



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 641-2005

**ASSINIBOINE PARK ZOO EAST GATE ENTRANCE AND EXIT RENOVATIONS –
700 ASSINIBOINE DRIVE**

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PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 ASSINIBOINE PARK ZOO EAST GATE ENTRANCE AND EXIT RENOVATIONS – 700 ASSINIBOINE DRIVE

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, December 9, 2005.
- B2.2 Bid Submissions 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 GC:3.1, the Contract Administrator or an authorized representative will be available at the Site from 10:00 a.m. to 12:00 noon on December 1, 2005 to provide Bidders access to the Site.
- B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

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 Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda shortly before submitting his Bid.
- 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 shall 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.

B7. BID SUBMISSION

B7.1 The Bid Submission consists of the following components:

- (a) Form A: Bid;
- (b) Form B: Prices.

B7.2 The Bid Submission shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B7.2.1 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.

B7.3 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.4 Bid Submissions shall be submitted to:

The City of Winnipeg
Corporate Finance Department
Materials Management Branch
185 King Street, Main Floor
Winnipeg MB R3B 1J1

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 shall 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 Submission 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.

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;
- (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
- (c) be financially capable of carrying out the terms of the Contract;
- (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
- (e) have successfully carried out work, similar in nature, scope and value to the Work;
- (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation 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 Branch internet site at <http://www.winnipeg.ca/matmgt>); and
 - (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba).

B10.2 The Bidder shall be prepared to 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.

B10.3 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 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.

B11.1.1 Bidders or their representatives may attend.

B11.2 After the public opening, the names of the Bidders and their Total Bid Prices as read out (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 Branch internet site 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B11.4 The Bidder is advised that any information contained in any Bid Submission 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 GC:23.3, 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 shall:

- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
- (b) open the Bid Submission 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 (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to 0 (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 Submission 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 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 Submission 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.

B14.4.1 If there is any discrepancy between the lump sum price written in figures and the lump sum price written in words, the price written in words shall take precedence.

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.

B15.4 Notwithstanding GC:4, 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 GC:1.1, 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

C1. GENERAL CONDITIONS

C1.1 The *General Conditions for Construction Contracts* (Revision 2000 11 09) are applicable to the Work of the Contract.

C1.1.1 The *General Conditions for Construction Contracts* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for Construction Contracts*, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.2 The General Conditions are amended by striking out "The City of Winnipeg Act" wherever it appears in the General Conditions and substituting "The City of Winnipeg Charter".
- D1.3 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.4 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.5 The General Conditions are amended by deleting GC:6.16 and GC:6.17. The City of Winnipeg is now within the jurisdiction of the Manitoba Ombudsman pursuant to The Ombudsman Act.

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of all materials, tools, equipment, labour and supervision required to renovate the East Gate Entrance and Exit at Assiniboine Park Zoo as indicated on the construction drawings and as specified herein.

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is:
Lou Chubenko
Project Officer II
100 Main Street, Main Floor
Winnipeg, Manitoba R3C 1A4
Telephone No. (204) 986-7278
Facsimile No. (204) 986-7311
- 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 GC:23.2.2, 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 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 Administrative Officer Secretariat
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
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

SUBMISSIONS

D6. INSURANCE

- D6.1 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) all inclusive, with The City of Winnipeg being added as an additional insured, with a cross-liability clause, such liability policy to also contain a contractual liability, an unlicensed motor vehicle liability and a products and completed operations endorsement to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) automobile liability insurance for owned and non-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;
- D6.2 Deductibles shall be borne by the Contractor.
- D6.3 The Contractor shall provide the City Solicitor with a certificate of insurance of each policy, in a form satisfactory to the City Solicitor, 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.
- D6.3.1 The certificate for insurance for the commercial general liability insurance must clearly state "operations to include demolition work".
- D6.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D7. PERFORMANCE SECURITY

- D7.1 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.
- D7.1.1 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.
- D7.2 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.

D8. SUBCONTRACTOR LIST

- D8.1 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

D9. COMMENCEMENT

- D9.1 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.
- D9.2 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 GC:6.14;
 - (iii) evidence of the insurance specified in D6;
 - (iv) the performance security specified in D7;
 - (v) the Subcontractor list specified in D8; and
 - (vi) the security clearances specified in **Error! Reference source not found.**
 - (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.

D9.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

D10. SUBSTANTIAL PERFORMANCE

D10.1 The Contractor shall achieve Substantial Performance within ninety (90) consecutive Working Days of the commencement of the Work as specified in D9.

D10.2 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.

D10.3 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.

D11. TOTAL PERFORMANCE

D11.1 The Contractor shall achieve Total Performance within ninety-five (95) consecutive Working Days of the commencement of the Work as specified in D9.

D11.2 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.

D11.3 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.

D12. LIQUIDATED DAMAGES

D12.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City one hundred dollars (\$100) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.

D12.2 The amount specified for liquidated damages in D12.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.

D12.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D13. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D13.1 Further to GC:6.26, 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).

WARRANTY

D14. WARRANTY

- D14.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Substantial Performance and shall expire one (1) year thereafter unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.
- D14.2 Notwithstanding GC:13.2 or D14.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Substantial Performance if:
- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D14.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in GC:13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D7)

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 dated the

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 641-2005

ASSINIBOINE PARK ZOO EAST GATE ENTRANCE AND EXIT RENOVATIONS – 700 ASSINIBOINE DRIVE

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)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)
(See D7)**

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 641-2005

ASSINIBOINE PARK ZOO EAST GATE ENTRANCE AND EXIT RENOVATIONS – 700
ASSINIBOINE DRIVE

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, STANDARD DETAILS AND DRAWINGS

E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

E1.1.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.

E1.1.3 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
A0	Existing Site Plan
A1	Proposed Site Plan
A2	Floor Plan
A3	East Elevation
A4	Building Section
A5	Building Sections
A6	Interior Elevations & Details
A7	Schedules
S1	Foundation Plan
S2	Main Floor Plan
S3	Building Sections
S4	Section Details
S5	Details & Notes
E1	Electrical Plan Layout & Notes

E2. DEMOLITION

E2.1 GENERAL

E2.1.1 Complete removal of 4 existing stone and concrete block columns and removal of existing metal gates and transom anchored to these columns. Cutting of existing concrete bases to below underside of new concrete slab to level shown on Structural Drawings.

E2.2 REFERENCE STANDARDS

E2.2.1 Demolition shall be carried out in strict accordance with the Provincial Building Code, the Winnipeg By-Law 1544/77 and/or regulations having the force of law.

E2.3 EXECUTION

E2.3.1 The Contractor shall furnish all labour, plant, materials, equipment and services necessary for and reasonably incidental to complete demolition of items listed and as shown on the drawings. All debris and rubbish to be removed from Site.

E2.4 DEMOLITION

- E2.4.1 The existing stone and concrete block columns shall be completely demolished and their concrete base cut to levels as shown on the Structural Drawings.
- E2.4.2 During demolition operations, dust shall be controlled by suitable means to prevent harm to the Workmen and the public.
- E2.4.3 Demolition operations shall be conducted with the minimum interference with zoo operations. No salvaged material shall be placed or stored on sidewalks, etc. within or surrounding the Site.
- E2.4.4 Demolition operations shall be conducted in such a manner as to prevent any damage to existing structures, streets whether located on the Site or within the street right-of-way. No debris or other material shall be burned on the Site.

E2.5 UTILITIES

- E2.5.1 The Bidder will be required to comply with all City or municipal regulations in respect to use of streets including the crossing of boulevards and sidewalks and to take out the necessary permits and make good any damage resulting there from.
- E2.5.2 All existing gas, electrical, steam and other service lines, pipes or conduits to the building under demolition shall be disconnected and sealed off from the Site by the utility company concerned.
- E2.5.3 All sewer and water service connections shall be disconnected and sealed by a Contractor licensed by the City to do such Work.
- E2.5.4 All costs for the disconnection and sealing off of all the above services shall be paid for by the Contractor.
- E2.5.5 In each case, it will be the sole responsibility of the Contractor to give adequate prior notification to each utility company concerned, and to the District Engineer in respect to the water service, as to when he will require these services to be disconnected.

E2.6 SALVAGED MATERIALS

- E2.6.1 All salvaged building materials resulting from the demolition, except items noted hereinafter shall become the property of the Contractor and shall be removed from the Site.

E2.7 PROTECTIVE BARRICADES

- E2.7.1 The Contractor shall provide and erect all protective barricades as required for demolition of building.
- E2.7.2 Protective Barricades shall comply with the requirements of the Employment Safety Regulations under the Employment Safety Act and the Winnipeg By-Law pertaining to erection of barricades for protection.
- E2.7.3 The Contractor shall also provide additional barricades or rope off temporary demolition zones as may be necessary for any dangerous demolition operation, in order to keep the public clear. Such temporary barricades shall be removed as soon as possible in order to prevent unnecessary interruption of traffic, etc. The Contractor shall be entirely responsible for maintaining all protective barricades, including gates, walks, lights, etc. in good condition for the entire period of the demolition and construction.

E3. EARTHWORK

E3.1 GENERAL

- E3.1.1 All excavation and preparation of all sub-grade both within the outside limits of the proposed concrete grade beam and slab.

E3.2 PROTECTION

- E3.2.1 Protect bottoms of excavations from softening. Should softening occur, remove softened soil and replace with compacted Type 2 Fill. Protect bottoms of excavations from freezing.
- E3.2.2 Excavate in accordance with requirements of Manitoba Environment and Workplace Safety.
- E3.2.3 Provide adequate protection around bench markers, layout markers, survey markers, geodetic monuments and electrical cables.
- E3.2.4 Provide protection to ensure no damage to existing facilities and equipment situated on Site.
- E3.2.5 Provide approved measures to minimize dust as result of this Work.
- E3.2.6 Do not stockpile excavated material to interfere with Site operation or drainage.

E3.3 COMPACTION DENSITIES

- E3.3.1 Compaction densities are percentages of maximum densities obtainable from ASTM D698-70 and corrected as noted.

E3.4 MATERIALS

- E3.4.1 Refer to Manitoba Association of Architects (M.A.A.) and the Winnipeg Construction Association (W.C.A.) Joint Committee on Granular Fill Materials Bulletin No. 4, for further information on the following granular fill materials.

E3.5 STOCKPILING

- E3.5.1 Stockpile fill materials in areas designated by the City of Winnipeg. Stockpile granular materials in manner to prevent segregation. Protect stockpiled fill material from freezing.

E3.6 EXECUTION

E3.6.1 Excavating

- (a) Excavate to elevations and dimensions indicated and of Work specified. Excavate to well define lines to minimize quantity of fill material required.
- (b) Earth bottoms of excavations to be dry undisturbed soil, level, free from loose or organic matter.
- (c) Correct unauthorized excavation at no extra cost as follows: fill under excavated areas under pavement with Type 2 Fill compacted to 100% density.
- (d) Remove concrete masonry paving, demolished foundations and rubble and other obstructions encountered in course of excavation.

E3.6.2 Backfilling

- (a) Do not commence backfilling until areas of Work to be backfilled have been inspected and approved by the Contract Administrator.
- (b) Areas to be backfilled shall be free from debris, snow, ice, water or frozen ground. Backfill material shall not be frozen or contain ice, snow or debris.
- (c) Prior to placing fill under slabs on grade, compact existing sub-grade to obtain same compaction as specified for fill. Remove soft material and fill with approved material.
- (d) Place and compact fill materials in continuous horizontal layers not exceeding 150mm loose depth. Use methods to prevent disturbing or damaging buried services, insulation, damp proofing. Make good any damage.
- (e) Do not use frozen material for backfilling or filling.

E3.6.3 Fill Types and Compaction

- (a) Backfill against foundation walls and grade beams: use Type 2 to within 400mm of finish grade. Compact to 95% standard proctor.

E3.6.4 Inspection and Testing

- (a) Testing of materials and compaction will be carried out by testing laboratory designated by the City of Winnipeg.
- (b) Costs for inspection and testing will be paid by the City of Winnipeg.
- (c) Laboratory and field compaction tests shall be performed by an approved Testing Laboratory as appointed by the Contract Administrator. Tests to prove the density shall be made with at least one (1) test for every 100 square meters of each 150mm lift. If test result is less than as called for, the Contractor shall compact further and retest the area before proceeding further with the Work.
- (d) Frequency of Tests: Excavated surfaces, when undisturbed excavated surface is being prepared, make a series of 3 tests of surface for each 500 m² area.

E3.6.5 Surplus Material

- (a) Dispose of surplus material not required for backfill, or grading from Site as directed.
- (b) Dispose of material unsuitable for fill, grading or landscaping from Site as directed.

E3.6.6 Weeping Tile Material

- (a) Coarse filter aggregate: to CAN3-A23.1-M77, Table 3, Group 1, 19mm to 4.75mm.
- (b) Fine filter aggregate: to CAN3-A23.1-M77, Table 1.
- (c) Plastic pipe and fittings: perforated and non-perforated, rigid, non-flexible plastic drain to CAN/CSA B182.1-M87, 150mm inside diameter, complete with factory made couplings and fittings. Install plastic pipe and fittings to CGSB41-GP-29M.
- (d) Use adapters as required to connect perforated pipe to non-perforated pipe or other pipe types. Seal joints with joint compound.
- (e) For all tile installations, fill around sides of weeping tile and hand tap firmly to consolidate around tile. Then place and compact two further 75mm layers of fill to provide a minimum cover not less than 150mm at the top and sides of the drain line.
- (f) Place filter bed in 150mm lifts. Place top seal of polyurethane or building paper to prevent surface infiltration of fine materials into coarse filter material.
- (g) Pipe shall be laid with perforations down. Such pipe shall be connected with couplings (couplings slots downward). Ensure pipe interior and coupling surfaces are clean before placement.
- (h) Connect pipe to existing sump pit in Zootique basement by appropriate adapters manufactured for this purpose.

E3.6.7 Crawl Space

- (a) Construction of unheated crawl space shall conform to the requirements of the National Building Code, 1995 Edition (Section 9.18.).
- (b) Access Hatch Opening: An access opening fitted with a hatch, shall be not less than 914mm by 762mm.
- (c) Access Hatch Door and Frame:
 - (i) Manufacturer/Model Type: Bilco Model No. J-3.
 - (ii) Material: Cover and frame shall be ¼" (6.35mm) steel.
 - (iii) Cover: Diamond-pattern tread plate reinforced for 300 psf (1464 kg/m²) live load.

- (iv) Frame: Formed channel frame with full anchor angle welded around the perimeter - 1 ½" (38mm) drain coupling is welded under the frame for a pipe connection to a dry well or disposal system.
 - (v) Hinges: Heavy forged brass hinges with 3/8" (9.5mm) type 316 stainless steel hinge pins.
 - (vi) Latch: Type 316 stainless steel slam lock with fixed interior handle and removable exterior turn/lift handle. Latch release is protected by a flush, gasketed, removable screw plug.
 - (vii) Finish: Alkyd base red oxide primer.
 - (viii) Hardware: Steel compression springs electro coated acrylic finish. Slam lock and all fasteners are Type 316 stainless steel. All hardware is zinc plated/chromate sealed.
- (d) Ventilation: crawl space shall be ventilated by natural means. Ventilation shall be provided to the outside air by not less than 0.1m² of unobstructed vent area for every 50m² of floor area.
- (e) Ground Cover: Shall be provided consisting of not less than Type S roll roofing, or 0.15 polyethylene. Joints in sheet type ground cover shall be lapped not less than 100mm and weighted down. The perimeter of the ground cover required shall be sealed to the grade beam walls.

E4. CONCRETE

- E4.1 All concrete Work shall be in accordance with CSA CAN3-A23.1 "Concrete Materials and Methods of Concrete Construction".
- E4.2 Proportion normal density concrete in accordance with CSA CAN-A23.1 to give the following properties:
- (a) Caissons Concrete
 - (i) Type 50 Cement
 - (ii) 20mm maximum coarse aggregate
 - (iii) 32 MPa minimum compressive strength at 28 days
 - (iv) 325 KG per meter minimum cement content
 - (v) 0.40 maximum water/cement content
 - (vi) 90mm +/- 30mm maximum slump
 - (vii) 5% to 7% air content
 - (viii) maximum 15% Class C Flyash content
 - (b) Beams & Slabs Concrete
 - (i) Type 10 Cement
 - (ii) 20mm maximum coarse aggregate
 - (iii) 30 MPa minimum compressive strength at 28 days
 - (iv) 0.45 maximum water/cement slump
 - (v) 90mm +/- 30mm maximum slump
 - (vi) 3% to 5% air content
 - (vii) maximum 15% Class C Flyash content
- E4.3 Construct formwork, shoring and bracing so that resultant finished concrete conforms to shapes, lines and dimensions indicated on the drawings.

- E4.4 Void forms under grade beams shall be wax-coated void forms and have a minimum compressive strength of 4.8 KPA.
- E4.5 Construction joints pour scheduling and Work procedures to be discussed with the Contract Administrator prior to starting construction.
- E4.6 For cold weather concreting all ice, snow and frost shall be removed from formwork and the temperature of all surfaces in contact with the concrete is at 10 degrees C for 24 hours prior to placing concrete. The concrete temperature shall be between 20 degrees C and 30 degrees C when deposited. Concrete shall be enclosed in an insulated hoarding and this area shall remain at a constant temperature of 20 degrees C for 3 days and not less than 5 degrees C for an additional 7 days. Exhaust from heaters shall not adversely affect the concrete. Hose heating systems are not permitted from November 15 to March 1 unless authorized by the Contract Administrator.
- E4.7 Notify the Contract Administrator 2 full Working Days prior to pouring concrete.
- E4.8 Three concrete test cylinders and one slump test to be taken for recovery day of concrete placement. Testing shall be performed in accordance with CAN3-A23.2. Cost for concrete testing shall be paid by the Contractor.

E5. STRUCTURAL STEEL

- E5.1 Fabrication and erection of structural steel to be performed in accordance with CSA S16 "Steel Structures for Buildings".
- E5.2 Hollow structural sections shall be in accordance with CSA G40.21, Grade 50W, and Class C. All other structural sections shall be in accordance with CSA G40.21, Grade 44W.
- E5.3 All structural steel connections shall be in accordance with CSA G40.21, Grade 44W.
- E5.4 Provide bolt and nail holes for fastening adjacent materials.
- E5.5 Anchor Bolts shall be provided by steel supplier and set by Contractor.
- E5.6 Welding shall be undertaken by a company with proven capability and shall be member of good standing of the Canadian Welding Bureau to the requirements of CSA W47.1.
- E5.7 All welding shall conform to the requirements of CSA W59.
- E5.8 Structural steel to receive one coat of CPMA standard 2.75 primers.
- E5.9 Submit shop drawings including connection details and clearly indicating profiles, sizes, spacing and locations of structural members, cambers, and loads. Connection details to be sealed by a professional Engineer.
- E5.10 Do not start fabrication until shop drawings are reviewed and approved by the Contract Administrator.

E6. WOOD MEMBERS

- E6.1 All lumber shall conform to NLGA standard grading rules for Canadian lumber.
- E6.2 All Work shall be done in accordance with the standard edition of the Residential Standards of Canada unless noted otherwise.
- E6.3 All structural lumber shall be a minimum SPF #2 Grade and be straight grained and kiln dried.

E7. ROUGH CARPENTRY

E7.1 GENERAL

E7.1.1 Supply all material, labour, and plant necessary for wood blocking, framing, furring, sheathing, vapour barrier, batt insulation, air barrier, aluminium air vents at base of Ticket Booth as shown on Drawings.

E7.2 MATERIALS

E7.2.1 All sawn lumber shall be No. 1 Common Construction Grade Douglas Spruce. Moisture content of all unless otherwise noted must be either air or kiln dried and moisture content will not be over 19%. Plywood floor and wall sheathing shall be 15.8mm G.1.S. Douglas fir Plywood.

E7.2.2 Construct continuous members from pieces of longest practical length. Install members true to line, levels and elevations. Set plumb.

E8. ARCHITECTURAL WOODWORK AND LAMINATED PLASTIC

E8.1 GENERAL

E8.1.1 Work shall include construction of cabinet Work and counters. Shortening and adjustment of existing store display rack at Door 7 in existing Boutique.

E8.2 REFERENCE STANDARDS

E8.2.1 Do millwork to Millwork Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC) 1972.

E8.3 SHOP DRAWINGS

E8.3.1 Submit 4 sets of shop drawings. Clearly indicate details of construction, profiles, jointing, fastening and other related details.

E8.4 PRODUCTS

E8.4.1 Use fir plywood unless otherwise indicated on Drawings.

E8.4.2 Softwood lumber: to CSA 0141-1970 and National Lumber Grades Authority requirements, with maximum moisture content of 12%. Interior Work to AWMAC grade.

E8.4.3 Hardwood lumber: to National Hardwood Lumber Association (NHLA) requirements, moisture content of maximum 7% for interior Work, birch species, o AWMAC custom grade.

E8.4.4 Hardwood plywood: to CSA 0115-1967 of thickness indicated, birch species.

E8.4.5 Douglas fir plywood: to CSA 0121-1973 sanded, good two side grade.

E8.4.6 Nails and staples: to CSA B111-1974.

E8.4.7 Hardware list: Door pulls shall be K&V extruded aluminium, drawer glides K&V, and K&V magnetic catches.

E8.5 FABRICATION OF CABINETWORK

E8.5.1 Sand Work smooth, set nails and screws, applies plain wood filler to indentations and leave ready to receive finish.

E8.5.2 Laminated plastic to be selected by Contract Administrator.

- E8.5.3 Shops install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
- E8.5.4 Shelving to cabinetwork to be adjustable unless otherwise noted.
- E8.5.5 Provide cut outs for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.
- E8.5.6 Provide 9mm thick solid birch matching wood strip on all edges 12mm or thicker, exposed in final assembly. Strips same width as plywood.
- E8.6 **INSTALLATION**
- E8.6.1 Set and secure all materials and components in place, rigid, plumb and square.
- E8.6.2 Provide heavy duty fixture attachments for wall mounted cabinets.
- E8.6.3 After installation, fit and adjust operating hardware for wood and laminated plastic cabinet doors, drawers and shelves.

E9. INSULATION AND VAPOUR BARRIER

E9.1 GENERAL

- E9.1.1 Supply and install batt insulation and polyethylene vapour barriers in walls and ceilings.

E9.2 RELATED WORK

- E9.2.1 Rough Carpentry

E9.3 REFERENCE STANDARDS

- E9.3.1 Batt mineral Type 1A CSA A101-1975 and CMHC acceptance #5862. Vapour barrier: CGSB70-GP-1.

E9.4 PRODUCTS

E9.4.1 Materials

- (a) Batt mineral wool or fibreglass friction fit. Unless otherwise noted, ceiling insulation shall be RSI 4.9 and in 2 by 4 walls insulation shall be RSI 2.4.
- (b) Vapour barrier shall be 4 mil clear polyethylene films. Provide tape for sealing as recommended by manufacturer.
- (c) Provide heavy formed cardboard or insulation baffle at all roof trusses to clear soffit vents.
- (d) Provide rigid Styrofoam, R 3.5 insulation at all hatches and openings where impractical to use batt insulation.
- (e) Provide 1/8 inch by 3 inch galvanized water bar.

E9.5 EXECUTION

- E9.5.1 Install insulation after building substrata materials are dry. Install insulation between studs and joints.
- E9.5.2 Install insulation to maintain continuity of thermal protection to building elements, electrical boxes and spaces.
- E9.5.3 Install materials in accordance with manufacturer's instructions.
- E9.5.4 Apply vapour barrier to inside face of insulation, lap joints 150mm, and seal by tape. Staple vapour barrier securely in place.

E9.5.5 Provide vapour barrier behind all electrical boxes, mechanical outlets and other such openings. Tape vapour barriers around all stacks.

E10. FLASHING AND SHEET METAL

E10.1 Metal flashing and counter flashing and drip edge as shown on Drawings.

E10.2 Materials: 22 gauge galvanized steel.

E11. WOOD DOORS

E11.1 Supply and installation of wood doors.

E11.2 Materials: Flush doors solid core, framed core construction, birch plywood face and painted grade. Provide 12 mm minimum thick vertical edge strips to match face veneer. Make provision for glass and provide glazing stops.

E11.3 Installation: Install doors and hardware in accordance with manufacturer's instructions. Adjust operable parts for correct function. Seal top and bottom door edges and edges of cut-outs to CSA 0132.2-1972, Appendix A.

E12. ALUMINUM ENTRANCES AND STOREFRONTS

E12.1 SUMMARY

E12.1.1 Section Includes: Supply and installation of Kawneer Architectural Aluminum Storefront Systems, including perimeter trims, stools, accessories, shim and anchors, and perimeter sealing of storefront units.

E12.1.2 Types of Kawneer Aluminum Storefront System and Entrances:

- (a) Window Framing – Trifab VG 451T, 2 inches x 4 ½ inches nominal dimension.
- (b) Door Framing – Trifab 451T, 1 ¾ inches x 4 ½ inches.
- (c) Doors – 350 Series Swing Doors, medium stile, 6 inch vertical face dimension, 8 inch (200mm) mid-rail, 10 inch (250mm) bottom rail, 1 ¾ inch depth, and high traffic applications.

E12.1.3 System Description

- (a) Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft² at a static air pressure differential of 6.24 psf. For single acting offset pivot or butt hung entrances in the closed and locked position, the test specimen shall be tested at a pressure differential of 6.24 psf for single doors and 1,567 psf for a pair of doors.
- (b) Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static pressure differential of 8 psf as defined in AAMA 501.
- (c) Uniform Loads: A static air design load of 20 psf shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
- (d) Windows – Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance shall not be more than:
 - (i) Glass to Center -0.44 (low-E)

- (e) Windows – Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than:
 - (i) Glass to Center -62 frame and 68 glass (low-E)
- (f) Windows – Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC): When tested to AAMA Specification 1801 and in accordance with ASTM E1425 and ASTM E90, the STC and OITC rating shall not be less than:
 - (i) Glass to Center -37 (STC) and 30 (OITC)

E12.2 SUBMITTALS

- E12.2.1 Quality Assurance/Control Submittals: Submit certified test reports showing compliance with specified performance characteristics. Fabricate aluminum framing in accordance with framing manufacturer's prescribed tolerances. Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions. Verify actual measurements by field measurements before fabrication.

E12.3 WARRANTY

- E12.3.1 Manufacturer's Product Warranty: Two (2) years from date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by Kawneer.

E12.4 PRODUCTS

- E12.4.1 Acceptable Manufacturer: Kawneer Company, Inc.
 - (a) Materials: Aluminum (Framing, Entrances and Components)
 - (b) Material Standards: ASTM B 221; 6063-T6 alloy and temper
 - (c) Tolerances: Reference to tolerances for cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.
 - (d) Accessories:
 - (i) Fasteners: Where exposed, shall be stainless steel.
 - (ii) Gaskets: Glazing gaskets shall be extruded EPDM rubber.
 - (iii) Perimeter anchors: Aluminum. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
- E12.4.2 Related Materials
 - (a) Sealants: As per manufacturer's written instructions and recommendations.
 - (b) Exterior Glazing: Window units – clear dual pane, sealed tempered safety glass units; Door units – single clear pane, sealed tempered safety glass units.
- E12.4.3 Fabrication
 - (a) Fabricate components per manufacturer's installation instructions and with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
 - (b) Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.
 - (c) Prepare components to receive anchor devices. Fabricate anchors.
 - (d) Arrange fasteners and attachments to conceal from view.

E12.4.4 Finishes

- (a) Kawneer Permanodic AA-M12C22A31, AAMA 611, Architectural Class II Clear Anodic coating. Colour to be selected by Contract Administrator.

E12.4.5 Protection and Cleaning

- (a) Protect installed product's finish surfaces from damage during construction. Protect aluminum storefront system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.
- (b) Clean installed products in accordance with manufacturer's instructions.

E13. DOOR HARDWARE

E13.1 HW SET: 1 (APPLIES TO DOORS D1 & D5)

1	EA	CONTINUOUS HINGE	FM-300	630	MAR
2	EA	STD COMBINATED CORE	1C7-2	626	BES
1	EA	DEADLOCK	MS1850S	628	ADA
1	EA	KICKPLATE	ACROVYN	BLK	ACR
1	EA	PUSHBAR	9100	630	IVE
1	EA	SURFACE CLOSER	4041 & 18 ADAPTOR	689	LCN
1	EA	OVERHEAD HOLDER	100H	630	GLY

HW SET: 2 (APPLIES TO DOORS D2 & D3)

1	EA	CONTINUOUS HINGE	FM-300	630	MAR
1	EA	KICKPLATE	ACROVYN KICKPLATE	BLK	ACR
1	EA	OVERHEAD STOP	100S	630	GLY
1	EA	EXIT DEVICE	KAWNEER EO PANELINE	628	KAW
1	EA	AUTO OPENER	STANLEY MAGIC FORCE WITH BUTTONS	628	STA

HW SET: 3 (APPLIES TO DOOR D4)

1	EA	CONTINUOUS HINGE	FM-300	630	MAR
1	EA	STD COMBINATED CORE	1C7-2	626	BES
1	EA	DEADLATCH	4710 X LEVER	628	ADA
1	EA	KICKPLATE	ACROVYN KICKPLATE	BLK	ACR
1	EA	PULL/PUSHBAR	9103EZ-0	630	IVE
1	EA	SURFACE CLOSER	4041 & 18 ADAPTOR	689	LCN
1	EA	OVERHEAD HOLDER	100S	630	GLY

HW SET: 4 (APPLIES TO DOORS D6 & D8)

3	EA	HINGE	3CB1 4.5 X 4 NRP	630	IVE
2	EA	STD COMBINATED CORE	1C7-2	626	BES
1	EA	DEADBOLT	B660BDC	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	EA	WEATHERSTIP	W-50	628	KNC
1	EA	DOOR SWEEP	W-13S	628	KNC
1	EA	THRESHOLD	CT-10	627	KNC

HW SWT: 5 (APPLIES TO DOOR D7)

3	EA	HINGE	3CB1 4.5 X 4 NRP	652	IVE
1	EA	STD COMBINATED CORE	1C7-2	626	BES
1	EA	CLASSROOM LOCK	ND70BDC RHO	626	SCH
1	EA	OVERHEAD STOP	410S	630	GLY

E14. SHEET VINYL FLOORING

E14.1 GENERAL

E14.1.1 Supply and installation of slip resistant sheet vinyl flooring as indicated on Drawings and Room Finish Schedule. Supply and install heat weldable and self coving base to provide a monolithic watertight floor.

E14.2 MAINTENANCE DATA

E14.2.1 Provide data for maintenance of resilient flooring for incorporation into Maintenance Manual.

E14.3 ENVIRONMENTAL REQUIREMENTS

E14.3.1 Maintain minimum 20 degrees C air temperature at flooring installation area for three (3) days before, during and for 48 hours after installation.

E14.4 MATERIALS

E14.4.1 Marley/Flexco Safetred Aqua sheet vinyl flooring or approved equal shall be a non-abrasive slip resistant sheet vinyl floor using a natural cork to provide the slip resistant properties. The flooring shall be 2 meters (6'-6") sheet widths, 2mm (0.080") thickness, colour to be selected by Contract Administrator. Resilient base shall be flash coved, 100mm (4") high, heat weldable.

E14.5 EXECUTION

E14.5.1 SUB-FLOOR TREATMENT

(a) Sub-floors must be free of paint, oil, dirt, or any foreign substance. Sub-floors must be firm, smooth and even without cracks. Moisture measurement of the sub-floor must not exceed 2.5% by the Carbide Method.

E14.5.2 SHEET VINYL APPLICATION

- (a) Lay flooring with joints parallel to building lines to produce symmetrical pattern. All seams and joints shall be hot air welded. A suitable flooring grade acrylic adhesive should be used to flooring manufacturer's recommendations and instructions.
- (b) Base application: Heat weldable and self coving base as recommended by the flooring manufacturer.
- (c) Cleaning and Waxing: Remove excess adhesive from floor, base and wall surfaces without damage. Clean, seal, and wax floor and base surface to flooring manufacturer's instructions.

E15. PAINTING

E15.1 GENERAL

E15.1.1 Section includes touching up of primed or sheet metal items, gypsum board, wood doors and frames, cabinetwork and plywood wall and ceiling panelling.

E15.2 PRODUCTS

E15.2.1 MATERIALS

(a) Qualified Products: Only paint materials listed on the Qualified Products List issued by the Interdepartmental Qualification Board for Paint Materials will be acceptable for use on this project.

- (b) Paint materials: To CGSB Standards listed in Finishing Formulae. Paint materials for each coating formulae to be products of a single manufacturer.

E15.3 EXECUTION

E15.3.1 PREPARATION OF SURFACES

- (a) Prepare wood surfaces to CGSB 85-GP-1M.
- (b) Apply wood paste filler to nail holes and cracks.
- (c) Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16.
- (d) Prepare and wallboard surfaces to CGSB 85-GP-33M. Fill minor cracks with plaster patching compound.
- (e) Sand and dust between each coat to remove defects visible from distance up to 1.5m.
- (f) Finish bottoms, edges, tops and cut-outs of doors after fitting as specified for door surfaces.

E15.3.2 INTERIOR FINISHES

- (a) Formula 1: for plaster and gypsum board walls apply:
 - (i) One coat primer-sealer 1-GP-119M.
 - (ii) Two coats semi-gloss enamel 1-GP-57M.
- (b) Formula 2: for plaster and gypsum board ceilings apply:
 - (i) One coat primer-sealer 1-GP-119M.
 - (ii) One coat semi-gloss enamel 1-GP-57M.
- (c) Formula 3: for wood doors, trim, etc. apply:
 - (i) One coat clear sealer 1-GP-102a.
 - (ii) Two coats semi-gloss enamel 1-GP-57M.
- (d) Formula 4: for cabinetwork apply:
 - (i) One coat clear sealer 1-GP-102a.
 - (ii) Two coats flat urethane.
- (e) Formula 5: for existing woodwork apply:
 - (i) One coat paste-filler.
 - (ii) One coat semi transparent stain.

E15.3.3 EXTERIOR FINISHES

- (a) Formula 6: for wood to receive stain finish apply:
 - (i) Two coats semi transparent stain 1-GP-145M, Type 1.
- (b) Formula 7: for primed ferrous metal surfaces apply:
 - (i) One coat spot priming 1-GP-40M.
 - (ii) One coat lead primer 1-GP-140M.
 - (iii) Two coats exterior enamel 1-GP-59M.
- (c) Formula 8: for galvanized and zinc coated metal apply:
 - (i) One coat vinyl wash primer 1-GP-121M.
 - (ii) One coat steel primer 1-GP-40M.
 - (iii) Two coats exterior enamel 1-GP-59M.

E16. ELECTRICAL WORK

E16.1 GENERAL

E16.1.1 The Work consists of disconnection and removal of electrical service and devices at existing ticket booth, and supply and installation of a new service to the location.

E16.1.2 Work is to be completed during the winter season.

E16.1.3 Contractor to obtain all necessary permits. All materials and Work performed shall meet or exceed Public Works, Building Services Design Guidelines, Workplace Safety and Health Act Standards, the Canadian Electrical Code and all applicable local codes.

E16.1.4 Any alteration or addition to the above specified Work involving extra costs shall be submitted in writing, and will require written approval prior to proceeding.

E16.2 OLD BOOTH

E16.2.1 Disconnection and removal of existing service feed and all power, lighting, telephone, data and internet wiring and devices.

E16.3 POWER

E16.3.1 Supply and install 2 new electrical subpanels (one in each ticket booth), complete with all necessary wiring and breakers to satisfy all loading and code requirements. All equipment and devices in the new booths to be fed from these new panels. Service feed for the new panels is from CDP in Zootique Gift Shop Electrical Room (Panels G1 and G2). Supply and install electrical wiring and devices as per Drawing E1.

(a) Booth 1: Supply and install the following devices:

- (i) four (4) 2-gang duplex receptacles (total of 2 circuits)
- (ii) 2 dedicated 15A duplex receptacles
- (iii) 24" 240V baseboard heater c/w wall-mount thermostat
- (iv) 1 dedicated 15A duplex receptacle (switched) protected by GFI breaker, to be mounted on the exterior of the booth in a weatherproof box with cover
- (v) Installation of switched open/closed sign (sign to be provided by others)
- (vi) Minimum of 2 spaces to be left in subpanel for future overcurrent devices

(b) Booth 2: Supply and install the following devices:

- (i) four (4) 2-gang duplex receptacles (total of 2 circuits)
- (ii) 2 dedicated 15A duplex receptacles
- (iii) 24" 240V baseboard heater
- (iv) 1 dedicated 15A duplex receptacle (switched) protected by GFI breaker, to be mounted on the exterior of the booth in a weatherproof box with cover
- (v) Installation of switched open/closed sign (sign to be provided by others)
- (vi) Air to air heat exchanger, sufficient for 14 square meter space
- (vii) Minimum of 2 spaces to be left in subpanel for future overcurrent devices

(c) Gate Entrance/Exit Doors:

- (i) Electrical wiring and connection for two (2) doors. Provide override switch to hold all doors in OPEN position for mass entry and/or emergency exit.
- (ii) Disconnection and removal of all electrical wiring and devices at existing wheelchair gate.

E16.4 LIGHTING

- E16.4.1 Supply and install and/or repair lighting as per Drawing E1, complete with all necessary wiring, lamps and overcurrent devices as necessary. Shop drawings are not required. Any fixture substitutions must be approved in writing.
- (a) 6 existing pot lights to be maintained in same positions with minor repairs and trim touch-ups/ trim replacement as necessary, and new A19 120V lamps to be installed (wattage to be determined). Fixture condition to be evaluated on Site. 2 existing pot lights in new Ticket Booth#1 space to be disconnected and removed.
 - (b) Supply and install four (4) directional 8" 120V incandescent surface downlights (2 at each ticket booth, mounted over the exterior of the ticket window). Lamp to be PAR38 flood, wattage to be determined. Use Pace Cilindro EDTC Series fixtures or approved equivalent. Finish to be dark bronze.
 - (c) Two (2) existing exterior wall-mounted fixtures to be repaired and re-used for up-lighting in the tower (existing wire covers to be removed and discarded). Fixture condition to be evaluated on Site. In the event that existing fixtures are not repairable, supply and install Lithonia WFL2 series fixtures (or approved equivalent) in the same wattage as existing fixtures. Finish to be dark bronze. New lamps to be installed, lamps to be metal halide where possible (lamp type and wattage to be determined on Site).
 - (d) Supply and install two (2) surface-mount fixtures for exterior path lighting. Use Lithonia WFL2 series fixtures (or approved equivalent) in same voltage as fixtures for tower up-lighting. Lamp to be metal halide, wattage to be determined.
 - (e) Supply and install the following interior surface mount fixtures (or approved equivalent):
 - (i) Booth1: Fixture – 2 x Lithonia LB-2-17-120-GEB
Lamp – 2 x F17T8
 - (ii) Booth2: Fixture – 2 x Lithonia LB-2-32-120-GEB
Lamp – 2 x F32T8
 - (f) Supply and install the following interior surface mount track lighting with directional heads (or approved equivalent):
 - (i) Booth1: Track – 1 x Lithonia ArchiTrak AKT4WH
Head – 2 x Lithonia ArchiTrak AKTSCP20WH
Lamp – 2 x 45PAR16/H/NFL 120V
 - (ii) Booth2: Track – 1 x Lithonia ArchiTrak AKT6WH
Head – 3 x Lithonia ArchiTrak AKTSCP20WH
Lamp – 3 x 45PAR16/H/NFL 120V

E17. MECHANICAL WORK

E17.1 HVAC SYSTEM

- E17.1.1 Supply and install two (2) 24" 120/208V baseboard heaters, complete with wall-mounted thermostat.
- E17.1.2 Supply and install one (1) balanced air to air heat exchanger in Booth2. Supply and install one (1) ductless split air conditioning system with heat pump (approximately 9,000 BTU), including remote control thermostat.
- E17.1.3 HVAC for Booth1 to be from system in Zootique and will be run through common wall. Supply and install all ducting, connections and devices required to provide conditioned environment in Booth1 to comply with ASHRAE and all local codes, including air conditioning, heating, exhaust and fresh air intake. Ductwork to be repaired and/or sealed to be with metal-backed tape.

E17.2 COMMUNICATIONS

E17.2.1 Disconnection and removal of existing telephone, data and internet cables at old ticket booth. Reconnection and supply / install communication cabling to new ticket booths as follows:

- (ii) 1 shared DSL line (1 connection point in each new ticket booth)
- (iii) 2 shared telephone lines (1 duplex jack in each ticket booth)
- (iv) 2 dedicated telephone lines (1 dedicated jack in each ticket booth) for Debit card swipe