



Specifications for

***John Howard Society of Kawartha Lakes & Haliburton
Renovations
31 Peel Street
Lindsay, Ontario***

February 2025

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JOHN HOWARD SOCIETY • LINDSAY • RENOVATIONS

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BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00100
INSTRUCTION TO BIDDERS

1. **SITE LOCATION** John Howard Society • Lindsay • Renovations
31 Peel Street
Lindsay, Ontario K9V 3L9
2. **OWNER** John Howard Society Kawartha Lakes & Haliburton
31 Peel Street
Lindsay, Ontario K9V 3L9
3. **CONSULTANT** Ronald A. Awde, Architect
1458 Highway 7A
Bethany, Ontario L0A 1A0
Telephone: (705) 277-9490
E.Mail: rawde@awdearchitect.com
4. **SUB-CONSULTANTS** Mechanical Engineers:
Berthelot Engineering Ltd.
2193 Lynhaven Road
Peterborough, Ontario K9K 1W8
Telephone: (705) 775-1517
E.Mail: ssranaghan@bertheloteng.com

Electrical Engineers:
Berthelot Engineering Ltd.
2193 Lynhaven Road
Peterborough, Ontario K9K 1W8
Telephone: (705) 775-1517
E.Mail: pberthelot@bertheloteng.com
6. **DOCUMENTS**
 - .1 Bidding Documents
 - .1 Documents may only be obtained through the Owner.
 - .2 All Documentation is the property of the Architect and **shall not be used for any other purpose than as intended to provide the information set out in this Request For Tender.**
 - .3 All Drawings and Specifications are for use in determining a bid amount only and must be destroyed following award of contract. Documents may not be used for any other purpose whatsoever and such use shall be considered to break the Architect's copyright under the provisions of statutes prohibiting same.
 - .4 The Consultant is not responsible for the completeness or accuracy of information resulting from reproduction of such documents.

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00100
INSTRUCTION TO BIDDERS

6. DOCUMENTS

- Continued

- .2 The following Contract Documents shall form the basis of the Contract and shall be consulted by the Bidders.
 - .1 Standard Construction Document CCDC 2 2020, Stipulated Price Contract and Section 00800, Supplementary Conditions.
 - .2 Section 00300 - The Tender Form, including all Supplementary Mechanical and Electrical tender forms.
 - .3 The Drawings.
 - .4 The Specifications.
 - .5 Addenda issued by the Architect prior to date set for reception of Tenders.
- .3 Documents on Site
 - .1 The Contractor for this Work will be issued with four (4) sets of documents for the Contract.
 - .2 Additional sets may be obtained, through the Consultant, at cost plus 10%, plus delivery charges and HST.

7. QUALIFICATIONS OF BIDDERS

- .1 In addition to Requirements indicated in the General Terms & Conditions, per Item 4.1 above, note the following:
 - .1 Bidders must be members in good standing with local, Provincial or National General Contractors Associations for a minimum of five (5) years.
 - .2 Bidders must be able to demonstrate general contracting project experience of equal size, complexity and cost to this project.
 - .3 The failure of a Bidder to adequately investigate the qualifications of a sub-trade or sub-contractor, resulting in a change of sub-trade or sub-contractor shall not result in any extension of time or costs to the Owner.

**8. EXAMINATION
& SITE VISIT**

- .1 General Contractors must attend a **Mandatory Site Meeting** on **---day, Month 00, 2020** at **00:00 p.m. EST** at John Howard Society Kawartha Lakes & Haliburton, 31 Peel Street, Lindsay, Ontario K9V 3L9.
- .2 All General Contractors and Sub-Contractors will be responsible for reviewing all Drawings and Specifications of other trades, as well as those pertaining to their own trades, to ensure a full understanding of the scope of their own Work.
- .3 General Contractors shall be responsible for ensuring the distribution of all the Instruments of Contract per Item 4.2 and Addenda thereto to all Sub-Tenderers or Sub-Contractors.

No claims for payment will be entertained because of the failure of the Owner, Architect, or their representatives to supply any Sub-Contractor with all or part of the Instruments of Contract and Addenda thereto, which have been supplied to the General Contractors up to the time for submitting Tenders.
- .4 No after claim will be allowed or entertained for any work or material that may be required for the proper execution and completion of the Work, due to failure to comply with the above.
- .5 Under no circumstances shall the Owner be responsible for any costs incurred by any Contractor or Sub-Contractor or any other party in submitting Tenders for the project, including the costs of preparing the Tender.

**9. PREPARATION
OF TENDER FORM**

- .1 All blank spaces on the Tender Form must be completed.
- .2 The Tender must not be qualified by any conditions other than those on the Tender Form or in this Specification.
- .3 The Tender will be irrevocable and remains open for acceptance from the time it is submitted until sixty (60) days after closing date.
- .4 All parts of the Tender Form completed by the Tenderer must be clearly legible.
- .5 Sign and seal the Tender submitted. Incorporated companies shall affix their seal under the hand of their duly authorized officers.

10. CLARIFICATIONS

- .1 During bidding period address all enquiries in writing to the Architect with a copy to the Owner.
- .2 Neither the Owner nor the Consultant will be responsible for verbal instruction. Clarifications will only be issued in the form of written Addenda.
- .3 Where clarifications of the Drawings or the Specifications are required, in response to enquiries during tendering period, the Architect will issue such clarifications in the form of Addenda, which must be incorporated in the Tender Price.
- .4 The same procedure will also be adopted for any clarifications or changes made by the Architect during tendering period.
- .5 The deadline for questions will be **---day, Month 00, 2024** at **00:00 p.m. EST**.

11. TENDER SUBMISSIONS

- .1 One original copy of pages 1-00300 through 7-00300 and Appendices 1 and 2 of the Tender Form shall be submitted at the time of tender submission noted in 0100-8.7, ***including in item 7.1, the names of the Prime Mechanical and Electrical Sub-Contractors*** carried by the General Contractor. Failure to list the names will result in the Tender being ruled informal.
- .2 Submit executed Tender on the Tender Form provided, executed under seal in a closed opaque envelope, clearly identified with Bidder's name, project name and the Owner's name on outside.

Include closed sealed Tender Form envelope and required Bid Bond, Agreement to Bond, undertaking to provide Irrevocable Letter of Credit and Undertaking of Insurance in this envelope.
- .3 Tenders that are unsigned, improperly signed or sealed, conditional, illegible, contain arithmetic errors, alterations or irregularities of any kind may be rejected by the Owner.
- .4 Tender submissions will be accepted only in the manner specified above. Telephoned, telegraphed or telefacsimiled Tender submissions will not be accepted.
- .5 The project name on the outside of the envelope shall be noted as follows:

John Howard Society • Lindsay
Renovations

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00100
INSTRUCTION TO BIDDERS

11. **TENDER SUBMISSIONS** - Continued
- .6 Deliver tenders to:
Dana Hetherton, Chief Executive Officer
John Howard Society Kawartha Lakes & Haliburton
31 Peel Street
Lindsay, Ontario K9V 3L9
- .7 Date of Closing:
____ day, Month 00, 2024 at 00:00 p.m. EST.
12. **TENDER OPENING**
- .1 Tender opening will not be public.
13. **AWARD OF CONTRACT**
- .1 The invitation to submit a Tender for the Work described in these Documents shall not be construed as a commitment by John Howard Society Kawartha Lakes & Haliburton to enter into an agreement or contract for the Work, either in its entirety or for any portion thereof.
- .2 The Owner shall have the following rights:
- .1 Not to accept lowest or any Tender.
- .2 On the acceptance of a Tender, to bind the Tenderer to execute a formal construction contract on the Standard Construction Document CCDC 2 2020.
- .3 The Owner reserves the right to fully investigate the qualifications (including financial status) of any Tenderer. The Owner's decision as to the Tenderer's suitability to tender shall be final.

**13. AWARD
OF CONTRACT**

- Continued

- .4 The submissions of Tenders does not obligate the Owner to accept any tender or proceed further with the project. The owner may in its sole discretion elect not to proceed with the project and may elect not to accept any and all Tenders for any reason and cancel the project. Alternatively, should the Owner not receive any satisfactory tenders it may, in its sole and absolute discretion revise the Instructions to Bidders or negotiate a contract for the whole or any part of the project with any of the Bidders. The Owner may also issue a Post-Tender Addendum to any or all Bidders seeking, if necessary, to reduce the Tender price.
- .5 The Owner reserves the right to accept or reject any and all Tenders, including, without limitation, the lowest price tender and to award the Contract to whomever the Owner, in its sole and absolute discretion, deems appropriate, not withstanding any custom of the trade to the contrary nor anything contained in the Tender documents.

14. SUBSTITUTIONS

- .1 The Bidder shall estimate all materials, equipment and labour called for in the Specifications or Drawings.
- .2 Should the Bidder desire to submit substitutes for materials, equipment or labour specified or indicated, they may request consideration by the Consultant within tendering period but not later than ten (10) working days before closing date in order to obtain **approval of the substitution**. The Consultant may issue an addendum to all bidders to include the substitute as an alternative to be stated on the Tender Form. See Section 01630 - Substitutions.
- .3 Above ruling applies also in case specified or indicated materials or equipment are not available at time of tender.

15. BONDS/DEPOSITS

- .1 Bidders are required to arrange, pay for and execute with an established Guarantee Company satisfactory to and approved by the Owner, the following:
 - .1 Bid Bond equal to ten per cent (10%) of the Tender amount. This bond to accompany the sealed Tender and be valid for a period of ninety (90) days from date of closing **or** a certified cheque, money order or bank draft payable to John Howard Society Kawartha Lakes & Haliburton in the amount of ten per cent (10%) of the Stipulated Sum shown in the tender.

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00100
INSTRUCTION TO BIDDERS

15. BONDS/DEPOSITS - Continued

- .2** Submit, with the Tender, an Agreement to Bond confirming the Bonding Company will supply the Performance Bond and Labour and Material Payment Bond within five (5) days of Tender acceptance based on:

 - .1** Performance Bond equal to fifty per cent (50%) of the Contract amount including a term covering the one year warranty period specified.
 - .2** Labour and Materials Payment Bond equal to fifty per cent (50%) of the Contract Amount including a term covering the one year warranty period specified.
- .2** If after a Tender has been accepted by the Owner and the successful Bidder fails or refuses to enter into a Contract or provide the required Performance Bond or Labour and Material Payment Bond, Irrevocable Letter of Credit or any of the other documents required herein within the time period specified, the Bid Bond shall be forfeited without recourse to the Owner.
- .3** The cost of all Bonds, including the cost of the Bid Bond, Agreement to Bond, Performance Bond and Labour and Material Payment Bond shall be included in the Tender Price.

16. TAXES & DUTIES

- .1** Tender on the basis of:

 - .1** Federal Harmonized Sales Tax (HST) excluded.
- .2** The successful Bidder must ensure that they completely understand all details of all procedures to be followed to obtain any sales tax exemptions as laid down in laws governing same. No allowance will be made by the Township of South Frontenac for tax charges made on the Contractor due to failure to follow such procedures.
- .3** In the event of any legislated change being made in amount of such taxes or duties, after execution of the Contract, the total Contract amount will be adjusted, either up or down in conformity with such changes for only the amount of the taxes or duties.

17. HOURS OF WORK

- .1** Tenders shall be based on work being carried out during normal hours.
- .2** There shall be no additional compensation for overtime Work.

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00100
INSTRUCTION TO BIDDERS

18. INSURANCE

- .1 Obtain and maintain in force, during the term of the Contract, insurance as outlined in General Conditions of Contract, Standard Construction Document CCDC 2 2020 and CCDC 41.
- .2 The Contractor shall at all relevant times carry Workplace Safety and Insurance Board of Ontario (WSIB) coverage.

19. PARKING FACILITIES

- .1 There will be limited use of the parking area on the Site. The Contractor shall make provision for temporary parking and for making good of all areas used for parking.
- .2 The Contractor will be permitted use of existing driveways for access to the area of Work or parking, but will be responsible for safety protocols related to ongoing use of area for the Owner's staff vehicles.

20. LABOUR

- .1 There shall be no interruptions in the Work due to labour disputes. The Owner reserves the right to require that any or all possible remedies be taken by the Contractor to ensure that no interruption to the Work occurs.

**21. SUPPLEMENTARY
TENDER FORMS
& SUBMITTALS**

- .1 Supplementary Mechanical and Electrical Tender Forms are bound into Document 00300 - Tender Form of these Specifications, to be completed by Mechanical and Electrical Sub-Contract Bidders carried by the General Contract Bidder.
- .2 Attach Supplementary Tender Forms and Staff Conduct Standards to the General Contract Tender Form and submit together with this Tender.

**22. WORK BY
THE OWNER**

- .1 The Owner reserves the right to have John Howard Society Kawartha Lakes & Haliburton employees and/or other Sub-Contractors to perform Work on site which may be related or unrelated to the Work of this Contract.

**23. ITEMS
NOT
INCLUDED
IN THE
CONTRACT**

- .1** Wherever, **as indicated in the Drawings or Specifications**, items are noted as 'N.I.C.' (Not In Contract), it is the intention of the Owner to provide such items either during or after the Contract period. The Contractor shall accommodate the entry of the materials into the Work when the N.I.C. item(s) is/are delivered to the Site.
- .2** Building Permits shall be obtained and paid for by the Owner.

END OF SECTION

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00300
TENDER FORM

PROJECT: John Howard Society • Lindsay
Renovations
31 Peel Street
Lindsay, Ontario K9V 3L9

NAME OF CONTRACTOR: _____

ADDRESS: _____

DATE OF SUBMISSION: _____

TO: Dana Hetherton, Chief Executive Officer
John Howard Society Kawartha Lakes & Haliburton
31 Peel Street
Lindsay, Ontario K9V 3L9

1. STIPULATED SUM

.1 We the undersigned, hereby offer to furnish all necessary labour, materials, plant, equipment and services required for the execution and completion of the entire Work, inclusive of all trades, for the construction and completion of the Work as hereinafter defined, all in accordance with the Drawings, Specifications, Instructions to Tenderers, General and Supplementary Conditions and Addenda Numbers:

for the **Stipulated Sum** of:

_____ Dollars (\$_____)

in lawful money of Canada, excluding Federal Harmonized Sales Tax (HST), but including all other applicable Excise Taxes, Customs, Duties and exchange in accordance with Canada Revenue Agency taxation policy.

This Tender amount **includes** \$_____ for Allowances in accordance with Section 01020 - Allowances.

2. QUALIFICATIONS

- 2.1** The undersigned agrees that if awarded the Contract, the Work will commence within twenty (20) working days after the date of the letter of acceptance and shall be completed within _____ () weeks.
- 2.2** The undersigned affirms that in making this Tender, they have not individually or as a representative of any company directly or indirectly, entered into any combination, collusion, undertaking or agreement with any other Tenderer(s) to maintain the prices of the Work, or any compact to prevent any other Tenderer from bidding on said Work, and further affirms that such Tender is made without any agreement or understanding or combination either directly or indirectly with any other person or persons with reference to such bidding in any way or manner whatsoever.

3. SUBSTITUTIONS - (Refer to Section 01630 - Substitutions)

- 3.1** Sub-Contractors wishing to use substitute brands in lieu of those specified shall list the proposed substitution below and shall include the amount to be added to or deducted from their Base Bids or marking "No Change" as the case may be, for each substitute.
- 3.2** Substitutions will not be used to determine the lowest compliant bid price.
- 3.3** It shall be further understood that unless a substitute is offered and subsequently accepted as indicated in the Contract between the Owner and the Contractor, then those brands specified shall be the ones that shall be furnished and installed.
- 3.4** Tenderers shall note that the amount for any proposed substitutions as listed below shall be taken by the Owner as including all related costs incurred by all other trades, cost of co-ordination and supervision, installation and testing, and any detail design or related engineering work affected, in order to accommodate the inclusion of the substitute into the Work.

DIV.	ITEM SPECIFIED	PROPOSED SUBSTITUTE	ADD OR (DEDUCT)
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____
_____	_____	_____	\$ _____

4. AGREEMENT

4.1 The undersigned agrees that this Tender is valid and subject to acceptance by the Owner for a period of **ninety (90) days** from date of Tender receipt, and that if notified of award of the Contract through Letter of Intent, will:

- .1** Execute a Contract with the Owner on the specified Form of Agreement.
 - .2** Furnish to the Owner, in care of the Consultant, copies of insurance policies as required by the General Conditions of the Contract.
 - .3** Furnish the Consultant, **within two (2) weeks of notification of award of Contract**, a complete breakdown of the Contract Amount by Sub-Trades for the purpose of checking and approving progress payments.
 - .4** Furnish the Consultant, within **ten (10) working days** of notification of award of contract, a Performance Bond issued by a Surety acceptable to the Owner in the amount of **50%** of the Contract Amount to ensure the full and proper completion of the Contract.
 - .5** Furnish to the Consultant, within **ten (10) working days** of notification of award of Contract, a Labour and Materials Payment Bond issued by a Surety acceptable to the Owner in the amount of **50%** of the Contract Amount.
- or**
- .6** In lieu of Performance, Labour and Materials Bonds, a Letter of Irrevocable Credit in the amount of **100%** of the Contract Amount.

5. ATTACHMENTS

5.1 We have attached to this Tender Form the following documents:

- .1** Agreement to Bond
- .2** Bid Bond
- .3** Document 00820 - Statutory Declaration Of Bidders

6. CHANGES TO THE WORK

6.1 Costs of any changes to the Work will be marked up as follows:

- .1** For General Contractor's work: 10% overhead and 5% profit.
- .2** For Sub-Contractors' work: 10% overhead and 10% profit.

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00300
TENDER FORM

**7. MECHANICAL
& ELECTRICAL**

7.1 We, the undersigned, are carrying the following prices for Mechanical and Electrical work within our Stipulated Price Tender.

.1 Mechanical _____ \$ _____
Name of Company

.2 Electrical _____ \$ _____
Name of Company

**8. SIGNATURE
OF TENDERER**

Signature _____

Title _____

Company _____

Witness _____

Seal

Official Address of Company:

Telephone () _____

Facsimile () _____

**9. LIST OF
SUB-CONTRACTORS**

- 9.1** This list of Sub-Contractors forms an integral part of the Tender Form. The list will be completed only by the compliant bidder with the lowest Stipulated Price and shall be submitted within 24 hours of the original Tender submission.
- 9.2** No changes to the List of Sub-Contractors will be allowed without the Consultant's express written permission.
- 9.3** The undersigned submits that in proposing the undermentioned Sub-Contractors they have consulted each and has ascertained to their complete satisfaction that those named are fully acquainted with the extent and nature of the Work involved, and the proposed construction schedule, and that they will execute the Work to conform to the requirements of the Contract Documents.
- 9.4** List each Sub-Contractor's firm by its proper legal designation.
- 9.5** Herewith is the list of Sub-Contractors we propose to use on this project:

ITEM/TRADE - FIRM/SUPPLIER

Plantings	_____
Masonry, Mortar And Accessories	_____
Rough Carpentry	_____
Finish Carpentry And Millwork	_____
Insulation	_____
Flashing And Sheet Metal	_____
Sealants, Gaskets, Barrier Membrane	_____
Hollow Metal Doors	_____
Interior Wood Doors	_____
Aluminum Windows	_____
Finish Hardware	_____
Miscellaneous Glass, Glazing And Mirrors	_____
Gypsum Board	_____

**9. LIST OF
SUB-CONTRACTORS**

9.5 - Continued

ITEM/TRADE - FIRM/SUPPLIER

Ceramic Tile	_____
Acoustic Ceilings	_____
Resilient Sheet Flooring And Base	_____
Painting	_____
Washroom Accessories	_____
Manufactured Specialties	_____
Mechanical	_____
Electrical	_____

**10. LIST OF
UNIT PRICES**

.1 Not Used.

**11. LIST OF
ITEMIZED
PRICES**

11.1 We submit the following itemized prices which **are** included in the Stipulated Price.
Prices include supply and install and all related costs.

.1 Not Used.

**12. LIST OF
SEPARATE PRICES**

12.1 We submit the following separate prices which are not included in the Stipulated Price,
but may be used to determine the lowest compliant bid price.
Prices include all direct and indirect costs, including, extension of time to the Contract.

.1 Not Used.

**13. LIST OF
ALTERNATE PRICES**

- 13.1** Alternate Prices are not considered in determining the lowest compliant bid price.
- 13.2** Alternate Prices are considered to include all direct and indirect costs, including extension of time to the Contract.
- 13.3** We submit the following alternate prices to the Stipulated Price in the Tender Form:
- .1** To Replace all existing windows not otherwise noted for replacement with new thermally broken, double glazed aluminum units per the Specifications:

Extra (Credit) to Stipulated Sum \$ _____

**1. LIST OF
UNIT PRICES**

- 1.1** We offer to provide extra Work or to delete certain Work as the Consultant may require, with increases or reductions in the Stipulated Price Sub-Contract. Such variations to the Contract shall be calculated using the number of Work Units added or deleted multiplied by the Unit Prices set hereunder. Unit Prices apply only to variations from base quantities and only to the net change (final difference between additions and deletions.) The Unit Price represents the total installed cost per unit including applicable taxes, overhead, profit and fees.

.1 Not Used.

**2. LIST OF
ITEMIZED
PRICES**

- 2.1** We submit the following itemized prices which are included in the Stipulated Price. Prices include all related overhead and fee costs.

.1 Not Used.

**3. LIST OF
SEPARATE
PRICES**

- 3.1** Separate Prices may be used to determine the lowest compliant bid price.
- 3.2** We submit the following separate prices which are not included in the Stipulated Price. Prices include all direct and indirect costs including but not limited to all taxes and duties, bonds, loss of anticipated profits and any extension required to contract time.

.1 Not Used.

**4. LABOUR
CONTRACTS**

- 4.1** We have labour contracts _____
with _____

which expire on _____

(include any Sub-Contractor contracts.)

**5. LIST OF
SUB-CONTRACTORS
& SUPERVISORS**

- 5.1** Listed below are the names of our Sub-Contractors and Supervisors who will be employed on this Project. No changes will be made to the following list after submission of this Tender.

<u>Item of Work</u>	<u>Sub-Contractor</u>	<u>Supervising Personnel</u>
Sheet Metal	_____	_____
Heating And Ventilation	_____	_____
Plumbing	_____	_____
Electrical Work	_____	_____

**6. LIST OF
SUPPLIERS,
MANUFACTURERS
& MATERIALS**

- 6.1** We based our Tender on the manufacturer/supplier of the specified material and equipment as circled on the attached lists.
- 6.2** We recognize that the specified manufacturers and/or suppliers have been listed with the sole intent to establish a common base for bidding, to indicate the type and quality of equipment and materials required and to assist in the selection of the successful bidder for each Contract.
- 6.3** We understand that naming of the manufacturer on which the Documents are based does not mean that their products are necessarily in a preferential position compared with acceptable alternative equipment and/or materials.
- 6.4** We agree that if tabulation of acceptable alternative equipment contained herein or any part thereof is not completed, it shall be understood that we do not wish to have any other product considered and we will supply the equipment and material listed under "Manufacturer On Which Contract Documents Are Based."
- 6.5** We agree that the Tender may be accepted either with or without the bidder's further alternatives.
- 6.6** We understand that if an alternative product is offered that causes more Work under any other Division or Contract, when compared with the specified product(s), we have made allowance therefore and any price adjustment offered thus is the net adjustment for the entire Project.
- 6.7** We state for each bidder's further alternative the amount including all applicable duties and taxes by which the Tender price is to be adjusted in case of acceptance.

**6. LIST OF
SUPPLIERS,
MANUFACTURERS
& MATERIALS** - Continued

6.8 For all bidder's further alternative equipment, we will submit literature providing complete data.

6.9 We recognize that the acceptance or rejection of bidder's further alternatives is the option of the Consultant and/or the Owner.

END OF APPENDIX 1

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00300
ELECTRICAL TENDER FORM - APPENDIX 2

**1. LIST OF
UNIT PRICES**

- 1.1** We offer to provide extra Work or to delete certain Work as the Consultant may require, with increases or reductions in the Stipulated Price Sub-Contract. Such variations to the Contract shall be calculated using the number of Work Units added or deleted multiplied by the Unit Prices set hereunder. Unit Prices apply only to variations from base quantities and only to the net change (final difference between additions and deletions.) The Unit Price represents the total cost per unit including applicable taxes, overhead and profit.

.1 Not Used.

**2. LIST OF
ITEMIZED
PRICES**

- 2.1** We submit the following itemized prices which are included in the Stipulated Price. Prices include all related overhead and fee costs.

.1 Not Used.

**3. LABOUR
CONTRACTS**

- 3.1** We have labour contracts _____
with _____

- which expire on _____

- (include any Sub-Contractor contracts.)

**4. LIST OF
SUB-CONTRACTORS
& SUPERVISORS**

- 4.1** Listed below are the names of our Sub-Contractors and Supervisors who will be employed on this Project. No changes will be made to the following list after submission of this Tender.

<u>Item of Work</u>	<u>Sub-Contractor</u>	<u>Supervising Personnel</u>
Permanent Site Superintendent	N/A	_____
Office Superintendent	N/A	_____
Job Foreman	N/A	_____
Testing	_____	_____
	_____	_____
	_____	_____

**5. LIST OF
SUPPLIERS,
MANUFACTURERS
& MATERIALS**

- 5.1** We based our Tender on the manufacturer/supplier of the specified material and equipment as circled on the attached lists.
- 5.2** We recognize that the specified manufacturers and/or suppliers have been listed with the sole intent to establish a common base for bidding, to indicate the type and quality of equipment and materials required and to assist in the selection of the successful bidder for each Contract.
- 5.3** We understand that naming of the manufacturer on which the Documents are based does not mean that their products are necessarily in a preferential position compared with acceptable alternative equipment and/or materials.
- 5.4** We agree that if tabulation of acceptable alternative equipment contained herein or any part thereof is not completed, it shall be understood that we do not wish to have any other product considered and we will supply the equipment and material listed under "Manufacturer On Which Contract Documents Are Based."
- 5.5** We agree that the Tender may be accepted either with or without the bidder's further alternatives.
- 5.6** We understand that if an alternative product is offered that causes more Work under any other Division or Contract, when compared with the specified product(s), we have made allowance therefore and any price adjustment offered thus is the net adjustment for the entire Project.
- 5.7** We state for each bidder's further alternative the amount including all applicable duties and taxes by which the Tender price is to be adjusted in case of acceptance.
- 5.8** For all bidder's further alternative equipment, we will submit literature providing complete data.
- 5.9** We recognize that the acceptance or rejection of bidder's further alternatives is the option of the Consultant and/or the Owner.

BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS

SC-1 GENERAL

- 1.1 These Supplementary Conditions presuppose the use of the Standard Construction Document CCDC 2 2020 for Stipulated Price Contract, GC 1 to GC 12, plus the addition of GC 13, 14 and 15 inclusive, in full. These "Supplementary Conditions" void, supersede or amend the "General Conditions" of the Document noted above as the case may be.
- 1.2 Throughout the Contract Documents reference to the "General Conditions of the Contract" shall imply the inclusion of "Supplementary Conditions".
- 1.3 Throughout the Contract Documents the term "Total Performance of the Work" is used, amend this term throughout to read: "Completion of the Contract".
- 1.4 Throughout the Contract Documents the term "Certificate of Total Performance of the Work" is used, amend this term throughout to read: "Statement of Completion of the Contract" and any other reference to the word "Certificate" then referring to "Certificate of Total Performance" shall be amended to read "Statement."
- 1.5 *Notices in Writing* between the parties or between them and the *Consultant* shall be considered to have been received by the addressee on the date of receipt if delivered by hand or by commercial courier or if sent during normal business hours by fax and addressed as set out below. Such *Notices in Writing* will be deemed to be received by the addressee on the next business day if sent by fax after normal business hours or if sent by overnight commercial courier. Such *Notices in Writing* will be deemed to be received by the addressee on the fifth *Working Day* following the date of mailing, if sent by pre-paid registered post, when addressed as set out below. An address for a party may be changed by *Notice in Writing* to the other party setting out the new address in accordance with this Article.
- 1.6 **Note:** Where changes in legislation governing payment, liens or other performance of the Work, such legislation shall govern the Contract and these Supplementary Conditions.

SC-2 DEFINITIONS

2.1 Add the following definitions:

.1 Submittals

Submittals are documents or items required by the *Contract Documents* to be provided by the *Contractor*, such as:

- Shop Drawings, samples, models, mock-ups to indicate details or characteristics, before the portion of the *Work* that they represent can be incorporated into the *Work*; and
- As-built drawings and manuals to provide instructions to the operation and maintenance of the *Work*.

Wherein the word "submit" is used in the *Contract Documents*, it shall be considered to be followed by the words "to the Consultant" unless the context provides otherwise.

.2 Headings

Headings of all articles of the Standard Construction Document CCDC 2, 2020 and all articles of the Specifications are inserted for reference only and do not affect the construction and the interpretation of the Contract.

.3 Schedules

Schedules are supplementary details and lists contained within or appended to the Specifications and to the Drawings.

.4 Syntax

Wherein the words "approved", "designated", "inspected", "instructed", "permitted", "required", "satisfactory", "selected" and "submit" are used in the *Contract Documents*, they shall be considered, unless the context provides otherwise, to be followed by the words "by the Consultant" and "to the Consultant".

.5 Provide

Where the word "Provide" is used, it shall mean supply and install at the Contractor's sole cost.

.6 Supply

Wherever the word "supply" is used in the *Contract Documents*, it means purchase and delivery of items by the Contractor at the their sole cost to the project site.

SC-2 DEFINITIONS

- Continued

.7 Install

Wherever the word "install" is used in the Contract Documents, it means unload, store, uncrate, assemble, mount in position, connect and otherwise perform the Work necessary for proper operation, by the Contractor at the their sole cost."

.8 Constructor

For purposes of the Contract, the Contractor shall be considered the 'Constructor' as defined by the Occupational Health and Safety Act and Regulation for Construction.

.9 Hazardous Substances

In addition to substances generally recognized as hazardous substances or characterized as such under applicable legislation, hazardous substances shall include any solid, liquid, gas, odour, heat, sound, vibration, radiation, mould, bacteria or combination of them that may impair the natural environment, injure or damage property, plant or animal life or harm or impair the health of any person."

.10 Conflict Of Interest

"Conflict of Interest means a situation in which financial or other personal considerations have the potential to compromise or bias professional judgment and objectivity. An apparent conflict of interest is one in which a reasonable person would think that the professional's judgment is likely to be compromised."

.11 Proper Invoice

Proper Invoice means a "proper invoice" as defined in the Payment Legislation, if any, and as may be modified by written agreement between the parties to the extent permitted by such Payment Legislation.

Refer to Section 01300 - Submittals, Item 3.3 for additional requirements.

.12 Substitution

Substitution means any change proposed by the *Contractor* for materials and/or assemblies or methodology as shown in the *Contract Documents*.

SC-3

AMENDMENTS TO AGREEMENT

.1 ARTICLE A-5 - PAYMENT

- .1 In paragraph 5.1.1 of Article A-5 add the following words to the end:
"or, where there is no Payment Certifier, jointly by the Owner and Contractor"

.2 ARTICLE A-6 – RECEIPT AND ADDRESSES FOR NOTICES IN WRITING

- .1 Delete paragraph 6.5 of Article A-6 in its entirety and replace it with the following:
6.5 Contact information for a party may be changed by Notice in Writing to the other party setting out the new contact information in accordance with this Article.

SC-4

PART 1 GENERAL PROVISIONS

GC 1.1

CONTRACT DOCUMENTS

- .1 Delete paragraphs 1.1.3 and 1.1.4 in their entirety and replace them with the following:

"1.1.3 The Contractor shall review the Contract Documents for the purpose of facilitating and co-ordination and execution of the Work by the Contractor. The Contractor shall report promptly to the Consultant any ambiguities, design issues or other matters requiring clarification made known to the Contractor or that the Contractor may discover from such a review. Such review by the Contractor shall comply with the standard of care described in paragraph 3.9.1 of the Contract.

1.1.4 Except for its obligation to review the Contract Documents and report the result pursuant to paragraph 1.1.3, the Contractor is not responsible for ambiguities, design issues or other matters requiring clarification in the Contract Documents and does not assume any responsibility to the Owner or to the Consultant for the accuracy of the Contract Documents. Without limiting the foregoing, the Contractor shall not be liable for any damages or costs resulting from any ambiguities, design issues or other matters requiring clarification in the Contract Documents which the Contractor could not reasonably have discovered from such a review in accordance with the standard of care. If the Contractor does discover any ambiguities, design issues or other matters requiring clarification in the Contract Documents, the Contractor shall not proceed with the work affected until the Contractor has received modified or additional information from the Consultant. The impacts of any ambiguities, design issues or other matters requiring clarification in the Contract Documents, including to the Contract Price and Contract Time, shall be addressed by the parties in accordance with Part 6 - CHANGES.

.2 *Add* the following 1.1.5:

The *Contractor* shall keep one copy of the current *Contract Documents, Supplemental Instructions, Contemplated Change Orders, Change Orders, Change Directives, Cash Allowance Disbursement Authorizations, reviewed Shop Drawings, Submittals*, reports and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and *Consultant*.

SC-5

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.2

ROLE OF THE CONSULTANT

.1 In paragraph 2.2.3 add the following to the end:

"Without limiting the foregoing, the Consultant may appoint one or more authorized representatives in writing who may fulfill the obligations of the Consultant under this Contract."

.2 In paragraph 2.2.8 add the words “, written statements” after the word “interpretations” in both the first and second sentences; and

.i Add the following to the end of paragraph 2.2.8:

The Owner and the Contractor shall waive any claims against the Consultant arising out of its making of any interpretations, written statements or findings in accordance with paragraphs 2.2.6, 2.2.7, 2.2.8, and 7.1.2, but only to the extent that any such interpretations, written statements, and findings are made by the Consultant in an unbiased manner, and in accordance with the Consultant's professional standard of care at law.

.3 In paragraph 2.2.13 add the words “which are provided” before the words “by the Contractor”.

SC-6

GC 2.3

REVIEW AND INSPECTION OF THE WORK

6.1 *Add* the following:

2.3.8 "Review of Installations - Work at Substantial Completion

- a) It shall be the responsibility of the Contractor to ensure that installations to be reviewed by the Architect are complete and satisfactory in every way prior to requesting such review.
- b) The Contractor shall be solely responsible for all consultant time and travel costs required as a result of follow up reviews of deficient Work.

**BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS**

SC-7 GC 2.3 REVIEW AND INSPECTION OF THE WORK

7.1 Add the following:

- c) If the Work is not found to be substantially complete at the time of review by the Consultants as requested by the Contractor, thereby necessitating reinspection by the Consultants; **a minimum of four (4) hours will be invoiced to the Owner at a rate of \$220 per hour plus \$60 for travel costs for each additional consultant review.** This amount will be deducted from the total amount owing to the Contractor and will be at their cost, not an expenditure from Allowances."

SC-8 GC 2.4 DEFECTIVE WORK

.1 In paragraph 2.4.1:

- .i** Add after the words "shall promptly correct" the phrase "in a manner acceptable to the Owner and the Consultant"; and
- .ii** Add after the words "Contract Documents" the phrase "or work that the Contractor discovers to be defective, whether or not the defective work had been identified by the Consultant, and"

.2 Add new paragraph 2.4.4 as follows:

- 2.4.4** The Contractor shall prioritize the correction of any defective work which, in the sole discretion of the Owner, adversely affects the day-to-day operation of the Owner.

SC-9 GC 3.1 CONTROL OF THE WORK

.1 Add new paragraph 3.1.4 as follows:

- 3.1.4** Prior to commencing individual procurement, fabrication and construction activities, the Contractor shall verify, at the Place of the Work, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the Work and shall further carefully compare such field measurements and conditions with the requirements of the Contract Documents. Where dimensions are not included or contradictions exist, or exact locations are not apparent, the Contractor shall immediately notify the Consultant in writing and obtain written instructions from the Consultant before proceeding with any part of the affected work.

SC-10 GC 3.2 **CONSTRUCTION BY THE OWNER AND OTHER CONTRACTORS**

.1 **Add** new paragraph 3.2.7 as follows:

3.2.7 At the commencement of the Work, the Contractor shall prepare for the review and acceptance of the Owner and the Consultant, a schedule indicating the times, within the construction schedule referred to in GC 3.4, that items that are specified to be Owner purchased and Contractor installed or hooked up are required at the site to avoid delaying the progress of the Work.

.2 **Add** new paragraph 3.2.8 as follows:

3.2.7 The Owner, Contractors and staff shall have the right to enter upon and occupy the Work, in whole or in part for the purpose of placing fittings and equipment or for such other uses as it may wish. Both the Owner and the Contractor shall co-operate with the other, so as to permit the Contractor to complete the Work and the Owner to place fittings and equipment in the most efficient manner possible. Such entry and occupancy shall not be interpreted as acceptance of the Work, nor in any way relieves the Contractor from its responsibilities under the Contract.

SC-12 GC 3.4 **CONSTRUCTION SCHEDULE**

11.1 **Delete** paragraph 3.4.1 in its entirety and **substitute** new paragraph 3.4.1:

3.4.1 The *Contractor* shall,

3.4.1.1 Prior to submitting the first application for payment, submit to the *Owner* and the *Consultant* for their review and acceptance a construction schedule indicating the critical path for the *Project* demonstrating that the *Work* will be performed in conformity with the *Contract Time* and in accordance with the *Contract Documents*. The *Contractor* shall provide the schedule information required by this paragraph in both electronic format and hard copy. Once accepted by the *Owner* and the *Consultant*, the construction schedule submitted by the *Contractor* shall become the baseline construction schedule;

3.4.1.2 Provide the expertise and resources, such resources including manpower and equipment, as are necessary to maintain progress under the accepted baseline construction schedule referred to in paragraph 3.5.1.1 or any successor or revised schedule accepted by the *Owner* pursuant to GC3.5;

3.4.1.3 Monitor the progress of the *Work* on a weekly basis relative to the construction schedule reviewed and accepted pursuant to paragraph 3.5.1.1, or any successor or revised schedule accepted by the *Owner* pursuant to GC 3.5, **update the schedule on a monthly basis and advise the *Consultant* and the *Owner* in writing of any variation from the baseline or slippage in the schedule; and**

3.4.1.4 If, after applying the expertise and resources required under paragraph 3.5.1.2, the *Contractor* forms the opinion that the slippage in schedule reported in paragraph 3.5.1.3 cannot be recovered by the *Contractor*, it shall, in the same notice provided under paragraph 3.5.1.3, **indicate to the *Consultant* and the *Owner* if the *Contractor* intends to apply for an extension of *Contract Time* as provided in PART 6 - CHANGES IN THE WORK.**

3.4.1.5 If the *Contractor* is not maintaining the *Contract* schedule consistent with its obligations under this *Contract*, then at the request of the *Owner*, the *Contractor* shall increase its efforts on the project, including, the addition of more personnel to the Project during regular times and during periods of time for which overtime may be required, all of which is to be done promptly at the *Contractor's* own cost and expense.

11.2 *Add* new paragraph 3.4.2:

If at any time it should appear to the *Owner* or the *Consultant* that the actual progress of the *Work* is behind schedule or is likely to become behind schedule, based on critical path methodology, or if the *Contractor* has given notice of such to the *Owner* or the *Consultant* pursuant to 3.5.1.3, the *Contractor* shall take appropriate steps to cause the actual progress of the *Work* to conform to the schedule and shall produce and present to the *Owner* and the *Consultant* a recovery plan demonstrating how the *Contractor* will achieve the recovery of the schedule.

SC-14 GC 3.5 SUPERVISION

14.1 *Add* new paragraph 3.5.2:

3.5.3 The supervisory staff assigned to the Project shall also be fully competent to implement efficiently all requirements for scheduling, co-ordination, field engineering, reviews, inspection and testing and submittals defined in the Specifications and have minimum three (3) years documented Superintendent/Project Management experience with projects of similar size and complexity as the Project.

14.2 *Add* new paragraph 3.5.4:

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

SC-15 GC 3.6 SUB-CONTRACTORS AND SUPPLIERS

15.1 *Add* new paragraph 3.6.7:

3.6.7 The *Contractor* agrees not to change *Sub-Contractors* without prior written approval of the *Owner*, which approval will not be unreasonably withheld.

SC-16 GC 3.7 LABOUR & PRODUCTS

16.1 *Add* the following to the end of paragraph 3.7.1:

The Contractor represents that it has sufficient skilled employees to replace, subject to the Owner's approval, acting reasonably, its designated supervisor and project manager in the event of death, incapacity, removal or resignation.

16.2 *Add* 3.7.2:

- a) the Contractor has the necessary high degree of experience and expertise required to enable it to perform the services required by the Contract Documents;
- b) the personnel the Contractor assigns to the project are highly experienced;
- c) there are no pending, threatened or anticipated claims or litigation that would have a material effect on the financial ability of the Contractor to perform its Work under this Contract.

16.3 *Add* the following paragraphs:

- 3.7.4** Products may be specified by reference to brand names, proprietary names, trademarks or symbols. The name of a manufacturer, distributor, supplier or dealer may be provided to assist the Contractor to find a source supplier. This shall not relieve the Contractor from responsibility for finding sources of supply even if the source named no longer supplies the product specified. If the Contractor is unable to obtain the specified product, a substitute product equal to or better than the specified product, shall be supplied by the Contractor, as approved by the Architect, at no additional cost. Should the Contractor be unable to obtain a substitute product equal to or superior to the specified product and the Owner accepts an inferior product, the Contract Price shall be adjusted accordingly, as approved by the Architect.
- 3.7.5** In performing any and all services and obligations that it has agreed to perform in accordance with the terms of this Contract, the Contractor shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects and in a first class and expeditious manner. The Contractor acknowledges and agrees that throughout this Contract the Contractor's obligations, duties and responsibilities shall be interpreted in accordance with this standard and any default or alleged default by the Contractor in the performance of its obligations, duties and responsibilities shall similarly be interpreted in accordance with this standard. The Contractor shall exercise the same standard of due care and diligence in respect of any products, personnel or procedures which it may recommend to the Owner.
- 3.7.6** The Contractor shall forthwith perform, without cost or expense to the Owner, any and all such services as are required to correct or remedy any act, error, omission or default of or attributable to the Contractor in the performance of any term of this Contract.
- 3.7.7** The Owner shall provide the Contractor in a timely manner with all relevant information (including storage, protection, and installation requirements) regarding Products to be supplied by the Owner or other contractors and, prior to delivery of any such Products to the Place of the Work, the Owner shall obtain the Contractor's written approval of the delivery date and proposed storage, protection and installation requirements.

3.7.8 Once the Contractor has accepted delivery of Products, the Contractor shall be responsible for the safe storage and protection of Products as required to avoid dangerous conditions or contamination to the Products or other persons or property. Products shall be stored in locations and at the Place of the Work to the satisfaction of the Owner and the Consultant as agreed and approved by the Contractor pursuant to paragraph 3.7.4.

Notwithstanding the foregoing, the Contractor shall not be responsible for any Products supplied by the Owner or other contractors unless:

- (i) the Contract Documents expressly stipulate that such Product is to be the Contractor's responsibility and to be installed by the Contractor as part of the Work;
- (ii) the Contractor has or has received from the Owner proof of insurance coverage sufficient, at a minimum, to cover the replacement cost of such Product; and
- (iii) the Owner obtained the Contractor's approval as required by paragraph 3.7.4.

SC-17 GC 3.8

SHOP DRAWINGS

17.1 **Add** the words "AND OTHER SUBMITTALS" to the title of GC 3.8 after the words "SHOP DRAWINGS".

17.2 **Add** the words "and *Submittals*" after the words "*Shop Drawings*" in paragraphs 3.8.1, 3.8.2, 3.8.3, 3.8.3.2, 3.8.5, 3.8.6, and 3.8.7.

17.3 **Delete** paragraph 3.8.2 in its entirety and replace it with new paragraph 3.8.2 as follows:

3.8.2 Prior to the first application for payment, the *Contractor* and the *Consultant* shall jointly prepare a schedule of the dates for submission and return of *Shop Drawings* and *Submittals* in an orderly sequence.

17.4 **Delete** the words "with reasonable promptness so as to cause no delay in the performance of the Work" and replace them with the words "within 10 *Working Days* or such longer period as may be reasonably required" in paragraph 3.8.7.

**BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
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SC-18 GC 3.9 PERFORMANCE BY CONTRACTOR

18.1 *Add* new General Condition GC 3.9 as follows:

3.9.1 In performing its services and obligations under the *Contract*, the Contractor shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The *Contractor* acknowledges and agrees that throughout the *Contract*, the *Contractor's* obligations, duties and responsibilities shall be interpreted in accordance with this standard. The *Contractor* shall exercise the same standard of due care and diligence in respect of any *Products*, personnel, or procedures which it may recommend to the *Owner*.

SC-20 GC 4.1 CASH ALLOWANCES

.1 *Delete* paragraph 4.1.7 in its entirety and replace it with the following:

4.1.7 At the commencement of the *Work*, the *Contractor* shall prepare for the review and acceptance of the *Owner* and the *Consultant* a schedule indicating the times within the construction schedule referred to in GC 3.4 that items called for under cash allowances are required to be delivered to the *Place of the Work* to avoid delaying the progress of the *Work*.

.2 *Add* new paragraph 4.1.8 as follows:

4.1.8 The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work* to be paid for from cash allowances.

SC-21 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

21.1 *Delete* the word "first" in paragraph 5.2.7 and replace it with the word "second."

21.2 Any *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall remain at the risk of the *Contractor* notwithstanding that title has passed to the *Owner* pursuant to GC 13.4 OWNERSHIP OF MATERIALS.

SC-22 GC 5.4 **PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK**

- .1 **Delete** all paragraphs of GC 5.4 in their entirety and replace them with the following paragraphs:

5.4.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall, within five (5) *Working Days*, deliver to the *Consultant* and to the list of items to be completed or corrected, together with a written application for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

5.4.2 The *Consultant* will review the *Work* to certify or verify the validity of the application and shall promptly, and in any event, no later than 10 calendar days after receipt of the *Contractor's* application:

- .1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
- .2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.

5.4.3 Subject to the requirements of any *Payment Legislation*, all holdback amounts prescribed by the applicable lien legislation for the *Place of the Work* shall become due and payable to the *Contractor* no later than 10 *Working Days* following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, as certified or verified by the *Consultant* when permitted by any *Payment Legislation*.

5.4.4 The *Contractor* shall submit an application for release of the lien holdback amount in accordance with the lien legislation applicable to the *Place of the Work*. Except to the extent required by any *Payment Legislation*, such application for release of the holdback shall not constitute an application for payment that is subject to *Proper Invoice* requirements.

5.4.5 Where legislation permits progressive release of the holdback for a portion of the *Work* and the *Consultant* has certified or verified that the part of the *Work* has been performed prior to *Substantial Performance of the Work*, the *Owner* hereby agrees to release, and shall release the holdback for such portion of the *Work* to the *Contractor* in accordance with such legislation.

5.4.6 Notwithstanding any progressive release of the holdback, the *Contractor* shall ensure that such parts of the *Work* are protected pending the issuance of a final certificate for payment or until the *Owner* takes early occupancy in accordance with GC12.2, whichever comes first, and shall be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when the holdback was released.

SC-23 GC 5.5

FINAL PAYMENT

- .1 *Add*** to the end of paragraph 5.5.1 the following sentence:
The application for final payment shall meet the requirements of a *Proper Invoice*.
- .2 *Add*** Add the following to the end of paragraph 5.5.3:
Subject to any *Payment Legislation*, when the *Consultant* finds the *Contractor's* application for final payment to be not valid, the *Contractor* shall revise and resubmit the application when the *Contractor* has addressed the reasons given by the *Consultant*.
- .3 *Add*** the following 5.5.6:
The *Owner* may decline after issuing *Notice of Non-Payment* to approve a final certificate for payment in whole or in part, to the extent necessary to protect the *Owner* and may withhold such funds as the *Owner* shall, pursuant to the opinion of the *Consultant*, be required to offset any previous payment made to the *Contractor*, or to set off against any costs and damages, to such extent as may be necessary in the opinion of the *Consultant* to protect the *Owner* from loss because of:
- 1) defective portions of the *Work*;
 - 2) third party claims or reasonable evidence indicating possible commencement of third party claims;
 - 3) evidence of the *Contractor's* failure to make payments promptly to Sub-Contractors or Suppliers;
 - 4) delay to work of other *Contractors*;

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- 5) the Contractor's failure to immediately resolve any liens arising from the Work; or
- 6) unsatisfactory prosecution of the Work by the Contractor or any Sub-Contractor.

Where the Owner has withheld payment of any portion of the Contract Price pursuant to the provisions of the Contract, the Owner shall be entitled to apply such portion of the Contract Price withheld toward the costs of any required remedial work, or for damages, loss or as indemnification with respect to any third party claims or other loss arising under the Contract.

27.5 Add:

"5.7.5 Final Payment shall be issued only upon all conditions of the Agreement being satisfied, including all submittals and rectification of all deficiencies in the Work."

SC-24 GC 6.2 CHANGE ORDER

24.1.1 GC6.2 Add new sub-paragraph:

"6.2.3 Mark ups for any changes to the Work shall be limited to:

- .1 For Work performed by the General Contractor's own forces: 10% overhead and 5% profit.
- .2 For Work performed by Sub-Contractor: 10% overhead to the Sub-Contractor and 10% profit to the General Contractor.
- .3 No Overhead and Profit will be allocated to Change Orders issued for Work to be performed under cash Allowances."

SC-25 GC 6.3 CHANGE DIRECTIVE

- .1 **Delete** the word "and" from the end of subparagraph 6.3.7.17.
- .2 **Delete** the period from the end of subparagraph 6.3.7.18 and replace it with "; and".
- .3 **Add** new subparagraph 6.3.7.19 as follows:
 - .19 safety measures and requirements.

SC-26 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

.1 *Add* new paragraph 6.4.5:

6.4.5 The Contractor confirms that, prior to bidding the Project, it carefully reviewed the Place of the Work and applied to that review the degree of care and skill described in paragraph 3.9.1, given the amount of time provided between the issue of the bid documents and the actual closing of bids, the degree of access provided to the Contractor prior to submission of bid, and the sufficiency and completeness of the information provided by the Owner. The Contractor is not entitled to compensation or to an extension of the Contract Time for conditions which could reasonably have been ascertained by the Contractor by such review undertaken in accordance with this paragraph 6.4.5.

SC-27 GC 6.5 DELAYS

27.1 *Delete* the period at the end of paragraph 6.5.1, and substitute the following words:
", but excluding any consequential, indirect or special damages."

27.2 *Add* new subparagraph 6.5.6:

6.5.6 If the *Contractor* is delayed in the performance of the *Work* by an act or omission of the *Contractor* or anyone employed or engaged by the *Contractor* directly or indirectly, or by any cause within the *Contractor's* control, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may decide in consultation with the *Contractor*. The *Owner* shall be reimbursed by the *Contractor* for all reasonable costs incurred by the *Owner* as the result of such delay, including all services required by the *Owner* from the *Consultant* as a result of such delay by the *Contractor* and, in particular, the cost of the *Consultant's* services during the period between the date of *Substantial Performance of the Work* stated in Article A-1 herein as the same may be extended through the provisions of these General Conditions and any later, actual date of *Substantial Performance of the Work* achieved by the *Contractor*.

SC-28 GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

28.1 *Add* the words "as noted in paragraph 6.6.3" after the words "of the claim" in paragraph 6.6.5 and add the words "and the *Consultant*", at the end of paragraph 6.6.5.

SC-29 GC 7.2 CONTRACTORS RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT

29.1 *Delete* subparagraph 7.2.3.1 in its entirety.

BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS

29.2 *Delete* subparagraph 7.2.3.3 in its entirety and *substitute* new subparagraph 7.2.3.3:

"7.2.3.3 the Owner fails to pay the Contractor when due the amount certified by the Consultant or awarded by arbitration or a Court, except where the Owner has a bona fide claim for set off, or"

29.3 *Delete* from line 2 of subparagraph 7.2.3.4, the words "OF THE OWNER".

29.4 *Add* the following paragraph:

7.2.6 If the Contractor stops the Work or terminates the Contract in accordance with the paragraphs above, the site and the Work shall be left by the Contractor in secure and safe conditions as required by authorities having jurisdiction and the Contract Documents.

SC-30

RESERVED

SC-31 GC 8.3

NEGOTIATION, MEDIATION AND ARBITRATION

31.1 *Add* the following new paragraphs 8.3.9 to 8.3.13:

8.2.9 Within five days of receipt of the notice of arbitration by the responding party under paragraph 8.3.6, the Owner and the Contractor shall give the Consultant a written notice containing:

- .1 a copy of the notice of arbitration;
- .2 a copy of supplementary conditions 8.3.9 to 8.3.14 of this Contract, and;
- .3 any claims or issues which the Contractor or the Owner, as the case may be, wishes to raise in relation to the Consultant arising out of the issues in dispute in the arbitration.

8.2.10 The Owner and the Contractor agree that the Consultant may elect, within ten days of receipt of the notice under paragraph 8.3.9, to become a full party to the arbitration under paragraph 8.3.6 if the Consultant:

- .1 has a vested or contingent financial interest in the outcome of the arbitration;
- .2 gives the notice of election to the Owner and the Contractor before the arbitrator is appointed;
- .3 agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.3.6, and,
- .4 agrees to be bound by the arbitral award made in the arbitration.

BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS

8.2.11 Without limiting and subject to the Owner and Contractor's rights under paragraph 8.3.12 to challenge whether the Consultant has satisfied the requirements of paragraph 8.3.10, if an election is made under paragraph 8.3.10:

- .1 the Owner or Contractor may request particulars and evidence of the Consultant's vested or contingent financial interest in the outcome of the arbitration;
- .2 the Consultant shall participate in the appointment of the arbitrator; and,
- .3 notwithstanding the rules referred to in paragraph 8.3.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date the respondent receives a copy of the notice of arbitration.

8.2.12 The arbitrator in the arbitration in which the Consultant has elected under paragraph 8.3.10 to become a full party may:

- .1 on application of the Owner or the Contractor, determine whether the Consultant has satisfied the requirements of paragraph 8.3.10, and;
- .2 make any procedural order considered necessary to facilitate the addition of the Consultant as a party to the arbitration.

8.2.13 The provisions of paragraph 8.3.9 shall apply (with all appropriate changes being made) to written notice to be given by the Consultant to any sub-consultant.

SC-32 GC 9.1 PROTECTION OF WORK AND PROPERTY

32.1 ***Delete*** subparagraph 9.1.1.1 in its entirety and replace it with the following:

9.1.1.1 errors or omissions in the Contract Documents which the Contractor could not have discovered applying the standard of care described in paragraph 3.9.1;

37.2 ***Delete*** paragraph 9.1.2 in its entirety and replace it with the following:

9.1.2 Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in the Contract Documents, or that are discoverable by applying to an inspection of the Place of the Work the degree of care and skill described in paragraph 3.9.1.

32.2 **Add** new paragraph 9.1.5:

9.1.5 The *Contractor* shall neither undertake to repair and/or replace any damage whatsoever to the work of other contractors, or to adjoining property, nor acknowledge the same was caused or occasioned by the *Contractor*, without first consulting the *Owner* and receiving written instructions as to the course of action to be followed from either the *Owner* or the *Consultant*. However, where there is danger to life or public safety, the *Contractor* shall take such emergency action as it deems necessary to remove the danger.

SC-33 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

.1 **Add** the following words to paragraph 9.2.6 after the word "responsible":

or whether any toxic or hazardous substances or materials already at the Place of the Work (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the Contractor or anyone for whom the Contractor is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the Owner or others,

.2 **Add** the words "and the Consultant" after the word "Contractor" in subparagraph 9.2.7.4.

.3 **Add** Add the following words to paragraph 9.2.8 after the word "responsible":

or that any toxic or hazardous substances or materials already at the Place of the Work (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the Contractor or anyone for whom the Contractor is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the Owner or others.

SC-34 GC 9.5 MOULD

.1 **Add** the words "and the Consultant" after the word "Contractor" in subparagraph 9.5.3.4.

SC-35 GC 9.6 CONSTRUCTION SAFETY

35.1 *Replace* sentence 9.4.2 with the following:

The Contractor shall comply and cause all of its Sub-Contractors, Suppliers and anyone for whom the Contractor is responsible to comply with all applicable provisions, requirements and safety standards of the Occupational Health and Safety Act and regulations thereto. Further, the Contractor shall comply and cause all of its Sub-Contractors, Suppliers and anyone for whom the Contractor is responsible to comply with any Owner's Policies and Procedures that may be in force or brought into force during construction. The Contractor shall be designated and hereby accepts the responsibilities and designation as 'Constructor' under the Occupational Health and Safety Act on the Project and hereby assumes all liabilities and obligations imposed on a 'Constructor' by the Occupational Health and Safety Act.

Prior to commencement of the Work, the Contractor shall submit to the Owner:

- a) Documentation of a valid Workplace Safety and Insurance Board clearance certificate and confirmation of the Contractor's WCB CAD-7 performance rating.
- b) Documentation of the Contractor's insurance coverage.
- c) Documentation of the Contractor's in-house safety related programs.
- d) A copy of the Notice of Project filed with the Ministry of Labour describing the Work to be performed and designating the Contractor as 'Constructor'.

The Contractor hereby represents and warrants to the Owner that appropriate health and safety instruction and training have been provided and will be provided to the Contractor's employees and Sub-Contractors, Suppliers and anyone for whom the Contractor is responsible, before the Work is commenced and agrees to provide to the Owner, if requested, proof of such instruction and training.

The Contractor shall tour the appropriate area to familiarize itself with the job site prior to commencement of the Work."

**BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS**

Add:

- 9.4.6** The *Contractor* shall indemnify and save harmless the *Owner*, its agents, officers, directors, employees, consultants, successors and assigns from and against the consequences of any and all safety infractions committed by the *Contractor* under OHSA, including the payment of legal fees and disbursements on a solicitor and client basis.

Such indemnity shall apply to the extent to which the *Owner* is not covered by insurance, provided that the indemnity contained in this paragraph shall be limited to costs and damages resulting directly from such infractions and shall not extend to any consequential, indirect or special damages.

Add the following paragraph:

- 9.4.7** The *Owner* undertakes to include in its contracts with other contractors and/or in its instructions to its own forces the requirement that the other contractor or own forces, as the case may be, will comply with directions and instructions from the *Contractor* with respect to occupational health and safety and related matters. The text of such instruction shall be provided to the *Contractor* for their acceptance prior to issuance by the *Owner*.

SC-36 GC 10.1 TAXES AND DUTIES

36.1 Add new paragraph 10.1.3:

- 10.1.3** "Where the *Owner* is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or *Value Added Taxes* applicable to the *Contract*, the *Contractor* shall, at the request of the *Owner* or the *Owner's* representative, assist with application for any exemption, recovery or refund of all such taxes and duties and all amounts recovered or exemptions obtained shall be for the sole benefit of the *Owner*. The *Contractor* agrees to endorse over to the *Owner* any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this paragraph."

**BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS**

SC-37 GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

37.1 *Add* to the end of paragraph 10.2.4, the following words:

“The *Contractor* shall notify the Chief Building Official or the registered code agency where applicable, of the readiness, substantial completion, and completion of the stages of construction set out in the Ontario Building Code. The *Contractor* shall be present at each site inspection by an inspector or registered code agency as applicable under the Ontario Building Code.”

37.2 *Delete* from the first line of paragraph 10.2.5 the word, “The” and substitute the words: “Subject to paragraph 3.9.1, the”.

SC-38 GC 12.1 READY-FOR-TAKEOVER

.1 After the second occurrence of the term “Ready-for-Takeover” insert before the term “Ready-for-Takeover” in paragraph 12.1.3 the words “determination of”.

SC-39 GC 12.2 EARLY OCCUPANCY BY THE OWNER

.1 ***Delete*** the word “achieve” in paragraph 12.2.4 and replace it with the words “have achieved”.

SC-40 GC 12.3 WARRANTY

.1 ***Delete*** the word “The” from the first line of paragraph 12.3.2 and replace it with the words “Subject to paragraph 3.9.1, the”.

SC-41 GC 13.1 INDEMNIFICATION

.1 ***Add*** new paragraph 13.1.0 as follows:

13.1.0 The Contractor shall indemnify and hold harmless the Consultant, its agents and employees from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings by third parties that arise out of, or are attributable to the Contractor’s performance of the Contract, provided such claims are:

- .1** attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and
- .2** caused by negligent acts or omissions of the Contractor or anyone for whose negligent acts or omissions the Contractor is liable, and
- .3** made by Notice in Writing within a period of 6 years from the Ready-for-Takeover date or within such shorter such period as may be prescribed by any limitation statute or the Province or Territory of the Place of Work.

.1 ***Add*** the words “13.1.0,” after the word “paragraphs” in paragraph 13.1.3.

SC-42

Part 14 - ADDITIONAL GENERAL CONDITIONS

The following sets out clauses required by the Owner:

GC 14.1 NO CLAIMS FOR ANTICIPATED PROFIT

- 14.1.1** If any change or deviation in, or omission from the Work is made by which the amount of Work to be done is decreased, or if the whole or any portion of the Work is dispensed with, no compensation is claimable by the Contractor or Sub-Contractor for any loss of anticipated profits in respects thereof excepting as set out in Bidding And Contract Requirements Document 00400 - Bid Form, 12.1, Separate Prices."

SC-43

GC 14.4 OWNERSHIP OF MATERIALS

Add the following Article:

- 14.4.1** Unless otherwise specified, all materials existing at the *Place of the Work* at the time of execution of the *Contract* shall remain the property of the *Owner*. All work and *Products* delivered to the *Place of the Work* by the *Contractor* shall be the property of the *Owner*. The *Contractor* shall remove all surplus or rejected materials as its property when notified in writing to do so by the *Consultant*.

SC-44

GC 14.5 CONTRACTOR DISCHARGE OF LIABILITIES

Add the following Article:

- 14.5.1** In addition to the obligations assumed by the *Contractor* pursuant to GC 3.7, the *Contractor* agrees to discharge all liabilities incurred by it for labour, materials, services, *Subcontractors* and *Products*, used or reasonably required for use in the performance of the *Work*, except for amounts withheld by reason of legitimate dispute which have been identified to the party or parties, from whom payment has been withheld.

SC-45

GC 14.6 DAILY REPORTS/DAILY LOGS

Add the following Article:

- 14.6.1** The *Contractor* shall cause its supervisor, or such competent person as it may delegate, to prepare a daily log or diary reporting on weather conditions, work force of the *Contractor*, *Subcontractors*, *Suppliers* and any other forces on site and also record the general nature of *Project* activities. Such log or diary shall also include any extraordinary or emergency events which may occur and also the identities of any persons who visit the site who are not part of the day to day work force.

The Contractor shall, if required by the Consultant or Owner, ensure that tracing information is recorded, including telephone numbers and e.mail contact.

- 14.6.2** The *Contractor* shall also maintain records, either at its head office or at the job site, recording manpower and material resourcing on the *Project*, including records which document the activities of the *Contractor* in connection with GC 3.5, and comparing that resourcing to the resourcing anticipated when the most recent version of the schedule was prepared pursuant to GC 3.5.

SC-46

GC 14.7 NEUTRAL APPOINTING AUTHORITY

Add the following Article:

- 14.7.1** For purposes of the Rules for Mediation and Arbitration of Construction Disputes CCDC 40, the term "neutral appointing authority", as used in both the Rules for Mediation of CCDC 2 Construction Disputes and the Rules for Arbitration of CCDC 2 Construction Disputes shall mean the head of the construction section of the ADR Institute of Ontario, Inc. presiding at the time notice of the dispute is given pursuant to the *Contract*. Refer to GC 8,3 and SC 31.

SC-47

GC 14.8 FORCE MAJEURE

Add the following Article:

14.8.1 As used in this proposal, "Force Majeure" means any event or circumstance (but specifically excluding economic factors alone) which (a) was beyond the reasonable control of the Contractor, (b) could not reasonably have been foreseen, (c) could not reasonably have been prevented, circumvented or avoided by the Contractor by reasonable precautions, (including without limitation back-up systems) through the use of alternate sources, work around plans or other means, and (d) occurred without the fault or negligence of the Contractor or of its subcontractors or carriers; including without limitation acts of God, war, acts of terrorism, civil disturbances, insurrections, riots, storms beyond ordinary strength, fire, explosions, floods, embargos, orders or acts of civil or military authority.

In the event of a Force Majeure, there shall be an equitable adjustment to the project delivery schedule (to be formalized by the execution of an amendment to this Contract); provided, however, the Contractor acknowledges and agrees that the occurrence of a Force Majeure event shall not entitle the selected Proponent to an increase in the proposal price. The Owner is not liable for any costs or charges of any nature incurred by the Contractor or any of its subcontractors or agents as a result of a Force Majeure.

The Owner shall have the right to investigate the causes or circumstances claimed by the Contractor to constitute a Force Majeure.

If the Owner terminates this Contract for Force Majeure, its sole liability will be to pay any balance due for Goods and Services purchased before the issuance of the Owner's termination notice and the Contractor agrees to repay immediately to the Owner the portion of any advance payment that is unliquidated at the date of the termination.

SC-48

GC 14.9 CONSTRUCTION LIENS

14.9.1 In the event that a construction lien is registered against the *Project* by or through a *Subcontractor* or *Supplier*, and provided the *Owner* has paid all amounts properly owing under the *Contract*, the *Contractor* shall, at its own expense:

.1 within ten (10) calendar days, ensure that any and all construction liens and certificates of action are discharged, released or vacated by the posting of security; and

.2 in the case of written notices of lien, ensure that such notices are withdrawn, in writing.

14.9.2 In the event that the *Contractor* fails to conform with the requirements of 13.5.1, the *Owner* may set off and deduct from any amount owing to the *Contractor*, all costs and associated expenses as related to removal of liens by the *Owner*, including the costs of borrowing the appropriate cash, letter of credit or bond as security and legal fees and disbursements. If there is no amount owing by the *Owner* to the *Contractor*, then the *Contractor* shall reimburse the *Owner* for all of the said costs and associated expenses.

SC-49

GC 15 CONFIDENTIALITY AND PRIVACY

Add the following Article:

15.1.1 The Contractor shall not collect, create, handle, use, copy, disclose, dispose of or destroy any "personal information" except as necessary to perform its obligations under the Contract. The Contractor shall take all reasonable steps to protect the personal information from loss, theft or unauthorized use, access, disclosure, copying, alteration or destruction. "Reasonable steps" to be taken by the Contractor include, without limitation, the use of physical, organizational and technological measures to safeguard the personal information, such as, where appropriate, access controls, encryption or other suitable means. All such personal information is the property of the Owner and the Contractor shall have no right in or to that information.

BIDDING AND CONTRACT REQUIREMENTS - SECTION 00800
SUPPLEMENTARY CONDITIONS

The Contractor shall deliver to the Owner all such personal information in whatever form (or at the Owner's request, destroy such personal information), including all working papers, notes, memoranda, reports, data in machine readable format or otherwise and documentation which have been made or obtained in relation to the Contract, upon the completion or termination of the Contract, or at such earlier time as the Owner may request. Upon delivery of the personal information to the Owner, the Contractor shall have no right to retain any such personal information in any form and shall ensure that no record of the personal information remains in the Contractor's possession.

END OF SECTION

BIDDING AND CONTRACT REQUIREMENTS - DOCUMENT 00820
STATUTORY DECLARATION OF BIDDERS

**DOMINION OF CANADA
PROVINCE OF ONTARIO
JUDICIAL DISTRICT OF**

In The Matter Of a proposed Contract for:

John Howard Society • Lindsay
Renovations
31 Peel Street
Lindsay, Ontario K9V 3L9

_____*
*(To be filled in with the name
of the Judicial District in which
Bidders business is located).

as herein before described on the Tender Form.

I/We _____ of

the _____ of _____ in the _____

of _____ do solemnly declare as follows:

(If an individual,
Strike out "of")

I am _____ of the Bidder herein.
(If an incorporated company, state Title)

(If an individual, carrying
on a business under a firm
name, use this paragraph)

I am the bidder herein and I carry on business at

(State address of firm)
under the name of _____
(State name of firm)

and there is no other person associated with me in
partnership.

(If a partnership, use
this paragraph)

We are the bidder herein and we carry on business at

_____ in partnership
(State address of firm)
under the name of _____
(State name of firm)

and we are the only members of such partnership.

I/We have carefully read through the foregoing Tender
Form and to the best of my/our information, knowledge
and believe the several matters stated in the said Tender
are in all respects correct and true.

I/We are each of the full age of eighteen (18) years or
over.

I/We Make this solemn Declaration conscientiously
believing it to be true knowing that it is the same force and
effect as if made under Oath and by virtue of "The Canada
Evidence Act".

In addition to the other information and representations
made in Tender Submission, I/We declare by completing
and signing this declaration whether I/We have an actual
or potential Conflict of Interest.

BIDDING AND CONTRACT REQUIREMENTS - SECTION 00820
STATUTORY DECLARATION OF BIDDERS

I/We, by submitting this Tender, warrant that to my/our best knowledge and belief, no actual or potential Conflict of Interest exists with respect to the submission of the Bid or performance of the contemplated contract other than those disclosed herein. I/We acknowledge that where the Hospital discovers a Bidder's failure to disclose all actual or potential Conflicts of Interest, the Hospital may disqualify my/our Bid or terminate any contract awarded to me/us pursuant to this procurement process.

(Prior to completing this portion of the Form of Offer, proponents should refer to the definition of Conflict of Interest set out in the Supplementary Conditions - Definitions.)

If the box below is left blank, the Bidder will be deemed to declare that: (1) there was no Conflict of Interest in preparing its proposal; and (2) there is no foreseeable Conflict of Interest in performing the contractual obligations contemplated in this Tender Submission.

Otherwise, if the statement below applies, check the box.

- ☐ I/We declare that there is an actual or potential Conflict of Interest relating to the preparation of its proposal, and/or the proponent foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in this Tender Submission.

(If the Bidder declares an actual or potential Conflict of Interest by marking the box above, the Bidder must set out below details of the actual or potential Conflict of Interest:)

**This form must be Notarized
and submitted with the
Tender Form**

Severally Declared before me at the _____ of
_____ in the _____
this _____ day of _____, 19

A Commissioner, etc.

(Signature)

END OF SECTION

1. GENERAL

1.1 The Drawings on which the Tender is based are:

Architectural

TBD

Mechanical

TBD

Electrical

TBD

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01010
WORK SUMMARY AND SCHEDULE

1. GENERAL CONDITIONS

- 1.1 Work, specified, shown on the drawings or referred to in the Contract Documents, is governed by the General Conditions of the Stipulated Price Contract, CCDC 2 2020 and Document 00800, Supplementary Conditions.

2. WORK DESCRIPTION

2.1 31 Peel Street, Lindsay

- .1 Renovations as indicated in the Drawings and Specifications.

3. SCHEDULE

- 3.1 The entirety of the Work must be completed by Month 00, 2025.

4. OWNER OCCUPANCY

- 3.1 The Owner will continue to occupy and use portions of the site and they and the (Owner) Compass - Compass Early Learning & Care reserve the right to occupy and use portions of the proposed Work, whether partially or entirely completed, or whether completed on schedule or not, provided such occupancy does not interfere with the Contractor's continuing work.
- 3.2 Partial occupancy or installation by the Owner and their Contractors of equipment, fixturing and stock shall not imply acceptance of the Work in whole, or in part, nor shall simply acknowledge that terms of Agreement are fulfilled.

END OF SECTION

1. INSTRUCTIONS

- 1.1** All allowances shall be carried by the General Contractor and not by individual Sub-Contractors, except for allowances specified as unit prices.
- 1.2** The Owner reserves right to delete any or all of the allowances as quoted without claim for loss of profit or overhead by the Contractor.
- 1.3** Allowances will be deducted in whole or in part by Change Order.
- 1.4** Verification, in the form of invoices and other documentation, will be required for any expenditure from allowances. Failure to provide these will delay approval of the amounts and payment of same.
- 1.5** The Contract sum **must include** the Contractor's overhead and profit for all cash allowances listed and all relevant duties and taxes.
- 1.6** Where cash allowances pertain to supply only, **all installation costs must be included in Tender Price** with such costs based on the full amount of the particular allowance.
- 1.7** The Owner reserves the right to call competitive bids for portions of the Work to be paid for out of any or all cash allowances. The relationship of the Contractor and other contractors performing portions of the work to be paid out of cash allowances shall be such as between the Contractor and any other Sub-Contractors.
- 1.8** Credit the Owner with unused portion of cash allowances in statement for final payment.
- 1.9** No change in the Contract Price will be considered until total cash allowance sum is depleted. The maximum charges for the Contractor's overhead and profit on authorized overrun of aggregate total amount of all specified cash allowances shall be 10%.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01020
ALLOWANCES

2. AMOUNTS

2.1 Cash Amounts

.1	Inspection and Testing:	\$10,000
.2	Site Works in addition to any Work as described in the Drawings or Specifications:	\$7,500
.3	Division 4 through Division 9 - For additional Work, including removals and making good in existing building:	\$25,000
.4	Division 10 Supply and installation of Specialties and Hardware in addition to those shown in the Drawings and Specifications:	\$5,000
.5	Division 15 Provision of Mechanical items other than those indicated in the Drawings and Specifications:	\$10,000
.6	Division 16 Provision of additional wiring, light fixtures, receptacles, etc., other than those indicated in the Drawings and Specifications:	\$10,000
Total:		\$67,500

END OF SECTION

1. **GENERAL
PROCEDURES**

- 1.1 Changes in the Work ordered by the Consultant in accordance with Article GC-6.1 of the General Conditions of the Stipulated Price Contract shall be valued in accordance with Article GC-6.2 of the General Conditions of the Stipulated Price Contract and as more fully specified in this Section.
- 1.2 The standard documentation for effecting changes in the Work shall be as follows:
 - .1 The Consultant's Site Instruction and/or Contemplated Change Order will be issued to the Contractor on a Standard Form and accompanied by the necessary Drawings, Specifications and Details.
 - .2 From time to time, the Consultant may issue Site Instructions for purposes of clarifying Drawings and Specifications. As such, the Contractor shall not be permitted to apply costs against these instructions unless it is noted on the Site Instruction that there may be additional costs associated with the Work. **Should the Contractor believe that there are costs associated with the clarification, the Contractor must notify the Consultant within twenty-four (24) hours of receipt of the instruction and prior to proceeding with the work. Failure to provide such notice will mean that no after claim shall be made.**
 - .3 The Contractor's Quotation will be submitted to the Consultant showing the amount by which the Contract shall be adjusted by way of increase or decrease if the change is ordered, and also the effect, if any, on contract time with any costs for Extension of Time included in the quotation.
 - .4 The Contractor shall submit a quotation, with full documentation for changes, including breakdown of labour and materials, including hourly rates, number of hours, unit material costs, etc., to allow the Consultant to ascertain the accuracy of amounts involved. Failure to submit adequate back up may result in delay of approval of the quotation. Any delay to the Work, or extra costs resulting from delay of approval for this reason shall be entirely the responsibility of the Contractor.
 - .5 Quotations shall be submitted no later than seven (7) days after receipt of a Contemplated Change Order. Where time is of the essence, the Architect may request pricing within a shorter time, but not less than five (5) days.

**1. GENERAL
PROCEDURES**

- Continued

- .6 The Owner and the Consultant shall have thirty (30) days in which to review and approve the Contractor's quotations for changes to the Work.
- .7 The Consultant's Change Order will be issued to the Contractor on Standard Form after the Owner's approval.
- .8 Failure to comply with any of these procedures governing changes in the Work may result in delay of issuance of change order to the Contract, but shall not delay the work in any way or to result in any extension of contract time.
- .9 Where the Contractor or any Sub-Contractor is authorized by a Site Instruction to proceed with any change on a time and material basis, daily time sheets and material slips must be submitted. Application for a final change order must be accompanied by these time sheets, material slips and a complete break down of all charges and costs. Failure to provide complete back up as required will result in delay of approval until such information is supplied in an acceptable form.
- .10 Where the Consultant and/or Owner and the Contractor cannot mutually agree upon cost or evaluation of a given change, the Contractor, upon receiving written directions from the Owner, shall proceed with required change without delaying the Work and evaluation of costs for the change be considered under CCDC 2 2020 - 8.3 Arbitration and Mediation.

**2. VALUATION
OF CHANGES**

- 2.1 Quotations submitted by the Contractor in response to the Consultant's Contemplated Change Order shall be fully detailed and itemized to facilitate checking and processing by the Consultant. Quotations shall:
 - .1 List the Work proposed to be carried out by the Contractor's own forces showing labour, material, plant and equipment charges, together with quantities and unit rates used in assessment of such changes.
 - .2 In the event of a change to the Work being carried out by the General Contractor's own forces, total amount for extras will include cost, plus mark-up for expenses and profit on additional work by the Contractor's own forces, only after all credits for each item included in change order have been deducted. Mark-up and Profit amounts to be included on the Tender Form.

**2. VALUATION
OF CHANGES**

2.1 - Continued

- .3** List the Work proposed to be carried out by the Sub-Contractors showing the amount quoted by each Sub-Contractor as verified by the Sub-Contractor's quotation which shall show labour, material, plant and equipment charges, together with quantities and unit rates upon which the quotation is based.
- .4** In event of a change to the Work being carried out by Sub-Contractors, the General Contractor shall submit complete quotations from the Sub-Contractors to the Consultant.
- .5** Use unit rates quoted in the Tender and incorporated into the Contract where applicable.
- .6** As specified in the Form of Tender, unit rates quoted in the Tender and incorporated in the Contract shall include the mark-up for labour on cost specified in Article 2.2.3 in this Section and all overhead and profit charges.
- .7** The quantity to which the unit rate is applied in assessing the net cost shall be the net difference in quantity between the original and revised work. For example: If the change effects the omission of one (1) square foot and the addition of three (3) square feet of an item covered by unit rates, the value of the change will be assessed by applying the unit rate to the net difference of two (2) square feet (extra) and applying the appropriate mark-up specified in Article 2.2.3 hereof.

2.2 Cost Analysis

- .1** Quote material prices which shall be the net price paid by the Contractor (or Sub-Contractor) after deduction of all trade and cash discounts and the like other than reasonable discount for prompt payment. Submit paid invoices if requested.
- .2** Quote plant and equipment costs which shall be not more than rates quoted in the latest edition of 'Rental Rates on Contractor's Equipment' published by the Canadian Construction Association. Note that mark-up for Overhead and Profit to be included as quoted on the Tender Form.

**2. VALUATION
OF CHANGES**

- Continued

2.2 Cost Analysis

.3 Quote labour costs which shall be the actual rate paid to the workers in accordance with the fair wage provision of the Contract plus a mark-up of percentage noted by Bidder on the submitted Tender Form to cover Welfare contribution, Pension contribution, Vacation Pay, Trade Improvement Fund, Promotional Fund, Training Fund, Supplementary Unemployment Benefit, Check Off, Apprenticeship Trust Fund and similar labour contract payments: Workers' Compensation Insurance Canada Pension Scheme and other statutory charges on labour.

.4 Where two (2) or more unrelated changes are included on the same Contemplated Change Order, each one (1) shall be quoted separately, and treated separately so far as net cost and mark-up are concerned.

2.3 Where the effect of a proposed change is an increase in the Contract or Sub-Contract Sum, the following maximum mark-ups for overhead and profit may be applied to the net cost, calculated as specified in Articles 2.2.1 and 2.2.2 above.

.1 Work carried out by the Contractor's own forces:
As noted on the Tender Form.

.2 Work carried out by Sub-Contractors: As noted on the Tender Form

2.4 Where the effect of a proposed change is to reduce the Contract or Sub-Contract Sum, the net cost calculated as specified in Articles 2.2.1 and 2.2.2 above shall be used without application of mark-ups.

2.5 It shall be understood and agreed that the mark-ups specified above shall be deemed to provide for payment in full for all items that in the custom of the Construction Industry in Ontario are considered to include all Site and Head Office overhead and profit including additional bonding, insurance, preparation of quotations, as built drawings and any other site or office based administrative work related to the proposed change.

2.6 Where premium payments in respect to overtime are paid to workers with the Owner's prior approval in writing and where such payments are recoverable from the Owner, then the premium time shall be subject to a mark-up as agreed. There shall be no mark-up for overhead and profit on premium time payments.

**2. VALUATION
OF CHANGES**

- Continued

2.7 The intention is that quotations submitted in response to Contemplated Change Orders shall be fair and reasonable and reflect current market prices in line with prices in the original Tender. The Contractor shall check the Sub-Contractor's quotations for compliance with this requirement before submission to the Consultant.

2.8 Changes in Contract Time, as well as changes in Contract Price, must be included in all quotations for changes to the Work. No extension of time will be subsequently granted in the case of non-conformance with this requirement. Following the issuance of a Change Order, the Owner will not entertain requests for Extension to Contract time, unless costs for same were previously stated in the Contractor's quotation submitted due to the Consultant's Contemplated Change Order.

Extension of time does not qualify for additional financial compensation other than as detailed in the quotation for plant and machinery costs. Costs for additional site superintendent time or office based contractor time are considered to be included in the overhead and profit mark-ups.

2.9 The issuance of a Change Order shall be deemed to be formal acceptance by the Owner of the Contractor's quotation as reviewed and recommended by the Consultant. Following the issue of a Change Order, the Owner will not entertain claims for extra payments due to errors alleged to have been made in the Contractor's quotation.

2.10 For change orders with a net cost exceeding \$50,000, the Contractor and Sub-Contractors agree to negotiate, if requested by the Owner, overhead and profit mark-ups to a lesser percentage than those specified in the Tender, prior to approval of change order.

3. QUALIFICATIONS

3.1 The amount payable to the Contractor under the Contract will not be increased or decreased by reason of any increase or decrease in the cost of the Work brought about by any increase or decrease in the cost of plant equipment, labour, materials or the wage rates set out and prescribed herein.

END OF SECTION

**1. PROJECT
CO-ORDINATION**

- 1.1** Assume full responsibility for the co-ordination and co-operation of all trades.
- 1.2** Ensure that the flow of information and materials, and the availability of work forces is adequate for the satisfactory and expeditious completion of the Work
- 1.3** Co-operate and co-ordinate with the Owner's Designated Representatives to ensure no interference with any separate Work by the Owner.
- 1.4** The Contractor shall co-operate with the Owner or whomever the Owner shall designate and arrange for all work to be expedited with the minimum of inconvenience to all parties, and shall report in writing any difficulties encountered in expediting the Work.
- 1.5** Report to the Consultant on progress of the Work in relation to schedule specified in Section 01310 - Construction Schedule.
- 1.6** Employ a qualified Superintendent who shall in addition to requirements of GC 3.5 Supervisor of the General Conditions and amended by Supplementary Conditions SC-14, 3.5.3, 3.5.4:
 - .1** Be on the Site at all times that the Work is being performed.
 - .2** Have full authority to act on the Consultant's instructions.
 - .3** Control the Work throughout.
 - .4** **Not be changed for duration of project, without prior approval of the Consultant** and only for good reason, including termination of employment or an inability for them to perform the Work required.
- 1.7** Responsibility as to which sub-trade provides required Work to be built-in or supplied rests entirely with the Contractor. Differences in interpretation of the Specifications or Drawings as to which trade shall provide certain Work shall not be grounds for payment of extras.
- 1.8** Co-ordinate use of construction plant and equipment including cranes, hoists, ladders, scaffolds and similar items with the Work of the various trades. Cost of such use is subject to whatever arrangement exists between the Contractor and Trades.
- 1.9** Include all costs with respect to construction plant and equipment in the Contract Price, until contract completion.

- 1. PROJECT CO-ORDINATION** - Continued

 - 1.10** Co-ordinate use of construction plant and equipment with the Work of other Sub-Contractors, providing such use is arranged so as not to delay the Work of the Contract. All costs for such use shall be by arrangement between the Contractor and their Sub-Contractors concerned and shall not be an extra charge to the Contract.
- 2. SEPARATE CONTRACTS**

 - 2.1** Where the Owner has any Work performed under separate contract by others, co-ordinate and co-operate as fully as possible to allow the work to be carried out at the proper time and location. Notify the Owner if such Work requires the Contractor to assume responsibility as Constructor for that trade or supplier.
 - 2.2** Where the Work under separate contract has to be installed on Work under this Contract, then the Owner or Separate Contractor will provide the necessary Drawings, Templates and Instructions required to prepare the Work of this Contract.
- 3. CUTTING & PATCHING**

 - 3.1** In accordance with Article 31 of the General Conditions of the Contract and as follows:

 - .1** Cutting and patching of work: By general trades specializing in work to be cut or patched. Payment will be by General Contractor. All cutting and patching must be co-ordinated through the General Contractor. Where any trade of any Division does not co-ordinate the Work as required, they shall be wholly responsible for the costs of cutting and patching.
 - .2** Obtain the Consultant's written permission before cutting, boring or sleeving any load bearing members, except where shown on the Drawings.
 - .3** Obtain approval of applicable trade before cutting holes.
 - .4** Make cuts with smooth, true, clean edges. Fit units to tolerances established for best standard practice for applicable work or as specified. Make patches invisible in final assembly. Drilled holes shall leave no hole larger than required.
 - .5** Co-ordinate and accurately locate inserts, sleeves, connections and similar items required by all trades or required by site conditions.

**3. CUTTING
& PATCHING**

- Continued

- .6 Be responsible for correct formation and bridging of openings in masonry and structural walls required by Trades.
- .7 Ensure compatibility between installed materials and security of installation.
- .8 See Division 15 - Mechanical and Division 16 - Electrical for further details required by Mechanical and Electrical Trades.
- .9 Ensure integrity of smoke and fire separations.

4. FASTENINGS

- 4.1 Supply fastenings, anchors and accessories required for fabrication and erection of the Work.
- 4.2 Ensure that metal fastenings are of same materials as metal component being anchored or of a metal which will not set up a galvanic action causing damage to the fastening or metal component under moist conditions.
- 4.3 Ensure that metal fastenings and accessories are of same texture, colour and finish as base metal on which they occur. Fastenings into masonry and concrete shall be galvanized steel and/or stainless or as specified.
- 4.4 Fastenings shall be permanent, of such a type and size and installed in such a manner to provide positive anchorage of the unit to be secured. Organic plugs are not acceptable. Install anchors at required spacing to provide required load bearing or shear capacity.
- 4.5 Explosive actuated fastenings shall be used only by trained personnel in accordance with all CSA and other safety requirements.

**5. INSERT
DRAWINGS**

- 5.1 The Sub-Contractors shall submit insert Drawings which are required by other trades, for attaching the Work of trade submitting the Drawings.
- 5.2 Indicate on insert Drawings, location and size of sleeves, anchor bolts, openings and miscellaneous items to be incorporated in the Work and material or equipment that will be secured.
- 5.3 Submit insert Drawings well in advance of construction incorporating building-in of inserts.

**6. FIRE
SEPARATIONS**

6.1 Conform to the following requirements to maintain the continuity of fire separations whether or not shown on the Drawings:

- .1** Fire separations may be pierced by openings for electrical and similar service outlets provided such boxes are non-combustible and are tightly fitted and in conformance with OBC 3.1.4. and 3.1.5.
- .2** Combustible construction that abuts on, or is supported by a non-combustible fire separation, shall be constructed so that its collapse under fire conditions will not cause collapse of fire separation.
- .3** Where a fire separation, required to be of non-combustible construction, terminates at an exterior wall, underside of floor, ceiling or roof structure and at floors, fire-stop opening with non-combustible material.
- .4** Do not use combustible members, fastenings, attachments and similar items to anchor electrical, mechanical or other fixtures to fire separations.
- .5** Tightly fit or fire stop openings for non-combustible pipes and ducts, to prevent the passage of smoke and flame. Be responsible for ensuring that where work passes through a fire separation, opening is plugged with fire-stop or other material, ULC classified and labelled or other material approved by authorities having jurisdiction to maintain the integrity of the fire separation.

**7. UNDERGROUND
& CONCEALED
SERVICES**

- 7.1** The Contractor shall be responsible for the protection of all pipes, ducts, cables, conduits, wires and other services against damage arising from the performance of the Work.
- 7.2** The Contractor shall take all the necessary precautions to locate the underground and concealed services and to protect them from damage.
- 7.3** The Contractor is responsible for making good to the satisfaction of the authorities concerned, any damages to services resulting from the Contractor's performance of the Work, without any additional cost to the Owner.

8. PROTECTION

- 8.1** Ensure that all work is fully protected against damage and that work damaged is replaced, repaired or rectified and carried out to the Consultant's approval and at no cost to the Owner.

9. AUTHORITY REQUIREMENTS

- 9.1** Representatives of authorities having jurisdiction over this project may require access and equipment to enable them to carry out inspections to ensure that requirements of codes and regulations have been met.
- 9.2** Provide all such access as required, at no cost to the Owner.
- 9.3** *Instructions from authorities must be confirmed in writing, before proceeding.*

10. INTERFERENCE

- 11.1** The Contractor shall maintain normal building operation and traffic flow, with a minimum of inconvenience to the Owner's staff.
- 11.2** The Contractor shall ensure that no essential services such as electric power and domestic hot water supply are interrupted for more than one continuous hour, and no longer than three consecutive hours for the heating system during the heating season except with the prior written permission of the Owner.
- 11.3** The Contractor shall in every case where an interruption of service is to occur, make prior arrangements with the Owner.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01050
LAYOUT AND DIMENSIONS

**1. SETTING
 OUT**

- 1.1 The Contractor shall:
- .1 Layout work from indicated verified reference points.
 - .2 Protect and preserve reference points. Inform the Consultant immediately if reference points are disturbed or damaged by any work and pay for their repair and/or replacement.
 - .3 Locate and fix grid lines and location of walls, partitions, shafts and all parts of the construction, as work proceeds.
 - .4 Verify grade, lines, levels and dimensions indicated and report any errors or inconsistencies to the Consultant before commencing work. Confirm job dimensions at once to allow prompt checking of Shop and other Drawings.

2. DIMENSIONS

- 2.1 The Contractor shall:
- .1 Ensure that necessary job dimensions are taken and trades are co-ordinated for the proper execution of the work. The Contractor shall assume complete responsibility for the co-ordination, accuracy and completeness of such dimensions.
 - .2 Verify that Work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent Work, as set out by requirements of the Drawings, and ensure that the Work installed in error is rectified before construction continues.
 - .3 Check and verify dimensions referring to the Work and interfacing of services. Dimensions, when pertaining to the Work of other trades, shall be verified with the trade concerned.
 - .4 Do not scale directly from the Drawings. If there is ambiguity or lack of information immediately inform the Consultant and await instructions before proceeding. The Contractor shall be fully responsible for rectifying, altering or re-doing any Work resulting from disregarding this clause.
 - .5 Ensure that all details and measurements of any Work which is to fit or to conform with Work installed shall be taken at the Site.

END OF SECTION

1. REGULATORY DOCUMENTS

- 1.1** The Contractor and all trades employed for the Work shall be fully conversant and knowledgeable about all requirements of the Ontario Building Code (OBC) and any other laws, regulations or statutory requirements that relate to the Work.

The Contractor shall have the latest version of the Ontario Building Code available at the site office at all times in hard copy or electronic format.

- 1.2** Nothing contained in the Drawings or Specifications shall be so construed as to be in conflict with any law, by-law or regulation of the municipal, provincial or other authorities having jurisdiction. Work shall be performed in conformity with all such laws, by-laws and regulations.
- 1.3** Contract forms, codes, specifications, standards, manuals and installations, referred to in these specifications are of the latest published editions at the date of signing the Contract.

2. PERMITS

- 2.1** The Owner will apply for the General Building Permit.
- 2.2** The Owner will pay for General Building Permit.
- 2.3** The Contractor shall apply, obtain and pay for all other permits from all authorities having jurisdiction, including, where required, inspection fees and permits.
- 2.4** The Contractor shall be responsible for verifying that the documents forming part of the Contract are in compliance with the applicable laws, ordinances, rules, regulations and codes relating to the Work and if any part of the Contract is at variance therewith, or changes which require modification to the Contract are made, to any of the laws, ordinances, rules, regulations and codes by the Authorities Having Jurisdiction subsequent to the date of tender submission. The Contractor shall notify the Owner in writing requesting direction immediately if any such variance or change is observed by the Contractor.
- 2.5** If the Contractor fails to notify the Owner in writing and obtain its direction as required in subsection 2.1 (4) and performs any work knowing it to be contrary to any laws, by-laws, ordinances, rules, regulations, codes and orders of any authority having jurisdiction, the Contractor shall be responsible for and shall correct any violations thereof and shall bear all costs, expense and damages attributable to the Contractor's failure to comply with the provisions of such laws, by-laws, ordinances, rules, regulations, codes and orders.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01060
REGULATORY REQUIREMENTS

2. PERMITS

- Continued

- 2.6** The Contractor shall be responsible for ensuring that no Work whatsoever is undertaken which is conditional on permits, approvals, guarantees, until certain that all conditions necessary to obtain these are met. No time extension will be allowed for delay in obtaining necessary permits.
- 2.7** The Contractor shall be responsible to the Consultant for reporting any condition, in writing, which would prohibit granting of any permit or approval before any Work affecting such items is commenced.

**3. SAFETY
ACTS
& CODES**

- 3.1** The Contractor shall give all required notices and comply with all laws, ordinances, rules, regulations, codes and orders of all authorities having jurisdiction relating to the Work, to the preservation of the public health and construction safety which are or become in force during the performance of the Work.
- 3.2** The Contractor shall submit notification of project, to Ministry of Labour, in compliance with Construction Safety Act of Ontario, so that a Safety Inspector may visit site. The Contractor shall obtain Ministry of Labour approval in all instances as may be required.
- 3.3** Upon such inspection being made by the Safety Inspector, under the Safety Act, and if non-compliance with the Act is observed and reported, then the Contractor and/or Sub-Contractor involved shall accept full responsibility for all requirements of the Safety Inspector, as noted in the report, and shall hold harmless the Owner and the Consultant.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01200
MEETINGS AND PROGRESS REPORTS

1. PRE-CONSTRUCTION MEETING

- 1.1 As soon as possible after award of the Contract, the Contractor will arrange a meeting between the Consultants, Owner's Project Director and other Representatives, Sub-Contractors, Superintendents, Inspection and Testing company representatives, and representatives of others whose co-ordination is required during construction.
- 1.2 Full details of project, scheduling, co-operation and co-ordination will be given and discussed and questions answered. See Section 01300 - Submittals, Before Commencing Work.
- 1.3 Minutes will be kept by the General Contractor and issued to all participants within three (3) working days after the meeting by facsimile or electronically.

2. PROJECT MEETINGS

- 2.1 Organize project meetings on site, on a regular basis as agreed to by the Consultant and send out notices stating time and place to the Owner's representative, the Consultant, Sub-Consultants, Sub-Contractors and/or other persons whose presence is required.
- 2.2 Attendance is mandatory by all concerned parties.
- 2.3 It is the responsibility of the Contractor and their Sub-Contractors to be fully prepared for all meetings so that all items on the agenda can be expedited quickly.

3. MEETING MINUTES & REPORTS

- 3.1 The General Contractor will prepare minutes noting matters discussed, decisions taken and follow-up actions required. **Copies of the report will be transmitted electronically to all parties no later than three (3) working days after the meeting in order to ensure that all items requiring action are expeditiously addressed.**
- 3.2 The meeting reports shall only record items discussed in the meeting and **shall not be used to convey information or directions, etc., either not discussed at that meeting or that is introduced by any party following the meeting.**

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01200
MEETINGS AND PROGRESS REPORTS

**3. MEETING
MINUTES
& REPORTS**

- Continued

- 3.3** The Owner and their Consultant shall review the meeting report for accuracy in recording discussions, decisions or action items and advise the Contractor prior to the next meeting in order for corrections to be made.
- 3.4** The Contractor shall use the template included in this Section for the meeting report with items to be discussed in the order as presented.
- 3.5** Items that are noted as resolved or provided for information only shall not be reopened for further discussion, unless there is a mutually agreed upon need to further discuss the item in which case they will be introduced as new items of business under Administration.

**4. PROGRESS
REPORTS**

- 4.1** Keep a permanent written record on the site of progress of the Work. This record is to be open to inspection of the Consultant and Owner's Project Director at all times. A copy is to be furnished to the Consultant upon request.
- 4.2** Include in record each day:
 - .1** Weather conditions with maximum and minimum temperatures.
 - .2** Conditions encountered during excavation (if applicable).
 - .3** Commencement and completion dates of the Work of each trade, in each area of the Project.
 - .4** Attendance of the General Contractor's and Sub-Contractor's work forces at the Project and a record of the Work they perform.
 - .5** Dates, status and particulars of submissions, i.e., shop drawings, samples, mock-ups and the like.
 - .6** Dates, status and particulars of deliveries, i.e., manufacturing dates, delivery and installation dates.
 - .7** Visits to the site by the Owner, Consultants, Jurisdictional Authorities, Testing Companies, General Contractor, Sub-Contractors and Suppliers.
 - .8** Maintain photographs per 3.3.9, Section 01300 - Submittals.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01200
MEETINGS AND PROGRESS REPORTS

John Howard Society • Lindsay - Renovations

[Contractor Logo] Location: 31 Peel Street, Lindsay, Ontario K9V 3L9

Building Permit No.

Meeting Minutes #_____

Duration of Meeting	Start: Day Month, Year, 9:00 am	End Time: 10:00 am
Attendees:	Owner: Name, Company	Email
	Contractor: Name, Company	Email
	Consultant: Name, Company	Email
	Sub-Contractor: Name, Company	Email

1. Health and Safety:

1.1	Items as identified by Contractor to Satisfy Health & Safety Regulations.	Info
1.2	The contractor is to identify when authorities having jurisdiction are on-site (since the last meeting): Agency, Name and Date of Visit	Info

2. Project Construction Schedule:

2.1	Scheduled Date For Substantial Completion: Day, Month Year	Info
2.2	Identify any slippage in schedule, as well as intended actions to correct.	[Action By]
2.3	Review Progress Report [As needed]	Info

3. Submittals:

3.1	Review Submittal Schedule: identify any outstanding items or action required by Contractor/Owner/Consultants	[Action By]
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4. Administration:

4.1	Review RFI Schedule: identify any outstanding items or action required by Contractor/Owner/Consultants	[Action By]
4.2.	Review Proposed Changes: identify any outstanding items or action required by Contractor/Owner/Consultants	[Action By]

5. Next Meeting:

5.1	Next Meeting: Day, Month Year, Time	Info
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Note: Meeting Minutes are provided as a resource for all parties to assist in identifying items requiring co-ordination or attention. They do not amend or adjust the Contract requirements in any form.

END OF SECTION

**1. PRIOR TO
CONTRACT
SIGNING**

- 1.1** Within twenty-four (24) hours of the Tender submission, submit to the Consultant:
 - .1** All items described in 00100 - Instruction To Bidders.
 - .2** All other Sections and Drawings to be reviewed.
- 1.2** Performance Bond, and Labour and Material Bonds to be submitted within fourteen (14) business days of award of Contract.
- 1.3** Insurance Policies required under GC-20, Insurance, General Conditions of the Contract.

**2. PRIOR TO
COMMENCEMENT
OF THE WORK**

- 2.1** Submit to the Consultant the following:
 - .1** Certificates of good standing from Workplace Safety & Insurance Board for the Contractor and all Sub-Contractors.
 - .2** Shop Drawing Schedule as specified in Section 01340 - Shop Drawings And Product Data.
 - .3** Copy of the Building Permit issued by the Municipality.
 - .4** Permits required for the Work of Division 15 - Mechanical Trades and Division 16 - Electrical Trades.
 - .5** Permits for temporary structures, hoists, signs and similar items.
 - .6** Schedule of Values: Article GC-13, General Conditions of the Contract.
 - .7** Estimate of monthly progress claims (cash flow schedule) and breakdown of progress claims.
 - .8** Construction Schedule as specified in Section 01310 - Construction Schedule.
 - .9** Prior to commencement of the Work by those trades, Interference Drawings for Division 15 - Mechanical and Division 16 - Electrical, to indicate clearances between construction elements such as slabs, beams, drops and ceilings, and to confirm the capability of such clearances to accommodate all various required services.
 - .10** Failure to comply with requirements of 2.1.11 will result in such work having to be rejected and re-done at no extra cost to the Owner in the event that services are in conflict with one another, and/or with other construction elements.

**3. DURING
CONSTRUCTION**

- 3.1** Documents specified under Section 01340 - Shop Drawings And Product Data, Section 01345 - Samples and Section 01050 - Layout And Dimensions in digital form and hard copy as noted or required.
- 3.2** Any permits required from authorities having jurisdiction enabling the Owner to occupy the Work (or part thereof) prior to substantial performance of the Contract.
- 3.3** To be considered a proper invoice, Applications for Payment **must** be accompanied by:
 - .1** The Contractor's Invoice for Payment.
 - .2** Progress Draw showing a schedule of values of various trades and for various parts of the Work, and in a format accepted to the Consultant prior to the first progress draw.
 - .3** A Statutory Declaration stating that all Sub-Contractors and their Sub-Contractors, and suppliers have been paid to date and that there are no liens outstanding. Where any Sub-Trade or Supplier has not been paid because of a dispute between the Contractor and the Sub-Trade or Supplier, the Contractor must submit a written explanation with the Progress Draw, notifying the amount that has been withheld.
 - .4** Workplace Safety & Insurance Board Clearance Certificate.
 - .5** Updated Schedule and updated Construction Management Plan.
- 3.4** Submit by digital transmission, progress records in accordance with Section 01200 - Meetings And Progress Reports, and testing and inspection reports in accordance with Section 01400 - Testing And Inspection.
- 3.5** Progress Billings:
 - .1** Co-ordinate the value of the Work completed with cost breakdown.
 - .2** Include value of the Work completed during the billing period.

**3. DURING
CONSTRUCTION**

- Continued

- .3 Include running total of value of the Work completed by the end of the billing period.
- .4 Format of progress billing shall be as requested by, and approved by the Owner and the Consultant.
- .5 Submission and approval requirements of progress billings shall be discussed as part of the pre-construction meeting.

3.6 Record Drawings:

- .1 The Consultant will provide for Record Drawing purposes an AutoCAD 2023 file.
- .2 Maintain Project Drawings which accurately record significant deviations from Contract Documents due to site conditions and/or changes ordered by the Consultant, Contractor/Sub-Contractor originated changes, Field Instructions, Supplementary Instructions, Addenda, instructions by correspondence and Jurisdictional Authority approvals. Carefully record location of concealed elements which are required for maintenance, alteration work and building additions. Eradicate all obsolete information.
- .3 Keep Project Record Drawings updated. Do not record irrelevant information. Do not permanently conceal any work until the required information has been recorded.
- .4 Completion of Record Drawings to current stage of construction shall be considered a condition precedent for validation of any application for payment made by the Contractor. Failure to comply may be cause for not issuing the Substantial Performance Certificate.
- .5 Mark Record Drawings changes in coloured ink, on white prints and/or mark changes distinctly on AutoCAD 2023 file drawings.
- .6 Record the following information:
 - .1 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features.
 - .2 Field changes of dimensions and details.

**3. DURING
CONSTRUCTION**

- Continued

- .3 Changes made by Change Order or Supplementary Instructions.
- .4 Other significant deviations which are concealed in construction and cannot be identified by visual inspection.
- .7 At completion of the project and prior to final inspection, neatly transfer recorded notations to a clear set of prints and submit all sets to the Consultant.
- .8 Clearly mark each copy of the Project Record Drawings "Project Record Copy" and initial each page.
- .9 Final satisfactory completion of the Project Record Drawings shall be a condition precedent to the issuance of the Consultant's final payment certificate.
- .10 Refer to Division 15 - Mechanical and Division 16 - Electrical Specifications for more specific requirements regarding preparation and submission of final Record Drawings.

3.7 At Substantial Performance the following must be submitted:

- .1 Shop Drawings: Two (2) complete sets of final Shop Drawings, marked "Reviewed" or "Reviewed as Noted". Do not include Drawings which were marked "Re-Submit".
- .2 Manufacturers' Data Book: Submit two (2) weeks prior to commissioning and demonstrating, and prior to application for certificate of substantial completion, two (2) bound copies as specified in Section 01730 - Operations And Maintenance Data.
- .3 Affidavits: Submit, to the Consultant, all affidavits which are specified in other Sections of the Specifications. Affidavits shall be in duplicate, signed by a responsible officer of the certifying company.
- .4 Extended Warranties: See Section 01730 - Operations And Maintenance Data.

3.8 Prior to issuance of Final Certificate the following must be submitted:

- .1 Extra Materials: Provide the Owner with extra materials, for future maintenance, as specified in trade Sections of the Specifications and Section 01730 - Operations And Maintenance Data.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01300
SUBMITTALS

- 3. DURING CONSTRUCTION** - Continued
- .2 Final Construction Schedule.
 - .3 Post Construction topographical survey of the area of the Site affected by the Work (if applicable).
- 3.9** All information requested as per Section 01700 - Project Closeout.
- 3.10** Progress Photographs:
- .1 Upon commencement of the Work and thereafter at weekly intervals, supply the Consultant with photographs, from two (2) locations, including the progress of the Work.
 - .2 Photographs shall be transmitted as digital images, clearly marked with the Name of Project, Date and Location.
- 4. PROJECT START-UP SUBMISSIONS**

Submission						Consultant	
Division	Item	Description	Start-Up	Reference	Submission Date	Resubmit	Accepted
1300	2.1	Performance Bond	x				
1300	2.1	Labour and Material Bonds	x				
1300	2.2	Insurance Policies	x				
1300	2.3	Worker's Compensation Certificate	x				
1300	2.4	Shop Drawing Schedule	x				
1300	2.5	Mechanical Permits	x				
1300	2.5	Building Permit	x				
1300	2.6	Electrical Permits	x				
1300	2.7	Permits for Temporary Structures	x				
1300	2.8	Schedule of Values	x				
1300	2.9	Estimated Monthly Progress Draw	x				
1300	2.1	Construction Schedule	x				
1550	5.1	Hard Hats & Boots	x				

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01300
SUBMITTALS

**5. SHOP DRAWING,
SAMPLES &
PRODUCT DATA
SUBMISSIONS**

Division	Item	Description	Dwgs.	Sample	Data Sheet	Submission- Date	Accepted	Re-submitted
6200		Finish Carpentry And Millwork	x	X	X			
6200		Cabinet Hardware		X	X			
7110	1.4	Waterproofing - Self Adhesive		X	x			
7200	1.3	Insulation - All Types		X	x			
7900	1.2.6	Sealants, Gaskets And Barrier Membrane		X	x			
8100		Hollow Metal Doors	x		x			
8200	1.5.3	Wood Doors	x	X	x			
8400	1.5.3	Aluminum Doors And Screens	x	X	x			
8700	1.5.1&1.6.1	Door Hardware		X	x			
8800	1.4.1	Mirrors	x	X				
9250	1.2.3	Gypsum Board		X	x			
9665	1.3	Resilient Sheet Flooring And Base		X	x			
9900	1.3	Paint		X	x			
10210	1.2.1&1.3.1.	Ventilation Louvres And Grilles	x		x			
10800	1.3.	Washroom Accessories	x		x			

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01300
SUBMITTALS

**6. SUBSTANTIAL
PERFORMANCE
SUBMISSIONS**

Submissions			Consultant		
Division	Item	Description	Submission- Date	Resubmit	Accepted
1300	3.6	Record Drawings			
1300	3.7.1	Shop Drawings (x2)			
1300	3.7.2	Operations & Maintenance Data (x2)			
1300	3.7.5	Extended Warranties			
1300	3.7.6	Final Construction Schedule			
1300	3.9	Progress Photographs			
1700	4.2.1.1	Permit Drawings And Specifications			
1700	4.2.1.2	Plumbing Permit			
1700	4.2.1.3	As-Built Drawings - 2 Sets			
1700	4.2.1.5	Operations And Instructions Manual - 3 Sets			
1700	4.2.1.6	Structural Certificate			
1700	4.2.1.6	Mechanical Certificate			
1700	4.2.1.6	Electrical Certificate			
1700	4.2.1.7	Test Report			
1700	4.2.2.1	Plumbing And Drainage Manuals - 2 Sets			
1700	4.2.2.2	Plumbing And Drainage - Pipe And Valve Tag Directories			
1700	4.2.3.1	Heat/Ventilation Manuals - 2 Sets			
1700	4.2.3.2	Heat/Ventilation - Pipe And Valve Tag Directories			
1700	4.2.4.1	Electrical - Manuals (x2)			
1700	4.2.4.4	Electrical - Panel Directories			
1700	4.2.4.5	Electrical - Hydro Certificates			

**7. FINAL
PAYMENT
CERTIFICATE**

Submissions			Consultant		
Division	Item	Description	Submission- Date	Resubmit	Accepted
1300	3.7.4	Extra Material			
1300	3.7.6	Final Construction Schedule			
1700	2.2.1	Post Construction Survey			
1700	4.2.6.1	Final Completion Certificate			

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01310
CONSTRUCTION SCHEDULE

1. TIME OF ESSENCE

- 1.1 The Contractor shall schedule the completion of the Work within the time stated in the tender. Such time will be reasonable and realistic based on the Contractor's experience with similar projects.
- 1.2 The Contractor shall schedule the completion of the Work with an understanding that time is of the essence in meeting the obligations under the Contract.

2. SCHEDULE

- 2.1 Seven (7) days before commencement of the Work, submit Construction Schedule to the Consultant based on the **Bar Chart Method**. Written schedules with dates listed will not be accepted.
- 2.2 Modify schedule if required by the Consultant and re-submit.
- 2.3 Schedule shall show:
 - .1 Commencement and completion dates of the Contract.
 - .2 Commencement and completion dates of stipulated phases in accordance with the Owner's instructions and Section 01010 - Work Summary And Schedule.
 - .3 Commencement and completion dates of trades.
 - .4 Critical dates and activities.
 - .5 Order and delivery times for materials and equipment, where possible.
 - .6 Schedule of Shop Drawings - See Section 01340 - Shop Drawings And Product Data.
 - .7 Any other information relating to the orderly progress of the Contract, considered by the Contractor to be pertinent.

3. UPDATING & MONITORING

- 3.1 Set up format of Construction Schedule to allow plotting of actual progress against scheduled progress.
- 3.2 Allow sufficient space for modifications and revisions to the Schedule as work progresses.
- 3.3 Obtain the Consultant's approval of format.
- 3.4 Display copy of Schedule in site office during complete construction period and plot actual progress weekly.

**3. UPDATING
 & MONITORING**

- Continued

3.5 Updating Schedule and Progress Reporting:

- .1 Arrange participation, on site and off site, with Sub-Contractors and Suppliers, as and when necessary for the purpose of updating Schedule and monitoring progress.
- .2 Reviews of progress by inspections and meetings will be conducted at least once a month or as directed by the Consultant.
- .3 Updated Schedule to be available at all project meetings.
- .4 Highlight activities on Schedule, encountering slippage stating the reason for slippage, impact to the overall Schedule and a statement of necessary corrective action in order to adhere to the Construction Progress Schedule.
- .5 When requested, provide a statement of monitoring, expediting and controlling of critical activities.
- .6 Indicate the effects of changes to the Work on the Construction Progress Schedule.

3.6 Failure to comply with any of the preceding requirements may result in delay in issuance of Certificate of Payment. Neither the Owner nor their Consultant shall be responsible for any delays in issuing payment as a result of the failure of the Contractor to adhere to the requirements of this Section.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01340
SHOP DRAWINGS AND PRODUCT DATA

1. GENERAL CONDITIONS

- 1.1 This Section provides additional instructions to the requirements of Article GC-3.11 - Shop Drawings, of the General Conditions of the Contract.

2. SUBMISSION REQUIREMENTS

- 2.1 The Shop Drawing Schedule submittal shall conform to all of the following requirements:

- .1 In accordance with Section 01300 - Submittals, submit a Shop Drawings Schedule for review by the Consultant, including the following information:

.1 Shop Drawings to be submitted by each trade.

.2 Dates of submission to the Consultant.

.3 Dates of expected return.

.4 Number of Drawings.

- .2 Note that allowance shall be made for a second submission and time required for fabrication and delivery after return of the Shop Drawings by the Consultant.

- 2.2 The Shop Drawing submissions shall conform to all of the following requirements:

- .1 Submit three (3) white prints of each Shop Drawing, where such Shop Drawings are not transmitted electronically.

- .2 The Contractor and Sub-Contractor(s) shall mark any information requested by fabricator, confirm field dimensions and layout and compliance with the Contract Documents, check and sign each trade Shop Drawing, and make any other notations considered necessary **before submitting to the Consultant**. Failure to conform to this requirement shall result in an automatic rejection of the Shop Drawings.

- .3 Drawings requiring several or extensive changes will be marked "Re-Submit", otherwise Shop Drawings will be returned marked "Reviewed" or "Reviewed as Noted" and shall not be returned to the Consultant. Drawings marked "Re-Submit" shall be revised and re-submitted.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01340
SHOP DRAWINGS AND PRODUCT DATA

**2. SUBMISSION
REQUIREMENTS**

2.2 - Continued

- .4** All Drawings are to be in imperial measurement. Drawings not in both metric and imperial measurements will not be accepted by the Consultant.
- .5** The Consultant's Drawings are not to be used for Shop Drawings.
- .6** The failure of the Contractor to ensure that Shop Drawing submittals conform to the requirements may lead to delay in the Work. Costs of such delay shall be solely the responsibility of the Contractor and no extension of contract time will be permitted as a result of any delay caused by the Contractor's, Sub-Contractor's or Supplier's failure to submit Shop Drawings in the form and manner prescribed herein.

**3. INFORMATION
REQUIREMENTS**

- 3.1** Name of the project, including contract number and/or building number.
- 3.2** Materials and finishes.
- 3.3** Descriptive names of equipment and mechanical and electrical characteristics when applicable.
- 3.4** Sections, arrangements and details which indicate complete construction, as well as all interconnections with other Work.
- 3.5** Fabrication and erection dimensions, together with quantities and/or locations.
- 3.6** Assumed design loadings, all dimensions of elements and material specifications for all load bearing members.
- 3.7** Data verifying that superimposed loads will not affect function, appearance and safety of the Work shown on the Shop Drawings, as well as other interconnected Work.
- 3.8** Proposed chases, sleeves, cuts and holes in structural members.
- 3.9** Time that the fabricator considers necessary from date of the Contractor's authority to proceed (and Shop Drawings are returned) until fabricated Work will be delivered to site, and for installation if appropriate.

4. PRODUCT DATA

- 4.1** Certain Specification Sections specify that manufacturers' standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data will be accepted in lieu of the Shop Drawings. Six (6) copies must be submitted where the Drawings are not transmitted electronically.
- 4.2** The above will only be accepted if they conform to the following:
- .1** Delete information which is not applicable to the project.
 - .2** Supplement standard information to provide additional information applicable to the project.
 - .3** Show dimensions, sizes and clearances required.
 - .4** Show colours, model number and options.
 - .5** Show performance characteristics and capacities.
 - .6** Show wiring diagrams and controls.
 - .7** Add to standard sheet, the project identification data.
 - .8** Are 8 1/2" x 11" (213mm x 275mm) originals.

5. CONSULTANT REVIEW

- 5.1** Review of the Shop Drawings by the Consultant is for the sole purpose of ascertaining conformance with general design concepts.
- 5.2** Review shall not mean that the Consultant approves detail design inherent in the Shop Drawings, responsibility for which shall remain with the Contractor submitting same, and such reviews shall not relieve the Contractor of the responsibility for errors or omissions in the Shop Drawings or of the responsibility for meeting all requirements of the Contract Documents.
- 5.3** The Contractor is responsible for dimensions and quantities to be confirmed and correlated at the job site, and for information that pertains solely to fabrication processes or to techniques of construction of the Work of all sub-trades.
- 5.4** Review of any Drawing and/or any notes added to it, does not constitute authorization to proceed with any Work which, in the Contractor's or Supplier's opinion will involve extra cost to the Owner.
- 5.5** **The Consultant will not review any Shop Drawing for items other than as specified unless prior approval has been given to substitution in accordance with requirements of Section 01630 - Substitutions.**

END OF SECTION

1. DEFINITIONS

- 1.1** Two types of samples may be requested as follows:
- .1** Site Samples: Sample installation of materials or components in suitable location, to determine standard of acceptable construction and finish. Site Samples are specified in the appropriate Trade Sections of the Specification and may form part of the completed construction if so approved by the Architect.
 - .2** Samples: Samples of materials, finishes and other components called for in appropriate Trade Sections of the Specification or as requested by the Architect.

2. SITE SAMPLES

- 2.1** Construct site samples, in locations determined by the Architect.
- 2.2** Include all materials specified in Trade Sections, including materials and assemblies required to adequately show site sample in its intended installation.
- 2.3** Erect, dismantle and re-erect, or modify site samples as many times as is necessary to obtain the Architect's approval.
- 2.4** Approved site samples will become minimum standards of labour and material against which installed work will be checked on project.
- 2.5** Site samples may be incorporated into the Work if so designated by the Architect.
- 2.6** Where site samples are not to be incorporated into the Work, remove same from the Site at completion of the Work or when so instructed by the Architect.

3. SAMPLES

- 3.1** Where specified, submit to the Architect, sample items and/or samples of adequate size to represent material or assembly.
- 3.2** Where degrees of marking or colour cannot adequately be shown in a single sample, submit a range of samples to show extremes of colour and marking. Identify samples with project number, date and name of the Sub-Contractor. Materials used in building shall correspond to approved samples for quality, colour, texture, finish and thickness.

- 3. SAMPLES** - Continued
- 3.3** When samples are very large, require assembly or require evaluation at the site, they may be delivered to the site, but only with the Architect's approval and as directed.
- 3.4** Include cost of delivery and handling, assembly and return to supplier of samples in the Contract Work.
- 3.5** If a sample is not approved, it may be returned, noted "Not Approved". If the sample is approved, one sample will be returned, marked "Approved" or with an accompanying memo concerning approval.
- 3.6** Each product incorporated in the Work shall be precisely the same in all details as the approved sample.
- 3.7** Should any change of material, colour, texture, finish, dimensions, performance, function, operation, construction, joining, fastening, fabrication techniques, service characteristics and other qualities be made to a product after approval has been given, request approval of the revised characteristics in writing and re-submit samples of the product for approval if required.

1. GENERAL

- 1.1** Responsibilities of the Contractor for Testing and Inspection include co-ordination of Inspections by an Inspector (or Registered Code Agency appointed by the Municipality) and Inspection and Testing agencies appointed by the Owner to review specific components of the Work.

Inspection and Testing is specified in individual Sections and includes, without being limited to:

- Building Envelope
- Baseline Indoor Air
- Integrated Fire Protection and Life Safety Systems Verification per CAN/ULC S1001

Refer to all Sections and Divisions for Inspection and Testing requirements.

- 1.2** For purposes of OBC 2.4.5.1(2), the Contractor shall be the **person** responsible for notifying the Chief Building Official (or Registered Code Agency appointed by the Municipality) of the readiness for inspection as required by this clause.

- 1.3** Testing and Inspection agents will be appointed by the Owner to carry out inspection and testing as specified in the various Sections of the Specifications. The Contractor shall co-ordinate all Inspection and Testing as needed.

- 1.4** Conditions for Access to the Work are as follows:

- .1** The Contractor and each Sub-Contractor, Supplier and Manufacturer whose material and work is subject to inspection and testing shall supply material, labour and facilities as required and necessary for the Inspection and Testing agency to perform its work; provide full access to site and/or manufacturing plant; give all required notices for inspection and testing and provide full co-operation.
- .2** The Contractor shall submit a schedule of required tests and inspections, for approval by the Architect and Sub-Consultant.
- .3** In addition to the above, provisions are to be made for site reviews by the Architect and all Sub-Consultants.

2. PAYMENT

- 2.1** Cost for inspection and testing, unless otherwise specified herein, will be by Allowance, specified in Section 01020 - Allowances.
- 2.2** Where tests show non-conformity to the Contract Documents, further inspection and testing costs shall be borne by the party at fault, (the Contractor and /or Sub-Contractor).

3. CONFORMANCE

- 3.1** Inspection and testing specified or directed for any part of the Work, material and manufactured items shall in no instance mitigate the Contractor's, Sub-Contractor's, Supplier's or Manufacturer's responsibility for their own supervision and conformance of the Work and Materials to the Contract Documents.

4. REPORTS

- 4.1** The Inspection and Testing agency shall provide a written report by electronic means for each inspection and test made with copies to:
- Owner
 - Prime Consultant
 - Sub-Consultants
 - Contractor who shall forward to:
 - Sub-Contractor(s)
 - Supplier/Manufacturer
 - Chief Building Official.
- 4.2** Include all of the following information in reports:
- .1** Date and time of inspection or test.
 - .2** Weather conditions and ambient air temperatures during the inspection.
 - .3** Testing method employed by proper standard reference and specific paragraph or other detailed information as applicable.
 - .4** Inspection description and details and other relevant information.
 - .5** Test results in detail, complete with applicable graphs and other clarifying documents and information.
 - .6** Printed name and signature of person having conducted inspection or test, and name, title and signature of supervisor having verified the report.

**5. DEFECTIVE
WORK**

- 5.1** Where testing, inspection or surveys indicate that defective labour has occurred or that the Work has been carried out incorporating defective materials, the Architect and their Sub-Consultants may request additional or further tests, inspections or surveys performed, calculation of structural strength made and/or similar analyses in order to help determine whether the Work must be replaced. Such additional testing or re-testing, inspections, surveys and analyses carried out under these circumstances will be made at the Contractor's expense.
- 5.2** All testing shall be conducted in accordance with the Architect's and their Sub-Consultant's requirements.
- 5.3** Defective work discovered before expiration of warranty period, specified in General Conditions of the Contract, as may be extended in this Specification (Section 01740 - Warranties), will be rejected, whether or not it has been previously inspected. If rejected, defective materials or labour shall be promptly removed and replaced or repaired to the Architect's approval, at no cost to the Owner.
- 5.4** See references to defective products and work in Section 01600 - Material And Equipment.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

1. GENERAL

**1.1 OFFICES
& SHEDS**

- .1 Provide, on the site, an area for an office and for job meetings. Equip with lights, plan desk and plan files as necessary.
- .2 Provide an adequate telephone service. Pay all accounts chargeable to the Work, so long as it is in progress.
- .3 **Make provision for electronic transmission of documents and print out of documents via e.mail at the Site Office.**
- .4 Provide for storage of materials. Material stored on the site must be protected by tarpaulins or other appropriate covering.
- .5 Storage for cement, lime and other perishable goods and articles, including hardware and finished millwork, shall be weatherproof and secure and of ample size for the purpose.
- .6 Remove from the site, temporary facilities and offices when directed by the Architect.

2. UTILITIES

2.1 TOILETS

- .1 The **Owner** will make available for a limited period of time a toilet for the use of the Contractor.
- .2 The Contractor will immediately rough in a temporary toilet and sink connected to the building water supply and sanitary waste system.
- .3 Use of permanent toilets in new construction or renovation areas **will not be permitted**. In the final phase of the Work, the Contractor will replace temporary fixtures and finishes with permanent fixtures and finishes.

2.2 WATER

- .1 Provide an adequate, pure fresh water supply for use of trades. Run supply pipes and maintain in good condition until permanent supply is maintained and ready for use.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01500**TEMPORARY FACILITIES AND CONTROLS**

- 2. UTILITIES** - Continued
- 2.3 HEAT**
- .1** Provide temporary heat and ventilation required for construction and completion of the Work.
 - .2** Maintain a minimum temperature of 10 degrees C or as necessary for the type of construction, either as defined in the trade Sections of this Specification or as approved by the Consultant. Provide necessary enclosures to maintain required environment and adequate ventilation. Equipment used for temporary heating and associated services, shall be approved by the Consultant and the authorities having jurisdiction prior to delivery and installation. Vent heating devices to open air. Requests for approval shall give full details of the proposed equipment and method of venting.
 - .3** The permanent heating system, when installed and when the building is enclosed, may be used for temporary heating, **only** if so authorized by the Consultant. Where the permanent system is so used, provide qualified personnel to run and maintain the equipment. At completion, the permanent system shall be turned over to the Owner in 'NEW' condition and the warranty will commence at the time stated for all warranties.
- 2.4 LIGHT & POWER**
- .1** Provide adequate temporary electrical light and power required for the entire Work of all trades, including lamps, wiring and similar equipment to replicate finished conditions. Connect to the nearest available power source.
- 3. SITE ENCLOSURES & BARRICADES**
- .1** Erect, maintain and remove, at the time of completion, suitable enclosures in the form of plywood hoarding provided with lockable gates or CSA approved welded steel wire mesh fencing systems. All enclosures shall conform to requirements of all authorities having jurisdiction. Erect all barricades required by authorities to protect the public and persons engaged on the Work from injury.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

**4. PLANT,
MACHINERY**

- .1 The Contractor and Sub-Contractors shall ensure that proper formwork, scaffolding, ladders, cranes, derricks, tackle, gangways, planks, fans, screens, gantries, tarpaulins, tools and machinery are provided for the execution and completion of the Work.
- .2 Scaffolding shall be erected without damage to the structure or finishes, be moved to suit the installation of the Work of required trades and be promptly removed at completion.
- .3 Permanent stairs and/or temporary stairs shall be constructed such that the main working levels are connected to grade, by stairs, at all times.

**5. SIDEWALK
& ROADWAY
PROTECTION
& MAINTENANCE**

- .1 Construct, maintain and remove, after completion, necessary service entries to provide, **at all times**, safe, convenient and adequate access for materials and supplies.
- .2 Protect existing sidewalks and roads to the satisfaction of the authorities having jurisdiction and the Owner.
- .3 Provide and maintain (where required) double planking over all sidewalk crossings and roadways.
- .4 Damage to sidewalks, roadways, trees, landscaped areas and to other existing on and off site structures, arising from the Work of this Contract shall be made good at no cost to the Owner.

**6. FIRE
PROTECTION**

- .1 **Absolutely Prohibit** smoking within the building. Post '**No Smoking**' signs prominently and see that they are strictly obeyed. Failure by the Contractor's Site Superintendent to enforce this requirement will result in immediate dismissal from the Site of the Superintendent and the individuals smoking on the Site.
- .2 Comply with fire regulations of the authorities having jurisdiction.
- .3 Take all necessary precautions and provide protection required by the authorities having jurisdiction. Provide adequate number of fire extinguishers.
- .4 Prohibit open fires on the site. Remove waste at regular intervals and when directed. Take all necessary precautions to avoid fire by spontaneous combustion.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

6. FIRE PROTECTION

- Continued

- .5 Ensure all rags and waste containing oil, grease or other inflammable materials are stored in an approved metal container and are removed daily.
- .6 Be responsible for fire protection within the areas of the Work. Provide and maintain in good working order, sufficient fire fighting equipment for this purpose including, but not limited to fire extinguishers, fire resistant blankets and portable fire pumps.
- .7 Assign workers to firewatch while welding, metal cutting or soldering is in progress and longer where necessary, especially after quitting times. If necessary, use fire resistant blankets to protect adjacent areas. Provide appropriate fire extinguishers immediately at hand, within 3 metres of the Work.
- .8 Familiarize workers with proper use of firefighting equipment.

7. GENERAL PROTECTION

- .1 Be responsible for all portions of the building and **all** damage, soiling and staining from the time of occupation of the site until handing over of the completed Work to the Owner.
- .2 Take all necessary precautions and provide and install required coverings to protect the Work, material and finishes from contamination, damage and weather conditions.
- .3 Make good any damage or replace damaged materials as directed and at no cost to the Owner. Repairs shall be made by the trade having originally installed or fabricated the damaged material, finish or item.
- .4 Protect floor finishes from construction traffic and transport of construction materials and equipment by adequate means, such as boarding or other acceptable material. Install and maintain proper protection of finished surfaces and installed Work.
- .5 Assume dust partitions to be provided between any area of the Work and all adjacent occupancies requiring protection from adjacent Work must be provided by this Division.
- .6 Be responsible for adjacent public and private property and repair and make good any damage resulting from the Work of this Contract.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

8. SECURITY

- .1 Provide and maintain guard lights at all barricade railings or obstructions in the street, road, sidewalks and at all trenches or pits adjacent to roads or the Work.
- .2 During the construction period, the premises shall be securely locked after working hours. Close in doors, windows and all other openings.
- .3 From the commencement of the Work until the area is occupied by the Owner, it shall be the sole responsibility of the Contractor to prevent entry to the Work of any unauthorized person or persons, to guard against fire and damage from the elements, theft of materials.
- .4 Security guards are not required, *but* it remains the sole responsibility of the Contractor to ensure site security.

**9. RODENT
& GARBAGE
CONTROL**

- .1 Co-ordinate with the Owner, if and as required, to institute and carry out a rodent control program on the site.
- .2 Start program two (2) weeks before construction begins and continue until construction is complete.
- .3 The Contractor will provide and identify a separate staging area for separation of waste and recyclable products.
- .4 The Contractor shall not allow food waste to be left in the area of the Work.
- .5 For garbage control, see Section 01710 - Cleaning.

10. SIGNS

- .1 **Individual Contractor's and Sub-Contractor's signs** will not be permitted on the site. One Project sign, with the names of the Contractor and principal Sub-Contractors may be provided at the Contractor's own cost.

11. PARKING

- .1 Contractors will be solely responsible for provision of temporary parking **at their own cost**, including restoration of disturbed area.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01550
SAFETY REQUIREMENTS

**1. CONSTRUCTION
SAFETY
MEASURES**

- 1.1** Observe and enforce construction safety measures required by National Building Code Part 8, Canadian Construction Safety Code, Occupational Health and Safety Act, Ontario Regulations 213/91, Workers' Compensation Board and municipal statutes and authorities.
- 1.2** In event of conflict between any provisions of above authorities the most stringent provision will apply.
- 1.3** Where applicable the Contractor shall be designated the "Constructor", as defined by Ontario Act.

**2. FIRE
SAFETY
REQUIREMENTS**

- 2.1** Comply with requirements of local Fire Marshal and other authorities having jurisdiction.
- 2.2** Comply with requirements of Section 01500 - Temporary Facilities And Controls.

3. FALSEWORK

- 3.1** Design and construct falsework in accordance with CSA S269.1 -1975.

4. SCAFFOLD

- 4.1** Design and construct scaffolding in accordance with CAN/CSA S269.2-M87.

5. VISITORS

- 5.1** Provide hard hats and safety boots for use of visitors. A minimum of 3 (three) hard hats and 2 (two) sets of safety boots shall be provided solely for use by authorized visitors, consultants and/or Owner Representatives.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01600
MATERIAL AND EQUIPMENT

1. GENERAL

- 1.1** The Contractor shall furnish all labour, materials, equipment, transportation storage facilities and all other incidentals required to perform the Work.
- 1.2** All products supplied for the Work shall be new except as noted otherwise.
- 1.3** The Contractor shall give preference to materials, products and equipment of Canadian origin and manufacture.
- 1.4** All products shall be supplied in accordance with the Contract requirements of each Section.
- 1.5** All products and equipment to be provided in conformance with best practices for construction waste management.
- 1.6** Products and appliances will not be supplied by the Owner unless so stated.
- 1.7** Description of products and work in the Contract Documents which have well known technical or trade meanings shall be held to denote that all related recognized standards apply.
- 1.8** The Contractor shall ensure that all materials, products, equipment and systems are new and they must be listed in the Canadian Construction Materials Centre's 'Evaluation Listing or Evaluation Reports'.
- 1.9** Where electrical equipment, fixtures, appliances and apparatus are specified under this Contract, they shall be of types approved by the Canadian Standards Association and if they do not bear this approval, the Contractor shall arrange and pay for them to be inspected by the Special Branch of Ontario Hydro and shall alter them at the Contractor's expense, as required by that Inspection Department.
- 1.10** Any electrical equipment, fixtures, appliance and apparatus delivered to the site, which does not bear either the Canadian Standards Association label with their approval number or the Special Branch of Ontario Hydro label, will be rejected and replaced with acceptable equipment or apparatus, without additional cost to the Owner.
- 1.11** The Contractor shall assume all liability for and be responsible for loss of or damage to the Contractor's materials or equipment and for any materials delivered to the Contractor from whatever source to the site of the Work.

2. HANDLING

- 2.1** Arrange for receiving area and procedures which do not require use of the Owner's facilities or personnel.
- 2.2** Schedule material delivery so as to keep storage at the site to the absolute minimum, but without causing delays due to late delivery. Before delivery arrange for receiving at site.
- 2.3** Handle and store materials in accordance with manufacturer's instructions to prevent damage to materials, structure and finishes. Avoid undue loading stresses in materials and shock during transport, handling and storage. Do not overload floors of areas used for storage.
- 2.4** All packaged materials must be in original, unopened and undamaged containers with manufacturer's labels and seals intact.
- 2.5** Store material that will be damaged by weather in suitable dry accommodation. Provide ventilation. Keep daily records of temperature and relative humidity where these factors are critical in material storage.
- 2.6** Do not store material and equipment detrimental to finished surfaces within areas of the building where finishing has commenced or has been completed. Material storage within the building is subject to relocation as directed.
- 2.7** Store highly combustible or volatile materials separately from other materials and under no circumstances within the building. Protect against open flame and other fire hazards. Limit volume of supply of such materials, on the site, to minimum required for one (1) day's operations.
- 2.8** Products supplied by the Owner and installed under this Contract will be delivered to the site during normal working hours. Unload, transport within the site and store, if necessary, all such products at no additional cost to the Owner providing that such delivery is not made inconsistent with the agreed progress schedule.
- 2.9** Damaged materials will be rejected for use and thereupon shall be removed immediately from site.

3. CONFORMANCE

- 3.1** Units of multiple unit products shall have same characteristics and shall be of same manufacturing run, dye lots, etc., wherever this may result in inconsistency in appearance. Materials or manufactured products with manufacturer's specific instructions for application or installation shall be used in strict accordance with such instructions.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01600
MATERIAL AND EQUIPMENT

- 3. CONFORMANCE** - Continued
- 3.2** When material or equipment is composed of various components, components shall conform to the manufacturer's and other relevant Specifications.
- 3.3** Materials and fixtures specified shall be subject to the approval of the Consultant, but where materials or fixtures named by brand, size and quality in the Drawings and Specifications, such materials may be used without further reference to the Consultant.
- 4. AVAILABILITY**
- 4.1** Determine availability of all specified materials and equipment before award of Contract.
- 4.2** If any material or equipment is not available at the time of Tender, this shall be brought to the attention of the Consultant at that time and a suitable alternative shall be selected by the Consultant.
- 4.3** Failure to do so will not be grounds for any extra costs to the Contract.
- 4.4** Upon award of the Contract, the Contractor shall determine delivery time necessary for all products, equipment and plant required. Order items to ensure that delivery to the site is such that agreed Progress Schedule is maintained. If requested by the Consultant, produce evidence to substantiate the foregoing.
- 4.5** Delivery time for all major items required during construction, and items in large quantities and over an extended period of time, shall be noted as specified in Section 01310 - Construction Schedule.
- 5. DEFECTIVE PRODUCTS**
- 5.1** Products and work found defective, whether not in accordance with Specifications or defaced or injured through the Contractor's, employees' or suppliers' negligence, or by fire, weather or any other cause, will be rejected for incorporation in work.
- 5.2** Remove rejected products and work from site immediately.
- 5.3** Replace rejected products and work with no delay after rejection. Provide replacement products and execute replacement work precisely as required by specifications for original products at no extra cost to the Owner. Previous inspection and payment shall not relieve the Sub-Contractor from obligation of providing sound and satisfactory Work in compliance with this Specification.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01600
MATERIAL AND EQUIPMENT

5. DEFECTIVE PRODUCTS

- Continued

- 5.4** See references to defective work uncovered during inspection and testing in Section 01400 - Testing And Inspection.
- 5.5** If, in the opinion of the Owner, it is not expedient to correct defective work or work not done in accordance with the Contract, the Owner may deduct from the Contract price the difference in value between the Work as done and that called for by the Contract, the amount of which shall be determined by the Owner.

6. QUALITY OF WORK

- 6.1** The Contractor shall ensure that all work is performed by competent workers, skilled in the particular trade. Only first class work will be accepted, not only with regard to safety, efficiency and durability, but also with regard to neatness and accuracy of detail.

7. DEVIATION

- 7.1** The Contractor shall not make any deviations from the Drawings and Specifications without prior written permission from the Owner and the Contractor shall correct unauthorized deviations at the Contractor's expense.

END OF SECTION

**1. CONTRACTOR'S
OPTIONS**

- 1.1** Where products are specified only by reference standards, the Contractor may select any product meeting the standards by any manufacturer.
- 1.2** Where products are specified by naming several products or manufacturers, the Contractor may select any product and manufacturer named.
- 1.3** Where products are specified by naming one or more products, but indicating the option of selecting equivalent products by stating "or approved alternate" after a specified product, the Contractor may submit a request to the Consultant, **in writing as required for the substitution**, for any product not specifically named.
- 1.4** Where products are specified by naming one product and manufacturer, **there is no option and substitution will not be allowed.**
- 1.5** Note that where 'Approved Alternates' are selected, they must be equal or superior to the product(s) in every respect. No additional costs will be entertained in order for alternate products to be used.

**2. CONSIDERATION
OF SUBSTITUTIONS**

- 2.1** Submit requests for substitutions as specified in Document 00100 - Instruction To Bidders, and on the form provided as part of this Section.
- 2.2** The Request for Substitution shall include the following information prior to submittal to the Consultant:
 - .1** Reason for Substitution.
 - .2** Credit to the Owner for considering the substitution.
 - .3** Certification by the Contractor that the proposed product and/or method has been investigated by them and determined to be equal or superior in all respects to that specified.
 - .4** Certification that same or better warranty is provided for the substitution as for the products and methods originally specified.
 - .5** Indication that all aspects of co-ordinating the proposed substitution into the Work have been considered for all trades prior to requesting approval for substitution.

2. SUBSTITUTIONS

2.2 - Continued

- .6** Request for consideration of substitution is accompanied by complete specifications and sample of material or product.
- .7** Agreement to pay costs by Consultants to examine and consider request for substitutions.

Note that a minimum of three (3) hours will be charged at \$200 per hour to consider any request for substitution where the reason for substitution is not unavailability of the product.

These charges will be invoiced to the Owner and charged against the Contractor's Progress Application.

If the amount of time required by the Consultant to review and consideration is likely to exceed three hours, the Consultant will provide the Contractor with an estimate of the time required and costs associated with the consideration of the substitution.

- .8** Should proposed substitution be accepted, either in part or in whole, assume full responsibility when substitution affects any other Work. The Consultant will execute any changes to Drawings required as a result of substitution, and costs of making such changes will be billed based at \$200 per hour and in accordance with Section 01026 - Change Order Procedures.
- .9** Proposed substitutions must satisfy all design conditions and other specified requirements. Properties including, but not necessarily limited to the following, as applicable, will be considered:

Physical dimension requirements to satisfy space limitations; static and dynamic weight limitations; structural properties; audible noise levels; vibration generation; interchangeability of parts of components; accessibility for maintenance; possible removal or replacement; colours; textures and compatibility with other materials, products, assemblies and components.

- .10** Cost of all changes in the Work of other trades, necessitated by the use of proposed material and product substitutions, shall be borne by the Contractor or Sub-Contractor proposing the substitution.

2. SUBSTITUTIONS - Continued

2.3 **Do not** substitute materials, equipment or methods into the Work unless such substitutions have been specifically approved by the Consultant and Owner.

Use of substitute materials, equipment or methods without approval of the Owner shall result in such Work being removed and replaced, with specified materials, at the Contractor's own cost.

2.4 Substitutions will not be considered if:

- .1** They are indicated or implied on the Shop Drawings or the project data without a formal request submitted as specified above.
- .2** Acceptance will require substantial revision of the Contract Documents.

2.5 The Consultant reserves the right to refuse any substitution without giving a reason.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01630
SUBSTITUTIONS

Request for Substitution

To: Ronald A. Awde, Architect
Project: John Howard Society • Lindsay
Renovations
31 Peel Street
Lindsay, Ontario K9V 3L9

Requested by: _____

Date Issued: _____

We hereby request consideration for a substitution for the following item in accordance with Section 01630 - Substitutions:

Division: _____ Section: _____ Item: _____

Proposed Substitution: _____

Reason for Substitution: _____

Credit to the Contract: \$ _____

☐ Complete specification attached

☐ Sample of material or product attached

Contractor Certification

1. The proposed product and/or method has been investigated by the contractor and determined to be equal or superior in all respects to that specified.
2. The same or better warranty is provided for the substitution as for products and methods originally specified.
3. All aspects of coordinating the proposed substitution into the work have been considered for all trades prior to requesting approval for substitution, including but not limited to the following: intended function, dimensional requirements, static and/or dynamic weight, structural properties, noise and vibration, accessibility for maintenance, removal or replacement, colour, texture, compatibility with other products.
4. We agree to reimburse the Owner for costs incurred by the consultants to examine and consider the request for substitutions, based on a minimum of three hours at the current OAA rates or as advised by the Consultant. This shall include any charges the consultants must make to drawings.
5. We agree that if the proposed substitution is accepted in part or in whole, that we will assume full responsibility in the event that it affects any other part of the work.
6. We agree that the cost of all changes in the work of other trades, necessitated by the use of the proposed product substitution shall be borne by the Contractor or Sub-Contractor proposing the substitution.

Signature: _____ Signature: _____
General Contractor Sub-Contractor (if applicable)

Consultants

Recommended ☐ Not Recommended ☐ Reimbursed Consultant Hours: _____

Signature: _____ Signature: _____
Prime Consultant Sub-Consultant (if applicable)

END OF SECTION

**1. FINAL
INSPECTIONS
& CLOSEOUT**

- 1.1** Arrange for, conduct and document final inspection, closeout, and takeover at completion of the Work in accordance with procedures described in the most recent edition O.A.A./OCGA Document Take-Over Procedures, O.A.A./OCGA Document No. 100, in force at the time of tender.
- 1.2** Supply all documents specified in Section 01300 - Submittals, under heading "Documents required at Substantial Performance".
- 1.3** Arrange with the Owner for termination of the Contractor's liability insurance coverage. The Contractor's insurance coverage shall not terminate until such time as the premises are vacated by the builder's forces and the Work has been certified complete.

**2. POST
CONSTRUCTION
SURVEY**

- 2.1** Arrange and pay for the services of a qualified surveyor to prepare an as-built record of the finish grading within the Site area included in this Contract. Failure to supply this shall result in the Owner having the survey completed and back charging the costs against the final payment certificate, including any Consultant time required to co-ordinate this item.

**3. TRIAL USAGE
& INSTRUCTIONS
- MECHANICAL**

- 3.1** Thoroughly instruct the Owner's authorized representative in the safe operation of the systems and equipment.
- 3.2** Arrange and pay for the services of qualified manufacturer's representatives to instruct the Owner on specialized portions of the installation; such as refrigeration machines, automatic controls, primary air handling and cooling equipment.
- 3.3** Submit a complete record of instructions as part of the maintenance instructions and data book given to the Owner. For each instruction period, supply the following:
 - .1** Date.
 - .2** System or equipment involved.
 - .3** Names of persons giving instructions.
 - .4** Names of persons being instructed.
 - .5** Other persons present.

**3. TRIAL USAGE
& INSTRUCTIONS
- MECHANICAL**

- Continued

3.4 Instructional period shall be carried out during a continuous period of thirty (30) days.

3.5 The Owner shall be permitted trial usage of systems or parts of system for the purpose of testing and learning operational procedures. Trial usage shall not affect the warranties, nor be construed as acceptance thereof and no claim shall be made against the Owner for any injury or breakage to any part or parts of such systems due to the aforementioned tests, where such injuries and/or breakage are caused, directly or indirectly, by a weakness or inadequacy of parts, or by defective materials or labour of any kind whatsoever.

**4. TRIAL USAGE
& INSTRUCTIONS
- ELECTRICAL**

4.1 Provide services of manufacturer's specialized representatives to instruct the Owner in operation of systems and equipment.

4.2 Permit the Owner's representatives, in order to familiarize themselves with the equipment, to operate the system(s) for a reasonable period of time.

4.3 The trial usage of any equipment by the Owner shall not affect the warranties, nor be construed as acceptance of the equipment or system and no claim for damage shall be made against the Owner for injury or breakage to any part or parts of the aforementioned system or systems due to any such test, where such injuries or breakage are caused, in whole or in part, directly or indirectly, by a weakness or inadequacy of parts, or by defective materials or labour of any kind whatsoever.

4.4 Review information provided in the maintenance instructions and data book with the Owner's representatives to ensure the Owner has a complete understanding of the electrical equipment.

**5. REQUIREMENTS
FOR
COMPLETION**

5.1 Provide notice, in writing, to the Owner of anticipated takeover date.

5.2 The following articles are to be submitted to the Owner before issuance of the Substantial Completion Certificate:

.1 General

.1 Building Permit copy of Drawings and Specifications.

**5. REQUIREMENTS
FOR
COMPLETION**

- 5.2 .1 General - Continued**
 - .2** Final Plumbing and Heating Permit clearances.
 - .3** One (1) copy as-built architectural, structural and electrical drawings in the form of electronic file (PDF format).
 - .4** Complete Operating and Instruction Manuals.
 - .5** Structural, mechanical and electrical certificates on site copy to the Owner.
 - .6** Copies of all test reports
 - .7** Extended warranties as listed in Section 01740 - Warranties.
 - .8** Post Construction topographical survey.
- .2 Plumbing & Drainage**
 - .1** Operating and Instructions Manuals - two (2) copies, hard bound.
 - .2** Piping and valve tag directories - one (1) copy framed and one (1) copy for the Operating Manual.
 - .3** All other requested data.
- .3 Heating & Ventilating**
 - .1** Operating and Instructions Manuals - two (2) copies, hard bound.
 - .2** Piping and valve tag directories - one (1) copy framed and one (1) copy for the Operating Manual.
 - .3** Balancing report of heating system and ventilator system.
 - .4** Test report on heating and ventilating control systems.
 - .5** All other requested data.
 - .6** Air quality report.

**5. REQUIREMENTS
FOR
COMPLETION**

5.2 - Continued

.4 Electrical

- .1** Operating and Instructions Manuals - two (2) copies, hard bound.
- .2** Completed Record Drawings, including television signals, telephone, fire alarm and intercom systems.
- .3** Test report of fire alarm system.
- .4** One (1) copy of all panel directories affected by the Work.
- .5** Hydro certificate.

.5 Substantial Performance

- .1** Upon receipt of a Certificate of Substantial Performance, the Contractor shall provide the Owner with evidence of publication (including name of paper, date of publication, etc.), of the Certificate of Substantial Performance acceptable to it.

.5 Final Payment

- .1** Final completion certificate required from the Architect and Consultants dated to takeover date.

1. GENERAL

- 1.1** Cleaning for specific products of the Work is described in the Specifications Section for that work.
- 1.2** At completion of the Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight exposed surfaces. Leave project clean and ready for occupancy.

2. SAFETY REQUIREMENTS

- 2.1** Maintain project in accordance with the Health and Safety Standards of the Province of Ontario.
- 2.2** Hazard Controls:
 - .1** Store volatile wastes in covered metal containers, and remove from premises daily.
 - .2** Prevent accumulation of wastes which create hazardous conditions.
 - .3** Provide adequate ventilation during use of volatile substances.

3. MATERIALS & INSTRUCTIONS

- 3.1** Use only cleaning materials recommended by manufacturer of surface to be cleaned and as recommended by cleaning material manufacturer.
- 3.2** Obtain from each Sub-Contractor, instructions which designate proper methods and materials to be used in final cleaning and provide such instructions to the Owner, for continued maintenance, as more exactly specified. Include instructions in Manufacturer's Data Book, specified in Section 01730 - Operations And Maintenance Data.

**4. CLEANING
DURING
CONSTRUCTION**

- 4.1** Maintain project grounds and public properties free from accumulations of waste materials and rubbish. Do not allow rubbish to accumulate in the Work under construction or on any roof area.
- 4.2** Provide on the Site, containers for collection of waste materials and rubbish.
- 4.3** At reasonable intervals during progress of the Work, clean the Site and public property, and dispose of waste materials, debris and rubbish.
- 4.4** Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- 4.5** Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as needed basis until building is ready for substantial completion or occupancy.
- 4.6** Schedule cleaning operations so that dust or other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- 4.7** Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- 4.8** Take precautions to prevent the disposing of mud or debris on roadways. Any and all mud or debris shall be cleaned up immediately. Neglect of this requirement will cause the Owner to have the necessary clean-up work carried out and charge all costs to the Contractor.
- 4.9** Cleaning operations shall include those areas used for temporary site access or used on a temporary basis to facilitate the Work.

**5. FINAL
CLEANING**

- 5.1** Employ experienced workers or professional cleaners for final cleaning, prior to application for Substantial Performance.
- 5.2** In preparation for Substantial Performance or occupancy, conduct final inspection of sight exposed interior and exterior surfaces and of concealed spaces.

**5. FINAL
CLEANING**

- Continued

5.3 In addition to the progressive removal of rubbish from the entire building and site, and leaving the building's broom clean, the Contractor shall perform the following the Work before final acceptance. Final cleaning shall not commence until so authorized by the Architect.

- .1** Remove grease, dust, dirt, stains, labels, finger prints and other foreign materials from all interior and exterior finished surfaces; polish surfaces so designated to shine finish.
- .2** Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- .3** Clean hardware, aluminum, stainless steel and similar finishes.
- .4** Completely clean all glass, interior and exterior and replace broken glass.
- .5** Remove paint spots and smears from all surfaces.
- .6** Vacuum clean all building interiors affected in construction operations.
- .7** Broom clean and wash paved surfaces inside and outside the building.
- .8** Remove debris and materials from roof areas.
- .9** Vacuum out and wipe clean all electrical, signal and security panels; switchboards, transformers and other electrical equipment.
- .10** Replace ventilating and air conditioning filters if units were operated during construction.
- .11** Clean ducts, blowers and coils if air conditioning units were operated without filters during construction.
- .12** Where the Owner takes over portions of the building for occupancy, carry out final cleaning in each portion of the Work prior to such takeover.
- .13** Remove all cleaning equipment and materials from the Site.

END OF SECTION

1. GENERAL

- 1.1** Prior to date of Substantial Performance submit to the Consultant three (3) copies of Operations Data and Maintenance Manual made up as follows:
- .1** For mechanical, electrical and other equipment that is specified to be demonstrated to the Owner's staff and maintenance personnel, the submission time shall be a minimum of fourteen (14) working days before date of Substantial Performance. When an Air Balancing Report is called for under Division 15 - Mechanical, it shall be noted that failure to provide such report before the fourteen (14) day period specified above may be held as a reason by the Consultant to delay substantial performance inspection.
 - .2** Deliver maintenance materials to the Owner's representative complete with Transmittal Form, with a copy of Transmittal Form to the Consultant.

2. MAINTENANCE MANUAL

- 2.1** Bind data in vinyl hard covered, three ring loose leaf binder for 8 1/2" x 11" (213mm x 275mm) size paper and also scan all data and provide manuals in PDF format in electronic media storage device acceptable to the Owner.
- 2.2** Enclose title sheet, labelled "Operation Data and Maintenance Manual", project name, date and list of contents.
- 2.3** Organize contents into applicable Sections of the Work to parallel Project Specification break down. Mark each Section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- 2.4** Include the following information plus data specified:
- .1** Maintenance instructions for finished surfaces and materials.
 - .2** Copy of hardware and paint schedules.
 - .3** Description, operation and maintenance instructions for equipment and systems, including complete list of equipment and parts. Indicate name plate information such as make, size, capacity and serial number. Operations data may be supplemented by verbal instructions on cassette.
 - .4** Names, addresses and telephone numbers of the Sub-Contractors and Suppliers.

**2. MAINTENANCE
MANUAL**

2.4 - Continued

- .5** Warranties and bonds.
- .6** Additional material used in project listed under various Sections showing name of manufacturer and source of supply.
- .7** Neatly type lists and notes. Use clear Drawings, diagrams or manufacturers' literature.
- .8** Include one (1) complete set of final reviewed Shop Drawings, bound separately, indicating corrections and changes made during fabrication and installation.
- .9** See Division 15 - Mechanical and Division 16 - Electrical for further instructions concerning data in maintenance manuals.

END OF SECTION

1. GENERAL

- 1.1** Standard one (1) year warranty, shall start at date of Substantial Performance of Contract. Ensure that all warranties comply with this stipulation prior to submission of same.
- 1.2** The Owner shall give prompt notice, in writing, to the Consultant and the Contractor of any defects noted during warranty period(s) in accordance with the attached form.
- 1.3** During month prior to end of standard one (1) year warranty period, the Owner, Consultant and Contractor will conduct an inspection of the project and the Contractor shall promptly remedy any defects due to faulty materials or labour.
- 1.4** Use of permanent heating system for temporary heat shall not affect requirement that all warranties start at date of the Consultant's Certificate of Substantial Completion.
- 1.5** At the expiry of the standard one (1) year warranty period, the Contractor shall formally assign to the Owner, all extended warranties given by Sub-Contractors for their work on the project and such Sub-Contractors shall be formally advised of assignment.

2. EXTENDED WARRANTIES

- 2.1** Provide extended warranties specified in Trade Sections of the Specification. Extended warranties shall commence immediately after the expiration of the standard one (1) year warranty included in the Contract under Article GC 2.4 - Defective Work. Submit warranties in Form of Warranty, a sample of which is included in this Section. Extended warranties must be co-signed by Manufacturer or Supplier.
- 2.2** Items shown in brackets on the Specimen Warranty Form are to be changed to give the specific information for this project and trade.
- 2.3** Extended warranties are to be submitted through the General Contractor
- 2.4** If validity of extended warranties is related to proper maintenance and servicing of equipment and similar procedures, full details must be provided in the Manufacturer's Data Book.

DIVISION 1 GENERAL REQUIREMENTS - SECTION 01740
WARRANTIES

3. SPECIMEN FORM

TO John Howard Society • Lindsay
Renovations
31 Peel Street
Lindsay, Ontario K9V 3L9

DATE

EXTENDED WARRANTY (Name of trade and Specification Section, or brief description of the Work covered)

OWNER John Howard Society Kawartha Lakes & Haliburton
31 Peel Street
Lindsay, Ontario K9V 3L9

PROJECT John Howard Society • Lindsay
Renovations
31 Peel Street
Kirkfield, Ontario K0M 2B0

DEFINITION (Give a clear description of the Work covered, including consequential damage to other Work and what remedial action will be taken under the Warranty)

WARRANTY JOINTLY AND SEVERALLY

The Contractor and the Sub-Contractor for valuable consideration jointly and severally warrant that all Work defined above is free from any defect in labour and materials. Without limiting the generality of the foregoing, moveable and adjustable work, including hardware, doors, drawers, apparatus, machinery, mechanical and electrical equipment are and shall remain in perfect working order for the Warranty Period hereinbefore set out, and in consideration as aforesaid, the Contractor and the Sub-Contractor jointly and severally covenant to remedy any defect due to faulty materials and labour appearing within the said Warranty Period according to notice, in writing, received from the Owner, or their duly authorized agents.

WARRANTY PERIOD

Commences on date of Certificate of Substantial Performance* (Date) and expires on Date).

Name and Address of General Contractor

Name and Address of Trade Contractor

Signature

Signature

SEAL

SEAL

*(This also applies to mechanical and electrical equipment which has been in use).

END OF SECTION

Specimen

*John Howard Society • Lindsay
Renovations
31 Peel Street
Lindsay, Ontario K9V 3L9*

To: [Contractor]

Date: _____

WR No.: _____

Brief Description of Problem: _____

Warranty: 1 year _____

Extended _____

Priority:

High (Health & Safety) _____

Can Be Scheduled _____

Action Taken By Contractor: _____

Date Work Completed: _____

Work Completed to Satisfaction of the Owner:

Owner Signature

Contractor Signature

c.c.: Architect

1. GENERAL

1.1 Description

- .1** The Work of this Section is **as indicated in the Drawings or Specifications.**
- .2** This Specification does not attempt to identify or define the scope of Work other than to state that it includes all selective demolition and changes to existing Work indicated on the Drawings and/or Schedules or required to accommodate the Work of this Contract. The Contractor shall make his own assessment of the Work by reference to the Contract Documents and inspection of the existing premises.

1.2 General

- .1** Perform the Work in or on existing building in accordance with each applicable Section of the Specification, together with Architectural, Mechanical, Electrical and Structural Drawings in their entirety as they apply.
- .2** Execute each part of the Work in existing building by trades specializing in such Work, in accordance with these Specifications for similar Work where applicable.
- .3** Schedule demolition and alteration Work to avoid interference with progress of new construction Work and the operation of the existing building.
- .4** Patching or replacement of damaged Work shall be done by workers experienced in the type of Work to be patched. Make patches indistinguishable in final assembly. Paint surfaces out, wall to wall in accordance with requirements of Section 09900 - Painting, where areas are patched; where patched walls are repainted, paint entire wall to corners and where scheduled paint and/or otherwise finish all walls, doors, trim, base and/or ceiling.
- .5** Refer to the Drawings for quantities. Refer to Sections 09250 - Gypsum Board - 2.3.1 through .7 for accessory items as they may be required.
- .6** Note cutting and patching related to Mechanical Work by this Division unless otherwise noted in Division 15 - Mechanical.
- .7** Temporary lighting, including exit lighting and emergency lighting in main corridors, shall be the responsibility of the General Contractor and must be provided to maintain existing lighting levels where existing fixtures are removed.

1. GENERAL
1.3 Owner's Use
of Existing
Building

- .1 The existing building will vacant throughout the duration of the Work.

1.4 Protection

- .1 The Work shall include temporary, weathertight, dust tight and lockable protective hoarding.
- .2 Provide weatherproof coverings over openings made in exterior walls and roofs of existing building, **immediately** they are opened.
- .3 Protection of existing building, including roofs, shall be substantial enough to prevent damage to them by falling objects, demolition and mandatory construction traffic during new Work.
- .4 Protection of property in, or on existing building shall include equipment, furniture and other similar furnishings, hardware, trim and supplies, whether fixed to building or not that are intended to remain.
- .5 Take all precautions to ensure that no structural damage is caused to existing building by demolition and alteration Work.
- .6 Ensure during demolition and alteration Work that materials, components and similar items to be reused are protected from damage.

1.5 Removal of
Existing Work
& Salvage

- .1 Remove building elements, components, materials and equipment, and relocate as directed.
- .2 Store and protect relocated items until built into new locations.
- .3 Limit removal of items to smallest areas possible and make good disturbed existing work.
- .4 Materials not relocated and recovered from the Work in existing building shall become the property of the Contractor and shall be disposed of away from the site.

1. GENERAL

1.5 Removal of Existing Work & Salvage

- Continued

- .5 Items which are to remain in the property of the Owner shall be stored by the Contractor in the existing building where directed by the Owner.
- .6 Architectural, mechanical and electrical items which are to be removed and reinstalled shall be done by the applicable trades. Damaged items shall be repaired or replaced to the satisfaction of the Consultant.
- .7 Remove debris and accumulated dirt **from existing building immediately it accumulates**. Ensure that during removal operations through the existing building that existing Work is not damaged and dirt, debris and dust is not spread.
- .8 Maintain the Work areas in existing building constantly broom clean to avoid tracking of dirt into adjacent areas. Immediately clean up debris resulting from the Work of the Contract that is deposited in existing building outside of the Work areas. Make a daily inspection to ensure that the Work and construction access areas are maintained clean and undamaged as specified.

1.6 Contractor's Use of Existing Building

- .1 The Contractor will have use of the entire building for the duration of construction.
- .2 Limit use of washrooms and services in existing building by construction personnel to those approved for use by the Owner. Do not use new toilets installed for the Owner's use
- .3 Construction personnel shall use areas of existing building for their purposes only as designated and only while the Work is in progress. Prohibit lounging and smoking in all areas. Make good damage to building, fixtures and fittings caused during use by construction personnel by replacement with new Work. Include cost of installation and making good of the Work thereby affected in replacement.
- .4 Assume total responsibility for security of existing building upon commencement of the Work except for those areas specifically retained by the Owner for their exclusive use during construction.
- .5 Do not use, under any circumstances or for any purposes, existing elevators unless on individual occasions and for purposes specifically approved by the Owner.

1. GENERAL

1.7 Existing Services

- .1 Ensure that existing services are not damaged during demolition and construction. Immediately cut off and cap concealed services uncovered during the Work by qualified mechanical and electrical workers.
- .2 Do not interrupt mechanical or electrical services of the existing building except for temporary or permanent close down or to make connections to new Work. **Give the Owner seven (7) working days notice of intention to interrupt mechanical or electrical services in existing building in any area, and obtain written permission from the Owner.**
- .3 In no case shall service interruptions affect total building.
- .4 Should existing services be accidentally uncovered and disrupted, make complete restoration immediately and provide adequate protection to avoid further disruption until alternative means of providing permanent continuation of the services are made.
 - .1 Payment for the Work specified in the foregoing shall be made by the Contractor at no additional cost to the Owner, if, in the opinion of the Consultant, such Work could have been foreseen at time of tendering and which has been caused by lack of proper care and protection.
 - .2 Payment for the Work specified in the foregoing shall be paid for by the Owner at standard rates established in the industry, if, in the opinion of the Consultant, such Work could not have been foreseen at time of tendering.
 - .3 Advise the Consultant and the Owner immediately, **in writing** of the commencement, duration and termination dates of this Work. The Contractor shall keep a record of work hours, number of workers, tools, equipment rentals, quantities of material used, mileage, etc., to present with the claim if requested by the Consultant or the Owner.

1.8 Fire Separations

- .1 Ensure that fire separations are installed to maintain total integrity and that they are not breached by the Work following their installation.
- .2 Replace fire separations which have suffered a lessening of their required rating during construction.

1. GENERAL

1.8 Fire Separations

- Continued

- .3** Existing walls and partitions which are shown on the Drawings as fire separations are assumed to provide the degree of separation indicated.
- .4** The Contractor shall inspect these partitions in their entirety to ensure that they form a continuous separation from the floor to the underside of the structural slab above. Any instance where existing partition shown as being fire rated does not form a continuous separation shall be brought to the attention of the Consultant so that remedial action can be instituted.
- .5** Provide temporary partitions between the Contract area and Owner occupied areas as shown in the Drawings and Schedules.

1.9 New & Replacement Work

- .1** Make good materials and prepare surfaces, and refinish all finished surfaces damaged, marred, replaced or otherwise remedied in the existing building.
- .2** Finish new surfaces flush with existing surfaces. Make junctions between existing and new Work or at replaced or remedial Work indistinguishable. Make surfaces adjacent to one another of the same material, unit sizes, colour and texture. If this is impossible, make a proposal of intended method of making good for approval, before installation.
- .3** Preparation for New Finish Flooring:
 - .1** Remove existing finish flooring where scheduled.
 - .2** Fill cracks and depressions with filler suitable for subfloor and new flooring as recommended by flooring manufacturer and finish smooth.
 - .3** Ensure the entire floor area is level and flat by application of levelling compound as required to bring any depressed areas to the height of other floor areas.
 - .4** Grind protrusions level with subfloor and finish smooth.
 - .5** Floor shall have no greater than 3/16" (5mm) deviation from flat surface over 10'-0" (3000mm) distance.
 - .6** Remove all evidences of existing adhesive, grease, oil, soil and other encrustations of foreign material by washing, scraping and grinding if necessary.
 - .7** Rinse subfloor clean and vacuum clean.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes preservation of existing trees and herbaceous materials, supply, installation and maintenance of Trees, Shrubs and Groundcovers.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01020 - Allowances
 - .2 Section 01630 - Substitutions
 - .3 All other Sections and Drawings are to be reviewed

1.2 Preservation of Existing Plantings

- .1 The Contractor shall review the site plan and ensure that areas indicated as remaining vegetation are protected with silt barriers and protective enclosures.
- .2 The Contractor will employ a qualified arborist to review the plant material and recommend:
 - .1 Relocation of any native wildflowers or other herbaceous material from areas designated for construction.
 - .2 Measures for the proper protection and preservation of trees and native plantings.
 - .3 Review of excavation to determine impact on root systems of existing trees and to advise on measures for proper root pruning or to reassess whether removal of trees will be required as a result of footings and foundations.
- .3 The Contractor shall be diligent in ensuring that materials and equipment are not stored in any area designated as protected and will ensure that workers fully understand that they are not to disturb the habitat in areas designated as protected.

The Contractor will be wholly responsible for all costs associated with restoration of any protected areas damaged during construction.
- .4 The Contractor shall submit the arborist's report to the Consultant for review prior to clearing any trees or underplanted native vegetation.
- .5 The trees, shrubs and other plant materials shown on the landscape drawings may be relocated and quantities increased or decreased in accordance with the final outcome of grading and construction.

- | | | |
|------|---|--|
| 1. | GENERAL | - Continued |
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 | | |
| 1.3 | Source
Quality
Control | |
| | | <ul style="list-style-type: none">.1 Make plant materials available for inspection at source of supply when requested..2 Notify the Consultant of source of material at least seven (7) days in advance of shipment..3 Approval of plant material at its source does not prevent rejection on site prior to or after planting operations. All plant materials shall be subject to inspection upon arrival on job site before starting the Work..4 Imported plant materials must be accompanied by necessary permits and import licenses. Conform to federal and provincial regulations..5 Give the Consultant at least 48 hours notice of arrival of plant materials on job site. |
|
 | | |
| 1.4 | Shipment
& Pre-Planting
Care | |
| | | <ul style="list-style-type: none">.1 Tie branches of trees and shrubs securely and protect plant materials against abrasion, exposure and extreme temperature change during transit. Avoid binding of planting stock with rope or wire which would damage bark, break branches or destroy natural shape of plant. Give full support to root ball of large trees during lifting..2 Cover plant foliage with tarpaulin, and protect bare roots by means of dampened straw, peat moss, saw dust shingle tow or other acceptable material to prevent loss of moisture during transit and storage..3 Remove broken and damaged roots with sharp secateurs. Make clean cut..4 Keep roots moist and protected from sun and wind. Plant materials shall be planted immediately after arrival on job site whenever feasible. Heel in trees and shrubs, which cannot be planted immediately, in shaded areas and keep well watered. |

1. GENERAL - Continued

1.5 Guarantees

- .1 Provide a written guarantee stating that all plant materials as itemized on plant list are guaranteed against defects for a period of one (1) year from the date of Preliminary Acceptance.
- .2 Guarantee that all plant materials shall remain free of defects, pests and diseases for the full duration of the guarantee period.
- .3 All plant materials shall be in a healthy, vigorous growing condition at the end of the guarantee period.
- .4 The Consultant reserves the right to extend guarantee period for an additional one (1) year at the end of the initial guarantee period, if leaf development and growth are not sufficient to ensure future survival.

1.6 Replacements

- .1 During the guarantee period, remove from site any plant material that has died or failed to grow satisfactorily as a result of pests, diseases or failure to provide Winter protection, as determined by the Consultant.
- .2 Replace plant materials in the next planting season.
- .3 Extend guarantee on replacement plant material for a period equal to the original guarantee period.
- .4 Continue such replacement and guarantee until plant material is acceptable.
- .5 Guarantee of replacements shall not apply where replacement is necessary due to vandalism or inadequate maintenance carried out by others.

2. PRODUCTS

2.1 Materials

- .1 **Water:** Potable free of minerals which may be detrimental to plant growth.
- .2 **Stakes:** T bar steel stakes 1 5/8" x 1 5/8" x 1/4" x 8'-0" (5mm x 5mm x 2400mm).
- .3 **Turnbuckles:** Factory galvanized with 6" (150mm) long eyebolts and 5/8" (16mm) diameter threaded opening for tightening.
- .4 **Guy Wires:** 1/8" (3mm) steel wire to CSA G4-M1977.

2. PRODUCTS

2.1 Materials - Continued

- .5 Anchors:** Underground 4" (100mm) diameter steel disc, screw in or T bar steel stakes 1 5/8" x 1 5/8" x 2" x 1'-8" (5mm x 5mm x 500mm) or duckbill anchors.
- .6 Tree Rings:** Fabricated from 1/8" (3mm) galvanized wire encased in two (2) ply reinforcing 1/2" (13mm) diameter rubber garden hose or equivalent.
- .7 Root Ball Burlap:** 6oz Hessian burlap.
- .8 Tree Wrapping Material:** New, clean, plain burlap strips 8oz/sq ft (.024kg/sq m) 6" (150mm) wide.
- .9 Mulch:** Shall be native shredded bark mulch free of decomposed colloidal residue and roots. Shredded materials may not exceed 6" (150mm) in length.
- .10 Antidesiccant:** Wax like emulsion to provide film over plant surfaces reducing evaporation but permeable enough to permit transpiration shall be provided as required.
- .11 Wound Dressing:** Horticulturally accepted non-toxic, non-hardening emulsion.
- .12 Topsoil:** Friable, sandy loam, free from subsoil, large roots, vegetation, debris, toxic materials, stones over 2" (50mm) diameter and reasonably free of rhizomes.

 - .1** All topsoil required for planting will be provided by the Contractor.
 - .2** Make topsoil available for inspection at source by the Consultant. All topsoil shall be subject to the Consultant's approval before use on job site, but subject to receipt and analysis of soil testing report.
 - .3** Have all topsoil tested by approved independent testing laboratory for N, P, K, soluble salts, organic matter, clay sand and silt content and pH value. Topsoil shall have 2% minimum sand and 4% minimum clay and loam.
 - .4** Submit to the Consultant two (2) copies of soil testing report with recommendations for correction.
- .13 Planting Soil Mixture:** Thoroughly mix nine (9) parts topsoil with one (1) part peat moss. Incorporate bonemeal at 1lb/5cu ft (3.2kg/1cu m) of soil mixture.

2. PRODUCTS

2.1 Materials - Continued

- .14 Peat Moss:** Derived from partially decomposed fibrous or cellular stems and leaves of Sphagnum Mosses, free from decomposed colloidal residue, wood, sulphur and iron.
- .15 Fertilizer:** Complete commercial synthetic fertilizer slow release planting tablets, minimum 65% insoluble nitrogen, conforming to soil testing report recommendations.
- .16 Bonemeal:** Finely ground with minimum analysis of 20% phosphoric acid.
- .17 Limestone:** Ground agricultural limestone containing minimum 85% of total carbonates, graded to 90% passing by weight 1.0mm sieve and 50% passing 0.125mm sieve.
- .18 Quality and Source:** Nursery grown, No.1 Grade Stock, complying with the latest edition of Canadian Standards For Nursery Stock of Canadian Nursery Trades Association referring to size and development of plant material and root ball. Measure plants when branches are in their natural position. Height and spread dimensions refer to main body of plant and not from branch tip to branch tip.
- .19** Use trees and shrubs with strong fibrous root systems free of diseases, insects, defects or injuries and structurally sound. Upon written approval of the Consultant and depending on availability and plant materials specified, Nursery Stock may be:

 - .1** Container Grown
 - .2** Balled and Burlapped
 - .3** Machine Dug Into Wire Baskets
 - .4** Processed Ball
 - .5** In-Ground Fabric Container
 - .6** Bare Root
- .20** Use trees with straight trunks, well and characteristically branched for the species. Plants must have been root pruned regularly, but not later than one (1) growing season prior to arrival on site.

2. PRODUCTS

2.2 Materials

- Continued

.21 Cold Storage: Approval required for plant materials which have been held in cold storage.

.22 Container Grown Stock: Acceptable if containers large enough for root development. Trees and shrubs must have grown in container for minimum of one growing season but no longer than two. Root system must be able to 'hold' soil when removed from container. Plants that have become root bound are not acceptable. Container stock must have been fertilized with slow releasing fertilizer.

.23 Balled and Burlapped: Coniferous and broad leaved evergreens over 1'-8" (500mm) tall must be dug with soil ball. Deciduous trees in excess of 10'-0" (3000mm) height must have been dug with large, firm root ball. Root balls must include 75% of fibrous feeder root system. Secure root balls with burlap, heavy twine and rope. For large trees: wrap ball in double layer of burlap and drum lace with minimum 5/8" (16mm) diameter rope.

Protect root balls against sudden changes in temperature and exposure to heavy rainfall.

.24 Plant List:

Locations and quantities are **as indicated in the Drawings and on the Schedule.**

.25 Substitutions to plant materials as indicated on planting plan not permitted unless written approval has been obtained as to type, variety and size. Plant substitutions must be of similar species and of equal size as those originally specified.

3. EXECUTION

3.1 General

.1 Stake out location of trees and planting beds as per planting plan. Obtain approval prior to excavating.

.2 Apply antidesiccant in accordance with manufacturer's instructions.

.3 Co-ordinate operations. Keep site clean and planting holes drained. Immediately remove soil or debris spilled onto pavement.

3. EXECUTION - Continued

3.2 Planting Time

- .1 Plant deciduous plant materials during dormant period before buds have broken. Plant materials noted for spring planting only, must be planted in dormant period.
- .2 If planting deciduous plant materials after buds have broken, spray plants with antidesiccant to slow down transpiration prior to transplanting.
- .3 Plant evergreens in spring before bud break. Planting of such stock with root balls may start after middle of August. Apply anti-desiccant to evergreens before digging.
- .4 Trees, shrubs and groundcovers growing in containers may be planted throughout growing season.

3.3 Planting

- .1 Plant only under conditions that are conducive to health and physical conditions of plants.
- .2 Provide planting schedule. Extending planting operations over long period using limited crew will not be accepted.
- .3 Do all planting as soon as possible after arrival and inspection on job site.
- .4 Immediately remove all rejected plant materials from the site.
- .5 Loosen bottom of planting hole to depth of 6" to 8" (150mm to 200mm). Cover bottom of each excavation with minimum of 6" (150mm) of topsoil mixture.
- .6 Plant trees and shrubs vertically with roots placed straight in hole. Orient plant material to give best appearance in relation to structure, roads and walks.
- .7 Place plant materials equal to depth they were originally grown in nursery.
- .8 **Prior to placing in hole, slash burlap wrapper every 6" (150mm) vertically to within 1" (25mm) of the base of the burlap.**
- .9 **With balled and burlapped root balls, loosen burlap and cut away minimum top 1/3 without disturbing root ball once tree has been placed, remove entire container without disturbing root ball. Non-biodegradable wrapping must be removed.**
- .10 With trees in wire baskets, remove wire from top 2'-0" (600mm) after tree has been placed in tree pit.

3. EXECUTION

3.3 Planting

- Continued

- .11 During planting of bare rooted stock, first shake backfill of planting soil among the roots.
- .12 Tamp planting soil around root system in layers of 6" (150mm) eliminating air voids. Frozen or saturated planting soil is unacceptable. When 2/3 of planting soil has been placed, fill hole with water. After water has completely penetrated into soil, complete backfilling.
- .13 Build 4" (100mm) deep saucer around outer edge of hole to assist with maintenance watering.
- .14 When planting is completed, give surface of planting saucer a dressing of organic 10-6-4 fertilizer at rate of 4oz/sq ft (12.2kg/sq m) for shrub beds or 4.5oz/in (52g/cm) of caliper for trees. Mix fertilizer with top layer of planting soil and water well.

3.4 Tree Support

- .1 Install supports as shown on planting details.
- .2 Staking for trees up to 10'-0" (3000mm) and evergreens up to 6'-8" (2000mm) in height: backfill planting hole 2/3, drive T rail stake 3'-0" (900mm) into bottom of pit, taking care not to damage main roots. Place stake or anchor 6" (150mm) away from trunk on side of prevailing wind. Fasten trunk to stake or anchor with tree ring. Different methods of fastening tree trunk to stake or anchor are acceptable if no damage to bark of tree will occur. Obtain approval prior to using other methods.
- .3 Guy wires for trees up to 6" (150mm) caliper:
 - .1 For deciduous trees taller than 10'-0" (3000mm) and evergreens up to 6'-8" (2000mm), fasten three (3) wires to tree where a branch will prevent slipping down. Use tree rings to prevent abrasion of bar.
 - .2 Fasten guy wires to anchors at distance from tree base equal to height of where wire is attached to trunk. Break wires, install wire tighteners and tighten slightly.
 - .3 Where guy wires are used close to pedestrian traffic ways, fasten metal flags to wires and 2'-0" (600mm) long rubber hose around bottom portion of guy wires to make them clearly visible.
 - .4 Use sufficient number of guy wires to support large shrubs.

3. EXECUTION - Continued

3.5 Wrapping

- .1 Wrap deciduous trees, whose caliper is 2" to 6" (50mm to 150mm), spirally from ground up, to height of second branches. Treat trunk with paste of long residual insecticide, lindane or equivalent before applying wrapping. Secure burlap with binder twine wound in opposite direction to burlap at 4" (100mm) intervals. Place wrapping neatly and snugly with 1 5/8" (40mm) overlap.

Tree wrap shall be applied only after trees have been inspected and accepted by the Consultant.

3.6 Pruning

- .1 Prune trees and shrubs after planting, as indicated, to remove damage suffered during transplanting. Postpone pruning of those trees where heavy bleeding may occur, until in full leaf. Employ clean sharp tools and make cuts flush with main branch, smooth sloping as to prevent accumulation of water. Remove projecting stumps on trunks or main branches that rub causing damage to bark. Trim out crown of trees and shrubs without changing their natural shape. Do not damage lead branches or remove smaller twigs along main branches. Treat cuts in excess of 5/8" (16mm) diameter and damaged parts with application of wound dressing.

3.7 Mulching

- .1 Obtain approval of planting before mulching material is applied. Loosen soil in planting beds and pits and remove debris and weeds. Spread mulch to a minimum thickness of 2" (50mm).

3.8 Maintenance

- .1 Maintain all plant materials from the time of planting until date of Final Completion Certificate.
- .2 During the guarantee period, be responsible for pest and disease control, Winter protection and maintenance of tree supports.

Inspect project site at regular intervals during the guarantee period and provide any necessary maintenance to ensure plant materials are in a healthy, vigorous growing condition.
- .3 Water once a week for the first four (4) weeks and then sufficiently thereafter to maintain optimum growing conditions. Ensure adequate moisture in root zone at freeze up.

3. EXECUTION

3.8 Maintenance - Continued

- .4** Keep soil, within confines of planting saucer around trees and planting beds, shallowly cultivated and free from weeds.
- .5** Spray plants to combat pests and diseases. Do not use DDT or sprays prohibited by Agriculture Canada or any chemicals not recommended by the Green Building Council and/or as noted in Section 01170 - Sustainable Design And Construction.
- .6** Keep tree guards and guy wires in proper repair.
- .7** Provide adequate protection against winter damage including damage caused by rodents.
- .8** Remove trunk wrapping, tree stakes, guy wires, eyebolts at end of guarantee period.

END OF SECTION

1. GENERAL

1.1 Description

.1 The Work of this Section, **as indicated in the Drawings or Specifications** includes without being limited to:

- .1 Placing of concrete and bonded concrete toppings.
- .2 Finishing.
- .3 Crushed stone base for slabs on grade.
- .4 Installation of inserts, anchors, sleeves and similar items, and building-in of items supplied under other Sections.
- .5 Concrete Reinforcing.
- .6 Insertion of neoprene pads into expansion joints.
- .7 All concrete Work required by Mechanical, Electrical and other trades. Co-ordinate with Division 15 - Mechanical and Division 16 - Electrical.

.2 Related Work Specified Elsewhere:

- .1 Section 01630 - Substitutions
- .2 Section 02200 - Excavation, Compaction And Grading
- .3 Section 07900 - Sealants Gaskets And Barrier Membranes
- .4 All concrete Work noted on Structural Drawings, Schedules and Specifications. Note: Wherever there is a variance between this Section and Structural Division, the latter shall prevail.
- .5 Division 15 - Mechanical
- .6 Division 16 - Electrical
- .7 All other Sections and Drawings to be reviewed

**1.2 Work
Installed
As Furnished
By Others**

.1 Install anchors, ties, sleeves, bolts, inserts, cast-in miscellaneous metal items, sub-frames, reglets and other items required to be built into, anchored to, or passing through the concrete Work of this Section and which is specified for supply in the Work of other Sections.

- 1. GENERAL** - Continued
- 1.3 Co-Operation With The Work Of Other Sections**
- .1** Check the Drawings and Specifications for the requirements of the Work of other Sections which will affect the construction of formwork.
 - .2** Inform those performing the Work of other Sections, in writing or by schedules, of the requirements for services, materials and built-in items prepared and/or supplied by other Sections which will affect the Work of this Section.
- 1.4 Quality Assurance**
- .1** The following Reference Standards shall govern the Work of this Section except where they are in conflict with requirements imposed by authorities having jurisdiction or by this Specification in which case the latter shall govern.
 - .1** Supply and place concrete in accordance with the latest edition of OPSS Nos. 351, 352, 904, 919, 1350 and CAN/CSA A23.
 - .2** CSA Standard A23.1 and CSA Standard 23.2 'Methods of Test for Concrete' shall govern the Work of this Section.
 - .3** Perform the reinforcement Work of this Section in accordance with the specified requirements of CSA A23.3-1973 'Code for the Design of Concrete Structures for Buildings'.
 - .4** All Standards referenced in this Specification are to be the latest editions, unless otherwise noted.
- 1.5 Qualifications**
- .1** The Contractor shall ensure that the Site Superintendent is experienced and knowledgeable about the placement of concrete in all climatic conditions. In any case where the Site Superintendent does not have experience in placement of concrete, the Contractor, at their expense shall employ additional personnel with expertise in this area for the duration of the placement, finishing and curing of the concrete.
 - .2** Undertake welding of reinforcement by a fabricator or Sub-Contractor full approved by the Canadian welding Bureau to the requirements of CSA W186-1970 'Welding of Reinforcing Bars in Reinforced Concrete Construction'.

1. GENERAL - Continued

1.6 Formwork Design

- .1 Assume full responsibility for the complete structural design and construction of formwork and falsework including shoring and bracing to resist vertical and horizontal loads due to the weight of wet concrete, self-weight of forms, wind, fluid pressure of concrete and other forces arising from equipment used in placing the concrete.
- .2 Perform structural design of formwork by a professional engineer experienced in the design of formwork and falsework and who is licensed to practise at the location of the project. The Engineer's responsibility shall include design of the formwork, falsework and shoring, review of the Drawings related to the Work of this Section and field review of the construction.

1.7 Tolerances

- .1 Do not allow tolerances to accumulate or combine in such a manner that strength of the member will be reduced by a greater amount than would be caused by incorporation of any one of the acceptable maximum tolerances.
- .2 The following maximum tolerances shall apply to concrete in place after removal of formwork, except as additionally specified for Architectural Concrete:
 - .1 For lines and surfaces of walls and in corners, plumb within 1/4" (6mm) per 10'-0" (3000mm), 1" (25mm) maximum.
 - .2 Variation of the linear building lines from established position in plan and related position of walls and partitions: 1/2" (12mm) in any bay of 20'-0" (6000mm) maximum 1" (25mm) in greater than 40'-0" (12000mm).
 - .3 Variation in thickness of slabs and walls, minus 1/4" (6mm) and plus 1/2" (12mm) for beams, minus 0" and plus 1/4" for slabs and walls.
 - .4 Variation in footings minus 1/2" (12mm) and plus 2" (50mm) for plan dimensions, 2" (50mm) maximum or 2% of footing width in direction of misplacement for location, minus 5% of specified thickness.
 - .5 Variation in stairs 1/8" (3mm) for riser in a flight, 1/4" (6mm) for tread in a flight, 1/16" (1.5mm) for riser in consecutive steps, 1/8" (3mm) for tread in consecutive steps.

1. GENERAL - Continued

1.8 Submittals

- .1 Shop Drawings:**
- .1** Submit Shop Drawings in accordance with Section 01340 - Shop Drawings And Product Data at least four (4) weeks prior to starting concrete work.
 - .2** Prior to submission to the Consultant, the Contractor shall review all Shop Drawings and Submittals. By this review, the Contractor represents that they have determined and verified all field measurements, filed construction criteria, materials, catalogue numbers and similar data and have checked and co-ordinated each Shop Drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each Shop Drawing shall be indicated by their stamp, date and signature of a responsible person.
 - .3** At the time of submission, the Contractor shall notify the Consultant, in writing, of any deviations in the Shop Drawings from the requirements of the Contract Documents.
 - .4** The Architect will review and return the Shop Drawings in accordance with the schedule agreed upon. The Architect's review will be for conformity to the design concept and for general arrangement only. Such review shall not relieve the Contractor of the responsibility for meeting all requirements of the Contract Documents unless a deviation on the Shop Drawings has been approved, in writing, by the Architect.
 - .5** The Contractor shall make any changes to the Shop Drawings which the Architect may require, consistent with the Contract Documents and resubmit unless otherwise directed.
 - .6** Submit specified reinforcement Shop Drawings in accordance with the General Conditions for the Consultant's review. Allow at least seven (7) days for the Consultant's review. Do not commence fabrication or placement of reinforcement before the Shop Drawings have been reviewed and the Consultant's comments are incorporated on the Drawings issued to the fabricating shop.
 - .7** Submit the Placing Drawings and Bar Lists, sufficiently detailed and dimensioned, with complete information necessary for fabrication of reinforcement and placing of bars and accessories without reference to the design Drawings. Show reinforcement in elevation on the Placing Drawings for wall reinforcement.

1. GENERAL

1.8 Submittals

- .1** Shop Drawings - Continued:
 - .8** Prepare the Shop Drawings in accordance with 'American Concrete Institute Detailing Manual - 1980' and the Typical Details included with the Contract Documents to a minimum scale of 1/4" = 1" (6mm = 25mm).
- .2** Inspection Reports:
 - .1** Submit written reports of inspection and tests as follows:
 - Two (2) Copies to the Architect.
 - One (1) Copy to the Consulting Engineer.
 - One (1) Copy to the Contractor.
 - .2** On concrete cylinder test reports, include:
 - Specific location of concrete represented by the sample.
 - Design Strength.
 - Slump.
 - Class of concrete.
 - Aggregate size and admixtures incorporated.
 - Date, hour and temperature at time sample was taken.
 - Percentage air content and unit weight of sample.
 - Test strength of cylinder.
 - Type of failure, if any.
 - .3** Submit, in writing, reports on all testing of other materials in accordance with Section 01400 - Testing And Inspection.

1.9 Inspection & Testing

- .1** An independent Inspection and Testing Agency will be appointed and paid for as specified in Section 01400 - Testing And Inspection.
- .2** Each strength test will consist of three (3) cylinders. One (1) specimen will be tested at seven (7) days and two (2) at twenty-eight (28) days. One (1) additional site cured specimen is required for testing at seven (7) days when concrete is placed under cold weather conditions.
- .3** Store cylinders in metal lined curing box maintained at a temperature of 10 degrees C until shipped to the testing laboratory. Store additional cylinder required for cold weather conditions adjacent to the Work for seven (7) days.

1. GENERAL

**1.9 Inspection
& Testing**

- Continued

- .4 Should first cylinders of concrete already in place, fall below specified value, any remedial measures deemed fit to repair the deficiencies shall be made. The costs of such measures to be borne by this Sub-Contractor.
- .5 Concrete slump and air content tests shall also be made at the site.
- .6 Conduct all testing in accordance with CAN/CSA-A23.1, A23.2 and at least for each day's pour.

**1.10 Weather
Requirements**

- .1 Cold Weather:
 - .1 When air temp is below 4 degrees C, temperature of concrete when deposited shall not be less than 16 degrees C and not more than 27 degrees C and areas where concrete is to be placed shall be maintained at a temperature of at least 10 degrees C for a minimum of five (5) days after placing.
- .2 Hot Weather:
 - .1 When air temperature is above 27 degrees C, comply with requirements of CAN/CSA-A23.1 and sprinkle all formwork, reinforcing, sub-grade and general work area, with cold water to increase humidity. Place concrete as quickly as possible.
 - .2 Protect exposed areas from the direct rays of the sun.
 - .3 Apply fog sprays as soon as possible after placing.
 - .4 Do not place concrete which has a temperature above 32 degrees C.
- .3 Wet Weather:
 - .1 Schedule concrete placing to avoid all possible marring by rain.
 - .2 Take precautions to protect freshly placed surfaces from rain.

**1.10 Provision
For Future
Extension**

- .1 Provide for any future vertical or horizontal extension to the building **as indicated in the Drawings or Specifications.**

2. PRODUCTS

2.1 Materials

- .1 Cement: CAN/CSA-A5/A8/A362, normal (Type 10) Portland Cement.
- .2 Cement:
 - .1 Proportions in accordance with CAN/CSA-A23.1
 - .2 Type GU normal Portland: 75% minimum
 - .3 SCM, Type S: 25% maximum
 - .4 Or blended cement Type GUb-25S
- .3 Aggregates: Clean, sand and stone from an approved source to CAN/CSA-A23-1/A23.2 maximum size 3/4" (19mm). Aggregates for exposed concrete to be consistent in gradation, type and from the same source and batch.
- .4 Water: Clean, directly from main source.
- .5 Admixtures
 - .1 Cement Dispersing Admixture: To entrain maximum 2% air content for all concrete below grade.
 - .2 Air Entraining Admixture: Conforming to CAN3-A266.1 to entrain 6% (+/-1%) air content for all other concrete.
- .6 Concrete Properties:
 - .1 Compressive Strength: 4300psi (30mpa) in general; Refer to Drawings for any exceptions noted.
 - .2 Maximum Slump: 3" (75mm).
- .7 Joint Filler: Asphalt impregnated fibreboard, 'Flexcel' by Sternson or approved equal.
- .8 Granular Fill Below Slabs: Compacted Granular 'A' **as indicated in the Drawings.**
- .9 Welded Wire Reinforcing Mesh: Conforming to CSA G30.5, welded steel wire fabric for concrete reinforcement.
- .10 Waterstop: 'Superstop' by Paramount Technical Products Inc. or equivalent.
- .11 Screw Anchors and Bolts: 'Richmond Screw Anchors' by Acrow Richmond Ltd., or approved equivalent.
- .12 Dovetail Anchor Slots: Specified under Section 03100 - Concrete Formwork.

- 2. PRODUCTS** - Continued
- 2.2 Mixing**
- .1 Conform to Part 14 of CAN/CSA-A23.1/A23.2. Design mixes to produce concrete with specified strength as noted on drawings, workability consistent with placing conditions and methods, durability consistent with service conditions, and in the case of floor surfaces, finishability. Provide a minimum cement content as specified on the Structural Drawings, for floors. Submit mix designs to the Consultant for review.
- 3. EXECUTION**
- 3.1 Examination**
- .1 Examine surfaces on which the Work of this Section depends.
- .2 Commencement of the Work will denote acceptance of surfaces and conditions.
- .3 Do not place any concrete until the Consultant has inspected and approved formwork and reinforcing.
- 3.2 Placing Concrete**
- .1 Prior to placing concrete, the Contractor shall give Inspection and Testing firm at least 24 hours notice to review placement of reinforcing. No concrete shall be placed without review by the give Inspection and Testing authority or by the municipal building official if required by them.
- .2 Compact concrete with general purpose vibrators so that concrete is evenly and adequately distributed around and between reinforcing and against formwork, without honeycombing. External vibrating of forms is not permitted.
- .3 Methods of conveying and placing are to be such that concrete components do not segregate.
- .4 Use ready mix concrete. The time between adding of mixing water and discharge of concrete into final location must not exceed 1 1/2 hours.
- .5 Concrete shall be homogenous, uniformly workable, readily placeable into corners and angles of forms and around reinforcements without permitting materials to segregate or excessive free waters to collect on the surface.
- .6 Retarding agents may only be used where the Contractor's engineer considers such agents necessary because of hot weather, heating of concrete or the need for continuous concrete placement.

3. EXECUTION

**3.2 Placing
Concrete**

- Continued

- .7** Tolerances: To conform to CAN/CSA-A23-1/A23.2-M90 where less than those stated in this Section.
- .8** Slabs on Grade:

 - .1** Excavate to undisturbed soil and lay and compact granular fill to thicknesses in 6" lifts **as indicated in the Drawings**, immediately below slabs on grade.
 - .2** Place concrete to thicknesses **as indicated in the Drawings or Specifications**.
- .9** Hot and Cold Weather Protection:

 - .1** For concrete placed during hot weather the Contractor shall protect the concrete as detailed in CAN/CSA-A23.1.
 - .2** For concrete placed during cold weather the Contractor shall protect the concrete as detailed in CAN/CSA-A23.1.
 - .3** There will be no additional compensation for concrete placed and cured under either hot weather or cold weather concreting conditions.
- .10** Fillets and Chamfers:

 - .1** The edges and re-entrant angles of all concrete exposed to view shall be bevelled to a 20mm x 20mm fillet or chamfer unless large fillets or chamfers are indicated on the Drawings.
- .11** Build In:

 - .1** Wherever practicable, fittings and pipework to be built-in shall be installed at the time of pouring of the concrete structure, and boxing out will be done only with sanction and to the satisfaction of the Architect. Forms shall be neatly fitted around the items built-in so as to prevent any leakage of mortar. All pipes passing through floors or through concrete walls retaining liquids shall have wall flanges cast en situ.
- .12** Anchor Bolts:

 - .1** Anchor bolts shall be set in place prior to placement of concrete. Setting of anchor bolts shall be to the dimensions and details shown on the Contractor's structural steel erection diagrams or the equipment manufacturer's shop Drawings which have been approved by the Architect. Tolerances on anchor bolt placement shall be as shown in Appendix D of the CISC Code of Standard Practice for Structural Steel.

3. EXECUTION

**3.2 Placing
Concrete**

- Continued

- .2 Anchor bolts for columns within the braced frames shown on the Contract Drawings and anchor bolts for columns supported by concrete columns below shall be set in place prior to placement of concrete.
- .3 Use templates for anchor bolts of mechanical equipment, provided by mechanical supplier.

.13 Construction Joints:

- .1 Contractor shall submit the construction joint layout for Architect's review with the shop Drawings. Locate construction joints so as not to impair the strength, water tightness and appearance of the structure. Wall construction joints shall be staggered from those locations in roof and floor slabs. Construction joints in slabs and beams shall be at the approximate centre of span.
- .2 Unless otherwise shown, maximum distances between construction joints are:
 - .1 Walls: 6-10 m
 - .2 Base slabs and slabs on grade: 6-10 m
 - .3 Suspended slabs and super-structure beams and girders: 6-10 m
- .3 The pouring of the base slab may be sequenced in either a linear or checker-board pattern provided the maximum construction joint distances are maintained. The walls are to be poured in a checker-board fashion. A minimum of 48 hours must elapse between casting of infill or adjacent wall units. A pouring sequence and proposed schedule must be submitted to the Architect at least 14 days prior to commencing the Work.
- .4 Beams, girders, curbs, brackets, column capitals, haunches and drop panels shall be placed with slabs.
- .5 Provide a bulkhead at all construction joints.
- .6 All steel as shown on Drawings is to be continuous through construction joints.
- .7 Before placing new concrete, remove all dirt, loose aggregate and laitance from face of existing concrete. This shall be accomplished by sandblasting, power washing or other method acceptable to the Architect.

3. EXECUTION

**3.2 Placing
Concrete**

- Continued

- .8 Allow adequate curing time to the satisfaction of the Architect between placing adjacent sections separated by construction joints. Place concrete in alternate sections if necessary and place closing sections after alternate sections have cured.
- .9 All construction joints shall have a row of form ties located at a distance of approximately 150mm from the joint to permit aligning and tightening of the forms for subsequent sections.

.14 Repairing Concrete Surfaces:

- .1 As soon as face forms are removed, the surfaces shall be thoroughly washed with clean water under pressure, and all fins, projections and off-sets smoothed off. Metal ties shall be cut and any defective areas, permitted by the Architect to be patched shall be repaired at once before the concrete is thoroughly dry.
- .2 At the discretion of the Architect, defective areas shall be chipped away to a minimum depth of 25mm or to solid concrete, whichever is greater, with edges perpendicular to the surface. The area to be patched and a 150mm wide band around it shall be thoroughly wetted. A grout of equal parts cement and sand shall then be brushed into the surface followed by a mortar of the same sand/cement mix as the unit being repaired.
- .3 Repair patches shall be left slightly higher than the surrounding area and allowed to reach initial shrinkage before the final screeding.
- .4 Repair patches shall be cured continuously for a period of 10 days. Bonding of patch Work to parent concrete and the curing of the complete repair Work will require special attention. Repair patches shall be free from shrinkage cracks or voids after the repair patches have been cured.

3. EXECUTION

- Continued

3.3 Finishing

- .1 Finish exposed concrete surface as required by the Drawings and Schedules and specified herein, before concrete is thoroughly cured. Conform to CAN/CSA-A23-1/A23.2-M90.
- .2 Generally, the surface of all concrete, immediately after the removal of forms, shall be finished as follows:
 - .1 Chip off the fins and ridges flush with general surface and cut back metal form ties not less than 1" (25mm) from the surface.
 - .2 Honeycomb and other defective areas shall be cut perpendicular to the surface and at least 1 1/2" (38mm) deep. Voids and honeycomb areas shall be inspected by the Consultant who shall direct the corrective methods of treatment to be carried out.
 - .3 Saturate cut out areas or cavities with water. Scrub patch surfaces with neat cement paste and immediately after, fill holes with mortar having same general composition and cement as mortar in concrete. Pack mortar into depressions to completely fill them and then finish to match adjacent surface.

**3.4 Curing
& Sealing**

- .1 Cure with a sealing and curing compound finished horizontal concrete surfaces, except surfaces to receive mortar beds or air entrained concrete exposed to freezing temperatures and placed between October 1st and April 1st.

Use a sealing and curing compound which will leave the surface with a uniform appearance and with a minimum of discolouration after drying. Check that the curing compound will be compatible with the architectural finishes. Apply the compound in accordance with the manufacturer's written instructions.
- .2 Protect surfaces which will be exposed to direct sunlight during the curing period and which will remain exposed permanently, with a light coloured laminated waterproof paper immediately after the curing and sealing compound has hardened sufficiently for the paper to be placed without damage to the sealed surface. Lay the paper in place for at least seven (7) days.
- .3 Cure horizontal surfaces to which a curing and sealing compound cannot be applied by covering with 4 mil thick polyethylene sheets. Lap and seal all edges. Maintain in place for seven (7) days minimum.
- .4 Comply with 'Hot Weather Concreting' requirements of CSA A23.1-1973, Clause 17.

- 3. EXECUTION** - Continued
- 3.5 Grouting For Steel Members**
- .1 Grout for setting of base plates shall be shrinkage compensating, premixed type and shall be placed in accordance with the manufacturer's instructions.
- 3.6 Dampproofing/ Waterproofing**
- .1 Apply dampproofing to the entire surface of the earth face of exterior and interior foundation walls with earth on one side only. Apply dampproofing from the exterior grade level down to and including the top surface of the footing.
- .2 At temperature of 4 degrees C and above, apply approved mineral colloid asphalt emulsion in accordance with CGSB 37-GP-3M 'Application of Emulsified Asphalts for Dampproofing or Waterproofing', at a rate of 2gal/100sq ft (7.6L/9.3sq m) for each of two (2) coats.
- .3 At temperature below 4 Degrees C, apply approved unfilled asphalt cutback in accordance with CGSB 37-GP-12M 'Application of Unfilled Asphalt Cutback for Dampproofing', at a rate of 2gal/100sq ft (7.6L/9.3sq m) for each of two (2) coats.
- .4 Caulk the exterior joint between the footing and the foundation walls after the dampproofing has cured, with asphalt caulking compound.
- .5 Obtain the Consultant's approval of the dampproofing before backfilling.
- 3.7 Defective Work**
- .1 Concrete is defective when:
- .1 Failing to meet all requirements of this specification.
- .2 Concrete contains excessive honeycombing or embedded debris.
- .3 28 day average strength in any defined area is less than the permitted tolerances specified in CAN/CSA A23.1.
- .2 Movement and displacement of the formwork during construction, variations in excess of specified tolerances and marked and disfigured surfaces that cannot be repaired by specified methods will be considered defective Work performed by this Section.

3. EXECUTION

3.7 Defective Work

- Continued

- .3** Reconstruct defective formwork and replace concrete and reinforcement placed in defective formwork at no additional cost to the Owner.
- .4** Replace or modify concrete that is out of place or does not conform to lines, details or grade as directed by the Consultant.
- .5** Replace or repair defectively placed or finished concrete as directed by the Consultant.
- .6** Testing and replacement of deficient Concrete-In-Place:
 - .1** The Contractor shall pay for additional testing and related expenses if the concrete Work has proven to be deficient.
 - .2** The Contractor shall replace or strengthen deficient concrete Work as directed by the Consultant and pay for all testing and related expenses for replaced Work until approved by the Consultant.

3.8 Clean-Up

- .1** Clear away from the Building and Site excess and waste materials and debris resulting from the Work of this Section. Leave the premises in a condition acceptable to the Consultant before completion of the Work.

END OF SECTION

DIVISION 3 CONCRETE - SECTION 03345
CONCRETE FLOOR FINISHING

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes Bonded Concrete Topping over core slab and all other Finishing of Concrete Floors.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 03300 - Cast-In-Place Concrete
 - .3 Division 9 - Finishes (Various Flooring Sections)
 - .4 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 The Company performing the Work of this Section must have a minimum of five (5) years recent experience in similar installations.
- .2 Workers must be skilled and each have a minimum of five (5) years experience.

1.3 Reference Standards

- .1 ASTM C309, 'Specification for Liquid Membrane Forming Compounds for Curing Concrete'.
- .2 CAN/CSA-A23.1-M90/A23.2-M90, 'Concrete Materials and Methods of Concrete Construction', 'Specification for Liquid Membrane Forming Compounds for Curing Concrete'.

1.4 Tolerances

- .1 Levels of finished concrete floors and floors under finished flooring applications shall be within 1/4" (6mm) of established elevations in any 20'-0" (6000mm) square area and sufficiently even to contact a 10'-0" (3000mm) long straightedge with a tolerance of 1/4" (6mm).
- .2 Under resilient and seamless flooring, finish levels shall not vary more than 1/16"/lineal foot (1mm/meter)

- 1. **GENERAL** - Continued
- 1.5 **Co-Operation**
 - .1 Ensure that concrete supplied for slabs does not contain admixtures which will be incompatible with floor hardener materials.
- 1.6 **Job Conditions**
 - .1 Perform the Work only when environmental conditions are as specified in CAN/CSA-A23.1-M90/A23.2-M90.
 - .2 Ensure that adequate temporary heating is provided as required to perform the Work in cold weather.
 - .3 Provide adequate moisture, sun shades and wind barriers to prevent too rapid drying of concrete during hot weather.
 - .4 Ensure that finished concrete floor areas are protected from abrasion from foot or wheeled traffic and from damage caused by spillage of oil or other harmful materials.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Concrete Materials:** In accordance with Section 03300 - Cast-In-Place Concrete.
 - .2 **Hardener Aggregate:** Dry-Shake, non-metallic, mineral aggregate surface hardener Mastercron by Degussa or approved alternate (waste management floor area).
 - .3 **Curing Sheet:** 2 mil. Polyethylene or waterproof paper.
 - .4 **Sealing Compound:** 'Hydrozo 100' silane sealer by Degussa for exterior slabs, equipment pads, sidewalks and ramps not receiving architectural finish.
 - .5 **Curing Compound:** Where concrete floors are to be left exposed, unpainted and concrete **cannot** be water cured; use **only** non-volatile curing compounds conforming to ASTM C309 such as 'Planicure 65' by Mapei or approved alternate.
 - .6 **Grout:** Non-shrink grout 'In-Pakt' by Sternson Limited or approved alternate.
 - .7 **Concrete Topping:** 'Self Leveller Plus' by Mapei or approved alternate.

3. EXECUTION

3.1 Examination

- .1 Before commencing the Work of this Section, ensure that surfaces are acceptable to receive and maintain concrete finishing and that specified installation will be achieved.
- .2 Commencement of the Work will denote acceptance of conditions and surfaces.

**3.2 Bonded
Concrete
Topping**

- .1 Conform to CAN/CSA-A23.1.
- .2 Strength of concrete and mix to be in accordance with CAN/CSA-A23.1.
- .3 Roughen concrete slab surface before placing topping. Use mechanical means to roughen slab, as may be required to ensure a bond with topping.
- .4 Place each section in one operation.
- .5 Take special precautions against plastic shrinkage cracking, in accordance with /CSA-A23.1, Clause 21, whenever rapid drying of topping may occur.
- .6 Provide control joints in topping directly over control joints in slabs, with 3/16" (5mm) saw to depth of 2/3 topping thickness no later than 24 hours after placing. After 24 hours clean and install filler in joint.

**3.3 Concrete
Floor
Finishing**

- .1 Immediately after placing, screed and darby concrete before any water has bled to the surface.
- .2 Strike off concrete level to screeds leaving no low spots. If vibrators are used on straightedge ensure that concrete is not over vibrated causing segregation and collection of water and fines over the surface.
- .3 Smooth concrete to an even plane with a darby or bull float and leave until bleed water and water sheen has disappeared and ridges and voids have disappeared.
- .4 Immediately after preliminary work, apply floor hardening compounds in accordance with manufacturer's requirements.

3. EXECUTION

**3.3 Concrete
Floor
Finishing**

- Continued

- .5 Proceed with finishings only when bleed water has disappeared and concrete has hardened sufficiently to support a worker with only slight footprint left on the surface.
- .6 Apply curing and sealing compounds in accordance with manufacturer's application instructions.
- .7 Do not use curing or hardening compounds on concrete where ceramic tile or seamless epoxy flooring is to be provided.
- .8 Finish concrete surface with mechanical float or with metal hand floats in areas inaccessible to power floats. Floating shall embed large aggregate below the surface, consolidate mortar at the surface, provide even planes with no bumps or depressions, remove marks from edging and prepare the surface for further specified finishing. Do not bring water and fine material to the surface by overworking.
- .9 Steel trowel floated surface with mechanical trowels or hand trowels in areas inaccessible to power trowels. Proceed with trowelling only when there is no sheen on the surface. Repeat trowelling until the surface is brought to approved finish. Allow sufficient time between trowellings for additional set of concrete.
- .10 Draw a soft bristled brush over steel trowelled surfaces to provide a very light swirled broom surface where a non-skid floor is required.
- .11 Finish floor surfaces shall be level dense with no aggregate showing and free of blemishes.

**3.4 Hardened
Floors**

- .1 Apply hardener aggregate to floor surfaces **as indicated in the Drawings or Specifications** in two shakes, half of the aggregate for each shake.
- .2 Apply the first shake when the concrete is firm enough to support worker and equipment and when standing water is present. Mechanically float aggregate into the surface.
- .3 Apply the second shake and mechanically float as specified above for finishing.
- .4 Apply total amount of aggregate at a rate of 26 ounces per square foot (3kg/sq m) of floor area.

3. EXECUTION - Continued

3.5 Curing

- .1 Cure Concrete as specified in CAN/CSA-A23.1-M90/A23.2-M90 and by methods specified in 3.7 'Concrete Floor Finishing Schedule'. Ensure that no curing compound is used which is detrimental to the bond of bedding for finish flooring or finish flooring materials. Where concrete curing compounds are used, sandblast floor finish after concrete is fully cured.

**3.6 Patching
& Refinishing**

- .1 Before the completion of project, patch and refinish defective surfaces to match surrounding areas with no discernable variation in appearance.

**3.7 Concrete
Floor
Finishing
Schedule**

- .1 **Rough Floor and Horizontal Surfaces:** Screed surfaces to an even, level or sloped surface to elevations **as indicated in the Drawings or Specifications.**
- .2 **Floor Finishing:** Ensure that the floor finishes are provided **as indicated in the Drawings or Specifications.** Verify with those performing the Work of applicable Sections that the proposed finishing is satisfactory for the Work they apply to the floors.
- .3 **Steel Trowel Finish:** Smooth finish by hand and machine float, free from laitence, excessive water, trowel marks, blemishes and ridges for the Work of Section 09300 - Ceramic Tile, Section 09440 - Terrazzo, Section 09625 - Slate Flooring, Section 09665 - Resilient Sheet Flooring, Section 09680 - Carpeting or Section 09900 - Painting.
- .4 **Exposed Floors:** Give floors exposed to view a steel trowel finish to provide a hard, smooth, dense surface free from laitence, excessive water, trowel marks, blemishes and discolouration.
- .5 **Non-Slip Floor Surface:** For light non-slip surface, provide swirl trowel finish to match the approved sample. For heavy duty non-slip surface provide a swirl trowel finish.

END OF SECTION

1. GENERAL

1.1 Description

.1 The Work of this Section **as indicated in the Drawings or Specifications** shall include the patching and repair of masonry units and mortar to match existing building.

.2 Related Work Specified Elsewhere:

.1 Section 01630 - Substitutions

.2 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

.1 Submit affidavits of an independent laboratory that materials conform to requirements specified herein.

.2 References:

.1 ASTM A82-01 'Steel Wire, Plain for Concrete Reinforcement'.

.2 ASTM A116-00 'Specification for Zinc Coated (Galvanized) Steel Woven Wire Fence Fabric'.

.3 ASTM A153-83/A153M-01 'Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware'.

.4 ASTM C207-91 'Specification for Hydrated Lime for Masonry Purposes'.

.5 ASTM C270-96a 'Specification for Mortar for Unit Masonry'.

.6 CAN/CSA5-93 'Portland Cements'.

.7 CAN/CSA-A8-93 'Masonry Cements'.

.8 CAN/CSA-A23.1-94/A23.2-94 'Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete'.

.9 CSA A82-56-M1976 'Aggregate for Masonry Mortar'.

.10 CSA A179-94 'Mortar and Grout for Unit Masonry'.

1. GENERAL - Continued

1.3 Samples

- .1 Submit samples in accordance with Section 01345 - Samples:
 - .1 Mortar colour selection.
 - .2 Reinforcement.
 - .3 Ties.
 - .4 Anchors.
 - .5 Closures and Fillers.

1.4 Submittals

- .1 Submit samples in accordance with Section 01345 - Samples:
- .2 Submit, a minimum of 2 weeks in advance, testing reports of samples prepared in accordance with mix designs when tested in accordance with CAN/CSA A179 for site prepared mortars and grouts.
- .3 Submit with testing reports, site mix designs for grout indicating proportions of constituents required to achieve strengths as specified on the Drawings and placement of the Work.
- .4 Submit with testing reports, site mix designs for mortar indicating proportions of constituents required to achieve strengths, durability and workability as specified in CAN/CSA A179.

2. PRODUCTS

2.1 Mortar Materials

- .1 **Materials:** Conform to CSA A179-1994.
 - .1 Use same brand of materials and source of aggregate for entire project.
 - .2 Mortar and grout to CAN/CSA A179.
 - .3 Mortar for exterior masonry above grade:
 - .1 Load bearing: Type S based on approved mix design
 - .2 Non-Load bearing: Type N
 - .4 Mortar for interior masonry:
 - .1 Load bearing: Type S based on approved mix design
 - .2 Non-Load bearing: Type N

2. PRODUCTS

2.1 Mortar Materials

- Continued

.5 Following applies regardless of mortar types and uses specified above:

.1 Mortar for grouted reinforced masonry: Type S based on approved mix design.

.2 Cement: Normal Portland Cement conforming to CAN/CSA-A5-93.

.3 Sand: Sharp, durable, clean and free from contaminants, uniform in colour, CSA A82.56-M1976.

.4 Hydrated Lime: ASTM-C206-84.

.5 Masonry Cement: CAN/CSA-A8-93.

.6 Water: Clean, free of contaminants and potable.

.7 Pre-Mixed Mortar: Prepared, mixed and bagged mortar, requiring only the addition of water and mixing to provide specified mortar, Betomix supplied by Daubois Inc.

.8 Pigment: Iron oxide type by Northern Pigments Ltd. Colour: As required to provide mortar to the Consultant's colour selection. Not to exceed 10% of cement content by mass.

.9 Non-Staining Mortar: use non-staining masonry cement for cementitious portions of specified mortar type.

.10 Grout: 20 MPa to approved mix design.

2.2 Mortar Mixing

.1 Accurately proportion by volume and thoroughly mix mortar in a mechanical mixer for at least five (5) minutes after all material is in the mixer.

.2 For pre-mixed mortar mix in accordance with manufacturer's written instructions.

.3 Retempering: Add water so that mortar will contain maximum amount of water consistent with good workability. Mortar that has started to set shall not be retempered but removed from site.

2. PRODUCTS

**2.2 Mortar
Mixing**

- Continued

- .4 Time Limits: Use mortar within 2 1/2 hours when temperature is 27 degrees C or higher. Use within 3 1/2 hours when temperature is below 27 degrees C.
- .5 Add pigment to mortar mix, in accordance with manufacturer's instructions to produce mortar matching colour of samples. Maximum content, by volume: 10% of total mortar content.

2.3 Mixes

- .1 For Load Bearing and all Exterior Exposed Masonry: Type S mortar, (CSA A179) 1 part cement, 1/2 part lime, 4 1/2 parts sand or 1 part cement, 2 parts masonry cement, 9 parts sand.
- .2 For Non Load Bearing Masonry: Type N mortar, (CSA A179) 1 part cement, 1 part lime, 6 parts sand or 1 part masonry cement, 3 parts sand.
- .3 Temperature of Mortar: 21 degrees C minimum, 49 degrees C maximum.

**2.4 Reinforcing
& Ties**

- .1 Horizontal reinforcing: Galvanized wire reinforcing composed of two corrugated 10ga (3.8mm) wires spaced apart 5/8" (15mm) less than actual block with, unless specified otherwise on drawings, and held apart by straight cross wires welded in place.
- .2 Wall Ties (for fastening masonry veneer through insulation and air barrier to sheathing): Stainless steel with insulation support, Helifix by Blok-Lok Ltd. or Slotted Rap-Tie by Fero Corp.
- .3 Provide galvanized ties and other similar items as required, including dovetail anchors.
- .4 Bolts and Anchors: Conforming to Clause 3.6.2 and 4.5.4 of CAN3-S304-M78.
- .5 Corrosion Protection: Conforming to Clauses 3.3.3.1 and 3.6.2.6 of CAN3-A370-M84 for metal ties and horizontal reinforcing in exterior walls.
- .6 Weep Joints and Vents: P.V.C. brick joint type conforming to CAN3-A93-M82 with horizontal louvres by Goodco or other approved manufacturer.

2. PRODUCTS

**2.4 Reinforcing
& Ties**

- Continued

- .7 Nailing Inserts: 25ga (.5mm) galvanized corrugated steel inserts for setting into mortar joints.
- .8 Dovetail Brick Anchors: Standard 18ga galvanized metal ties, length to suit application.

**2.5 Flashing
& Joint Filler**

- .1 Flashing: 'Blueskin' by Bakor, 'AirShield' by W.R. Meadows or 'Aqua Barrier' by IKO.
- .2 Joint Filler: Rubber type, by Blok-Lok Ltd. Dur-O-Wall Ltd. or Debro Products Ltd.

**2.6 Masonry
Units**

- .1 Re-use all existing masonry units.
- .2 Units shall be clay brick of exact shape, size and colour of existing. Reclaimed units from new openings may be used if after cleaning, ends appear as though new. Where units cannot be salvaged, new units of same shape and size may require tinting to match existing.

3. EXECUTION

3.1 Installation

- .1 Distribute exposed masonry units to produce an even appearance.
- .2 Chipped or blemished units may be used where concealed. Defective and broken units shall be rejects and removed.

3. EXECUTION

3.1 Installation

- Continued

- .3 Cut masonry neatly with a table mounted carborundum saw, where masonry comes in contact with the structure and where less than full units are required, and build tightly against structure except where expansion, control and deflection joints are required.

- | | | |
|------------|---|--|
| 3. | EXECUTION | - Continued |
| 3.2 | Beds,
Joints
& Coursing | |
| | | <p>.1 Lay masonry units with all beds and vertical collar joints filled with mortar including webs of concrete block, through the entire wall thickness.</p> <p>.2 Above requirement will be rigidly enforced and wherever it is found that it has not been carried out, the wall shall be taken down and re-built.</p> |
| 3.2 | Joints | |
| | | <p>.1 For brick exposed: To match existing.</p> <p>.2 For tooling of joints, compress mortar with a non-staining plastic or stainless steel tool to produce a dense, perfectly flush or concave joint.</p> |
| 3.3 | Shelf Angles
& Lintels | |
| | | <p>.1 Install angles for support of exterior face of masonry at locations and sizes shown on Structural Drawings. Angles to be minimum 1/2" (12mm) less than masonry wythe x same height x 3/8" (8mm). Angles supplied under Section 05500 - Metal Fabrications.</p> |
| 3.4 | Building In,
Cutting
& Fitting | |
| | | <p>.1 Do cutting, fitting and making good to receive work of other trades.</p> <p>.2 Install items supplied by others to be built into masonry including miscellaneous metal work, loose lintels, bearing plates, sleeves, anchor bolts, wood nailers, anchors and other similar items. Set access doors with front face flush with final wall finish. Locate such fittings precisely as directed.</p> |

3. EXECUTION - Continued

**3.5 Adjust
& Clean**

- .1** Surplus mortar shall be removed immediately from floors, walls and other locations.
- .2** At completion of pointing, remove all rubbish and surplus material, and brush and clean all masonry with water and stiff fibre brush.
- .3** If further cleaning of masonry surfaces is required follow recommendations of masonry manufacturer and treat a sample area of masonry for the Consultant's approval before proceeding with cleaning of all surfaces.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes fabrication, supply and installation of Fabricated Metal items.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 09900 - Painting
 - .3 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 Fabricators shall be fully approved by Canadian Welding Bureau and conform to CSA W47-1-1983 and have a minimum of five (5) years experience in the fabrication and erection of structural steel.
- .2 Meet requirements of governing codes and standards specified which shall be latest current editions in all cases.

1.3 Shop Drawings

- .1 Submit the Shop drawings for all specified components for the Consultant's review in accordance with Section 01340 - Shop Drawings And Product Data.
- .2 Show on the drawings:
 - .1 Size and location of all members and necessary details.
 - .2 Identify materials and give thicknesses and finishes.
 - .3 Sizes and dimensions based on field measurements where possible.
 - .4 Provide templates and show dimensions for setting anchor bolts, sleeves, frames and fastenings by other trades.

- 1. GENERAL**
 - 1.4 Protection**
 - .1 Prevent staining by concrete, mortar, plaster, oil, grease or other decontaminants.
 - .2 Do not use paint, crayon or other markings on exposed surfaces.
- 2. PRODUCTS**
 - 2.1 Materials**
 - .1 Use all new materials and grades of metals and alloys to suit application.
 - .2 **Steel Sections and Plates:** CSA G40-21.
 - .3 **Steel Pipe:** Schedule 40.
 - .4 **Welding:** CSA W59-1.
 - .5 **Welding Electrodes:** CSA W48 Series.
 - .6 **Shop Coat Primer:** CGSB 1-GP-40.
 - .7 **Zinc Rich Primer:** Ready mixed type, CGSB 1-GP-181a.
 - .8 **Galvanizing:** CSA G164.
 - .9 **Expanding Grout:** Equal to Embeco by Master Builders Ltd.
 - 2.2 Fabrication**
 - .1 Fabricate fit and shop assemble items wherever possible.
 - .2 Fabricate to approved shop drawings and details.
 - .3 Verify site dimensions before proceeding with shop fabrication to suit field conditions and field openings.
 - .4 Fabricate the Work complete with components required for anchoring, bolting or welding to structure; standing free or resting in frames and sockets.
 - .5 Fabricate items in largest possible sections. Form joints in field by welding.
 - .6 Grind and fill welds after inspection and acceptance and leave ready for prime painting.
 - .7 Fill open joints, depressions and seams with metallic paste filler or by continuous brazing or welding and grind smooth to true, sharp arrises and profiles.

2. PRODUCTS

2.3 Finishing

- .1 Prime Finish:**
 - .1** After fabrication clean, scrape and remove rust, mill scale, grease and other extraneous materials.
 - .2** Apply full smooth coat of primer, working paint into corners and open spaces such that all visible and accessible surfaces are fully covered.
 - .3** Deliver items to site with primer undamaged.
- .2 Galvanizing:**
 - .1** Galvanize Work where specified.
 - .2** Galvanize items after fabrication. Where this is not possible, touch up welds with zinc rich primer.
 - .3** Clean and prepare surfaces and hot dip galvanize to CSA G164-M1981.
 - .4** Coating: 3oz/sq ft. (764g/sq m).

3. EXECUTION

3.1 Installation

- .1** Provide temporary supports and bracing.
- .2** Do drilling, cutting and fitting necessary to attach the Work to adjoining components and surfaces and make it complete.
- .3** Make joints tight and smooth; leave the completed Work straight, true, positioned and anchored securely.
- .4** Where anchors, fastenings or sleeves have to be built in by other trades, supply necessary templates, instructions and supervision to ensure satisfactory installation.
- .5** Use bituminous paint, butyl tape or other suitable and approved means to prevent electrolytic action between metal and metal; metal and concrete; metal and masonry.
- .6** Grind welds smooth and touch up prime coats and galvanizing damaged by field erection.

3. EXECUTION - Continued

**3.2 Miscellaneous
Rough Hardware
& Sections**

- .1** Supply anchor bolts, washers and nuts, lag screws, expansion shields, toggles, straps, sleeves, brackets and other similar items where required or called for on the Drawings, for the Work in this Section. Such items occurring on or in an exterior wall or slab shall be hot dip galvanized. Thread dimensions shall be such that nuts and bolts will fit without rethreading or chasing threads.
- .2** Provide all miscellaneous steel angles, channels, tubes, plates and similar items of shapes and sizes noted or required which are not included on the Structural Drawings or called for in other Sections of this Specification.

**4. Item
Schedule**

- .1** Lintels and Shelf Angles: Provide steel lintels and shelf angles for all openings as required where these are not otherwise provided for by Structural. Where necessary provide double angles welded back to back. Provide packing where back to back angles are at different levels. Provide for bearing at each end as directed by Structural Sub-Consultant.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes interior and exterior Rough Carpentry and Moisture Barrier Work.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 05500 - Metal Fabrications
 - .3 Section 06200 - Finish Carpentry
 - .4 Section 07200 - Insulation
 - .5 Section 07900 - Sealants, Gaskets And Barrier Membrane
 - .6 All other Sections and Drawings to be reviewed.

1.2 Quality Control

- .1 Identify lumber by grade stamp of an agency certified by the Canadian Lumber Standards Accreditation Board.
- .2 References:
 - .1 Comply with the National Building Code or the latest edition as a minimum standard.

2. PRODUCTS

2.1 Materials

- .1 **Furring and Blocking:** No. 2 grade and better Spruce-Pine-Fir.
- .2 **Backboards:** Douglas Fir plywood, good one side.

3. EXECUTION

3.1 Installation

- .1 General:
 - .1 Design construction methods for expansion and contraction of the materials.
 - .2 Conceal joints and connections wherever possible. Locate prominent joints only where directed.
 - .3 Erect the Work plumb, level, square and to the required lines.
 - .4 Do not regard blocking, strapping and other rough carpentry indicated as complete or exact. Provide rough carpentry items required for the installation of the Work of other Sections.

3. EXECUTION

3.1 Installation - Continued

.2 Panel Boards:

.1 Fabricate back boards for electrical panels and other equipment from Douglas Fir plywood, G1S.

.2 Mount boards on 2" x 2" (50mm x 50mm) or 2" x 4" (50mm x 100mm) bearers bolted to walls in accordance with requirements of Division 16 - Electrical.

.3 Provide all other rough carpentry required including, but not limited to blocking for all millwork, curtain tracks at all windows, provision for grab bars and accessories in all washrooms and for all equipment and fitments to be provided by the Owner.

Refer to the Drawings and all other Sections of the Specifications for location and requirements for blocking.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes cabinetwork, millwork and trim, wood screens and panelling.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 06100 - Rough Carpentry
 - .3 Section 08800 - Miscellaneous Glass, Glazing And Mirrors
 - .4 Section 09900 - Painting
 - .5 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 The Work in this Section shall be executed by fully equipped, expert artisans, highly skilled in millwork fabrication with experience in producing millwork for similar projects.
- .2 Unless otherwise specified herein comply with requirements for Custom Grade Work as set out in the Quality Standards for Architectural Millwork published by the Architectural Woodwork Manufacturers Association of Canada.
- .3 References:
 - .1 CAN3-O188-0-M78 'Standard Test Method for Mat Formed Wood Particleboards and Waferboard'.
 - .2 CAN3-O188-1-M78 'Interior Mat Formed Wood Particleboard'.
 - .3 CAN3-A172-M79 'High Pressure Paper Base, Decorative Laminates'.
 - .4 CAN4/ULC-S102-M88 'Standard Method of Test for Surface Burning Characteristics of Building Material and Assemblies'.
 - .5 CAN/CGSB 11-3-M87 'Hardboard'.
 - .6 CSA O80-M1983 'Wood Preservation'
 - .7 CSA O112-4-M1977 'Standard for Wood Adhesives Polyvinyl Adhesives for Wood'.

1. GENERAL

1.2 Quality Assurance

- .3** References: - Continued
 - .8** CSA O112-5-M1977 'Standard for Wood Adhesives - Urea Resin Adhesives for Wood (Room and High Temperature Curing)'.
 - .9** CSA O115-M1982 'Hardwood and Decorative Plywood'.
 - .10** CSA O121-M1978 'Douglas Fir Plywood'.
 - .11** CSA O141-1970 'Softwood Lumber'.
 - .12** CSA O151-M1978 'Canadian Softwood Plywood'.
 - .13** NFPA 80-1986 'National Fire Protection Association, Fire Doors and Windows'.
- .4** Do millwork to Millwork Standards of the AWMAC latest edition. Custom Grade 1, unless otherwise specified.

1.3 Delivery & Storage

- .1** Co-ordinate delivery with construction schedule. Protect materials from weather while in transit and on job site.
- .2** Do not deliver materials until required for installation. Keep job storage to a minimum.
- .3** Give painting trade sufficient notice so that casework can be primed and walls may receive finishing coats as necessary.
- .4** Store finished millwork in building, in location where temperature and humidity control is operational.
- .5** Provide protective coverings of suitable material for plastic laminate items, take special precautions at corners.

1.4 Warranty

- .1** Provide five (5) year warranty on plastic laminate work in lieu of standard one (1) year warranty.
- .2** Provide two (2) year warranty on millwork in lieu of standard one (1) year warranty.
- .3** Submit warranties in Accordance with Section 01740 - Warranties.

- 1. **GENERAL** - Continued
- 1.5 **Shop Drawings**
 - .1 Submit the Shop Drawings in accordance with Section 01345 - Samples.
 - .2 Submit the Shop Drawings in accordance with Section 01340 - Shop Drawings And Product Data for cabinets and other Work as requested by the Consultant, with sections shown full size or half size and related to elevations.
- 1.6 **Submittals**
 - .1 Submit samples in accordance with Section 01345 - Samples.
 - .2 Submit two (2) 2'-0" (600mm) cabinet doors; one (1) lower and one (1) upper in finish specified of solid wood or plywood finish.
 - .3 Submit two (2) 2'-0" (600mm) long samples of each type of trim and moulding in finish specified.
 - .4 Submit 2'-0" x 2'-0" (600mm x 600mm) samples of stainless steel and plastic laminate counters including typical edges.
 - .5 Submit one (1) of each item of hardware, including one (1) 2'-0" x 3'-0" (600mm x 900mm) section of perforated metal panels.
- 1.7 **Moisture Content**
 - .1 Finish Grades of Lumber: Dry to a uniform maximum moisture content of 12% for exterior work and 6% to 8% for Interior Work.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Custom Millwork**, including sills, casings, etc., in quantities and locations as indicated on the Drawings shall be:
 - .1 All cabinetry to be manufactured using CNC Technology - Blind Dadoed, Glued and Nailed.
 - .2 **Cabinet Carcass and Doors:** Pre-finished Maple (19mm) Melamine on 5/8" MDF
 - .1 Ensure that MDF has no added urea formaldehyde and is composed of 100% post industrial/pre-consumer content
 - .3 **Edge Banding:** .3mm Natural Maple Melamine edge to match carcass

2. PRODUCTS

2.1 Materials

- Continued

- .1 Custom Millwork**, including sills, casings, etc., as indicated on the Drawings shall be:
 - .4 Plastic Laminate Countertops**: Post framed plastic laminate on 5/8" particle board substrate complete with Innovation profile
 - .5 Toe Kicks**: Finish base by Section 09660 - Resilient Flooring And Base
 - .6 Pulls**: BP552 76 ORB
 - .7 Hooks**: H55445 GW
 - .8 Hinges**: 165 Degree Euro Soft Close
 - .9 Drawers**: Blum Metabox Metabox 320
 - .10 Shelf Support**: 5mm metal adjustable shelf pins
 - .11 Locks**: Hafele cabinet locks

3. EXECUTION

3.1 Examination

- .1** Examine surfaces and conditions upon which the Work of this Section depends and do not proceed unless such surfaces and conditions are acceptable.
- .2** Commencement of the Work will denote acceptance of surfaces and conditions.

3.2 Fabrication

- .1** Accurately mill to details with clean cut mouldings, profiles and lines. Scrape, sand smooth. Slightly arise all edges. Mortise, tenon, splice, house, joint, block, screw and glue pieces together as approved in manner to avoid swelling and shrinkage and to ensure the Work remaining in place without warping, splitting or opening of joints.
- .2** Slow feed machine dressed Work using sharp cutters and free from drag, feathers, slivers or roughness of any kind. Remove machine marks by sanding.

3. EXECUTION

3.2 Fabrication - Continued

- .3** In the finished Work, machine sand exposed surfaces in the shop and hand sand on the job to even smooth surfaces, free from scratches, ready for finishing. For final sanding, use minimum 220 grit paper for painted, stained and varnish finishes and 400 grit paper for oil finish.
- .4** Finish woodwork in one piece wherever possible. Running members shall be in the largest length obtainable. Where jointed, splice, finger joint or mitre to accurate fit and alignment, match for grain and colour.
- .5** Hollow cut backs of straight run millwork, minimum 1/8" (3mm) deep.
- .6** Set and fill nailheads. Countersink and plug screw or bolt heads.
- .7** Thicknesses of all wood members shall be in accordance with the maximum possible dressed size from standard lumber.
- .8** Protect finished surfaces, arises, mouldings and trims from damage. Sand and remove machine marks or other scrapes from exposed or partially exposed surfaces. Leave in good condition for painter.
- .9** Replace the Work damaged by hammer or other tools where such damage cannot be satisfactorily rectified by sanding.
- .10** Laminated Plastic Work:

 - .1** Fabricate on MDF core 3/4" (20mm) minimum thickness unless shown otherwise in the Drawings and backed with backing sheet.
 - .2** Finished surfaces shall be level, smooth and without core ghosting.
 - .3** Cut holes for sinks and fittings as required, seal edges with black asphalt compound. Corners shall be radiused to prevent cracking. Edges around cut outs shall be chamfered.
 - .4** Arrange parts of continuous laminate Work to match in colour and pattern.
 - .5** Joints shall be accurately fitted to provide tight, flush hairline appearance. Provide concealed, adjustable draw bolts.

3. EXECUTION

3.2 Fabrication

- Continued

.11

Laminated Veneer Work:

- .1 Fabricate on MDF core 3/4" (20mm) minimum thickness unless shown otherwise in the Drawings and backed with backing sheet.
- .2 Finished surfaces shall be level, smooth and without core ghosting.
- .3 Cut holes for sinks and fittings as required, seal edges with black asphalt compound. Corners shall be radiused to prevent cracking. Edges around cut outs shall be chamfered.
- .4 Arrange parts of continuous laminate Work to match in colour and pattern.
- .5 Joints shall be accurately fitted to provide tight, flush hairline appearance. Provide concealed, adjustable draw bolts.

**3.3 Priming
& Backpainting**

- .1 Items of woodwork to be installed on interior, whether stained or painted, shall be back primed under Section 09900 - Painting, before fixing and immediately on delivery.
- .2 Surfaces to receive stain or varnish shall not be primed, treatment shall be specified in Section 09900 - Painting.
- .3 Back painting shall be done before delivery to site.

3.4 Installation

- .1 Set and secure all materials and components in place, rigid, plumb and square.
- .2 Provide heavy duty fixture attachments for wall mounted cabinets.
- .3 Use draw bolts in countertop joints.
- .4 Apply water resistant building paper over wood framing members in contact with masonry or cementitious construction.
- .5 Install and adjust finish hardware for cabinet doors, drawers and shelves.
- .6 Fabricate and install all other finish carpentry.
- .7 Fabricate wood frames for door and screens with neatly mitred corners and without intermediate joints. Provide removable glazing stops, held in place with brass caps and screws, one piece for each location, mitred corners.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes plastic wall panelling.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 All other Sections and Drawings to be reviewed

1.2 References

- .1 Canadian Food Inspection Agency (CFIA) Approval
- .2 ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- .3 ASTM D4226 - Standard Test Method for Impact Resistance
- .4 ASTM G21 - Standard Test Method Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
- .5 City of Los Angeles Research Report: RR 26036

1.3 Submittals

- .1 Submit under provisions of Section 01300 - Submittals
- .2 Product Data: Manufacturer's data sheets on each product to be used, including:
 - .1 Preparation instructions and recommendations
 - .2 Storage and handling requirements and recommendations
 - .3 Installation methods
- .3 Shop Drawings: Submit, in accordance with Section 01340 - Shop Drawings And Product Data, plan, section and elevation drawings to depict the actual construction of each unit type specified and to depict proper attachment and installation techniques. Co-ordinate locations with those indicated on the contract drawings
- .4 Verification Samples: For each finish product specified, two (2) samples representing actual product, colour and patterns

- 1. GENERAL** - Continued
- 1.4 Quality Assurance**
 - .1 Manufacturer Qualifications: Primary products shall be manufactured and supplied by a single manufacturer
 - .2 Installer Qualifications: Products shall be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified
 - .3 Mock Up: Provide a mock up for evaluation of surface preparation techniques and application workmanship:
 - .1 Finish areas designated by Architect
 - .2 Do not proceed with the remaining Work until workmanship, colour and sheen are approved by Architect
 - .3 Refinish mock up area as required to produce acceptable Work
- 1.5 Delivery, Storage & Handling**
 - .1 Store products in manufacturer's unopened packaging until ready for installation
 - .2 Store materials in clean, dry area indoors in accordance with manufacturer's instructions
 - .3 Store panels flat
- 1.6 Project Conditions**
 - .1 Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits. Panels should be installed at temperatures that are within 40°F (4°C) of operating temperature
 - .2 Cold Temperatures: Do Not install panels at temperature at or below 32°F (0°C)

- 1. GENERAL** - Continued
- 1.7 Warranty**
 - .1** Submit warranties in Accordance with Section 01740 - Warranties
 - .2** At project closeout, provide to Owner or Owner's Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions and exclusions from coverage
 - .1** Term: Limited Lifetime
- 2. PRODUCTS**
- 2.1 Manufacturer**
 - .1** Parent Manufacturer: Trusscore Inc., 140 Minto Road Palmerston, Ontario N0G 2P0, telephone: (888) 418-4679, e.mail: hello@trusscore.com
 - .2** Substitutions: Not permitted
- 2.2 PVC Wall Panels**
 - .1** Product: Trusscore Wall & CeilingBoard PVC Interlocking Liner Panel:
 - .1** Description: Tongue and groove, rib reinforced wall panels with nailing fins
 - .2** Material: PVC; 100% virgin
 - .3** Outside Surface: Flat
 - .4** Width: 1'-4" (400mm)
 - .5** Thickness: 1/2" (13mm)
 - .6** Weight: 0.8 pounds per square foot
 - .7** Food processing facilities: CFIA approved and compliant with FDA and USDA guidelines
 - .8** Surface Burning Characteristics, ASTM E 84: Class A
 - .1** Flame Spread Index: 15
 - .2** Smoke Developed Index: 450
 - .9** Colour: White
 - .10** Corrosion proof
 - .11** Waterproof, Nonporous

2. PRODUCTS - Continued

2.3 Accessories

- .1 Product: Trusscore PVC Trim
 - .1 Description: J Trim, Outside Corner, Inside Cove, Base Trim, H Divider and F Channel
 - .2 Material: PVC, 100% virgin
 - .3 Colour: White

3. EXECUTION

3.1 Examination

- .1 Examine surfaces and conditions upon which the Work of this Section depends and do not proceed unless such surfaces and conditions are acceptable
- .2 Commencement of the Work will denote acceptance of surfaces and conditions

3.2 Preparation

- .1 Clean surfaces thoroughly prior to installation
- .2 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions

3.3 Installation

- .1 Install wall and ceiling panels in accordance with manufacturer's instructions at locations indicated on the Drawings
- .2 Install wall and ceiling panels plumb, level, square, flat and in proper alignment
- .3 Install trim in accordance with manufacturer's instructions
- .4 Ceiling Panels: Anchor ceiling panels with fasteners in accordance with manufacturer's instructions
- .5 Wall Panels: Anchor wall panels with construction adhesive and fasteners in accordance with manufacturer's instructions

3. EXECUTION

3.3 Installation - Continued

- .6 Fasteners:**
 - .1** Fastening into Wood or Metal: Stainless Steel or Zinc coated, 1" (25mm), No. 10 pancake head screw
 - .2** Fastening into Masonry: Stainless steel, Tapcon 3/16" x 1 1/4" (6mm x 31mm) screws
 - .3** Install fasteners in pre-punched holes 1'4" to 2'-0" (400mm to 600mm) on centre into screw flange
 - .4** Ensure screw flange lays flat against surface, between screw head and substrate, not deformed around screw heads
 - .5** Do not recess screw heads into nailing fins
 - .6** Ensure fasteners are not exposed
 - .7** Staples: Do not use
- .7 Cutting Panels:**
 - .1** Field cut panels as necessary in accordance with manufacturer's instructions
 - .2** Ensure cuts are straight, square and do not damage panels

3.4 Cleaning & Adjustment

- .1** Clean with a mild detergent or soap scum remover
- .2** Where detergents do not work, low pressure washers with mild soap and a soft cloth may be used
- .3** Multi purpose cleaners may be used, provided they are PVC compatible. Spot test material in an inconspicuous location prior to cleaning
- .4** Do not use of abrasive cleaners
- .5** Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect
- .6** Where damage cannot be repaired, remove and replace damaged Work in accordance with manufacturer's instructions

3. EXECUTION

3.5 Protection

- .1 Protect installed products until completion of project

END OF SECTION

DIVISION 7 THERMAL AND MOISTURE PROTECTION - SECTION 07200
INSULATION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes, provision of materials and application of Insulation, Vapour Retarder and Exterior Insulation Finish System and related Work.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 06100 - Rough Carpentry
 - .3 Section 07620 - Flashing And Sheet Metal
 - .4 Section 07900 - Sealants, Gaskets And Barrier Membrane
 - .5 All other Sections and Drawings to be reviewed

1.2 Delivery,
Storage &
Handling

- .1 Store packaged materials in original undamaged containers with manufacturer's labels and seals intact.
- .2 Prevent damage to materials during handling, storing and erection. Damaged materials will be rejected.

1.2 Submittals

- .1 Submit Sample and product literature for each insulation product to be used.

2. PRODUCTS

2.1 Material

- .1 **Batt Insulation - Walls:** Comfort Batt mineral wool by Roxul to fill the depth of the wall cavity.
- .2 **Foam Insulation - Windows:** 'Great Stuff Pro-Series' window and door insulating foam sealant by Dow Chemical or approved equal. Install in accordance with manufacturer's instructions and CAN/ULC-3705.2.

THERMAL AND MOISTURE PROTECTION - SECTION 07200
INSULATION

2. PRODUCTS

2.1 Material - Continued

- .3 Vapour Retarder:** Type 10 mil or 6 mil thickness polyethylene sheet conforming to CAN/CGSB-51.34, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .4 Rigid Insulation:** Extruded polystyrene conforming to CAN/ULC-S701-97 Type 3, Thermal Insulation, Polystyrene Boards and Pipe Coverings. Acceptable product: Styrofoam 'Cavitymate' or approved equal.
- .5 Sound Attenuation Batts:** 3 1/2" (88mm) thick fibre glass blanket to CAN/ULC-S114; Acceptable product: 'Quiet Zone' by Owens Corning or mineral wool batts Safe 'n Sound 169028 by Roxul.

3. EXECUTION

3.1 Installation of Batt Insulation

- .1** Install insulation to maintain minimum continuity of the thermal protection to the building elements and spaces.
- .2** Fit insulation tight to mechanical and electrical services, and around doors, windows and protrusions.
- .3** Cut and trim insulation neatly to fit spaces, insulation to be free of ripped edges. **Fill all voids.**
- .4** Sound attenuation batts: install in interior partitions only.

3.2 Installation of Foam Insulation

- .1** Install polyurethane foam insulation at the perimeter of all windows, doors and other exterior wall penetrations, in strict accordance with the manufacturers instructions.
- .2** Ensure the continuity of the installation against air leakage.
- .3** Ensure that frames or other items are not damaged or distorted by foam.
- .4** Trim neatly flush with frame and other elements as required.

THERMAL AND MOISTURE PROTECTION - SECTION 07200
INSULATION

3. EXECUTION - Continued

3.3 Installation of Vapour Retarder

- .1 Unless otherwise indicated, reinstall polyethylene to the warm side of the exterior walls and ceilings wherever indicated on the Drawings or Notes.
- .2 Make joints over solid bearing and lap 2" (50mm). **Do not seal.** Staple in position at not more than 8" (200mm) o.c. on all edges.
- .3 Repair damaged or torn membrane with pressure sensitive tape recommended for the purpose by the polyethylene manufacturer.
- .4 Cut polyethylene neatly around all openings in the exterior wall, fasten against the frame.

3.4 Installation of Sub-Grade Insulation

- .1 Install insulation as shown on the Drawings, with boards tightly butted together.
- .2 Ensure insulation is not displaced during construction.

END OF SECTION

THERMAL AND MOISTURE PROTECTION - SECTION 07620
FLASHING AND SHEET METAL

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes supply and installation of flashings, accessories and materials for installation.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 04220 - Unit Masonry
 - .3 Section 06100 - Rough Carpentry
 - .4 Section 07200 - Insulation
 - .5 Section 07900 - Sealants, Gaskets And Barrier Membrane
 - .6 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 Installer shall have at least five (5) years experience in the Work of this Section.

1.3 Extended Warranty

- .1 Submit warranty in accordance with Section 01740 - Warranties covering materials and labour for a period of one (1) year from end of standard one (1) year warranty. Total warranty period: two (2) years.

1.4 Shop Drawings

- .1 Submit Shop Drawings, in accordance with Section 01340 - Shop Drawings And Product Data, showing complete layout of flashing and copper Work; thicknesses, dimensions, spacing, fastenings and anchoring methods, and allowances for expansion and contraction.

1.5 Samples

- .1 Submit samples of typical flashings, accessories and materials, in accordance with Section 01345 - Samples.

THERMAL AND MOISTURE PROTECTION - SECTION 07620
FLASHING AND SHEET METAL

2. PRODUCTS

2.1 Materials

- .1 Sheet steel: 28 gauge minimum thickness, commercial quality to ASTM A526 with AZ150 designation zinc coating.
- .2 Pre-finished aluminum: 28 gauge minimum thickness, commercial quality.

2.2 Fabrication

- .1 Fabricate flashings and other sheet metal Work as indicated in the Drawing and details, and in accordance with OBC Part 9.
- .2 Form pieces in 8'-0" (2400mm) maximum lengths. Make allowance for expansion joints.
- .3 Hem exposed edges on underside 1/2" (12mm). Mitre 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 material to metal surfaces to be embedded in concrete or mortar.

3. EXECUTION

3.1 Examination

- .1 Examine the Work on which this Section is supported or comes into contact and do not proceed unless surfaces and conditions are acceptable.
- .2 Commencement of the Work will denote acceptance of surfaces and conditions and any subsequent failure of installed Work of this Section will be rectified at no cost to the Owner.

**3.2 Installation
General**

- .1 Form sheet metals on a bending brake.
- .2 Shaping, trimming and hand seaming shall be done on a bench where possible.
- .3 Make angles of bends and folds, for interlocking metal, to allow for full expansion and contraction without buckling or fullness in metal.
- .4 Partly formed metal to be fastened with cleats.

THERMAL AND MOISTURE PROTECTION - SECTION 07620
FLASHING AND SHEET METAL

3. EXECUTION

**3.2 Installation
General**

- Continued

- .5 Tightly close dry lock joints without solder to allow for adjustment of sheets but to remain weathertight .
- .6 Watertight joints shall be cleaned, pre-tinned and soldered. Close clinch lock seams with block of wood and mallet, flux and fill with molten solder, using sufficient heat for solder to completely seal joint.
- .7 Reinforce and solder lap joints with 1/8" (3mm) copper rivets at maximum 2" (50mm) spacing.
- .8 Clean soldered joints by wiping and washing to remove all traces of acid flux immediately as joints are made.
- .9 Caulk joints as required.
- .10 Use concealed fastenings except where approved before installation.
- .11 Provide underlay under sheet metal. Secure in place and lap joints 4" (100mm).

**3.3 Installation
Of Flashings**

- .1 Flashings shall be watertight under all service and weather conditions.
- .2 Install underlay under sheet metal. Secure in place and lap joints 4" (100mm).
- .3 Join 8'-0" (2400mm) long sheets by 3/4" (19mm) flat locked soldered seams.
- .4 In exposed Work, provide expansion joints with 3" (75mm) loose locked seams filled with caulking compound.
- .5 Do not form open joints or pockets that fail to drain water.
- .6 Ensure end dams are provided at flashings above window and door openings.

THERMAL AND MOISTURE PROTECTION - SECTION 07620
FLASHING AND SHEET METAL

3. EXECUTION

**3.3 Installation
Of Flashings**

- Continued

- .6 Through-wall flashings:
- .1 Install where shown on the Drawings and/or the following locations:
 - Around perimeter of windows.
 - Around all exterior openings.
 - At all openings in exterior walls.
 - .2 Form through-wall flashings with corrugations, ribs or crimps 3/16" (5mm) high and spaced 3" (75mm) apart, and formed to permit drainage and prevent lateral movement in both directions.
 - .3 Use one piece flashings at corners.
 - .4 Interlock end joints by overlapping corrugations or ribs 1 1/2" (38mm). Bed lap in sealant.

3.4 Cleaning

- .1 Clean surfaces to remove protective oil film, finger prints and all marks, dirt and other deposits.

END OF SECTION

DIVISION 7 THERMAL AND MOISTURE PROTECTION - SECTION 07900
SEALANTS, GASKETS AND BARRIER MEMBRANES

1. GENERAL

1.1 Description

.1 The Work of this Section **as indicated in the Drawings or Specifications** includes the supply and installation of sealants, gaskets and barrier membranes at all the following locations:

- .1 Repair at exterior walls with moisture barrier.
- .2 Control joints in masonry (if required).
- .3 Perimeter of hollow metal frames on both interior and exterior sides of frames.
- .4 Perimeter of insulated aluminum door frames and screens in masonry only.
- .5 Sealing of perimeter of all window and door openings at exterior with self-adhesive asphalt membrane to spunbond olefin moisture barrier.
- .6 Junction between pipes, ducts and other items passing through floors, walls, ceilings and partitions.
- .7 Perimeter of louvres, panels and similar items in exterior walls.
- .8 Caulking under thresholds.
- .9 Perimeter of washroom fixtures and adjacent surfaces.
- .10 Where typically shown on Drawings or required to achieve weathertight joints or where not specified in other Sections.

.2 Related Work Specified Elsewhere:

- .1 Section 01630 - Substitutions
- .2 Section 04110 - Masonry, Mortar And Accessories
- .3 Section 06100 - Rough Carpentry
- .4 Section 07200 - Insulation
- .5 Section 07620 - (Caulking of) Sheet Metal Flashing
- .6 Section 09250 - (Acoustic Caulking in) Gypsum Board
- .7 All other Sections and Drawings to be reviewed

**THERMAL AND MOISTURE PROTECTION - SECTION 07900
SEALANTS, GASKETS AND BARRIER MEMBRANES**

- | | | |
|------------|--------------------------|--|
| 1. | GENERAL | - Continued |
| 1.2 | Quality Assurance | |
| | | <ul style="list-style-type: none">.1 The Work to be performed by a recognized established caulking and sealing contractor having at least five (5) years experience and skilled mechanics thoroughly trained and competent in the use of caulking and sealing equipment and the specified materials..2 Arrange with the caulking and sealant manufacturers for visit at the job site by one of their technical representatives before beginning the caulking and sealing installation to discuss with the Contractor and the Consultant the procedures to be adopted, to analyze site conditions and inspect the surfaces and joints to be sealed, in order that recommendations may be made..3 Discuss the following:<ul style="list-style-type: none">.1 Weather conditions under which work will be done.2 Anticipated frequency and extent of joint movement.3 Joint design.4 Suitability of durometer hardness and other properties of material to be used.4 Application of sealants shall be done in strict accordance with manufacturer's printed directions, using pressure gun and equipment approved by the sealant manufacturer..5 In rated walls, sealant for fire rated penetrations to be installed by company specializing in this type of application..6 Submit Samples and product literature for each product listed/used. |
| 1.3 | Job Conditions | |
| | | <ul style="list-style-type: none">.1 Do not apply materials when ambient air temperature and surface temperature are below 5 degrees C..2 Where necessary to prevent contamination of adjacent surfaces, mask areas adjacent to joints with masking tape. Remove tape immediately when joint has been completed. |

**THERMAL AND MOISTURE PROTECTION - SECTION 07900
SEALANTS, GASKETS AND BARRIER MEMBRANES**

- 1. **GENERAL** - Continued
- 1.4 **Extended Warranty**
 - .1 Provide a three year extended warranty per Section 01740 - Warranties, definition to read:
 - .1 The caulking Work of Section 07900 Sealants, Gaskets And Air Barrier Membrane is guaranteed against leaking, cracking, crumbling, melting, shrinkage, running, loss of adhesion, staining adjacent surfaces or other failure, for a period of three (3) years from the date of Substantial Performance.
 - .2 Submit affidavit stating that all fire separations are integral complete with list of material used and ULC designation.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Sealants:**
 - .1 **Type 1 - Vertical Joint Sealant:** Epoxidized, polyurethane, terpolymer type conforming to CAN/CSGB 19.24-M80. Acceptable Product: Tremco "Dymeric" or approved equivalent.
 - .2 **Type 2 - Horizontal Joint Sealant:** Modified self-leveling urethane conforming to CAN/CSGB 19.24-M80 (example concrete floor joints) Acceptable Product: Tremco 'THC 900' or approved equal.
 - .3 **Type 3 - Painted Joint Sealant:** One part silicone rubber conforming to CAN/CSGB 19.18-M87. Acceptable Product: Dow Corning 8644 Paintable Silicone Rubber Sealant or approved equal.
 - .4 **Type 4 - Washroom, Kitchen, Laundry and All Counters:** One part silicone conforming to CAN/CSGB 19.18-M87. Acceptable Product: Dow Corning 786 Mildew Resistant Silicone Sealant or approved equal.
 - .5 **Type 5 - For use with fire resistant joint filler:** One part intumescent elastomer, ULC listed. Acceptable Product: 3M CP-25 caulk.
 - .6 **Cladding Joint Sealant:** One component acrylic base, solvent curing compound that conforms to the standards set out in CAN/CSGB 19GP-5M.

**THERMAL AND MOISTURE PROTECTION - SECTION 07900
SEALANTS, GASKETS AND BARRIER MEMBRANES**

2. PRODUCTS

2.1 Materials

.1 Sealants: - Continued

- .7 Cladding Movement Joint Sealant:** One-component elastomeric (urethane) chemical curing compound that conforms to the standards set out in CAN/CGSB 19.13-M87.
- .8 Interior Air-barrier Element Sealant:** One component elastomeric (urethane) chemical curing compound that conforms to the standards set out in CAN/CGSB 19.13-M87 (not for use on polyethylene).
- .9 Glazing Tape:** 100 per cent solid, cross-linked butyl performed sealant (non-shimmed).

2.2 Accessories

- .1 Primer:** Type and locations shall be as recommended by the sealant manufacturer.
- .2 Back-Up Material:** polyethylene, urethane, neoprene or vinyl foam:
 - .1** Extruded closed cell foam backer rod, oversized 30 to 50 per cent wider than joint with Shore A hardness and tensile strength of 138 kPa to 207 kPa. Acceptable Manufacturer: Dow Chemical Company of Canada Limited or approved equal.
 - .2 Bond Breakers:** polyethylene tape which will not bond to sealant.
 - .3 Cleaning Solvent:** coal tar naphtha, as recommended by the sealant manufacturer.

2.3 Gaskets

- .1 Sill Gasket:** Closed-cell polyethylene strip gasket sized to suit plate.
- .2 Air Barrier Component Gasket:** Closed cell polyvinylchloride (PVC) self-adhesive tape 1/2" x 1/4" (13mm x 6mm) thick or as shown (can only be used in clean, dry conditions).
- .3 Air Barrier Component Gasket:** Closed cell Ethylene Propylene Diene Monomer (EPDM) 5/16" (8mm) diameter hollow tubular gasket with stapling flange (For use when lumber is wet or in freezing weather or with the EASE system).

THERMAL AND MOISTURE PROTECTION - SECTION 07900
SEALANTS, GASKETS AND BARRIER MEMBRANES

- 2. PRODUCTS** - Continued
- 2.4 Membranes**
 - .1 Self-Adhesive Rubberized Asphalt Membranes:** Except as otherwise Specified in other Sections, composite sheet of rubberized asphalt integrally bonded to a film of cross-laminated polyethylene that is a minimum of 1/32" (1mm) thick, for peel and stick application. Acceptable Manufacturer: Grace, IKO, Soprema or approved equivalent.
 - .2 Primer and Mastic:** Type and location shall be as recommended by membrane manufacturer.
 - .3 Rubber Membrane:** EPDM rubber membrane 1/16" (1.6mm) thick. Acceptable manufacturer: Sarnafil.
 - .4 Moisture Barrier:** Spunbonded olefin, complying with CGSB -51.32-M77 breather type standards, in combination with sealant and gaskets to form air barrier system.
- 3. EXECUTION**
- 3.1 Preparation**
 - .1** Ensure that joint surfaces are structurally sound, free from contaminants which may adversely affect the adhesion of the sealing materials.
 - .2** Clean surfaces with a solvent or cleaner recommended by the manufacturer of the sealing materials.
 - .3** Before commencing with sealing, test materials for indication of staining or poor adhesion.
 - .4** Apply a primer to joint surfaces as recommended by sealant manufacturer.
- 3.2 Application**
 - .1** Commence sealing only after adjacent surfaces scheduled to receive an applied finish have been completed.
 - .2** Install joint backing materials at locations as detailed or where required by sealant manufacturer's directions. Compress material not less than 30%.
 - .3** Ensure that the correct sealant depth is maintained.
 - .4** Tool all sealant surfaces to produce a smooth surface.
 - .5** Remove excess sealant or droppings which would set up or become difficult to remove from finished surfaces. Do not use chemicals, scrapers or other tools which affect the finished surface. Replace finished surfaces damaged due to this work to the Consultant's approval at no additional cost to the Owner.

**THERMAL AND MOISTURE PROTECTION - SECTION 07920
SEALANTS, GASKETS AND BARRIER MEMBRANES**

3. EXECUTION

3.2 Application - Continued

- .6 Use sealing materials of gun grade or tool grade consistency to suit joint condition. Use gun with proper size nozzle.
- .7 Apply sealant to exterior joints from exterior of building.
- .8 Gasket and Glazing Tape:
 - .1 Install gaskets and tape in accordance with the manufacturers written instructions.
 - .2 Staple the gasket or tape at 1'-0" (300mm) o.c. to maintain it in place while abutting materials are installed.
 - .3 Ensure that gasket or tape is compressed by the installation of abutting materials.
- .9 Membrane:
 - .1 Install membranes where shown and in accordance with the manufacturer's written instructions.

3.3 Sealant Locations

- .1 Use Type 1 sealant and polyethylene joint filler and bond breaker for all joints as follows:
 - .1 To exterior joints between window and door frames and adjacent building components around perimeter of every window or door opening.
 - .2 Between dissimilar materials or elsewhere as required to make building weathertight, except where specified otherwise.
 - .3 To masonry control joints at locations indicated, as detailed. (Joint filler not required.)
 - .4 To control joints and expansion joints between top of masonry walls and underside of concrete slabs and beams, both sides of wall. (Joint filler not required.)
 - .5 To all thresholds on two continuous beads of sealant.

**THERMAL AND MOISTURE PROTECTION - SECTION 07920
SEALANTS, GASKETS AND BARRIER MEMBRANES**

3. EXECUTION

**3.3 Sealant
Locations**

- Continued

- .2 Use Type 2 sealant to pour breaks in exposed interior concrete slabs on grade and control joints in interior quarry tile floors, full depth of joint.
- .3 Use Type 3 sealant to interior joints between window and door frames and adjacent building components around perimeter of every window or door opening.
- .4 Use Type 4 sealant to caulk ceramic tile edges and perimeter of washroom fixtures where indicated.
- .5 Use Type 5 sealant to joints in fire rated walls, with fire resistive joint filler and bond breaker tape installed to one side of wall in strict accordance with manufacturer's directions.
- .6 Use Type 5 sealant to all openings in fire rated walls and slabs around piping or conduit penetrating walls and slabs, with fire resistive joint filler installed in accordance with manufacturer's directions.

**3.4 Adjust
& Clean**

- .1 Do not use chemicals, scrapers or other tools which would damage surfaces of caulked materials when excess compounds or droppings are removed.
- .2 Use materials recommended by sealant manufacturer.

END OF SECTION

DIVISION 7 THERMAL AND MOISTURE PROTECTION - SECTION 07940
FIRESTOPPING

1. GENERAL

1.1 Description

- .1 The Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Section, apply to the Work specified in this Section.
- .2 **Firestopping:** Material or combination of materials used to retain integrity of fire rated construction by maintaining an effective barrier against the spread of flame, smoke, water and hot gases through penetrations in/ joints between fire rated wall and floor assemblies.
- .3 The Work of this Section **as indicated in the Drawings or Specifications** includes the supply and installation of only tested firestop systems to be used in specific locations as follows:
 - .1 Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies) and vertical service shaft walls and partitions.
 - .2 Safing slot gaps between edge of floor slabs and curtain walls.
 - .3 Openings between structurally separate Sections of wall or floors.
 - .4 Gaps between the top of walls and ceilings or roof assemblies.
 - .5 Expansion joints in walls and floors.
 - .6 Openings and penetrations in fire rated partitions or walls containing fire doors.
 - .7 Openings around structural members which penetrate floors or walls.
- .2 Co-ordinate the Work of this Section with the Work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the Work of other Sections, including:
 - .1 Section 01630 - Substitutions
 - .2 Section 07920 - Sealants And Caulking
 - .3 Section 09250 - Gypsum Board
 - .4 Division 15 - Mechanical
 - .5 Division 16 - Electrical
 - .6 All other Sections and Drawings to be reviewed

1. GENERAL - Continued

1.2 References

- .1 Test Requirements: ULC-S115-M or CAN4-S115-M, 'Standard Method of Fire Tests of Through Penetration Fire Stops'.
- .2 Underwriters Laboratories of Canada (ULC) of Scarborough runs CAN4-S115-M under their designation of ULC-S115-M and publishes the results in their 'Fire Resistance Ratings Directory' that is updated annually.

Underwriters Laboratories (UL) of Northbrook, IL runs ASTM E-814 under their designation of UL 1479 and publishes the results in their 'Fire Resistance Directory' that is updated annually. UL tests that meet the requirements of ULC-S115-M are given a cUL listing and are published by UL in their 'Products Certified for Canada (cUL) Directory'.

Omega Point Laboratories runs ASTM E-814 and publishes the results annually in their 'Omega Point Laboratories Directory'.
- .3 Test Requirements: UL 2079, 'Tests for Resistance of Building Joint Systems' (July 1998.) or ASTM E 1966, 'Standard test method for Fire Resistive Joint Systems' (July 2000.) These test requirements provide more guidelines for testing moving joints than that given in CAN4-S115-M. UL tests that meet the requirements of ULC-S115-M are given a cUL listing and are published by UL in their 'Products Certified for Canada (cUL) Directory'.
- .4 Inspection Requirements: ASTM E 2174 - 01, 'Standard Practice for On Site Inspection of Installed Fire Stops'.
- .5 Test Requirements: ASTM E 2307, 'Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-story Test Apparatus'.
- .6 International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments.
- .7 CAN/ULC-S102-M, Standard Test Method for Surface Burning Characteristics of Building Materials.
- .8 All major building codes: NBC, OBC, BCBC and ABC.
- .9 NFPA 101 - Life Safety Code.
- .10 Canadian Electrical Code.

1. GENERAL - Continued

1.3 Quality Assurance

- .1 A manufacturer's direct representative (not distributor or agent) to be on Site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. This will be done per manufacturer's written recommendations published in their literature and Drawing details.
- .2 Firestop System installation must meet requirements of CAN4-S115-M, ULC S-115-M or UL 2079 tested assemblies that provide a fire rating as shown in Section 2.03 Clauses P, Q & R below.
- .3 Proposed firestop materials and methods shall conform to applicable governing codes having local jurisdiction.
- .4 Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.
- .5 For those firestop applications that exist for which no ULC or cUL tested system is available through a manufacturer, a manufacturer's engineering judgment derived from similar ULC or cUL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineer judgment Drawings must follow requirements set forth by the International Firestop Council (September 7, 1994, as may be amended from time to time).

1.4 Submittals

- .1 Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of ULC or cUL firestop systems to be used and manufacturer's installation instructions to comply with Section 01320 - Submittals and Section 01340 - Shop Drawings And Product Data.
- .2 Manufacturer's engineering judgment identification number and Drawing details when no ULC or cUL system is available for an application. Engineered judgment must include both project name and contractor's name who will install firestop system as described in the Drawing.
- .3 Submit material safety data sheets provided with product delivered to job Site.

THERMAL AND MOISTURE PROTECTION - SECTION 07940
FIRESTOPPING

- | | | |
|------|---|--|
| 1. | GENERAL | - Continued |
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 | | |
| 1.5 | Installer Qualifications | |
| | | <ul style="list-style-type: none">.1 Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having the necessary experience, staff and training to install manufacturer's products per specified requirements. A supplier's willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer. |
|
 | | |
| 1.6 | Delivery. Storage & Handling | |
| | | <ul style="list-style-type: none">.1 Deliver materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type and ULC or cUL label where applicable..2 Co-ordinate delivery of materials with scheduled installation date to allow minimum storage time at the job Site..3 Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements..4 Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable..5 Do not use damaged or expired materials. |
|
 | | |
| 1.7 | Project Conditions | |
| | | <ul style="list-style-type: none">.1 Do not use materials that contain flammable solvents..2 Scheduling:<ul style="list-style-type: none">.1 Schedule installation of Cast In Place firestop devices after completion of floor formwork, metal form deck, or composite deck but before placement of concrete..2 Schedule installation of other firestopping materials after completion of penetrating item installation but prior to covering or concealing of openings..3 Verify existing conditions and substrates before starting the Work. Correct unsatisfactory conditions before proceeding..4 Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet..5 During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces. |

- 1. **GENERAL** - Continued
- 1.6 **Extended Warranty**
 - .1 Submit extended warranty in accordance with Section 01740 - Warranties, covering defective materials and labour for a period of two (2) years from end of standard one (1) year period. Total warranty period: Three (3) years.
 - .2 The following shall be judged defective Work: leakage, hardening, cracking, crumbling, melting, shrinkage, running of sealants, loss of adhesion or staining of adjacent work or surfaces.
 - .3 Repair or replace any caulking materials judged defective, and Work of other Trades damaged due to faulty or defective Work of this Trade, at no cost to the Owner.
 - .4 Arrange with the Consultant for inspection of all fire penetrations and submit affidavit stating that all fire separations are integral, complete with lists of materials used and ULC designations.
- 2. **PRODUCTS**
- 2.1 **Firestopping (General)**
 - .1 Provide firestopping composed of components that are compatible with each other, the substrates forming openings and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.
 - .2 Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire resistance rated systems.
 - .3 Firestopping Materials are either 'cast in place' (integral with concrete placement) or 'post installed.' Provide cast in place firestop devices prior to concrete placement.
- 2.2 **Acceptable Manufacturers**
 - .1 Subject to compliance with through penetration firestop systems and joint systems listed in the U.L.C. Fire Resistance Directory - Volume III or UL Products Certified for Canada (cUL) Directory, provide products of the following manufacturers as identified below:
 - .1 Hilti (Canada) Corporation, Mississauga, Ontario, (800) 363-4458 or www.ca.hilti.com.
 - .2 Provide products from the above acceptable manufacturer.
No substitutions will be accepted.

2. PRODUCTS - Continued

2.3 Materials

- .1 Use only firestop products that have been ULC or cUL tested for specific fire rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements and fire rating involved for each separate instance.
- .2 Cast in place firestop devices for use with non-combustible and combustible plastic pipe (closed and open piping systems) penetrating concrete floors, the following products are acceptable:
 - .1 Hilti CP 680 Cast-In Place Firestop Device for combustible and non-combustible pipe:
 - .1 Add Aerator adaptor when used in conjunction with aerator ('solvent') system.
 - .2 Hilti CP 681 Tub Box Kit for use with tub installations.
 - .3 Hilti CP 682 Cast In Place Firestop Device for non-combustible pipe only.
- .3 Sealants or caulking materials for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:
 - .1 Hilti FS-ONE Intumescent Firestop Sealant
 - .2 Hilti CP 604 Self Leveling Firestop Sealant
 - .3 Hilti CP 620 Fire Foam
 - .4 Hilti CP 606 Flexible Firestop Sealant
 - .5 Hilti CP 601s Elastomeric Firestop Sealant
- .4 Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable:
 - .1 Hilti CP 601s Elastomeric Firestop Sealant
 - .2 Hilti CP 606 Flexible Firestop Sealant
 - .3 Hilti FS-ONE Intumescent Firestop Sealant
 - .4 Hilti CP 604 Self Leveling Firestop Sealant

2. PRODUCTS

2.3 Materials - Continued

.5 Sealants, caulking or spray materials for use with fire rated construction joints and other gaps, the following products are acceptable:

- .1** Hilti CP 672 Speed Spray
- .2** Hilti CP 601s Elastomeric Firestop Sealant
- .3** Hilti CP 606 Flexible Firestop Sealant
- .4** Hilti CP 604 Self Leveling Firestop Sealant

.6 Pre-formed mineral wool designed to fit flutes of metal profile deck; as a backer for spray material:

- .1** Hilti CP 777 Speed Plugs
- .2** Hilti CP 767 Speed Strips

.7 Intumescent sealants or caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:

- .1** Hilti FS-ONE Intumescent Firestop Sealant

.8 Foams, intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles, the following products are acceptable:

- .1** Hilti FS-ONE Intumescent Firestop Sealant
- .2** Hilti CP 618 Firestop Putty Stick
- .3** Hilti CP 620 Fire Foam
- .4** Hilti CP 601s Elastomeric Firestop Sealant
- .5** Hilti CP 606 Flexible Firestop Sealant

.9 Non-curing, re-penetrable intumescent sealants, caulking or putty materials for use with flexible cable or cable bundles, the following products are acceptable:

- .1** Hilti CP 618 Firestop Putty Stick
- .2** Hilti CP 658T Firestop Plug

2. PRODUCTS

2.3 Materials - Continued

- .10** Wall opening protective materials for use with cUL/ULC listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:

 - .1** Hilti CP 617 Firestop Putty Pad
- .11** Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems) tested to 50 Pa. differential, the following products are acceptable:

 - .1** Hilti CP 643N Firestop Collar
 - .2** Hilti CP 644 Firestop Collar
 - .3** Hilti CP 645/648 Wrap Strips
- .12** Materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

 - .1** Hilti FS 637 Firestop Mortar
 - .2** Hilti FS 657 Fire Block
 - .3** Hilti CP 620 Fire Foam
 - .4** Hilti CP 675--T Firestop Board
- .13** Non-curing, re-penetrable materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

 - .1** Hilti FS 657 Fire Block
 - .2** Hilti CP 675-T Firestop Board
- .14** Sealants or caulking materials used for openings between structurally separate Sections of wall and floors, the following products are acceptable:

 - .1** Hilti CP 672 Speed Spray
 - .2** Hilti CP 601s Elastomeric Firestop Sealant
 - .3** Hilti CP 606 Flexible Firestop Sealant
 - .4** Hilti CP 604 Self Leveling Firestop Sealant

2. PRODUCTS

2.3 Materials - Continued

- .15** For blank openings made in fire rated wall or floor assemblies, where future penetration of pipes, conduits, or cables is expected, the following products are acceptable:

- .1** Hilti FS 657 Fire Block (for walls and floors)
- .2** Hilti CP 658T Firestop Plug (for walls and floors)
- .3** Hilti CP 680 Cast-In Place Firestop Device (for floors only)

- .16** For penetrations through a Fire Separation wall provide a firestop system with an 'F' Rating as determined by ULC or cUL as indicated below:

Fire Resistance Rating of Separation	Required ULC or cUL 'F' Rating of Firestopping Assembly
30 minutes	20 minutes
45 minutes	45 minutes
1 hour	45 minutes
1.5 hours	1 hour
2 hours	1.5 hours
3 hours	2 hours
4 hours	3 hours

For combustible pipe penetrations through a Fire Separation provide a firestop system with a 'F' Rating as determined by ULC or cUL which is equal to the fire resistance rating of the construction being penetrated.

- .17** For penetrations through a Fire Wall or horizontal Fire Separation provide a firestop system with a 'FT' Rating as determined by ULC or cUL which is equal to the fire resistance rating of the construction being penetrated.
- .18** For joints provide a firestop system with an Assembly Rating as determined by CAN4-S115-M, ULC-S115-M or UL 2079 which is equal to the fire resistance rating of the construction being penetrated.

3. EXECUTION

3.1 Preparation

- .1 Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely completion:
 - .1 Verify penetrations are properly sized and in suitable condition for application of materials.
 - .2 Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents and any other substances that may affect proper adhesion.
 - .3 Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
 - .4 Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
 - .5 Do not proceed until unsatisfactory conditions have been corrected.

3.2 Co-Ordination

- .1 Co-ordinate location and proper selection of cast in place Firestop Devices with Trade responsible for the Work. Ensure device is installed before placement of concrete.
- .2 Responsible Trade is to provide adequate spacing of field run pipes to allow for installation of cast in place firestop devices without interference.

3.3 Installation

- .1 Regulatory Requirements: Install firestop materials in accordance with ULC Fire Resistance Directory or UL Products Certified for Canada (cUL) Directory or Omega Point Laboratories Directory.
- .2 Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through penetration and construction joint materials:
 - .1 Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
 - .2 Consult with mechanical engineer, project manager and damper manufacturer prior to installation of ULC or cUL firestop systems that might hamper the performance of fire dampers as it pertains to ductwork.
 - .3 Protect materials from damage on surfaces subjected to traffic.

3. EXECUTION

**3.4 Field
Quality
Control**

- .1 Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.
- .2 Keep areas of the Work accessible until inspection by applicable code authorities.
- .3 Inspection of through penetration firestopping shall be performed in accordance with ASTM E 2174, 'Standard Practice for On Site Inspection of Installed Fire Stops' or other recognized standard.
- .4 Perform under this Section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other Trades.
- .5 Install a warning card that is clearly visible adjacent to all large and medium openings that may be re-penetrated. This card should contain the following information:
 - .1 Warning that the opening has being fire stop protected
 - .2 Indicate the fire stop system used (ULC or cUL)
 - .3 F rating or FT rating
 - .4 Fire stop product(s) used
 - .5 Person to contact and phone number in case of modification or new penetration of fire stop system

**3.5 Adjusting
& Clean**

- .1 Remove equipment, materials and debris, leaving area in undamaged, clean condition.
- .2 Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as the Work progresses.

END OF SECTION

DIVISION 8 DOORS AND WINDOWS - SECTION 08100
HOLLOW METAL DOORS AND SCREENS

1. GENERAL

1.1 Description

.1 The Work of this Section **as indicated in the Drawings or Specifications** includes:

- .1 Provision of Hollow Metal Doors, Frames and Screens
- .2 Installation of Finish Hardware

.2 Related Work Specified Elsewhere:

- .1 Section 01630 - Substitutions
- .2 Section 09900 - Patching And Painting
- .3 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

.1 Canadian Steel Door and Frame Manufacturers' Association, "Manufacturing Standard for Doors and Frames" shall be minimum standard for the Work of this Section.

.2 References:

- .1 ASTM A366/A366M-85 'Standard Specification for Steel Sheet, Carbon, Cold Rolled Commercial Quality'.
- .2 ASTM A527/A527M-85 'Standard Specification for Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process Lock Forming Quality'.
- .3 CGSB 1-GP-132M 'Primer, Zinc Chromate Low Moisture Sensitivity'.
- .4 CGSB 31-GP-105M 'Coating, Conversion, Zinc Phosphate, for Paint Base'.
- .5 CSA A101-M1983 'Thermal Insulation, Mineral Fibre'.
- .6 CSA W59 'Welded Steel Construction (Metal Arc Welding)'.
- .7 CSA W47-1-1973 'Certification of Companies for Fusion Welding of Steel Structures'.

DOORS AND WINDOWS - SECTION 08100
HOLLOW METAL DOORS AND SCREENS

- | | | |
|------------|--|---|
| 1. | GENERAL | - Continued |
| 1.3 | Delivery
& Storage | |
| | | .1 Prevent rust and other damage to materials during delivery and storage in dry conditions, under cover. |
| 1.4 | Schedules | |
| | | .1 Check the Door Schedule for door numbers, types, sizes, thickness, frame types and all other relevant information. |
| | | .2 Refer to the Hardware Schedule for types of hardware to be installed. |
| | | .3 Door sizes shown on the Door Schedule are nominal only. Make allowance for clearance. |
| 1.5 | Shop
Drawings | |
| | | .1 Submit the shop drawings showing full details of all specified items noting gauges, anchors, jointing and cores and preparation. |
| 1.6 | Fire Rated
Doors
& Frames | |
| | | .1 Supply fire door and frame assemblies to meet fire resistance time rating called for and carry appropriate ULC label. |
| | | .2 Supply fire door and frame assemblies to meet temperature rise requirements and carry ULC Label. |
| | | .3 Review Hardware Schedule and advise the Consultant if scheduled hardware fails to comply with ULC requirements. |
| 1.7 | Warranty | |
| | | .1 Submit a written five (5) year warranty covering labour and materials of hollow metal doors and frames. |

2. PRODUCTS

2.1 Materials

- .1 **Hollow Metal Doors:** 1 1/2 hour rated door by All Steel (**No Substitutions**); 16 gauge in 14 gauge frame, full lite as indicated in the Drawings and Schedules.

2.2 Fabrication

- .1 General:
 - .1 Profiles shall be as indicated on the Architectural Drawings.
 - .2 Construct in accordance with details and the approved shop Drawings, fully welded construction with no visible seams or joints on faces or vertical edges. Interlock door faces at door edge and fill and tack weld seams.

3. EXECUTION

**3.1 Fitting
& Hanging
Doors**

- .1 Set doors and frames into framing and secure in accordance with the manufacturer's written instruction to ensure no warping, racking, twisting or mis alignment of door.

**3.2 Finish
Hardware**

- .1 Install hardware and accurately set and adjust in accordance with manufacturer's instructions. Co-ordinate with Section 08700 - Finish Hardware.
- .2 Obtain necessary templates for drilling, tapping and fastening hardware.
- .3 Adjust hardware for trouble free operation.

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** specifies aluminum thermally broken, sliding aluminum framed windows, hardware and accessories.
 - .1 This Section does not include the framing of door openings.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 07200 - Insulation
 - .3 Section 07620 - Flashing And Sheet Metal
 - .4 Section 07900 - Sealants, Gaskets & Barrier Membranes
 - .5 Section 08800 - Miscellaneous Glass, Glazing And Mirrors
 - .6 All other Sections and Drawings to be reviewed

1.2 Reference Standards

- .1 Aluminum Association (AA)
 - .1 DAF 45 2003, Designation System For Aluminum Finishes
- .2 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA-2603-2013, Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels
 - .2 AAMA-2604-2013, Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
 - .3 AAMA-2605-2013, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
 - .4 AAMA CW-10-2012, Care and Handling of Architectural Aluminum From Shop to Site
- .3 ASTM International (ASTM)
 - .1 ASTM B209-2010, Specification for Aluminum and Aluminum Alloy Sheet and Plate
 - .2 ASTM B221-2013, Specification for Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
 - .3 ASTM D2240 - 2010, Standard Test Method for Rubber Property - Durometer Hardness

1. GENERAL

1.2 Reference Standards

- Continued

- .4** Canadian General Standards Board (CGSB)
 - .1** CAN/CGSB-12.8-97, Insulating Glass Units
 - .2** CAN/CGSB-19.13-M87, Sealing Compound, One Component, Elastomeric, Chemical Curing
- .5** CSA International (CSA)
 - .1** CSA A440 00
 - .2** CAN/CSA-S157 2005, Strength Design in Aluminum
 - .3** CAN/CSA W59.2 M1991(R2003), Welded Aluminum Construction
 - .4** CAN/CSA Z91 - M90(R2000), Safety Code for Window Cleaning Operations
- .6** Environmental Choice Program (ECP)
 - .1** CCD 45 1995, Sealants and Caulking Compounds
- .7** Underwriter's Laboratories of Canada (ULC)
 - .1** CAN/ULC-S710.1 2005, Standard for Thermal Insulation - Bead Applied One Component Polyurethane Air Sealant Foam, Part 1: Materials Standard for Thermal Insulation - Bead - Applied One Component Polyurethane Air Sealant Foam, Part 1: Materials

1.3 Administrative Requirements

- .1** Co-ordination: Co-ordinate the Work of this Section with the Work of other trades for proper time and sequence to avoid construction delays.

1.4 Action & Informational Submittals

- .1** Make submittals in accordance with Contract Conditions and Section 01300 - Submittals.
- .2** Product Data: Submit product data including manufacturer's literature for aluminum, panels, stiles, rails, components and accessories, indicating compliance with specified requirements and material characteristics in accordance with Section 01340 - Shop Drawings And Product Data:
 - .1** Submit list on window manufacturer's letterhead of materials, components and accessories to be incorporated into the Work
 - .2** Include product names, types and series numbers
 - .3** Include contact information for manufacturer and their representative for this Project

1. GENERAL

**1.4 Action
& Informational
Submittals**

- Continued

**.3 Shop Drawings: Submit in accordance with Section 01340
- Shop Drawings And Product Data:**

.1 Indicate materials and details in full size scale for head, track, jamb and sill, profiles of components, interior and exterior trim, junction between combination units, elevations of unit, anchorage details, description of related components and exposed finishes, fasteners and caulking

.2 Indicate location of hardware

.3 Indicate location of manufacturer's nameplates

.4 Samples:

.1 Submit duplicate 1'-0" x 1'-0" (300mm x 300mm) sample sections showing prefinished aluminum surface, finish, colour and texture and including frame corner details and hardware in accordance with Section 01345 - Samples:

.2 Submit duplicate 1'-0" x 1'-0" (300mm x 300mm) sample sections of insulating glass unit showing glazing materials and edge and corner details in accordance with Section 01345 - Samples

.5 Test Reports:

.1 Submit test reports showing compliance with specified performance characteristics and physical properties including air and water infiltration

.6 Field Reports: Submit manufacturer's field reports within three (3) days of manufacturer representatives site visit and inspection.

.7 Installer Qualifications:

.1 Submit letter verifying installer's experience with Work similar to the Work of this Section

**1.5 Closeout
Submittals**

.1 Operation and Maintenance Data: Supply maintenance data for curtain wall for incorporation into manual specified in Section 01700 - Project Closeout.

- 1. **GENERAL** - Continued
- 1.6 **Quality Assurance**
 - .1 Mock-up: Co-ordinate mock-up of aluminum windows with Section 08440 - Glazed Aluminum Curtain Wall Systems and sample exterior wall assembly.
- 1.7 **Delivery Storage & Handling**
 - .1 Delivery and Acceptance Requirements:
 - .1 Deliver material in accordance with Section 01600 - Material And Equipment
 - .2 Deliver aluminum windows in manufacturer's original packaging with identification labels intact and in sizes to suit project
 - .3 Brace frames to maintain squareness and rigidity during shipment
 - .2 Material Handling: To AAMA CW-10.
 - .3 Storage and Handling Requirements: Store materials off ground and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
 - .1 Material storage: To AAMA CW-10
- 1.8 **Warranty**
 - .1 Project Warranty: Refer to Contract Conditions for project warranty provisions.
 - .2 Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
 - .3 Warranty Period: Two (2) years commencing on Date of Substantial Performance of the Work.
 - .1 Insulating glass units: ten (10) years, on Date of Substantial Performance of the Work

2. PRODUCTS

2.1 Manufacturer

- .1 Manufacturer: Alumicor Limited, 290 Humberline Drive, Toronto, Ontario M9W 5S2, Phone: (877) ALUMICOR, e.mail: info@Alumicor.com, www.Alumicor.com.

2.2 Description

- .1 Thermally broken, aluminum framed, mechanically double operating, side sliding windows with concealed tamperproof fasteners and insect screen EasySlide 200 series.

2.3 Design Criteria

- .1 Design aluminum components to CAN/CSA S157.
- .2 Window Classification: To CAN/CSA A440:
 - .1 Air tightness: A3
 - .2 Water tightness: B7
 - .3 Wind load resistance: C5
 - .4 Condensation resistance: Temperature Index, I 58 minimum

2.4 Window Materials

- .1 Main Frame: Extruded aluminum: To ASTM B221, 6063 alloy with T6 temper.
 - .1 Thermal Break: PVC porthole extrusion
- .2 Glass for Awning Windows:
 - .1 Interior Sash Glass: Insulated glass units 1/4" (6mm) clear float glass with hard coat pyrolitic type low E coating on exterior surface, Argon filled 1/2" air space
 - .2 Exterior Sash Glass: 1/4" (6mm) clear float glass
- .3 Insulating Glass Units for Fixed Windows: To CAN/CGSB-12.8, double glazed, hermetically sealed, argon filled insulating glass units with low conductance black warm edge spacer:
 - .1 Outer lite: 1/4" (6mm) clear float glass with Solarban 60 low E coating on surface two
 - .2 Inner lite: 1/4" (6mm) clear float glass
 - .3 Total system thermal resistance: RSI 33 minimum

2. PRODUCTS

2.4 Window Materials

- Continued

- .4 Interior and Exterior Sills: Extruded aluminum to ASTM B209, of type and size as detailed and to suit project conditions; 1/8" (3mm) minimum thick, complete with joint covers, jamb drip deflectors, chairs, anchors and anchoring devices. Colour to match exterior frame colour.
- .5 Acceptable Material: Awning Lites - Univent 1350 by Alumicor Ltd.

2.5 Screens

- .1 Screens: To CAN/CGSB 79.1.
 - .1 Insect screening mesh: Count 18 x 16 aluminum
 - .2 Screen frames: Extruded aluminum colour to match exterior window frame
 - .3 Screen mounting: Interior

2.6 Hardware

- .1 Hardware: Stainless steel, aluminum or white bronze sash locks and aluminum handles to provide security and permit easy operation of units.
- .2 Locks: Provide operating sash with spring loading locking device, to provide automatic locking in closed position.
- .3 Opening Restraint: Provide compatible restraint on window frame track to prevent opening of window beyond 4" (100mm).

2.7 Window Fabrication

- .1 Fabricate windows to CAN/CSA A440.
 - .1 Fabricate aluminum assemblies of extruded sections to sizes and profiles indicated
 - .2 Construct units square, plumb and free from distortion, waves, twists, buckles or other defects detrimental to performance or appearance.
 - .1 Brace frames to maintain squareness and rigidity during installation

2. PRODUCTS

**2.7 Window
Fabrication**

- Continued

- .3 Fabricate units square and true with tolerance of plus or minus 0.06" (1.5mm) maximum for units with diagonal measurement of 6'-0" (1800mm) maximum and plus or minus 1/8" (3mm) maximum for units with diagonal measurement greater than 6'-0" (1800mm).
- .4 Accurately fit and secure joints and corners.
 - .1 Ensure joints are flush, hairline and weatherproof
- .5 Face dimensions detailed are maximum permissible sizes.
- .6 Use only concealed tamperproof fasteners.
 - .1 Where fasteners cannot be concealed, countersunk screws finished to match adjacent material may be used upon receipt of written approval from the Consultant
- .7 Visible manufacturer's labels are not permitted.

2.8 Finishes

- .1 Exterior exposed aluminum surfaces: To AAMA 2605, 2 coat, thermal setting enamel consisting of primer, colour coat and clear coat with 70% minimum fluoropolymer resin and polvinylidene fluoride (PVDF), 0.03 mm (1.2 mil) minimum total thickness colour to be selected from the Duranar Sunstorm range.
 - .1 Acceptable material; PPG Industries Inc., Duranar Sunstorm
- .2 Interior exposed aluminum surfaces: To AAMA 2604, 2 coat, thermal setting enamel consisting of primer and topcoat with 70% minimum fluoropolymer resin and polvinylidene fluoride (PVDF), 0.025mm (1 mil) minimum total thickness colour to be selected from the Duranar Solid range.
 - .1 Acceptable material; PPG Industries Inc., Duranar Solid

2. PRODUCTS - Continued

**2.9 Air
Barrier
& Vapour
Retarder**

- .1 Equip window frames with site installed air barrier material for sealing to building air barrier as follows:
 - .1 Material: identical to, or compatible with, building air barrier and vapour retarder materials to provide required air tightness and vapour diffusion control throughout exterior envelope assembly
 - .2 Material width: adequate to provide required air tightness and vapour diffusion control to building air barrier from interior

2.10 Accessories

- .1 Gasketing: To CCD-45 EPDM.
- .2 Setting Blocks: To CCD-45 and ASTM D2240] silicone, 80 - 90 Shore A Durometer hardness.
- .3 Spacers: To CCD-45 and ASTM D2240, silicone 50 - 60 Shore A Durometer hardness.
- .4 Sealant: To CAN/CGSB-19.13, Class 40, one-component, cold applied, non-sagging silicone.
 - .1 Acceptable material: Dow Corning 795
- .5 Sealant Bond Breaker: Open cell foam backer rod sized to suit project requirements.
- .6 Flashings: 1/8" (Fasteners: Tamperproof, cadmium plated stainless steel 300 or 400 series to meet window requirements and as recommended by manufacturer.) thick aluminum flashing to profiles indicated and in accordance with Section 07620 - Flashing And Sheet Metal.
- .7 Liquid Foam Insulation: Single component, moisture cure, low expansion rate spray in place polyurethane liquid foam insulation to ULC-S710.1 and in accordance with manufacturer's written recommendations.

2. PRODUCTS

2.10 Accessories - Continued

- .8** Fasteners: Tamperproof, cadmium plated stainless steel 300 or 400 series to meet window requirements and as recommended by manufacturer.
- .9** Opening Limiter Hardware: Adjustable sliding window lock stop to fit to frame track; fixed in place with hexangular key or other similar locking device.

2.11 Product Substitutions

- .1** Substitutions: Only in accordance with Section 01630 - Substitutions.
- .2** Ensure all components, including operating hardware come from one manufacturer.

3. EXECUTION

3.1 Installers

- .1** Use only Alumicor authorized installers with two (2) years minimum experience in Work similar to the Work of this Section.

3.2 Examination

- .1** Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for window installation in accordance with manufacturer's written instructions:
 - .1** Visually inspect substrate in presence of the Consultant
 - .2** Inform the Consultant of unacceptable conditions immediately upon discovery
 - .3** Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from the Consultant

3.3 Window Installation

- .1** Install windows in accordance with manufacturer's written instructions and to CAN/CSA A440.
- .2** Arrange components to prevent abrupt variation in colour.

3. EXECUTION

3.3 Window Installation

- Continued

- .3 Co-ordinate attachment and seal of perimeter vapour retarder in accordance with Section 07900 - Sealants, Gaskets And Barrier Membranes.
- .4 Co-ordinate attachment and seal of perimeter air barrier in accordance with Section 07900 - Sealants, Gaskets And Barrier Membranes.
- .5 Install insect screens in accordance with manufacturer's written recommendations.

3.4 Sill Installation

- .1 Install aluminum sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces.
- .2 Cut sills to fit longer than window opening.
- .3 Secure sills in place with anchoring devices located at ends and evenly spaced 2'-0" (600mm) on centre in between.
- .4 Fasten expansion joint cover plates and drip deflectors with tamperproof, self tapping cadmium plated stainless steel screws.
- .5 Maintain 1.4" to 3/8" 6mm to 9mm space between butt ends of continuous sills. For sills over 4'0" (1200mm) in length, maintain 1/8" to 1/4" (3mm to 6mm) space at each end.

3.5 Caulking

- .1 Apply sealant in accordance with Section 07900 - Sealants, Gaskets And Barrier Membranes. Conceal sealant within window units except where exposed use is approved in writing by the Consultant.
- .2 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in bedding compound:
 - .1 Caulk between sill upstand and window frame. Caulk butt joints in continuous sills

3. EXECUTION - Continued

**3.6 Field
Quality
Control**

- .1 Field Inspection: Co-ordinate field inspection in accordance with Section 01400 - Testing And Inspection.
- .2 Site Installation Tolerances: Install windows square and true with tolerance of plus or minus 1.5 mm (0.06 inches) maximum for units with diagonal measurement of 1800 mm (6 feet) maximum and plus or minus 3 mm (0.125 inches) maximum for units with diagonal measurement greater than 1800 mm (6 feet).
- .3 Manufacturer's Services:
 - .1 Coordinate manufacturer's services with Section 01400 - Testing And Inspection
 - .2 Submit to the Consultant a written agreement from the manufacturer to perform the manufacturer's services
 - .3 Schedule manufacturer's review of the Work procedures at stages listed:
 - .1 Product Application: [1] off site review[s]
 - .2 Fabrication and Handling: [1] review[s] at authorized installers fabrication facilities
 - .3 Installation: [3] site reviews at commencement of the Work, 50% completion of the Work and Upon completion of the Work
 - .4 Submit manufacturer's written reports to Consultant describing:
 - .1 The scope of the Work requested
 - .2 Date, time and location
 - .3 Procedures performed
 - .4 Observed or detected non-compliances or inconsistencies with manufacturers' recommended instructions
 - .5 Limitations or disclaimers regarding the procedures performed
 - .6 Obtain reports within seven (7) days of review and submit immediately to the Consultant

3. EXECUTION - Continued

3.7 Cleaning

- .1 Progress Cleaning: Perform cleanup as the Work progresses in accordance with Section 01710 - Cleaning.
 - .1 Remove sealant and caulking drippings as the Work progresses
 - .2 Leave the Work area clean at the end of each day
- .2 Final cleaning: Upon completion, remove surplus materials, rubbish, tools and equipment in accordance with Section 01710 - Cleaning.

3.8 Adjustment

- .1 Lubricate moving parts to operate smoothly and fit accurately.

3.9 Protection

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by aluminum terrace door and frame installation.

END OF SECTION

1. GENERAL

1.1 Description

.1 The Work of this Section **as indicated in the Drawings or Specifications** includes provision of all Wood Doors without being limited to:

- .1 Supply of all plastic laminate faced solid core wood doors
- .2 Supply of Fire Rated doors

.2 Related Work Specified Elsewhere:

- .1 Section 01630 - Substitutions
- .2 Section 06200 - Finish Carpentry And Millwork
- .3 Section 07900 - Sealants Gaskets And Barrier Membranes
- .4 Section 08700 - Finish Hardware
- .5 Section 08800 - Miscellaneous Glass, Glazing And Mirrors
- .6 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

.1 Qualifications

- .1 Conform to CSA 0132.2-M77 solid core flush doors, using only laminated solid wood cores, except as specified otherwise herein.
- .2 CAN3-0188-1-M78 'High Pressure Decorative Laminates'.
- .3 Use workers skilled in this Section of the Work.
- .4 Perform the Work of this Section to best standard practice and in accordance with the laws, by-laws and regulations which govern. Conform to the requirements of the authorities having jurisdiction.
- .5 ASTM E283, E300, E547, E774 for Solid Wood Doors.

1.3 Shop Drawings

- .1 Submit Shop Drawings in accordance with Section 01340 - Shop Drawings And Product Data showing full details of construction, materials and preparation for hardware including electrical hardware.

- | | | |
|-----|---|---|
| 1. | GENERAL | - Continued |
| 1.4 | Samples | |
| | | .1 Submit sample section of doors showing construction of rails and stiles, method of securing panels and glazing installation in accordance with Section 01345 - Samples. |
| 1.5 | Product Delivery, Storage & Handling | |
| | | .1 Wrap doors individually in protective wrapping for shipment and site storage and handling. Ship doors in pallet wrapped loads if quantity is sufficient. |
| 1.6 | Warranty | |
| | | .1 The Warranty contained in General Requirements Section 01740 - Warranties is, with respect to this Section of the Work, extended from one (1) year to three (3) years. Without restricting generality of the warranty, defects shall include bubbling, delamination of faces, cores or edges, warp or twist exceeding 1/4" (6mm), telegraphing of core through to faces. |
| | | .2 Replace defective doors including installation of hardware, finishing hanging and fitting. |
| | | .3 Commence the warranty date as of Substantial Performance of the Work. |
| 2. | PRODUCTS | |
| 2.1 | Materials | |
| | | .1 Solid Core Wood Doors (Non-Fire Rated): Shall be 5-LVL with edge fender stile and HPDL laminated to HDF-1 3/4" thickness by Lambton Doors. |
| | | All cutouts for glazing to be framed with Lambton trim kit LB6 (maple). |
| | | .2 Solid Core Wood Doors (Fire Rated): Shall be 5-STC 35-90 EME wood veneer face (maple) with glazed lite opening limited to 1296m ² , clear coat finish. |
| | | Lite stops shall be LB6-20N by Lambton Doors. |

3. EXECUTION**3.1 Fabrication**

- .1 Fabricate wood doors in accordance with specified standards. The use of tubular particle board core is not acceptable.
- .2 Provide doors of size to suit frame openings ensuring 1/16" (1.6mm) clearance at jambs and head and maximum 3/8" (9mm) clearance at floor unless indicated otherwise.
- .3 For ULC rated doors maximum clearance at bottom shall be 1/4" (6mm).
- .4 Strike edges of single leaf to be bevelled 1/16" (1.6mm) maximum unless otherwise indicated.
- .5 Provide cutouts on glazed doors as detailed.
- .6 Provide reinforcing on fire rated mineral core for attachment and hardware as required.
- .7 All plastic laminate doors shall have matching plastic laminate on vertical edges.

3.2 Clean-Up

- .1 Promptly as the Work proceeds and on completion, remove all rubbish and debris from the building and site resulting from the foregoing Work of this Section.

DIVISION 8 DOORS AND WINDOWS - SECTION 08400
ALUMINUM DOORS AND SCREENS

1. GENERAL

1.1 Description

.1 The Work of this Section **as indicated in the Drawings or Specifications** specifies aluminum swing doors, thermally broken aluminum swing doors and accessories.

.1 This Section does not include the framing of door openings.

.2 Related Work Specified Elsewhere:

.1 Section 01630 - Substitutions

.2 Section 08440 - Glazed Aluminum Curtain Wall Systems

.3 Section 08800 - Miscellaneous Glass, Glazing And Mirrors

.4 All other Sections and Drawings to be reviewed

1.2 Reference Standards

.1 Aluminum Association (AA)

.1 DAF 45 2003, Designation System For Aluminum Finishes

.2 American Architectural Manufacturers Association (AAMA)

.1 AAMA-2603-2013, Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels

.2 AAMA-2604-2013, Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

.3 AAMA-2605-2013, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels

.4 AAMA CW-10-2012, Care and Handling of Architectural Aluminum From Shop to Site

.5 AAMA 1503-2009, Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections

.6 AAMA TIR-A8-04, Structural Performance of Composite Thermal Barrier Framings Systems

.7 AAMA 1304, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems

1. GENERAL

1.2 Reference Standards

- Continued

.3 ASTM International (ASTM)

- .1** ASTM B209-2010, Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- .2** ASTM B221-2013, Specification for Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
- .3** ASTM C612 - 2014, Standard Specification for Mineral Fiber Block and Board Thermal Insulation
- .4** ASTM E283 2012, Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen
- .5** ASTM D2240 - 2010, Standard Test Method for Rubber Property - Durometer Hardness

.4 Canadian General Standards Board (CGSB)

- .1** CAN/CGSB-12.8-97, Insulating Glass Units
- .2** CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings
- .3** CAN/CGSB-19.13-M87, Sealing Compound, One Component, Elastomeric, Chemical Curing

.5 CSA International (CSA)

- .1** CAN/CSA-S157 2005, Strength Design in Aluminum
- .2** CAN/CSA W59.2 M1991(R2003), Welded Aluminum Construction
- .3** CSA A440 00

.6 Environmental Choice Program (ECP)

- .1** CCD 45 1995, Sealants and Caulking Compounds

1.3 Administrative Requirements

- .1** Co-ordination: Co-ordinate the Work of this Section with the Work of other trades for proper time and sequence to avoid construction delays.
- .2** Pre-installation Meeting: Convene pre-installation meeting after Award of Contract and one (1) week prior to commencing the Work of this Section to verify project requirements, substrate conditions and coordination with other building sub-trades and to review manufacturers written installation instructions:

1. GENERAL

1.3 Administrative Requirements

- Continued

- .1 Comply with Section 01200 - Meetings And Progress Reports and co-ordinate with other similar pre installation meetings
- .2 Notify attendees two weeks prior to meeting and ensure meeting attendees include as minimum:
 - .1 Owner
 - .2 Consultant
 - .3 Glazing Sub-Contractor
 - .4 Manufacturer's Technical Representative
- .3 Ensure meeting agenda includes review of methods and procedures related to aluminum door installation including co-ordination with related Work
- .4 Record meeting proceedings including corrective measures and other actions required to ensure successful completion of the Work and distribute to each attendee within one (1) week of meeting

1.4 Action & Informational Submittals

- .1 Make submittals in accordance with Contract Conditions and Section 01300 - Submittals.
- .2 Product Data: Submit product data including manufacturer's literature for aluminum, panels, stiles, rails , components and accessories, indicating compliance with specified requirements and material characteristics in accordance with Section 01340 - Shop Drawings And Product Data.
 - .1 Submit list on aluminum door manufacturer's letterhead of materials, components and accessories to be incorporated into the Work
 - .2 Include product names, types and series numbers
 - .3 Include contact information for manufacturer and their representative for this Project

1. GENERAL

**1.4 Action
& Informational
Submittals**

- Continued

- .3** Shop Drawings: Submit drawings stamped and signed by Professional Engineer registered or licensed in Ontario in accordance with Section 01340 - Shop Drawings And Product Data. Include on Shop Drawings:
 - .1** Indicate materials and profiles and provide full size, scaled details of components for each type of door. Indicate:
 - .1** Core thicknesses of components
 - .2** Type and location of exposed finishes
 - .3** Size of door opening and tolerances
 - .4** Arrangement of hardware and required clearances
 - .2** Include catalogue details for each type of door illustrating profiles, dimensions and methods of assembly.
- .4** Samples:
 - .1** Submit duplicate 1'-0" x 1'-0" (300mm x 300mm) sample sections showing prefinished aluminum surface, finish, colour and texture and including section of infill panel in accordance with Section 01345 - Samples:
 - .1** Include corner sample of each type of door
 - .2** Submit duplicate 1'-0" x 1'-0" (300mm x 300mm) sample sections of insulating glass unit showing glazing materials and edge and corner details in accordance with Section 01345 - Samples
- .5** Test Reports:
 - .1** Submit test reports showing compliance with specified performance characteristics and physical properties including air infiltration and water infiltration in accordance with Section 01400 - Testing And Inspection
- .6** Field Reports: Submit manufacturer's field reports within 3 days of manufacturer representatives site visit and inspection.
- .7** Installer Qualifications:
 - .1** Submit letter verifying installer's experience with Work similar to the Work of this Section

DOORS AND WINDOWS - SECTION 08400
ALUMINUM DOORS AND SCREENS

- 1. **GENERAL** - Continued
- 1.5 **Closeout Submittals**
 - .1 Operation and Maintenance Data: Supply maintenance data for curtain wall for incorporation into manual specified in Section 01700 - Project Closeout.
- 1.6 **Delivery Storage & Handling**
 - .1 Delivery and Acceptance Requirements:
 - .1 Deliver material in accordance with Section 01600 - Material And Equipment
 - .2 Deliver aluminum door materials and components in manufacturers original packaging with identification labels intact and in sizes to suit project
 - .2 Material Handling: To AAMA CW-10.
 - .3 Storage and Handling Requirements: Store materials off ground and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
 - .1 Material storage: To AAMA CW-10
- 1.7 **Warranty**
 - .1 Project Warranty: Refer to Contract Conditions for project warranty provisions.
 - .2 Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
 - .3 Warranty Period: Two (2) years commencing on Date of Substantial Performance of the Work.
 - .1 Insulating glass units: ten (10) years, on Date of Substantial Performance of the Work

2. PRODUCTS

2.1 Manufacturer

- .1 Exterior/Interior Door and Screen:** Alumicor Limited, 290 Humberline Drive, Toronto, Ontario, Phone: (877) ALUMICOR, e-mail: info@Alumicor.com, www.Alumicor.com.
- .2 Interior Screen:** Flush Glaze TL 1800 by Alumicor non-thermally broken aluminum framing.

2.2 Description

- .1 Exterior Door:** ThermaPorte 7700 2 1/4" aluminum framed, thermally broken swing door with glass insert suitable for inclusion in curtain wall or storefront system; 4" stile and midrail.
- .2 Exterior Storefront:** FlushGlaze BF 3400 thermally broken 2" storefront system.
- .3 Interior Screen:** Elite Solutions Glass Wall system in 2" (50mm) aluminum framing, 4 7/8" (124mm) wrap, factory painted finish; colour to later selection by Consultant.
- .4 Interior Door:** Canadian 1 3/4" (44mm) aluminum framed door with glass insert; 4" stile and midrail.

2.3 Design Criteria

Aluminum Doors:

- .1** Design aluminum components to CAN/CSA S157.
- .2** Vision glass areas: Insulating Glass Unit centre of glass U 3.86.
- .3** Air infiltration: 2.92 L/s/m² maximum of test area to ASTM E283 at differential pressure across assembly of 75 Pa (1.57 psf).
- .4** Temperature Index: I 68 for -15°C to -30°C, 77 for below -30°C to CSAA440.
- .5** Condensation Resistance Factor (CRF): CRF 63.65 to AAMA 1503.
- .6** Forced Entry: To AAMA 1304.

Storefront Systems:

- .1** Design aluminum framed storefront to AAMA CW-DG-1.
- .2** Design aluminum components to CAN/CSA S157.
- .3** Design and size aluminum-framed storefront to withstand dead and live loads caused by pressure and suction of wind, acting normal to plane of wall using design pressure of 0.95 kPa (20 psf) to ASTM E330:

2. PRODUCTS

**2.3 Design
Criteria**

- Continued

- .1 Design aluminum-framed storefront system for expansion and contraction caused by cycling temperature range of 171 degrees F (95 degrees C) over 12 hour period without causing detrimental effect to system components
- .2 Thermal expansion: Ensure aluminum framed storefront system can withstand temperature differential of 153 degrees F (85 degrees C) and is able to accommodate interior and exterior system expansion and contraction without damage to components or deterioration of seals
- .3 Design vertical expansion joints with baffled overlaps and compressed resilient air seal laid between mullion ends
- .4 Ensure system is designed to accommodate:
 - .1 Movement within aluminum framed storefront assembly
 - .2 Movement between system and perimeter framing components
 - .3 Dynamic loading and release of loads
 - .4 Deflection of structural support framing
 - .5 Shortening of building concrete structural columns
 - .6 Creep of concrete structural members
 - .7 Vision glass areas: Insulating Glass Unit RSI 3.86
- .5 Limit mullion deflection to flexure limit of glass 3/4" (19mm) maximum with full recovery of glazing materials
- .6 Sound attenuation through wall system (exterior to interior): STC 33 to ASTM E413
- .7 Glass dimensions: Size glass units to CAN/CGSB-12.20
- .8 Flatness criteria: 1/4" (6mm) maximum in 20'-0" (6000mm) for each panel
- .9 Air infiltration: 0.3 L/s/m² (0.63 cfm) maximum of wall area to ASTM E283 at differential pressure across assembly of 300 Pa (0.044 psi)

2. PRODUCTS

**2.3 Design
Criteria**

- Continued

- .10 Water infiltration: None to ASTM E331 at differential pressure across assembly of 720 Pa (0.104 psi)
- .11 Ensure interior surfaces have no condensation before exposed edges of sealed units reach dew point temperatures during testing to AAMA 501
- .12 Maintain continuous air barrier and vapour retarder throughout building envelope and aluminum framed storefront assembly
- .13 Ensure no vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system occur
- .14 Reinforce aluminum framed storefront system where necessary

2.4 Materials

.1 Aluminum Door Components:

- .1 Extruded aluminum: To ASTM B221, 6063 alloy with T6 temper
- .2 Thermal Break: To AAMA IIR-A8, Glass fibre reinforced polyamide porthole extrusion
- .3 Sheet aluminum: To ASTM B209, utility grade for unexposed surfaces, anodizing quality for exposed surfaces
- .4 Fasteners, screws and bolts: Cadmium plated stainless steel 400 series to meet curtain wall requirements and as recommended by manufacturer
- .5 Insulating glass units for exterior glazed door: To CAN/CGSB-12.8, double glazed, hermetically sealed, argon filled insulating glass units with low conductance black warm edge spacer:
 - .1 Outer Lite: 1/4" (6mm) clear tempered glass with low E coating on surface two
 - .2 Inner Lite: 1/4" (6mm) clear tempered glass

2. PRODUCTS - Continued

2.5 Fabrication

Aluminum Doors:

- .1 Do aluminum welding to CAN/CSA W59.2.
- .2 Fabricate aluminum assemblies of extruded sections to sizes and profiles indicated:
 - .1 Ensure verticals and horizontals are extrusions designed for shear block or screw spline corner construction
- .3 Construct units square, plumb and free from distortion, waves, twists, buckles or other defects detrimental to performance or appearance.
- .4 Fabricate aluminum-framed storefront with minimum clearances and shim spacing around panel perimeter and ensure installation and dynamic movement of perimeter seal is enabled.
- .5 Fabricate aluminum framed doors in accordance with the requirements of this Section.
- .6 Accurately fit and secure joints and corners:
 - .1 Ensure joints are flush, hairline and weatherproof
- .7 Prepare aluminum-framed storefront to receive anchor devices.
- .8 Use only stainless steel or zinc plated concealed fasteners:
 - .1 Ensure fasteners do not penetrate thermal break
 - .2 Where fasteners cannot be concealed, countersunk screws finished to match adjacent material may be used upon receipt of written approval from the Consultant
- .9 Prepare components to receive doors and openings as indicated.
- .10 Reinforce framing members for exterior imposed loads where required.
- .11 Visible manufacturer's labels are not permitted.

2. PRODUCTS

2.5 Fabrication - Continued

Storefront Systems:

- .1 Do aluminum welding to CAN/CSA W59.2.
- .2 Fabricate aluminum assemblies of extruded sections to sizes and profiles indicated.
 - .1 Ensure stiles and rails are tubular extrusions designed for mechanical shear block fastening in combination with SIGMA deep penetration plug welds and fillet welds at all stile/rail connections
 - .2 Provide complete separation of interior and exterior components of door leaf by means of a porthole extruded structural thermal break
- .3 Door Thickness: 2 1/4" (56mm).
- .4 Construct doors square, plumb and free from distortion, waves, twists, buckles or other defects detrimental to performance or appearance.
- .5 Accurately fit and secure joints and corners:
 - .1 Ensure joints are flush and hairline
- .6 Use only concealed or semi-concealed fasteners:
 - .1 Where fasteners cannot be concealed, countersunk screws finished to match adjacent material may be used
- .7 Install door hardware.
- .8 Locate manufacturer's labels on exterior side of door bottom rail.

2.6 Finishes

- .1 Exposed aluminum surfaces: To AAMA 2605, 3 coat, thermal setting enamel consisting of primer, colour coat and clear coat with 70% minimum fluoropolymer resin and polvinylidene fluoride (PVDF), 0.03mm (1.2 mil) minimum total thickness colour to be selected from manufacturer's Duranar Sunstorm colour range.
 - .1 Acceptable material; PPG Industries Inc., Duranar Sunstorm

DOORS AND WINDOWS - SECTION 08400
ALUMINUM DOORS AND SCREENS

- 2. PRODUCTS** - Continued
- 2.7 Hardware**
 - .1 Hardware: In accordance with Section 08700 - Finish Hardware:
 - .1 Ensure hardware is supplied and factory installed by door manufacturer
- 2.8 Accessories**
 - .1 Gasketing: To CCD-45 EPDM gaskets.
 - .2 Setting Blocks: To CCD-45 and ASTM D2240, neoprene
 - .3 Spacers: To CCD-45 and ASTM D2240, neoprene
 - .4 Sealant: To CAN/CGSB-19.13, Class 40, one-component, cold applied, non-sagging silicone:
 - .1 Acceptable material: Dow Corning 795
 - .5 Sealant Bond Breaker: Open cell foam backer rod sized to suit project requirements.
- 2.9 Product Substitutions**
 - .1 Substitutions: Only in accordance with Section 01630 - Substitutions.
 - .2 Ensure all components, including operating hardware come from one manufacturer.
- 3. EXECUTION**
- 3.1 Installers**
 - .1 Use only authorized installers with two (2) years minimum experience in Work similar to the Work of this Section.
- 3.2 Examination**
 - .1 Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for door installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Consultant
 - .2 Inform Consultant of unacceptable conditions immediately upon discovery

3. EXECUTION

3.2 Examination - Continued

- .3** Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from the Consultant

3.3 Installation

- .1** Install aluminum swing doors in accordance with manufacturer's written instructions.

3.4 Adjusting

- .1** Adjust operable parts for correct function.
- .2** Ensure doors do not bind while opening and closing.

**3.5 Field
Quality
Control**

- .1** Field Inspection: Co-ordinate field inspection in accordance with Section 01400 - Testing And Inspection.
- .2** Manufacturer's Services:
 - .1** Coordinate manufacturer's services with Section 01400 - Testing And Inspection
 - .2** Submit to the Consultant a written agreement from the manufacturer to perform the manufacturer's services
 - .3** Schedule manufacturer's review of the Work procedures at stages listed:
 - .1** Product Application: One (1) off site review
 - .2** Fabrication and Handling: One (1) review at authorized installers fabrication facilities
 - .3** Installation: Two (2) site reviews at commencement of the Work and upon completion of the Work
 - .4** Submit manufacturer's written reports to Consultant describing:
 - .1** The scope of the Work requested
 - .2** Date, time and location
 - .3** Procedures performed

3. EXECUTION

**3.5 Field
Quality
Control**

- Continued

- .4** Observed or detected non-compliances or inconsistencies with manufacturers' recommended instructions
- .5** Limitations or disclaimers regarding the procedures performed
- .6** Obtain reports within seven days of review and submit immediately to Consultant

3.6 Cleaning

- .1** Progress Cleaning: Perform cleanup as the Work progresses in accordance with Section 01710 - Cleaning.
 - .1** Leave the Work area clean at the end of each day
- .2** Final cleaning: Upon completion, remove surplus materials, rubbish, tools and equipment in accordance with Section 01710 - Cleaning.

3.7 Protection

- .1** Protect installed products and components from damage during construction.
- .2** Repair damage to adjacent materials caused by aluminum terrace door and frame installation.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section as indicated in the Drawings or Specifications includes:**
 - .1** Provision of Finish Hardware for interior and exterior doors. See also Section 01020 - Allowances.
 - .2** Provision of templates, information and all other requirements necessary for installation of hardware.
- .2 Related Work Specified Elsewhere:**
 - .1** Section 01630 - Substitutions
 - .2** Section 08100 - Insulated Fibreglass Doors
 - .3** Section 08200 - Flush Wood Doors
 - .4** Division 16 - Electrical
 - .5** All other Sections and Drawings to be reviewed

1.2 Submittals

- .1** Provide product data indicating dimensions, profiles, attachment methods, trim, and related work.
- .2** Provide duplicate samples representative of materials, finishes, colours and profiles as specified for every item listed in 2. Products.

1.3 Hardware List

- .1** Upon award of the Contract, check the Drawings, Specifications, Schedules and Addenda and submit a list of items to be supplied. Include the following information in that list:
 - .1** Degrees of opening of doors.
 - .2** Hands of doors are to be shown for all doors. In case of pairs of doors or banks of doors, active leaf or leaves must be noted.
 - .3** Any deviation from the Hardware Schedule included with the Specification.
 - .4** Complete legend of all abbreviations and catalogue numbered systems. Clearly identify hardware listed by manufacturers name, product catalogue number and finish.

1. GENERAL

1.3 Hardware List

- Continued

- .2 Submit Finishing Hardware schedule complete with catalogue cuts for approval by the Consultant prior to the ordering of any materials.
- .3 Upon receipt of approved schedule reviewed by the Consultant, supply copies of the final schedule within two (2) weeks of approval date.

1.6 Samples

- .1 When requested, submit samples of each type of hardware specified, showing type, function, colour and finish.
- .2 Approved samples shall form minimum standards for the finished Work.
- .3 Identify each sample by tag label indicating applicable schedule item number for sample, brand name, number, finish and building location.
- .4 Substitute new samples for samples rejected by the Consultant.
- .5 The Consultant will retain samples until completion of project, at which time samples shall be returned to the Supplier at their expense.
- .6 Do not supply hardware to the Site until samples are approved.

1.7 Co-Ordination

- .1 When preparing the Finishing Hardware schedule to submit for approval, it is the Hardware Supplier's responsibility to review the Specifications and Drawings, confirming quantities and detailing, reporting any errors and/or omissions to the Consultant. 'Extras' will not be considered nor accepted for necessary changes as a result of the Hardware Supplier's neglect.
- .2 'Extras' will be invoiced at no more than 30% off Manufacturer's current list price. 'Credits' will be issued at no less than 50% off Manufacturer's current list price.

1.8 Delivery & Storage

- .1 All Finishing Hardware shall be delivered to the Site in manufacturer's original individual containers, with necessary screws, keys, instructions, installation templates and wiring diagrams. Each container to be clearly marked with the item definition and location shown on the list.

1. GENERAL

**1.8 Delivery
& Storage**

- Continued

- .2 The Hardware Supplier shall be responsible for arranging time and date to the Site, or door manufacturer, of hardware so that Work may progress without delay or interruptions.
- .3 The Hardware Supplier and the Installer together shall check, in detail, hardware delivered to the Site to prevent discrepancies, shortages or omissions. Receiving and laying out all hardware on shelving in a locked, clean and dry room provided by the Contractor.
- .4 Be responsible for storage and protection of hardware.
- .5 Maintain an inventory list with the Hardware Schedule.
- .6 Any loss or damage shall be the Contractor's sole responsibility. Exercise close control over handling of hardware particularly the distribution of keys.

**1.9 Maintenance
Data**

- .1 Provide maintenance data, parts list and manufacturer's instructions for each type of hinge, locksets, door closers and door holders for incorporation into maintenance manual specified in Section 01730 - Operations and Maintenance Data.
- .2 Supply two (2) sets of wrenches for locksets and door closers.
- .3 Brief the Owner's maintenance staff regarding proper care of hardware such as lubrication of locksets and adjustments of door closers, cleaning and general maintenance.

**1.10 Inspection
& Certification**

- .1 Final inspection of hardware installation to be carried out by the Hardware Supplier and Product Representative. The representative shall provide written certification that hardware has been installed and adjusted as intended.
- .2 After rectification of deficiencies, submit to the Consultant written certification that materials are accounted for, correctly installed and functioning normally.

1.11 Warranty

- .1 Submit a written warranty in accordance with Section 01740 - Warranties. All hardware supplied under the approved hardware schedule will be guaranteed by the Manufacturer for a period of one (1) year after final acceptance of the project. Door closers will be guaranteed for ten (10) years.

1. GENERAL - Continued

1.12 Fastenings

- .1 All hardware is to be installed using Manufacturers' supplied fasteners. Failure to comply may void warranties and applicable licensed labels. Self tapping/tek screws will not be acceptable on this project.
- .2 Supply all screws, bolts, expansion shields and other fastening devices required for proper installation and operation of hardware.
- .3 Exposed fastening devices to match the finish of the hardware.
- .4 Kick plates shall be supplied with self adhesive tape, except where noted, then supply countersunk, oval head, flush mounting socket screws to suit door material.

2. PRODUCTS

2.1 Hinges

- .1 Supply 1 1/2 pair per door leaf for doors up to 7'-4" (2200mm) in height. Supply one additional hinge for each additional 2'-6" (750mm) of height or fraction thereof. Doors, 1 3/4" (44mm) thickness, up to 3'-0" (900mm) in width, supply 4 1/2" (113mm) high hinges; over 3'-0" (900mm) to 4'-0" (1200mm), supply 5" (125mm) high hinges.

NRP - non-removable pin.

Hinges listed are by Hager. (Stanley equivalents are acceptable.)

Hager	Stanley
BB1168	FBB168
BB1191	FBB191
BB1199	FBB199
BB1279	FBB179

2.2 Continuous Hinges

- .1 Continuous hinge shall be gear type full mortise, concealed edge mounted, but not extending fully across both the frame rebate and the edge of door thus reducing transfer of cold, heavy duty, no inset, minimum thirty-two thrust bearings, staggered screw holes. For exterior door application the length should be reduced to allow installation of the door sweep across full width of the exterior door face without interfering with the hinge knuckle.

Hager Roton continuous hinges 780-112HD series.

DIVISION 8 DOORS AND WINDOWS - SECTION 08700
FINISH HARDWARE

2. PRODUCTS - Continued

2.3 Locks & Latchsets

.1 Standard duty commercial cylindrical Schlage 'ALX' series with Saturn (SAT) lever/rose design.

.2 Heavy duty mortise Schlage 'L' series with 06B lever/rose design.

2.4 Deadlatches

.1 Stanley-Best - Interchangeable core; Owner shall provide cores.

2.5 Kick Plates

.1 0.050" (1.27mm) stainless steel. Type 304. Bevelled edges. Height as noted x length to suit. Exact sizing to be confirmed before ordering. Self adhesive tape mounting, except where noted. Screws to suit door material and plates to be drilled and countersunk.

C.B.H.	Standard Metal	Gallery
903	K10A	80A

2.6 O/H Stops & Holders

.1 All listed degrees of hold open should be reviewed and confirmed before preparation and/or installation.

Glynn Johnson surface 90 series - no alternates.

2.7 Floor/Wall Stops

.1 Zinc die cast construction.

Wall stops to be secured with two (2) screws thru mounting back plate. Allen screw on side of rosette shall be inconspicuous. No screw hole shall be visible on face of bumper.

C.B.H.	Standard Metal
100	S100
110	S102
120	S120
130	S122

2. PRODUCTS - Continued

2.8 Abbreviations

LH	left hand
LHR	left hand reverse
RH	right hand
RHR	right hand reverse
INS. HMD	insulated hollow metal door
PSF	pressed steel frame
T.B. PSF	thermally broken pressed steel frame
WF	wood frame
SCWD	solid core wood door
HR/FR	hour/fire rated
MS	machine screw

2.9 Finishes

- .1 Type and finish of hardware shall be equal in all respects to the samples of hardware and finishes approved by the Consultant.
- .2 Metal finishes shall be free from defects, clean and unstained, and of a uniform colour.

Hinges	630	stainless steel, satin
Push & Kick Plates	630	stainless steel, satin
O/H Stops & Holders	630	stainless steel, satin

2.10 Keying

- .1 The Hardware Supplier shall prepare a detailed keying schedule in co- operation with and to approval of the Owner and the Consultant.
- .2 All locks shall be keyed into a new factory Schlage keying system as follows:
 - construction keyed
 - master keyed
 - keyed alike or different as required
- .3 Supply six (6) Construction Master Keys
Supply two (2) Extractor Keys
Supply three (3) Master Keys per group
Supply two (2) change keys per cylinder except where noted otherwise
- .4 With the exception of the construction keys, which are to be given to the Contractor, all permanent keys are to be delivered directly to the Owner.
- .5 The Hardware Supplier is to ensure all cylinders are supplied with cams/ tailpieces suitable for specified lock functions. Supply all compression rings, trim collars and blocking rings to suit.
- .6 Supply one (1) lockable key cabinet complete with hooks, tags and index cards. Telkee RWC 25-S. Turnover to the Owner.

3. EXECUTION

3.1 Installation

- .1 When requested, furnish metal door and frame manufacturer with complete instructions and templates for preparation of their Work to receive hardware.
- .2 Only workers competent in the installation of Finishing Hardware shall be used for this purpose. Qualification would require a minimum five (5) years experience in commercial application. The installer shall adjust, clean and make good all installation of Finishing Hardware to the satisfaction of the Consultant.
- .3 Kick plates are to be installed 1/16" (1.6mm) maximum up from the bottom edge of door push side, with the exception of doors where a lip threshold is being used. Then install kick plates to clear threshold not greater than 1/16" (1.6mm). On single doors install in centre of the door equally spaced to clear between the frame jamb stops and/or weatherstripping.
- .4 The Contractor to ensure walls are properly blocked to prevent future damage wherever wall stops are to be used.
- .5 Thresholds are to be extended from masonry opening to masonry opening and are to be coped around the pressed steel frames. Installer to caulk threshold base to ensure proper seal.
- .6 Weatherstripping is not to be installed until final coat of paint has been applied to the door and frame and is completely dry.
- .7 Door and frame supplier, when templating, must consider the surface mounted w/stripping W-20N which is 5/16" (7.8mm) thick. Parallel arm door closer brackets and surface overhead stop arm jamb bracket will mount on top of the w/stripping thus ensuring a continuous weather seal.

3.2 Mounting Heights

- .1 Locksets: 40 5/16"
- .2 Backsets for locksets: 2 3/4"
- .3 Door Pulls: 3'-6"
- .4 All installation heights to meet ANSI standards and be approved by the Consultant.

DIVISION 8 DOORS AND WINDOWS - SECTION 08700
FINISH HARDWARE

3. EXECUTION - Continued

3.3 Hardware Schedule

Set No. 1 MAIN ENTRANCE DOORS - Insulated Glazed HM Exterior Door and HM Screen System

1 SGLE Door D115A		Exterior to Vestibule 115	
1 SGLE Door D120A		Exterior to Vestibule 120	
2	EA	Continuous Hinge	780-224 HD 628
2	EA	Tubular Deadbolt	8T3-7-M-S4 626
2	EA	Cylinder	M-Double Cylinder 626
2	EA	Door Pull	3212-2 x #4B MTG. 630
2	EA	Auto Operator	HA8-SP
Confirm adapter plates and long arm requirements			
2	EA	Wall Actuator	CM-57GRB
2	EA	O/H Stop	GJ104S x 90 Degree
2	EA	Kickplates	K10A 10" (interior side) SS
2	LEN	Threshold	CT-45 x 42 AL
2	LEN	Door Sweep	W-24S x 38 AL
		W/stripping	160V-84
		Door Contacts	Supplied by others

Location of Actuators to be confirmed on site, provide conduit and junction boxes for all low voltage wiring, no exposed conduit.

Set No. 2 EXIT DOOR - Insulated Glazed HM Exterior Door and HM Frame System

1 SGLE Door D113A		Commons 113 to Exterior	
1	EA	Continuous Hinge	780-224 HD 628
1	EA	Tubular Deadbolt	8T3-7-M-S4 626
1	EA	Cylinder	M-Double Cylinder 626
1	EA	Exit Devices	9875-697NL-3ft-CYL-AL
1	EA	Mag Lock	9875-697NL-3ft-CYL-AL 628
1	EA	O/H Stop	GJ104S x 90 Degree
1	EA	Kickplates	K10A 10" (interior side) SS
1	LEN	Threshold	CT-45 x 42 AL
1	LEN	Door Sweep	W-24S x 38 AL
		W/stripping	160V-84
		Door Contacts	Supplied by others

DIVISION 8 DOORS AND WINDOWS - SECTION 08700
FINISH HARDWARE

3. EXECUTION

3.3 Hardware Schedule - Continued

Set No. 3 EXIT DOOR - Insulated HM Exterior Door and HM Frame System

1 SGLE Door D139A		Corridor 139 to Exterior		
1	EA	Continuous Hinge	780-224 HD	628
1	EA	Tubular Deadbolt	8T3-7-M-S4	626
1	EA	Cylinder	M-Double Cylinder	626
1	EA	Exit Devices	9875-697NL-3ft-CYL-AL	
1	EA	O/H Stop	GJ104S x 90 Degree	
1	EA	Kickplates	K10A 10" (interior side)	SS
1	LEN	Threshold	CT-45 x 42	AL
1	LEN	Door Sweep	W-24S x 38	AL
		W/stripping	160V-84	
		Door Contacts	Supplied by others	

Set No. 4 SECURE DOOR - BF Hollow Metal Glazed Interior Door & Screen

1 SGLE Door D115B		Vestibule 115 to Common Rm 115		
1 SGLE Door D120B		Vestibule 120 to Corridor 144		
1 SGLE Door D127A		Corridor 117 to Corridor 127		
1 SGLE Door D144A		Vestibule 120 to Corridor 144		
1 SGLE Door D112A		Common Rm 113 to Corridor 112		
12	EA	Hinge	5BB1-HW-SH-5-NRP	630
4	EA	Electric Strike	6211AL - FSE - 24	US32D
4	EA	Power Supply	To Suit Electric Strike	
4	EA	Auto Operator	HA8-SP	
		Confirm adapter plates and long arm requirements		
		Coordinate power and wiring requirements with Division 16 at rough-in stage. All wiring to be concealed, surface mount not acceptable.		
4	EA	Wall Actuator	CM-57GRB	
4	EA	Kickplates	K10A 10" (both faces)	SS
4	LEN	Door Sweep	W-24S x 38	AL
		Door Contacts	Supplied by others	

Sequence of Operations:

Operator and Electric Strike to be connected to Access Control System.

Vestibule Side Wall Actuator: shall power electric strike to release and direct operator to open at all times.

Vestibule Side Wall Actuator: shall only engage strike and operator to release and direct operator when initiated by Access Control System Only.

Access Control System will be programmed to initiate door remote and by a localized indicator. EXIT DEVICE latch will always be active by push bar and key.

DIVISION 8 DOORS AND WINDOWS - SECTION 08700
FINISH HARDWARE

3. EXECUTION

3.3 Hardware Schedule - Continued

Set No. 5 SECURE DOOR - Hollow Metal Glazed Interior Door & Screen

1 SGLE Door D107A		Vestibule 115 to Reception 107	
1 SGLE Door D110A		Common 113 to Office 110	
1 SGLE Door D114A		Common 113 to Stair 114	
1 SGLE Door 121A		Corridor 144 to Reception 121	
9	EA Hinge	5BB1-HW-SH-5-NRP	630
3	EA Electric Strike	6211AL - FSE - 24	US32D
3	EA Power Supply	To Suit Electric Strike	
6	EA Kickplates	K10A 10" (both faces)	SS
	Door Contacts	Supplied by others	

Set No. 6 COMMON AREA DOORS - Hollow Metal Steel Doors and Frames

1 SGLE Door 106C		Meeting 106 to Closet 106C	
1 SGLE Door 119A		Common area 113 to Jan 119	
1 SGLE Door 140A		Corridor 144 to Elec. 140	
6	EA Hinge	5BB1-HW-SH-5-NRP	630
2	EA Lockset	AL53 "J/T"	630
2	EA Wall Stop	S120	619
4	EA Kickplates	K10A 10" (both faces)	SS

Set No. 7 PRIVACY BFA WR - HM Doors and Frames

1 SGLE Door 108A		Common area 113 to BFA WR 108	
1 SGLE Door 126A		Corridor 127 to BFA WR 12	
1 SGLE Door 143A		Vestibule 120 to BFA WR 143	
3	EA Hinge	5-BB-1-HW-SH-5-NRP	630
1	EA Lockset	AL80	630
1	EA Wall Stop	S120	619
1	EA Universal Accessible Washroom Electronic Locking System Kit TA-UWOBC-KIT (Thomas Door & Security Hardware or equivalent).		

Set No. 8 PRIVACY WR/SHWR - HM Doors and Frames

1 SGLE Door 109A		Office 110 to Washroom 109	
1 SGLE Door 118A		Corridor 127 to Shower 118	
1 SGLE Door 122A		Corridor 144 to Washroom 122	
1 SGLE Door 125A		Corridor 139 to Shower 125	
1 SGLE Door 124A		Corridor 139 to Shower 124	
1 SGLE Door 128A		Corridor 127 to Washroom 125	
3	EA Hinge	5-BB-1-HW-SH-5-NRP	630
1	EA Lockset	AL80	630
1	EA Wall Stop	S120	619

DIVISION 8 DOORS AND WINDOWS - SECTION 08700
FINISH HARDWARE

3. EXECUTION

3.3 Hardware Schedule - Continued

Set No. 9 OFFICES - WOOD SOUND CONTROL DOORS

1 SGLE Door 100A	Open Office 110 to Clinical 100
1 SGLE Door 101A	Open Office 110 to Clinical 101
1 SGLE Door 102A	Open Office 110 to Clinical 101
1 SGLE Door 103A	Corridor 111 to Office 103
1 SGLE Door 104A	Corridor 111 to Office 104
1 SGLE Door 105A	Corridor 111 to Office 105
1 SGLE Door 106A	Reception 107 to Meeting 106
1 SGLE Door 106B	Corridor 111 to Meeting 106

24	EA	Hinge	BB1409-4 1/2 x 4-NRP	630
8	EA	Lockset	ALX50	630
14	EA	Wall Stop	S120	619

END OF SECTION

DIVISION 8 DOORS AND WINDOWS - SECTION 08800
MISCELLANEOUS GLASS, GLAZING AND MIRRORS

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes supply and installation of:
 - .1 Glazing of steel doors and interior steel screens (hollow metal)
 - .2 Glazing of wood doors and interior wood screens
 - .3 Mirrors - Non-adjustable
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 08200 - Flush Wood Doors
 - .3 Section 08400 - Aluminum Doors And Screens
 - .4 Section 08610 - Vinyl Windows
 - .5 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 The Work of this Section shall be executed by fully equipped, expert workers, highly skilled in the installation of glass and glazing with minimum of five (5) years experience.
- .2 References:
 - .1 ASTM D412-87 'Test Method for Rubber Properties in Tension'.
 - .2 ASTM D1149-86 'Test Method for Rubber Deterioration Surface Ozone Cracking in a Chamber (Flat Specimen)'.
 - .3 ASTM D2240-86 'Test Method for Rubber Property - Durometer Hardness'.
 - .4 CAN/CGSB-12-1-M79 'Glass, Safety Tempered or Laminated'.
 - .5 CAN/CGSB-12-2-M76 'Glass, Sheet, Flat, Clear'.
 - .6 CAN/CGSB-12-3-M76 'Glass, Polished Plate or Float, Flat, Clear'.
 - .7 CAN/CGSB-19-13-M87 'Sealing Compound, One Component Elastomeric, Chemical Curing'.
 - .8 CAN/CGSB-19-24-M80 'Sealing Compound, Multi-Component, Chemical Curing'.

DOORS AND WINDOWS - SECTION 08800
MISCELLANEOUS GLASS, GLAZING AND MIRRORS

- 1. **GENERAL** - Continued
- 1.3 **Protection**
 - .1 Mark glazed openings immediately after glazing.
 - .2 Replace scratched or broken glass damaged due to faulty setting, careless handling or storage at no cost to the Owner.
- 1.4 **Samples**
 - .1 Submit samples of mirror fastenings and moulding as specified in Section 01300 - Submittals.
- 1.5 **Warranty**
 - .1 Mirrors: Provide written five (5) year warranty in accordance with Section 01740 - Warranties.
- 2. **PRODUCTS**
- 2.1 **Glass**
 - .1 **Glass:** 1/4" (6mm) tempered conforming to CAN/CGSB -12-1-M90 unless otherwise indicated.
 - .2 **Spacer Shims:** Neoprene rubber, 40-60 Shore A hardness.
 - .3 **Setting Blocks:** Neoprene rubber, 70-90 Shore A hardness.
 - .4 **Glazing Tape:** Tremco '440 Tape' manufactured by Tremco Canada or approved equal. **Colour: To the Architect's Later Selection.**
 - .5 **Glazing Sealant:** One (1) part acrylic terpolymer, Tremco 'Mono' or other approved product, conforming to CGSB 19-GP-17M.
 - .6 **Fire Rated Glazing:** 5/16" (8mm) safety rated glass ceramic by FireLite, set in Lite trims by Lambton Doors.
 - .7 **Mirrors:** Provide mirrors in all washrooms as indicated on the Drawings.
 - .1 Silvered mirror glass, conforming to CAN/CGSB-12-5-M86.
 - .2 Backing: sprayed on silvering, followed by galvanic copper coating and baked on backing paint.
 - .3 Edges: arrised and polished.
 - .4 Fastenings: Concealed vandal proof type. Use continuous chromed 'J' mould on rectangular mirrors.
 - .5 Adhesive: Compatible with mirror backing and recommended by mirror manufacturer.

3. EXECUTION

3.1 General

- .1 Carefully remove glazing beads and replace after glazing without damaging stops.
- .2 Remove excess or foreign materials or droppings which would set up or become difficult to remove from surrounding surfaces. Do not use chemicals, tools or methods which would affect surrounding surfaces.
- .3 Collect glass cutting in boxes and remove when cleaning up debris.

3.2 Measurements

- .1 Accurately measure openings and calculate light size based on manufacturer's installation tables, allowing for proper minimum edge engagement, rabbet width and depth and expansion.

3.3 Glazing

- .1 Interior:
 - .1 Apply glazing tape to stops both sides of glass. Use tape of thickness to suit installation.
 - .2 Centre glass in opening, place on setting blocks and apply stops.
 - .3 Finish to neat appearance by trimming tape above sight line 1/32" (.8mm).
- .2 Exterior:
 - .1 Apply 440 tape to fixed leg of frame, accurately cutting and butting joints at corners.
 - .2 Run a heal bead of caulking compound up jambs and along frame at bottom of glass rebate, lapping tape and frame to ensure weathertight seal.
 - .3 Remove protective paper cover from tape and apply setting blocks at 1/4 points and not more than 6" (150mm) from ends. Set glass in rebate and press firmly in place. Apply spacer shims to edges of glass maximum 2'-0" (600mm) apart and not more than 6" (150mm) from corners and secure glazing beads in place.
 - .4 Gun in glazing sealant, to fill void between glass and beads, trim off excess compound to a neat, even sightline bevelled approximately 1/16" (1.6mm) onto glass.

DOORS AND WINDOWS - SECTION 08800
MISCELLANEOUS GLASS, GLAZING AND MIRRORS

3. EXECUTION - Continued

3.4 Cleaning

- .1 Remove deposits which affect appearance of units on completion of installation.
- .2 Clean surfaces by washing with clear water rinse or with water and soap or detergent, followed by a clear water rinse.
- .3 Clean and restore stained metal surfaces in accordance with manufacturer's recommendations. Replace if cleaning is impossible.
- .4 Clean glazing material with methods and materials recommended by glazing material manufacturer.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes:
 - .1 Gypsum board to partitions, ceilings, bulkheads, furring and wall facings.
 - .2 Acoustic materials.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 06100 - Rough Carpentry
 - .3 Section 07200 - Insulation
 - .4 Section 09900 - Painting
 - .5 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 The Contractor for this Work to have a minimum of five (5) years experience in installation of gypsum wallboard.
- .2 Install the Work to CSA A82-31-M1980, C. G. C., Drywall Construction Handbook and the Manual of Gypsum Wallboard Construction by Gypsum Drywall Contractor's International.
- .3 Submit sample and product literature for every item specified.

1.3 Delivery & Storage

- .1 As specified in Section 01600 - Material And Equipment.

1.4 Job Conditions

- .1 Air and Surface Temperature: Minimum 10 Degrees C and maximum 21 Degrees C for 24 hours before, during and until entire installation is complete.
- .2 Ensure proper ventilation, during and following joint treatment to eliminate excessive moisture.
- .3 Examine surfaces in which wallboard is to be attached and check environmental conditions and do not commence the Work until surfaces and conditions are satisfactory.
- .4 Commencement of the Work will denote acceptance of conditions and surfaces.

2. PRODUCTS

2.1 Manufacturer

- .1 Generally specification is based on Canadian Gypsum Company Ltd. material but equivalent materials by other manufacturers are acceptable.

2.2 Gypsum Board

- .1 **Gypsum Board:** Conforming to CSA A82-27 as follows:
 - .1 Fire Resistant Board: CGC Sheetrock Fire Code "C".
 - .2 Water Resistant Board: CGC Sheetrock W/R. (Not to be used for ceilings).
 - .2 Shaft Wall Panel: 1" (25mm) by CGC or equal.
- .2 **Thickness of Board: 5/8" (16mm) as indicated in the Drawings or Specifications.**
- .3 **Edges:** Tapered or tapered and rounded.
- .4 **Size:** Note that all board is to be installed vertically unless otherwise noted and that length of board is to be minimum 10'-0" (3000mm) or full height of wall.

2.3 Accessories

- .1 **Metal Trim:** 28ga (.34mm) galvanized steel with perforated flanges, one (1) piece per location, 'Dur-A-Bead' corner reinforcement, CGC Control Joint #093 and CGC Trim 200-B.
- .2 **Screws:** CGS brand screws Type S. 1" (25mm) and 1 1/4" (32mm) as required.
- .3 **Joint Treatment Material:** CGC MC 'All Purpose' and CGC MC Joint Topping compounds, to ASTM 0474 and 0475 premixed ready to use, in sealed cans.
- .4 **Reinforcing Tape:** 'Perf-A-Tape' by CGC or equal.
- .5 **Adhesive:** CGC 'Durabond' 90 pre-mixed ready to use in sealed cans.

2. PRODUCTS

2.3 Accessories

- Continued

.6 Acoustic Materials:

- .1** Acoustical Caulking: Acoustical sealant conforming to CAN/CGSB-19-21 by Tremco or approved equal.
- .2** Thermal & Sound Attenuation Batts: Refer to Section 07210 - Batt Insulation.

3. EXECUTION

3.1 Examination

- .1** Examine surfaces and other conditions on which the Work of this Section depends and do not proceed until conditions are suitable.
- .2** Commencement of the Work will denote acceptance of surfaces and conditions.

3.2 Installation General

- .1** Do not install gypsum board until the Work of other Trades which will be covered by the board has been installed and approved.
- .2** Use board of maximum practical length to reduce number of end joints. Install control joints in long runs of board; form with back to back casing beads.
- .3** Fit ends and edges closely, but do not force together.
- .4** Attach board to framing using screws, not nails.

3.3 Installation on Stud Framing & Furring

- .1** Install board vertically only using full height of lengths of board. Cut and fit boards around openings, beams, joists, ducts, light fixtures and similar items.
- .2** Position edges over supports.
- .3** For single layer vertical application, space screws 1'-0" (300mm) o.c. for field of panel and 8" (200mm) o.c. staggered along vertical abutting edges.
- .4** For double layer application, stagger joints in second layer of boards a minimum of one (1) stud spacing in both directions and fasten with screws as before.

3. EXECUTION - Continued

3.4 Installation on Ceiling Suspension

- .1 Install board with long dimension at right angle to furring channels.
- .2 Position end joints over channel flange and stagger in adjacent rows.
- .3 Fasten board to channels with 1" (25mm) Type S screws spaced 1'-0" (300mm) o.c. in field of panels and along abutting edges.

3.5 Installation Acoustic Materials

- .1 Install continuous double row of caulking beads around perimeter of partitions which are indicated as containing sound attenuation batts. This shall apply to partitions that stop at ceiling or partitions that are continued up to slab or deck above.
- .2 Install sound attenuation batts in partitions where shown, with air space consistently on one (1) side. Continue batts behind electrical boxes, conduits and all other services and items installed in partitions.
- .3 Provide acoustic and/or fire stop caulking around all ducts, pipes, conduits and other items passing through partitions.

3.6 Trim

- .1 Install corner beads, hanging track, interior mouldings and all other trim in maximum possible lengths, plumb and true, securely fastened in place.

3.7 Fire Ratings

- .1 For fire rated partitions, ceilings and bulkheads, conform to fire resistant ratings called for on the Drawings and Schedules and appropriate codes and regulations. Use minimum 5/8" (16mm) 'Firecode C' or approved equivalent gypsum board.

3. EXECUTION - Continued

3.8 Finishing

- .1** Mix joint compound (powder) in accordance with manufacturer's printed instructions.
- .2** Prefill 'V' grooves of rounded edges with Durabond 90 compound. Finish flush with tapered surface ready for reinforcing tape application. Allow prefill material to dry thoroughly before application of embedding compound and tape.
- .3** Apply 'All Purpose' compound in thin uniform layer; embed reinforcing tape accurately centred on joint, securely pressed in, leaving sufficient compound under tape to provide proper bond. Immediately apply skim coat over tape application. Allow to dry thoroughly before application of filler coat.
- .4** Apply filler coat of topping compound such that taper depression is flush with board surfaces. Allow to dry thoroughly before application of finish coat.
- .5** Apply finish coat of topping compound extending slightly beyond the filler coat and feathered out onto the board surface.
- .6** Sand between coats and following the finish coat, where necessary and leave surface smooth and ready for painting.
- .7** Finish Screw depressions with filler material and finish coat as specified in .4 and .5 above.
- .8** Joint and depression finish shall in no case protrude beyond the plane of the board surface.
- .9** Finish corner beads and metal trim flush with board surface using filler and finishing coats feathered out approximately 2" (50mm) and 4" (100mm) respectively onto the board surface to ensure that metal is visible only at corner.
- .10** Fill and tape joints and internal corners and fill screw depressions in board face and smooth out along corner beads and metal trim with joint compound.
- .11** Provide specified metal trim and control joints at exposed edges, at junctions of gypsum board with dissimilar material, at control joints and at junction with columns. Fasten with screws at 1'-0" (300mm) o.c. along entire length. Use extruded aluminum reveals as detailed and at all connections between gypsum board and concrete block.
- .12** **Apply skim coat of joint compound over entire gypsum board surfaces, after all joint treatment work is complete.**

3. EXECUTION - Continued

3.9 Cleaning

- .1** Clean thoroughly and remove all excess materials from other surfaces.
- .2** Remove all excess materials as job proceeds and at completion.

1. GENERAL

1.1 Description

- .1** The Work of this Section **as indicated in the Drawings or Specifications** includes supply and installation of Ceramic Tile.
- .2** Related Work Specified Elsewhere:
 - .1** Section 01630 - Substitutions
 - .2** Section 01345 - Samples
 - .3** Section 09250 - Gypsum Board
 - .4** Section 09650 - Resilient Tile And Sheet Flooring
 - .5** All other Section and Drawings to be reviewed

1.2 Quality Assurance

- .1** The Work of this Section shall be executed by a company that is a member in good standing of the Terrazzo, Tile and Marble Association with minimum of five (5) years experience.
- .2** References:
 - .1** TTMAC 'Tile, Terrazzo and Marble Association of Canada, Manual'.
 - .2** CAN/CSA-A5/A8/ 'Portland Cement/Masonry A362-M88 Cement/Blended Hydraulic Cement'.
 - .3** CSA/A82-56-M1976 'Aggregate for Masonry Mortar'.
 - .4** ASTM C206-84 'Specification for Finishing Hydrated Lime'.
 - .5** ASTM C207-79 (1984) 'Specification for Hydrated Lime for Masonry Purposes'.
 - .6** CAN/CGSB-51-34-M86 'Vapour Barrier, Polyethylene Sheet, for Use in Building Construction'.
 - .7** CAN/CGSB-75-1-M88 'Tile, Ceramic'.
 - .8** CSA G30-5-M1983 'Welded Steel Wire Fabric for Concrete Reinforcement'.
 - .9** CSA A82-30-M1980 'Interior Furring, Lathing and Gypsum Plastering'.

- 1. **GENERAL** - Continued
- 1.3 **Samples**
 - .1 Submit samples of tile and grout materials for the Consultant's approval in accordance with Section 01345 - Samples.
 - .2 Submit 2'-0" x 2'-0" (600mm x 600mm) samples of tile mounted on 3/4" (19mm) plywood, **before commencing tile laying**. Samples shall show grout, joint treatment and corner guard piece.
- 1.4 **Maintenance Instructions**
 - .1 Submit maintenance instructions to the Owner.
- 1.5 **Job Conditions**
 - .1 Install tile only when base surfaces and air temperatures have been maintained between 10 Degrees C and 21 Degrees C for 72 hours preceding installation and will be so maintained during installation and until setting materials have cured.
 - .2 Prevent traffic and work on newly laid floors by barricading areas for at least 48 hours following installation.
- 1.6 **Warranty**
 - .1 Submit a two (2) year warranty against defects in labour and of work of this Section.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Ceramic Floor Tile (CFT1):** 12" x 24" x 3/8" (300mm x 600mm x 10mm) MaxGlory - Cement Block #79736ET; colour Smoke by Centura Tile Ltd.; grout to match.
 - .2 **Cement:** CAN/CSA-A5/A8/A362-M88.
 - .3 **Sand:** CSA A82-56-1950.
 - .4 **Lime:** ASTM C206.
 - .5 **Additives:** 'Laticrete' by UniRoyal Chemical Limited.
 - .1 Levelling Coat and Setting Coat - #4237.
 - .2 Grout - To match floor tiles.
 - .6 **Adhesive:** Solvent rubber type, rubber base, Glidden G-711 Ceramic Wall Tile Adhesive.

2. PRODUCTS

2.1 Materials - Continued

- .7 Sealer:** Silicon Impregnator by HMK or approved equal.
- .8 Underlayment:** Corrugated polyethylene matting with 1/8" (3mm) high dovetail shaped ribs and a polypropylene fiber support webbing laminated to the underside to provide a mechanical bond to the substrate adhesive by Schluter-DITRA or approved equal.
- .9 Floor Drains:** Shall be 'Schluter-Kerdi Drain' with trap as indicated on Mechanical Drawings. Flooring sub-contractor to supply the drain; installation by Division 15.

3. EXECUTION

3.1 Examination

- .1** Examine surfaces on which the Work of this Section is to be applied and report any defects.
- .2** Commencement of the Work will denote acceptance of surfaces and conditions and any subsequent failure of installed Work of this Section due to surface defects will be rectified at no cost to the Owner.

3.2 General Instructions

- .1** Before commencing the Work, thoroughly clean surfaces with which the Work of this Section will come into contact.
- .2** Apply bonding materials in accordance with manufacturer's instructions.
- .3** Cut and drill for proper fitting of accessories, components or services without marring tile; fit tile so that plates, collars or other covers will overlap cuts or drilling.
- .4** Splitting of tile is expressly prohibited except where no alternative is possible.
- .5** Grout and clean small areas at a time to obviate against drying of grout.
- .6** Finished surfaces of tile shall be true, level with joints of constant thickness and in straight lines.
- .7** Use a 3/16" (5mm) deep 'V' notched trowel for applying adhesive.
- .8** Keep temperature of adhesive at 18 degrees C during application.

3. EXECUTION

**3.3 Installation
Floor Tile**

- .1 Sweep slabs clean, remove laitance and other foreign matter that will impair and reduce bond.
- .2 Wet surfaces thoroughly, remove excess water and leave surfaces damp.
- .3 Immediately apply bond coat, including latex additive mixed to a creamy texture in accordance with manufacturer's instruction, and brushed well in.
- .4 Apply setting bed including latex additive mixed in accordance with manufacturer's instructions.
- .5 Use notched trowel for application of setting bed according to manufacturer's instructions.
- .6 Set tiles and beat into place to give true even surface.
- .7 Joint to be 1/16" (1.6mm).
- .8 Allow to dry for minimum 24 hours.
- .9 Apply grout including latex additive, mixed to a creamy consistency, in accordance with manufacturer's instructions. Work into joints using stiff brush, trowel or sponge float, filling all joints completely. Remove surplus grout immediately and complete cleaning with damp cloth so that all traces of grout are removed.

**3.4 Installation
Washroom Tile**

- .1 Apply bonding mortar to floor substrate with a 1/4" x 3/16" (6mm x 5mm) V-notched trowel. Roll matting into tile setting adhesive to achieve full contact. Do not fill dovetail ribbed channels on underside of matting. Overlap adjacent sheets 4" (100mm) maximum.
- .2 Apply a 10" (250mm) width of tile setting adhesive to the installed matting at joints, penetrations and transitions. Apply adhesive with a 1/4" x 3/8" (6mm x 10mm) U or square notched trowel.
- .3 Embed a minimum 5" (125mm) wide waterproofing membrane band into the applied tile setting adhesive, centred over the joint.

3. EXECUTION

**3.4 Installation
Washroom Tile**

- Continued

- .4 Floor Drain Connection: Leave matting 4" to 6" (100mm to 150mm) short of drain outlet in all directions. Apply a 2'-0" x 2'-0" (600mm x 600mm) area of tile setting adhesive to the installed matting at the drain area and embed a 1'-8" x 1'-8" (500mm x 500mm) cut section of waterproofing membrane into the applied tile setting adhesive. Cut to fit flange and clamp or bond with a waterproof adhesive to the flange of the floor drain.
- .5 Apply waterproofing membrane corners and pipe sleeves where required at other penetrations and corner conditions.
- .6 Apply 7 1/4" (182mm) wide bands of waterproofing membrane to transitions at wall tile setting materials. Maintain integrity of wall to floor waterproofing system.
- .7 Maintain a uniform thickness over entire area to be waterproofed.
- .8 Where floor base and wall are different colours, carry base tile up to minimum 4" (100mm) above coved base.

**3.6 Adjust
& Clean**

- .1 After grout has cured thoroughly, clean tile with clean water and fibre brushes. Allow to dry and remove smears and marks remaining on surface. Acid solutions shall not be used.
- .2 Before project completion, remove and replace defective, damaged, loose and unbonded tile and point defective joints.

3.7 Sealing

- .1 Prepare floor tile and apply sealer in accordance with manufacturer's written instructions.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section **as indicated in the Drawings or Specifications** includes supply and installation of lay in acoustic panel ceilings complete with suspension system.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 09100 - Steel Stud And Suspension Systems
 - .3 Section 09250 - Gypsum Board
 - .4 Division 15 - Mechanical
 - .5 Division 16 - Electrical
 - .6 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 Employ specialist firm with minimum five (5) years institutional acoustic ceiling installation.

1.3 Samples

- .1 Submit full size sample panels in accordance with Section 01345 - Samples. All panels subsequently used on the job shall match the approved samples.
- .2 Submit samples of suspension system members for approval prior to commencement of site installation.

1.4 Hydro Requirements

- .1 Submit written conformation, to the Consultant, that the suspended ceiling will support the additional weight of fixtures and related wiring in accordance with Ontario Hydro Electrical Safety Code.

1.5 Protection

- .1 Exercise care in execution of the Work under this Section to prevent damage to finished surfaces, adjacent Work, mechanical and electrical installations.

- 1. **GENERAL** - Continued
- 1.6 **Job Conditions**
 - .1 Do not commence the Work until:
 - .1 Building is enclosed.
 - .2 "Wet Work" is dry.
 - .3 Dust generating procedures are completed.
 - .4 Layout is co-ordinated with Mechanical and Electrical trades and approved by the Consultant.
 - .2 Maintain minimum temperature of 15 Degrees C and relative humidity of 20% to 40% before, during and after installation.
- 1.7 **Maintenance Materials**
 - .1 Provide two (2) cartons of each panel type to the Owner, for future maintenance use.
- 1.8 **Warranty**
 - .1 Warranty contained in GC is, with respect to ceiling boards specified, extended from one (1) year to three (3) years. Without restricting generality of warranty, defects shall include warp, twist, sag, delamination, etc., regardless of humidity of surrounding atmosphere.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Acoustic Panels:** Conforming to U.S. Fed. Spec. SS-S-118B, Class A and ASTM E-84, 0 to 25 flamespread rating, with factory applied washable white vinyl latex paint finish and as follows:
 - .1 Type 1 - 'Cirrus High NRC' 551 - 2'x2'x7/8" - 9/16" bevelled tegular lay in tile by Armstrong or approved alternate; colour white, NRC .75 treated with Humiguard Plus.
 - .2 Type 2 - 'Schoolzone' 1824 - 2'x4'x3/4" white by Armstrong or approved alternate (Kitchen and Laundry).
 - .32 Type 3 - Acouslic panels to match existing.

2. PRODUCTS

2.1 Materials

- Continued

.2 Suspension System:

.1 Suprafine 9/16" exposed interlocking tee grid system formed out of cold rolled zinc bond steel 25ga (.55mm) thick.

.2 Main Tees: 1 1/2" x 1" (38mm x 25mm) in precoat baked on white paint finish incorporating holes for hangers and slots for connecting pieces.

.3 Structural Cross Tees: 1 1/2" x 9/16" (38mm x 14mm) double web bulb top, capping plate in precoat baked on white paint.

.4 Accessories: Splice plates, clips, screws as required to complete the installations, galvanized finish.

.3 Carrying Channels: 2" x 3/4" (50mm x 20mm) cold rolled galvanized.

.4 Tie Wires: 16ga (1.6mm) galvanized soft annealed steel.

.5 Hangers: Galvanized annealed steel wire, 12ga (2.6mm) for maximum weight of 150lbs (68kg) per hanger, 10ga (3.6mm) for maximum weight of 308lbs (140kg) per hanger and 8ga (4.8mm) for maximum weight of 1225lbs (249kg) per hanger. Inserts and attachments to structure for hanger connection shall suit conditions and loading, be galvanized after forming and approved by the Consultant before installation.

.6 Screws: Corrosion resistant, self tapping Phillips head of length and gauge to suit installation.

.7 Hanger Isolators: Model VHSK by Vibron Limited or approved equal.

3. EXECUTION

3.1 Installation

.1 Suspension:

.1 Space hangers securely fixed to structure at maximum 4'-0" (1200mm) o.c. above main runner tees, except at fixtures where they shall be at 3'-0" (900mm) o.c. maximum as required by Hydro regulations. Install hanger isolators where noted on Drawings and as recommended by manufacturer.

.2 Install main tees at 4'-0" (1200mm) o.c. and cross tees at 2'-0" (600mm) o.c. snap locked into position. Main tees shall be as long as possible with splice plates at joints.

3. EXECUTION

3.1 Installation

- .1** Suspension: - Continued

 - .3** Frame up around light fixtures, grilles, diffusers, columns and openings as required.
 - .4** Secure edge mouldings to walls, columns, bulkheads and other vertical surfaces at perimeter edges of acoustic ceiling.
 - .5** Erect carrying channel at required spacing to adequately carry all mechanical and electrical fixtures in addition to ceiling system.
- .2** Panel Installation:

 - .1** Install panels with pattern in one (1) direction in finished ceiling.
 - .2** End panels shall not be less than half full size and installation in each area shall be symmetrical with end panels abutting opposite vertical wall surfaces to be of the same width. Do all necessary cutting and fitting neatly and accurately.
 - .3** Place panels between tees so that all edges bear evenly on flanges. Where valves occur above, mark panel suitably and inconspicuously with small coloured pins.
 - .4** Secure edges of all panels with metal spring clips.
- .3** Finished ceiling shall be level to within 1/8" (3mm) in 12'-0" (3600mm).

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section includes All labour, materials, equipment, and services to supply and install resilient flooring to areas noted on drawings and schedules and as specified herein **as indicated in the Drawings or Schedules.**
- .2 The Work shall also include but not necessarily be limited to the following:
 - .1 Review and acceptance of conditions and surfaces
 - .2 Job site co-ordination and co-operation
 - .3 Resilient bases
 - .4 Trims and accessories
- .3 The following shall be supplied by other Divisions:
 - .1 Acceptable substrate surfaces - Section 02070 - Alterations And General Demolition
 - .2 Testing for moisture and alkalinity unless otherwise noted herein - Section 01400 - Testing And Inspection
 - .3 Threshold at entries in accordance with the requirements of Section 08700 - Finish Hardware
 - .4 Removal and disposal of existing floor covering materials including adhesive - Section 02070 - Alterations And General Demolition
- .4 Separate Prices: Provide the following separate price and note same on Bid Form:
 - .1 Separate Prices: Not Used
- .5 Unit Prices: Provide the following Unit Price and note same on Bid Form:
 - .1 Unit Prices: Not Used
- .6 This Section along with the drawings forms part of the Contract and is to be read, interpreted, and coordinated with all other parts.
- .7 Division 01 - General Requirements form an integral part of this Section of Work.

1. GENERAL

- 1.1 Description** - Continued
- .8** Related Work Specified Elsewhere: Related Work includes but is not necessarily limited to the following:
- .1** Section 01630 - Substitutions
 - .2** Section 02070 - Alterations and General Demolition
 - .3** Section 06100 - Rough Carpentry
 - .4** Section 06200 - Finish Carpentry And Millwork
 - .5** Section 07900 - Sealants, Gaskets, Barrier Membranes & Drainage Layers
 - .6** Section 08700 - Finish Hardware
 - .7** Section 09250 - Gypsum Board
 - .8** Section 09300 - Ceramic Tile
 - .9** Division 15 - Mechanical (floor drains, trenches, clean outs, etc.)
 - .10** Division 15 - Mechanical (heating, ventilation and air conditioning, floor grilles, etc.)
 - .11** Division 16 - Electrical (floor outlets/boxes for power and communications, etc.)
 - .12** All other Sections and Drawings to be reviewed
- 1.2 Reference Standards**
- .1** The ***latest edition*** of the Floor Covering Reference Manual issued by the National Floor Covering Association of Canada (NFCA) shall govern all materials and workmanship. Whenever reference is made within this specification to NFCA requirements it shall mean, as a minimum, those standards and requirements noted in the NFCA Reference Manual.
 - .2** The ***latest applicable edition*** of the following reference standards shall also govern all materials and installation Work specified herein as applicable:
 - .1** CAN/CSA A23.1-00, Concrete Materials and Methods of Concrete Construction. ASTM F710, Standard Specification for Preparing Concrete Floor to Receive Resilient Flooring
 - .2** ASTM F3311, Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring Systems Components Prior to Installation. ASTM F3191 Standard Practice for Field Determination of Substrate Surface Water Absorption (Porosity) for Substrates to Receive Resilient Flooring

1. GENERAL

1.2 Reference Standards

- Continued

- .3 ASTM 1482, Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
- .4 ASTM F1066, Standard Specification for Vinyl Composition Floor Tile
- .5 ASTM F1303, Standard Specification for Sheet Vinyl Flooring With Backing. ASTM F1344, Standard Specification for Rubber Floor Tile
- .6 ASTM F1700, Standard Specification for Solid Vinyl Floor Tile
- .7 ASTM F1859, Standard Specification for Rubber Sheet Flooring Without Backing. ASTM F1860, Standard Specification for Rubber Sheet Flooring With Backing
- .8 ASTM F1861, Standard Specification for Resilient Wall Base
- .9 ASTM F1913, Standard Specification for Vinyl Sheet Floor Covering Without Backing. ASTM F2034, Standard Specification for Sheet Linoleum Floor Covering
- .10 ASTM F693, Standard Practice for Sealing Seams of Resilient Sheet Flooring Products by Use of Liquid Seam Sealers
- .11 ASTM F1516, Standard Practice for Sealing Seams of Resilient Flooring Products by the Heat Weld Method (when Recommended)
- .12 ASTM F355, Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials
- .13 ASTM F1292, Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment
- .14 ASTM F1931, Standard Test Method for Characterization of Gymnastic Landing Mats and Floor Exercise Surfaces
- .15 CGSB 20-GP-32M, Matting, Floor, Rubber or Plastic
- .16 CAN/ULC-S102, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
- .17 CAN/ULC-S102.2, Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies
- .18 Industrial Health and Safety Regulations of the Workers Compensation Board (WCB). Workplace Hazardous Materials Information System (WHMIS)

1. GENERAL - Continued

1.3 Quality Assurance

- .1 All preparation, materials, and workmanship shall be in strict accordance with NFCA requirements and material manufacturer's written recommendations and detail requirements for conditions of the Work that apply and guarantee/warranty periods noted herein.
- .2 Any preparation, materials, and workmanship that does not meet NFCA requirements shall be repaired or replaced in accordance with Quality Assurance requirements at no additional cost to the Owner.
- .3 The flooring contractor shall be recommended by the manufacturer/supplier of resilient flooring as qualified to install specified flooring materials including heat welding of seams and must have a minimum of three (3) years local experience and have successfully completed a minimum of five (5) projects with the same or similar materials, quantities, and complexity as this project. If requested provide a list of similar flooring projects completed within the last two (2) years.
- .4 For specialty resilient flooring materials or systems the manufacturer's representative shall review all surfaces and conditions for material applications and provide sufficient site reviews and reports to ensure that the installation is in conformance with the product guarantee requirements.
- .5 Pre-construction meeting:
 - .1 Convene a pre-construction meeting in accordance with Section 01200 - Meetings And Progress Reports. All relevant parties shall attend including the Contractor, Concrete Contractor, Flooring Contractor, Consultant (specifying authority), Owners representative, Quality Assurance Program Inspector
 - .2 Review:
 - .1 Co-ordination with Section 02070 - Alterations And General Demolition for starting concrete flatness, levelness tolerances and slab surface requirements
 - .2 Temporary heating and humidity control required for installation of flooring products
 - .3 Acceptable substrate conditions (moisture, pH, relative humidity, straightedge gap measurements
- .6 Pre-Installation Meeting - See 1.6 Pre-Installation Site Meeting in this Section.

1. GENERAL - Continued

1.4 Testing Requirements

- .1 Moisture and alkalinity tests shall be conducted by an independent third party testing agency using testing methods and devices in accordance with NFCA requirements and the floor covering manufacturer's recommendations. In multiple story buildings each floor level shall be tested. All test locations shall be marked on As-Built Drawings.
- .2 It shall be the responsibility of the General Contractor to provide and pay for such testing in a timely manner in accordance with Section 01400 - Testing And Inspection.
- .3 The final test results must be in compliance with minimum NFCA requirements, resilient flooring, cementitious underlayment and adhesive manufacturer's recommendations and unless otherwise permitted by the floor covering material manufacturers [and approved by the NFCA Quality Assurance Inspector]:
 - .1 RH In Situ Probe test results, conducted according to ASTM F-2170, shall not exceed 85%
 - .2 Anhydrous Calcium Chloride test results, conducted according to ASTM F-1869, shall not exceed an MVER of 3 lbs./1000 ft² over a twenty-four (24) hour period
 - .3 Alkalinity test results according to ASTM F710
 - .4 For wood substrates check the manufacturers installation requirements. An electronic pin moisture meter reading of no more than 12% is often recommended (depending on the meter being used)
- .4 Check substrate surfaces for correct temperature to ensure manufacturers requirements are met. This includes the following:
 - .1 Hydraulic Cementitious Underlayment. Minimum surface temperature of 10°C (50°F)
 - .2 Floor adhesive. Minimum surface temperature of 16°C (60°F)
- .5 Check ambient room temperature is at 'service' conditions and meet manufacturers requirements.
- .6 Check floor covering and related products are within a temperature range recommended by the manufacturer prior to application.
- .7 Check ambient room relative humidity and ambient room temperature are between 40 - 60% or meet manufacturers requirements for the products being used.

1. GENERAL

1.4 Testing Requirements

- Continued

- .8 Check concrete surface profile meets manufacturers requirements.
- .9 Check sub-floor surface porosity (water absorption) meets adhesive manufacturers requirements. Conduct tests in accordance with ASTM F3191.
- .10 Check substrate surfaces for flatness tolerances to ensure they are within NFCA requirements of 3/16" over 10', or as required by the floor covering product manufacturer.
- .11 Do not install flooring materials until testing results indicate that all substrate surfaces are acceptable for covering. Report any unsatisfactory conditions to the Contractor.
- .12 ASTM F-710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring shall apply.
- .13 Perform Mat Bond Tests to confirm acceptable adhesion between all products prior to installation start up.

1.5 Regulatory & Environmental Requirements

- .1 Ensure that all materials, including adhesives and other accessory products, are environmentally safe and are not prohibited by any applicable laws, regulations, bylaws, ordinances or orders of any Authorities Having Jurisdiction.
- .2 Ensure that all employees are fully informed and comply, at all times with Workplace Hazardous Material Information System (WHMIS) requirements. Such compliance shall include but not be limited to:
 - .1 Training of staff in the proper handling and storage of such materials
 - .2 Furnishing and use of Workplace Material Safety Data Sheets (MSDS) and labels for such materials

1. GENERAL - Continued

**1.6 Pre-Installation
Site Meeting**

.1 Before commencement of the Work on site, the Contractor, resilient flooring contractor, flooring manufacturer's factory/distributor representative and the Consultant shall meet to discuss the following items:

- .1 Where applicable, removal and disposal of existing floor coverings, adhesives and contaminants (sealers, paint, curing agents, etc.)
- .2 Review of substrate requirements and conditions including substrate finish and level and flatness tolerances
- .3 Substrate testing for moisture and alkalinity and provision of written results
- .4 Other testing requirements such as Bond (Pull) Testing, Porosity, surface compressive strength (psi), concrete surface profile (CSP), existing sub floor surface requirements
- .5 Confirmation of all floor covering materials, i.e., types, patterns/colours and miscellaneous related materials and mock up
- .6 Scheduling of all flooring Work, including material deliveries, handling, storage, conditioning and staging of the Work
- .7 Installation requirements, including heating, ventilation, condition and preparation of acceptable substrates, workspace lighting and protection of the completed Work
- .8 Review of details, including, but not limited to (when applicable) seaming, bases, correct drywall finish for cove former, corners, interfaces with adjacent materials, all expansion and movement joints, floor access hatches (where applicable) and floor penetration (e.g. trench and drain) requirements
- .9 Co-ordination with Mechanical sub-trade to ensure that floor drain types for sheet flooring have a clamping ring and flush floor grate
- .10 Inspection procedures and reports.
- .11 Flooring contractor requirements:
 - .1 Provision of project flooring Specifications and applicable Drawings
 - .2 A schedule of materials intended for use on the project and any subsequent Addenda
 - .3 Changes approved by the Specifying Authority, if any
 - .4 Provision of a list of names and qualifications of installers prior to commencement of the Work
 - .5 Provision of Consent of Surety (by the flooring contractor) for a two (2) year 100% Maintenance Bond

1. GENERAL

**1.6 Pre-Installation
Site Meeting**

- Continued

- .6 Notification of conditions that do not meet manufacturer and or NFCA standards
- .7 Notify the Consultant through the Contractor a minimum of five (5) full working days prior to the start of the floor covering Work and the same for subsequent site meetings
- .12 Provision of maintenance materials and data requirements for cleaning, treatment and maintenance for each type of flooring installed
- .13 The General Contractor shall keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation instructions and distribute minutes to attendees within 48 hours

**1.7 Site
Sample**

- .1 Prior to installation, install a sample of each type of specified resilient flooring to designated area(s) or room(s) in accordance with site meeting requirements to show selected material, pattern/texture/colour schemes, direction of lay, finish fits to walls and doorways, seam finish, top set base and/or flash cove details at inside and outside corners and/or any other requirements that apply as well as workmanship.
- .2 Following completion, the installation is to be reviewed by the Consultant, Contractor, resilient flooring contractor and flooring manufacturer's factory/distributor representative. If accepted, the sample(s) shall serve as the 'Standard' for all other such Work throughout the building. Do not proceed with balance of installation until such approval has been given.

**1.8 Product Delivery,
Handling
& Storage**

- .1 Deliver all flooring materials (including adhesives and accessories) wrapped/sealed in original labelled and unopened packaging with type and pattern/colour and registration numbers clearly marked on each roll, carton, or container.
- .2 Prevent damage to and store all materials in strict accordance with manufacturer's written requirements in a secure dry space on site at locations designated by the Contractor. Roll goods shall be stored on end and tile boxes should not be stacked over four (4) boxes high.

1. GENERAL

**1.8 Product Delivery,
Handling
& Storage**

- Continued

- .3** Deliver all materials to the Work areas when required and a minimum of 48 hours before installation to condition materials to site temperature and humidity conditions.

**1.9 Installation
Requirements**

- .1** The Work under this Section shall be limited to that indicated under the scope of Work of this trade including the correction and filling of minor imperfections and irregularities with a non-shrinking latex based patching/levelling compound and sanding it smooth.

- .2** It shall be the responsibility of the General Contractor to provide conditions acceptable for the installation of floor covering materials. This shall include the provision of floor levels, finish tolerances, and conditions in accordance with manufacturer's recommendations and minimum requirements of NFCA Floor Covering Reference Manual Part A10 - Acceptable Conditions including the following:

- .1** Concrete slabs - Substrate surfaces equal to or less than a flatness tolerance of 3/16" over 10', as per ASTM 710, or as required by the manufacturer shall be provided by the General Contractor before the Work of this Section proceeds using an acceptable Hydraulic Cement Underlayment and or grinding of high areas as necessary
- .2** Wood sub-floor: N/A
- .3** Concrete substrates machine trowelled to a smooth (Concrete Surface Profile 1-2), porous (perform porosity test ASTM F-3191), flat surface that are free of all marks, imperfections or conditions that will telegraph through or damage installed flooring materials
- .4** Grinding or sanding of ridges, undulations, projections and areas of carbonation and scaling and filling and levelling of expansion joints, cracks, grooves and other irregularities
- .5** Clean, dry substrate surfaces free of contaminants detrimental to flooring installation (e.g. paint, varnish, oils, release agents, waxes, sealers and curing and hardening compounds not compatible with adhesives employed if flooring is glued down). Surfaces shall be broom cleaned. Removal of existing flooring material including adhesive where applicable
- .6** Removal of existing flooring material including adhesive where applicable

1. GENERAL

1.9 Installation Requirements

- Continued

- .7** Environmental conditions prior to and immediately after flooring installation meeting the following criteria:
 - .1** Heating, air conditioning and humidity control facilities in operation
 - .2** Substrate moisture content and alkalinity level within manufacturer's requirements. New concrete and suspect existing concrete surfaces shall be tested in accordance with NFCA requirements by an independent testing agency in a timely manner arranged by the Contractor with costs paid for by the Owner
 - .3** Environment and substrate temperatures within manufacturer's requirements. This includes the temperature of all materials to be installed and areas to receive flooring be maintained at a minimum of 18°C (65°F) and maximum of 29°C (85°F) for at least 48 hours prior to, during, and after installation, and that a minimum temperature of 13°C (55°F) is maintained thereafter. If temperature is not within range postpone installation until acceptable conditions are provided
 - .4** Adhesive requirement - sub-floor surface temperature minimum 16°C (60°F) and 29°C (85°F)
 - .5** Humidity range within manufacturer's requirements and as a minimum between 40% and 60% assuming an 18°C to 25°C (65°F to 77°F) temperature. If humidity is not within this range, postpone installation until conditions are suitable
 - .6** Areas to receive flooring shall be vented 24 to 48 hours prior to installation using fresh circulating air and adequate ventilation (for noxious fumes) shall be provided in accordance with WHMIS and WCB requirements
 - .7** Areas to receive flooring shall be provided with adequate illumination (minimum of 500 lux at floor level) in accordance with WCB requirements
- .8** The final type and condition of each substrate shall be in complete accordance with NFCA requirements and the flooring material manufacturer's installation recommendations
- .9** Condition all flooring materials including adhesives on site to avoid potential expansion, contraction and bonding problems
- .10** Consult with and co-ordinate flooring Work and make provisions for all trades in advance to avoid conflict and future repairs. Refer to other flooring Sections for interface details and base type where applicable

1. GENERAL

1.9 Installation Requirements

- Continued

- .11 Install flooring materials only after all other trade's Work, especially gypsum board and painting, has been completed and all overhead mechanical and lighting Work and other wall mounted equipment has been installed
- .12 **Do Not** proceed with installation until all unsatisfactory conditions have been corrected. Notify the Contractor in writing of all defects likely to impair finished Work. Start of Work implies acceptance of surfaces and conditions
- .13 Unless otherwise noted herein or pre-approved, resilient flooring seams shall be placed with consideration of traffic patterns

1.10 Submittals

- .1 All submittals shall be in accordance with the requirements of Section 01300 - Submittals
- .2 Submit manufacturer's product literature, technical data in both metric and imperial values verifying compliance with specification requirements and full range of products and patterns/colours available with sample set for review/selection.
- .3 Submit manufacturer's product literature of accessory products and full range set of patterns/colours available and minimum 4" (100mm) long sample of each type of protective edgings and reducer strips to be used for review/selection and pre-approval.
- .4 Within 24 hours after award of Contract place orders for all materials and send copies of all such orders including confirmed delivery dates. No substitutions of specified or pre-approved materials will be entertained.
- .5 Submit material installation drawings for all areas clearly indicating flooring types, patterns/colours, pattern direction, joint (seam) locations (i.e., locations of length and cross seams and open edges) and other details required to clarify the Work including type and finish/colour of trims and mouldings used for review before commencing installation.
- .6 Submit minimum 600 mm (24") square mock up of flash coved [slip resistant] resilient floor assembly showing flash coving, cap trim, feature strip, heat welded joint and corner details for review and acceptability before commencing installation.

1. GENERAL

1.10 Submittals - Continued

- .7** At project completion, submit a list of all materials installed, including adhesives, accessories and bases clearly indicating material and manufacturer's names, type/pattern/colour name and numbers for Owner's future reference.
- .8** At project completion submit manufacturer's maintenance data and cleaning instructions for each type of resilient flooring and base installed.

1.11 Maintenance Materials & Data

- .1** For sheet goods: At project completion, provide full roll width x length as required to meet two percent of total area or minimum 110sq. ft. (10m²) from same production run of each type, pattern/colour of resilient flooring installed.
- .2** For goods in cartons: At project completion, provide a minimum of one box of each type and pattern/colour of resilient tile used or the amount required to meet 2% of total area for each product installed or minimum 55sq. ft. (5m²) from same production run for each type, pattern/colour of tile installed.
- .3** At project completion provide balance of roll but no less than length required to meet a minimum of 2% of total length of each type, colour and height from same production run of resilient base installed to a maximum of one (1) full roll or 120' (36500mm) for each.
- .4** At project completion, provide a minimum of one piece but no less than 2% of total length from same production run for each type, finish/colour of flash coved capping installed.
- .5** At project completion, deliver all maintenance materials as directed and obtain a written receipt stating amount and date delivered. Receipt shall be signed by the Contractor who shall forward a copy to the Owner. The flooring installer will request from the floor covering manufacturer for each type of resilient flooring installed and provide to the Contractor to include in the Manual.
- .6** At project completion provide cleaning and maintenance data from the manufacturer for each type of flooring material installed for Owner's maintenance manual and later use.
- .7** At project completion conduct a cleaning, treatment and maintenance training session with facility maintenance personnel.

1. GENERAL - Continued

1.12 Maintenance Bond

- .1** Furnish a 100%, Two (2) year Maintenance Bond on completion of resilient flooring Work. The Maintenance Bond shall warrant that the Work has been performed **in accordance with applicable standards and practice per this Specification and Manufacturer's requirements.**
- .2** Provide a copy of the bond to be used, together with written proof (Consent of Surety) of ability to furnish the bond at no cost to the Owner with Bid.

1.13 Warranties

- .1** Provide the following warranties beyond date of Substantial Performance in writing as well as any details of other warranties offered that exceed noted minimum requirements:
 - .1** Flooring manufacturer:
 - .1** Five (5) year abrasive wear guarantee that resilient flooring will provide specified level of appearance, subject to proper care and maintenance
 - .2** Seven (7) year abrasive wear guarantee that slip resistant resilient flooring will provide specified level of appearance, subject to proper care and maintenance
 - .2** Flooring installer:
 - .1** One (1) year against substrate preparation/installation failures such as incorrect layout/improper fitting, seam failures, buckling due to bond failure, telegraphing of substrate imperfections, tile slippage/gapping and other deficiencies that can be attributed to poor workmanship
 - .3** Adhesive manufacturer:
 - .1** Ten (10) year, including labour and materials, against adhesive failure

2. PRODUCTS

2.1 General Requirements

- .1 All the Work shall be based on the use of specified materials. Other floor coverings and accessory materials may be approved by the Consultant only before Bid Closing providing they meet or exceed the requirements specified herein. Refer to submittal requirements. **No other products will be accepted after Bid Closing.**
- .2 All colours, patterns and textures of resilient flooring material (flooring, welding rods, bases, etc.) shall be as selected by the Consultant from manufacturer's complete range as indicated on Finish Schedules and/or as noted below.

2.2 Installation Materials

- .1 Sheet Underlayment: N/A
- .2 Substrate Primers and Sealers: As recommended by substrate filler and resilient flooring manufacturers.
- .3 Substrate Filler: Smooth trowelling, fast setting, non-shrinking, non-cracking, pre-mixed filler with Portland cement and polymeric modifiers (white latex) and a minimum compressive strength of 20 MPa (2900 psi) at 28 days for patching/filling/levelling substrates, type(s) to suit substrate conditions as recommended by each resilient flooring manufacturer. Gypsum based products are not permitted.
- .4 Adhesives: Premium grade, **low VOC (solvent free)**, alkaline and water resistant type to suit material backing and substrate type and condition as recommended by both adhesive and resilient flooring and resilient base manufacturers. Manufacturer's spread rates shall be strictly adhered to.
- .5 Adhesive for Rubber Mat Flooring: N/A
- .6 Trowel (for adhesive): Notched type as recommended by flooring material and adhesive manufacturer.
- .7 Roller: Minimum weight as recommended by resilient flooring manufacturer.
- .8 Heat Welding Rods: Solid colour or patterned rods to match/compliment flooring as recommended and supplied by flooring manufacturer and as selected by the Consultant from manufacturer's standard range.

2. PRODUCTS

2.2 Installation Materials

- Continued

- .9** Fasteners: Non-corrosive staples, nails, tacks and screws of type to suit material types and substrate conditions as recommended by accessory manufacturer.
- .10** Sealants: Mildew resistant sanitary sealant to CAN/CGSB 19.22 for use around toilets, tub/shower units and to requirements noted in Section 07900 - Sealants, Gaskets, Barrier Membranes & Drainage Layers.

2.3 Resilient Tile Flooring

- .1** Provide the following resilient tile flooring type:
 - .1 Offices & Central Communal Areas:** Vinyl Composition Plank: DuraFlex Floor Vinyl Planks by Centura; colour: Putty.
 - .2 Washrooms, Sleep Areas, Corridor, Reception & Support Areas:** Altro Reliance 25 non-slip 2.5mm thickness, colour to later selection from standard available range.

2.4 Resilient Sheet Flooring (Roll Goods)

- .1** Provide the following resilient sheet flooring types in manufacturer's standard widths, unless otherwise noted herein:
- .2** Provide flooring with smoke developed rating of 450 or less in accordance with ASTM E662 and with a maximum flame spread rating of 25 or less and smoke developed rating of 50 or less in accordance with CAN/ULC S102:
 - .1** Flexible Polyvinyl Chloride (PVC) Flooring: 2mm gauge thick solid PVC flooring - Medintone by Armstrong Flooring; colour Talisman H2012.

2.5 Other Resilient Flooring

- .1** Outdoor Resilient Floor Coverings: PlaySafe SHOCK - Park and Play Tile 2' x 2' x 1 3/16" (600mm x 600mm x 30mm) by Perfect Surfaces (888) 363-6289, 2007 - 4 Highland Park Green NE, Airdrie, Alberta; colour Sandcastle.

2. PRODUCTS - Continued

2.6 Bases

- .1 Rubber Base: 3 mm (1/8") thick x 102 mm (4") moulded rubber toeless (straight) base to ASTM F1861, Type TP, complete with pre-moulded external and internal corners; Mandalay profile by Johnsonite; colour to later selection by Consultant.
- .2 Flash Coved Integral Base: Fabricated from resilient sheet flooring that is flash coved 4" (100mm) up wall face, complete with pre-approved heat welded joint seams and interior and exterior corner details and with continuous top cap as specified.
- .3 Self/Flash Coved Base Supports: Minimum 19 mm (3/4") radius (22 mm (7/8") for backed flooring) continuous wood, hard wax, or plastic fillet material as recommended by flooring manufacturer.
- .4 Flash Coved Base Cap: Continuous PVC cap for transition of flash coved resilient flooring with colour as selected by the Consultant from manufacturer's standard range. Provide the following types:
 - .1 Termination cap for flooring on gypsum board walls
- .5 Refer to Finish Schedule for base types and locations and co-ordinate bases with other flooring types as applicable.
- .6 Provide bases in minimum 8'-0" (2400mm) lengths.
- .7 Use pre-moulded corner finish.
- .8 Protective Edging and Reducers:
 - .1 Protective Edgings and Reducer Strips: Heavy duty commercial, tapered rubber type to suit application and traffic conditions as recommended by resilient flooring manufacturer with material, style, finish and colour as selected by the Consultant from manufacturer's standard range to match resilient flooring and compliment flooring finishes. Items to be mechanically fastened or glue applied to suit substrate conditions with a vandal proof, non-destructive wear surface as appropriate. Thickness as required for adjoining floor covering.

3. EXECUTION

3.1 Installation Requirements

- .1 Review substrate, environmental conditions and work by other trades to ensure that they are in complete compliance with the manufacturer's recommended installation specification and NFCA Standard requirements prior to the installation of resilient floor coverings. Start no work until all conditions are acceptable.
- .2 Ensure that paint, varnish, oils, release agents, waxes, sealers and curing and hardening compounds not compatible with adhesives employed have been removed.
- .3 Ensure that all appliances and other movable equipment and furnishings are removed.

3.2 Preparation

- .1 **Note:** Testing of substrates for moisture and alkalinity shall be in accordance with NFCA requirements and be provided by the General Contractor.
- .2 Verify that moisture and alkalinity testing has been done by General Contractor and field check ratings as required.
- .3 The type, location, condition and surface tolerances of substrate must be in complete accordance with NFCA requirements and resilient flooring manufacturer's recommendations.
- .4 Fill substrate low spots, minor cracks, joints and holes with substrate filler to the extent required by scope of work and ensure substrates are free from all bumps, ridges and other imperfections. Feather filler as required to allow for difference in adjacent floor materials. Sand smooth to eliminate all irregularities, bumps, ridges and other imperfections and vacuum clean to provide a surface that will not telegraph imperfections through resilient flooring.
- .5 Seal and prime substrate surfaces if recommended by flooring adhesive manufacturer's recommendations.
- .6 Review all site conditions, installation requirements and timetable for work and ensure substrate, environmental conditions and work by other trades is acceptable prior to commencing installation of all materials and to ensure that schedule can be maintained.
- .7 Ensure that temperature requirements for installation of materials is within appropriate range prior to, during, and after installation.

3. EXECUTION

3.2 Preparation - Continued

- .8** Provide adequate means to protect face of doors, door frames and walls from marring due to supply and installation of new resilient flooring and/or removal of existing flooring.
- .9** Where applicable, remove existing resilient flooring and dispose of in a legal manner or recycle in accordance with noted requirements.
- .10** After remedial work has been done to subfloors, ensure all surfaces to receive resilient flooring are vacuumed clean and are dry, smooth and free from substances detrimental to filler and adhesive bond (as noted herein).
- .11** Remove toilet bowls if installed before sheet flooring so that flooring material butts to toilet flange and replace wax seals and, if necessary, provide new brass anchor bolts and plastic cover caps. Install specified silicone sealant around toilet bowl and bathtub/shower edge, neatly with even and smooth concave surface.

3.3 Installation of Resilient Flooring

- .1** Mix and apply adhesives in strict accordance with manufacturer's written instructions, observing recommended trowel notching, spread/coverage rates, open times and safety precautions. Do not spread more adhesive than can be covered by flooring before initial set takes place. Roll flooring as required (during and after installation) to prevent visible adhesive/trowel marks in high polished flooring. No visible traces of adhesive will be acceptable in sheet or tile joints.
- .2** Install all resilient flooring and accessories in accordance with NFCA guidelines using tools, materials, methods and sequence of work as recommended.
- .3** Install resilient flooring to mock up areas and rooms for approval to types and patterns as detailed or scheduled.
- .4** Install all resilient flooring to areas and patterns detailed and/or shown on Finish Schedules and unless otherwise noted or pre-approved, continuous under all appliances and moveable millwork and furniture items and into closets.

3. EXECUTION

3.3 Installation of
Resilient
Flooring

- Continued

- .5 Provide contrasting bands, inlays, and features using specified materials double cut or water cut (to produce tight fine joints) to shapes, sizes, and profiles shown on drawings and install into positions of installed field material. Correctly match patterned materials and place designs for best visual appearance.
- .6 Install resilient tile and sheet flooring with variations in shade or pattern disbursed to obtain a uniform effect, with pattern grain laid in **one direction, long way of room or corridor** unless otherwise indicated. Abrupt variations are not permitted.
- .7 Install all resilient flooring continuous through doorways and scribed to fit all projections and vertical surfaces. Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.
- .8 Unless otherwise noted on drawings, install resilient sheet flooring with joints straight, true to plane and symmetrical with minimum one half width of sheet at perimeters.
- .9 Install resilient plank flooring with joints straight, true to plane and symmetrical with minimum half width tile at perimeters, but not less than 6" (150mm) wide, unless otherwise necessitated by irregular shaped rooms.
- .10 Keep resilient sheet joints to a minimum and conceal from view where possible with locations pre-approved by the Consultant prior to installation. Minimize sheet joints by using full width rolls, wherever possible. Follow manufacturer's recommendations in regard to reverse or non-reverse lay for best colour match.
- .11 Cross seams and seams at doors and at pivot points shall be avoided unless unavoidable by material width or roll length. Such conditions shall be reviewed with and pre-approved before proceeding.
- .12 Install resilient sheet flooring with double cut, **heat welded joints using matching colour rods with heat welded joints and seams finished flush with floor and free from voids, recesses and raised areas.**

3. EXECUTION

**3.3 Installation of
Resilient
Flooring**

- Continued

- .13** Install resilient sheet flooring into clamping ring of floor drains and down into trench drains where applicable. Cutting and caulking of such flooring flush with floor drain grate/trim is not acceptable and flooring will be rejected.
- .14** Caulk with vandal proof/waterproof sealant at perimeter of linoleum abutting walls, millwork bases and other projections in wet areas.

**3.4 Installation of
Resilient
Flooring
- Flash Coved Base**

- .1** Provide resilient flooring flash coved base ***using same flooring material*** where indicated on drawings and/or Finish Schedule in strict accordance with manufacturer's installation recommendations.
- .2** Install fillet strip (cove backing) to facilitate transition at intersection of wall and floor.
- .3** Install continuous base cap of types specified to wall face at heights indicated for base on Finish Schedule or detailed on the Drawings ensuring that adjacent pieces are aligned and level.
- .4** Install flash coved base 6" (150mm) up wall and fit top of flooring into continuous cap.

**3.5 Installation of
Protective
Edgings &
Reducer Strips**

- .1** Install protective edgings/reducer strips to all exposed resilient flooring edges as required to suit conditions, securely bonded to substrate and in a straight line.
- .2** Refer to Section 09300 - Ceramic Tile for supply and installation of edging adjacent to ceramic tile (including marble, slate, etc.).

3. EXECUTION - Continued

**3.6 Cleaning,
Adjustment &
Protection**

- .1** On completion remove all floor covering waste and scraps from areas and rooms worked in, and from the job site and inspect all installed floor covering for adjustments and repairs required. Provide a list of deficiencies to the Consultant/Flooring QA Inspector.
- .2** Remove excess adhesive from floor, base, and wall surfaces without causing damage.
- .3** Prohibit traffic on all installed resilient flooring for forty-eight (48) hours after installation.
- .4** Protect resilient flooring with suitable non-marring covering from time of final set of adhesive until just before final inspection. Refer to Section 01600 - Material And Equipment for protection after installation until Substantial Performance.
- .5** Protect resilient flooring against damage from rolling loads by covering with plywood or hardboard.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section includes All labour, materials, equipment, and services to supply and install two resinous flooring systems, one with epoxy body and one with urethane urea resin to areas **as indicated in the Drawings or Schedules.**
- .2 Related Work Specified Elsewhere: Related Work includes but is not necessarily limited to the following:
 - .1 Section 01630 - Substitutions
 - .2 Section 02070 - Alterations and General Demolition
 - .3 Section 09660 - Resilient Flooring And Base
 - .4 Section 09985 - Hygienic Wall And Ceiling Covering
 - .5 All other Sections and Drawings to be reviewed
- .3 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

- .1 This Section includes two (2) resinous flooring systems, one (1) with epoxy body and one (1) with urethane urea resin.
 - .1 Application Method: Troweled screed and sanded. Rubberized Terrazzo

1.3 Submittals

- .1 Product Data: For each type of product indicated. Include the manufacturer's technical data, application instructions and recommendations for each resinous flooring component required.
- .2 Samples for Verification: For each resinous flooring system required, 5" (125mm) square, applied to a rigid backing by the installer for this Project.
- .3 Product Schedule: Use resinous flooring designations indicated in Part 2 and room designations indicated on Drawings in product schedule.
- .4 Installer Certificates: Signed by the manufacturer certifying that installers comply with specified requirements.
- .5 Maintenance Data: For resinous flooring to include in maintenance manuals.

1. GENERAL - Continued

1.4 Quality Assurance

- .1 No request for Substitution shall be considered that would change the generic type of floor system specified (i.e. urethane based rubberized terrazzo). Equivalent materials of other manufactures may be substituted only on approval of Architect or Engineer. Request for Substitution will only be considered only if submitted ten (10) days prior to bid date. Request will be subject to Specification requirements described in this Section.
- .2 Installer Qualifications: Engage an experienced installer (applicator) who is experienced in applying resinous flooring systems similar in material, design and extent to those indicated for this Project, whose Work has resulted in applications with a record of successful in service performance and who is acceptable to the resinous flooring manufacturer.
 - .1 Engage an installer who is certified in writing by the resinous flooring manufacturer as qualified to apply resinous flooring systems indicated
 - .2 Contractor shall have completed at least ten (10) projects of similar size and complexity
- .3 Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats and topcoats, through one source from a single manufacturer, with not less than ten years of successful experience in manufacturing and installing principal materials described in this Section. Provide secondary materials, including patching and fill material, joint sealant and repair materials, of type and from source recommended by the manufacturer of primary materials.
- .4 Manufacturer Field Technical Service Representatives: Resinous flooring manufacture shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.
 - .1 Field Technical Services Representatives shall be employed by the system manufacture to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer

1. GENERAL

1.4 Quality Assurance

- Continued

.5 Mock Ups: Apply mock ups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:

.1 Apply full thickness mock ups on 4'-0" (1200mm) square floor area selected by the Architect

.1 Include 4'-0" (1200mm) length of integral cove base

.2 Approved mock ups may become part of the completed Work if undisturbed at time of Substantial Completion

.6 Pre-Installation Conference:

.1 The General Contractor shall arrange a meeting not less than thirty (30) days prior to starting the Work

.2 Attendance:

.1 General Contractor

.2 Architect/Owner's Representative

.3 Manufacturer/Installer's Representative

1.5 Delivery, Storage & Handling

.1 Deliver materials in original packages and containers, with seals unbroken, bearing the manufacturer's labels indicating brand name and directions for storage and mixing with other components.

.2 Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects. Store material per Product Data sheet.

.3 All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements allowed.

1. GENERAL - Continued

1.6 Project Conditions

- .1 Environmental Limitations: Comply with the resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation and other conditions affecting resinous flooring application:
 - .1 Maintain material and substrate temperature between 18°C and 30°C (65°F and 85°F) during resinous flooring application and for not less than 24 hours after application
- .2 **Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.**
- .3 Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless the manufacturer recommends a longer period.
- .4 The concrete substrate shall be properly cured. A vapour barrier must be present for concrete subfloors on or below grade. Otherwise, an osmotic pressure resistant grout must be installed prior to the resinous flooring.

1.7 Warranty

- .1 The manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of one (1) one full year from date of installation, or provide a joint and several warranty signed on a single document by the material manufacturer and applicator jointly and severally warranting the materials and workmanship for a period of (1) one full year from date of installation. A sample warranty letter must be included with bid package or bid may be disqualified.

2. PRODUCTS

2.1 Resinous Flooring

- .1 Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, the following:
- .2 Products: Provide the following:
 - .1 Stonhard, Inc. Stonres RTZ
 - .2 Colour from the manufacturer's standard range

2. PRODUCTS

**2.1 Resinous
Flooring**

- Continued

.3 System Characteristics:

- .1** Colour and Pattern: As indicated by the Architect in finish legend Drawings
- .2** Wearing Surface: Smooth Rubberized
- .3** Integral Cove Base: 6" (150mm) or height as noted on Drawings and Schedules
- .4** Overall System Thickness: 3/16" (5mm)

.4 System Components: Manufacturer's standard components that are compatible with each other and as follows:

.1 Primer Coat:

- .1** Material Basis: Stonhard Standard Primer
- .2** Resin: Two (2) component epoxy
- .3** Formulation Description: 100% solids
- .4** Application Method: squeegee back roll
- .5** Number of Coats: One (1)

.2 Primer Coat 2:

- .1** Material Basis: Stonhard SL Primer
- .2** Resin: Three (3) component epoxy
- .3** Formulation Description: 100% solids
- .4** Application Method: squeegee back roll onto wet standard primer
- .5** Number of Coats: One (1)

.3 Formulation Description: Body Coat:

- .1** Material Basis: Stonres Mortar base
- .2** Resin: Urethane
- .3** Formulation Description: Comprised of a three (3) component mortar, consisting of pigmented urethane resin, curing agent and rubber aggregates
- .4** Application Method: Screed Rake
 - .1** Free Flowing Mortar: Uniformly spread mortar over substrate using the manufacturer's specially designed screed rake adjusted to the manufacturer's recommended height. Spike roll the mortar to remove any rake lines, using manufacturer's specially designed spike roller
 - .2** Sanding: Sand surface of the cured mortar according to the manufacturer's recommended equipment and procedures

2. PRODUCTS

**2.1 Resinous
Flooring**

- Continued

.4 Grout Coat:

- .1** Material Basis: Stonres grout coat
- .2** Resin: Urethane
- .3** Formulation Description: Two (2) component, 100% aliphatic, polyaspartic urethane
- .4** Type: Clear
- .5** Finish: Matte
- .6** Number of Coats: One (1)

.5 Topcoat: Chemical resistant and high UV stability

- .1** Material Basis: Stonseal GS7 clear flat
- .2** Resin: Aliphatic polyurethane
- .3** Formulation Description: Two (2) component, waterborne, flat, aliphatic polyurethane topcoat
- .4** Type: Clear
- .5** Finish: Matte
- .6** Number of Coats: One (1)

Note: Components listed above are the basis of design intent; all bids will be compared to this standard including resin chemistry, colour, wearing surface, thickness and installation procedures, including number of coats. The Contractor shall be required to comply with all the requirements of the Specifications and all of the components required by the Specifications, whether or not such products are specifically listed above.

.5 System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:

- .1** Static load Limit: 0.004in/0.1mm
- .2** Resistance to Heat: Delta E>8 per ASTM F-970
- .3** Hardness: 85 Min. per ASTM D-2240/Shore A Durometer
- .4** Residual Indentation: 1% thickness per ASTM F-1914
- .5** Noise Reduction Coefficient: 0.05 per ASTM C-423
- .6** Abrasion Resistance: 0.01gm per ASTM D-3389, H-18 500g, 1000 cycles
- .7** Fire Resistance: Class 1, Per ASTM E-648
- .8** Percent Elongation: 150% per ASTM D-638
- .9** Thermal Coefficient of Linear Expansion: 3.3×10^{-5} in./in. F per ASTM C-531

2. PRODUCTS - Continued

2.2 Accessory Materials

- .1** Pitching and Leveling: Use a three (3) component fast setting trowel able epoxy grout. Resinous epoxy based grout designed for permanent repairs under flooring system. Stonhard, Stonset TG 5. See Drawings for fill locations. Use standard drain details, saw cut and chase.
- .2** Joint Sealant: Type recommended or produced by the resinous flooring manufacturer for type of service and joint condition indicated.

3. EXECUTION

3.1 Preparation

- .1** General: Prepare and clean substrates according to the resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry and neutral Ph substrate for resinous flooring application.
- .2** Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form release agents, dust, dirt, grease, oil and other contaminants incompatible with resinous flooring:
 - .1** Mechanically prepare substrates as follows:
 - .1** Shot blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus and recirculates the shot by vacuum pickup or Diamond Grind with dust free system
 - .2** Repair damaged and deteriorated concrete according to the resinous flooring manufacturer's written recommendations
 - .3** Verify that concrete substrates are dry:
 - .1** Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 80%
 - .2** Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture vapour emission rate of 6 lb of water/1000 sq. ft. of slab in 24 hours
 - .3** Perform additional moisture tests recommended by the manufacturer. Proceed with application only after substrates pass testing

3. EXECUTION

3.1 Preparation - Continued

- .3** Use patching and fill material to fill holes and depressions in substrates according to the manufacturer's written instructions.
- .4** Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations. Allowances for Stonproof CT5.

3.2 Application

- .1** General: Apply components of resinous flooring system according to the manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated:
 - .1** Co-ordinate application of components to provide optimum adhesion of resinous flooring system to substrate and optimum intercoat adhesion
 - .2** Cure resinous flooring components according to the manufacturer's written instructions. Prevent contamination during application and curing processes
 - .3** At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations:
 - .1** Apply joint sealant to comply with manufacturer's written recommendations
- .2** Apply SL Primer over prepared substrate at the manufacturer's recommended spreading rate wet on wet application.
- .3** Integral Cove Base: High performance, mortar consisting of epoxy resin, curing agent and selected, graded aggregates blended with inorganic pigments, high solids epoxy mortar system. Top coat with Stonseal GS7, pigmented urethane top coat.
- .4** Apply cove base mix to wall surfaces before applying flooring. Apply according to the manufacturer's written instructions and details including those for taping, mixing, priming and troweling, sanding and top coating of cove base. Round internal and external corners.
- .5** Free Flowing Mortar: Mix mortar material according to the manufacturer's recommended procedures. Uniformly spread mortar over substrate using manufacturer's specially designed screed rake adjusted to manufacturer's recommended height. Spike roll the mortar to remove any rake lines, using manufacturer's specially designed spike roller.

3. EXECUTION

3.2 Application - Continued

- .6** Sanding: Sand surface of the cured mortar according to manufacturer's recommended equipment and procedures. Thoroughly clean and vacuum the surface of the base once all sanding has been completed.
- .7** Grout coat: Mix and apply sealer with strict adherence to the manufacturer's installation procedures and coverage rates.
- .8** Topcoat: Mix and roller apply the topcoat with strict adherence to the manufacturer's installation procedures and coverage rates.

3.3 Terminations

- .1** Chase edges to 'lock' the coating system into the concrete substrate along lines of termination.
- .2** Penetration Treatment: Lap and seal coating onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement.
- .3** Trenches: Continue coating system into trenches to maintain monolithic protection. Treat cold joints to assure bridging of potential cracks.
- .4** Treat floor drains by chasing the coating to lock in place at point of termination.

**3.4 Joints
& Cracks**

- .1** Treat control joints and to maintain monolithic protection.
- .2** Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.
- .3** Discontinue floor coating system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

3. EXECUTION - Continued

**3.5 Field
Quality
Control**

- .1 Material Sampling: The Owner may at any time and any numbers of times during resinous flooring application require material samples for testing for compliance with requirements:
 - .1 Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed and certified in presence of the Contractor
 - .2 The testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data
 - .3 If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials and reapply flooring materials to comply with requirements

**3.6 Cleaning,
Protecting
& Curing**

- .1 Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 24 hours.
- .2 Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. The General Contractor is responsible for protection and cleaning of surfaces after final coats.
- .3 Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer. the General Contractor is responsible for cleaning prior to inspection.

END OF SECTION

1. GENERAL

1.1 Description

- .1 The Work of this Section includes supply and application of paint finishes to areas and surfaces. **Note that all surfaces shall be painted unless otherwise indicated in the Drawings or Specifications and Schedules.**
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 Section 06200 - Finished Carpentry And Millwork
 - .3 Division 15 - Mechanical
 - .4 All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1 The Work in this Section shall be executed by fully equipped, expert labourers, highly skilled in painting application.
- .2 Painting shall be in accordance with CAN2-85-100-M81 - Painting.

1.3 Samples

- .1 Provide samples as follows in accordance with Section 01345 - Samples.
 - .1 On panels of same materials on which finishes appear on job site.
 - .2 Show all coats.
 - .3 Panels to be minimum 1'-0" x 1'-0" (300mm x 300mm) except for masonry materials which shall be one unit.

1.4 Delivery & Storage

- .1 Deliver packaged materials in original, unopened, labelled and sealed containers.
- .2 Keep stored materials covered at all times and take necessary precautions against fire.
- .3 Provide fire extinguisher (carbon dioxide type), minimum 20lbs (9kg) capacity, in storage area.

- 1. **GENERAL** - Continued
- 1.5 **Job Conditions**
 - .1 Minimum temperature for painting 10 degrees C.
 - .2 Surfaces must be dry, clean free from dust, grease, oil or other contaminants which will affect the Work of this Section.
- 1.6 **Protection**
 - .1 Use sufficient drop cloths and protective coverings to protect floors, furnishings and the Work of others not being painted.
 - .2 Areas assigned for storage and preparation of materials shall be fully protected.
 - .3 Keep waste rags in metal drums containing water and remove from building at end of each working day.
- 1.7 **Warranty**
 - .1 Submit a two (2) year warranty against defects in labour and materials of this Section.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Paints, Enamels, Fillers, Primers and Stains:** Standard interior latex paint shall be ICI Dulux Lifemaster in all areas; Density 11.51lbs/gal, VOC 0.00lbs/gal. **Colours: To the Architect's Later Selection.**
 - .1 The same brand of paint and stain chosen shall be used throughout, except where specified otherwise.
 - .2 Paint colours may be selected from any manufacturer's standard colouring system (e.g., paint sample chips, baked enamel colours) and shall be matched by the Paint Supplier.
 - .2 **Thinners, Cleaners:** Type and brand recommended by the paint manufacturer.

3. EXECUTION

3.1 Inspection

- .1 Check surfaces with electric moisture meter and do not proceed with paint application if meter reading is higher than 12 to 15 without written permission from the Consultant.

3.2 Preparation

- .1 Concrete Block, Brick and Concrete:
 - .1 Wire brush surfaces. Treat surfaces which are highly glazed or where traces of form oil or parting compound are present, with solution of 1 part concentrated muriatic acid to 4 parts water and 1 part acid detergent. Thoroughly wash with water and allow to dry.
 - .2 If effluorescence is evident on masonry, wash with solution of 2.2lbs (1kg) zinc sulphate to 1gal (4.5 litres) of water, rinsed with clear water and allowed to dry.
- .2 Metal:
 - .1 Neutralize zinc coated surfaces before painting with Lithoform or Galvaprep. Apply in strict conformance with manufacturer's printed directions.
 - .2 Touch up shop primed metal after first removing loose primer, rust, oil, grease and other contaminants.
 - .3 Feather edges to make touch up inconspicuous when applying new primer.
 - .4 Prime with zinc rich primer.
 - .5 Prime structural steel surfaces to receive A/D Firefilm III with primers approved by A/D Coatings. Refer to Approved Primers List; strictly follow primer manufacturer's written directions.
- .3 Gypsum Board:
 - .1 For small holes, scratches or other surface marks fill with patching compound and sand smooth.
 - .2 Larger holes and damaged areas will be repaired under Section 09250 - Gypsum Board.

3. EXECUTION

3.2 Preparation

- Continued

.4

Wood:

- .1** Inspect millwork to assure surfaces are smooth, free from machine marks and that nailheads have been countersunk. Seal knots and sapwood in surfaces with a sealer compatible with finish specified.
- .2** Sand woodwork which is to be finished, to a smooth finish and clean surfaces of dust before applying first coat. Fill nail holes, splits and scratches with putty tinted to match local grain condition. Between coats sand lightly with No. 00 sandpaper and remove dust.
- .3** Back paint wood, noted for varnish or natural finish.
- .4** Prime wood, noted for paint finish, immediately upon delivery to site.

.5

General:

- .1** Mask specification plates occurring on equipment, switch boxes and similar items requiring painting.
- .2** Protect, remove and replace hardware, accessories, lighting fixtures and similar items.
- .3** Paint interior of pipe spaces, ducts and similar areas visible through grilles in matte black, or other colour selected by the Consultant, finish to end of sight line, but in any case not less than 1'-6" (450mm).
- .4** Conform with the Consultant's colour schedules and exactly match approved samples.

3.3 Application

- .1** Finish and number of coats specified are intended to cover surfaces completely. If they do not, apply further coats until coverage is achieved to the Consultant's approval.
- .2** Any areas exhibiting incomplete or unsatisfactory coverage shall have the entire plane painted. Patching will not be acceptable.
- .3** Spraying will not be allowed without written permission.
- .4** Arrange to have traffic barred from completed areas wherever possible.

3. EXECUTION

3.3 Application

- Continued

- .5 Apply materials in strict accordance with manufacturer's directions and specifications and be familiar with those directions and specifications. Do not use adulterants.
- .6 Apply primer sealer coats by brush or roller method. Permit paint to dry before applying succeeding coats, touch up suction spots and sand between coats with No. 00 sandpaper.
- .7 Where more than one (1) coat of the same paint is to be applied, tint each coat to differentiate from subsequent coats.
- .8 Each coat must be completely dry (minimum 24 hours) before application of subsequent coats, and each coat is to be inspected
- .9 After second coat, provide a sample wall of final coat for the Consultant's review. The Consultant may adjust intensity of final coat.
- .10 Exterior paints shall be factory tinted to required colours.
- .11 Apply final coats on smooth surfaces by roller or brush. Hand brush wood surfaces.
- .12 Paint shall be uniform in sheen, colour and texture, free from brush or roller marks, sags, runs or other defects.
- .13 Remove grilles, covers, access panels for mechanical and electrical systems from installed locations and paint separately if these items are not factory finished.
- .14 Remove doors, paint edges including top and bottom. Rehang doors.

**3.4 Surfaces
To Be
Painted**

- .1 All exposed surfaces unless otherwise **indicated in the Drawings or Specifications and Schedules.**
- .2 Mechanical and Electrical services exposed to view including ductwork, diffusers and the like, electrical conduits, sprinkler and other piping.
- .3 Interior and exterior metals, exposed to view including louvres and railings.
- .4 Interior wood including doors.
- .5 Metal stairs and ladders.
- .6 All steel doors, frames and screens.

- 3. EXECUTION** - Continued
- 3.5 Adjust & Clean**
- .1** Cracks occurring in walls or ceilings requiring patching during Warranty Period shall be repainted in such a way that the patch is not visible at a distance of 5'-0" (1500mm).
 - .2** If patch painting is not acceptable repaint entire wall area.
 - .3** At completion, clean entire area of surplus materials and equipment.
- 3.6 Paint Schedule**
- .1** Gloss values determined in accordance with ASTM D2523 -62T as follows:
 - .1** 5 to 20 for flat.
 - .2** 20 to 40 for eggshell.
 - .3** 40 to 60 for semi-gloss.
 - .4** 60 to 80 for gloss.
 - .2** Painted Wood - Latex Enamel:
 - 1st Coat: Latex Primer.
 - 2nd Coat: Latex Undercoat, tinted 50%.
 - 3rd Coat: Latex Enamel, Semi-Gloss.
 - .3** Gypsum Board and Plaster - Latex Finish:
 - 1st Coat: Latex Sealer.
 - 2nd Coat: Latex Undercoat, tinted.
 - 3rd Coat: Latex - Eggshell - Flat Finish
or Latex - Semi-Gloss
 - .4** Ferrous Metal, Shop Primed and Unpainted:
 - 1st Coat: Alkyd Primer.
 - 2nd Coat: Alkyd Enamel, Gloss.
 - 3rd Coat: Alkyd Enamel, Gloss
or Alkyd Enamel, Semi-Gloss
or Alkyd Enamel, Eggshell.
 - .5** Ferrous Metal, Galvanized:
 - 1st Coat: Zinc Chromate Primer.
 - 2nd Coat: Alkyd Enamel, Gloss.
or Alkyd Enamel, Semi-Gloss
or Alkyd Enamel, Eggshell.

END OF SECTION

1. GENERAL

1.1 Description

- .1** The Work of this Section **as indicated in the Drawings or Specifications** includes supply and installation of accessories for public and staff washrooms.
- .2** Related Work Specified Elsewhere:
 - .1** Section 01630 - Substitutions
 - .2** Section 06200 - Finish Carpentry And Millwork
 - .3** Section 08200 - Flush Wood Doors
 - .4** Section 09300 - Ceramic Tile
 - .5** Section 09900 - Painting
 - .6** All other Sections and Drawings to be reviewed

1.2 Quality Assurance

- .1** Supply and installation by sub-trade with minimum five (5) years experience in the Work of this Section.

1.3 Shop Drawings & Samples

- .1** Submit manufacturer's product literature to the Consultant for review including complete list of items and quantities.
- .2** Clearly indicate site dimensions, anchorage requirements and all other pertinent information.
- .3** Submit one (1) sample of each item specified for review.
- .4** All items are subject to the Consultant's approval before ordering.

1.4 Delivery & Storage

- .1** Deliver all items to job site in original undamaged packaging with manufacturer's seals and labels intact and in accordance with Section 01600 - Material And Equipment.
- .2** Place in locked storage until ready for use.

- 1. **GENERAL** - Continued
- 1.5 **Warranty**
 - .1 Submit a two (2) year warranty against defects in labour and materials of the Work of this Section.
- 2. **PRODUCTS**
- 2.1 **Materials**
 - .1 **Grab Bars, Hooks, Toilet Paper Dispensers, etc.:**
This specification refers to equipment as supplied by Watrous. Products of equivalent quality and description as manufactured by Bobrick or Twin-Cee are equally acceptable. The Consultant will reject products proposed by manufacturers other than Watrous that are not equivalent to the product specified.
 - .1 **Stainless Steel:** AISI Type 302/304 with #4 finish.
 - .2 **Sheet Steel:** Cold rolled, commercial quality, ASTM A366. Surface preparation and pretreatment as required for applied finish.
 - .3 **Steel Mounting Devices:** Hot dip galvanized after fabrication, ASTM A386.
- 3. **EXECUTION**
- 3.1 **Fabrication & Anchorage**
 - .1 **Hooks, Toilet Paper Dispensers, etc.:**
 - .1 Provide steel anchor plates and anchor components to job site for installation.
 - .2 Back paint components where contact is made with building finishes to prevent electrolysis.
 - .3 Hot dip galvanize ferrous metal anchor and fastening devices which are not finished to match component.
 - .4 Shop assemble components and package complete with anchors and fittings.
 - .5 Deliver inserts to job site at appropriate time for building in. Provide templates and/or rough in measurements as required.

3. EXECUTION - Continued

3.2 Installation

- .1 Install and secure fixtures rigidly in place to locations noted on the Drawings and in accordance with the manufacturer's recommendations using tamperproof head screws/bolts for fastener.

4. ITEM LIST

4.1 Product Description

- .1 **Note:** The Contractor shall co-ordinate for installation of soap and sanitizer dispensers provided by the Owner, providing blocking as required.
- .2 **Toilet Tissue Dispenser:** Shall be Model 36816 'Castino' by Umbra, one (1) per toilet.
- .3 **Robe Hook:** Shall be solid brass, chrome plated, satin finish to match stainless steel complete with stainless steel set screws, ASI Model 7345-S, one (1) for Barrier Free washroom.
- .4 **GB1 - Grab Bar:** Frost, or equal 30" x 30" x 1 1/4" diameter, L shape brushed stainless steel #1001.SP.
- .5 **GB2 - Grab Bar:** Frost, or equal 30" x 1 1/4" diameter, satin finish, peened grip #1001.DP.
- .6 **Tilt Mirror:** Bobrick B-293 2'-0" x 3'-0". One (1) for Ground Floor Washroom and one (1) for hand sink at Kitchenette.

END OF SECTION

1. GENERAL

1.1 Requirements

- .1 The Work of this Section shall conform to Division 1, General Requirements and all documents referred to therein.
- .2 Related Work Specified Elsewhere:
 - .1 Section 01630 - Substitutions
 - .2 All other Sections and Drawings to be reviewed
- .3 Products listed in this Section may or may not require installation by the manufacturer (supplier).

1.2 Work Included

- .1 Provide manufactured specialties **as indicated in the Drawings or Specifications.**

1.3 Shop Drawings & Samples

- .1 Submit the detailed the Shop Drawings and or manufacturer's brochures to the Consultant for approval. Where it is not usual to submit the Shop Drawings for a manufactured item, submit Installation Drawings for proper installation.
- .2 Submit 1'-0" x 1'-0" (300mm x 300mm) sample each of Floor Grille, Balcony Guard, Handrail brackets and Handrail assembly.

1.4 Delivery & Storage

- .1 Deliver all items to job site in original undamaged packaging with manufacturer's seals and labels intact and in accordance with Section 01600 - Material And Equipment.
- .2 Handle and store materials in accordance with manufacturer's printed instructions.
- .3 Replace promptly, all items verified as received in damaged condition.

1.5 Quality Assurance

- .1 Where a component, device, item or part of material is referred to in the singular number, such reference shall mean consistent quality for as many as are required to complete the Work of this Section.

1.6 Warranty

- .1 Submit a two (2) year warranty against defects in labour and materials of the Work of this Section.

2. PRODUCTS

2.1 Materials

- .1 Manufactured items shall be shop fabricated in accordance with the best shop practice and shall be finished according to manufacturer's literature unless stated otherwise herein.
- .2 Fit and assemble the Work in the shop where possible. Execute the Work according to details and the approved Shop Drawings/Brochures. Where shop fabrication is not possible, make a trial assembly in the shop.
- .3 Trademarks and/or labels will not be permitted on exposed finished surfaces.

3. EXECUTION

3.1 Installation

- .1 Fabricate and erect the Work true to dimensions, square, plumb, level and free from distortion or defects detrimental to appearance and performance.
- .2 Provide adequate reinforcing and anchorage to ensure a rigid installation to the approval of the Consultant.
- .3 Where fastenings or anchors have to be built in by other trades, supply same with necessary templates, instructions and supervision to ensure satisfactory installation. Supply anchoring devices.
- .4 Co-ordinate with all Sections of Division 9, Finishes where this Work is attached to or recessed in finished walls.
- .5 Secure masonry walls by lead plugs and non-corrosive type screws or fastening to suit the load with a safety factor of three (3).
- .6 Isolate all metal in contact with other metals, masonry, concrete or mortar to prevent corrosion. Method of isolation shall be approved by the Consultant.
- .7 Surplus welding material shall be ground off and exposed internal and external corners shall have sharp lines. Remove grind marks on exposed surfaces to the approval of the Consultant.
- .8 All components and items shall be fastened securely.

3. EXECUTION - Continued

3.2 Isolation

- .1 Backpaint all aluminum surfaces in contact with cement, concrete, masonry or dissimilar metals with heavy coat of non-staining alkali resistant bituminous paint of type(s) approved by the Consultant.

3.3 Clean-Up

- .1 Promptly as the Work proceeds and on completion, remove all rubbish and debris from the building and site resulting from the Work of this Section.

4. PRODUCT LIST

- .1 Quantities are **as indicated in the Drawings or Specifications.**