



INVITATION TO TENDER

FOR

EXTERIOR MASONRY REPAIRS

Building 94

Project: CEF13 0077

CENTRAL EXPERIMENTAL FARM (CEF)

Agriculture and Agri-Food Canada (AAFC)

K.W. Neatby Building, Main Entrance

960 Carling Avenue

Ottawa, Ontario K1A 0C6

SOLICITATION #13-1328

Jean-Pierre Simard

Senior Contracts Officer

613 759-6157

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**CLOSING: Monday November 25, 2013 at 02:00 p.m.
Eastern Standard Time (EST)**

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SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01 BID DOCUMENTS

- 1) The following are the bid documents:
 - a) Invitation to Tender - Page 1;
 - b) Special Instructions to Bidders;
 - c) General Instructions to Bidders;
 - d) Clauses & Conditions identified in "Contract Documents";
 - e) Drawings and Specifications;
 - f) Bid and Acceptance Form and related Appendice(s); and
 - g) Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

SI02 ENQUIRIES DURING THE SOLICITATION PERIOD

- 1) Enquiries regarding this bid must be submitted in writing as early as possible within the solicitation period to:

Jean-Pierre Simard
Senior Contracts Officer
Agriculture and Agri-Food Canada
960 Carling Ave. (K.W. Neatby building)
Ottawa, Ontario
K1A 0C6
Telephone: 613 759-6157
Facsimile: 613 759-7005
Jean-pierre.simard@agr.gc.ca

Except for the approval of alternative materials as described in GI15 of the "General Instructions to Bidders", enquiries should be received no later than one (1) calendar day prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.

- 2) To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
- 3) All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed **ONLY** to the Contracting Officer named herein. Failure to comply with this requirement may result in the bid being declared non-responsive.

SI03 MANDATORY SITE VISIT

It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for site visit to be held on **Tuesday November 19, 2013 at 10:00 am at 960 Carling Avenue, K.W. Neatby building, Ottawa**. Bidders will be required to sign an attendance form. Bidders should confirm in their bids that they have attended the site visit. Bidders who do not attend or send a representative will not be given an alternative appointment and their bids will be rejected as non-compliant. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

SI04 REVISION OF BID

A bid may be revised by letter in accordance with GI10 of the "General Instructions to Bidders".

SI05 BID RESULTS

Following solicitation closing, bidders may ask the results of the bid opening by calling the CEF at Telephone No. (613) 759-6157.

SI06 INSUFFICIENT FUNDING

In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may:

- a) cancel the solicitation; or
- b) obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid; and/or
- c) negotiate a reduction in the bid price and/or scope of work of not more than 15% with the Bidder submitting the lowest compliant bid. Should an agreement satisfactory to Canada not be reached, Canada shall exercise option (a) or (b).

SI07 BID VALIDITY PERIOD

- 1) Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.
- 2) If the extension referred to in paragraph 1) of SI07 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.
- 3) If the extension referred to in paragraph 1) of SI07 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either
 - a) continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
 - b) cancel the invitation to tender.
- 4) The provisions expressed herein do not in any manner limit Canada's rights in law or under GI11 of the "General Instructions to Bidders ".

SI08 CONSTRUCTION DOCUMENTS

The successful contractor will be provided with one paper copy of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Obtaining more copies shall be the responsibility of the contractor including costs.

SI09 SECURITY CLEARANCE

This document contains no mandatory security requirements.

SI10 WEB SITES

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies:

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appl>

Contracts Canada (Buy and Sell):

<https://www.achatsetventes-buyandsell.gc.ca/eng/welcome>

Canadian economic sanctions:

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf>

Certificate of Insurance (form PWGSC-TPSGC 357):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/357.pdf>

SACC Manual:

<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>

Schedules of Wage Rates for Federal Construction Contracts:

http://www.rhdcc-hrsdc.gc.ca/eng/labour/employment_standards/contracts/schedule/index.shtml

PWGSC, Industrial Security Services

<Http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>

GENERAL INSTRUCTIONS TO BIDDERS (GI)

GI01 Code of Conduct and Certifications – Bid

1. Bidders must comply with the [Code of Conduct for Procurement](#). In addition to the [Code of Conduct for Procurement](#), bidders must:
 - a) respond to bid solicitations in an honest, fair and comprehensive manner,
 - b) accurately reflect their capacity to satisfy the requirements stipulated in the bid solicitations and resulting contracts,
 - c) submit bids and enter into contracts only if they will fulfill all obligations of the Contract.
2. Bidders further understand that, to ensure fairness, openness and transparency in the procurement process, the commission of certain acts or offences will render them ineligible to be awarded a contract. Canada will declare non-responsive any bid in respect of which the information herein requested is missing or inaccurate, or in respect of which the information contained in the certifications specified hereinafter is found to be untrue, in any respect, by Canada. If it is determined, after contract award, that the Bidder made a false declaration, Canada will have the right to terminate the Contract for default. The Bidder will be required to diligently maintain up-to-date the information herein requested. The Bidder and any of the Bidder's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the period of any contract arising from this bid solicitation.
3. For the purpose of this section, everyone, including but not limited to organizations, bodies corporate, societies, companies, firms, partnerships, associations of persons, parent companies, and subsidiaries, whether partly or wholly-owned, as well as individuals, and directors, are Bidder's affiliates if:
 - a. directly or indirectly either one controls or has the power to control the other, or
 - b. a third party has the power to control both.

Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the acts or convictions specified in this section which has the same or similar management, ownership, or principal employees, as the case may be.

4. Bidders who are incorporated, including those bidding as a joint venture, must provide with their bid or promptly thereafter a complete list of names of all individuals who are currently directors of the Bidder. Bidders bidding as sole proprietorship, including those bidding as a joint venture, must provide with their bid or promptly thereafter the name of the owner. Bidders bidding as societies, firms, or partnerships do not need to provide lists of names. If the required names have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time

frame within which to provide the information. Failure to comply will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

Canada may, at any time, request that a Bidder provide properly completed and Signed Consent Forms ([Consent to a Criminal Record Verification form - PWGSC-TPSGC 229](#)) for any or all individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the bid being declared non-responsive.

5. The Bidder must diligently maintain an up-to-date list of names by informing Canada in writing of any change occurring during the validity period of the bid as well as during the period of any contract arising from this bid solicitation. The Bidder must also, when so requested, provide Canada with the corresponding Consent Forms.
6. By submitting a bid, the Bidder certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Bidder, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties.
7. By submitting a bid, the Bidder certifies that neither the Bidder nor any of the Bidder's affiliates have directly or indirectly, paid or agreed to pay, and will not, directly or indirectly, pay a contingency fee to any individual for the solicitation, negotiation or obtaining of the Contract if the payment of the fee would require the individual to file a return under section 5 of the [Lobbying Act](#).
8. By submitting a bid, the Bidder certifies that no one convicted under any of the provisions under a) or b) are to receive any benefit under a contract arising from this bid solicitation. In addition, the Bidder certifies that except for those offences where a criminal pardon or a record suspension has been obtained or capacities restored by the Governor in Council, neither the Bidder nor any of the Bidder's affiliates has ever been convicted of an offence under any of the following provisions:
 - a. paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the [Financial Administration Act](#), or
 - b. section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud*) for fraud committed against Her Majesty or section 418 (*Selling defective stores to Her Majesty*) of the [Criminal Code](#) of Canada, or
 - c. section 462.31 (*Laundering proceeds of crime*) or sections 467.11 to 467.13 (*Participation in activities of criminal organization*) of the [Criminal Code](#) of Canada, or
 - d. section 45 (*Conspiracies, agreements or arrangements between competitors*), 46 (*Foreign directives*) 47 (*Bid rigging*), 49 (*Agreements or arrangements of federal financial institutions*), 52 (*False or misleading representation*), 53 (*Deceptive notice of winning a prize*) under the [Competition Act](#), or
 - e. section 239 (*False or deceptive statements*) of the [Income Tax Act](#), or
 - f. section 327 (*False or deceptive statements*) of the [Excise Tax Act](#), or
 - g. section 3 (*Bribing a foreign public official*) of the [Corruption of Foreign Public Officials Act](#), or
 - h. section 5 (*Trafficking in substance*), section 6 (*Importing and exporting*), or section 7 (*Production of substance*) of the [Controlled Drugs and Substance Act](#).
9. In circumstances where a criminal pardon or a record suspension has been obtained, or capacities have been restored by the Governor in Council, the Bidder must provide with its bid or promptly thereafter a copy of confirming documentation from an official source. If such documentation has not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a

time frame within which to provide the information. Failure to comply will render the bid non-responsive.

10. Bidders understand that Canada may contract outside of the present solicitation process with a supplier who has been convicted of an offense enumerated under c) to h) of the paragraph hereinabove, or who is affiliated with someone who has been convicted of an offense enumerated under c) to h) of the paragraph hereinabove, when required to do so by law or legal proceedings, or when Canada considers it necessary to the public interest for reasons which include, but are not limited to:
 - o Only one person is capable of performing the contract;
 - o Emergency;
 - o National security;
 - o Health and safety;
 - o Economic harm;

Canada reserves the right to impose additional conditions or measures to ensure the integrity of the procurement process.

GI02 Completion of Bid

1. The bid shall be
 - a. submitted on the Bid and Acceptance Form provided in the solicitation or a clear and legible reproduced copy of such Bid and Acceptance Form that must be identical in content and format to the Bid and Acceptance Form provided in the solicitation;
 - b. based on the Bid Documents listed in the Special Instructions to Bidders;
 - c. correctly completed in all respects;
 - d. signed by a duly authorized representative of the Bidder; and
 - e. accompanied by:
 - i. bid security as specified in GI08; and
 - ii. any other document or documents specified elsewhere in the solicitation where it is stipulated that said documents are to accompany the bid.
2. Subject to paragraph 6) of GI11, any alteration to the pre-printed or pre-typed sections of the Bid and Acceptance Form, or any condition or qualification placed upon the bid shall be cause for disqualification. Alterations, corrections, changes or erasures made to statements or figures entered on the Bid and Acceptance Form by the Bidder shall be initialed by the person or persons signing the bid. Alterations, corrections, changes or erasures that are not initialed shall be deemed void and without effect.
3. Unless otherwise noted elsewhere in the Bid Documents, facsimile copies of bids are not acceptable.

GI03 Identity or Legal Capacity of the Bidder

1. In order to confirm the authority of the person or persons signing the bid or to establish the legal capacity under which the Bidder proposes to enter into Contract, any Bidder who carries on business in other than its own personal name shall, if requested by Canada, provide satisfactory proof of:
 - a. such signing authority; and
 - b. the legal capacity under which it carries on business;

prior to contract award. Proof of signing authority may be in the form of a certified copy of a resolution naming the signatory(ies) that is (are) authorized to sign this bid on behalf of the

corporation or partnership. Proof of legal capacity may be in the form of a copy of the articles of incorporation or the registration of the business name of a sole proprietor or partnership.

GI04 Applicable Taxes

1. "Applicable Taxes" means the Goods and Services Tax (GST), the Harmonized Sales Tax (HST), and any provincial tax, by law, payable by Canada such as, the Quebec Sales Tax (QST) as of April 1, 2013.

GI05 Capital Development and Redevelopment Charges

1. For the purposes of GC1.8, "Laws, Permits and Taxes", in the General Conditions of the Contract, only fees or charges directly related to the processing and issuing of building permits shall be included. The Bidder shall not include any monies in the bid amount for special municipal development, redevelopment or other fees or charges which a municipal authority may seek as a prerequisite to the issuance of building permits.

GI06 Registry and Pre-qualification of Floating Plant

1. Dredges or other floating plant to be used in the performance of the Work must be on Canadian registry. For dredges or other floating plant that are not of Canadian make or manufacture, the Bidder must obtain a certificate of qualification from Industry Canada as described in the Floating Plant Appendix of the Bid and Acceptance Form, and this certificate must accompany the bid. Plant so qualified by Industry Canada may be accepted on this project

GI07 Listing of Subcontractors and Suppliers

1. Notwithstanding any list of Subcontractors that the Bidder may be required to submit as part of the bid, the Bidder shall, within forty-eight (48) hours of receipt of a notice to do so, submit all information requested in the said notice including the names of Subcontractors and Suppliers for the part or parts of the Work listed. Failure to do so shall result in the disqualification of its bid.

GI08 Bid Security Requirements

1. The Bidder shall submit bid security with the bid in the form of a bid bond or a security deposit in an amount that is equal to not less than 10 percent of the bid amount. The maximum amount of bid security required with any bid is \$2,000,000.
2. A bid bond (form [PWGSC-TPSGC 504](#)) shall be in an approved form, properly completed, with original signatures and issued by an approved company whose bonds are acceptable to Canada either at the time of solicitation closing or as identified in Treasury Board Appendix L, [Acceptable Bonding Companies](#).
3. A security deposit shall be an original, properly completed, signed where required and be either
 - a. a bill of exchange, bank draft or money order 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
 - b. bonds of, or unconditionally guaranteed as to principal and interest by, the Government of Canada.
4. For the purposes of subparagraph 3. a. of GI08

- a. a bill of exchange is an unconditional order in writing signed by the Bidder and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed or determinable future time a sum certain of money to, or to the order of, the Receiver General for Canada;
 - b. if a bill of exchange, bank draft or money order is certified by or drawn on an institution or corporation other than a chartered bank, it must be accompanied by proof that the said institution or corporation meets at least one of the criteria described in subparagraph 4.c. of GI08, either by letter or by a stamped certification on the bill of exchange, bank draft or money; and
 - c. An approved financial institution is
 - i. a corporation or institution that is a member of the Canadian Payments Association as defined in the [Canadian Payments Act](#);
 - ii. a corporation that accepts deposits that are insured, to the maximum permitted by law, by the Canada Deposit Insurance Corporation or the "Autorité des marchés financiers";
 - iii. a corporation that accepts deposits from the public if repayment of the deposit is guaranteed by Her Majesty the Queen in right of a province;
 - iv. a corporation, association or federation incorporated or organized as a credit union or co-operative credit society that conforms to the requirements of a credit union which are more particularly described in paragraph 137(6) of the [Income Tax Act](#); or
 - v. Canada Post Corporation.
5. Bonds referred to in subparagraph 3. b. of GI08 shall be provided on the basis of their market value current at the date of solicitation closing, and shall be
- a. payable to bearer;
 - b. 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
 - 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.
6. As an alternative to a security deposit an irrevocable standby letter of credit is acceptable to Canada and the amount shall be determined in the same manner as a security deposit referred to above.
7. An irrevocable standby letter of credit referred to in paragraph 8) of GI08 shall
- a. be an arrangement, however named or described, whereby a financial institution (the "Issuer") acting at the request and on the instructions of a customer (the "Applicant") or on its own behalf,
 - i. is to make a payment to, or to the order of, the Receiver General for Canada as the beneficiary;

- ii. is to accept and pay bills of exchange drawn by the Receiver General for Canada;
 - iii. authorizes another financial institution to effect such payment or accept and pay such bills of exchange; or
 - iv. authorizes another financial institution to negotiate against written demand(s) for payment provided that the terms and conditions of the letter of credit are complied with;
 - b. state the face amount which may be drawn against it;
 - c. state its expiry date;
 - d. 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 Departmental Representative identified in the letter of credit by his/her office;
 - e. provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face value of the letter of credit;
 - f. provide that it is subject to the International Chamber of Commerce (ICC) *Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision*, ICC Publication No. 600, Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and
 - g. be issued or confirmed, in either official language, by a financial institution which is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.
8. Bid security shall lapse or be returned as soon as practical following:
- a. the solicitation closing date, for those Bidders submitting non-compliant bids; and
 - b. the administrative bid review, for those Bidders submitting compliant bids ranked fourth to last on the schedule of bids; and
 - c. the award of contract, for those Bidders submitting the second and third ranked bids; and
 - d. the receipt of contract security, for the successful Bidder; or
 - e. the cancellation of the solicitation, for all Bidders.
9. Notwithstanding the provisions of paragraph 8 of GI08 and provided more than three compliant bids have been received, if one or more of the bids ranked third to first is withdrawn or rejected for whatever reason then Canada reserves the right to hold the security of the next highest ranked compliant bid in order to retain the bid security of at least three valid and compliant bids.

GI09 Submission of Bid

1. The Bid and Acceptance Form, duly completed, shall be enclosed and sealed in an envelope provided by the Bidder, and shall be addressed and submitted to the office designated on the Front Page "Invitation to Tender" for the receipt of bids. The bid must be received on or before the date and time set for solicitation closing.

2. Unless otherwise specified in the Special Instructions to Bidders
 - a. the bid shall be in Canadian currency;
 - b. exchange rate fluctuation protection is not offered; and
 - c. any request for exchange rate fluctuation protection shall not be considered.
3. Prior to submitting the bid, the Bidder shall ensure that the following information is clearly printed or typed on the face of the bid envelope:
 - a. Solicitation Number;
 - b. Name of Bidder;
 - c. Return address; and
 - d. Closing Date and Time.
4. Timely and correct delivery of bids is the sole responsibility of the Bidder.

GI10 Revision of Bid

1. A bid submitted in accordance with these instructions may be revised by letter provided the revision is received at the office designated for the receipt of bids, on or before the date and time set for the closing of the solicitation. The letter shall bear the Bidder's letterhead or a signature that identifies the Bidder.
2. A revision to a bid that includes unit prices must clearly identify the change(s) in the unit price(s) and the specific item(s) to which each change applies.
3. A letter submitted to confirm an earlier revision shall be clearly identified as a confirmation.
4. Failure to comply with any of the above provisions shall result in the rejection of the non-compliant revision(s) only. The bid shall be evaluated based on the original bid submitted and all other compliant revision(s).

GI11 Rejection of Bid

1. Canada may accept any bid, whether it is the lowest or not, or may reject any or all bids.
2. Without limiting the generality of paragraph 1) of GI11, Canada may reject a bid if any of the following circumstances is present:
 - a. the Bidder's bidding privileges are suspended or are in the process of being suspended;
 - b. the bidding privileges of any employee or subcontractor included as part of the bid are suspended or are in the process of being suspended, which suspension or pending suspension would render that employee or subcontractor ineligible to bid on the Work, or the portion of the Work the employee or subcontractor is to perform;
 - c. the Bidder is bankrupt, or where for whatever reason, its activities are rendered inoperable for an extended period;
 - d. evidence, satisfactory to Canada, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination, has been received with respect to the Bidder, any of its employees or any subcontractor included as part of its bid;
 - e. evidence satisfactory to Canada that based on past conduct or behavior, the Bidder, a sub-contractor or a person who is to perform the Work is unsuitable or has conducted himself/herself improperly;
 - f. with respect to current or prior transactions with Canada

- i. Canada has exercised, or intends to exercise, the contractual remedy of taking the work out of the contractor's hands with respect to a contract with the Bidder, any of its employees or any subcontractor included as part of its bid; or
 - ii. Canada determines that the Bidder's performance on other contracts is sufficiently poor to jeopardize the successful completion of the requirement being bid on.
3. In assessing the Bidder's performance on other contracts pursuant to subparagraph 2.f. i & ii of GI11, Canada may consider, but not be limited to, such matters as:
 - a. the quality of workmanship in performing the Work;
 - b. the timeliness of completion of the Work;
 - c. the overall management of the Work and its effect on the level of effort demanded of the department and its representative; and
 - d. the completeness and effectiveness of the Contractor's safety program during the performance of the Work.
4. Without limiting the generality of paragraphs 1), 2) and 3) of GI11, Canada may reject any bid based on an unfavourable assessment of the
 - a. adequacy of the bid price to permit the work to be carried out and, in the case of a bid providing prices per unit, whether each such price reasonably reflects the cost of performing the part of the work to which that price applies;
 - b. Bidder's ability to provide the necessary management structure, skilled personnel, experience and equipment to perform competently the work under the Contract; and
 - c. Bidder's performance on other contracts.
5. When Canada intends to reject a bid pursuant to a provision of paragraphs 1), 2), 3) or 4) of GI11, other than subparagraph 2)(a) of GI11, the Contracting Authority will inform the Bidder and provide the Bidder ten (10) days within which to make representations, before making a final decision on the bid rejection.
6. Canada may waive informalities and minor irregularities in bids received if Canada determines that the variation of the bid from the exact requirements set out in the Bid Documents can be corrected or waived without being prejudicial to other Bidders.

GI12 Bid Costs

1. No payment will be made for costs incurred in the preparation and submission of a bid in response to the bid solicitation. Costs associated with preparing and submitting a bid, as well as any costs incurred by the Bidder associated with the evaluation of the bid, are the sole responsibility of the Bidder.

GI13 Procurement Business Number

1. Bidders are required to have a Procurement Business Number (PBN) before contract award. Bidders may register for a PBN in the Supplier Registration Information system on the [Contracts Canada](#) Web site. For non-Internet registration, Bidders may contact the nearest [Supplier Registration Agent](#).

GI14 Compliance with Applicable Laws

1. By submission of a bid, the Bidder certifies that the Bidder has the legal capacity to enter into a contract and is in possession of all valid licences, permits, registrations, certificates, declarations, filings, or other authorizations necessary to comply with all federal, provincial and municipal laws and

regulations applicable to the submission of the bid and entry into any ensuing contract for the performance of the work.

2. For the purpose of validating the certification in paragraph 1) of G14, a Bidder shall, if requested, provide a copy of every valid licence, permit, registration, certificate, declaration, filing or other authorization listed in the request, and shall provide such documentation within the time limit(s) set out in the request.
3. Failure to comply with the requirements of paragraph 2) of G14 shall result in disqualification of the bid.

G15 Approval of Alternative Materials

1. When materials are specified by trade names or trademarks, or by manufacturers' or suppliers' names, the bid shall be based on use of the named materials. During the solicitation period, alternative materials may be considered provided full technical data is received in writing by the Contracting Officer at least ten (10) calendar days prior to the solicitation closing date. If the alternative materials are approved for the purposes of the bid, an addendum to the bid documents shall be issued.

G16 Performance Evaluation

1. Bidders shall take note that the performance of the Contractor during and upon completion of the work shall be evaluated by Canada. The evaluation shall be based on the quality of workmanship; timeliness of completion of the work; project management, contract management and management of health and safety. Should the Contractor's performance be considered unsatisfactory, the Contractor's bidding privileges on future work may be suspended indefinitely.
2. The form [PWGSC-TPSGC 2913](#), SELECT - Contractor Performance Evaluation Report Form, is used to record the performance.

G17 Conflict of Interest - Unfair Advantage

1. In order to protect the integrity of the procurement process, bidders are advised that Canada may reject a bid in the following circumstances:
 - a. if the Bidder, any of its subcontractors, any of their respective employees or former employees was involved in any manner in the preparation of the bid solicitation or in any situation of conflict of interest or appearance of conflict of interest;
 - b. if the Bidder, any of its subcontractors, any of their respective employees or former employees had access to information related to the bid solicitation that was not available to other bidders and that would, in Canada's opinion, give or appear to give the Bidder an unfair advantage.
2. The experience acquired by a bidder who is providing or has provided the goods and services described in the bid solicitation (or similar goods or services) will not, in itself, be considered by Canada as conferring an unfair advantage or creating a conflict of interest. This bidder remains however subject to the criteria established above.
3. Where Canada intends to reject a bid under this section, the Contracting Authority will inform the Bidder and provide the Bidder an opportunity to make representations before making a final decision. Bidders who are in doubt about a particular situation should contact the Contracting Authority before bid closing. By submitting a bid, the Bidder represents that it does not consider itself to be in conflict

of interest nor to have an unfair advantage. The Bidder acknowledges that it is within Canada's sole discretion to determine whether a conflict of interest, unfair advantage or an appearance of conflict of interest or unfair advantage exists.

SUPPLEMENTARY CONDITIONS (SC)

SC01 LIMITATION OF LIABILITY

GC1.6 of R2810D is deleted and replaced with the following:

GC1.6 Indemnification by the Contractor

1. The Contractor shall indemnify and save Canada harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by Canada or in respect of claims by any third party, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by, or attributable to the activities of the Contractor in performing the Work, provided such claims are caused by the negligent or deliberate acts or omissions of the Contractor, or those for whom it is responsible at law.
2. The Contractor's obligation to indemnify Canada for losses related to first party liability shall be limited to:
 - a. In respect to each loss for which insurance is to be provided pursuant to the insurance requirements of the Contract, the Commercial General Liability insurance limit for one occurrence as referred to in the in the insurance requirements of the Contract .
 - b. In respect to losses for which insurance is not required to be provided in accordance with the insurance requirements of the Contract, the greater of the Contract Amount or \$5,000,000, but in no event shall the sum be greater than \$20,000,000.

The limitation of this obligation shall be exclusive of interest and all legal costs and shall not apply to any infringement of intellectual property rights or any breach of warranty obligations.

3. The Contractor's obligation to indemnify Canada for losses related to third party liability shall have no limitation and shall include the complete costs of defending any legal action by a third party. If requested by Canada, the Contractor shall defend Canada against any third party claims.
4. The Contractor shall pay all royalties and patent fees required for the performance of the Contract and, at the Contractor's expense, shall defend all claims, actions or proceedings against Canada charging or claiming that the Work or any part thereof provided or furnished by the Contractor to Canada infringes any patent, industrial design, copyright trademark, trade secret or other proprietary right enforceable in Canada.
5. Notice in writing of a claim shall be given within a reasonable time after the facts, upon which such claim is based, became known.

SC02 INSURANCE TERMS

IT2.2 of R2910D is deleted and replaced with the following:

1. The policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture and Agri-Food Canada as an additional Insured, with respect to liability arising out of the operations of the contractor with regard to the work.

IT3.3 of R2910D is deleted and replaced with the following:

1. The policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture and Agri-Food Canada.

CONTRACT DOCUMENTS (CD)

- 1) The following are the contract documents:
 - a) Contract Page(s) when signed by Canada;
 - b) Duly completed Bid and Acceptance Form and any Appendices attached thereto;
 - c) Drawings and Specifications;
 - d) General Conditions and clauses
 - GC1 General Provisions R2810D (2013-04-25);
 - GC2 Administration of the Contract R2820D (2012-07-16);
 - GC3 Execution and Control of the Work R2830D (2010-01-11);
 - GC4 Protective Measures R2840D (2008-05-12);
 - GC5 Terms of Payment R2850D (2010-01-11);
 - GC6 Delays and Changes in the Work R2865D (2013-04-25);
 - GC7 Default, Suspension or Termination of Contract R2870D (2008-05-12);
 - GC8 Dispute Resolution R2880D (2012-07-16);
 - GC9 Contract Security R2890D (2012-07-16);
 - GC10 Insurance R2900D (2008-05-12);
 - Insurance Terms R2910D (2008-12-12);
 - Supplementary Conditions
 - Fair Wages and Hours of Labour - Labour Conditions R2940D (2012-07-16);
 - Allowable Costs for Contract Changes under GC6.4.1 R2950D (2007-05-25);
 - Schedules of Wage Rates for Federal Construction Contracts;
 - e) Any amendment issued or any allowable bid revision received before the date and time set or solicitation closing;
 - f) Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
 - g) Any amendment or variation of the contract documents that is made in accordance with the General Conditions.
- 2) The documents identified by title, number and date above are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>
- 3) Schedules of Wage Rates for Federal Construction Contracts are included by reference and may be accessed from the Web site: http://www.rhdcc-hrsdc.gc.ca/eng/labour/employment_standards/contracts/schedule/index.shtml
- 4) The language of the contract documents is the language of the Bid and Acceptance Form submitted.

BID AND ACCEPTANCE FORM (BA)

BA01 IDENTIFICATION

EXTERIOR MASONRY REPAIRS
Building 94, CEF Ottawa
Project #CEF13 0077
Solicitation # 13-1328

BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone: _____
Fax: _____
Email: _____
PBN: _____

BA03 THE OFFER

The Bidder offers to Her Majesty the Queen in right of Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the Total Bid Amount of \$ _____ excluding Applicable Taxes.
(amount in numbers)

BA04 BID VALIDITY PERIOD

The bid shall not be withdrawn for a period of 30 days following the date of solicitation closing.

BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work within **eight (8) weeks** from the date of notification of acceptance of the offer.

BA07 BID SECURITY

The Bidder is enclosing bid security with its bid in accordance with GI08 - Bid Security Requirements of the General Instructions to Bidders (GI).

BA08 SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (Type or print)

Signature

Date



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

DRAWINGS AND SPECIFICATIONS

#13-1328

FOR

EXTERIOR MASONRY REPAIRS

Building 94

Project: CEF13 0077

CENTRAL EXPERIMENTAL FARM (CEF)

Agriculture and Agri-Food Canada (AAFC)

960 Carling Avenue

Ottawa, Ontario K1A 0C6

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PART 1 - GENERAL

1.1 SECTION INCLUDES

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

1.2 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Prepare submittals log, listing all shop drawings, samples and product data sheets submittals required as part of the contract. List status of each submittal, from submission to final approval. Submit updated submittals log at each progress meeting.
- .3 Work affected by submittal shall not proceed until review is complete.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, converted values are acceptable.
- .6 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Verify field measurements and affected adjacent Work are coordinated.
- .9 Coordinate each submission with requirements of work and contract documents. Individual shop drawings will not be reviewed until all related drawings are available.
- .10 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

- .11 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review, unless Departmental Representative gives written acceptance of specified deviations.
- .12 Keep one reviewed copy of each submission on site.
- .13 Arrange and pay for all deliveries and pick ups to and from the office of the Departmental Representative.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Prepare shop drawings using a computer aided drafting program.
- .4 Allow three days for Departmental Representative's review of each submission.
- .5 Adjustments made to shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes to shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Contractor.
 - .2 Subcontractor.

- .3 Supplier.
- .4 Manufacturer.
- .5 Separate detailer when pertinent.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Identification of product or material.
- .6 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Standards.
 - .5 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit 5 prints or electronic copy of shop drawings for each requirement requested in Specification Sections and as Departmental Representative may reasonably request.
- .11 Submit 5 copies or electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Delete information not applicable to project.
- .13 Supplement standard information to provide details applicable to project.
- .14 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.4 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.

- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.5 MOCK-UPS

- .1 Construct field samples and mock-ups at locations acceptable to the Departmental Representative.
- .2 Construct each sample or mock-up complete, including work of all trades required to finish work.
- .3 Reviewed and approved samples or mock-ups will become standards of workmanship and material, against which installed work will be checked on project.

1.6 PROGRESS PHOTOGRAPHS

- .1 Submit progress photographs periodically as requested by Departmental Representative to document progress of the Work.

1.7 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Transcription of Insurance.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Province of Ontario
 - .1 Occupational Health and Safety Act and Regulations 213/91 for Construction Projects, R.S.O. 1990 as amended 443/09.

1.2 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 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.
- .3 Submit 1 copy of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit Material Safety Data Sheets (MSDS) to Departmental Representative.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 2 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 2 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.

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

1.3 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to commencement of Work.

1.4 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.5 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
- .2 Schedule and administer weekly Health and Safety Toolbox meetings with workers. Submit minutes of meetings to Departmental Representative at progress meetings.

1.6 GENERAL REQUIREMENTS

- .1 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 plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.7 RESPONSIBILITY

- .1 Be responsible for health and 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, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 COMPLIANCE REQUIREMENTS

- .1 Comply with Ontario Health and Safety Act and Regulations for Construction Projects.

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

1.9 UNFORSEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of the Province of Ontario. Advise Departmental Representative verbally and in writing.

1.10 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have minimum 2 years' site-related working experience.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.
- .2 Provide the name of this individual to the Departmental Representative.

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 the Province of Ontario, and in consultation with Departmental Representative.

1.12 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by 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.

1.13 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.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- .1 To supply all labour and materials to erect, maintain, and dismantle scaffolding as necessary, to complete the work of this contract. The use of a cherry picker to carry out the work to building exterior elevations will be required at locations above the area well and stairs on the west elevation.

1.2 RELATED SECTIONS

- .1 Section 01 56 00 - Temporary Barriers and Enclosures

1.3 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CSA Z797-09, Code of Practice for Access Scaffold.

1.4 DESIGN REQUIREMENTS

- .1 Design scaffolding to support loading from material hoist attached to scaffold frames.
- .2 Design bridging to ensure adequate distribution of scaffold loads over floor and roof structures to prevent overloading of structural members.
- .3 Design adequate connections to building elevation to resist lateral loads from scaffolding.

1.5 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 When scaffolding is higher than 15.25m for arch frame and system scaffolding, or 10m for tube and clamp scaffolding, submit shop drawings for scaffolding and hoarding, stamped by a qualified professional Engineer registered in the province of Ontario.
- .3 On shop drawings, indicate material specifications, and all details and information necessary for assembly and erection of scaffolding, including anchorage to the existing building.
- .4 The shop drawings shall show all superimposed service dead, live and lateral loads, for which the scaffolding is designed.

1.6 REGULATORY REQUIREMENTS

- .1 Design and construct scaffolding in accordance with:

- .1 CSA Z797.

1.7 SITE CONDITIONS

- .1 Scaffolding shall be erected, or dismantled as the case may be within a 5 day period after notification from the departmental Representative.
- .2 Maintain access to the building for all entrances where scaffolding is erected, providing all necessary enclosures, bridging, etc. to protect the building occupants, and public in general.
- .3 When the scaffold is in place, locate existing ventilation openings/louvers within the scaffold area, prior to the start of the work. Extend ventilation shaft outside the enclosure, in order to prevent dust entering adjacent areas.
- .4 Provide lighting for all public areas covered by the scaffolding.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Scaffolding
 - .1 Scaffolding materials must conform to CSA Standard CSA Z797.
 - .1 System scaffold with standing head clearance of a minimum of 1800mm, and side brackets. Welded arched steel frames are acceptable.
- .2 Scaffold Fabric Enclosure
 - .1 Light Duty Enclosure:
 - .1 High density green polyethylene knotted knit construction. U.V. stabilized, with vertical rows of strong polyester ribbons down the middle and along both sides of the netting, minimum weight 1185 gram/sq metre. This netting is not to be used as a human safety net. It's function is to guard against wind blown and falling debris.
 - .2 Heavy Duty Enclosure:
 - .2 Heavy duty T.S.E. insulated construction tarps, of a minimum of 8mm in thickness and a minimum of 155kg in tensile strength, and low temperature bond to -55⁰C.

PART 3 - EXECUTION

3.1 PROTECTION TO EXISTING ROOFING

- .1 Under scaffold frame legs or outrigger supports that bear on roofing, provide 15mm plywood over 50mm rigid insulation to protect existing roofing. Any damage to roofing to be repaired at the contractor's expense.

3.2 SCAFFOLDING ERECTION

- .1 Set scaffold anchors in horizontal masonry joints only. NO DRILLING INTO THE FACE BRICK IS PERMITTED. Repointing of masonry joints as scaffolding is removed will be carried out as part of contract.
- .2 At all entrances to the building, at grade level, bridge scaffolding and provide hoarding to allow continual pedestrian access for all the doors on each entrance.
- .3 Provide all scaffolding with arched frames, or other approved configuration for free access for workers, including side brackets each lift. Tie-backs must be installed at same level as side brackets.
- .4 Supply and install full width, continuous platform and side brackets, planking, braces, (cross and horizontal), jacks and baseplates, hangers, guardrails, guardrail posts, coupling pins, safety clips and all clamps for safe installation.
- .5 Do not bear any part of the scaffolding, directly against the masonry. Provide isolating material, lumber or plywood with additional padding as required to prevent damage to the existing masonry.
- .6 Provide and maintain adequate access to project site at all time.
- .7 Provide all safety handrails as required for safe working conditions for workers.
- .8 For scaffolding requiring shop drawings, provide proof of review and approval of scaffolding erection by a Professional Engineer licensed in the Province of Ontario.
- .9 Maintain the scaffolding in satisfactory condition for the duration of the work.
- .10 Provide hoarding, or other form of security fencing, around scaffolding to prevent access to scaffolding by the public in accordance with Section 01 56 00 - Temporary Barriers and Enclosures. Contractor is responsible to maintain security on the scaffold.

3.3 SCAFFOLDING ENCLOSURE

- .1 Install scaffold light duty fabric enclosure as per manufacturer's recommendations. All connections to the scaffolding must be capable of resisting applicable wind loads as specified in the 2010 National Building Code.
- .2 From April to mid-October, provide light duty fabric enclosure. In mid-October, replace light duty fabric enclosure with heavy duty fabric enclosure to protect all outstanding masonry work, or areas of masonry where required curing has not been achieved.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

1. Barriers.
2. Traffic Controls.
3. Fire Routes.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Construction Fence
 - .1 2300 mm modular steel construction fence. Provide fence bases that will not present a tripping hazard for the public.

PART 3 - EXECUTION

3.1 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.
- .3 Install temporary barriers and enclosures as per manufacturer's recommendations.

3.2 CONSTRUCTION FENCE

- .1 Erect and maintain secure construction fence around perimeter of the work area.
- .2 Install lockable access gate on secure hinges to provide access for all equipment and personnel into the work area.

3.3 SIGNAGE

- .1 Provide common use signs related to traffic control, information, instruction, use of equipment, public safety devices, and other signs as directed by the Departmental Representative.

3.4 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain barricades as required to perform Work and protect the public.

3.5 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

3.6 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect adjacent private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International).
 - .1 CSA S350 M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .2 Federal Legislation.
 - .1 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
 - .2 Comply with National Building Code 2010 (Part 8).

1.2 DEFINITIONS

- .1 Alternate Disposal: reuse and recycling of materials by designated facility, user or receiving organization which has valid Certificate of Approval to operate. Alternative to landfill disposal.
- .2 Deconstruction: systematic dismantling of structure in a manner that achieves safe removal/disposal of hazardous materials and maximum salvage/recycling of materials.
 - .1 Ultimate objective is to recover potentially valuable resources while diverting from landfill what has traditionally been significant portion of waste system.
- .3 Demolition: rapid destruction of structure with or without prior removal of hazardous materials.
- .4 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, including but not limited to: corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health, well being or environment if handled improperly.
- .5 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .6 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form.
 - .1 Recycling does not include burning, incinerating, or thermally destroying waste.
- .7 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from remodeling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.

- .8 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .9 Source Separation: acts of keeping different types of waste materials separate, beginning from first time they became waste.
- .10 Waste Management Coordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.

1.3 SITE CONDITIONS

- .1 Existing Conditions.
 - .1 Should materials resembling spray or trowel applied asbestos or other designated substance be encountered in course of deconstruction, stop work, take preventative measures, and notify Departmental Representative immediately. Do not proceed until written instructions have been received.
 - .2 Label and package component parts of mechanical and electrical material specified for salvage in accordance with Departmental Representative's instructions to prevent damage or loss.
- .2 Protection.
 - .1 Prevent debris from blocking surface drainage system, elevators, mechanical and electrical systems.
 - .2 Keep noise, dust, and inconvenience to occupants to a minimum.
 - .3 Protect existing building structure, systems, windows, services and equipment, which are to remain.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Do Work in accordance with Section 01 35 30 - Health and Safety Requirements.
- .2 Locate and protect utility lines. Do not disrupt active or energized utilities traversing premises designated to remain undisturbed.

3.2 REMOVAL OF HAZARDOUS WASTES

- .1 Prior to start of deconstruction work remove contaminated or hazardous materials as directed by Departmental Representative from site and dispose of at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements.

3.4 DISASSEMBLY

- .1 Materials removed from designated structure are property of Contractor.
- .2 Throughout course of deconstruction, pay close attention to connections and material assemblies. Employ workmanship procedures which minimize damage to materials and equipment.
- .3 Ensure workers and subcontractors are briefed to carry out work in accordance with appropriate deconstruction techniques.
- .4 Project supervisor with previous deconstruction experience must be present on site throughout project.
- .5 Deconstruct in accordance with CSA S350, the National Building Code, Part 8 and other applicable safety standards.
- .6 Separate from waste stream, material in condition suitable for reuse and/or recycling.
- .7 Remove and store materials to be salvaged, in manner to prevent damage. Store and protect in accordance with requirements for maximum preservation of material. Handle salvaged materials as new materials.
- .8 Source separate for recycling materials that cannot be salvaged for reuse including wood, metal, concrete and asphalt.
- .9 Remove materials that cannot be salvaged for reuse or recycling and dispose of in accordance with applicable codes at licensed facilities.
- .10 Where existing materials are to be re-used in Work, use special care in removal, handling, storage and re-installation to assure proper function in completed work.

3.5 PROCESSING

- .1 Designate location for processing of materials which eliminates double handling and provides adequate space to maintain efficient material flow.
- .2 Keep processing area clean and free of excess debris.
- .3 Supply separate, marked disposal bins for categories of waste material. Do not remove bins from site until inspected and approved by Departmental Representative. Notify Departmental Representative prior to removal of bins from site.

- .4 Separate processed materials into organized piles for stockpiling. Provide collection area for materials designated for alternate disposal. Pile materials on pallets to facilitate transport off site or to storage areas.

3.6 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

3.7 REMOVAL FROM SITE

- .1 Transport material designated for alternate disposal to approved facilities listed in waste reduction workplan and in accordance with applicable regulations. Do not deviate from facilities listed in waste reduction workplan without prior written authorization from Departmental Representative.
- .2 Dispose of materials not designated for alternate disposal in accordance with applicable regulations. Disposal facilities must be approved of and listed in waste reduction workplan. Do not deviate from disposal facilities listed in waste reduction workplan without prior written authorization from Departmental Representative.

3.8 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout deconstruction.
- .2 Upon completion of project, remove debris, trim surfaces and leave work site clean.
- .3 Upon completion of project, reinstate areas, parking surfaces and walkways affected by Work to condition which existed prior to beginning of Work.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C881/C881M-02, Specification for Epoxy-Resin-Based Bonding Systems For Concrete.
- .2 Canadian Standards Association (CSA)
 - .1 CAN/CSA A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction.

1.2 SUBMITTALS

- .1 Product Data.
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.
- .2 Place materials defined as hazardous or toxic in designated containers.
- .3 Ensure emptied containers are sealed and stored safely.
- .4 Use trigger operated spray nozzles for water hoses.
- .5 Designate cleaning area for tools to limit water use and runoff.

1.4 ENVIRONMENTAL

- .1 Maintain repaired concrete, including parging, above 5°C and below 30°C for a minimum of three days after placing.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Bonding agent: Bonding agent shall be anti-corrosive, water-based, suited for the proposed application.
- .2 Polymer modified repair mortar: Polymer modified mortar shall be latex-based, prepackaged, suited for the proposed application.

- .3 Epoxy for structural crack repairs: Epoxy resin adhesive to ASTM C881.
- .4 Parging material: Polymer-modified, cement-based parging material suitable for parging thickness between 10mm and 20mm Texture to match existing. Colour to be chosen by the Departmental Representative from the standard available colour.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACE REPAIRS

- .1 Prepare surface for repair. Provide 13mm deep straight edge around perimeter of area to be repaired, both top and underside of slab for through slab repairs. The surface will be checked by the Departmental Representative for fractured concrete, or loose aggregate. This material shall be removed using hand tools.
- .2 After acceptance of surface by Departmental Representative, grit blast surface including existing reinforcing steel. Grit blast all exposed reinforcement to near white metal degree of cleanliness as per SSPC-SP10-63T (NACE No. 2). Grit blast concrete repair surfaces to expose clean, sound, laitance free concrete. Surface preparation to be in accordance with polymer modified repair mortar manufacturer's instructions.
- .3 Immediately after grit blasting, the surface will be checked by Departmental Representative for fractured concrete, or loose aggregate. This material shall be removed using hand tools.
- .4 After acceptance of surface by Departmental Representative, install reinforcement where necessary. Minimum spacing of steel bars to be as noted on the Drawings.

3.2 APPLICATION

- .1 Complete concrete repairs in accordance with the polymer modified repair mortar manufacturer's instructions.
- .2 Complete parging replacement for the extent noted on the drawings, in accordance with the parging manufacturer's instructions.

3.3 FINISHES

- .1 Formed surfaces exposed to view: sack rubbed finish in accordance with CAN/CSA A23.1.

3.4 CURING

- .1 Cure and protect repairs and parging in accordance with CAN/CSA A23.1.

3.5 PARGING INSTALLATION

- .1 Remove existing parging at locations indicated on drawings. All parging to be removed to expose existing concrete or concrete block.
- .2 Prepare the existing surface in accordance with the parging material manufacturer's instructions.
- .3 Apply the parging in two coats for parging up to 10mm thick and three coats for parging up to 20mm thick. Allow 24 hours minimum between coats.
- .4 Scratch surface of the first coat and intermediate coat while applying it to ensure good bond with the subsequent coats.
- .5 Build up the thickness of the parging to the thickness noted on drawing.
- .6 Terminate parging neatly around all openings and existing building features without gaps or voids.
- .7 Parging finish to be smooth and of uniform thickness.

END OF SECTION

PART 1 - GENERAL

1.1 ALTERNATES

- .1 Obtain, in writing from Departmental Representative authorization for changes of cleaning method, cleaning medium, tools, pressure, and flow rates.

1.2 REFERENCES

- .1 Canadian Environmental Assessment Act (CEAA) 1992
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS)
- .3 Mine Safety and Health Administration/National Institute for Occupational Safety and Health (MSHA/NIOSH) Standards.

1.3 SUBMITTALS

- .1 Submit WHMIS MSDS – Material Safety Data Sheets documentation in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Samples
 - .1 Demonstrate machinery, tools and nozzles for approval by Departmental Representative.
 - .2 Submit samples of all cleaning materials for approval of Departmental Representative.

1.4 QUALITY ASSURANCE

- .1 Test Reports
 - .1 Submit test results in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit 2 copies of test results describing cleaning method, water pressure at compressor, tools, nozzle size and distance from masonry surface, used for cleaning of each test patch.
 - .3 Proceed with cleaning upon written approval by Departmental Representative concerning tested cleaning methods.
- .2 Mock-Ups
 - .1 Do mock-ups tests in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Conduct tests on building to determine effectiveness of low pressure wash cleaning methods.
 - .3 Test brushing and spraying as alternative to pressure washing. Use successful tests.
 - .4 Locate test patches in inconspicuous places directed by Departmental Representative

- .5 Test patches to be 2 m square.
- .6 Notify Departmental Representative 48 hours before commencing cleaning of each test patch.
 - .1 Do not start without approval of Departmental Representative.
- .7 Determine effect of cleaning operations on surrounding historic material and plants.
- .8 Stop work when cleaning has detrimental effect on surrounding material and plants.
- .9 Proceed after written instructions are received from Departmental Representative.
- .10 Protect masonry openings from water infiltration with polyethylene during cleaning.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's requirements.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with local collection practices.

1.6 ENVIRONMENTAL REQUIREMENTS

- .1 Do not use wet cleaning methods when there is threat of frost within a 48 hour period.
- .2 Provide shading to wall to avoid cleaning in full, hot sunlight.
- .3 Chemical cleaning work will not take place when surface temperature of masonry is below 15 degrees Celsius.

1.7 EXISTING CONDITIONS

- .1 Report to Departmental Representative conditions of deteriorated masonry or pointing found during cleaning.
- .2 Record existing conditions, using photographs, before and after cleaning. Advise Departmental Representative of potential cleaning problems.
- .3 Do not clean areas of deteriorated masonry without prior written approval of Departmental Representative.

1.8 SCHEDULING

- .1 Complete work within approved schedule time.
 - .1 Do not change Schedule without written approval of Departmental Representative.

- .2 Co-ordinate cleaning work schedule with other work on site.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Use clean potable water free from contaminants.
- .2 Treat water which has high metal content before use in cleaning.
- .3 Use air free from oil or other contaminants.
- .4 Use masking material to approval of Departmental Representative.
- .5 Surfactant: non-ionic detergent such as "Brilliance".
- .6 Solvents: Toluene, Xylene, Acetone, Methyl Ethyl Ketone.
- .7 Abrasive for micro-abrasive cleaning.
- .8 Use hydrofluoric acid (HF) based cleaner in concentration less than 5% by volume. Include Orthophosphoric acid 0.25% by volume.
- .9 Use xylene 60 degrees C Flash Point solvent in gel poultice or Perchloroethylene to remove graffiti and other stains.
- .10 Amended Water: Non-sudsing surfactant in water to soak stains and environmental soiling.

2.2 TOOLS AND EQUIPMENT

- .1 Use only brushes with natural or soft plastic bristles.
- .2 Use only scrapers of wood, or stainless steel, or plastic.
- .3 Use water pumps fitted with accurate pressure regulators and gauges capable of being preset and locked at maximum specified levels.
 - .1 Water pumps to have rating of 0.3 kPa.
- .4 Use air compressors equipped with on-line oil filters to avoid spraying oil onto masonry.
- .5 Use gun equipped with pressure gauge at nozzle end.
- .6 Use plastic or non-ferrous metal piping and fittings.
- .7 Use nozzles that give nebulized droplet spray. Use nozzles with 12 mm opening.
- .8 Buckets.

- .9 Colorfast sponges resistant to solvents and chemicals.
- .10 4 ml polyethylene sheeting.
- .11 Small wedges.
- .12 Water/Abrasive Cleaning Equipment – Proprietary cleaning systems based on micro-abrasives and low pressure water delivered by means of various nozzles (including standard, micro and piccolo) producing a rotating vortex process.
- .13 Vacuum Cleaner designed for industrial use, Hepa type.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Place safety devices and signs near work areas as indicated and directed.
- .2 Seal or repair openings and joints where there is potential risk of water infiltration.
- .3 Cover surfaces not to be cleaned.
- .4 Dry brush or scrape accumulations from walls, ledges and cornices.
- .5 Cover and protect surfaces and non-masonry finishes in areas to be cleaned.

3.2 PROTECTION

- .1 Mask or seal vents, windows, and other openings, to prevent water entry, or entry of air contaminated with chemical fumes, or fine dust residue.
- .2 Mask wood, glass, and metal adjacent to masonry.
- .3 Protect plants, gardens, shrubs from excessive watering.
- .4 Hang sheeting material from scaffolding to enclose water spray.
- .5 Ensure workers wear eye, head, and face protection, and protective gloves, coveralls, boots and filter mask to MSHA/NIOSH standard.
- .6 Protect cleaned surfaces which are to be painted from contact with rain and snow.
- .7 Protect rainwater leaders, eaves troughs and gutters from being blocked by residue. Install suitable protection at drains, but ensure normal flow of water is not restricted.

- .8 Protect finished Work from damage until take-over.
- .9 Protect adjacent Work from spread of dust and dirt beyond work areas.
- .10 Protect operatives and other site personnel from hazards.

3.3 EXECUTION OF CLEANING

- .1 Low Pressure Water Cleaning:
 - .1 Pre-wet masonry surface when necessary. Work from top of wall downwards.
 - .2 Avoid prolonged wetting and excessive water penetration.
 - .3 Do not exceed maximum pressure at nozzle or have nozzle closer to masonry than approved by Departmental Representative at mock-up.
 - .4 Use chemical cleaners approved by Departmental Representative. Follow manufacturer's recommended dwell time.
 - .5 Heavy soiled areas will require proportionately more soaking time than cleaning open areas. Avoid running streams of water down wall elevations and excessive soaking of masonry with subsequent damage to wall envelope. Concealed iron fittings and structural components can be seriously damaged by prolonged wetting of masonry, leading to spalling, severe staining and structural damage. Avoid steel or iron pipes and spray heads/nozzles. Provide plastic piping and fittings for general use.
- .2 Use brushing and scraping only to supplement water washing.
- .3 Soak stains and environmental soiling with amended water. Rinse with clean water.
- .4 Soften and loosen heavy deposits with prolonged water spray, then brush. Remove thick incrustations with wooden or plastic scrapers.
- .5 Ensure masonry is cleaned after removal of scaffolding to eliminate possible staining on stone from tie-backs.
- .6 Ensure finishpointing mortar is sufficiently cured prior to final cleaning. Any mortar joints damaged during final cleaning, must be raked out, and finishpointing reinstalled.
- .7 Use chemical cleaners approved Departmental Representative for stain and soil removal.

3.4 SURFACTANT CLEANING

- .1 The following method will be used to clean all light or loosely bonded forms of soiling.
- .2 Dry brush with stiff bristle brush all surfaces to remove accumulated loose dirt, suctioning the dirt with a vacuum as it loosens.

- .3 Provide protection, troughs and all installations necessary to ensure cleaning solution does not spill, drip or in any other way make contact with adjacent wall or floor surfaces not included in this intervention.
- .4 Liberally wet the surface of the soiled stones with the surfactant and hot water solution.
 - .1 Concentrations of the surfactant and water solution will be determined by the Departmental Representative.
- .5 Brush aggressively by hand using a stiff bristle brush. Do not allow to dry. Work on maximum surface areas which are manageable any one time.
 - .1 Brushes must be of various shapes and sizes to allow easy and certain contact with all shaped surfaces of the stones being cleaned.
- .6 Discard surfactant solution as soon as it becomes dirty and replace with fresh solution.
- .7 Once surface is clean and to the satisfaction of the Departmental Representative, rinse the surface of the cleaned stones by applying liberally with hot water keeping certain to collect all spillage of the rinse water.
- .8 Any damage of adjacent wall surfaces such as mortars, glass, plaster, wood, will be replaced or repaired to the Departmental Representative satisfaction at the expense of the Contractor.

3.5 CLEAN-UP

- .1 Rinse off masonry to satisfaction of Departmental Representative.
- .2 Rinse from bottom to top and from top to bottom.
- .3 Clean up work area as work progresses. At end of each work day remove debris and waste from site.
- .4 Upon completion, clean and restore areas used for work to condition at least equal to that previously existing.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 04 03 06 - Historic – Cleaning Historic Masonry.
- .2 Section 04 05 10 - Common Work Results for Masonry

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM A276-08, Standard Specification for Stainless Steel Bars and Shapes.
- .2 Canadian Standards Association (CSA)
 - .1 CSA A23.1-09/A23.2-09, Construction Materials and Methods of Concrete Construction.
 - .2 CAN/CSA A371-04 (r2009), Masonry Construction for Buildings.

1.3 DEFINITIONS

- .1 Raking: the removal of loose/deteriorated mortar until sound mortar is reached but not less than a depth of 30mm.
- .2 Backpointing: filling of masonry joints for the full depth, from which mortar is missing, has been raked out or has been omitted to a point 30 mm from the brick or stone face.
- .3 Finishpointing: filling and finishing of masonry joints from which mortar is missing, has been raked out or has been omitted; for a depth of 30 mm.
- .4 Tooling: finishing of masonry joints using tool to provide final contour.
- .5 Repair: using adhesives to rebond sections of fractured masonry.
- .6 Consolidation: strengthening masonry units to prevent deterioration (spalling).
- .7 Descaling: the removal of loose portions of the masonry (usually spalled area) through impact with a bush hammer or similar device.
- .8 Core: that portion of stone masonry wall located between the outer and inner stone wythes, and consisting of mortar and small stones.

1.4 SYSTEM DESCRIPTION

- .1 Work of this Section includes but is not limited to:
 - .1 Visually inspecting for obvious signs of deteriorated masonry.
 - .2 Raking identified unsound joints, and as noted on Drawings.

- .3 Preparation of masonry surface including joints, surface cleaning, flushing of voids and open joints, and masonry wetting.
- .4 Repointing of identified masonry joints, including backpointing and finishpointing.
- .5 Removal of loose portions on brick surface.
- .6 Resetting of dislodged masonry units.
- .7 Ensuring cure of mortar.
- .8 Grouting by hand, small voids.
- .9 Consolidation of fractured masonry units or spalled units, using crack repair technique.
- .10 Replacement of deteriorated or missing units, with new brick.

1.5 EXISTING CONDITIONS

- .1 Report in writing to the Departmental Representative, areas of deteriorated masonry revealed during work. Obtain Departmental Representative's approval and instructions of repair and replacement of masonry units before proceeding with repair work.
- .2 Study pointing styles and methods of reproducing them, and submit sample for approval before starting work.
- .3 Examine horizontal and vertical joints to determine which were struck first and whether they are the same style, as well as other aspects of workmanship which establish authenticity of original work.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Masonry materials are specified in Related Sections.

PART 3 - EXECUTION

3.1 GENERAL

- .1 Perform work in accordance with CAN/CSA A371. Extent of raking out and repointing is as noted on the Drawings.
- .2 Use manual raking tool unless otherwise specified, to remove deteriorated mortar and ensure that no masonry units are chipped/altered/damaged by work to remove mortar. Tools for cutting out must be narrower than the joint.
- .3 Tool and compact using jointing tool to force mortar into joint.
- .4 For backpointing in deep, narrow joints, fabricate long stainless steel packing tools, to force mortar into the joints and compact it.
- .5 Finish joints to match existing joints, except where specified otherwise.

- .6 Use suitable approved jointing tool to form compacted concave tooled joints. Tool length for finishpointing not to exceed 50 mm.
- .7 Do not saw-cut or rake out mortar joints when ambient temperature is below 5°C in the Spring or 0°C in the Fall, as the mortar in the joints may be frozen. Any attempt to remove frozen mortar will result in damage to the masonry. Damaged masonry resulting from removal of frozen mortar, must be replaced at the Contractor's expense.

3.2 REPOINTING

- .1 Procedure of testing: inspect joints visually for obvious signs of deteriorated masonry.
 - Test deteriorated joints not visually observed as follows:
 - .1 Test for voids and weakness by using hammers or other approved means.
 - .2 Perform testing in co operation with Departmental Representative so that unsound joints can be marked and recorded.
 - .2 Raking joints:
 - .1 Rake out all joints as noted on drawings.
 - .2 Rake unsound joints free of deteriorated and loose mortar, dirt and other undesirable material.
 - .3 All cutting out of joints is to be done with hammer and chisel, or air tools unless otherwise specified. Great care must be taken so as not to damage masonry units adjacent to joints. Cut away from the arrises to prevent spalling of the masonry. The use of power tools is only permitted, as noted.
 - .4 Where the use of power tools is permitted to remove existing mortar, proceed as follows:
 - .1 Grind the centre of the joint only, to a maximum width of half of the joint width. Mortar must remain on each side of the cut. The grinders must not touch the brick.
 - .2 For vertical joints, and discontinuous horizontal joints, stop sawcut 50 to 75mm from end of joint. Do not sawcut brick.
 - .3 Notify the Departmental Representative to inspect the grinding, prior to removing the remaining mortar with hand tools.
 - .4 The remaining mortar must be removed by hand tools.
 - .5 Permission to use power tools will be based on the Contractor's ability to comply with the above conditions, as observed in the mock-up.
 - .6 If the contractor is found not to comply with these requirements, he will be required to remove all mortar by using hand tools, at no extra cost to the Departmental Representative.
 - .5 Include removal of all existing excess mortar that may have been applied to brick face due to overpointing. Do not damage arris or finish on brick face.

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- .6 Clean joints to full depth of deteriorated mortar but in no case to less than 30 mm. Clean out voids and cavities encountered.
 - .7 Clean by compressed air, surfaces of joints without damaging texture of exposed joints.
 - .8 Flush open joints and voids; clean open joints and voids with low pressure water and if not free draining blow clean with compressed air.
 - .9 Fine joints (less than 4mm) need not be raked out more than 10mm, in order to reduce the danger of chipping the masonry edges. Cut these joints with power -saw, if necessary. When saw cutting vertical joints, stop sawcut 50 to 75mm from end of joint. Do not saw cut brick. Use flat-bladed quirks and light hammers, hack-saw blades or similar tools to rake out joints.
 - .10 Leave no standing water.
 - .11 Damaged masonry includes widening of existing joints, nicks, gouges and chipped or scratched surfaces from cutting out tools, resulting from improper workmanship. Any brick damaged as a result of careless raking, or saw cutting, shall be replaced at no cost to the Owner.
 - .12 Joints cannot be raked for more than four levels of scaffold in height, prior to backpointing, unless approved by the Departmental Representative.
 - .13 If masonry unseats or bond is broken, remove unit and reset.
- .3 Backpointing:
- .1 Where cut out joints are deeper than minimum raking out depths specified above, backpoint joints to bring mortar face to depth specified above, in preparation for finishpointing. Where voids exist that conventional backpointing cannot fill, notify Departmental Representative for direction.
 - .2 Immediately prior to pointing, thoroughly wet joints in order to control absorption.
 - .3 Allow water to soak into masonry and mortar, leaving no standing water, but remaining wet.
 - .4 For backpointing, fill all joints full with mortar, compacting firmly into joints to ensure positive adhesion to all inner surfaces. Place mortar in layers, max 30 mm thickness, minimum 15 mm thick, allowing each layer to set to thumb print hardness before placing next layer. Bring face of mortar in backpointed joint to specified minimum depth for raked out joints, measured from the arris of the masonry unit. Leave ready for final pointing.
 - .5 Form mortar square to brick face, and leave exposed brick each side of joint clean of mortar prior to mortar setting.
 - .6 For deep joints, provide stainless steel packing tools manufactured to permit the mason to compact mortar deep in the joints.
 - .7 Prevent mortar from being placed or smeared onto face of brick. Avoid mortar staining of masonry faces during backpointing.
- .4 Finishpointing:
- .1 When all required repair and replacement work is complete, carry out finishpointing.

- .2 Before finishpointing, wash walls to be finishpointed and allow to dry to damp-dry condition. Ensure that all dust, mortar particles, and other debris is removed from joints and wall surfaces before finishpointing.
- .3 Dampen joints and completely fill with mortar. If surface of masonry units has worn rounded edges, keep pointing back from surface to keep same width of joint. Avoid feather edges. Pack mortar solidly into voids and joints, to ensure positive adhesion to all inner surfaces.
- .4 Keep masonry damp while pointing is being performed.
- .5 Do no pointing in freezing weather. See Section 04 05 10- Common Work Results for Masonry for protection required for work in this Section.
- .6 Build up pointing in layers not exceeding 30 mm in depth. Allow bottom layers to become thumbprint hard before applying subsequent layers. Pack and compress mortar into voids to fit approximately, but no less than 15mm thick. Maintain joint width.
- .7 Remove excess mortar from masonry face before it sets. Finish jointing neatly as detailed.
- .8 Allow mortar to set so that there is no free water that will cause run off on brick faces, then tool to match approved mock-up joints. Tool head joints, followed by horizontal joints. Do not overwork the face of the joints. Joints shall be uniform in appearance. Do not brush joints until they have set to the extent that brushing will not mark the joint surface.
- .9 When mortar is thumbprint hard, finish joints with stippling action using a short stout bristle brush to compact the joint further, and produce a textured finish, exposing the aggregate.
- .10 Retempering of Mortar:
 - .1 Portland cement-hydrated lime mortars should only be retempered once, and should be used within 2 hours of adding water to the mix when the air temperature is less than 25 degrees C. (1½ hours for higher temperatures).
 - .2 Do not retemper coloured mortars as it will affect the colour of the mortar.
- .5 Curing:
 - .1 Moist cure freshly pointed joints by spraying at intervals for minimum of 3 days after finishpointing. Keep wall and burlap misted.
- .6 Protection
 - .1 Protect newly laid mortar from frost, rainfall or rapid drying conditions for 3 days.

3.3 SCAFFOLDING ANCHORAGE

- .1 As each level of work is completed and cured for a minimum of seven days, remove embedded scaffold anchors.
- .2 Reinstall anchors into alternate masonry joints adjacent to existing anchorage location, until scaffold removal is required.
- .3 Rake out and repoint joints affected by anchors, as detailed.

- .4 Repointed joints must be inspected by Departmental Representative prior to removal of scaffold deck.
- .5 Upon final removal of anchors, caulk the joints where the anchor has been removed. Caulking colour to match mortar colour.

3.4 DESCALING

- .1 Remove loose masonry portions by impact with bush hammer as directed by Departmental Representative.

3.5 RESETTING

- .1 Prepare area to receive reset brick. Clean back all loose and deteriorated core to sound material.
- .2 Repoint all void joints in back-up masonry. Replace deteriorated masonry as directed by Departmental Representative. Shave back-up masonry as necessary to reset brick.
- .3 Install new stainless steel helical wall ties built into back-up masonry, as directed.
- .4 Install mortar on face of back-up masonry to form continuous collar joint, just prior to resetting brick.
- .5 Fix dislodged masonry units in same location and orientation as originally set with water soaked wedges. Reset level, true and square with even mortar joints to exact original thickness.
- .6 Insert and compress firm mortar to within 30 mm of finish pointing surface. Allow mortar to set 24 hours.
- .7 Pull out wood wedges when dried and shrunken.
- .8 Backpoint in layers, and leave ready for finishpointing.

3.6 FIELD QUALITY CONTROL

- .1 The Departmental Representative will inspect the quality of the work on a regular basis.
- .2 Notify Departmental Representative prior to sawcutting joints, so that the stone masonry can be photographed. Provide clear access to all points of stone masonry to permit this photography to occur.
- .3 Provide Departmental Representative with a minimum of 48 hours notice for required inspection.

- .4 Approval of raked out condition of joints, and approval of backpointing mortar, must be received in writing by the contractor before the next procedure can proceed.
- .5 Where work proceeds to the next phase, without the approval of the Departmental Representative, the contractor will remove all unapproved mortar at his cost.

3.7 CLEANING

- .1 Clean masonry in accordance with Section 04 03 06 - Historic – Cleaning Historic Masonry.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 04 03 06 – Historic – Cleaning Historic Masonry
- .2 Section 04 05 12 - Mortar and Masonry Grout.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA A82-06, Fired Masonry Brick Made From Clay or Shale.
 - .2 CAN/CSA A179-04 (R2009), Mortar and Grout for Unit Masonry.
 - .3 CSA S304.1-04, Design for Masonry Structures.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Provide samples:
 - .1 One of each type of masonry unit specified.

1.4 QUALITY ASSURANCE

- .1 Provide and construct mock ups in accordance with Section 01 45 10 – Common Work Results for Masonry.
- .2 Construct mock up panel of masonry wall construction 600 x 600 mm showing masonry colours, textures, jointing, coursing, mortar and workmanship.
- .3 Construct mock up where directed by Departmental Representative.
- .4 Allow 24 hours for inspection of mock up by Departmental Representative. Accepted mock up becomes the standard for this Work.
- .5 When mock up accepted, proceed with repointing and repair work. Mock up may remain as part of finished Work.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Provide weather protection and construction protection in accordance with CSA S304.1.
- .2 Provide weather protection to newly opened sections in assembly.

- .3 Protect bricks and store bricks to facilitate their resetting.
 - .1 Store dismantled masonry units on pallets, protected from exposure to water, elements, and potential mechanical damage fully covered under polyethylene.
 - .2 Submit storage and identification system to Departmental Representative for review.
- .4 Place detached bricks on wood surfaces during handling. Prevent contact with metal.
- .5 When bricks are lowered to ground, place directly on wooden platform that will be used for transport or storage.
- .6 Transport and keep bricks on wooden platforms.
- .7 Ensure that sharp edges of bricks do not come into contact with hard objects.

1.6 EXISTING CONDITIONS

- .1 Check for evidence of repairs, cracks, moisture and dampness, and report to Departmental Representative, before starting Work.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

- .1 Face brick.
 - .1 Burned clay brick: to CAN/CSA A82.1.
 - .1 Type: FBX
 - .2 Grade: SW
 - .3 Size: Ontario size: 213mm long by 102mm wide by 60mm high, to match existing.
 - .4 Colour and texture: to match existing.
 - .5 Acceptable material: Hanson Brick. Colour: Mixes bricks: "Vintage" package (3 bricks) and "Copper".

2.2 EXISTING BRICK

- .1 Use hard, sound, and clean old bricks salvaged on site only with Departmental Representative's approval.

2.3 MORTAR

- .1 Mortar: in accordance with Section 04 05 12 – Masonry Mortar and Grout.

PART 3 - EXECUTION

3.1 SITE VERIFICATION OF CONDITIONS

- .1 Check for evidence of repairs, cracks, moisture and dampness, not noted on Contract Drawings, and report to Departmental Representative, before starting Work.
- .2 Stop work and report to Departmental Representative immediately evidence of mould.

3.2 BRICK REMOVAL

- .1 Verify locations and dimensions of areas of Work with Departmental Representative.
- .2 In areas of work, identify salvageable bricks with Departmental Representative.
- .3 During removal, protect sound areas designated to remain. Use mechanical hand methods of removal. Obtain Departmental Representative's approval for use of power tools before commencing work.

3.3 BRICK SALVAGE

- .1 Carefully clean, and store bricks for re use. Store and protect bricks in accordance with Article 1.5, DELIVERY, STORAGE AND HANDLING.

3.4 BRICK REPLACEMENT

- .1 Clean dust and brick fragments from slot. Before proceeding with Work, inspect cleaned surface with Departmental Representative.
- .2 Dampen slot's surfaces before applying mortar.
- .3 Apply mortar and lay bricks.
- .4 Finish joints to match those of existing brickwork.
- .5 Keep new mortar wet for 3 days at a minimum temperature of 5 degrees C.
- .6 Clean finished brickwork.
 - .1 Remove mortar splashings on exposed brickwork.
 - .2 Clean masonry with low pressure clean water and soft bristle brush.
- .7 Inspect finished brickwork with Departmental Representative.

3.5 REPOINTING:

- .1 Dampen joints.
- .2 Keep masonry damp while pointing is being performed.

- .3 Completely fill joint with mortar. If surface of masonry units has worn rounded edges keep pointing back from surface to keep same width of joint. Avoid feather edges. Pack mortar solidly into voids and joints.
- .4 Tool joints to match existing profile.
- .5 Remove excess mortar from masonry face before it sets.

3.6 CLEANING

- .1 Clean masonry in accordance with Section 04 03 06 - Historic – Cleaning Historic Masonry.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 04 03 06 - Historic – Cleaning Historic Masonry.
- .2 Section 04 03 07 - Historic - Masonry Repointing and Repair.
- .3 Section 04 05 12 – Masonry Mortar and Gout.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International).
 - .1 CAN/CSA A165 Series-04 (R2009), Standards on Concrete Masonry Units.
 - .2 CAN/CSA A179-04 (r2009), Mortar and Grout for Unit Masonry.
 - .3 CAN/CSA A371-04, Masonry Construction for Buildings.

1.3 SUBMITTALS

- .1 Product Data.
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings
 - .1 Where existing masonry becomes laterally unsupported during construction, provide shop drawings for temporary bracing, stamped by a Professional Engineer registered in the Province of Ontario.
- .3 Samples.
 - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures Submit samples:
 - .1 Two of each type of masonry unit specified.
 - .2 Two samples of bricks to be used to replace existing brick.
 - .3 One of each type of Restoration mortar.
- .4 The approved samples shall become the standard material to be used.
- .5 Manufacturer's Instructions.
 - .1 Submit manufacturer's installation instructions.
- .6 Temporary Bracing.
 - .1 Submit stamped engineered drawings for temporary bracing to support free standing masonry during construction, in conformance with Annex D of CAN/CSA A371.

1.4 QUALITY ASSURANCE

- .1 Test Reports.
 - .1 Submit certified test reports showing compliance with specified performance characteristics and physical properties.
 - .2 Submit laboratory test reports certifying compliance of masonry units with specification requirements.
 - .3 For clay units, in addition to requirements set out in referenced CSA Standards, include data indicating initial rates of absorption.
- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.
- .3 Mock-ups.
 - .1 Construct mock-ups in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Construct mock up panel of masonry wall construction 600 x 600 mm showing masonry colours, textures, jointing, coursing, mortar and workmanship.
 - .3 For repointing, mock-up must include samples of saw cut joints, raked joints, backpointed joints and finishpointed joints, for both horizontal and vertical joints.
 - .4 Mock-up will be used:
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
 - .2 For testing to determine compliance with performance requirements. Perform the following tests.
 - .1 For clay units, in addition to requirements set out in referenced CSA Standards include data indicating initial rate of absorption.
 - .5 Construct mock-up where directed.
 - .6 Allow 24hours for inspection of mock-up by Departmental Representative before proceeding with work.
 - .7 When accepted by Departmental Representative, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.
 - .8 Start work only upon receipt of written approval of the mock-up by the Departmental Representative.
- .4 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. .
- .5 The principal mason and site superintendent engaged by the Masonry Contractor must have sufficient experience with historic masonry similar to this project, and can demonstrate an ability to pass a hands-on test of skills, if so administered by the Departmental Representative. Departmental Representative has the right to

reject either of these individuals, who does not demonstrate the appropriate abilities or experience on the following tasks:

- .1 Raking joints by hand.
 - .2 Pinning techniques
 - .3 Restoration mortar repairs: repairs involving proprietary restoration mortar shall be carried out by persons who have successfully completed the manufacturer's training course and have been certified by the manufacturer for the type of work required. Provide proof of accreditation by the manufacturer before work begins.
 - .4 Historical repointing.
- .6 All masons employed on this project must demonstrate the ability to reproduce the mock up standards.
- .7 All masons employed on this project must meet the above requirements. Where, during the course of the project, masons leave the work force, all replacement masons must also meet the requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver materials to job site in dry condition.
- .2 Storage and Protection.
 - .1 Keep materials dry until use except where wetting of bricks is required.
 - .2 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 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material, in accordance with Waste Management Plan.
- .3 Unused metal materials are to be diverted from landfill to a metal recycling facility as approved by Departmental Representative.
- .4 Unused or damaged masonry materials must be diverted from landfill to a local facility as approved by Departmental Representative.

1.7 SITE CONDITIONS

- .1 Site Environmental Requirements.
 - .1 Cold weather requirements.
 - .1 Supplement Clause 6.7.2 of CAN/CSA A371 with following requirements.
 - .1 Maintain temperature of mortar between 5 degrees C and 30 degrees C until batch is used or becomes stable.

- .2 Maintain ambient temperature between 5 degrees C and 30 degrees C and protect site from wind chill.
- .3 Cover mortar less than 3 days old with tarpaulins, when temperature is forecast to fall below 5 degrees C, and insulated tarpaulins when temperature is forecast to fall below 0 degrees C.
- .4 Provide heating of masonry work when air temperature falls below 5 degrees C.
- .5 Maintain mean temperature of masonry above 0 degrees C for a minimum of 28 days, after mortar is installed.
- .6 Do not repoint if the temperature is forecast to drop below 0 Degrees C in the following 24 hours.
- .7 For hydraulic lime mortar, maintain temperature above 5 Degrees C in dry conditions for a minimum of three days.
- .8 An unheated section of wall must be preheated in it's enclosure for a minimum period of 72 hours above 10 degrees C, before any mortar is applied.
- .2 Hot weather requirements.
 - .1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.
 - .2 Protect masonry 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 flashings or other permanent construction.
 - .3 Spray the mortar surface at intervals to keep it moist for a minimum of three days after installation.
- .3 Maintain minimum/maximum thermometers and relative humidity gauges on site and in all enclosures and maintain a daily record of temperature and humidity.

1.8 PERFORMANCE

- .1 The following will be considered deficiencies in the work in addition to any failure to meet other provisions of these specifications:
 - .1 Mortar shrinkage cracks between units.
 - .2 Unfilled joints.
 - .3 Spalling of units or joints.
 - .4 Poor colour or texture blending of joints or units.
 - .5 Dusting, efflorescence of joints or units.
 - .6 Surface discolouration, discolouration, variance of colour or crumbling of mortar.
 - .7 Failure of anchors of built-in items.
 - .8 Sloppy fitting, or otherwise poor workmanship in levelling, bedding or jointing of units.
 - .9 Failure to match adjacent work or failure to match control test area.
 - .10 Failure to adequately cure the mortar.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Masonry materials to be in accordance with Section 04 05 12 – Masonry Mortar and Grout.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 PREPARATION

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

3.3 INSTALLATION

.1 Masonry work in accordance with CAN/CSA A371 except where specified otherwise.

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

.3 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

3.4 CONSTRUCTION

.1 Exposed masonry.

.1 Remove chipped, cracked, and otherwise damaged units, in accordance with CAN/CSA A165, Clause 82.1, in exposed masonry and replace with undamaged units as directed by the Departmental Representative.

.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 where concave joints are indicated. Mortar must match existing, in colour and physical characteristics.

.2 Allow joints to set just enough to remove excess water, then rake joints uniformly to 6 mm depth and compress with square tool to provide smooth, compressed, raked joints of uniform depth where raked joints are indicated.

.3 For joint finishing, see Section 04 03 07, Historic-Masonry Repointing and Repair.

- .3 Wetting of bricks.
 - .1 Except in cold weather, wet bricks having an initial rate of absorption exceeding 1 g/minute/1000 mm²: wet to uniform degree of saturation, 3 to 24 hours before laying, and do not lay until surface dry.
- .4 Interface with other work.
 - .1 Cut openings in existing work as indicated.
 - .2 Openings in walls: approved by Departmental Representative.
 - .3 Make good existing work. Use materials to match existing.

3.5 SITE TOLERANCES

- .1 Tolerances: Conform to Clause 6.2 of CAN/CSA A371.

3.6 FIELD QUALITY CONTROL

- .1 Inspection and testing will be carried out by Testing Laboratory designated by Departmental Representative.
- .2 Departmental Representative will pay costs for testing.

3.7 CLEANING

- .1 Perform cleaning after installation and when mortar has fully cured to remove construction and accumulated environmental soiling.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.
- .3 Clean masonry in accordance with Section 04 03 06 - Historic – Cleaning Historic Masonry.

3.8 PROTECTION

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

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 04 03 06 - Historic – Cleaning Historic Masonry.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C144-11, Specifications for Aggregate for Masonry Mortar
- .2 Canadian Standards Association (CSA International).
 - .1 CAN/CSA A179-04 (R2009), Mortar and Grout for Unit Masonry.
 - .2 CAN/CSA-A3000-08 Cementitious Material Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

1.3 SUBMITTALS

- .1 Product Data.
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's mortar, grout, parging, colour additives and admixtures.
- .2 Samples.
 - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two samples of coloured mortar.
- .3 Prior to the mixing or preparation of mortars submit for approval to the Departmental Representative confirmation of source or product data sheet of:
 - .1 Aggregate
 - .2 Cements
 - .3 Lime
 - .4 Premixed products
- .4 Manufacturer's Instructions.
 - .1 Submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

- .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements..

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material for recycling in accordance with Waste Management Plan.

1.6 SCHEDULING OF WORK

- .1 Submit work schedule indicating anticipated progress stages within time of final completion shown in bid document.
- .2 Take measures necessary to complete work within approved schedule time. Schedule may not be changed without approval.

1.7 ALTERNATIVES

- .1 Obtain Departmental Representative's approval before changing manufacturer's brands or sources of supply of mortar materials during entire contract or other methods of mixing mortar specified elsewhere in this specification.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Use same brands of materials and source of aggregate for entire project.
- .2 Mortar and grout: to CAN/CSA A179.
- .3 Aggregate: to CAN/CSA A179. Gradation to ASTM C144. Use well graded aggregate passing 4.75mm down to 300 micron sieve where joints are greater than 6mm. Use aggregate passing 1.18mm down to 150 micron sieve where 6mm thick joints or less are indicated. Acceptable material: Bagged mason sand from Merkley supply.
- .4 Masonry cement: White masonry cement to CAN/CSA-A3002. Acceptable material: Federal White Masonry Cement.
- .5 Water: potable or from approved non-potable supply.
- .5 Parging mortar: to CAN/CSA A179.

2.2 PROPERTIES

- .1 Mortar for exterior and brick masonry:
 - .1 One part masonry cement and three parts sand.
 - .2 Range for compressive strength: 5.5MPa to 9.0MPa.
 - .3 Allowable air content in mortar: 7% to 15%.

2.3 MIXES

- .1 Colour and admixtures: mix grout to semi-fluid consistency.
- .2 Coloured mortars: incorporate colour and admixtures into mixes in accordance with manufacturer's instructions.
 - .1 Use clean mixer for coloured mortar.
- .3 Pointing mortar: prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour or more than 2 hours then remix with sufficient water to produce mortar of proper consistency for pointing.
- .4 Do not add air entraining admixture to mortar mix.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 CONSTRUCTION

- .1 Do masonry mortar and grout work in accordance with CAN/CSA A179 except where specified otherwise.
- .2 Apply parging in uniform coating not less than total thickness noted on drawings.

3.3 MIXING

- .1 All pointing mortar can be mixed using a regular paddle mixer. Only electric motor mixers are permissible. Mixers run on hydrocarbons are not permitted, due to fumes. Mixing by hand must be pre-approved by the Departmental Representative.
- .2 Clean all mixing boards and mechanical mixing machine between batches.

- .3 Mortar must be weaker than the units it is binding.
- .4 Mortar must not contain elements detrimental to the original masonry or surrounding materials.
- .5 Appoint one individual to mix mortar, for duration of project. In the event that this individual leaves the workforce, mortar mixing must cease until the replacement individual is trained, and mortar mix is tested.
- .6 Hydraulic lime mortar must not be re-tempered.

3.4 CLEANING

- .1 Clean masonry in accordance with Section 04 03 06 - Historic – Cleaning Historic Masonry.

3.5 FIELD QUALITY CONTROL

- .1 Inspection and testing of mortar will be carried out by a Testing Laboratory designated by the Departmental Representative, to CAN/CSA A179.
- .2 Owner will pay for cost of test as specified.
- .3 Frequency of mortar testing will be specified by Departmental Representative.
- .4 Air content, and penetration using Vicat Cone for mortars used in brick and stonework, must be tested at the same frequency as strength tests, or more frequently as required by the Departmental Representative.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Materials, preparation and application for caulking and sealants.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C920-08, Standard Specification for Elastomeric Joint Sealants.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB - 19.13 - M87, Sealing Compound, One-Component, Elastomeric, Chemical -Curing.

1.3 SUBMITTALS

- .1 Manufacturer's product data to describe.
 - .1 Caulking compound.
 - .2 Primers.
 - .3 Sealing compound, each type, including compatibility when dissimilar sealants are in contact with each other.
- .2 Cured samples of exposed sealants for each colour where required to match adjacent material.
- .3 Submit manufacturer's instructions, to include installation instructions for each product used.
- .4 At least 1 week prior to sealant installation, provide Departmental Representative with material safety data sheets.

1.4 QUALITY ASSURANCE/MOCK-UP

- .1 Mock-ups
 - .1 Construct mock-up to show location, substrate preparation, size, shape and depth of joint complete with back-up material, primer, caulking and sealant.
 - .2 Mock-up will be used:
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
 - .3 Locate where directed by Departmental Representative.
 - .4 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with sealant work.
 - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this Work. Remove mock-up and dispose of materials when no longer required and when directed by Departmental Representative.

- .6 SWRI validation: confirm validation of sealant by Sealant and Waterproofing Restoration Institute (SWRI).
- .2 Qualifications of Applicator
 - .1 All sealant applicators must have a minimum of 5 years proven experience in the application of sealants. Experience can be substantiated in the form of naming a minimum of three projects, with supporting references, on which the applicator has applied sealant.
 - .2 Approved sealant applicator must be the individual who prepares the mock-up. The Departmental Representative has the right to reject any applicator who does not first demonstrate the ability to apply the sealant in conformance with this specification.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, handle, store and protect materials in accordance with manufacturer's directions.
- .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.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove waste from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, and packaging material for recycling in accordance with Waste Management Plan.
- .3 Place materials defined as hazardous or toxic in designated containers.
- .4 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .5 Unused material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

1.7 PROJECT CONDITIONS

- .1 Environmental Limitations:
 - .1 Do not proceed with installation of joint sealants under following conditions:
 - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or as noted elsewhere.
 - .2 When joint substrates are wet.

- .2 Joint-Width Conditions:
 - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
 - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.8 ENVIRONMENTAL 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 (MSDS) 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. Ensure sealant and substrate materials are within the temperature range recommended by the sealant manufacturer, for 24 hours before and during application, until sealant has cured.
- .3 Where necessary to apply sealants below temperatures of 5⁰C, follow manufacturer's recommendations.

1.9 PROTECTION

- .1 Make good damage caused by inadequate or improper protection at no extra cost to the Owner.
- .2 Protect masonry and other work from marking and other damage. Protect completed work. Use non-staining coverings.
- .3 Prevent damage to building. Make good damage.
- .4 Provide complete protection for partially completed work until all repairs are completed. The Contractor is responsible for making good damage caused by the failure to provide adequate protection at no extra charge to the Owner.
- .5 Provide protection against the spread of dust, debris and water at or beyond the work area.
- .6 Ensure that all workers wear adequate, approved protective equipment during the work.

PART 2 - PRODUCTS

2.1 SEALANT MATERIALS

- .1 Do not use caulking that emits strong odors, contains toxic chemicals or is not certified as mould resistant in air handling units.
- .2 Where sealants are qualified with primers use only these primers.
- .3 Sealants acceptable for use on this project must be listed on ASTM.

2.2 SEALANT MATERIAL DESIGNATIONS

- .1 Urethanes One Part.
 - .1 Non-Sag to CAN/CGSB-19.13, Type 2, colour to suit existing conditions.
- .2 Type (as per ASTM C920)
 - .1 Type S or M (elastomeric).
 - .2 Grade NS (non sag).
 - .3 Class 25 (expansion-compression range $\pm 50\%$).
- .3 Preformed Compressible and Non-Compressible back-up materials flexible.
 - .1 Polyethylene, Urethane, Neoprene or Vinyl Foam.
 - .1 Extruded open cell foam backer rod.
 - .1 Size: oversize 25 %.
 - .2 Neoprene or Butyl Rubber for wear surface joints.
 - .1 Round solid rod, Shore A hardness 70.
 - .3 High Density Foam.
 - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m³ density, or neoprene foam backer, size as recommended by manufacturer.
- .4 Bond Breaker Tape.
 - .1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 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.

2.4 AIR

- .1 Pressurized air shall be clean and free from oil or other contaminants.
 - .1 An on-line oil filter with a manual drain and pressure control gauge at the working face must be fitted to all air lines.

2.5 COMPATIBILITY

- .1 Ensure that all materials used are compatible.

2.6 DESIGN OF JOINTS

- .1 Use smallest possible depth to width ratio. For preferred joint width of 12mm, width to depth ratio of caulking should be 2:1.
- .2 Minimum depth of joint should not be less than 6mm, maximum joint width should not exceed 50mm.
- .3 Maximum depth of caulking should not exceed 12mm.
- .4 Bond breaker, or backer rod, must be used below the sealant.

PART 3 - EXECUTION

3.1 GENERAL

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Give at least 2 days notice to the Departmental Representative before starting work.

3.2 PROTECTION

- .1 Protect installed Work of other trades from staining or contamination.

3.3 SURFACE PREPARATION

- .1 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil, grease, and other matter which may impair Work. Remove all existing sealants.
- .2 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.
- .3 Wipe metal surfaces to be caulked with cellulose sponges or clean rags soaked with cleaning material and wipe dry with a clean cloth. Clean pre-coated metals with solutions or compounds which will not injure finish and which are compatible with primer and sealant. All anodized aluminum surfaces to be caulked must be wiped with an appropriate cleaner before the application of caulking.
- .4 Clean joints of all foreign materials by wire brushing, grinding or sanding. Use a dry clean air stream if necessary to clean the joint of all particle matter.
- .5 Ensure joint surfaces are dry and frost free.
- .6 Prepare surfaces in accordance with manufacturer's directions.

- .7 Commence caulking or sealing work only after joint surfaces have been inspected and approved by the Departmental Representative.

3.4 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.

3.5 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 25% compression.

3.6 MIXING

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

3.7 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. Superficial pointing with skin bead is not acceptable.
 - .7 Exposed surfaces to be flush with exterior surface. Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as work progresses and upon completion.
 - .9 Cut out damaged caulking unacceptable to the Departmental Representative, re-prepare and prime joints and install new material as directed.
- .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 Where sealants remain tacky after curing, protect by applying painters tape where work is occurring adjacent to the new sealant. Debris adhering to the sealant will be cause for rejection of the sealant.

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

END OF SECTION