



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 276-2016

**LAGIMODIERE BOULEVARD NOISE ATTENUATION BARRIER: SUPPLY AND
INSTALLATION OF TWO (2) PRECAST CONCRETE PANELS**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 LAGIMODIERE BOULEVARD NOISE ATTENUATION BARRIER: SUPPLY AND INSTALLATION OF TWO (2) PRECAST CONCRETE PANELS

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 29, 2016.
- B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

- B3.1 Further to C3.1, the Bidder may view the Site without making an appointment. The Bidder shall not enter the private property without permission.

B4. ENQUIRIES

- B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.
- B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. CONFIDENTIALITY

- B5.1 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.
- B5.2 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.

B6. ADDENDA

- B6.1 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.
- B6.2 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.
- B6.2.1 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/>
- B6.2.2 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.
- B6.2.3 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.

B7. SUBSTITUTES

- B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B7.3 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.
- B7.4 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.
- B7.5 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.
- B7.6 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.

- B7.6.1 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.
- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 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 B16.
- B7.9 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.

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 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.
- B8.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B8.5 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
- B8.5.1 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.
- B8.6 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.7 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 B16.1(a).
- B8.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204 949-1178.
- B8.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B8.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B9. BID

B9.1 The Bidder shall complete Form A: Bid, making all required entries.

B9.2 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.

B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

B9.3 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.

B9.4 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.

B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B9.4.2 All signatures shall be original.

B9.5 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.

B10. PRICES

B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B10.2 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.

B10.3 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.

B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B11. DISCLOSURE

B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

- (a) N/A.

B12. QUALIFICATION

B12.1 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.

B12.2 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>

B12.3 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);

B12.4 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.

B12.5 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.

B13. OPENING OF BIDS AND RELEASE OF INFORMATION

B13.1 Bids will not be opened publicly.

B13.2 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>

B13.3 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/>

- B13.4 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.

B14. IRREVOCABLE BID

- B14.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.
- B14.2 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.

B15. WITHDRAWAL OF BIDS

- B15.1 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.
- B15.1.1 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.
- B15.1.2 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.
- B15.1.3 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 B15.1.3(b), declare the Bid withdrawn.
- B15.2 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 B14.2 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.

B16. EVALUATION OF BIDS

- B16.1 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 B12 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B7.
- B16.2 Further to B16.1(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.

- B16.3 Further to B16.1(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.
- B16.4 Further to B16.1(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.
- B16.4.1 Further to B16.1(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.

B17. AWARD OF CONTRACT

- B17.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B17.2 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.
- B17.2.1 Without limiting the generality of B17.2, 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.
- B17.3 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 B16.
- B17.3.1 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.
- B17.4 Notwithstanding C4, the City may issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B17.5 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 supply and installation of precast concrete panels for Lagimodiere Boulevard noise attenuation barrier.

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

- (a) Removal of the existing damaged concrete panels
- (b) Supply, delivery, and installation of the two (2) new precast concrete panels
- (c) Site restoration and landscaping

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Mohamed Mady, Ph.D., P.Eng.
Bridge Maintenance Engineer

Telephone No. 204 986-4046

Email. MMady@winnipeg.ca

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

D3.3 Bids Submissions must be submitted to the address in B8.5.

D4. CONTRACTOR'S SUPERVISOR

D4.1 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.

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D5.1 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.

D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D5.3 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.

D5.4 A Contractor who violates any provision of D5 may be determined to be in breach of Contract.

D6. NOTICES

D6.1 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.

D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the Email identified in D3.1.

D6.3 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

D6.4 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

D6.5 Bids Submissions must be submitted to the address in B8.5.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

D7.1 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.

D8. SAFE WORK PLAN

D8.1 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.

D8.2 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>

D9. INSURANCE

D9.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) Automobile Liability Insurance 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 materials intended to enter into and form part of any installation.

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the City Solicitor 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 the date specified in C4.1 for the return of the executed Contract.

D9.4 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.

D10. PERFORMANCE SECURITY

D10.1 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.

D10.1.1 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.

D10.2 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.

D11. SUBCONTRACTOR LIST

D11.1 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.

D12. DETAILED WORK SCHEDULE

- D12.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) 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.
- D12.2 The detailed work schedule shall consist of the following:
- (a) a critical path method (C.P.M.) schedule for the Work;
 - (b) a Gantt chart for the Work based on the C.P.M. schedule;
- all acceptable to the Contract Administrator.
- D12.3 Further to D12.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:
- (a) Mobilization/Demobilization
 - (b) Traffic Control in place
 - (c) Removal of the existing damaged panels
 - (d) Supply, delivery, and installation of the new precast panels
 - (e) Site cleanup
- D12.4 Further to D12.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

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 D7;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
 - (vi) the Subcontractor list specified in D11; and
 - (vii) the detailed work schedule 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.
- D13.4 The City intends to award this Contract by May 20, 2016.
- D13.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D14. SUBSTANTIAL PERFORMANCE

- D14.1 The Contractor shall achieve Substantial Performance by August 31, 2016..
- 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 by September 16, 2016..
- 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 two hundred dollars (\$200) per Calendar 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 bi-weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of Contract Administrator, and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator 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 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.

MEASUREMENT AND PAYMENT

D20. INVOICES

D20.1 Further to C12, the Contractor shall submit an invoice for each portion of Work performed. to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: 204-949-0864

Email: CityWpgAP@winnipeg.ca

D20.2 Invoices must clearly indicate, as a minimum:

- (a) the City's purchase order number;
- (b) date of delivery;
- (c) delivery address;
- (d) type and quantity of work performed;
- (e) the amount payable with GST and MRST shown as separate amounts; and
- (f) the Contractor's GST registration number.

D20.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D20.4 Bids Submissions must be submitted to the address in B8.5.

D21. PAYMENT

D21.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D22. WARRANTY

D22.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire two (2) years thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D22.2 Notwithstanding C13.2 or D22.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:

- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.

D22.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND

(See D10)

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. 276-2016

LAGIMODIERE BOULEVARD NOISE ATTENUATION BARRIER: SUPPLY AND INSTALLATION OF TWO (2) PRECAST CONCRETE PANELS : SUPPLY AND INSTALLATION OF TWO (2) PRECAST CONCRETE PANELS

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 D10)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 276-2016

LAGIMODIERE BOULEVARD NOISE ATTENUATION BARRIER: SUPPLY AND INSTALLATION
OF TWO (2) PRECAST CONCRETE PANELS : SUPPLY AND INSTALLATION OF TWO (2) PRECAST
CONCRETE PANELS

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)

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>
NW682-16-01-R0	Lagimodiere Boulevard Noise Attenuation Barrier – Plan & Location
NW682-16-02-R0	Lagimodiere Boulevard Noise Attenuation Barrier – Elevation
NW682-16-03-R0	Lagimodiere Boulevard Noise Attenuation Barrier – Sections & Details
REF-P2932-09-R1	Lagimodiere Boulevard Noise Attenuation Barrier – Wall Barrier Details

E2. MOBILIZATION AND DEMOBILIZATION

- E2.1 Description
- (a) This Specification shall cover all operations relating to the mobilization and demobilization of the Contractor to the Site, as specified herein
 - (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 things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.
- E2.2 Materials
- (a) The Contractor shall be responsible for the supply, safe storage and handling of all Materials as set forth in this Specification.
- E2.3 Construction Methods
- (a) The City obtained a consent from the private property owners (at 4 Lochmoor Avenue) to complete the work. The Contractor shall inform the private property owners prior to the commencement of the work and prior to any use of private property.
 - (b) A construction fence shall be setup and maintained around the perimeter of the Site to separate the Work area from public spaces and private property. An orange snow-fence with regularly spaced posts is acceptable.
 - (c) The Contractor's Site supervisor is required to carry, at all times, a cellular telephone, with voice mail.
 - (d) The Work to be done by the Contractor under this Specification shall also include travel and accommodation, set-up and demobilization of site offices, storage conveniences and other temporary facilities, construction plant, and other items not required to form part of the permanent Work and not covered by other prices.
- E2.4 Measurement and Payment

- (a) Mobilization and demobilization will be paid for on a Lump Sum basis under “Mobilization and Demobilization,” which price will be payment in full for supplying all 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.
- (b) Mobilization and demobilization will be paid for at a percentage of the Contract Lump Sum Price for “Mobilization and Demobilization” specified as follows:
 - (i) 30% when the Contract Administrator is satisfied that construction has commenced.
 - (ii) 70% when Total Performance has been met.

E3. TRAFFIC AND PEDESTRIAN CONTROL

E3.1 Further to clause 3.7 of CW 1130:

- E3.1.1 The Work set out in this Bid Opportunity will take place on the intersection of the Lagimodiere Boulevard and Cottonwood Road.
- E3.1.2 Traffic lane and sidewalk closures shall only be undertaken if necessary and as approved by the Contract Administrator.
- E3.1.3 Before proceeding with Mobilization to Site or any lane closures, the Contractor must submit a proposed Traffic Management plan (Drawing or Sketch) to the Contract Administrator for review and approval at least three (3) business days prior to closures and adjustments. The Traffic Management Plan shall indicate how the traffic flow from Cottonwood Road heading to the southbound Lagimodiere Boulevard, will be redirected. Curb lanes closures of Cottonwood Road for work staging/laydown areas are envisioned and will be permitted. Contractor shall minimize the closure.
- E3.1.4 The Contractor shall be restricted to a lane closure in the eastbound right turn lane of Cottonwood Road at Lagimodiere Boulevard, unless otherwise approved by the Contract Administrator.
- E3.1.5 Barricades shall be supplied, installed, and maintained by the Contractor and include the telephone number(s) at which the Contractor can be reached twenty-four (24) hours per day, seven (7) days per week.
- E3.1.6 The Contractor is responsible for notifying the City Lane Closures at (204) 986-5640 at least three (3) business days prior to closures and one (1) day prior to reopen.
- E3.1.7 The Contractor shall provide temporary sidewalk closure signs during the removal and installation of the precast panels.
- E3.2 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.
- E3.3 Measurement and Payment
 - (a) The Work associated with lane closures, signage, and traffic management will be paid for at a Lump Sum price under “Traffic and Pedestrian Control”, as accepted by the Contract Administrator.

E4. REMOVAL OF EXISTING PANELS

E4.1 Description

- (a) The Work covered under this item shall include all items relating to the removal of existing damaged panel (total 2 panels), as laid out and specified by the Contract Administrator.
- (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 things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E4.2 Materials

E4.2.1 General

- (a) The Contractor shall be responsible for the safe removal and disposal of the existing concrete panels and for safe storage and handling of all Materials as set forth in the Specification. All Materials shall be handled in a careful and workmanship-like manner, to the satisfaction of the Contract Administrator.

E4.3 Construction Methods

E4.3.1 Existing Damaged Concrete Panels

- (a) The Contractor shall only use methods of removal that will not damage the existing posts or the grade beams.
- (b) Removal of the existing panels shall not be carried out until the new precast panels are fabricated and shipped to the Site.

E4.3.2 Protection of Private Property Yard

- (a) The Contractor shall take special precautions during demolition when working on private property to ensure that no debris is left in this area and that no work affects existing shrubs and trees. The Contractor shall coordinate all work that will affect the private property with the Contract Administrator.
- (b) The Contractor needs to close off the open panel space with plywood upon removal of damaged panels, unless the new panels are installed immediately after. The scheduling of the work shall be approved by the Contract Administrator.

E4.3.3 Disposal

- (a) All material removed shall become the responsibility of the Contractor except as otherwise indicated herein. The Contractor shall promptly remove all material from the site. No long term storage of any materials on-site shall be allowed. It shall be the Contractor's responsibility to find suitable disposal areas away from the site.

E4.4 Quality Control

E4.4.1 Inspection

- (a) All workmanship and all materials removed under this specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations 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 acceptance that may have been previously given. The Contract Administrator reserves the right to reject any Works, which are not in accordance with the requirements of this Specification.

E4.4.2 Access

- (a) The Contractor shall allow the Contract Administrator free access to all parts of the Work at all times to determine whether it is carried out in accordance with this Specification.

E4.5 Measurement and Payment

E4.5.1 Removal of Existing Panels

- (a) The removal of existing panels will not be measured. This item of work will be paid for at the Contract Lump Sum Price for "Removal of Existing Panels", performed in accordance with this Specification and accepted by the Contract Administrator.

E5. SUPPLY AND INSTALLATION OF NEW PANELS

E5.1 Description

- E5.1.1 This Specification covers the supply of all material, labour, plant and equipment, the fabrication and installation of precast concrete Noise Attenuations panels to complete the work as hereinafter specified and as shown on the Drawings including but not necessarily confined to the following:
- (a) Prepare Shop Drawings for the Noise Barrier precast panels and stamp it by a Structural Engineer Registered in the Province of Manitoba.
 - (b) Supply all materials, fabricate panels, and store the new precast panels off Site in a secured yard.
 - (c) Deliver and install the Noise Barrier panels complete, including the installation of the adhesive/sealant with existing posts.
 - (d) 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 thing necessary for and the incidental to the satisfactory performance and completion of all Works as hereinafter specified.

E5.2 References and Related Specifications

E5.2.1 References

- (a) City of Winnipeg Standard Construction Specifications- latest revision.
- (b) CAN/CSA-A23.1, Concrete Materials and Methods of Concrete Construction
- (c) CAN/CSA-A23.2, Methods of Test and Standard Practices for Concrete
- (d) CAN/CSA-A23.4/CSA-A251, Materials and Construction/Qualification Code for Architectural and Structural Precast Concrete Products
- (e) CAN/CSA-A3001, Cementitious Materials for Use in Concrete
- (f) CAN/CSA – G30.18, Billet-Steel Bars for Concrete Reinforcement
- (g) ASTM A108, Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished
- (h) ASTM C 260, Standard Specification for Air-Entraining Admixtures for Concrete
- (i) ASTM C 494, Standard Specification for Chemical Admixtures for Concrete
- (j) ASTM C 1017, Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete

E5.2.2 Construction Drawings

- (a) Construction work shall be generally in accordance with the Construction Drawings for the Lagimodiere Boulevard Noise Attenuation Barrier.
- (b) Precast concrete panels dimensions shown on the Drawings are approximate. The Contractor is responsible for confirming all dimensions prior to commence fabrication. All dimensions to be shown on Shop Drawings.
- (c) The Contractor is responsible for verifying all surfaces finishing on site, to assure that the new panels' surface finishing shall match with the existing damaged panels. The Shop Drawings shall indicate all surface finishing details.

E5.3 Submittals

- (a) The Contractor shall submit the following to the Contract Administrator, at least ten (10) Business Days prior to the commencement of any fabrication:
 - (i) Detailed Shop Drawings including all concrete dimensions, rebar details and spacing, and lifting hooks details and location. Shop Drawings shall be stamped, signed and dated by a Professional Engineer licensed to practice in the Province of Manitoba. Any changes to the Shop Drawings shall be reviewed by the Contract Administrator prior to the Contractor implementing the change.
 - (ii) Concrete mix design statement of the concrete type specified herein that reflects the specified performance properties of the concrete indicated hereinafter on the Specifications.

- (iii) Detailed information about the form liner the Contractor will use including the data sheet and a sample.
 - (iv) Data sheet for the release agent of the exposed aggregate finish. Contractor to prepare and submit a test panel no smaller than 0.50m x 0.50m showing the resulted exposed aggregate finish.
- (b) The Contractor shall submit the following to the Contract Administrator prior to the commencement of shipping the fabricated panels to the Site:
- (i) Copies of all reports, including but not limited to: "Record of Concrete Strength" form and material quality control test results.
 - (ii) The loading, handling, and transportation procedures, including the proposed route and all traffic control procedures.

E5.4 Materials

E5.4.1 General

- (a) All materials supplied under this Specification shall be subject to inspection and approval by the Contract Administrator
- (b) The Contractor shall be responsible for the supply, safe storage, and handling of all materials set forth in this Specification

E5.4.2 Concrete

- (a) Precast panels concrete shall: have minimum compressive strength of 35 MPa at 28 days, meet requirement for Class of Exposure C-1, meet air content Category 1.

E5.4.3 Coarse Aggregate

- (a) The maximum nominal size of coarse aggregate shall be 20 mm and meet the grading requirements of CSA A23.1, Table 11, Group I. Coarse aggregate shall be uniformly graded and not more than 2% shall pass a 75 um sieve. Coarse aggregate shall consist of crushed stone or gravel or a combination thereof, having hard, strong, durable particles free from elongation, dust, shale, earth, vegetable matter or other deleterious substances.
- (b) Tests of the coarse aggregate shall not exceed the limits for standard requirements prescribed in CSA A23.1, Table 12, for concrete exposed to freezing and thawing.

E5.4.4 Fine Aggregate

- (a) Fine aggregate shall meet the grading requirements of CSA A23.1, Table 10, FA1, be graded uniformly and not more than 3% shall pass a 75 um sieve. Fine aggregate shall consist of sand, stone, screenings, other inert materials with similar characteristics or a combination thereof, having clean, hard, strong, durable, uncoated grains free from injurious amounts of dust, lumps, shale, alkali, organic matter, loam or other deleterious substances.
- (b) Tests of the fine aggregate shall not exceed the limits for standard requirements prescribed in CSA A23.1, Table 12.

E5.4.5 Admixtures

- (a) Air-entraining admixtures shall conform to the requirements of ASTM C 260.
- (b) Chemical admixtures shall conform to the requirements of ASTM C 494 or C 1017 for flowing concrete.

E5.4.6 Cementitious Materials

- (a) Cementitious materials shall conform to the requirements of CSA-A3001.
- (b) Should the Contractor choose to include a silica fume admixture in the concrete mix design, the substitution of silica fume shall not exceed 8% by mass of cement.

- (c) Should the Contractor choose to include fly ash in the concrete mix design, the fly ash shall be Class C-1 of F and the substitution shall not exceed 30% by mass of cement.

E5.4.7 Water

- (a) Water to be used for all operations in the Specification, including mixing and curing of concrete or grout, and surface texturing operations shall conform to the requirements of CAN/CSA A23.1 and shall be free of oil, alkali, acidic, organic materials or deleterious substances

E5.4.8 Grout

- (a) Grout shall have a compressive strength of 40 MPa @ 28 days and shall be non-shrink, non-metallic. Approved products are Sternson M-bed Standard, Specialty Construction Products CPD Non-Shrink Grout, Sika 212 Non-Shrink Grout, or equal as accepted by the Contract Administrator.
- (b) Grout specified within this Specification section shall be used for filling the holes at the lifting device locations as designed by the Contractor.

E5.4.9 Reinforcing Steel

- (a) All reinforcing bars shall be deformed billet steel conforming to CSA G30.18, Grade 400 W. Bars shall be branded by the manufacturer with bar size and grade of steel, and certified mill reports shall be submitted for record.

E5.4.10 Form Retarder

- (a) Form retarder for achieving exposed aggregate finish in areas shown on the Drawings shall be MasterFinish EA (formerly MBT EAC-S) or equal as accepted by the Contract Administrator.
- (b) Prior to the commencement of panels fabrication, the Contractor is responsible for fabricating a test panel with minimum dimensions of 0.50m x 0.5m to ensure the resulted exposed aggregate finish to the satisfaction of the Contract Administrator.
- (c) The Contractor is responsible for achieving the exposed aggregate finish undulation for the new panels to match the existing damaged panels, and to the satisfaction of the Contract Administrator.

E5.4.11 Form Liner

- (a) The Contractor is responsible for achieving the outside face ripple/waive texture to match the existing damaged panels, and to the satisfaction of the Contract Administrator.

E5.4.12 Paint for Raised Lettering

- (a) Paint for raised lettering "WINDSOR PARK" shall be Ultra Exterior Flat Latex by Glidden Paint, black colour, or equal as accepted by the Contract Administrator.

E5.4.13 Adhesive/Sealant

- (a) The Contractor shall use polyether adhesive/sealant on all vertical faces between the precast panels and the existing posts as per Drawings.
- (b) The adhesive/sealant to be used shall be the product Chem Link M-1, or equal as accepted by the Contract Administrator.
- (c) Installation of the adhesive/sealant shall be carried out as per the product specification / data sheet.

E5.4.14 Shimming

- (a) Material used for shimming must be concrete which matches the concrete in the grade beam.

E5.5 Construction/Fabrication

E5.5.1 General

- (a) All casting operations for the production of precast concrete shall be under the direct supervision of a Registered Professional Engineer in the Province of Manitoba.
- (b) The casting operations of the manufacturer shall be continuously open to inspection by representatives of the Contract Administrator. Complete and up-to-date copies of all shop drawings together with a complete set of the Contract Drawings and Specifications shall be kept available for their use.
- (c) During production of the precast members, weight checks shall be carried out on completed units when requested by the Contract Administrator.
- (d) Mark each member with identifying number and date of casting.

E5.5.2 Tolerances

- (a) The acceptable tolerance for all dimensions shall not exceed ± 3 mm.

E5.5.3 Formwork

- (a) Forms shall be constructed as to allow for the different surface textures as shown on the Drawings. The Contractor is responsible for panels final texture/finishing to match with the existing damaged panels

E5.5.4 Reinforcing Steel

- (a) Reinforcing steel shall be placed accurately in the positions shown on the plans, and shall be retained in such positions by means of bar accessories and wires so that the bars shall not be moved out of alignment, during or after the deposition of concrete. Bar accessories shall be galvanized or shall be made from non-rusting material
- (b) Reinforcing steel shall be kept free of all foreign materials in order to ensure a positive bond between the concrete and steel. The Contractor shall remove any material, which has been deposited on the steel before concrete is placed.
- (c) Intersecting bars shall be tied positively at each intersection.

E5.5.5 Depositing of Concrete

- (a) Concrete shall be deposited carefully and well worked by vibrating so that it shall fill the forms completely and make complete contact with all reinforcing bars.
- (b) The concrete shall be deposited in such frequent locations in the forms that there shall be no necessity for moving large quantities of concrete from place to place in the forms. The concrete shall be vibrated into place by methods, which will not permit the ingredients to separate. The Contractor shall provide and use different personnel on the depositing equipment and on the vibrating equipment to ensure that each batch of concrete shall be properly worked into place as deposited.
- (c) The buckets, chutes or any other equipment used to deposit concrete in the members shall be positioned as close to the top of the forms as possible to keep the free fall of the concrete to a minimum.
- (d) The depositing of concrete in each unit shall be a single continuous complete operation so that each unit shall be monolithic without joints.
- (e) Before any concrete shall be deposited, the interior of the forms shall be made free of all chips, earth, shavings, sawdust, rubbish or other foreign substances.

E5.5.6 Testing of Concrete

- (a) All concrete shall attain the minimum strength as shown in the Drawings and indicated in this Specification at the age of 28 days. The compressive strength of the concrete is to be determined in accordance with CSA Standard A23.2, latest edition.

- (b) The minimum number of test cylinders that a Contractor shall mould from each separately mixed batch of concrete to be placed in a member is as follows:
 - (i) Three (3) cylinders for the determination of 28 day strength.
 - (ii) Two (2) cylinders to be tested prior to the member being hauled to the site and erected, where applicable.

All test cylinders shall be cured under the same conditions as the member until such time as the moist curing of the member has been completed.
- (c) In addition to the moulding of the specified number of test cylinders the Contractor will be required to perform the following tests on every separate batch of concrete to be placed in a member, and to record the results of such tests:
 - (i) slump (mm)
 - (ii) air content (%)
 - (iii) temperature (°C)
- (d) The Contractor shall be responsible for maintaining an up-to-date record of all test results on a "Record of Concrete Strength" form approved by the Contract Administrator. A separate "Record of Concrete Strength" form is to be prepared for each member and the strengths of the test cylinders as well as the pertinent data are to be listed in the same order as the batches of concrete were placed in the forms. A complete set of test results is to be submitted to the Contract Administrator within seven (7) days after the date that the 28 day cylinders from the last component were tested. All costs involved in performing and recording the previously mentioned tests will be the responsibility of the Contractor.
- (e) The Contract Administrator at his own discretion and at the Contractor's expense may make any other tests deemed necessary on the concrete, on the components of the concrete as well as on any finished or partially finished member. The Contractor must allow the Contract Administrator unhindered access to the concrete, concrete components and members and to also assist the Contract Administrator in carrying out any test.

E5.5.7 Vibrating Concrete

- (a) Vibrators shall only be used when acceptable to the concrete supplier.
- (b) External vibration shall be used when sections are too small or inaccessible for the internal type.
- (c) Internal vibrators shall be used in all sections, which are sufficiently large, and they shall be supplemented by platform or screed-type vibrators in the event that satisfactory top surfaces cannot be obtained with the internal type alone; internal vibrators shall be supplemented with vibrators operated against outside of the forms to improve vertical surfaces.
- (d) A sufficient number of vibrators shall be employed so that at the required rate of placement, vibration and complete compaction are obtained throughout the entire volume of each layer of the concrete. At least one extra vibrator shall be on hand for emergency use. Form vibrators shall be attached to the forms in such a manner as to transmit the vibration to the concrete effectively. The form vibrators shall be spaced horizontally apart at distances not greater than the radius through which the concrete is visibly affected.
- (e) Internal vibrators shall be kept constantly moving vertically in the concrete and they shall be applied at points uniformly spaced that are not farther apart than the radius over which the vibrator is visibly effective. The vibrator shall not be held in one location long enough to draw a pool of grout from the surrounding concrete. Internal vibrators shall be applied close enough to the forms to vibrate the surface concrete effectively but care shall be taken to avoid hitting the forms with sufficient force to damage them.
- (f) With form or internal vibrators, the vibration shall be such that the concrete becomes uniformly plastic and there shall be at least 20 seconds of vibration per

square foot of surface of each layer of the concrete, computed on the basis of the visibly affected radius and taking overlapping into consideration. Surface vibrators shall be applied only long enough to embed the coarse aggregate and to bring enough mortar to the surface for satisfactory screeding.

E5.5.8 Form Removal

- (a) Immediately after the removal of the forms, any defects in the concrete shall be brought to the Contract Administrator's attention and they shall be repaired as directed by the Contract Administrator, provided the defects are not extensive enough to cause rejection of the member.
- (b) Honeycomb, if any, shall be repaired as soon as the forms are taken off, subject to the approval of the Contract Administrator. When approved by the Contract Administrator, repairs shall be accomplished by removing any aggregate that is loose or that is not thoroughly bonded to the surrounding concrete, washing the sound concrete with clean water, using a wire brush to remove any loose particles and by applying an approved epoxy resin to the dried areas to be patched immediately prior to the applying of cement mortar. Patched areas shall be rubbed flush with the surrounding surface after the cement mortar has hardened.
- (c) All objectionable fins, projections, offsets, steaks, or other surface imperfections shall be totally removed to the Contract Administrator's satisfaction by approved means.

E5.5.9 Curing

- (a) Concrete shall be moist cured for a minimum of seven (7) days from the time of casting as per Clause 21 of CSA –A23.4/A251
- (b) Double layer of wet burlap to cover the fabricated components, after the surface finishing is complete, and shall be maintained all the time until the moist curing is complete.
- (c) Changes in temperature of concrete shall be uniform and gradual and shall not exceed a rate of 3°C per hour or 24°C per twenty-four hours.

E5.5.10 Handling, Storage and Loading

- (a) Lifting devices shall be cast into the concrete at the top face of the panels. The Contractor is responsible for the design of the lifting devices. The location of the lifting devices and details shall be shown on the Shop Drawings.
- (b) The lifting devices shall be of such a nature as to avoid twisting, racking, or other distortions while handling, storing, moving and erecting the panels. The devices shall be anchored fully to the main body of concrete.
- (c) The Contractor shall be responsible for storage of the panels from the completion of their fabrication until they are required for erection. The Contractor may have to store, free of charge, all or portions of the Substantial Performance date, depending upon the actual construction progress.
- (d) Extreme care shall be exercised during the handling and storage of the precast panels to avoid twisting, cracking or other distortion that may result in damage to the panels.

E5.5.11 Handling, Transportation and Erection

- (a) The Contractor shall load, transport, and unload all the fabricated panels (total two (2) panels) in accordance with the following:
 - (i) The members shall not be transported until the concrete design strength has been reached.
 - (ii) The Contractor shall be responsible for protecting the panels at restraint points on the vehicle. Any damaged corners or surfaces of the panels are to be regarded as honeycomb and repaired in accordance with E5.5.8(b) of this Specification.

- (iii) The Contractor and the Contract Administrator shall visually inspect the panels once they have been loaded on the hauling equipment and immediately prior to the unloading. Extensive cracking of the panels during transportation will be basis for rejection by the Contract Administrator.
 - (iv) When transporting panels, the Contractor shall be responsible for ensuring that all of the required permits have been acquired and the conditions of all permits are met.
 - (v) The Contractor shall submit his proposed route for transporting the panels including traffic control procedures as part of the proposed loading and transporting procedure. In all traffic control situations, the flagmen must be trained and properly attired in flagman's vest and approved headgear with approved flagman's stop/slow paddle or fluorescent red flag. The proper advance signing must also be in place.
- (b) The contractor is responsible for installing the new panels in place, while fitting between the existing posts and sitting on the grade beam. Shimmiing may be required to make sure that the panels are perfectly vertical with no gaps between the grade beam and the panel.
- (c) Adhesive/Sealant Application
- (i) The Contractor shall use backer rods and polyether adhesive/sealant on all vertical faces between the precast panels and the existing posts as per Drawings and the sealant manufacturer specifications.
- (d) Lifting Hooks and Lifting Holes
- (i) After the Contract Administrator has approved the erection positions of the panels, all lifting hooks shall be cut off minimum 25 mm recess deep from the face of the panels.
 - (ii) All lifting holes shall be filled with an approved grout.

E5.6 Quality Control

E5.6.1 Inspection

- (a) All workmanship and all materials under this specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations 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 acceptance that may have been previously given. The Contract Administrator reserves the right to reject any Works, which are not in accordance with the requirements of this Specification.

E5.6.2 Access

- (a) The Contractor shall allow the Contract Administrator free access to all parts of the Work at all times to determine whether it is carried out in accordance with this Specification.

E5.7 Measurement and Payment

E5.7.1 Supply and Installation of New Panels

- (a) The supply, delivery and installation of the new precast panels will be measured on a unit basis and paid for at the Contract Unit Price per Each panel for "Supply and Installation of New Panels", performed in accordance with this Specification and accepted by the Contract Administrator.

E6. SITE RESTORATION AND LANDSCAPING

- E6.1 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, shrubs and trees, sod, and concrete sidewalk to the satisfaction of the Contract

Administrator. Any costs incurred in connection with the above mentioned Work are incidental to the work and no separate measurements or payments shall be made.

- E6.2 Damaged grass areas shall be repaired with sod.
- E6.3 Restoration shall include repairs of existing damaged grass and shrubs. The three (3) shrubs that are damaged shall be replaced to match the existing ones.
- E6.4 The site cleanup, restoration and landscaping will not be measured. This item of work will be paid for at the Contract Lump Sum Price for "Site Restoration and Landscaping", performed in accordance with this Specification and accepted by the Contract Administrator.

PART F - SECURITY CLEARANCE

F1. SECURITY CLEARANCE

- F1.1 Each individual proposed to perform the following portions of the Work:
- (a) any Work on private property;
 - (b) communicating with residents and homeowners in person or by telephone;
- F1.1.1 Each Individual shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his/her place of residence. Or
- (a) BackCheck, forms to be completed can be found on the website at: <http://www.backcheck.net/> ; or
- F1.1.2 The original Criminal Record Search Certificate (Form P-253) will be provided by the Winnipeg Police Service to the individual applicant. The original has a validation sticker from the Winnipeg Police Service in the top right hand corner. The applicant shall:
- (a) Provide the original Criminal Record Search Certificate (Form P-253) to the Contract Administrator.
- F1.2 Prior to the commencement of any Work specified in F1.1, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.
- F1.3 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person will not be permitted to perform any Work specified in F1.1.
- F1.4 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- F1.5 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work specified in F1.1.

