

# PROJECT MANUAL

BID AND CONTRACT DOCUMENTS  
SPECIFICATIONS - DIVISIONS 00 TO 32

PROJECT NO. 221334



## Peace River Town Hall – Main Entrance Accessibility Peace River, Alberta

ISSUED FOR TENDER

May 2, 2023

SET NO. \_\_\_\_\_

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**INVITATION TO BID**

**Peace River Town Hall Main Entrance Accessibility  
Peace River, Alberta**

The intent of this Invitation to Bid is to solicit and receive formal offers to upgrade the Peace River Town Hall Project, for a Stipulated Price Contract, in accordance with the Contract Documents.

**BIDS will be received at the Town of Peace River Office until 2:00 p.m. (Local Time), Thursday May 25<sup>th</sup>, 2023 or by email at [tenders@peaceriver.ca](mailto:tenders@peaceriver.ca) until 2:00 p.m. (Local Time) as received by the Town dependent on the email time receipt as per the Town server, Thursday May 25<sup>th</sup>, 2023.**

Town of Peace River  
9911 – 100 Street  
Peace River, Alberta  
T8S 1S4  
Telephone: 780-624-2574  
[tenders@peaceriver.ca](mailto:tenders@peaceriver.ca)

Bids must have the seal of the Bidder affixed and must be submitted in a sealed opaque envelope clearly marked: **“Peace River Town Hall Main Entrance Accessibility – Peace River, Alberta”**.

Drawings and Specifications will be posted on the Buildworks Canada website.

Each Bid must be accompanied by the Bid Security as specified in the Bid Documents. The Owner reserves the right to accept or reject any or all Bids, or to accept the Bid which the Owner deems to be in its own best interest. Bids submitted by Fax will not be accepted nor considered.

Bids will be publicly opened immediately after the time of bid closing:

All enquiries to: **Brandon Berube**  
BR2 Architecture  
Telephone: (780) 423-6606  
[office@BR2Architecture.com](mailto:office@BR2Architecture.com) OR [bberube@BR2Architecture.com](mailto:bberube@BR2Architecture.com)

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**1. SUMMARY**

- .1 The intent of this bid call is to solicit and receive formal offers to construct the **Peace River Town Hall Accessibility Upgrades** for a Stipulated Price Contract, in accordance with the Contract Documents.
- .2 The Owner is **Town of Peace River**.
- .3 Bids shall be prepared and submitted and the bidding process shall be administered in accordance with these bidding requirements.
- .4 Refer to Section 01 11 00 - Summary of Work for a summary of the Project, including requirements pertaining to Contract Time.
- .5 The contract documents are identified as **Peace River Town Hall Main Entrance Accessibility – Peace River, Alberta, Project No. 221334**, as prepared by the Prime Consultant:

BR2 Architecture  
201, 10441 – 123 Street  
Edmonton, Alberta  
T5N 1N8

and listed in the Project Manual.

**2. BID SUBMISSION**

- .1 Irrevocable Bids, under the seal of the Bidder, free of escalation clauses, qualifications or other additions or deductions must be received by:

Town of Peace River  
9911 – 100 Street  
Peace River, Alberta  
T8S 1S4  
Telephone: 780-624-2574  
tenders@peacriver.ca

Until: **2:00 p.m.** (Local Time), **Tuesday May 25<sup>th</sup>, 2023** for hardcopy bids.

Until: **2:00 p.m.** (Local Time), **Tuesday May 25<sup>th</sup>, 2023** for emailed bids.

- .2 For bid closing purposes, the official time of receipt of bids shall be as determined by the time recorder clock used to time and date stamp bids upon submission to the above location.
- .3 Submit bids on forms provided in the Bid Documents and must be free of any and all escalation clauses, qualifications or other additions or deletions.
- .4 All Bids and all required Bid Security must be in a sealed opaque envelope clearly marked **Peace River Town Hall Main Entrance Accessibility – Peace River, Alberta**. The name and address of the Bidder must be shown on the reverse side of the envelope.
- .4 Oral, telephoned, telegram, or fax bids will **not** be accepted nor acknowledged.
- .5 The bid closing time may be extended by Addendum.

- .6 Any item missed or any special conditions added to the Bid may be cause for its rejection by the Owner's sole discretion including but not limited to all spaces, blanks and declarations completed.
- .7 Each Bid must be accompanied by the Bid Security as specified in the Bid Documents. The **Town of Peace River** reserves the right to accept or reject any or all Bids, or to accept the Bid which the **Town of Peace River** deems to be in its own best interest. Bids submitted by Fax will **not** be accepted nor considered.
- .8 Emailed bids will be received by the Town dependent on the email time receipt as per the Town server.

**3. BASIS OF BID - STIPULATED PRICE**

- .1 Bids shall be on a stipulated price basis.

**4. SUFFICIENCY OF BID**

- .1 The submission of a bid shall constitute an incontrovertible representation by the Bidder that:
  - .1 the Bidder has complied with all bidding requirements,
  - .2 the Bidder is qualified and experienced to perform the Work in accordance with the Bid Documents,
  - .3 the bid is based upon performing the Work in accordance with the Bid Documents, without exception, and
  - .4 the price or prices stated in the bid cover all the Bidder's obligations under the Contract and all matters and things necessary for the performance of the Work in accordance with the Bid Documents.

**5. CONTRACT/BID DOCUMENTS**

- .1 Definitions
  - .1 Contract Documents: defined in CCDC-2 (2020) edition, Definitions.
  - .2 The Bid Documents are the documents issued or made available to Bidders by the Owner for the purpose of preparing a bid. The Bid Documents consist of the following:
    - .1 Instructions to Bidders.
    - .2 Pre-Bid Meeting.
    - .3 Information Documents.
    - .4 Bid Form and Bid Form Supplements.
    - .5 Bid Security.
    - .6 Statutory Declaration.
    - .7 Contract Performance Security.
    - .8 Security for Payment of Claims.
    - .9 CCDC-2 (2020) Contract
    - .10 Supplementary General Conditions.
    - .11 Insurance Conditions.



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- .12 Detail Drawings.
  - .13 Specifications, Divisions 01 to 48 inclusive.
  - .14 Drawings, as listed in the List of Drawings.
  - .15 Addenda issued during bid period.
- .3 Bid, Offer, or Tendering: Act of submitting an offer under seal.
  - .4 Bid Price or Stipulated Price: Monetary Sum identified by the Bid form.
- .2 Availability
    - .1 Digital drawings and specifications will be distributed via email and posted to Buildworks Canada.
- .3 Examination
    - .1 Drawings and Specifications will be posted on Buildworks Canada.
- .4 Queries / Addenda
    - .1 If there are to be any changes in the work, or in the bidding procedures, Bidders will be informed prior to Bid Closing by means of an Addendum.
    - .2 All Addenda shall become a part of the Contract Documents, and receipt of Addenda shall be acknowledged by the Bidder in the Bid submission. Include costs in the Bid Price.
    - .3 Addenda will be issued no later than **4:00 p.m.** local time two working days immediately prior to the Bid Closing. Should Addenda be issued after that date and time, then such Addenda shall also include a revised Bid closing date.
    - .4 Direct questions by email to Mr. Brandon Berube at BR2 Architecture  
  
**bberube@br2architecture.com**  
  
Telephone and fax enquiries **will not** be responded to.
- .5 Product / System Options
    - .1 Reviews of equivalent and/or alternatives will be undertaken only earlier than seven (7) days prior to closing.
    - .2 Where the Specifications and/or Bid specifically state that equivalent and/or alternatives will be considered, the Bidder may submit with the Bid a request for a review of an equivalent and/or alternative so specified. The Bidder shall bid a price for the item as originally specified, and the proposed increase or decrease if the alternative is used shall be included in the Bid Submission.
    - .3 In such cases, the request for consideration of an alternative method of construction, material or product shall be submitted and received in writing to BR2 Architecture and shall contain pertinent data such as construction, operational characteristics and performance history, seven (7) days prior to closing of Bid.
    - .4 BR2 Architecture may reject the alternative and the Bidder shall use the item originally specified. BR2 Architecture may allow the alternative as a basis for acceptance of a Bid on condition that, upon review of the shop drawings, if the alternative is found not acceptable, the item as originally specified must be used. Bidders must assume the risk

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of obtaining final acceptance and any additional costs, if the alternative is found to be unacceptable.

- .5 Whenever alternatives are accepted, the Bidder shall be responsible for making all consequential adjustments to make the alternative fit into the Work as specified, and any consequential costs shall be deemed to be included in the Bid prices.

**6. QUALIFICATIONS**

- .1 The Owner reserves the right to reject a proposed subcontractor for reasonable cause.  
.2 Refer to CCDC-2 (2020), Article GC 3.7 of General Conditions.

**7. BID FORM**

- .1 The Bidder's legal status as a corporation, partnership or proprietorship must be indicated.  
.2 The business address must be inserted.  
.3 All Bids must be dated.  
.4 Fill in all blanks in Bid Form and sign as follows:  
.1 Limited Company: Print or type in space provided full name of company and name(s) and status of authorized signing officer(s). Authorized signing officer(s) shall sign. Sign Bid Form in the presence of a witness who shall also sign, or in the absence of a witness, affix corporate seal.  
.2 Limited Company Joint Venture: Each joint venture company shall sign as for a limited company.  
.3 Partnership: Print or type in space provided firm name and name(s) of person(s) signing. One or more of the partners shall sign in the presence of a witness who shall also sign.  
.4 Sole Proprietorship: Print or type in space provided business name and name of sole proprietor. Sole proprietor shall sign in the presence of a witness who shall also sign.  
.5 Complete the Bid Form in its entirety. Any required information that is omitted or illegible, any alterations to the text, or any conditions added on or submitted with the Bid Form, may cause the bid to be declared invalid and rejected.

**8. BID FORM REQUIREMENTS**

- .1 The bidder, in submitting an offer, agrees to complete the Work by the dates indicated on the Bid Form.  
.2 Refer to Supplementary Conditions for Inclusion of Federal Goods and Services Tax.

**9. BID ENCLOSURE REQUIREMENTS**

- .1 Bid and Contract Security  
.1 Bid Security and Contract Security shall be based on **no G.S.T.**  
.2 Each Bid shall be accompanied by Bid and Contract Security as follows:

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- .1 Bid Bond in the amount of 10% of the Bid amount
  - .2 Consent of Surety for a Performance Bond, for not less than 50% of the Bid amount.
  - .3 Labour and Material Payment Bond, for not less than 50% of the Bid amount.
  - .3 The Bid Security shall be retained until the Contractor has provided approved Contract Security to the Owner, as specified under the Terms of the Contract Documents.
  - .4 All Bid Security and all Contract Security which is required by the contract documents and which is in the form of surety bonds shall be issued by a surety company licensed to conduct business in the Province of Alberta.
  - .5 If the Owner accepts a Bid and that Bidder refuses or neglects to sign the Contract Agreement, or to provide the specified Performance Bond and Labour and Materials Payment Bond or other Contract Security, or to provide the Certificates of Insurance required by the Bid and Contract Documents within the time specified, then the Bid Security shall be forfeited to the Owner as liquidated damages and not as a penalty.
- .2 Insurance
- .1 Workers' Compensation Insurance: Prior to commencing the Work and prior to receiving payment on Substantial and Total Performance of the Work, the Contractor shall provide evidence of compliance with the requirements of the Province of Alberta with respect to Workers' Compensation Insurance including payments due thereunder.
  - .2 General Liability Insurance: Prior to commencing the Work, the Contractor shall provide evidence of General Liability Insurance in the joint names of the Contractor and the Owner with limits of not less than \$5.0 million inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof, with a property damage deductible of \$500.00.
  - .3 Separation of Insureds Cross Liability: except with respect to the Limits of insurance, and any rights or duties specifically assigned to the first Named Insured, this insurance applies:
    - .1 As if each Named Insured were the only Named Insured; and,
    - .2 Separately to each Insured against whom claim is made or 'action' is brought.
- .3 Safety Certification
- .1 Submit a copy of valid Certificate of Recognition (COR) as issued by the Alberta Construction Safety Association (ASCA) or another certifying organization authorized by Alberta Labour to issue CORs within forty eight (48) hours of bid submission. Failure to provide COR within time period will cause rejection of the bid.

## 10. **BID FORM SUPPLEMENTS**

- .1 Prepare and submit each required supplement to the Bid Form as specified below.
- .2 Enclose the following Bid Form supplement together with the Bid Form in a single envelope and submit before the bid closing time:
  - .1 Bid security, as specified in Section 00 43 13.
  - .2 Completed Form 00 41 73 - Supplementary Bid Information Form

- .3 Bid Form supplements are final and binding on the Bidder upon submission and may not be modified or superseded with another submission, unless the modifying or superseding submission is received before the bid closing time, as specified in the Instructions to Bidders article entitled "Bid Modifications."
- .4 Bid Form supplements will be reviewed for compliance with the requirements of the Bid Documents after the public bid opening.
- .5 Any of the following irregularities may cause the bid to be declared invalid and rejected:
  - .1 Any failure to submit a required Bid Form supplement as specified.
  - .2 Any required information in a Bid Form supplement is omitted, illegible, frivolous, or otherwise improperly submitted.
  - .3 Any alterations to the text, or any conditions added on or submitted with a Bid Form supplement.
- .6 The Owner may, after the bid closing time and before contract award, require any Bidder to submit, in a form prescribed by or acceptable to the Owner, a detailed cost breakdown of the Bid Price(s), or any other additional supplementary information about any aspect of the Bidder's bid which, in the Owner's opinion, is necessary for bid evaluation purposes.

## **11. SUBCONTRACTORS**

- .1 The Bidder shall submit the names of subcontractors proposed for the Work in the Schedule of Subcontractors.
- .2 Where the Schedule of Subcontractors shows specific items of work the Bidder shall name the Subcontractor. If the Work will not be subcontracted the Bidder shall so indicate using the words "Own Forces".
- .3 The Subcontractor listed in the Bid may not be changed without the written consent of the Owner. If the Bidder has indicated "Own Forces" for Subtrade work that aspect of the Work may not be subcontracted afterward without the written consent of the Owner.
- .4 The Owner shall review the competence of the named Subcontractors prior to the acceptance of a Bid, and if a Subcontractor named in the Bid is not acceptable to the Owner, the Bidder shall submit an alternative Subcontractor for consideration by the Owner.

## **12. SUPPLIERS AND MANUFACTURERS**

- .1 The Bidder shall submit in the Schedule of Suppliers and Manufacturers of Material and Equipment, the names of Manufacturers, and if materials and product are obtained through intermediate agents, the agents shall be indicated as the Suppliers.
- .2 The Suppliers and Manufacturers named in the Bid shall not be changed without the written consent of the Owner.
- .3 If a Supplier or Manufacturer named in the Bid is not acceptable to the Owner, the Bidder shall submit an acceptable alternative Supplier or Manufacturer for consideration by the Owner.

## **13. BID MODIFICATION**

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- .1 A bid, including the Bid Form and Bid Form supplements, submitted in accordance with these bidding requirements may be modified, provided the modification:
    - .1 is in the form of a letter received at the address specified in 2.1 before the bid closing time, and
    - .2 states the project title, name of the Bidder, the nature of the modification, and is signed by an authorized person.
    - .3 bid modifications submitted by FAX will **not** be accepted.
  - .2 When submitting a modification directing a change in a bid amount, do not reveal the original amount nor the revised amount:
    - .1 On stipulated price bids, state only the amount to be added to or deducted from the original bid amount.
    - .2 **Do not** submit modifications to the Bid by fax machine, telegram or telephone.
  - .4 When submitting a second or more modifications related to a single bid amount, ensure that there is no ambiguity as to the intended bid price. The written modification shall clearly indicate whether:
    - .1 the bid amount first submitted is being modified and any previous modifications are to be disregarded, or
    - .2 a revised bid amount derived from a previous modification is being modified.
  - .5 State all Addendum Numbers received, if different from what was indicated on originally submitted Bid Form.
  - .6 **The Town of Peace River** will assume no responsibility or liability for the content of modifications, or for modifications that are, for any reason, delayed, illegible, unclear as to intent, ambiguous, contrary to these instructions, or otherwise improperly received. **The Town of Peace River** may disregard improperly received modifications.
  - .7 Persons withdrawing Bids or making Bid modifications in person shall show a letter signed by original bidder as proof of authorization to do so. Persons not showing proper authorization will not be allowed to modify or withdraw a Bid.

#### **14. BID WITHDRAWAL AND ACCEPTANCE**

- .1 A bid may be withdrawn at any time before the bid closing time, provided the request is in the form of:
  - .1 a letter received at the address specified in 2.1 before the bid closing time.
  - .2 **do not** submit a withdrawal of Bid by fax machine, email, telegram or telephone.
- .2 Withdrawn bids may be resubmitted in accordance with these bidding requirements providing the resubmitted bid is received at the office specified in 2.1, before the bid closing time.
- .3 A bid may not be withdrawn at or after bid closing time and shall be open to acceptance by the Owner until:

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- .1 some other Bidder has entered into a contract with the Owner for performance of the Work, or
  - .2 60 days after the bid closing time,
- whichever occurs first.
- .4 The 60 day acceptance period referred to above shall commence at midnight of the date of bid closing and shall terminate at midnight of the 60th day thereafter. If the 60th day falls on a statutory holiday, such day(s) shall be omitted from the computation.
  - .5 The 60 day acceptance period referred to above may be extended at the Owner's request and subject to the Bidder's written agreement to the extension.
  - .6 The Contract shall be established upon issuance, by the Owner to the successful Bidder, of a letter accepting the bid without qualification or, if the letter accepting the bid contains one or more qualifications, upon written acceptance by the Bidder of all such qualifications.
  - .7 The lowest or any bid will not necessarily be accepted and the Owner may reject any and all bids.
  - .8 The Owner may negotiate contract terms with the Bidder submitting the lowest valid bid, provided that the negotiated changes to the Bid Documents result in either no change to the bid price or a reduced bid price. Such changes may be formalized in the form of a Post-Bid Addendum that, upon written acceptance by the Bidder, shall form part of the Contract Documents.

**15. NOTIFICATION OF INTENT NOT TO SUBMIT A BID**

- .1 Prospective Bidders who have received Bid Documents from the office specified in 2.1, but do not intend to submit a bid, are requested, as a courtesy to subcontract bidders, to promptly notify the office specified in 2.1 by letter, fax or email.

**16. BID OPENING**

- .1 A public bid opening will commence immediately after the bid closing time, at the address specified in 2.1. Bidders will be notified by email of the results.
- .2 The Owner and the Consultant will assess the completeness and validity of each submitted Bid in private.

**17. TENDER EVALUATION CRITERIA**

- .1 The **Town of Peace River** reserves the right to accept or reject any and all Tenders and to waive irregularities and informalities at its discretion. The **Town of Peace River** reserves the right to accept a Tender other than the lowest Tender without stating reasons. By submitting its Tender, the Tenderer waives any right to contest, in any proceedings or action, the right of the **Town of Peace River** to accept or reject any Tender in its sole and unfettered discretion. Without limiting the generality of the foregoing, the **Town of Peace River** may consider any other factor besides price and capability to perform the Work in its sole and unfettered discretion.
- .2 Tenders must be submitted on the Tender Form provided. Tenders that are unsigned, incomplete, conditional, illegible, unbalanced, obscure, that contain additions not called for, reservations, erasures, alterations, or other irregularities may be rejected as being informal.
- .3 The tender form must contain the Tenderer's business address and his legal status must be disclosed and must be signed by a duly authorized official and be sealed with the corporate seal in the case of a corporation.

- .4 The Tenders will be compared on the basis of the Engineers Schedule of Quantities which, while not guaranteed, is believed to be approximately correct. If there is a discrepancy between the Unit Price and the total amount, the Unit Price shall be considered as representing the intention of the Tenderer.
- .5 The Owner reserves the right to waive informalities or reject any or all Tenders or accept the Tender that is the most favourable in the interest of the Owner.
- .6 The Tender will be evaluated based on the following:

EVALUATION CATEGORY	EVALUATION DOCUMENTATION REQUIRED	CATEGORY SCORE (1-10)	CATEGORY WEIGHTING (%)	TOTAL SCORE
The ability and skill of the Tenderer to provide the goods and services requested	Contractor to provide information on 2 recent projects inclusive of the Bid Amount, Actual Amount, Construction Schedule, Actual Timeline, and Project Sponsor.	10	20%	2.0
The character, integrity, reputation, judgement, experience, and efficiency of the Tenderer.	Contractor to provide 3 business references.	10	10%	1.0
The ability of the Tenderer to perform the Work or provide the services promptly or at the time indicated without delay or interference and with minimal cost overruns.	Contractor to provide information on 2 recent projects inclusive of the Bid Amount, Contract Amount, Construction Schedule, Actual Timeline, and Project Sponsor.	10	15%	1.5
The sufficiency of the financial resources and the ability of the Tenderer to perform the Work or provide the goods or services.	Contractor to provide COR, Bid Bond, Consent of Surety, etc.	10	10%	1.0
The ability of the Tenderer to complete the Work with fewer site occupancy days.	Tenderer to provide a project schedule timeline, complete with site occupation days within the restrictions of the tender.	10	15%	1.5
Equalized Project Pricing	Total tender standardized to total site occupation days in schedule.	10	30%	3.0
<b>TOTAL SCORE</b>				<b>10.0</b>

- .7 When evaluating local involvement, the Town will abide by the NW Partnership Trade Agreement and agreements of internal trade.
- .8 The Contract award shall be made on the Tender that will give the greatest value based on quality, service and price.

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**18. ACCEPTANCE OR REJECTION OF TENDERS:**

.1 As it is the purpose of the **Town of Peace River** to obtain the Tender most suitable and most advantageous to the interests of the **Town of Peace River** notwithstanding anything else contained within the Tender Documents, the **Town of Peace River** reserves the right, in its sole and unfettered discretion, to reject or accept any Tender, including the right to reject all Tenders. Without limiting the generality of the foregoing, any Tender which:

- .1 is incomplete, obscure, irregular or unrealistic;
- .2 is non-compliant in a trivial/immaterial or substantial/material manner, or conditional;
- .3 has erasures or corrections;
- .4 omits a price on any one or more items in the Tender;
- .5 fails to complete the information required in the Tender;
- .6 is accompanied by an insufficient certified cheque, irrevocable letter of credit or by a Bid Bond in an unsatisfactory form,

may at the **Town of Peace River's** sole and unfettered discretion be rejected or accepted. Further, a Tender may be rejected or accepted on the basis of the **Town of Peace River's** unfettered assessment of its best interest, which includes the **Town of Peace River's** unfettered assessment as to a bidder's past work performance for the **Town of Peace River** or for anyone else or as to a bidder's financial capabilities, completion schedule, or ability to perform the Work, or the **Town of Peace River's** desire to reduce the number of different contractors on the construction site at any given time. The **Town of Peace River** reserves the right to negotiate after Closing Time with the Bidder that the **Town of Peace River** deems has provided the most advantageous Tender; in no event will the **Town of Peace River** be required to offer any modified terms to any other Bidder prior to entering into a Contract with the successful Bidder and the **Town of Peace River** shall incur no liability to any other Bidders as a result of such negotiation or modification.

**19. GST EXCLUDED**

- .1 Bidders shall not include GST in their bid prices.
- .2 G.S.T. is not to be included in Bid Security or Contract Security amounts.

**21. EXAMINATION OF BID DOCUMENTS AND SITE**

- .1 Bidder shall, before submitting a bid:
  - .1 examine and read the Bid Documents thoroughly,
  - .2 visit site and its surroundings and other locations to become familiar with local and other conditions affecting the Work,
  - .3 consider the effect of regulatory requirements applicable to the Work,
  - .4 study and correlate Bidder's observations with the Bid Documents,
  - .5 immediately notify the Consultant of all perceived omissions and discovered conflicts, errors and discrepancies in the Bid Documents, and
  - .6 be satisfied that Bidder understands the Bid Documents and is competent to undertake and complete the Work.
- .2 Bidders may make non-destructive tests, inspections and measurements, but such investigations must be prepared within schedules and arrangements made with the Owner. Bidders shall comply



with the Owner's requirements including obtaining any necessary permits. All costs for such tests, inspections and measurements shall be borne solely by the Bidder(s).

- .3 As this is an educational facility, access to the site is restricted, this will be the only opportunity to familiarize yourself with the site conditions, limitations, means of access, and scope of work. Further site-visits outside of the times stated above are not permitted. No additional pre-bid site examinations are planned.

## **22. SITE SECURITY**

- .1 Project Personnel Identification Tags
  - .1 All contractors and suppliers must supply identification tags (ID Tags) to all personnel on the work site and/or the property.
  - .2 ID tags must include the name of the company, be numbered, and be worn by all personnel on the property at all times.
  - .3 ID tags must be worn in a clearly visible manner.
  - .4 ID tags do not require picture ID.
- .2 Project personnel not displaying required ID tags will be requested to vacate from the property immediately.

## **23. SMOKING**

- .1 Smoking is not permitted on the property. No exceptions.

## **24. CONTRACT FORM**

- .1 Once the Owner has accepted a Bid, the Bidder shall enter into a contract.
- .2 The Contract to be executed between the Owner and the successful Bidder (Contractor) is the Stipulated Price Contract, CCDC-2 (2020) of the Canadian Construction Documents Committee.
- .3 In the event of this Bid being accepted within the stated acceptance period and the Bidder fails to enter into a Contract:
  - .1 The Bid security submitted in accordance with Section 9 above will be forfeited in lieu of damages to which the Owner is entitled by reason of failure or refusal to enter into a contract.
  - .2 Damages will be limited to the lesser of the face value of the security or the difference between this Bid and the Bid for which the contract is signed.

## **25. DIVISION OF WORK**

- .1 Work specified in the Specifications is divided into Divisions and Sections for reference purposes only.
- .2 Except as may be otherwise specified in the Bid Documents, division of work among Contractor, Subcontractors, Sub-subcontractors and suppliers is Bidders' responsibility.

## **26. INTERPRETATION AND MODIFICATION OF BID DOCUMENTS**

- .1 Submit questions in writing about the meaning and intent of the Bid Documents to BR2 Architecture.
- .2 If an inquiry requires an interpretation or modification of the Bid Documents, the response to that inquiry will be issued in the form of a written Addendum only, to ensure that all bidders base their bids on the same information.
- .3 Addenda may also be issued to modify the Bid Documents as considered necessary by BR2 Architecture.
- .4 Submit inquiries as early as possible in the bid period. If an inquiry requires an interpretation or modification of the Bid Documents, but is received too close to the bid closing time to permit issuance of an Addendum, BR2 Architecture may be unable to respond to that inquiry.
- .5 Any replies to inquiries or interpretations or modifications of the Bid Documents made verbally, by e-mail, or by any manner other than in the form of a written Addendum, shall not be binding.

**27. ADDENDA**

- .1 During the bid period, Addenda will be issued by BR2 Architecture via Buildworks Canada to all parties recorded by BR2 Architecture as having received Bid Documents.
- .2 Other Bidders who may have obtained Bid Documents from another source, such as one of the BUILDWORKS CANADA electronic plan rooms, will not automatically receive addenda via fax or courier. It is such Bidders' responsibility to check BUILDWORKS CANADA for addenda as they are issued.
- .3 Addenda shall become part of the Bid and Contract Documents.
- .4 Each Bidder shall ascertain before bid submission that it has received all Addenda issued by BR2 Architecture and shall indicate in the Bid Form the Addendum number(s) of all Addenda received.

**END OF SECTION**

**1. OPTIONAL PRE-BID MEETING AND SITE INSPECTION**

- .1 A pre-bid meeting and site inspection will be held **May 9, 2023 at 1:00 p.m. at Peace River Town Hall located at 9911 - 100 Street, Peace River, Alberta.**
- .2 Attendance is optional but strongly recommended for all General Contractors and major subcontract bidders.
- .3 Purpose is to provide Bidders an opportunity to familiarize themselves with the Work and with existing conditions. Owner's representative will be present.
- .4 No additional site review will be approved.
- .5 No information provided by the Consultant or any of his representatives at the pre-bid Meeting and site tour shall be binding unless such information is included in an Addendum. Questions or Inquiries regarding this project will be submitted to [bberube@br2architecture.com](mailto:bberube@br2architecture.com).

**END OF SECTION**

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Project Title and Location: Peace River Town Hall – Main Entrance Accessibility  
**9911 – 100 Street**  
**Peace River, Alberta**

Project No.: **221334**

Submitted To: BR2 Architecture  
201, 10441 – 123 Street  
Edmonton, Alberta  
T5N 1N8  
Telephone: 780-423-6606  
[office@BR2Architecture.com](mailto:office@BR2Architecture.com)

Bidder, \_\_\_\_\_  
(Legal Name)

of \_\_\_\_\_  
(Business Address)

the undersigned, having examined the Bid Documents and Addenda No. \_\_\_\_\_ to No. \_\_\_\_\_ inclusive, all as prepared by BR2 Architecture; hereby offer to enter into a Contract to perform the Work required by the Bid Documents for the **STIPULATED PRICE** of

\_\_\_\_\_ Dollars (\$\_\_\_\_\_ ) in Canadian funds, which price includes any specified cash and contingency allowances and the applicable taxes in force as of this date, except the Federal Goods and Services Tax.

**Supplementary Bid Information Forms:**

Provide the following supplementary bid information forms with the stipulated price form:

1 – Supplementary Bid Information Form A – Schedule of Unit Prices

Provide the following supplementary bid information forms to the Owner within one day of Bid closing:

- 1 – Supplementary Bid Information Form B – Cost Breakdown
- 1 – Supplementary Bid Information Form C – Subcontractor Breakdown
- 1 – Supplementary Bid Information Form D – Schedule of Contractors Supervisory Personnel
- 1 – Supplementary Bid Information Form E - Alternates
- 1 – Supplementary Bid Information Form F – Schedule of Labour Rates

**Declarations:**

We hereby declare that:

- a) We agree to perform the Work and to attain Substantial Performance of the Work by **August 22, 2023** and to attain Total Performance of the Work by **September 5, 2023**.
- b) We declare that no person, firm or corporation other than the undersigned has any interest, financial or otherwise, in this Bid or in the proposed contract for which the Bid is made.
- c) This Bid is open to acceptance for a period of **Sixty (60)** days from the date of bid closing.
- d) In submitting this bid I/we understand that a Bid revision will not be called if minor changes to the Bid documents are contemplated at or after Bid closing.
- e) The Owner reserves the right to request a Bid revision from any or all of the Bidders where significant modifications to the Bid documents become apparent at, or after Bid closing.
- f) I/We agree that after notification in writing by the Owner of the acceptance of this Bid, within the time limits of the Bid acceptance period state above, that we will:
  - i) Execute the Agreement between Owner and Trade Contractors, including provision of required bonds, within five (5) days, as specified in General Conditions, Standard Construction Document CCDC-2 (2020).
  - ii) Commence construction within seven (7) days of the date of acceptance of this Bid by the Owner or other period as may be directed in writing by the Owner.
  - iii) Furnish and pay for a Performance Security, in the form of a bond for an amount equal to 50% of the total stipulated price.
  - iv) Furnish and pay for a Labour and Material Payment Security, in the form of a bond for an amount equal to 50% of the total stipulated price.

**Attachments:**

This Bid includes the following:

- a) A Bid Bond (or certified cheque) in the minimum amount of 10% of the stipulated price, made out in favour of the Owner.
- b) A Consent of Surety issued by a company licensed to carry on such business in Canada, and in the Province of Alberta for the Performance, and Labour Material Payment Bonds in the amounts listed in Section 00 43 13 – Bid Performance and Payment Security.
- c) Photocopy of Certificate of Recognition (COR) issued by the Alberta Construction Safety Association.
- d) Proof of Insurance as identified in Section 00 21 13 – Instruction to Bidders.

**Signatures:**

Signed, sealed and submitted for and on behalf of:

Company: \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address or Postal Box Number)

\_\_\_\_\_  
(City, Province & Postal Code)

(Apply SEAL above)

Signature: \_\_\_\_\_

Name & Title: \_\_\_\_\_  
(Please Print or Type)

Witness: \_\_\_\_\_

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

*N.B. Where legal jurisdiction or Owner requirement calls for proof of authority to execute this Bid, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign this bid for and on behalf of the Corporation or Partnership should be attached.*

**END OF SECTION**

---

**SUPPLEMENTARY BID INFORMATION FORM A – SCHEDULE OF UNIT PRICES**

Bidder \_\_\_\_\_  
(Legal Name)

.1 The following list of Unit Prices shall be used to determine the cost of applicable variations to the Contract. These Unit Prices are to include all Labour, Products and Equipment, and all related Duties and Taxes together with chargers for overhead and profit but exclude GST.

<b>Type of Work</b>	<b>Unit</b>	<b>Addition</b>
.1 Supply and installation of date Outlet complete with cabling, Conduit/raceway (including testing And termination)	each	\$ _____

---

**SUPPLEMENTARY BID INFORMATION FORM B – COST BREAKDOWN**

Bidder \_\_\_\_\_  
(Legal Name)

- .1 Provide the following cost breakout information. Do not include Federal Goods & Services Tax.
- .2 The Bidder agrees that the Total Stipulated Sum includes, but is not necessarily limited to the following items of the Work to complete the \_\_\_\_\_ in accordance with the specifications and drawings.

.3 Items of Work

.1	Permits, Insurance, Bonds and Warranties	\$ _____
.2	General Requirements, Mobilization	\$ _____
.3	Miscellaneous Steel	\$ _____
.4	Rough Carpentry	\$ _____
.5	Exterior Finishes	\$ _____
.6	Finish Hardware	\$ _____
.7	Aluminum Frames and Glazing	\$ _____
.8	Drywall Steels Studs / Acoustic Ceilings	\$ _____
.9	Painting	\$ _____
.10	Electrical	\$ _____
	Miscellaneous Items of Work not included above	\$ _____

.4 Total Stipulated Sum \$ \_\_\_\_\_

Total Stipulated Sum (in words) \_\_\_\_\_



---

**SUPPLEMENTARY BID INFORMATION FORM C – SUBCONTRACTOR BREAKDOWN**

Bidder \_\_\_\_\_  
(Legal Name)

.1 The Bidder shall complete the following subcontractor breakdown list.

.1	Structural / Miscellaneous Steel	\$ _____
.2	Rough Carpentry	\$ _____
.3	Exterior Finishes	\$ _____
.4	Finish Hardware	\$ _____
.5	Aluminum Frames and Glazing	\$ _____
.6	Drywall Steels Studs / Acoustic Ceilings	\$ _____
.7	Painting	\$ _____
.8	Electrical	\$ _____

---

**SUPPLEMENTARY BID INFORMATION FORM D – SCHEDULE OF CONTRACTOR'S  
SUPERVISORY PERSONNEL**

Bidder \_\_\_\_\_  
(Legal Name)

- .1 The Contractor states that the following supervisory personnel employed by the Contractor shall be employed on this Contract.

<u>Name</u>	<u>Position</u>	<u>Years and Type of Experience/Education/Work</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

- .2 Before the acceptance of any Bid the Bidder will provide true and accurate resumes of each supervisory personnel requested by the Owner.
- .3 The Contractor agrees that if a named supervisory person is not acceptable to the Owner, the Contractor shall name an acceptable alternative.



**SUPPLEMENTARY BID INFORMATION FORM F – SCHEDULE LABOUR RATES**

- .1 This Schedule of Labour Rates is subject to Owner’s approval and will be used solely for evaluating Contractor Proposals for changes in the Work.
- .2 The Owner has not established, and does not intend to establish, minimum wages or benefits applicable to the Work, other than those required by law.

**Labour rates for trades employed by Contractor:**

Name of Trade	Trade Classification	Direct Labour Cost (\$/hour)	Payroll Burden Cost (\$/hour)	Total Labour Cost (\$/hour)

We hereby declare that the above stated labour rates are, to the best of our knowledge, the rates that will actually be paid in the normal performance of the Work, during regular working hours, and do not include any overhead cost or profit.

Signature	Name of Contractor	Date
-----------	--------------------	------

**Labour rates for trades employed by Subcontractors and Sub-subcontractors:**

Name of Trade	Trade Classification	Direct Labour Cost (\$/hour)	Payroll Burden Cost (\$/hour)	Total Labour Cost (\$/hour)
We hereby declare that the above stated labour rates are, to the best of our knowledge, the rates that will actually be paid in the normal performance of the Work, during regular working hours, and do not include any overhead cost or profit.				
Signature	Name of Subcontractor / Sub-subcontractor		Date	

**END OF SECTION**

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**1. TYPE AND AMOUNT OF BID SECURITY**

- .1 Provide bid security in the form of a bid bond, a certified cheque or bank draft in an amount not less than:
  - .1 10% of the bid price.
- .2 Bids not accompanied by bid security will be rejected as non-compliant.

**2. BID BOND**

- .1 Bid bond shall be based on the Canadian Construction Documents Committee (CCDC) standard form of bid bond, CCDC 220, 2002 edition.
- .2 A bid bond that is improperly completed or executed may cause the bid to be rejected as non-compliant if, in the Owner's judgment, such improper completion or execution of the bid bond potentially renders the bid bond unenforceable.
- .3 Bid bond may, upon request and at the Owner's sole discretion, be returned to unsuccessful bidders.

**3. CERTIFIED CHEQUE OR BANK DRAFT**

- .1 Bid security provided in the form of a certified cheque or bank draft does not negate the successful bidder's obligation to provide surety bonds as specified in Section 00 61 13 and Section 00 61 90.
- .2 Bidders providing bid security in the form of a certified cheque or bank draft shall, as a condition of contract award, submit a Consent of Surety or Agreement to Bond issued by duly incorporated surety company authorized to transact business of suretyship in the Province of Alberta. If a Bidder fails to submit an acceptable Consent of Surety or Agreement to Bond by the earlier of:
  - .1 a date that the Owner may request in writing, or
  - .2 seven days before expiry of the bid acceptance period,the bid will be rejected as non-compliant.
- .3 Make certified cheque or bank draft payable to the Town of Peace River.
- .4 The Owner will return certified cheques and bank drafts to unsuccessful bidders promptly upon expiry of the bid acceptance period or, at the Owner's sole discretion, before expiry of the bid acceptance period.

**4. BIDDER DEFAULT**

- .1 If a Bidder whose bid is accepted by the Owner in writing, without conditions, and within the acceptance period specified in the Bid Documents, refuses or fails within 15 days after the date of issuance of the written acceptance of the bid:
  - .1 to sign a formal Agreement with the Owner for the performance of the Work, and

- .2 to provide surety bonds as specified in Section 00 61 13 and Section 00 61 90, the Bidder shall be liable to the Owner for the difference in money between the amount of its bid and the greater amount for which a contract for the Work is entered into with some other Bidder, up to the maximum amount of the bid security provided.
  
- .2 If a Bidder provides bid security in the form of a certified cheque or bank draft, and fails to submit a Consent of Surety or Agreement to Bond as specified in 3.2, the Bidder shall be liable to the Owner for the difference in money between the amount of its bid and the greater amount for which a contract for the Work is entered into with some other Bidder, up to the maximum amount of the bid security provided.

**END OF SECTION**

**1 CONTRACT PERFORMANCE SECURITY**

- .1 Contractor shall provide security for performance of the Contract in the form of the following:
  - .1 Performance Bond for 50% of the Contract Price, or
  - .2 Certified Cheque or Bank Draft in the amount of 10% of the Contract Price, or
  - .3 Government of Canada or Provincial Government Bonds in bearer form in the amount of 10% of the Contract Price, at current market value as of date of issuance of the Letter of Acceptance of bid.
  - .4 Security to be made payable to “**Town of Peace River**”.

**2 PAYMENT OF CLAIMS SECURITY**

- .1 Contractor shall provide security for payment to claimants for labour and material used or reasonably required for use in the performance of the Contract. Such security shall be in the form of the following
  - .1 Labour and Material Payment Bond for 50% of their Contract Price, or
  - .2 Certified Cheque or Bank Draft in the amount of 10% of the Contract Price, or
  - .3 Government of Canada or Provincial Government Bonds in bearer form in the amount of 10% of the Contract Price, at current market value as of date of issuance of the Letter of Acceptance of bid.

**3 FORMS OF ACCEPTABLE SECURITY**

- .1 Surety Bonds
  - .1 Performance Bonds shall be in accordance with the Canadian Construction Documents Committee (CCDC) Standard Form of Performance Bond, CCDC Document No. 21.
  - .2 Labour and Material Bond shall be in accordance with the Canadian Construction Committee (CCDC) Standard Form of Labour and Material Payment Bond, CCDC Document No. 22.
  - .3 Consign Bonds to Owner.
- .2 Certified Cheque or Bank Draft
  - .1 Certified Cheque or Bank Draft shall be drawn on a financial institution authorized to conduct business in the Province of Alberta and shall be payable to the Owner.
  - .2 Monies covering the certified cheque or bank draft will be deposited in a Trust Account Administered by the Owner’s Legal Council. No Monies may be issued from the Trust Account without all parties signatures. The parties to the trust account will be the Owner, Contractor and Legal Council.
  - .3 Contractor shall not be entitled to, or receive, accrued interest on a deposited certified cheque provided as security.



.3 Government Bonds

- .1 Government Bonds shall be unconditionally guaranteed as to principal and interest and shall be payable to the bearer.
- .2 Contractor shall be entitled to and receive accrued interest on government bonds as security.

**4 SUBMISSION OF SECURITY**

- .1 Submit Security to the Owner within fifteen (15) days after bid is accepted.

**5 RELEASE OF CONTRACT PERFORMANCE SECURITY**

- .1 Where contract performance security is in the form of a certified cheque or a bank draft. Such security will be released progressively as follows:
  - .1 Four months after Substantial Performance of the Work, not more than one third of the Security will be released to the Contractor.
  - .2 Eight months after Substantial Performance of the Work a further amount not exceeding one third of the amount of the security will be released
  - .3 Twelve months after Substantial Performance of the Work the balance of the security will be released, subject to deficiencies in materials and workmanship arising during the warranty period having been corrected to the Owner's satisfaction.
- .2 Intermediate releases of security will be made only upon written request by the Contractor.

**6 RELEASE OF SECURITY FOR PERFORMANCE OF CLAIMS**

- .1 Where security for payment of claims is provided in the form of a certified cheque or bank draft, such security will be released to the Contractor provided:
  - .1 The Builder's Lien Act, Alberta statutory period of forty-five (45) days from the date of issue of a Certificate of Substantial Performance by the Consultant has expired.
  - .2 No Lien claims have been registered which are then outstanding, and
  - .3 Contractor has submitted a complete Statutory Declaration on standard CCA form 9A.

**END OF SECTION**

SAMPLE

000 222  
1979

**LABOUR AND MATERIAL PAYMENT BOND**  
(TRUSTEE FORM)

No. .... \$ .....

Note: This Bond is issued simultaneously with another Bond in favour of the Obligee conditioned for the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENT THAT

..... as Principal  
hereinafter called the Principal, and

.....  
a corporation created and existing under the laws of

.....  
and duly authorized to transact the business of Suretyship in

.....  
as Surety, hereinafter called the Surety are, subject to the conditions hereinafter contained, held and firmly bound unto

..... as Trustee  
hereinafter called the Obligee, for the use and benefit of the Claimants, their and each of their heirs, executors, administrators, successors and assigns, in the amount of

..... Dollars

(\$.....) of lawful money of Canada for the payment of which sum well and truly to be made the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a written contract with the Obligee, dated the

..... day of ..... 20 ..... for

.....  
which Contract Documents are by reference made a part hereof, and are hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall make payment to all Claimants for all labour and material used or reasonably required for use in the performance of the Contract, then this obligation shall be null and void: otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A Claimant for the purpose of this Bond is defined as one having a direct contract with the Principal for labour, material or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the purchase price thereof shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during when the equipment was used in the performance of the Contract. The prevailing industrial value of equipment shall be determined, in so far as it is practical to do so, in accordance with and in the manner provided for in the latest revised edition of the publication of the Canadian Construction Association titled "Rental Rates on Contractors Equipment" published prior to the period during which the equipment was used in the performance of the contract.
2. The Principal and the Surety, hereby jointly and severally agree with the Obligee, as Trustee, that every Claimant who has not been paid as provided for under the terms of his contract with the Principal before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's work or labour was done or performed or materials were furnished by such Claimant, may as a beneficiary of the trust herein provided for sue on this Bond, prosecute the suit to final judgement for such sum or sums as may be justly due to such Claimant under the terms of his contract with the Principal and have execution there on. Provided that the Obligee is not obliged to do or take any act, action or proceeding against

the Surety on behalf of the Claimants or any of them to enforce the provisions of this Bond. If any act, action or proceeding is taken either in the name of the Obligeo or by joining the Obligeo at a party to such proceeding, then such act, action or proceeding, shall be taken on the understanding and basis that the Claimants, or any of then who take such act, action or proceeding shall indemnity and save harmless the Obligeo against all costs, charges and expenses or liabilities incurred there on and any loss or damage resulting to the Obligeo by reason thereof. Provided still further that subject to the foregoing terms and conditions, the Claimants, or any of them may use the name of the Obligeo to sue on and enforce the provisions of this Bond.

3. No suit or action shall be commenced hereunder by any Claimant:

a) .....unless such Claimant shall have given written notice within the time limits hereinafter set forth to each of the Principal, the Surety and the Obligeo, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal, the Surety and the Obligeo, at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the Contract is located. Such notice shall be given

.....(1) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal under either the terms of the Claimant's contract with the Principal, whichever is the greater, within one hundred and twenty (120) days after such Claimant should have been paid in full under the Claimant's contract with the Principal;

.....(2) in respect of any claim other than for the holdback or portion thereof referred to above within one hundred and twenty (120) days after the date upon which such Claimant did, or performed, the last of the work or labour or furnished the last of the materials for which such claim is made under the Claimant's contract with the Principal;

b) after the expiration of one (1) year following the date on which the Principal ceased work on the Contract including work performed under the guarantees provided in the Contract;

c) other than in a Court of competent jurisdiction of the Province or District of Canada in which the subject matter of the Contract or any part thereof is situated and not elsewhere and the parties hereto agree to submit to the jurisdiction of such Court.

4. The Surety agrees not to take advantage of Article 1959 of the Civil Code of the Province of Quebec in the event that by an act or an omission of a Claimant, the Surety can no longer be subrogated in the rights, hypothecs and privileges of Said Claimant.

5. Any material change in the contract between the Principal and the Obligeo shall not prejudice the rights or interest of any Claimant under this Bond who is not instrumental in bringing about or has not caused such change.

6. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith and in accordance with the provisions hereof inclusive of the payment by the Surety of Mechanics Liens which may be filed of record against the subject matter of the Contract whether or not claim for the amount of such lien be presented under and against this Bond.

7. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

IN WITNESS WHEREOF, the Principal and the Surety have signed and Sealed this Bond this

..... day of .....20 .....

SIGNED and SEALED

In the presence of.. (

..... ( .....(Seal)  
..... (Principal  
..... ( .....(Seal)  
..... (Surety

**SAMPLE**

**CERTIFICATES OF INSURANCE**

This is to Certify that the insurance as specified in the Contract Documents has been arranged for the insured named herein on whose behalf this Certificate is executed and we hereby certify that such insurances are in full force and effect.

NAME OF INSURED \_\_\_\_\_

ADDRESS OF INSURED \_\_\_\_\_

**INSURANCE COVERAGE PROVIDED**

- 1. **COMPREHENSIVE GENERAL LIABILITY INSURANCE** covering occurrence property damage and covering contractual liability.

Policy No. _____	Insurer _____
Date Effective _____	Date of Expiration _____
Limits of Liability:	Each Person _____
	Each Occurrence _____
	Aggregate Cover _____
	Inclusive Limits _____

- 2. **AUTOMOBILE INSURANCE** covering all vehicles owned, operated, leased or hired.

Policy No. _____	Insurer _____
Date Effective _____	Date of Expiration _____
Limits of Liability:	Each Person _____
	Each Occurrence _____
	Aggregate Cover _____
	Inclusive Limits _____

- 3. **PROPERTY INSURANCE** either All Risks Builders Policy or (Please Specify)

\_\_\_\_\_  
\_\_\_\_\_

Policy No. _____	Insurer _____
Date Effective _____	Date of Expiration _____

Limits of Liability:

If any of the policies as specified in the Contract Documents are cancelled or materially changed in any manner, for any reason, during the period of coverage as stated herein, so as to effect this Certificate, or if any of the policies are cancelled or terminated, 30 days written notice shall be given to the Owner prior to such change, cancellation or termination becoming effective.

This Certificate is executed and issued to the Owner, the day and date written below:

**Town of Peace River  
9911 – 100 Street  
Peace River, Alberta  
T8S 1S4**

Date: \_\_\_\_\_

NAME OF AGENT OR BROKER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

NAME OF AUTHORIZED OFFICIAL: \_\_\_\_\_

SIGNATURE OF AUTHORIZED OFFICIAL: \_\_\_\_\_

**END OF SECTION**

SAMPLE

000 222  
1979

**BID BOND**

No ..... \$ .....

KNOW ALL MEN BY THESE PRESENTS THAT

.....  
..... as Principal

hereinafter called the Principal, and

.....  
a corporation created and existing under the laws of

.....  
and duly authorized to transact the business of Suretyship in

.....  
as Surety, hereinafter called the Surety are held and firmly bound unto

.....  
..... as Obligee

hereinafter called the Obligee, in the amount of

..... Dollars

(\$.....) lawful money of Canada for the payment of which sum well and truly to be made the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written tender to the Obligee, dated the ..... day of .....20 ..... for

.....  
.....  
.....

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the aforesaid Principal shall have the tender accepted within thirty (30) days from the closing date of tender and the said Principal will within the time required enter into a formal contract and give the specified security to secure the performance of the terms and conditions of the Contract, then his obligation shall be null and void otherwise the Principal and the Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former.

The Principal and the Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of six months from the date of this Bond.

IN WITNESS WHEREOF, the Principal and the Surety have signed and Sealed this Bond this

..... day of ..... 20.....

SIGNED and SEALED

In the presence of (

(  
(  
(..... (Seal)  
(Principal

(  
(  
(  
(..... (Seal)  
(Surety

Endorsed by: ACEC CCA CCPE CSC RAIC

Approved by:INSURANCE BUREAU OF CANADA

**SAMPLE**

**PERFORMANCE BOND**

CCDC 221  
1979

No ..... \$ .....

KNOW ALL MEN BY THESE PRESENT THAT

.....  
..... as Principal  
hereinafter called the Principal, and

a corporation created and existing under the laws of .....

and duly authorized to transact the business of Suretyship in .....

as Surety, hereinafter called the Surety are held and firmly bound unto .....

..... as Oblige  
hereinafter called the Oblige, in the amount of.....

..... Dollars  
(\$.....)lawful money of Canada for the payment of which sum well and truly to be made the  
Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written tender to the Oblige, dated the  
..... day of ..... 20 ..... for

in accordance with the Contract Documents submitted therefore which are by reference made part hereof and are hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall promptly and faithfully perform the Contract then this obligation shall be null and void: otherwise it shall remain in full force and effect.

Whenever the Principal shall be and declared by the Oblige to be in default under the Contract the Oblige having performed the Oblige's obligations thereunder the Surety may promptly remedy the default or shall promptly

- (1) complete the Contract in accordance with its terms and conditions or
- (2) obtain a bid or bids for submission to the Oblige for completing the Contract in accordance with its terms and conditions and upon determination by the Oblige and the Surety of the lowest responsible bidder arrange for a contract between such bidder and the Oblige and made available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price but not exceeding including other costs and damages for which the Surety may be liable hereunder the amount set forth in the first paragraph hereof. The term "balance of the Contract price" as used in this paragraph shall mean the total amount payable by the Oblige to the Principal under the Contract less the amount property paid by the Oblige to the Principal.

Any suit under this Bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Oblige named herein or the heirs, executors, administrators or successors of the Oblige.

IN WITNESS WHEREOF, the Principal and the Surety have signed and Sealed this Bond this  
..... day of ..... 20.....

SIGNED and SEALED

In the presence of ( .....(Seal)  
(Principal  
( .....(Seal)  
(Surety



SAMPLE

LETTER OF CREDIT

(BLANK LETTERHEAD)

(OWNER'S NAME AND ADDRESS)

RE: (PROJECT NAME)

At the request of, and for account of (CONTRACTOR'S NAME AND ADDRESS), we hereby establish in your favour our Irrevocable Letter of Credit No. \_\_\_\_\_ for a sum not exceeding in the aggregate \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).

This credit shall be available to you by your signed and endorsed sight drafts drawn on (BANK NAME AND ADDRESS) when supported by your written demand for payment made upon us, and accompanied by a letter of authorization from your Consultant, verifying your claim, and certifying that monies drawn pursuant to this credit are in connection with contract security required by you as specified in the Contract Documents.

It is understood that the Bank is obligated under this credit to the payment of monies only, and not the performance of services or otherwise.

Partial drawings are permitted.

Drafts drawn under this credit are to be endorsed here on by ourselves and must be accompanied by the original of this credit.

Drawings must indicate they are drawn under BANK NAME AND ADDRESS) Irrevocable Letter of Credit No. \_\_\_\_\_ dated \_\_\_\_\_.

We hereby agree with the drawers, endorsers, and the bona fide holders in due course of drafts drawn under this credit that such drafts will be duly honoured on presentation provided that all terms and conditions of the credit have been complied with and the drafts are presented not later (DATE TO BE ESTABLISHED BY OWNER).

FOR (BANK NAME)

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Countersigned

**SAMPLE**

**CONSENT OF SURETY**

The undersigned Surety does hereby consent and agree to become bound as surety

i) In an approved Performance Bond for the amount of

\_\_\_\_\_

- and -

ii) In an approved Labour and Materials Payment Bond for the amount of

\_\_\_\_\_

all for the fulfillment of the Contract for the Work covered by the annexed Contract Documents, which may be awarded to:

Name of Bidder

\_\_\_\_\_

Address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

at prices set forth in the attached Tender. The undersigned Surety is legally entitled to do business in the Province/Territory of \_\_\_\_\_ and is worth, over and above its present liabilities, the total amount of the bonds herein referred to.

Name of Surety

\_\_\_\_\_

Address

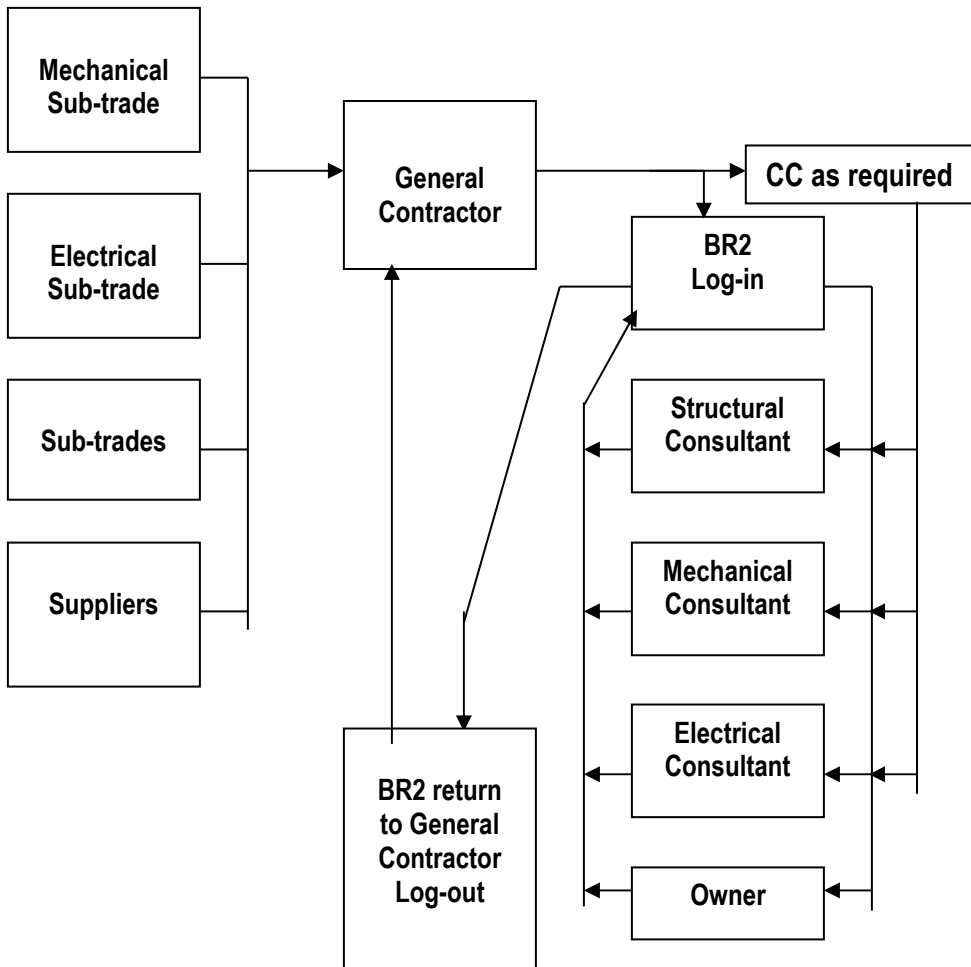
\_\_\_\_\_

Per: \_\_\_\_\_

Per: \_\_\_\_\_

(Corporate Seal)

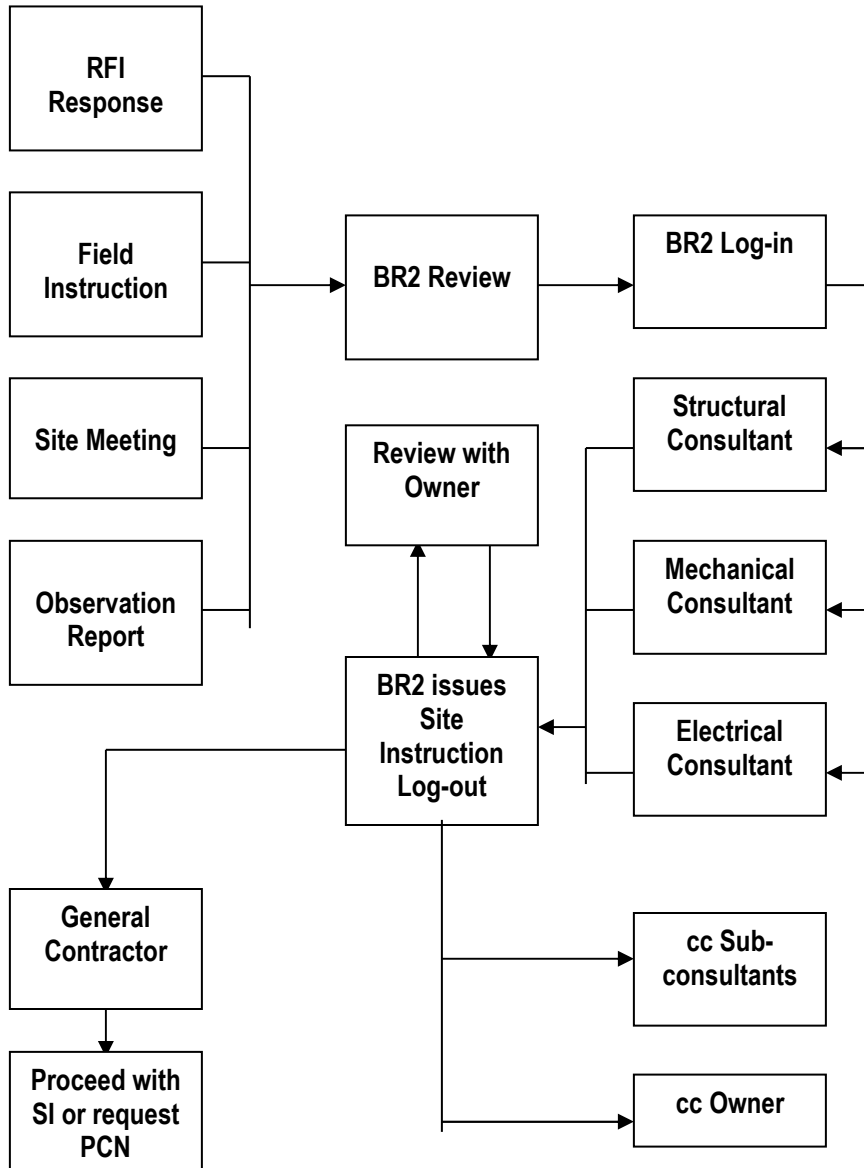
### Request for Information (RFI) Distribution Flow



1. General contractor to issue Request for Information (RFI) to BR2 in digital format and cc respective consultants.
2. BR2 to log-in RFI.
3. BR2 distributes to sub-consultants and/or Owner for action.
4. Sub-consultants and/or Owner returns answered RFI or request for additional information to BR2 using digital format.
5. BR2 returns RFI to general contractor in digital format.
6. BR2 distributes response to general contractor and Owner in digital format.
7. BR2 log-out RFI.
8. BR2 to distribute RFI log bi-weekly to general contractor and Owner



### Site Instruction Distribution Flow



1. Site Instructions (SI) are issued to clarify design intent. Site Instructions do not alter the project scope or price.
2. Site Instructions are issued at the consultants' discretion, in addition to response provided to RFI to document discussion from site progress meetings or site observations or follow up to Field Instructions provided by consultants. Site Instructions are issued in digital format.
3. Upon receipt of a Site Instruction, the contractor may notify the consultant that a change in scope and/or price will result from the Site Instruction and request that a Proposed Change Notice be issued.
4. The consultant will review the request for Proposed Change Notice (PCN). Refer to Proposed Change Notice procedures.



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## Site Instruction

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Contractor: \_\_\_\_\_ SI No.: \_\_\_\_\_ SI 001

Attn: \_\_\_\_\_ Date: \_\_\_\_\_

Project: Peace River Town Hall – Accessibility Upgrades File No.: \_\_\_\_\_

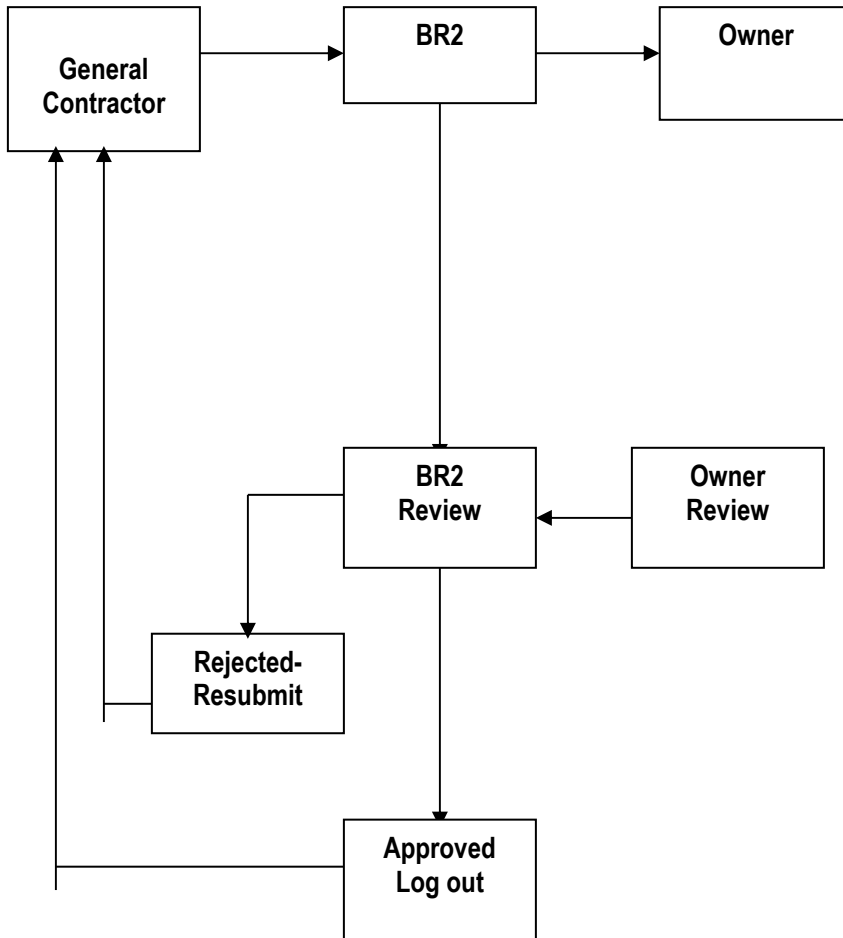
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BR2 ARCHITECTURE

*(signature)*

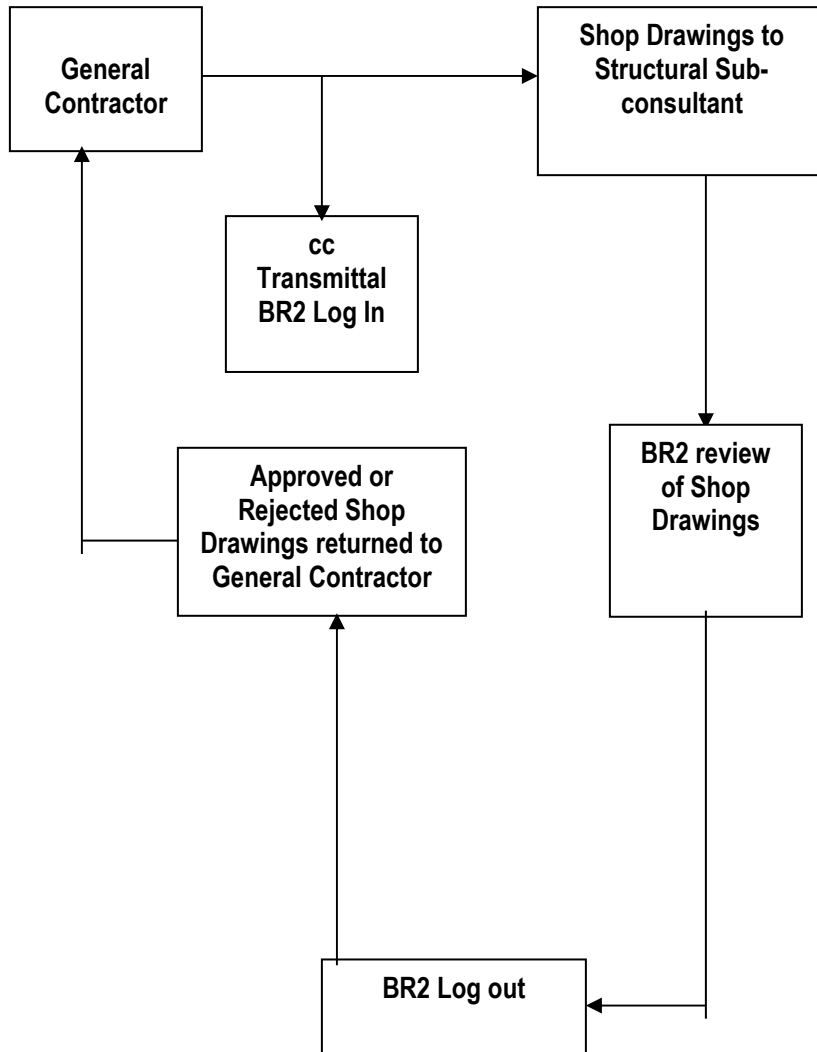
cc:

## Architectural Shop Drawings Distribution



1. General Contractor to submit shop drawings with Contractor's review stamp affixed to BR2.
2. Submit in digital format (PDF).
3. Owner will issue review comments to BR2.
4. BR2 will consolidate Owner review comments.
5. Rejected shop drawings returned to General Contractor.
6. Approved shop drawings returned to General Contractor.
7. BR2 to distribute digital copy of Shop Drawing Log bi-weekly to General Contractor and Owner.

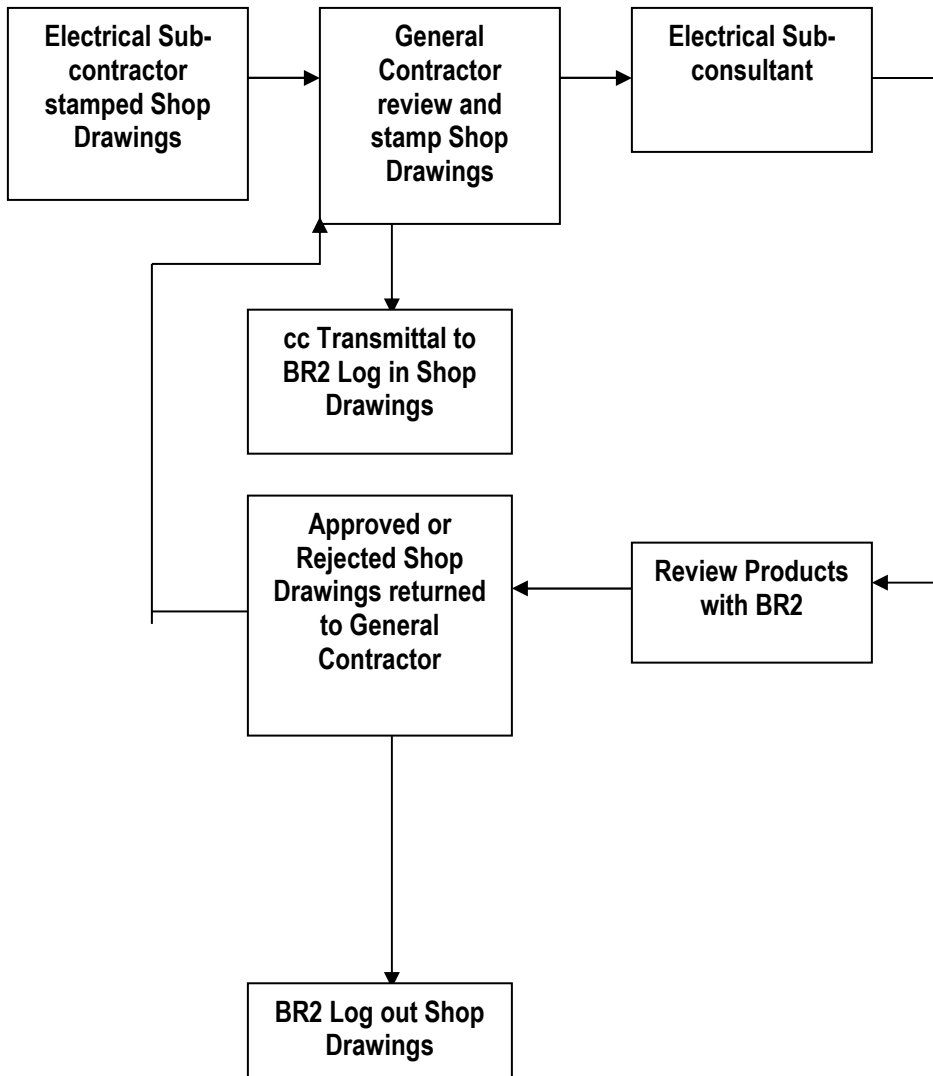
## Structural Shop Drawings Distribution



1. General Contractor to submit shop drawings with Contractor's review stamp affixed to Structural Sub-consultant electronically.
2. Submit in digital format (PDF).
3. General Contractor forwards digital copy of transmittal to BR2.
4. BR2 log in shop drawings.
5. Structural sub-consultant reviews details with BR2/ Owner where applicable.
6. Rejected shop drawings returned by Structural sub-consultant to General Contractor, cc digital copy of transmittal to BR2.
7. Approved shop drawings returned by Structural sub-consultant to General Contractor, cc digital copy of transmittal to BR2.
8. BR2 logs out shop drawings.
9. BR2 distributes digital copy of shop drawings log bi-weekly to General Contractor and Owner.

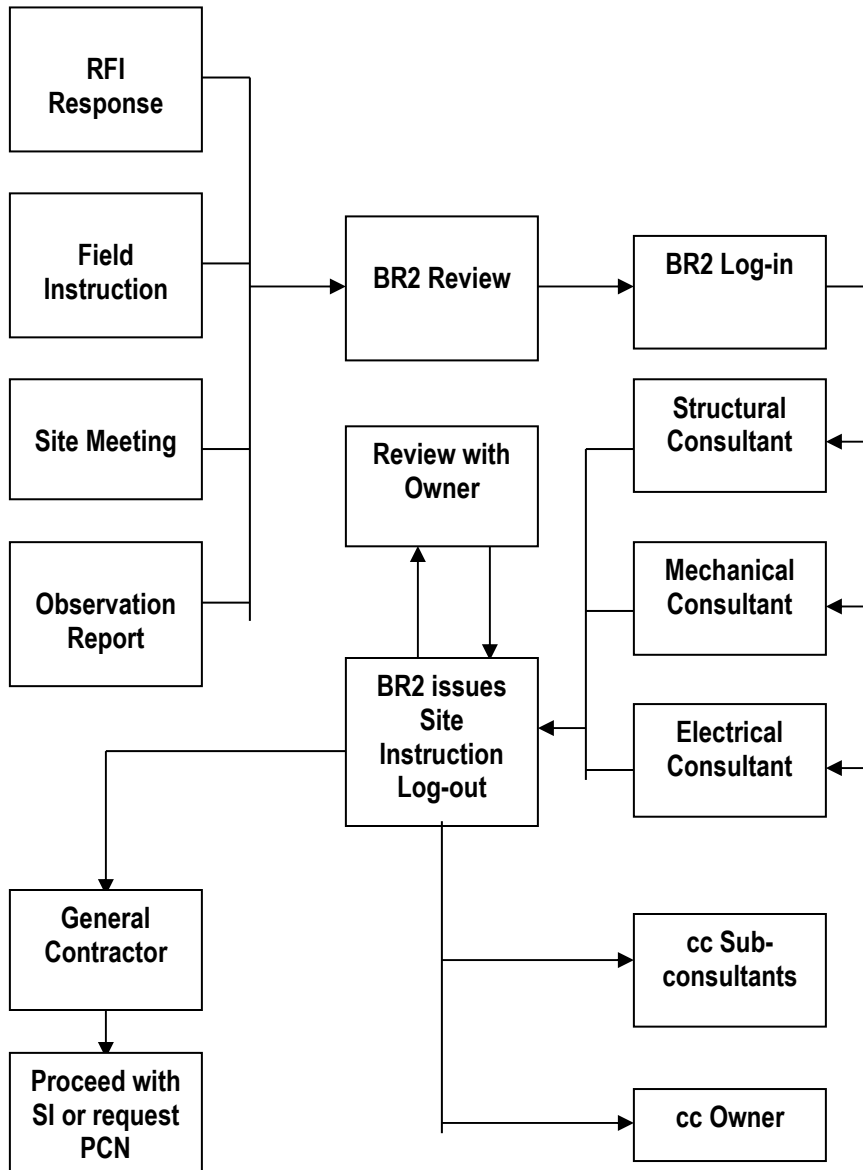


## Electrical Shop Drawings Distribution



1. Electrical sub-contractor submits reviewed and stamped shop drawings to General Contractor electronically.
2. General Contractor submits reviewed and stamped shop drawings to electrical sub-consultant. Cc transmittal in digital format to BR2. BR2 log in shop drawings.
3. General Contractor submits stamped and reviewed shop drawings to Owner. Cc transmittal in digital format to BR2.
4. Electrical sub-consultant consolidates review comments from Owner and BR2.
5. Electrical sub-consultant returns approved or rejected shop drawings to General Contractor. Cc transmittal in digital format to BR2.
6. Electrical sub-consultant submits approved shop drawings to BR2.
7. BR2 log out shop drawings.
8. BR2 distributes digital copy of Shop Drawing Log bi-weekly to General Contractor.

### Proposed Change Notice Distribution Flow



1. Proposed Change Notices (PCN) are issued to review a potential revision to the contract scope and price credit.
2. Proposed Change Notices originate from response to RFI, Site Instruction, issues minuted at site progress meetings, issues raised by consultants and/or issues raised by the owner.
3. BR2 revises potential PCNs, proceed with or reject request.
4. PCNs issued for review with owner.
5. PCNs issued to general contractor for review and quotation.
6. General contractor issues quote to BR2 for review.
7. PCN quotation accepted or rejected.
8. Change Directive issued at discretion of owner.
9. Change Order issued.
10. Change Orders issued in digital format.
11. Quotations received in digital format with backup.
12. Change Directives issued in digital format.



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## Change Notice

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To:	C.N. No.:
Attn:	File No.:
Project: Peace River Town Hall – Accessibility Upgrades	Date:

---

Please submit prices for the following work at your earliest convenience, stating the amount of credit or extras involved.  
THIS MUST NOT BE ACCEPTED AS AUTHORIZATION TO PROCEED WITH THE WORK INVOLVED. ALL PRICES QUOTED WITHOUT G.S.T.

BR2 ARCHITECTURE

*(signature)*



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## Change Directive 001

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To:	C.D. No.
Attn:	File No.:
Project: Peace River Town Hall – Accessibility Upgrades	Date:

---

You are hereby authorized, subject to the Deductions / Additions provisions of your Contract and GC 6.3, to proceed with the following work provided that valid contractor pricing of work is undertaken concurrent with the work submitted expeditiously for review. This authority to proceed is not an acceptance of any quote or monetary offer made by the contractor to perform the scope of work listed below but is made in order to allow for the expeditious planning of the work in relation to the current construction schedule.

All material and workmanship shall conform to the contract documents unless otherwise stated herein.

All other Contract terms and Conditions shall remain unchanged. The Change in contract time is NIL days.

### 1.0 Change Directive

BR2 ARCHITECTURE

(Name)

cc:



## Change Order

Contractor:	C.O. No.:	<b>CO 001</b>
Project: Peace River Town Hall – Main Entrance Accessibility	Date:	
Owner: Town of Peace River	File No.:	

A. The following described item is hereby incorporated as part of the above contract for the sum noted

1		\$0.00
---	--	--------

<b>Total Extra / Credit (excludes GST)</b>	Credit	<u><u>\$0.00</u></u>
--	--------	----------------------

Original Contract Sum	<u>\$0.00</u>
Changes to Date	<u>\$0.00</u>
Revised Contract Amount	<u>\$0.00</u>
Change This Change Order	<u>\$0.00</u>
Net Contract Sum	<u>\$0.00</u>

ORDER for the above change to Contract  
 The value of the contract is hereby

BR2 Architecture

Per:

Decreased by \_\_\_\_\_  
 The Sum of \_\_\_\_\_  
 \$0.00

\_\_\_\_\_

Date

- COPY TO:
- ARCHITECT
  - CONTRACTOR
  - OWNER

\_\_\_\_\_

Owner's Authorization





## Certificate of Payment

Contractor:	CofP No.: <b>COP XXX</b>
Project	Date:
Owner:	File No.:

To:

### STATUS OF ACCOUNT

Original Contract amount (excluding GST)			xx,xxx,xxx.xx
<b>Authorized Change Orders To Date</b>	<b>CO-001</b>	(-)	<b>xx,xxx.xx</b>
Current Contract Amount			<b>#VALUE!</b>

### CONTRACTOR'S CLAIM

Value of Work certified to date (gross)			x,xxx,xxx.xx
Holdback (10%)		(-)	#VALUE!
Net amount of previous claims		(-)	\$0.00
Net amount certified			#VALUE!
Holdback Release (if applicable)		(-)	\$0.00
Seasonal Holdback (if applicable)		(-)	\$0.00
Net Amount Certified			#VALUE!
5% GST			#VALUE!

<b>Total Amount this Certificate</b>	<b>#VALUE!</b>
--------------------------------------	----------------

This is to certify that **[GENERAL CONTRACTOR]** is entitled to payment of:  
**X Hundred X Thousand, X Hundred X Dollars, X Cents**  
 for work performed and/or releases for the period ending \_\_\_\_\_

### BR2 Architecture

_____	Signature: _____
_____	Date: _____

### Owner

_____	Signature: _____
_____	Date: _____

---

**1 General**

**1.1 CONSTRUCTION CONTRACT**

- .1 These supplementary general conditions consist of amendments and supplements to the **“General Conditions of the Standard Construction Document CCDC-2 (2020) Stipulated Price Contract**, hereinafter referred to as the General Conditions, and shall be read in conjunction with this document.

**1.2 AGREEMENT**

- .1 Article A-5, 5.1 Add the following subparagraphs:

.4 Retain the right to retain funds for deficient or uncompleted work with sums so identified by the Consultant. The value of deficient or uncompleted work will be multiplied by a factor of 2”.

**1.3 DEFINITIONS**

- .1 **Article 4 Consultant:** Add: The terms “Architect”, “Engineer” and “Consultant” are synonymous for the purposes of this Contract. The “Consultant” is:

BR2 Architecture

- .2 **Article 7 Contract Price:** Add Contract Price / Contract Amount: The Terms “Contract Price” and “Contract Amount” are synonymous for the purposes of this Contract.

- .3 **Article 8 Contract Time:** Delete in its entirety and insert the following paragraph:

- .1 Construction to begin **Immediately after award.**  
.2 Substantial Performance by **August 22, 2023.**  
.3 Total Performance by **September 5, 2023.**

- .4 **Article 8 Contract Time:** Insert the following paragraph:

“The Contractor shall provide additional manpower as required to ensure the completion of the project on time defined in 1.3 of Article A-1 of the Agreement”.

- .5 **Article 8 Contract Time:** Insert the following paragraph: “Ready for Occupancy is:

- .1 Designated areas are able to be used for intended use.  
.2 May occur for designated areas prior to overall Substantial Performance of the Work for the project and is to be capable of being commissioned.

- .6 **Article 8 Contract Time:** Insert the following paragraph:

“If deficient work is required to be completed after the Owner has occupied the building, the Contractor shall complete the deficient work during working hours acceptable to the Owner, at no increase in the contract price. The Contractor shall provide protection to all existing work and make good all work disturbed.”



- .7 **Article 21 Substantial Performance of the Work:** Delete in its entirety and insert the following paragraph:

**"Substantial Performance of the Work:** For the purposes of the Contract, 'Substantial Performance of the Work' means as defined by the "Alberta Builders Lien Act"

- .8 **Article 26 Working Day:** Add Calendar Days: Defined within these Supplementary General Conditions means consecutive days inclusive of weekends and holidays.

- .9 **Add Article 28:** "Total Performance of the Work"

"Total completion of the Work means when the Owner and the Consultant shall in their absolute discretion so certify that the entire work appears to be complete."

- .10 **Add Article 29:** "Start of the Work":

"Start of the Work means when the Contract is awarded."

#### 1.4 GENERAL PROVISIONS

- .1 Article GC 1.1 Contract Documents

- .1 Add 1.1.5.6

"Schedules and drawings bound into the Project Manual shall govern over drawings of a larger scale."

- .2 Add 1.1.12

"Work specified in the specifications is divided into sections for reference purposes only. Division of work between contractor, subcontractors, sub-subcontractors and suppliers is the Contractor's responsibility. The Owner or Consultant assumes no responsibility to act as an arbiter to establish subcontract, sub-contractor, and supplier limits between sections or divisions of work.

.1 The Contract Documents are prepared solely for the use by the party with whom the design professional has entered into a contract and there are no representations of any kind made by the design professional to any party with whom the design professional has not entered into a contract.

.2 All decisions, instructions, consents and approvals will be in writing. Neither the Owner nor the Consultant will be responsible for oral decisions, instruction, consents or approvals."

- .2 Article GC 2.2 Role of the Consultant

- .1 Add the following paragraph:

2.2.19 The consultant may vary or revoke any of his instructions, directions or authorizations where:

- .1 there is a contravention of any condition under which the instructions, directions or authorizations were issued or
  - .2 the instructions, directions or authorizations were issued in error, or
  - .3 the instructions, directions or authorizations were issued on the basis of incorrect or incomplete information.
  
- .2 Add the following paragraph:
  - 2.2.20 “Site Instruction: The Consultant may furnish to the Contractor a Site Instruction. Refer to attached Site Instruction format.”
  
- .3 Article GC 2.3 Review and Inspection of the Work
  - 2.3.1 Insert the following paragraph:

“Failure of the Consultant, or of an authorized inspection agency to properly carry out any reviews or inspections shall not relieve the Contractor from responsibility to perform the Work in accordance with the Contract Documents.”
  
- .4 GC 2.4 Defective Work
  - 2.4.1 Insert the following paragraph:

“Such removal, repair or re-execution shall be undertaken in cooperation with any insurer having an interest in the settlement of a claim arising from any acts or omissions of the Contractor.”
  
- .5 GC 3.4 Construction Schedule
  - .1 Paragraph 3.4.1.1 to read as follows:
    - 3.4.1.1 Prepare and submit to the Owner and Consultant within 15 (fifteen) days after contract award, a construction schedule that indicates the timing of the major activities of the Work and provides sufficient detail of the critical events and their inter-relationship to demonstrate the Work will be performed in conformity with the Contract Time.
  
- .6 GC 3.5 Supervision
  - .1 Revise as follows: In the first line, add: “full-time” between the words “competent” and “representative”.
  
- .7 GC 3.8.1 Shop Drawings
  - .1 Insert the following paragraph:

Refer to Specification Section 01 33 00 – Submittal Procedures.
  
- .8 GC 3.9 Document Review
  - 3.9.1 The Contractor shall review the Contract Documents and shall report promptly to the Consultant any error, inconsistency or omission the Contractor may discover.

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

3.9.2 Insert the following paragraph:

“The Contractor shall review the Contract Documents and shall promptly report any errors, inconsistencies or omissions to the Consultant, which the Contractor may discover. If the Contractor does discover an error, inconsistency, or omission in the Contract Documents, The Contractor shall not proceed with the work affected until the Contractor has received corrected or missing information from the Consultant.”

.9 Add “GC 3.10 General Conditions

GC 3.10 Record of Communication of the Contract Execution

3.10.1 During the progress of the work, the Contractor, the Owner, and/or the Consultant may issue to either one or both of the other named parties, a Request for Information (RFI). Refer to attached Request for Information format. The Consultant shall collect, log, assign and distribute each Request for Information (RFI) issued from either the Contractor, Owner and/or Consultant. The Owner, Consultant and Contractor shall assign their own sequential ‘Issue Number’ to each RFI submitted for distribution. The Consultant shall assign a sequential distribution number to each RFI.”

.10 GC 4.1 Cash Allowances

.1 Paragraph 4.1.5, revise to read as follows:

“The form of written order used to authorize Work paid out of Cash Allowance contained in the Contract will be the combined Proposed Change Notice / Change Order forms. Refer to attached sample forms in Section 00 63 32.”

.2 Add the following subparagraph:

4.1.8 “Where there are unit prices and quantities or lump sum priced included in the Schedule of Quantities and Prices as Breakout Work items, only actual expenditures made on the written authority of the Owner shall be paid for. The Contract Price will be increased or decreased, in whole or in part, in accordance with the quantities measured and authorized by the Owner.”

.11 Add "GC 4.3 General Conditions

GC 4.3 Valuation and Authorization of Changes in the Work

4.3.1 Lump Sum quotations submitted for changes in the work shall be complete with a detailed breakdown of the total sum including quantities of all materials and labour with corresponding material costs and labour rates in sufficient detail to permit the Consultant to review and verify all costs.

- .1 Similar breakdowns for all subtrade work shall be included.
- .2 Prior to submitting any formal quotations, the Contractor shall submit to Consultant for approval, the labour rates he intends to use. Such labour rates shall be consistent with current rates paid to workers.  
Labor rates shall be provided for the General Contractor's site supervisor, Journeyman Carpenter, Laborer, blended mechanical and electrical rates.
- .3 The Owner reserves the right to request a review of the Contractor's quotation, and where necessary, conduct an independent audit to verify that quotations reflect true value for the work required by the change in the work.
- .4 The form of written request used when preparing a quotation request from the Consultant will be the Proposed Change Notice. Refer to attached sample form in this Section 00 63 32.
- .5 Change quotations must be submitted within fifteen (15) days after receipt of proposed change notice.

4.3.2 Quotations shall include the following:

- .1 Actual costs of labour and materials only, to the Contractor or Subcontractor performing the work.
- .2 Direct and indirect costs to the Contractor or Subcontractor performing the work.
- .3 Direct and indirect costs to the Contractor, where the work is performed by a Subcontractor.
- .4 Quotations shall clearly identify any impact to the project schedule.
- .5 Back up shall be provided for all direct costs claimed.
- .6 Quotations shall be final and free of any and all escalation clauses or caveats.

4.3.3 Direct costs, in addition to labour and materials, shall be limited to the following:

- .1 Ordering, delivering and handling of materials.
- .2 Garbage removal and cleanup.
- .3 Deposits lost where applicable.
- .4 Charges levied by Authorities Having Jurisdiction at the Place of Work, where applicable.

4.3.4 Indirect Costs and Fee shall be limited to a maximum of ten percent (10%) of the direct costs that are applicable only to the Contractor performing the work, Five percent (5%) to the General Contractor for work performed by a Sub-Contractor and are to include the following:

- .1 Supervision and inspection of the work.
- .2 Estimating, scheduling and coordinating the work.
- .3 Project Management or Administration.

- 
- .4 Invoicing, accounting and auditing.
  - .5 Photocopies, Fax, mailing and courier, telephone and all related clerical costs.
  - .6 Interest, financing or bank charges.
  - .7 Offsite and onsite facilities including offices and temporary washrooms.
  - .8 Safety including safety meetings.
  - .9 Preparation and submission of record drawings and maintenance manuals.
  - .10 Temporary heating and hoarding except where the work requires these facilities and where such facilities are not already provided for in the contract or sub-contract.
  - .11 Supply of all small hand tools, rental costs of all other tools, machinery and equipment, whether rented or provided by the Contractor or others including installation, minor repairs and replacements, dismantling, removal, transportation and delivery thereof.
  - .12 Taxes, duties and levies.
- 4.3.5 In addition, an allowance of 5% shall be included for profit to costs of the work to the General Contractor for work performed by the General Contractor's Own Forces.
- 4.3.6 Project Vehicles and travel cost (for travel greater than 40 kilometers from the job site) shall be charged as an Actual Cost free of mark-up and profit.
- 4.3.7 All quotations of changes shall show, as a separate item, the adjustment in GST."
- 4.3.8 The contractor does NOT reserve the right to seek additional compensation and/or time extension for the cumulative effect of changes that are not identified with the quotation.
- .12 GC 5.4 Substantial Performance of the work and Payment of Holdback
- Add the following subparagraph:
- "5.4.7 Payment of holdback will be released by the Owner providing a Statutory Declaration is issued by the Contractor stating that no claims have been filed and the Owner is in receipt of a certification of clearance from Workers Compensation Board."
- .13 GC Part 6 Changes in the Work:
- Insert the following paragraph:
- "6.2.3 Change Order: Refer to attached Change Order format."
- .14 GC 6.3 Change Directive: Insert the following paragraph:
- "Refer to attached Change Directive format."
- .15 Add "GC 6.7 General Conditions
- GC 6.7 Valuation and Authorization of Changes in the Work
- 6.7.1 Lump Sum quotations submitted for changes in the work shall be complete with a detailed breakdown of the total sum including quantities of all materials and labour with

corresponding material costs and labour rates in sufficient detail to permit the Consultant to review and verify all costs.

- .1 Similar breakdowns for all subtrade work shall be included.
- .2 Prior to submitting any formal quotations, the Contractor shall submit to Consultant for approval, the labour rates he intends to use. Such labour rates shall be consistent with current rates paid to workers.  
Labor rates shall be provided for the General Contractor's site supervisor, Journeyman Carpenter, Laborer, blended mechanical and electrical rates.
- .3 The Owner reserves the right to request a review of the Contractor's quotation, and where necessary, conduct an independent audit to verify that quotations reflect true value for the work required by the change in the work.
- .4 The form of written request used when preparing a quotation request from the Consultant will be the Proposed Change Notice. Refer to attached sample form in this Section 00 63 32.
- .5 Change quotations must be submitted within fifteen (15) days after receipt of proposed change notice.

6.7.2 Quotations shall include the following:

- .1 Actual costs of labour and materials only, to the Contractor or Subcontractor performing the work.
- .2 Direct and indirect costs to the Contractor or Subcontractor performing the work.
- .3 Direct and indirect costs to the Contractor, where the work is performed by a Subcontractor.
- .4 Quotations shall clearly identify any impact to the project schedule.
- .5 Back up shall be provided for all direct costs claimed.
- .6 Quotations shall be final and free of any and all escalation clauses or caveats.

6.7.3 Direct costs, in addition to labour and materials, shall be limited to the following:

- .1 Ordering, delivering and handling of materials.
- .2 Garbage removal and cleanup.
- .3 Deposits lost where applicable.
- .4 Charges levied by Authorities Having Jurisdiction at the Place of Work, where applicable.

6.7.4 Indirect Costs and Fee shall be limited to a maximum of ten percent (10%) of the direct costs that are applicable only to the Contractor performing the work, Five percent (5%) to the General Contractor for work performed by a Sub-Contractor and are to include the following:

- .1 Supervision and inspection of the work.
- .2 Estimating, scheduling and coordinating the work.
- .3 Project Management or Administration.
- .4 Invoicing, accounting and auditing.
- .5 Photocopies, Fax, mailing and courier, telephone and all related clerical costs.
- .6 Interest, financing or bank charges.
- .7 Offsite and onsite facilities including offices and temporary washrooms.
- .8 Safety including safety meetings.
- .9 Preparation and submission of record drawings and maintenance manuals.

- 
- .10 Temporary heating and hoarding except where the work requires these facilities and where such facilities are not already provided for in the contract or sub-contract.
  - .11 Supply of all small hand tools, rental costs of all other tools, machinery and equipment, whether rented or provided by the Contractor or others including installation, minor repairs and replacements, dismantling, removal, transportation and delivery thereof.
  - .12 Taxes, duties and levies.
- 6.7.5 In addition, an allowance of 5% shall be included for profit to costs of the work to the General Contractor for work performed by the General Contractor's Own Forces.
- 6.7.6 Project Vehicles and travel cost shall be charged as an Actual Cost free of mark-up and profit.
- 6.7.7 All quotations of changes shall show, as a separate item, the adjustment in GST."
- 6.7.8 The contractor does NOT reserve the right to seek additional compensation and/or time extension for the cumulative effect of changes that are not identified with the quotation.
- .16 GC 9.2 Toxic and Hazardous Substances
- .1 Revise Clause 9.2.4:  
  
Unless the Contract expressly includes as part of the Work, the Owner shall be responsible for taking all necessary steps, in accordance with Occupational Health and Safety, to dispose of, store or otherwise render harmless toxic or hazardous substances or materials which were present at the Place of Work prior to the Contractor commencing the Work.
  - .2 Revise Clause 9.2.5  
  
If the Contractor:
    - .1 encounters toxic or hazardous substances or materials at the Place of the Work,  
  
or
    - .2 has reasonable grounds to believe that toxic or hazardous substances or materials are present at the Place of the Work,  
  
which were not known by the Owner, as under paragraph 9.2.2, or which were disclosed but have not been dealt with as required under paragraph 9.2.4, the Contractor shall
    - .3 take all reasonable steps, including stopping the Work, to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to or the presence of the substances or materials, and
    - .4 immediately report the circumstances to the Consultant and the Owner in writing.

.17 GC 10.1 Taxes and Duties:

Add the following subparagraphs:

“10.1.3 On all submissions of quotations for Changes to the Work and application for payment, provide costs excluding the Goods and Services Tax to a subtotal amount, then add the Goods and Services Tax as five percent (5%) of that subtotal. Do not accumulate the Goods and Services Tax amount in calculating the subtotals so that the Owner will not pay more than the required five percent (5%) Goods and Services Tax on any portion of the work.

10.1.4 The Owner reserves the right to claim and shall be the only Claimant of any exemption from taxes provided under the Excise Tax Act. The Contractor shall execute a limited Power of Attorney and such other documents as are required by Revenue Canada to successfully obtain a refund under the Contract payable to the Owner.”

.18 GC Part 10 Governing Regulations:

“GC 10.2 Laws, Notices, Permits and Fees”

Delete the following:

10.2.2

Replace with the following:

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

Insert the following subparagraphs:

“GC 10.5 Occupational Health and Safety

“10.5.1 The Contractor shall comply with the provisions of the Occupational Health and Safety Act, RSA 2004, Chapter 0-2, and amendments thereto and regulations there under or any successive legislation, and shall at all times ensure that all subcontractors at the work site shall comply with the requirements of the said Act and regulations thereunder. The Contractor shall be the general representative and agent to the Owner for the purposes of ensuring compliance with safety regulations for both itself and subcontractors. The Contractor shall bring to the attention of subcontractor the provisions of the Occupational Health and Safety Act and regulations thereunder.”

“10.5.2 Unless otherwise stated in the Supplementary Conditions, for the purposes of the project, the Contractor is assigned the role of Prime Contractor for the work site and is responsible for ensuring compliance with the Occupational Health and Safety Act by all employees on the work site.”

“10.5.3 The Contractor shall at all times during the continuation of this Contract with the Owner observe the provisions of the Labour Relations Act, Workers’ Compensation Act,



Employment Standards Act and the Occupational Health and Safety Act as well as rules and regulations pursuant thereto. In the event the Contractor fails to comply with the said Acts or any regulations thereunder, and the Owner is required to do anything or take any steps or pay any sums to rectify such non-compliance, the Owner may subtract the cost of such rectification from any monies owing to the Contractor.”

.19 GC 11.1 Insurance

- .1 Delete GC 11.1.1.1 General Liability Insurance, paragraph 1, in its entirety.

Replace with:

“11.1.1 The Contractor shall, without limiting his obligations or liabilities herein and at his own expense, provide and maintain throughout the duration of the Project the following insurances in accordance with the Alberta Insurance Act and in forms and amounts acceptable to the Owner:

“.1 General Liability Insurance:

General Liability in an amount not less than \$5,000,000 inclusive per occurrence against bodily injury, and property damage including loss of use thereof. The Consultant shall be added as an insured under this policy. Such insurance shall include, but not be limited to:

- .1 Owner’s and Contractor’s Protective Liability;
- .2 Blanket Written Contractual Liability;
- .3 Personal Injury Liability;
- .4 Non-Owned Automobile Liability;
- .5 Broad Form Property Damage Endorsement; and where such further risk exists:
- .6 Blasting, Pile Driving, Caisson Work and Tunneling coverages;
- .7 Elevator and Hoist Liability;
- .8 Operation of Attached Machinery.

The completed operations liability coverage shall remain in effect for a period of 12 months after Substantial Performance of the Work.”

“.2 Automobile Liability Insurance:

Automobile Liability on all vehicles owned, operated or licensed in the name of the Contractor in an amount not less than \$3,000,000.”

“.3 Course of Construction Property Insurance:

Course of Construction insurance in the form of an “all risks” builder’s risk policy. Such policy shall insure the Work to the total of the full value of the contract price and the full value, as stated, of materials which are specified to be provided by the Owner for incorporation into the Work. The policy shall extend to cover at any other location and while in transit. Such insurance shall be in the joint names of the Contractor, Owner, Consultant, and all others having an insurable interest in the Work, and shall continue until Substantial Performance of the Work.

Boiler and Machinery insurance is required where objects normally insurable under a Boiler and Machinery policy enter into and form part of the Work. Such objects shall be insured under the Course of Construction policy until installed, tested and accepted by the Owner.

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

In the event of loss or damage, the Contractor shall immediately report such loss or damage to the Owner. The Contractor shall act on behalf of the Owner and himself for the purpose of negotiation with the adjuster and insurer regarding the amount of the loss or damage. When the extent of the loss or damages determined, and upon the Owner's approval, the Contractor shall proceed to restore the Work. Payment will be made by the insurer to the Owner or, at the Owner's direction, to other insureds as their respective interests may appear."

"11.1.2 The Contractor shall be responsible for deductible amounts under the policies."

"11.1.3 Notice of Change to Policy: Each policy shall state that it cannot be cancelled or materially altered to restrict coverage without at least 30 days advance written notice to the Owner."

"11.1.4 The Contractor shall provide the Owner with acceptable evidence of all required insurance prior to the commencement of the Work and shall promptly provide the Owner with a certified true copy of each policy."

.20 GC 12.3 Warranty

.1 Add the following to paragraph 12.3.3:

Notwithstanding provisions under the Alberta Builder's Lien Act permitting Substantial Performance of subcontractors work prior to substantial performance of the total work, the commencement date for warranty is the date of Substantial Performance for the total work but in no case before the item being warranted is complete and has been inspected and accepted.

.2 Add the following Clause 12.3.7:

The warranty period, as defined in this Article, will commence from the date of verification by the consultant of Substantial Performance of the work of the prime contract and further, in this contract, "certified by the consultant", when used in reference to Substantial Performance, shall mean "certified by the contractor/ subcontractor and verified by the consultant.

.21 GC 13.1 Indemnification

.1 Item 1.4.20 GC13.1 Indemnification, add item 13.1.7

"The Third Party agrees to indemnify and save harmless Canada, Alberta, the

municipality, their officers, servants, employees or agents from and against all claims, demands, loss, costs, damages, actions, suits or other proceedings brought or prosecuted in any manner based upon, or occasioned by any injury to persons, damage to or loss or destruction of property, economic loss or infringement of rights caused by or arising directly or indirectly from:

- a) This Contract;
- b) the performance of a contract or the breach of any term or condition of it by the Third Party, its officers, servants, employees or agents; or
- c) Any omission or other willful or negligent act of the Third Party, their respective employees, officers, servants or agents."

.2 Item 1.4.20 GC13.1 Indemnification, add item 13.1.8

.3

"The Third Party agrees that nothing in this Contract is to be construed as authorizing the Third Party to contract for or incur any obligation on behalf of the Municipality, Alberta or Canada or act as agent for them."

**END OF SECTION**

## 1. PART 1 – INSURANCE PROVIDED BY OWNER

1.1 The OWNER shall obtain and maintain during the Contract period the following policies of insurance for the benefit of the Owner, Architect, Engineer, Contractor, and / or Subcontractors, hereinafter called the Insureds:

- A.** Builders' Risk Course of Construction (COC) Insurance covering all risks (subject to applicable policy exclusions) of physical loss of damage to materials, structures, property, and equipment entering into or intended to become part of the Work or alterations thereto, for an amount not less than the full replacement cost value of the Work. This insurance shall cover loss or damage to all such materials, structures, property, and equipment while at the site of the Work or in transit thereto, and while there awaiting construction, erection and installation and during construction, erection, installation or testing and until final acceptance by Owner.

The policy will contain a waiver of the insurer's rights of subrogation against all parties insured.

In respect of losses for which coverage is provided under such Builders' Risk policy, the first \$40,000 of each and every loss shall be for the account of the Contractor whose work or material suffers the loss unless such work has been accepted by the Owner, and a Certificate of Substantial Completion has been issued in respect thereof. However, if another Contractor is found to be responsible for such loss by the independent adjuster appointed by Owner to investigate and settle such loss, then that Contractor shall be responsible for the said \$40,000.

In respect of losses for which coverage is provided under such Builders' Risk policy, the Owner hereby relieves the Contractor from responsibility for any amount in excess of \$40,000 for each and every loss.

A copy of the Builders' Risk Course of Construction Insurance Certificate can be provided to the successful bidder if requested.

- B.** Boiler and Machinery Insurance: Where required, the Owner shall provide and maintain Boiler and Machinery Insurance insuring the interests of the Owner, the Contractor, and the Subcontractor for not less than replacement value of boilers, pressure vessels, heating, ventilation, air conditioning, electronic equipment and all other electrical systems and mechanical equipment forming part of the Work. The form of this insurance shall be the equivalent of Comprehensive Boiler and Machinery Form and shall be maintained continuously from commencement of use or operation of the property insured by the policy and until ten (10) days after the date of the issuance of final certificate for payment. This policy shall cover any sudden and accidental electrical or mechanical breakdown for direct physical loss or damage to any electrical or mechanical object as defined in the Project Specifications. The policy to provide coverage for the breakdown of permanently installed equipment during construction and to be extended to include coverage during commissioning and testing. Commissioning and testing to include both hot and cold testing and commissioning operations and acceptance tests. The policy will be subject to a \$40,000 deductible, each and every loss. Every property damage loss shall be for the account of the Contractor found to be responsible by the independent adjuster appointed by Owner to investigate and settle all losses.

- C.** Wrap Up Liability Insurance:

- (i) Providing for an inclusive limit of \$5,000,000 for each occurrence or accident;
- (ii) Providing coverage for all sums which the Insureds shall become legally obligated to pay for damages because of bodily injury (including death at any time resulting therefrom) sustained by any person or persons or because of damage to or destruction of property (including loss of use or occupancy) caused by occurrence or accident arising out of or related to the Work, subject to the applicable policy exclusions;
- (iii) Including coverage for Products, Complete Operations, Blanket Contractual, Contractors' Protective, Personal Injury, Contingent Employer's Liability, Occurrence Property Damage, Non-owned Automobile Liability and Explosion, Collapse and Underground Damage;

- (iv) Providing for Completed Operations Liability to continue for a period of twenty- four (24) months after the Work has been completed; and
- (v) Including a Cross Liability Clause, providing that the inclusion of more than one Insured shall not in any way affect the rights of any other Insured hereunder, in respect to any claim, demand, suit or judgment made against any other Insured, subject to an overall limit of \$5,000,000.

In respect to losses for property damage for which coverage is provided under the Comprehensive General Liability insurance, the first \$40,000 of each and every property damage loss shall be for the account of the Contractor found to be responsible by the independent adjuster appointed by Owner to investigate and settle all losses.

A copy of the Wrap Insurance Certificate can be provided to the successful Bidder if requested.

- 1.2 The Owner makes no representation or warranty with respect to the extent or adequacy of the insurance policies maintained by Owner and the Contractor shall satisfy itself as to the coverage afforded by such insurance policies. The furnishing of the insurance by the Owner shall not limit any of the obligations or liabilities of the Contractor as expressed elsewhere in the Contract.
- 1.3 The Owner shall have the right to deduct amounts for which the Contractor is responsible under this PART 1 from any monies which are due or may become due to the Contractor.
- 1.4 In respect of any losses for which coverage is provided under the Builders' Risk (COC) policy, the Contractor hereby waives all rights of recovery which might otherwise exist for his benefit under the Comprehensive General Liability Insurance maintained by the Owner.
- 1.5 Contractor and all Subcontractors shall comply with all requirements of the Owner or the insurance policies relative to the providing of information required in the maintenance of said Owner furnished policies and relative to the immediate reporting of all incidents which might result in a loss or claim under said policies, including furnishing in a timely fashion all documents required in the defense or settlement of claims.

## 2. PART 2 – INSURANCE PROVIDED BY CONTRACTOR

- 2.1 The **CONTRACTOR** shall, without limiting its obligations or liabilities under the Contract, obtain and maintain during the Contract period at his own expense and cost, the following policies of insurance with limits not less than those shown in the respective items:
  - A. Workers' Compensation Insurance covering all employees of the Contractor engaged in the Work in accordance with the statutory requirements of the province or territory having jurisdiction over such employees.
  - B. Unless otherwise directed by Owner in writing, the Contractor will carry All Risks insurance coverage covering all construction equipment owned or rented for which Contractor may be responsible and for an amount not less than the replacement cost value of the equipment. In the event of loss, or damage to the said equipment or any part thereof, Contractor shall if so requested by the Owner in writing, forthwith replace such damaged or destroyed equipment. Such All Risks insurance policy shall be endorsed to waive rights of subrogation against the Owner, Architect, and Engineer.
  - C. Automobile or Watercraft Liability insurance covering all motor vehicles or watercraft owned, operated, and used or to be used by the Contractor in connection with the Work. The Limit of Liability shall not be less than \$5,000,000 inclusive, for loss or damage including personal injuries and death arising from any one (1) accident.
  - D. Pollution Liability

Contractors and Subcontractors with Work involved in the removal or treatment of hazardous materials will provide and maintain Contractor's Pollution Liability Insurance or an appropriate

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Environmental Impairment Liability (EIL) Insurance Policy. Such coverage will specifically schedule the type of Work defined in the Contract. This coverage is intended to cover Contractor's liability for claims caused by pollution events arising out of covered operations performed by or on behalf of the insured at project sites.

The limits of liability for Contractor's Pollution Liability or (EIL) Insurance for Parties involved in abatement work:

Combined Single Limit per Occurrence \$5,000,000

General Annual Aggregate \$5,000,000

Coverage shall be maintained in force for twelve (12) months following the termination of the Contract.

If transporting hazardous waste/materials to/from the Jobsite, an appropriate endorsement must be attached and supplied by the contractor with a \$5,000,000 limit. The Town of Peace River must be added as an Additional Insured to this policy with respect to the Work performed on behalf of the Board.

The Owner's rights under this policy are meant to be maintained with respect to a pollution condition arising out of the operations of the Contractor. Insured vs. Insured exclusion to be removed under the above mentioned policy.

- E.** Contractor shall submit, prior to commencement of Work, in a form acceptable to Owner, proof that insurance coverage is in effect and meets specified conditions.
  - F.** The Contractor shall provide the Owner with a Certificate of Insurance evidencing coverage for Commercial General Liability insurance in the amount of \$5,000,000.
  - G.** The Contractor shall indemnify and save harmless the Owner from any and all losses, liabilities, claims, demands, and costs (including legal costs) howsoever caused, with respect to losses caused directly by the Contractor.
  - H.** The policies mentioned in the above Certificate shall not be cancelled, altered, or permitted to lapse unless the insurer notifies the owner in writing at least thirty (30) days prior to the effective date of cancellation or expiry. The insurance policy will be in a form and with a company, acceptable to the Owner.
- 2.2** The Contractor shall require each of its Subcontractors to provide comparable insurance to that set forth under Items 2.1 A, B, C, D, E, F, G, and H.
- 2.3** Certificates of Insurance shall be submitted by Contractor and all Subcontractors to the Owner prior to commencing the Work. Such Certificates shall provide that thirty (30) days written notice shall be given to the Owner prior to any material changes or cancellation of any such policy or policies.
- 2.4** Labour Disputes: The Contractor shall bear the risk and responsibility of any loss, damage, or expense to the Work or to themselves of any nature and kind whatsoever, arising from strikes or labour disputes.
- 2.5** Obstructions and Utilities: Except as otherwise provided in this Section, the Contractor assumes all the risks and responsibilities arising out of any obstruction on or under the road allowance and any traffic conditions caused by such obstruction including traffic conditions on any highway or road giving access to the Contract area and they shall not make any claim against the Town of Peace River for any loss, damage or expense occasioned thereby.

Before commencing Work, the Contractor shall notify all owners of utilities, pipes, structures or other obstructions, sewers and water mains excepted, either under, on, or above the surface within or adjacent to the Work area and request their accurate field location.

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It is the Contractor's responsibility to coordinate its proposed Works with any Work required by utilities. The Contractor shall make all reasonable efforts to schedule and coordinate its Work to avoid delays.

**END OF SECTION**

Preferred Nominal Thickness in (mm)		GAUGES AND NOMINAL THICKNESS EQUIVALENTS							
		Galvanized Steel		Uncoated Steel (Hot & Cold Rolled)		Stainless Steel		Non-Ferrous Metal	
1 <sup>st</sup> Pref.	2 <sup>nd</sup> Pref.	GSG	Thick. Equiv.* (mm)	MSG	Thick. Equiv. (mm)	USSG	Thick. Equiv. (mm)	AG or B&S G	Thick. Equiv. (mm)
0.30		32	0.3404	30	0.3048	30	0.3175	28	0.3200
0.40		30	0.3988	28	0.3785	28	0.3969	26	0.4039
0.50		28	0.4750	26	0.4547	26	0.4763	24	0.5105
0.60		26	0.5512	24	0.6071	24	0.6350	22	0.6452
	0.70	24	0.7010						
0.80		22	0.8534	22	0.7595	22	0.7938	20	0.8128
1.0		20	1.006	20	0.9119	20	0.9525	18	1.0236
1.2		18	1.311	18	1.2141	18	1.2700	16	1.2903
1.6		16	1.613	16	1.5189	16	1.5875	14	1.6281
2.0		14	1.994	14	1.8974	14	1.9844	12	2.0523
2.5				12	2.6568			10	2.5883
3.0		12	2.753			12	2.7781		
3.5		10	3.510	10	3.4163	10	3.5719	8	3.2639
4.0				8	4.1758			6	4.1148
4.5		8	4.270			8	4.3656		
Col. 1	2	3	4	5	6	7	8	9	10

\*The thickness equivalents for galvanized steel include both base steel and zinc coating.

**END OF SECTION**



This addendum forms part of the Tender Documents for Peace River Town Hall – Accessibility Upgrades, and modifies them as follows:

**1.0 GENERAL INFORMATION (BIDDING & CONTRACT REQUIREMENTS)**

**1.1 SPECIFICATIONS (00 – 01)**

**2.0 ARCHITECTURAL**

**2.1 QUESTIONS**

.1

**2.2 ARCHITECTURAL – SPECIFICATIONS**

.1

**2.3 ARCHITECTURAL – DRAWINGS**

.1

**3.0 CIVIL**

.1

**4.0 STRUCTURAL**

.1

**5.0 MECHANICAL**

.1

**6.0 ELECTRICAL**

.1

Attachment:

**END OF ARCHITECTURAL ADDENDUM NO. xx**

**END OF SECTION**

**1 General**

**1.1 REQUIREMENTS INCLUDED**

- .1 Title and description of Work
- .2 Contract Method
- .3 Future Work

**1.2 RELATED REQUIREMENTS**

- .1 Section 00 10 16 – Invitation to Bid
- .2 Section 00 21 13 – Instructions to Bidders
- .3 Section 00 41 13 – Stipulated Price Bid Form
- .4 Section 00 73 03 – Supplementary General Conditions
- .5 Division 1

**1.3 WORK COVERED BY CONTRACT DOCUMENTS**

- .1 Work of this Contract comprises the barrier free upgrades of the Town of Peace River Office including upgrading the existing exterior railings at the front entry, replacing the front entry and vestibule doors and frames with aluminum doors and frames and installing new barrier free door operators.

**1.4 CONTRACT METHOD**

- .1 Construct the Work under a single stipulated sum contract.

**1.5 WORK BY OTHERS**

- .1 Work of Project executed prior to start of Work on site of this Contract, and which is specifically excluded from this Contract:

**1.6 WORK SEQUENCE**

- .1 Coordinate Progress Schedule and coordinate with Owner during construction.

**1.7 CONTRACTOR USE OF PREMISES**

- .1 Contractor has restricted use of site until Substantial Performance.
- .2 Assume full responsibility for protection and safekeeping of products under this Contract.
- .3 Refer to Section 01 50 00 Temporary Facilities.

- .4 The Contractor may use new mechanical and electrical equipment under the following conditions:
  - .1 Protect the equipment from damage due to construction work including dust.
  - .2 Clean and balance all equipment and ductwork. Replace filters, belts and lamps.
  - .3 Maintain warranties of equipment starting as the Total performance of Construction

#### **1.8 OWNER-FURNISHED ITEMS**

- .1 Owner furnished and installed items will be delivered to site and installed after Substantial Performance of this Contract. Contractor to provide final hookup by Total Performance of the Contract.
- .2 Schedule of Owner-furnished items: all items as NIC (not in Contract) in the Contract Documents.

#### **1.9 RESPONSIBILITY FOR EXISTING PROPERTY**

- .1 Contractor shall assume responsibility for the care, custody and control of property which is assigned to him for performance of the Work.
- .2 Contractor shall assume responsibility for and shall make good damage to existing property attributable to performance of Work of this Contract.

#### **1.10 PROJECT IMPLEMENTATION SEQUENCE**

- .1 Because the Town of Peace River must remain operational during the course of construction, the construction sequence and process must be carefully planned out (by the Contractor in collaboration with the Owner) before any construction commences.
- .2 The Contract Document drawings are presented as 'finished product', i.e., as the office will appear at the end of all construction in this Contract.
- .3 By the action of submitting a bid and committing to a construction contract the Contractor agrees:
  - .1 that he has reviewed the Work and required phasing steps
  - .2 that there will be additional conditions during the course of the project which will require additional hoarding or enclosure, at no additional cost to the Owner
  - .3 that all these conditions have been assessed by the Contractor and included in the Base Bid Contract Price.

**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Project coordination.

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 01 32 00 – Construction Schedule
- .3 Section 01 60 01 - Material and Equipment: Coordination.
- .4 Individual Product Sections: Cutting and patching incidental to work of the section. Advance notification to other sections required.

**1.3 OWNERS ACCESS TO SITE**

- .1 Owner reserves the right to access the site to tour personnel and media through the site upon prior written notice.

**1.4 COORDINATION**

- .1 Allocate mobilization areas of site; for field offices and sheds, access, traffic, and delivery and parking facilities.
- .2 During construction coordinate use of site and facilities, procedures for submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.
- .3 Provide information required for preparation of coordination drawings. Review and approve revised drawings for submission to Consultant.
- .4 Mechanical and Electrical Coordination: Be responsible for field coordination for the type of mechanical and electrical work required for this Project for duration of construction work.
- .5 Coordinate and carefully monitor work of subtrades to prevent any damage to existing conditions.

**1.5 CUTTING AND PATCHING**

- .1 Execute cutting, fitting, and patching including excavation and fill, to complete the Work.
- .2 Remove and replace defective and non-conforming work.
- .3 Restore work with new products in accordance with requirements of Contract Documents.
- .4 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical work.

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- .5 Execute work by methods to avoid damage to other work, and which will provide proper surfaces to receive patching and finishing.
  - .6 Employ skilled installer competent to work with materials to be cut and patched for exposed to view materials.
  - .7 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed with masonry materials without prior approval.
  - .8 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

#### **1.6 PROTECTION OF WORK IN PROGRESS**

- .1 Adequately protect work completed or in progress. Any work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by Consultant, at no increase in Contract Price.
- .2 Prevent overloading of any part of building. Do not cut, drill or otherwise sleeve any load bearing structural members, unless indicated specifically on drawings or in specifications, without written approval of Consultant.
- .3 Services Priority: In the event of interference occurring between equipment shown in a concealed area, the following order of priority shall be observed:
  - .1 Structural elements.
  - .2 Plumbing drains.
  - .3 Ductwork.
  - .4 Heating piping.
  - .5 Plumbing piping.
  - .6 Electrical conduit.

#### **1.7 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing utility lines, carry out work as many times as directed by local governing authorities having jurisdiction, with a minimum of disturbance to public traffic flow.
- .2 Protect and maintain existing active utility lines which must remain in place.
- .3 When inactive utility lines are encountered, cap off in a manner acceptable to local governing authorities having jurisdiction. Record location of these capped utility lines on "Record Drawings".

#### **1.8 WORKING LIMITS**

- .1 Confine Work to within limits of site.
- .2 Encroachment of area beyond limits of site is to be arranged for with the Town of Beaumont.

- .3 Upon completion of work for which encroachment is necessary, remove such encroachment and make good any damage to adjacent areas.

## **1.9 RELOCATE DOORS & SERVICES**

- .1 Owner's right to relocate doors and/or partitions:
  - .1 The Owner reserves the right to relocate doors and frames and/or partitions at a later date, but prior to installation, without cost, assuming that there will be no increase in the number of doors and/or frames, or greater lengths or heights of partition, or no increase in number of corners.
  - .2 Should there be an increase or decrease in doors, frames or lengths of partition after such relocation, cost adjustments shall be made.
- .2 Owner's right to relocate mechanical/electrical items:
  - .1 The Owner reserves the right to relocate electrical outlets at a later date, but prior to installation, without cost, assuming that the relocation per outlet does not exceed 3000 mm from the original location. No credits shall be anticipated where relocation per outlet of up to 3000 mm reduces materials, products and labour.
  - .2 Should relocations per outlet exceed 3000 mm from the original location, the contract price will be adjusted accordingly.
  - .3 Make necessary changes, due to lack of coordination, and as required when approved, at no additional cost, to accommodate structural and building conditions. The location of pipes and other equipment shall be altered without charge to the Owner if approved, provided the change is made before installation.

## **1.10 SURVEYING**

- .1 Qualifications of Surveyor:
  - .1 Registered as a Land Surveyor, with the Land Surveyors Association in Alberta.
- .2 Survey Requirements:
  - .1 General Conditions.
  - .2 Supplementary General Conditions.
  - .3 Establish two working bench marks on site, referenced to established bench marks. Record vertical and horizontal locations in Project Record Documents.
  - .4 Locate, confirm, and protect control points prior to starting the work. Preserve control points during construction.

- .5 Establish lines, levels, locate and layout, by instrumentation. Survey “the Work”.
  - .1 Site grading – surface drainage plan.
  - .2 Watermains installation, gas and power lines.
  - .3 Storm and sanitation sewer lines, man holes and catch basins.
  - .4 Locate newly planted trees, curbs and sidewalks.
- .6 Survey drawings must bear the seal and signature of a registered Land Surveyor in Alberta.
- .7 Foundation and survey drawings sheet size must equal sheet size of drawings used on this project.
- .8 Provide one original copy, full size, bond, survey drawings and AutoCAD format CD of original.
- .3 Foundations and Site Survey:
  - .1 Refer to General Requirements, “Survey Requirements”.
  - .2 Upon substantial completion of foundations work, submit survey drawings of building foundations to BR2 Architecture for review.
  - .3 Do not proceed with the work until BR2 Architecture has reviewed the survey drawings, and returned reviewed copy to Contractor.
- .4 Project Record Documents:
  - .1 Refer to General Requirements, “Survey Requirements”.
  - .2 Maintain a log of control and survey work as the work progresses.
  - .3 Provide survey drawing showing a building site graded in conformance with surface drainage plan, for the area in which the building and site is located.
  - .4 Include with Project Record Documents submission, survey drawings illustrating the work at Total Performance.

**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Scheduled preconstruction and progress meetings.

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract documents apply to and govern the work of this Section.
- .2 Section 01 60 01 - Material and Equipment: Coordination

**1.3 PRECONSTRUCTION MEETING**

- .1 Within **15** (fifteen) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of the Owner, BR2 Architecture, Contractor, major Subcontractors and field inspectors for design team will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum (5) five days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement prior to signing.
- .5 BR2 Architecture to preside at meetings and will record minutes of meetings including significant proceedings and decisions. Identify action by the parties and circulate to Owner and Contractor.
- .6 Agenda to include the following:
  - .1 Appointment of official representative of participants in the Work.
  - .2 Schedule of Work, progress scheduling (Section 01 32 00).
  - .3 Schedule of submission of shop drawings, samples, colour chips (Section 01 33 00).
  - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences (Section 01 50 00).
  - .5 Delivery schedule of specified equipment (Section 01 32 00).
  - .6 Site security.
  - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
  - .8 Record documents (Section 01 78 39).
  - .9 Maintenance manuals (Section 01 78 39 ).
  - .10 Take-over procedures, acceptance, warranties (Section 01 77 00).
  - .11 Monthly progress claims, administrative procedures, photographs, holdbacks (GC).
  - .12 Appointment of inspection and testing agencies or firms (Section 01 45 00).
  - .13 Insurances, transcript of policies (GC).



#### **1.4 CONTRACTOR AND SUBTRADE MEETINGS**

- .1 Schedule regular subtrade meetings prior to progress meetings and distribute minutes of these meetings promptly to the Owner, BR2 Architecture and Engineering Consultants..

#### **1.5 PROGRESS MEETINGS**

- .1 During course of Work schedule online progress meetings every two weeks at times and location mutually agreed with Owner and BR2 Architecture.
- .2 BR2 Architecture, Contractor and Owner are to be in attendance. Major Subcontractors involved in Work may be requested to attend specific meetings. Engineering Consultants may be in attendance when work on site warrants attendance.
- .3 Representative of Contractor, Subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.
- .4 BR2 Architecture to preside at meetings and will record minutes of meetings including significant proceedings and decisions. Identify action by the parties and circulate to Owner and Contractor.
- .5 BR2 Architecture shall circulate updated Site Instruction, Proposed Change Notice, Submittal and Request For Information logs at the progress meetings.
- .6 Agenda to include the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.
  - .3 Field observations, problems, conflicts.
  - .4 Problems which impede construction schedule.
  - .5 Review of off-site fabrication delivery schedules.
  - .6 Corrective measures and procedures to regain projected schedule.
  - .7 Revision to construction schedule.
  - .8 Progress, schedule, during succeeding work period.
  - .9 Review submittal schedules and log: expedite as required.
  - .10 Maintenance of quality standards.
  - .11 Review Proposed Change Notice and Site Instruction log.
  - .12 Review proposed changes for affect on construction schedule and on completion date.
  - .13 Review Request For Information Log.
  - .14 Other business.

**END OF SECTION**

**General**

**1.1 SECTION INCLUDES**

- .1 Schedule, form, content.
- .2 Scheduled revisions.
- .3 Critical path scheduling.

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Summary of the Work Section 01 11 00.

**1.3 SCHEDULES REQUIRED**

- .1 Submit the following schedules:
  - .1 Construction Progress Schedule
  - .2 Submittal Schedule for Shop Drawings and Product Data
  - .3 Submittal Schedule for Samples
  - .4 Cash Allowance /Prime Cost Sum Schedule for purchasing Products
  - .5 Product Delivery Schedule
  - .6 Two Week Look Ahead Schedule
  - .7 Two Week Recap of Construction Activities

**1.4 FORMAT**

- .1 Prepare schedule in the form of a horizontal bar chart.
- .2 Provide a separate bar for each trade or operation.
- .3 Provide horizontal time scale identifying the first work day of each week.
- .4 Format listings: The chronological order of the start of each item of work.
- .5 Identification of listings: By Specification subjects.
- .6 Incorporate appropriate time scales including both calendar and working days.
- .7 Incorporate legend to facilitate ready interpretation of symbols and abbreviations.

**1.5 SUBMISSION**

- .1 Submit initial schedules within **15** (fifteen) days after award of Contract.
- .2 Submit an electronic copy to the Consultant and the Owner.
- .3 Consultant will review schedule and return review copy within 10 days after receipt.

- .4 Resubmit finalized schedule within 7 days after return of review copy.
- .5 Submit revised progress schedule with each application for payment.
- .6 Owner may withhold payment if updated schedule is not submitted with application for payment.
- .7 Distribute copies of the revised schedule to:
  - .1 Job site office.
  - .2 Subcontractors.
  - .3 Other concerned parties.
- .8 Instruct recipients to report to the Contractor within 10 days, any problems anticipated by the timetable shown in the schedule.

## **1.6 CONSTRUCTION PROGRESS SCHEDULE**

- .1 Include the complete sequence of construction activities, by updating and submitting the schedule every two weeks.
- .2 Include the dates for the commencement and completion of each major elements of construction including, but not limited to, the following:
  - .1 Demolition
  - .2 Excavation and Backfill
  - .3 Foundation Work
  - .4 Interior steel studs, gypsum board
  - .5 Interior doors, frames, storefront framing and glazing
  - .6 Electrical Installations; Power; Low Voltage, Lighting, Fire alarm
  - .7 Suspended Ceilings, Lay-in Tile and Gypsum Board
  - .8 Painting, Exterior and Interior
  - .9 Flooring, sheet goods, carpet, specialty flooring, base
  - .10 Finishing; specialties, equipment and furnishings
  - .11 Wheelchair lift
- .3 Show projected percentage of completion of each item as of the first day of the month.
- .4 Indicate progress of each activity to date.
- .5 Show changes occurring since previous submission of schedule:
  - .1 Major changes in scope.
  - .2 Activities modified since previous submission.
  - .3 Revised projections of progress and completion.
  - .4 Other identifiable changes.
- .6 Provide a narrative report to define:
  - .1 Problem areas, anticipated delays, and the impact on the schedule.

- .2 Corrective action recommended and its effect.
- .3 The effect of change on schedules of the other prime contractors.
  
- .7 Comply with schedule. Bear all costs necessary to meet the schedule. If progress of the Work is delayed for any reason other than one for which extra time is provided for an GC4 of the General Conditions, immediately engage additional labour and equipment, and work additional hours to bring work back on schedule at no increase in cost to the Contract Price.

#### **1.7 SUBMITTALS SCHEDULE**

- .1 Include schedule for submitting shop drawings, product data, samples and mock-ups.
- .2 Indicate dates for submitting, review time, resubmission time, float time, last date for meeting fabrication schedule.
- .3 Include dates when submittals and delivery will be required for Owner-furnished products.
- .4 Include dates when reviewed submittals will be required from the Consultant.

#### **1.8 TWO WEEK LOOK AHEAD SCHEDULE**

- .1 Submit schedule two (2) days prior to site progress meeting in digital form to Owner and Consultant.
- .2 Schedule to include anticipated construction activities and submittals for the upcoming two (2) weeks.
- .3 Provide a phasing plan for concrete pours, steel erection and other major Sub-trades.

#### **1.9 TWO WEEK SUMMARY OF CONSTRUCTION ACTIVITIES**

- .1 Submit summary **two** (2) days prior to site progress meeting in digital format to the Owner and Consultant.
- .2 Submit summary of construction activities that have occurred since the previous site progress meeting.
- .3 Submit phasing plan indicating where work has been completed since the previous site progress meeting.

#### **1.10 USE OF SCHEDULE**

- .1 The formally accepted schedule will become the basis of the Contractor's work schedule against which progress of the work will be measured.
- .2 The Owner will accept no claims rising from subcontractors and suppliers of the Contractor due to the Contractor's failure to bind them to the accepted Schedule.
- .3 If, in the Owner' opinion, the actual progress of the work is behind schedule or the Contract completion date appears to be in jeopardy, the Owner will request submission of

the method which will be used to ensure the schedule and a revised CPM network to support this outline. Provide within 7 (seven) days of written notice a concise outline of how the schedule will be maintained and the work will be completed by the contract completion date.

**END OF SECTION**

**1.1 SECTION INCLUDES**

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

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 01 45 00 - Quality Control: Submission of test and mix design.
- .3 Section 01 62 00 – Product Options and Substitutions: Submission of manufacturer's instructions.

**1.3 ADMINISTRATIVE**

- .1 Submit to BR2 Architecture submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in the 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 the submittal shall not proceed until review is complete.
- .3 Review submittals prior to submission to BR2 Architecture. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the Work and the Contract Documents. Submittals not stamped, signed, dated and identified as to the specific project will be returned without being examined and shall be considered rejected.
- .4 Verify field measurements and affected adjacent Work are coordinated.
- .5 Keep one reviewed copy of each submission on site.
- .6 Submit the qualifications of the actual people who will be performing the work at the site.
- .7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by the BR2 Architecture's review of submission, unless BR2 Architecture gives written acceptance of specific deviations.

**1.4 SUBMISSION REQUIREMENTS**

- .1 Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows: Time for review shall commence on BR2 Architecture's receipt of submittal:
  - .1 Initial review: Allow a minimum of ten (10) working days for initial review of each submittal. Allow for additional time if processing must be delayed to permit coordination with subsequent submittals. BR2 Architecture will advise Contractor when a submittal being processed must be delayed for coordination.

- .2 Concurrent Review, Where concurrent review of submittals by BR2 Architecture, Sub-consultants, Owner or other parties is required, allow a minimum of fifteen (15) working days for initial review of each submittal. If intermediate submittal is required, process it in the same manner as initial submission but allow for a minimum of five (5) additional working days for each re-submittal.
- .3 No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the work to permit processing.
- .4 Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential delivery:
  - .1 Individual submissions will not be reviewed until all related information is available.
  - .2 Where multiple submission are made, identify which submissions have a higher priority with respect to the progress of the work.
- .5 Accompany submissions with transmittal letter in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name, address, telephone, fax and email address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
  - .6 Submittals may be rejected for not complying with these requirements.
- .6 Submissions shall include:
  - .1 Date and revision dates.
  - .2 Name and address of sub-contractor.
  - .3 Name and address of supplier.
  - .4 Name and address of manufacturer.
  - .5 Contractor's stamp, signed by the Contractor's authorized representative certifying approval of submissions, verification of filed measurements and compliance with Contract Documents.
  - .6 Details of appropriate work as applicable, including fabrication, layout showing dimensions, field dimensions, clearances, setting of erection details, capacities, performance characteristics, standards, operating weight, wiring diagrams, single line schematic diagrams and relationship to other work.
- .7 Shop drawings shall be formatted so there is sufficient space for Contractor's, sub-contractor's and Consultant's circulation stamps to appear on face of submittal.
- .8 BR2 Architecture will reject drawings not stamped, reviewed and signed by Contractor and Sub-Contractor.

## **1.5 ELECTRONIC DRAWING FILES**

- 
- .1 Electronic drawing files in \*.DWG (AutoCAD) CADD format will be made available to the General Contractor by BR2 Architecture for the preparation of Shop Drawings specific to this Project subject to the following:
    - .1 The electronic drawing files will be made available at no cost to the General Contractor only. The General Contractor will be responsible for providing additional copies of electronic drawing files to their sub-trade contractors.
    - .2 Electronic drawing files will be provided on CD ROM format only, one copy.
    - .3 Electronic drawing files will be provided in the CADD file format requested by the Owner, a change in format will not be undertaken by BR2 Architecture.
    - .4 Only floor plans and reflected ceiling plans will be provided.
    - .5 Details, Elevations, Sections and Schedules are specifically excluded from this arrangement, and no request for these documents will be acknowledged.
  - .2 BR2 Architecture will alter electronic drawing file information not essential to the contract from materials provided to the Contractor, but not limited to, the following:
    - .1 Remove Title Blocks.
    - .2 Remove Professional Seals.
    - .3 Bind external files and blocks.
  - .3 Contractor shall request electronic drawing files at the beginning of the work:
    - .1 BR2 Architecture makes no warranty or guaranty that the dimensions provided or established from the electronic drawing files represent actual site conditions.
    - .2 Contractor shall remain responsible for establishing and confirming field dimensions and project conditions, except as limited by 1.4.3.4 below.
    - .3 In the event that there is a discrepancy between the electronic drawing files provided to the Contractor and the Bid Documents and ADDENDA, The Bid Documents and Addenda shall govern.
    - .4 In the event that dimensions are not indicated, they shall not be scaled electronically from the electronic drawing files. Missing dimensions shall be brought to the attention of BR2 Architecture, who will determine the dimensions or direct the method for determination of the missing dimensions.
  - .4 Contractor recognizes that the use of the electronic drawing files is at their own risk. The contractor will be required to sign an agreement accepting the terms of use including, but not limited to:
    - .1 Contractor, Sub-contractor, Sub-sub-contractor, supplier, manufacturer, or other third party agent agrees to indemnify and hold harmless BR2 Architecture from any damage, liability or costs arising from the use of the electronic drawing files.
    - .2 BR2 Architecture retains the copyright for electronic drawing files made available to the Contractor.



- .3 Use of the supplied electronic drawing files for any subsequent Project is forbidden without the express written consent of BR2 Architecture.
- .4 BR2 Architecture will not be held liable for any unauthorized use of modification of the electronic drawing files provided.
- .5 BR2 Architecture expressly disclaims any warranty or assurance that the electronic drawing files will remain accurate beyond the date the electronic drawing files were created.
- .6 BR2 Architecture assumes no responsibility and disclaims any liability to any person or entity for any loss or damages including any special. Indirect or consequential damages caused by error or omissions in the electronic drawing files and CADD format provided, whether resulting from negligence, accident or any other cause.
- .5 BR2 Architecture reserves the right to withdraw the offer for electronic drawing files where an excessive number of drawings are requested.
- .6 BR2 Architecture reserves the right to reject shop drawings prepared from electronic drawing files submitted to them by the Contractor that have not been substantially altered from the electronic drawing files provided, and as follows:
  - .1 Shop drawings shall reflect constructability requirements.
  - .2 Shop drawings shall be detailed in accordance with requirements listed in the technical specification sections.

#### **1.6 SHOP DRAWINGS AND PRODUCT DATA**

- .1 Refer to attached shop drawing flow charts for distribution requirements.
- .2 Submit two (2) copies of samples for each requirement requested in specification Sections and as the Consultant may reasonably request. Submit one (1) copy of sample for each requirement requested in specification Sections to the owner.
- .3 Submit digital copies of product data sheets or brochures for requirements requested in specification Sections and as the Consultant may reasonably request where shop drawings will not be prepared due to standardized manufacture of product. Submit one (1) copy to the owner.
- .4 If upon review by BR2 Architecture, no errors or omissions are discovered or if only minor corrections are made, the transparency will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, one noted copy will be returned and resubmission of corrected shop drawings, through the same procedure indicated above, shall be performed before fabrication and installation of Work may proceed.
- .5 Reimburse the Owner for BR2 Architecture's time to review shop drawings after the second review.
- .6 All shop drawings shall be metric.

## **1.7 SAMPLES**

- .1 Submit for review samples as requested in respective specification Sections. Label samples as to origin and intended use in the Work.
- .2 Deliver samples prepaid to BR2 Architecture's business address.
- .3 Notify BR2 Architecture in writing, at the time of submission of deviations in samples from requirements of Contract Documents.
- .4 Adjustments made on samples by BR2 Architecture are not intended to change the Contract Price. If adjustments affect the value of Work, state such in writing to the Consultant prior to proceeding with the Work.
- .5 Make changes in samples which BR2 Architecture may require, consistent with Contract Documents.

## **1.8 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status transcription of insurances to the Owner.
- .2 Submit copy of building permit application and payment prior to commencing construction.

## **1.9 STATUTORY DECLARATIONS**

- .1 Provide a statutory declaration with each request for payment, following the initial request, indicating that all monies of previous claim have been properly dispersed of to be qualified sub-contractors working on this project.

## **1.10 PROGRESS REPORTS**

- .1 Keep a permanent written record on site of progress of the Work, including information from Subcontractors. Maintain this record open to review by the BR2 Architecture. Furnish a copy to BR2 Architecture upon request.
- .2 Indicate dates of commencement and completion of trades and parts of the work coming under the Contract, including reports on daily weather conditions, excavation work erections and removal of forms and other similar pertinent information relevant to the work. Submit type written records to BR2 Architecture at regular monthly intervals.
- .3 Keep a log of all Contractor's and Subcontractors' forces on site, including the hours of work and the like. Provide such log to BR2 Architecture on a weekly basis.
- .4 Report delays (and potential delays) relevant to their work, giving reason for delay and action being taken to resolve the problem.
- .5 Record all visitors names.

- .6 Record details of all accidents or other unusual occurrences.

### 1.11 PHOTOGRAPHS

- .1 Progress photographs:
  - .1 Sizes: minimum 1 megapixel image file size or 600 dpi print density.
  - .2 Type: digital colour with binding margin at one end.
  - .3 Format: jpeg on CD-ROM
  - .4 Viewpoints: A minimum of four (4) photographs from three (3) different viewpoints will be required.
  - .5 Number of copies: 1 set per month. Provide 1 copy to Consultant and 1 copy to Owner. Submit photographs with each progress claim continuing until substantial performance.
  - .6 Identification: Readable text file (\*.rtf) referenced to photo file with name, location, purpose and number of project and date of exposure.
  - .7 Viewpoints: interior and exterior locations, as determined by Consultant.
  - .8 Frequency: at completion of excavation, foundation, framing and services before concealment and at completion of each discrete phase of construction.
- .2 Final photographs:
  - .1 Sizes: minimum 1 megapixel image file size or 600 dpi print density.
  - .2 Type: digital colour with binding margin at one end.
  - .3 Format: jpeg on CD-ROM
  - .4 Viewpoints: A minimum of four (4) photographs from three (3) different viewpoints will be required.
  - .5 Number of copies: Provide 1 copy to Consultant and 1 copy to Owner.
  - .6 Identification: Readable text file (\*.rtf) referenced to photo file with name, location, purpose and number of project and date of exposure.
  - .7 Viewpoints: interior and exterior locations, as determined by Consultant.
  - .8 Final submission shall be all photographs, and submitted on a CD-ROM with the file names referencing progress time when each photograph was prepared.

**END OF SECTION**

## **1 General**

### **1.1 INTENT**

- .1 The intent of the Delegated Design Submittals required by this Section is to provide assurance to the Consultant that materials requiring professional engineering responsibility for design, review and acceptance of components of the work forming a part of the permanent Work in accordance with the Building Code, and that has been assigned to a design entity other than the Consultant including, but not limited to, the following:
  - .1 Design requiring structural analysis of load bearing components and connections.
  - .2 Design requiring compliance with fire safety regulations.
  - .3 Design requiring compliance with life for health safety regulations.
- .2 This Section provides standard forms for submittal of Letter of Commitment and Letter of Compliance required to comply with requirements of the Building Code and design delegated to a professional engineer within the technical specification sections.
- .3 Delegated design submittals are not required for components of the work requiring engineering for temporary work (i.e. crane hoisting, engineered lifts, false work, shoring, concrete formwork) that would normally form a part of the Contractor's scope of the work.
- .4 The requirements of this Section are in general conformance with recommended Responsibilities for Engineering Services for Building Projects published by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA), with regards to duties of specialty professional appointed during the construction period.
- .5 The requirements of this Section do not diminish the responsibilities of the Consultant's role as the Registered Professional of Record; the submittals will be used by the Consultant to establish that the work is substantially performed in accordance with the Building Code.

### **1.2 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 01 45 00 - Quality Control, Testing and Inspections
- .3 Section 05 50 00 - Custom Steel Fabrications
- .4 Section 05 51 00 - Metal Stairs, Design of connections for steel stairs, handrails and other load supporting elements
- .5 Divisions 20-23 and 25-28 – Coordinate with disciplines for items requiring delegated design submittals Fire Suppression Systems Building Automation and Control.

### **1.3 DELEGATED DESIGN**

- .1 Performance and Design Criteria: Provide products and systems complying with specific performance and design criteria indicated where professional design services or certifications by a design professional are specifically required of Contractor by the Contact Documents.

- .2 If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Consultant.

## **2 Products**

### **2.1 LETTER OF COMMITMENT**

- .1 Submit a signed and sealed Letter of Commitment on company letterhead addressed to the Consultant in accordance with the format in Schedule A attached to the end of this Section prior to starting work requiring design and seal of a professional engineer.

### **2.2 LETTER OF COMPLIANCE**

- .1 Submit signed and sealed Letter of Compliance on company letterhead addressed to the Consultant in accordance with the format in Schedule B attached to the end of this Section on completion of the work requiring design and seal of a professional engineer.

## **3 Execution**

### **3.1 IMPLEMENTATION**

- .1 Include the summary of the work described in the technical specification section as a part of the required Letter of Commitment.
- .2 Prepare required submittals and present to the Consultant within sufficient time to allow for the Consultant's detailed review and acceptance.

**END OF SECTION**

**SCHEDULE A – LETTER OF COMMITMENT**

Submit a signed and sealed letter of commitment on company letterhead in the form as follows:

[Date]

BR2 Architecture  
201, 10441 – 123 Street  
Edmonton, Alberta  
T5N 1N8

Att: [Consultant’s Registered Professional of Record]

**Re: Letter of Commitment for Delegated Design of [System of Component of Work]  
[Name of Project]  
[Project Number]  
[City, Province]**

As the retained registered professional engineer for the design and field review of the above named component of the work and project, I hereby give assurance I am qualified to perform the following work as required by the Contract Documents:

1. [List appropriate design services for System or Component of the Work];
2. Preparation of shop and erection documents;
3. Review the fabrication of [structural] [fire rated] [life and health safety] components;
4. Review of the erection of [structural] [fire rated] [life and health safety] components.
5. [Modify list to suit System of Component of the Work.]

I hereby give assurance that I will be responsible for the above noted work as described in Section [\_\_\_\_] – [Name of Section] of the Project Manual, including requirements of all addenda, change orders and change directives.

I also undertake to be responsible for field review of the fabrication and erection [structural] [fire rated] [life and health safety] components as required to ascertain substantial compliance with the Building Code and Contract Documents.

I will notify you in writing if my responsibility is terminated at any time during the course of the work covered by this Letter of Commitment.

**Retained Professional Engineer**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

(Apply seal)

**SCHEDULE B – LETTER OF COMPLIANCE**

[Date]

BR2 Architecture  
201, 10441 – 123 Street  
Edmonton, Alberta  
T5N 1N8

Att: [Consultant's Registered Professional of Record]

**Re: Letter of Compliance for Delegated Design of [System of Component of Work]  
[Name of Project]  
[Project Number]  
[City, Province]**

I hereby give assurance that I have fulfilled my obligations for field review as outlined by the previously submitted Letter of Commitment.

I hereby give assurance that the aspects of the [structural] [fire rated] [life and health safety] work as defined by the previously submitted Letter of Commitment substantially complies with the Contract Documents and the Building Code.

**Retained Professional Engineer**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

(Apply seal)

**1 General**

**1.1 RELATED SECTIONS**

- .1 Section 01 31 19 – Project Meetings
- .2 Section 01 33 00 – Submittal Procedures

**1.2 WORK SITE SAFETY**

- .1 This Contractor is “*Prime Contractor*”
- .2 This Contractor shall, for the purposes of the Occupational Health and Safety Act (Alberta), and for the duration of the *Contract*:
  - .1 Be the “*Prime Contractor*” for the “*Work Site*”.
  - .2 Meet all requirements of the Occupational Health and Safety Act and regulations, Workers Compensation Board Legislation, The Alberta Fire Code legislation and all other applicable laws that govern work place safety.
- .3 The *Prime Contractor* shall direct all sub-contractors, sub-sub-contractors, other contractors, employees, suppliers, workers and any other persons at the “*Work Site*” on safety related matters, to the extent required to fulfill its “*Prime Contractor*” responsibilities pursuant to the Act, regardless of:
  - .1 Whether or not any contractual relationship exists between the Prime Contractor and any of these entities, and,
  - .2 Whether or not such entities have been specifically identified in this Contract.

**1.3 CERTIFICATE OF RECOGNITION (COR)**

- .1 Safety Certification, as specified in Section 00 21 13 – Instructions to Bidders, is a condition of Contract award.
- .2 The Contractor shall maintain a valid COR for the duration of the *Work* of this *Contract*.

**1.4 SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Provide Material Safety Data Sheets (MSDS’s) for all controlled products as listed in the Chemical Hazards regulation.
- .3 Provide Workers Compensation Board Experience Rating.
- .4 Provide Contractor’s Injury Severity and Frequency Report.
- .5 Provide Contractor’s Safety Plan to include:
  - .1 Permits required by the authorities having jurisdiction.
  - .2 Emergency plans and contact name and telephone list.



- .3 Copy of Contractor's liability insurance policy.
  - .4 Safety procedure for electrical systems, including but not limited to de-energization, re-energization, Alberta 1<sup>st</sup> Call, locking out and tagging procedures, identification of energized services and lines, and requirements of local utilities.
  - .5 Safety procedures for mechanical systems, including but not limited to; isolation and depressurization of pressure systems, locking out and tagging of systems, purging of systems, and re-start and re-fill of systems.
  - .6 Ventilation procedures for confined spaces and MSDS work requirements.
  - .7 Noise control procedures.
  - .8 List of Personal Protection Equipment (PPE) required on this site.
  - .9 Work place incident and severity reports for this Project.
  - .10 Safety Plans.
- .6 The Owner and/or BR2 Architecture may review the Contractor's safety plan and may request modification, additions and or deletions as necessary for the work of this contract.
  - .7 Contractor's safety plan shall be kept at the work place and shall be updated after each safety meeting.

## **1.5 SAFETY REQUIREMENTS**

- .1 Contractor will ensure that emergency procedures including appropriate first aid facilities and First Aid personnel are in place at the work site.
- .2 Contractor shall employ a Construction Safety Officer (CSO). Ensure that the provision of new employee orientation, to over-see site activities, provide appropriate training on personal protective equipment (PPE) and Work Place Hazardous Material Information (WHIMS), conduct and document accident investigations as required.
  - .1 The need for a full time, on site CSO can be waived where it can be shown that the site superintendent is certified and trained to act as the Construction Safety Officer.
  - .2 CSO shall be certified by a training program recognized by the Alberta Construction Association.
  - .3 The CSO will conduct daily work site inspections, to conduct weekly site safety meetings, train new employees and ensure that Sub-contractors and Sub-sub-contractors, suppliers and others working on the site are aware of safety requirements.
- .3 Maintain on site sufficient quantities of PPE, including but not limited to: hard hats, safety glasses, hearing protection, steel toed foot wear and other items of clothing or special equipment as necessary to ensure that visitors to the site, the Consultant and the Owner's representative are adequately protected.
- .4 Ensure that all Contractor's employees, Sub-contractors, Sub-sub-contractors, suppliers and others working on the site, meet clothing requirements of shirts with sleeves no shorter than midway between shoulder and elbow and full length pants. Muscle shirts or sleeveless shirts, cut-offs or shorts will not be allowed on the site.

**1.6 ENVIRONMENTAL REQUIREMENTS**

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHIMS) regarding use, handling, storage and disposal of hazardous materials, and regarding labeling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

**END OF SECTION**

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**1. INTENT**

- .1 Due to the nature of the facility where the Work is being performed, special procedures must be followed during the course of the Work.
- .2 Comply with the requirements specified in this Section and as otherwise determined by the Province to maintain the required degree of security and safety for the User, Contractor's Personnel, Province's personnel, and the public.

**2. DEFINITIONS**

- .1 User: means facility inhabitants and staff.
- .2 User's Representative: means the person designated in this Section.
- .3 Contractor's Personnel: means all members of Contractor's work force, all members of Subcontractors' and Sub-subcontractors' work forces, and all other persons who require access to the facility for performance of the Work.

**3. USER'S REPRESENTATIVE**

- .1 The Town's contact person with respect to requirements of this Section and all other facets of the Work, which directly or indirectly affect the operation of the facility, will be:

Name: Arun Thomas  
Title: Project Manager  
Telephone no.: (780) 634-2574

or any other person whom the Town of Peace River may designate from time to time. This person is called the "User's Representative" for the purposes of this Contract. If the User's Representative is changed, the Contractor will be notified accordingly.

- .2 The User Representative is the representative of the Owner.
- .3 The Contractor's contact and all communication shall, in the first instance, be with the Owner's authorized representative who will in turn communicate with the User's Representative.
- .4 The Contractor may communicate directly with the User's Representative **only** if:
  - .1 a concern arises which affects the operation of the facility, and
  - .2 such concern requires prompt attention, and
  - .3 the Province's authorized representative cannot be contacted.
- .5 Acceptance of any instructions given by the User's Representative under circumstances indicated above, shall be at the Contractor's discretion and at his own risk.
- .6 Notwithstanding the foregoing, in the event of an emergency involving security or safety, the Contractor shall comply immediately with all instructions given by the User's Representative.

**4. ENTRY AND IDENTIFICATION**

- .1 Upon each entry to the site, Contractor's Personnel shall contact appropriate facility staff and identify themselves.

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- .2 Entrance may entail issuance of identification cards or badges, notation in a log book or other security procedures
  - .3 Identification badges, if issued, must be worn at all times while on site.

**5. SECURITY AND SAFETY REGULATIONS**

- .1 Comply with all security and safety regulations in force at the facility.
- .2 Be aware of and comply with the facility's standing orders in case of fire and other emergencies.
- .3 Contractor's Personnel shall confine themselves to their particular duties and areas of work and shall not converse nor fraternize with facility inhabitants.

**6. VEHICLE ACCESS AND PARKING**

- .1 Restrict construction traffic to access routes designated by the Owner or the User Representative. Obtain the Owner's permission before using alternative routes.
- .2 Place directional signs along designated traffic route, to the Owner's satisfaction.
- .3 Restrict loading and unloading operations to areas designated by the Owner.
- .4 Restrict parking for Contractor's Personnel to areas designated by the Owner.
- .5 Maintain parking areas in good condition during construction period. After completion of Work, restore parking areas to condition equal to that at start of the Work.

**7. VEHICLE OPERATION AND SECURITY**

- .1 Observe posted speed limits and other traffic control signs on facility grounds.
- .2 Do not leave any vehicle running and unattended, regardless of how long the operator intends to be absent from the vehicle.
- .3 Do not leave keys in any unattended vehicle. Secure vehicles left unattended.
- .4 Do not park vehicles in fire lanes or access areas unless absolutely necessary for the purpose of carrying out the Work.
- .5 Secure vehicles left on site after normal working hours or overnight. Leave in designated parking area only.
- .6 Secure tools, ladders, materials etc. when left in or on vehicles. Secure tools out of sight, not in passenger compartment of vehicle.

**8. BARRIERS**

- .1 Enclose and secure work area with barriers as specified in Section 01 50 00. Locate barriers as designated by the Owner.
- .2 Ensure work area gates and accesses are locked and secured at end of each work day.

**9. KEY CONTROL**

- .1 Contractor's Personnel will be held personally responsible and accountable for key control.
- .2 All security keys, including padlock keys, switch box keys and other keys must be accounted for at all times.

- 
- .3 Each person authorized to be in possession of keys must retain possession of such keys at all times while on site. Unauthorized exchanges of keys among other Contractor's Personnel, Province's personnel or facility staff is not permitted.
  - .4 Keys must never be given to a facility inhabitant or left in an area where an facility inhabitant could have access to a key.

**10. TOOLS, EQUIPMENT AND MATERIAL CONTROL**

- .1 Contractor's Personnel will be personally responsible and accountable for tools carried onto the site, upon entry and upon departure each work day, and upon completion of the Work.
- .2 Tools carried into an inhabited secure area must be accounted for, upon entry to and upon departure from such areas.
- .3 All tools must be permanently marked with the owner's name.
- .4 The Owner may request that an inventory be provided of a tradesman's personal tools and may inspect such tools at any time to confirm count.
- .5 Maintain visual control of, and closely monitor use and location of, tools, equipment and materials at all times. Keep tools in immediate work area.
- .6 Do not leave tools and equipment unattended at any time without being shut off and properly secured.
- .7 Leave tools, equipment and materials in a secure storage area or otherwise secured to the Owner's satisfaction when not in use during the work day and at the completion of each work day.
- .8 Tools that present a high security risk, such as saws, hammers, chisels, screw drivers, power nail drivers, crowbars, etc., must be removed from work areas upon the completion of each work day.
- .9 Use of explosive actuated fastening devices is prohibited.
- .10 Do not deposit or allow to accumulate outside confines of work area, unused and waste material, rubbish, and debris, including nails, screws, etc. Remove material so deposited from site immediately.

**11. PROCEDURES IN EVENT OF LOSS**

- .1 If a key, tool, piece of equipment or item of personal property is lost or missing, or there is an unexplained material shortage, take the following action immediately:
  - .1 Notify appropriate facility staff or User Representative and advise them of the loss. Do not attempt to search for the lost item(s) prior to this notification.
  - .2 Provide facility staff with as much detail about the lost item as possible, including where it was lost and for how long it has been missing.
  - .3 Account for all other keys, tools, equipment and materials.

**END OF SECTION**

**1. INTENT**

- .1 These procedures apply to requirements for patching and making good around new and existing work.

**2. SITE VISIT**

- .1 Review existing site conditions during bid period. Investigate ceiling plenums, duct shafts, wall structures and other building systems affected by the Work.
- .2 Confirm dimensions of applicable existing equipment with field measurements.
- .3 Use visit to note required materials which may be difficult provide and notify the Owner as soon as possible.

**3. SUBMITTALS**

- .1 Comply with requirements of Section 01 33 00.
- .2 Submit drawings of structural alterations and temporary support systems for the Owner's review before proceeding with structural alterations.
- .3 Provide drawings fully detailing alterations to structure, signed and sealed by a professional structural engineer registered to practice in the Province of Alberta.
- .4 Submit, for the Owner's approval, details of methods other than specified coring, drilling, or cutting.

**4. STRUCTURAL ALTERATIONS**

- .1 Do not cut, cut into or alter any building structure, or bearing walls and partitions until proposed methods and procedures for doing so, including temporary support system, are reviewed by the Owner.
- .2 Conform strictly to approved details. Cut or remove only to extent shown on engineer's drawing reviewed by the Owner.

**5. SPECIAL PROTECTION REQUIREMENTS**

- .1 Protect unaffected finishes, equipment and adjacent work from damage caused by cutting, moving, removal and patching operations. Protect surfaces which will remain as part of finished work.
- .2 Notify the Owner immediately of damage to fireproofing coatings.
- .3 Protect fireproofing coating to structural members. If damaged due to work of this Contract, restore damaged areas to original condition using materials to match existing colour, texture and required fire protection rating.
- .4 Protect personnel, building occupants and public from airborne dust and contaminants when cleaning spray fireproofing or contaminant-generating materials from structure.
- .5 Protect area below welding work from sparks and molten metal, using wet double canvas blankets.

**6. CUTTING, REMOVAL AND FITTING**

- .1 Make cuts with clean, true, smooth edges. Provide patches inconspicuous in final assembly.
- .2 Use electric percussion tools to cut clay tile, plaster and concrete blocks.
- .3 Carefully remove material being cut. Do not cut services discovered.
- .4 Where required, carefully remove modular, manufactured type finishes, including lay-in ceiling tile in component ceiling systems.
- .5 Fit alteration work airtight to pipes, sleeves, ducts, conduits and other required penetrations through building elements.

**7. MATERIALS**

- .1 Obtain new products to patch, match or extend existing products and meet or exceed quality of existing products.
- .2 Quality of existing products, available for assessment during pre-bid site visit, shall serve as basis for requirements for appearance and performance of materials used in the Work.
- .3 Where existing material cannot be matched with new, salvaged material may be used subject to approval by the Owner.
- .4 Where matching materials are not available, the Owner will consider similar product which meets same performance requirements as existing.
- .5 Obtain acceptance of the Owner before installing any materials not matching existing.

**8. PATCHING, EXTENDING AND MAKING GOOD TO EXISTING WORK**

- .1 Patch, extend and make good existing work using skilled workers able to match existing quality. Quality of work shall meet technical requirements for similar components throughout Specifications.
- .2 Where a portion of existing finished surface is damaged, lifted, stained, or otherwise imperfect, patch or replace with matching materials. Match existing finishes unless specified otherwise.
- .3 If patched or imperfect surface was painted or coated, repaint or recoat entire surface area.
- .4 Replace damaged lay-in type ceiling tile and other components with new.
- .5 Patch surfaces and materials exposed by partition removal, with finishes to match adjacent.
- .6 Restore existing work damaged during construction to a condition matching existing finishes.

**9. TRANSITIONS**

- .1 Make transitions as smooth as possible where new work abuts or finishes flush with existing work.
- .2 Match existing adjacent work in texture and appearance, providing transition invisible to the eye from distance of 2 meters.

- .3 When smooth transition is not practicable, e.g., from a smooth finish to masonry, tile or plaster, terminate existing surface along a straight line at a natural point of division and provide trim to the Owner's approval.
- .4 Where two or more spaces become one space and planes are nominally continuous, re-work floors and walls and ceilings to provide planes meeting without breaks, steps or bulkheads.
- .5 Where change of plane exceed 75 mm, obtain instructions from the Owner for method of executing transition.

**10. EXISTING SERVICES**

- .1 Establish location and extent of services in area of work and notify the Owner of findings before starting Work.
- .2 Inform the Owner immediately of unknown services that are encountered. Confirm findings in writing.

**11. ALTERATIONS TO MECHANICAL AND ELECTRICAL SERVICES**

- .1 Refer to mechanical and electrical drawings and Divisions 20-23 and 26 of the Specifications for extent of mechanical and electrical alterations.
- .2 Perform alterations with minimum disturbance to existing work.
- .3 Access service runs in ceiling spaces through light fixture openings and ceiling access panels where possible. Subject to the Owner's approval, provide bulkheads to conceal services where ceiling spaces are not accessible.
- .4 Except in mechanical and electrical rooms, conceal the following:
  - .1 ducts
  - .2 pipes
  - .3 raceways
  - .4 conduit runs
  - .5 junction boxesusing chases and cut-outs in walls and floors, underfloor ducts and ceiling spaces.
- .5 Patch and make good existing work, where damaged due to alterations to and installation of services.

**12. CORING, DRILLING AND SAW-CUTTING CONCRETE**

- .1 Complete an x-ray inspection of affected concrete area before coring. Employ the services of an experienced x-ray inspector. Confirm with the Owner before coring or drilling, location of reinforcing steel and raceways that may be present.
- .2 Perform coring and drilling after normal working hours, unless specified otherwise. Confirm coring and drilling times with the Owner.
- .3 Wet or dry core drilling and saw-cutting are acceptable. Reduce amount of cooling water used to minimum required and collect water used in suitable containers, or use a suitable vacuum system that will collect water.



- .4 Do not core structural beams or cut conduits or reinforcing steel without written permission from the Owner.

**END OF SECTION**

**1 General**

**1.1 DEFINITIONS**

- .1 Regulatory requirements means laws, by-laws, ordinances, rules, regulations, codes, orders of authorities having jurisdiction, and other legally enforceable requirements applicable to the Work and which are or become in force during the performance of the Work.

**1.2 REGULATORY REQUIREMENTS**

- .1 Except as otherwise specified, Contractor shall apply for, obtain, and pay all fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and the Contract Documents, based on General Conditions of Contract and the following:
  - .1 Regulatory requirements and fees in force on date of Bid submission, and,
  - .2 Any change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission.
- .2 Owner will obtain permanent easements and rights of servitude that may be required for performance of the work.
- .3 Contractor shall give all notices required by regulatory requirements.

**2 Products**

**2.1 CONTRACT DOCUMENTS**

- .1 Contractor shall not be responsible for verifying that contract Documents comply with regulatory requirements, except for where Delegated Design Criteria listed in Section 01 33 16 require a professional to design specific elements of the construction.
- .2 If Contract Documents are at variance therewith, or changes that require modification to Contract Documents are made to regulatory requirements, by authorities having jurisdiction, subsequent to date of bid closing, Contractor shall notify Consulting in writing, requesting direction, immediately such variance of change becomes known to him.
- .3 Owner may make changes required to Contract Documents, and any resulting change in Contract Price or Contract Time will be made in accordance with the General Conditions of Contract.
- .4 If Contractor fails to notify Consultant in writing and obtain Owner's direction as required in paragraph 2.1.2 above, and performs work knowing it to be contrary to regulatory requirements, Contractor shall be responsible for and shall correct violations thereof and shall bear costs, expenses and damages attributable to his failure to comply with provisions of such regulatory requirements.

## **2.2 BUILDING CODE**

- .1 Conform to and perform work in accordance with the 2019 Alberta Building Code, except as otherwise indicated in Contract Documents.

## **2.3 PERMITS**

- .1 Building Permit:
  - .1 Contractor shall apply for, obtain and pay for building permit on behalf of the owner, and other permits required for the Work and its various parts.
    - .1 Contractor will require that specific Subcontractors obtain and pay for permits required by the authorities having jurisdiction, where their work is affected by work requiring permits.
  - .2 Contractor will display the building permit and such other permits in a conspicuous location at the Place of the Work.
- .2 Occupancy Permits:
  - .1 Where required by authority having jurisdiction, Contractor shall apply for, obtain, and pay for occupancy permits, including partial occupancy permits.
  - .2 Where Contract Document deficiencies are required to be corrected in order to obtain occupancy permits, including partial occupancy permits, Consultant will issue appropriate instructions to the Contractor for correction to the Work.
  - .3 Contractor shall correct deficiencies in accordance with Consultant's instructions. Where deficiency is not corrected, the Owner reserves the right to make the correction and charge the Contractor for costs incurred.
  - .4 Contractor will turn occupancy permits over to Owner after all Subcontractors have completed their portions of the Work.

**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mock-ups.
- .4 Equipment and system adjust and balance.

**1.2 RELATED SECTIONS**

- .1 Section 01 33 00 – Submittal Procedures: Submission of samples to confirm product quality.
- .2 Section 01 62 00 – Product Options and Substitutions: Material and workmanship quality, reference standards.
- .3 All parts of the Contract Documents apply to and govern the Work of this section.

**1.3 INSPECTION**

- .1 Refer to GC 2.3 - Inspection of the Work.

**1.4 INDEPENDENT INSPECTION AGENCIES**

- .1 Independent Inspection/Testing Agencies will be engaged by the Owner for the purpose of inspecting and/or testing portions of Work as follows:
  - .1 Concrete Testing
  - .2 Additional testing deemed necessary
- .2 Equipment required for executing inspection and testing will be provided by appointed agencies.
- .3 Where materials are specified to be tested, deliver representative samples in required quantities to testing laboratory.
- .4 The Contractor will pay for the following testing and inspection services:
  - .1 Retesting and Re-inspection of Work by Independent testing agencies, which was rejected after the initial testing which was paid for by the Owner.
  - .2 Inspection and testing required by law, ordinances, rules, regulations or orders of public authorities.
  - .3 Inspection and testing performed exclusively for the Contractor's convenience.
  - .4 Mill tests and certificates of compliance.

- .5 Tests specified to be carried out by the Contractor under the supervision of BR2 Architecture.
  - .6 Testing adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
  - .7 Materials, scaffolding and labour required to facilitate testing.
  - .8 After rectification, re-testing of work found deficient by previous tests.
- .5 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by BR2 Architecture no cost to the Owner. Pay costs for retesting and reinspection.

#### **1.5 ACCESS TO WORK**

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

#### **1.6 PROCEDURES**

- .1 Notify the appropriate agency and BR2 Architecture a minimum of 48 hours in advance of the requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples. Provide transport of samples as required by the testing agency.

#### **1.7 DEFECTIVE WORK**

- .1 Refer to GC 2.4 – Rejected Work.

#### **1.8 REPORTS**

- .1 Submit (3) three copies of inspection and test reports, if tests are provided by the Contractor, to BR2 Architecture. Submit (1) One copy to the Owner.
- .2 Provide copies to Subcontractor of work being inspected or tested and/or manufacturer or fabricator of material being inspected or tested.

#### **1.9 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 the Contract Documents or beyond those required by the law of the Place of Work shall be appraised by BR2 Architecture may be authorized as recoverable.

#### **1.10 MOCKUP**

- .1 Provide mock-ups for the items of work as specified in the individual specification Sections.
- .2 Co-ordinate construction of mock-ups so that the same personnel will supervise construction of the various parts as will do so in the finished Work.
- .3 Co-ordinate construction of mock-ups so that the same personnel will supervise construction of the various parts as will do so in the finished Work.
- .4 Construct sample areas at location designated by BR2 Architecture.
- .5 Prepare mock-ups for BR2 Architecture's review with reasonable promptness and in an orderly sequence so as not to cause any delay in the Work.
- .6 Failure to prepare mock-ups 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.
- .7 Where required, provide mock-ups which involve work of more than one trade, i.e - exterior wall mock-ups, which include windows and frames, curtain wall, air/vapour barriers, Z girts, strapping, insulation, flashing and cladding.
- .8 If requested, BR2 Architecture will assist in preparing a schedule fixing the dates for preparation.
- .9 Sample installations must indicate materials, patterns, joints, colours, shades, installation methods and level of workmanship.
- .10 Adjust sample installations as required to conform with the referenced standards, the drawings, and this specification, and to gain acceptance by the Consultant, at no additional cost to the Owner.
- .11 Accepted sample installations will become the standard for the project and may be incorporated into the Work, if the mock-up is in an undisturbed condition at time of Substantial Performance of the Work and may become part of the completed Work where they form a part of the completed Work. Any work which does not match the accepted mock-ups will be rejected and replaced to match accepted mock-ups.

#### **1.11 EQUIPMENT AND SYSTEMS**

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

- .2 Prepare reports in accordance with requirements for Section 01 78 39 Project Record Documents.

**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Construction aids.
- .2 Traffic controls.
- .3 Office and sheds.
- .4 Project identification.
- .5 Temporary Facilities

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.

**1.3 GENERAL**

- .1 Contractor to submit a proposed site hoarding, lay-down and office layout to the consultant for review and approval prior to mobilization to the site.
- .2 Contractor shall restore to pre-existing condition any surfaces, landscaping, products or equipment damaged as result of this contract.

**1.4 INSTALLATION AND REMOVAL**

- .1 Contractor to provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

**1.5 OFFICES**

- .1 Provide and maintain, in a clean and orderly condition, during progress of Work, adequately lighted, heated and ventilated lockable temporary office shed or trailer.
- .2 Office to be minimum of 10 m<sup>2</sup> in area, equipped with a desk, telephone, 2 chairs, filing 2 cabinet, layout table, and plan hanging files.
- .3 Provide Contractor's offices with space for filing and layout of Contract Documents and Contractor's normal site office staff. Provide meeting room of adequate size to hold all required meetings.
- .4 Provide adequate required first aid facilities as required by the Authority Having Jurisdiction.
- .5 Provide suitable mail slot for the receipt of letters, drawings, or packages after normal working hours.
- .6 Subcontractors may provide their own offices as necessary. offices within the hoarded area. Direct the location of these offices within the hoarded area.



## **1.6 SECURITY**

- .1 Assume full responsibility for any losses or damages to materials, fixtures or equipment whether due to failure to properly secure the work site or for any other reason whatsoever.
- .2 Ensure that access locations in hoarding to the work site are securely locked after working hours and during holidays, and that equipment and machinery, within the work site hoarding area, is properly locked or otherwise rendered inoperable to any unauthorized individuals.
- .3 As the Work progresses, ensure that all openings to buildings are properly closed in with secure barricades. Work to exterior walls must be scheduled so that the walls can be made secure against forced entry at the completion of each workday.

## **1.7 PARKING**

- .1 Availability of off-site parking shall be at the sole discretion of the Owner.

## **1.8 PROTECTION**

- .1 Carefully maintain existing benchmarks, monuments and other survey control references.
- .2 Take precautions at all times to protect persons, including the public, Contractor's employees, Subcontractor's and their employees, and property affected in any way by the work whether direct or incidental. Especially guard against and eliminate hazardous conditions.
- .3 Protect work and materials from damage due to building operation, from action of the elements, from carelessness of Contractor's employees or Sub-contractors and their employees, from vandalism and from any other cause until completion and the Owner's acceptance of the work.
- .4 Secure covers for openings into ducts, piping, fixtures and appliances both before and after setting into place to prevent obstruction, breakage and disfigurement.
- .5 Protect Work against possible damage from:
  - .1 Ground water and rain water.
  - .2 Snow, ice and frost. Remove snow, ice and frost where necessary for efficient progress.
  - .3 Climatic and weather conditions.
  - .4 Fire.
- .6 Be responsible for damage incurred, and remove and replace with new Work at no extra cost to the Owner.
- .7 Protect adjacent roads and private property from damage during construction.
- .8 Provide and maintain all necessary overhead protection in public areas during the

progress of the Work.

- .9 Protection of Off-site and Public Property:
  - .1 Protect adjacent private and public property from damage during the performance of the work.
  - .2 Be responsible for all damages incurred due to improper protection.
  - .3 Remove combustible debris from site daily and deposit in refuse containers in accordance with the Waste Management Plan.
- .10 Protect soils that will be reused in landscaped areas from contamination by fuels and construction waste.

### **1.9 PROTECTION OF BUILDING FINISHES AND EQUIPMENT**

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of the work.
- .2 Provide all necessary screens, covers, hoardings as required.
- .3 Cover stair treads including nosings, with plywood or OSB sheathing.
- .4 Provide three sided full height protective covers to door frames.
- .5 Immediately upon completion of aluminum frame installation, provide heavy cardboard covers to all interior anodized or painted aluminum window and door frames.
- .6 Immediately upon completion of installation of finished flooring provide protective cover sheet to top surface. Retain protection until inspection for Substantial Completion.
- .7 Immediately upon completion of installation of millwork provide protective cover sheet to counter top surface. Retain protection until inspection for Substantial Completion.
- .8 Be responsible for damage incurred due to lack of protection or improper protection.
- .9 Provide preventative measures to minimize wear and tear both on and off the site and restore areas damaged by Construction activities.

### **1.10 EXISTING SERVICES**

- .1 Existing services and structures include pipelines, culverts, ditches, manholes, catch basins, pole lines, other items which are part of an existing drainage, sewerage, water, gas, power, telephone, swales, fences and buildings.
- .2 Make arrangements with the Owner of existing services to determine the actual location of underground services which may affect the Work. Cooperate with owners of existing services and obey their notices. Repair any damage which occurs, including damage because of underground service which the Owner operations.

- .3 Maintain the flows in all ditches, water courses, watermains, sewers and drains encountered during the Work.
- .4 Cap, plug, disconnect, relocate or divert all utilities interfering with construction operations and report unidentified utilities to the Consultant. Take necessary action to prevent damage.
- .5 Take proper measures to maintain access to existing manholes, catch basins, electrical pull boxes, fire hydrants, valve boxes and allied services underground and on the surface.
- .6 No additional payment will be made for this work, the cost being deemed to be included in the Contract.

#### **1.11 SPECIAL CONTROLS**

- .1 Noise and Dirt:
  - 1 Alert the Owner in advance of performing work creating unusual noise and dirt and schedule work at times mutually agreeable.
- .2 Explosive Actuated Fastening Tools:
  - .1 Do not use explosive actuated fastening tools on this project without the prior written acceptance of the Town of Peace River.
  - .2 When using explosive actuated fastening tools conform to the requirements of CSA Z166 - "Explosive Actuated Fastening Tools" and the requirements of the authority having jurisdiction.
  - .3 Operate tools only by persons possessing an operator's certificate indicating that they are qualified to use such tools.

#### **1.12 PREVENTING MOULD DURING CONSTRUCTION**

- .1 Monitor interior relative humidity conditions in relation to surface temperatures to prevent generation of moisture that may contribute to mould growth on the surface of organic construction materials.
- .2 If using temporary heaters, use a type that exhausts combustion products directly to the exterior of building enclosures. Do not use temporary heaters that exhaust combustion products into building enclosures.
- .3 Install insulation concurrently with air/vapour barrier or vapour retarder.
- .4 Protect all organic construction materials from the elements, before, during, and after their installation.
- .5 Refer to CCA82-2004 "Mould Guidelines for the Canadian Construction Industry", published by the Canadian Construction Association, for additional information about

mould, its implications and recommendations on its prevention.

- .6 Promptly report to the Consultant any mould growth observed at the work site. If the Consultant determines that such mould growth was caused by the Contractor's operations, the Contractor must promptly remove it in accordance with procedures prescribed by the Consultant, at no cost to the Owner.
- .7 Include third party report of clean-up.

### **1.13 PROJECT CLEANLINESS**

- .1 Maintain the Work in tidy condition, free from the accumulation of waste products and debris. Follow sustainable construction practices as outlined in Section 01 74 19.
- .2 Control accumulation of waste materials and trash. Recycle or dispose off site at regular intervals accepted by the Consultant, and in compliance with the waste management procedures specified in Section 01 74 19.
- .3 Remove waste material and debris from the site and deposit in appropriate waste container at the end of each working day. Do not allow dirt, debris or discarded materials to accumulate on site.
- .4 Provide recycling bins appropriately labelled for each required recycled material in a designated area within hoarded area. Transport recyclables to the designated area and carefully sort them into appropriate recycling bins. Do not co-mingle materials as co-mingled waste cannot be diverted from the landfill.
- .5 Provide refuse bins for non-recyclables, located where designated within hoarded area. Transport refuse to the bins. Refuse classified as hazardous waste must be disposed of in accordance with all applicable regulations.
- .6 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.
- .7 Store waste materials within the confines of the site hoarding.
- .8 Comply with local ordinances and by-laws relating to littering of public streets. Take proper precautions to prevent the depositing of mud on any road-ways adjacent to the construction site. Immediately cleanup deposited mud or debris, otherwise the Consultant may have the necessary clean-up work carried out and charge any costs incurred back to the Contractor. The foregoing also applies to roads on the Owner's property.
- .9 During excavation operations, the route used by trucks from the site to the disposal area is to be kept clean at all times. When site conditions, require, wash down wheels of vehicles leaving the site, power cleaned or otherwise clean street surfaces and/or wash trucks to prevent dust and maintain the streets in a clean condition. Frequency of cleaning will depend on conditions.

### **1.14 MAINTENANCE OF TEMPORARY FACILITIES**

- .1 Maintain and pay for all temporary facilities required for the successful completion of the project for the duration of the project. This includes during any period which the work may be stopped for any reason including but not limited to inclement weather, holidays, and periods during which “Stop Work” orders are in effect.

**1.15 POLLUTION CONTROL**

- .1 Maintain temporary pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant to local authority’s emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control in construction areas.

**1.16 ENVIRONMENTAL CONSIDERATIONS**

- .1 Where choices exist, use products and materials with recycled content/regional content or resource efficient characteristics.
- .2 In the selection of the products and materials, especially adhesives, mastics, membranes and the like, use those with the following characteristics:
  - .1 Water based.
  - .2 Water soluble.
  - .3 Water clean-up.
  - .4 Non-flammable.
  - .5 Biodegradable.
  - .6 Low Volatile Organic Compound (VOC) content.
  - .7 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
  - .8 Manufactured without compounds which contribute to smog in the lower atmosphere.
  - .9 Does not contain methylene chloride.
  - .10 Does not contain chlorinated hydrocarbons.
  - .11 Recycled content: post-consumer or post-industrial waste.

**1.17 SLEEVES, ANCHORS, HANGERS AND SUPPORTS**

- .1 Provide and set sleeves where conduits pass through masonry or concrete.
- .2 Do not pierce concrete slabs with hanger wires, rods, brackets, bolts, inserts and other connections, except as authorized by the Consultant. Submit methods of fixing to the Consultant for acceptance, prior to commencement of operation.
- .3 Be responsible for all system pipe, conduit and equipment anchors, hangers and support systems and connections to building structure and employ a Professional Engineer registered in the Province of Alberta to design such anchors, hangers, support systems and connections to building structure. Make engineering design notes available to the Consultant upon request.

**1.18 FIELD MARKING**

- .1 Do not use wick pen to mark face of products to be installed in the Work. Such pen marks will show through applied paint or vinyl coatings and the like, in due course. Be responsible for and remedy such defects, classified as "latent defects" regardless of when they occur.

**1.19 SALT**

- .1 No salt is to be used on this project under any circumstances for ice and snow removal or as an addition to concrete.

**1.20 FIRE FIGHTING EQUIPMENT**

- .1 Conform to Part 8 of the Alberta Building Code 2014 with regard to fire protection and safety during construction of the Work.
- .2 Take special precautions against fire. Comply with all mandatory requirements.
- .3 Whenever workers leave the job after using hazardous equipment, a thorough check must be made to ensure that there is not a possibility of fire resulting from the Work.
- .4 Provide adequate fire extinguishers on the premises during the course of construction of the types and sizes recommended by the authority having jurisdiction for control of fires resulting from the particular work being performed. Instruct workers in their use.
- .5 Place all extinguishers in the immediate vicinity of the work being performed ready for instant use.
- .6 Provide minimum one fire extinguisher in each equipment and tool shed, temporary office and material storage shed.
- .7 In the use of especially hazardous types of equipment such as torches and welding equipment, do not commence work or use equipment unless fire extinguishers of an approved type and capacity are placed in the working area and are available for immediate use by the workers using the above mentioned equipment. In addition to large units in the area, provide minimum 20 lb. ABC type extinguisher, fully charged, mounted onto welding carts to provide immediate protection.
- .8 Portable fire extinguishers must be visually checked daily, prior to commencement of Work to ensure the units are operational.
- .9 Observe all regulations of the local fire department and take all necessary precautions to prevent fires.
- .10 Maintain all fire extinguishers in good condition. If used, immediately recharge or replace.
- .11 Where subjected to low temperatures, use anti-freeze type extinguishers.

- .12 Handle gasoline and like combustible materials with good, safe practice.
- .13 Remove highly combustible debris from site daily.
- .14 During the full time of construction, maintain free unobstructed access to all parts of the building for local fire department equipment and maintain levels of safety and to the satisfaction of the fire marshall.
- .15 Provide all necessary temporary fire standpipes and hose, or other approved fire extinguishing equipment as required by the nearest fire department, or directed by the Consultant, in the building(s) until the permanent fire protection system is in the building(s) is accepted for use by the Consultant. The permanent fire standpipe may be used for temporary use.

#### **1.21 HOARDING**

- .1 Erect hoarding around entire perimeter of site and internal phased areas to protect the public, workers, public and private property from injury or damage and to the approval of the authority having jurisdiction.
- .2 Provide hoarding with prefabricated temporary steel framed construction fence with mesh, from slab to underside of structure, with sections interlocked together and fence being self supporting, protecting public and private property from injury or damage. If required by the Alberta Building Code provide fire rated hoarding to the satisfaction of the Authority Having Jurisdiction.
- .3 Provide a shop drawing indicating hoarding plan, including dimensions, configurations and access gates.
- .4 Provide lockable gates within hoarding for access to site by workers and vehicles. Ensure hoarding is completely secure when work is not in progress.
- .5 Provide wind breaks and sun shades as required to allow proper setting and curing of cementitious materials.
- .6 Prevent sprayed materials from contaminating air beyond application area, by providing temporary enclosures.
- .7 Provide enclosures around piles and separated materials pursuant to the waste management plan specified in Section 01 74 19.
- .8 Locate all construction trailers, garbage chutes, garbage bins, hoists, equipment, tools and the like, within the confines of the exterior hoarding.
- .9 Remove barriers prior to completion and final acceptance. Patch and repair surfaces to original condition damaged by erection of barriers.

#### **1.22 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard railings and barricades around deep excavations, open

shafts, open stair wells, open edges of floors and roofs, garbage chutes and hoists. Design to best practices and Workers Compensation Board requirements.

- .2 Provide as required by authority having jurisdiction.
- .3 Neatly assemble and firmly brace.
- .4 Maintain as required during construction period.
- .5 Remove barriers prior to completion and final acceptance. Patch and repair surfaces to original condition damaged by erection of barriers.

### **1.23 WEATHER ENCLOSURES**

- .1 Provide weather tight closures to unfinished door and window openings, top of shafts and other openings in floors and roofs.
- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.
- .3 Provide weather enclosures and heating for exterior work, including but not limited to, concrete, masonry, roofing, air/vapour barriers, dampproofing, sealants and the like, during cold weather. Ensure that the temperatures specified in the individual specification Sections, are maintained within the weather enclosures until all such work has thoroughly cured or set. Do not remove such heating and weather tight enclosures until such time as acceptable to the Consultant.
- .4 Make allowance for sufficient to cover full, continuous working operation through normal weather conditions, without interruptions or shutdowns.

### **1.24 HOISTING**

- .1 Provide, operate and maintain hoists and cranes required for moving of workers, material and equipment.
- .2 Operate hoists and cranes using qualified operators.

### **1.25 SCAFFOLDING**

- .1 Provide and maintain scaffolding, ramps, ladders, swing stages, platforms and temporary stairs.
- .2 Erect scaffolding independent of walls. Use scaffolding with the least possible interference with the Work. Construct and maintain scaffolding in rigid, secure and safe manner. Remove scaffolding promptly when no longer required.
- .3 Erect and place scaffolding to permit convenient access to all levels for all workers, the authority having jurisdiction, the Consultant and the Owner.



**1.26 DE-WATERING**

- .1 Provide temporary drainage and pumping facilities compliant with the ESC Plan to maintain excavations and site free of standing water, to the approval of the authority having jurisdiction.
- .2 Submit shop drawings of proposed dewatering systems for review in accordance with this Section.
- .3 Keep excavations free of water while work is in progress.
- .4 Keep excavations free of water and protect open excavations against flooding and damage due to surface run-off, while work is in progress.
- .5 Protect open excavations against flooding and damage due to surface run-off.
- .6 Handle discharged water in strict accordance with all applicable environmental regulations and to the satisfaction of the Authority Having Jurisdiction and to conform to LEED® program and ESC Plan requirements. Dispose of water in a manner not detrimental to public and private property, or any portion of work completed or under construction.
- .7 Provide flocculation tanks, setting basins, or other treatment facilities to remove suspended solids or other materials before discharging to storm sewers, water courses or drainage areas, in accordance with local authority requirements.
- .8 Bear all costs for remedial work, and/or the cost to remove saturated material and install additional material to replace saturated material resulting from the failure to carry out the recommended dewatering techniques.

**1.27 SITE STORAGE AND OVERLOADING**

- .1 Confine the Work and the operations of employees to limits indicated by the Contract Documents. Do not unreasonably encumber the premises with Products.
- .2 Do not load or permit to be loaded, any part of the Work, with weight or force that will endanger the Work.
- .3 Ensure every temporary support is as strong as the permanent support.
- .4 Do not place loads on concrete floors until they have obtained their permanent set and the Consultant's authorization has been received.

**1.28 ACCESS TO SITE**

- .1 Maintain free and unimpeded access to and egress from site at all times.
- .2 Whenever interference with normal street and sidewalk traffic becomes necessary for proper and convenient performance of the work, and no satisfactory detour route exists, provide satisfactory detour, temporary bridge, or other proper facility for traffic to pass

around or over interference, and maintain in satisfactory condition as long as interference continues. Provide before beginning interference.

- .3 Access to Site: Provide and maintain access roads, sidewalk crossing, ramps and construction runways as may be required by workers for access to and on site.

### **1.29 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain flag persons, traffic signals, barricades and flares/lights/lanterns as required to perform the Work and protect the public.
- .2 Maintain access to all portions of the site for firefighting equipment to the satisfaction of the local Fire Department and the Owner's representative.

### **1.30 SANITARY FACILITIES**

- .1 Provide sufficient portable sanitary facilities during the construction period for workers, in accordance with local health authorities.
- .2 Maintain in clean condition.
- .3 The use of the permanent washroom facilities will not be permitted.
- .4 Provide separate facilities, as required, for men and women, appropriately identified.
- .5 Remove and disinfect area on completion of work.

### **1.31 WATER SUPPLY**

- .1 Potable water for construction use is available for use.
- .2 Provide all hoses and other means of distribution as required, from the designated source.
- .3 Arrange for connection with appropriate utility company and pay all costs for installation, maintenance, consumption and removal.
- .4 Provide utility reduction items such as reducing valves. Provide necessary piping, connections, valves, hoses, etc. and make same available to all trades throughout the project.
- .5 Take precautions to ensure no disturbances are transmitted to the existing system.
- .6 Pay for utility charges at prevailing rates.

### **1.32 TEMPORARY HEATING AND VENTILATING**

- .1 Provide and pay for temporary ventilation required during construction period, including attendance, maintenance and fuel. A natural gas source is available for the contractor to

tie into for construction purposes, provide all means of distribution as required, from the designated source. At completion of Work, remove all temporary apparatus, restore to as is condition.

- .2 Construction heaters used inside the building must be vented to outside or be flameless type. Solid fuel salamanders not permitted.
- .3 Maintain temperatures of minimum 15 degrees C in areas where construction is in progress, unless indicated otherwise in the Product specification Section.
- .4 Provide adequate ambient temperatures and humidity levels for storage, installation and curing of materials.
- .5 Ventilate heated areas and keep building free of exhaust or combustion gases and to meet health regulations for a safe working environment. Prevent hazardous accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
- .6 If propane gas is required for temporary heating, be aware of and accountable for the potential problems which have been experienced with condensation containing mineral oil or mineral spirits in solution which in turn attack glazing sealants and compounds. Be entirely responsible for preventing all detrimental effects from the use of propane gas in all aspects of the materials and finishes used in construction of the Work.
- .7 The permanent heating system of the building, or portions thereof, may be used when available only upon written acceptance of the Owner. Be responsible for damage thereto. Use of the permanent heating system, prior to Substantial Performance of the Work will not impact on the warranty obligation as noted in the specifications.
- .8 Operate permanent heating system under conditions which ensure no temporary or permanent damage, under the direction of the Heating Subcontractor who is fully responsible for the safety of the system and its operation, including the provision of trained operators. Operate fans at proper resistance with filters installed. Change filters at regular intervals. Operate with proper safety devices and controls installed and fully operational. Where applicable, operate systems only with treated water as specified.
- .9 When permanent systems are used for temporary heating, provide alarm indicating system failure.
- .10 Where pumps are used for temporary heating, replace mechanical seals, regardless of condition, with new mechanical seals.
- .11 Restore to new condition, any portion of the permanent heating system used during construction, prior to the date of Substantial Performance of the Work.
- .12 Date of Substantial Performance of the Work and Warranties for heating system do not commence until entire system is in as near original condition as possible and is so certified by Consultant.

- .13 Pay all costs for maintaining temporary heat, when using permanent heating system.
- .14 Be responsible for damage to the Work due to failure in providing adequate heat and protection during construction.

**1.33 HUMIDITY CONTROL**

- .1 Do not exceed the normal building operating relative humidity of the air in the building, during construction. Provide appropriate humidity for the work being performed.
- .2 To achieve this requirement, it may be necessary to use portable temporary heating units of the type which heat and force fresh air into the building.
- .3 Vent moist air to the exterior. Avoid causing pressurization of the building during construction.

**1.34 TEMPORARY POWER AND LIGHT**

- .1 A temporary power source is available during construction at no cost to the contractor. If the power source is not adequate for construction purposes the contractor is responsible for obtaining a power source at their expense to meet construction needs. Provide all means of distribution as required, from the designated source.
- .2 Wiring for temporary power is to be entirely separate from permanent power installation, except for a common supply connection at either an electrical service or distribution centre.
- .3 Provide all connections, cabling, switching and metering equipment to the approval of the local power supply authority.
- .4 Provide utility reduction items such as transformers, connection to utility source, distribution of utility, metering, consumption, maintenance and removal.
- .5 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.
- .6 Provide centrally located power panels for the use of all Subcontractors.
- .7 Provide and maintain temporary lighting throughout the project. Provide a level of illumination on all floors and stairs of not less than 15 foot candles. Install lamps in suitable location to obtain unobstructed light over the entire area. Replace burnt out or missing lamps.
- .8 When work is performed at night or where daylight is obscured, provide artificial light sufficient to perform work properly and to permit thorough review.
- .9 Take precautions to ensure that electrical disturbances are not transmitted to permanent electrical distribution system.
- .10 The permanent power and lighting system of the building, or portions thereof may be

used when it is available, subject to acceptance of the Consultant. Be responsible for all damages thereto. Pay all costs of maintaining and providing temporary power and light when using permanent system.

- .11 Upon completion of work for which the permanent lighting system has been used, replace all lamps and leave the entire system in near original condition as possible.

### **1.35 TEMPORARY TELEPHONE, FAX AND COMPUTER**

- .1 Provide and pay for temporary telephone, FAX machine and computer with internet access and E mail capability, necessary for own use and use of the Consultant. Pay phone not acceptable.

### **1.36 EQUIPMENT/TOOL/MATERIALS STORAGE**

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds or trailers suitable for storage of tools, equipment and materials and to protect from weather or construction. Materials, equipment and tools may be stored within the confines of the Work area.
- .2 Locate materials required to be stored on site in a manner to cause the least interference with work activities.
- .3 All Contractor's and Subcontractor's tools and equipment must be in good physical condition.

### **1.37 FUELLED AND GAS WELDING MACHINES AND AIR COMPRESSORS**

- .1 Each respective user of fuelled or gas welding machines or air compressors is responsible for such equipment.
- .2 Wherever possible, locate on outside of building. Ensure apparatus is not open to physical damage and extremes of heat and is securely anchored.

**END OF SECTION**

**1 General**

- .1 Implement and monitor the sediment and erosion control plan outlined herein, in compliance with all municipal provincial or federal acts and regulations.

**1.1 SECTION INCLUDES**

- .1 Section includes, but is not limited to:
  - .1 Implementing and monitoring the sediment and erosion control plan outlined herein, in compliance with all municipal provincial or federal acts and regulations.

**1.3 REFERENCES**

- .1 Erosion and Sedimentation control objectives are as follows:
  - .1 To minimize the disturbance of existing vegetation and soil on the construction site.
  - .2 Prevent the loss of soil from the site (including topsoil stockpiled for reuse) resulting from storm water runoff, wind erosion and construction activities.
  - .3 Prevent sedimentation of storm water or receiving streams.
  - .4 Prevent pollution of the air with dust and particulate matter.
  - .5 Meet or exceed 2003 US EPA Construction General Permit or equivalent local standard, whichever is more stringent.

**1.4 DESCRIPTION OF WORK**

- .1 Be responsible for Erosion and Sedimentation Control requirements for the overall site including Erosion and Sedimentation Control monitoring and maintenance. Manage and control the overall project Erosion and Sedimentation Control system for the duration of the entire project.
- .2 Conduct an assessment of the construction site to determine pre-development conditions (including local topography, soil types, water flows, etc.).
- .3 Implement and document measures to achieve the erosion and sedimentation control objectives listed above.
- .4 Follow strategy based on the best management practices for stabilization and structural measures outlined in 2003 US EPA Construction General Permit.
- .5 Minimize the amount of disturbed soil and preserve existing vegetation by establishing construction boundaries. Use stakes to indicate the limits of construction, grading and disturbance. Clearly mark the trees to be preserved and protect them from ground disturbances around the base of the tree.
- .6 Show the stabilization and structural measures selected for the site on the drawings.

**1.5 REFERENCES**

- .1 2003 US EPA Construction General Permit.
- .2 Master Municipal Construction document (MMCD) vol. II.

## 1.6 REGULATORY REQUIREMENTS

- .1 Comply with all requirements and regulations of the Federal Department of Fisheries and Oceans and of the Alberta Ministry of Environment and all other applicable regulations, with regards to sedimentation and erosion control measures.
- .2 Be aware of all relevant bylaws affecting activities on site, and comply with all bylaw requirements.
- .3 Assume all responsibilities and obligations described by the accepted erosion and sedimentation control plan. Be fully responsible for all stoppages of work as a result of noncompliance with this plan.
- .4 Implement measures of the erosion and sedimentation control plan for the entire duration of the Construction Contract. During cessation of construction activity due to winter shutdown (if any), continue to provide erosion and sedimentation control including monitoring and maintenance measures in accordance with the Erosion and Sediment Control Plan.
- .5 Submit an Erosion and Sediment Control Plan to consultant and the Authority having Jurisdiction for approval prior to commencement of the Work.
- .6 Maintain and operate in a manner acceptable to the authorities having jurisdiction, who will conduct site visits. Arrange all such site visits with the appropriate authority having jurisdiction.
- .7 Construction work will be suspended if the regulatory requirements are not satisfactorily complied with. No extra compensation or extension of time for the Contract will be allowed, whatsoever.
- .8 Construct, regularly inspect, maintain and repair as necessary, such facilities until such time that the risk of silt and/or deleterious materials entering the storm sewer drainage system for the construction phase has passed.
- .9 There is a zero discharge policy regarding saw cutting slurry entering the storm sewer system. Saw cutting slurry may contain substances such as sediment, hydrocarbons from asphalt cutting or high pH water from concrete cutting that may be harmful to the aquatic environment. All saw cutting slurry must be contained in a manner that will ensure that none of the materials enter the stormwater system, in accordance with the Authority having Jurisdiction requirements and the following:
  - .1 Minimize the amount of water used to cool and lubricate the saw, so as to minimize the amount of slurry generated.
  - .2 Use anti-freeze only if necessary, Use the minimum amount required to prevent water from freezing.
  - .3 Cover manholes to prevent slurry from entering them.
  - .4 Cover/block catch basins to prevent slurry from entering them.
  - .5 Direct saw cutting slurry into an excavation, rather than allowing it to migrate to the catch basin.
  - .6 Contain saw cutting slurry in the immediate work area wherever possible, not

allowing it to run across the road and to a catch basins so as to minimize the amount of clean-up after cutting is completed. Containment may be achieved using socks and/or absorbent material.

- .7 Clean up contained slurry or slurry remaining on the road. Place an absorbent material on the slurry and clean up as a solid either manually or by calling a street sweeper; pay all costs for street sweeper). Alternatively, collect as a slurry using an appropriate sized vacuum. (Eg. Vacuum sweeper or Vactor Unit for large amounts of wet/dry vacuum cleaner for small amounts.).
- .8 Use a saw with a built-in slurry containment system.
- .9 Dispose of solid clean up material as regular garbage.
- .10 Dispose of liquid clean-up material appropriately.

### **1.7 SITE DOCUMENTATION**

- .1 Maintain one complete, up-to-date copy of the Erosion and Sedimentation Control Plan at the job site.
- .2 Post up-to-date copies of the Erosion and Sedimentation Control Plan in a location that is easily accessible for review by all site workers.
- .3 Report on Erosion & Sediment control at weekly intervals. Ensure that the summary details the regular monitoring (including photographs) of Erosion and Sediment control including control measures utilized, modifications required and their site location.
- .4 In the event of winter shutdown periods or cessation of construction activity continue to provide monitoring and maintenance of ESC Measures on a bi-monthly basis and provide ESC Reports with photos, to the Consultant.
- .5 Provide an additional report, confirming inspection of ESC Measures and Maintenance, after each rain or snowmelt event to the Consultant.
- .6 Take photos at all ESC controls as approved by the Consultant (all BMPs e.g., construction entrance and adjacent street, storm water inlets, silt fencing to show condition, catch basins) to provide a visual record demonstrating compliance and cross reference them to the ESC plan.

### **1.8 PRE-CONSTRUCTION MEETING**

- .1 Prior to commencement of Construction, conduct a pre-construction meeting to present the plan to all Contractors and their sub trades. Ensure all Subcontractors receive training on the ESC Plan requirements.
- .2 Describe and promote the Erosion and Sedimentation Control Plan objectives.
- .3 Communicate the requirements of this Section to all Subcontractors.
- .4 Train Subcontractors about proper erosion and sedimentation control protocol.

### **1.9 SCHEDULING**

- .1 Coordinate work with other activities at site to ensure timely and orderly progress of the work. Refer to attached ESC Report Template



**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Reference standards.
- .2 Product quality, availability, storage, handling, protection, transportation.
- .3 Manufacturer's instructions.
- .4 Workmanship, coordination and fastenings.

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 01 45 00 - Quality Control: Quality control and inspection of Work.

**1.3 REFERENCE STANDARDS**

- .1 Within the text of the specifications, reference may be made to the following standards:

ABC – Alberta Building Code  
NBC – National Building Code  
CEC - Canadian Electrical Code (published by CSA)  
CEMA - Canadian Electrical Manufacturer's Association  
CGSB - Canadian General Standards Board  
CSA - Canadian Standards Association  
IEEE - Institute of Electrical and Electronic Engineers  
IPCEA - Insulated Power Cable Engineers Association  
NAAMM -National Association of Architectural Metal Manufacturers  
ULC - Underwriters' Laboratories of Canada

- .2 Conform to these standards, in whole or in part as specifically requested in the specifications.
- .3 If there is question as to whether any product or system is in conformance with applicable standards, BR2 Architecture reserves the right to have such products or systems tested to prove or disprove conformance.
- .4 The cost for such testing will be born by the Owner in the event of conformance with Contract Documents or by the Contractor in the event of non-conformance.
- .5 Conform to latest date of issue of referenced standards in effect on date of submission of bids, except where a specific date or issue is specifically noted.
- .6 Provide on site, for reference purposes, all concrete reference standards identified in Sections 03 30 00.

**1.4 QUALITY**

- .1 Products, materials, equipment and articles (referred to as Products throughout the specifications) incorporated in the Work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective Products, whenever identified prior to the completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should any dispute arise as to the quality or fitness of Products, the decision rests strictly with the Consultant based upon the requirements of the Contract Documents.
- .4 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item throughout the building.
- .5 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

#### **1.5 AVAILABILITY**

- .1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of Products are foreseeable, notify BR2 Architecture of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In the event of failure to notify BR2 Architecture at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the
- .3 BR2 Architecture reserves the right to substitute more readily available products of similar character, at no increase in Contract Price.

#### **1.6 STORAGE, HANDLING AND PROTECTION**

- .1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in the Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store sheet materials on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .5 Remove and replace damaged Products at own expense and to the satisfaction of the Consultant.

#### **1.7 TRANSPORTATION**

- .1 Pay costs of transportation of Products required in the performance of Work.
- .2 Transportation cost of Products supplied by the Owner will be paid for by the Owner. Unload, handle and store such Products.

**1.8 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's written instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
- .2 Notify BR2 Architecture in writing, of conflicts between the specifications and manufacturer's instructions, so that BR2 Architecture may establish the course of action.
- .3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes BR2 Architecture to require removal and re-installation at no increase in Contract Price.

**1.9 QUALIFICATIONS OF SUPERINTENDENT**

- .1 Provide resume indicating qualifications of superintendent upon contract award.

**1.10 WORKMANSHIP**

- .1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required Work is such as to make it impractical to produce required results.
- .2 Do not employ any unfit person or anyone unskilled in their required duties. BR2 Architecture reserves the right to require the dismissal from the site, workers deemed incompetent, careless, insubordinate or otherwise objectionable.
- .3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with BR2 Architecture, whose decision is final.

**1.11 CO-ORDINATION**

- .1 Insure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

**1.12 CONCEALMENT**

- .1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation, inform the BR2 Architecture if there is a contradictory situation. Install as directed by BR2 Architecture.

**1.13 REMEDIAL WORK**

- .1 Refer to GC 41.
- .2 Perform remedial work required to repair or replace the parts or portions of the Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

**1.14 LOCATION OF FIXTURES**

- .1 Consider the location of fixtures, outlets, and mechanical and electrical items indicated as approximate. Coordinate all fixture locations with architectural, structural, mechanical and electrical drawings.
- .2 Inform BR2 Architecture of a conflicting installation. Install as directed.

**1.15 FASTENINGS**

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in the affected specification Section.
- .4 Space anchors within their load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

**1.16 PROTECTION OF WORK IN PROGRESS**

- .1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Consultant, at no increase in Contract Price.
- .2 Prevent overloading of any part of the building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Consultant.

**1.17 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with a minimum of disturbance to Work and pedestrian and vehicular traffic.

- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in a manner approved by authority having jurisdiction, stake and record location of capped service.

**END OF SECTION**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 07 21 16 - Batt And Blanket Insulation
- .2 Section 07 25 00 - Sheet Air/Vapour Barriers
- .3 Section 07 92 00 - Sealants
- .4 Section 08 44 00 - Aluminum Windows

### **1.2 GENERAL**

- .1 The air/vapour barrier and vapour retarder is comprised of a variety of materials and assemblies that contribute to a complete air/vapour barrier system continuous across the exterior building envelope.
- .2 The General Contractor is responsible for the coordination of the air/vapour system components, including confirming the compatibility of each air/vapour barrier component to one another.
- .3 The General Contractor shall schedule and conduct a pre-activity meeting with each sub-trade responsible for providing a component of the air/vapour barrier system. The pre-activity meeting shall include representatives of the general contractor, sub-contractors, material suppliers.
- .4 The General Contractor shall confirm that the pre-requisites for installation of air/vapour barrier components have been fully satisfied in accordance with the material latest published manufacturer's written instructions. Pre-requisites shall include but not be limited to environmental conditions, substrate preparation, storage and handling of materials, quality control and quality assurance.
- .5 Where the air/vapour system component is comprised of a self adhering or thermo-fusible modified bitumen membrane, the general contractor shall ensure that the sequence of attachment to substrates, flashings and trims has been understood, coordinated and executed.

### **1.3 REQUIREMENTS**

- .1 The General Contractor and subcontractors shall conform to the following requirements to maintain and protect the continuity and integrity of the building vapour and air retarder.
  - .1 During the course of construction each subcontractor shall leave sufficient air/ vapour retarder membrane for subsequent subcontractors to tie into. A minimum of 75mm overlap shall be provided from one component of the air/vapour barrier system to the next.
  - .2 The air/vapour barrier is an integral part of the building thermal enclosure and must be maintained intact and continuous on the interior (warm) side of all exterior surfaces.
  - .3 The air/vapour barrier component comprised of a self adhering or thermo-fusible modified bitumen membrane, must be maintained in tight physical contact with the interior (warm) side of the building enclosure insulation, and must be sealed air and vapour tight to all

designed openings and penetrations and to all other elements of the building vapour retarder system.

- .4 The air/vapour barrier system must be designed to resist air movement into or out of a building enclosure, and must be able to resist air pressures of 2.0 kPa, minimum, without tearing, rupturing or breaking away from its fastening.
- .5 All subcontractors and any persons on the site must take all necessary precautions not to puncture, tear, weaken or damage in any way the air/vapour barrier membrane. Any damage shall be sealed to the BR2 Architecture's approval.
- .6 The air/vapour barrier membrane must always be protected from the cold in the final building by insulation.
- .7 Where foam-in-place insulation is specified or indicated on the drawings to form a component of the air/vapour barrier system, the foam-in-place insulation shall be applied to adjacent substrates to provide an air-tight closure from sheet membranes to adjacent surfaces, including but not limited to metal floor and roof decks, supporting steel structure, window and door frames, cast-in-place concrete and concrete masonry units.
- .8 Where foam-in-place insulation is specified or indicated on the drawings to form a component of the air/vapour barrier system, and the foam-in-place insulation is joining the air/vapour barrier of a wall to a roof or canopy metal deck, the foam-in-place insulation shall fully fill both the TOP SURFACE and the BOTTOM SURFACE of the metal deck to provide an air-tight joint between the roof vapour retarder and the wall vapour barrier. All deck flutes shall be fully filled with foam-in-place insulation.
- .9 Where mastics are used as a component in the air/vapour barrier system, the mastics shall be fully compatible with the air/vapour barrier membrane and the protrusion that is sealed into the air/vapour barrier system.

#### **1.4 QUALITY ASSURANCE**

- .1 The General Contractor shall document the installation of the air/vapour barrier system throughout the course of construction. Digital photographs shall be taken to confirm the juncture of all components of the air/vapour barrier system. Distribute copies of the digital photographs to the consultant when directed to do so.
- .2 The General Contractor shall obtain copies of all manufacturer's field reviews of components of the air/vapour barrier system installation. Provide copies of manufacturer's field reviews to the consultant when directed to do so. The General Contractor shall rectify any deficiencies reported by the manufacturer's representative at no additional cost to the owner.
- .3 The Owner may retain an independent building envelope consultant to conduct periodic reviews of the air/vapour barrier system installation. The General Contractor shall assist the independent envelope consultant in the carrying out of inspections of the air/vapour barrier system.
- .4 The Owner may retain an independent building envelope consultant to complete a thermo-graphic survey of the completed building air/vapour barrier and envelope work. Any deficiencies found in the building envelope / air/vapour barrier installation shall be promptly rectified at no additional cost to the Owner.



**END OF SECTION**

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**1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Substitutions during bidding period: Instructions to Bidders.

**1.2 DEFINITIONS**

- .1 Proprietary specification means a specification which includes one or more proprietary name of product or manufacturers, or both, and may also include descriptive, reference standard, or performance requirements, or any combination thereof.
- .2 Non-proprietary specification means a specification which includes descriptive, reference standard or performance requirements, or any combination thereof, but does not include proprietary names of products or manufacturers.
- .3 Substitution means a product or manufacturer not specified by proprietary name which may be acceptable in place of a product or manufacturer which is specified by proprietary name.

**1.3 PRODUCT OPTIONS**

- .1 For products specified by non-proprietary specification:
  - .1 Select any product by any manufacturer, which meets requirements of Contract Documents.
- .2 For products specified by proprietary specification:
  - .1 Select any product or manufacturer named, or
  - .2 Substitute an unnamed product or manufacturer in accordance with item 1.4 of this section.
- .3 For products specified by proprietary specification and accompanied by words indicating that substitutions will not be accepted:
  - .1 Select any product or manufacturer named; substitutions are not permitted.

**1.4 SUBSTITUTIONS**

- .1 Substitute Products: Where substitute products are permitted, unnamed products will be accepted by the owner, subject to the following:
  - .1 Substitute products shall be the same type as, be capable of performing the same functions as, and meet or exceed the standards of quality and performance of the named product(s). Substitutions shall not require revisions to Contract Documents nor to work of Other Contractors.
- .2 Substitute Manufacturers: Where substitute manufacturers are permitted, unnamed manufacturers will be accepted by the Owner, subject to the following:

- 
- .1 Substitute manufacturers shall have capabilities comparable to those of the named manufacturer(s). Substitutions shall not require revisions to Contract Documents nor to work of Other Contractors.
  - .3 In making a substitution, Contractor represents that:
    - .1 He has investigated substitute product or manufacturer, or both, and has determined that it meets the criteria specified in 1.4.1 and 1.4.2, or both, and
    - .2 He will make any changes to the Work necessitated by the substitution as required for the Work to be complete in all respects, and
    - .3 He waives claims for additional costs and time caused by substitution which may subsequently become apparent.
  - .4 Substitutions shall not be ordered nor installed without Owner's acceptance.
  - .5 If in the Owner's opinion, a substitution does not meet requirements of Contract Documents, Contractor shall, at no extra cost to the Owner, provide a product which, in the Owner's opinion, does meet requirements of the Contract Documents.

#### **1.5 PROPRIETARY SPECIFICATIONS**

- .1 Notwithstanding specified proprietary names of either or both products or manufacturers, products provided shall meet other applicable requirements of Contract Documents. Modify products if necessary to ensure compliance with all requirements of Contract Documents.

#### **1.6 CHANGES TO ACCEPTED PRODUCTS AND MANUFACTURERS**

- .1 Products and manufacturers accepted by the Owner for use in performance of Work of Contract shall not be changed without the Owner's written consent.
- .2 Submit requests to change accepted products and manufacturers to the Owner in writing, including product data indicated in item 1.7.

#### **1.7 PRODUCT DATA**

- .1 When requested by the Owner, submit complete data substantiating compliance of a product with requirements of Contract Documents. Include the following:
  - .1 Product identification, including manufacturer's name and address.
  - .2 Manufacturer's literature providing product description, applicable reference standards, and performance and test data.
  - .3 Samples, as applicable.
  - .4 Name and address of projects on which product has been used and date of each installation.

- .5 For substitutions and request for changes to accepted products, include in addition to the above, the following:
  - .1 Itemized comparison of substitution with named product(s). List significant variations.
  - .2 Designation of availability of maintenance services and sources of replacement materials.

**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Progressive cleaning.
- .2 Final cleaning.

**1.2 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL**

- .1 Provide separate recycled and salvaged material trash bins (at no cost to the trades), on site for the disposal of wood, ferrous metals, non-ferrous metals, paper, gypsum board and miscellaneous trash which is to be recycled and salvaged, and other materials. Provide all trades with guidelines regarding sorting and clean-up of waste materials, at the time of the safety orientation. Ensure that all construction personnel follow the guidelines for disposing of materials in the appropriate trash containers. Do not co-mingle waste.
- .2 Separate, store, protect and handle at the site identified recyclable and salvageable waste products in order to prevent contamination of materials and to ensure recyclability and salvage ability of identified materials. Do not co-mingle materials in bins.
- .3 Set aside and protect mis-delivered and substandard products and materials and return to supplier for credit and replacement.
- .4 Set aside, sort, and protect separated products and materials for collection, reuse on site or elsewhere, by the Contractor or Owner, or salvaged by others.
- .5 Arrange for timely pickups from site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

**1.3 PROJECT CLEANLINESS**

- .1 The Contractor is responsible for maintaining of discipline and general orderliness.
- .2 Continuously daily cleanup equivalent to at least broom-cleaning throughout the performance of the Work within the existing building boundaries including manual clean up of waste products and debris outside the building area or on neighbouring streets.
- .3 Maintain the Work in tidy condition, free from accumulation of waste products and debris, other than that caused by the Owner or other Contractors.
- .4 Remove waste material and debris from the site and deposit in waste container at the end of each working day.
- .5 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

- .7 Lower waste material in a controlled manner: do not drop or throw materials from heights.

#### **1.4 FINAL CLEANING**

- .1 When the Work is Substantially Performed, or when a designated area is deemed "Ready for Occupancy" prior to Substantial Performance, remove surplus products, tools, construction machinery and equipment not required for the performance of the remaining Work.
- .2 Remove waste products and debris other than that caused by the Owner, other contractors or their employees, and leave the Work clean and suitable for the occupancy by Owner.
- .3 When the Work is ready for Construction Completion Inspection, remove surplus products, tools, construction machinery and equipment. Remove waste products and debris other than that caused by the Owner or other Contractors.
- .4 Remove waste materials and the site at regularly scheduled times or dispose of as directed by the consultant. Do not burn waste materials on site, unless approved by the Consultant.
- .5 Use experienced workers or professional cleaners for final cleaning.
- .6 Leave the work broom clean before the inspection process commences.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove grease, stains, spots, marks, labels fingerprints and dirt from interior and exterior decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors, including glass and other polished surfaces.
- .9 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- .10 Seal, shampoo or prepare floor finishes, as recommended by the manufacturer.
- .11 Provide any manufacturer's recommendations with regard to waxing. Waxing of floors by Owner. Resilient floor: provide three (3) cleanings as directed by manufacture's requirements.
- .12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .13 Ensure that cleaning agents and methods do not remove finishes and permanent protective coatings on surfaces being cleaned.
- .14 Wash floor surfaces not finished otherwise: clean metal doors and frames; clean metal work; clean equipment; clean hardware; clean and polish glass on both sides; clean and polish mirrors; vacuum carpet.

- .15 Clean lighting diffusers, lenses and other lighting surfaces.
- .16 Rake clean other surfaces of grounds.
- .17 Broom clean and wash exterior walks, steps and surfaces.
- .18 Remove dirt and other disfiguration from exterior surfaces.
- .19 Clean and seep roofs, gutters, areaways, sunken wells.
- .20 Sweep and wash clean paved areas.
- .21 Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment.

**END OF SECTION**

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**1 General**

**1.1 SECTION INCLUDES**

- .1 Preparation of Documents for Project Close Out.
- .2 Spare parts and maintenance materials.
- .3 Take over procedures.

**1.2 RELATED SECTIONS**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Individual Specifications Sections: Specific requirements for submittals of operation and maintenance and record data.
- .3 Section 01 50 00 - Temporary Facilities and Controls
- .4 Section 01 74 23 –Cleaning

**1.3 PREPARATION FOR DOCUMENTATION OF PROJECT CLOSE OUT**

- .1 After award of Contract begin preparing two lists as follows:
  - .1 List One: Itemize all data that will be required for submittals such as operating instructions, maintenance data, maintenance instructions and brochures, record drawings, spare parts and maintenance materials as required by the Contract.
  - .2 List Two: Itemize all documentation that will be required for submittals such as statutory declarations, Workers Compensation Board letter of good standing, warrantees and bonds which will be required to be submitted and approved by Owner before issuing any payment certificate.

**1.4 SPARE PARTS AND MAINTENANCE MATERIALS**

- .1 Spare parts and maintenance materials provided shall be new, not damaged or defective, and of the same quality and manufacture as Products provided in the Work. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective Products will be rejected, regardless of previous inspections. Replace products at own expense.
- .3 Store spare parts and maintenance materials in a manner to prevent damage, or deterioration.
- .4 Provide spare parts, special tools, maintenance and extra materials in quantities specified in individual specification Sections.
- .5 Provide items of same manufacturer and quality as items in the Work.



- .6 Provide 2% of the project amount for maintenance material of each product specified unless indicated otherwise.

## **1.5 SUMMARY OF PROCESS**

- .1 A Contract acceptance process shall be used to facilitate Owner's acceptance of the Work. The process can be summarized as follows:
  - .1 Ready for Occupancy:
    - .1 Designated areas are able to be used for intended use.
    - .2 Mechanical and electrical systems are fully operational in the designated area.
    - .3 May occur for designated areas prior to Substantial Performance of the Work for the project and is to be capable of being commissioned.
  - .2 Substantial Performance of the Work:
    - .1 Fulfillment of prerequisites to Substantial Performance.
    - .2 Inspection for Substantial Performance.
    - .3 Issuance of Letter of Substantial Performance.
  - .3 Construction Completion of the Work:
    - .1 Fulfillment of prerequisites to Construction Completion.
    - .2 Inspection for Construction Completion.
    - .3 Issuance of Letter of Construction Completion.
  - .4 Total Performance of the Work:
    - .1 Fulfillment of prerequisites to Total Performance.
    - .2 Inspection for Total Performance.
    - .3 Issuance of Letter of Total Performance.
- .2 Refer to General Conditions - Certificates and Payments for specifics to application.

## **1.6 REINSPECTION**

- .1 Should status of the Work require reinspection by Consultant due to failure of Work to comply with Contractor's claims for inspection, Owner will deduct amount of Consultant's compensation for reinspection services from payment to Contractor.

## **1.7. PARTIAL ACCEPTANCE OF WORK**

- .1 When partial utilization of the Work is required and Substantial Completion, Construction Completion or Construction Completion of parts of the Work is a condition of such partial utilization, the applicable requirements specified in this Section shall apply to the parts of the Work to be utilized.

## **1.8 PREREQUISITES TO SUBSTANTIAL COMPLETION**

- .1 Prior to requesting Owner's inspection for Substantial Completion, do the following, not necessarily in order listed:

- .1 Obtain and submit evidence of compliance with regulatory requirements, including the following:
  - .1 Occupancy permit(s).
  - .2 Inspection/operating certificates.
- .2 Remove from project site temporary facilities as specified in Section 01 50 00, along with construction tools, equipment, mock-ups and similar items.
- .3 Complete testing, adjusting and balancing of systems and equipment as specified.
- .4 Complete equipment and systems demonstration and instruction as specified.
- .5 Complete final cleaning as specified.
- .6 Submit project record documents as specified.
- .7 Submit operation and maintenance data as specified.
- .8 Provide spare parts and maintenance materials as specified.
- .9 Submit product warranties and certificates of assurance as specified.
- .10 Ensure that the Work is ready for use for the purpose intended.
- .11 Review Contract Documents and inspect Work to confirm that prerequisites to Construction Completion of Work have been fulfilled and that Work is ready for inspection for Substantial Completion.

## **1.9 INSPECTION FOR SUBSTANTIAL COMPLETION**

- .1 Submit written request to Owner for inspection for Substantial Completion of the Work, certifying that prerequisites specified in General Conditions have been fulfilled and specifying known exceptions in the form of a list of items to be completed, corrected or submitted.
- .2 Owner will within a reasonable time after receipt of Contractor's request:
  - .1 proceed with inspection, or
  - .2 advise Contractor that prerequisites are not adequately fulfilled.
- .3 Results of Owner's inspection for Substantial Completion will form initial Contract Deficiency list.

## **1.10 SUBSTANTIAL COMPLETION OF THE WORK**

- .1 Following inspection, Owner will:
  - .1 issue a Letter of Substantial Completion stating effective date of Construction Completion of the Work, with a copy of the Contract Deficiency list attached thereto, or

- .2 advise Contractor that prerequisites to Substantial Completion are not fulfilled and repeat inspection for Construction Completion as necessary.
- .2 Upon issuance of Letter of Substantial Completion, Owner will assume responsibility for care, custody and control of the Work, including responsibility for:
  - .1 Facility operation, including all systems and equipment.
  - .2 Maintenance.
  - .3 Security.
  - .4 Property insurance.
  - .5 Utility costs.
  - .6 Commencement of Warranty Periods

### **1.11 PREREQUISITES TO CONSTRUCTION COMPLETION**

- .1 Prior to requesting Owner's inspection for Construction Completion, Contractor shall do the following:
  - .1 Ensure that the entire Work, except those items arising from the warranty provisions of the Contract Documents, has been performed to the requirements of the Contract Documents.
  - .2 Review Contract Documents and inspect Work to confirm that prerequisites for Construction Completion of Work have been met and that Work is ready for inspection for Construction Completion.

### **1.12 INSPECTION FOR CONSTRUCTION COMPLETION**

- .1 Submit written request to Owner for inspection for Construction Completion of Work, including copy of Owner's most recent Contract Deficiency list, and certifying that each Contract Deficiency has been corrected or otherwise resolved in a manner agreed to between Owner and Contractor. List known exceptions, if any, in request.
- .2 Owner will within a reasonable time after receipt of Contractor's request:
  - .1 proceed with inspection, or
  - .2 advise Contractor that prerequisites are not adequately fulfilled.

### **1.13 CONSTRUCTION COMPLETION OF THE WORK**

- .1 Following inspection, Owner will:
  - .1 issue a Letter of Construction Completion, stating effective date of Total Performance of Work, or
  - .2 advise Contractor of Contract Deficiencies which must be corrected prior to issuance of Letter of Construction Completion.

### **1.14 PREREQUISITES TO TOTAL PERFORMANCE**

- .1 The prerequisites to Total Performance of the Work are:
  - .1 Total Performance of the Work.
  - .2 Expiry of one year warranty period, excluding extended warranties, if any.
  - .3 Items arising from the one year warranty period required by the Contract Documents shall have been corrected by the Contractor.

**1.15 INSPECTION FOR TOTAL PERFORMANCE**

- .1 Just prior to end of one year warranty period, Owner will conduct an inspection for Total Performance.

**1.16 TOTAL PERFORMANCE OF THE WORK**

- .1 Following inspection, Owner will:
  - .1 Issue a Letter of Total Performance, or
  - .2 Advise Contractor of items which must be corrected prior to issuance of Letter of Total Performance.

**END OF SECTION**

**1. INTENT**

- .1 Contractor shall obtain all specified operation and maintenance data. Using this data, Contractor shall prepare and submit operation and maintenance manuals as specified.

**2. DESCRIPTION OF TYPES OF OPERATION AND MAINTENANCE DATA**

- .1 Contractor Designed System Data: includes the following for systems designed by Contractor:
  - .1 System Design Criteria
  - .2 System and Controls Descriptions
  - .3 System and Controls Schematics
  - .4 Operating Instructions
- .2 Installation Instructions: manufacturer's printed instructions describing manufacturer's recommended installation procedures.
- .3 Operating Instructions: manufacturer's printed instructions describing proper operation.
- .4 Equipment Identification: name plate information for each piece of equipment, on forms approved by the Owner.
- .5 Maintenance Instructions: manufacturer's printed instructions describing manufacturer's recommended maintenance.
- .6 Spare Parts Lists: parts lists and manufacturer's recommended spare parts.
- .7 Suppliers and Contractors List: list of contractors and suppliers who supplied and installed equipment, systems, materials or finishes, organized by Division and system. Includes company name, address, and telephone number.
- .8 Tag Directories: directory identifying tag number and equipment description and location.
- .9 Drawings List: list of contract drawings.
- .10 Shop Drawings: final reviewed shop drawings.
- .11 Product Data: manufacturer's product data for equipment, systems, materials and finishes.
- .12 Certifications: includes the following:
  - .1 Copies of inspection reports prepared by authorities having jurisdiction.
  - .2 Certified copies of test reports prepared by independent testing agencies.
  - .3 Any other certificates required by the Contract Documents.
- .13 Warranties and Bonds: Owner's copy of manufacturer's warranties, maintenance bonds and service contracts.
- .14 Reports: includes the following:
  - .1 Reports documenting the performance of tests required by the Contract Documents and the results of those tests.
  - .2 Documentation of other material, equipment or system related information required by the Contract Documents.

**4. CONTRACTOR PREPARED OPERATION AND MAINTENANCE MANUAL(S)**

- .1 General Organization:
  - .1 Include the following in each volume:
    - .1 Title page.
    - .2 Table of contents. Identify volume number where listed information is located.
    - .3 Ten percent free space for additional data.
  - .2 Present textual information, schematics and data on 21.5 X 28 cm, 75 g/m<sup>2</sup>, white bond paper.
- .2 Manual Contents Organization:
  - .1 For each major equipment, system, materials or finishes area, organize operation and maintenance data as follows:
    - .1 Operation Division: include the following, as applicable:
      - .1 System Design Criteria.
      - .2 System and Controls Descriptions.
      - .3 System and Controls Schematics.
      - .4 Operating Instructions.
    - .2 Maintenance Division: include the following, as applicable:
      - .1 Maintenance Tasks and Schedules.
      - .2 Spare Parts.
      - .3 Suppliers and Contractors.
      - .4 Tags and Directories.
    - .3 Contract Document Division: include the following, as applicable:
      - .1 Drawings List.
      - .2 Shop Drawings and Product Data.
      - .3 Certifications.
      - .4 Warranties and Bonds.
      - .5 Maintenance Brochures.
      - .6 Reports.
  - .3 Document Binding Methods:
    - .1 Standard 21.5 X 28 cm sheets: punch sheets to fit binder.
    - .2 Sheets up to 28 X 41.5 cm: punched and neatly folded to allow use without removing from binder.
    - .3 Drawings larger than 28 X 41.5 cm: insert drawings in sturdy vinyl envelopes with reinforced binding holes, open on one side and overall folded size not exceeding 21.5 X 28 cm. Do not punch holes in drawings.

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- .4 Binders:
  - .1 Commercial quality, fabric coated, hard covers attached to spine with metal piano hinges, three post, designed to accommodate 21.5 X 28 cm paper. Maximum 100 mm thick.
  - .2 Silk-screen project title and identification, in white, on front cover and spine of binder.
  - .3 Colour of Binder Fabric and:
    - .1 Mechanical: Blue, Ontario Buckram colour #OBV460
    - .2 Electrical: Red, Ontario Buckram colour #OBV037.
    - .3 Architectural/Structural/Specialties: Dark Green, Ontario Buckram colour #OBV375.
    - .4 Binders containing multiple disciplines (Mechanical, Electrical and Architectural) Binder fabric to be Architectural fabric colour.
- .5 Divider Tabs:
  - .1 Heavy weight coloured paper, mylar laminated with tab number and title printed on tab as follows:
    - .1 Main Divisions: White tabs, labeled with division name, two bank tab length.
    - .2 Sections of a Main Division: tabs of same colour as Binder fabric for Mechanical, Electrical or Architectural sections of a Main Division, labeled with section name, four bank tab length.
    - .3 Subsections: tabs of same colour as Binder fabric for Mechanical, Electrical or Architectural subsections, printed label, eight bank tab length.

**5. SUBMISSION OF OPERATION AND MAINTENANCE MANUAL(S)**

- .1 Submit two hard copies and one electronic copy of completed Contractor prepared operation and maintenance manual(s) prior to substantial performance of the Work. Electronic copy must be searchable, and electronically tabbed complete with hyper linked table of contents.

**END OF SECTION**

**1. DESIGNATION OF PROJECT RECORD DOCUMENTS**

- .1 Request from the Province at commencement of the Work the following documents to be designated and retained as project record documents:
  - .1 One copy of specifications manual(s):
  - .2 Two complete sets of Drawings.
  - .3 One set of all Addenda issued.

**2. MAINTENANCE OF PROJECT RECORD DOCUMENTS**

- .1 Store record documents in site office apart from documents used for construction.
- .2 Label each document "PROJECT RECORD" in neat, large printed letters.
- .3 Maintain record documents in a clean, dry and legible condition. Do not use record documents for construction purposes.
- .4 Keep record documents available for inspection by the Province.

**3. RECORDING INFORMATION ON PROJECT RECORD DRAWINGS**

- .1 Record information on original drawings.
- .2 Use coloured erasable pencils to record information.
- .3 Use different colours to record information pertaining to each major system.
- .4 Record changes and variations from Contract Drawings concurrently with construction process. Do not conceal any work until required information is recorded.
- .5 Legibly mark project record drawings to record actual construction, including:
  - .1 Measured depths of foundation elements in relation to finished first floor datum.
  - .2 Measured horizontal and vertical locations of underground utilities and appurtenances. Reference locations to permanent surface improvements.
  - .3 Measured locations of internal utilities and appurtenances concealed in construction. Reference to visible and accessible features of construction.
  - .4 Field changes of dimension and detail.
  - .5 Changes to equipment layout and services.

**4. SUBMISSION OF PROJECT RECORD DOCUMENTS**

- .1 Prior to placing concrete slab, submit one set of project record drawings showing locations of:
  - .1 Site services.
  - .2 Underslab services, equipment and materials.
- .2 Submit balance of completed project record documents before or with application for Interim Acceptance of the Work.



- .3 Submit with each submission a covering letter including:
  - .1 Date of Submission.
  - .2 Project Title, Plan No. and Centre Code.
  - .3 Contractor's name, address and telephone number.

**END OF SECTION**

**1 General**

**1.1 SECTION INCLUDES**

- .1 Spare parts.
- .2 Maintenance materials.
- .3 Special tools.

**1.2 RELATED SECTIONS**

- .1 Section 01 78 39 Project Record Documents
- .2 Section 01 77 00 – Closeout Procedures
- .3 Individual Specifications Sections: Specific requirements for operation and maintenance data.

**1.3 QUALITY**

- .1 Spare parts, maintenance materials and special tools provided shall be new, not damaged or defective, and of the same quality of manufacture as Products provided in the Work.
- .2 If requested, furnish evidence as to type, source and quality of Products provided.
- .3 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

**1.4 TRANSPORTATION**

- .1 Pay costs of transportation.

**1.5 STORAGE, HANDLING AND PROTECTION**

- .1 Store spare parts, maintenance materials and special tools in a manner to prevent damage, or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and to satisfaction of Consultant.

**1.6 SPARE PARTS**

- .1 Provide spare parts in quantities specified in individual specification sections unless noted otherwise.
- .2 Provide items of same manufacture and quality as items in the Work.
- .3 Deliver to Project site; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual specified in Section 01 78 39.
- .5 Obtain receipt for delivered products and submit prior to final payment.

**1.7 MAINTENANCE MATERIALS**

- .1 Provide 2% maintenance and extra materials unless indicated otherwise.
- .2 Provide items of same manufacture and quality as items in the Work.
- .3 Deliver to Project site; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual specified in Section 01 78 39.
- .5 Obtain receipt for delivered products and submit prior to final payment.

**1.8 SPECIAL TOOLS**

- .1 Provide special tools in quantities specified in individual specification Sections.
- .2 Provide items with tags identifying their function and equipment to which they are associated.
- .3 Deliver to Project site; place and store.
- .4 Receive and catalogue all items. Include listings in Maintenance Manual specified in Section 01 78 39.

**END OF SECTION**

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**1 General**

**1.1 RELATED SECTIONS**

- .1 Division 01 - Scheduling of work
- .2 Division 01 - Submittals
- .3 Division 01 - Temporary facilities

**1.2 REFERENCE STANDARDS**

- .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

**1.3 EXISTING CONDITIONS**

- .1 Visit and examine the site and note all characteristics and irregularities affecting the work of this Section.

**1.4 SUBMITTALS**

- .1 Where required by authorities having jurisdiction, submit for approval, drawings, diagrams, details and supporting data clearly showing sequence of demolition and removal work of building supporting structures and underpinning. Provide Consultant with copy of such drawings.
- .2 Drawings for structural elements shall be designed by and bear signature and stamp of qualified professional engineer registered in the Province of Alberta.

**1.5 PROTECTION**

- .1 Prevent movement or settlement of adjacent work. Provide and place bracing or shoring and be responsible for safety and support of such work. Be liable for any such movement or settlement, and any damage or injury caused.
- .2 Cease operations and notify Consultant if safety of any adjacent work or structure appears to be endangered. Take all precautions to support the structure. Do not resume operations until reviewed with the Consultant.
- .3 Ensure safe passage of building occupants around area of demolition.
- .4 Cease operations and notify the Consultant immediately for special protective and disposal instructions when asbestos materials or other hazardous materials are uncovered during the work of this project.
- .5 Prevailing weather conditions and weather forecasts shall be considered. Demolition work shall not proceed when weather conditions constitute a hazard to the workers and site.
- .6 Prevent debris from blocking surface drainage inlets and mechanical and electrical systems which remain in operation.

- .7 Temporarily suspended work that is without continuous supervision, shall be closed to prevent entrance of unauthorized persons.

## **1.6 TEMPORARY PARTITIONS**

- .1 Erect and maintain dustproof partitions, seal off ducts as required to prevent spread of dust and fumes to other parts of the building. On completion, remove partitions and make good surfaces to match adjacent surfaces.

## **1.7 SALVAGEABLE AND RECYCLABLE MATERIALS**

- .1 Except where otherwise specified, all materials indicated or specified to be permanently removed from the Place of the Work shall become Contractor's property. Maximize to the fullest extent possible, salvage and recycling of such materials, consistent with proper economy and expeditious performance of the Work.
- .2 To reduce the quantity of material otherwise destined for disposal at a landfill, the Contractor is encouraged to consider utilizing the services of businesses and non-profit organizations that specialize in salvage and recycling of used building materials, but does so at his own option and risk.

## **2 Products**

### **2.1 MATERIALS AND EQUIPMENT**

- .1 Provide materials and equipment as required to perform work of this section.

## **3 Execution**

### **3.1 EXISTING SERVICES**

- .1 Disconnect all electrical and telephone service lines in the areas to be demolished. Post warning signs on all electrical lines and equipment that must remain energized to serve other areas during period of demolition. Disconnect electrical and telephone service lines in demolition areas to the requirements of local authority having jurisdiction.
- .2 Disconnect and cap all mechanical services in accordance with requirements of local authority having jurisdiction. Natural gas supply lines shall be removed by the gas company or by a qualified tradesman in accordance with gas company instructions.
- .3 Essential Services: Maintain all essential services to the following areas: existing in ice rink, community hall and existing curling rink.
- .4 In each case notify the affected utility company in advance and obtain approval where required, before commencing with the work on main services.

### **3.2 DEMOLITION**

- .1 Carry out demolition work in accordance with CSA S350, unless otherwise specified.
- .2 Remove from the site all materials indicated to be removed.

- 
- .3 Carry out demolition in a manner to minimize inconvenience to adjacent occupied space.
  - .4 Carry out demolition in an orderly and careful manner.
  - .5 Demolition by explosives or methods to initiate a "Rapid Progressive Failure" of any portion of a structure will not be permitted without written permission of Owner and all authorities having jurisdiction.
  - .6 Before commencing general demolition, separate by hand demolition, attached structures to remain from structure to be demolished.
  - .7 Sprinkle exterior debris with water to prevent dust. Do not cause flooding, contaminated runoff or icing. Do not allow waste material, rubbish, and windblown debris to reach and contaminate adjacent properties.
  - .8 Lower waste materials in a controlled manner; do not drop or throw materials from heights.
  - .9 Burning of materials on site is not permitted.
  - .10 Selectively and carefully remove existing brick veneer where existing brick veneer noted on drawings. The intent is to utilize as much existing brick for re-installation as possible for infill areas.

### **3.3 RESTORATION**

- .1 Restore to its original condition any portion of the building demolished unnecessarily, at no expense to the Owner.
- .2 Immediately as the work progresses, repair all vibration and excavation damages to existing adjacent properties and active underground services.
- .3 Walls of adjoining structures that were not exposed prior to demolition shall be adequately protected from all weather by waterproofing walls to above grade wall areas. Protect existing partitions for demolition of ice plant room roof assembly.

### **3.4 CLEAN-UP**

- .1 For clean-up during demolition and for final cleaning, comply with requirements of Division 01.

**END OF SECTION**

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**1. General**

**1.1 RELATED SECTIONS**

- .1 Scheduling of work: Division 01.
- .2 Submittals: Division 01.
- .3 Temporary Facilities and Controls: Division 01.

**1.2 REFERENCE DOCUMENTS**

- .1 American National Standards Institute (ANSI):
  - .1 ANSI A10.8-2001 Safety Requirements for Scaffolding
- .2 Canadian Standards Association (CSA):
  - .1 CSA S350-M1980 Code of Practice for Safety in Demolition of Structures (R2003)
- .3 Hazardous Materials Information Review Act, 1985
- .4 Motor Vehicle Safety Act (MVSA), 1995
- .5 National Fire Protection Association (NFPA):
  - .1 NFPA 241-04 Standard for Safeguarding Construction, Alteration, and Demolition Operations

**1.3 EXISTING CONDITIONS**

- .1 Visit and examine the site and note all characteristics and irregularities affecting the work of this Section.

**1.4 PROTECTION**

- .1 Take precautions to guard against damage to adjacent work. Be liable for any damage or injury caused.
- .2 Cease operations and notify Owner if safety or any adjacent work appears to be endangered. Do not resume operations until reviewed with the Owner.
- .3 Ensure safe passage of building occupants around and through area of demolition.
- .4 Cease operations and notify the Owner immediately for special protective and disposal instructions when asbestos materials or other hazardous materials, other than those identified, are uncovered during the work of this project.
- .5 Protect temporarily suspended work that is without continuous supervision to prevent access by unauthorized persons.

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**1.5 TEMPORARY PARTITIONS**

- .1 Erect and maintain dustproof partitions, seal off ducts as required to prevent spread of dust and fumes to other parts of the building. On completion, remove partitions and make good surfaces to match adjacent surfaces.

**1.6 SALVAGEABLE AND RECYCLABLE MATERIALS**

- .1 Except where otherwise specified, all materials indicated or specified to be permanently removed from the Place of the Work shall become Contractor's property. Maximize to the fullest extent possible, salvage and recycling of such materials, consistent with proper economy and expeditious performance of the Work.
- .2 To reduce the quantity of material otherwise destined for disposal at a landfill, the Contractor is encouraged to consider utilizing the services of businesses and non-profit organizations that specialize in salvage and recycling of used building materials, but does so at his own option and risk
- .3 A current listing of recyclers specializing in specific categories of materials may be obtained during normal office hours from:

Alberta Environment  
Recycling Branch  
Recycle Info Line  
Phone: (780) 427-6982 or 1-800-463-6326  
Website: [www.recyclinghotline.ca](http://www.recyclinghotline.ca)

**2. Products**

**2.1 MATERIALS AND EQUIPMENT**

- .1 Provide materials and equipment as required to perform the work of this section.

**3. Execution**

**3.1 DEMOLITION**

- .1 Unless otherwise specified, carry out demolition in accordance with CSA S350.
- .2 Completely demolish the items scheduled and immediately remove materials from the premises.
- .3 Carry out demolition work in a manner to least inconvenience adjacent occupied building area.
- .4 Carry out demolition in an orderly and careful manner.
- .5 Lower waste materials in a controlled manner; do not drop or throw materials from heights.



### **3.2 EXISTING SERVICES**

- .1 Disconnect all electrical and telephone service lines in the areas to be demolished. Post warning signs on all electrical lines and equipment which must remain energized to serve other areas during period of demolition. Disconnect electrical and telephone service lines in demolition areas to the requirements of local authority having jurisdiction.
- .2 Disconnect and cap all mechanical services in accordance with requirements of local authority having jurisdiction. Natural gas supply lines shall be removed by the gas company or by a qualified tradesman in accordance with gas company instructions.
- .3 Essential Services: Maintain fire alarm and all essential services to all areas:
- .4 In each case notify the affected utility company in advance and obtain approval where required, before commencing with the work on main services.

### **3.3 RESTORATION**

- .1 Make good any demolition to the existing work beyond that necessary for carrying out new work, at no expense to the Owner.

### **3.4 CLEAN UP**

- .1 Remove all debris and rubbish away from site at regular intervals.
- .2 Remove all tools and equipment from site.

**END OF SECTION**

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**1 General**

**1.1 SECTION INCLUDES**

- .1 Stock and shop fabricated ferrous metal (steel) items, 2.0 mm thick (14 gauge) and greater in thickness, including, but not limited to:
  - .1 railings, handrails and guardrails,
  - .2 support for power door openers,

**1.2 RELATED SECTIONS**

- .1 Section 06 10 00 – Rough Carpentry

**1.3 REFERENCES**

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM A53/A53M-99b (current edition), Standard Specification for - Black and Hot-Dipped, Zinc-Coated Welded and Seamless Steel Pipe.
  - .2 ASTM A36/A36M-00a (current edition), Standard Specification for Carbon Structural Steel.
  - .3 ASTM A123/A123M-97ae1 (current edition), Zinc (Hot Galvanized) Coatings on Products Fabricated from Rolled, Pressed, or Forged Steel Shapes, Plates, Bars and Strips.
  - .4 ASTM A653/A653M-99a (current edition), Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
  - .5 ASTM A66-00 (current edition) Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
  - .6 ASTM A780-93a (current edition), Repair of Damaged Hot-Dip Galvanized Coatings.
- .2 Canadian Standards Association (CSA)
  - .1 CAN/CSA S16-01 (current edition), Limit States Design of Steel Structures.
  - .2 CAN/CSA G164-M92(R1988) (current edition), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 Can/CSA G40.20/G40.21-98 (current edition), General requirements for Rolled or Welded Structural Quality Steel. Structural Quality Steels.
  - .4 CSA W47.1-92 (1988) (current edition), Certification of Companies for Fusion Welding of Steel Structures.
  - .5 CSA W59-M1989(R1998) (current edition), Welded Steel Construction (Metal Arc welding)
  - .6 CSA W178-96 (current edition), Qualification Code for Welding Inspection Organizations.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGAB-1.40M-97 (current edition), Primer, Structural Steel, Oil Alkyd Type
  - .2 Can/CGSB 1.181M-99 (current edition), Coating, Zinc Rich, Organic, Ready Mixed
- .4 SSPC (Steel Structures Painting Council)
  - .1 Steel Structures Painting Manual.

- .5 The National Association of Architectural Metal Manufacturer's (NAAMM)
  - .1 AMP 555-92 (current edition), Code of Standard Practice for Architectural Metal Industry, Including Miscellaneous Iron.
  - .2 AMP 521-92 (current edition), Pipe Railing Systems Manual Including Round Tube.
- 6. National Ornamental and Miscellaneous Metals Association (NOMMA)
  - .1 Joint Finish Guideline appended to the end of this section.
- .7 The National Association of Architectural Metal Manufacturer's (NAAMM) and The National Ornamental & Miscellaneous Metals Association (NOMMA)
  - .1 AMP 500-06 (Current edition) Metal Finishes Manual for Architectural and Metal Products.

#### **1.4 QUALITY ASSURANCE**

- .1 Detail and Fabricate metal fabrications in accordance with the NAAMM AMP 555.
- .2 Welding: qualifications to CSA W55.3 and certification to CSA W47.1. Upon request, submit evidence that welders employed on the Work are qualified and certified.

#### **1.5 SUBMITTALS FOR REVIEW**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit shop drawings indicating profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
- .3 Indicate welded connections using standard welding symbols. Indicate net weld lengths.
- .4 Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of ferrous metal fabrications and licensed in the local jurisdiction.
- .5 Provide product data for paint and coating products.

#### **1.6 SHOP INSPECTION**

- .1 Allow Consultant to examine and review all steel fabrications in shop (fabrication plant) prior to delivery to site.
- .2 Consultant will examine and review all steel fabrications to verify preparation, finishing and quality of fabrications.
- .3 Make changes to preparation, finishing and quality control as advised by Consultant, consistent with requirements of Contract Documents.

#### **2 Products**

## 2.1 MATERIALS

- .1 Steel: to CAN/CSA G40.21M (current edition), with pipe to ASTM A53 (current edition) and tubing to ASTM A500 (current edition); types and grades as follows:
  - .1 Rolled sections: Type 300W.
  - .2 Hollow structural sections: Type 350W, Class C or H.
  - .3 Miscellaneous bars, plates and sections: Type 250.
  - .4 Pipe: Grade B, Schedule 40.
  - .5 Tubing: Grade B.
- .2 Aluminum: extrusions to ASTM B221/ASTM B221M (current edition). alloy 6063-T6
- .3 Aluminum alloy: plate to ASTM B 632/B632M (current edition), alloy 6061-T6
- .4 Bolts, nuts, and washers: ASTM A325 (current edition); high strength type recommended for structural steel joints; for locations where not specifically detailed of size and frequency to adequately support components.
- .5 Screws: purpose made to suit applications; for locations where not specifically detailed of size and frequency to adequately support components.
- .6 Welding materials: to CSA W47.1 (current edition); type required for materials being welded.
- .7 Shop primer: epoxy type for fabrications exposed to view, even partially exposed to view; to CISC/CPMA 2-75 for fabrications that will be totally concealed.
- .8 Touch-up primer for galvanized surfaces: inorganic zinc rich type.
- .9 Grout: non-shrink, non-metallic and flowable; minimum 16 MPa at 24 hours; minimum 7.9 MPa pull out strength.
- .10 Contain recycled content (refer to Section 01 61 10 LEED Product Requirements)
- .11 Contain regional materials (refer to Section 01 61 10 LEED Product Requirements)
- .12 Adhesives, sealants, paints and coatings required for final installation and finishing of the product on site must meet the applicable VOC limits (refer to 01 61 10 LEED Product Requirements)

## 2.2 STOCK FABRICATED COMPONENTS (Refer to drawings for all items to be fabricated)

- .3 Pipe Balustrades and Handrails
  - .1 Fabricate Railings and Handrails to NAAMM, Pipe Railing Systems and NOMMA Finish Guidelines as follows:
    - .1 All Guardrails and handrails exposed to public view. – Finish Type #1,.
    - .2 Railings located at mechanical service platforms - Finish Type #2,
    - .3 Refer to NOMMA Finish Guidelines appended to end of this Section.
  - .2 Fabricate wall handrails and brackets as indicated

- .3 Cap and weld exposed ends of balusters and handrails.
- .4 Terminate at abutting wall with end flange. Return all handrails and guardrails to adjacent wall with radii end flange.
- .5 Colors: Refer to Room Finish Schedule (miscellaneous) for finishes.

## **2.3 FABRICATION**

- .1 Verify dimensions on site prior to shop fabrication.
- .2 Fabricate components square, true, straight and accurately fitted in accordance with sizes and profiles detailed, with joints neatly fitted and properly secured. The quality of fabrication of components will be subject to Consultant's approval.
- .3 Full weld all joints and joining sections. Grind all exposed welds smooth and flush with adjacent finished surfaces.
- .4 Locate exposed fastenings consistent with design of fabrications. Drill and form holes to suit type of fasteners used.
- .5 Unless otherwise detailed, fabricate pipe railings generally as follows:
  - .1 Use 90° elbows at rounded corners.
  - .2 Provide rounded steel caps, full welded in place, at exposed ends and terminations.
  - .3 Provide alignment pipe inserts for joining sections, and to allow for thermal expansion and contraction. Bevel ends of joining sections.
  - .4 Provide minimum 38 mm and maximum 50 mm clearance between railings and wall surfaces.
- .6 Drill holes in bottom flanges of supporting steel structures to accommodate anchors for folding panel partition. Coordinate locations of holes with design of partition.

## **2.4 FABRICATION TOLERANCES**

- .1 Squareness: 3 mm maximum difference in diagonal measurements.
- .2 Maximum offset between faces: 1.5 mm.
- .3 Maximum misalignment of adjacent members: 1.5 mm.
- .4 Maximum bow: 3 mm in 1.2 m.
- .5 Maximum deviation from plane: 1.5 mm in 1.2 m.

## **2.5 FINISHES**

- .1 Remove welding slag and spatter. Grind smooth all sharp edges and welds.
- .2 Clean surfaces of all rust, scale, grease, oils and foreign matter prior to preparation.
- .3 Prior to applying primer and galvanized coatings, prepare steel (clean) surfaces as follows:

- .1 For components to be galvanized: SSPC-SP10 (near-white blast clean), unless a more stringent level of cleaning is required by galvanizing firm.
- .2 For components that are to receive epoxy primer (those that are to be exposed to view, even partially exposed to view): SSPS-SP6 (commercial blast clean).
- .3 For components that are to receive standard primer (those that are to be totally concealed): SSPS-SP7 (brush-off blast clean).
- .4 Hot-dip galvanize components indicated to be galvanized, to minimum 380 g/m<sup>2</sup> coating, to CSA G164 (current edition). Galvanize components after fabrication. In addition to those indicated to be galvanized, hot-dip galvanize the following components:
  - .1 Sump pit covers and their support frames.
  - .2 Drainage trench gratings and their support frames.
- .5 Prime paint fabrications, except those to be galvanized. Apply primer within 6 hours of cleaning, and in accordance with manufacturer's recommendations. Apply primer uniformly and to a minimum dry film thickness of 50 micrometers.
- .6 Do not prime surfaces in direct contact with concrete or where field welding is required.

### **3 Execution**

#### **3.1 PREPARATION**

- .1 Clean and strip primed steel surfaces to bare metal where site welding is required.
- .2 Supply components that are required to be cast into concrete or embedded in masonry to site as clean uncoated metal. Supply complete with required setting templates.

#### **3.2 INSTALLATION**

- .1 Obtain Consultant's permission prior to site cutting or making adjustments that are not part of scheduled work.
- .2 Install components secure and well anchored, square and level, and accurately fitted and free from distortion or defects detrimental to appearance and performance.
- .3 Keep work in alignment at all times.
- .4 Full weld all joints and joining sections. Grind welds smooth and flush with adjacent surfaces.
- .5 So as to allow for thermal expansion and contraction, do not weld joining sections of exterior located steel pipe railings. Allow for adequate space between joining sections, governed by coefficient of expansion and contraction of components and length of components.
- .6 Perform all necessary bracing, drilling and cutting as required to complete and to join work.
- .7 After installation touch-up scratched and damaged prime painted surfaces. Use a primer consistent with that used to provide shop coat. Clean surfaces with an aromatic solvent before priming.
- .8 Grout in base plates of floor anchored bollards. Grout in hoistway beams.

- .9 Install monitor brackets in accordance with manufacturer's directions. Orient brackets as directed by Owner.

### **3.3 ERECTION TOLERANCES**

- .1 Maximum variation from plumb: 6 mm per story, non-cumulative.
- .2 Maximum offset from true alignment: 3 mm.
- .3 Maximum out-of-position: 6 mm.

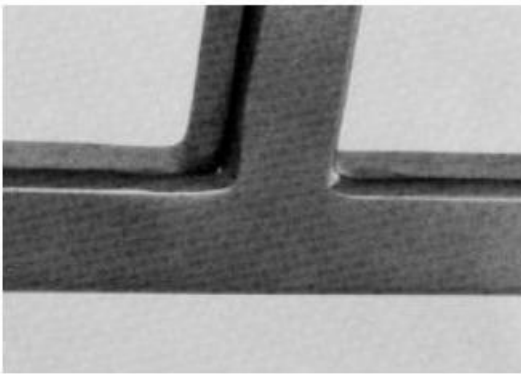
## Guideline 1: Joint Finishes

These voluntary guidelines were developed by the NOMMA Technical Committee, with strong input from the membership.

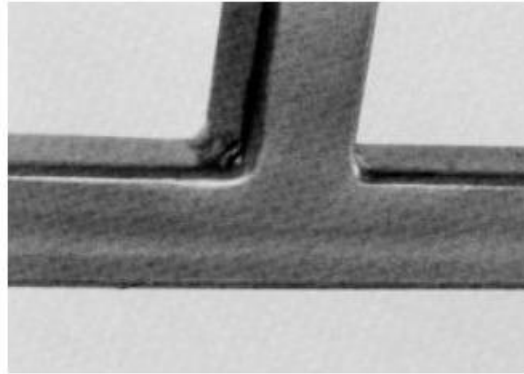
All samples shown are primed steel.

### Tube

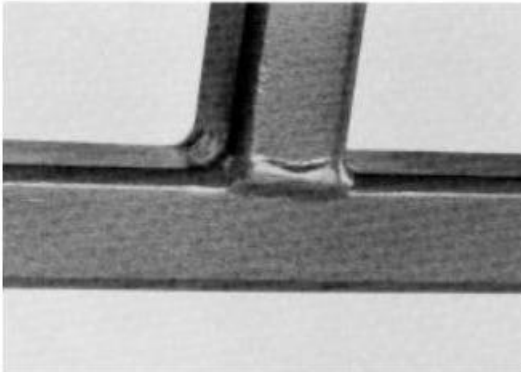
Example A: 1" to 1" square tube "T"



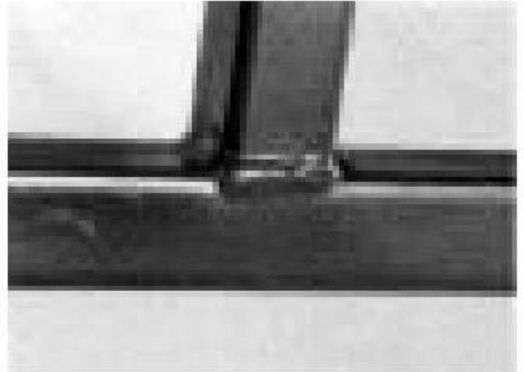
**Finish #1** - No evidence of a welded joint.



**Finish #2** - Completely sanded joint, some undercutting and pinholes okay.



**Finish #3** - Partially dressed weld with spatter removed.

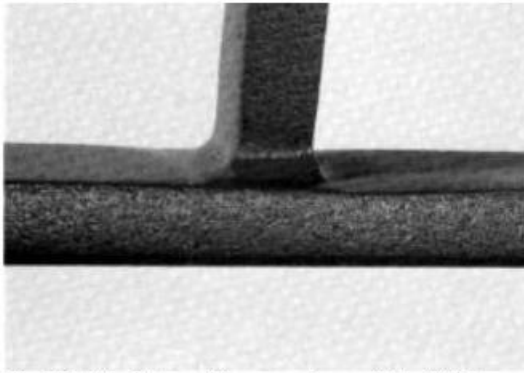


**Finish #4** - Good quality, uniform undressed weld with minimal spatter.

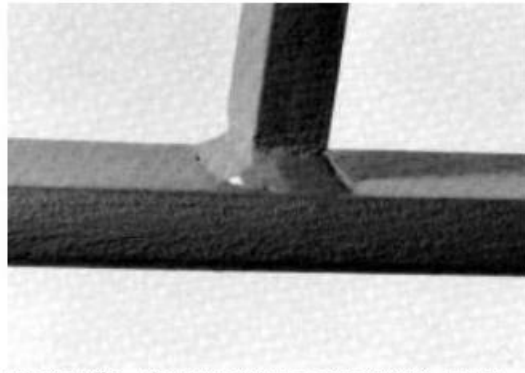


**Solid**

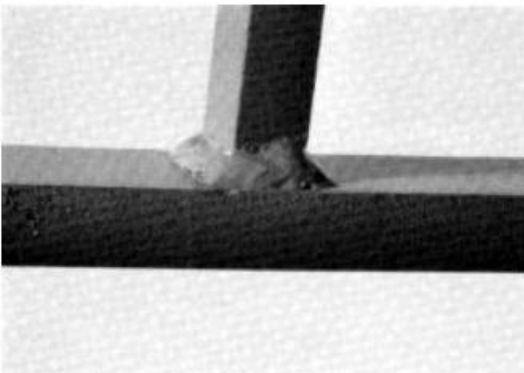
Example B: 1/2" square to 1/2" x 1" bar "T"



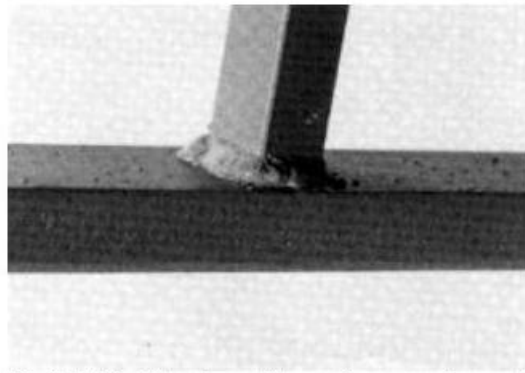
**Finish #1** - No evidence of a welded joint.



**Finish #2** - Completely sanded joint, some undercutting and pinholes okay.



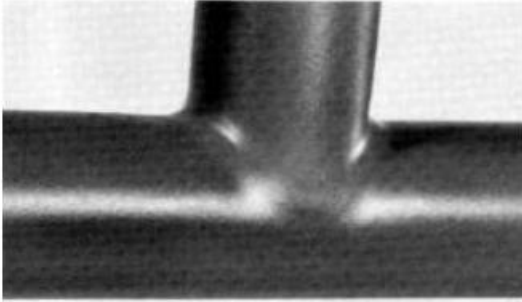
**Finish #3** - Partially dressed weld with spatter removed.



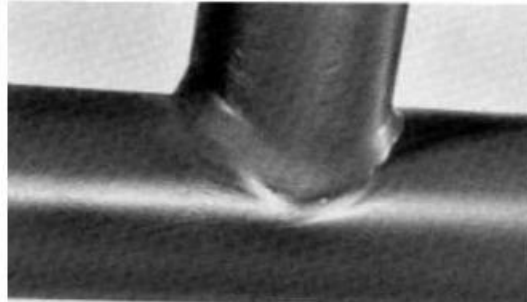
**Finish #4** - Good quality, uniform undressed weld with minimal spatter.

## Pipe

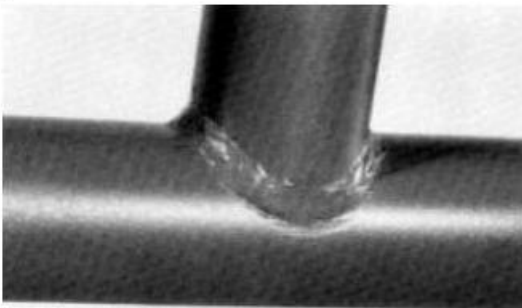
Example C: 1-1/2" to 1-1/2" pipe "T"



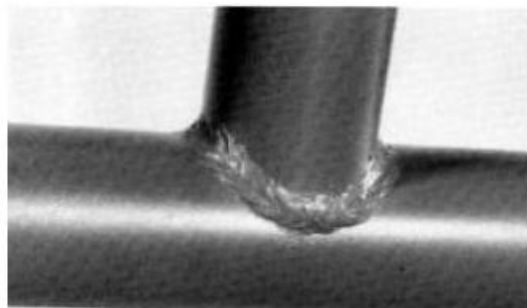
**Finish #1** - No evidence of a welded joint.



**Finish #2** - Completely sanded joint, some undercutting and pinholes okay.



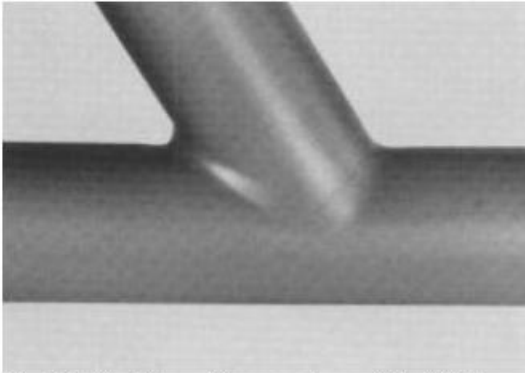
**Finish #3** - Partially dressed weld with spatter removed.



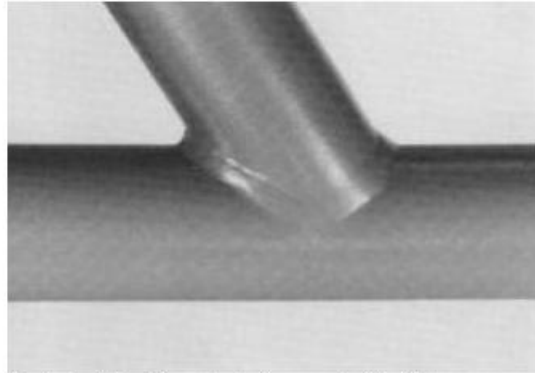
**Finish #4** - Good quality, uniform undressed weld with minimal spatter.

## Pipe Raked

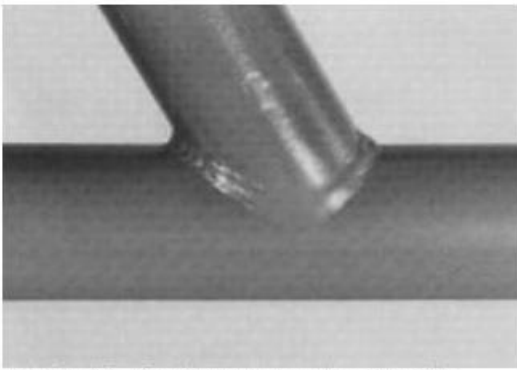
Example D: 1-1/2" to 1-1/2" pipe "T" RAKED



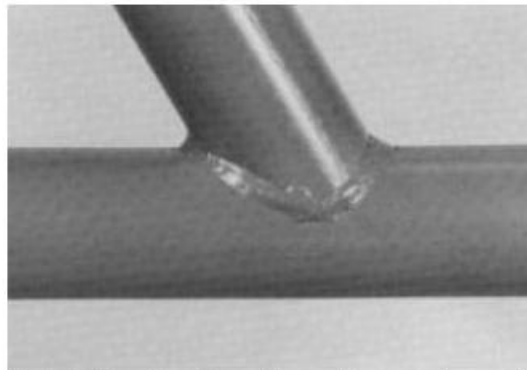
**Finish #1** - No evidence of a welded joint.



**Finish #2** - Completely sanded joint, some undercutting and pinholes okay.



**Finish #3** - Partially dressed weld with spatter removed.



**Finish #4** - Good quality, uniform undressed weld with minimal spatter.

These guidelines are voluntary recommendations for information purposes only. It is the responsibility of the individual to ensure proper construction design. The use of fillers is not included in the scope of this work. These guidelines do not endorse or discourage fillers. They deal with finished appearance only.

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**END OF SECTION**

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## **1 General**

### **1.1 SECTION INCLUDES**

- .1 This Section includes, but is not limited to:
  - .1 Miscellaneous blocking and strapping where required.
  - .2 Preservative treatment of wood members.

### **1.2 REFERENCES**

- .1 ASTM Standards:
  - .1 ASTM A307-07b: Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
  - .2 ASTM D1761-06: Standard Test Methods for Mechanical Fasteners in Wood.
  - .3 ASTM F2403-06: Standard Specification for Inch Series Machine Screws, Carbon Steel, 60 000 psi Tensile Strength.
  - .4 ASTM D5582-00(2006): Standard Test Method for Determining Formaldehyde Levels from Wood Products using Desiccator.
  - .5 ASTM F1667-05: Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
  - .6 ASTM F2403-06: Standard Specification for Inch Series Machine Screws, Carbon Steel, 60 000 psi Tensile Strength.
- .2 CSA Standards:
  - .1 CAN/CSA O80-Series-08: Wood Preservation.
  - .2 CSA O112 Series-M1977 (R2006): CSA Standards for Wood Adhesives.
  - .3 CSA O121-08: Douglas Fir Plywood.
  - .4 CAN/CSA O141-05: Softwood Lumber.
  - .5 CSA O151-09: Canadian Softwood Plywood.
  - .6 CAN/CSA-O325.0-07: Construction Sheathing.
- .3 ABC: Alberta Building Code 2014.
- .4 NLGA Standard Grading Rules for Canadian Lumber, current edition.

### **1.3 SUBMITTALS**

- .1 Submit in accordance with Division 01.

### **1.4 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL**

- .1 Set aside damaged wood and dimensional lumber off-cuts for approved alternative uses (e.g. bracing, blocking, cripples, bridging). Store this separated reusable wood waste convenient to cutting station and area of work.
- .2 Do not burn scrap at the project site.

- 
- .3 Fold up metal banding, flatten, and place in designated area for recycling.
  - .4 Divert unused wood materials from landfill to recycling, reuse or composting facility acceptable to the Consultant.
  - .5 Do not dispose of preservative treated wood through incineration.
  - .6 Do not dispose of preservative treated wood with materials destined for recycling or reuse.
  - .7 Dispose of treated wood, end pieces, wood scraps and sawdust at sanitary landfill acceptable to the Consultant.
  - .8 Dispose of unused wood preservative material at official hazardous material collections site acceptable to the Consultant.
  - .9 Do not dispose of unused preservative material into sewer system, into streams, lakes, onto ground or in other locations where they will pose health or environmental hazard.

## **1.5 QUALITY ASSURANCE**

- .1 Provide all lumber bearing the grading stamp of an agency certified by the Canadian Lumber Standards Administration Board.
- .2 Supply lumber and panel components marked with a recognized, visible grade stamp.

## **1.6 PRODUCT HANDLING**

- .1 Protect materials from weather while in transit and on job site.
- .2 Store materials on site to prevent deterioration or loss or impairment of structural or other essential properties. Store materials on raised supports. Avoid rapid changes in moisture content. Provide adequate air circulation and ventilation.
- .3 Store, protect, handle and install prefabricated structural elements in accordance with manufacturer's instructions. Pay particular attention to requirements for stacking, lifting, bracing, cutting, notching, and special fastening requirements.
- .4 Cover materials with tarpaulins or polyethylene sheets to prevent moisture absorption and impairment of structural or aesthetic properties.
- .5 Do not store seasoned materials in wet or damp areas.
- .6 Damaged material will be rejected and must be removed from site.

## **2 Products**

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## **2.1 GENERAL**

- .1 Use only wood composite products and adhesives that are free of added urea formaldehyde.

## **2.2 MATERIALS**

- .1 Lumber for blocking and strapping: S-P-F species, construction grade.
- .2 Moisture content of dimension lumber: Dimension lumber to meet dry service conditions with a maximum moisture content of 15% (fifteen percent) at the time of installation of the surfacing material.
- .3 Sheathing plywood: Douglas Fir or Canadian softwood, sheathing grade, to CSA O121 or O151; 19 mm thickness unless noted otherwise.
- .4 Plywood to electrical backboards: G1S fir plywood conforming to CSA O121; 19 mm thickness.
- .5 Nails, spikes and staples: to ASTM F1667, galvanized to exterior locations. To locations where ACQ pressure treated lumber is used, use stainless steel fasteners.
- .6 Screw fasteners into metal framing: stainless steel or ceramic coated galvanized steel, self drilling screws of lengths to suit application.
- .7 Rough Hardware and proprietary fasteners: bolts, nuts, toggle bolts, expansion shields, washers, lag bolts, pins, screws (hot dip) galvanized to ASTM A123/A123M where exposed to corrosive conditions, and lead or inorganic fibre plugs; recommended for purpose by manufacturer. To locations where ACQ pressure treated lumber is used, use stainless steel fasteners.
- .8 Wood preservative: to CSA O80, alkaline copper quaternary (ACQ) content, no chromium or arsenic allowed.

## **3 Execution**

### **3.1 WORKMANSHIP**

- .1 Produce joints which are tight, true and well nailed, with members assembled in accordance with the Drawings and with pertinent codes and regulations.
- .2 Select individual pieces so that knots and obvious defects will not interfere with placing of bolts, or proper nailing, and will allow making of proper connections.
- .3 Cut out and discard defects which render a piece of wood unable to serve its intended function.
- .4 Lumber may be rejected by the Consultant, whether or not it has been installed, for excess warp, twist, bow, crook, mildew, fungus, or mould, as well as for

improper cutting and fitting.

- .5 Do not shim any framing components.
- .6 Sequence work to minimize use of temporary HVAC to dry out building and to control humidity.
- .7 Perform cutting in designated areas only. Wherever possible, use dust collection.

### **3.2 PRESERVATIVE TREATMENT**

- .1 Pressure preservative treat wood in the following locations:
  - .1 Wood in or on exterior walls.
  - .2 Where indicated on the drawings.
  - .3 Note: do not pressure treat or preservative treat any wood in contact with roofing membranes, air/vapour barriers and other membranes. Note: pressure treated wood in contact with polyethylene side of air/vapour barrier is permissible.
- .2 Treat components in accordance with CSA-O80-08 series, and as follows:
  - .1 CSA-O80 using ACQ water borne preservative treatment to S-P-F materials.
- .3 Following water borne preservative treatment, dry material to maximum moisture content of 19%.
- .4 Treatment for site sawn ends and edges: two brushed coats, or three-minute immersion.
- .5 Treat individually all cuts or holes made after general treatment, before installation of items.

### **3.4 FASTENING & ATTACHMENT METHODS/DEVICES**

- .1 Unless otherwise required, fastening methods to conform to Section 9.23 Residential Standards (Table 23A and 23B) and/or Part 4 of the Alberta Building Code. Minimize splitting by staggering nails in the direction of the grain and by keeping them well away from edges.
- .2 Adequately mechanically fasten all wood products used in connection with roofing.
- .3 Only use galvanized nails where nailing is an approved method of attachment, except where ACQ treated wood is used, use stainless steel nails.
- .4 When fastening wood products to concrete, concrete block and similar cementitious/ masonry material, use only lag bolts or hilti "Hit" type fastening system. Use hilti "hit" when fastening to brick and block and lag bolts for

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fastening to concrete at 450 mm o.c. each way. In no case use lag bolt less than 10 mm diameter. Hilti "HPS" and other types of fasteners are not approved for fastening wood, blocking, etc.

- .5 When fastening wood products to metal decks, use only Ucan "tek screws" in a size and quantity pattern to be determined by the Consultant, but in no case to less than a 300 mm o.c. each way.

### **3.5 MISCELLANEOUS BLOCKING, BUCKS, AND PLATES**

- .1 Provide blocking and plates for roofing and related sheet metal work according to indicated details. Provide wood curbs around roof penetrations, unless metal is indicated.
- .2 Place members true to lines and levels and secure rigidly in place.
- .3 Notch wood blocking attached to metal studs as required to accommodate stud flange returns, so that blocking will be flush with stud faces.
- .4 Install plywood blocking where indicated.
- .5 Install blocking to all heavy wall mounted items and items which will support live loads, including, but not limited to change tables and upper cabinets.
- .6 All blocking in fire rated assemblies is to conform to Alberta Building Code requirements.
- .7 Install other blocking where indicated.

**END OF SECTION**



## **1 General**

### **1.1 RELATED WORK**

- .1 All part of the Contract Documents apply to and govern the work of this Section.
- .2 Section 06 10 00 - Rough Carpentry
- .3 Section 09 22 16 - Metal Stud System
- .4 Section 09 29 00 - Gypsum Board

### **1.2 STORAGE**

- .1 Store insulation neatly on raised platforms and protect with waterproof covers.

### **1.3 SUBMITTALS**

- .1 Submit Product data in accordance Division 01.

## **2 Products**

### **2.1 INSULATION**

- .1 **Fibrous glass** (flexible) insulation without membrane: to CAN/ULC-S702-1997 (current edition), Type 1, preformed, friction fit batts, thickness as noted on drawing wall construction legends.

Acceptable Product: CertainTeed Insulation Canada Inc. Sustainable Insulation Fibre Glass Building Insulation.

- 2 **Mineral wool** insulation: Non-combustible to CAN4 S114 (current edition), mineral wool insulation to CAN/ULC S702 Type 1; CAN/ULC-S102, flame spread rating 0, smoke developed 0, unfaced, of thickness indicated or required to fill insulated spaces where not indicated.

## **3 Execution**

### **3.1 INSULATION INSTALLATION**

- .1 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation. Cut and trim insulation neatly to fit spaces.
- .2 Do not compress insulation to fit into spaces.
- .3 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from side walls of CAN4-S604 (current edition) type A chimneys and CAN1-B149.1 (current edition) and CAN1-B149.2 (current edition) type B and L vents.
- .4 Install acoustic insulation in walls, ceilings and bulkheads noted on the drawings.

- .5 Install ULC approved insulation for fire rated assemblies. Maintain the continuity of the rated assembly.
- .6 Install only mineral wool batts in fire rated partitions. Mineral wool or glass fibre batts may be used in all other indicated wall types.
- .7 Install batt insulation where required to maintain continuity of thermal insulation of the building envelope.

**END OF SECTION**

**1 General**

**1.1 RELATED WORK**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 01 60 05 – Air and Vapour Barrier General Requirements
- .2 Section 07 21 16 – Batt and Blanket Insulation
- .3 Section 08 11 16 – Aluminum Doors and Frames

**1.2 JOB MOCK-UP**

- .1 Submit mock-ups in accordance with Division 01.
- .2 Construct mock-up of sheet vapour barrier installation including one lap joint, one inside corner and at one electrical box. Mock-up may be part of finished work. Coordinate with mock-ups of Section 08 11 16 – Aluminum Doors and Frames.
- .3 Allow 24 hour for inspection of mock-up by Consultant before proceeding with vapour barrier work.

**1.3 SUBMITTALS**

- .1 Submit product documentation in accordance Division 01.

**1.4 QUALITY ASSURANCE**

- .1 Contractor applying the vapour retarder to be acceptable to the manufacturer. Provide written evidence of such endorsement where requested.

**1.5 PRODUCT DELIVERY, STORAGE AND HANDLING**

- .1 Deliver sheet air/ vapour barrier materials in factory wrapped rolls with labels indicating: manufacturer's name or trade name, compliance with acceptance to specified standards, material type thickness and roll width and area.
- .2 Handle and store materials in accordance with manufacturer's written recommendations.
- .3 Protect installed work and materials from damage.

**1.6 CO-ORDINATION**

- .1 Co-ordinate the installation of the sheet/air vapour barrier with the work of other Sections to achieve an air/vapour barrier tight building envelope. Confirm compatibility of membranes with adjacent materials. Submit confirmation in accordance with Division 01 PRIOR TO COMMENCEMENT OF THE WORK.

**1.7 COMPATIBILITY AND DETAILING**

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- .1 Membrane supplier for vapour retarder and air vapour barrier provide written confirmation of (a) compatibility of membrane with adjacent materials (b) confirmation that the products can be warranted as detailed PRIOR TO COMMENCEMENT OF THE WORK.

## **1.8 FIELD QUALITY CONTROL**

- .1 Arrange to have manufacturer's representative provide inspections, technical assistance and application guidance during installation of air/vapour barrier. Manufacturer's field representative shall complete a minimum of one inspection during the membrane installation. Submit to the consultant copies of manufacturer's field reports and inspections.

## **1.9 INDEPENDENT INSPECTION**

- .1 The Owner may employ a firm for Independent Inspection and performance of a thermographic scan of the building. The cost of this inspection service shall be paid for by the Owner.

## **1.10 JOB CONDITIONS**

- .1 Apply the air/vapour barrier membrane and accessory materials at ambient temperatures satisfactory to the manufacturer and under dry conditions only.
- .2 Cure concrete and concrete block assemblies a minimum of seven (7) days to be free of surface moisture. Demonstrate an acceptable adhesion test before membrane application. Allow a minimum of 24 hours drying period following precipitation.
- .3 Prior to the installation, inspect those areas to receive the air/vapour barrier membrane to ensure that they are clean, dry, sound, smooth and continuous at all openings.
- .4 Install the vapour retarder membrane and accessory materials only in suitable weather where ambient temperatures are above 4°C and there is no threat of precipitation.
- .5 Store vapour retarder accessory materials at temperatures no less than +4C and no greater than 38°C. Containers shall be resealed after usage.

## **1.11 FIRE SAFETY REQUIREMENTS FOR AIR VAPOUR MEMBRANE INSTALLATION**

- .1 Meet with authority having jurisdiction and local Fire Chief to establish action to be taken in the case of fire resulting from the Trade Contractor's operations.
- .2 Provide one 4.5 kg. CO<sup>2</sup> fire extinguisher within 3 m of torching operations.
- .3 Inspect work completed at each interruption of torching and at end of each working day for smoldering fires.
- .4 Do not torch in areas where flammable vapours may be ignited.

## **2 Products**

### **2.3 SELF ADHERING AND AIR VAPOUR BARRIER MEMBRANE**

- .1 Air/Vapour Barrier membrane (for vertical to horizontal transitional areas, exterior walls, flat and sloped roofs, parapets unless specifically noted otherwise in the specification or on the drawings).
- .2 Air/Vapour Barrier membrane composed of a non-woven polyester or glass fleece reinforcement and SBS modified bitumen.

Acceptable membrane products:

- .1 SOPRASEAL STICK 1100T by Soprema
- .2 BLUESKIN SA by BAKOR
- .3 CARLISLE CCW 705

## **2.8 ACCESSORIES**

- .1 For Self Adhered Air/Vapour Barrier Membrane
  - .1 Primer: As recommended by the air / vapour barrier membrane manufacturer.
  - .2 Mastic: As recommended by the air / vapour barrier membrane manufacturer.

## **3 Execution**

### **3.1 INSTALLATION**

- .1 Ensure substrates are clean, smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease.
- .2 It is imperative that a complete air-vapour seal be achieved. Provide complete air/vapour barrier whether it is specifically noted or not. Notify the Consultant if there is any doubt as to the integrity and continuity of the membrane, whether detailed or not. Pay particular attention to change in plane, such as window head sill and jamb conditions and joints across dissimilar materials.
- .3 Install sheet air/vapour barrier on warm side of exterior assemblies as indicated on the drawings to form continuous barrier.
- .4 Install air/vapour barrier as indicated on the drawings. Install vapour barrier below the slab on grade to form a continuous barrier.
- .5 Use sheets of largest practical size to minimize joints. Use widths to suit other building modules such as masonry ties.
- .6 Inspect sheets for continuity. Repair punctures and tears in vapour retarder before work is concealed. Seal the laps of vapour retarder.
- .7 Install an additional layer of the air/vapour barrier at all changes of plane, where wood is in contact with concrete and concrete block and where noted on the drawings.
- .8 Notify Consultant when the sheet air-vapour barrier are ready for inspection. Do not cover up the membrane until it has been inspected by the Consultant.

### **3.2 PREPARATION**

- .1 Inspection and Repair
  - .1 Inspect all surfaces to receive the air/vapour barrier to ensure that they are continuous and free of voids and excessive gaps. Report and have corrected any deficiencies.
- .2 Priming
  - .1 Prime all surfaces to receive the air/vapour barrier, applied by means of roller or spray and at a rate of recommended by the manufacturer.
  - .2 Allow primer to dry adequately before proceeding with the membrane.
  - .3 To avoid excess pick up of air borne dust once priming has been completed, prime only as much area as can be covered with membrane the same working day. If not covered in the same working day, reprime.

### **3.3 MEMBRANE INSTALLATION**

- .1 For ease of application cut membrane in lengths of 2135 mm to 2440 mm, length may be increased as familiarity with the application increases.
- .2 Apply air/vapour barrier to the primed plywood sheathing. Apply vertically or horizontally in accordance with manufacturer's recommendations to reduce the number of penetrations projecting through the membrane by masonry reinforcing.
- .3 For horizontal applications, install each length of membrane such that its upper edge runs continuously along the underside of the line of masonry reinforcing. Overlap subsequent sheets applied above the sheet below a minimum of 76 mm immediately below the line of reinforcing of the sheet below.
- .4 Maintain a minimum overlap of 76 mm at the end laps in the membrane.
- .5 Detail inside and outside corners and penetrations as recommended by the membrane manufacturer.
- .6 Press the membrane firmly into place ensuring continuous and intimate contact with the substrate.
- .7 Continue the membrane installation to a point, which as indicated interfaces with other elements designated as integral to the overall air/vapour barrier system. Ensure compatibility with those components and consult with the manufacturer for assistance on detailing proper tie-ins.

### **3.4 DETAILS**

- .1 To ensure the integrity of the air/vapour barrier installation at the base of the tie wire locations, apply mastic to seal any voids which may have been caused in fitting the membrane around these projections.

- .2 Fit membrane tightly around all penetrations through the air/vapour barrier and seal.
- .3 Continue the membrane into all openings in the wall area, (i.e. windows, doors, etc.), and terminate at a point that will ensure that it will not be visible from the interior. Continue the membrane into the aluminum window frame extrusion secured between the window frame and pressure cap.
- .4 Make the membrane installation continuous at all framed openings.
- .5 Coordinate the installation of the air/vapour barrier with the roofing to ensure continuity of the air/vapour barrier 'system' at the roof/wall juncture.
- .6 At the end of each working day, where a wall area has been only partially covered, apply a bead of mastic along the top edge of the membrane at its termination to prevent the vertical drainage of precipitation from undermining the adhesion of the in place membrane.
- .7 Before covering in the air/vapour barrier with the cavity insulation, inspect and repair as necessary any punctures, damaged areas or inadequately lapped seams. Make repairs using the air/vapour barrier appropriately sized to extend a minimum of 150 mm in all directions from the perimeter of the affected area.

**END OF SECTION**

## **1 General**

### **1.1 RELATED WORK**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 06 10 00 - Rough Carpentry - Wood blocking, curbs, and nailing strips
- .3 Section 08 11 16 – Aluminum Doors and Frames

### **1.2 QUALITY ASSURANCE**

- .1 Comply with "Manual of Good Roofing Practice" prepared by Alberta Roofing Contractor's Association.

### **1.3 SAMPLES**

- .1 Submit one 150 mm length of each profile of fabricated flashings, showing end connection detail, seams and corners, for approval (major flashings only).

### **1.4 SUBMITTALS, SHOP DRAWINGS**

- .1 Submit shop drawings in accordance with Division 01.
- .2 Indicate details of construction, profiles, jointing, fastening, and other related details. Scale: Profiles - full size, details - ½ full size.
- .3 Indicate all materials, thicknesses, finishes and hardware.

## **2 Products**

### **2.1 PREFINISHED STEEL SHEET**

- .1 Flashings and Fascias: to profiles indicated:
  - .1 Finish: factory applied coating to CGSB 93-GP-3M (current edition).
  - .2 Finish coating based on HMP 100% ceramic pigmentation finish or pre-approved equivalent.
  - .3 A maximum of two colours for flashing to be selected by the Consultant from the manufacturer's full colour range.
  - .4 Gloss: medium.

### **2.2 GALVANIZED FLASHINGS**

- .1 Base and counter flashings where indicated: to profiles indicated of 24 gauge (0.70 mm) galvanized.

### **2.3 PREFORMED METAL FLASHINGS**



- .1 Minimum 24 gauge pre-finished sheet steel.

## **2.4 MISCELLANEOUS FLASHINGS**

- .1 Exposed fasteners: use rubber gasketed hex head metal screws, length as required.

## **2.5 FASCIAS**

- .1 Minimum 24 gauge pre-finished sheet steel.

## **2.8 ACCESSORIES**

- .1 Isolation coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CGSB 37-GP-5Ma (current edition).
- .3 Underlay for metal flashing: in accordance with Section 07 21 16 as indicated.
- .4 Sealants: in accordance with Section 07 92 00, colour to match prefinished sheet metal.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.
- .6 Fasteners: of same material as sheet metal, to CSA B111-1974, flat head roofing nails of length and thickness suitable for metal flashing application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .8 Touch-up paint: as recommended by metal flashing and trim manufacture.
- .9 Accessories such as Vents, Drains and Cable Flashings shall be acceptable and compatible with membrane and assemblies in which they are being installed.

## **2.9 FABRICATION**

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series and ARCA details and specifications and as indicated.
- .2 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.
- .3 Hem exposed edges on underside 12 mm. Miter and seal corners with sealant.
- .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

## **.10 METAL FLASHINGS**

- .1 Form flashings to profiles indicated of prefinished steel and galvanized steel as indicated on the drawings.

## **2.11 TRIM**

- .1 Provide prefinished reveal profile to detail.

## **3 Execution**

### **3.1 INSTALLATION**

- .1 Install sheet metal work in accordance with ARCA specifications and as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
- .4 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock forming tight fit over hook strips.
- .5 Lock end joints and caulk with sealant.
- .6 Install surface mounted reglets true and level, and caulk top of reglet with sealant.
- .7 Install pipe flashing as per manufacturer's instructions.
- .8 Install metal flashings at eaves, rakes, junction of roofs with higher walls, penetrations through roofs, door and window heads, and where shown on Drawings.
- .9 Sleeve Flashing System
  - .1 At air intake ducts and other mechanical penetrations not specifically covered, provide sleeve flashing system.
  - .2 Prior to installation place a bead of sealant around penetration. Place protection cup and sleeve over penetration into sealant.
  - .3 Insulate between penetration and sleeve with 25 mm thick fibrous insulation.
  - .4 Prime surfaces to receive base sheet.
  - .5 Install metal collar.
- .10 At wall openings extend flashing up behind insulating sheathing min. 100 mm and form a strip at the outside edge. Secure along top edge of flashing to support building elements.
- .11 Where flashings are exposed, provide cleats or locking strips to secure them. Do not use exposed fasteners, unless approved by the Consultant.
- .12 Fill and seal seams with sealant in accordance with Section 07 92 00.

**END OF SECTION**

**1 General**

**1.1 SUMMARY**

- .1 Section 06 10 00 – Rough Carpentry
- .2 Section 08 11 16 – Aluminum Doors and Frames
- .3 Section 08 80 00 – Glazing
- .4 Section 09 91 00 – Painting

**1.2 REFERENCES**

- .1 CGSB 19-GP-14M (current edition), Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.
- .2 CAN/CGSB-19.17M90 (current edition), One Component, Acrylic Emulsion Base Sealing Compound.
- .3 CAN/CGSB-1913-M87 (current edition), Sealing Compound, One Component, Elastomeric, Chemical Curing.
- .4 CAN/CGSB-19.24-M90 (current edition), Sealing Compound, Multi-Component, Chemical Curing.
- .5 ASTM C920-98e1 (current edition), Elastomeric Joint Sealants.
- .6 ASTM D2240-97e1 (current edition), Rubber Property – Durometer Hardness.

**1.3 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture and water. Comply with manufacturer's written instructions.

**1.4 QUALITY ASSURANCE**

- .1 Caulking shall be performed by a caulking contractor with 3 or more years successful experience in Work of similar size and complexity.
- .2 Provide low VOC products. Comply with SCAQMD Rule #1168.

**1.5 SUBMITTALS**

- .1 Provide colour samples of the actual sealants for approval, painted or printed colour charts are NOT acceptable.
- .2 Before performing caulking work do sample applications of each type of sealant for approval. Site locations for samples will be designated by the Consultant. Approved

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samples shall form the standard for this project and no work of inferior quality will be allowed. Start no final work until the Consultant gives approval of samples.

- .3 Provide test results from an approved Canadian Materials Testing Laboratory indicating that sealants meet the requirements of the CGSB standard specified.

## **1.6 ENVIRONMENTAL AND SAFETY REQUIREMENTS**

- .1 Comply with requirements of WHIMS regarding use, handling, storage and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity and substrate moisture content for application and curing of sealants including special conditions governing use.

## **1.7 WARRANTY**

- .1 Provide warranty that states that caulking work will not leak, crack, crumble, melt, shrink, run, lose adhesion or stain adjacent surfaces in accordance with General Conditions, but for three years from date of substantial performance.

## **2 Products**

### **2.1 SEALANT MATERIALS**

- .1 TYPE S-1 – acrylic sealant: One part acrylic latex, Shore A Hardness 20, conforming to CAN/CGSB-19.17-M (current edition) and ASTM C834 (current edition).

Acceptable Products:  
Chemtron Latacalk  
Tremco Latex 100  
Sonneborn Sonolac

- .2 TYPE S-2 – silicone sealant: Mould and mildew resistant, Shore A Hardness 15-25, conforming to ASTM C920 (current edition), Type S, Grade NS, Class 25, use NT,G and A.

Acceptable Products:  
GE SCS 1700  
Dow Corning 786  
Tremco Tremflex 835  
Sonneborn Omni Plus

- .3 TYPE S-3 – silicone sealant, general construction, Shore A Hardness 15-25, conforming to CAN/CGSB-19.13M (current edition), classification C-1-40-B-N and C-1-25-BN and ASTM C920 (current edition), Type S, Grade NS, Class 25, use NT, M, G, A, and O.

Acceptable Products:  
GE Silpruf or GE Silpruf LM SCS 2700  
Dow Corning 790  
Chemtron 999

Tremco Spectrum 2  
Sonneborn Omni Seal

- .4 TYPE S-4 – Silicone sealant, Structural Glazing, Shore A Hardness 15-25, conforming to CAN/CGSB-19.13M (current edition), classification C-1-40-B-N and C-1-25-BN and ASTM C920 (current edition), Type S, Grade P, Class 25, use T and M.

Acceptable Products:  
GE Ultraglaze SSG4000/Spilruf SCS 2000  
Dow Corning 795  
Chemtron Multiseal  
Tremco Spectrum 2 or Proglaze II

- .5 TYPE S-5 – acoustical sealant, non-shrinking, non-hardening, single component, synthetic rubber sealant, conforming to CAN/CGSB-19.21.M (current edition).

Acceptable Products:  
Chemtron Metaseal  
Tremco Acoustic Sealant

- .6 TYPE S-6 – air-seal sealant, one part butyl non-hardening, conforming to CGSB 19-GP-14M (current edition).

Acceptable Products:  
Chemtron Butylin  
Tremco Acoustic Sealant

- .7 TYPE S-7 – Two part multi-component sealant, chemical curing, non-sag, exterior wall sealant, Shore A Hardness 2-35, conforming to CAN/CGSB-19.24M (current edition), Type 2, Class B, And ASTM C920 (current edition), Type S, Grade NS, Class 25, use NT, M and A.

Acceptable Products:  
Chemtron Thioplast 400  
Sikaflex 2c NS  
Tremco Dymeric  
Sonneborn NP 2

- .8 TYPE S-8 – horizontal joint sealant, two component, self leveling, conforming to CAN/CGSB-19.24M (current edition), Type 1, Class A, And ASTM C920 (current edition), Type M, Grade P, Class 5, use T, M and O.

Acceptable Products:  
Sikaflex 2c SL  
Tremco THC-901  
Sonneborn SL 2

- .9 TYPE S-9 – polyurethane sealant, one component, non-sag, for general construction, Shore A Hardness 15+, conforming to CAN/CGSB-19.13M (current edition), Type 2, Classification MCG-2-25-A-N and ASTM C920 (current edition), Type S, Grade NS, Class 25, use NT, M and A.

Acceptable Products:  
Chemtron Multiflex  
Sikaflex 1-a  
Sika / Sternson RC-1  
Tremco Dymonic  
Sonneborn NP 1  
Mameco / Vulkem 116

- .10 TYPE S-10 saw-cut sealant, multi component, solvent free, flexible epoxy, conforming to ASTM D2240 (current edition), Shore A Hardness 65-75.

Acceptable Material:  
Sika / Sternson Loadflex

- .11 TYPE S-11 two component polysulfide, non-sag sealant, conforming to ASTM C920 (current edition), Type M, Grade NS, Class 25, NT, Shore A hardness 15-25 for use on swimming pool and deck control joints in both concrete and ceramic tile joints, colour to be specified. Pourable grade for horizontal concrete joints, gun grade for vertical concrete joints and all ceramic tile joints.

Acceptable Material:  
Deck-O-Seal by W.R. Meadows (no alternates)

### **2.3 BACK-UP MATERIALS**

- .1 Polyethylene, Urethane, Neoprene or Vinyl Foam

.1 Extruded closed cell foam backer rod.

.2 Size: oversize 30 to 50%.

.3 Compatible with primers and sealants.

.4 Shore A Hardness: 20.

.5 Tensile Strength: 140 - 200 kPa.

- .2 Bond Breaker Tape

.1 Polyethylene bond breaker tape which will not bond to sealant.

- .3 Acceptable Products:

ITP Soft Type Backer Rod as manufactured by Industrial Polymers.  
SofRod as manufactured by Nomaco Inc.  
Tremco SofTM Rod as manufactured by Tremco Ltd.  
Tremco HBR as manufactured by Tremco Ltd.

### **2.4 JOINT CLEANER**

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

- .2 Primer: as recommended by manufacturer.

### **3 Execution**

#### **3.1 PREPARATION OF JOINT SURFACES**

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.

#### **3.2 PRIMING**

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

#### **3.3 BACKUP MATERIAL**

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape.

#### **3.4 MIXING**

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

#### **3.5 APPLICATION**

- .1 Sealant
  - .1 Apply sealant in accordance with manufacturer's instructions.
  - .2 Apply sealant in continuous beads.
  - .3 Apply sealant using gun with proper size nozzle.
  - .4 Use sufficient pressure to fill voids and joints solid.

- .5 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
- .6 Tool exposed surfaces to give slightly concave shape.
- .7 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing
  - .1 Cure sealants in accordance with sealant manufacturer's instructions.
  - .2 Do not cover up sealants until proper curing has taken place.
- .3 Cleanup
  - .1 Clean adjacent surfaces immediately and leave work neat and clean.
  - .2 Remove excess and droppings, using recommended cleaners as work progresses.
  - .3 Remove masking tape after initial set of sealant.

**END OF SECTION**



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**1 General**

**1.1 RELATED WORK**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 07 92 00 – Sealants: Caulking of joints between frames and other building components
- .3 Section 08 71 00 – Door Hardware: Supply of finish hardware
- .4 Section 08 80 00 – Glazing

**1.2 REFERENCES**

- .1 Aluminum Association Designation System for Aluminum Finish (1980).
- .2 ASTM E330-84 Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- .3 CAN/CSA-G40-21-M87 Structural Quality Steels.
- .4 CSA G164-M1981 Hot Dip Galvanizing of Irregularly Shaped Articles.
- .5 CGSB 1-GP-40M-79 Primer, Structural Steel, Oil Alkyd Type.
- .6 CAN/CGSB-12.1-M79 Glass, Safety, Tempered or Laminated.
- .7 CGSB 63-GP-2M-76 Windows, Extruded Aluminum, Vertical and Horizontal Sliding.

**1.3 DESIGN CRITERIA**

- .1 Design frames and doors in exterior walls to:
  - .1 Design and assemble exterior swinging doors to maintain the following:
    - .1 For single doors, air infiltration is not to exceed 2.78 m<sup>3</sup>/h.m. of perimeter crack, when tested to ASTM E283 at a pressure differential of 75 Pa.
    - .2 For double doors, air infiltration is not to exceed 5.63 m<sup>3</sup>/h.m. of perimeter crack, when tested to ASTM E283 at a pressure differential of 75 Pa.
  - .2 Limit deflection of mullions to maximum 1/175<sup>th</sup> of clear span when tested to ASTM E330 under the wind load of 1.2 kPa.
  - .3 Maintain the following tolerances:
    - .1 Maximum variation from plane or location shown on drawings: 2mm / m length. Non-accumulative.
    - .2 Maximum offset from true plane between 2 adjacent members butting end to end, in line: 1mm.

**1.4 SHOP DRAWINGS**

- .1 Submit shop drawings in accordance with Section 01 33 00 – Submittals.
- .2 Indicate each type of door and frame, extrusion profiles, method of assembly, section and hardware reinforcement, locations of exposed fasteners, finishes. Manufacturer's nameplates not allowed.
- .3 Submit catalogue details for each type of door and frame illustrating profiles, dimensions and methods of assembly.

**1.5 MAINTENANCE DATA**

- .1 Provide maintenance data for cleaning and maintenance of aluminum doors for incorporation into manual specified.

**1.6 MOCK-UP**

- .1 Prepare in accordance with Section 01 45 00 – Mock-ups.
- .2 Construct one complete assembly including door, door hardware, frame, and glazing.
- .3 Accepted Mock-Up may remain as part of finished work.
- .4 Accepted Mock-Up will represent standard of quality to which work is performed.

**1.7 STORAGE, HANDLING AND PROTECTION**

- .1 Comply with requirements of Section 01 33 00 - Submittals.
- .2 Apply temporary protective coating to finished surfaces. Remove coating after erection. Do not use coatings that will become hard to remove or leave residue.
- .3 Leave protective covering in place until final cleaning of building.
- .4 Store components off ground, braced or blocked to prevent twisting, racking, sagging and bending.

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## 2 Products

### 2.1 EXTERIOR ENTRANCES AND MAIN ENTRANCE INTERIOR VESTIBULES

- .1 Frames: sections extruded from AA6063-T5 aluminum alloy; non-thermally broken; with shear block and screw spline configuration; component sizes and arrangements shown; acceptable product:
  - .1 **Kawneer 1600 Series**  
**Alumicor 2500 Series**  
**United States Aluminum 7200 Series**  
**Columbia Aluminum 2500 Series**
  - .2 Swinging doors: non-thermally broken; heavy duty construction; sections extruded from AA6063-T5 aluminum alloy; hook in type extruded aluminum glass stops to suit; sizes and arrangements shown; acceptable product:
    - .1 Wide Stile Series, modified to reflect detailed size for head, sill and stile members.  
  
**Kawneer 500**  
**Columbia Aluminum Products 500**  
**United States Aluminum 550 Series**  
**Alumicor 600A Series**
    - .3 Glass: hermetically sealed double glazed units to requirements specified in Section 08 80 00.
    - .4 Glazing materials: high quality neoprene and EPDM glazing gaskets recommended by manufacturer to suit application and acceptable to Consultant.
    - .5 Swinging door adapters: sections extruded from AA6063-T5 aluminum alloy, minimum 2.5 mm base metal wall thickness; fitted with rot-proof weatherstripping retained by extruded aluminum adapters; compatible with curtain wall framing.
    - .6 Door hardware: as specified in Section 08 71 00.
    - .7 Weather-stripping for double doors at meeting rails: rot-proof; set in door edge.
    - .8 Fasteners and accessories: stainless steel, or corrosion resistant and compatible with aluminum frame sections.
    - .9 Sheet aluminum: anodizing quality; minimum 2 mm thickness.
    - .10 Glazing panels: constructed of 19 mm thick type double glazed sealed units.
    - .11 Rigid insulation: Type IV rigid polystyrene.
    - .12 Frames are to have punch-outs for security system hidden button with a mortar box on top. Punch out for electrical conduit, one for each door leaf.

## 2.4 INTERIOR BORROWED LIGHTS AND SWINGING DOORS

- .1 Frames: sections extruded from AA6063-T5 aluminum alloy; non-thermally broken; with shear block and screw spline configuration; component sizes and arrangements shown; acceptable product:

**Kawneer Tri-Fab 450 Series**  
**Alumicor 1800 Series**  
**United States Aluminum 450 Series**  
**Columbia Aluminum 4120S Series**

- .2 Swinging doors: heavy duty construction; sections extruded from AA6063-T5 aluminum alloy; non-thermally broken; hook in type extruded aluminum glass stops to suit; sizes and arrangements as shown; acceptable product:

- .3 Wide Stile Series, modified to reflect detailed size for head, sill and stile members.

**Kawneer 500**  
**Columbia Aluminum Products 500**  
**United States Aluminum 550 Series**  
**Alumicor 600A Series**

- .4 Swinging door adapters: sections extruded from AA6063-T5 aluminum alloy, minimum 2.5 mm base metal wall thickness; fitted with rot-proof weatherstripping retained by extruded aluminum adapters.

- .5 Glass: to requirements specified in Section 08 80 00.

- .6 Glazing materials: high quality neoprene and EPDM glazing gaskets recommended by manufacturer to suit application and acceptable to Consultant.

- .7 Door hardware: as specified in Section 08 71 00.

- .8 Sheet aluminum: anodizing quality; minimum thickness.

- .1 Brake shapes: 2 mm.  
.2 Closure pieces: 2 mm.

- .9 Internal reinforcements and anchorages: stainless steel, or corrosion resistant and compatible with aluminum frame sections.

- .10 Fasteners and accessories: stainless steel, or corrosion resistant and compatible with aluminum frame sections.

- .11 Frames are to have punch-outs for security system hidden button with a mortar box on top. Punch out for electrical conduit, one for each door leaf.

## 2.5 FINISHES

- .1 All aluminum surfaces exposed to view: clear anodized.
- .2 Concealed aluminum surfaces: mill.
- .3 Concealed steel components: galvanized.
- .4 Stainless steel: manufacturer's standards.

## **2.6 FABRICATION**

- .1 Construct door from extrusions of size and shape shown on shop drawings. Door top rails, bottom rails and stiles shall be porthole extrusions.
- .2 Corner construction shall be mechanical clip fastening plus SIGMA deep penetration plug and fillet welds.
- .3 Glazing stops shall be hook-in type with glazing gaskets. Meeting stiles on pairs of doors shall be provided with an adjustable weathered astragal.
- .4 The door bottom rail shall be weathered. Door weathering shall be Kawneer SEALAIR.

## **3 Execution**

### **3.1 INSTALLATION**

- .1 Doors shall be installed, glazed and adjusted by experienced personnel in accordance with the manufacturer's instructions and approved shop drawings. All items in this section shall be set in their correct location and shall be set level, square, plumb and at proper elevations and in alignment with other work.
- .2 Protection and Cleaning: Doors shall be protected from other building materials during and after installation until acceptance by the General Contractor. Thereafter, it shall be the responsibility of the General Contractor to maintain protection and provide final cleaning.
- .3 Incorporate internal reinforcing where required to meet design performance requirements.
- .4 Apply a coat of bituminous paint on concealed aluminum surfaces which shall be in contact with cementitious or dissimilar materials.
- .5 Set thresholds in full bed of mastic, secure in place.

### **3.2 GLAZING**

- .1 Glaze aluminum doors and frames in accordance with Section 08 80 00 – Glazing.

**3.3 CAULKING**

- .1 Seal joints to provide weathertight seal at outside and air, vapour seal at inside.
- .2 Apply sealant in accordance with Section 07 92 00 – Sealant. Conceal sealant within the aluminum work except where exposed use is permitted by Consultant.

**END OF SECTION**

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 08 11 16 – Aluminum Doors and Frames

### **1.2 REFERENCES**

- .1 American National Standards Institute ([ANSI](#))/Builders Hardware Manufacturers Association ([BHMA](#)):
  - .1 ANSI A117.1-1998, Accessible and Usable Buildings and Facilities
  - .2 ANSI/BHMA A156 Series of Standards
  - .3 ANSI/BHMA A156.18 Materials and Finishes
- .2 Builders Hardware Manufacturers Association ([BHMA](#)):
  - .1 Directory of Certified Products
- .3 Door and Hardware Institute ([DHI](#)):
  - .1 Sequence and Format for the Hardware Schedule
  - .2 ANSI/DHI A115.IG Installation Guide for Doors and Hardware

### **1.3 SUBSTITUTIONS**

- .1 The hardware listed in the Door Hardware Schedule establishes the quality standards, finishes, manufacturers and functions.
- .2 Materials other than the named products for the Project may be acceptable to the Consultant.

### **1.4 SUBMITTALS**

- .1 Provide submittals for review.
- .2 Submit product data indicating installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- .3 Submit product data, and finish hardware schedule at earliest possible date, particularly where approval of door hardware schedule must precede fabrication of other work that is critical in the Project construction schedule.
- .4 Submit door hardware schedule prepared by or under the supervision of qualified Architectural Hardware Consultant (AHC), detailing fabrication and assembly of door hardware.
- .5 Submit keying schedule prepared by or under the supervision of qualified Architectural Hardware Consultant (AHC), detailing Owner's final keying instructions for locks, including schematic keying diagram and index each key Group to unique door designations.

- .6 Submit product certificates signed by manufacturer of door hardware certifying that products furnished comply with requirements for labelled fire doors, for types and sizes of doors used for the Project

## **1.5 QUALITY ASSURANCE**

- .1 Conform to ULC and Building Code requirements, as applicable to hardware, for labelled or rated doors and frames, and for exiting, operation and function.
- .2 Only products listed in the BHMA Directory of Certified Products shall be used for hardware of this Project.
- .3 Door hardware supplier shall have warehousing facilities in Project's vicinity and shall employ a permanent staff member who is a fully certified and licensed Architectural Hardware Consultant (AHC), participating in the DHI Continuing Education Program, who will be responsible for the preparation of the door hardware schedule submittal:
  - .1 Door hardware supplier shall be available during the course of the Work to consult with Contractor, Consultant, and Owner about door hardware and keying.
- .4 Installer shall have completed door hardware similar in material, design, and extent to that indicated with a record of successful in service performance for the last five (5) years.

## **1.6 PERFORMANCE REQUIREMENTS**

- .1 Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated, and generally comply with the following provisions:
  - .1 Accessibility requirements in accordance with ANSI 117.1.
  - .2 Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
  - .3 Door Closers: Maximum opening force requirements as follows:
    - .1 Interior Hinged Doors: 22.2 N (5 lbf) applied perpendicular to door.
    - .2 Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
  - .4 Thresholds: Maximum 13 mm ( $\frac{1}{2}$ " ) high; bevel raised thresholds with a slope of maximum 1:2.



- .5 Latches, Locks, and Exit Devices: Maximum 67 N (15 lbf) to release the latch, and shall not require the use of a key, tool, or special knowledge for operation.
- .6 Door Closers: Maximum 133 N (30 lbf) to GROUP door in motion and maximum 67 N (15 lbf) to open door to minimum required width.

## **1.7 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver hardware items in original factory containers, clearly labelling contents and scheduled use for this project.
- .2 Inventory door hardware on receipt and provide secure lock up for door hardware delivered to Project site.
- .3 Store hardware in a clean, well illuminated (500 lux minimum) securely locked storage room accessible only to authorized personnel.
- .4 Store hardware items on shelves (not on floors) separated and packaged as a group for each individual door with the door number, and list of items for that door on each package related to the door hardware schedule, and include basic installation instructions with each item or package.
- .5 Maintain an itemized inventory list of each item, updated on a daily basis, to show items in storage and items installed.
- .6 Key to existing building requirements & Grandmaster Key system.

## **1.8 COORDINATION**

- .1 Obtain and distribute templates for doors, frames, and other work specified to be factory prepared for installing door hardware.
- .2 Coordinate with shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware in accordance with indicated requirements.

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**1.9 WARRANTY**

- .1 Provide written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
- .2 Failures include, but are not limited to, the following:
  - .1 Structural failures including excessive deflection, cracking, or breakage.
  - .2 Faulty operation of operators and door hardware.
  - .3 Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- .3 Warranty Period: From date of Substantial Performance, and as follows:

Locks, latches and cylinders	2 year
Closers	10 years
Hinges	1 year
Panics	5 years
Miscellaneous	1 year
Electrical Hardware:	5 years

**1.10 MAINTENANCE MATERIALS**

- .1 Furnish a complete GROUP of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

**2 Products**

**2.1 SCHEDULED DOOR HARDWARE**

- .1 Provide door hardware for each door in accordance with requirements in this Section, door hardware Groups indicated in door, frame and hardware schedule in Section 08 06 00, and the Door Hardware Schedule in Item 0 below.
- .2 Alternates to the hardware listed in the Door Hardware Schedule will not be accepted for this project.

**2.2 ACCEPTABLE PRODUCTS**

- .1 The following manufacturers have been specified for use on this project.
- .2 Specified Product Acceptable Alternate

Hinges: Hager	STANLEY MCKINNEY
Continuous Hinges: Pemko	HAGER MCKINNEY

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Locksets/Cylinder: CORBIN LWA	SARGENT 8200 YALE 8700 SCHLAGE L9000
Door Closers: NORTON 7500	SARGENT 351 CORBIN DC2200 LCN 4041
Door Closers: NORTON UNI-7500	SARGENT 351 X 690 CORBIN DC2200 X A12 LCN 4041 X GJ100
Exit Devices: CORBIN ED4000/ED5000	SARGENT 80 YALE 7100/7200 VON DUPRIN 35/98
Ext. Exit Devices: CORBIN ED4000S/ED5000S	YALE 7150/7250 SQUAREBOLT
Flat Goods: CDH	HAGER GALLERY STANDARD METAL
Weatherstripping: Pemko	K N CROWDER AK DRAFT NATIONAL GUARD
Auto Operators:	Besam 455 STANLEY MAGIC FORCE HORTON 4000LE GYROTECH GT500

All alternates must be equal in grade and function to specified product.

- .3 Insure all hardware is properly sized during shop drawing preparation and hardware ordering.

## 2.3 KEYING

- .1 Manufacturer's standard; finish face to match lockset; in accordance with the following.
- .2 Temporary Construction Keying:
- .1 Construction Master Keys: Provide construction only cylinders with construction keying. Provide 10 construction master keys.
- .3 Permanent Keying System: Provide a factory registered high security keying system in accordance with the following requirements:
- .1 New System: Master key or grand master key locks to Owner's new system.
- .4 Keys: Provide nickel-silver keys in accordance with the following:

- .1 Stamping: Permanently inscribe each key with a visual key control number and each key with “Do Not Duplicate”.
- .2 Quantity: In addition to one extra blank key for each lock, provide the following:
  - .1 Cylinder Change Keys: Three
  - .2 Master Keys: Five
  - .3 Grand Master Keys: Five

### **3 Execution**

#### **3.1 EXAMINATION**

- .1 Examine doors and frames, with installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- .2 Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- .3 Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 PREPARATION**

- .1 Steel Doors and Frames: Comply with DHI A115 series.

#### **3.3 INSTALLATION**

- .1 Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required in accordance with governing regulations:
  - .1 Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - .2 Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
  - .3 Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- .2 Install each door hardware item in accordance with manufacturer's written instructions.
- .3 Coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way.
- .4 Do not install surface mounted items until finishes have been completed on substrates involved, and as follows:
  - .1 GROUP units level, plumb, and true to line and location.

- .2 Adjust and reinforce attachment substrates as necessary for proper installation and operation.
- .3 Drill and countersink units that are not factory prepared for anchorage fasteners.
- .4 Space fasteners and anchors according to industry standards.
- .5 Key Control System: Place keys on markers and hooks in key control system cabinet, as determined by final keying schedule.
- .6 Thresholds: GROUP thresholds for exterior and acoustical doors in full bed of sealant in accordance with requirements specified in Section 07 92 00 – Sealants.

### **3.4 ADJUSTING**

- .1 Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and in accordance with referenced accessibility requirements:
  - .1 Door Closers: Adjust sweep period so that, from an open position of 70°, the door will take at least 3 seconds to move to a point 76 mm (3") from the latch, measured to the leading edge of the door.
- .2 Six Month Adjustment: Approximately six months after date of Substantial Performance, perform the following:
  - .1 Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.
  - .2 Consult with and instruct Owner's personnel on recommended maintenance procedures.
  - .3 Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

### **3.5 CLEANING AND PROTECTION**

- .1 Clean adjacent surfaces soiled by door hardware installation.
- .2 Clean operating items as necessary to restore proper function and finish.
- .3 Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

### **3.6 DEMONSTRATION**

- .1 Engage a factory authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes.

**3.7 DOOR HARDWARE SCHEDULE**

.1 Hardware groups as follows:

**Hardware Group No. 001 - AUTO OPERATOR**

For use on Door #(s):

37

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 127X114MM NRP		630	IVE
1	EA	POWER TRANSFER	EPT10 CON		⚡ 689	VON
1	EA	FIXED MULLION	FIXED MULLION BY FRAME SUPPLIER			
1	EA	ADVANCE LOGIC RELAY	CX-33		⚡	CAM
1	EA	PANIC HARDWARE	35A-EO		626	VON
1	EA	ELEC PANIC HARDWARE	HD-QEL-35A-NL-OP-388-CON 24 VDC		⚡ 626	VON
1	EA	MORTISE CYLINDER	20-001 114 36-083		626	SCH
1	EA	RIM CYLINDER	20-021		626	SCH
2	EA	90 DEG OFFSET PULL	8190EZHD 305MM STD		630-316	IVE
1	EA	OH STOP	100S		630	GLY
1	EA	OH STOP	100S ADJ USE WITH 4642L OPERATOR		630	GLY
1	EA	SURFACE CLOSER	TJ4040XP LONG		689	LCN
1	EA	SURF. AUTO OPERATOR	4642 STD LONG CS WMS 120 VAC		⚡ 689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ		689	LCN
2	EA	ACTUATOR, TOUCH	8310-836T		⚡ 630	LCN
1	EA	SEAL SET	WEATHERTRIP BY ALUMINUM DOOR & FRAME			
2	EA	DOOR SWEEP	8192AA X DR WIDTH		AA	ZER
1	EA	THRESHOLD	626A-223 X OPENING WIDTH		A	ZER
1	EA	WIRE HARNESS	CON__TO SUIT			SCH
1	EA	WIRE HARNESS	CON-6W			SCH
1	EA	KEY SWITCH	653-0405 NS L2 ATS 12/24 VDC		⚡ 613	SCE
1	EA	POWER SUPPLY	PS902 BBK 900-4RL KL900 120/240 VAC		⚡ LGR	SCE










**WIRE THE KEY SWITCH TO THE EXTERIOR ACTUATOR AND THE ELECTRIC PANIC HARDWARE.  
 THE KEY SWITCH TO BE USE TO TURN THE POWER OFF TO THE ACTUATOR AND THE  
 ELECTRIC PANIC AT THE OWNER'S DISCRETION.  
 WHEN THE ACTUATOR AND ELECTRIC PANIC ARE ENGIZED, THE LATCH IS RETRACTED  
 ALLOWING THE DOOR TO BE PULLED OPEN OR PRESSING THE ACTUATOR WILL ACTIVATE  
 THE AUTOMTIC DOOR OPERATOR.  
 FREE EXITING AT ALL TIME BY PRESSING PUSH PAD ON PANIC HARDWARE OR INSIDE  
 ACTUATOR WILL RETRACT THE LATCH AND ACTIVATE THE OPERATOR.**

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**Hardware Group No. 002 - AUTO OPERATOR**

For use on Door #(s):  
37A

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 114X114MM		652	IVE
2	EA	DUMMY PUSH BAR	350		626	VON
2	EA	90 DEG OFFSET PULL	8190EZHD 305MM STD		630- 316	IVE
1	EA	OH STOP	100S		630	GLY
1	EA	OH STOP	100S ADJ USE WITH 4642L OPERATOR		630	GLY
1	EA	SURFACE CLOSER	TJ4040XP LONG		689	LCN
1	EA	SURF. AUTO OPERATOR	4642 STD LONG CS WMS 120 VAC		⚡ 689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ		689	LCN
2	EA	ACTUATOR, TOUCH	8310-836T		⚡ 630	LCN

**END OF SECTION**

**1 General**

**1.1 RELATED WORK**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Glass and glazing of:
  - .1 Section 08 11 16 – Aluminum Doors and Frames

**1.2 REFERENCES**

- .1 Canadian General Standards Board (CGSB):
  - .1 CAN/CGSB-12.1-M90 Tempered or Laminated Safety Glass
  - .2 CAN/CGSB-12.3-M91 Flat, Clear Float Glass
  - .3 CAN/CGSB-12.4-M91 Heat Absorbing Glass
  - .4 CAN/CGSB-12.6-M91 Transparent (One-Way) Mirrors
  - .5 CAN/CGSB-12.8-M97 Insulating Glass Units
  - .6 CAN/CGSB-12.9-M91 Spandrel Glass
  - .7 CAN/CGSB-12.10-M76 Glass, Light and Heat Reflecting
  - .8 CAN/CGSB-12.12-M90 Plastic Safety Glazing Sheets
  - .9 CAN/CGSB-19.13-M87 Patterned Glass
  - .10 CAN/CGSB-19.13-M87 Sealing Compound, One-Component, Elastomeric, Chemical Curing
  - .11 CAN/CGSB 19-GP-14M Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing
  - .13 CAN/CGSB-19.24-M90 Multicomponent, Chemical-Curing Sealing Compound
- .2 Canadian Standards Association (CSA):
  - .1 CSA A440.2-09 Fenestration Energy Performance/User guide to CSA A440.2-09
  - .2 CSA Certification Program for Windows and Doors 2000
- .3 Environmental Choice Program (ECP):
  - .1 CCD 045-95 Sealants and Caulking
- .4 Flat Glass Manufacturers Association (FGMA):
  - .1 FGMA Glazing Manual - 1997
- .5 Laminators Safety Glass Association (LSGA):
  - .1 LSGA Laminated Glass Design Guide 2000



### **1.3 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Division 01.
- .2 Samples:
  - .1 Submit 300 mm x 300 mm sized samples of each type of glass, clearly labelled with manufacturer's name and glass type. Reference glass types to those scheduled and specified herein.
- .3 Test and Evaluation Reports:
  - .1 Prepare a stress analysis on all tinted heat/absorbing glass and light and heat reflecting glass. Submit prior to ordering glass.

### **1.4 PERFORMANCE REQUIREMENTS**

- .1 Source Limitations for Glass Sputter-Coated with Solar-Control Low-E coatings: Obtain sputter coated solar control Low-E coated glass in fabricated units from a fabricator that is certified by coated glass manufacturer has a certified fabricator program.
- .2 Provide continuity of building enclosure vapour and air barrier using glass and glazing materials utilizing inner light of multiple light sealed units for continuity of air and vapour seal.
- .3 Size glass to withstand wind loads, deck loads and positive and negative live loads acting normal to plane of glass to a design pressure of 75 kPa as measured in accordance with ANSI/ASTM E330.
- .4 Limit glass deflection to 1/200 with full recovery glazing materials.

### **1.5 QUALITY ASSURANCE**

- .1 Certifications:
  - .1 Insulating glass units shall be certified by the Insulated Glass Manufacturers Alliance (IGMA)

## **1.6 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver and store packaged materials in their original containers with manufacturer's labels intact.
- .2 Store glass vertically, off the ground, on "A" frames, braced or blocked to prevent racking, twisting, or sagging.
- .3 Take special care to protect edges of insulating glass units from damage but do not apply tape or other materials to edges.
- .4 Protect glass products from exposure to moisture or condensation prior to installation.
- .5 Install glass as soon as possible after delivery to site.
- .6 Handle glass carefully to its place of installation. Prevent damage to glass, adjacent materials and surfaces.

## **1.7 SITE CONDITIONS**

- .1 Coordinate the Work of this Section with the Installation of frames to ensure a continuous, uninterrupted sequence, and to prevent the undue exposure of unprotected frames to the weather.
- .2 Do not install any glass until all nearby welding is completed.
- .3 As each light of glass installed, mark it in a manner to make it visible and obvious to all persons. Do not use materials which may permanently mar, discolour or disfigure the glass.

## **1.8 WARRANTY**

- .1 provide manufacturer's guarantee for the following types of glass listed, against defects in materials and workmanship for the period indicated, commencing from the date of Substantial Performance of Work:
  - .1 Sealed glass units against misting, dusting, seal failure, thermal shock breaks, or other impairments: 5 years.

## **1.9 COORDINATION**

- .1 Confirm requirements for tolerances, clearance and bite and confirm with related sections.
- .2 Confirm compatibility of glazing with adjacent sealants.

## **2 Products**

### **2.1 GLASS MATERIALS**

- .1 Insulating Glass – double glazed, sealed, insulating glass units meeting the requirements of CAN/CGSB- 12.8-97 and ASTM E2190.
- .2 Float glass: to CAN/CGSB-12.3-M91, glazing quality 6 mm thick.

### **2.2 INSULATING GLASS**

- .1 Provide sealed insulating glass units in accordance with CAN/CGSB-12.8, in configurations indicated in Insulating Glass Schedule, and as specified herein. Make air pressure within sealed air space of insulating glass units to suit atmosphere conditions at the location of the installation to prevent distortion of the installed units. Thickness of glass for each pane determined by window size, snow loads and wind/suction loads but minimum glass thickness 6 mm each pane. Total thicknesses as noted below for each type of sealed unit.
- .2 Manufacture sealed insulating glass units without edge channels or tape, that is, with bare glass edges.
- .3 Use two stage seal method of manufacture, as follows:
  - .1 Primary Seal: polyisobutylene sealing compound between glass and metal spacer/separator, super spacer bar or TDSE Intercept.
  - .2 Secondary Seal: polyurethane, silicone or polysulphide base sealant, filling gap between the two lites of glass at the edge up to the spacer/separator and primary seal.
- .4 Spacer/separator to provide continuous vapour barrier between interior of sealed unit and secondary seal.
- .5 Sealants for Insulating Glass Units:
  - .1 Butyl-polyisobutylene Sealants: one component, polymer base, solvent curing, to CGSB 19-GP-14M, colour to match frame colour.
  - .2 Polysulphide Base and Polyurethane Base Sealants: to CAN/CGSB-19.24, multi-component, chemical curing, and as follows:
    - .1 Type: 2 - non-sag.
    - .2 Class: A - glazing.
    - .3 Movement Capability: plus and minus 25%.
    - .4 Colour: to be selected.

- .3 Silicone Base Sealants: to CAN/CGSB-19.13, one component, elastomeric, chemical curing, and as follows:
  - .1 Rheological Properties: Class 2 - non-sag.
  - .2 Substrate Class: G - Glass.
  - .3 Glazing Suitability: Class A - resists ultraviolet through glass.
  - .4 Temperature Class: L - low temperature
  - .5 Movement Class: 40.
  - .6 Colour: to be selected.
- .4 Do not use polyurethane sealants for insulating glass units having laminated glass with a polyvinyl butyrate interlayer.
- .6 Do not exceed the maximum deflection of the exterior lite of sealed units after installation with no wind loading of  $L/1000$  where L is the shortest dimension of the sealed unit. The ratio of the shortest dimension of the sealed unit (L) to the deflection (Y) to be  $Y/L = 1/1000$ .
- .7 Where required to minimize distortion, and to meet the requirements of item 2.2.6 of this Section, interior lite to be of thinner glass than exterior lite. Glass thicknesses indicated are to be minimum thicknesses, or thicker as required to withstand all superimposed loading, and to meet all Alberta Building Code Requirements. To all sidelights to doors, use tempered glass to all lites in lieu of heat strengthened glass.

### **2.3 GLAZING ACCESSORIES**

- .1 Sealant compound: one component, silicone base, solvent curing to CGSB 19-GP-18M-80 (current edition). Colour to match adjacent materials, as directed by Consultant.
- .2 Sealant compound: multi-component, chemical curing to CAN/CGSB-19.24-M80 (current edition), type 2, class A. Colour to match adjacent materials, as directed by Consultant.
- .3 Glazing tape: preformed butyl tape, integral spacing device, 10-15 durometer hardness, with integral neoprene shim, 80 durometer hardness, paper release.
- .4 Setting blocks: neoprene, Shore "A" durometer hardness 80, 100 mm long x 6 mm high x width to suit glass thickness.
- .5 Spacer shims: neoprene, Shore "A" durometer hardness as recommended by window manufacturers. Do not use metal, plastic or wood shims.
- .6 Glazing Splines and Gaskets: manufacturer's standard dry neoprene glazing splines and gaskets. Provide keyed type for fixed glazing stops and keyed or roll-in type for removable glazing retaining devices. Except where otherwise specified, colour shall match frame colour.
- .7 Glazing points and wire spring clips: corrosion resistant, manufacturer's standard.
- .8 Primer-sealers and cleaners: to glass and gasket manufacturer's standard.

### **2.4 GENERAL FABRICATION**

- .1 Cut all glass to field measurement with proper clearances; cut to produce clean, straight edges with no chips, cracks or flaws.

## **2.5 INSULATING GLASS FABRICATION**

- .1 Shop fabricate sealed glass units to CAN/CGSB.12.8 (current edition) and IGMAC certification as a minimum.
- .2 Sealed units shall have a minimum of 12mm air space giving a total overall thickness of not less than 25mm. Edge spacer shall not bow in or out more than 5mm over full length of a side.
- .3 Sealed units shall be assembled and air space sealed in a clean, dry environment, in a location with the same barometric air pressure as the job site.
- .4 Sealed units having pressure-venting or equalizing holes in spacer for site sealing, will be rejected.
- .5 Edges of sealed units shall be clean and not have metal or tape binding or facings.
- .6 Unit types, make-up and colour shade as listed at end of this Section.

## **3 Execution**

### **3.1 WORKMANSHIP**

- .1 Remove protective coatings and clean contact surfaces with solvent and wipe dry.
- .2 Apply primer-sealer to contact surfaces.
- .3 Place setting blocks as per manufacturer's instructions.
- .4 Install glass, rest on setting blocks, ensure full contact and adhesion at perimeter.
- .5 Install removable stops, without displacing tape or sealant.
- .6 Provide edge clearance of 3 mm minimum.
- .7 Insert spacer shims to center glass in space. Place shims at 600 mm o.c. and keep 6 mm below sight line.
- .8 Apply cap bead of sealant at exterior void.
- .9 Apply sealant to uniform and level line, flush with sightline and tooled or wiped with solvent to smooth appearance.
- .10 Do not cut or abrade tempered, heat treated, or coated glass.
- .11 Install safety glass in interior doors and partitions.

- .12 Supply glass with drawlines that will run horizontally when installed.
- .13 Leave labels on glass until final cleaning.
- .14 Be responsible for any faulty glazing and sealing to windows and doors. Reseal and make good any damage attributed to faulty glazing.

### **3.2 EXAMINATION**

- .1 Verify that openings for glass are correctly sized and within tolerance.
- .2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

### **3.3 INSTALLATION**

- .1 Install in accordance with the manufacturer's written instructions and the contract documents, plumb, true, level and rigid.
- .2 Do not glaze when ambient or surface temperatures are less than 4°C. Glazing rebates, stops and glass shall be dry, free from ice, frost slick, grease, oil, dust, rust, or other matter detrimental to adhesion, of tape, glazing compounds and sealant.
- .3 Installation of glass shall be by workmen skilled in this trade in strict accordance with manufacturer's directions, to produce a first-class installation.
- .4 Center and support glass on setting blocks at quarter points, as required shim sides.
- .5 Glass shall be free from contact with the frames and stops.
- .6 Label each light to show manufacturer's name or trademark, quality and thickness.
- .7 Glaze interior doors with foam or cork tape on both sides. For wired glass, use glazing tape. Trim tape even with the sight line.
- .8 Use sealant at exterior doors, sealing water and weather tight.

### **3.4 FINISHING**

- .1 Immediately remove sealant and compound droppings from finished surfaces.

### **3.5 GLAZING SCHEDULE**

- .1 Exterior:
  - .1 All exterior windows are curtain wall with double glazed insulating glass.
- .2 Interior:
  - .1 Inner vestibule doors and sidelights: 6 mm clear tempered.

- .2 Interior glazed doors and sidelights: 6 mm clear tempered.
- .3 Interior windows: 6 mm clear tempered.

**END OF SECTION**

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**1. General**

**1.1 RELATED WORK**

- .1 All parts of the Contract Documents apply to and govern the work of this Section.
- .2 Section 09 29 00 – Gypsum Board; Interior gypsum board
- .3 Furring

**1.2 GENERAL DOCUMENTS:**

- .1 General and Supplementary Conditions of Contract as well as Drawings and general provisions of Contract and Division 1 Specification section, apply to work of this section.

**1.3 DESCRIPTION OF WORK:**

- .1 Extent of steel stud framing is shown on drawings and schedules. Included are "C" shaped steel studs, miscellaneous track, channels, clips, bracing, bridging and fasteners necessary for complete installation.
- .2 Coordinate with all trades required to install work on or into work of this section.

**1.4 QUALITY ASSURANCE:**

- .1 Standards:
  - .1 ASTM A-446 Standard Specification for Steel Sheet, Zinc-coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality
  - .2 ASTM A-525 Standard Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
  - .3 ASTM A-568 Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled
  - .4 ASTM A-780 Practice for Repair of Damaged Hot-Dip Galvanized Coatings
- .2 ASTM C-955 Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Track), and Bracing or Bridging for Screw Application of Gypsum Board and Metal Plaster Bases.
- .3 ASTM C-1002 Standard Specification for Steel Drill Screws for the Application of Gypsum Board.
- .4 ASTM C-1007 Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories
- .5 AWS "Code for Welding in Building Construction, D1.0"
- .6 AWS "Specification for Welding Sheet Steel in Structures, D1.3"
- .7 ANSI Z49.1 "Safety in Welding and Cutting"
- .8 AISI "Specification for the Design of Cold-Formed Steel Structural Members "Fire-Resistance Rating: Where fire resistance rating is required, provide materials and installation which are in



compliance with those of applicable assemblies tested per ASTM E119 by fire testing laboratories acceptable to authorities having jurisdiction.

## **1.5 PERFORMANCE**

- .1 Design wind loads shall be in accordance with applicable building code or as shown on the drawings.
- .2 Design floor and roof loading, dead and live, shall be in accordance with applicable building code or as shown on the drawings. Maximum live load deflection of steel joists shall be  $L/360$ .
- .3 Maximum allowable wall deflection under transverse loading shall be  $L/360$  based on stud properties
- .4 Maximum deflection is based on that allowable for the finish material.
- .5 Designs shall include verification that allowable steel stress and end reaction are not exceeded in conformance to 1986 AISI Specification for the Design of Cold-Formed Steel Structural Members.

## **1.6 SUBMITTALS**

- .1 Product Data: Submit manufacturer's product specifications and installation instructions for systems used.
- .2 Certificates: Submit certification of compliance with fire and sound requirements indicated.
- .3 Samples: Furnish standard size sample of each linear or continuous product, and one sample of all other components required for project.
- .4 Shop Drawings: Submit shop drawings for special components and installations not fully dimensioned or detailed in the
- .5 Manufacturer's product data. Submit complete structural calculations signed, sealed and dated by a registered Professional Engineer indicating compliance with all applicable local and state codes with certification that all design loads have been accommodated for members and components, for all conditions. Indicate design loads required, member stresses, member deflection limitation, and connection designs.
- .7 All welds, both shop and field, shall be indicated using AWS "Welding Symbols, A2.0". Submit written description, as required, to illustrate each welding procedure to be performed in the work.
- .8 Placing Drawings: Submit placing drawings for framing members showing size and gauge designations, number, type, location and spacing. Indicate supplemental strapping, bracing, splices, bridging, accessories and details required for proper installation.

## **1.7 DELIVERY AND HANDLING**

- .1 Handling: Handle materials to avoid damage.
- .2 Delivery: Deliver materials to the jobsite in original packages, containers, or bundles bearing the brand name and manufacturer's identification.
- .3 Storage: Store materials in dry locations with adequate ventilation, free from water, and in such a manner to permit easy access for inspection and handling.
- .4 Damaged materials shall be removed from the job site.

- .5 Store and maintain welding electrodes in accordance with AWS "Code for Welding in Building Construction, D1.0", latest edition.

## 1.8 PROJECT CONDITIONS:

- .1 Protect adjacent work of other trades from damage, physical distress, etc.

## 2 Products

### 2.1 STEEL PARTITION AND SOFFIT FRAMING

- .1 Provide components and material in accordance with ASTM C754 for conditions as indicated on the drawings. All metal studs for interior partitions to use 25 gauge metal.
- .2 Steel Sheet Components, Steel Studs, and Runners In accordance with ASTM C645m requirements for metal and with ASTM A653, Z120 (G40), hot dip galvanized zinc coatings and as follows:
  - .1 Steel Studs: 0.50mm
  - .2 Runners:
    - .1 Double runner deflection track: Outside runner using 50mm flanges; inner runner of 33mm; maintaining 25mm (1") minimum deflection spaces unless noted otherwise on drawings.
    - .2 Base Runner: 33mm (1 5/16") X width and gauge to match steel studs.
  - .3 Flat Strap and Backing Plate: Sheet steel for blocking and bracing in length and width indicated: minimum base metal thickness: 0.84mm ( 0.033").
  - .4 Cold Rolled Channel Bridging: 1.22mm (0.084") bare steel thickness, with minimum 13mm (1/2") flange. Depth: minimum 38mm (1 1/2"). Clip Angle: 38mm (1 1/2") x 38mm ( 1 1/2") x 1.91mm (0.075") thick.
- .3 Furring Channels: Commercial steel sheet with ASTM A653, Z180 (G60) hot dip galvanized zinc coating and as follows:
  - .1 Hat shaped, rigid furring channels: ASTM C645, 0.60mm thickness x 22mm deep.
  - .2 Resilient Furring Channels: 0.60mm thickness x 13mm deep members designed to reduce sound transmission having asymmetrical face attached to single flange by slotted leg.
- .4 Fasteners for metal framing: Type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- .5 Acoustical sealant: to CGSB 19-GP-21M (current edition).
- .6 Metal Backing: Galvanized sheet steel minimum thickness 1.22mm (0.084") metal core thickness X 406mm (16") wide minimum or as indicated on the drawings.

- .7 Isolation strip at exterior walls: Adhesive backed, closed cell vinyl foam strips that allow fastener penetration without foam displacement, 3mm (1/8") thick, in width to suit full width of stud base runner.

### **3 Execution**

#### **3.1 PRE-INSTALLATION CONFERENCE:**

- .1 Prior to start of installation of light gauge metal framing systems, Contractor and sub-contractors shall meet at project site with installers of related work including door and window frames and mechanical and electrical work.
- .2 Review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.

#### **3.2 INSTALLING STEEL FRAMING: GENERAL**

- .1 Installation Standards: ASTM C754, and ASTM C840 requirements that apply to framing installation.
- .2 Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings or similar construction. In accordance with details indicated and with gypsum board manufacturer's written recommendations or, if none available, with NWCB, Specification Standards Manual.
- .3 Isolate steel framing from building structure at locations indicated to prevent transfer of load imposed by structural movement.
- .4 Isolate ceiling assemblies where they abut or are penetrated by building structure.
- .5 Isolate partition framing and wall furring where it abuts structure, except at floor.
- .6 Install double runner deflection track at head of assemblies that avoid axial loading of assembly and laterally support assembly.

#### **3.3 ERECTION**

- .1 Install runners at floors, ceilings and structural walls, columns where gypsum board assemblies are indicated on the drawings.
- .2 Where walls are installed directly against exterior walls, install foam gasket isolation strip between studs and walls...
- .3 Place studs vertically at 400 mm o.c. and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are scheduled to terminate at suspended ceilings OR to terminate at a prescribed dimension above suspended ceilings.
- .6 Attach studs to tracks using screws.

- .7 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .8 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.
- .9 Provide two studs extending from floor to ceiling at each side of openings wider than stud centers specified. Secure studs together, 50 mm apart using flat strap sheet steel, maximum 1000mm on center vertical typical each side of paired studs.
- .10 Install double studs at openings up to 2400mm in clear width. Secure studs together, 50 mm apart using flat strap sheet steel, maximum 1000mm on center vertical typical each side of paired studs.
- .11 Install triple studs at openings greater than 2400mm in clear width. Secure studs together, 50 mm apart using flat strap sheet steel, maximum 1000mm on center vertical typical each side of triple studs.
- .12 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .13 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .14 Provide 38 mm X 150mm wood stud secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.
- .15 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .16 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use double track slip joint.
- .17 Install continuous insulating strips to isolate studs from uninsulated surfaces.
- .18 Install two continuous beads of acoustical sealant under studs and tracks around perimeter of sound control partitions.
- .19 Provide stud or furring channel secured between studs to provide continuous backing behind gypsum board joints in partitions requiring a fire resistance rating.
- .20 Install bridging channels through steel stud pre-punched openings maximum 1500mm on center vertical. Bridging to be continuous to full length of wall.

**END OF SECTION**

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**1. General**

**1.1 RELATED SECTIONS**

- .1 Section 06 10 00 - Rough Carpentry
- .2 Section 07 21 16 - Fibrous batt insulation

**1.2 REFERENCE DOCUMENTS**

- .1 American Society for Testing and Materials (ASTM):
  - .1 ASTM C645-08a Standard Specification for Nonstructural Steel Framing Members
  - .2 ASTM C754-08 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
  - .3 ASTM C840-08 Standard Specification for Application and Finishing of Gypsum Board (Provide copy on site.)
  - .4 ASTM C1002-07 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
  - .5 ASTM C1047-05 Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base
  - .6 ASTM C1278/C1278 M-07a Standard Specification for Fibre-Reinforced Gypsum Panel
  - .7 ASTM C1280-07 Standard Specification for Application of Gypsum Sheathing (Provide copy on site.)
  - .8 ASTM C1288-99(2004)e1 Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets
  - .9 ASTM C1396/C1396 M-06a Standard Specification for Gypsum Board
- .2 Canadian General Standards Board (CGSB):
  - .1 CAN/CGSB-51.34-M86 AMEND Vapor Barrier, Polyethylene Sheet for Use in Building Construction.
- .3 Canadian Standards Association (CSA):
  - .1 CAN/CSA B111-1974(R2003) Wire Nails, Spikes and Staples.
- .4 Underwriters Laboratories of Canada (ULC):
  - .1 CAN/ULC-S101-07 Fire Endurance Tests of Building Construction and Materials.

**1.3 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Division 01.

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- .2 Samples:
    - .1 Comply with requirements of Division 01.
    - .2 Submit duplicate 300 mm x 300 mm samples of vinyl faced gypsum board.

## **2. Products**

### **2.1 GYPSUM BOARD**

- .1 Gypsum board products shall meet or exceed requirements of ASTM C1396M unless specified otherwise.
  - .1 Gypsum board products shall be 1220 mm wide x maximum practical length for application, unless specified otherwise .
  - .2 Fire Rated board and other board specified with Fire Rated core shall be labeled in accordance with a certification program accredited by the Standards Council of Canada
- .2 Standard Gypsum Board: ends square cut, tapered and beveled edges.
- .3 Fire Rated Gypsum Board: ends square cut, tapered and beveled edges.

### **2.2 FIBRE REINFORCED PANELS**

- .1 Fibre reinforced gypsum panel products shall meet or exceed requirements of ASTM C1278M.
- .2 Fibre reinforced gypsum panel products shall be 1220 mm wide x maximum practical length for application, unless specified otherwise .
- .3 Panels specified with Fire Rated core shall be labeled in accordance with a certification program accredited by the Standards Council of Canada
- .4 Interior Fibre Reinforced Gypsum Panels: ends square cut, tapered square edges.
- .5 Foil Backed Fibre Reinforced Gypsum Panels: ends square cut, tapered square edges.
- .6 Water-Resistant Fibre Reinforced Gypsum Backing Panels: ends square cut, tapered square edges.
- .7 Water-Resistant Exterior Fibre Reinforced Gypsum Sheathing Panels: ends square cut, square edges.
- .8 Cementitious Wallboard: to ASTM C1288, high density, glass fibre reinforced.

### **2.3 FRAMING MEMBERS**

- .1 Studs and Tracks: to ASTM C645, metal thickness as specified in Steel Stud Height Schedule for appropriate height and as specified elsewhere, galvanized to ASTM A653/A653M, Z180 zinc coating. Use minimum 0.88 mm studding for fibre-reinforced gypsum board.
- .2 Furring: 0.48 mm thick galvanized sheet steel to ASTM A653M-00, Z180 zinc coating, sizes as indicated on drawings.

- .3 Resilient Furring: 0.48 mm thick galvanized sheet steel to ASTM A653M-00, Z180 zinc coating, pre-punched, 35 mm face width, 16 mm high.

## **2.5 ACCESSORIES**

- .1 Accessories shall meet or exceed requirements of ASTM C1047 unless otherwise required for conformance to fire-rated assemblies.
- .2 Screws: to ASTM C1002, and modified as required for fastening to 1.22 mm and thicker steel studs.
- .3 Nails: to CAN/CSA B111, annular ring type, galvanized.
- .4 Adhesive for bonding gypsum board or panels to wood framing: to ASTM C557, waterproof, organic type, gun applied having VOC content less than the VOC limits of State of California's South Coast Air Quality Management District Rule #1168, June 2006.
- .5 Adhesive for laminating gypsum board or panel to gypsum board or panel: as recommended by gypsum board or panel manufacturer, as applicable and having VOC content less than the VOC limits of State of California's South Coast Air Quality Management District Rule #1168, June 2006.
- .6 Corner Beads: galvanized sheet steel to ASTM A653M, Z180 zinc coating, beaded angle, knurled and perforated, metal and paper flange combination, beaded angle, for installation with joint compound.
- .7 Casing Beads: galvanized sheet steel to ASTM A653M, Z180 zinc coating, beaded edge, knurled and perforated flange 32 mm wide, for joint compound filling.
- .8 Control Joints: pre-formed galvanized metal or plastic "V" type, perforated flanges.
- .9 Joint treatment material, joint tape and topping compound: to ASTM C475.

## **3. Execution**

### **3.1 INSTALLATION, GENERALLY**

- .1 Meet or exceed the requirements of ASTM C840 for gypsum board and ASTM C1280 for gypsum sheathing.
- .2 Materials and installation of fire-rated assemblies shall conform to assemblies that have achieved the specified rating when tested to CAN/ULC-S101.

### **3.2 INSTALLATION OF METAL FRAMING**

- .1 Meet or exceed the requirements of ASTM C754.
- .2 Provide double studs at partition openings, door and interior window jambs. First stud adjacent to openings shall be minimum 0.88 mm material thickness.
- .3 Provide concealed bracing as required to construct rigid installation. Provide bracing to building structure for partitions extended above ceilings.

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- .4 Provide extra length top track flanges to maintain clearance between structure and top of studs, to avoid transmission of structural loads to studs.
  - .5 Screw attach studs to top and bottom tracks of partitions less than ceiling height.
  - .6 Install steel channel brake shape backing for support of fixtures, heavy trim, washroom accessories, wall cabinets and similar construction. Position channel web to face gypsum board or panel, bend web at ends and screw to stud webs with two screws per connection.
  - .7 Frame openings for firestopping and around structural components, cabinets, access panels, and other built-in equipment, on four sides. Extend framing into recesses. Check clearances with respective equipment suppliers.

### **3.3 FURRING**

- .1 Furr to form bulkheads between ceilings at different levels. Furr for beams, columns, pipes, and around exposed services, except as otherwise indicated.
- .2 Frame perimeter of openings to support access panels, light fixtures, diffusers, grilles and similar components.
- .3 Install 150mm continuous strip of gypsum board, thickness to match resilient channel, or panel along base of partitions where resilient furring is installed.

### **3.7 APPLICATION OF BOARDS AND PANELS**

- .1 Do not apply gypsum board and panels until framing, blocking, mechanical and electrical work have been inspected and approved by Minister.
- .2 Erect gypsum board and panels vertically for walls unless horizontal application results in fewer end joints. Locate end joints over framing members.
- .3 Cut holes for penetrating items to minimize gaps between items and board and panels.
- .4 Keep end joints away from prominent locations and central portions of ceilings.
- .5 Locate vertical joints at least 300 mm from jamb lines of doors, windows and other openings.
- .6 Erect ceiling gypsum board and panels with long dimensions perpendicular to framing members.
- .8 Where applicable, adhere boards and panels directly to interior masonry or concrete walls as follows:
  - .1 Ensure substrate is dry and free from efflorescence.
  - .2 Mix and apply adhesive to manufacturer's directions.
  - .3 Temporarily secure aligned board and panels in place. Avoid impact or movement of boards and panels until adhesive sets firmly.
- .9 Install cementitious wallboard in accordance with ASTM C840, similar to water resistant gypsum board, and to manufacturer's recommendations.



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### 3.8 INSTALLATION OF ACCESSORIES

- .1 Provide control joints as follows:
  - .1 where indicated.
  - .2 at changes in substrate construction.
  - .3 at wall juncture with suspended ceilings.
  - .4 over control joints in substrate construction.
  - .5 at approximate 9 m spacing on long runs in excess of 9 m..
  - .6 at maximum 7.5 m spacing in each direction on ceilings.
  - .7 at maximum 3.5 m spacing in each direction on exterior soffits.
- .2 Install expansion joints at all building expansion joints.
- .3 Erect beads and joints straight and rigid. Use full length pieces only. Mitre and fit corners accurately.
- .4 Install corner beads at external angles. Secure to substrate.
- .5 Install casing beads where gypsum board and panel materials terminate against surface having no trim concealing the junction and where indicated on drawings.

### 3.9 TAPING AND FINISHING

- .1 Meet or exceed requirements of ASTM C840.
- .2 Provide the finish level, specified in ASTM C840, for the following surfaces:
  - .1 Level 1: plenum areas above ceilings and other concealed areas.
  - .2 Level 2: surfaces that are to receive ceramic tile.
  - .3 Level 3: surfaces that are to receive heavy spray or trowel applied finishes.
  - .4 Level 4: surfaces to receive wallcoverings, flat paints or light textures.
  - .5 Level 5: surfaces to receive semi-gloss paints.
- .3 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and topping compound.
- .4 Apply joint system according to manufacturer's directions. Feather out onto board and panel faces.
- .5 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of topping compound feathered out 300 mm onto board and panel faces.
- .6 Fill each screw and nail head depression individually with joint and topping compounds to bring flush with adjacent surfaces of gypsum board and panels so as to be invisible after painting is completed.
- .7 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surfaces of boards and panels.
- .8 Use minimum #120 grit sandpaper for first and second sandings. Use minimum #150 grit sandpaper for final sanding.
- .9 Completed installation shall be smooth, level or plumb, free from waves and other defects, ready for painting.

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**3.10 SKIM COATING**

- .1 Provide finish level 5 as specified in ASTM C840.
- .2 Mix joint compound slightly thinner than for joint taping.
- .3 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations and tool marks.
- .4 Allow skim coat to dry completely.
- .5 Remove ridges by light sanding or wiping with damp cloth.
- .6 Surfaces to receive skim coating are:
  - .1 Locations where fibre reinforced gypsum board panels are used and areas with expansive areas natural light.

**3.11 CUTTING AND PATCHING**

- .1 Do all cutting, patching and making good as required to provide a satisfactory finish.
- .2 When prime coat has become sufficiently dry, examine surfaces for any final patching that may be required. Use colour tinted patching compound for later visual examination and approval by Minister before final prime and paint coats.

**3.12 GYPSUM BOARD SCHEDULE**

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Board Type	Location
Regular Board	- All interior locations, except as specified below
Fire Rated	- Fire separations requiring fire resistance rating
Sheathing	- Exterior soffits - Exterior side of exterior wall framing - Other exterior locations
Gypsum Core Board	- Mechanical service shaft wall liner - Electrical service shaft wall liner
Foil Backed Wallboard Types as specified	- Interior side of exterior walls

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**3.13 FIBRE REINFORCED PANEL SCHEDULE**

Panel Type	Location
Interior Fibre Reinforced Gypsum Panels	- Locations where abuse is anticipated and as identified on drawings as <i>abuse resistant gypsum board</i> .
Foil-Backed Fibre Reinforced Gypsum Panels	- Interior side of exterior walls where abuse is anticipated and as noted on drawings as abuse resistant gypsum board. ( <i>Use in conjunction with foil backed gypsum board.</i> )
Water Resistant Fibre Reinforced Gypsum Backing	- As substrate for ceramic wall tile, except in showers, saunas and other similarly wet or highly humid areas - Walls surrounding service or mop sinks, janitor closets
Exterior Fibre Reinforced Gypsum Soffit Panels	- Exterior soffits - Exterior ceilings protected from liquid water
Exterior Fibre Reinforced Gypsum Sheathing Panels	- Exterior side of exterior wall framing - Other exterior locations
Cementitious Wallboard	- Backing for ceramic tile

**3.14 STEEL STUD HEIGHT SCHEDULE**

Maximum Stud Height (mm) based on lateral pressure of 240 Pa with deflection limit of L/240

Stud Spacing O.C.	0.48 mm Steel Design Thickness		0.88 mm Steel Design Thickness	
	300	400	300	400
Stud Depth (mm)	0.48 mm Steel Design Thickness		0.88 mm Steel Design Thickness	
64	3630	3430	4240	3910
92	4670	4370	5440	5000
102	5000	4670	6070	5590
152	6730	6020	8150	7470

Based upon tests with 13mm gypsum board both sides with screw fasteners spaced at 300 o.c. Heights also apply to greater gypsum board thickness and multiple gypsum board layers.

**END OF SECTION**

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**1 General**

**1.1 SECTION INCLUDES**

- .1 All labor, materials, tools and other equipment, services and supervision required to complete all exterior and interior painting and decorating work as indicated on Finish Schedules and to the full extent of the drawings and specifications.
- .2 Work under this contract shall also include, but not necessarily be limited to:
  - .1 Surface preparation of substrates as required for acceptance of painting, including cleaning, small crack repair, patching, caulking, and making good surfaces and areas to the limits defined under MPI preparation requirements.
  - .2 Specific pre-treatments noted herein or specified in the MPI Architectural Painting Specification Manual.
  - .3 Priming (except where pre-primed with an approved primer under other Sections of work) and painting of structural steel, miscellaneous metal, ornamental metal and primed steel equipment.
  - .4 Priming and back-priming of wood materials as noted herein or specified in the MPI Architectural Painting Specification Manual.
  - .5 Painting of all semi-concealed areas (e.g. inside of light troughs and valances, behind grilles, and projecting edges above and below sight lines).
  - .6 Painting of roof vent flashings in accordance with the requirements of Section 07 62 00.
  - .7 Zone and traffic marking (e.g. parking lines and numbers, direction arrows, small car, barrier free accessible and visitor parking bay designations, speed bump and pedestrian walkway demarcation, overhead height restrictions, etc. on exterior (asphalt and/or concrete) and interior (asphalt and/or concrete) surfaces except where such work is part of asphalt or concrete paving specification work.
  - .8 Painting of exposed to view mechanical (heating, ventilating and plumbing) services and equipment, e.g., ducts, sprinkler piping, etc., and electrical work unless pre-finished.
  - .9 Provision of safe and adequate ventilation as required over and above temporary ventilation supplied by others, where toxic and/or volatile / flammable materials are being used.
- .3 Refer to drawings and Room Finish Schedules for type, location and extent of finishes required, and include all touch-ups and field painting necessary to complete work shown, scheduled or specified.
- .4 This Section along with the drawings forms part of the Contract documents and is to be read, interpreted and coordinated with all other parts.
- .5 Division 0 and Section 00 73 03 - Supplementary Conditions and Division 1 form an integral part of this Section of Work. Painting contractor shall refer to these and all other related parts.
- .6 Do Not paint prefinished equipment and fixtures unless specifically noted otherwise on drawings OR in the Room Finish Schedule.
- .7 Do Not paint pre engineered building insulation surfaces.
- .8 Do Not paint pre engineered building GALVANIZED roof purlins.

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## 1.2 RELATED SECTIONS

- .1 Section 01 45 00 – Quality Control
- .2 Section 03 30 00 – Cast-in-place Concrete
- .3 Section 05 50 00 – Custom Steel Fabrications
- .4 Section 08 11 13 – Shop Priming steel doors and frames
- .5 Section 09 29 00 – Gypsum board
- .6 Mechanical (painting, stenciling, banding of mechanical systems)
- .7 Electrical (painting, stenciling, banding of electrical systems)

## 1.3 REFERENCES

- .1 The latest edition of the following reference standards shall govern all painting work:
  - .1 **Architectural Painting Specification Manual by the Master Painters Institute (MPI)**, including Identifiers, Evaluation, Systems, Preparation and Approved Product List. (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
  - .2 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
  - .3 National Fire Code of Canada.
  - .4 **Environmental Choice Program (ECP)**  
Paints and Surface Coatings, Low VOC Product Listings
  - .5 **The Society for Protective Coatings (SSPC)**
    - .1 Coating Material Guidelines
    - .2 Surface Preparation Guidelines
  - .6 **South Coast Air Quality Management District (SCAQMD) Rule #1113**,  
Architectural Coatings
  - .7 Green Seal Standard GS-11: Paints, First Edition, May 20, 1993
  - .8 Green Seal Standard GS-03: Anti-Corrosive Paints, Second Edition, January 7, 1997.

## 1.4 QUALITY ASSURANCE

- .1 This Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested, Contractor shall

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- provide a list of the last three comparable jobs including, name and location, specifying project manager, start & completion dates and value of the painting work.
- .2 Only qualified journeypersons, as defined by local jurisdiction shall be engaged in painting and decorating work. Apprentices may be employed provided they work under the direct supervision of a qualified journeyperson in accordance with trade regulations.
  - .3 All materials, preparation and workmanship shall conform to requirements of the latest edition of the Architectural Painting Specification Manual by the Master Painters Institute (MPI) (hereafter referred to as the MPI Painting Manual) as issued by the local MPI Accredited Quality Assurance Association having jurisdiction.
  - .4 All paint manufacturers and products used shall be as listed under the **Approved Product List Section of the MPI Painting Manual**.
  - .5 All painting and decorating work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority and the local MPI Accredited Quality Assurance Association. The painting contractor shall notify the Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Room Finish Schedule.
  - .6 VOC Emissions: Provide low VOC products
    - .1 Comply with California's South Coast Air Quality Management District (SCAQMD)  
Rule #1113, Architectural Coatings
    - .2 Comply with GreenSeal Standard GS-03: Anti-Corrosive Paints
    - .3 Comply with GreenSeal Standard GS-11: Paints
  - .7 **All surfaces requiring painting shall be inspected** by the Paint Inspection Agency who shall notify the Consultant and General Contractor in writing of any defects or problems, prior to commencing painting work, or after the prime coat shows defects in the substrate.
  - .8 Where "special" painting, coating or decorating system applications (i.e. non-MPI listed products or systems) are to be used, the paint or coating manufacturer shall provide as part of this work, certification of all surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to the Owner.
  - .9 The painting contractor shall receive written confirmation of the specific surface preparation procedures and primers used for all fabricated steel items from the fabricator / supplier to ascertain appropriate and manufacturer compatible finish coat materials to be used before painting any such work.
  - .10 Mandatory Pre-Application Meeting:
    - .1 Attendees shall include, but not be limited to the Contractor's personnel, The Consultant, the Mechanical Contractor and the Painting Contractor.
    - .2 Items discussed will include, environmental conditions, cleaning of surfaces, primers and coating materials and procedures, protection of completed work and site safety.

## **1.5 REGULATORY REQUIREMENTS**

- .1 Conform to the latest edition of Industrial Health and Safety Regulations issued by applicable authorities having jurisdiction in regard to site safety (ladders, scaffolding, ventilation, etc.).
- .2 Conform to requirements of local authorities having jurisdiction in regard to the storage, mixing, application and disposal of all paint and related waste materials. Refer to Waste Management and Disposal.
- .3 Fully cooperate at all times with the requirements of the Paint Inspection Agency in the performance of their duties, including providing access and assistance as required to complete inspection work.

## **1.6 SAMPLES AND MOCK-UPS**

- .1 Mockups shall be completed by the Contractor and reviewed by the Consultant PRIOR to commencement of general paint preparation, priming and top coat applications.
- .2 When requested by the Consultant, provide duplicate minimum 300 mm (12") square samples of surfaces or acceptable facsimiles requested painted with specified paint or coating in colors, gloss / sheen and textures required to MPI Painting Manual standards for review and approval. When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.
- .3 When requested by the Consultant or Paint Inspection Agency, prepare and paint designated surface, area, room or item (in each color scheme) to requirements specified herein, with specified paint or coating showing selected colors, gloss / sheen, textures and workmanship to MPI Painting Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

## **1.7 SUBMITTALS**

- .1 All submittals shall be in accordance with the requirements of Section 01 33 00 – Submittals PRIOR to commencement of surface preparation, primer and top coat(s) application.
- .2 Submit consent of surety with Bid Submission as proof of ability to supply a 100% two (2) year Maintenance Bond, if an MPI Accredited Quality Assurance Association's guarantee option is not used.
- .3 If requested, submit a list of all painting materials to the Consultant and the Paint Inspection Agency for review prior to ordering materials. If requested, provide an invoice list of all paint materials ordered for project work to Paint Inspection Agency indicating manufacturer, types and quantities for verification and compliance with specification and design requirements.
- .4 Submit two sets of Material Safety Data Sheets (MSDS) prior to commencement of work

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for review and for posting at job site as required.

- .5 If requested, submit work schedule for various stages of work when painting occupied areas for the Consultant's review and Owner's approval.
- .6 At project completion provide an itemized list complete with manufacturer, paint type and color coding for all colors used for Owner's later use in maintenance.
- .7 At project completion provide properly packaged maintenance materials as noted herein and obtain a signed receipt.

## **1.8 PRODUCT DELIVERY, STORAGE AND HANDLING**

- .1 Deliver all painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and color designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.
- .2 Store all paint materials in original labeled containers in a secure (lockable), dry, heated and well ventilated single designated area meeting the minimum requirements of both paint manufacturer and authorities having jurisdiction and at a minimum ambient temperature of 10° C. Only material used on this project to be stored on site.
- .3 Where toxic and/or volatile / explosive / flammable materials are being used, provide adequate fireproof storage lockers and take all necessary precautions and post adequate warnings (e.g. no smoking) as required.
- .4 Take all necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) shall be stored in suitable closed and rated containers and removed from the site on a daily basis.
- .5 Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.

## **1.9 SCHEDULING & COORDINATION**

- .1 Painting Sub contractor to verify recoat time of primers specified and verify schedule with Consultant and General Contractor.
- .2 Coordinate the supply of temporary heat, and light, scaffolding and platforms, and housekeeping services with Contractor.
- .3 Schedule painting operations to prevent disruption of and by other trades.
- .4 Schedule painting operations in occupied facilities to prevent disruption of occupants in and about the building. Painting shall be carried out in accordance with Owner's operating requirements. Schedule work such that painted surfaces will have dried before occupants are affected. Obtain written authorization from Consultant / Owner for changes in work schedule.



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**1.10 PROJECT / SITE REQUIREMENTS**

- .1 UNLESS specifically pre-approved by the specifying body, Paint Inspection Agency and the applied product manufacturer, perform no painting or decorating work when the ambient air and substrate temperatures are below 10° C for both interior and exterior work.
- .2 Perform no exterior painting work unless environmental conditions are within MPI and paint manufacturer's requirements or until adequate weather protection is provided. Where required, suitable weatherproof covering and sufficient heating facilities shall be in place to maintain minimum ambient air and substrate temperatures for 24 hours before, during and after paint application.
- .3 Perform no interior painting or decorating work unless adequate continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above minimum requirements for 24 hours before, during and after paint application. Provide supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
- .4 Perform no painting or decorating work when the relative humidity is above 85% or when the dew point is less than 3° C variance between the air / surface temperature.
- .5 Perform no painting or decorating work when the maximum moisture content of the substrate exceeds:
  - .1 12 % for concrete and masonry (clay and concrete brick/block).
  - .2 15% for wood.
  - .3 12 % for plaster and gypsum board.
- .6 Conduct all moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple cover patch test.
- .7 Test concrete, masonry and plaster surfaces for alkalinity as required. Concrete and masonry surfaces must be installed at least 28 days prior to painting and decorating work and must be visually dry on both sides.
- .8 Apply paint only to dry, clean, properly cured and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.
- .9 Perform no painting or decorating work unless a minimum lighting level of 323 Lux (30 foot candles) is provided on surfaces to be painted or decorated. Adequate lighting facilities shall be provided by the General Contractor.

**1.11 MAINTENANCE MATERIALS**

- .1 At project completion provide 4 liters of each type and color of paint from same production run used in full unopened cans of surplus paint, properly labeled and identified for Owner's later use in maintenance. Store where directed.

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## 1.12 WASTE MANAGEMENT AND DISPOSAL

- .1 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Obtain information on these controls from applicable Provincial and local government departments having jurisdiction.
- .2 All waste materials shall be separated and recycled. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility. Materials that cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- .3 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .4 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:
  - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
  - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
  - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
  - .4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
  - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
  - .6 Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
- .5 Set aside and protect surplus and uncontaminated finish materials not required by the Owner and deliver or arrange collection for verifiable re-use or re-manufacturing.

## 1.13 GUARANTEE

- .1 Furnish the local MPI Accredited Quality Assurance Association's two (2) year guarantee in accordance with MPI Painting Manual requirements.
- .2 All painting and decorating work shall be in accordance with MPI Painting Manual requirements and shall be inspected by the local MPI Accredited Quality Assurance Association's Paint Inspection Agency (inspector), whether using either the MPI Accredited Quality Assurance Association's guarantee, or the Maintenance Bond option. The cost for such inspections, and for either the local MPI Accredited Quality Assurance Association's Guarantee shall be included in the Base Bid Price.

## 2 Products

### 2.1 MATERIALS

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- .1 Only materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project. All such material shall be from a single manufacturer for each system used.
  - .2 Other materials such as linseed oil, shellac, thinners, solvents, etc. shall be the highest quality product of an MPI listed manufacturer and shall be compatible with paint materials being used as required.
  - .3 All materials used shall be lead and mercury free and shall have low VOC content where possible.
  - .4 All paint materials shall have good flowing and brushing properties and shall dry or cure free of blemishes, sags, air entrapment, etc. Refer to 3.7, Field Quality Control / Standard of Acceptance requirements.
  - .5 Where required, paints and coatings shall meet flame spread and smoke developed ratings designated by local Code requirements and/or authorities having jurisdiction.

## **2.2 EQUIPMENT**

- .1 Painting and Decorating Equipment: to best trade standards for type of product and application.
- .2 Spray Painting Equipment: of ample capacity, suited to the type and consistency of paint or coating being applied and kept clean and in good working order at all times.

## **2.3 MIXING AND TINTING**

- .1 Unless otherwise specified herein or pre-approved, all paint shall be ready-mixed and pre-tinted. Re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and color and gloss uniformity.
- .2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.
- .3 Where thinner is used, addition shall not exceed paint manufacturer's recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.
- .4 If required, thin paint for spraying according in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.

## **2.4 FINISH AND COLORS**

- .1 Unless otherwise specified herein, all painting work shall be in accordance with MPI Premium Grade finish requirements.
- .2 For deep colour application refer to Section 3.3.6 - Application.

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- .3 Colors shall be as selected by the Consultant from a manufacturer's full range of colors. A Finish Schedule will be furnished after award of the Contract.
  - .4 Exterior colors shall be based on three (3) and two (2) accent colors with a maximum of two (2) deep or bright colours. No more than seven (7) exterior colours will be selected for the entire project. Note that this does not include pre-finished items by others, e.g. aluminum or vinyl windows, aluminum doors and handrails, etc.
  - .5 Interior colors will be based on five (5) base colors and five (5) deep or bright accent colors. No more than ten (10) colors will be selected for the entire project. Note that this does not include pre-finished items by others, e.g. aluminum windows, aluminum doors and handrails, etc.
  - .6 Walls without a noted paint colour shall be painted the same color as noted walls within the given area.
  - .7 Ceilings, gypsum board and exposed structure shall be painted as per Room Finish Schedule.
  - .8 Except as noted herein or indicated on the Room Finish Schedule, interior walls and ceiling surfaces shall be painted in accordance with the following criteria over appropriate prime / sealer coat:
    - .1 All areas (except as noted): washable latex with G3 (eggshell) finish.
  - .9 Unless otherwise noted or scheduled all painted doors, frames and trim shall be painted using a G5 (semi-gloss) finish.
  - .10 Unless otherwise noted or scheduled all painted window frames, trim and sills shall be painted using a G5 (semi-gloss) finish.
  - .11 Access doors, prime coated butts and other prime painted hardware (e.g. door closers), registers, radiators and covers, exposed piping and electrical panels shall be painted to match adjacent surfaces (i.e. same color, texture and sheen), unless otherwise noted or where pre-finished.
  - .12 Plywood service panels (e.g. electrical, telephone and cable vision panels) including edges shall be back-primed and painted with flame retardant paint to match painted wall mounted on.
  - .13 The inside of all duct work or exposed ceiling area behind louvers, grills and diffusers for a minimum of 460 mm (18") or beyond sight line, whichever is greater, shall be painted using flat black (non-reflecting) paint.
  - .14 Parking bays lines shall be identified with 100 mm (4") wide white or yellow painted lines with each bay in accordance with approved parking layout and/or in accordance with the requirements or authorities having jurisdiction.
  - .15 Barrier free accessible parking bays and refuge areas shall be identified with appropriate symbol designation and/or in accordance with the requirements or authorities having jurisdiction.
  - .16 Pedestrian walkways shall be identified with 100 mm (4") wide yellow painted lines at 45

degrees to path of travel spaced at 450 mm (18") o.c. and/or in accordance with the requirements or authorities having jurisdiction.

- .17 Where other methods are not specified (i.e. applied material or nosings) and/or in accordance with the requirements or authorities having jurisdiction at stairs providing access and exit for persons with visual impairment, slip resistant paint shall be applied to handrails and treads. Slip resistant paint shall be of a contrasting color at tactile warning strips at stair treads and landings.

**2.5 GLOSS / SHEEN RATINGS**

- .1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following MPI values:

Gloss Level	Description	Units @ 60 degrees	Units @ 85 degrees
G1	Matte or Flat finish	0 to 5	10 max.
G2	Velvet finish	0 to 10	10 to 35
G3	Eggshell finish	10 to 25	10 to 35
G4	Satin finish	20 to 35	35 min.
G5	Semi-Gloss finish	35 to 70	
G6	Gloss finish	70 to 85	
G7	High-Gloss finish	> 85	

- .2 Gloss level ratings of all painted surfaces shall be as specified herein and unless noted otherwise on Room Finish Schedule.

**3 Execution**

**3.1 CONDITION OF SURFACES**

- .1 Prior to commencement of work of this section, thoroughly examine (and test as required) all conditions and surfaces scheduled to be painted and report in writing to the Contractor and Consultant any conditions or surfaces that will adversely affect work of this section.
- .2 No painting work shall commence until all such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor and Inspection Agency.
- .3 Commencement of work shall not be held to imply acceptance of surfaces except as qualified herein. Such surfaces as concrete, masonry, structural steel and miscellaneous metal, wood, gypsum board and plaster, shall not be the responsibility of the Painting Subcontractor.
- .4 The Painting Subcontractor shall not be responsible for the condition of the substrate or for correcting defects and deficiencies in the substrate which may adversely affect the painting work except for minimal work normally performed by the Painting Subcontractor and as indicated herein. It shall always, however, be the responsibility of the Painting

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Subcontractor to see that surfaces are properly prepared before any paint or coating is applied.

### 3.2 PREPARATION OF SURFACES

- .1 Prepare all surfaces in accordance with MPI requirements. Refer to the MPI Painting Manual in regard to specific requirements for the following:
  - .1 environmental conditions.
  - .2 asphalt surfaces.
  - .3 vertical and horizontal concrete surfaces.
  - .4 structural steel and miscellaneous metals.
  - .5 galvanized and zinc coated metal.
  - .6 aluminum and copper surfaces.
  - .7 glue laminated beams and columns.
  - .8 dimension and dressed lumber.
  - .9 wood doors.
  - .10 wood paneling and casework.
  - .11 gypsum board.
  - .12 acoustical panels.
  - .13 bituminous coated surfaces.
  - .14 metal doors and frames
- .2 Sand, clean, dry, etch, neutralize and/or test all surfaces under adequate illumination, ventilation and temperature requirements.
- .3 Remove and securely store all miscellaneous hardware and surface fittings / fastenings (e.g. electrical plates, mechanical louvers, door and window hardware (e.g. hinges, knobs, locks, trim, frame stops), removable rating / hazard / instruction labels, washroom accessories, light fixture trim, etc. from wall and ceiling surfaces, doors and frames, prior to painting. Carefully clean and replace all such items upon completion of painting work in each area. Do not use solvent or reactive cleaning agents on items that will mar or remove finishes (e.g. lacquer finishes). Doors shall be removed before painting to paint bottom and top edges and then re-hung.
- .4 Protect all adjacent interior surfaces and areas, including rating and instruction labels on doors, frames, equipment, piping, etc., from painting operations and damage with drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
- .5 Substrate defects shall be made good and sanded by others ready for painting particularly after the first coat of paint. Start of finish painting of defective surfaces (e.g. gypsum board) shall indicate acceptance of substrate and any costs of making good defects shall be borne by the painter including re-painting of entire defective surface (no touch-up painting).
- .6 Confirm preparation and primer used with fabricator of steel items. Refer to Quality Assurance.

### 3.3 APPLICATION

- .1 Do not paint unless substrates are acceptable and/or until all environmental conditions (heating, ventilation, lighting and completion of other subtrade work) are acceptable for applications of products.
- .2 Apply paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.
- .3 Apply paint and decorating material in a workmanlike manner using skilled and trade qualified applicators as noted under Quality Assurance.
- .4 Apply paint and coatings within an appropriate time frame after cleaning when environmental conditions encourage flash-rusting, rusting, contamination or the manufacturer's paint specifications require earlier applications.
- .5 Painting coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendations.
- .6 Unless otherwise approved by the painting inspection agency, apply a minimum of four coats of paint where deep or bright colors are used to achieve satisfactory results.
- .7 Sand and dust between each coat to provide an anchor for next coat and to remove defects visible from a distance up to 1000 mm (39").
- .8 Do not apply finishes on surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.
- .9 Prime coat of stain or varnish finishes in accordance with manufacturer's directions.
- .10 Paint finish shall continue through behind all wall-mounted items (e.g. chalk and tack boards).

### 3.4 EXTERIOR FINISH / COATING SYSTEMS:

Paint exterior surfaces in accordance with the following MPI Painting Manual requirements:

- .1 **Asphalt Surfaces:** (zone / traffic marking for drive and parking areas, etc.)  
EXT 2.1B Alkyd zone / traffic marking finish – MPI #32
- .2 **Concrete Horizontal Surfaces:** (decks, stairs, driveways and parking areas, etc.)  
EXT 3.2F Alkyd zone / traffic marking finish – MPI #32  
EXT 3.2H Sealer, clear finish – MPI #99
- .3 **Structural Steel and Metal Fabrications:** (columns, beams, joists)  
EXT 5.1F Epoxy (over H.B.Epoxy)  
Primer – Epoxy Primer – MPI #101  
Second Coat – High Build Epoxy – MPI #108

Third Coat – Epoxy – MPI #77



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- .4 **Steel - High Heat:** (heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted)
- EXT 5.2A Heat resistant enamel finish, maximum (205° C) – MPI # 21
- .5 **Galvanized Metal:** (not chromate passivated)  
For high contact / high traffic areas (doors, frames, railings, misc. steel, pipes, etc.)  
For low contact / low traffic areas (overhead decking, ducts, gutters, flashing, etc.)
- EXT 5.3B Alkyd G5 (semi-gloss) finish.
- Primer – Cementitious Primer – MPI #26  
Second Coat – Alkyd Finish - MPI #94  
Third Coat – Alkyd Finish – MPI #94
- .6 **Aluminum:** (sash, sills and frames, flashing, posts and railings, downpipes, etc.)
- EXT 5.4F Alkyd G5 (semi-gloss) finish.
- Primer – QD Metal Primer – MPI #95  
Second Coat – Alkyd Finish – MPI #94  
Third Coat – Alkyd Finish – MPI #94
- .7 **Copper:** (excluding roofs)
- EXT 5.5H Latex G1 (flat) finish.
- Primer – QD Metal Primer  
Second Coat – Latex Finish – MPI #10  
Third Coat – Latex Finish – MPI #10
- .8 **Glue Laminated Beams and Columns:**
- EXT 6.1J Polyurethane, pigmented.
- 3 coats of polyurethane - MPI #72
- .9 **Dimension Lumber:** (columns, beams, exposed joists, underside of decking, siding, fencing, etc.)
- EXT 6.2J Polyurethane, pigmented.
- 3 coats of polyurethane – MPI #72
- .10 **Dressed Lumber:** (doors, door and window frames, casings, battens, smooth facias, etc.)
- EXT 6.3H Polyurethane, pigmented
- 3 coats of polyurethane – MPI #72

.11 **Wood Paneling:** (plywood siding, fascias, soffits, etc.)

EXT 6.4L Stain, semi-transparent, water based.

Primer and Topcoats – MPI #156

.12 **Canvas and Cotton Coverings:** (pipes, ductwork, etc.)

EXT 10.1A Latex G1 (flat) finish – 3 coats latex – MPI #10

.13 **Bituminous Coated Surfaces:** (cast iron pipe, concrete, etc.)

EXT 10.2C Alkyd G5 (semi-gloss) finish.

Primer – Rust Inhibitive Primer – MPI #107

Second Coat – Alkyd Finish – MPI #8

Third Coat – Alkyd Finish – MPI #8

### 3.5 INTERIOR PAINT AND COATING SYSTEMS

Paint interior surfaces in accordance with the following MPI Painting Manual requirements:

.1 **Concrete Vertical Surfaces:** (sealed concrete walls and soffits)

Sika Florseal WB 18 & 25 – Water based Acrylic Concrete Cure and Seal

.2 **Concrete Horizontal Surfaces:** (painted floors and stairs)

INT 3.2B Alkyd floor enamel low gloss finish – 3 coats – MPI #59

.3 **Concrete Masonry Units:** (painted block walls)

INT 4.2D High performance architectural latex finish.

Primer – Latex Block Filler – MPI #4

Second Coat – HIPAC Latex – MPI #141

Third Coat – HIPAC Latex – MPI #141

.4 **Structural Steel and Metal Fabrications:** (exposed structure)

INT 5.1CC Alkyd Dry Fall

Shop Prime – Q.D. Shop Primer – MPI #275

Finish Coats as per Section 3.3.6 – Alkyd Dry Fall – MPI #118

.5 **Structural Steel and Metal Fabrications:** (metal handrails, guardrails, guard support frames, etc.)

INT 5.1P High Build Epoxy

Primer – Epoxy Zinc Rich Primer – MPI #20

Second Coat – High Build Epoxy Finish – MPI #108

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Third Coat – Epoxy Finish – MPI #77

- .6 **Steel - High Heat:** (boilers, furnaces, heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted)

NT 5.2A Heat resistant enamel finish, (maximum 205° C) – MPI #21

- .7 **Galvanized Metal:** (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.)

INT 5.3C Alkyd finish (over cementitious primer).

Primer – Cementitious – MPI #2

Second Coat – Alkyd Finish – MPI #47

Third Coat – Alkyd Finish – MPI #47

- .8 **Copper:**

INT 5.5H Latex G1 (flat) finish.

Primer – QD Primer – MPI # 95

Second Coat – Latex Finish – MPI #53

Third Coat – Latex Finish – MPI #53

- .9 **Glue Laminated Beams and Columns:**

INT 6.1U Fire Retardant, pigmented – MPI #67

- .10 **Dimension Lumber:** (columns, beams, exposed joists, underside of decking, etc.)

INT 6.2F Fire Retardant, pigmented - MPI #67

- .11 **Dressed Lumber:** (including doors, door and window frames, casings, molding, etc.)

INT 6.3Y Polyurethane varnish G5 (semi-gloss) finish (over stain).

Stain – MPI #90

3 Coats – Polyurethane – MPI #31

- .12 **Wood Paneling and Casework:** (ceiling paneling)

INT 6.4P Fire Retardant, pigmented – MPI #76

- .13 **Plaster and Gypsum Board:** (gypsum wallboard, drywall, “sheet rock type material”, etc., and textured finishes)

INT 9.2B High performance architectural latex finish. Gloss/sheen as specified

Primer – Latex Primer Sealer – MPI #50

Second Coat – HIPAC Latex

Third Coat – HIPAC Latex

.14 **Canvas and Cotton Coverings:**

INT 10.1A Latex G1 (flat) finish.

Primer – MPI #50

Second coat – Latex Finish - MPI # 53

Third coat – Latex Finish – MPI #53

.15 **Bituminous Coated Surfaces:** (cast iron pipe, concrete, etc.)

INT 10.2A Latex G5 (semi-gloss) finish.

Primer – Rust Inhibitor - MPI #107

Second coat – Latex Finish – MPI # 54

Third Coat – Latex Finish – MPI # 54

**3.6 MECHANICAL / ELECTRICAL EQUIPMENT AND RELATED SURFACES**

.1 Unless otherwise specified or noted, paint all “unfinished” conduits, piping, hangers, ductwork and other mechanical and electrical equipment with color and texture to match adjacent surfaces, in the following areas:

.1 where exposed-to-view in all exterior and interior areas.

.2 in all interior high humidity interior areas.

.3 in all boiler room, mechanical and electrical rooms.

.2 In unfinished areas leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.

.3 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.4 Do not paint over nameplates.

.5 Paint the inside of all ductwork where visible behind louvers, grilles and diffusers for a minimum of 460 mm (18”) or beyond sight line, whichever is greater, with primer and one coat of matt black (non-reflecting) paint.

.6 Paint the inside of light valances gloss white.

.7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

.8 Paint or band all fire protection piping and sprinkler lines in accordance with mechanical specification requirements. Keep sprinkler heads free of paint.

.9 Paint or band all natural gas piping in accordance with mechanical specification requirements.

.10 Backprime and paint face and edges of plywood service panels for telephone and electrical equipment before installation to match adjacent wall surface. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

- .11 Paint exterior steel electrical light standards. Do not paint outdoor transformers and substation equipment.

### **3.7 FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE**

- .1 All surfaces, preparation and paint applications shall be inspected.
- .2 Painted exterior and interior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to the Painting Inspection Agency inspector:
  - .1 brush / roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
  - .2 evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.
  - .3 damage due to touching before paint is sufficiently dry or any other contributory cause.
  - .4 damage due to application on moist surfaces or caused by inadequate protection from the weather.
  - .5 damage and/or contamination of paint due to blown contaminants (dust, spray paint, etc.).
- .3 Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces and final lighting source (including daylight) for interior surfaces:
  - .1 visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39”).
  - .2 visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1000 mm (39”).
  - .3 visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.
  - .4 when the final coat on any surface exhibits a lack of uniformity of color, sheen, texture, and hiding across full surface area.
- .4 Painted surfaces rejected by the inspector shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas or areas without sufficient dry film thickness of paint shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.

### **3.8 PROTECTION**

- .1 Protect all exterior surfaces and areas, including landscaping, walks, drives, all adjacent building surfaces (including glass, aluminum surfaces, etc.) and equipment and any labels and signage from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.
- .2 Protect all interior surfaces and areas, including glass, aluminum surfaces, etc. and equipment and any labels and signage from painting operations and damage by drop

cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.

- .3 Erect barriers or screens and post signs to warn of or limit or direct traffic away or around work area as required.

### **3.9 CLEAN-UP**

- .1 Remove all paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
- .2 Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.
- .3 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
- .4 Clean equipment and dispose of wash water / solvents as well as all other cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints, thinners, paint removers / strippers in accordance with the safety requirements of authorities having jurisdiction.

**END OF SECTION**