



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 580-2009

**DESIGN, SUPPLY AND CONSTRUCTION OF A FABRIC COVERED STORAGE
BUILDING**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 DESIGN, SUPPLY AND CONSTRUCTION OF A FABRIC COVERED STORAGE BUILDING

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, August 7, 2009.

B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Bidder may view the Site without making an appointment.

B3.2 The Bidder is advised that the site is located at 1220 Pacific Avenue and is available for viewing 8:00 am to 4:00 pm, Monday to Friday.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. ADDENDA

B5.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopplasp>

B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:

- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
- (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
- (c) identify any anticipated cost or time savings that may be associated with the substitute;
- (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
- (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.

B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.

B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.

B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.

B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.7, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

B7. BID COMPONENTS

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices.
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg, MB R3B 1J1
- B7.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B14.1(a).
- B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.
- B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B7.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B8. BID

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers;
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B8.4.2 All signatures shall be original.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state the lump sum price in Canadian funds for the Work on Form B: Prices.
- B9.2 The Bidder shall state the lump sum price in Canadian funds for the Work on Form B: Prices. Work on Form B: Prices:
- (a) Separate Price – Item No. 1 shall be the amount to be deducted from the lump sum price if electrical work is supplied and installed by others in accordance with E13 of the Specifications.
- B9.3 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

- B10.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
 - (b) be financially capable of carrying out the terms of the Contract; and
 - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and

- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba).

B10.4 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)

B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B10.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

B11.1 Bids will not be opened publicly.

B11.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B11.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B11.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B13. WITHDRAWAL OF BIDS

B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

- B13.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B14. EVALUATION OF BIDS

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the lump sum price shown on Form B: Prices adjusted, if necessary, as follows:
- (a) If the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the lump sum price bid; or
 - (b) If the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the lump sum prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting separate prices in the order listed in B9.2 until a Total Bid Price within the budgetary provision is achieved, i.e., Total Bid Price = Lump Sum Price – Separate Price No. 1.

B15. AWARD OF CONTRACT

- B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

- B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B14.
- B15.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.
- B15.4 Notwithstanding C4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B15.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for Construction*, these Supplemental Conditions are applicable to the Work of the Contract.

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the Design, Supply and Construction of a fabric covered storage building.

D2.2 The major components of the Work are as follows:

- (a) Preparation of construction documents including drawings and specifications for all works, sealed by Professional engineers licensed to practice in Manitoba;
- (b) Obtaining all necessary permits and licenses required for the construction of the project including the necessary building and occupancy permits;
- (c) Construction of:
 - (i) Foundation and barrier wall
 - (ii) Fabric Building including overhead doors
 - (iii) Passive ventilation system
 - (iv) Electrical components for lighting and power supply.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Ken Boyd, P.Eng.
Support Services Engineer
Streets Maintenance Division
104-1155 Pacific Avenue

Telephone No. (204) 986-5076
Facsimile No. (204) 986-5566

D3.2 At the pre-construction meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4. CONTRACTOR'S SUPERVISOR

D4.1 At the pre-construction meeting, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D5. NOTICES

D5.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3,

D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.

- D5.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg
Chief Financial Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174

- D5.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg
Internal Services Department
Legal Services Division
Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

- D6.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D7. SAFE WORK PLAN

- D7.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D7.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/safety/default.stm>

D8. INSURANCE

- D8.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;

- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

D8.2 Deductibles shall be borne by the Contractor.

D8.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than seven (7) Calendar Days from notification of the award of Contract by Purchase Order.

D8.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D9. PERFORMANCE SECURITY

D9.1 If the Contract Price exceeds twenty-five thousand dollars (\$25,000.00), the Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
- (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
- (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D9.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D9.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of Purchase Order and prior to the commencement of any Work on the Site.

D10. SUBCONTRACTOR LIST

D10.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.

SCHEDULE OF WORK

D11. COMMENCEMENT

D11.1 The Contractor shall not commence any Work until he is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.

D11.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:

- (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D7;
 - (iv) evidence of the insurance specified in D8;
 - (v) the performance security specified in D9;
 - (vi) the Subcontractor list specified in D10.
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D11.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

D11.4 The City intends to award this Contract by August 17, 2009.

D11.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D12. SUBSTANTIAL PERFORMANCE

D12.1 The Contractor shall achieve Substantial Performance by October 1, 2009.

D12.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D12.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D13. TOTAL PERFORMANCE

D13.1 The Contractor shall achieve Total Performance by October 15, 2009.

D13.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D13.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D14. LIQUIDATED DAMAGES

D14.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City seven hundred and fifty dollars (\$750.00) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.

- D14.2 The amount specified for liquidated damages in D14.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.
- D14.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D15. JOB MEETINGS

- D15.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D15.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D16. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D16.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D17. PAYMENT

- D17.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D18. PAYMENT SCHEDULE

- D18.1 Further to C12, payment shall be in accordance with the following payment schedule:
- | | |
|--|-----------|
| (a) Completion of foundation/concrete wall | up to 15% |
| (b) Completion of the structure | up to 65% |
| (c) Total Performance | up to 20% |

FORM H1: PERFORMANCE BOND
(See D9)

KNOW ALL MEN BY THESE PRESENTS THAT

_____ ,
(hereinafter called the "Principal"), and

_____ ,
(hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), in the sum of

_____ dollars (\$_____.)

of lawful money of Canada to be paid to the Obligee, or its successors or assigns, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a written contract with the Obligee for

BID OPPORTUNITY NO. 580-2009

DESIGN, SUPPLY AND CONSTRUCTION OF A FABRIC COVERED STORAGE BUILDING

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

NOW THEREFORE the condition of the above obligation is such that if the Principal shall:

- (a) carry out and perform the Contract and every part thereof in the manner and within the times set forth in the Contract and in accordance with the terms and conditions specified in the Contract;
- (b) perform the Work in a good, proper, workmanlike manner;
- (c) make all the payments whether to the Obligee or to others as therein provided;
- (d) in every other respect comply with the conditions and perform the covenants contained in the Contract; and
- (e) indemnify and save harmless the Obligee against and from all loss, costs, damages, claims, and demands of every description as set forth in the Contract, and from all penalties, assessments, claims, actions for loss, damages or compensation whether arising under "The Workers Compensation Act", or any other Act or otherwise arising out of or in any way connected with the performance or non-performance of the Contract or any part thereof during the term of the Contract and the warranty period provided for therein;

THEN THIS OBLIGATION SHALL BE VOID, but otherwise shall remain in full force and effect. The Surety shall not, however, be liable for a greater sum than the sum specified above.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

IN WITNESS WHEREOF the Principal and Surety have signed and sealed this bond the

_____ day of _____, 20____.

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D9)

(Date)

The City of Winnipeg
Internal Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 580-2009

DESIGN, SUPPLY AND CONSTRUCTION OF A FABRIC COVERED STORAGE BUILDING

Pursuant to the request of and for the account of our customer,

(Name of Contractor)

(Address of Contractor)

WE HEREBY ESTABLISH in your favour our irrevocable Standby Letter of Credit for a sum not exceeding in the aggregate

_____ Canadian dollars.

This Standby Letter of Credit may be drawn on by you at any time and from time to time upon written demand for payment made upon us by you. It is understood that we are obligated under this Standby Letter of Credit for the payment of monies only and we hereby agree that we shall honour your demand for payment without inquiring whether you have a right as between yourself and our customer to make such demand and without recognizing any claim of our customer or objection by the customer to payment by us.

The amount of this Standby Letter of Credit may be reduced from time to time only by amounts drawn upon it by you or by formal notice in writing given to us by you if you desire such reduction or are willing that it be made.

Partial drawings are permitted.

We engage with you that all demands for payment made within the terms and currency of this Standby Letter of Credit will be duly honoured if presented to us at:

(Address)

and we confirm and hereby undertake to ensure that all demands for payment will be duly honoured by us.

All demands for payment shall specifically state that they are drawn under this Standby Letter of Credit.

Subject to the condition hereinafter set forth, this Standby Letter of Credit will expire on

(Date)

It is a condition of this Standby Letter of Credit that it shall be deemed to be automatically extended from year to year without amendment from the present or any future expiry date, unless at least 30 days prior to the present or any future expiry date, we notify you in writing that we elect not to consider this Standby Letter of Credit to be renewable for any additional period.

This Standby Letter of Credit may not be revoked or amended without your prior written approval.

This credit is subject to the Uniform Customs and Practice for Documentary Credit (1993 Revision), International Chamber of Commerce Publication Number 500.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

E1.1 These Specifications shall apply to the Work.

E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>

E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.

E1.2.3 Further to C2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.3 The following Drawings are issued for reference purposes only:

Drawing Title	Drawing No.	File Name	Size
Site Layout	1	580-2009_Drawing_01-R0.pdf	8 ½" x 11"

E2. CODES AND STANDARDS

E2.1 The entire project will conform to the National Building Code (NBC), the Manitoba Building Code (MBC), the Manitoba Fire Code (MFC), the Manitoba Electrical Code and all other applicable Federal, Provincial, and Municipal Codes, Bylaws and Regulations.

E2.2 It is the Contractor's responsibility to ensure compliance.

E2.3 Materials, workmanship and design must meet or exceed applicable requirements of Canadian General Standards Board (CGSB), Canadian Standards Association (CSA), American Concrete Institute (ACI), Canadian Sheet Steel Buildings Institute (CSSBI), American Society for Testing and Materials (ASTM), Underwriters Laboratory of Canada (ULC), Canadian Gas Association (CGA), Canadian Electrical Manufacturers Association (CEMA) or other referenced organizations.

E2.4 Compliance shall be with latest edition of the applicable code or standard.

E3. SITE PROTECTION AND CLEAN-UP

E3.1 The Contractor shall restrict himself to as small a work area as possible during all phases of the construction of the storage building, as well as the storage and marshalling of materials associated with the construction.

E3.2 The Contractor shall protect all existing grounds and structures from damage at all times. The Contractor shall repair or remedy any damage to the Contract Administrator's satisfaction, at the Contractor's cost.

E3.3 The Contractor shall keep the work area free of waste materials and debris and on the completion of the Work shall clean up and remove all debris to the satisfaction of the Contract Administrator.

E4. CONSTRUCTION DOCUMENTS

- E4.1 During the progress of the Work, the Contractor shall furnish to the Contract Administrator the Construction Documents that describe details of the design required by the Bid Opportunity. At the time of submission the Contractor shall notify the Contract Administrator of any significant deviations in the construction documents from the requirements of the Bid Opportunity.
- E4.2 The Contract Administrator shall review the construction documents with reasonable promptness so as to cause no delay. The Contract Administrator's review is for conformity to the intent of the Bid Opportunity and shall not relieve the Contractor of the responsibility for errors or omissions in the construction documents or for meeting all requirements of the Bid Opportunity unless the Contract Administrator expressly accepts a deviation from the Bid Opportunity.
- E4.3 No later than five (5) Business Days after completing the review, the Contract Administrator shall notify the Contractor in writing that the City has accepted the construction documents or shall notify the Contractor, giving reasons in writing, why the City rejects the Construction Documents. The Contractor shall revise and resubmit construction documents which the City has rejected.
- E4.4 When the construction documents are accepted by the City, the documents will be signed by the appropriate City authorities and the Contractor, and the construction documents shall become part of the Contract.
- E4.5 Further to GC.2.4, in the event of conflicts between portions of the Bid Opportunity and the construction documents, the Bid Opportunity shall govern unless these conflicts have been expressly overridden in writing by the Contract Administrator and accepted by the City.

E5. SHOP DRAWINGS

- E5.1 Shop drawings shall be submitted to the Contract Administrator for the products, equipment or materials identified in the Bid Opportunity requiring Shop Drawings. In addition, provision of products, equipment or materials not identified in the Bid Submission or the construction documents must be to the satisfaction of the Contract Administrator, and must be approved by the Contract Administrator through submission of Shop Drawings prior to being manufactured.
- E5.2 Shop Drawings are to be originals prepared by Contractor, Subcontractor, Supplier or Distributor. Submit three (3) prints of each shop drawing to the Contract Administrator for review.
- E5.3 Shop drawings for the following structural components shall bear the seal of a registered Engineer of Manitoba:
- (a) Concrete reinforcement;
 - (b) Structural steel/aluminum;
 - (c) Structural connection details.
- E5.4 The Contract Administrator's review is for conformity to the intent of the Bid Opportunity and contract documents and for general arrangement only. The Contract Administrator's review shall not relieve the Contractor of the responsibility for errors or omissions in the shop drawings or for meeting all requirements of the contract documents unless the Contract Administrator expressly accepts a deviation from the contract documents in writing.

E6. RECORD DRAWINGS AND DOCUMENTS

- E6.1 The Contractor shall keep one record copy of all Specifications, Drawings, Addenda, Operation and Maintenance Manuals, Shop Drawings and samples at the Site in good order and shall record thereon all changes made during the construction of the Work as they occur. These record copies shall be made available to the Contract Administrator during construction and

shall be delivered to the Contract Administrator on behalf of the City upon completion of the Work.

E7. OPERATION AND MAINTENANCE MANUALS AND WARRANTIES

- E7.1 The Contractor shall prepare and submit to the Contract Administrator three (3) copies of detailed operation and maintenance manuals. The operation and maintenance manuals shall include the following information:
- (a) Maintenance instructions for finished surfaces and materials
 - (b) Copy of hardware and paint schedules
 - (c) Description, operation, maintenance and lubrication instructions, including daily, weekly, monthly, semi-annual and annual checks for equipment and systems, including complete list of equipment. Indicate nameplate information such as make, size, capacity and serial number.
 - (d) Detailed instructions on adjustment of wear and replacement of parts
 - (e) Names, addresses and telephone numbers of installing Contractors and local service representatives
 - (f) Each section of the data book shall be listed in the Table of Contents by number, title as shown on divider tabs. Appendices shall be listed separately
 - (g) Guarantees, warranties and bond showing:
 - (i) Name and address of project
 - (ii) Guarantee commencement date (date of Total Performance of the Work)
 - (iii) Duration of guarantee(s)
 - (iv) Clear indication of what is being guaranteed and what remedial action will be taken under guarantee
 - (v) Signature and seal of contractor
 - (h) Manufacturer's literature shall show the name, address and telephone number of the local agent or supplier
 - (i) Include final shop drawings in the appropriate sections, indicating corrections and changes made during fabrication and installation. Shop drawings shall be bound in manuals such that drawings may be used without dismantling manuals.

E8. FOUNDATION

- E8.1 The foundation shall be designed to fully support the structure, and shall include a minimum 1.2 m x 200 mm concrete stub wall or a 1.2 m high engineered concrete block system.
- E8.1.1 The minimum height shall be measured from top of grade.
- E8.2 The Contractor shall submit a foundation design for approval. The design shall include any required footings, piles or buttresses and details for door opening.
- E8.3 The Contractor shall submit shop drawings, bearing seal and signature of a professional Engineer registered in the Province of Manitoba.

E9. PREFABRICATED BUILDING STRUCTURE

- E9.1 System Description
- (a) Provide building structure and enclosure to physical dimensions indicated.
 - (b) Generally, building is intended for gravel storage.
 - (c) The building shall be a clear span, stressed membrane structure approximately 12.2m (40 ft.) wide by 30.5m (100 ft.) long with a 1.2m (4 ft.) high concrete stub wall and foundation.

- (d) The centre line interior height of the building shall be 8.0m (26 ft) or greater with a minimum 3.35m (11 ft) clearance within 1.5m (5 ft) of the side of the building.
- (e) The structure shall be constructed with flat end walls to maximize space usage.
- (f) The building shall be a clear span, totally enclosed weather-tight building, with no exterior horizontal purlins or exterior guy ropes or cables for anchoring the structure.

E9.2 Design Requirements

- (a) Design building to allow for thermal movement of component materials caused by ambient temperature range of 80 deg. C without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects.
- (b) Building shall be watertight.
- (c) Provide for positive drainage of water entering at joints, to exterior face in accordance with NRC "Rain Screen Principles".
- (d) Design for hourly velocity pressure of 0.42 kPa for 1/30 probability. In addition to uniform live load, design for full live load on leeward half of building frame and zero live load on windward half.
- (e) Design members to withstand, within acceptable deflection limitations:
 - (i) Snow load based on ground snow level $S_s = 1.7$ kPa plus $S_r = 0.2$ kPa.
 - (ii) Lateral load of wind based on design hourly velocity pressure of 0.42 kPa.
- (f) Design building enclosure elements to accommodate movement in wall and structural movements without permanent distortion, damage to infills, racking of joints, breakage of seals or water penetration.
- (g) Design, assemble and secure building elements to building frame to ensure stresses in sealants and seals are within manufacturer's recommended maximum.
- (h) Design building assembly to permit easy replacement of components.
- (i) Allow for ventilators and vents per E10, conduit and lighting per E13 and other interior dead loads imposed on this structure.
- (j) Access units and doors to sizes and locations indicated in E11 and E12. Access units and doors shall be weather resistant and weather-stripped.

E9.3 Shop Drawings

- (a) Submit shop drawings.
- (b) Submitted drawings to bear signature and seal of professional Engineer registered in Province of Manitoba for fabricator designed assemblies, components and connections including foundations and stub walls.
- (c) Indicate plans and grid lines, structural members and connection details, bearing and anchorage details, stressed membrane, framed openings, accessories, schedule of materials and finished, camber and loadings, fasteners and welds.
- (d) Indicate detailed description of mechanical, electrical and other systems in work.
- (e) Submit erection drawings for approval, before construction.
- (f) Indicate erection dimensions and methods.

E9.4 Warranty

- (a) For work of this section – Prefabricated buildings the warranty period is 3 years.

E9.5 Materials

- (a) Building materials: non-combustible or combustible construction in accordance with the National Building code of Canada for use specified.
- (b) Fire resistive building elements: in accordance with the National building code of Canada for use and occupancy specified.

- (c) The main structural components shall be coated steel or aluminum.
 - (i) The main steel structural components shall be “Gatorshield” coated Viper steel (or approved equal) coated on the exterior with a gloss finish providing a minimum corrosion resistance of 2000 hours as per ASTM B117-90. A 100% zinc based organic coating shall be applied to the interior. All welded components shall be finished with a coating of hot molten zinc, applied to a minimum of 3 mils thick. All welded surfaces must be prepared/sandblasted prior to the application of the molten zinc. As per the National Building code, all welds shall maintain a minimum standard as determined by the Canadian Welding Bureau sections W47.1 and W59. All bolts used shall be a minimum of Grade 5 – A325 galvanized specification. An acceptable alternative is to have the steel structural components sand blasted and powder coated using DuraCoat Powder applied to a minimum thickness of 5.3 mils with all tube members seal welded prior to sand blasting. All connection bolts for this alternative shall be Type 316 stainless steel and anchor bolts shall be powder coated or type 316 stainless steel.
 - (ii) The main aluminum components shall be extruded or cast aluminum utilizing the 6061 structural aluminum alloy. All connections in areas of high stress shall be bolted using Type 316 stainless steel bolts. Connections in areas of low stress may be bolted using Type 316 stainless steel bolts or welded using 4043 or 5356 filler alloy. All aluminum shall be isolated from contact with concrete by coating with 2 coats of bituminous paint.
- (d) The fabric membrane shall be Duraweave II FR fire retardant, Polyethylene (or approved equal) white in colour with a weight of 12.5 oz. per square yard and a minimum thickness of 2.3 mm, including a minimum .4 mm ultraviolet protective coating. The fabric shall have a minimum 10 year pro-rated warranty with workmanship guarantee for a minimum of 2 years. An acceptable alternative is Nova-Shield II Membrane Structure Fabric RU88X-6 fire retardant, polyethylene white in colour with a weight of 12.5 oz. per square yard, a minimum thickness of 2.3 mm, including a minimum .4 mm ultraviolet protective coating. The fabric shall have a minimum 10 year pro-rated warranty with a workmanship guarantee for a minimum of 2 years.
- (e) Man Doors – 3'-0" x 7'-0" hollow metal doors and frames per E10.
- (f) Overhead Doors – 18'-0" x 18'-0" sectional metal overhead doors. Provide in accordance with E11.

E9.6 Erection

- (a) Erect building structure and enclosure elements.
- (b) The Duraweave membrane (or approval equal) shall be installed and tensioned both vertically and horizontally to prevent wear and abrasion. The horizontal stretch-warp direction (min pre-stress of 40 lbs. PLF) shall be maintained mechanically with horizontal purlins and cabling that requires no ongoing maintenance. The vertical stretch-fill direction (min. pre-stress of 40 lbs. PLF) shall be maintained mechanically with winch lock fastening system that requires no ongoing maintenance. The membrane shall be assembled and tensioned in a manner to eliminate wrinkles in hot and cold temperatures. The membrane-welded seams shall maintain a minimum of 175 lbs. per lineal inch (PLI).

E10. AIR VENTILATION

E10.1 Scope of Work

E10.1.1 The scope of work for this section includes, but is not limited to, the following:

- (a) Design and provide complete functional ventilation system suitable and adequate for the application. Gravel will be stored and handled in the building. All items shall be corrosion-proof, suitable for use in this environment;
- (b) Building is not mechanically heated nor cooled. Natural ventilation method to be used;
- (c) Provide exterior louvers and ventilators.

E10.2 Products

E10.2.1 General

- (a) All items shall be corrosion-proof, suitable for the applications.

E10.2.2 Air Intake/Exhaust Louvers

- (a) Construction:
 - (i) Galvanized steel (16 gauge) or equivalent frames and blades, welded construction with exposed joints ground flush and smooth.
- (b) Louver Depth: 100mm (4")
- (c) Blade Configuration: storm-proof blades on 45° slope with vertical/horizontal top and bottom margins, horizontal middle "ridge" over entire length on each blade for water protection.
- (d) Mounting: shall be suitable for the building system.
- (e) Accessories: intake birdscreen in frames; middle mullions at maximum 1.500 mm (60") on centre.
- (f) Louver Free Area: 45% face area.
- (g) Air Intake Louver Water Penetration: not to exceed 0.01 oz/ft² of free area when tested to AMCA Standard 511.

E10.2.3 Alternative Design

- (a) If the building configuration allows, the Contractor may provide an alternative air intake along the sides of the building where the structure connects to the 1.2 m high concrete/block wall. The space shall provide equivalent to or better than air intake properties as the louvered vents. An intake bird screen shall be provided along the full length and width of the vent.

E10.2.4 Exhaust Air Ventilator

- (a) Minimum of 5 Ventilators, each 300 mm by 300 mm, rated for 197 L/S extracted air flow rate at approach wind velocity of 6.4 km/hr. equally spaced along centre line of roof system.
- (b) Construction:
 - (i) Steel: galvanized, minimum 22 gauge, with baked polyester finish.
 - (ii) Entire unit shall be built in once piece. The base of the ventilator shall be reinforced for more solidity.
 - (iii) The ventilator shall be complete with epoxy coating on all surfaces (inside and outside), suitable for salt and sand handling environment (corrosive) in the buildings.
- (c) Colour: Grey
- (d) Storm-proof deflectors well protected against rain or snow infiltrations. Stainless steel mesh shall be equipped at the ventilator openings exposed to outdoor.
- (e) Static ventilation with no moving parts.

E10.3 Installation

E10.3.1 Procedure

- (a) Make airtight connections between louvers and building.
- (b) Confirm all air outlet/inlet and louver dimensions. Coordinate mounting details, finish and colours with building construction.
- (c) Contractor shall integrate mounting of intake air louvers and exhaust air ventilators to the building structural system so that they are firmly secured in place. Contractor shall coordinate equipment installations with all other trades. Equipment installations shall be in accordance to equipment manufacturer's recommendations.

- (d) All materials used for securing the equipment shall be corrosion-proof and weather-proof. Provide top quality industrial grade silicone for sealing. Eliminate any sharp edges or corners of the equipment and all the equipment supporting system so that building's wall/fabric will not be damaged. Provide framing for equipment penetrating building wall/fabric. Special attention must be given to exhaust air ventilator installation. Each ventilator shall be firmly secured to the building's structural system as per ventilator manufacturer's recommendations.

E11. MAN DOORS

- E11.1 Two (2) man doors, each 36 inches by 80 inches.
- E11.2 Doors and frames to galvanized steel, commercial grade quality.
- E11.3 Door hardware to include handles, lock sets (each with 2 keys), panic hardware and all mounting hardware.
- E11.4 Doors to be located on each of the end walls of the structure.
- E11.5 Doors to be designed and installed to swing out.

E12. SECTIONAL METAL OVERHEAD DOORS

- E12.1 Two (2) overhead doors, each 18 ft by 18 ft.
- E12.2 The requirements of the door shall be:
 - (a) Design of exterior door assembly to withstand wind of 1 KPa with maximum horizontal deflection of 1/240 of opening width;
 - (b) Design of door assembly to withstand minimum of 2000 cycles per annum and 25 years total life cycle.
- E12.3 The door materials shall be:
 - (a) Galvanized steel sheet: commercial quality Z275 zinc coating
 - (b) Steel sheet: commercial quality to ASTM A 366M exposed (e)
 - (c) Primer: to CGSB1, 181, for galvanized steel surfaces
 - (d) Cable: multi-strand stainless steel aircraft cable
- E12.4 Door Fabrication shall be:
 - (a) Fabricate 42mm thick flush panel doors of interlocking roll formed steel section
 - (b) Fabricate panel frames in a continuous box frame with vertical stiffeners at 600mm centres
 - (c) Assemble components by means of spot or arc welding or coated rivet system or adhesive and self tapping screws to manufacturer's recommendations
 - (d) Fabricate doors from pre-painted steel stock
- E12.5 Heavy Duty Industrial Hardware shall include:
 - (a) Track: high lift hardware with 75 mm size 2.6 mm core thickness galvanized steel track
 - (b) Track Supports: 2.3 mm core thickness continuous galvanized steel angle track supports
 - (c) Spring counter balance: heavy duty oil tempered torsion spring with manufacturer's standard brackets.
 - (i) Drum: 200 mm diameter die cast aluminum
 - (ii) Shaft: 32 mm diameter galvanized steel
 - (d) Top roller carrier: galvanized steel 3.04 mm thick adjustable

- (e) Rollers: sealed full floating grease packed hardened steel, ball bearing 75 mm diameter solid steel tire
- (f) Roller brackets: adjustable, minimum 2.5 mm galvanized steel.
- (g) Hinges: heavy duty, 3.04 mm thick stainless steel.
- (h) Cable: 6 mm diameter stainless steel aircraft cable.

E12.6 Door Accessories shall include:

- (a) Overhead horizontal track and operator supports: galvanized steel, type and size to suit installation.
- (b) Pusher springs
- (c) Handles
 - (i) Flat bar door latch
 - (ii) Handles: key handle operated from outside, handle operated from inside
- (d) Two horizontal sliding lock bolts on interior
- (e) Weather stripping
 - (i) Sills: bulb type full width extruded neoprene weatherstrip
 - (ii) Jambs and head: extruded aluminum and arctic grade vinyl weatherstrip to manufacturer's standard
- (f) Finish ferrous hardware items with minimum zinc coating of 300 g/m² to CSA G164.

E12.7 Prefinished sheet steel shall be:

- (a) Prefinished steel with factory applied polyvinylidene fluoride
 - (i) Class F1S
 - (ii) Colour selected by Contract Administrator from manufacturer's standard range
 - (iii) Specular gloss: 30 units +/- in accordance with ASTM D 523
 - (iv) Coating thickness: not less than 22 micrometres
 - (v) Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20% to ASTM D 822 as follows:
 - (i) Outdoor exposure period 2500 hours
 - (ii) Humidity resistance exposure period 5000 hours.

E12.8 Operators shall be:

- (a) Equip doors for operation by:
 - (i) Chain hoist with galvanized steel chain
- (b) Cable fail safe device
 - (i) Able to stop door immediately if cable breaks on door free fall. Braking capacity 500 kg.

E12.9 Electrical Operator shall be:

- (a) Electrical jack shaft side mounted type operator
- (b) Electrical motors, controller units, remote push button stations, relays and other electrical components: to CSA approval with CSA enclosure type 12
- (c) Motor: 746 W (1 hp), 120 V, single phase
- (d) Controller units with integral motor reversing starter, solenoid operated brake 3 heater elements for overload protection, including reset push buttons and control relays as applicable.
- (e) Operations:
 - (i) Remote push button stations: surface mounted, in 1 location, with "OPEN-STOP-CLOSE" "SECURITY LOCKOUT" designations on push buttons in English.

- (f) Safety switch: combination roll rubber with limit switches for full length of bottom rail of bottom section of door, to reverse door to open position when coming in contact with object on closing cycle.
- (g) For jack shaft operators:
 - (i) Provide floor level disconnect device to allow for manual operation in the event of a power failure.
 - (ii) Equip Operator with:
 - (i) Electrical interlock switch to disconnect power to operator when in manual operations
 - (ii) Built-in chain hoist for manual operation in the event of a power failure
- (h) Automatic illumination complete with time delay, self extinguishing
- (i) Door speed, 300 mm per second
- (j) Control transformer: for 24 VAC control voltage
- (k) Mounting brackets: galvanized steel, size and gauge to suite conditions

E12.10 The installation shall be:

- (a) Install doors and hardware in accordance with manufacturer's instructions
- (b) Rigidly support rail and operator and secure to supporting structure
- (c) Touch-up steel doors with primer where galvanized finish damage during fabrication
- (d) Install operator including electrical motors, controller units, push button stations, relays and other electrical equipment required for door operation
- (e) Lubricate and adjust door operating components to ensure smooth opening and closing of doors
- (f) Adjust weather stripping to form a weather tight seal.

E12.11 The Contractor shall provide routine maintenance and any operational adjustments to the doors for the period of (1) year warranty on the doors. The maintenance and adjustments shall be incidental to the bid price for supply and installation of the doors.

E13. ELECTRICAL

E13.1 General

E13.1.1 The Contractor shall design, supply and install all electrical components in compliance with CSA C22-1-2002.

E13.1.2 Permits, Fees and Inspection

- (a) Submit to Electrical Inspection Department and Supply Authority necessary number of drawings and specifications for examination and approval prior to commencement of work
- (b) Pay associated fees
- (c) Notify Contract Administrator of changes required by Electrical Inspection Department prior to making changes
- (d) Furnish Certificates of Acceptance from Electrical Inspection Department and authorities having jurisdiction on completion of work to Contract Administrator.

E13.1.3 Main distribution to be designed and installed to handle and service the lighting and electric motors for overhead door opening system.

E13.1.4 Contractor to supply all cabinets, mountings and labelling necessary in accordance with the code.

- E13.1.5 The Contractor shall be responsible for the provision of an underground connection to an electrical supply to tie into the designated power source (refer to Drawing 01-R0.pdf).
- (a) Contractor to provide all wiring, conduit and connections for the underground work.
 - (b) Contractor to provide trenching or directional boring necessary for the underground electrical service.
 - (c) The designated source will have enough spare capacity with an empty conduit stubbed out.
- E13.2 Lighting
- E13.2.1 Supply and install 4 luminaries inside the building
- (a) Luminaries to be 400 watt high pressure sodium with a dropped acrylic lens. Lighting unit to be sealed from entry of dirt and dust.
 - (b) Install 400 W HPS luminaries. Bottom of luminaries lens to be at an elevation no lower than the building structural frame elevation
 - (c) Acceptable luminaries: Lithonia TXC 400S series or equal
 - (d) Luminaries to be equally spaced for the length of building.
- E13.2.2 Supply and install 2 luminaries on the exterior of the building
- (a) Building exterior at north and south overhead doors each to have one 250 watt weatherproof wall pack style luminaries mounted on the exterior door frame
 - (b) Acceptable manufacturer for exterior luminaries: Luthonia TWH series 250 watt high pressure sodium
 - (c) Each to be controlled by photocell.
- E13.2.3 Supply and install emergency lighting and exit signs
- (a) Each man door to have an exit sign
 - (b) Exit sign lamps to be LED type
 - (c) Exit sign to be complete with two tungsten emergency lighting heads complete with internal battery, battery charging unit and battery heating element
 - (d) Exit signs to be rust proof, constructed of PVC
 - (e) Exit signs/emergency light units to be connected to non-switched lighting circuit
 - (f) Emergency lighting to be installed in accordance with Manitoba Building Code to illuminate egress routes
 - (g) Exit sign/emergency lighting unit: Ready-Lith LDX-6-72-IF-L061-2-WSR-HTR model or approved equal
- E13.2.4 Supply and install wall receptacles:
- (a) Supply 2 at each end of building, one located on each side of the overhead door
 - (b) To be 15A, 125V rated straight blade NEMA configuration No. 5-15R Specification grade
 - (c) Covers to be thermoplastic duplex self closing flip lids
 - (d) Boxes to be supported independently of conduit
- E13.2.5 Supply and install wiring and switching for electric motors for overhead door openers.
- E13.3 Wiring Devices
- (a) All device boxes to be PVC, suitable for surface mounting
 - (b) Conduit buried below grade to be PVC
 - (c) Conduit in building to be surface mounted PVC, complete with PVC fittings
 - (d) Lighting control wiring to be minimum #12 AWG in separate conduit system

- (e) Connect overhead door operators as per manufacturer's instructions
- (f) Interior lights to be on two-way switch, one at each man-door.

E14. ASPHALT PAVING

- E14.1 The floor of the interior of the building will be paved with asphalt either prior to building construction or before the fabric cover is installed on the building to alleviate fume problems associated with the asphalt paving operation. This work will be done by others and will take one (1) day or less.
- E14.2 The Contractor will not be compensated for any delays as a result of this work. The City will make every effort to coordinate the work to minimize disruptions to the Contractor.