



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 852-2014

OLD MARKET SQUARE RENOVATIONS 2014

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 OLD MARKET SQUARE RENOVATIONS 2014

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, September 17, 2014.

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. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B3.2 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.

B3.3 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.

B3.4 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.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. CONFIDENTIALITY

B4.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

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/>
- B5.2.2 The Bidder is responsible for ensuring that he/she 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.
- B5.2.3 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/her 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, to the Bidder who requested approval of the substitute.
- B6.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she 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/her 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/her own name, his/her 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/her 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/her 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/her 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 a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.1.1 Notwithstanding C12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9.4 Payments to Non-Resident Contractors are subject to 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/Subcontractors has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
 - (a) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
 - (b) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
 - (c) 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/bidopp.asp>

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/her 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/her Bid after the Submission Deadline but before his/her 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/her Bid or in other information required to be submitted, that he/she is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B14.4.1 Further to B14.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

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/her Bid upon written request to the Contract Administrator.
- B15.4 Notwithstanding C4, the City may 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:
- (a) Letinsky Monument New Base and Relocated Site Preparation
 - (b) Letinsky Monument Existing Site Refurbishment
 - (c) New Removable Bollard and Concrete Pad near Old Market Square Parking Area
 - (d) Relocate Park Canada Sign Structure
- D2.2 The major components of the Work are as follows:
- (a) Remove and Relocate Letinsky Monument
 - (b) Remove and Stockpile Existing Paving Stones
 - (c) Site Preparation, Excavation and Grading
 - (d) Construction and Installation of New Letinsky Monument Base with lighting and electrical services
 - (e) Installation of New Removable Bollard and Concrete Pad
 - (f) Construction and Installation of Park Canada Sign Structure
 - (g) Reinstallation of Stockpiled Paving stones
 - (h) Site Repair including Sidewalk and Boulevard Restoration

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**CSA**" means Canadian Standards Association;
 - (b) "**ASTM**" means American Society for Testing and Materials;

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is Scatliff+Miller+Murray Inc., represented by:
- Mr. Russell Krepert
Senior Urban Designer
Suite 1120 – 201 Portage Ave.
Winnipeg Manitoba
R3B 3K6
- Telephone No. (204) 927-3444
Facsimile No. (204) 927-3443
- D4.2 At the pre-construction meeting, Mr. Krepert will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.
- D4.3 Bids Submissions must be submitted to the address in B7.5.

D5. CONTRACTOR'S SUPERVISOR

- D5.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

- D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.
- D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.
- D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;
- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
 - (b) the Contract, all deliverables produced or developed; and
 - (c) any statement of fact or opinion regarding any aspect of the Contract.
- D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

D7. NOTICES

- D7.1 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.
- D7.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D7.3, D7.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D4.1.
- D7.3 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 facsimile number:
- The City of Winnipeg
Chief Financial Officer
Facsimile No.: 204 949-1174
- D7.4 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 facsimile number:
- The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204 947-9155

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

- D8.1 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.

D9. SAFE WORK PLAN

D9.1 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.

D9.2 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>

D10. INSURANCE

D10.1 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) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
- (c) all risks installation floater, carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D10.2 Deductibles shall be borne by the Contractor.

D10.3 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.

D10.4 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.

D11. PERFORMANCE SECURITY

D11.1 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.

- D11.1.1 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.
- D11.2 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.

D12. SUBCONTRACTOR LIST

- D12.1 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

D13. COMMENCEMENT

- D13.1 The Contractor shall not commence any Work until he/she is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.
- D13.2 The Contractor shall not commence any Work on the Site until:
 - (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D9;
 - (iv) evidence of the insurance specified in D10;
 - (v) the performance security specified in D11; and
 - (vi) the Subcontractor list specified in D12.
 - (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.
- D13.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

D14. SUBSTANTIAL PERFORMANCE

- D14.1 The Contractor shall achieve Substantial Performance within twenty-five (25) consecutive Working Days of the commencement of the Work as specified in D13.
- D14.2 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.
- D14.3 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.

D15. TOTAL PERFORMANCE

- D15.1 The Contractor shall achieve Total Performance within thirty-five (35) consecutive Working Days of the commencement of the Work as specified in D13.
- D15.2 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.
- D15.3 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.

D16. LIQUIDATED DAMAGES

- D16.1 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 five hundreds dollars (\$500) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.
- D16.2 The amount specified for liquidated damages in D16.1 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.
- D16.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D17. JOB MEETINGS

- D17.1 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.
- D17.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D18. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D18.1 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).

D19. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D19.1 Further to B10.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B10.4.

MEASUREMENT AND PAYMENT

D20. PAYMENT

- D20.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D21. WARRANTY

- D21.1 Warranty is as stated in C13.

FORM H1: PERFORMANCE BOND
(See D11)

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. 852-2014

OLD MARKET SQUARE RENOVATIONS 2014

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 D11)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 852-2014
OLD MARKET SQUARE RENOVATIONS 2014

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 (2007 Revision), International Chamber of Commerce Publication Number 600.

(Name of bank or financial institution)

Per: _____

(Authorized Signing Officer)

Per: _____

(Authorized Signing Officer)

(See D12)

OLD MARKET SQUARE RENOVATIONS 2014

[illegible]

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 are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
L1-R0	Letinsky Monument Proposed & Existing Plans & Details
L2-R0	Proposed Bollard & Relocated Sign Plans & Details

E2. PRE-CONSTRUCTION MEETING

- E2.1 The Contractor shall not begin the Work under this Contract until a pre-construction meeting has been held between representatives of the General Contractor, the City of Winnipeg, and the Contract Administrator.

E3. SITE ACCESS

- E3.1 All access to be on the designated routes through the Site. These routes will be determined at the pre-construction meeting.
- E3.2 Access to the Site as required by the Contractor shall be provided and maintained by the Contractor at his own expense and approved by the Contract Administrator.
- E3.3 The Contractor's operation shall be limited to the minimum area necessary for undertaking the Work and he shall be responsible for all damage resulting from his Work on private property. Damage to areas beyond the marked routes shall be repaired by and at the expense of the Contractor to the satisfaction of the Contract Administrator.

E4. SITE CONDITION

- E4.1 The Contractor and applicable Sub-Contractors shall examine the Site and make themselves familiar with the existing conditions (both above and below grade) and nature of Work to be done.
- E4.2 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface; the City shall not be liable for the incorrectness and inadequacy thereof. Surface and sub-surface conditions shown on the Drawings and included herein are provided for general information and variations there from shall not affect the terms of the Contract. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.

- E4.3 The Contractor shall set all necessary control lines, benchmarks, survey, elevation stakes and layout in accordance with the individual Site conditions and in consultation with the Contract Administrator.

E5. EXISTING SERVICES AND UTILITIES

- E5.1 This Specification shall amend and supplement CW 1120.
- E5.2 The Contractor's attention is being drawn to the existing underground lines or services that may be located in the area of the Work. It will be the responsibility of the Contractor to familiarize himself with the requirements of all the utility involved within the street right-of-way
- E5.3 Other than required to be done by the Contractor under the Work of this Contract, all necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing plant material, pavements, streets, roads, boulevards, light standards, hydro poles, fences, fire hydrants, culverts, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred in the performance of the Work (either directly or indirectly), the Contractor shall either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to the Contract Administrator, and the cost of which shall be borne entirely by the Contractor. The Contractor shall also indemnify and save harmless the City from all claims made directly or indirectly against it in respect to any such damage.
- E5.4 The Contractor shall take all necessary precautions when performing the Work to ensure that no damage is done to these existing services.
- E5.5 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface; the City shall not be liable for the incorrectness and inadequacy thereof. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.
- E5.6 All costs in connection with this item including location of the existing service, repairs to any existing services damaged by the construction operation, etc. shall be included in the Unit Prices bid for "Site Preparation, Excavation and Grading" included under this Contract.
- E5.7 The Contractor will be required to make his own arrangements in connection with the temporary use of lighting, power, gas, sewer, water or other utilities, and pay all costs in connection therewith.
- E5.8 All necessary permits, fees and other like expenses as well as the cost of temporary connections to existing facilities shall be arranged and paid for by the Contractor.

E6. TRAFFIC CONTROL

- E6.1 Further to clauses 3.6 and 3.7 of CW 1130:
- (a) Where directed, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planning drop-offs to the satisfaction of the Contract Administrator. No measurement for payment will be made for this work.
 - (b) In accordance with the Manual of Temporary Traffic Control, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Section of the City of Winnipeg to place all temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by the Traffic Services Section of the City of Winnipeg in connection with the works undertaken by the Contractor.

E7. TRAFFIC MANAGEMENT

- E7.1 Further to clauses 3.7 of CW 1130:

- (a) Maintain a minimum of one lane of traffic northbound on King Street during construction time.
- (b) Maintain a minimum of one lane of traffic on Arthur and Albert Street during construction time.
- (c) Intersecting street and private approach access shall be maintained at all times.
- (d) Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he shall review the planned disruption with the residence or business and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.
- (e) Pedestrian and ambulance / emergency vehicle access must be maintained at all times.

E8. SITE ENCLOSURES

- E8.1 Temporary Site enclosures and temporary snow fences at open excavation, as determined necessary at the pre-construction meeting, shall be erected and maintained as required for the duration of the construction period.
- E8.2 Site enclosures and temporary snow fence shall be considered incidental to the Contract Work.

E9. WATER USED BY CONTRACTOR

- E9.1 Further to clause 3.7 of CW 1120, the Contractor shall pay for all costs associated with obtaining water in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.

E10. SURFACE RESTORATIONS

- E10.1 Further to clause 3.3 of CW1130, when Total Performance is not achieved in the year the Contract is commenced, the Contractor shall temporarily repair any Work commenced and not completed to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

E11. INFRASTRUCTURE SIGNS

- E11.1 The Contractor shall obtain infrastructure signs from the Traffic Services Sign Shop at 421 Osborne Street. The Contractor shall mount each sign securely to a rigid backing material approved by the Contract Administrator. The Contractor shall fasten each sign to a suitable support and erect and maintain one sign at each street as directed by the Contract Administrator. When the Contract Administrator considers the Work on the street complete, the Contractor shall remove and dispose of the sign and supports. No measurement for payment will be made for performing all operations herein described and all other items incidental to the work described.

E12. PROTECTION OF EXISTING TREES

- E12.1 General
 - (a) This Specification covers the protection of all existing trees. The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.
- E12.1.1 Definitions

- (a) The following definitions shall apply.
- (i) **TREE PROTECTION AREA:** Generally, a tree protection area should consist of the ground encompassing from 1.0 (minimum) to 1.5 times the distance between the trunk and dripline, or as shown in the table below, whichever is greater. Areas of ground covered by pavement, buildings, or other permanent structures where the presence of roots is minimal or negligible may be excluded at the discretion of the Contract Administrator.

Trunk Diameter	Minimum Protection Area Radius
< 100 mm	1.8 m
110 – 400 mm	2.4 m
410 – 500 mm	3.0 m
510 – 600 mm	3.6 m
610 – 700 mm	4.2 m
710 – 800 mm	4.8 m
810 – 900 mm	5.4 m
910 – 1000 mm	6.0 m

- (ii) With groups of trees or where an array effect is present, there may be discontinuous (non-overlapping) perimeters of tree protection areas, which result in difficult to maintain or ineffective tree protection fencing. In these cases, even though tree protection areas do not overlap, they should be treated as though they do if the distance between the perimeters of such areas is less than 10M. In effect, this will artificially enlarge the area of tree protection, but will result in a more clearly defined, manageable area.
- (iii) **DRIPLINE:** The outermost edge of the tree's canopy or branch spread. The area within a tree's dripline is all the ground under the total branch spread.
- (iv) **CRITICAL ROOT ZONE:** Generally, all of the ground area included in the dripline.
- (v) **DIAMETER (CALIPER):** The size (millimetres) of a tree's trunk is measured at:
- 150mm above grade for trunk diameters up to and including 100mm;
 - 600mm above grade for trunk diameters from 100mm up to and including 200mm; and
 - 1.2M above grade for trunk diameters greater than 200mm.
- (vi) **ARBORIST:** An individual who has obtained accreditation from the Manitoba Arborists Training and Examination Program or the International Society of Arboriculture Arborist Certification Program (ISA) and possesses a valid Manitoba Arborist's License.

E12.2 Products

- (a) Not Applicable

E12.3 Execution

E12.3.1 Tree Protection Area

- (a) Existing trees and planted areas shall be protected and preserved as noted on the drawings. The Protection Area shall be as described above, unless otherwise approved by the Contract Administrator.
- (b) Motorized equipment and trailers, including tractors, bobcats, bulldozers, trackhoes, trucks, cars, and carts shall not be allowed access within tree protection areas. Should access be necessary within designated tree protection areas, the existing grade shall be covered with 150 -200mm of wood mulch to help distribute the weight

of equipment and to minimize soil compaction and rutting. Plywood and/or mulch is not acceptable bridging material for driving over exposed tree roots. Exposed tree roots shall not be driven over. The Contract Administrator must approve the access and driving surface prior to its use.

- (c) Materials and supplies shall not be stockpiled or stored within the tree protection area. Should temporary storage be necessary within designated tree protection areas, the existing grade shall be covered with double, overlapping sheets of $\frac{3}{4}$ inch thick plywood, or 150 -200mm of wood mulch to help distribute the weight of materials or supplies and to minimize soil compaction.
- (d) No objects or materials may be leaned against or supported by a tree's trunk, branches, or exposed roots. The attachment or installation to trees of any sign, cable, wire, nail, swing, or any other material that is not needed to help support the natural structure of the tree is prohibited. Standard arbouricultural techniques such as bracing or cabling that are performed by professional arbourists are acceptable upon approval by the Contract Administrator.
- (e) Concrete or chemicals spilled within tree protection areas should be completely removed. Contamination soil shall be completely removed at the time of the spill and removed by hand without disturbance to root systems. Appropriate soil should be added as necessary to restore the grade.
- (f) Appropriate tree pruning and/or removal permits must be secured prior to beginning work.

E12.3.2 Tree Protection Fencing

- (a) Tree protection areas and fencing locations shall be approved by the Contract Administrator prior to construction. Layout and staking shall be done by the Contractor.
- (b) Tree protection fences should be constructed of one of the following:
 - (i) Moulded plastic construction fencing, 1.2m in height, colour: orange.
- (c) Fencing should be installed to completely surround the limits of tree protection areas, and should extend at least 3.0m beyond the designated construction limits.
- (d) Tree protection fencing must be installed prior to any site activity and shall remain in good condition until its removal is authorized by the Contract Administrator.

E12.3.3 Trunk Protection

- (a) If requested by the Contract Administrator, trees so identified will require 1x6x8' wood planks strapped to the tree trunk to completely protect the tree trunk from impact damage (smaller trees will be similarly protected using proportionally sized wood planks).
- (b) If requested by the Contract Administrator, trees so identified will have a 1.0m (minimum) radius protective zone calculated from the circumference at the base of the trunk which will remain free of digging, trenching, grade changes, stock piling of materials and soil compaction throughout the duration of the Contract.
- (c) Should the demands of construction require an unfenced Tree Protection Area, protective fencing must be installed for the area described in above.

E12.3.4 Overhead Branch and Limb Protection

- (a) Tree limbs and branches overhanging the construction area shall not be damaged. The Contractor shall be responsible for ensuring that the above ground portions of trees are not damaged during Work.
- (b) Should pruning be required, the Contractor shall contact the Contract Administrator for approval. Pruning work must be using proper pruning techniques by a licensed Arbourist.

E12.3.5 Excavation

- (a) During all excavation a representative of the Contract Administrator shall be present at all times unless otherwise agreed upon.
- (b) The Contract Administrator shall be notified prior to any trenching or excavation known or suspected to involve cutting of more than:
 - (i) Two (2) roots, 75mm or more in diameter; and/or
 - (ii) Four (4) roots between 50mm and 75mm in diameter.
 - (iii) In the event of the above, roots shall be exposed using hydro excavation techniques. This work must be done with the City Forester and Contract Administrator present
 - (iv) Should root pruning be required the Contractor must ensure proper root pruning techniques are employed by a licensed Arbourist.
 - (v) Further to the above, the Contract Administrator shall be notified and all work excavation suspended in the event that roots in excess of that described above are cut, torn, ripped, or otherwise injured.
- (c) Upon approval by the Contract Administrator, prior to any excavation, removal of sidewalk, or other activity that will result in removal of soil and tree roots, all tree roots within work area will be pruned to a depth equal to the depth of excavation. Pruning shall occur with a Dosko Root Pruner, or equivalent, in accessible areas, and by hand in areas inaccessible to the root pruning machine. Proper root pruning techniques must be used and employed by a licensed Arbourist.
- (d) All work under the Dripline of any tree shall be done by hand or by other methods which will prevent breakage or other injury to branches and roots.
- (e) Where it is necessary to excavate within the critical root zone of existing trees, contractor shall use all possible care to avoid injury to trees and tree roots. Excavation, in areas where 50mm diameter and larger roots occur, shall be done by hand with approved hand tools. Where possible, tree roots 50mm inches or larger in diameter shall be tunnelled or bored under and shall be covered with moistened burlap to prevent excessive drying.
- (f) Wherever roots smaller than two 50mm in diameter are exposed, such roots extending through the excavation shall be hand pruned. All excavated areas within critical root zones shall be closed within twelve (12) hours - if this is not possible, the excavation walls shall be covered with burlap and kept moistened. Prior to backfilling, the Contractor shall contact the Contract Administrator to inspect the condition and treatment of roots larger than 50mm in diameter injured by excavation.
- (g) Horizontal directional boring (auger tunnelling), rather than open trenching, shall be used for irrigation line or other utility installation within 150mm linear distance from the trunk base for every 25mm of trunk diameter, if root disruption or utility installation occurs on no more than one side of the tree. If trenching or utility installation will occur on two or more sides of a tree trunk (e.g. N,S,E, or W), then horizontal directional boring shall be used if line installation is within 600mm linear distance from the trunk base for every inch of trunk diameter.

E12.3.6 Notification

- (a) The Contract Administrator is to be notified 48 hours in advance of any large equipment to be working in the vicinity of existing trees. The Contractor shall provide adequate personnel on foot to supervise equipment operators in the vicinity of the trees to ensure that no damage occurs.

E12.3.7 Demolition of Existing Paved Area

- (a) Caution should be used during removal of existing street, curb, gutter, sidewalk, drain inlets, and other concrete, pavers and asphalt demolition, to minimize injury to tree root systems. The following procedures should be used when removing existing concrete.

- (i) Breaking of the existing concrete, pavers and asphalt for removal should be done in a manner that will minimize ground disturbance and vibration.
- (ii) Curbs and sidewalks within designated tree protection areas and critical root zones shall be removed by hand. When removing existing sidewalks and curbs, care should be taken to avoid injury to roots located under, over, or adjacent to paved surfaces.
- (iii) Roots and root-trunk flares growing over curbs should not be injured during breaking of curbs and removal of debris. Wood and bark tissues shall not be injured by striking tissues with equipment.
- (iv) During the removal of concrete or pavers, all root systems and soil areas exposed shall not be disturbed.
- (v) Motorized equipment and trailers, including tractors, Bobcats, bulldozers, trackhoes, trucks, cars, and carts are to be limited to access on the existing paved street only. Access is not allowed behind the curb within tree protection areas.

E12.3.8 Utility Installation

- (a) All utility lines shall be indicated on construction plans and pre-approved by the Contract Administrator. Unless approved by the Contract Administrator, no utility lines shall be located within 2.4m of any existing tree trunk.
- (b) All trenching or other work under the dripline of any tree shall be done by hand or by other methods which will prevent breakage or other injury to branches and roots.
- (c) Wherever a trenching machine exposes roots smaller than 50mm in diameter, such roots extending through the trench wall shall be hand pruned. All trenches within critical root zones shall be closed within twelve (12) hours-if this is not possible, the trench walls shall be covered with burlap and kept moistened. Prior to backfilling, Contractor shall contact the Contract Administrator to inspect the condition and treatment of roots larger than 50mm in diameter injured by trenching.
- (d) Horizontal directional boring (auger tunnelling), rather than open trenching, should be used for irrigation line or other utility installation within 150mm linear distance from the trunk base for every 25mm of trunk diameter, if root disruption or utility installation occurs on no more than one side of the tree. If trenching or utility installation will occur on two or more sides of a tree trunk (e.g. N,S,E, or W), then horizontal directional boring should be used if line installation is within 300mm linear distance from the trunk base for every 25mm of trunk diameter.

E12.4 Measurement and Payment

E12.4.1 Measurement

- (a) Protection of existing trees shall be considered incidental to the Contract Work. No measurement will be made for protection of existing trees.

E12.4.2 Basis for Payment

- (a) Protection of existing trees shall be considered incidental to the Contract Work. No separate payment will be made for protection of existing trees.

E13. PERMITS, NOTICES, LICENSES, CERTIFICATES, LAWS AND RULES

E13.1 Further to C6.12, the Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.

E13.2 The Contractor shall comply with all laws, ordinances, rules and regulations that would relate to the Work.

- E13.3 All notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be submitted to the Contract Administrator.
- E13.4 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Act.
- E13.5 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Fall Protection guidelines.
- E13.6 The Contractor and Sub-Contractors must be fully aware of all Work involving hazardous materials. All Work must be performed in compliance with the Manitoba Department of Labour Workplace Health and Safety Guidelines and all other applicable codes. The Contractor is responsible for the immediate notification to the Contract Administrator of his/her encountering of suspected hazardous material during their course of Work.

E14. PRODUCT APPROVALS

- E14.1 The Contractor shall, following award, prepare a complete list of all material to be used on the project and submit the list to the Contract Administrator seventy-two (72) hours prior to start of construction.
- E14.2 The Contractor shall only use material which has been approved by City of Winnipeg or by the Contract Administrator. The list shall provide the product, the manufacturer and the supplier.
- E14.3 All Workmanship and materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator. The Contract Administrator reserves the right to reject any materials or Works which are not in accordance with the requirements of the Specifications.
- E14.4 The Contractor shall wholly be responsible for the supply, safe storage, and handling of all materials set forth in this specification, and the control of all operations, incidental thereto notwithstanding any inspection or approval that may have been previously given.

E15. PROTECTION OF SURVEY INFRASTRUCTURE

- E15.1 Notwithstanding clause 4 "Protection of Survey Bars" of the Standard Provisions; Current legislation, The Surveys Act, places the onus on those undertaking construction to protect the Survey Infrastructure from damage as a result of their activity.
- E15.2 Further to C:6.26 (g), at least 72 hours prior to the commencement of the On-Site Work the Contractor shall contact the City of Winnipeg, Geomatics Services Branch at 204-918-1360 (8:00 am to 4:00 pm Monday to Friday excluding holidays) to obtain underground clearance. Geomatics Services will locate and mark all known outline survey monuments and geodetic control monuments and confirm the physical condition of those monuments upon completion of construction, at no cost to the Contractor.
- E15.3 Where a survey post, bar or control monument lies in the line of the proposed Work and must be disturbed, the Contractor shall provide the Contract Administrator with 48 hours notice to permit referencing for future replacement, at no cost to the Contractor. Failure to provide the specified notice shall result in the Contractor paying for all costs associated with replacing or relocating the disturbed outline survey monuments and geodetic control monuments.
- E15.4 Survey monuments and geodetic control monuments at or adjacent to the Site, not in the line of the proposed construction that are damaged or disturbed by the Contractor shall be replaced or relocated by the City or its agent and all associated costs shall be paid for by the Contractor. An approximate estimate of the costs involved to restore a legal survey monument is \$1,000 per bar and \$3,000 per control monument. Contractors must ensure their landscaping and other subcontractors are aware of this clearance procedure and the potential restoration costs.
- E15.5 Where possible, amounts owed to the City in accordance with the above will be deducted from any payments to be made by the City to the Contractor.

E16. STAKES AND MARKS

- E16.1 The Contractor will mark, to the extent he determines to be necessary, the location, alignment and elevation of the Work by means of stakes or marks, for review and approval by the Contract Administrator. The Contractor shall make the completed Works conform to the lines and marks thus approved and indicated.
- E16.2 The Contractor shall notify the Contract Administrator immediately of the disturbance of any such stakes or marks. The cost of correcting any errors arising out of neglect of the Contractor to so notify the Contract Administrator shall be borne entirely by the Contractor, as well as the cost of replacing any disturbed stakes or marks.
- E16.3 Before commencing Work, the Contractor shall satisfy himself as to the meaning and correctness of all stakes and marks and no claims shall be entertained by the City on account of any alleged inaccuracies. If any error is suspected in the Drawings, Specifications or the directions of the Contract Administrator, Work shall be discontinued until the errors are rectified, but no claims shall be made on account of any delay occasioned thereby.
- E16.4 The Contractor shall determine and provide all dimensions and elevations measured from the stakes or marks.

E17. REMOVALS

E17.1 General

E17.1.1 Description

- (a) This Specification is supplemental to CW 3010 Clearing and Grubbing.
- (b) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as herein specified.
- (c) Work shall include, but not necessarily confined to, the following:
 - (i) Remove and Store Letinsky Monument for reinstallation;
 - (ii) Remove and Stockpile of Interlocking Paving Stones for reinstallation;
 - (iii) Remove and Dispose for all Concrete Pads and Footings;
 - (iv) Remove and Dispose of excess material for Electrical Trenching as approved by Contract Administrator; and
 - (v) Stockpile location to be restored to original condition following removal and re-use of material.

E17.2 Execution

E17.2.1 Site Access

- (a) The location of access points for the construction equipment and materials, and the methodology to facilitate construction shall be subject to the approval of the Contract Administrator. All material excavated for access ramps shall be hauled away from the Site at no additional cost. Care shall be taken to prevent damage to existing Site facilities, services and roads. In the event of damage to existing Site facilities or services caused by the Contractor's access and construction activities, the Contractor shall be held liable, and shall be required to provide appropriate restoration, to the satisfaction of the Contract Administrator. The Contractor shall be required to submit his proposed access methodology for review and approval prior to undertaking the Work.

E17.2.2 Removals

- (a) Disposal of material shall be understood to mean the hauling of all unsuitable material from the Site and the unloading in a safe and legal manner acceptable to the Contract Administrator. If arrangements are made in advance excavated material may be disposed of on Site at a location designated by the Contract Administrator.
- (b) Prior to commencement of removals operations, Contractor to meet on Site with Contract Administrator and representative of the City of Winnipeg to verify limits of removals.
- (c) The Contractor shall ensure that upon completion of the removal operations, the Site is left in a neat condition free from debris, etc. for approval by the Contract Administrator prior to placing clean fill.
- (d) Prevent damage to surface or underground utility lines which are to remain. Make good any damage.
- (e) Do not disturb soil within branch spread of trees to remain. Also refer to E12 Protection of Existing Trees.
- (f) All extraneous materials to be removed from the Site and disposed of in a safe and legal manner. This specification shall amend and supplement City of Winnipeg Standard Construction Specifications CW 3110.
- (g) Contractor must coordinate with the Contract Administrator for a site inspection to ensure all removals have occurred.
- (h) All items identified for removal shall be removed from the Site prior to excavation and/or fill placement.
- (i) Removal of Existing Letinsky Monument
 - (i) Remove and store Existing Letinsky Monument with method approved and in a protected location directed by Contract Administrator. All reasonable measures shall be taken to ensure no damage occurs during removals, hauling, storage, refurbishment and reinstallation.
 - (ii) The Contractor shall load and haul all excess material from Site and dispose of these materials at a dump located by the Contractor and approved by the Contract Administrator. Any materials dropped or spilled on any streets during hauling operations shall be promptly cleaned up at the expense of the Contractor, to the satisfaction of the Contract Administrator.
- (j) Removal of existing interlocking paving stone
 - (i) Removal of existing interlocking paving stones for reinstallation shall include removal of paving stones and lean mix as required, disposal of unusable paving stone and base course material and stockpiling of paving stones in approved area for future reinstallation.
 - (ii) All existing lean mix concrete base found is to be removed and disposed to City of Winnipeg Standards.
 - (iii) At the limits of excavation, the Contractor shall sawcut the existing pavement for the full depth of the pavement prior to the demolition and removal operation, to produce a clean straight edge when excavation. All costs in connection with sawcutting and disposal of any surplus material are incidental and shall be included in the unit price bid for "Remove and Stockpile Paving Stones for Reinstallation".
 - (iv) The edge of existing pavement, at the limits of excavation, shall be re-sawcut the day of paving if the edge has been damaged during construction to produce a clean straight edge.
 - (v) The Contractor shall exercise due caution during the interlocking paving stone removal Works so as to limit vibration. The Contractor shall take all necessary precautions when Working in the vicinity of any existing areaways, coal chutes, duct lines, trees, hedges, etc.

- (vi) Interlocking paving stones for reinstallation shall be safely stored and all reasonable measures shall be taken to ensure no damage occurs during removals, hauling and storage.

E17.3 Measurement and Payment

E17.3.1 Method of Measurement

- (a) Removals and Stockpile of Paving Stones for Reinstallation (for Existing Letinsky Site, Proposed Bollard Site and Proposed Sign Structure Site) will be measured on a surface area basis. The amount to be paid for shall be the total number of square meters constructed in accordance with this Specification and accepted by the Contract Administrator.
- (b) Removal and Dispose of Existing Concrete Pad and Footing (for Proposed Bollard Site) is a lump sum bid item, and shall include all Items of Work completed in accordance with this Specification and accepted by the Contract Administrator. No measurement will be made for this work.
- (c) All cost in connection with Removal and Stockpile of Letinsky Monument are incidental and shall be included in the unit price bid for "Refurbish and Relocate Letinsky Monument with New Concrete Base. Refurbish Concrete Lip on Monument Base (where required)" in accordance with this Specification and accepted by the Contract Administrator. There shall be no separate measurement or payment for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.
- (d) All cost in connection with Remove and Dispose of excess material for Electrical Trenching (Proposed Letinsky Site) are incidental and shall be included in the unit price bid for "Site Preparation, Excavation and Grading (Proposed Letinsky Site)" acceptably installed in accordance with E18 and this Specification and accepted by the Contract Administrator. There shall be no separate measurement or payment for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.

E17.3.2 Basis of Payment

- (a) Payment for Removal will be paid for at the Contract Unit Price for the "Items of Work" listed below, and measured as specified herein. This price shall be payment in full for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work included in this Specification.

Items of Work:

- i) Remove and Stockpile Paving Stones for Reinstallation (Existing Letinsky Site)
- ii) Remove and Dispose of Existing Concrete Pad and Footing (Proposed Bollard Site)
- iii) Remove and Stockpile Paving Stones for Reinstallation (Proposed Bollard Site)
- iv) Remove and Stockpile Paving Stones for Reinstallation (Proposed Sign Structure Site)

E18. SITE PREPARATION, EXCAVATION AND GRADING

E18.1 General

E18.1.1 Description

- (a) This Specification shall amend and supplement CW 3110 "Sub-grade, Sub-base and Base Course Construction" and CW 3170 "Earthwork and Grading".
- (b) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory

performance and completion of all Work as shown on the Drawings and as herein specified.

- (c) Work shall include, but not necessarily be confined to, the following:
 - (i) Excavation, removals, disposal, subgrade compaction and finish grading of the existing Site for the construction to ensure positive drainage and to the design requirements noted on the Drawings and the Specifications, approved on site by the Contract Administrator, to depths as required.

E18.2 Construction Methods

E18.2.1 General

- (a) The Contractor shall excavate and grade to the levels and contours allowing for surface treatment as shown on the drawings.
- (b) All imported and salvaged fill materials shall conform to CW 3170.
- (c) The Contractor shall construct the Site, within the limits indicated, to the design elevations and gradients noted on the Drawings (less the appropriate surface treatment depths specified) and shall excavate, remove and dispose of all unsuitable or surplus materials of whatever nature encountered.
- (d) The Contractor shall be responsible for the removal and reinstallation of any concrete paving and/or interlocking paving stones/ brick on private sidewalks as a result of vertical grade changes in the proposed pavement. The Contractor shall be responsible for the removal and reinstallation of any concrete and/or interlocking paving stones/brick on side street sidewalks and City owned Property as a result of vertical grade changes in the proposed pavement.
- (e) The removal and reinstallation of concrete sidewalk paving and/or interlocking paving stones/brick on private sidewalks, side street and City owned property, to meet new pavement grades, shall be included in the area calculations for these items of work.
- (f) Wherever the proposed paved area meets existing pavement, building edge, doorway or property line, the Contractor shall construct the paved area to an acceptable grade, as directed by the Contract Administrator, to ensure the proper drainage and accessibility are maintained.
- (g) Excavated or graded materials to be approved before use as fill for grading Work. Protect such approved material from contamination. Stockpile in approved locations. Protection and stockpiling are incidental to unit price bid for Site Preparation, Excavation and Grading.
- (h) Prevent damage to surface or underground utility lines which are to remain. Make good any damage.
- (i) The Contractor shall construct all subgrade in accordance with Specification CW 3110. This shall include the use of sheep's foot or other suitable compaction equipment as approved by the Contract Administrator to achieve a minimum compaction of 98% Standard Proctor Density below all paved areas, and 90% Standard Proctor Density in all other areas disturbed under this Contract unless otherwise indicated.
- (j) Excavation will be performed as per Section 4.3 of CW 3110.
- (k) Following earth moving, rough grading and compaction the Work areas shall be fine graded to provide a maximum deviation of 50mm in 10 metres from the design grade with no low areas that hold water. The finished surface of all disturbed areas shall be dragged and smoothed in such a manner that there are no loose soil particles greater than 50mm in maximum dimensions.

E18.2.2 Approvals

- (a) The Contractor shall stake grades and receive approval from the Contract Administrator prior to any construction.

- (b) The Contract Administrator shall approve grading work prior to installation of growing medium and/or surfacing materials.

E18.3 Measurement and Payment

E18.3.1 Measurement

- (a) Site Preparation, Excavation and Grading is a lump sum bid item, and shall include all Items of Work completed in accordance with this Specification and accepted by the Contract Administrator. No measurement will be made for this work.

E18.3.2 Basis of Payment

- (a) Payment for Excavation and Grading will be paid for at the Contract Unit Price for the "Items of Work" listed below, and measured as specified herein. This price shall be payment in full for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work included in this Specification.

Items of Work:

- i) Site Preparation, Excavation and Grading (Proposed Letinsky Site)
- ii) Site Preparation, Excavation and Grading (Existing Letinsky Site)
- iii) Site Preparation, Excavation and Grading (Proposed Bollard Site)
- iv) Site Preparation, Excavation and Grading (Proposed Sign Structure Site)

E19. CONCRETE FORMWORK

E19.1 Description

- (a) This Specification covers the supply, fabrication, and placement of all formwork for Cast in Place Concrete.
- (b) All Concrete formwork is to be done in accordance with CAN/CSA-A23.1 and CAN/CSA-23.2.
- (c) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E19.1.1 Related Specifications:

- (a) E20 - Case in Place Concrete
- (b) E21 – Letinsky Monument Refurbishment with Concrete Base

E19.2 Material

E19.2.1 Formwork materials shall conform to CSA Standard CAN3-A23.1-M77 and American Concrete Publication SP-4 "Formwork for Concrete".

E19.2.2 Formwork lumber: plywood and wood formwork materials conform to CAN-086.

E19.2.3 Form liner:

- (a) Plywood: Douglas Fir to CSA 0121, concrete form grade, square edge, 19mm thick.

E19.2.4 Form ties: removal or snap-off metal ties, fixed of adjustable length, free of devices leaving holes larger than 25mm dia in concrete surface

E19.2.5 Formwork release agent: chemically active release agents containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing concrete from sticking to forms.

E19.3 Construction Methods

E19.3.1 Erection

- (a) Verify lines, levels and dimensions before proceeding with formwork and ensure dimensions agree with drawings
- (b) Construct forms to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CAN/CSA-A23.
- (c) If requested, prepare and submit for approval to Contract Administrator, diagram showing proposed location and details of all construction joints.
- (d) Formwork shall be constructed to permit easy dismantling and stripping and such that removal will not damage the concrete. Provision shall be made in the formwork for shores to remain undisturbed during stripping where required.
- (e) Forms shall be constructed and maintained so that the complete work is within minus 3mm or plus 6 mm of the dimension shown on the Drawings.
- (f) Align form joints and make watertight. Keep form joints to minimum.
- (g) Clean formwork in accordance with CAN/CSA-A23:1. Only permitted if in good condition
- (h) Where prefabricated panels are used, care shall be taken to ensure that adjacent panels remain flush. Where metal forms are used all bolts and rivets shall be countersunk and well ground to provide a smooth, plane surface
- (i) All form lumber, studding, etc. becomes the property of the Contractor when the work is finished, and it shall be removed from the concrete and the site by the Contractor after the concrete is set, free of extra charge, and the entire site left in a neat and clean condition.
- (j) It shall be permissible to use the forms over again where possible, provided they are thoroughly cleaned and in good condition after being removed from the former portions of the Work. The Contract Administrator shall be the sole judge of their condition and his decision shall be final regarding the use of them again.

E19.3.2 Form Removal

- (a) The Contract Administrator must be notified at least 24 hours prior to form removal and give approval prior to beginning work.

E19.3.3 Patching of Formed Surfaces

- (a) Immediately after forms have been removed, but before any repairing or surface finish is started, the concrete surface shall be inspected by the Contract Administrator. Any repair or surface finishing started before this inspection may be rejected and required to be removed.
- (b) All formed concrete surfaces shall have bolts, ties, struts and all other timber or metal parts not specifically required for construction purposes cut back twenty-five (25) mm from the surface before patching.
- (c) Minor surface defects caused by honeycomb, air pockets greater than 5 mm in diameter and voids left by strutting and tie holes shall be repaired by removing the defective concrete to sound concrete, dampening the area to be patched and then applying patching mortar. A slurry grout consisting of water and cement, shall be well brushed onto the area to be patched. When the slurry grout begins to lose the water sheen, the patching mortar shall be applied. It shall be struck off slightly higher than the surface and left for one hour before final finishing to permit initial shrinkage of the patching mortar, it shall be touched up until it is satisfactory to the Contract Administrator.
- (d) All objectionable fins, projections, offsets, streaks or other surface imperfections shall be removed by approved means to the Contract Administrator's satisfaction. Cement washes of any kind shall not be used.
- (e) Wherever "Concrete Surface Coating" is to be applied, patching of minor surface defects shall be done by the Thoroseal applicator using Thorite. Payment for same is

considered incidental to the works of this Specification. Patching of snap tie holes to defects larger than 15 mm is diameter shall be done under this Specification.

E19.3.4 Finishing of Formed Surfaces

- (a) Concrete shall be cast against forms which will produce plane surfaces with no bulges, indentation or swelling other than those shown on the Drawing. The arrangement of panel joints shall be kept to a minimum. Panels containing worn edges, patches or other defects which will impair the texture of concrete surfaces shall not be used. All fins on the concrete surfaces shall be removed.

E19.4 Quality Control

E19.4.1 Inspection

- (a) All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the specified work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or works which are not in accordance with the requirements of this Specification.

E19.4.2 Access

- (a) The Contract Administrator shall be afforded full access for the inspection of form work and constituent materials.

E19.5 Method of Measurement and Basis of Payment

- (a) The supply and installation of Concrete Formwork be will be considered incidental to the supply and placement of Cast-in-Place Concrete, acceptably installed in accordance with this Specification and accepted by the Contract Administrator. There shall be no separate payment for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.

E20. CAST IN PLACE CONCRETE

E20.1 Description

E20.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:

- (a) Letinsky Monument Concrete Base
- (b) Concrete Slab for Proposed Bollard Area
- (c) Concrete Slab for Proposed Sign Structure
- (d) Sidewalk and Boulevard Restoration for Proposed Letinsky Site

E20.1.2 All concrete formwork is to be done in accordance with CAN/CSA-A23.1-M77 and CAN/CSA-A23.2, except where specified otherwise.

E20.1.3 Related Specifications:

- (a) E19 – Concrete Formwork
- (b) E21 – Letinsky Monument Refurbishment with Concrete Base

E20.2 Submittals

- E20.2.1 Detailed design calculations and Shop Drawings for any temporary works, including falsework and formwork, that are sealed, signed and dated by a Professional Engineer licensed to practice in the Province of Manitoba. **Shop Drawings are to be submitted to the Contract Administrator prior to the Contractor proceeding with the Work.**
- E20.2.2 At least one (1) week prior to commencing Work, inform Contract Administrator of proposed source of aggregates and provide access for sampling
- E20.3 Certificates
- E20.3.1 Minimum one (1) week prior to starting concrete work submit (if requested) to Contract Administrator manufacturer's test data and certification by qualified independent inspection and testing laboratory that the following materials will meet specified requirements:
- (a) Portland cement.
 - (b) Cement slurry bonding agent.
 - (c) Admixtures.
 - (d) Aggregates.
 - (e) Water.
 - (f) Waterproofing
 - (g) Emulsified asphalt.
 - (h) Epoxy grout.
- E20.3.2 Provide certification that plant, equipment, and materials to be used in concrete complies with requirements of CAN/CSA-A23.1 and that mix design is adjusted to prevent alkali aggregate reactivity problems.
- E20.3.3 Provide certification that mix proportions selected will produce concrete of specified quality and yield and that strength will comply with CAN/CSA-A23.1 and that mix design is adjusted to prevent alkali aggregate reactivity problems.
- E20.4 Construction Quality control and Placement Procedures.
- E20.4.1 Submit proposed quality control procedures for Contract Administrator's approval.
- E20.4.2 Submit proposed concrete placement procedures for Contract Administrator's approval.
- E20.5 Materials
- E20.5.1 Portland cement to CAN3-A5-M 1983
- E20.5.2 Aggregates to CAN/CSA-A23.1-M90. Coarse aggregates to be normal density.
- E20.5.3 Chemical admixtures to CAN3-A266.2-M78. Contract Administrator to approve accelerating or set retarding admixtures during cold and hot weather placing. Use of calcium chloride is not permitted.
- E20.5.4 Curing and sealing compound to: CAN/CSA-A23.1-M90, CPD Acrylic cure and seal or equal and to ASTM C309-81, Type 1 - chlorinated rubber.
- E20.5.5 Accessories and Application Equipment: As per manufacturer's specifications.
- E20.5.6 Pre-molded joint fillers:
- (a) Flexcell Expansion Joint Filler
- E20.5.7 Concrete Mixes
- (a) All concrete Work shall be in accordance with CSA A23.1 Concrete Materials and methods of concrete construction.
 - (b) Proportion normal density concrete in accordance with CSA A23.1 to give the following properties:

- (c) Concrete for Landscape curbs, headers and tree rings
 - i) Cement: Type 50 Sulphate resistant
 - ii) Maximum Coarse Aggregate: 20mm
 - iii) Minimum Compressive Strength at 28 days: 32 Mpa
 - iv) Maximum Water/Cement Ratio: 0.45
 - v) Class of Exposure: C-2
 - vi) Maximum Slump: 80mm \pm 30mm
 - vii) Air Content: 5-8%
- (d) Concrete for all curbs and planters shall be as indicated on the Drawings

E20.6 Construction Methods

E20.6.1 Workmanship

- (a) Do all concrete Work in accordance with CAN/CSA-A23.1. All testing of concrete shall be done in accordance with CAN/CSA-A23.2. Obtain Contract Administrator's approval before placing concrete. Provide 3 Calendar Days notice prior to placing of concrete.
- (b) Pumping of concrete is permitted only after approval of equipment and mix.
- (c) Ensure reinforcing bars and reinforcement and inserts are not disturbed during concrete placement.
- (d) Do not place load upon new concrete until authorized by Contract Administrator as per City of Winnipeg Standards.
- (e) The concrete sidewalk below the existing electrical power pedestal installations shall have a minimum depth of 250mm over the area of the pedestal base and a minimum depth of 75mm compacted granular levelling course . Contractor to co-ordinate with City of Winnipeg for location of conduit, etc. All costs in connection with this operation are incidental and shall be included in the unit price bid for "Site Restoration (Proposed Letinsky Site)". No separate measurement or payment will be made.

E20.6.2 Joint Fillers

- (a) Furnish filler for each joint in a single piece for depth and width required for joint, unless otherwise authorized by Contract Administrator. When more than one piece is required for a joint, fasten abutting ends and hold securely by stapling or other positive fastening.

E20.6.3 Finishing of Concrete

- (a) Finish concrete in accordance with CAN/CSA/A23.1.
- (b) All shall be finished by a specialty concrete finisher.
- (c) The size of finishing crews shall be planned with due regard for the effects of concrete temperatures and atmospheric conditions of the rate of hardening of the concrete.
- (d) Finish of all items shall be clean with no pits, chips, bumps or other surface imperfections.
- (e) Hand steel towelled smooth as directed by the Contract Administrator.

E20.6.4 Cleanup and Damage

- (a) Immediately on completion of concrete Work the Contractor shall remove from Site all equipment, timbers, shores, excavated materials, unused concrete, rubbish etc. caused by operations, and leave the Site clean, level and ready for other Works.
- (b) The Contractor shall be responsible for making good all areas damaged by operations.

E20.7 Method of Measurement and Basis of Payment

- E20.7.1 Concrete Slab for Proposed Bollard Area will be measured on an area basis and paid for at the Contract Unit Price for "Concrete Slab (Proposed Bollard Site)". The area to be paid for shall be the total number of square meters of Concrete Slab installed in accordance with the Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, compaction, granular base, forming, reinforcing steel, concrete and all other items incidental to the Work for "Concrete Slab (Proposed Bollard Site)" and accepted by the Contract Administrator.
- E20.7.2 Concrete Slab for Proposed Sign Structure will be measured on an area basis and paid for at the Contract Unit Price for "Concrete Slab (Proposed Sign Structure Site)". The area to be paid for shall be the total number of square meters of Concrete Slab installed in accordance with the Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, compaction, granular base, forming, reinforcing steel, concrete and all other items incidental to the Work for "Concrete Slab (Proposed Sign Structure Site)" and accepted by the Contract Administrator.
- E20.7.3 All cost in connection with Letinsky Monument Concrete Base are incidental and shall be included in the unit price bid for "Refurbish and Relocate Letinsky Monument with New Concrete Base. Refurbish Concrete Lip on Monument Base (where required)" acceptably installed in accordance with E21 and this Specification and accepted by the Contract Administrator. There shall be no separate measurement or payment for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.
- E20.7.4 All cost in connection with Sidewalk and Boulevard Restoration for Proposed Letinsky Site are incidental and shall be included in the lump sum bid price for "Site Restoration (Proposed Letinsky Site)" installed in accordance with E22 Reinstall Stockpiled Paving Stones and this Specification and accepted by the Contract Administrator. There shall be no separate measurement or payment for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.

E21. LETINSKY MONUMENT REFURBISHMENT WITH CONCRETE BASE

E21.1 General

E21.1.1 Description

E21.1.2 The work to be done by the Contractor under this Specification shall include the furnishing of labour, materials, equipment, tools, supplies, storage, transportation, overhead, markup and all things necessary for and incidental to the satisfactory performance and completion of all works as hereinafter specified, and as described on the Drawings. The major components of the work involved, but not limited to are:

- (a) Clean and Repair existing Letinsky Monument as required;
- (b) Supply and Install new Concrete Base;
- (c) Place and Secure existing Letinsky Monument on new base;
- (d) Supply and Install LED lighting cable;
- (e) Supply and Install Aluminum Angle Guard for Lighting;
- (f) Co-ordination with City of Winnipeg and Old Market Square for connection to Power Supply and Lighting Control Panel;
- (g) Supply and Installation of all underground electrical trenching, conduit, electrical conductor cable and junction box;
- (h) Supply and Install two (2) 15 Amp circuits for duplex receptacle in lockable box cast into concrete base.

E21.1.3 Related Specifications:

- (a) E19 - Concrete Formwork
- (b) E20 - Cast in Place Concrete

E21.2 Materials

E21.2.1 The Contractor shall be responsible for the supply, safe storage, and safe handling of all materials as set forth in this Specification. All materials shall be handled in a careful and workmanlike manner, to the satisfaction of the Contract Administrator.

E21.2.2 New concrete base to match profile of Monument Concrete Platform. Contractor to be responsible for recording necessary information prior to removal and construction.

E21.2.3 LED Lighting shall be as follows:

- (a) Tape light: Green Image Tech, GS 50 NFX4D 24V WW 200W
- (b) LED Driver: Green Image Tech, M200L24DC

E21.2.4 Contact for LED Lighting:

Jing Jia
R.D. Sales
104 – 120 Fort St.
Winnipeg, Manitoba
R3C 1C7

Telephone No.: (204) 943-7090

Facsimile No.: (204) 943-1386

Email: jjia@rdsales.ca

E21.2.5 Aluminum Angle Guard for Lighting:

- (a) 1" x 1" X 1/8" Thick Aluminum Angle Guard

E21.3 Construction Methods

E21.3.1 Clean and Repair Existing Letinsky Monument:

- (a) Existing monument shall be cleaned of all rust, dirt, loose paint or other surface imperfections and repaired as determined by Contract Administrator on Site in conjunction with the Contractor.
- (b) If damage occurs to the Existing Letinsky Monument prior to or during fabrication, delivery or installation etc., the Contract Administrator shall be notified to facilitate the implementation of remedial measures. Remedial repair measures will be subject to the approval of the Contract Administrator, at the Contractor's expense.

E21.3.2 Concrete Base:

- (a) Concrete Base as per E19 - Concrete Formwork, E20 - Case in Place Concrete and as shown on Drawings.
- (b) Concrete Base shall be connected to electrical and installed as per specifications and drawings. Contractor to ensure Monument Concrete Platform set plumb and secure.

E21.3.3 Aluminum Angle Guard for Lighting

- (a) Bent aluminum angle guard to conform to radius of underside of monument mechanically fastened.

E21.3.4 Electrical Work

- (a) Contractor to provide electrical shop drawings to Contract Administrator for review and approval prior to any construction.
- (b) Finish all labour materials, equipment and services for the complete installation of electrical Work as shown on the Drawings and specified. Complete system to operate to total satisfaction of the Contract Administrator.

- (c) All electrical work, including all equipment, conduit, wiring, grounding, backfill, connections, hook-up and seals etc., as per Drawings and to be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal and other codes and regulations. Municipal and Provincial codes and regulations will take precedence over all other codes.
- (d) Prepare and submit to the proper authorities all necessary permits and pay all fees.
- (e) Upon completion and before final payment is made, present to the Contract Administrator a Certificate of Approval for all electrical work from the inspection of the department having jurisdiction.
- (f) Examine the site and local conditions affecting the Work under this contract.
- (g) Refer to associated drawings and specifications for electrical work in connection therewith.
- (h) Install all Work promptly and in advance of concrete pouring and/or construction.
- (i) The Contractor shall be responsible to make good all "Cutting and Patching" required by this section of the Contract. Include all trenching, backfilling and surface repair. Contractor to push wires where possible at all locations.
- (j) All Work shall be executed in a first class and workmanlike manner. All supports, hangers, and securing devices shall be solid and substantial. All Work shall be laid out neatly in its mechanical appearance. It shall be logically arranged for simplicity of installation and accessibility.
- (k) Provide corrected "as-built" drawings on completion of the project. All underground services shall be indicated on as-built and dimensioned.
- (l) Identify circuits/ equipment with lamaroid nameplates.
- (m) All electrical apparatus shall be properly grounded according to the latest edition of the "Canadian Electrical Code".
- (n) Wiring in finishing grade shall be in rigid PVC conduits, complete with ground conductor. Conduits in direct contact with earth or in concrete shall be 50mm low-density black polyethylene.
- (o) Supply and install tape lights and driver as per manufacturer's specification and as shown on Drawing.
- (p) Supply and install electrical conduit, wiring and connection to tape lights and driver.
- (q) Co-ordinate installation with Manitoba Hydro, City of Winnipeg and Old Market Square. Installation to conform to all utility requirements.
- (r) Provide ground rod and grounding connection to suit Manitoba Hydro and City of Winnipeg Inspection Department.
- (s) The Contractor shall guarantee the satisfactory operation of all work and apparatus included and installed under this section for a period of twelve (12) calendar months after the final acceptance of the project.
- (t) Contractor to co-ordinate with City of Winnipeg for location of conduit, etc. Contractor to supply and install sleeves for electrical in concrete base as required by the City of Winnipeg.

E21.4 Method of Measurement

- E21.4.1 Letinsky Monument Refurbishment with new Concrete Base will be paid for at the Contract Lump Sum Prices for "Refurbish and Relocate Letinsky Monument with New Concrete Base. Refurbish Concrete Lip on Monument Base (where required)". No measurement will be made for this work.
- E21.4.2 Electrical Work for the Relocated Letinsky Monument and applicable MRST/ PST will be paid for at the Contract Lump Sum Prices for "Electrical Work (including LED Light Cable, Trenching and Connection) and Aluminum Angle Guard for Lighting". No measurement will be made for this work.

E21.4.3 Pick up, cleaning, repair and placement of Existing Letinsky monument shall be incidental to the Work. No separate measurement and payment shall be made.

E21.4.4 Co-ordination with City of Winnipeg and Old Market Square and hooking up to power supply shall be incidental to the Work. No separate measurement and payment shall be made.

E21.5 Basis of Payment

E21.5.1 Letinsky Monument Refurbishment with new Concrete Base will be paid for at the Contract Unit Prices and measured as specified herein. This price shall be payment in full for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work included in this Specification and accepted by the Contract Administrator.

E21.5.2 Electrical Work for the Relocated Letinsky Monument and applicable MRST/ PST will be paid for at the Contract Unit Prices and measured as specified herein. This price shall be payment in full for supplying all labour, equipment, materials, trenching, conduit and cable installation, wiring, LED strips, driver, transformer, junction box, backfilling, fasteners and performing all operations herein described and all other items incidental to the Work included in this Specification and accepted by the Contract Administrator.

E22. REINSTALL STOCKPILED PAVING STONES

E22.1 General

E22.1.1 Description

- (a) This Specification shall cover the supply and installation of stockpiled paving stones and bedding course of sand for areas as indicated on the Drawing. The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all other things necessary for and incidental to the satisfactory performance and completion of all work as specified and in accordance with CW 3110, CW 3310 and CW 3330.

E22.1.2 Related Specifications:

- (a) E17 – Removal
- (b) E20 – Cast in Place Concrete

E22.2 Materials

E22.2.1 General

- (a) All materials shall conform to CW 3110, CW 3330 and this Specification. Where the two do not agree, this Specification shall take precedence.

E22.2.2 Clay Pavers

- (a) Stockpiled pavers from existing site.

E22.2.3 Sand

- (a) In accordance with Specification CW 3310 and CW 3330.

E22.2.4 Granular Base

- (a) In accordance with Specification CW 3110 and CW 3330.

E22.2.5 Equipment

- (a) All equipment shall conform to Specification CW 3330.

E22.3 Construction Methods

E22.3.1 General

- (a) Construction methods shall conform to Specification CW 3330 and as shown on the drawing.
- (b) The Contractor shall construct the paved area to an acceptable grade, as directed by the Contractor Administrator, to ensure that proper drainage and accessibility are maintained.
- (c) The Contractor shall excavate, backfill with compacted granular base, re-level and grade existing Letinsky Monument Site prior to installation of stockpiled pavers as per CW 3110 and CW 3330. This operation and the supply and Installation of granular base are incidental to the Work in this section.
- (d) The concrete sidewalk below the existing electrical power pedestal installations shall have a minimum depth of 250mm over the area of the pedestal base and a minimum depth of 75mm compacted granular levelling course . Contractor to co-ordinate with City of Winnipeg for location of conduit, etc. All costs in connection with this operation are incidental and shall be included in the unit price bid for "Site Restoration (Proposed Letinsky Site).
- (e) Restore all damaged paved areas by replacing with original material at the Contractor's expense to the satisfaction of the Contract Administrator and the City in accordance with City of Winnipeg Specification and this Specification.

E22.3.2 Shipping and Handling

- (a) All unit pavers shall be carefully packed and loaded for shipment using all reasonable and customary precautions against damage in transit. No material which may cause staining or discoloration shall be used for blocking or packing.

E22.4 Measurement and Payment

E22.4.1 Method of Measurement

- (a) The supply and placing of Stockpiled Paving Stone for Existing Letinsky Site, Proposed Bollard Site and Proposed Sign Structure Site will be measured on a per square meter basis. The amount to be paid for shall be the total number of square metres constructed in accordance with this Specification and as accepted by the Contract Administrator.
- (b) Site Restoration for Proposed Letinsky Site is a lump sum bid item. No measurement will be made for this work.
- (c) The supply and placing of the sand levelling layer and base course shall be considered incidental to the work. No measurement or payment will be made.

E22.4.2 Basis of Payment

- (a) Unit Pavers will be paid for at the Contract Unit Price for the "Items of Work" listed below, and measured as specified herein. This price shall be payment in full for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, compaction, granular base, forming, reinforcing steel, concrete and all other items constructed in accordance with this Specification and as accepted by the Contract Administrator.

Items of Work:

- i) Site Restoration (Proposed Letinsky Site)
- ii) Reinstall Stockpiled Paving Stones (Existing Letinsky Site)
- iii) Reinstall Stockpiled Paving Stones as required (Proposed Bollard Site)
- iv) Reinstall Stockpiled Paving Stones (Proposed Sign Structure Site)

E23. SITE FURNITURE

E23.1 Description

E23.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:

- (a) Supply and Install Removable Bollard (including Receiver, Mount and Mount Cover)

E23.2 Materials

E23.2.1 All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.

E23.2.2 Supply crushed limestone base in accordance with CW 3110.

E23.2.3 Removable Bollard shall be Reliance Foundry Co. Ltd., 316 Stainless Steel Removable Bollard (Model # R-8462) with yellow reflective striping, complete with in-ground Receiver / Mount, Cover, Lock Key and Tamper-Resistant Screw Driver, or substitute approved in accordance with B6.

E23.2.4 Contact for Bollard:
Shawn Chessell
Reliance Foundry Co. Ltd.
#207 – 6450 148th Street
Surrey, British Columbia
V3S 7G7

Telephone No.: (604) 592-4325
Toll Free: 1-888-735-5680
Facsimile No.: (604) 590-8875
Email: shawn@reliance-foundry.com

E23.3 Construction Methods

E23.3.1 All Work is to be located and installed in accordance with the drawings using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished Work suitable for the purpose intended. Fasteners and assembly hardware shall be incidental to the Work.

E23.3.2 All furnishings and fixtures to be installed plumb and true to correct elevations and location, as directed the Contract Administrator. The Contractor shall confirm proposed locations of all Site furnishings with Contract Administrator prior to installation.

E23.3.3 All furnishings and fixtures to be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering, which will injure or distort fixture, is prohibited.

E23.3.4 Install as per manufacture's instructions and the attached drawings. Ensure bollard is plumb.

E23.3.5 Contractor to secure removable bollard with lock until final site meeting (Total Performance) is reached.

E23.4 Method of Measurement and Basis of Payment

E23.4.1 Method of Measurement shall be as follows:

- (a) Bollard will be measured on a per unit basis. The total unit to be paid for shall be the total number of units that are installed in accordance with this Specification and the Construction Drawings, and as acceptable to the Contract Administrator.

E23.4.2 Basis of Payment shall be as follows:

- (a) Bollard will be paid for at the Contract Unit Prices and measured as specified herein. This price shall be payment in full for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work included in this Specification and accepted by the Contract Administrator.

E24. SIGN STRUCTURE

E24.1 Description

E24.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:

- (a) Pick up Existing Parks Canada Plaque with new map.
- (b) Supply and Installation of custom Parks Canada Sign Structure complete with refurbished Park Canada Plaque, supporting stands, anchoring system into concrete slab and all necessary hardware and structure. Frame to be painted, color to be determined by Contract Administrator.

E24.2 Samples

E24.2.1 Submit sample of colour of powder coating for Contract Administrator's approval. Deliver samples prepaid to Contract Administrator's business address and Notify Contract Administrator in writing, at time of submission of deviations in samples from requirements of Contract Documents.

- (a) Specific RAL and Pantone color numbers shall be supplied by the Contract Administrator

E24.3 Shop Drawings

E24.3.1 Submit shop drawings for all items which are to be custom fabricated. All dimensions are to be verified prior to fabrication.

E24.3.2 Contractor shall submit shop drawings for all supply items within two weeks after award of contract and prior to fabrication for review and approval by Contract Administrator.

E24.3.3 Contractor shall submit shop drawings, stamped by and signed by structural engineer licensed to practice in the Province of Manitoba to Contract Administrator for approval prior to fabrication.

E24.3.4 Shop drawings are to clearly indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners and accessories.

E24.3.5 Indicate welded connections using CISC standard welding symbols. Clearly indicate net weld lengths.

E24.4 Delivery and Storage

E24.4.1 Store units in a protected location, immediately upon arrival on the Site.

E24.4.2 Remove from Site any units which have been damaged during transportation and replace.

E24.5 Related Specifications:

- (a) E19 Concrete Formwork
- (b) E20 Cast in Place Concrete and Drawing for Concrete Slab
- (c) E25 Miscellaneous Metal for Sign Structure

E24.6 Related Codes:

- (a) The following codes to be met:

- | | | |
|------|--------------------------|---------------------------|
| (i) | CAN/CSA-G164-M92 (R2003) | Hot Dip Galvanizing |
| (ii) | CAN3-Z299.3-85 (R2006) | Quality Assurance Program |

E24.7 Materials

E24.7.1 All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.

E24.7.2 Refurbished Parks Canada Plaque will be available for pick-up from:

Brunet Monuments Inc.
Attn: Charles Brunet
405 Bertrand Street
Winnipeg, MB

Telephone No.: (204) 233-7864
Toll Free: 1-888-733-3323
Email: info@brunetmonuments.com

E24.7.3 Metal Work

- (a) Metal for stands and anchoring supports to be as dimensioned on the drawings. All metal to be as specified on drawings.
- (b) Standard angles and plates, unless otherwise specified, all steel for new members shall conform to the requirements of CSA Standard CAN/CSA-G40.21-M87, Grade 300W.
- (c) Welding consumables for all processes shall be certified by the manufacturer as complying with the requirements of the following specifications:
- (d) Manual, shielded metal arc-welding (SMAW):
- (e) All electrodes for manual, shielded metal arc welding shall conform to CSA Standard CSA W48.1-M1991 classification number E7018 for single pass tack welds and CSA W48.3-M1982, classification numbers E8016-B1, E8016-C3, E8018-B1 or E8018-C3 for final welds.
- (f) All fasteners to be stainless steel, galvanized or otherwise approved rust proof units, sufficient in size and strength to meet the structural and technical requirements of the applicable sign, the City of Winnipeg, and/or any other applicable regulatory authority.
- (g) Equipment: All equipment shall be of a type approved by the Contract Administrator and shall be kept in good working order
- (h) Refer to E25 Miscellaneous Metal for Sign Structure for fabrication and finishing requirements.

E24.7.4 Concrete Slab

- (a) Refer to E19 Concrete Formwork, E20 Cast in Place Concrete and Drawing for Concrete Slab.

E24.8 Construction Methods

E24.8.1 Coordinate and Pick up refurbished map from Manufacturer.

E24.8.2 Contractor to notify Contract Administrator when all off Site metal work is complete for review and approval of components prior to delivery to Site. Any works delivered to Site that have not been approved by the Contract Administrator maybe rejected and will be redone at Contractor's own costs.

E24.8.3 Fasten Refurbished Parks Canada Plaque to tube steel stands and plates in accordance with Drawing and Shop Drawing.

- E24.8.4 Install sign structure on concrete base as indicated on the Drawings. Install standard fittings, fasteners and hardware as required.
- E24.8.5 Concrete Slab and Sign Structure to be set plumb. Contractor shall support Sign Structure and concrete slab while sufficient compacted granular fill is installed to level the structure. Contractor to contact Contract Administrator once concrete slab has been leveled for approval prior to further work.
- E24.8.6 All Work is to be located and installed in accordance with the drawings using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished Work suitable for the purpose intended.
- E24.8.7 All fixtures to be installed plumb and true to correct elevations and location, as directed the Contract Administrator.
- E24.8.8 All fixtures to be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering, which will injure or distort fixture, is prohibited.
- E24.8.9 Protect and maintain sign structure, until acceptance of project Work.
- E24.8.10 If damage occurs to the map or the Parks Canada Plaque prior to or during fabrication, delivery or installation etc., the Contract Administrator shall be notified to facilitate the implementation of remedial measures. Remedial repair measures will be subject to the approval of the Contract Administrator, at the Contractor's expense.
- E24.8.11 Immediately remove any damaged parts and hardware. Replace, repair, refinish or otherwise make good to the satisfaction of the Contract Administrator.
- E24.8.12 Restore surrounding area to drain water away from Sign Structure.
- E24.8.13 Restoration of damaged paved areas shall be achieved as per E22 Reinstall Stockpiled Paving Stone, unless otherwise directed by the Contract Administrator.

E24.9 Method of Measurement

- (a) Sign Structure with Proposed Stand and Refurbished Plaque will be measured on a lump sum price. The total unit to be paid for shall be the total number of units that are installed in accordance with this Specification and the Construction Drawings, and as acceptable to the Contract Administrator.
- (b) Fasteners and assembly hardware shall be incidental to the Work. No separate measurement and payment shall be made.
- (c) Pick up of Park Canada Plaque shall be incidental to the Work. No separate measurement and payment shall be made.

E24.10 Basis of Payment

- (a) Sign Structure with Proposed Stand and Refurbished Plaque will be paid for at the Contract Unit Prices and measured as specified herein. This price shall be payment in full for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work included in this Specification and accepted by the Contract Administrator.

E25. MISCELLANEOUS METAL FOR SIGN STRUCTURE

E25.1 Description

- E25.1.1 This Specification shall cover supply, fabrication, galvanizing, transportation, handling and installation of miscellaneous metal, including all miscellaneous metal elements and incidental component/fasteners, as specified herein.
- E25.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E25.2 Workmanship

- (a) Metal Work shall be finished straight, even and smooth and free of any defects to sizes specified and required.
- (b) Work shall include all necessary angles, brackets, metal inserts, rivets, anchor bolts, frames, adjusting screws, gaskets and other items necessary for the complete installation of the Work.
- (c) Welding is to be neat, symmetrical, clean and unobtrusive in appearance.

E25.3 Reference Standards

- (a) Canadian Institute of Steel Construction (CISC)
- (b) American Society for Testing and Materials (ASTM)
- (c) Canadian Standards Association (CSA)

E25.4 Materials

E25.4.1 General

- (a) Unless detailed or specified otherwise, standard products will be acceptable if construction details and installation meet the intent of the Drawings and Specifications in the opinion of the Contract Administrator.
- (b) Work is to be free from defects which impair the strength or durability or which are visible. Work is to be new or best quality, and free from rust, waves or buckles.
- (c) The Contractor shall be responsible for the supply, safe storage and handling of all miscellaneous metal materials as set forth in this Specification.
- (d) All materials supplied under this Specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- (e) Samples of any component, requested by the Contract Administrator, shall be submitted prior to fabrication
- (f) All metals are to be new materials and free from defects impairing strength, durability and appearance of the best commercial quality for the purpose specified.
- (g) All supplied items shall be factory assembled to ensure fitment and painted with all accessories and attachments to ensure complete and operational assemblies.

E25.4.2 Structural and Miscellaneous Steel

- (a) Unless otherwise specified, all steel for new members shall meet the requirements of CAN / CSA – G40.20 / G40.21 – M92.

E25.4.3 Welding

- (a) Unless otherwise noted, all welding shall conform to the requirements of CSA Standard W59 – M1989.

E25.4.4 Hardware

- (a) All bolts, nuts, washers, inserts, etc., as required for a complete installation shall be stainless steel, Type 316 unless noted otherwise.

E25.4.5 Galvanizing Touch-up

- (a) Field-applied galvanizing, to touch-up damaged hot-dip galvanizing and to galvanize field welds, shall be done with self-fluxing, low temperature, zinc-based alloy rods in accordance with ASTM A780-80 for "Repair of Damaged Hot Dip Galvanizing Coatings".
- (b) Approved products for field touch up work are: Galvalloy as manufactured by Metalloy Products Company and Welco Galvanizing Alloy, as manufactured by Thermocote Welco. Locally, both products are available from Welder Supplies Limited, 25 McPhillips Street, Winnipeg, Manitoba.

E25.5 Construction Methods

E25.5.1 Structural and Miscellaneous Steel

- (a) Structural and miscellaneous steel fabrication shall be in accordance with CAN / CSA – S16.1 – M89.

E25.5.2 Welding

- (a) Welding shall be in accordance with CSA W59 – M1989.
- (b) All welds to be 6mm unless noted otherwise.
- (c) Seal weld all joints
- (d) The welding shop must be certified and qualified in accordance with CSA W47.1 – 1983.

E25.5.3 Welding to Galvanized Metal

- (a) All field welding to galvanized metal shall be touched up by the Galvalloy process as described in E25.4.5. All Galvalloy repairs shall be made flush with adjacent metal.

E25.5.4 Finish

- (a) All exposed surfaces shall be smooth and free of sharp edges.
- (b) The exterior surface shall be cleaned of all grease and oil and all loose particles.
- (c) All steel shall be hot-dipped galvanized to meet the requirements of CAN / CSA G164 – M92.

E25.5.5 Galvanizing Touch-up Procedure

- (a) Any areas of damaged galvanizing, and all field welds, are to receive field-applied galvanizing as specified herein.
- (b) Surfaces to receive field-applied galvanizing shall be cleaned using a wire brush, a light grinding action, or mild blasting to remove loose scale, rust, paint, grease, dirt, or other contaminants. Preheat the surface to 315°C and wire brush the surface during preheating. Rub the cleaned preheated area with the repair stick to deposit an evenly distributed layer of zinc alloy. Spread the alloy with a wire brush, spatula, or similar tool. Field-applied galvanizing shall be blended into existing galvanizing of surrounding surfaces and shall be buffed and polished if required to match the surrounding surfaces. Care shall be taken to not overheat surfaces beyond 400°C and to not apply direct flame to the alloy rods.

E25.5.6 Fabrication

- (a) Contractor to verify all dimensions on site prior to shop fabrication.
- (b) Fabricate items of sizes and profiles detailed on the drawings and approved shop drawings with joints neatly fitted and properly secured.
- (c) Supply all components required for proper anchorage of miscellaneous metals. Fabricate anchorage and related components of same material and finish as metal fabrications unless otherwise noted.
- (d) Grind or file exposed welds and metal sections smooth and flush.

E25.5.7 Installation

- (a) Install Work plumb, true, square, level, straight, and accurately and tightly fitted together and to surrounding Work.
- (b) Smooth all cut edges and weld joints prior to final painting and ensure that all steel is free from burrs, cracks, defects and other imperfections.
- (c) Make provision for erections stresses and temporary bracing. Keep work in alignment at all times.
- (d) Replace items damaged in course of installation

- (e) Perform all field assembly, bolting and welding to match standard of shop bolting and welding.
- (f) After installation, touch up field bolts, nuts, welds, and scratched and damaged painted surfaces.
- (g) Install all items as indicated on the drawings.

E25.6 Measurement and Payment

- E25.6.1** Metal Fabrication for Sign Structure shall be incidental to the measurement of "Sign Structure with Proposed Stand and Refurbished Sign". No separate allowance will be made for metal fabrication, supply, finish and installation.

E26. SITE CLEAN UP

- E26.1** The Contractor shall upon the completion of Work each day, load and dispose of all excess asphalt cuttings, spoiled concrete, reinforcing steel, granular and other material associated with the Works from the Site. The Contractor shall secure or remove all of his machinery and equipment at the end of each day from the immediate Work Site. The Contractor will not be permitted to store machinery, equipment, or materials on public roads overnight.
- E26.2** Unless otherwise specified the Contractor shall restore all areas which have been disturbed by his operations to as good as or better than original condition including removal of all construction debris, repair all vegetation, sod, concrete pavement, concrete curbs, concrete sidewalk and asphalt paving to remain etc. to the satisfaction of the Contract Administrator.
- E26.3** Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the Site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator.
- E26.4** Any costs in connection with Site Cleanup Works are considered incidental and no payment shall be made.