Request for Tenders

To: Agriculture and Agri-Food Canada (AAFC)

Project Title:

Modernization of two washrooms (Phase I)
At: The Greenhouse and Processing Crops Research Centre
in Harrow, Ontario

Tenders **must** be received **by: 2:00 PM**, Eastern Daylight Time

On Thursday, October 31st, 2013 at the following address:

Agriculture and Agri-Food Canada

Corporate Management Branch
Assets Team – Eastern Service Centre
TENDER RECEIVING UNIT
2001 University St., Suite 671-TEN
Montreal, QC
H3A 3N2

Note: Tenders received at a location other than this one will be rejected.

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INSTRUCTIONS TO TENDERERS

Invitation 1. Sealed tenders will be received up to the local time, on the date, and at the location indicated on the Tender Form, for the construction of the described works.

Information on Site Conditions 2. Each tenderer must fully inform themselves of the conditions relating to the work to be performed and shall inspect the site and be thoroughly familiar with the Plans Specifications and all terms and covenants of the tender documents. Failure to do so will not relieve the successful tenderer of their obligations to enter into the contract and to carry out the work for the consideration as set forth in their offer.

Pre-Tender Meeting 3. A pre-tender information meeting, followed by a site visit is scheduled for **10:00AM, October 17, 2013** at the Greenhouse and Processing Crops Research Centre located at 2585 County Road 20, Harrow, Ontario, N0R 1G0. Tenderers are requested to be present at the reception desk at least 10 minutes prior to the meeting. No other pre-tender meeting will be scheduled during the tender process. Attendance by interested tenderers is **not mandatory**.

Explanations and Modifications 4. Any explanation desired by tenderers regarding the meaning or interpretation of the tender documents must be requested in writing and with sufficient time allowed for a reply to reach them before the submission of their tenders. Verbal explanations or instructions given before the award of the contract will not be binding. Any request for explanation must be directed ONLY to the Contracting Authority named below:

Carol Rahal
Agriculture and Agri-Food Canada
2001 University, 671 -TEN
Montreal, Quebec
Telephone : 514 315-6143
Facsimile : 514 283-3143
carol.rahal@agr.gc.ca

Canada reserves the right to revise or amend the tender documents prior to the date set for opening tenders. Such revisions and amendments, if any, will be announced by an addendum or addenda to the documents.

Tenderers are required to acknowledge receipt of all addenda to the tender documents on the Tender Form in the space provided. Failure to acknowledge all addenda may cause the tender to be rejected.

Tender Security 5. Tenders must be accompanied by security having one of the following three forms :

(a) A Bid Bond generally in the form prescribed in Appendix "1" of the Instructions annexed hereto, executed by the tenderer and a Surety named in Appendix "4" in the Instructions annexed hereto, in the amount of 10% of the total tender.

or alternatively

(b) A Security Deposit in an amount of 10% of the amount of the tender to a value of $250,000.00, plus 5% of the amount by which the amount of the tender exceeds $250,000.00. The Security Deposit shall take the form of either

(i) a certified cheque payable to the Receiver General for Canada as follows :

(A certified cheques drawn on chartered banks, including Canadian branches of foreign banks, are acceptable as security deposits without confirmation,

(B) certified cheques drawn on Province of Alberta Treasury Branches are acceptable as security deposits without confirmation,

(C) certified cheques, drawn on trust companies or credit unions, provided as tender and/or contract security must be accompanied by a written statement from the institution on which the cheque is drawn that the institution :

- if a trust company, is a member of the Canadian Payments Association;

- if a credit union, is a member of a central which is a member of the Canadian Payments Association, or is itself a member either individually or through a provincial central;

or

(ii) bonds of the Government of Canada or unconditionally guaranteed as to principal and interest by the Government of Canada, if such bonds are :

(A) payable to bearer,

(B) accompanied by a duly executed instrument of transfer to the Receiver General for Canada in the form prescribed by the Domestic Bonds of Canada Regulations, or

(C) registered as to principal or as to principal and interest in the name of the Receiver General for Canada pursuant to the Domestic Bonds of Canada Regulations.

or alternatively

(c) An irrevocable bid support Letter of Credit in the form prescribed in Appendix "5" of the Instructions annexed hereto, in the amount of not less than 10% of the total tender.

Preparation of Tenders

6. Tenders must be submitted on the printed form provided and must be accompanied by tender security of a form described in the immediately preceding paragraph 4.

The Tender Form provides for quotation of prices only on the scheduled items. Tenderers must quote on each item in the Unit Price Table, and failure to do so may disqualify the tender. Alternative tenders will not be considered unless specifically called for. Any alteration or additions to the pre-printed part of the Tender Form may be cause to reject the tender.

Tenders shall be submitted in sealed envelopes. The following information shall be clearly marked on the outside of the envelope :

(i) it is a tender,
(ii) the name of the project,
(iii) the name and address of the tenderer.

Telegraphic or facsimile tenders will not be considered. Modifications by letter, telegraph or facsimile (514 283-3143) of tenders already submitted will be considered if received prior to the time fixed for receipt of tenders; such modifications **must only state** :

(i) the item or items to be modified,
(ii) the amount each item is to be modified,
(iii) the total amount of the modification.

However, such modifications by letter, telegram or facsimile shall not reveal the amount of the original or the revised total tender.

Signature of Tender Form

7. (a) Tenders must be properly completed in full compliance with the requirements indicated herein.

(b) The signature of persons tendering must be in their respective handwriting.

(c) The tenderer, or the person or persons duly authorized to sign on their behalf, must initial and date each and every correction, change, erasure or alteration contained in the completed tender.

(d) LIMITED COMPANY: If the tender is made by a limited, the tender must be signed in the name of the company by the authorised signing officers should be printed in the spaces provided therefore

(e) PARTNERSHIP: If the tender is made by a partnership, the tender must be signed in the name of the partnership by the authorised signing officer(s) of the partnership. In addition, the name of the partnership and the name(s) and title(s) of the signing officer(s) should be printed in the spaces provided therefore.

(f) SOLE PROPRIETORSHIP: If the tender is made by an individual carrying on business as a non-limited company using their own name, a name other than their own or a firm name, the tender must be signed by the individual of the authorized signing officer(s) of the firm. . In addition, the name of the individual or of the firm and the name(s) of the signing officer(s) should be printed in the spaces provided therefore.

Withdrawal Of Tenders

3. Tenders may be withdrawn on written, telegraphic or facsimile (514) 283-3143) request received from tenders prior to the time fixed for receipt of tenders. Negligence on the part of the tender in preparing the tender confers no right for the tender after it has been opened.

Rejection of Tenders

9. Canada reserves the right to reject any and all tenders when such rejection is in the interest of Canada.

Award of Contract

10. The contract will be awarded as soon as possible after tenders are received, provided that the lowest or any tender will not necessarily be accepted. All tender security may be held until a contract is awarded, or if no contract is awarded, until so decided by the Minister or his/ her representative.

Contract Security

11. The Contractor whose tender is accepted will be required to furnish to the Minister Contract Security in accordance with the conditions as outlined in Appendix "F", entitled "Contract Security Conditions".

When provided, any Performance Bond and Labour and Material Payment Bond shall be in the form prescribed in Appendices "2" and "3" respectively of the Instructions annexed hereto. These Bonds must be issued by one or more of the Sureties named in Appendix "4" of the Instructions annexed hereto.

When provided, any Irrevocable Contract Support Letter of Credit shall be in the form provided in Appendix “5”.

Upon approval of the Minister, a Performance Bond and a Labour and Material Payment bond in the form prescribed above, executed by the successful tenderer and approved Surety, or alternatively, an Irrevocable Contract Support Letter of Credit, may be substituted for the Security Deposit deposited as tender security.

Approved Equals

12. Requests for "Approved Equals" shall be made in writing and shall be received at least seven (7) working days prior to tender closing.

Goods and Services Tax (GST)

13. For the purpose of establishing the amount of taxes that are to be included in the tender price, the Tenderer must take into account all applicable taxes.

The Goods and Services Tax (GST), implemented January 1, 1991, is NOT to be considered an applicable tax for purposes of this tender.

Any amount to be levied in respect of the GST will be billed as a separate item with each request for progress payment submitted by the Contractor. The GST levy will be paid to the Contractor in addition to the amount approved by the Engineer for work performed under the contract and will, therefore, not affect the amount of the contract. The Contractor's GST registration number must be shown on all requests for progress payments. No GST levy will be paid to the Contractor if the Contractor does not have a GST registration number.

The Contractor will be required to make the appropriate remittance to Revenue Canada in accordance with the legislation.

Income Tax

14. Pursuant to paragraph 221 (1)(d) of the Income Tax Act, payments made by departments

Requirement

and agencies under applicable contracts (including contracts involving a mix of goods and services) must be reported on a T4A supplementary slip. To comply with this requirement, contractors are required to provide certification on the form shown in Appendix “6" in the Instructions annexed hereto within fourteen (14) calendar days of notification of contract award and within fourteen (14) calendar days immediately following any change to the information already provided under the Contract.

APPENDIX "1" OF INSTRUCTIONS TO TENDERERS

BID BOND

Bond No. : _____ **Amount:** _____**$**

KNOW ALL MEN BY THESE PRESENTS, that

as Principal, hereinafter called the Principal, and

as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto Her Majesty the Queen in Right of Canada, Represented by the Minister of Agriculture and Agri-Food as Obligee, hereinafter called the Crown, in the amount of _____ dollars ($ _____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20____.

WHEREAS, the Principal has submitted a written tender to the Crown, dated the _____ day of _____, 20____, for

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that if:

(a) the Principal, should his tender be accepted within the period be specified by the Crown, or, if no period be specified, within sixty (60) days after closing date of the tender, does execute within a period specified by the Crown, or, if no period be specified therein, within fourteen (14) days after the prescribed forms are presented to him for signature, execute such further contractual documents, if any, as may be required by the terms of the tender as accepted, and does furnish a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract price and satisfactory to the Crown, or other security acceptable to the Crown, or

(b) the Principal does pay to the Crown the difference between the amount of the Principal's tender and the amount of the Contract entered into by the Crown for the work, supplies and services which were specified in the said tender, if the latter amount be in excess of the former, then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that the Surety and the Principal shall not be liable to the Crown for an amount greater than the amount specified in this bond.

PROVIDED FURTHER that the Surety shall not be subject to any suit or action unless such suit or action is instituted and process therefore served upon the Surety at its Head Office in Canada, within twelve (12) months from the date of this bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

SIGNED, SEALED AND DELIVERED
in the presence of :

_____
Principal

_____
Witness

_____
Surety

Note: Affix Corporate seal, if applicable.

APPENDIX "2" OF INSTRUCTIONS TO TENDERERS

PERFORMANCE BOND

Bond No. : _____ **Amount:** _____**$**

KNOW ALL MEN BY THESE PRESENTS, that

as Principal, hereinafter called the Principal, and

as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto Her Majesty the Queen in Right of Canada, Represented by the Minister of Agriculture and Agri-Food as Obligee, hereinafter called the Crown, in the amount of : _____ dollars ($ _____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20_____.

WHEREAS, the Principal has submitted a written tender to the Crown, dated the _____ day of _____, 20____ , for

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

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall well and faithfully observe and perform all the obligations on the part of the Principal to be observed and performed in connection with the Contract, then this obligation shall be void, otherwise it shall remain in full force and effect, subject, however, to the following conditions:

(1) Whenever the Principal shall be, and declared by the Crown to be, in default under the Contract, the Surety shall

(a) if the work is not taken out of the Principal's hands, remedy the default of the Principal,

(b) if the work is taken out of the Principal's hands and the Crown directs the Surety to undertake the completion of the work, complete the work in accordance with the Contract provided that if a contract is entered into for the completion of the work
  (i) it shall be between the Surety and the Completing Contractor, and
  (ii) the selection of such completing contractor shall be subject to the approval of the Crown,

(c) if the work is taken out of the Principal's hands and the Crown, after reasonable notice to the Surety, does not direct the Surety to undertake the completion of the work, assume the financial responsibility for the cost of completion in excess of the moneys available to the Crown under the Contract,

(d) be liable for and pay all the excess costs of completion of the Contract, and

(e) not be entitled to any Contract moneys earned by the Principal, up to the date of his default on the Contract and any holdbacks relating to such earned Contract moneys held by the Crown, and the liability of the Surety under this Bond shall remain unchanged provided, however, and without restricting the generality of the foregoing, upon the completion of the Contract to the satisfaction of the Crown, any Contract moneys earned by the Principal or holdbacks related thereto held by the Crown may be paid to the Surety by the Crown.

(2) The Surety shall not be liable for a greater sum than the amount specified in this Bond.

(3) No suit or action shall be instituted by the Crown herein against the Surety pursuant to these presents after the expiration of two (2) years from the date on which final payment under the Contract is payable.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and first above written.

SIGNED, SEALED AND DELIVERED
in the presence of :

_____ Principal

_____ Surety

Note: Affix Corporate seal if applicable.

APPENDIX "3" OF INSTRUCTIONS TO TENDERERS

LABOUR AND MATERIAL PAYMENT BOND

Bond No. : _____ **Amount:** _____ **$**

KNOW ALL MEN BY THESE PRESENTS, that

as Principal, hereinafter called the Principal, and

as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto Her Majesty the Queen in Right of Canada, Represented by the Minister of Agriculture and Agri-Food as Obligee, hereinafter called the Crown, in the amount of _____ dollars ($ _____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20_____.

WHEREAS, the Principal has submitted a written tender to the Crown, dated the _____ day of _____, 20_____, for

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

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if payment is promptly made to all Claimants who have performed labour or services or supplied material in connection with the Contract and any and all duly authorized modifications and extensions of the Contract that may hereafter be made, notice of which modifications and extensions to the Surety being hereby waived, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions :

(1) For the purpose of this bond, a Claimant is defined as one having a direct contract with the Principal or any Sub-Contractor of the Principal for labour, material or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone services or rental of equipment (but excluding rental of equipment where the rent pursuant to an agreement is to be applied towards the purchase price thereof) directly applicable to the Contract.

(2) For the purpose of this Bond, no payment is required to be made in respect of a claim for payment for labour or services performed or material supplied in connection with the Contract that represents a capital expenditure, overhead or general administration costs incurred by the Principal during the currency or in respect of the Contract.

(3) The Principal and the Surety hereby jointly and severally agree with the Crown that if any Claimant has not been paid as provided for under the terms of his contract with the Principal or a Sub-Contractor of the Principal before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's labour or service was done or performed or materials were supplied by such Claimant, the Crown may sue on this bond, have the right to prosecute the suit to final judgment for such sum or sums as may be due and have execution thereon; and such right of the Crown is assigned by virtue of Part VIII of the Financial Administration Act to such Claimant.

(4) For the purpose of this bond the liability of the Surety and the Principal to make payment to any claimant not having a contract directly with the Principal shall be limited to that amount which the Principal would have been obliged to pay to such claimant had the provisions of the applicable provincial or territorial legislation on lien or privileges been applicable to the work. A claimant need not comply with provisions of such legislation setting out steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which the claimant might have had. Any such claimant shall be entitled to pursue a claim and to recover judgment hereunder subject to the terms and notification provisions of the Bond.

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

change.

(6) No suit or action shall be commenced hereunder by any Claimant:

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

(i) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal or by the Sub-Contractor of the Principal under either the terms of the Claimant's Contract with the Principal or the Claimant's Contract with the Sub-Contractor of the Principal within one hundred and twenty (120) days after such Claimant should have been paid in full under this Contract,

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

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

(c) Other than in a court of competent jurisdiction in the province or district of Canada in which the subject matter of the Contract or any part thereof is situated and not elsewhere, and the parties hereto hereby agree to submit to the jurisdiction of such court.

(7) The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.

(8) The Surety shall not be entitled to claim any moneys relating to the Contract and the liability of the Surety under this Bond shall remain unchanged and, without restricting the generality of the foregoing, the Surety shall pay all valid claims of Claimants under this Bond before any moneys relating to the Contract held by the Crown are paid to the Surety by the Crown.

(9) The Surety shall not be liable for a greater sum that the amount specified in this bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and first above written.

SIGNED, SEALED AND DELIVERED
in the presence of :

_____
Principal

_____
Surety

_____
Witness

Note: Affix Corporate seal, if applicable.

APPENDIX "4" OF INSTRUCTIONS TO TENDERERS

LIST OF COMPANIES WHOSE GUARANTEE BONDS
ARE ACCEPTABLE BY GOVERNMENT OF CANADA

1. Canadian Companies

ACE INA Insurance
Allstate Insurance Company of Canada
Ascentus Insurance Ltd. (Surety only)
Aviva Insurance Company of Canada
AXA Insurance (Canada)
AXA Pacific Insurance Company
Canadian Northern Shield Insurance Company
Certas Direct Insurance Company (Surety only)
Chartis Insurance Company of Canada (formerly AIG Commercial Insurance Company of Canada)
Chubb Insurance Company of Canada
Commonwealth Insurance Company
Co-operators General Insurance Company
CUMIS General Insurance Company
The Dominion of Canada General Insurance Company
Echelon General Insurance Company (Surety only)
Economical Mutual Insurance Company
Elite Insurance Company
Everest Insurance Company of Canada
Federated Insurance Company of Canada
Federation Insurance Company of Canada
Gore Mutual Insurance Company
Grain Insurance and Guarantee Company
The Guarantee Company of North America
Industrial Alliance Pacific General Insurance Corporation
Intact Insurance Company
Jevco Insurance Company (Surety only)
Lombard General Insurance Company of Canada
Lombard Insurance Company
Markel Insurance Company of Canada
The Missisquoi Insurance Company
The Nordic Insurance Company of Canada
The North Waterloo Farmers Mutual Insurance Company (Fidelity only)
Novex Insurance Company (Fidelity only)
The Personal Insurance Company
Pilot Insurance Company
Quebec Assurance Company
Royal & Sun Alliance Insurance Company of Canada
Saskatchewan Mutual Insurance Company
Scottish & York Insurance Co. Limited
The Sovereign General Insurance Company
TD General Insurance Company
Temple Insurance Company
Traders General Insurance Company
Travelers Guarantee Company of Canada
Trisura Guarantee Insurance Company
The Wawanesa Mutual Insurance Company
Waterloo Insurance Company
Western Assurance Company
Western Surety Company

2. Provincial Companies

Surety bonds issued by the following companies may be accepted provided that the contract of suretyship was executed in a province in which the company is licensed to do business as indicated in brackets.

AXA Boreal Insurance Company (P.E.I., N.B., Que., Ont., Man., B.C.)
AXA Boreal Insurance Company (P.E.I., N.B., Que., Ont., Man., B.C.)
ALPHA, Compagnie d'Assurances Inc. (Que.)
Canada West Insurance Company (Ont., Man., Sask, Alta., B.C., N.W.T.) (Surety only)
The Canadian Union Assurance Company (Que.)
La Capitale General Insurance Inc. (Nfld. & Lab., N.S., P.E.I., Que.(Surety only), Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
Coachman Insurance Company (Ont.)
Continental Casualty Company (Nfld. & Lab., N.S., P.E.I., N.B., Que., Ont., Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
GCAN Insurance Company (Nfld. & Lab., N.S., P.E.I., N.B., Que., Ont., Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
The Insurance Company of Prince Edward Island (N.S., P.E.I., N.B.)
Kingsway General Insurance Company (N.S., N.B., Que., Ont., Man., Sask., Alta., and B.C.)
Liberty Mutual Insurance Company (Nfld. & Lab., N.S., P.E.I., N.B., Que., Ont., Man., Sask., Alta., B.C., Nun., N.W.T., Yuk.)
Manitoba Public Insurance Corporation (Man.)
Norgroupe Assurance Générales Inc.
Orleans General Insurance Company (N.B., Que., Ont.)
Saskatchewan Government Insurance Office (Sask.)
SGI CANADA Insurance Services Ltd. (Ont., Man., Sask., Alta.)
L'Unique General Insurance Inc. (Nfld. & Lab., N.S., P.E.I., N.B., Que.(Surety only), Ont.(Surety only), Man., Sask., Alta., B.C.(Surety only), Nun., N.W.T., Yuk.)

3. Foreign Companies

Aspen Insurance UK Limited
Compagnie Française d'Assurance pour le Commerce Extérieur (Fidelity only)
Eagle Star Insurance Company Limited
Ecclesiastical Insurance Office Public Limited Company (Fidelity only)
Lloyd's Underwriters
Mitsui Sumitomo Insurance Company, Limited
NIPPONKOA Insurance Company, Limited
Sompo Japan Insurance Inc.
Tokio Marine & Nichido Fire Insurance Co., Ltd.
XL Insurance Company Limited (Surety only)
Zurich Insurance Company Ltd

Revised - September, 2010

APPENDIX "5" OF INSTRUCTIONS TO TENDERERS

Use of Irrevocable Letters of Credit for Tender or Contract Security for Federal Government Contracts.

1. Definitions

For the purpose of these instructions:

1.1 a Letter of Credit means any arrangement, however named or described, whereby a financial institution, acting at the request and on the instructions of a Contractor, or on its own behalf, is to make a payment to or to the order of Her Majesty, as the beneficiary, or is to accept and pay bills of exchange drawn by Her Majesty, provided that the terms and conditions of the letter of credit are complied with.

1.2 a Bid Support Letter of Credit is a letter of credit pursuant to which demand may be made if the proposed Contractor refuses or fails to enter into a written contract in accordance with the terms and conditions of the bid or fails to provide the required contract security.

1.3 a Contract Support Letter of Credit is a letter of credit pursuant to which demand may be made if the Contractor, having entered into a contract with Her Majesty, does not perform the contract in accordance with the terms and conditions of that contract.

1.4 the expression "Member of the Canadian Payments Association", is defined in the Canadian Payments Association Act.

1.5 the expression "UCP" means the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 1993 Revision, ICC Publication No. 500.

2. Form of Letter of Credit

2.1 A letter of credit shall:

(a) clearly specify that it is irrevocable or is deemed to be irrevocable pursuant to article 6 (c) of the UCP;

(b) be issued by a financial institution which is a member of the Canadian Payments Association or issued by a financial institution confirmed by a financial institution that is a member of the Canadian Payments Association;

(c) state the face amount which may be drawn against it;

(d) state its expiry date (date to be 60 days beyond the specified contract completion date);

(e) provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by his/her officer;

(f) provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the Letter of Credit;

(g) provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 1993 Revision, ICC Publication No. 500.

3. Payment of a Letter of Credit

3.1 After an offer is accepted within the specified time after the closing date for bidding, and if the contractor refuses to enter into the contract or refuses or is unable to furnish any required contract security or contract support letter of credit, Her Majesty may demand payment under the bid support letter of credit

in accordance with its terms. Proceeds from the letter of credit shall be applied in accordance with the terms and conditions governing the bid solicitation.

3.2 During the performance of a contract, if the contractor does not comply with all the terms and conditions of the contract, Her Majesty may demand payment under the contract support letter of credit in accordance with its terms. Proceeds from the letter of credit shall be applied in accordance with the terms and conditions of the contract.

APPENDIX "6" OF INSTRUCTIONS TO TENDERERS

The Contractor shall complete and submit this T4-A Certification within fourteen (14) calendar days of Notification of Contract award and within fourteen (14) calendar days immediately following any change to the information already provided under the Contract. Failure to provide this information or failure to provide the correct information shall result in a fundamental breach of the Contract.

1. **The Contractor shall enter a [x] in one of the boxes below opposite the description that best describes its status.**

[ ] A business incorporated either federally or provincially;
[ ] An unincorporated business, either as a sole proprietor or a partnership; or
[ ] An individual.

Note: The information provided in Section 2 must correspond with that provided in Section 1.

Corporate or unincorporated business or individual's name: _____

Street Name or Box #: _____

City, Town or Village: _____

Province: _____

Postal Code: _____

2. Contractor shall complete Section 2(a) or 2(b) or 2(c), whichever is applicable to its situation.

(a) If incorporated:

Business Number (BN): _____, or
GST / HST Number: _____, or
T2 Corporation Tax Number (T2N): _____, whichever is applicable

(b) If unincorporated:

Social Insurance Number (SIN): _____, and
Business Number (BN): _____, or
GST / HST Number: _____, whichever is applicable

Note: The Unincorporated Business Name must be the same as the name associated with the Revenue Canada Business Number or the GST Number.

(c) If individual:

Social Insurance Number (SIN): _____, and
Business Number (BN): _____, or
GST / HST Number: _____, whichever is applicable

Note: The Individual's Name must be the same as the name associated with the Social Insurance Number.

3. WE HEREBY CERTIFY that I/We have examined the information provided above, including the legal name, address and Revenue Canada identifier (SIN, BN, GST / HST No., T2N), as applicable, and that it is correct and complete, and fully discloses my/our identification.

_____	_____	_____
Contractor's signature	Title of Signatory	Date

APPENDIX "A"

SPECIFICATIONS

PROJECT TITLE

HARROW RESEARCH FACILITY

WASHROOM UPGRADES PHASE A

PROJECT NUMBER

0307 526587

PROJECT DATE

2013-09-16

PREPARED BY

GLOS ASSOCIATES INC.
3535 NORTH SERVICE ROAD EAST
WINDSOR, ONTARIO
N8W 5R7

Client:
Agriculture and Agri-Food Canada
2001 University, Suite 671-L, Montreal Quebec, H3A 3N2

Location of Work:
Greenhouse and Processing Crops Research Centre
2585 County Road 20
Harrow, Ontario N0R 1G0

Consultant:
Glos Associates Inc.
3535 North Service Road East, Windsor Ontario, N8W 5R7
519-966-6750 phone, 519-966-6753 fax, glos@mnsi.net
Project Number 11016

These specification sections from Divisions 00 00 00 to 15 44 01 were prepared under the supervision of the following registered coordinating professionals:

ARCHITECTURAL	MECHANICAL
	

List of Drawings

A000	Title Sheet – Phase A
A101	Men’s Washroom ‘A’ and Women’s Washroom ‘B’ – Plans
A201	Men’s Washroom ‘A’ and Women’s Washroom ‘B’ – Elevations and Details
A202	Sections and Details
M101	Men’s Washroom ‘A’ & Women’s Washroom ‘B’

PART 1 - GENERAL

1 SUMMARY OF THE WORK

1.1 SECTION INCLUDES

.1 *Title and description of work:*

Client: **Agriculture Agri-Food Canada also referred to in this contract as "Owner"**

Project: **Harrow Research Facility**
Washroom Upgrades – Phase A

.2 *Contract Method:*
Stipulated Price Contract

.3 *Work by others:*
N/A

.4 Future work:
N/A

.5 Work sequence:
Construct Work in stages to accommodate the Owner's continued use of the existing adjacent premises during construction. Refer to drawings for phasing of the work of this contract.

.6 Contractor use of premises:
Contractor shall limit the use of the premises for Work, storage and for access to allow:

I. **Owner occupancy**
II. **Work by other contractors**
III. **Public usage**

.7 Owner's occupancy:

I. **Owner will occupy various stipulated portions of the existing building and site during the entire construction period for execution of normal operations.**
II. **Cooperate with the Owner in scheduling operations to minimize conflict and to facilitate Owner usage.**

.8 Permit and Inspection Fees:
Pay all fees for permits, certificates and inspections required by all Technical Authorities having jurisdiction related to the work of this contract.

.9 Owner furnished items:
N/A

.10 Work Restrictions:

I. Existing Services

Notify Owner and utility companies of intended interruption of services and obtain required permission. Where work involves breaking into or connecting to existing service, give the Owner 48 hours prior notice for necessary interruption of mechanical or electrical service throughout the course or the work. Keep the duration of interruptions to a minimum. Carry out interruptions after normal working hours of the occupants, preferably on weekends.

II. Other Projects

This Contractor shall be responsible to co-ordinate with other contractors on some sites where other projects are in progress or which will start during the time frame of this contract.

III. Special Requirements - Weekend Access into Building

Contractors requesting to work within a building during a weekend or after regular hours will be accommodated. Contractors will be required to make arrangements with the Owner and any other contractors on site. This Contractor shall be responsible for keeping the building secure for such after hours periods.

2. ALLOWANCES

2.1 CASH ALLOWANCES

.1 Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage, installation and other authorized expenses incurred in performing the Work.

.2 The Contract Price, and not Cash Allowance, includes Contractor’s overhead and profit in connection with such cash allowance.

.3 The amount of each Cash Allowance, associated the Work specified in the following specification Section 15:

1. Cash Allowance for “in or below existing floor slab, utilities encountered beyond areas shown on the drawings, including the stipulated sum of $2,000.00.

2.2 CONTINGENCY ALLOWANCE

.1 Include in Contract Price a stipulated sum contingency allowances assigned to the project as follows: none required.

.2 Do not include in the Contract Price, additional sums for products, installation, overhead or profit.

.3 Expenditures under Contingency Allowance will be authorized in accordance with procedures provided in the General Conditions, Part 6 – Changes in the Work, and evaluated under the General Conditions.

3 PROJECT COORDINATION

.1 Coordinate progress of the Work, progress schedules, submittals, use of site, temporary utilities, construction facilities and controls.

4 CUTTING AND PATCHING

4.1 – APPROVALS

.1 Submit written request in advance of cutting or alteration which affects:

1. Structural integrity of any element of Project.

2. Integrity of weather-exposed or moisture resistant elements.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of slight-exposed elements.
5. Work of Owner or separate contractor.

4.2 – INSPECTION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of the work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

4.3 – EXECUTION

.1 Perform cutting, fitting and patching including excavation and fill, to complete the Work.

.2 Remove and replace defective and non-conforming work.

.3 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical work.

.4 Perform work to avoid damage to other work.

.5 Prepare proper surfaces to receive patching and finishing.

.6 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.7 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.

.8 Restore work with new products in accordance with Contract Documents.

.9 Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.10 At penetration of fire-rated wall, ceiling or floor construction, completely seal voids with fire-rated fire-resistant material, specified in Section 07 84 00, Fire Stopping, full thickness of construction element.

.11 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

5 PROJECT MEETINGS

5.1 ADMINISTRATIVE

.1 Schedule and administer project progress meetings throughout progress of work at call of Consultant.

.2 Distribute written notice of each meeting four days in advance of meeting date to Consultant.

.3 Provide physical space and make arrangement for meetings.

.4 Record minutes. Include significant proceedings and decisions. Identify 'action by' parties.

.5 Reproduce and distribute copies of minutes within three days after each meeting and transmit to meeting participants, affected parties not in attendance Consultant and Owner.

6 SUBMITTALS

6.1- ADMINISTRATIVE

.1 Submit to the Consultant submittals listed for review. Submit with reasonable promptness and in an orderly sequence so as not cause delay in the Work.

.2 Work affected by submittals shall not proceed until review is complete.

.3 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and

verified, or will be, and that each submittal has been checked and coordinated with requirements of the Work and Contract Documents.

.4 Verify field measurements and affected adjacent Work are coordinated.

6.2 – SHOP DRAWINGS AND PRODUCT DATA

.1 "Shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of the Work.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connection, explanatory notes and other information necessary for completion of Work.

.3 Adjustments made on shop drawings by Consultant are not intended to change Contract Price.

.4 Make changes in shop drawing as Consultant may require.

.5 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

.6 Submit 6 copies of product data sheets or brochures for requirements requested in specification Sections and as Consultant may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.

6.3 – SAMPLES

.1 Submit for review, samples in duplicate as requested in respective specification Sections.

.2 Deliver samples prepaid to Consultant's business address.

6.4 – JOB MOCK-UPS

.1 Two weeks prior to Substantial Performance of the Work, submit to Consultant, 3 copies of operating and maintenance manuals.

.2 Manuals to contain operational information on equipment, cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information.

.3 Bind contents in a three-ring, hard covered, plastic –jacketed binder. Organize contents into applicable categories of work, parallel to specifications Sections.

6.5 – RECORD DRAWINGS

.1 After award of Contract, Consultant will provide a set of drawings for the purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents causes by site conditions and changes ordered by Consultant.

.2 Record locations of concealed components of mechanical and electrical services.

.3 Identify drawings as “Project Record Copy”. Maintain in new condition and make available for inspection on site by Consultant.

.4 On completion of Work and prior to final inspection, submit record documents to Consultant.

6.6 – HEALTH AND SAFETY POLICY

.1 Submit Health and Safety Policies in effect for the General Contractor.

.2 Submit Health and Safety Policies for all trade firms utilized on project.

.3 All policies must be submitted prior to start of construction.

7 SCHEDULE

7.1 CONSTRUCTION PERIORD

.1 All work shall be completed on or before November 22, 2013, unless otherwise agreed to in writing with the Owner’s Representative.

.2 The Contractor shall base his tender upon the construction period proposed. The Contractor shall state his starting and finishing dates. Otherwise, the Contractor shall state his proposed starting date, the number of weeks required to complete the work after receipt of Purchase Order.

.3 During the progress of the construction stage, should the Contractor's Schedule fall behind in regards to production activity in the event of delay of materials, strikes, walkouts and matters beyond reasonable control, the Contractor shall at such time notify verbally and in writing to the Owner's Representative requesting extension to completion deadline date. At such time, the Owner's Representative will review the matter of the problem in question and the new proposed completion deadline date for consideration of acceptance.

7.2 – SCHEDULES REQUIRED

.1 Construction Progress Schedule

.2 Submittal schedule for Shop Drawings, Product Data and Samples.

.3 Cash Allowance Schedule for purchasing products.

7.3- FORMAT

.1 Prepare schedule in form of horizontal bar chart.

.2 Provide separate bar for each trade or operation.

.3 Provide horizontal time scale identifying first work day of each week.

.4 Format for listings: Chronological order of start of each item of work.

7.4 – SUBMISSION

.1 Submit initial schedules within 10 days after award of Contract.

.2 Submit one opaque reproduction, plus 2 copies to be retained by Owner.

.3 Owner will review schedule and return reviewed copy within 5 days after receipt.

.4 Resubmit finalized schedule within 5 days after return of reviewed copy.

8 QUALITIY CONTROL

8.1 – INSPECTION

.1 Owner and Consultant shall have access to Work.

.3 Give timely notice requesting inspection if Work is designated for special test, inspections or approvals by Consultant instructions, or law of Place of the Work.

.4 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

9 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

9.1 – INSTALLATION/REMOVAL

.1 Provide construction facilities and temporary controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

9.2 – HOARDING

.1 Erect hoarding where indicated on drawings and as required to protect public, workers, public property and private property from injury or damage.

.2 Provide hoarding with chain link fence 1.3m high, protecting public and private property from injury or damage. Provide lockable gates within hoarding for access to site by workers and vehicles.

9.3 – WEATHER ENCLOSURES

.1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.

9.4 – CONTROL OF DUST AND ORDOURS

.1 Provide dust tight screens or partitions to localize dust generating activities, for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such Work is complete.

.3 Seal washroom door openings to the approval of the Board.

.4 Provide negative air pressure in renovation spaces to prevent migration of dust and odours from work area to Owner's occupied spaces. If work space has no exterior window this contractor shall take special precautions to control migration of work place dust and odours.

9.5 –DEWATERING

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

9.6 – SITE STORAGE/LOADING

.1 Confine the Work and operations of employees to limits indicated by Contract Documents; limited to the work site; and as set out in the pre-construction meeting. Do not unreasonably encumber premises and products.

.2 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the Work.

.3 Contractor.

9.7 – SANITARY FACILITIES

.1 Existing stipulated facilities may be used during construction period.

.2 Maintain in clean condition.

9.8 – WATER SUPPLY

.1 Owner will provide a continuous supply of potable water for construction use.

9.9 – TEMPORARY HEATING .1 Permanent heating system of building, or portions thereof, may be used when available. Be responsible for damage thereto.

9.10 – TEMPORARY POWER .1 Owner will pay for temporary power required during construction for temporary lighting and operating of power tools, to maximum supply of 110 volts 15 amps.

.2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

9.11 – TEMPORARY PHONE .1 There is no requirement for a temporary telephone on behalf of the Owner or the Consultant.

9.12 – EQUIPMENT/TOOL/ MATERIALS STORAGAE .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work and Owner’s activities.

9.13 – PROJECT CLEANLINESS .1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste material and debris from site and deposit in waste container at end of each working day.

.3 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

9.14 – SIGNS .1 No advertisements shall be displayed without the consent of the Board’s representative.

10 MATERIAL AND EQUIPMENT

10.1 – PRODUCT AND MATERIAL QUALITY .1 Products, materials, equipment and articles (referred to as Products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best

quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.

.2 Defective products will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant based upon requirements of Contract.

10.2 – STORAGE, HANDLING AND PROTECTION

.1 Handle and store Products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled Products in original undamaged condition with manufacturer's seals and labels intact.

.3 Store products subject to damage from weather in weatherproof enclosures.

10.3 – MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect Products in accordance with manufacturer's written instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

.2 Notify Owner in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.

.3 Improper installation of erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and reinstallation at no increase in Contract Price.

10.4 – WORKMANSHIP

.1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ any unfit person or any unskilled in their required duties.

.3 Decisions as to qualify or fitness of workmanship in cases of dispute rest solely with Consultant, whose decision is final.

10.5 –CONCEALMENT

.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation, inform Consultant if there is a contradictory situation. Install as directed by Consultant.

11 PROJECT CLOSEOUT

11.1 – FINAL CLEANING

.1 When the Work is Substantially Performed, remove surplus products, tools construction machinery and equipment not required for performance of remaining Work.

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

.3 Leave work broom clean before inspection process commences.

.4 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.5 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and ceilings.

.6 Vacuum clean and dust building interiors, behind grilles, louvers and screens.

.7 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.

.8 Broom clean and was exterior walks, steps and surfaces.

.9 Remove dirt and other disfigurations from exterior surfaces.

11.2 – SYSTEMS DEMONSTRATION

.1 Prior to final inspection, demonstrate operation of each system to Owner and Consultant together.

.2 Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as basis for instruction.

11.3 - DOCUMENTS

.1 Collect reviewed submittals and assemble documents executed by Subcontractors, suppliers and manufacturers.

.2 Submit material prior to final Application for Payment.

.3 Submit operation and maintenance data, record (as-built) drawings in both hard copy and electronic format.

.4 Provide warranties and bonds fully executed and notarized.

.5 Execute transition of Performance and Labour and Materials Payment Bond to warranty period requirements.

.6 Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining due.

.7 Owner will issue final change order reflecting approved adjustments to Contract Price not previously made.

.8 Provide a summary of all trade contract information as well as warranty dates for each trade and system.

11.4 – INSPECTION/TAKE OVER PROCEDURE

.1 Prior to application for certificate of Substantial Performance, carefully inspect the work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and building is clean and in condition of occupancy. Provide a verification report from Mechanical Contractor to ensure that all fixtures, fans and systems are working as designed and in accordance with the manufacturer's written documentation and Notify Consultant in writing, of satisfactory completion of the work and request an inspection.

.2 During Owner's inspection, a list of deficiencies will be tabulated. Correct same.

.3 When Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been performed, make application for certificate of Substantial Performance. Refer to General Conditions for specifics to application.

.4 Upon completion of the project, the Owner's Representative and the Contractor will inspect all new work preparing an itemized list known as deficiencies. At such time, the Owner's Representative will itemize each deficiency noted with a dollar amount which will be held back until all work has been completed to the satisfaction of the Owner's Representative. In such deficiencies are prolonged due to lack of interest by the Contractor, the Owner will then tender all the unfinished items to outside Contractors, whatever cost is encountered to the Owner, the amount will be subtracted from the stipulated contract sum or the Owner will take over in completing the unfinished items

using the specified holdback dollar amount, the amount will then be subtracted from the stipulated contract amount.

.5 For failure of performance of the contract as committed, the Contractor will be considered for disqualification for tender any future Owner projects for a minimum period of two (2) years.

11.5 – CONSTRUCTION LIEN ACT

.1 Upon substantial completion of the project, the procedure for certification by the payment certifier (Owner) is only mandatory upon the application of the Contractor. If the General Contractor chooses not to make an application for Certificate of Substantial Performance then the lien period for the Contractor expires as stated in Section 31. (2 x b) of the Act.

.2 The Owner's Representative and the General Contractor will define substantial completion date prior to the deficiency inspection. At such time, the Owner's Representative will hold back the amount of 10% ten percent of the stipulated contract sum for a period of (45) forty-five days from the substantial completion date. The holdback will be released at the end of the specified period after a search of title of that particular project.

.3 The General Contractor will pay for any advertising required by the Construction Lien Act.

11.6 – EXTRA MATERIALS

.1 Where required under this contract provide to the Owner additional materials in quantities stated. All such materials shall be in original packaging in new condition.

PART 2 – PRODUCTS NOT USED

PART 3 – EXECUTION NOT USED.

END

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This specification covers the requirements for the furnishing of all labour, materials, tools, equipment, power, systems, transportation and supervision necessary to completely perform the work, as described in the drawings and the specifications.

.2 The work includes, but is not necessarily confined to the following:

- .1 Removal and disposal of all items in the designated washrooms noted for demolition on the drawings and specifications.
- .2 Prepare floor slab for underground plumbing work.
- .3 Supply and install new finishes to floors and walls as detailed and specified.
- .4 Supply and install new ceiling finishes as detailed and specified.
- .5 Installation of the new plumbing fixtures.
- .6 Installation of new toilet partitions and all washroom accessories noted.
- .7 Installation of electrical lighting fixtures and power items noted.
- .8 Installation of all finish items within the washroom area as noted.

1.2 LOCATION OF THE WORK

.1 The project is located at Agriculture and Agri-Foods Research Facility which is located in Harrow, Ontario.

1.3 ACCESS TO THE SITE

.1 The Contractor will be given access to the Building through the designated service entrance. Prior to bringing equipment and material into the building, get approval of the Owner Representative who will arrange to avoid conflicts with the public or other users. At all times take care to void contact with other users.

1.3 ACCESS TO THE SITE (cont'd)

.2 Hours of operation of the Research Facility vary. Generally the Building is open at 7:00 a.m. and closing time is 5:00 p.m. Any times prior to or after shall be agreed upon by the Owner Representative.

.3 Secure the work area in an approved manner. This includes hoarding/tarping off the construction work area and staging area and prevent public access to any areas where construction activities occur. Hoarding installed must be free standing as not to disturb the existing building finishes.

1.4 FIRE SAFETY REQUIREMENTS

.1 Comply with the National Building Code of Canada (NBC – latest edition) for fire safety in safety in construction and the National Fire Code of Canada 2005 (NFC) for fire prevention, fire fighting and life safety in building use.

.2 Comply with the following Human Resources and Social Development Canada (HRSDC), Fire Commissioner of Canada (FCC) standards DATE. These are available from HRSDC or may be downloaded from the internet at: www.hrsdc.gc.ca.

.1 No. 301: Standard for Construction Operations.

.2 No. 302: Standard for Welding and Cutting.

.3 No. 374: Fire Protection Standard for General Storage (Indoor and Outdoor).

.3 Welding and cutting:

.1 Assign a fire watcher as described in FC 302 when welding or cutting operations are carried out in areas where combustible materials are within 10 m may be ignited by conduction or radiation.

1.5 STANDARDS

.1 Reference is made to CGSB, ASTM, CSA and other national standards. These standards when quoted form an integral part of the and are to be read in conjunction with the specifications as if reproduced herein.

1.6 ABBREVIAIONS .1 Abbreviations used are:
.1 CSA – Canadian Standards Association.
.2 NBC – National Building Code of Canada.
.3 CGSB – Canadian General Standards Board.
.4 CAN2, CAN3 – National Standards of Canada published by CGSB.
.5 PWGSC – Public Works and Government Services Canada.

1.7 PROTECTION OF THE WORK .1 Protect the work from damage by ice, water and/or other adverse climatic conditions.

1.8 CONTRACT DOCUMENTS .1 Drawings and specifications are complementary, items shown or mentioned in one and not in the other are deemed to be included in the contract work.

1.9 SCHEDULING OF THE WORK .1 The work must start as soon as practically possible after contract award and continue uninterrupted until completion. After the award of the contract a review meeting of the project schedule by the Contractor is provided for approval.

.2 Provide within 10 working days after Contract award, schedule showing start date, dates for submission of shop drawings, material lists and samples, anticipated progress stages and date of final completion of work within time period required by Contract documents.

.3 When schedule has been reviewed by the Owner Representative take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative. The activities which must be identified include the beginning and completion dates.

1.10 USE OF THE SITE FACILITIES .1 Execute work with least possible interference or disturbance to the normal use of the premises and visitor and staff movement. Make arrangements with Departmental Representative to facilitate work as stated.

1.11 PROJECT MEETINGS .1 Administrative

.1 Schedule and administer project meetings in orderly manner throughout the progress of the work.
.2 Prepare agenda for meetings.
.3 Notice of each meeting shall be given minimum 2 days in advance of meeting.
.4 Provide physical space and make arrangements for meetings.
.5 Preside at meetings.
.6 Record the minutes. Include significant proceedings and decisions. Indentify “action” by parties.
.7 Reproduce and distribute copies of minutes within 3 (three) days of each meeting and transmit to meeting participants and affected parties not in attendance.
.8 Representative of contractor, subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.

.2 Pre-Construction Meetings

.1 Within 15 days after award of contract, arrange meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
.2 Senior representatives for the owner, consultant, sub-consultants, major sub-contractors, field inspectors and supervisors will be in attendance.
.3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
.4 Incorporate mutually agreed variations to contract documents into scope of work.
.5 Agenda to include the following;

.3 Agenda to include the following;

.1 Review, approval of minutes of previous meeting.
.2 Review of work progress since previous meetings.

.3 Field observations, problems, conflicts.
.4 Problems which impede construction schedule.
.5 Corrective measuring and procedures to regain project schedule.
.7 Revision to construction schedule.
.8 Progress, schedule, during succeeding work period.
.9 Review submittal schedules; expedite as required.
.10 Maintenance of quality standards.
.11 Pending changes and substitutions.
.12 Review of proposed changes for affect on construction schedule and on completion date.
.13 Other business.

1.12 COST BREAKDOWN .1 To be determined by AAFC as noted on tender form.

PART 2 - PRODUCTS

2.1 ACCEPTANCE OF MATERIALS .1 Where materials and equipment are specified to CSA, CGSB, or similar standards, submit a written request to the Departmental Representative for approval of the relevant items.

.2 Include with each request relevant test data bearing a recent date of test, manufacturer’s details, and any other document which will substantiate its quality and conformance.

.3 Cost of additional work and modifications to the design due to use of alternatives will be borne by the contractor.

.4 Do not use materials or products in the work until written approval has been received from the Owner Representative.

2.2 SAMPLES .1 Submit non-returnable samples to the Departmental Representative prior to purchase or fabrication. Be responsible for samples and sampling. The Departmental

Representative will be responsible for testing.

2.3 RECTIFICATION OF EXISTING SURFACES AND MATERIALS

.1 Repair, replace and refinish, to the Owner Representative's approval, existing surfaces and items damaged in connection with the work, at the contractor's expense.

.2 The repaired, replaced and refinished items to be at least equal to those that existed immediately before damage occurred.

2.4 SECURING WORK AREA

.1 Secure the work areas in an approved manner. This includes wood framed hoarding to prevent public access to any areas where construction activities occur and construction materials are stored. Wood hoarding shall be self-supported.

.2 A staging area in the visitors can be established. Staging area must be secured as above. Location to be approved by Owner Representative.

2.5 TEMPORARY FACILITIES

.1 Provide and maintain suitable storage facilities, of type and location approved by the Owner Representative.

.2 Observe and enforce all construction safety measures required by authorities having jurisdiction.

.3 Provide and maintain all necessary enclosures, guards, guardrails, hoardings, barricades, warning signs and similar items.

.4 Enclose the work and storage area as directed by the Owner Representative.

2.6 LAYOUT OF THE WORK

.1 Contractor will be responsible for layout work, and checking plan dimensions against field measurements.

.2 Lay out the work according to the dimensions shown on the plans and verify in the field.

.3 Notify the Owner Representative immediately of any discrepancies between field measurements and dimensions shown on plans.

.4 Be responsible for rectification of errors resulting from failure to verify dimensions, elevations and other pertinent data shown on the plans.

PART 3 - EXECUTION

3.1 Not Used

.1 Not used.

PART 1 - GENERAL

1.1 Administrative

.1 This section specifies the general requirements and procedures for contractor’s submissions of design calculations, design drawings, shop drawings, product data and samples to the Owner Representative for review. Additional specific requirements for submissions are specified in individual sections.

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

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

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

.5 Notify Owner Representative, in writing at time of submission, indentifying deviations from requirements of the Contract Documents stating reasons for deviations.

.6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Owner Representative review, unless Owner Representative gives written acceptance of specific deviations.

.7 Make any changes in submissions which Owner Representative may require consistent with contract documents and resubmit as directed by Owner Representative.

.8 Notify, Owner Representative in writing, when resubmitting, of any revisions other than those requested by Owner Representative.

1.2 Shop Drawings and Product Data

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

.2 Maximum sheet size: 850 x 1050 mm.

.3 Submit shop drawings as follows:

.4 Cross-reference shop drawing information to applicable portions of contract documents. rk.

.5 Prepare shop drawings as noted in individual specification sections.

.6 Coordinate each submission with requirements of work and contract documents. Individual submissions will not be reviewed until all related information is available.

.7 Allow 10 days for Owner Representative’s review of each submission.

.8 Accompany submissions with transmittal letter, in duplicate, containing:
- .1 Date.
- .2 Project title and number.
- .3 Contractor’s name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.9 Submissions include:
- .1 Date and revision dates
- .2 Project title and number.
- .3 Name and address of:
  - .1 Sub-contractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor’s stamp, signed by Contractor’s representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Manufacturer
  - .4 Setting or erection details.
  - .5 Capacities.
  - .6 Performance characteristics.
  - .7 Standards.
  - .8 Relationship to adjacent work.

1.2 Shop Drawings and Product Data (Cont'd)

.10 In addition for items designed by the Contractor's engineer should be signed and sealed by that engineer who should have extensive experience in this type of work. Submissions should include design calculations relating to codes used and design sketches.

.1 Design must be in accordance with Canadian Standards for the material being used. Design standards used. Design standards used should be listed on calculation sheets.

.11 After Owner Representative's review, distribute copies.

.12 Product Data: Manufacturer's catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.

.13 Submit 2 copies of product data.

.14 Sheet size: 215 x 280 mm, maximum of 3 modules.

.15 Delete information not applicable to project.

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

.17 Cross-reference product data information to applicable portions of contract documents.

.18 The review of shop drawings by Owner Representative Agriculture Agri Food Canada (AAFC)is for sole purpose of ascertaining conformance with general concept;

.1 This review shall not mean that AAFC approves detail design inherent in shop drawings, responsibility for which shall remain the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.

.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to

1.2 Shop Drawings and Product Data (cont'd)

techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 Samples

.1 Samples: examples of materials, equipment, quality, finishes, workmanship.

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

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

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

.1 Comply with Ontario Health and Safety Act and with Canada Labour Code, Canada Occupational Safety and Health Regulations.

.2 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site work and continue to implement, maintain, and enforce the plan until final demobilization from site. Health and Safety Plan must address project specifications.

.3 Relief from or substitutions for any portion or provision of minimum Health and Safety Guidelines specified herein or reviewed site-specific Health and Safety Plan must be submitted to Departmental Representative in writing. Departmental Representative will respond in writing, either accepting or requesting improvements.

1.2 REFERENCES

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

.2 National Building Code 2005 (NBC):
.1 NBC 2005, Division B, Part 8 Safety Measures at Construction and Demolition Sites.

.3 National Fire Code 2005 (NFC):
.1 NFC 2005, Division B, Part 2 Emergency Planning, subsection 2.8.2 Fire Safety Plan.

.4 Province of Ontario.
.1 Occupational Health and Safety Act, Revised Statutes of Ontario 1990, Chapter 0.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
.2 Workplace Safety and Insurance Act, 1997.
.3 Municipal statutes and authorities.

1.2 REFERENCES (cont'd)

.5 Fire Commissioner of Canada (FCC):
.1 FC-301 Standard for Construction Operations, June 1982.
.2 FC-302 Standard for Welding and Cutting 1982.
.3 The above standards can be viewed at the following website; www.hrsdc.gc.ca/eng/labour/fire%5Fprotection/policies%5Fstandards/commissioner/. Copies may be obtained from: Human Resources and Social Development Canada Labour Program Fire Protection Engineering Services Ottawa, Ontario K1A 0J2.

1.3 Submittals

.1 Submit site-specific Health and Safety Plan within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
.1 Results of site specific safety hazard assessment.
.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.

.2 Submit Construction Safety Checklists after completion.

.3 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.

.4 Submit copies of incident and accident reports.

.5 Submit WHMIS MSDS – Material Safety Data Sheets to Departmental Representative.

.6 Submit record of contractors health and safety meetings when requested.

.7 Personnel training requirements including as follows:
.1 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.

1.3 Submittals (cont'd)

.8 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 7 days of receipt of comments from the Departmental Representative.

.9 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.

1.4 FILING OF NOTICE .1 File Notice of Project with Provincial authorities prior to beginning of work.

1.5 SAFETY ASSESSMENT .1 Perform site specific safety hazard assessment related to project.

1.6 MEETINGS .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of work. Meeting to coincide with the pre-award meeting.

1.7 REGULATORY REQUIREMENTS .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

1.8 RESPONSIBILITY .1 Be responsible for safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

.3 Where applicable the Contractor shall be designated "Constructor", as defined by Ontario Act.

1.9 Compliance Requirements

.1 Comply with Ontario Health and Safety Act, with Canada Labour Code, Canada Occupational Safety and Health Regulations and Ontario regulations.

.2 Provide Departmental Representative with Material Safety Data Sheets (MSDS).

1.10 Unforeseen Hazards

.1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during the performance of Work, immediately stop work and immediately advise Departmental Representative verbally and in writing.

.2 Follow procedures in place for Employees Right to Refuse Work as specified in the Act for the Province of Ontario.

1.11 Posting of Documents

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative verbally and in writing.

.2 Provide documents as follows and post on site:
.1 Contractor’s Safety Policy;
.2 Health and Safety Representative;
.3 General Requirements – Constructor’s name;
.4 Workplace Safety and Insurance Board for Ontario – Poster 82C titled “In Case of Injury”;
.5 Workplace Safety and Insurance Board for Ontario – Regulation 1101;
.6 Ministry of Labour Regulations for the Province of Ontario;
.7 Occupational Health and Safety Act for Province of Ontario;
.8 Material Safety Data Sheets;
.9 Safety Plan;
.10 Notice of Project;
.11 Joint Health and Safety Committee Members;

.3 Comply with Provincial general posting requirements.

1.12 CONSTRUCTION SAFETY CHECKLISTS

.1 Review and implement out applicable health and safety checklists in collaboration with Departmental Representative.

1.13 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.14 BLASTING

.1 Use of explosives is not permitted.

1.15 POWDER ACTUATED DEVICES

.1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

1.16 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

.2 Assign responsibility and obligation to Health and Safety Officer to stop or start Work when, at Health and Safety Officer’s discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

1.17 PROJECT/SITE CONDITIONS

.1 The following are known or potential project related health, environmental and safety hazards at site which must be properly managed if encountered during course of work:

.1 Existing Hazards on site:

.1 Public present on site
.2 Working on/over/under water
.3 Working on/under/ice
.4 Potential for Marsh grass fire
.5 Oil Spills
.6 Creosote timber removal.

PART 2 – PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

1.1 Section Includes

.1 Owner Representative will engage, as required, independent Inspection/testing Agencies for purpose of Quality Assurance only, that is, verify Contractor's Quality Control processes for timber, concrete, environmental protection, waste disposal, etc.

.2 Contractor is responsible for all Quality Control. Employment of inspection/testing agencies does not relax responsibility to perform work in accordance with Contract Documents.

1.2 ACCESS TO WORK

.1 Allow Owner Representative access to work whenever and wherever it is in progress. Provide equipment required for access and executing inspection and testing by appointed agencies such as (but not limited to) ladders, lights.

.2 Co-operate to provide reasonable facilities for such access.

1.3 PROCEDURES

.1 Notify Owner Representative in advance of requirement for tests.

.2 Submit samples and/or materials required for testing as listed in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.4 TESTING BY OWNER REPRESENTATIVE

.1 Owner Representative will perform inspection/testing on a random basis for auditing purposes. Correct defect and irregularities as advised by Owner Representative at no cost. Pay costs for retesting and reinspection.

.2 If Contractor covers or permits to be covered

Work that has been designated for inspections before these are made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.3 Owner Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Owner Representative will authorize payment of the cost of examination and replacement.

1.5 REJECTED WORK

.1 Remove defective Work, whenever is found, either through Contractor Quality Control procedures or through Owner Representative's Quality Assurance. Replace or re-execute in accordance with Contract Documents.

.2 If in opinion of the Owner Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Owner Representative.

PART 2 - PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 - EXECUTION

.1 Not Used.

PART 1 - GENERAL

1.1 RECORD DRAWINGS

.1 Owner Representative will provide two sets of white prints for record drawing purposes.

.2 Maintain project record drawings and record accurately deviations from Contract documents.

.3 Record change in red. Mark on set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to Owner Representative.

.4 Record following information:
.1 Depths of various elements of foundation in relations to Canadian Geodetic Datum.
.2 Maintain project record drawings and record accurately deviations from Contract Documents.
.3 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
.4 Field changes of dimension and detail.
.5 Changes made by Change Order or Field Order.

PART 2 - PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 - EXECUTION

3.1 Not Used

.1 Not Used.

PART 1 - GENERAL

1.1 – REFERENCES

.1 Canadian Standards Association (CSA)

.1 CSA S350-M1980, Code of Practice for Safety Demolition of Structures.

.2 Comply with National Building Code of Canada, Part 8, “Safety Measures at Construction and Demolition Sites”. And Provincial Requirements.

1.2 – ASBESTOS AND DESIGNATED SUBSTANCES

.1 Contractor to review designated substance report and take precautions to protect the environment.

.2 Demolition of spray or trowel asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos not identified in Asbestos Manual be encountered, stop work and notify Consultant immediately. Do not proceed until written instructions have been received from Consultant.

.3 The Owner’s contractor shall remove any found asbestos in accordance with currently legislated removal procedures.

.4 Do not proceed with work in the vicinity of found asbestos until the Owner has issued a written clearance to proceed.

.5 Coordinate the efforts of the Asbestos Removal Contractor. Assist with the asbestos removal contractor’s access asbestos by minimizing damage necessitated by investigation openings in the finishes, repair and finish as scheduled any damage caused by investigative openings.

1.3 - PROTECTION

.1 Prevent movement, settlement, or other damage to adjacent structures, utilities, and parts of building

.2 Keep noise, dust, and inconvenience to occupants to minimum.

.3 Protect building systems, services and equipment.

.4 Provide temporary dust screens, covers, railings, supports and other protection as required.

1.4 – SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 00 10 General Requirements, 1.6 Submittals.

.2 Before proceeding with demolition of load bearing, walls or of other walls requiring shoring, provide to authority having jurisdiction shoring and underpinning drawings prepared by qualified professional engineer registered or licensed in the Province of Ontario in Canada showing proposed method.

1.5 – NOTICE

.1 Notify Consultant before disrupting building access or services.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION

3.1 – DEMOLITION SALVAGE AND DISPOSAL

.1 General Contractor shall ensure that testing is carried out prior to saw-cutting or core-drilling of concrete floors to ensure that there are no conduits, pipes or cables that may be damaged. All costs to repair damage to utilities below the concrete slab shall be the sole responsibility of the General Contractor.

.2 Remove parts of existing building to permit new construction. Sort materials into appropriate piles for recycling and or reuse.

.3 Refer to demolition drawings and specification for items to be salvaged for reuse.

.4 Remove items to be reused, store as directed by Consultant, and reinstall under appropriate section of specification.

.5 Trim edges of partially demolished building elements to suit future use.

.6 Dispose of removed materials, to appropriated recycling facilities or reuse facilities except where specified otherwise, in accordance with authority having jurisdiction.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS

.1 Section 04 06 00 – Mortar and Masonry Grout

.2 Section 04 08 00 -Masonry Reinforcing and Connectors

.3 Section 04 09 00 – Masonry Accessories

.4 Section 04 22 00 – Concrete Masonry Units

.5 Section 07 90 00 – Joint Sealers

1.2 - REFERENCES

.1 Canadian Standards Association (CSA)
.1 CSA A179-94, Mortar and Grout for Unit Masonry
.2 CSA-A371-94, Masonry Construction for Buildings

1.3 – SAMPLES

.1 Submit samples in accordance with Section 01001 General Requirements.

.2 Submit samples:
.1 Two of each type of masonry unit specified.
.2 One of each type of masonry accessory specified.
.3 One of each type of masonry reinforcement, tie and connector proposed for use.
.4 As required for testing purposes.

1.4 – TEST REPORTS

.1 Submit laboratory test reports in accordance Section 01 00 10 General Requirements, Part 7, Submittals.

.2 Submit laboratory test reports certifying compliance of masonry units and mortar ingredients with specification requirements.

1.5 – DELIVERY, STORAGE AND HANDLING

.1 Deliver, store, handle and protect materials in accordance with Section 01001 General Requirements.

.2 Deliver materials to job site in dry condition.

.3 Keep materials dry until use.

.4 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.6 – WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials.

.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

1.7 – ENVIRONMENTAL REQUIREMENTS

.1 Hot weather requirements

.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.

.2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashing or other permanent construction.

.3 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.

.4 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Masonry materials are specified in related Sections indicated in 1.1.

PART 3 - EXECUTION

3.1 – INSTALLATION

.1 Do masonry work in accordance with CSA-A371 except where specified otherwise.

.2 Build masonry plumb, level, and true to line, with vertical joints in alignment.

3.2 - CONSTRUCTION

.1 Exposed masonry

.1 Remove chipped, cracked, and otherwise damaged units in exposed masonry and replace with undamaged units.

.2 Jointing

.1 Allow joints to set just enough to remove excess water, then tool with round jointer to provide smooth, joints true to line, compressed, uniformly concave joints are indicated.

.3 Cutting

.1 Cut out for electrical switches, outlet boxes, and other recessed or built-in objects.
.2 Make cuts straight, clean, and free from uneven edges.

.4 Building-In

.1 Build in items required to be built into masonry.
.2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
.3 Brace door jambs to maintain plumb. Fill spaces between jambs and masonry with mortar.

.5 Support of loads

.1 Use 25 MPa concrete where concrete fill is used in lieu of solid units.
.2 Use grout to CSA A179 where grout is used in lieu of solid units.

.6 Provision for movement

.1 Leave 3 mm space below shelf angles
.2 Leave 6 mm space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.
.3 Built masonry to tie in with stabilizers, with provision for vertical movement.

.7 Loose steel lintels

.1 Install loose steel lintels. Centre over opening width.

.8 Control joints

.1 Construct continuous control joints as indicated.

.9 Expansion joints

.1 Build-in continuous expansion joints as indicated.

3.3 – SITE TOLERANCES

.1 Tolerances in notes to Clause 5.3 of CSA-A371 apply.

3.4 – RE-INSTALLATION

.1 Cut openings in existing work as indicated.

.2 Openings in walls to be approved by Consultant.

.3 Make good existing work. Use materials to match existing.

3.5 – FIELD QUALITY CONTROL

.1 Inspection and testing will be carried out by Testing Laboratory designated by Consultant.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 04 05 00 – Masonry Procedures

1.2 - REFERENCES .1 Canadian Standards Association (CSA)
.1 CSA A179-94, Mortar and Grout for Unit Masonry

1.3 – SAMPLES .1 Submit samples in accordance with Section 01001 General Requirements.

.2 Submit two full size samples of mortar.

1.4 – WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.

.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 – MATERIALS .1 Use same brands of materials and source of aggregate for entire project.

.2 Mortar and grout: CSA A179.

.3 Use aggregate passing 1.18 mm sieve where 6 mm thick joints are indicated.

.4 Colour: ground coloured natural aggregates for metallic oxide pigments.

.5 Mortar for interior masonry:

.6 Grout: to CSA A179, Table 3.

.7 Parging mortar: Type N to CSA A179.

2.2 – MIXES .1 Colour and admixtures: Mix grout to semi-fluid consistency.

.2 Pointing mortar: Pre-hydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain it form when pressed into ball. Allow to stand for not less than 1 hour nor more than 2 hours then re-mix with sufficient water to produce mortar of proper consistency for pointing.

PART 3 - EXECUTION

3.1 – CONSTRUCTION

.1 Do masonry work in accordance with CSA-A179 except where specified otherwise.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS

.1 Section 04 06 00 – Mortar and Masonry Grout

.2 Section 04 08 00– Masonry Reinforcing and Connectors

.3 Section 04 09 00 – Masonry Accessories

.4 Section 04 05 10 – Masonry Procedures

.5 Section 04 22 00 – Concrete Masonry Units

.6 Section 07 90 00 – Joint Sealers

1.2 - REFERENCES

.1 Canadian Standards Association (CSA)

.1 CSA A23.1-M94, Concrete Materials and Methods of Concrete Construction

.2 CSA-A370-M94,Connectors for Masonry

.3 CSA-A371-M94, Masonry Construction for Buildings

.4 Withdrawn – Replaced by CSA G30.14-M1983 (R1998), Formed Steel Wire for Concrete Reinforcement

.5 CSAG30.18-M92, Billet-Steel Bars for Concrete Reinforcement.

.6 CSA-S304-.1M94, Masonry Design for Buildings

.7 CSA W186-M1990, Welding of Reinforcing Bars in Reinforced Concrete Construction

.8 CSA A179-94, Mortar and Grout for Unit Masonry

1.3 – SOURCE QUALITY CONTROL

.1 Provide Consultant with certified copy of mill test report or reinforcement steel and connectors, showing physical and chemical analysis, minimum 5 weeks prior to commencing reinforcement work

.2 Inform Consultant of proposed source of material to be supplied.

1.4 – SHOP DRAWINGS

.1 Submit samples in accordance with Section 01 10 01 General Requirements, Part 7 Submittals.

.2 Submit drawings consist of bar bending details, lists and placing drawings.

.3 On placing drawings, indicate sizes, spacing, location and quantities of reinforcement and connectors.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Bar reinforcement: to CSA-A371 and CSA G30.18, Grade 400.

.2 Wire reinforcement: to CSA-A371 and CSA G30.14, truss type.

.3 Connectors: to CSA-A370 and CSA-S304.

.4 Corrosion protection: to CSA-S304, galvanized to CSA-S304 and CSA-A370.

2.2 – FABRICATION

.1 Fabricate reinforcing in accordance with CSA.A23.1 and Reinforcing Steel Manual of Practice by the Reinforcing Steel Institute of Ontario.

.2 Fabricate connectors in accordance with CSA-A370.

.3 Obtain Consultant’s approval for locations of reinforcement splices other than shown on placing drawings.

.4 Upon approval of Consultant, weld reinforcement in accordance with CSA W186.

.5 Ship reinforcement and connectors, clearly identified in accordance with drawings.

PART 3 - EXECUTION

3.1 – GENERAL

.1 Supply and install masonry connectors and reinforcement in accordance with CSA-A370,CSA-A371, CSA-A23.1 and CSA-S304.1 unless indicated otherwise.

.2 Prior to placing mortar obtain Consultant’s approval of placement of reinforcement and connectors.

.3 Supply and install additional reinforcement to masonry as indicated.

3.2 – BONDING AND TYING .1 Bond walls of two or more withes using metal connectors in accordance with CSA-S304, CSA-A371 and as indicated.

3.3 – GROUTING .1 Grout masonry in accordance with CSA-S304.1, CSA-A371 and CSA-A179 and as indicated.

3.4 – ANCHORS .1 Supply and install metal anchors as indicated.

3.5 – LATERAL SUPPORT AND ANCHORAGE .1 Supply and install lateral support and anchorage in accordance with CSA-S304.1 and as indicated.

3.6 – MOVEMENT JOINTS .1 Reinforcement will not be continuous across movement joints except where indicated or authorized by Consultant.

3.7 – FIELD TOUCH-UP .1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcement steel and connectors with compatible finish to provide continuous coating.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 04 08 00– Masonry Reinforcing and Connectors

.2 Section 04 05 10 – Masonry Procedures

1.2 - REFERENCES .1 American Society for Testing and Materials (ASTM)
.1 ASTM D 2240-97el, Standard Test Method for Rubber Property – Durometer Hardness

.2 Canadian Standards Association (CSA)
.1 CSA-A371-M94, Masonry Construction for Buildings

1.3 – WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.

.2 Collect and separate plastic, paper packaging and corrugated cardboard.

PART 2 - PRODUCTS

2.1 – MATERIALS .1 Control joint filler: purpose-made elastomer durometer hardness to ASTM D 2240 of size and shape indicated.

.2 Lap adhesive: recommended by masonry flashing manufacturer.

.3 Mechanical Connectors: Hot dipped galvanized, two-piece adjustable, 48mm, wire, as manufactured by Dur-O-Wal.

PART 3 - EXECUTION

3.1 – GENERAL .1 Install continuous control joint fillers in control joints at locations indicated.

.2 Install masonry mechanical fasteners every 400 mm vertically.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS
.1 Section 04 05 10 – Masonry Procedures
.2 Section 04 06 00 – Mortar and Masonry Grout
.3 Section 04 08 00– Masonry Reinforcing and Connectors
.4 Section 04 09 00 – Masonry Accessories

1.2 - REFERENCES
.1 Canadian Standards Association (CSA International)
.1 CAN3 A165 SERIES-94 (R2000), CSA Standards on Concrete Masonry Units covers: A165.1, A165.2, A165.3

1.3 – WASTE MANAGEMENT AND DISPOSAL
.1 Separate and recycle waste materials.
.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material for recycling.
.4 Divert damaged or unused concrete materials from landfill to local facility approved by Consultant.

PART 2 - PRODUCTS

2.1 – MATERIALS
.1 Standard concrete block units: to CAN3-A165 Series (CAN3-A165.1)
.1 Classification: H/15/A/M
.2 Size: modular
.3 Special shapes: provide square units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special shapes as indicated.
.2 Special fire resistant concrete block units: to CAN3-A165 Series (CAN3-A165.1) as modified below.
.1 Classification: H/15/B/M except as modified by fire resistance requirements specified below.

.2 Fire resistant characteristics: aggregate used in units and equivalent thickness of units to be Supplement to the National Building Code of Canada 1990, Chapter 2 for fire-resistance ratings indicated.

.3 Size: modular

.4 Special shapes: provide square bull-nosed units for exposed corners. Provide purpose-made shapes for lintels and provide additional special shapes as indicated.

PART 3 - EXECUTION

3.1 – INSTALLATION

.1 Concrete block units

.1 Bond: running.

.2 Coursing height: to match existing.

.3 Jointing: concave where exposed or where paint or other finish coating is specified.

.4 Clean block faces using soft cloths before mortar hardens rake to 10 mm depth. After completion of block laying fill joints with pointing mortar than point to provide concave joints. Repeat cleaning of faces.

.2 Concrete block lintels

.1 Install reinforced concrete block lintels over openings in masonry where steel or reinforced concrete lintels are not indicated.

.2 End bearing: not less than 200 mm.

3.2 – CLEANING

.1 Standard block: Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with a small piece of block and finally by brushing.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 10 16 00 – Metal Toilet Partitions

.2 Section 10 80 00 – Washroom Accessories

1.2 - REFERENCES .1 Canadian Standards Association (CSA International)
.1 CSA B111-1974 (R1998), Wire Nails, Spikes and Staples
.2 CAN/CSA-G164-M92 (R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
.3 CSA O121-M1978(R1998), Douglas Fir Plywood.
.4 CAN/CSA-O141-91(R1999), Softwood Lumber
.5 CSA O151-M1978(R1998), Canadian Softwood Plywood
.6 CAN/CSA-O325.0-92(R1998), Construction Sheathing

.1 National Lumber Grades Authority (NLGA)
.1 Standard Grading Rules for Canadian Lumber 2000.

1.3 – QUALITY ASSURANCE .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

.1 Plywood, OSB and wood based composite panel construction sheathing identification: by grade mark in accordance with CSA standards.

1.4 – WASTE MANAGEMENT DISPOSAL .1 Separate and recycle waste materials.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling.

.4 Divert unused wood materials from landfill to recycling reuse facility approved by Consultant.

.5 Do not dispose of preservative treated wood through incineration.

.6 Do not dispose of preservative treated wood with materials destined for recycling or reuse.

.7 Dispose of treated wood, end pieces, wood scrapes and sawdust at sanitary landfill approved by Consultant.

.8 Dispose of unused wood preservative material at official hazardous material collections site approved by Consultant.

.9 Do not dispose of unused preservative material into sewer system, into streams, lakes, onto ground or in other locations where they will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 – LUMBER MATERIAL .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
.1 CAN/CSA-O141
.2 NLGA Standard Grading Rules for Canadian Lumber

.2 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:
.1 S2S is acceptable for concealed, non-structural elements
.2 Board sizes: “Standard” or better grade.
.3 Dimension sizes: “Standard” light framing or better grade
.4 Post and timbers sizes: “Standard” or better grade.

2.2 – PANEL MATERIALS .1 Douglas fir plywood (DFP): to CSA O121, standard construction.

.2 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.3 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.

2.3 – ACCESSORIES

.1 Nails, spikes and staples: to CSA B111.

.2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

.3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.

2.4 – FINISHES

.1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work interior high humid areas pressure- preservative treated lumber.

PART 3 - EXECUTION

3.1 – INSTALLATION

.1 Comply with requirements of NBC, supplemented by the following paragraphs.

.2 Install furring and blocking as required to space-out the support casework, cabinets, wall and ceiling finishes, facings and other work as required.

.3 Align and plumb faces of furring and blocking to a tolerance of 1:600.

.4 Use caution when working with particle board. Use dust collectors and high quality respirator masks.

3.2 - ERECTION

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

3.3 – SCHEDULES

.1 Provide electrical equipment backboards for mounting electrical equipment as indicated. Use 19 mm thick plywood on 19 x 38 mm furring around spacing, perimeter and at maximum 300mm intermediate.

.2 Provide blocking and backing for secure fastening of items to gypsum board walls or ceiling of all types. Items include, but not limited to, Toilet Partitions and Screens; Washroom Accessories; Surface-Mounted Electrical, etc.

END

PART 1 - GENERAL

1.1 – SECTION INCLUDES .1 Interior and exterior frames.

1.2 – RELATED SECTIONS .1 Section 01 00 10 – General Requirements

.2 Section 06 10 10 – Rough Carpentry

.3 Section 09 91 10 – Interior Painting: Painting and finishing

1.3 - REFERENCES .1 Canadian Standards Association (CSA)
.1 CAND/CSA-A247-M86(R1996),Insulating Fibreboard
.2 CSA B111-1974 (R1998), Wire Nails, Spikes and Staples
.3 CAN/CSA-G164-M92 (R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
.4 CSA O121-M1978(R1998), Douglas Fir Plywood.
.5 CAN/CSA-O141-91(R1999), Softwood Lumber
.6 CSA O151-M78(R1998), Canadian Softwood Plywood
.7 CSA-O153-M80 (R1998),Poplar Plywood

.2 National Lumber Grades Authority (NLGA)
.1 Standard Grading Rules for Canadian Lumber -2000.

.3 Underwriters Laboratories of Canada (ULC)
.1 CAN4-S104-80(R1985), Fire Tests of Door Assemblies.
.2 CAN4-S105-85(R1992), Fire Door Frames, meeting the Performance Required by CAN4-S104.

1.4 – SHOP DRAWINGS .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements.

.2 Indicate details of construction, profiles, jointing, fastening and other related details.

.3 Indicate materials, thicknesses, finishes and hardware.

1.5 – SAMPLES

.1 Submit samples in accordance with Section 01 00 10 General Requirements.

.2 Submit duplicate samples: sample size 200 x 200 mm or 300 mm long unless specified otherwise of all materials.

1.6 – REGULATORY REQUIREMENTS

.1 Wood fire rated frames and panels: listed and labeled by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 and CAN4-S105 for ratings specified or indicated.

1.7 – DELIVERY, STORAGE AND HANDLING

.1 Deliver, handle, store and protect materials in accordance with Section 01 00 10 General Requirements.

.2 Protect materials against dampness during delivery.

.3 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

PART 2 - PRODUCTS

2.1 – LUMBER MATERIAL

.1 Lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:
.1 CAN/CSA-O141.
.2 NLGA Standard Grading Rules for Canadian Lumber.
.3 AWMAC premium grade, moisture content as specified.

.2 Machine stress-rated lumber is acceptable.

.3 Hardwood lumber: moisture content 7% or less in accordance with following standards:
.1 NLGA Standard Grading Rules for Canadian Lumber.
.2 AWMAC premium grade, moisture content as specified.

2.2 – PANEL MATERIALS .1 Douglas fir plywood (DFP): to CSA O121, standard construction.

.2 Poplar plywood (PP): to CSA 153, standard construction.

2.3 – ACCESSORIES .1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; plan finish elsewhere.

.2 Wood screws: electroplated, type and size to suite application.

.3 Splines: metal.

.4 Adhesive: recommended by manufacturer.

.5 Use least toxic sealants, adhesives, sealers, and finishes necessary to comply with requirement for this section.

PART 3 - EXECUTION

3.1 – INSTALLATION .1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise. Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects. Form joints to conceal shrinkage.

3.2 - CONSTRUCTION *.1 Fastening*

.1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.

.2 Design and select fasteners to suite size and nature of components being jointed. Use proprietary devices as recommended by manufacturer.

.3 Set finishing nails to receive filler. Where screws are used to secure members countersink screw in round cleanly cut hole and plug with wood plug to match material being secured.

.4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

.2 Interior and exterior frames

.1 Set frames with plumb sizes and level heads and secure.

.3 Hardware

.1 Install all hollow metal doors and wood doors.

.2 Install all finish hardware under Section 08710 Door Hardware as per manufacturer’s written instructions.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Fire stopping and smoke seals within mechanical assemblies (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) are specified in Division 15 and 16.

1.2 - REFERENCES .1 Underwriters Laboratories of Canada (ULC)
.1 ULC-S115-1995, Fire Tests of Fire-stop Systems

1.3 - SAMPLES .1 Submit samples in accordance with Section 01 00 10 General Requirements.

.2 Submit duplicate 300 x 300 mm samples showing actual fire stop material proposed for project.

1.4 – SHOP DRAWINGS .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements.

.2 Submit shop drawings to show proposed material, reinforcement, anchorage, fastenings and method of installation. Construction details should accurately reflect actual job conditions.

1.5 – PRODUCT DATA .1 Submit product data in accordance with Section 01 00 10 General Requirements.

.2 Submit manufacturer’s product data for materials and prefabricated devices, providing descriptions are sufficient for identification at job site. Include manufacturer’s printed instructions for installation.

1.6 – WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.

.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Fire stopping and smoke seal systems: in accordance with ULC-S115.
.1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of ULC-S115 and not to exceed opening sizes for which they are intended.
.2 Firestop system rating
1 hours walls
2 hours floors/ceilings

.2 Service penetration assemblies: certified by ULC in accordance with ULC-S115 and listed in ULC Guide No.40 U19.

.3 Service penetration firestop components: certified by ULC in accordance with ULC-S115 and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.

.4 Fire-resistance rating of installed fire stopping assembly in accordance with NBC.

.5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.

.6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.

.7 Primers: to manufacturer’s recommendation for specific material, substrate, and end use.

.8 Water (if applicable): potable, clean and free from injurious amounts of deleterious.

.9 Damming and backup materials, supports and anchoring devices: to manufacturer’s recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

.10 Sealants for vertical joints: non-sagging.

PART 3 - EXECUTION

3.1 – PREPARATION

.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.

.2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer’s instructions.

.3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.

.4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.2 – INSTALLATION

.1 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer’s instructions.

.2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

.3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool or trowel exposed surfaces to a neat finish.

.5 Remove excess compound promptly as work progresses and upon completion.

3.3 – INSPECTION

.1 Notify Consultant when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.

3.4 – SCHEDULE

.1 Fire stop and smoke seal at:

.1 Penetrations through fire-resistance rated masonry, concrete, and gypsum board partitions and walls.

.2 Top of fire-resistance rated masonry and gypsum board partitions.

.3 Intersection of fire-resistance rated masonry and gypsum board partitions.

.4 Control and sway joints in fire-resistance rated masonry and gypsum board partitions and walls.

.5 Penetrations through fire-resistance rated floor slabs, ceilings and roofs.

.6 Openings and sleeves installed for future use through fire separations.

.7 Around mechanical and electrical assemblies penetrating fire separations.

.8 Rigid ducts: greater than 129cm^2: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

3.5 – CLEAN UP

.1 Remove excess materials and debris and clean adjacent surfaces immediately after application.

.2 Remove temporary dams after initial set of fire stopping and smoke seal materials.

END

PART 1 - GENERAL

1.1 - REFERENCES

.1 CAN/CGSB-19.13-M87, Sealing Compound , One-component, Elastomeric, Chemical Curing

.2 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.

.3 CAN/CGSB-19.18-M87, Sealing Compound, One-Component Silicone Base, Solvent Curing

.4 CAN/CGSB-19.21-M87, Sealing and Bedding Compound

.5 CAN/CGSB-19.22-M89, Mildew Resistant, Sealing Compound for Tubs and Tiles.

1.2 - SAMPLES

.1 Submit samples in accordance with Section 01 10 01 General Requirements.

.2 Submit duplicate samples of each type of material and colour.

1.3 – MOCK-UP

.1 Construct mock-up in accordance with Section 01 10 01 General Requirements.

.2 Construct mock-up to show location, size, shape and depth of joints complete work of back-up material, primer, caulking and sealant. Mock-up may be part of finished work.

.3 Allow 24 hours for inspection of mock-up by Consultant before proceeding with sealant work.

1.4 – DELIVERY, STORAGE AND HANDLING

.1 Deliver, handle, store and protect materials in accordance with Section 01001 General Requirements.

.2 Deliver and store materials in original wrappings and containers with manufacturer’s seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.5 – ENVIRONMENTAL AND SAFETY REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

.3 Ventilate area of work by use of approved portable supply and exhaust fans.

1.6 – WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials.

.2 Place materials defined as hazardous or toxic waste in designated containers.

.3 Ensure emptied containers are sealed and stored safely for disposal away from children.

.4 Dispose of surplus chemical and finishing materials in accordance with federal, provincial and municipal regulations.

.5 Separate corrugated cardboard and place in designated areas for recycling.

.6 Fold up metal banding, flatten, and place in designated area for recycling.

.7 Use trigger operated nozzles for water hoses.

.8 Return solvent and oil soaked rags for contaminated recovery and laundering or for proper disposal.

.9 Use the least toxic sealants, adhesives, sealers, and finished necessary to comply with the requirements of this section.

.10 Close and seal tightly all partly used sealant containers and store protected in well ventilated fire-safe area at moderate temperature.

.11 Place used hazardous sealant tubes and other containers in areas designated for hazardous materials

PART 2 - PRODUCTS

2.1 – SEALANT MATERIALS *.1 Sealants and caulking compounds must:*

.1 Meet or exceed all applicable governmental and industrial safety and performance standards; and

.2 be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the fisheries Act and the Canadian Environmental Act (CEPA)

.3 Sealant and caulking compounds must not be formulated or manufactured with: aromatic solvents, fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, barium or their compounds, except barium sulfate.

.4 Sealant and caulking compounds must not contain a total of volatile organic compounds (VOC’s) in excess of 5% by weight as calculated from records of the amounts of constituents used to make the product.

.5 Sealant and caulking compounds must be accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance, and information describing proper disposal methods.

.6 Caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant shall not be used in air handling units.

.7 When low toxicity caulks are not possible, confine usage to areas which off-gas to the exterior, are contained behind air barriers, or applied several months before occupancy to maximize off-gas time.

.8 In the selection of products and materials of this section preference will be given to those with the following characteristics: Water based, non-flammable, low Volatile Organic Compound (VOC's)content, manufactured without compounds which contribute to ozone depletion in the upper atmosphere, does not contain methylene chloride, does not contain chlorinated hydrocarbons.

.9 The manufacturing process must adhere to Lifecycle Assessment Standards as per CSA Z760-94 LCA Standards.

2.2 – SEALANT MATERIAL DESIGNATION

.1 Urethane One Part

.1 Non-Sag to CAN/CGSB-19.13, Type 2, MCG-2-25, colour selected by Consultant from manufacturer's full range of colours.

.2 Acceptable material: Tremco HPL Sealant of SirFlex 15LM or Consultant approved equal.

.2 Silicones One Part

.1 To CAN/CGSB-19.13

.1 Acceptable material: paintable silicone sealant as manufactured by Dow Corning or Consultant approved equal.

.2 To CAN/CGSB-19.22 (Mildew resistant)

.1 Acceptable material: Sanitary 1700 as manufactured by G.E.C.,

.3 Acrylics One Part

.1 To CGSB 19-GP-5M.

.2 Acceptable material: or Consultant approved equal.

.4 Acrylics Latex One Part

.1 To CAN/CGSB-19.17

.2 Acceptable material: LePage Bulldog Grip PL Gapseal Crack and Gap Filler or Consultant approved equal.

.5 Acoustic Sealant

.1 To CAN/CGSB-19.21

.2 Acceptable material: LePage Bulldog Grip PL Gapseal Crack and Gap Filler or Consultant approved equal.

.6 Preformed Compressible and Non-Compressible back-up materials

.1 Polyethylene, Urethane, Neoprene or Vinyl Foam

.1 Extruded closed cell foam backer rod.

.2 Size: oversize 30 to 50%

.2 Bond Breaker Tape

.1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 – SEALANT SELECTION

.1 Seal interior perimeters of exterior openings as detailed on drawings: Sealant type: Acrylic Latex.

.2 Control and expansion joints on the interior of exterior surfaces of unit masonry walls: Sealant type: Silicone Paintable.

.3 Perimeters of interior frames, as detailed and itemized: Sealant type: Acrylic Latex

.4 Interior masonry vertical control joints (block-to-block, block-to-concrete, and intersecting masonry walls): Sealant Type: Acrylic One Part.

.5 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, water closets, basins, vanities): Sealant type: Sanitary.

.6 Exposed interior control joints in drywall: Sealant type: Acrylic Latex.

2.4 – JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

PART 3 - EXECUTION

3.1 – PROTECTION

.1 Protect installed work of other trades from staining or contamination.

3.2 – PREPARATION OF JOINT SURFACES

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

.2 Clean bonding jointing surfaces of harmful matter substances including dust, rust, oil, grease, and other matter which may impair work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer’s directions.

3.3 – PRIMING

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer’s instructions immediately prior to caulking.

3.4 – BACKUP MATERIAL

.1 Apply bond breaker tape where required to manufacturer’s instructions.

.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 – MIXING

.1 Mix materials in strict accordance with sealant manufacturer’s instructions.

3.6 – APPLICATION

.1 Sealant

.1 Apply sealant in accordance with manufacturer’s written instructions.

.2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
.3 Apply sealant in continuous beads.
.4 Apply sealant using gun with proper size nozzle.
.5 Use sufficient pressure to fill voids and joints solid.
.6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
.7 Tool exposed surfaces before skinning begins to give slightly concave shape.
.8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing

.1 Cure sealants in accordance with sealant manufacturer’s instructions
.2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup

.1 Clean adjacent surfaces immediately and leave work neat and clean.
.2 Remove excess and droppings, using recommended cleaners as work progresses.
.3 Remove masking tape after initial set of sealant.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS

.1 Section 01 00 10 – General Requirements

.2 Section 07 90 00 – Joint Sealers

.3 Section 08 71 00 – Door Hardware

.4 Section 09 91 00 – Interior Painting

1.2 - REFERENCES

.1 American Society for Testing and Materials (ASTM International)
- .1 ASTM A653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

.2 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating

.3 Canadian Standards Association (CSA International)
- .1 G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel
- .2 CSA W59-M1989 (R2001), Welded Steel Construction (Metal Arc Welding) (Metric Version)

.4 Canadian Steel Door Manufacturers' Association (CSDMA)
- .1 CSDMA, Specifications for Commercial Steel Doors and Frames, 1990.
- .2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 1990

.5 National Fire Protection Association (NFPA)
- .1 NFPA 80-99, Standard for Fire Doors and Fire Windows
- .2 NFPA 252-99, Standard Methods of Fire Tests of Door Assemblies

.6 Underwriters' Laboratories of Canada (ULC)
.1 CAN4-S104-80(R1985), Fire Tests of Door Assemblies
.2 CAN4-S105-85 (R1992), Fire Door Frames Meeting the Performance Required by CAN4-S104

1.3 – SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 00 10 General Requirements.

.2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of hardware and fire rating and finishes.

.3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and fire rating finishes.

.4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

1.4 – REQUIREMENTS

.1 Steel fire rated doors and frames: labeled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104M NFPA 252 for ratings specified or indicated.

.2 Provide fire labeled frame products for those openings requiring fire protection ratings as scheduled. Test products in strict conformance with CAN4-S104, ASTM E152 or NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Hot dipped galvanized steel sheet: to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 – Thickness for Component Parts

.2 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.

2.2 – DOOR CORE MATERIALS

.1 Honeycomb construction:
.1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5kg/m³ minimum sanded to required thickness

.2 Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door 250C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E152 or NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

2.3 – ADHESIVES

.1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.

.2 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.

.3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, highly viscosity sealant/adhesive.

2.4 – PRIMER

.1 Touch-up prime CAN/CGSB-1.181.

2.5 - PAINT

.1 Field paint steel doors and frames in accordance with Section 09 11 00 – Interior Painting, Protect weatherstrips from paint. Provide final finish shall be free from scratches or other blemishes.

2.6 – ACCESSORIES

.1 Door silencers: single stud rubber/neoprene type.

.2 Interior top and bottom caps: steel

.3 Metallic paste filler: to manufacturer's standard.

.4 Fire labels: metal riveted

.5 Sealant: Paintable Acrylic Sealant

2.7 – FRAMES FABRICATION GENERAL

.1 Fabricate frames in accordance with CSDMA specification.

.2 Fabricate frames to profiles and maximum face sizes as indicated.

.3 Interior frames: 1.6mm welded type construction.

.4 Blank, reinforce, drill and tap for mortised, template hardware, using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.

.5 Protect mortised cutouts with steel guard boxes.

.6 Prepare frame for door silencers, 3 for single door.

.7 Manufacturer's nameplates on frames and screens are not permitted.

.8 Conceal fastenings except where exposed fastening are indicated.

.9 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

2.8 – FRAME ANCHORAGE

.1 Provide appropriate anchorage to floor and wall construction.

.2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.

.3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.

.4 Locate anchors for frames in existing openings not more than 150mm from top and bottom of each jambs and intermediate at 660mm o.c. maximum.

2.9 – FRAMES: WELDED TYPE

.1 Welding in accordance with CSA W59.

.2 Accurately mitre or mechanically joint frame product and securely weld on inside of profile.

.3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.

.4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.

.5 Securely attach floor anchors to inside of each jamb profile.

.6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.

.7 Fabricate frame products for oversized openings in sections, sizes to suite splice joints for field assembly.

2.10 – DOOR FABRICATION GENERAL

.1 Doors: swing type, flush, with provision for glass as indicated.

.2 Fabricate doors with longitudinal edges welded. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.

.3 Blank, reinforce, drill doors and tap for mortised, template hardware.

.4 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.

.5 Reinforce doors where required, for surface mounted hardware. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.

.6 Provide factory applied touch-up primer at areas where zinc coating has been removed during construction.

.7 Provide fire labeled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CANS-S104, ASTM E152, NFPA 252 and list by national recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

.8 Manufacturer’s nameplates are permitted on hinge edge of door.

2.11- DOORS: HONEYCOMB CORE CONSTRUCTION

.1 Form each face sheet for interior doors from 1.6 sheet steel with honeycomb temperature rise rated core laminated under pressure to face sheets.

2.12 – HOLLOW STEEL CONSTRUCTION

.1 Form each face sheet for interior doors from 1.6 sheet steel.

.2 Fill voids between stiffeners of interior doors with temperature rise rated core.

PART 3 - EXECUTION

3.1 – INSTALLATION GENERAL

.1 Install labeled steel fire rated doors and frames to NFPA 80 except where specified otherwise.

.2 Install doors and frames to CSDMA Installation Guide.

3.2 – FRAME INSTALLATION

.1 Set frames plumb, square, level and at correct elevation.

.2 Set anchorages and connections to adjacent construction.

.3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over

1200mm wide. Remove temporary spreaders after frames are built-in.

.4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.

.5 Caulk perimeter of frames between frame and adjacent material.

3.3 – DOOR INSTALLATION

.1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions in Section 08 71 00-Door Hardware.

.2 Provide even margins between door and jambs and doors and finished floor and thresholds as follows:
.1 Hinge side: 1.0 mm.
.2 Latchside and head: 1.5 mm.
.3 Adjust operable parts for correct function

3.4 – FINISH REPAIRS

.1 Touch up with primer finishes damaged during installation.

.2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 06 20 00 – Finish Carpentry

.2 Section 08 11 00 – Steel Doors and Frames

1.2 - REFERENCES .1 Standard hardware location dimensions in accordance with Canadian Metric Guide for steel Doors (Modular Construction) prepared by Canadian Steel Door and Frame Manufactures' Association.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-69.17-M86,Bored and Preassembled Locks and Latches.
.2 CAN/CGSB-69.18-M90 /ANSI/BHMA A156.1-1981, Butts and Hinges.
.3 CAN/CGSB-69.20-M90 /ANSI/BHMA A156.4-1986, Door Controls (Closers)
.4 CAN/CGSB-69.21-M90 /ANSI/BHMA A156.5-1984, Auxiliary Locks and Associates Products
.5 CAN/CGSB-69.29-M93 /ANSI/BHMA A156.13-1980, Mortise Locks and Latches
.6 CAN/CGSB-69.31-M89 /ANSI/BHMA A156.15-1981, Closer/Holder Release Device.
.7 CAN/CGSB-69.32-M90 /ANSI/BHMA A156.16-1981, Auxiliary Hardware.
.8 CAN/CGSB-69.34-93 /ANSI/BHMA A156.18-1984, Materials and Finishes.

1.3 – REQUIREMENTS REGULATORY AGENCIES .1 Hardware for doors in fire separations and exit doors certified by a Canadian Organization accredited by Standards Council of Canada.

1.4 – SAMPLES .1 Submit shop drawings in accordance with Section 01 10 00 General Requirements.

.2 Indentify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.

.3 After approval samples will be returned for incorporation in the work.

1.5 – HARDWARE LIST

.1 Submit shop drawings in accordance with Section 01 10 00 General Requirements.

.2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.

1.6 – CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for door closers, locksets, door holders and fire exit hardware for incorporation into manual specified in Section 01 10 00 General Requirements.

.2 Brief maintenance staff regarding proper care, cleaning, and general maintenance.

1.7 – DELIVERY AND STORAGE

.1 Deliver, store, handle and protect materials in accordance with Section 01 00 10 General Requirements.

.2 Store finishing hardware in locked, clean and dry area.

.3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

1.8 – WASTE DISPOSAL AND MANAGEMENT

.1 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.2 Dispose of all corrugated polystyrene plastic packaging material in appropriate on-site bin for recycling.

PART 2 - PRODUCTS

2.1 – HARDWARE ITEMS

.1 Only door locksets and latchsets listed on CGSB Qualified Products List are acceptable for use on this project.

.2 Use one manufacturer’s products only for all similar items available in all materials and finishes, consult product catalogues for availability.

2.2 – DOOR HARDWARE

.1 Butts and hinges: Hager or Consultant approved equal.

.2 Door Closers and Accessories: LCN.

2.3 – FASTENINGS

.1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

.2 Exposed fastening devices to match finish of hardware.

.3 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.

.4 Use fasteners compatible with material through which they pass.

PART 3 - EXECUTION

3.1 – INSTALLATION INSTRUCTIONS

.1 Furnish wood door and metal frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.

.2 Furnish manufacturers' instructions for proper installation of each hardware component.

.3 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel door and Frame Manufacturers' Association.

.4 Where door stop contact door pulls, mount stop to strike bottom of pull.

3.2 – HARDWARE SCHEDULE

.1 The following applies to an individual door.
03 EA Hinges – Hager BB1168 x NRP (size to match existing template frame opening) Finish: Steel.

01 EA Door Closer – LCN 1460 x EDA x CTB Note

no alternatives accepted. Finish: Powdercoat

01 EA Door Closer – LCN 4810. Finish: powder coat.

01 EA Push Plate – CBH 920 4″ x 16″ .125. Finish: Aluminum.

01 EA Door Pull – CBH 7430. Finish Aluminum.

01 Kick Plates – CBH900 100 10″ x 34″ x .050. Finish: aluminum, standard gauge 0.50.

01 EA Floor Stop - CBH 101. Finish: aluminum

2-8310-856 Wall mounted actuation with surface mounted box 8310 or 868S with surface kit 8310-3856 with receiver – noted all equipment to be supplied to ensure actuator is optional.

Notes: Kick Plates
34″ is for a 36″ wide door

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS
.1 Section 06 20 00 – Finish Carpentry

.2 Section 09 25 00 – Gypsum Board

1.2 - REFERENCES
.1 ASTM C 645-99, Standard Specification for Nonstructural Steel Framing Members.

.2 ASTM C 754 98a, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

.3 CAN/CGSB-1.40-97, Primer, Structural Steel, Oil Alkyd Type.

.4 CAN/CGSB-19.21 M87, Sealing and Bedding Compound Acoustical.

1.3 – WASTE MANAGEMENT AND DISPOSAL
.1 Divert steel scraps from landfill by disposal at nearest metal recycling facility.

.2 Divert reusable materials for reuse at nearest used building materials facility or similar type facility.

.3 Divert unused primer materials from landfill through disposal at a special waste depot.

PART 2 - PRODUCTS

2.1 – MATERIALS
.1 Non-load bearing channel stud framing: to ASTM C 645,92mm stud size, roll formed form 0.53 and 0.91 mm thickness to suit wall height hot dipped galvanized steel sheet, for screw attachments of gypsum board. Knock-out service holes at 460mm centres.

.2 Floor and ceiling tracks: to ASTM C 645,in widths to suite stud sizes, 32mm flange height.
.1 Floor track: snap-in type formed to hold studs securely in place at 50 mm intervals; fabricated from 0.5 mm thick steel sheet; size to suit studs.
.2 Ceiling track: channel shaped track for use with stud shoes and 1.2mm diameter double wire ties; size to suite studs.

.3 After fabrication apply one shop coat of CAN/CGSB-1.40 primer to steel surfaces. Descale and clean surfaces before painting.

.3 Metal channel stiffener: 25 x 50 mm size, 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.

.4 Acoustical sealant: to CAN/CGSB-19.21.

.5 Insulating strip: rubberized, moisture resistant 3mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required.

PART 3 - EXECUTION

3.1 – ERECTION

.1 Align partition tracks at floor and ceiling and secure at 600 mm o.c. maximum.

.2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.

.3 Place studs vertically at 400 mm o.c. and not more than 50 mm abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer’s instructions.

.4 Erect metal studding to tolerance of 1:1000.

.5 Attach studs to bottom and ceiling track using crimp method.

.6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.

.7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.

.8 Provide two studs extending from floor to ceiling at each side openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.

.9 Provide two heavy gauge double studs at each arm of plumbing fixture carriers. Secure studs together and to arm of the carrier.

.10 Install heavy gauge double jamb studs at openings and exterior corners.

.11 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.

.12 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.

.13 Provide 40 mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partition.

.14 Install steel studs or furring change between studs for attaching electrical and other boxes.

.15 Extend partitions to ceiling height except where noted otherwise on drawings.

.16 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use double track slip joint as indicated

.17 Install continuous insulating strips to isolate studs from uninsulated surfaces.

END

PART 1 - GENERAL

1.1 - REFERENCES

Aluminum Association

.1 Designation for Aluminum Finishes -1997.

American Society for Testing and Materials (ASTM)

.1 ASTM C 36-95, Specification for Gypsum Wallboard.

.2 ASTM C442-92, Specification for Gypsum Backing Board and Coreboard.

.3 ASTM C475-94, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.4 ASTM C514-94, Specification for Nails for the Application of Gypsum Board.

.5 ASTM C630-93, Specification for Water-Resistant Gypsum Backing Board.

.6 ASTM C840-95, Specification for Application and Finishing of Gypsum Board.

.7 ASTM C954-93, Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.

.8 ASTM C1002-93, Specification for Steel Drill Screws for the Application of Gypsum Board.

.9 ASTM C1047-94, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

.10 ASTM C1280-94, Specification for Application of Gypsum Sheathing Board.

.11 ASTM C1178-93, Specification for Glass Mat Water-Resistant Gypsum Backing Board.

.12 ASTM D 3273 Mold Resistant.

.13 ASTM D 4060 Abrasion Resistance Test.

.14 ASTM D 5420 Surface Indentation Tests.

.15 ASTM 695 Soft Body Impact Test.

Canadian General Standards Board (CGSB)

.1 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

.2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.

Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S102-1988, Building Materials and Assemblies, Standard Method of Test for Surface Burning Characteristics of.

1.2 – SITE ENVIRONMENTAL REQUIREMENTS

.1 Maintain temperature minimum 10°C, maximum 21°C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.

.2 Apply board and joint treatment to dry, frost free surfaces.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Gypsum board: to ASTM CMTT and ASTM C630, DensArmor Plus as manufactured by Georgia Pacific Corporation, ½" thick 48" wide x maximum practical length.

.2 Tile Backer Board: To ASTM D 3273
.1 Acceptable Products: ½" Dens Armor Plus interior wallboard as manufactured by Georgia Pacific Corporation.

.3 Metal furring runners, hangers, tie wires, inserts, anchors.

.4 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.

.5 Resilient clips drywall furring: 0.5mm base steel thickness galvanized steel for resilient attachment of gypsum board.

.6 Steel drill screws: to ASTM C 1002.

.7 Stud adhesive: to CAN/CGSB-74.25 ASTM C 557.

.8 Laminating compound: as recommended by manufacturer, asbestos-free.

.9 Casing beads, corner bead, control joints and edge trim: to ASTM C 1047, meal zinc-coated by electrolytic process, 0.5mm base thickness, perforated flanges, one piece length per location.

.10 Sealants: in accordance with Section 07 90 00 Joint Sealers.

.11 Acoustic sealant: Tremco.

.12 Insulating strip: rubberized, moisture resistant, 3mm thick closed cell neoprene strip, 12 mm wide, with self-sticking permanent adhesive on one face, lengths as required.

.13 Joint compound: to ASTM C 175, asbestos free.

.14 Tile Backer Panel Adhesive: Thin set grout as manufactured by TEC.

PART 3 - EXECUTION

3.1 – ERECTION

.1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.

.2 Do application of in accordance with ASTM C 1280.

.3 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C 840 except where specified otherwise.

.4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.

.5 Install work level to tolerance of 1:1200.

.6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, and other ceiling penetration.

.7 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.

.8 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.

.9 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

.10 Install wall furring for gypsum board wall finishes in accordance with ASTM C 840, except where specified otherwise.

.11 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring to reveals. Check clearances with equipment suppliers.

.12 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

.13 Tile backer adhesive on to existing, prepared substrate using a notched trowel sited in accordance with manufacturer's written instructions. Apply material to provide fully adhered application. Mechanically fasten.

3.2 – APPLICATION

.1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.

.2 Apply single layer gypsum board to metal furring or framing using screw fasteners stud adhesive for first layer, laminating adhesive screw fasteners for second layer. Maximum spacing of screws 300 mm oc.

.3 Apply single layer gypsum board to concrete block surfaces, where indicated, using appropriate laminating adhesive.

.4 Apply water-resistant gypsum board. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fasten heads.

.5 Apply board using stud adhesive on furring and framing.

3.3 – INSTALLATION

.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm oc using contact adhesive for full length.

.2 Install casing beads around perimeter of suspended ceiling.

.3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

.4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.

.5 Construct control joints of two back-to-back casing beads set in gypsum board facing and supported independently on both side of joint.

.6 Provide continuous polyethylene dust barrier behind and across control joints.

.7 Locate control joints at changes in substrate construction and at approximate 15 m spacing on ceilings.

.8 Install control joints straight and true.

.9 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.

.10 Install expansion joint straight and true.

.11 Splice corners and intersections together and secure to each member with 3 screws.

.12 Install access doors to electrical and mechanical fixtures specified in respective Sections
.1 Rigidly secure frames to furring or framing systems.

.13 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer’s directions and feathered out onto panel faces.

.14 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.

.15 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.

.16 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.17 Competed installation to be smooth, level or plumb, free from waves and other defects.

.18 Mix joint compound slightly thinner than for joint taping.

.19 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.

.20 Allow skim coat to dry completely.

.21 Remove ridges by light sanding or wiping with damp cloth.

END

PART 1 - GENERAL

1.1 – REFERENCE STANDARDS

.1 Do tile work in accordance with Installation Manual 200-1979, “Ceramic Tile”, produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.2 – SAMPLES

.1 Submit shop drawings in accordance with Section 01 10 00 General Requirements.

.2 Submit duplicate 340 x 340 mm sample panels of each colour, texture, size and pattern of tile.

.3 Adhere tile samples to 11mm thick plywood and grout joints to represent project installation.

1.3 – ENVIRONMENTAL CONDITIONS

.1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12°C for 48 h before, during, and 48 h after, installation.

1.4 – EXTRA MATERIALS

.1 Provide extra materials of floor and wall tile in accordance with Section 01 00 10 General Requirements.

.2 Provide extra floor and wall tile amounting to 2% of the products on this project in each colour and type.

.3 Extra material shall be from the same product run as installed materials.

.4 Clearly identify each type, pattern and colour.

.5 Deliver to the Owner’s Representatives designated location upon completion of the work of this section.

.6 Obtain a written receipt for the delivery of these extra materials.

1.5 – CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for door closers, locksets, door holders and fire exit hardware for incorporation into manual specified in Section 01 00 10 General Requirements.

.2 Brief maintenance staff regarding proper care, cleaning, and general maintenance.

1.6 – DELIVERY AND STORAGE

.1 Deliver, store, handle and protect materials in accordance with Section 01 00 10 General Requirements.

.2 Store finishing hardware in locked, clean and dry area.

.3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

1.7 – WASTE DISPOSAL AND MANAGEMENT

.1 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.2 Dispose of all corrugated polystyrene plastic packaging material in appropriate on-site bin for recycling.

PART 2 - PRODUCTS

2.1 – FLOOR TILE

.1 Porcelain Tile: Pianeti 12 x 12 by Olympia Tile. Colour: Mercurio Beige as distributed by Olympia.

2.2 – WALL TILE

.1 Wall Tile:
Type ‘A’ Santa Barbara-Beige 34010 10” x 13” as distributed by Olympia.
Type ‘B’ Santa Barbara-White 34020 10” x 13” as distributed by Olympia.

2.3 – WALL BASE TILE

.1 Floor tile cut to suite required base height.

2.4 – MORTAR AND ADHESIVE MATERIALS

.1 Keralastic Additives as manufactured by Mapei.

.2 Thin set system grout: by TEC.

2.5 – GROUT

.1 Grout preparation to manufacturers instructions.

.2 Colour to be selected by Consultant.

2.6 – ACCESSORIES

.1 Threshold: Aluminum, beveled one side, satin lowest available slope finish to exposed surfaces, size to suite door opening and frame width and adjacent changes in floor finishes. Acceptable material “Reno-Ramp” as manufactured by Schluter Systems.

.2 Sealant in accordance with Section 07 90 00 – Sealants, colour selected by Consultant.

.3 Floor sealer and protective coating to tile and grout manufacturers recommendations.

.4 Wall Tile PVC trim where indicated to be “Rodec” as manufactured by Schluter Systems sizes to suite tile and adhesive combined thickness. Colour to be selected by Consultant from full range of colour. Provide outside matching corner pieces complete with manufactured junction pieces.

.5 Grout Release to porcelain tile and grout manufacturer’s written recommendations.

2.7 – MORTAR AND ADHESIVE MIXES

.1 Dry set mortar mix to manufacturer’s written instructions.

PART 3 - EXECUTION

3.1 – WORKMANSHIP

.1 Remove existing floor finishes.

.2 Apply tile or backing coats to clean and sound surfaces in accordance with tile adhesive manufacturers’ written instructions.

.3 Fit tile around corners, fitments, fixtures, drawings and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.

.4 Maximum surface tolerance 1:800.

.5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation.

.6 Lay out tiles so perimeter tiles are minimum ½ size.

.7 Sound tiles after setting and replace – sounding units to obtain full bond.

.8 Make internal angles square.

.9 Install threshold strips and junction of tile flooring and dissimilar materials.

.10 Clean installed tile surfaces after installation and grouting cured.

3.2 – FLOOR TILE .1 Install in accordance with TTMAC details.

3.3 – WALL BASE TILE .1 Install trim caps level and straight with butt joints flush. Inside and outside corners shall be mitred with a power mitre saw.

.2 Install in accordance with TTMAC details.

.3 Install cut tile edge down toward top edge of wall base. Shall be manufactured edge.

3.4 – WALL TILE .1 Install in accordance with TTMAC details.

3.5 – FLOOR SEALER AND PROTECTIVE COATING .1 Apply in accordance with manufacturer's instructions.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 01 00 10 General Requirements.

1.2 - REFERENCES

American Society for Testing and Materials (ASTM)

.1 ASTM E1264-98, Classification for Acoustical Ceiling Products.

Canadian General Standards Board (CGSB)

.1 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.

Canadian Standards Association (CSA)

.1 CSA B111-74 (R1998), Wire Nails, Spikes and Staples.

Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S102-88(R2000),Surface Burning Characteristics of Building Materials

1.3 – SAMPLES

.1 Submit samples in accordance with Section 01001 General Requirements.

.2 Submit duplicate full size samples of each type acoustical units.

1.4 – REGULATORY REQUIREMENTS

.1 Fire-resistance rated floor/ceiling and roof/ceiling assembly: certified by a Canadian Certification Organization accredited by Standards Council of Canada.

1.5 – MOCK-UP

.1 Construct mock-ups in accordance with Section 01001 General Requirements.

.2 Construct mock-up 1m 2 minimum of each type acoustical panel tile ceiling including one outside corner.

.3 Construct mock-up where directed.

.4 Allow 24 hours for inspection of mock-up by Consultant before proceeding with ceiling work.

.5 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of the finished work if accepted by Consultant.

1.6 – WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials.

.2 Collect and separate plastic, paper packaging and corrugated cardboard.

1.7 – ENVIRONMENTAL REQUIREMENTS

.1 Permit wet work to dry before commencement of installation.

.2 Maintain uniform minimum temperature of 15°C and humidity of 20–40% before and during installation.

.3 Store materials in work area 48 hours prior to installation.

1.8 – EXTRA MATERIALS

.1 Provide extra materials of acoustic units in accordance with Section 01 00 10 General Requirements.

.2 Provide acoustical units amounting to 2% of gross ceiling area for each pattern and type required for project.

.3 Extra materials to be from same production run as installed materials.

.4 Clearly identify each type of acoustic unit, including colour and texture.

.5 Deliver to Consultant, upon completion of the work in this section.

.6 Store where directed by Consultant.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Acoustic units for suspended ceiling system: to CAN/CGSB-92.1
.1 Type 1.
.2 Cellulose fibre with minimum 30 recycled content.
.3 Radar “ClimaPlus” CGC 2410.
.4 Flame spreading of 25 or less in accordance with CAN/ULC-S102.
.5 Smoke developed 10 or less in accordance with CAN/ULC-S102.

.6 Noise reduction coefficient (NRC) designation of .55.
.7 Ceiling Attenuation Class (CAC)rating 35 in accordance with ASTM E1264.
.8 Lighting reflectance range of .84.
.9 Edge type square.
.10 Colour: White.
.11 Size 24″ x 48″ 5/8 thick.
.12 Shape: Flat.

PART 3 - EXECUTION

3.1 – EXAMINATION

.1 Do not install acoustical panels and tile until work above ceiling has been inspected by Consultant.

.2 This contractor shall inspect the existing support of the existing ceiling grid prior to inserting new tiles. This contractor shall be responsible for the support systems once the new acoustic panels have been installed. Report any support deficiencies to the Consultant prior to proceeding.

3.2 – INSTALLATION

.1 Install acoustical panels and tiles in ceiling suspension system.

3.3 – APPLICATION

.1 Install acoustical units parallel to building lines with edge unit not less than 50% of unit width with directional pattern running in same direction. Refer to reflected ceiling plan.

.2 Scribe acoustic units to fit adjacent work. Butt joints tight, terminate edges with moulding.

3.4 – INTERFACE WITH OTHER WORK

.1 Co-ordinate ceiling work to accommodate components of other sections, such as light fixtures, diffusers, to be built into acoustical ceiling components.

3.5 – SCHEDULE

. Type ‘1’: to be used in all locations.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 01 00 10 – General Requirements.

.2 Section 06 20 00 – Finish Carpentry.

1.2 - REFERENCES .1 Architectural Painting Specifications Manual, Master Painters Institute (MPI).

.2 Systems and Specifications Manual, SSPC Painting Manual, Volume Two, Society for Protective Coatings (SSPC).

.3 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).

.4 National Fire Code of Canada.

1.3 – QUALITY ASSURANCE .1 Contractor shall have a minimum of five years proven satisfactory experience. When requested, provide a list of last three comparable jobs including, job name and location, specifying authority, and project manager.

.2 Qualified journeyman who have a “Tradesman Qualification Certificate of Proficiency” shall be engaged in painting work. Apprentices may be employed provided they work under the direct supervision of qualified journeyman in accordance with trade regulations.

.3 Conform to latest MPI requirements for interior painting work including preparation and priming.

.4 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with MPI Painting Specification Manual "Approved Product" listing and shall be from a single manufacturer for each system used.

.5 Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.

.6 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Consultant.

.7 Standard of Acceptance:
1. Walls: No defects visible from a distance of 1000 mm at 90 to surface.
2. Ceilings: No defects visible from floor at 45 to surface when viewed using final lighting source.
3. Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.4 – ENVIRONMENTAL PERFORMANCE REQUIREMENTS

.1 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.

1.5 – SCHEDULING OF WORK

.1 Submit work schedule for various stages of painting to Consultant for approval. Submit schedule minimum of 48 hours in advance of proposed operations.

.2 Obtain written authorization from Consultant for any changes in work schedule.

.3 Schedule painting operations to prevent disruption of occupants in and about the building.

1.6 – SUBMITTALS

.1 Submit product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with Section 01 00 10 General Requirements

.2 Submit WHMIS MSDS – Material Safety Data Sheets in accordance with Section 01 00 10 General Requirements.

.3 Upon completion, submit records of products used. List products in relation to finish system and include the following:

1. Product name, type and use.
2. Manufacturer's product number.
3. Colour numbers.
4. MPI Environmentally Friendly classification system rating.
5. Manufacturer's Material Safety Data Sheets (MSDS).

1.7 – SAMPLES

.1 Submit full range colour sample chips in accordance with Section 01 00 10 General Requirements.

.2 Submit duplicate 200 x 300 mm sample panels of each paint stain clear coating with specified paint or coating in colours, gloss/sheen and textures required to MPI Painting Specification Manual standards submitted on the following substrate materials:

1. 3 mm plate steel for finishes over metal surfaces.
2. 13 mm birch plywood for finishes over wood surfaces.
3. 50 mm concrete block for finishes over concrete or concrete masonry surfaces.
4. 13 mm gypsum board for finishes over gypsum board and other smooth surfaces.

.3 When approved, sample panels shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.

1.8 – QUALITY CONTROL

.1 Provide mock-up in accordance with Section 01 10 00 General Requirements.

.2 When requested by Consultant or Paint Inspection Agency, prepare and paint designated surface, area, room or item (in each colour scheme) to requirements specified herein, with specified paint or coating showing selected colours, gloss/sheen, textures and workmanship to MPI Painting Specification Manual standards for review and approval. When approved, surface, area, and/or items shall become acceptable standard of finished quality and workmanship for similar on-site work.

1.9 – EXTRA MATERIALS

.1 Submit maintenance materials in accordance with Section 01 10 00 General Requirements.

.2 Submit one – one 4 litre can of each type and colour of primer and finish coating. Identify colour and paint type in relation to established colour schedule and finish system as well as all locations where paint was applied by Room Name and Number.

.3 Deliver to Consultant and store where indicated.

1.10 – DELIVERY, HANDLING AND STORAGE

.1 Deliver, store and handle materials in accordance with Section 01 10 00 General Requirements.

.2 Labels shall clearly indicate:
1. Manufacturer’s name and address.
2. Type of paint or coating.
3. Compliance with applicable standard.
4. Colour number in accordance with established colour schedule.

.3 Remove damaged, opened and rejected materials from site.

.4 Provide and maintain dry, temperature controlled, secure storage.

.5 Observe manufacturer’s recommendations for storage and handling.

.6 Store materials and supplies away from heat generating devices.

.7 Store materials and equipment in a well ventilated area with temperature range 7°C to 30°C.

.8 Store temperature sensitive products above minimum temperature as recommended by manufacturer.

.9 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Consultant. After completion of operations, return areas to clean condition to approval of Consultant.

.10 Remove paint materials from storage only in quantities required for same day use.

.11 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazard materials.

.12 Fire Safety Requirements:

1. Provide one 9kg dry chemical fire extinguisher adjacent to storage area.
2. Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
3. Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.11 – SITE REQUIREMENTS

.1 Heating, Ventilation and Lighting:

1. Ventilate enclosed spaces to prevent the build-up and distribution of paint odours within the building to the satisfaction of the Consultant.
2. Perform no painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10°C for 24 hours before, during and after paint application

until paint has cured sufficiently.

3. Where required, provide continuous ventilation for seven days after completion of application of paint.
4. Coordinate use of existing ventilation system with General Contractor and ensure its operation during and after application of paint as required.
5. Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating form existing system is inadequate to meet minimum requirements.
6. Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities shall be provided by General Contractor.

.2 Temperature, Humidity and Substrate Moisture Content Levels:

A. Unless specifically pre-approved by the specifying body and the applied product manufacturer, perform no painting work when:

1. Ambient air and substrate temperatures are below 10°C.
2. Substrate temperature is over 32°C unless paint is specifically formulated for application at high temperatures.
3. Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer’s prescribed limits.
4. The relative humidity is above 85% or when the dew point is less than 3°C variance between the air/surface temperature.
5. Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.

B. Perform no painting work when the maximum moisture content of the substrate exceeds:

1. 12% for concrete masonry (clay and concrete brick/block)
2. 15% for wood.

3. 12% for plaster gypsum board.

C. Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple “cover patch test”.

D. Test concrete, masonry and plaster surfaces for alkalinity as required.

.3 Surface and Environmental Conditions:
1. Apply paint finish only in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
2. Apply paint only to adequately prepared surfaces and to surfaces within moisture limits noted herein.
3. Apply paint only when previous coat of paint is dry or adequately cured.

.4 Additional Interior Application Requirements:
1. Apply paint finishes only when temperatures at location of installation can be satisfactorily maintained within manufacturer’s recommendations.
2. Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Consultant such that painted surfaces will have dried and cured sufficiently before occupants are affected.

1.12 – WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials.

.2 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.,) are regarded as hazardous products and are subject to regulations of disposal.

.3 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

.4 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.5 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground the following procedures shall be strictly adhered to:

1. Retain cleaning water for water-based materials to allow sediments to be filtered out.
2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
3. Return solvent and oils soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriated cleaning and laundering.
4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
5. Empty paint cans are to be dry prior to recycling.

.6 Collect waste paint by type and provide for delivery to recycling facility.

.7 Set aside and protect surplus and uncontaminated finish materials. Deliver to or arrange collection by employees, individuals, or organizations for verifiable re-sue or re-manufacturing. (Habitat for Humanity)

.8 Close and seal tightly partly used sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.

.2 Paint materials for paint systems shall be products of a single manufacturer.

.3 Only qualified products with E2 “Environmentally Friendly” rating are acceptable for use on this project.

.4 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids shall:
1. Be water-based water clean-up.
2. Be non-flammable biodegradable.
3. Be manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
4. Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.

.5 Water-borne surface coatings must be manufactured and transported in a manner that steps of process, including disposal of waste products arising therefrom, will meet requirements of applicable governmental acts, by-laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act.

.6 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavelant chromium or their compounds.

.7 Water-borne surface coatings and recycled water-borne surface coatings must have a flash point of 61.0°C or greater.

.8 Both water-borne surface coatings and recycled water-borne surface coatings must be made by a process that does not release:

.9 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes must meet a minimum “Environmental Friendly” E2 rating.

2.2 – COLOURS

.1 Consultant will provide Colour Schedule after Contract award.

.2 Colour schedule will be based upon the selection of two base colour and two accent colours. No more than eight colours will be selected for the entire project and no more than three colours will be selected in each area.

.3 Selection of colours will be from manufacturers full range or colours.

.4 Where specified products are available in a restricted range of colours, selection will be based on the limited range.

.5 Second coat in a three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.3 – MIXING AND TINTING

.1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is not allowed.

.2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer’s written instructions.

.3 Where thinner is used, addition shall not exceed paint manufacturer’s recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.

.4 Thin paint for spraying according in strict accordance with paint manufacturer’s instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant prior to start of this work.

.5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settle pigment, and colour and gloss uniformity.

2.4 – GLOSS/SHEEN RATING

.1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following values:

Gloss Level Category	Units @ 60°	Units at 85°
G1-matte finish	0 to 5	Max. 10
G2-velvet finish	0 to 10	10 to 35
G3-eggshell finish	10 to 25	10 to 35
G4-satin finish		
G5-semi-gloss finish	35 to 70	
G6 – gloss finish	70 to 85	
G7-high gloss finish	>85	

.2 Gloss level ratings of painted surfaces shall be defined as specified herein and as noted on Finish Schedule.

2.5 – INTERIOR PAINTING

.1 Concrete Masonry Units: smooth
1. INT 4.2D High performance architectural latex G4 finish premium grade

.2 Structural Steel and Metal Fabrications: columns, beams, joists, etc.
1. INT 5.12B Waterborne light industrial G5 coating.

.3 Galvanized Metal: doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.
1. INT 5.3M High performance architectural latex G5 finish. (G1 Finish inside doors.)

.4 Wood Doors and Casework: shelving, millwork, etc.
1. INT 6.3E Polyurethane Varnish G6 finish. (over stain). Premium Grade

.5 Plaster and Gypsum Board: gypsum wallboard, drywall, “sheet rock type material”, etc., and textured finishes.
1. INT 9.2B High performance architectural latex insert gloss level G3 finish.

PART 3 - EXECUTION

3.1 – GENERAL

.1 Perform preparation and operations for interior painting in accordance with MPI Painting Specifications Manual except where specified otherwise.

.2 Apply paint materials in accordance with paint manufacturer’s written application instructions.

3.2 – EXISTING CONDITIONS

.1 Investigate existing substrates for problems related to proper and completed preparation of surfaces to be painted. Report to Consultant damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.

.2 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter, except test concrete floors for moisture a simple “cover patch test” and report findings to Consultant. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

.3 Maximum moisture content as follows:
1. Stucco, Plaster and Gypsum Board: 12%.
2. Concrete: 12%
3. Clay and Concrete Block/Brick: 12%
4. Wood: 15%

3.3 – PROTECTION

.1 Protect existing building surfaces and adjacent structures from spatters, markings, and other damage by suitable non-suitable covers or masking. If damaged, clean and restore such surfaces as directed by Consultant.

.2 Protect items that are permanently attached such as Fire Labels on doors and frames.

.3 Protect factory finished products and equipment.

.4 Protect passing pedestrians, building occupants and general public in and about the building.

.5 Removal of electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings shall be done by General Contractor prior to undertaking any painting operations. Items shall be securely stored and re-installed by General Contractor after painting is completed.

.6 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

.7 As painting operations progress, place “WET PAINT” signs in occupied areas to approval of Consultant.

3.4 – CLEANING AND OPERATION

.1 Clean and prepare surfaces in accordance with MPI Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements as follows:

1. Remove dust, dirt and other surface debris by vacuuming, wiping with dry clean clothes or compressed air.
2. Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
3. Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
4. Allow surfaces to drain completely and allow to dry thoroughly.
5. Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
6. Use trigger operated spray nozzles for water hoses.

7. Many water-based paints cannot be removed with water once dried. However, minimize the use of kerosene or any such organic solvents to clean up water-based paints.

.2 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, other pretreatment as soon as possible after cleaning and before deterioration occurs.

.3 Where possible, prime surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
1. Apply vinyl sealer to MPI#35 over knots, pitch, sap and resinous areas.
2. Apply wood filler to nail holes and cracks.
3. Tint filler to match stains for stained woodwork.

.4 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000mm.

.5 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products form surfaces, pockets and corners to be painted by brushing with clean brushes blowing with clean dry compressed air, or vacuum cleaning.

.6 Touch up of shop primers with primer as specified in applicable section. Major touch-up including cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged of defective paint and rusted areas, shall be by supplier of fabricated material.

.7 Do not apply paint until prepared surfaces have been accepted by Inspecting Agency Consultant.

3.5 – APPLICATION

.1 Method of application to be as approved by Consultant. Apply paint by brush and roller. Conform to manufacturer's application instructions unless specified otherwise.

.2 Brush and Roller Application:

1. Apply paint in a uniform layer using brush and/or roller of types suitable for application.
2. Work paint into cracks, crevices and corners.
3. Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
4. Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Consultant.
5. Remove runs, sags and brush marks from finished work and repaint.

.3 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access and only when specifically authorized by Consultant.

.4 Apply coats of paint as a continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.6 Sand and dust between coats to remove visible defects.

.7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboard and cabinets and projecting ledges.

.8 Finish inside of cupboards and cabinets as specified for outside surfaces.

.9 Finish closets and alcoves as specified for adjoining rooms.

.10 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.6 – MECHANICAL/ELECTRICAL EQUIMENT

.1 Unless otherwise specified, paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as otherwise noted.

.2 Boiler room, storage, janitor's closet, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.

.3 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.

.4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.5 Do not paint over nameplates.

.6 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.

.7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

.8 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.7 –FIELD QUALITY CONTROL

.1 Field inspection of painting operations to be carried out by Consultant.

.2 Advise Consultant when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

3.8 –RESTORATION

.1 Clean and re-install all hardware items removed before undertaken painting operations.

.2 Remove protective coverings and warning signs as soon as practical after operations cease.

.3 Remove paint splashing on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.

.4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.

.5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Consultant.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS .1 Section 01 00 10 – General Requirements

1.2 – REFERENCES

.1 ASTM A65 3/A 653M – Standard Specifications for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

.2 ASTM A24 O/A 24 OM – Standard Specifications for Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

1.3 - SUBMITTALS

.1 Submit under provisions of Section 01 00 10.

.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: show layout, door swings, clearance to fixtures, hardware, and methods of anchoring.

.4 Verification Samples: For each finish product specified, tow samples, minimum size 6 inches (150 mm) square, representing actual product, colour and patterns.

.5 Operations and Maintenance Data: At completion of the project, furnish to the Owner two (2) copies of an Owner’s Operation and Maintenance Manual.

1.4 – MOCK-UP

.1 Construct mock-up in accordance with Section 01001 General Requirements.

.2 Construct mock-up to show location, size, shape complete with all hardware and fasteners, back-up material, primer, caulking and sealant. Mock-up may be part of finished work.

.3 Allow 48 hours for inspection of mock-up by Consultant before proceeding with work.

1.5 – DELIVERY, STORAGE AND HANDLING

.1 Mark packaging with numbering or nomenclature used on shop drawings.

.2 Store products in manufacturer's unopened packaging until ready for installation.

1.6 – PROJECT CONDITIONDS

.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. The Manual shall consist of a hard cover three ring binder with the project name on the front. Include in the manual the following information: Maintenance instructions, Catalogue pages for each product, Name/Address and phone number of the manufacturer and their Sales Agent, copy of the final shop drawings.

1.7 – WARRANTY

.1 The toilet partition manufacturer shall guarantee all powder coated toilet partitions by written certification, for a period of 1 year against defects in material and workmanship. Warranty does not include installation errors, improper usage or vandalism. Warranty does include ease of graffiti removal.

1.8 – WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials.

.2 Collect and separate plastic, paper packaging and corrugated cardboard for recycling.

.3 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Metal toilet partitions. Acceptable material: Hadrian Elite Floor mounted toilet partitions.

2.2–METAL COMPARTMENTS AND SCREENS

.1 Toilet Compartments: Headrail braced.

.1 Compartment Depth and Width: as indicated on drawings.

.2 Door width: 23 inches (610mm), minimum; at wheelchair accessible compartments, 36 inches (915 mm, minimum.

.3 Door and panel type: Style: Standard (58 inch / 1473 mm high doors and panels)

.4 Door and Panels: Top at 69.5 inches (1765 mm)above finished floor. Bottom at 12 inches (305mm) above finished floor.

.5 Elite Panel Type: Style: Elite (64 inch / 1626 mm high doors and panels. These panels only required at end of stall when located across from washroom entrance door. See floor plans.

.6 Elite Panels:

1. Top at 69.5 inches (1765 mm) above finished floor.
2. Bottom at 6 inches (152 mm) above finished floor.

.7 Pilaster Width: As required to fit space; minimum 3 inches (76mm).

.8 Pilaster Height: 81.5 inches (2070 mm).

.2 Urinal Screens: Wall mounted

1. Depth: 24 inches (610 mm).
2. Height: Top at 54 inches (1372 mm) and bottom at 12 inches (305mm) above finished floor.
3. Mounting: Stirrup brackets.

2.3– METAL MATERIALS

.1 Powder Coated Steel Panels, Pilasters, and Doors: Hollow steel sheet construction with formed edges welded and ground smooth.

1. Steel Face Sheet: Panel flatness zinc coated galvanneal steel, ASTM A65 3/A 653M Grade 33.
2. Edges: interlocked under tension, welded, with roll-formed oval crown locking bar; corners mitered, welded and ground smooth.
3. Core: Honeycomb with maximum cell size of 1 inch (25mm), laminated under pressure to face sheet.
4. Doors: 1 inch (25mm) thick, with 22 gauge (0.8mm) thick face sheets.

5. Panels: 1 inch (25mm) thick with 22 gauge (0.8mm) thick face sheets.
6. Headrail Braced Pilasters: shall be 1-1/4 inch (32mm) thick, with 20 gauge (0.9 mm) thick face sheets. Top of headrail braced pilasters to be reinforced with 20 gauge (0.9mm) channel for strength and rigidity.
7. Finish: High performance graffiti resistant powder coating, electrostatically applied and oven cured to smooth uniform finish; preparation by cleaning and phosphatizing.
8. Colour: Shall be #585 Sahara.

.2 Pilaster Shoes: Type 304 stainless steel, 4 inches (102mm) high, one-piece welded design.
1. Finish: Polished.

.3 Door Hinges:
1. Top: Concealed hinge bracket with a high strength threaded metal hinge pin with a self-lubricating nylon sleeve.
2. Bottom: Concealed gravity hinge; adjustable to set the door to rest at any position when not latched.
3. Material: Chrome plated zinc, polished finish.

.4 Stops and Keepers:
1. Continuous stop and keeper: extruded aluminum, full length of door, with ¼ inch (6mm) wide continuous rubber bumper locked into place. Finish to match door and pilaster finish.

.5 Door Latches:
Concealed, mortised turn latch with face plate flush with edge face of door, exterior turn slot for emergency access.
1. On wheelchair access doors provide turn lever that does not require fingertip grip.
2. Material: Chrome plated zinc, polished finish.

.6 Door Pulls for out-swinging Door: Pulls mounted on outside.
1. Material: Chrome plated zinc, polished finish.

.7 Fasteners: Provide fasteners of type appropriated to members being fastened and substrate to which they are being fastened.

.8 Door Stops shall be provided and mounted as indicated on the drawings as typical for every stall. Door stop to be type CBH120.

.9 Provide stainless steel panel on urinal side of all toilet partitions and urinal screens.

PART 3 - EXECUTION

3.1 - EXAMINATION

.1 Do not begin installation until substrates have been properly prepared.

.2 If substrate preparation is the responsibility of another installer, notify Consultant of unsatisfactory preparation before proceeding.
.1 Stud Walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.
.2 Hollow Masonry Units; use toggle bolts drilled into cell/wall cavity.
.3 Solid Masonry or Concrete: use bolt with lead expansion sleeve set into drilled hole.

3.2 – INSTALLATION

.1 Ensure supplementary anchorage, if required, is in place.

.2 Do work in accordance with CAN/CSA-B651 and manufacturer’s recommendations.

3.3 – ERECTION

.1 Partition Erection

.1 Install partitions secure, plumb and square.

.2 Leave 12 mm space between wall and panel or end pilaster.

.3 Anchor mounting brackets to masonry/concrete surfaces using screws and shields: to hollow

walls using bolts and toggle type anchors, to steel supports with bolts in threaded holes.

.4 Attach panel and pilaster to brackets with through type sleeve bolt and nut.

.5 Provide for adjustment of floor variations with screw jack through steel saddles made integral with pilaster. Conceal floor fixing with stainless steel shoes.

.6 Equip each door with hinges, latch set, and each stall with coat hook mounted on side wall, mounting heights as indicated. Adjust and align hardware for easy, proper function. Set door open position at 30° to front. Install door bumper wall mounting, type.

.7 Equip out swinging doors with door pulls on inside and outside of door in accordance with CAN/CSA-B651.

.8 Install hardware grab bars.

.9 Secure headrail to pilaster face with not less than two fasteners per face.

.10 Set tops of doors parallel with overhead brace when doors are in closed position.

.2 Floor supported partition erection

.1 Secure pilasters to floor with pilaster supports anchored with minimum 50 mm penetration in structural floor.

.2 Level, plumb and tighten installation with leveling device.

.3 Secure pilaster shoes in position.

.4 Set tops of doors level with tops of pilasters when doors are in closed position.

3.4 – PROTECTION

.1 Protect installed products until completion of project.

.2 Touch-up, repair or replace damaged products as directed by the Consultant.

END

PART 1 - GENERAL

1.1 – RELATED SECTIONS

.1 Section 07 90 00 – Joint Sealers

.2 Section 08 11 00 – Steel Doors and Frames

.3 Section 15 – Mechanical

1.2 - REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM A 366M-91 (R1993), Specifications for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.

.2 ASTM A 653/A653 M-90, Specifications for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM D 822-89, Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus

1.3 - SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 00 10 General Requirements

.2 Indicate fabrication and erection details, including anchorage, accessories, and finishes.

1.4 – SAMPLES

.1 Submit samples in accordance with Section 01 00 10 General Requirements.

.2 Submit duplicate samples of each type of louver showing colour and finish.

.3 Show frame detail and finish.

1.5 – CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for manual operated louvers for incorporation into manual specified in Section 01 00 10 General Requirements.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Materials

.1 Galvanized steel sheet: commercial quality to ASTM A 526M with Z275 zinc coating.

.2 Sheet Steel: commercial quality to ASTM A 366 with Class I matte finish.

.3 Screws and fasteners: same material as fabricated items.

.4 Prefinished steel sheet.

.2 Acceptable Product

.1 Acceptable Product Model: 61DGD-FR as manufactured by Nailer Industries Inc.

.3 Door Louvers

.1 Construct door louvers from steel minimum 18 GA thick. Minimum free area 45%. Provide fasteners to suit louver material.

.2 Use standard blades.

.3 Provide separate adjustable trim member for clamping louver in opening.

.4 Miter frame and trim members at corners and secure rigidly with corner brackets.

.5 Secure interior frame with countersunk tamperproof screws.

.6 Fire-rated doors to have louver 70° C ULC listed fusible link with stainless steel operating spring and dead lock bar.

.7 Louver frame to suit door thickness.

PART 3 - EXECUTION

3.1 - INSTALLATION

.1 Install louvers where indicated.

.2 Install louvers in accordance with manufacturer’s printed instructions.

.3 Adjust louvers so moving parts operate smoothly.

.4 Cooperate with the ceiling and acoustic

END

PART 1 - GENERAL

1.1 – REFERENCES

.1 Conform to Contract Requirements and Division 1– General Requirements as part of this Section.

1.2 – RELATED SECTIONS

.1 Section 06 10 00 – Rough Carpentry

.2 Section 09 11 00 – Non-Load Bearing Wall Framing

.3 Section 10 16 00 – Toilet Partitions.

1.3 - SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 00 10 General Requirements

.2 Clearly indicate size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in frame, building-in details of anchors for grab bars.

PART 2 - PRODUCTS

2.1 – MATERIALS

.1 Sheet Steel: commercial grade, stretcher leveled sheet steel to ASTM A526-90 with G90 zinc coating to ASTM A525-93.

.2 Stainless Steel Sheet: to CSA G110.6-1968, Type 304 with #4 finish, minimum 0.80mm thick.

.3 Stainless Steel Tubing: AISA Type 304, commercial grade, seamless welded, 18 ga. Wall thickness, unless otherwise noted.

.4 Adhesive: epoxy type contact metal.

.5 Fasteners: screws and bolts, stainless steel or hot-dip galvanized. Expansion shield plastic, lead or rubber as recommended by fixture manufacturer for component and it intended use.

2.2 - FINISHES

.1 Chrome and Nickel Plating: to ASTM B456-95 satin finish.

.2 Stainless Steel: to AISI No. 4, luster finish.

.3 Baked Enamel: condition metal by applying one (1) coat of metal conditioner to CGSB.

.4 1-GP-107Ma, apply one (1) coat Type 2 primer to CAN/CGSB-1.81-M90 and bake; apply to (2) coats Type 2 enamel to CAN/CGSB-1.88-92 and bake to hard, durable finish. Sand between final coats. Colour selected from standard range by Architect.

.5 Manufacturer's or brand names on face of units not acceptable.

2.3–WASHROOM ACCESSORIES

.1 The listed products are equally acceptable. Do not inter mix products of different manufacturers unless the chosen manufacturer cannot provide the required product, or product item listed does not give the option for alternatives.

.2 Sanitary Napkin Disposal: Supply and install one (1) sanitary napkin disposal at each water closet in women's washrooms where designated by Owner, of the following manufacturer's model: Frost Model No. 620.

.3 Surface-mounted hand dryer: aluminum casting, finished with silver metalic baked enamel, air-outlet nozzle and concealed air-inlet vanes. 1850 Watts, tamperproof mounting.
Fan: Dynamically balanced, single inlet, air flow through heating element at 90 cfm.
Acceptable Material: Model No. XL-SB Xlerator by Excel or Consultant approved equal.

.4 Soap dispenser: refer to mechanical plans.

.5 Two roll toilet tissue dispenser – Frost or equal.

.6 Fixed Grab Bars: Supply and install behind and on one side of each handicap water closet where indicated on drawings and as, located in accordance with Ontario Building Code 3.8.3.8, grab bars of one of the following manufacturer's

models:
.1 Bobrick – Model No. B-5806.99 x 24, B-81622.99 x 30 x 30 (L-shaped)
.2 Bradley - Model No. 8322-00124 and 8322-0053030 (L-shaped)
.3 Frost - Model No. 1001 SP 24 and 1003 SP 30 x 30 (L-shaped)
.4 Watrous - Model No. 3701-M24, and W-3704-P-M3030 (L-shaped)

.7 Fixed Mirrors: Supply and install one (1) fixed mirror where indicated in all washrooms of one of the following manufacturer's models:

Bobrick	Model No. B-1556-2436
Bradley	Model No. 7481-24x36
Watrous	Model No. W-8226-2436

2.4 – FABRICATION

.1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.

.2 Wherever possible form exposed surfaces from one sheet of stock, free of joints.

.3 Brake form sheet metal work with 1.5mm (1/16") radius bends.

.4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.

.5 Back paint components where contact is made with building finishes to prevent electrolysis.

.6 Hot-dip galvanize ferrous metal anchors and fastening devices to CAN/CSA-G164-M92.

.7 Shop assembly components and package complete with anchors/fittings.

.8 Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates or rough-in measurements as required.

PART 3 - EXECUTION

3.1 - INSTALLATION

.1 Install and secure fixtures rigidly in place as follows:

.1 Stud Walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.
.2 Hollow Masonry Units; use toggle bolts drilled into cell/wall cavity.
.3 Solid Masonry or Concrete: use bolt with lead expansion sleeve set into drilled hole.

END

PART 1 - GENERAL

1.1 – GENERAL

.1 The specifications of Section 15 01 00 apply to and govern all work of Division 15.

.2 Comply with the Instructions to Bidders, the General Conditions of the Contract Documents and all amendments and supplements thereto, and with Division 1.

.3 Include Taxes as outlined in General Conditions and Tendering Instructions.

.4 Whenever the word “consultant” is indicated under Division 15 this would be defined as the “mechanical engineer” unless specifically indicated otherwise.

1.2 – SCOPE OF SPECIFICATIONS

.1 The listing hereinafter of any article, material, operation or method requires that this Division is to provide each item listed of the quality and subject to the qualifications noted, and this Division is to perform each operation prescribed according to the condition stated, providing therefore, all necessary labour, equipment and incidentals.

1.3 – SCOPE OF WORK

.1 Related work specified elsewhere:

1. Electrical Division 16.

.2 Work included: This Division is to include the supply of all labour, tools, equipment and materials for the installing, testing and putting into proper operation the complete system as herein specified, as shown on the drawings, or as is reasonably inferable from either or both.

.3 Equipment items that are supplied as packaged units under this Division are to include all internal wiring, relays, contactors, switches, transformers, motor starters, controls, and ancillaries as required for the intended operation, and to be complete with all necessary terminals suitable for connection to power source and external devices at a single location.

1.4 – INTENT OF SPECIFICATIONS AND DRAWING

.1 Any specific item or work omitted from one and which is mentioned or reasonably implied in the other is to be considered as properly and sufficiently specified and must be provided by this Division.

.2 Should any discrepancy or conflict appear between these specifications and the drawings which leave this Division in doubt as to the true meaning and intent of the drawings and specifications, a ruling is to be obtained from the Consultant before submitting the tender. If clarification is not sought prior to the closing of tender, the Consultants decisions are final, conclusive binding on this Division.

1.5 – REGULATION AND PERMITS

.1 All work to be carried out in accordance with the latest editions of all the relevant authorities, codes or regulations including but not limited to the Ontario Building Code, including Part 7, Plumbing; Canadian Regulations for the Construction and Inspection of Pressure Vessels;, Ontario Fire code, Ministry of Labour Guidelines, Occupational Health and Safety Act, Ontario Electrical Safety Code, Gas Utilization Code, Canadian Heating, Ventilation and Air Conditioning code, NFPA, Canadian Standards Association, and A.S.H.R.A.E Standards.

.2 All authorized code inspections required by above mentioned laws, rules and regulations, inclusive of any fees, obtaining permits, issuance of notices are to be arranged and paid for by the Division.

.3 Furnish all necessary certificates as evidence that work installed complied with aforementioned laws and regulations of all governing authorities, prior to acceptance of the work and before the final certificate of payment is issued.

.4 Any deviations from the plans and specifications requested by an official representing one or any of the authorities having jurisdiction over that portion of the work must be brought to the attention of the Consultant prior to proceeding with the change. Any additional costs incurred for extra work performed without instruction from the consultant will not be considered.

1.6 – EXAMINATION OF THE SITE AND DOCUMENTS

.1 This Division and related subtrades, before tendering, are to examine the site and all drawings and specifications of other trades and familiarize himself with the local conditions, building construction and finishes affecting the work under this section. No allowances are to be made for any extra expense incurred by him through his failure to do so.

1.7 – CONTRACT DRAWINGS

.1 The Contract Drawings are not intended to be shop or working drawings and all measurements are to be taken from the Architectural dimensional drawings or in the field. This division shall make, without any extra expense or credit to the Owner, any necessary changes or additions to the work to accommodate the Architectural or Structural conditions.

.2 Where shop or working/installation drawings are required, this Division shall provide them and submit them to the Consultant for review.

.3 The Contract drawings show the minimum standard acceptable regardless of any lesser standards set by any codes or regulations having jurisdiction.

.4 The Architectural, Structural and Electrical contract drawings are to be examined to ensure that the work of this division may be satisfactorily completed.

.5 Notify the Consultant upon discovery of any conditions, which adversely affect the work of this Division. No allowances are to be made after awarding Contract for any expenses incurred through the failure to do so.

1.8 – STORAGE OF MATERIALS

.1 Proper facilities for storage and protection of material and equipment are to be provided at the jobsite by this Division.

.2 All pipe to be used on the job to be carefully stacked off the floor with ends capped or suitable plugged to prevent the entry of dirt etc., until such times as when the piping is being installed. Similarly all openings in pressure vessels, tanks, etc., to be kept closed until ready for use. Any piping not suitably protected to be removed from the site and replaced with new.

.3 Equipment located on site, must also be suitably protected to prevent damage from abuse or misuse. Equipment and/or materials damaged after delivery to site is to be replaced or repaired to the satisfaction of the Consultant.

.4 Make known, any hazardous or flammable materials to be used and method of application before using. This division shall be responsible for proper storage and all necessary safety requirements in the storage and use of all hazardous and flammable materials used in the execution of their work.

1.9 – CO-OPERATION OF TRADES

.1 This Division is to co-operate with all other trades on the job, so that all equipment can be satisfactorily installed, and so that no delay is caused to any other trade. Any reworking of installed equipment, piping or ducting to accommodate the installation of other trades work shall be performed at no extra cost.

1.10 - WARRANTY

.1 This division to warranty products and execution of work under the Division against defects of material and workmanship for one full year after date of Substantial Performance.

.2 Repair defects that are discovered or develop during this period and make good any resulting damage to equipment or building. Repairs to be carried out at no cost to owner.

.3 Provide extended warranties where indicated in other sections of this Division. Extended warranties to commence on termination of the standard one year warranty and to be an extension of these same provisions.

1.11 – CHANGES IN THE WORK

.1 Submit prices for additional work to be deleted, requested by the Consultants with a complete breakdown as follows:

- Quantities of all items of equipment and material and unit costs.
- Total net cost of material.
- Total man hours.
- Total labour cost.
- Overhead and profit as specified in the Supplementary General Conditions.
- All Applicable taxes
- Changes to scheduled completion.

1.12 – LOCAL UTILITIES

.1 The Contractor before tendering to contact all utilities to determine the local procedures and policies concerning servings, and portions of that service which would be supplied or available through the utilities and incur any cost. The Contractors to ensure no delays in construction or service connections.

1.13 – EXISTING SERVICES

.1 Where work involves the breaking into or connecting existing services, carry out work at times directed by governing authorities, with minimum of disturbance to the premises and its operation.

.2 Before commencing work, establish location and extent of service liens in area of work and notify Consulting of finding.

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

.4 Remove abandoned service lines. Cap or otherwise seal lines and cut-off points, in manner approved by authorities having jurisdiction over service.

.5 Record locations of maintained, re-routed and abandoned service lines. The sub-contractors concerned shall provide the Division with all necessary dimensions required to accurately locate those services.

.6 Where to location of any of these utilities has been shown on the plans, such information is not guaranteed. It is the responsibility of this Division to verify locations, elevations, etc., immediately after they move on the site. If for any reason the information obtained necessitates changes in procedures or design, they must advise the Consultant at once. If this verification of existing conditions is not done at the outset and any problems arise, the responsibility for same is entirely this Division's.

.7 Where it is necessary to temporarily shut down equipment or services serving essential areas, this Division, shall include premium costs to ensure the work force is scheduled for "round the clock" operation in order to minimize disruption and equipment downtime.

PART 2 - PRODUCTS

2.1 – MATERIAL

.1 Materials and equipment are specifically named and described in this specification to establish a standard that this Division is to adhere to.

.2 The terms "approved alternate", "alternate manufacturer" are used to indicate a product or manufacturer which, in the Consultants opinion, meets the basic performance and quality of the specified product or manufacturer, subject to all requirements so specified being met. Dimensions, weights, electrical requirements, etc., are not always equal to the specified item. Except where a product or manufacturer is "base bid" when an approved alternate product(s) or manufacturer(s) is named, this Division may provide and install the alternate but must be be prepared to bear any and all costs incurred by its use.

.3 The term “base bid” indicates a product or manufacturer the tender amount must be based on. This Division may list on the tender form an “alternate product or manufacturer” with cost savings (if any) and the Owner shall have the option of accepting or rejecting the alternate.

.4 Whenever an alternate product is not listed in the specifications and is proposed for approval prior to tender close, this Division to guarantee that such proposed alternates are not to adversely affect the space requirements allocated on the drawings for the material, item, plant or equipment specified. This division agrees to bear any additional expense incurred by the Owner, the General Contractor and other divisions due to the use of proposed alternates, particularly in connection with any required changes in the work and any additional material and installation costs by any other part of the project. When proposing an alternate product, this division to make the Consultants aware of any structural, architectural, mechanical or electrical design changes necessary to accommodate the alternative product.

.5 Equipment manufacturer’s and sub-contractors submitting alternates for this contract, upon written request for the Consultant, are to qualify themselves to have the experience in the successful manufacturer and/or installation of the type of work and quality of materials specified and shown.

.6 Request for approval to be accompanied with complete specifications for the equipment, showing dimensions, ratings, etc. Approval or rejection of an alternate shall be issued in writing to the applicant.

.7 Any equipment installed without the Consultant's written approval, is to be removed and the correct equipment installed at the Division's expense. No consideration is to be allowed for claims of delay of schedule in this case.

.8 In the event the approved alternate equipment is not available for any reason, the specified equipment is to be installed, any and all costs incurred shall be the responsibility of this Division.

.9 The Consultant reserves the right to accept or reject an alternative without explanation.

2.2 – ACCESS DOORS

1 The Contractor to supply access doors of the adequate size and with appropriate clearances, wherever any equipment, cleanouts, valves, dampers, fire dampers, etc., which require service, maintenance or removal and are built in or concealed behind walls, or ceiling. Doors to be installed by the General Contractor. Coloured thumb tacks are to be used in acoustic tile ceilings.

.2 Access doors to be U.S.S. gauge steel with concealed hinges, anchor straps, screwdriver operated lock, rounded safety corners and dust tight doors that open 180°. Doors are to be adequately sized to suit equipment which is to be accessed, but in no case smaller than 8" x 8" (200mm x 200mm). Provide spanner head cam latch for all wall-mounted access doors.

.3 In acoustic tile ceiling, where access cannot be achieved through tile, install access doors to suit tile. Markers are to be approved colour-coded markers to indicate type of valve or equipment concealed.

.4 Where access doors are to be installed in a fire rated assembly, the access door must have a fire rating equal to or greater than the assembly fire rating. Fire rated access doors to be ULC rated and in accordance with NFPA-80.

.5 Acceptable manufacturers: Acudor, Le Hage, Mi-Fab.

2.3 – SUPPORTS

.1 This Division shall furnish and install all special structural work required for the installation of mechanical equipment and motors, etc. All details to meet the approval of the Consultant and Drawings are to be submitted for all major steel supports.

.2 Where on the drawings or specifications special isolation bases are noted, these shall be the responsibility of this division.

.3 All equipment shall be properly aligned on bases before being bolted down.

.4 All floor mounted equipment to be set at least 4″ (100mm) above the floor on concrete bases, and anchored securely with anchor bolts unless indicated otherwise. Installation of bases and all associated work to be by Division 3, identified accurately by this Division as to location and dimensions.

2.4 – SPECIAL TOOLS AND SPARE PARTS

.1 Furnish spare parts as follows:
a) One set of mechanical seals and volute gasket for each pump.
b) One spare coupler for each pump.
c) One set of V-belts for each piece of machinery(matched for multiple belt drives)
d) One set of filters for each filter bank, to be installed after substantial completion and prior to balancing.

.2 Identify spare part container as to contents and replacement parts number.

.3 Provide one set of special tools where required to service equipment as recommended by manufacturers.

.4 Furnish one grease gun and adapters to suit different types of grease and fittings.

.5 Provide a list of spare parts provided in operating and maintenance instructions.

PART 3 – EXECUTION

3.1 – INSTALLATION

.1 Each piece of equipment or material to be checked against the specification and reviewed shop drawing before installation, all clearances and installation instructions are to be strictly adhered to. Failure to comply with the instructions shall result in removal and proper reinstallation of the equipment at no cost to the Owner.

.2 Where mechanical equipment is installed in a fire rated assembly provide fire dampers and drywall enclosure or other as required to maintain the assembly fire rating to the approval of this Division. Include all costs.

3.2 – EXCAVATION AND BACKFILLING

.1 All excavation to be carried out in accordance with Occupational Health and Safety requirements, by-laws and authorities having jurisdiction over installation of this work.

.2 Bottoms of trenches to be excavated so that piping, conduits, ducts, etc, are supported on a solid bed of undisturbed earth with additional excavation under joist to permit joint to be properly made up. Provide concrete pad, brick or concrete piers properly reinforced under all piping, etc. below grade when a solid undisturbed earth is not obtainable. Approval for any alternate procedure is at the discretion of the Consultant.

.3 Bed beneath pipe is to be laid of an approved sand supplied and consolidated to provide a continuous solid bearing the pipe. Do all necessary plumbing required to maintain any excavation free of water.

.4 Inform the Consultant immediately if excavation reveals unexpected sub-surface conditions such as heavy seepage or springs.

.5 Obtain the Consultant's approval prior to commencement of backfilling of the pipe trenches. Backfill the trenches carefully to prevent injury to the work and subsequent settlement.

.6 Do not puddle of flood with water for consolidating the backfill. Add water during the compaction to the optimum moisture of the backfill material.

.7 Ensure special precautions at all pipe penetrations in foundation wall.

.8 Prior to backfilling of underfloor plumbing services trenches, the installation must be inspected and tested by an authorized representative. Provide a minimum 48 hours notice. If tested and inspected by local authority submit written certification.

3.3 SLEEVES, HOLES AND PATCHING

.1 All cutting and patching to be as specified under the General Conditions and Supplementary Conditions bearing in mind that the integrity of the fire separations are to be maintained at all times.

.2 All holes, pipe chases, etc., through walls and floors that are not fire separation are to be large enough to accommodate the thickness of the insulation specified.

.3 All cutting and patching, sleeves, grouting, painting and drywall required by this Division is to be performed by fully craftsman of that respective trade. All cutting and patching required by this Division to be provided by the Division, unless indicated otherwise.

.4 All holes, pipe chases, etc, through walls and floors that are fire separations are to be properly firestopped as specified.

.5 Holes through masonry walls are to be sleeved with schedule 40 steel pipe, all other holes to be sleeved with light gauge metal sleeves, unless indicated otherwise.

.6 Holes through exterior walls and roof are to be properly flashed and made weatherproof. Refer to Architectural drawings for details.

.7 Holes through structural steel are to be reinforced with steel plates welded each side as detailed in the Structural Engineer's drawings and specifications or to meet their approval.

.8 Sleeves for uninsulated pipes are to be sized to allow ½" (13mm) clearance between the pipe and the sleeve. The space between the pipe and the sleeve to be sealed with rockwool insulation to avoid smoke, sound and dust transmission and firestopped.

.9 Pipes are not to be in direct contact with plaster, concrete or any other finishing material.

.10 Sleeves for all piping penetrating mechanical room floor to extend 2" (50mm) above the finished floor and sealed at the floor.

.11 Sleeves in potentially wet floor areas to extend at least 1" (25mm) above the finished floor.

.12 Ensure no contact between copper tube or pipe and ferrous sleeve.

.13 This Division to provide detailed dimensioned drawings prior to pouring floors, erecting masonry, or installing a roof deck. Drawings to indicate size and location of all openings to ensure correct bridging installed as indicated under Division 5.

.14 This Division is responsible to install sleeves for piping and ducts and frames for openings for grilles, louvers etc., as the construction progresses. If these sleeves and frames are not installed by this Division during construction the cost of cutting openings, chases and installing the sleeves and frames is to be at This Divisions expense by the respective trade involved.

.15 Provide sleeves for all ducting penetrating floors and masonry and concrete walls.

.16 Ducts penetrating fire separations to have any voids between the duct sleeve and fire separation properly firestopped as specified. Ducts penetrating non fire separations to have any voids between the duct sleeve and separation filled with rockwool insulation to avoid smoke, sound and dust transmission.

.17 Supply and set all necessary sleeves for this work prior to pouring of concrete.

.18 Approval of the location, size and proposed method of cutting through structural components must be received before proceeding.

3.4 – WORKMANSHIP

.1 Employ and experienced, responsible tradesperson to supervise the work and retain this supervisor on the job throughout the construction period until completion of work, and all mechanical systems are fully operational and have been commissioned and demonstrated to the Owners unless otherwise approved or directed by the Consultant.

.2 Employ only skilled licensed pipe fitters, etc for execution of work. Workmanship to be first class not only as regards to durability, efficiency and safety, but also as regards to neatness of detail.

.3 Set equipment accurately, plumb and level and align hanger rods and steel supporting structures.

.4 Products and installations in the opinion of the Consultant found to be defective; not in accordance with specifications; damaged or defected; or of poor workmanship to be rejected.

.5 Rejected work is to be repaired or replaced at no cost to the Owner.

3.5 – PIPING

.1 All piping for this Division is to be run concealed where possible and grouped so that valves, etc., are accessible through as few access panels or doors as possible, while still maintaining adequate working space.

.2 Piping that does not present a neat workmanlike appearance, in the opinion of the Consultant, is to be reworked according to his instructions without extra cost to the Owner. Arrange piping within pipe chases that have been designed for access of personnel to ensure that all access is not impeded.

.3 In specifically designated unfinished areas such as mechanical rooms or existing areas, run pipes neatly parallel or in banks and group valves. Piping may be run exposed in these designated areas. The crossing over of pipes must be kept to a minimum.

.4 The piping shown in the drawings is located diagrammatically in the space in which it is intended to run. Co-operate and co-ordinate with work of other divisions, also installing pipes, conduits, ducts, etc., with the same area. No extras are to be paid for any relocation of piping to suit the work of other Divisions.

.5 Separation by approved dielectric unions is to be applied to all ferrous and non-ferrous domestic water piping. Separation of ferrous and non-ferrous piping on closed loop systems to meet accomplished with the use of brass or brass or bronze fittings and/or valves. All connecting or touching metals that could give rise to electrolytic action to be separated with insulation.

.6 All piping is to be installed with adequate change in direction, expansion joints and anchors, so that the piping and equipment will in no way be strained or distorted by expansion and contraction.

.7 If on the job circumstances require additional change of direction and expansion loops, furnish and install same at no extra cost.

.8 All take-offs from the mains to made using swing joints whenever possible.

.9 Hydronic branches serving down feed risers are to be taken lower from sides or bottom of mains and grade down slightly to risers. Branches which serve units above the mains are to be taken from the top or sides of mains.

.10 Anchors are to be provided where necessary to protect equipment and to generally be made from ½″ (13mm) M.S. plate with structural steel angle and channel sections.

.11 Suitable anchors and guides are to be provided where shown or where necessary for all vibration devices.

.12 Expansion loops are to be located midway between anchors except where shown otherwise. All expansion loops are to be cold sprung 50% in accordance with the latest edition of the ASHRAE Guide.

.13 Install all water piping so that the lines can be drained. Provide drip tee with ¾″ (19mm) ball valve with cap and chain

.14 All exposed plumbing piping in finished area to be chrome plated unless indicated otherwise.

3.6 – IDENTIFICATION OF PIPING

.1 Identify all visible piping whether fully exposed or in accessible spaces such as above acoustic tile ceilings.

.2 Identify all concealed piping mains in concealed areas such as drywall ceilings and pipe trenches etc prior to these areas being enclosed.

.3 Identify the medium in the piping with Brimar System #1 wrap-around pipe markers (or equal) including direction-of-flow arrows.

Medium in Pipe	Background Colour	Lettering Colour
Domestic Cold Water	Green	White
Domestic Hot Water	Yellow	Black
Domestic Hot Water Return	Yellow	Black
Tempered Water	Yellow	Black
Sanitary drain	Green	White
Storm drain	Green	White
Plumbing Vent	Green	White
Heating Water Supply	Yellow	Black
Heating Water Return	Yellow	Black
Steam	Yellow	Black
Condensate	Yellow	Black

.4 All piping identification to be done on clean surfaces.

.5 Size all wrap-around labels for the pipe being labeled.

.6 All piping exposed in mechanical rooms shall be covered with coloured PVC jacket, colour coded to identify the medium in the piping. Colour codes to Board standard.

.7 Location:

- Locate markers and classifying colour on piping systems so they can been seen from the floor or platform.
- Identify piping runs at least once in each room.
- Do not exceed 50 ft. (15m) between identifications in open areas and above T bar ceilings.
- Identify both sides where piping penetrates walls, partitions and floors.
- Where piping is concealed in pipe chase or other confined space, identify at point of entry and leaving, and t each access opening.
- Identify piping at started and ending points of runs and at each piece of equipment.

- Identify piping at major manual and automatic valves immediately upstream of valves. Where it is not possible, place identification as close to valve as possible.
- Identify branch, equipment or building served after such valve.
- Identify piping in concealed spaces prior to spaces being enclosed.

3.9 – VALVE TAGS

.1 All valves installed under the Division to have securely affixed to them an approved valve tag bearing an engraved number which shall be used to identify the valve on an indexed valve list prepared and mounted in a glazed frame in the mechanical or boiler room.

.2 Beside each number on the list of valves to be listed, identify the function normal position, and location of each valve so tagged.

.3 Valve tags shall be either engraved lamicoid or plastic valve tags (Brimar B11101-39) with 1/4" tall lettering of a colour to contrast with the label colour.

.4 Valve tags shall be colour coded as follows:

System	Tag Colour	Letting Colour
Domestic piping systems	Green	White
Heating water piping systems	Yellow	Black

3.10 – PAINTING

.1 All field priming and finishing to be performed by Division 9.

.2 Provide field surface preparation, priming and finishing of the work of this Division including exposed bare (or insulated) pipework, fittings, ductwork, miscellaneous metals, supports, and equipment, in accordance with Division 9.

3.11 – PLACING IN OPERATION

.1 Prior to acceptance and on completion of work make a complete operational test of systems and work carried out under Division 15.

.2 At all fixtures, adjustments for correction water flow to be made, this is to include hot and cold water systems and flush valves.

.3 At all drains, covers and grating are to be removed and cleaned, traps cleaned out and drains thoroughly flushed.

.4 All strainers are to be cleaned out after two weeks normal operation.

.5 All filters in fan cabinets are to be removed, thoroughly cleaned and stored for future use, install new filters in units. Bird and insect screens on all louvers to be cleaned. All coils to be combed out where necessary and vacuumed out.

3.12 Clean-Up

.1 Avoid accumulation of scrap and debris resulting from the operations of this Division and at all times help maintain the working site in neat and clean condition. On completion of the contact, remove all scrap and debris resulting from the work of this Division and clean all equipment installed by this Division.

3.13 – START UP SERVICE

.1 Provide services of a qualified technician responsible for assisting the Owner’s staff in becoming familiar with operating of systems, co-ordinating work of control manufacturer, acting on any complaints from the Owners, or Consulting regarding operation of any of the systems installed under this Division.

.2 Provide start-up of major pieces of mechanical equipment or systems, by representative of equipment manufacturer or person qualified and recognized by the equipment manufacturer.

.3 Submit start up reports on all mechanical equipment and systems verifying correct installation and operating parameters in all modes of operation. Include service reports in operating and maintenance manuals.

.4 Notify Consultant prior to start-up on any piece of mechanical equipment or system. Demonstrate operation of ally or any mechanical system or equipment as directed by the Consultant in his presence.

3.14 – TESTING

.1 Notification of Tests: Consultant must be given at least 48 hour notice of date and time of which any and all tests are to be carried out. Under no circumstances must a test be assume conclusive unless it has been witnessed by the Consultant or his designated representative.

.2 Test all piping systems for leaks, providing gauges, materials and labour as required. Equipment furnished as part of the permanent installation shall not be used for testing purposes. Before testing, remove all equipment which is not designed to withstand the test pressures. All piping is to be tested before covering is applied.

.3 Before final payment, test the operation of each system and all equipment installed, make all necessary adjustments and replacements and demonstrate to the satisfaction of the Consultant, that all equipment is operating as intended and without undue noise and vibration.

END

PART 1 - GENERAL

1.1 – REQUIREMENTS INCLUDED

.1 Shop drawings and product data.

.2 Working/interference drawings.

.3 As-built drawings.

.4 Operating and maintenance included extended warranties.

1.2 – RELATED WORK SPECIFIED ELSWHERE

.1 Basic Materials and Methods, Section 15 05 00.

.2 Plumbing, Section 15 40 00.

.3 Plumbing Fixtures and Trim, Section 15 44 00.

1.3 – ADMINISTRATIVE

.1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as not cause delay in the construction schedule. Failure to submit in ample time is not considered sufficient reason for an extension of the Construction Schedule and no claim for extension by reason of such default is allowed.

.2 Work affected by the submittal is not to proceed until the review is complete unless an approval is obtained from the Consultant.

.3 Review submittals prior to submission to the Consultant. This review represents that necessary requirements have been determined and verified, and that each submittal has been checked and coordinated with the requirements of the Contract Documents.

1.4 – SHOP DRAWINGS

.1 Submit shop drawings in accordance with the General Requirements of Division 1 and as required in various sections of these specifications and on the drawings, see also Commissioning Plan Schedule.

.2 Shop drawings to be submitted with a cover sheet(s) on the Contractor’s letter head listing the following information: Project, Owner /Client,Mechanical/Electrical

Consultant/Mechanical Contractor/Supplier/Specification Section/Materials or Equipment Submitted.

Include space for review stamps Consultant, General Contractor and Mechanical Contractor.

.3 Prepare and submit for review, where specified, shown or considered necessary by the Consultant, shop drawings showing details or work as follows:

1. Fabrication and erection dimension.
2. Sections, arrangements and details which include complete construction as well as interconnections with other work.
3. Location and type of anchors and fastenings.
4. Materials including gauges, thickness, sizes and finishes.
5. Descriptive names of equipment and mechanical and electrical characteristics when applicable
6. Data verifying that superimposed loads will not affect function, appearance, and safety of work shown on shop drawings as well as other work interconnected.
7. Assumed design loadings, dimensions of elements and materials specifications for load bearing members.
8. Complete composite wiring diagrams as required by Division 16 of each mechanical system. Indicate all electrical requirements both internal and external for review and coordination of other trades.
9. Indicate all accessories and clearances for operation and servicing.

.4 Submit shop drawings, unless otherwise specified in form of reproducible transparency (sepia) plus one set of prints.

.5 Manufacturer’s printed data sheets for standard items are acceptable providing pertinent characteristics are identified and relate to specified items. Submit eight (8) copies of data sheets except where specified otherwise.

.6 Check shop drawings and data sheets, before submission as follows:

a) Against contract documents and other applicable shop drawings, to ensure that work adjacent to and affecting the other work is accurately detailed.

b) To ensure that work shown on shop drawings conforms to requirements of Contract Documents.

c) Enclose notice in writing of any variations from requirements of Contract Documents.

.7 Indicate on shop drawings that they have been checked by applying stamp “checked and certified correct for construction”. Including date and signature. Drawings and details submitted without such stamp or whenever it is evident that the drawings have not been checked (despite approval stamp) are not reviewed and not reviewed and are to be returned to this Division.

.8 The Consultant’s review of shop drawings and data sheets pertain to general design only. Errors in dimensions, quantities or interference are to be marked if noticed, but is not in any way to relieve the Contractor from the responsibility to complete the work as shown and specified.

.9 All shop drawings are to be submitted in Imperial dimensions.

.10 Shop drawings are to be returned with “Reviewed”, “Reviewed as Noted” or “Revise and Resubmit”.

1. Reviewed – drawings conform with the general design concept.
2. Reviewed as Noted – Drawings conform with the general design concept, subject to the corrections noted. Drawings to be corrected and resubmitted for final review and incorporation into maintenance manuals. Such submission is not to hold up manufacture.
3. Revise and Resubmit – Drawings are rejected and manufacture of this equipment is not to proceed. Drawings are to be resubmitted with required correction on equipment.

1.5 – WORKING/INTERFERENCE DRAWINGS

.1 Before commencing any work, the Contractor is to prepare working/interference drawings to ensure that all components, including any components of other divisions, are to be properly accommodated with the spaces provided, ensure all clearances required by jurisdictional authorities and for proper maintenance are indicated and maintained.

.2 Prepare drawings to indicate coordination and method of installation of a system with other systems where their relationship is critical. Ensure all details of equipment, apparatus and connections are coordinated.

.3 As an alternate to preparing interference drawings, regularly scheduled meetings on site with all associated trades are to be conducted as necessary but not less than one week apart.

.4 Failure to coordinate with all other trades could result in reworking of installed equipment, piping or ducting at the discretion of the Consultant. Any reworking to accommodate the installation of other trades is to be performed at no extra cost.

1.6 – AS-BUILT DRAWINGS

.1 As-built drawings are to be maintained in accordance with the general requirements of Division 1.

.2 The Consultant is to provide this Division with an extra set of white prints on which to show clearly in red in, as the job progresses, all changes and deviations from the plans, including all changes as part of change orders, site instructions or site condition.

.3 Record location of concealed mechanical services and components. Dimension and reference all concealed and buried mechanical services from visible and accessible permanent features of structure.

.4 In accordance with the Commissioning Schedule Plan, submit a complete set of record drawings, marked “as-built” and dated.

.5 In accordance with the Commissioning Schedule Plan, submit a complete set of record drawings, marked “as-built” and dated.

1.7 – MAINTENANCE DATA AND OPERATING INSTRUCTIONS

.1 As-built drawings are to be maintained in accordance with the general requirements of Division 1.

.2 Front cover of each binder to be suitably lettered as follows:

.3 Provide plastic tab indices for all sections of the manual, provide separate sections for each major piece of equipment and for groups of smaller products.

.4 Provide master index at the beginning of each binder indicating all items included in each section.

.5 Provide list of names, addresses and telephone numbers of equipment suppliers, Installing Contractors, General Contractors, Architect and Consulting Engineer.

.6 Provide final review shop drawings for each manufactured item in addition to the operating and maintenance instructions.

.7 Operating instructions to include:

1. General Description of each mechanical unit and system.
2. Step by step procedure to follow commissioning of each piece of equipment, including start-up, break-in, and routine normal operating instructions and sequences. Including regulation control stopping, shutdown, and emergency instructions. Include summer, winter and any special operating instructions.
3. Schematic control diagrams for each separate system. Each diagram to indicate locations of start-stop switches, insertion thermostats,

thermometers, freezestats, firestats, pressure gauges, automatic valves and accessories. Correct operating settings for each control device to be indicated on diagram.

4. Drawings of each control panel indentifying all components on the panels and their function and sequence of operation.
5. All mechanical equipment wiring and control diagrams as installed.
6. Provide original manufacturers illustrations, shop drawings and assembly drawings.

.8 Maintenance instructions are to include:

1. Manufacturer's printed maintenance instructions for each item of mechanical equipment installed under this Division. Instructions are to include installation instructions, description of the unit or system and component parts numbers and lists, name of supplier and maintenance and lubrication instructions. Include complete nomenclature and commercial number or replacement parts.
2. Summary list of each item of mechanical equipment requiring servicing and lubrication, indicating the name of the equipment item, location of the all points of lubrication recommended, and frequency of lubrication.
3. Include routing procedures and guide troubleshooting, disassembly, repair and reassembly instructions, alignment, adjustment, balancing and checking instructions.
4. Provide list of manufactures spare parts, current prices and recommended quantities to be maintained in storage.
5. Balancing and test reports.

.9 Provide written warranty on this Division's letterhead addressed to the Owner, copied to the General Contractor.

.10 Furnish complete Operating and Maintenance Manuals to the Owner's/Owner's Representative for review in accordance with the Commissioning Plan Schedule. Allow a minimum fourteen (14) days for review.

.11 Furnish Final reviewed Operating and Maintenance Manuals to the Owner's/Owner's Representative fourteen (14) days prior to scheduled Functional Tests.

1.8 – EXTENDED WARRANTY .1 This Division is to submit extended warranties for specific materials and/or work specified in their respective sections.

.2 Extend warranties are to be issued on the Manufacturers or respective Contractor's letterhead, under seal, and issued in the name of the Owner.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION NOT USED

END

PART 1 - GENERAL

1.1 – GENERAL

.1 Conform to the General Provisions of Section 15 01 00.

1.2 – RELATED WORK SPECIFIED ELSEWHERE

.1 Painting – Section 09 91 10

.2 Insulation - Section 15 18 00

.3 Plumbing – Section 15 40 00

.4 Plumbing Fixtures & Trim – Section 15 44 00

.5 Electrical – Division 16

1.3 – QUALITY OF ASSURANCE

.1 Requirements of Regulatory Agencies:

1. Conform to local and district by-laws, regulations and published engineering standards.
2. Conform to Ontario Building Code 1997 containing the Building Code Act, and Ontario Regulation 403/97 including all amendments.
3. Conform to ACNBC Canadian Plumbing Code, current edition.
4. Conform to Regulations for Construction Project, Ontario Regulation 659, under the Occupational Health and Safety Act, current edition.

1.4 – SUBMITTALS

.1 Submit shop drawings in accordance with Section 15 01 10, Paragraph 1.4 for all the following items:

- Valves and Suction Guides
- Strainers and Air Eliminators
- Pressure and Temperature Gauges
- Backflow Preventers and Flow Switches
- Expansions Joints, Expansion Compensators and Flexible Connections
- Roof Flashing

PART 2 - PRODUCTS

2.1 – PIPE AND PIPE FITTINGS

.1 Heating Water Piping

.1 Steel pipe 3”(50mm) and smaller- Schedule 40, electric weld or seamless A.S.T.M. specification A-53.

.2 Steel pipe 2 ½” (65mm) and larger – schedule 40, electric weld or seamless A.S.T.M. specification A-53 with butt welding ends.

.3 Copper pipe ¾” (19mm) and smaller – Type “L” hard drawn copper with wrought copper solder type fittings to ASTM B888-83.

.4 Dielectric unions to be used between cooper and steel pipe.

.5 Steel pipe fittings up to and including 2” (50mm) are to be threaded joints malleable iron type.

.6 Steel pipe fittings 2 ½” (65mm) and larger are to be forged steel butt welded type with all joints welded.

.7 All elbows are to long radius type.

.8 Cooper pipe fittings to be wrought copper or cast bronze solder type.

.9 Grooved piping will not be suitable.

.2 Sanitary Dain, Storm and Vents

.1 Soil and waste pipe 3” (75mm) and over to be medium weight cast iron type MJ, unless indicated otherwise; 2 ½” (65mm) and under copper DWV pipe and fittings when above floor and Type L copper when buried.

.2 Vent pipe 3” (75mm) and up is to be medium weight cat iron type MJ; 2 ½” (65mm) and under galvanized steel pipe with cast iron drainage fittings or copper type DWV.

.3 Below grade piping only:

- ABS piping in accordance with CSA-B181-1 for 4" (100mm) pipe sizes and larger.
- P.V.C. gravity sewer piping SDR28 for 6" (150mm) pipe sizes smaller to CSA-B182.1
- P.V.C. gravity sewer piping SDR35 for 8" (200mm) pipe sizes and smaller to CSA-B182.1

.3 Domestic Water Piping and Cold Condensate Piping

.1 Domestic water lines, (cold, hot and re-circulating) above grade shall be type L. Copper to ASTM B88-83.

.2 Exposed piping in finished areas shall be chrome plated unless noted otherwise.

.3 Air conditioning condensate lines above grade to be Type M copper to ASTM B88.

2.2 – HANGER AND SUPPORTS

1 Hangers shall be carbon steel with copper or plastic coating for direct support of copper tubing, and shall be carbon steel with black corrosion resistant finish for all other piping.

.2 Use Grinnell Fig. 65, 70, 97, CT-99, 101, 260 or 269 hangers for individual support of all horizontal piping.

.3 Provide Grinnell Fig. 168 pipe covering protection saddles at each hanger where pipes are insulated.

.4 Provide Grinnell Fig. 171 single pipe rollers complete with Fig. 160 protection saddles on all heat mains where indicated.

.5 Use 100 mm x 40mm minimum steel channel for joint support of horizontal piping.

.6 Use welded beam attachments or beam clamps for support of horizontal pipe from steelwork.

.7 Perforated pipe hangers are not acceptable.

.8 Determine spacing between pipe rack supports using smallest pipe size.

.9 Provide Grinnell fig. 262 pipe saddles on each pipe where trapeze hangers are used.

.10 Hangers and supports shall be manufactured by Grinnell, Myatt or Economec.

2.3 – VALVES AND ACCESSORIES

.1 Domestic Water

.1 This Division shall furnish and install all special structural work required for the installation of mechanical equipment and motors, etc. All details to meet the approval of the Consultant and Drawings are to be submitted for all major steel supports.

a) Gate Valves:

Up to 2″ (50mm) Screwed and/or Soldered	Crane 438, 1324, 1701 Newman Hattersly 33X Milwaukee 105 & 1105 Jenkins 3110J & 313J Nibco T-113 and S-113 Kitz 40 and 41
2″ (50mm) and larger, flanged	Crane 465-1/2 Newman Hattersley 504 Jenkins 454J Milwaukee F-2885M Nibco F-617-0

b) Globe Valves:

Up to 2″ (50mm) Screwed and/or Soldered	Crane 5, 7 & 1310 Newman Hattersly 13 & 14 Millwaukee 590T & 1590T Jenkins 106BJ & 1068BPJ Nibco T-235-Y & S-235-Y Kitz 03, 09 and 10
2″ (50mm) and larger, flanged	Crane 351 Newman Hattersley 731 Jenkins 2342J Milwaukee F-2981M Nibco F-718-B

c) Ball Valves:

Up to 2″ (50mm) Screwed and/or Soldered	Crane F9202, F9222 Newman Hattersly 13 & 14 Milwaukee BA-100-600 WOG, Chrome Ball Jenkins 201F and 202F Nibco T-FP600 & S-FP600 Kitz 58 and 59

*Note: Provide stem extensions where valves are located in insulated pipes.

d) Swing Check Valves:

Up to 3″ (75mm) Screwed and/or Soldered	Crane 37 and 1342 Newman Hattersly 47 Milwaukee 509 and 1590 Jenkins 4092J & 4093J Nibco T-413 Kitz 24
3″ (75mm) and larger, flanged	Crane 373 Newman Hattersley 651 Jenkins 587J Milwaukee F-2974M Nibco F918

e) Shock Absorbers: Ancon – Shok-gard
Enpoco – HT Series
Zurn – Shok Trol

f) Drain Cocks: Emco 10240
Cambridge Brass 32W 200
Jenkins 201CJ
Nibco T-585-70-66-HC

.2 Heating .1 NOT USED

.3 Strainers .1 Furnish and install strainers where shown on the drawings. Strainer baskets shall be of stainless steel or monel selected for the service for which they are installed. Strainers 2″ (50mm) I.P.S. and smaller shall be screwed; 2 ½″(65mm) I.P.S. and larger shall be flanged or grooved ends flanged strainers shall be provided with a blow-off ball valve, full size of blow-off tapping, with a short nipple on discharge side. Smaller strainer shall have nipple and cap affixed. Strainer to be Colton, Sarco, Armstrong or Watts.

.2 Strainer bodies for mechanical systems shall be cast iron or brass.

.3 Strainer bodies for plumbing systems shall be brass.

.4 Air Eliminators

.1 Air eliminators on Hydronic chilled water and heating remains to be Sarco AWN-150, Hoffman 792, Colton AUDT - #150.

.2 Air eliminators are to be connected to air colleting chambers with ½" (13mm) I.P.S. nipple and isolating gate valve. Air collecting chambers shall consist of a full size tee.

.5 Air Separators

.1 Furnish and install as shown on drawing an air separator with tangential nozzles. The air separator shall be fitted with an NPT vent connection to facilitate installation of piping to connect expansion tank or air vent to the air separator. An NPT tapping shall be provided on the bottom of the air separator to facilitate blowdown.

.2 The air separator shall be equipped with a steel system strainer with free area of not less than four times the cross-sectional area of the connecting pipe. Strainer can be removed for routine cleaning.

.3 Air separators sizes 2" (50mm), 2 ½" (65mm) and 3" (75mm) will have cast iron body with NPT connections and will be designed and constructed for 160 psig (1100 kPa) at 350 F (177 C). Air separators 4" (100mm) to 12" (305 mm) will be fabricated steel with flanged connections, size are to be designed and constructed for 165 psig (1140kPA) at 375F (190C).

.4 All sizes are to be designed and constructed in accordance with Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

.5 Acceptable manufacturers: Armstrong, Taco, Amtrol.

.6 Pressure Gauges

.1 To be 4 ½" (115mm) black cast aluminum case, black figures on white dial face, phosphor bronze tube, brass rotary movement, ranges to suite pressure of medium being measured, c/w needle valve. Provide pressure snubbers on pump suction and discharge.

.2 Trerice series 600C with type FFG – No 740 needle valves and No 872 snubbers, Winter Weiss or Baker.

.7 Temperature Gauges

.1 To be 3 ½" diameter, aluminum case, Bi-Ometal thermometer, with scale calibrated in both degrees F and C to suit range of medium being measured, black markings on white background. All thermometers to include separable well.

.2 Acceptable Products: Winters HVAC BI-METAL THERMOMETERS 160/161/165 or equals Trerice, Baker or Weiss.

.8 Expansion Joints

.1 For steel pipe to be self-equalizing type with two-ply stainless steel bellows, carbon steel shrouds and internal positive anti-torque device.

- Flexonics Model H or H3, or Hydro-Flex.

.2 For copper pipe to be self-equalizing with two-ply bronze bellows, all bronze construction and internal positive anti-torque device.

- Flexonics Model HB 0r HB3 or Hydro-Flex.

.9 Felxible Connections

.1 Provide flexible connections with inner core or annularly corrugated stainless steel with an outer casing of two layers of braided high tensile steel. Hose to be complete with couplings and fittings of steel with threaded or flanged connections, depending on pipe size. Flexonics or Hydr-Flex.

.10 Escutcheons

.1 Supply and install chromium plated escutcheon plates on all piping passing through finished walls, floors and ceilings. Where sleeves

project above the floor in potentially wet areas, provide chromium plated Grinnell fig. 400 escutcheon.

.2 Escutcheons plates shall be installed over the insulation and shall have set screws or clamping devices to keep the escutcheon plate in place.

.11 Flow Switches .1 To be single pole, double throw paddle type, stainless steel bearings, monel bellows, paddle, corrosion resistant with screws adjustment.

.2 Acceptable product: McDonnell Miller FS4-3.

PART 3 – EXECUTION

3.1 – PIPING INSTALLATION

.1 Make all piping connections to boiler, pumps, radiation, coils, fan coil units, humidifiers, etc. Unions and valves to be located so that removal of units and equipment is possible without disconnecting more than a minimum of pipe work, and without shutting down any other pieces of equipment.

.2 Where branch pipes are welded into mains with the use of a “T” connections, torch cut openings must be cut true, beveled and filed smooth. Branch pipes must not be allowed to project inside of main pipe. Openings must not be cut large enough to permit entry of welding material and slag within the pipe.

.3 Grade horizontal water distribution piping 1” per 30 ft (2.78 mm per meter) rising in direction of flow, wherever possible. Provide ball valves with cap and chain for draining at all low points and vent valves at high points.

.4 Provide adequate space around piping to facilitate application of insulation.

.5 All reductions in pipe size to made with eccentric fittings. Minimum size of run s out shall be ¾″ (19mm).

.2 Sanitary, Storm and Vent Piping

.1 Install sanitary drawings and connect fixtures where show. Connect up all drains to drain, open hub or other approved locations. Connect to drainage system all drains from equipment supplied under other Sections.

.2 Horizontal sanitary drawings shall have the following minimum slopes.

.3 Connect storm drains to all roof hoppers, specialty gutter outlets, etc. Carry main drain to point as shown on drawings.

.4 All fixtures are to be vented in accordance with Local and Provincial Regulations. Vents are to be run as directly as possible and to be properly graded so as to drain back to fixture connection. Vents are to be concealed in walls, and ceilings; vent stacks are to be built into pipe chases, concealed areas, and walls, with particular attention paid to building frame construction.

.5 Vent stacks are to be connected to the vent extensions provided by Division 7 and installed by the General Contractor. The only exposed vent pipe of vent stack allowed will be in the areas provided in pipe spaces, mechanical room, etc. Maintain a minimum of 10 ft. (3m) from fresh air intakes to location of vent stack.

.6 Domestic Water Piping and Cold Condensate Piping

.1 Connect cold water to all fixtures, hose bibs, as required and as shown. This is to include all connections to equipment and units supplied under other Sections.

.2 All equipment is to have unions or flanged connection for equipment removal, and where possible piping is to run concealed in all walls and ceiling, but may run exposed in mechanical rooms and warehouse.

.3 Install shock absorbers ahead of all solenoid valves or other quick closing valves and where shown. Vacuum breakers are to be installed on all fixtures where required by the Ontario Plumbing Code, or Local Plumbing Inspector.

.4 Connect condensate piping to all drain pans and run to nearest drain.

.7 Equipment Connection

.1 Install unions and/or flanges to connect piping to all pieces of equipment. All equipment is to have isolating valves for equipment removal.

.8 Flashing

.1 All vent stacks and soil stacks are to connect to isolated stackvents. Stackvents are supplied and installed through the roof by Division 7. All holes through the roof are to be properly flashed and made weatherproof by roofer as required under Division 7.

.9 Thermal Expansion and Contraction of Piping

.1 The contractor to be responsible for expansion and contraction of all pipework. Erect all pipe in such a manner that the strain and weight does not come upon pipe connections of apparatus. Provide bends, or swing joints except where corrugated bellows type expansion joints are shown or required.

.10 Air Elimination and Drainage

.1 All low points to be installed with a ball valve with a screwed connection suitable for connecting a hose. Install air vents at all points in system/

3.2 – PIPING JOINTS

.1 Threaded Joints

.1 Pipe is to be cut at right angles and reamed to full bore.

.2 Threads are to be carefully cut with sharp dies and proper cutting oil.

.3 All chips and other foreign matter are to be removed from the pipe before installation into

system.

.4 Proper joint compound is to be used on male threads only. A good grade of hemp fibre is to be used on threads.

.5 Connections to be made with proper wrench to suite pipe size, additional leverage not to be allowed.

.6 Of threaded joints leak after assembly by normal methods, they are to be disconnected and corrected if possible, or replaced. Over tightening or caulking is not considered a proper correction.

.2 Solder Joints .1 Pipe is to be cut at right angles, reamed, deburred and sized.

.2 End of pipe and inside of fittings to be cleaned with steel wool to a bright metallic finish.

.3 Flux to be applied to outside of pipe and inside of fittings; fitting to be revolved on pipe to ensure proper distribution of flux.

.4 Using solder wire, heat assembly with torch until solder has flowed completely around fittings. Wipe off excess solder. Solder used on potable water systems to consist of 0.2% maximum lead composition or alternately use 90/5/5 tin/silver/antimony. Large size pipe joints are to be completely tinned before assembly.

.3 Cast Iron Joints .1 Mechanical joint cast iron piping and fittings will be assembled in accordance with manufacturer’s recommendations.

.4 P.V.C. Polypropylene and A.B.S. Piping Joints .1 Install P.V.C. Polypropylene and A.B.S. joints as per manufacturer’s recommendations, using approved joining methods, compounds and materials.

3.3 HANGERS AND SUPPORTS

.1 Horizontal piping is to be supported as close as practical to the connected equipment and intermediated hangers are to be spaced as

follows:

Pipe size	Single Rod Dia.	Double Rod Dia.	Maximum copper Steel	Spacing
Up to 3/4″	3/8″	3/8″	5 ft.	6 ft.
(Up to 19mm	10mm	10mm	1.5m	1.8m)
1″ – 1 ¼″	3/8″	3/8″	5 ft.	8 ft.
(25mm to 32	10mm	10mm	1.5m	2.4m)
1 1/2″ -2″	3/8″	3/8″	10 ft.	10 ft.
(38mm & 50mm	10mm	10mm	3m	3m)
2 ½″ & 3″	1/2″	3/8″	10 ft.	12 ft.
(65mm & 75mm	13 mm	13 mm	3m	3.7m)
4″	5/8″	5/8″	-	15 ft.
(100mm	16mm	16mm	-	4.6m)
6″	¾″	5/8″	-	17 ft.
(150mm	19mm	16mm	-	5.2m)

.2 Cast Iron Piping is to be supported at intervals not exceeding 5 ft. (1.5m) with clevis hanger securely anchored to building.

.3 Cast iron fittings are to be supported at intervals not exceeding 3 ft (900mm).

.4 Cast iron pipes are to be supported at every floor.

.5 No support or hanger securing devices is to penetrate waterproofing roof membrane above steel deck.

.6 Provide roller supports, floor stands, wall brackets, etc., for all lines running near the floor or near the walls, which can be properly supported by the floors or walls.

.7 All pipe support arrangements are to be adjustable for proper support and grading.

.8 Suspend piping using malleable iron or wrought steel hangers suspended from hanger rods threaded each end not more than 1 ½″ (38mm). Continuous threaded hanger rod is to be used

in concealed locations only.

.9 Hanger rods are to be attached to concrete inserts, beam clamps, welded brackets or similar device. Co-ordinate location and method of pipe support in building with Structural Engineer.

.10 Roof supports for gas piping to be provided by Division 7.

.11 Provide hangers for chilled water and cold water piping with the hanger around the insulation.

3.4 – VALVES AND ACCESSORIES

.1 Use valve of line size unless noted otherwise or being used for balancing purposes.

.2 Provide isolating valves in each branch from the main line and where shown.

.3 Provide isolating valves for all fixtures, appliances etc., including the following:

1. On each branch serving more than three fixtures.
2. At the base of each main riser.

Note: valves are not necessarily shown on the drawings.

.4 Unless indicated otherwise provide radiation regulating valves at each terminal unit and in locations where valve is to be used for regulating purposes. Ball valves are not acceptable for balancing purposes.

.5 Provide ½" (13mm) ball valve with cap and chain at any low point of the system not drainable through the main supply piping.

.6 All valves are to be tagged and a chart showing location and equipment controlled to be turned over to the Owners upon completion of the job.

.7 Escutcheon plates are to be installed at walls and floors where pipes are exposed to view.

.8 Install auto air vents at all high points in system.

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.9 Install drain cup at each backflow preventer vent and drain opening and pipe to nearest floor drain.

3.5 – TEMPERATURE GAUGES

.1 Install temperature gauges in all locations noted.

.2 Check range of temperature expected at each location and supply thermometer with range to suit.

.3 All temperature gauges to be installed in separable wells.

3.6 – PRESSURE GAUGES

.1 Install pressure gauges in all locations noted and before and after each circulating pump.

.2 Check range or pressures expected at each location and supply pressure gauge with range to suit.

3.7 – INSPECTION AND TESTING

.1 Make tests that are required, by any authority having jurisdiction, in the presence of the authority’s authorized inspector. Tests are to be certified by him.

.2 Test all piping at the completion of roughing-in before connecting to new systems, and prior to concealment, insulation or covering of piping.

.3 Notify the Consultant in writing at least forty-eight (48) hours prior to start of test. Failure to do so may require test to be re-done.

.4 Ball test drains to O.W.R.C. Regulation 815/84, Ontario Plumbing Code.

.5 all new drainage and vent piping is to be tested using water test method before connection of fixtures and maintain the required water level for 24 hours. Pressure test science room and prep room piping in accordance with manufacturer's instructions. Do not pressure test with compressed air or gas.

.6 Final air test drains, waste and vent piping to O.W.R.C. Regulation 815/84, Ontario Plumbing Code.

.7 All water distribution piping to be tested at a pressure of not less than 150 psig (1034kPa) maintained for 6 hours without necessity of additional pumping.

.8 Heating water piping may be tested by filling the system with water and applying a hydrostatic pressure of 125 psig (860 kPa) which is to be maintained for at least 24 hours. If a freezing hazard exists the Consultant may permit a compressed air test to be substituted.

.9 Perform tests before application of pipe covering. Test buried and concealed piping before backfilling or concealing in structure. Protect equipment and parts not capable of withstanding test pressure during test.

.10 Any leaks found are to be properly repaired and test reapplied until results satisfactory to the Consultant are obtained.

3.8 – PLACING IN OPERATION

.1 Upon completion of the work and before turning over the job, the Contractor is to make a complete test of the various systems.

.2 Flush and sterilize domestic water mains in accordance with the procedures established by AWWA Specification C601.

.3 Flush all other domestic water piping in accordance with Local and Provincial Codes.

END

PART 1 - GENERAL

1.1 – GENERAL

.1 Conform to the General Conditions, Supplementary General Conditions and Sections of Division 1, as applicable.

.2 Conform to the General Provisions of Section 15 01 00.

.3 Provide work under this Section as shown or specified and in accordance with the requirements of the Contract documents.

1.2 – RELATED WORK SPECIFIED ELSWHERE

.1 Basic Materials and Methods, Section 15 05 00.

.2 Plumbing Fixtures and Trim, Section 15 44 00.

1.3 – CLARIFICATION

.1 Insulation may extend through fire rated separations when used in conjunctions with fire stopping material specifically tested for this purpose.

PART 2 - PRODUCTS

2.1 – GENERAL

.1 Insulating material by Fibreglas Canada Limited, Manson Insulation, Knauf Fibreglass & Owens Corning are considered equal.

.2 For adhesives and mastics for applications noted equal products of the following manufacturers will be accepted: Flinkote, Benjamin Foster; Minnesota Mining and Manufacturing; Pronto.

.3 All insulation and covering material are to be non combustible, and asbestos free. Vapour barrier jacket, and adhesive to be fire retardant to approved standards of fire hazard classification for building materials. Flame spread rating not to exceed 25 and smoke rating not to exceed 50.

.4 "Koolphen K" phenolic foam insulation with a thermal conductivity of 0.13 BTU.in/HR.FtSq. F and factory applied ASJ jacket is acceptable, except where piping is exposed then PVC jacketing is required. Thickness of insulation shall provide equivalent or better thermal resistance (R-factor) than specified.

2.2 – MATERIALS

.1 Domestic Cold Water

.1 Piping – Fibreglass heavy density fiberglass insulation with factory applied all services vapour barrier jacket lapped and ahdhered with Flinkote 203 adhesive or equal. Insulation conductivity shall be in the range of 0.22 – 0.28 BTU in (h/ft.F) with mean temperature of 100°F. Seal all joints with 4" (100mm) wide strip of all service jacket material. Finished with a smooth layer of asbestos free finishing cement and covered with canvas.

.2 Fittings and valves – Moulded or fabricated mitred segments of a thickness equal to that of the pipe insulation and finished with a layer of asbestos free finishing cement, trowelled smooth and covered with canvas.

.3 Alternate method for insulating fittings: Pre-moulded high impact PVC fitting covers with fiberglass inserts, end joints sealed with PVC tape.

.4 Exposed insulation – Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.

.5 Insulation to be the thickness as follows:

Pipe Size	Insulation Thickness
½"(13mm)-1 ¼" (32mm)∅ pipe	1" (25mm)
1 ½" (38mm) – 8"(203mm) ∅ pipe	1 1/2" (38mm)

.2 Domestic Hot Water, Domestic Hot Water Recirculating Piping

.1 Piping – Fibregalls heavy density fiberglass insulation with factory applied all service jacket lapped and adhered with Flintkote 203 adhesive or equal. Seal all joints with 4" (100mm) wide strip of all service jacket material. Insulation conductivity shall be in the range of 0.22 – 0.28 BTU in/(h.ft.F) with mean temperature of 100°F.

.2 Fittings and valves – Moulded or fabricated mitred segments of a thickness equal to that of the pipe insulation and finished with a layer of asbestos free finishing cement, trowelled smooth and covered with canvas.

.3 Alternate method for insulating fittings: Pre-moulded high impact PVC fitting covers with fiberglass inserts, end joints sealed with PVC tape.

.4 Exposed insulation – Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.

.5 Insulation to be the thickness as follows:

Pipe Size	Insulation Thickness
½"(13mm)-1 ¼" (32mm)∅ pipe	1" (25mm)
1 ½" (38mm) – 8"(203mm) ∅ pipe	1 1/2" (38mm)

.3 Heating Supply and Return Piping

.1 Piping – Fibregalls heavy density fiberglass insulation with factory applied all service jacket lapped and adhered with Flintkote 203 adhesive or equal. Seal all joints with 4" (100mm) wide strip of all service jacket material. Insulation conductivity shall be in the range of 0.22 – 0.29 BTU in/(h.ft.F) with mean temperature of 125°F.

.2 Fittings and valves – Moulded or fabricated mitred segments of a thickness equal to that of the pipe insulation and finished with a layer of asbestos free finishing cement, trowelled smooth and covered with canvas.

.3 Alternate method for insulating fittings: Pre-moulded high impact PVC fitting covers with fiberglass inserts, end joints sealed with PVC tape.

.4 Exposed insulation – Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.

.5 Insulation to be the thickness as follows:

Pipe Size	Insulation Thickness
¾" (19mm)-3(75mm)Ø pipe	1" (25mm)
4(100mm) – 8"(203mm) Ø pipe	1 1/2" (38mm)

.4 Hot Water and Drain Piping at Handicapped Fixtures

.1 Armstrong Armaflex 2000 self seal pipe insulation, closed cell elastomeric and flexible, ½" (13mm) thickness. Secure joints with 3M #471 tape. Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.

PART 3 – EXECUTION

3.1 - GENERAL

.1 Do not apply insulating materials until equipment to be insulated has been properly cleaned, dried and tested to the satisfaction of the Consultant.

.2 Apply all insulation, wrapping, vapour barrier, adhesives, coatings and cement in strict accordance with manufacturer's recommendations.

.3 Do not apply any insulation or finishing when the ambient temperature in the space is less than 50°F. (10°C).

3.2 – INSTALLATION APPLICATION

.1 Apply all covering in a neat workmanlike manner to present a clean appearance upon completion of the job.

.2 Apply all insulation in a manner to facilitate replacing and/or servicing of equipment.

.3 Make good and refinish cracks, undulations or any other deficiencies occurring in the insulation or vapour barrier.

.4 On all piping, equipment and ductwork, terminate the insulation neatly around all openings and items requiring periodic access. Insulate separately with removable 16 gauge galvanized sheet steel panels lined with rigid slab insulating materials providing equivalent insulation to that on the adjoining surface.

.5 Provide metal corners concealed with canvas finish on all exposed rigid duct insulations.

.6 Do not use staples on vapour barriers.

.7 Provide the following insulation work:
1. All new domestic hot water, domestic hot water recirculating and cold water piping, including water meter, accessories, etc.
2. All new heating supply and return piping.
3. All new exposed domestic hot water drain at each handicapped fixture 1/2″ (13mm) pipe insulation.

.8 On all piping having vapour barrier jacket, the adjoining section of insulation is to be butted firmly together and the longitudinal seams of the vapour jacket to be sealed with vapour barrier adhesive. End joints are to be sealed with 4″ (100mm) factory furnished vapour barrier strips.

.9 Apply insulation over clean dry surfaces butting and adjoining sections firmly together and sealing or taping smoothly over joints.

.10 Where the pipe hanger is around the insulation, provide a 6″ (152 mm) length at equal thickness of moulded thermo – 12 insulation, protected with a saddle, within the pipe support. Coordinate with Contractor installing hangers referenced in Section 15 05 00.

.11 Extend pipe and duct insulation and covering through sleeves, walls, floors, ceilings, and structural beams, unless indicated otherwise on drawings, or other sections of this specification.

.12 Cover angles and standing seams which extend beyond face of applied insulation with ½″ (13mm) thick blanket of glass fibre insulation fitted with factory applied facing of fire resistant kraft paper. Provide 3″ (75mm) overlap on each side of angle or seam. Apply strips of 1″ (25mm) thick glass fibre insulation board over blanket type insulation, allowing extended portion of angle or seam to project through work.

.13 Seal holes, corners, and joints with 3″ (75mm) wide scrim foil tape immediately following application of insulating materials.

END

PART 1 - GENERAL

1.1 – GENERAL

.1 Conform to the General Provisions of Section 15 01 00.

.2 Provide work under this Section as shown or specified and in accordance with the requirements of the Contract documents.

1.2 – RELATED WORK SPECIFIED ELSWHERE

.1 Basic Materials and Methods, Section 15 05 00.

.2 Insulation, Section 15 18 00.

.3 Plumbing Fixtures and Trim, Section 15 44 00.

1.3 – QUALITY ASSURANCE

.1 Requirements of Regulatory Agencies:

1. Comply with local bylaws and standards.
2. Comply with regulations under the Ontario Hydro Electrical Safety Code (latest edition)
3. Conform to Ontario Building Code (latest edition) containing the Building Code Act, and Ontario Reg. 403/97 including all amendments.
4. Conform to ACNBC Canadian Plumbing Code current edition.

1.4 – SUBMITTALLS

.1 Submit shop drawings in accordance with Paragraph 1.4 Section 15 01 10 for the following items:

- Plumbing specialties
- Floor Drains
- Cleanouts
- Fixture Carriers

.2 Submit inspection certificates obtained from local inspection authorities.

.3 Submit certificates indicating that all required testing has been completed.

1.5 – APPROVAL

.1 Additional manufacturers wishing to bid products other than the product specified herein, are to submit to the Consultant prior to Tender close a list of three past installations of products similar to those listed. Complete catalogue data along with

deviations from the product specified are to be noted in the submittal to the Consultant. The manufacturer guarantees the proposed substitute product to comply with the product specified and as detailed on the Drawings, unless the deviations are so noted in the submittal for approval.

PART 2 - PRODUCTS

2.1 – FLOOR AND HUB DRAINS

.1 Flor drains to Ancon FD-200-L, Enpoco, smith SQ4-1753-D-SQ5 or Zurn in 3″ (75mm) outlet size. Drain to be complete with trap and ½″ (13mm) thick, polished nickel bronze adjustable strainer (match existing size if floor drain is being replaced with new). Where shown as funnel floor drain, provide Ancon FD-100-G, Smith 2005-3591NB, fitted with 9″ (225mm) x 4″ (100mm) oval funnels. Drains in shower and similar wet areas to have “C” membrane clamp.

.2 Floor drains in utility, service, storage, etc, areas shall be Ancon FD-100, Enpoco, Smith 2005A or Zurn, 3″ (75mm) outlet size, ½″ (13 mm) thick nickel bronze strainer.

.3 Hub drains for planting areas shall be Ancon FD-860, Enpoco, Smith 2675 or Zurn in 3″ (75mm) outlet, with satin bronze tub.

2.2 – CLEANOUTS

1 All cleanouts to be made with standard TY branch and Y branch and bend using Ancon Model CO-300-S, Enpoco, Smith 4930 or Zurn floor type cleanouts with nickel bronze tops (match existing size if clean out is being replaced with new).

.2 Cleanouts in finished walls to be concealed with Ancon, Enpoco, Smith 4930 or Zurn floor type cleanouts with nickel bronze tops (match existing size if clean out is being replaced with new).

.3 In floor with terrazzo finish, use Ancon CO-200-US, Encopo, Smith 4200 or Zurn inlay type cleanout with square recessed nickel bronze access cover and frame.

.4 In floors with waterproof membrane, use Ancon CO-100-C-S-1, Enpoco, Smith 4020Y or Zurn floor level cleanout with anchoring flange and membrane clamp, satin nickel bronze square top.

.5 In carpet floors, use Ancon CO-100-CF, Enpoco, Smith or Zurn with carpet clamping flanges.

.6 Cleanouts to be placed where shown, but wheter shown or not, there is to be a cleanout at the base of every soil stack Ancon model CO-4619(H), Enpoco, Smith 4530 or Zurn. Install cleanout on main building drain just before it leaves the building.

.7 In walls for urinals, use Ancon Model CO-590-B-RD, Enpoco, smith or Zurn wall cleanout with round polished steel access cover.

2.3 – VENT STACKS .1 All new ventstacks to be provided with insulated ventstacks supplied and installed by Division 7. This Division to connect new vents to stacks.

2.4 – SHOCK ABSORBERS .1 Shock absorbers shall ben Ancon series Shock Guard all stainless steel construction with nesting bellows precharged with air.

.2 Enpoco, Smith or Zurn are acceptable manufacuturers.

2.5 – FIXTURE CARRIERS .1 Provide Ancon Model CA-411 Lavatory Carrier with epoxy coated cast iron foot support heavy duty rectangular steel uprights, epoxy coated cast iron support, heavy duty rectangular steel uprights, epoxy coated cast iron support arms with integral locking device and leveling screws for all lavatories mounted on stud partition walls or block walls.

.2 Provide Ancon Model CA-321 Urinal Carrier with epoxy coated cast iron foot support heavy duty rectangular steel structural uprights with universal steel hanger support plate and bottom bearing plate and plated hardware for all urinals mounted on stud partition walls or block walls.

.3 Provide Ancon Model CA-101 for single water closet or back water closets epoxy coated cast iron horizontal adjustable fittings face place and foot supports invertible for siphon jet or blow jet water closets, complete with ABS extension with integral test cap plated hardware and neoprene gaskets, for all wall hung water closets mounted on stud or block walls.

.4 Provide Ancon Model CA-421 for drinking fountain, epoxy coated cast iron foot support heavy duty rectangular steel structural uprights with universal steel hanger support plate for all drinking fountains mounted on stud partition walls or block walls.

.5 Enpoco, Smith or Zurn are acceptable manufacuturers.

2.6 – DIELECTRIC UNIONS .1 Provide wherever pipes of dissimilar metals are joined.

.2 Provide insulting unions for pipe sizes 2″ (50mm) and under and flanges for pipe sizes 2 ½″ (65mm) and over.

.3 Cast brass adapters may be used where approved by the Consultant.

.4 Provide an isolating separations wherever piping may touch dissimilar metal studs, joists, concrete, etc.

2.7 – BACKFLOW PREVENTERS .1 Install backflow preventers as required by the OBC and local regulations. Install and test in accordance with CAN/CSA B64 standards.

PART 3 – EXECUTION

3.1 – PLUMBING SPECIALTIES

.1 Cleanouts

.1 Cleanouts to be the same size as a pipe up to 4″ (100mm) and not less than 4″ (100mm) for larger pipes.

.2 Provide cleanouts at the end of mains and branches, at changes in directions, in long straight runs, at the base of all soil stacks and rainwater leader and where required by code.

.3 Use extended cleanouts for piping installed below grade and furred ceiling spaces.

.4 Co-ordinate final cleanout elevations and configurations with floor finishes.

.2 Floor & Hub Drains

.1 Reference shall be made the Architectural Drawings for slopes of floors and locations of floor drains with regard to furniture, benches, etc, and on specific placing.

.2 Provide drains, complete with traps, where shown on drawings.

.3 Provide trap seal primers and supply lines to each drain. All trap seal primers shall be accessible, provide suitable access doors where necessary.

.4 Co-ordinate final drain elevation and configuration with floor drains.

.3 Water Hammer Arrestors

.1 Provide 24″ (610mm) air chambers fabricated from Type L, copper tubing with capped end, or water hammer arrestors, at each plumbing fixture or fixture group, and where else necessary to prevent water hammer.

.4 Fixture Carriers

.1 Fasten carriers securely to the building structure with ½″ (13mm) bolts and necessary anchors.

END

PART 1 - GENERAL

1.1 – GENERAL

.1 Conform to the General Provisions of Section 15 01 00.

.2 Provide work under this Section as shown or specified and in accordance with the requirements of the Contract documents.

1.2 – QUALITY ASSURANCE

.1 Requirements of Regulatory Agencies.

1. Comply with local bylaws and standards.
2. Comply with regulations under the Ontario Hydro Electrical Safety Code (latest edition).
3. Conform to Ontario Building Code 1997 containing the Building Code Act, and Ontario Reg. 403/97 including all amendments.
4. Conform to ACNBC Canadian Plumbing Code current edition.

1.3 – SUBMITTALS

.1 Submit shop drawings and maintenance manuals for all plumbing fixtures in accordance with Section 15 01 10.

.2 Submit inspection certificates obtained from local inspection authorities.

.3 Submit certificates indicating that all required testing has been completed.

1.4 – ALTERNATE PRODUCTS

.1 Additional manufacturers wishing to bid products, other than the products **specified herein**, are to submit the Consultant prior to Tender close a list of three past installations of products similar to those listed. Complete catalogue data along with deviations from the product specified are to be noted in the submittals to the Consultant. The manufacturer guarantees the proposed substitute product to comply with the product specified and as detailed on the drawings, unless the deviations are so noted in the submittals for approval.

PART 2 - PRODUCTS

2.1 – PLUMBING FIXTURES .1 All plumbing fixtures to be CSA approved, Class A fixtures.

.2 Fixture Reference “**WC-1**”: Water closet to be vitreous china, wall-mount, siphon jet, quiet action, low-consumption (4.8 Lpf) closet bowl elongated rim, self draining jet, bolt caps, 1 ½” (38mm) top spud and heavy duty front open front seat less cover with check hinge. All toilets and seats to be white. Provide necessary floor mount carrier to suit wall construction. Provide electronic flush valve with hardwire (24 VAC) sensor on valve c/w manual push-button override. Provide optional 24-hour automatic flush factory set to ‘OFF’. Division 15 to provide all necessary 110 to 24VAC transformers to suit all required electronic fixtures. Note: Flush valve to be adjustable to match water closet reduced to flow of 4.8 Lpf.

Manufacturer: American Standard “AFWALL Flow-Wise” Model 3351.001

Flush Valve: Delta Model 81T201HWA

Seat: Olsonite #8C
Centoco or Beneke equivalent

.3 Fixture Reference “**U-1**”: Wall-hung, wall outlet, water-less Urinal.

Manufacturer: Sloan WES-1000

Wall Carrier: Ancon Model CA-321
Enpoco,Smith or Zurn equivalent

.4 Fixture Reference “**SD**”: Hands-free soap dispenser.

Manufacturer: Delta model DESD-550 w/ 060919A wiring (hardwired)

.5 Fixture Reference **"LAV-1,2,3":** Vanity basin to be solid surface countertop with integral bowls(see Plumbing Note #24 on Drawing M101). Provide hardwired sensor faucet with mechanical mixing valve housed in 10"x10" control box with stainless steel cover. Provide vandal proof aerator and offset grid strainer assembly. Provide **offset** chrome plated P-trap with cleanout for all basins. Maximum flow rate of 1.84 GPM (8.35 LPM). Provide 120AC/6VDC power converter.

Manufacturer:	Bradley Terreon Lav Deck Model LD-3010/MOD
Faucet:	Delta Model 591T0266
Drain:	Powers Crane P-3902 Cambridge Brass, McGuire
Supplies:	Powers Crane P4252 Cambridge Brass or McGuire equivalent
Trap:	Powers Crane P4001 Cambridge Brass or McGuire equivalent
Wall Carrier*:	Ancon CA-411 Enpoco, Smith or Zurn equivalent

*** Note: Mechanical Contractor shall install "heady duty" lavatory carriers as per the Architectural Details Sheet A202. Provide one carrier support at both ends of the lavatory plus one carrier in-between each bowl.**

.6 Fixture Reference **"L-1H"**: Handicapped lavatory to be vitreous china wall-hung lavatory with integral back, concealed front overflow, rectangular basin, splash lip, soap depressions, mounting brackets. Provide supplies with lockshield stops complete with hard wired sensor faucet with mechanical mixing valve, vandal proof aerator and offset grid strainer assembly. Provide hardwired sensor faucet with mechanical mixing valve housed in 10"x10" control box with stainless steel cover. Provide vandal proof aerator and offset grid strainer assembly. Provide **offset** chrome plated P-trap with cleanout for all basins. Maximum flow rate of 1.84 GPM (8.35 LPM). Provide 120AC/6VDC power converter. Provide offset chrome plated P-trap with cleanout for all lavatories. Provide vitreous china/knee contact guard. Maximum flow rate of 1.84 GPM (8.35 LPM). Provide 120AC/6VDC power converter.

Manufacturer:	
American Standard	0954.00 w/0059.020 contact guard
“Murro”	
Crane “Serena”	Model 129V w/ 132 contact guard
Gerber	Model 12-464 w/ contact guard
Kohler	Model K-2028-4/K-2057 w/ contact guard
Briggs	Model 6640/6645 w/ contact guard
Faucet:	Delta 591T0266
Drain:	Delta 33T290
Supplies:	(provide as required)
Trap:	Delta 33T311
Wall Carrier:	Ancon CA-411, Enpoco, Smith or Zurn equivalent

PART 3 - EXECUTION

3.1 – WORKMANSHIP

.1 Remove existing floor finishes.

.2 Apply tile or backing coats to clean and sound surfaces in accordance with tile adhesive manufacturers’ written instructions.

.3 Fit tile around corners, fitments, fixtures, drawings and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.

.4 Maximum surface tolerance 1:800.

.5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation.

.6 Lay out tiles so perimeter tiles are minimum ½ size.

.7 Sound tiles after setting and replace – sounding units to obtain full bond.

.8 Make internal angles square.

.9 Install threshold strips and junction of tile flooring and dissimilar materials.

.10 Clean installed tile surfaces after installation and grouting cured.

3.2 – FLOOR TILE .1 Install in accordance with TTMAC details.

3.3 – WALL BASE TILE .1 Install trim caps level and straight with butt joints flush. Inside and outside corners shall be mitred with a power mitre saw.

.2 Install in accordance with TTMAC details.

.3 Install cut tile edge down toward top edge of wall base. Shall be manufactured edge.

3.4 – WALL TILE .1 Install in accordance with TTMAC details.

3.5 – FLOOR SEALER AND PROTECTIVE COATING .1 Apply in accordance with manufacturers instructions.

END

APPENDIX "B"

TERMS OF PAYMENT

TP1 Amount Payable – General

1.1. Subject to any other provisions of the contract, Her Majesty shall pay the Contractor, at the times and in the manner hereinafter set out, the amount by which

1.1.1. the aggregate of the amount described in TP2 exceeds

1.1.2. the aggregate of the amount described in TP3

and the Contractor shall accept that amount as payment in full satisfaction for everything furnished and done by him in respect of the work to which the payment relates.

TP2 Amounts Payable to the Contractor

2.1 The amounts referred to in TP1.1.1 are the aggregate of

2.1.1 the amounts referred to in the Articles of Agreement, and

2.1.2 the amounts, if any, that are payable to the Contractor pursuant to the General Conditions.

TP3 Amounts Payable to Her Majesty

3.1 The amounts referred to in TP1.1.2 are the aggregate of the amounts, if any, that the Contractor is liable to pay Her Majesty pursuant to the contract.

3.2 When making any payment to the Contractor, the failure of Her Majesty to deduct an amount referred to in TP3.1 from an amount referred to in TP2 shall not constitute a waiver of the right to do so, or an admission of lack of entitlement to do so in any subsequent payment to the Contractor.

TP4 Time of Payment

4.1 In these Terms of Payment :

4.1.1 The "payment period" means a period of 30 consecutive days or such other longer period as is agreed between the Contractor and the Engineer.

4.1.2 An amount is "due and payable" when it is due and payable by Her Majesty to the Contractor according to TP4.4, TP4.7 or TP4.10.

4.1.3 An amount is overdue when it is unpaid on the 1st day following the day upon which it is due and payable.

4.1.4 The "date of payment" means the date of the negotiable instrument of an amount due and payable by the Receiver General for Canada and given for payment.

4.1.5 The "Bank Rate" means the discount rate of interest set by the Bank of Canada in effect at the opening of business on the date of payment.

4.2 The Contractor shall, on the expiration of a payment period, deliver to the Engineer in respect of that payment period a written progress claim that fully describes any part of the work that has been completed, and any material that was delivered to the work site but not incorporated into the work, during that payment period.

4.3 The Engineer shall, not later than 10 days after receipt by him of a progress claim referred to in TP4.2 :

4.3.1 inspect the part of the work and the material described in the progress claim; and

4.3.2 issue a progress report, a copy of which the Engineer will give to the Contractor, that indicates the value of the part of the work and the material described in the progress claim that, in the opinion of the Engineer;

4.3.2.1 is in accordance with the contract; and

4.3.2.2 was not included in any other progress report relating to the contract.

4.4 Subject to TP1 and TP4.5 Her Majesty shall, not later than 30 days after the receipt by the Engineer of a progress report claim referred to in TP4.2, pay the Contractor :

4.4.1 an amount that is equal to 95 % of the value that is indicated in the progress report referred to in TP4.3.2 if a labour and material payment bond has been furnished by the Contractor, or

4.4.2 an amount that is equal to 90 % of the value that is indicated in the progress report referred to in TP4.3.2 if a labour and material payment bond has not been furnished by the Contractor :

4.5 It is a condition precedent to Her Majesty's obligation under TP4.4 that the Contractor has made and delivered to the Engineer:

4.5.1 a statutory declaration described in TP4.6 in respect of a progress claim referred to in TP4.2;

4.5.2 in the case of the Contractor's first progress claim, a construction schedule in accordance with the relevant sections of the Specifications; and

4.5.3 if the requirement for a schedule is specified, an update of the said schedule at the times identified in the relevant sections of the Specifications.

4.6 A statutory declaration referred to in TP4.5 shall contain a deposition by the Contractor that, up to the date of the Contractor's progress claim, the Contractor has complied with all its lawful obligations with respect to the Labour Conditions, and that all lawful obligations of the Contractor to subcontractors and suppliers of material in respect of the work under the contract have been fully discharged.

4.7 Subject to TP1 and TP4.8, Her Majesty shall, not later than 30 days after the date of issue of an Interim Certificate of Completion referred to in GC44.2, pay the Contractor the amount referred to in TP1 less the aggregate of:

4.7.1 the sum of all payments that were made pursuant to TP4.4;

4.7.2 an amount that is equal to the Engineer's estimate of the cost to Her Majesty of rectifying defects described in the Interim Certificate of Completion; and

4.7.3 an amount that is equal to the Engineer's estimate of the cost to Her Majesty of completing the parts of the work described in the Interim Certificate of Completion other than the defects referred to in TP4

4.8 It is a condition precedent to Her Majesty's obligation under TP4.7 that the Contractor has made and delivered to the Engineer :

4.8.1 a statutory declaration described in TP4.9 in respect of an Interim Certificate of Completion referred to in GC44.2; and

4.8.2 if so specified in the relevant sections of the Specifications, an update of the construction schedule referred to in TP4.5.2 and the updated schedule shall, in addition to the specified requirements, clearly show a detailed timetable that is acceptable to the Engineer for the completion of any unfinished work and the correction of all listed defects.

4.9 A statutory declaration referred to in TP4.8 shall contain a deposition by the Contractor that up to the date of the Interim Certificate of Completion the Contractor has:

4.9.1 complied with all of the Contractor's lawful obligations with respect to the Labour Conditions;

4.9.2 discharged all of the Contractor's lawful obligations to the subcontractors and suppliers of material in respect of the work under the contract; and

4.9.3 discharged the Contractor's lawful obligations referred to in TP4.6.

4.10 Subject to TP1 and TP4.11, Her Majesty shall, not later than 60 days after the date of issue of a Final Certificate of Completion referred to in GC GC44.1, pay the Contractor the amount referred to in TP1 less the aggregate of :

4.10.1 the sum of all payments that were made pursuant to TP4.4; and

4.10.2 the sum of all payments that were made pursuant to TP4.7.

4.11 It is a condition precedent to Her Majesty's obligation under TP4.10 that the Contractor has made and delivered a statutory declaration described in TP4.12 to the Engineer.

4.12 A statutory declaration referred to in TP4.11 shall, in addition to the depositions described in TP4.9, contain a disposition by the Contractor that all of the Contractor's lawful obligations and any lawful claims against the Contractor that arose out of the performance of the contract have been discharged and satisfied.

TP5 Progress Report and Payment Thereunder Not Binding on Her Majesty

5.1 Neither a progress report referred to in TP4.3 nor any payment made by Her Majesty pursuant to these Terms of Payment shall be construed as an admission by Her Majesty that the work material or any part thereof is complete, is satisfactory or is in accordance with the contract.

TP6 Delay in Making Payment

6.1 Notwithstanding TP5 any delay by Her Majesty in making any payment when it is due pursuant to these Terms of Payment shall not be a breach of the contract by Her Majesty.

6.2 Her Majesty shall pay, without demand from the Contractor, simple interest at the Bank Rate plus 1 % centum on any amount which is overdue pursuant to TP4.1.3, and the interest shall apply from and include the day such amount became overdue until the day prior to the date of payment except that :

6.2.1 interest shall not be payable or paid unless the amount referred to in TP6.2 has been overdue for more than 15 days following

6.2.1.1 the date the said amount became due and payable; or

6.2.1.2 the receipt by the Engineer of the Statutory Declaration referred to in TP4.5, TP4.8 or TP4.11;

whichever is the later; and

6.2.2 interest shall not be payable or paid on overdue advance payments if any.

TP7 Right of Set-off

7.1 Without limiting any right of set-off or deduction given or implied by law or elsewhere in the contract, Her Majesty may set off any amount payable to Her Majesty by the Contractor under this contract or under any current contract against any amount payable to the Contractor under this contract.

7.2 For the purposes of TP7.1, “current contract” means a contract between Her Majesty and the Contractor :

7.2.1 under which the Contractor has an undischarged obligation to perform or supply work, labour or material; or

7.2.2 in respect of which Her Majesty has, since the date on which the Articles of Agreement were made, exercised any right to take the work that is the subject of the contract out of the Contractor’s hands.

TP8 Payment in Event of Termination

8.1 If the contract is terminated pursuant to GC41, Her Majesty shall pay the Contractor any amount that is lawfully due and payable to the Contractor as soon as is practicable under the circumstances.

TP9 Interest in Settled Claims

9.1 Her Majesty shall pay to the Contractor simple interest on the amount of a settled claim at an average Bank Rate plus 1 ¼ per centum from the date the settled claim was outstanding until the day prior to the date of payment.

9.2 For the purposes of TP9.1:

9.2.1 a claim is deemed to have been settled when an agreement in writing is signed by the Engineer and the Contractor setting out the amount of the claim to be paid by Her Majesty and the items of work for which the said amount is to be paid;

9.2.2 an “average Bank Rate” means the discount rate of interest set by the Bank of Canada in effect at the end of each calendar month averaged over the period the settled claim was outstanding;

9.2.3 a settled claim is deemed to be outstanding from the day immediately following the date the said claim would have been due and payable under the contract had it not been disputed.

9.3 For the purposes of TP9 a claim means a disputed amount subject to negotiation between Her Majesty and the Contractor under the contract.

APPENDIX "C"

GENERAL CONDITIONS

GC1 Interpretation

1.1 In the contract

1.1.1 Where reference is made to a part of the contract by means of numbers preceded by letters, the reference shall be construed to be a reference to the particular part of the contract that is identified by that combination of letters and numbers and to any other part of the contract referred to therein :

1.1.2 “contract” means the contract documents referred to in the Articles of Agreement;

1.1.3 “contract security” means any security given by the Contractor to Her Majesty in accordance with the contract;

1.1.4 “Engineer” means the officer or employee of Her Majesty who is designated pursuant to the Articles of Agreement and includes a person specially authorized by him to perform, on his behalf, any of his functions under the contract and is so designated in writing to the Contractor.

1.1.5 “material” includes all commodities, articles and things required to be furnished by or for the Contractor under the contract for incorporation into the work;

1.1.6 “Minister” includes a person acting for, or if the office is vacant, in place of the Minister and his successors in the Office, and his or their lawful deputy and any of his or their representatives appointed for the purposes of the contract;

1.1.7 “person” includes, unless the context otherwise requires, a partnership, proprietorship, firm, joint venture, consortium and a corporation;

1.1.8 “plant” includes all animals, tools, implements, machinery, vehicles, buildings, structures, equipment and commodities, articles and things other than material, that are necessary for the due performance of the contract;

1.1.9 “subcontractor” means a person to whom the Contractor has, subject to GC4, subcontracted the whole or any part of the work;

1.1.10 “superintendent” means the employee of the Contractor who is designated by the Contractor to act pursuant to GC19;

1.1.11 “work” includes, subject only to any express stipulation in the contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the contract.

1.2 The headings in the contract documents, other than in the Plans and Specifications, form no part of the contract but are inserted for convenience of reference only.

1.3 In interpreting the contract, in the event of discrepancies or conflicts between anything in the Plans and Specifications and the General Conditions, the General Conditions govern.

1.4 In interpreting the Plans and Specifications, in the event of discrepancies or conflicts between :

1.4.1 the Plans and Specifications, the Specifications govern;

1.4.2 the Plans, the Plans drawn with the largest scale govern; and

1.4.3 figured dimensions and scaled dimensions, the figured dimensions govern.

GC2 Successors and Assigns

2.1 The contract shall inure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and assigns.

GC3 Assignment of Contract

3.1 The contract may not be assigned by the Contractor, either in whole or part, without the written consent of the Minister.

GC4 Subcontracting by Contractor

4.1 Subject to this General condition, the Contractor may subcontract any part of the work.

4.2 The Contractor shall notify the Engineer in writing of this intention to subcontract.

4.3 A notification referred to in GC4.2 shall identify the part of the work, and the subcontractor with whom it is intended to subcontract.

4.4 The Engineer may object to the intended subcontracting by notifying the Contractor in writing within 6 days of receipt by the Engineer of a notification referred to in GC4.2.

4.5 If the Engineer objects to a subcontracting pursuant to GC4.2 the Contractor shall not enter into the intended subcontract.

4.6 The Contractor shall not, without the written consent of the Engineer, change a subcontractor who has been engaged by him in accordance with this General Conditions.

4.7 Every subcontract entered into by the Contractor shall adopt all of the terms and conditions of the contract that are of general application.

4.8 Neither a subcontracting nor the Engineer's consent to a subcontracting by the Contractor shall be construed to relieve the Contractor from any obligation under the contract or to impose any liability upon Her Majesty.

GC5 Amendments

5.1 No amendment or change in any of the provisions of the contract shall have any force or effect until it is reduced in writing.

GC6 No implied Obligations

6.1 No implied terms or obligations of any kind by or on behalf of Her majesty shall arise from anything in the contract and the express covenants and agreements therein contained and made by Her Majesty are the only covenants and agreements upon which any rights against Her Majesty are to be founded.

6.2 The contract supersedes all communications, negotiations and agreements, either written or oral, relating to the work that was made prior to the date of the contract.

GC7 Time of Essence

7.1 Time is of the essence of the contract.

GC8 Indemnification by Contractor

8.1 The Contractor shall identify and save Her Majesty harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings by whomever made, brought or prosecuted and in any

8.2 manner bases upon, arising out of, related to, occasioned by or attributable to he activities of the Contractor, his servants, agents, subcontractors and sub-subcontractors in performing the work including and infringement or an alleged infringement of a patent of invention or any other kind of intellectual property.

8.3 For the purposes of GC8.1, "activities" includes any act improperly carried out, any omission to carry out an act and any delay in carrying out an act.

GC9 Indemnification by Her Majesty

9.1 Her Majesty shall, subject to the Crown Liability Act, the Patent Act, and any other law that affects Her Majesty's rights, powers, privileges or obligations, indemnity and save the Contractor harmless from and against all claims, demands, losses, costs, damage, actions, suits or proceedings arising out of his activities under the contract that are directly attributable to :

9.1.1 lack of or a defect in Her Majesty's title to the work site whether real or alleged; or

9.1.2 an infringement or an alleged infringement by the Contractor of any patent of invention or any other kind of intellectual property occurring while the Contractor was performing any act of the purposes of the contract employing a model, plan or design or any other thing related to the work that was supplied by Her Majesty to the Contractor.

GC10 Members of House of Commons Not to Benefit

10.1 As required by the *Parliament of Canada Act*, it is an express condition of the contract that no member of the House of Commons shall be admitted to any share or part of the contract or to any benefit arising therefrom.

GC11 Notices

11.1 Any notice, consent, order, decision, direction or other communication, other than a notice referred to in GC11.4, that may be given to the Contractor pursuant to the contract may be given in any manner.

11.2 Any notice, consent, order, decision, direction or other communication required to be given in writing to any party pursuant to the contract shall, subject to GC11.4, be deemed to have been effectively given

11.2.1 to the Contractor, if delivered personally to the Contractor or the Contractor's superintendent, or forwarded by mail, telex or facsimile to the Contractor at the address set out in A4.1 or

11.2.2 to Her Majesty, if delivered personally to the Engineer, or forwarded by mail, telex or facsimile to the Engineer at the address set out in A1.2.1.

11.3 Any such notice, consent, order, decision, direction or other communication given in accordance with GC11.2 shall be deemed to have been received by either party

11.3.1 if delivered personally, on the day that it was delivered

11.3.2 if forwarded by mail, on the earlier of the day it was received and the sixth day after it was mailed, and

11.3.3 if forwarded by telex or facsimile, 24 hours after it was transmitted.

11.4. A notice given under GC38.1, GC40 and GC41, if delivered personally, shall be delivered to the Contractor if the Contractor is doing business as a sole proprietor or, if the Contractor is a partnership of corporation, to an officer thereof

GC12 Material, Plant and Real Property Supplied by Her Majesty

12.1 Subject to GC12.2, the Contractor is liable to Her Majesty for any loss of or damage to material, plant or real property that is supplied or placed in the care, custody and control of the Contractor by Her Majesty for use in connection with the contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control.

12.2 The Contractor is not liable to Her Majesty for any loss or damage to material, plant or real property referred to in GC12.1 if that loss or damage results from and is directly attributable to reasonable wear and tear.

12.3 The Contractor shall not use any material, plant or real property referred to in GC12.1 except for the purpose of performing this contract.

12.4 When the Contractor fails to make good any loss or damage for which he is liable under GC12.1 within a reasonable time after being required to do so by the Engineer, the Engineer may cause the loss or damage to be made good at the Contractor's expense, and the Contractor shall thereupon be liable to Her Majesty for the cost thereof and shall, on demand, pay to Her Majesty an amount equal to that cost.

12.5 The Contractor shall keep such records of all material, plant and real property referred to in GC12.1 as the Engineer from time to time requires and shall satisfy the Engineer, when requested, that such material, plant and real property are at the place and in the condition in which they ought to be.

GC13 Material, Plant and Real Property Become Property of Her Majesty

13.1 Subject to GC14.7 all material and plant and the interest of the Contractor in all real property, licenses, powers and privileges purchased, used or consumed by the Contractor for the contract shall, after the time of their purchase, use or consumption be the property of Her Majesty for the purposes of the work and they shall continue to be the property of Her Majesty,

13.1.1 in the case of material, until the Engineer indicates that he is satisfied that it will not be required for the work, and

13.1.2 in the case of plant, real property, licenses, powers and privileges, until the Engineer indicates that he is satisfied that the interest vested in Her Majesty therein is no longer required for the purposes of the work.

13.2 Material or plant that is the property of V irtue of GC13.1 shall not be taken away from the work site or used or disposed of except for the purposes of the work without the written consent of the Engineer.

13.3 Her Majesty is not liable for loss of or damage from any cause to the material or plant referred to in GC13.1 and the Contractor is liable for such loss or damage notwithstanding and the material or plant is the property of Her Majesty.

GC14 Permits and Taxes Payable

14.1 The Contractor shall, within 30 days after the date of the contract, tender to a municipal authority an amount equal to all fees and charges that would be lawfully payable to that municipal authority in respect of building permits as if the work were being performed for a person other than Her Majesty.

14.2 Within 10 days of making a tender pursuant to GC14.1, the Contractor shall notify the Engineer of his action and of the amount tendered and whether or not the municipal authority has accepted that amount.

14.3 If the municipal authority does not accept the amount tendered pursuant to GC14.1 the Contractor shall pay that amount to Her Majesty within 6 days after the time stipulated in GC14.2.

14.4 For the purposes of GC14.1 to GC14.3 "municipal authority" means any authority that would have jurisdiction respecting permission to perform the work if the owner were not Her Majesty.

14.5 Notwithstanding the residency of the Contractor, the Contractor shall pay any applicable tax arising from or related to the performance of the work under the Contractor.

14.6 In accordance with the Statutory Declaration referred to in TP4.9, a Contractor who has neither residence nor place of business in the province in which work under the contract is being performed shall provide Her Majesty with proof of registration with the provincial sales tax authorities in the said province.

14.7 For the purpose of the payment of any applicable tax or the furnishing of security for the payment of any applicable tax arising from or related to the performance of the work under the contract, the Contractor shall, notwithstanding the fact that all material, plant and interest of the Contractor in all real property, licenses,

powers and privileges, have become the property of Her Majesty after the time of purchase, the liable, as a user of consumer, for the payment or for the furnishing of security for the payment of any applicable tax payable, at the time of the use or consumption of that material, plant or interest of the Contractor in accordance with the relevant legislation.

GC15 Performance of Work under Direction of Engineer

15.1 The Contractor shall:

15.1.1 permit the Engineer to have access to the work and its site of all times during the performance of the contract;

15.1.2 furnish the Engineer with such information respecting the performance of the contract as he may require; and

15.1.3 give the Engineer every possible assistance to enable the Engineer to carry out his duty to see that the work is performed in accordance with the contract and to carry out any other duties and exercise any powers specially imposed or conferred on the Engineer under the contract.

GC16 Cooperation with Other Contractors

16.1 Where, in the opinion of the Engineer, it is necessary that other contractors or workers with or without plant and material be sent onto the work or its site, the Contractor shall, to the satisfaction of the Engineer, allow them access and cooperate with them in the carrying out of their duties and obligations.

16.2 If

16.2.1 the sending onto the work or its site of other contractors or workers pursuant to GC16.1 could not have been reasonably foreseen or anticipated by the Contractor when entering into the contract, and

16.2.2 the Contractor incurs, in the opinion of the Engineer, extra expense in complying with GC16.1, and

16.2.3 the Contractor has given the Engineer written notice of his claim for the extra expense referred to in GC16.2.2 within 30 days of the date that the other contractors or workers were sent onto the work or its site.

Her Majesty shall pay the Contractor the cost, calculated in accordance with GC48 to GC50, of the extra labour, plant and material that was necessarily incurred.

GC17 Examination of Work

17.1 If, at any time after the commencement of the work but prior to the expiry of the warranty or guarantee period, the Engineer has reason to believe that the work or any part thereof has not been performed in accordance with the contract, the Engineer may have that work examined by an expert of his choice.

17.2 If, as a result of an examination of the work referred to in GC17.1, it is established that the work was not performed in accordance with the contract, then, in addition to and without limiting or otherwise affecting any of Her Majesty's rights and remedies under the contract either at law or in equity, the Contractor shall pay Her Majesty, on demand, all reasonable costs and expenses that were incurred by Her Majesty in having that examination performed.

GC18 Clearing of Site

18.1 The Contractor shall maintain the work and its site in a tidy condition and free from the accumulation of waste material and debris, in accordance with any directions of the Engineer.

18.2 Before the issue of an interim certificate referred to in GC44.2, the Contractor shall remove all the plant and material not required for the performance of the remaining work, and all waste material and other debris, and

shall cause the work and its site to the clean and suitable for occupancy by Her Majesty's servants, unless otherwise stipulated in the contract.

18.3 Before the issue of a final certificate referred to in GC44.1, the Contractor shall remove from the work and its site all of the surplus plant and material and any waste material and other debris.

18.4 The Contractor's obligations described in GC18.1 to GC18.3 do not extend to waste material and other debris caused by Her Majesty's servants or contractors and workers referred to in GC16.1.

GC19 Contractor's Superintendent

19.1 The Contractor shall, forthwith upon the ward of the contract, designate a superintendent.

19.2 The Contractor shall forthwith notify the Engineer of the name, address and telephone number of a superintendent designated pursuant to GC19.1

19.3 A superintendent designated pursuant to GC19.1 shall be in full charge of the operations of the Contractor in the performance of the work and is authorized to accept any notice, consent, order, direction, decision or other communication on behalf of the Contractor that may be given to the superintendent under the contract.

19.4 The Contractor shall, until the work has been completed, keep a competent superintendent at the work site during work hours.

19.5 The Contractor shall, upon the request of the Engineer, remove any superintendent who, in the opinion of the Engineer, is incompetent or has been conducting himself improperly and shall forthwith designate another superintendent ho is acceptable to the Engineer.

19.6 Subject to GC19.5, the Contractor shall not substitute a superintendent without the written consent of the Engineer.

19.7 A breach by the Contractor of GC19.6 entitles the Engineer to refuse to issue any certificate referred to in GC44 until the superintendent has returned to the work site or another superintendent who is acceptable to the Engineer has been substituted.

GC20 National Security

20.1 If the Minister is of the opinion that the work is of a class or kind that involves the national security he may order the Contractor :

20.1.1 to provide him with any information concerning persons employed or to be employed by him for purposes of the contract; and

20.1.2 to remove any person from the work and its site if, in the opinion of the Minister, that person may be a risk to the national security.

20.2 The Contractor shall, in all contracts with persons who are to be employed in the performance of the contract, make provisions for his performance of any obligation that may be imposed upon him under GC19 to GC21.

20.3 The Contractor shall comply with an order of the Minister under GC20.1.

GC21 Unsuitable Workers

21.1 The Contractor shall, upon the request of the Engineer, remove any person employed by him for purposes of the contract who, in the opinion of the Engineer, is incompetent or has conducted himself improperly, and the Contractor shall not permit a person who has been removed to return to the work site.

GC22 Increased or Decreased Costs

22.1 The amount set out in the Articles of Agreement shall not be increased or decreased by reason of any increase or decrease in the cost of the work that is brought about by an increase or decrease in the cost of labour, plant or material or any wage adjustment arising pursuant to the Labour Conditions.

22.2 Notwithstanding GC22.1 and GC35, an amount set out in the Articles of Agreement shall be adjusted in the manner provided in GC22.3, if any change in a tax imposed under the *Excise Act*, the *Excise Tax Act*, the *Old Age Security Act*, the *Customs Act*, the *Customs Tariff* or any provincial sales tax legislation imposing a retail sales tax on the purchase of tangible personal property incorporated into Real Property.

22.2.1 occurs after the date of the submission by the Contractor of his tender for the contract,

22.2.2 applies to material, and

22.2.3 affects the cost to the Contractor of that material.

22.3 If a change referred to in GC22.2 occurs, the appropriate amount set out in the Articles of Agreement shall be increased or decreased by an amount equal to the amount that is established by an examination of the relevant records of the Contractor referred to in GCS1 to be the increase or decrease in the cost incurred that is directly attributable to that change.

22.4 For the purpose of GC22.2, where a tax is changed after the date of submission of the tender but public notice of the change has been given by the Minister of Finance before that date, the change shall be deemed to have occurred before the date of submission of the tender.

GC23 Canadian Labour and Material

23.1 The Contractor shall use Canadian labour and material in the performance of the work to the full extent to which they are procurable, consistent with proper economy and the expeditious carrying out of the work.

23.2 Subject to GC23.1, the Contractor shall, in the performance of the work, employ labour from the locality where the work is being performed to the extent to which it is available, and shall use the offices of the Canada Employment Centers for the recruitment of workers wherever practicable.

23.3 Subject to GC23.1 and GC23.2, the Contractor shall, in the performance of the work, employ a reasonable proportion of persons who have been on active service with the armed forces of Canada and have been honorably discharged therefrom.

GC24 Protection of Work and Documents

24.1 The Contractor shall guard or otherwise protect the work and its site, and protect the contract, specifications, plans, drawings, information, material plants and real property, whether or not they are supplied by Her Majesty to the Contractor, against loss or damage from any cause, and he shall not use, issue, disclose or dispose of them without the written consent of the Minister, except as maybe essential for the performance of the work.

24.2 If any document or information given or disclosed to the Contractor is assigned a security rating by the person who gave or disclosed it, the Contractor shall take all measures directed by the Engineer to be taken to ensure the maintenance of the degree of security that is ascribed to that rating.

24.3 The Contractor shall provide all facilities necessary for the purpose of maintaining security, and shall assist any person authorized by the Minister to inspect or to take security measures in respect of the work and its site.

24.4 The Engineer may direct the Contractor to do such things and to perform such additional work as the Engineer considers reasonable and necessary to ensure compliance with or to remedy a breach of GC24.1 to GC24.3.

GC25 Public Ceremonies and Signs

25.1 The Contractor shall not permit any public ceremony in connection with the work without the prior consent of the Minister.

25.2 The Contractor shall not erect or permit the erection of any sign or advertising on the work or its site without prior consent of the Engineer.

GC26 Precautions Against Damage, Infringement of Rights, Fire and Other Hazard

26.1 The Contractor shall, at his own expense, do whatever is necessary to ensure that :

26.1.1 no person, property, right easement or privilege is injured, damages or infringed by reasons of the Contractor's activities in performing the contract;

26.1.2 pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the work or plant;

26.1.3 fire hazard in or about the work or its site are eliminated and, subject to any direction that may be given by the Engineer, any fire is promptly extinguished;

26.1.4 the health and safety of all persons employed in the performance of the work is not endangered by the method or means of its performance;

26.1.5 adequate medical services are available to all persons employed on the work or its site at all times during the performance of the work;

26.1.6 adequate sanitation measures are taken in respect of the work and its site; and

26.1.7 all stakes, buoys and marks placed on the work or its site by or under the authority of the Engineer are protected and are not removed, defaced, altered or destroyed.

26.2 The Engineer may direct the Contractor to do such things and to perform such additional work as the Engineer considers reasonable and necessary to ensure compliance with or to remedy a breach of GC26.1.

26.3 The Contractor shall, at his own expense, comply with a direction of the Engineer made under GC26.2.

GC27 Insurance

27.1 The Contractor shall, at his own expense, obtain and maintain insurance contracts in respect of the work and shall provide evidence thereof to the Engineer in accordance with the requirements of the Insurance Conditions in Appendix "E".

27.2 The insurance contracts referred to in GC27.1 shall:

27.2.1 be in a form, of the nature, in the amounts, for the periods and containing the terms and conditions specified in Insurance Conditions in Appendix "E".and

27.2.2 provide for the payment of claims under such insurance contracts in accordance with GC28.

GC28 Insurance Proceeds

28.1 In the case of a claim payable under a Builders Risk/Installation (All Risks) insurance contract maintained by the Contractor pursuant to GC27, the proceeds of the claim shall be paid directly to Her Majesty, and

28.1.1 the monies so paid shall be held by Her Majesty for the purposes of the contract, or

28.1.2 if Her Majesty elects, shall be retained by Her Majesty, in which event they vest in Her Majesty absolutely.

28.2 In the case of a claim payable under a General Liability insurance contract maintained by the Contractor pursuant to GC27, the proceeds of the claim shall be paid by the insurer directly to the claimant.

28.3 If an election is made pursuant to GC28.1, the Minister may cause an audit to be made of the accounts of the Contractor and of Her Majesty in respect of the part of the work that was lost, damaged or destroyed for the purpose of establishing the difference, if any, between

28.3.1 the aggregate of the amount of the loss or damage suffered or sustained by Her Majesty, including any costs incurred in respect of the clearing and cleaning of the work and its site and any other amount that is payable by the Contractor to Her Majesty under the contract, minus any monies retained pursuant to GC28.1.2, and

28.3.2 the aggregate of the amounts payable by Her Majesty to the Contractor pursuant to the contract up to the date of the loss or damage.

28.4 A difference that is established pursuant to GC28.3 shall be paid forthwith by the party who is determined by the audit to be the debtor to the party who is determined by the audit to be the creditor.

28.5 When payment of a deficiency has been made pursuant to GC28.4, all rights and obligations of Her Majesty and the Contractor under the contract shall, with respect only to the part of the work that was the subject of the audit referred to in GC28.3, be deemed to have been expended and discharged.

28.6 If an election is not made pursuant to GC28.1.2 the Contractor shall, subject to GC28.7, clear and clean the work and its site and restore and replace the part of the work that was lost, damaged or destroyed at his own expense as if that part of the work had not yet been performed.

28.7 When the Contractor clears and cleans the work and its site and restores and replaces the work referred to in GC28.6, Her Majesty shall pay him out of the monies referred to in GC28.1 so far as they will thereunto extend.

28.8 Subject to GC28.7, payment by Her Majesty pursuant to GC28.7 shall be made in accordance with the contract but the amount of each payment shall be 100% of the amount claimed notwithstanding TP4.4.1 and TP4.4.2.

GC29 Contract Security

29.1 The Contractor shall obtain and deliver contract security to the Engineer in accordance with the provisions of the Contract Security Conditions.

29.2 If the whole or a part of the contract security referred to in GC29.1 is in the form of a security deposit, it shall be held and disposed of in accordance with GC43 and GC45.

29.3 If a part of the contract security referred to in GC29.1 is in the form of a labour and material payment bond, the Contractor shall post a copy of that bond on the work site.

GC30 Changes in the Work

30.1 Subject to GC5, the Engineer may, at any time before he issues his Final Certificate of Completion,

30.1.1 order work or material in addition to that provided for in the Plans and Specifications, and

30.1.2 delete or change the dimensions, character, quality, quality, description, location or position of the whole or any part of the work or material provided for in the Plans and Specifications or in any order made pursuant to GC30.1.1, if that additional work or material, deletion, or change is, in his opinion, consistent with the general intent of the original contract

30.2 The Contractor shall perform the work in accordance with such orders, deletions and changes that are made by the Engineer pursuant to GC30.1 from time to time as if they had appeared in and been part of the Plans and Specifications.

30.3 The Engineer shall determine whether or not anything done or omitted by the Contractor pursuant to an order, deletion or change referred to in GC30.1 increased or decreased the cost of the work to the Contractor.

30.4 If the Engineer determines pursuant to GC30.3 that the cost of the work to the Contractor has been increased, Her Majesty shall pay the Contractor the increased cost that the Contractor necessarily incurred for the additional work calculated in accordance with GC49 or GC50

30.5 If the Engineer determines pursuant to GC30.3 that the cost of the work to the Contractor has been decreased, Her Majesty shall reduce the amount payable to the Contractor under the contract by an amount equal to the decrease in the cost caused by the deletion or change referred to in GC30.1.2 and calculated in accordance with GC49.

30.6 GC30.3 to GC30.5 are applicable only to a contract or a portion of a contract for which a Fixed Price Arrangement is stipulated in the contract.

30.7 An order, deletion or change referred to in GC30.1 shall be in writing, signed by the Engineer and given to the Contractor in accordance with GC11.

31 Interpretation of Contract by Engineer

31.1 If, at the time before the Engineer has issued a Final Certificate of Completion referred to in GC44.1, any question arises between the parties about whether anything has been done as required by the contract or about what the Contractor is required by the contract to do, and, in particular but without limiting the generality of the foregoing, about

31.1.1 the meaning of anything in the Plans and Specifications,

31.1.2 the meaning to be given to the Plans and Specifications in case of any error therein, omission therefrom, or obscurity or discrepancy in their wording or intention,

31.1.3 whether or not the quality or quantity of any material or workmanship supplied or proposed to be supplied by the Contractor meets the requirements of the contract,

31.1.4 whether or not the labour, plant or material provided by the Contractor for performing the work and carrying out the contract are adequate to ensure that the work will be performed in accordance with the contract and that the contract will be carried out in accordance with its terms,

31.1.5 what quantity of any kind of work has been completed by the Contractor, or

31.1.6 the timing and scheduling of the various phases of the performance of the work, the question shall be decided by the Engineer whose decision shall be final and conclusive in respect of the work.

31.2 The Contractor shall perform the work in accordance with any decisions of the Engineer that are made under GC31.1 and in accordance with any consequential directions given by the Engineer.

GC32 Warranty and Rectification of Defects in Work

32.1 Without restricting any warranty or guarantee implied or imposed by law or contained in the contract documents, the Contractor shall, at his own expense,

32.1.1 rectify and make good any defect or fault that appears in the work or comes to the attention of the Minister with respect to those parts of the work accepted in connection with the Interim Certificate of Completion referred to GC44.2 within 12 months from the date of the Interim Certificate of Completion;

32.1.2 rectify and make good any defect or fault that appears in or comes to the attention of the Minister in connection with those part of the work described in the Interim Certificate of Completion referred to in GC44.2 within 12 months from the date of the Final Certificate of Completion referred to in GC44.1.

32.2 The Engineer may direct the Contractor to rectify and make good any defect or fault referred to in GC32.1 or covered by any other expressed or implied warranty or guarantee.

32.3 A direction referred to in GC32.2 shall be in writing, may include a stipulation in respect of the time within which a defect or fault is required to be rectified and made good by the Contractor, and shall be given to the Contractor in accordance with GC11.

32.4 The Contractor shall rectify and make good any defect or fault described in a direction given pursuant to GC32.2 within the time stipulated therein.

GC33 Non-Compliance by Contractor

33.1 If the Contractor fails to comply with any decision or direction given by the Engineer pursuant to GC18, GC24, GC26, GC31 or GC32, the Engineer may employ such methods as he deems advisable to do that which the Contractor failed to do.

33.2 The Contractor shall, on demand, pay Her Majesty an amount that is equal to the aggregate of all costs, expenses and damage incurred or sustained by Her Majesty by reason of the Contractor's failure to comply with any decision or direction referred to in GC33.1, including the cost of any methods employed by the Engineer pursuant toGC33.1.

GC34 Protesting Engineer's Decisions

34.1 The Contractor may, within 10 days after the communication to him of any decision or direction referred to in GC30.3 or GC33.1, protest that decision or direction.

34.2 A protest referred to in GC34.1 shall be in writing, contain full reasons for the protest, be signed by the Contractor and be given to Her Majesty by delivery to the Engineer.

34.3 If the Contractor gives a protest pursuant to GC34.2, any compliance by the Contractor with the decision or direction that was protested shall not be construed as an admission by the Contractor of the correctness of that decision or direction, or prevent the Contractor from taking whatever action he considers appropriate in the circumstance.

34.4 The giving of a protest by the Contractor pursuant to GC34.2 shall not relieve him from complying with the decision or direction that is the subject of the protest.

34.5 Subject to GC34.6, the Contractor shall take any action referred to in GC34.3 within three months after the date that a Final Certificate of Completion is issued under GC44.1 and not afterwards.

34.6 The Contractor shall take any action referred to in GC34.3 resulting from a direction under GC32 within three months after the expiry of a warranty or guarantee period and not afterwards.

34.7 Subject to GC34.8, if Her Majesty determines that the Contractor's protest is justified, Her Majesty shall pay the Contractor the cost of the additional labour, plant and material necessarily incurred by the Contractor in carrying out the protested decision or direction.

34.8 Costs referred to in GC34.7 shall be calculated in accordance with GC48 to GC50.

GC35 Changes in Soil Conditions and Neglect or Delay by Her Majesty.

35.1 Subject to GC35.2 no payment, other than a payment that is expressly stipulated in the contract, shall be made by Her Majesty to the Contractor for any extra expense or any loss or damage incurred or sustained by the Contractor.

35.2 If the Contractor incurs or sustains any extra expense or any loss or damage that is directly attributable to :

35.2.1 a substantial difference between the information relating to soil conditions at the work site that is contained in the Plans and Specifications or other documents supplied to the Contractor for his use in preparing his tender or a reasonable assumption of fact based thereon made by the

Contractor, and the actual soil conditions encountered by the Contractor at the work site during the performance of the contract, or

35.2.2 any neglect or delay that occurs after the date of the contract on the part of Her Majesty in providing any information or in doing any act that the contract either expressly required Her Majesty to do or that would ordinarily be done by an owner in accordance with the usage of the trade, he shall, within 10 days of the date the actual soil conditions described in GC35.2.1 were encountered or the neglect or delay described in GC35.2.2 occurred, give the Engineer written notice of his intention to claim for that extra expense or that loss or damage.

35.3 When the Contractor has given a notice referred to in GC35.2, he shall give the Engineer a written claim for extra expense or loss or damage within 30 days of the date that a Final Certificate of Completion referred to in GC44.1 is issued and not afterwards.

35.4 A written claim referred to in GC35.3 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable the Engineer to determine whether or not the claim is justified and the Contractor shall supply such further and other information for that purpose as the Engineer requires from time to time.

35.5 If the Engineer determines that a claim referred to in GC35.3 is justified, Her Majesty shall make an extra payment to the Contractor in an amount that is calculated in accordance with GC47 to GC50.

35.6 If, in the opinion of the Engineer, an occurrence described in GC35.2.1 results in a savings of expenditure by the Contractor in performing the contract, the amount set out in the Articles of Agreement shall, subject to GC35.7, be reduced by an amount that is equal to the saving.

35.7 The amount of the saving referred to in GC35.6 shall be determined in accordance with GC47 to GC49.

35.8 If the Contractor fails to give a notice referred to in GC35.2 and a claim referred to in GC35.3 within the times stipulated, an extra payment shall not be made to him in respect of the occurrence.

GC36 Extension to Time

36.1 Subject to GC36.2, the Engineer may, on the application of the Contractor made before the day fixed by the Articles of Agreement for completion of the work or before ay other date previously fixed under this General Conditions, extend the time for its completion by fixing a new date if, in the opinion of the Engineer, causes beyond the control of the Contractor have delayed its completion.

36.2 An application referred to I GC36.1 shall be accompanied by the written consent of the bonding company whose bond forms part of the contract security.

GC37 Assessments and Damages for Late Completion

37.1 For the purposes of this General Conditions :

37.1.1 the work shall be deemed to be completed on the date that an Interim Certificate of Completion referred to in GC44.2 is issued, and

37.1.2 “period of delay” means the number of days commencing on the day fixed by the Articles of Agreement for completion of the work and ending on the day immediately preceding the day on which the work is completed but does not include any day within a period of extension granted pursuant to GC36.1, and any other day on which, in the opinion of the Engineer, completion of the work was delayed for reasons beyond the control of the Contractor.

37.2 If the Contractor does not complete the work by the day fixes for its completion by the Articles of Agreement but completes it thereafter, the Contractor shall pay Her Majesty an amount equal to the aggregate of

37.2.1 all salaries, wages and travelling expenses incurred by Her Majesty in respect of persons overseeing the performance of the work during the period of delay;

37.2.2 the costs incurred by Her Majesty as a result of the inability to use the completed work for the period of delay, and

37.2.3 all other expenses and damages incurred or sustained by Her Majesty during the period of delay as a result of the work not being completed by the day fixes for its completion.

37.3 The Minister may waive the right of Her Majesty to the whole or any part of the amount payable by the Contractor pursuant to GC37.2 if, in the opinion of the Minister, it is in the public interest to do so.

GC38 Taking the Work Out of the Contractor's Hands

38.1 The Minister may, at his sole discretion, by giving a notice in writing to the Contractor in accordance with GC11, take all or any part of the work out of the Contractor's hands, and may employ such means as he sees fit to have the work completed if the Contractor

38.1.1 has not, within 6 days of the Minister or the Engineer giving notice to the Contractor in writing in accordance with GC11, remedied any delay in the commencement or any default in the diligent performance of the work to the satisfaction of the Engineer;

38.1.2 has defaulted in the completion of any part of the work within the time fixed for its completion by the contract;

38.1.3 has become insolvent or has committed an act of bankruptcy, and has neither made a proposal to its creditors nor filed a notice of intention to make such a proposal, pursuant to the Bankruptcy and Insolvency Act;

38.1.4 has committed an act of bankruptcy;

38.1.5 has abandoned the work;

38.1.6 has made an assignment of the contract without the consent required by GC3.1;or

38.1.7 has otherwise failed to observe or perform any of the provisions of the contract.

38.2 If the Contractor has become insolvent or has committed an act of bankruptcy, and has either made a proposal to its creditors or filed a notice of intention to make such a proposal, pursuant to the *Bankruptcy and Insolvency Act,* the Contractor shall immediately forward a copy of the proposal or the notice of intention to Her Majesty.

38.3 If the whole or any part of the work is taken out of the Contractor's hands pursuant to GC38.1,

38.3.1 the Contractor's right to any further payment that is due or accruing due under the contract is, subject only to GC38.5, extinguished, and

38.3.2 the Contractor is liable to pay Her Majesty, upon demand, an amount that is equal to the amount of all loss and damage incurred or sustained by Her Majesty in respect of the Contractor's failure to complete the work.

38.4 If the whole or any part of the work that is taken out of the Contractor's hands pursuant to GC38.1 is complete by Her Majesty, the Engineer shall determine the amount, if any, of the holdback or a progress claim that had accrued and was due prior to the date on which the work was taken out of the Contractor's hands and that is not required for the purposes of having the work performed or of compensating Her Majesty for any other loss or damage incurred or sustained by reason of the Contractor's default.

38.5 Her Majesty may pay the Contractor the amount determined not to be required pursuant to GC38.4.

GC39 Effect of Taking the Work Out of the Contractor's Hands

39.1 The taking of the work or any part thereof out of the Contractor's hands pursuant to GC38 does not operate so as to relieve or discharge him from any obligation under the contract or imposed upon him by law except the obligation to complete the performance of that part of the work that was taken out of his hands.

39.2 If the work or any part thereof is taken out of the Contractor's hands pursuant to GC38, all plant and material and the interest of the Contractor in all real property, licenses, powers and privileges acquired, used or provided by the Contractor under the contract shall continue to be the property of Her Majesty without compensation to the Contractor.

39.3 When the Engineer certifies that any plant, material, or any interest of the Contractor referred to in GC39.2 is no longer required for the purposes of the work, or that it is not in the interests of Her Majesty to retain that plant, material, or interest, it shall revert to the Contractor.

GC40 Suspension of Work by Minister

40.1 The Minister may, when in his opinion it is in the public interest to do so, require the Contractor to suspend performance of the work either for a specified or an unspecified period by giving notice of suspension in writing to the Contractor in accordance with GC11.

40.2 When a notice referred to in GC40.1 is received by the Contractor in accordance with GC11, he shall suspend all operations in respect of the work except those that, in the opinion of the Engineer, are necessary for the care and preservation of the work, plant and material.

40.3 The Contractor shall not, during a period of suspension, remove any part of the work, plant or material from its site without the consent of the Engineer.

40.4 If a period of suspension is 30 days or less, the Contractor shall, upon the expiration of the period, resume the performance of the work and has is entitled to be paid the extra cost, calculated in accordance with GC48 to GC50, of any labour, plant and material necessarily incurred by him as a result of the suspension.

40.5 If, upon the expiration of a period of suspension of more than 30 days, the Minister and the Contractor agree that the performance of the work will be continued by the Contractor, the Contractor shall resume performance of the work subject to any terms and conditions agreed upon by the Minister and the Contractor.

40.6 If, upon the expiration of a period of suspension of more than 30 days, the Minister and the Contractor do not agree that performance of the work will be continued by the Contractor or upon the terms and conditions under which the Contractor will continue the work, the notice of suspension shall be deemed to be a notice of termination pursuant to GC41.

GC41 Termination of Contractor

41.1 The minister may terminate the contract at any time by giving a notice of termination in writing to the Contractor in accordance with GC11.

41.2 When a notice referred to in GC41.1 is received by the Contractor in accordance with GC11, he shall subject to any conditions stipulated in the notice, forthwith cease all operations in performance of the contract.

41.3 If the contract is terminated pursuant to GC41.1, Her Majesty shall pay the Contractor, subject to GC41.4, an amount equal to

41.3.1 the cost to the Contractor of all labour, plant and material supplied by him under the contract up to the date of termination in respect of a contract or part thereof for which a Unit Price Agreement is stipulated in the contract, or

41.3.2 the lesser of

41.3.2.1 an amount, calculated in accordance with the Terms and Payment, that would have been payable to the Contractor had he completed the work, and

41.3.2.2 an amount that is determined to be due to the Contractor pursuant to GC49 in respect of a contract or part thereof for which is a Fixed Price Arrangement is stipulated in the contract,

less the aggregate of all amounts that were paid to the Contractor by Her Majesty and all amounts that are due to Her Majesty from the Contractor pursuant to the contract.

41.4 If Her Majesty and the Contractor are unable to agree about an amount referred to in GC41.3 that amount shall be determined by the method referred to in GC50.

GC42 Claims Against and Obligations of the Contractor or Subcontractor

42.1 Her Majesty may, in order to discharge lawful obligations of and satisfy claims against the Contractor or a subcontractor arising out of the performance of the contract, pay any amount that is due and payable to the Contractor pursuant to the contract directly to the obliges of and the claimants against the Contractor or the subcontractor but such amount, if any, as is paid by Her Majesty shall not exceed that amount which the Contractor would have been obliged to pay to such claimant had the provisions of the Provincial or Territorial lien legislation, or, in the Province of Quebec, the law relating to privileges, been applicable to the work. Any such claimant need not comply with the provisions of such legislation setting out the steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which claimant might have had;

42.2 Her Majesty will not make any payment as described in GC42.1 unless and until that claimant shall have delivered to Her Majesty :

42.2.1 a binding and enforceable Judgment or Order of a court of competent jurisdiction setting forth such amount as would have been payable by the Contractor to the claimant pursuant to the provisions of the applicable Provincial or Territorial lien legislation, or, in the Province of Quebec, the law relating to privileges, had such legislation been applicable to the work; or

42.2.2 a final and enforceable award of an arbitrator setting forth such amounts as would have been payable by the Contractor to the claimant pursuant to the provisions of the applicable Provincial or Territorial lien legislation, or, in the Province of Quebec, the law relating to privileges, had such legislation been applicable to the work; or

42.2.3 the consent of the Contractor authorizing a payment.

For the purposes of determining the entitlement of a claimant pursuant to GC42.2.1 and GC42.2.2, the notice required by GC42.8 shall be deemed to replace the registration or provisions of notice after the performance of work as required by any applicable legislation and no claim shall be deemed to have expired, become void or unenforceable by reason of the claimant not commencing any action within the time prescribed by any applicable legislation.

42.3 The Contractor shall, by the execution of this contract, be deemed to have consented to submit to binding arbitration at the request of any claimant those questions that need be answered to establish the entitlement of the claimant to payment pursuant to the provisions of GC42.1 and such arbitration shall have as parties to it any subcontractor to whom the claimant supplied material, performed work or rented equipment should such subcontractor wish to be adjoined and the Crown shall not be a party to such arbitration and, subject to

any agreement between the Contractor and the claimant to the contrary, the arbitration shall be conducted in accordance with the Provincial or Territorial legislation governing arbitration applicable in the Province or Territory in which the work is located.

42.4 A payment made pursuant to GC42.1 is, to the extent of the payment, a discharge of Her Majesty's liability to the Contractor under the contract and may be deducted from any amount payable to the Contractor under the contract.

42.5 To the extent that the circumstances of the work being performed for Her Majesty permit, the Contractor shall comply with all laws in force in the Province or Territory where the work is being performed relating to payment period, mandatory holdbacks, and creation and enforcement of mechanics' liens, builders' liens or similar legislation or in the Province of Quebec, the law relating to privileges.

42.6 The Contractor shall discharge all his lawful obligations and shall satisfy all lawful claims against him arising out of the performance of the work at least as often as the contract requires Her Majesty to pay the Contractor.

42.7 The Contractor shall, whenever requested to do so by the Engineer, make a statutory declaration deposing to the existence and condition of any obligations and claims referred to in GC42.6,

42.8 GC42.1 shall only apply to claims and obligations :

42.8.1 the notification of which has been received by the Engineer in writing before payment is made to the Contractor pursuant to TP4.10 and within 120 days of the date on which the claimant

42.8.1.1 should have been paid in full under the claimant's contract with the Contractor or subcontractor where the claim is for money that was lawfully required to be held back from the claimant; or

42.8.1.2 performed the last of the services, work or labour, or furnished the last of the material pursuant to the claimant's contract with the Contractor or subcontractor where the claim is not for money referred to in GC42.8.1.1, and

42.8.2 the proceedings to determine the right to payment of which, pursuant to GC42.2 shall have commenced within one year from the date that the notice referred to in GC42.8.1 was received by the Engineer, and

the notification required by GC42.8.1 shall set forth the amount claimed to be owing and the person who by contract is primarily liable.

42.9 Her Majesty may upon receipt of a notice of claim under GC42.8.1, without from any amount that is due and payable to the Contractor pursuant to the contract the full amount of the claim or any portion thereof.

42.10 The Engineer shall notify the Contractor in writing of receipt of any claim referred to in GC42.8.2 and of the intention of Her Majesty to withhold funds pursuant to GC42.9 and the Contractor may, at any time thereafter and until payment is made to the claimant, be entitled to post, with Her Majesty security in a form acceptable to Her Majesty in an amount equal to the value of the claim, the notice of which is received by the Engineer and upon receipt of such security, Her Majesty shall release to the Contractor any funds which would be otherwise payable to the Contractor, that were withheld pursuant to the provisions of GC42.9 in respect of the claim of any claimant for whom the security stands.

GC43 Security Deposit – Forfeiture or Return

43.1 If

43.1.1 the work is taken out of the Contractor's hands pursuant to GC38,

43.1.2 the contract is terminated pursuant to GC41, or

43.1.3 the Contractor is in breach of or in default under the contract, Her Majesty may convert the security deposit, if any, to Her own use.

43.2 If Her Majesty converts the contract security pursuant to GC43.1, the amount realized shall be deemed to be an amount due from Her Majesty to the Contractor under the contract.

43.3 Any balance of an amount referred to in GC43.2 that remains after payment of all losses, damage and claims of Her Majesty and others shall be paid for by Her Majesty to the Contractor if, in the opinion of the Engineer, it is not required for the purposes of the contract.

GC44 Engineer's Certificates

44.1 On the date that

44.1.1 the work has been completed, and

44.1.2 the Contractor has complied with the contract and all orders and directions made pursuant thereto,

both to the satisfaction of the Engineer, the Engineer shall issue a Final Certificate of Completion to the Contractor.

44.2 If the Engineer is satisfied that the work is substantially complete he shall, at any time before he issues a certificate referred to in GC44.1, issue an Interim Certificate of Completion to the Contractor, and

44.2.1 for the purposes of GC44.2 the work will be considered to be substantially complete,

44.2.1.1 when the work under the contract or a substantial part thereof is, in the opinion of the Engineer, ready for use by Her Majesty or is being used for the purposes intended; and

44.2.1.2 when the work remaining to be done under the contract is, in the opinion of the Engineer, capable of completion or correction at a cost of not more than :

44.2.1.2.1 3% of the first $500,000, and

44.2.1.2.2 2% of the next $500,000, and

44.2.1.2.3 1% of the balance

of the value of the contract at the time this cost is calculated.

44.3 For the sole purpose of GC44.2.1.2, where the work or a substantial part thereof is ready for use or is being used for the purpose intended and the remainder of the work or a part thereof cannot be completed by the time specified in A2.1, or as amended pursuant to GC36, for reasons beyond the control of the Contractor or where the Engineer and the Contractor agree not to complete a part of the work within the specified time, the cost of that part of the work which was either beyond the control of the Contractor to complete or the Engineer and the Contractor have agreed not to complete by the time specified shall be deducted from the value of the contract referred to GC44.2.1.2 and the said cost shall not form part of the cost of the work remaining to be done in determining substantial completion.

44.4 An Interim Certificate of Completion referred to in GC44.2 shall describe the parts of the work not completed to the satisfaction of the Engineer and all things that must be done by the Contractor :

44.4.1 before a Final Certificate of Completion referred to in GC 44.1 will be issued, and

44.4.2 before the 12-month period referred to in GC32.1.2 shall commence for the said parts and all the said things.

44.5 The Engineer may, in addition to the parts of the work described in an Interim Certificate of Completion referred to in GC44.2, require the Contractor to rectify any other parts of the work not completed to his satisfaction and to do any other things that are necessary for the satisfactory completion of the work.

44.6 If the contract or a part thereof is subject to a Unit Price Arrangement, the Engineer shall measure and record the quantities of labour, plant and material, performed, used and supplied by the Contractor in performing the work and shall, at the request of the Contractor, inform him of those measurements.

44.7 The Contractor shall assist and co-operate with the Engineer in the performance of his duties referred to in GC44.6 and shall be entitled to inspect any record made by the Engineer pursuant to GC44.6.

44.8 After the Engineer has issued a Final Certificate of Completion referred to in GC 44.1, he shall, if GC44.6 applies, issue a Final Certificate of Measurement.

44.9 A Final Certificate of Measurement referred to in GC44.8 shall :

44.9.1 contain the aggregate of all measurements of quantities referred to in GC44.5, and

44.9.2 be binding upon and conclusive between Her Majesty and the Contractor as to the quantities referred to therein.

GC45 Return to Security Deposit

45.1 After an Interim Certificate of Completion referred to in GC44.2 has been issued, Her Majesty shall, if the Contractor is not in breach of or in default under the contract, return to the Contractor all or any part of the security deposit that, in the opinion of the Engineer, is not required for the purposes of the contract.

45.2 After a Final Certificate of Completion referred to in GC 4401 has been issued, Her Majesty shall return to the Contractor the remainder of any security deposit unless the contract stipulates otherwise.

45.3 If the security deposit was paid into the Consolidated Revenue Fund of Canada, Her Majesty shall pay interest thereon to the Contractor at a rate established from time to time pursuant to Section 21(2) of the *Financial Administration Act*.

GC46 Clarification of Terms in GC47 and GC50

46.1 For the purposes of GC47 to GC50 :

46.1.1 “Unit Price Table” means the table set out in the Articles of Agreement, and

46.1.2 ”plant” does not include tools customarily provided by a tradesman in practicing his trade.

GC47 Additions or Amendments to Unit Price Table

47.1 Where a Unit Price Arrangement supplies to the contract or a part thereof the Engineer and the Contractor may, by an arrangement in writing :

47.1.1 add classes of labour, plant or material, and units of measurement, prices per unit and estimated quantities to the Unit Price Table if any labour, plant or material that is to be included in the Final Certificate of Measurement referred to in GC44.8 is not included in any class of labour, plant or material set out in the Unit Price Table; or

47.1.2 subject to GC47.2 and GC47.3, amend a price per unit set out in the Unit Price Table for any class of labour, plant or material included therein if the Final Certificate of Measurement referred to in GC44.8 shows or is expected to show that the total quantity of that class of labour, plant or material actually performed, used or supplied by the Contractor in performing the work is

47.1.2.1 less than 85 % of that estimated total quantity, or

47.1.2.2 in excess of 115 % of that estimated total quantity.

47.2 In no event shall the total cost of an item set out in the Unit Price Table that has been amended pursuant to GC47.1.2.1 exceed the amount that would have been payable to the Contractor had the estimated total quantity actually been performed, used or supplied.

47.3 An amendment that is made necessary by GC47.1.2.2 shall apply only to the quantities that are in excess of 115 %.

47.4 If the Engineer and the Contractor do not agree as contemplated in GC47.1, the Engineer shall determine the class and the unit of measurement of the labour, plant or material and, subject to GC47.2 and GC47.3, the price per unit therefore shall be determined in accordance with GC50.

GC48 Determination of Cost – Unit Price Table

48.1 Whenever, for the purposes of the contract it is necessary to determine the cost of labour, plant or material, it shall be determined by multiplying the quantity of that labour, plant or material expressed in the unit set out in column 3 of the Unit Price Table by the price of that unit set out in column 5 of the Unit Price Table.

GC49 Determine of Cost Prior to Undertaking Work : Lump Sum

49.1 If the method described in GC48 cannot be used because the labour, plant or material is of a kind or class that is not setout in the Unit Price Table, the cost of that labour, plant or material for the purposes of the contract shall be the amount agreed upon from time to time by the Contractor and the Engineer.

49.2 For the purposes of GC49.1, the Contractor shall submit to the Engineer any necessary cost information requested by the Engineer in respect of the labour, plant and material referred to in GC49.1.

GC50 Determine of Cost Following Completion of Work

50.1 Where it is not possible to pre-determine the cost of a change including elements not set out in the Unit Price Table, the actual cost of the change shall be equal to the aggregate of

50.1.1 all reasonable and, proper amounts actually expended or legally payable by the Contractor in respect of the labour, plant and material that falls within one of the classes of expenditure described in GC50.2 that are directly attributable to the performance of the contract;

50.1.2 an allowance for profit for all other expenditures or costs, included overhead, general administration costs, financing and interest charges, and every other cost, charge and expenses, but not including those referred to in GC50.1.1 or GC50.1.3 or of a class referred to in GC50.2, in an amount that is equal to 10 % of the sum of the expenses referred to in GC50.1.1 for that portion of the work undertaken by the Contractor's own forces, and 10 % for that portion of the work undertaken by subcontractors; plus

50.1.3 interest on the costs determined under GC50.1.1 and GC50.1.2, which interest shall be calculated in accordance with TP9;

provided that the total cost of an item set out in the Unit Price Table that is subject to the provisions of GC47.1.2.1 does not exceed the amount that would have been payable to the Contractor had the estimated total quantity of the said item actually been performed, used or supplied.

50.2 For the purposes of GC50.1.1 the classes of expenditure that may be taken into account in determining the cost of labour, plant and material are :

50.2.1 payments to subcontractors

50.2.2 wages, salaries and travelling expenses of employees of the Contractor located at the worksite and that portion of wages, salaries, bonuses, living and travelling expenses of personnel of the Contractor generally employed at the head office or at a general office to the Contractor provided they are actually and properly engaged on the work under the contract;

50.2.3 assessments payable under any statutory authority, which include, but are not exclusive to, workers' compensation, unemployment insurance, pension plan or holidays with pay, and provincial health or insurance plans;

50.2.4 rent that is paid for plant or an amount equivalent to the said sent if the plant is owned by the Contractor that is necessary for and used in the performance of the work, if the rent or the equivalent amount is reasonable and use of that plant has been approved by the Engineer;

50.2.5 payments for maintaining and operating plant necessary for and used in the performance of the work, and payments for effecting such repairs thereto as, in the opinion of the Engineer, are necessary to the proper performance of the contract other than payments for any repairs to the plant arising out of the defects existing before its allocation to the work;

50.2.6 payments for material that is necessary for and incorporated in the work, or that is necessary for and consumed in the performance of the contract;

50.2.7 payments for preparation, delivery, handling, erection, installation, inspection, protection and removal of the plant and material necessary for and used in the performance of the contract;

50.2.8 any other payments made by the Contractor with the approval of the Engineer that are necessary for the performance of the contract.

GC51 Records to be kept by Contractor

51.1 The Contractor shall :

51.1.1 maintain full records of his estimated and actual cost of the work together with all tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto;

51.1.2 make all records and material referred to in GC51.1.1 available to audit and Inspection by the Minister and the Deputy Receiver General for Canada or by persons acting on behalf of either or both of them, when requested;

51.1.3 allow any of the persons referred to in GC51.1.2 to make copies of and to take extracts from any of the records and material referred to in GC51.1.1; and

51.1.4 furnish any person referred to in GC51.1.2 with any information he may require from time to time in connection with such records and materials.

51.2 The records maintained by the Contractor pursuant to GC51.1.1 shall be kept intact by the Contractor until the expiration of two years after the date that a Final Certificate of Completion referred to in GC 44.1 was issued or until the expiration of such other period of time as the Minister may direct.

51.3 The Contractor shall cause all subcontractors and all other persons directly or indirectly controlled by or affiliated with the Contractor and all persons directly or indirectly having control of the Contractor to comply with GC51.1 and GC51.2 as if they were the Contractor.

GC52 Conflict of Interest

52.1 it is a term of this contract that no former public office holder who is not in compliance with the Conflict or Interest and Post-Employment Code for Public Office Holders shall derive a direct benefit from this contract.

GC53 Contractor Status

53.1 The Contractor shall be engaged under the contract as an independent Contractor.

53.2 The Contractor and any employee of the said Contractor is not engaged by the contract as an employee, servant or agent of Her Majesty.

53.3 For the purposes of GC53.1 and GC53.2 the Contractor shall be solely responsible for any and all payments and deductions required to be made by law including those required for Canada or Quebec Pension Plans, Unemployment Insurance, Worker's Compensation or Income Tax.

GC54 Determination of Cost – Clarification of Terms

54.1 For the purposes of GC50, the rental rates of machinery and equipment owned by the Contractor and by subcontractors retained in accordance with the provisions of GC54 shall be in accordance with the most current Schedule of Equipment Rental Rates as set out by the Provincial Highway's and Transportation Departments in the Province of the work.

54.2 Notwithstanding the provisions of GC50.1.2, the 10 % allowance shall not apply to rental equipment where the Engineer determines it is included in Provincial schedules.

54.3 Notwithstanding the provisions of GC50.2.5, the rental rates set out in the “Provincial Scheduling” shall be deemed to include payment for effecting repairs to plant used in the performance of the work.

APPENDIX "D"

LABOUR CONDITIONS / CONDITIONS DE TRAVAIL

Index

01 Interpretation

(a) "Act" means the Fair Wages and Hours of Labour Act;

(b) "Regulations" means the Fair Wages and Hours of Labour Regulations made pursuant to the Act;

(c) "Contact" means the contract of which these Labour Conditions are part;

(d) "Contracting Authority" means the department of Government or a crown corporation with whom the contract is made;

(e) "Contractor" means the person who has entered into the contract with the contracting authority;

(f) "regional Director" means the director of a regional office of the Department of Human Resources Development or the director's designated representative;

(g) "Inspector" has the meaning assigned to the term by Part III of the Canada Labour Code;

(h) "Minister" means the Minister of Labour of Canada;

(I) "Persons" means those workers employed by the Contractor, subcontractor or any other person doing or contracting to do the whole or any part of the work contemplated by the contract;

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01 Interprétation

(a) « Loi » désigne la Loi sur les justes salaires et les heures de travail;

(b) « Règlement » désigne le Règlement sur les justes salaires et les heures de travail établi en application de la Loi;

(c) « Contrat » désigne le contrat auquel sont annexées les présentes Conditions de travail;

(d) « Adjudicateur » désigne le ministère du gouvernement ou la société d'État avec lequel le contrat a été passé;

(e) « Entrepreneur » désigne la personne qui a passé le contrat avec l'adjudicateur;

(f) « Directeur Régional » le responsable d'un bureau régional du ministère du Développement des ressources humaines ou son représentant désigné;

(g) « Inspecteur » s'entend au sens de la partie III du Code canadien du travail;

(h) « Ministre » désigne le ministre du Travail du Canada;

(i) « Personnes » désigne les travailleurs employés par l'entrepreneur, le sous-traitant ou toute autre personne exécutant ou s'engageant par contrat à exécuter la totalité ou une partie quelconque des travaux prévus dans le contrat.

APPENDIX "D"

LABOUR CONDITIONS / CONDITIONS DE TRAVAIL

02 General Fair Wage Clause

(a) All persons in the employ of the Contractor, subcontractor, or any other person doing or contracting to do the whole or any part of the work contemplated by the contract, shall during the continuance of the work :

(i) be paid fair wages that is, such wages as are generally accepted as current for competent workers in the district in which the work is being performed for the character or class of work in which such workers are respectively engaged; and

(ii) in all cases, be paid no less than the minimum hourly rate of pay established by the Labour Program of the Department of Human Resources Development in the Fair Wage Schedules which form a part of this contract as Appendix A to these Labour Conditions; and

(iii) for contracts covering work performed in the province of Québec, be paid at least the wage rates established by that province for the purposes of the Quebec « Construction Decree ».

(b) Where there is no wage rate in the schedules referred to in (a) for a particular character or class of work, the Contractor shall pay wages for that character or class of work at a rate not less than the rate for an equivalent character or class of work.

(c) Where during the term of the contract, the Contractor receives notice from the contracting authority of any change in wage rates, the Contractor shall pay not less than the Contractor shall pay not less than the changed wage rate beginning on the first day after receipt, by the Contractor, of the notice of the change in wage rates.

03 Hours of Work

(a) The hours of work in a day and in a week of persons employed in the execution of the contract, including the hours of work in excess of which a person shall be paid overtime at a rate at least equal to one and one half times the fair wage, are the hours of work for the province in which the work is being performed as set out from the time to time in an Act of that province.

(b) The daily or weekly hours of work referred to in paragraph (a) may be exceeded in accordance with the applicable provincial law.

02 Clause générale de justes salaires

(a) Toutes les personnes employées par l'entrepreneur, le sous-traitant ou toute autre personne exécutant ou s'engageant par contrat à exécuter la totalité ou une partie quelconque des travaux prévus dans le contrat seront payées :

(i) des justes salaries tant que dureront les travaux, c'est-à-dire les salaires généralement reconnus comme salaires courants pour les travailleurs qualifiés dans la région où les travaux sont exécutés, selon la nature ou la catégorie du travail auquel ces travailleurs sont respectivement affectés, et

(ii) dans tous les cas, pas moins que les taux horaires minima fixes par le Programme du travail du ministère du Développement des ressources humaines dans les échelles de justes salaires qui deviennent partie de ce contrat en tant qu'Annexe A de ces Conditions de travail; et

(iii) pour les contrats concernant les travaux effectués dans la province de Québec, pas moins que les taux de salaries qui sont établis par cette province pour les fins du "Décret de la construction" du Québec.

(b) Lorsqu'il n'y a aucun taux prévu dans l'échelle des taux de salaires à l'égard d'un travail d'une nature ou d'une catégorie donnée, l'entrepreneur verse à l'employé un taux de salaire qui n'est pas inférieur à celui établi pour un travail de nature ou de catégorie équivalente.

(c) Lorsque pendant la durée du contrat, l'entrepreneur reçoit de l'adjudicateur un avis de modification à l'échelle de salaires, l'entrepreneur rémunère les employés touchés par cette modification à des taux qui ne sont pas inférieurs aux taux modifiés à compter de la journée qui suit la réception par lui, de l'avis.

03 Durée du travail

(a) Les heures de travail quotidiennes et hebdomadaires des personnes employées à l'exécution du contrat, notamment les heures au-delà desquelles une personne doit être rétribuée selon le tarif pour heures supplémentaires, soit au moins le juste salaire majoré de 50 pour cent, sont celles fixées et éventuellement modifiées par la législation de la province dans laquelle le travail est effectué.

(b) Les heures de travail quotidiennes ou hebdomadaires mentionnées à l'alinéa (a) peuvent être dépassées conformément à la législation provinciale applicable.

APPENDIX "D"

LABOUR CONDITIONS / CONDITIONS DE TRAVAIL

04 Labour Conditions to be Posted

(a) For the information and the protection of all persons, the Contractor agrees to post and keep posted, in a conspicuous place on the premises where work contemplated by the contract is being carried out or on premises occupied or used by persons engaged in carrying out such work, a copy of these Labour Conditions, and a copy of the applicable Fair Wage Schedules along with any subsequent changes.

05 The Contractor to Keep Records which are to be Kept Open for Inspection

(a) The Contractor agrees to keep books and records showing the names, addresses, classification of employment and work of all workers employed under the contract, the rate of wages to be paid, the wages paid and the daily hours worked by the workers.

(b) The Contractor also agrees that the Contractor's books, records and premises will be open at all reasonable times for inspection by an inspector.

(c) The Contractor also agrees to furnish the inspector and the contracting authority, on request, with such further information as is required to ascertain that the requirements of the Act, the Regulations and the contract with respect to wages, hours of work and other labour conditions have been complied with.

06 Department Requirements before Payment made to Contractor

(a) The Contractor agrees that the Contractor will not be entitled to payment of any money otherwise payable under the contract until the Contractor has filed with the contracting authority in support of a claim for payment a sworn statement :

(i) that the Contractor has kept the books and records required by these Regulations;

(ii) that there are no wages in arrears in respect of work performed under the contract; and

(iii) that to the Contractor's knowledge, all the conditions in the contract required by the Act and the Regulations have been complied with.

04 Affichage des conditions de travail

(a) Pour l'information et la protection de toutes les personnes, l'entrepreneur convient d'afficher et de tenir affichés, bien à la vue, à l'endroit où les travaux prévus dans le contrat sont exécutés, ou dans les locaux occupés ou fréquentés par les personnes employées à l'exécution desdits travaux, un exemplaire des présente Conditions de travail, un exemplaire de l'échelle de justes salaires applicable et toutes modifications subséquentes.

05 L'entrepreneur tient des dossiers pour fins d'inspection

(a) L'entrepreneur convient de tenir les registres et dossiers où sont consignés le nom, l'adresse et la catégorie d''emploi et de travail de tous les travailleurs employés à des travaux exécutés en vertu du contrat, de même que le taux de salaire, le salaire payé et la durée journalière du travail pour chacun de ces travailleurs.

(b) L'entrepreneur convient également à faire en sorte que ses registres, ses dossiers et ses locaux soient accessibles en tout temps opportun, pour fins d'inspection par un inspecteur.

(c) L'entrepreneur convient en outre de fournir, sur demande, à l'inspecteur et à l'adjudicateur tous les autres renseignements requis pour permettre de constater qu'on a satisfait aux exigences de la Loi, des règlements et du contrat en ce qui concerne les salaires, la durée du travail et les autres conditions de travail.

06 Exigences du ministère avant le versement des sommes dues à l'entrepreneur

(a) L'entrepreneur convient qu'il n'aura droit au paiement d'aucune somme qui autrement devrait lui être versée en vertu du contrat tant qu'il n'aura pas déposé auprès de l'adjudicateur, à l'appui de sa réclamation de paiement, une déclaration sous serment indiquant :

(i) qu'il a tenu les registres et dossiers requis par les présents règlements;

(ii) qu'il n'y a pas d'arrérages de salaires à l'égard des travaux exécutés en vertu du contrat, et

(iii) qu'à sa connaissance, toutes les conditions du contrat exigées par la Loi et les règlements on été observées.

APPENDIX "D"

LABOUR CONDITIONS / CONDITIONS DE TRAVAIL

06 (…)

(b) The Contractor also agrees that, where fair wages have not been paid by the Contractor to person employed under the contract, the contracting authority shall withhold from any money otherwise payable under the contract to the Contractor the amount necessary to ensure that fair wages are paid to all employees until fair wages are paid. paid to all employees until fair wages are paid.

07 Authority to pay Wages in the Event of Default by the Contractor

(a) The Contractor agrees that where the Contractor is in default of payment of fair wages to an employee, the Contractor is in default.

(b) The Contractor agrees that where the Contractor fails to comply with paragraph (a), the contracting authority will pay to the Receiver General, out of any money otherwise payable to the contract, the amount for which the Contractor is in default.

08 Conditions of Subcontracting

(a) The Contractor and the subcontractor agree that in subcontracting any part of the work contemplated by the contract, they will place in the subcontract the conditions respecting fair wages, hours of work and other labour conditions set out in the contract and the requirements set out in Section 4. The Contractor further agrees that the Contractor will be responsible for carrying out these conditions in the event the subcontractor fails to carry them out.

09 Non-discrimination in Hiring and Employment of Labour

(a) The Contractor agrees that in the hiring and employment of workers to perform any work under the contract, the Contractor will not refuse to employ and will not discriminate in any manner against any person because :

(i) of that person's race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status;

(ii) of the race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status of any person having a relationship or association with thatperson; or

06 (…)

(b) L'entrepreneur convient en outre que lorsqu'il n'a pas versé un juste salaire à une personne employée en vertu du contrat, l'adjudicateur sera autorisé à retenir de toute somme autrement payable à l'entrepreneur en vertu du contrat la somme requise pour assurer le paiement de justes salaires à tous les employés, jusqu'à ce qu'ils aient touché leur juste salaire.

07 Paiement des salaires par l'adjudicateur si l'entrepreneur omet de le faire(a) L'entrepreneur convient qu'à défaut du paiement par ce dernier d'un juste salaire à un travailleur, l'entrepreneur devra verser au ministre le montant qu'il a omis de payer.

(b) L'entrepreneur convient que s'Il omet de se conformer au paragraphe (a), l'adjudicateur paiera au Receveur général, à même les sommes autrement payables à l'entrepreneur, le montant qu'il a omis de payer.

08 Conditions imposes à un sous-traitant

(a) L'entrepreneur et le sous-traitant conviennent dans l'adjudication à un sous-traitant de toute partie des travaux prévus par le contrat, d'insérer dans le sous-contrat les conditions relatives aux justes salaires, à la durée du travail et autres conditions de travail indiquées dans le contrat ainsi que les obligations énoncées à l'article 4. L'entrepreneur convient en outre qu'il sera responsable du respect de ces conditions si elles ne sont pas respectées par le sous-traitant.

09 Non-discrimination dans l'embauchage et l'emploi de main-d'œuvre

(a) L'entrepreneur convient que dans l'embauchage et l'emploi des travailleurs aux fins de l'exécution de tout travail en vertu du contrat, l'entrepreneur ne refusera pas d'employer une personne ou d'exercer de quelque façon que ce soit des distinctions injustes à l'endroit d'une personne en raison :

(i) de la race, de l'origine nationale ou ethnique, de la couleur, de la religion, de l'âge, du sexe, de l'orientation sexuelle, de l'état matrimonial, de la situation de famille, de l'état de personne graciée ou d'une déficience de la personne;

(ii) de la race, de l'origine nationale ou ethnique, de la couleur, de la religion, de l'âge, du sexe, de l'orientation sexuelle, de l'état matrimonial, de la situation de famille, de l'état de personne graciée ou d'une déficience de toute personne ayant un lien avec elle;

APPENDIX "D"

LABOUR CONDITIONS / CONDITIONS DE TRAVAIL

09 (…)

(a) (iii) a complaint has been made or information has been given in respect of that person relating to an alleged failure by the Contractor to comply with subparagraph (i) or (ii).

09 (…)

(iii) du fait que cette personne a porté plainte ou a fourni des renseignements ou parce qu'une plainte a été portée ou des renseignements ont été fournis en son nom relativement à toute prétendue omission de la part de l'entrepreneur de se conformer aux sous-alinéas (i) ou (ii).

APPENDIX "E"

INSURANCE CONDITIONS

The Contractor shall provide and maintain Worker's Compensation Insurance in accordance with the legal requirements of the Province where the work is being carried out.

The Contractor shall provide and maintain insurance as provided hereunder with companies approved by the Minister.

IC 1 INDEMNIFICATION

The insurance coverage required by the provisions of these Insurance Conditions shall in no way limit the Contractor's responsibility under GC8 (Indemnification by Contractor) of the General Conditions of the contract. Any additional coverage the Contractor may deem necessary to fulfil their obligations under the aforesaid GC8 shall be at their own discretion and expenses.

IC 2 INSURED

Each insurance policy shall insure the Contractor, and shall include as an Additional Named Insured, Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture and Agri-Food Canada.

IC 3 PERIOD OF INSURANCE

Unless otherwise directed in writing by the Engineer, the policies required hereunder shall attach from the date of contract award and shall be maintained until the day of issue of the Engineer's Final Certificate of Completion.

IC 4 PROOF OF INSURANCE

Immediately following notification of contract award and preceding the start of any on-site work, the Contractor shall have their insurance broker or agency provide written confirmation (letter, telegram or facsimile) to the Engineer that all insurance required hereunder is in force.

Within 30 days after acceptance of the Contractor's tender the Contractor shall, unless otherwise directed by the Engineer, deposit with the Engineer, the originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the requirements of these Insurance Conditions.

IC 5 NOTIFICATION

Each insurance policy shall contain a provision that 30 days prior written notice shall be given to Her Majesty in the event of any material change in, cancellation of, or expiration of coverage.

IC 6 PAYMENT OF DEDUCTIBLE

The amount of any claim up to the deductible amount shall be borne by the Contractor.

IC 7 COMPREHENSIVEGENERAL LIABILITY

7.1 The policy shall be written on the Comprehensive General Liability Form.

7.2 This policy shall provide for limits of liability of not less than $1,000,000 inclusive, for Bodily Injury and Property Damage for any one occurrence or series of occurrences arising out of one cause and not less than $1,000,000 for personal injury.

7.3 The policy shall include but not necessarily be limited to the following coverages :

7.3.1 All premises, property and operations necessary or incidental to the performance of this contract.

7.3.2 Personal injury.

7.3.3 Bodily Injury and Property Damage on an “occurrence” basis.

7.3.4 “Broad Form” Property Damage including the loss of use of property.

7.3.5 Removal or weakening of support of any property, building or land whether such support be natural or otherwise.

7.3.6 Elevators.

7.3.7 Contingent Employer’s Liability.

7.3.8 Owner’s and Contractor’s Protective Liability.

7.3.9 Contractual and Assumed Liabilities under this contract.

7.3.10 Completed Operations and Products Liability.

7.3.11 Cross Liability*****.

***** The clause shall be written, as follows:

CROSS LIABILITY

The insurance as is afforded by this policy shall apply in respect to any claim or action brought against any one Insured by any other Insured. The coverage shall apply in the same manner and to the same extent as though a separate policy had been issued to each Insured. The inclusion herein of more than one Insured shall not operate to increase the limit of the Insurer’s liability.

7.4 The policy shall be endorsed to include the following exposures or hazards if the work is subject thereto :

7.4.1 Blasting;

7.4.2 Pile Driving and Caisson Work;

7.4.3 Underpinning;

7.4.4 Demolition.

7.5 The insurance shall continue for a period of at least one year beyond the date of the Engineer’s Final Certificate of Completion for the Completed Operations Hazard.

7.6 The policy shall be issued with a deductible amount of not more than $1,000.00 per occurrence applying to Property Damage claims only.

IC 8 AUTOMOBILE LIABILITY INSURANCE

Automobile Liability Insurance in respect of licensed vehicles shall have limits of not less than one million dollars inclusive per occurrence for bodily injury, death, and damage to property, in the following forms endorsed to provide Her Majesty with not less than 30 days written notice in advance of any cancellation or change or amendment restricting coverage :

8.1.1 Standard non-Owned Automobile Policy including Standard Contractual Liability Endorsement.

8.1.2 Standard Owner's Form Automobile Policy providing Third Party Liability and Accident Benefits Insurance and covering licensed vehicles owned or operated by or on behalf of the Contractor.

APPENDIX "F"

CONTRACT SECURITY CONDITIONS

CS1 Obligation to Provide Contract Security

1.1. The Contractor shall, at the Contractor's own expense, provide one or more of the forms of contract security prescribed in CS2.

1.2. The Contractor shall deliver to the Engineer the contract security referred to in CS1.1 within 14 days after the date that the Contractor receives notice that the Contractor's tender or offer was accepted by Her Majesty.

CS2 Prescribed Types and Amounts of Contract Security

2.1 The Contractor shall deliver to the Engineer pursuant to CS1:

2.1.1 a performance bond and a labour and material payment bond each in an amount that is equal to not less than 50 % of the contract amount referred to in the Articles of Agreement; or

2.1.2 a labour and material bond in the amount that is equal to not less than 50 % of the contract amount referred to in the Articles of Agreement, and a security deposit in an amount that is equal to :

2.1.2.1 not less than 10 % of the contract amount referred to in the Articles of Agreement where that amount does not exceed $250,000; or

2.1.2.2 $25,000 plus 5 % of the part of the contract amount referred to in the Articles of Agreement that exceeds $250,000; or

2.1.3 a security deposit in an amount prescribed by CS2.1.2, plus an additional amount that is equal to 10 % of the contract amount referred to in the Articles of Agreement; or

2.1.4 an irrevocable contract support letter of credit in an amount equal to 20 % of the contract amount referred to in the Articles of Agreement.

2.2 A performance bond and a labour and material payment bond referred to in CS2.1 shall be in a form and be issued by a bonding or surety company that is approved by Her Majesty.

2.3 An irrevocable contract support letter of credit shall be in a form approved by Her Majesty.

2.4 The amount of a security deposit referred to in CS2.1.2 shall not exceed $250,000 regardless of the contract amount referred to in the Articles of Agreement.

2.5 A security deposit referred to in CS2.1.2 and CS2.1.3 shall be in the form of :

2.5.2 a bill of exchange made payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or

2.5.3 bonds of unconditionally guaranteed as to principal and interest by the Government of Canada.

2.6 For purposes of CS2.5 :

2.6.2 a bill of exchange is an unconditional order in writing signed by the Contractor and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed determinable future time a sum certain of money to, or to the order of, the Receiver General for Canada; and

2.6.3 if a bill of exchange is certified by a financial institution other than a chartered bank then it must be accompanied by a letter or stamped certification confirming that the financial institution is in at least one of the categories referred to I CS2.6.3.

2.6.4 an approved financial institution is :

2.6.4.1 any corporation or institution that is a member of the Canadian Payments Association;

2.6.4.2 a corporation that accepts deposits that are insured by the Canadian Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec to the maximum permitted by law;

2.6.4.3 a credit union as defined in paragraph 137(6)(b) of the Income Tax Act;

2.6.4.4 a corporation that accepts deposits from the public, if repayment of the deposit is guaranteed by Her Majesty in right of a province; or

2.6.4.5 the Canada Post Corporation;

2.6.5 the bonds referred to in CS2.5.2 shall be :

2.6.5.1 made payable to bearer; or

2.6.5.2 accompanied by a duly executed instrument of transfer of the bonds to the Receiver General for Canada in the form prescribed by the Domestic Bonds of Canada Regulations; or

2.6.5.3 registered, as to principal or as to principal and interest in the name of the Receiver General for Canada pursuant to the Domestic Bonds of Canada Regulations; or

2.6.5.4 provided on the basis of their market value current at the date of the contract.

TENDER FORM

PROJECT:	**DATE OF RECEIPT:**
Modernization of two washrooms (Phase I)	Quotations will be received until 2:00 p.m., Eastern Daylight Time, Thursday, October 31, 2013.

TO:

DATE:

Carol Rahal
Agriculture and Agri-Food Canada
2001 University, 671 –TEN
Montreal, Quebec
Telephone : 514 315-6143
Facsimile : 514 283-3143
carol.rahal@agr.gc.ca

We, the undersigned, hereby offer the Honourable Minister of Agriculture and Agri-Food to furnish, execute and complete in a satisfactory and workmanlike manner, in accordance with the specifications, schedules, drawings and conditions, all the work required for this project for the consideration of the unit or lump sum price or prices set forth in the attached UNIT PRICE TABLE. We hereby agree that we will enter into a contract, of the form exhibited to us, for the execution of the work, if required to do so within 10 calendar days after the opening of bids.

We herewith enclose as Tender Security, either

(7) a Security deposit in the amount and in the form prescribed in the Instructions to Tenderers, or

(b) a Bid Bond in the amount and in the form prescribed in the Instructions to Tenderers executed by ourselves and as Surety.

We agree upon execution of the Contract to furnish additional security in one of the three (3) alternate forms prescribed in Appendix “F”, “Contract Security Conditions”.

We further agree that if awarded the contract, we will commence the work as specified and will complete the work on or before **March 31st, 2014.**

We hereby acknowledge receipt of the following addenda to the tender documents (give number and date of each).

Addenda Numbers: _____ Date: _____

TENDER FORM

UNIT PRICE TABLE

Item	Class of Labour Plant or Material	Unit of Measurement	Estimated Total Quantity	Price per Unit	Estimated Total Price
1.		Lump sum			
2.	N/A	Lump sum	x	x	x
3.	N/A	Lump sum	x	x	x
4.	N/A	Lump sum	x	x	x
5.	N/A	Lump sum	x	x	x
6.	N/A	Lump sum	x	x	x
7.	N/A	Dollars	x	x	x
	TOTAL TENDER (GST/HST extra)				$

NOTE : **BOTH PRICE PER UNIT AND ESTIMATED TOTAL PRICE MUST BE FILLED IN FOR EACH ITEM IN THE UNIT PRICE TABLE. ALL ESTIMATED TOTAL PRICES WILL BE SUBJECT TO VERIFICATION BY CANADA.**

IN CASE OF VARIATION BETWEEN THE PRICE PER UNIT AND THE ESTIMATED TOTAL PRICE, THE PRICE PER UNIT WILL BE CONSIDERED TO BE THE PRICE TENDERED.

IN WITNESS whereof (I/We) have hereunto set (my/our) hand(s)

This _____day of _____, 2013

FIRM NAME : _____

Signature(s) : _____ _____

Print name(s)
of Signatory(ies) : _____ _____

Address : _____

Telephone No. : _____ Facsimile No. : _____

Note: Corporate Firms shall affix their Corporate Seal.

For departmental use only
Tender opened in : _____ on : _____, 2013 @ _____ AM G / PM G

TENDER FORM

LIST OF SUBCONTRACTORS

I/ We will subcontract the following parts of the work to the subcontractors listed for each part. I/We agree not to make changes in the following list without the written consent of the Engineer. In my/our opinion the subcontractors named hereunder are reliable and competent to perform that part of the work for which each is listed. The parts of the work not listed below will be performed with my/our own forces.

Part of Work	Subcontractor	Address

TENDER FORM

STATEMENT OF EQUIPMENT

Listed below is a description of equipment owned by the Contractor and the subcontractors listed on "List of Subcontractors" which I/we intend to make available for the satisfactory prosecution of the work of this contract.

Owned (Contractor or Subcontractor)	Description Of Unit (Make, Model, Year)	Capacity, Size, Horsepower, Rating	Condition	Present Location

ARTICLES OF AGREEMENT

Gender

For the sake of conciseness, wherever the forms "he", "him" and "his" appear, they are to be understood in the generic sense that includes "she" and its related forms.

These Articles of Agreement made in duplicate this *day of* **2013**

Between

Her Majesty the Queen, in right of Canada (referred to in the contract documents as **"Her Majesty"**) represented by the Minister of Agriculture and Agri-Food (referred to in the contract documents as the "Minister")

and * (referred to in the contract documents as the "Contractor")

Witness that in consideration for the mutual promises and obligations contained in the contract. Her Majesty and the Contractor covenant and agree as follows:

A1 Contract Documents

1.1 Subject to A1 and A1.5, the documents forming the contract between Her Majesty and the Contractor, referred to herein as the contract documents, are

1.1.1 these Articles of Agreement,

1.1.2 the documents attached hereto, marked "Appendix A" and entitled "Specifications" referred to herein as the Specifications,

1.1.3 the document attached hereto, marked "Appendix B" and entitled "Terms of Payment", referred to herein as the Terms of Payment,

1.1.4 the document attached hereto marked "Appendix C" and entitled "General Conditions", referred to herein as the General Conditions,

1.1.5 the document attached hereto, marked "Appendix D" and entitled "Labour Conditions", referred to herein as the Labour Conditions,

1.1.6 the document attached hereto, marked "Appendix E" and entitled "Insurance Conditions", referred to herein as the Insurance Conditions,

1.1.7 the document attached hereto, marked "Appendix F" and entitled "Contract Security Conditions", referred to herein as the Contract Security Conditions,

1.1.8 the documents attached hereto, entitled "Plans", referred to herein as the Plans, and

1.1.9 any amendment or variation of the contract documents that is made in accordance with the General Conditions.

1.2 The Minister hereby designates the Senior Procurement Officer, Agriculture and Agri-Food Canada, of the Government of Canada, as the Contracting Authority for the purposes of the contract, and for all purposes of or incidental to the contract the Contracting Officer address shall be deemed to be :

Carol Rahal
Agriculture and Agri-Food Canada
2001 University, 671 -TEN
Montreal, Quebec
Telephone : 514 315-6143
Facsimile : 514 283-3143
Carol.rahal@agr.gc.ca

1.3 In the Contract

1.3.1 **"Fixed Price Arrangement"** means that part of the contract that prescribes a lump sum as payment for performance of the work to which it relates; and

1.3.2 **"Unit Price Arrangement"** means that part of the contract that prescribes the product of a price multiplied by a number of units of measurement of a class as payment for performance of the work to which it related.

1.4 Any of the provisions of the contract that are expressly stipulated to be applicable only to a Unit Price Arrangement are not applicable to any part of the work to which a Fixed Price Arrangement is applicable.

1.5 Any of the provisions of the contract that are expressly stipulated to be applicable only to a Fixed Price Arrangement are not applicable to any part of the work to which a Unit Price Arrangement is applicable.

A2 Date of Completion of Work and Description of Work

2.1 The Contractor shall, between the date of these Articles of Agreement and March 31st, 2014 in a careful and workmanlike manner, diligently perform and complete the following work :

"Mordernization of two washrooms (phase I) at the Greenhouse and Processing Crops Research Centre in Harrow, Ontario"

which work is more particularly described in the Plans and Specifications.

A3 Contract Amount

3.1 Subject to any increase, decrease, deduction, reduction or set-off that may be made under the contract, Her Majesty shall pay the Contractor at the times and in the manner that is set out or referred to in the Terms of Payment

3.1.1 the sum of $ _____ in consideration for the performance of the work or the part thereof that is subject to a Fixed Price Arrangement, and

3.1.2 a sum that is equal to the aggregate of the products of the number of units of measurement of each class of labour plant and material that is set out in a Final Certificate of Measurement referred to in GC44.8 multiplied in each case by the appropriate unit price that is set out in the Unit Price Table in consideration for the performance of the work or the part thereof that is subject to a Unit Price Arrangement.

3.2 For the information and guidance of the Contractor and the persons administering the contract on behalf of Her Majesty, but not so as to constitute a warranty, representation or undertaking of any nature by either party, it is estimated that the total amount payable by Her Majesty to the Contractor for the part of the work to which a Unit price Arrangement is applicable will not exceed $* (*).

3.3 A3.1.1 is applicable only to a Fixed Price Arrangement.

3.4 A3.1.2 and A3.2 are applicable only to a Unit Price Arrangement.

A4 Contractors Address

4.1 For all purposes of or incidental to the contract, the Contractor's address shall be deemed to be:

*

A5 Unit Price Table

5.1 Her Majesty and the Contractor agree that the following table is the Unit Price Table for the purposes of the contract :

Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*	*Column 6*
Item	**Class of Labour Plant or Material**	**Unit of Measurement**	**Estimated Total Quantity**	**Price Per Unit**	**Estimated Total Price**
1				$	$
2				$	$
3				$	$
4				$	$
5				$	$
6				$	$
7				$	$
8				$	$

Unit Price Table (Concluded)

Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*	*Column 6*
Item	**Class of Labour Plant or Material**	**Unit of Measurement**	**Estimated Total Quantity**	**Price Per Unit**	**Estimated Total Price**
1				$	$
2				$	$
3				$	$
4				$	$
5				$	$
6				$	$
7				$	$
8				$	$

5.2 The Unit Price Table that is set out in A5.1 designates the part of the work to which a Unit Price Arrangement is applicable.

5.3 The part of the work that is not designated in the Unit Price Table referred to in A5.2 is the part of the work to which a Fixed Price Arrangement is applicable.

N.B.:

The attention of the Contractor is drawn to the following statutory provision:

"It is a term of every contract providing for the payment of any money by Her Majesty that payment thereunder is subject to there being an appropriation for the particular service for the fiscal year in which any commitment thereunder would come in course of payment".

Section 40, Financial Administration Act, R.S. 1985, c.F-11

Signed on behalf of **Her Majesty**

by _____
Full Name

as _____
Title

Date: _____

_____
Signature

Signed on behalf of **The Consultant/Contractor**

by _____
Full Name

as _____
Title

Date: _____

_____
Signature

Plans and Drawings

- Cover sheet (Ground floor key plan)
- A101
- A201
- A202
- M101