



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 957-2010

**SUPPLY, FABRICATION, AND DELIVERY OF BEARINGS -
OSBORNE STREET BRIDGE**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SUPPLY, FABRICATION, AND DELIVERY OF BEARINGS -
OSBORNE STREET BRIDGE

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, January 13, 2011.

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, the Bidder may make an appointment to view the Site by contacting the Contract Administrator.

B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

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 promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B4.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B4.4 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.

B4.5 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.

B4.6 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.

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/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 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 materials, equipment, methods and products 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 seven (7) 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 material, equipment, method or product 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 Contract;
 - (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 Contract.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.

- B6.9 No later claim by the Contractor for an addition to the price(s) 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 SUBMISSION

- 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.
- B7.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B8. BID

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;

- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B8.4 Paragraph 11 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B8.5 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 Prices on Form B: Prices shall include:

- (a) duty;
- (b) freight and cartage;
- (c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
- (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.

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.

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, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; 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 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.

B10.5 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.

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 or evaluated prices) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

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

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

B12. IRREVOCABLE BID

- B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 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 10 of Form A: Bid.

B13. WITHDRAWAL OF BIDS

- B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B13.1.1 Notwithstanding C21, 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 11 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 11 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B14. EVALUATION OF BIDS

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6;
- B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.
- B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each

item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B14.4.2 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.

B14.5 This Contract will be awarded as a whole.

B15. AWARD OF CONTRACT

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

B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B14.

B15.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

B15.4 Notwithstanding C4 and Paragraph 6 of Form A: Bid, the City will issue a purchase order to the successful Bidder in lieu of the execution of a Contract.

B15.5 The Contract Documents, as defined in C1.1(n) (ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for the Supply of Goods* (Revision 2008 05 26) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for the Supply of Goods* 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 Supply of Goods*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for the Supply of Goods*, 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, fabrication, and delivery of elastomeric expansion bearings, expansion disc bearings, and fixed disc bearings as specified in the Specifications and on the Drawings.

D2.2 Contractors are reminded that the Work shall not proceed until approval has been granted by the Contract Administrator.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**ASTM**" means the American Society for Testing and Materials that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.
- (b) "**CSA**" means the Canadian Standards Association that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is Wardrop Engineering Incorporated, A Tetra Tech Company, represented by:

Vaibhav Banthia, P. Eng.
400 – 161 Portage Avenue East
Winnipeg, MB R3B 0Y4

Telephone No.: (204) 954-6823
Facsimile No.: (204) 988-0546

D5. NOTICES

D5.1 Notwithstanding C21.3, 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

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

D6.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on

business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D7. INSURANCE

D7.1 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; such liability policy to also contain a cross-liability clause, non-owned automobile liability and products and completed operations cover, to remain in place at all times during the performance of the Work;
- (b) if required, automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00), to remain in place at all times during the performance of the Work;

D7.2 Deductibles shall be borne by the Contractor.

D7.3 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 the date specified in C4 for the return of the executed Contract.

D7.4 The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D8. PERFORMANCE SECURITY

D8.1 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.

D8.1.1 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.

D8.2 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 and prior to the commencement of any Work.

SCHEDULE OF WORK

D9. COMMENCEMENT

D9.1 The Contractor shall not commence any Work until he is in receipt of a notice of award from the City authorizing the commencement of the Work.

D9.2 The Contractor shall not commence any Work until:

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

- (i) evidence of authority to carry on business specified in D6;
 - (ii) evidence of the workers compensation coverage specified in C6.16;
 - (iii) evidence of the insurance specified in D7; and
 - (iv) the performance security specified in D8.
- (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

D10. CRITICAL STAGES / DELIVERY

- D10.1 Goods shall be delivered f. o. b destination, freight prepaid, to a location as specified by the Contract Administrator. Delivery shall be within fifteen (15) kilometres of the limits of the City of Winnipeg.
- (a) Northbound Bridge bearings by May 19, 2011; and
 - (b) Southbound Bridge bearings by May 30, 2011.
- D10.2 The Contractor shall confirm each delivery with the Contract Administrator or his/her designate, at least two (2) Business Days before delivery.
- D10.3 Goods shall be delivered between 8:30 a.m. and 4:30 p.m. on Business Days.

D11. TOTAL PERFORMANCE

- D11.1 The Contractor shall achieve Total Performance by October 15, 2012.
- D11.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D11.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D12. LIQUIDATED DAMAGES

- D12.1 If the Contractor fails to achieve delivery of the goods within the time specified in D10 the Contractor shall pay the City one thousand dollars (\$1,000.00) per Calendar Day for each and every Calendar Day until the goods have been delivered.
- D12.2 The amount specified for liquidated damages in D12.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Delivery by the day fixed herein for same.
- D12.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D13. WORK BY OTHERS

- D13.1 Work By Others
- (a) Work by Others will include but necessarily be limited to:
 - (i) Osborne Street Bridge Rehabilitation and Related Works – installation of supplied bearings to take place in 2011 and 2012.

MEASUREMENT AND PAYMENT

D14. INVOICES

D14.1 Further to C10, the Contractor shall submit an invoice for each order delivered 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

D14.2 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 goods delivered;
- (e) the amount payable with GST and MRST shown as separate amounts; and
- (f) the Contractor's GST registration number.

D14.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D14.4 Bids Submissions must be submitted to the address in B7.5.

D15. PAYMENT

D15.1 Further to C10, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D16. PAYMENT SCHEDULE

D16.1 Further to C10, payment shall be in Canadian funds in coordination with the dates specified in D10.

D16.2 Upon confirmation of delivery as specified in D10, the Contractor shall receive a partial payment of eighty (80%) percent. Upon completion of inspection and certification of the installed bearings, the balance of the partial payment of twenty (20%) percent will be made.

D17. RETURNED GOODS

D17.1 Further to C9.11, The Contract Administrator or his/her designate shall inform the Contractor of the item(s) being returned and the reason for the return. The Contractor shall provide the Contract Administrator with Return Material Authorization (RMA) including shipping instructions, within five (5) Calendar Days of the request.

D17.1.1 The Contractor shall be responsible for all transportation charges on returned goods and further to C8.2, C.8.3, the goods will be held at the Contractor's risk pending instruction.

D17.2 Further to D17.1, the RMA shall include the following information, as a minimum:

- (a) Company name, if different than the Contractor, and ship to addresses;
- (b) Written authorization for the return and for a collect shipment;
- (c) Preference of carrier/shipping method, a contact person with either a local Winnipeg telephone number or a toll-free telephone number;

(d) A contact person, responsible for returned goods, with a toll-free telephone number.

D17.3 The Contract Administer shall provide, as a minimum:

- (a) The City department returning the goods, including an address and contact information for pick up;
- (b) The City account number, if applicable;
- (c) The City of Winnipeg's Department and address;
- (d) Two (2) copies of the written authorization/RMA, one (1) copy on the outside and one (1) within the package;
- (e) Total number of packages, weight, and dimensions.

WARRANTY

D18. WARRANTY

D18.1 Notwithstanding C11, the warranty period shall begin on the date of Total Performance and shall expire five (5) years thereafter unless extended pursuant to C11.3, in which case it shall expire when provided for thereunder.

D18.2 The responsibility for the design of the complete unit, its performance and reliability shall rest upon the Contractor.

D18.3 The term "**repeat failures**" as used herein is defined to mean that the same component, subassembly, or assembly develops repeated defects, breakdowns, and/or malfunctions rendering the unit inoperative, or required repeated shop correction, service and/or replacement during the warranty period applicable for said component, subassembly, or assembly. Minor items or ordinary service adjustments are not included, or considered under the scope of "repeated failures", as well as other factors, such as operational damage due to accidents, misuse or lack of proper maintenance, service and lubrication attention by not following the manufacturer's preventative maintenance schedules.

D18.4 Where the unit develops "**repeated failures**" in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance.

FORM H1: PERFORMANCE BOND
(See D8)

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. 957-2010

SUPPLY, FABRICATION, AND DELIVERY OF BEARINGS -
OSBORNE STREET BRIDGE

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 D8)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 957-2010

SUPPLY, FABRICATION, AND DELIVERY OF BEARINGS -
OSBORNE STREET BRIDGE

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B6.
- E1.3 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
B109-11-001	Cover Sheet
B109-11-002	Bearing Supply – Overall Layout and Bearing Data
B109-11-003	Bearing Supply – North and South Abutments – Bearing Details
B109-11-004	Bearing Supply – Pier 1 and 3 – Bearing Details
B109-11-005	Bearing Supply – Pier 2 – Bearing Details

REFERENCE DRAWINGS

- P.D.NO.75-197 Osborne Street Bridge Replacement Across the Assiniboine River, Record Drawings: Cover Sheet R1; B-5076-1 R1 to B-5076-30 R1; B-5076-32 R1 to B-5076-35 R1.
- Osborne Street Bridge Bearing Shop Drawings: E669-1 1 to 3 R0; E670-1 1 to 3 R0; E671-1 1 and 2 R0.

E2. GOODS

- E2.1 The Contractor shall supply, fabricate, and deliver bearings in accordance with the requirements hereinafter specified.

E3. SHOP DRAWINGS

- E3.1 Description
- (a) This Specification provides instructions for the preparation and submission of Shop Drawings. The term 'Shop Drawings' means drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data, including Site erection drawings which are to be provided by the Contractor to illustrate details of a portion of the Work.
 - (b) Further to C6.9, the Contractor shall arrange for the preparation of Shop Drawings required by the Contract, or as reasonably required by the Contract Administrator.
 - (c) The Contractor shall submit to the Contract Administrator for review, all specified Shop Drawings. All submissions must be in metric units. Where data is in imperial units, the correct metric equivalent shall also be shown on all submissions for the Contract Administrator's review.
- E3.2 Shop Drawings
- E3.2.1 Original drawings shall be prepared by the Contractor, to illustrate the appropriate portion of Work including fabrication, layout, setting, or erection details as specified in the appropriate sections.

- E3.2.2 Shop Drawings for bearings shall bear the seal of a Professional Engineer licensed to practice in the province of Manitoba.
- E3.2.3 Shop Drawings shall be prepared by the Contractor within ten (10) Business Days of notification by the Contract Administrator.
- E3.3 Contractor's Responsibilities
- (a) Review Shop Drawings, product data, and samples prior to submission and stamp and sign drawings indicating conformance to the Contract requirements.
 - (b) Verify:
 - (i) Field Measurements
 - (ii) Field Construction Criteria
 - (iii) Catalogue numbers and similar data
 - (c) Coordinate each submission with requirement of Work and Contract Documents. Individual Shop Drawings will not be reviewed until all related drawings are available.
 - (d) Notify Contract Administrator, in writing at time of submission, of deviations from requirements of Contract Documents.
 - (e) Responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator's review of submission, unless Contract Administrator gives written acceptance of specified deviations.
 - (f) Responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
 - (g) Make any corrections required by the Contract Administrator and resubmit the required number of corrected copies of Shop Drawings. Direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Contract Administrator on previous submission.
 - (h) After Contract Administrator's review and return of copies, distribute copies to Subcontractors and others as appropriate.
 - (i) Maintain one (1) complete set of reviewed Shop Drawings, filed by Specification Section Number, at the Site of the Work for use and reference of the Contract Administrator and Subcontractors.
- E3.4 Submission Requirements
- (a) Allow for a ten (10) Business Day period for review by the Contract Administrator of each individual submission and re-submission, unless otherwise noted in the Contract Documents.
 - (b) Submit two (2) paper prints of Shop Drawings. The Contract Administrator will retain one (1) copy of all submittals and return one (1) copy to the Contractor.
 - (c) Accompany submissions with transmittal letter containing:
 - (i) Date
 - (ii) Project title and Bid Opportunity number
 - (iii) Contractor's name and address
 - (iv) Number of each shop drawing, product data and sample submitted
 - (v) Specification Section ,Title, Number, and Clause
 - (vi) Drawing Number and Detail/Section Number
 - (vii) Other pertinent data
 - (d) Submissions shall include:
 - (e) Date and revision dates
 - (f) Project title and Bid Opportunity number

- (g) Name of:
 - (i) Contract
 - (ii) Subcontractor
 - (iii) Supplier
 - (iv) Manufacturer
 - (v) Detailer (if applicable)
 - (vi) Identification of product or material
 - (vii) Relation to adjacent structure or materials
 - (viii) Field dimensions, clearly identified as such
 - (ix) Specification section name, number, and clause number or drawing number and detail/section number
 - (x) Applicable standard, such as CSA or CGSB numbers
 - (xi) Contractor's stamp, initialled or signed, certifying review of submission, verification of field measurements and compliance with Contract Documents

E3.5 Other Considerations

- (a) Fabrication, erection, installation, or commissioning may require modifications to equipment or systems to conform to the design intent. Revise pertinent Shop Drawings and resubmit.
- (b) Material and equipment delivered to the Site of the Works will not be paid for at least until pertinent Shop Drawings have been submitted and reviewed.
- (c) Incomplete shop drawing information will be considered as stipulated deductions for the purposes of progress payment certificates.
- (d) No delay or cost claims will be allowed that arise because of delays in submissions, re-submissions, and review of the Shop Drawings.

E4. DISC BEARINGS

E4.1 Description

- (a) This Specification shall cover the supply and fabrication of twelve (12) disc bearings and their connection assemblies as shown on the Drawings to replace the existing disc bearings for the Osborne Street Bridge. Disc bearing types have been designated by their appropriate mark number, as shown on the Drawings.
- (b) The Work to be done by the Manufacturer 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.

E4.2 References

- (a) The latest edition and all subsequent revisions of the following standards:
 - (i) CSA-B95-1 Surface Texture (Roughness, Waviness and Lay)
 - (ii) CAS-G40.20/40.21 General Requirements for Rolled or Welded Structural Steel /Structural Quality Steel
 - (iii) CSA-G164-M92 Hot Dip Galvanizing of Irregularly Shaped Articles
 - (iv) CSA-W48 Filler Metals and Allied Materials for Metal Arc Welding
 - (v) CSA-W59-M92 Welded Steel Construction (metal Arc Welding) (Metric Version)
 - (vi) CSA-S6 Canadian Highway Bridge Design Code
 - (vii) ASTM A240/A240M Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels
 - (viii) ASTM A325 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

E4.3 Submittals

- (a) All bearing Shop Drawings shall be sealed by a Professional Engineer licensed to practice in the Province of Manitoba, and signed and dated by the said Engineer.
- (b) The Bearing Supplier shall provide the detailed design calculations for all of the bearings sealed by a Professional Engineer Registered in the Province of Manitoba, showing that the stability, stresses on PTFE and rotational capacities meet the requirements of this Specification.
- (c) The following information is required regarding the bearings:
 - (i) Dimensions of each component;
 - (ii) Minimum and maximum horizontal and vertical load capacity, both SLS and ULS;
 - (iii) Longitudinal and transverse movement capacity;
 - (iv) Bearing rotation capacity in radians;
 - (v) Sketch indicating bearing locations, orientation and movement;
 - (vi) Installation details;
 - (vii) Method of attachment of bearings to the top and bottom plates; and
 - (viii) All additional plates shown on the Drawings.

E4.4 Materials

E4.4.1 Disc Bearings

- (a) Bearing materials, manufacture, fabrication and installation shall comply with CAN/CSA-S6.
- (b) All materials shall be new and unused with no reclaimed material incorporated in the finished bearing.
- (c) The Contractor shall furnish a manufacturer's certification that materials proposed for use on the project have been pre tested and will meet the requirements as set forth in the manufacturer's current literature.
- (d) Elastomer and rubber components shall meet Grade 5 classification.
- (e) Sliding disc bearings shall have a PTFE and stainless steel interface.

E4.4.2 Manufacturing

- (a) Bearings shall be factory set and clamped for equal expansion and contraction and plant assembled.
- (b) The stainless steel sliding surface interface sheet shall conform to ASTM A240/A240M and continuously welded to the top plate. The roughness of the contact surface shall be measured in accordance with CSA B95 and shall not be greater than 0.25 mm arithmetic average.
- (c) All disc bearings shall have a minimum rotational capacity of + 0.02 radians. All elements shall be capable of maintaining its initial uniform contact at + 0.02 radians rotation. The coefficient of friction between the PTFE and stainless steel plates at maximum permissible bearing load shall be 0.03 or less. PTFE for disc bearings are to be lubricated and unfilled. Exposed steel surface shall be zinc metalized.
- (d) All welding shall be in accordance with CSA W59. The company undertaking welding fabrication shall be certified in Division 1 or Division 2.1 of CSA W47.1. All welding shall be done with electrodes certified by the Canadian Welding Bureau to the requirements of CSA W48.
- (e) All bearing surfaces of steel plates shall be finished flat within 0.25 mm.
- (f) Connections shall be designed and supplied by the fabricator for the maximum horizontal force and minimum/maximum vertical force indicated on the drawings.
- (g) All bearings shall be indelibly marked with the name of the manufacturer, the part number, bearing identification number, elastomer type, elastomer grade and the date of manufacture on the side visible after erection.

E4.4.3 Steel Plates and Bars

- (a) Steel plates and bars where shown on the Drawings shall conform to the requirements of CSA Specification G40.21 Grade 300W and shall be galvanized after fabrication in accordance with CSA G164-M92 for a minimum retention of 610 g/m².

E4.4.4 Fixing Bolts, Fasteners, Washers and Nuts

- (a) Fixing bolts, nuts and washers requires for the bearing installation shall conform to the requirements of ASTM Specification A325. Nuts shall conform to the requirement of ASTM Specification A563, Grade C. Washers shall conform to the requirements of ASTM Specification F436, Type 1. Bolts, fasteners, washers and nuts shall be hot-dip galvanized in accordance with CSA Standard G164-M92 to a minimum retention of 610 g/m².

E4.4.5 Welding Consumables

- (a) Welding consumables for all processes shall be certified by the manufacturer as complying with the requirement of CSA Standard W59 and the following specifications:
 - (ii) Manual shielded metal-arc welding (SMAW):
 - (i) All electrodes for the manual, shielded metal-arc welding process shall conform to CSA W48.1, CSA G48.3 classification E480XX or imperial equivalent.
 - (iii) Gas, Metal Arc Welding (GMAW):
 - (i) All electrodes used in the gas, metal arc-welding process shall be composite electrodes conforming to CSA G48.4 classification ER480S-X or imperial equivalent.
 - (iv) Shielding gas shall be welding grade carbon-dioxide with a guaranteed dew point of -46°C.
 - (v) Submerged Arc Welding (SAW):
 - (i) Welding electrodes and fluxes used in the submerged arc welding process shall conform to CSA W48.6 classification F480X-EXXX or imperial equivalent.
 - (vi) All electrodes, wires and fluxes used shall be of a classification requiring a minimum impact of 27 joules at -30°C as outlined in the various codes mentioned above.
- (b) The proposed welding procedures and welding consumable certificates shall be submitted to the Contract Administrator for his acceptance at least twenty-one (21) days prior to the scheduled commencement of any fabrication.
- (c) In multiple pass welds, the weld may be deposited such that at least two layers on all surfaces and edges are deposited with one of the filler metals listed above for each particular welding process, provided the underlying layers are deposited with one of the filler metals specified in CSA Standard W59.

E4.4.6 Miscellaneous Materials

- (a) Miscellaneous materials shall be of the type specified on the Drawings and approved by the Contract Administrator.

E4.5 Equipment

E4.5.1 General

- (a) All equipment shall be of a type acceptable to the Contract Administrator and shall be kept in good working order.

E4.6 Construction Methods

E4.6.1 Disc Bearings

- (a) The manufacturer shall ship each bearing fully assembled. The bearings are not to be disassembled prior to final installation without the knowledge of the manufacturer.

- (b) Bearings when received on site shall be unloaded and stored in accordance with the manufacturer's recommendations.
- (c) The bearing plate is to be fixed to the existing, embedded base plate utilizing the existing fixing bolt locations as noted in the Drawings.

E4.6.2 Welding

- (a) All welding shall conform to the requirements of CSA Standard W59.1.
- (b) All metal surfaces to be galvanized shall be cleaned thoroughly of rust, rust scale, mill scale, dirt, paint and other foreign material by commercial sand, grit or shop blasting or pickling prior to galvanizing. Heavy deposits or oil and grease shall be removed with solvents prior to blasting or pickling.

E4.6.3 Inspection

- (a) In addition to the requirements of C9, The Contract Administrator may complete an on- site inspection of the bearings when fabrication is complete. The bearing supplier shall notify the Contract Administrator when fabrication is complete and the bearings are ready for inspection.
- (b) All workmanship and materials furnished and supplied under this Specification are subject to the close and systematic inspection by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the specified Work.
- (c) The Manufacturer 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 the Specification.
- (d) The Manufacturer shall allow the Contract Administrator free access to all parts of the Work at all times. The Manufacturer shall supply samples to the Contract Administrator or his inspector for testing purposes as required. There will be no charge to the City for samples taken.

E4.6.4 Fabrication and Installation Guarantee

- (a) The bearing supplier will coordinate with the General Contractor of the Osborne Street Bridge Rehabilitation and Related Works for installation of the bearings. Upon installation of the bearings the bearing supplier shall inspect the bearings to certify that the bearings have been properly installed. The bearing supplier will coordinate with the General Contractor of the Osborne Street Bridge Rehabilitation and Related Works and provide a written guarantee that the bearings will perform satisfactorily within the design range of movement and under the design loads for a period of five (5) years from the date of bearing installation and certification from the bearing supplier.

E5. STEEL REINFORCED ELASTOMERIC BEARINGS

E5.1 Description

- (a) This Specification shall cover the fabrication and supply of twenty-eight (28) steel reinforced elastomeric bearings and their connection assemblies as shown on the drawings to replace the existing disc bearings for the Osborne Street Bridge. Elastomeric bearing types have been designated by their appropriate mark number, as shown on the Drawings.
- (b) The Work to be done under the 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.

E5.2 References

- (a) The latest edition and all subsequent revisions of the following standards:
 - (i) CSA-B95-1 Surface Texture (Roughness, Waviness and Lay)
 - (ii) CAS-G40.20/40.21 General Requirements for Rolled or Welded Structural Steel /Structural Quality Steel
 - (iii) CSA-G164-M92 Hot Dip Galvanizing of Irregularly Shaped Articles
 - (iv) CSA-W48 Filler Metals and Allied Materials for Metal Arc Welding
 - (v) CSA-W59 Welded Steel Construction (metal Arc Welding) (Metric Version)
 - (vi) CSA-S6 Canadian Highway Bridge Design Code
 - (vii) ASTM A240/A240M Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels
 - (viii) ASTM A325 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

E5.3 Submittals

- (a) All bearing Shop Drawings shall be sealed by a Professional Engineer licensed to practice in the Province of Manitoba, and signed and dated by the said Engineer.
- (b) The Bearing Supplier shall provide the detailed design calculations sealed by a Professional Engineer registered in the Province of Manitoba for all of the bearings, showing that the stability, stresses on PTFE and rotational capacities meet the requirements of this Specification.
- (c) The following information is required regarding the bearings:
 - (i) Dimensions of each component;
 - (ii) Minimum and maximum horizontal and vertical load capacity, both SLS and ULS;
 - (iii) Longitudinal and transverse movement capacity;
 - (iv) Bearing rotation capacity in radians;
 - (v) Sketch indicating bearing locations, orientation and movement;
 - (vi) Installation details;
 - (vii) Method of attachment of bearings to the top and bottom plates; and
 - (viii) All additional plates shown on the Drawings.

E5.4 Materials

E5.4.1 Steel Reinforced Elastomeric Bearings

- (a) Steel Reinforced Elastomeric Bearings shall be fabricated and supplied by the Manufacturer as shown on the Drawings.
- (b) Steel Reinforced Elastomeric Bearings shall be designed and fabricated in accordance with CAN/CSA CHBDC S6.
 - (i) Polytetrafluoroethylene (PTFE) used for bearings shall be made from virgin resin satisfying the requirements of ASTM D4895.
 - (ii) PTFE for steel reinforced elastomeric bearing shall be dimpled and lubricated.
 - (iii) Elastomer shall be natural rubber, low temperature grade 4 or 5 with a 60 durometer shore A hardness.
- (c) Stainless Steel
 - (i) Stainless steel shall conform to ASTM Standard A240.
 - (ii) Roughness of the contact surface shall be no greater than 0.26 μm arithmetic average,

- (d) Steel
 - (i) Steel for bearings shall conform to CSA G40.21, Grade 300W.
 - (ii) Internal steel reinforcing plates for elastomeric bearings shall conform to CSA G40.21 Grade 230.
- (e) Galvanizing
 - (i) Galvanizing shall conform to CSA G164-M92.
- (f) Zinc Metalizing
 - (i) Zinc Metalizing shall be 100% zinc to a minimum thickness of 6 mils.

E5.5 Equipment

E5.5.1 General

- (a) All equipment shall be of a type acceptable to the Contract Administrator and shall be kept in good working order.

E5.6 Construction Methods

E5.6.1 Bearings

- (a) Workmanship and finish shall be in accordance with the plans and Specifications and shall conform to the best practices of bridge construction. The parts shall be assembled as shown on the plans and all match marks shall be observed. The material shall be handled carefully so that no parts will be bent, broken, or otherwise damaged.

E5.7 Quality Control

E5.7.1 All workmanship and materials furnished and supplied under this Specification are subject to the close and systematic inspection by the Contract Administrator. 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 material or works which are not in accordance with the requirements of Specifications.

E5.7.2 Inspection

- (a) In addition to the requirements of C9, The Contract Administrator may complete an on site inspection of the bearings when fabrication is complete. The bearing supplier shall notify the Contract Administrator when fabrication is complete and the bearings are ready for inspection.
- (b) All workmanship and materials furnished and supplied under this Specification are subject to the close and systematic inspection by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the specified Work.
- (c) The Manufacturer 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 the Specification.
- (d) The Manufacturer shall allow the Contract Administrator free access to all parts of the Work at all times. The Manufacturer shall supply samples to the Contract Administrator or his inspector for testing purposes as required. There will be no charge to the City for samples taken.

E5.8 Fabrication and Installation Guarantee

- (a) The bearing supplier will be required to coordinate with the General Contractor of the Osborne Street Bridge Rehabilitation and Related Works for installation of the bearings. Upon installation of the bearings the bearing supplier shall inspect the bearings to certify that the bearings have been properly installed. The bearing supplier will coordinate with the General Contractor of the Osborne Street Bridge Rehabilitation and Related Works and provide a written guarantee that the bearings will perform satisfactorily within the design range of movement and under the design loads for a period of five (5) years from the date of bearing installation and certification from the bearing supplier.