



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 747-2008

**NATURAL GAS ENGINE - EXHAUST SYSTEM REPLACEMENT
MCPHILLIPS PUMPING STATION**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 NATURAL GAS ENGINE - EXHAUST SYSTEM REPLACEMENT
MCPHILLIPS PUMPING STATION

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, December 19, 2008.
- 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 is requested to attend a Site Meeting at McPhillips Pumping Station, 360 McPhillips St., Winnipeg, from 1:00 p.m. to 2:30 p.m., December 9th, 2008. Attendance is strongly recommended.
- B3.2 Bidder shall be familiar with the site prior to submitting bid.
- B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Site Meeting unless that information or interpretation is the Bidder's direct observation or is provided by the Contract Administrator in writing.
- B3.4 Photos are not permitted during the Site Meeting.

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

B5. ADDENDA

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

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division internet site 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 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed Work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified, and can be incorporated into the Work, strictly in accordance with the proposed Work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID COMPONENTS

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;
- 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 shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid 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.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, may result in the Bid being determined to be non-responsive.
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Bids shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B8. BID

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

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

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

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

B8.4 Paragraph 12 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 Notwithstanding C12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

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

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

B9.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

B10.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed, or permitted by law to carry on business in Manitoba; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

- B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred, or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt/debar.stm>.
- B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope, and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- B10.4 Further to B10.3(c), the Bidder shall, within three (3) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health, and Environment Program; or
 - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt/>.)
- B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. BID SECURITY

- B11.1 The Bidder shall provide bid security in the form of:
- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
 - (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking 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 included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B11.1.2 All signatures on bid securities shall be original.
- B11.1.3 The Bidder shall sign the Bid Bond.

- B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

- B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.
- B12.1.1 Bidders or their representatives may attend.
- B12.2 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 internet site at <http://www.winnipeg.ca/matmgt>.
- B12.3 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 internet site at <http://www.winnipeg.ca/matmgt>.
- B12.4 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.

B13. IRREVOCABLE BID

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B13.2 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 until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

- B14.1 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.
- B14.1.1 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.

- B14.1.2 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 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 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 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 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, including the right to retain the Bidder's bid security.

B15. EVALUATION OF BIDS

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9.1 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B15.1(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.
- B15.3 Further to B15.1(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.
- B15.4 Further to B15.1(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.
- B15.4.1 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.
- B15.4.2 Further to B15.1(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.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B16.2 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.

- B16.2.1 Without limiting the generality of B16.2, 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.
- B16.3 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 B15.
- B16.3.1 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.

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 internet site at http://www.winnipeg.ca/matmgt/gen_cond.stm .

C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the replacement of three exhaust systems at the McPhillips Pumping Station.

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

- (a) Removal of identified asbestos.
- (b) Removal of the three (3) existing exhaust systems.
- (c) Supply and Installation of three (3) new exhaust systems.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) **"Installation Contractor and/or Installer"**, means the General Contractor retained by the City, under a separate contract, to install the equipment supplied under this contract;
- (b) **ANSI** means American National Standards Institute;
- (c) **ASME** means American Society of Mechanical Engineers;
- (d) **ASTM** means American Society for Testing and Materials;
- (e) **AWWA** means American Water Works Association;
- (f) **CSA** means Canadian Standards Association;
- (g) **DAF** means Dissolved Air Flotation;
- (h) **IEC** means International Electro-technical Commission;
- (i) **ISO** means International Standards Organization;
- (j) **NACE** means National Association of Corrosion Engineers;
- (k) **NEMA** means National Electrical Manufacturer's Association;
- (l) **NSF** means National Sanitation Foundation;
- (m) **SAE** means Society of Automotive Engineers;
- (n) **CEC** means Canadian Electrical Code;
- (o) **LOX** means liquid oxygen;
- (p) **Manufacturer** means the person, partnership, or corporation responsible for the manufacture and fabrication of equipment provided to the City for the completion of the work;
- (q) **IEEE** means Institute of Electrical and Electronics Engineers;
- (r) **Furnish** means supply;
- (s) **ISA** means the Instrumentation Systems and Automation Society;
- (t) **AGMA** means American Gear Manufacturer's Association;
- (u) **API** means American Petroleum Institute;
- (v) **EEMAC** means Electrical and Electronic Manufacturer's Association of Canada;

- (w) **VSD** means Variable Speed Drive;
- (x) **VFD** means Variable Frequency Drive;
- (y) **Contract Work Schedule** means a Gantt Charter developed by the Contractor developed using the critical path method which shows the proposed progress of the major items of work which are to be performed under this Contract;
- (z) **Project Master Schedule** means a schedule developed by the Contract Administrator which includes and coordinates the Contract Work Schedules of several City contracts, including this Contract;
- (aa) **Professional Engineer** means a professional engineer registered in the Province of Manitoba;
- (bb) **Major Equipment** means all equipment for which shop drawing submittals are required as specified in this Bid Opportunity;
- (cc) **Certified Shop Drawings** means Shop Drawings prepared by the Contractor after all the required Shop Drawings have been noted by the Contract Administrator as being "Reviewed – No comment", or "Reviewed – Note Comments" in accordance with Section E5 of this Bid Opportunity. These Shop Drawings shall incorporate all modifications, comments and notations made by the Contract Administrator in the course of the prior review(s) identified as "Reviewed – Revise and Resubmit".

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is UMA Engineering Ltd., doing business as AECOM, represented by:

Claude Courchaine, P. Eng
Mechanical Engineer
AECOM
1479 Buffalo Place,
Winnipeg, MB R3T 1L7

Telephone No. (204) 928-7415 or (204) 284-0580
Facsimile No. (204) 475-3646

D4.2 At the pre-construction meeting, Mr. Courchaine will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

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

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 address or facsimile number identified in D4.1.

D6.3 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 address or facsimile number:

The City of Winnipeg

Chief Financial Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: (204) 949-1174

- 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 address or facsimile number:

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

Facsimile No.: (204) 947-9155

D7. FURNISHING OF DOCUMENTS

- D7.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him at cost.

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

- D8.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed, or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D9. SAFE WORK PLAN

- D9.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D9.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt/safety/default.stm>.

D10. INSURANCE

- D10.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;

- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) An all risks installation floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation;
- (d) The Contractor and/or Subcontractor performing the asbestos removal, must also provide a certificate of insurance for Commercial General Liability insurance with a minimum limit of \$2,000,000 to The City of Winnipeg. This certificate of insurance to include evidence of " Asbestos Abatement".

D10.2 Deductibles shall be borne by the Contractor.

D10.3 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.

D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. PERFORMANCE SECURITY

D11.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

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

D11.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D11.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and 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. SUBCONTRACTOR LIST

D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D13. DETAILED WORK SCHEDULE

- D13.1 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.
- D13.2 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;
 - (c) a daily manpower schedule for the Work;
- all acceptable to the Contract Administrator.
- D13.3 Further to D13.2(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) Start and completion of asbestos removal for each of the engines.
 - (b) Start and completion of exhaust system removal for each of the engines.
 - (c) Completion of new exhaust system for each of the engines.
 - (d) Substantial Performance.
 - (e) Total Performance.
- D13.4 Further to D13.2(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.
- D13.5 Further to D13.2(c), the daily manpower schedule shall list the daily number of individuals on the Site for each trade.

D14. SECURITY CLEARANCE

- D14.1 Each individual proposed to perform the following portions of the Work:
- (a) any Work on private property;
 - (b) any Work within City facilities other than:
 - (i) an underground structure such as a manhole;
 - (ii) in areas and at times normally open to the public;
- shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.
- D14.2 Prior to the commencement of any Work specified in D14.1, 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.
- D14.3 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 D14.1.
- D14.4 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.
- D14.5 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 D14.1.

SCHEDULE OF WORK

D15. COMMENCEMENT

- D15.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D15.2 The Contractor shall not commence the Work on the Site before receipt of approval from the City or the Contract Administrator.
- D15.3 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D9;
 - (iv) evidence of the insurance specified in D10;
 - (v) the performance security specified in D11;
 - (vi) the Subcontractor list specified in D12;
 - (vii) the detailed work schedule specified in D13; and
 - (viii) the security clearances specified in D14.
 - (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.
- D15.4 The Contractor shall commence the Work on the Site within twenty (20) Working Days of receipt of the letter of intent, unless otherwise requested by the City due to conditions mentioned in D16.1.1.

D16. CRITICAL STAGES

- D16.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- D16.1.1 The engine exhaust system work completion dates are based on the work outlined in this specification, and may be adjusted by the City due to the necessity to coordinate these Works with other work or activities in the facility.
- (a) Installation and testing (Form 103 executed) of the exhaust work on the first engine shall be completed within 4 weeks of the date specified by the City for the commencement of the overall work;
 - (b) Installation and testing (Form 103 executed) of the exhaust work on the second engine shall be completed within 4 weeks of the date specified by the City for the commencement of work on that engine. This work shall not begin until the exhaust work on the first engine has been completed and successfully tested (Form 103 executed);
 - (c) Installation and testing (Form 103 executed) of the exhaust work on the third engine shall be completed within 4 weeks of the date specified by the City for the commencement of work on that engine. This work shall not begin until the exhaust work on the first and second engine has been completed and successfully tested (Form 103 executed for each).

D17. SUBSTANTIAL PERFORMANCE

- D17.1 The Contractor shall achieve Substantial Performance 14 weeks from the date of commencement specified in D15.4 unless otherwise approved by the City in accordance with D16.1.1.
- D17.2 Substantial Performance shall be achieved when each engine has operated for at least 5 consecutive operating days with its new exhaust system in place.
- D17.3 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.
- D17.4 In addition to all of the requirements specified in the General Conditions, Substantial Performance of the work will not be achieved until Form 103 – Certificate of Equipment Satisfactory Performance has been issued for each of the three (3) new exhaust systems.
- D17.5 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.

D18. TOTAL PERFORMANCE

- D18.1 The Contractor shall achieve Total Performance within 4 weeks of achieving Substantial Performance.
- D18.2 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.
- D18.3 In addition to all of the requirements specified in the General Conditions, Total Performance of the work will not be achieved until the O&M manuals have been submitted and accepted by the Contract Administrator.
- D18.4 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.

D19. LIQUIDATED DAMAGES

- D19.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City one thousand dollars (\$1,000) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.
- D19.2 The amount specified for liquidated damages in D19.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.
- D19.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D20. JOB MEETINGS

- D20.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City, and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City, and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D20.2 The Contract Administrator reserves the right to cancel any job meetings or call additional job meetings whenever he deems it necessary.

D21. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D21.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D22. PAYMENT

- D22.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D23. PAYMENT SCHEDULE

- D23.1 Further to C12, payment shall be in accordance with the following payment schedule:
- (a) Thirty percent (30%) upon completion of the exhaust work and testing (Form 103 executed) on the first engine.
 - (b) Thirty percent (30%) upon completion of the exhaust work and testing (Form 103 executed) on the second engine.
 - (c) Thirty percent (30%) upon completion of the exhaust work and testing (Form 103 executed) on the third engine.
 - (d) Five percent (5%) upon issue of the Certificate of Substantial Performance.
 - (e) Five percent (5%) upon issue of the Certificate of Total Performance.

WARRANTY

D24. WARRANTY

- D24.1 Warranty is as stated in C13.
- D24.2 Notwithstanding C13.2 or D24.1, 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.

D24.3 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 D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

BID OPPORTUNITY NO. 747-2008.

NATURAL GAS ENGINE EXHAUST SYSTEM REPLACEMENT – MCPHILLIPS PUMPING STATION

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)

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.
- 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>Specification No.</u>	<u>Specification Title</u>
02 41 23	SELECTIVE SITE DEMOLITION
02 61 33	HAZARDOUS MATERIALS
02 82 12	ASBESTOS ABATEMENT – MAXIMUM PRECAUTIONS
05 50 00	METAL FABRICATIONS
07 62 00	SHEET METAL FLASHING AND TRIM
09 91 13	EXTERIOR PAINTING
09 91 23	INTERIOR PAINTING
21 07 20	THERMAL INSULATION FOR PIPING
23 05 05	INSTALLATION OF PIPEWORK
23 05 17	PIPE WELDING
23 05 29	HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
1-0640M-M0001-001	P1,3,5 Exhaust Replacement - Mechanical – General Notes and Legend P1,3,5 Exhaust Replacement - Mechanical – Demolition - Pump/Engine Level
1-0640M-M0002-001	Floor Plan P1,3,5 Exhaust Replacement - Mechanical – P1, P3 & P5 Engine
1-0640M-M0003-001	Exhaust Sections and Details P1,3,5 Exhaust Replacement - Mechanical – Miscellaneous Details and
1-0640M-M0004-001	Sections

GENERAL REQUIREMENTS

E2. FACILITIES HOUSEKEEPING

- E2.1 Work Site Cleanliness
- E2.1.1 The Contractor must maintain continued cleanliness in the building throughout the Works.
- E2.1.2 Foods and beverages other than water shall only be permitted to be consumed in areas of the building specifically approved by the City.

E2.2 Dust Control:

- (a) All dust creating works shall be contained within a sealed enclosure;
- (b) The enclosure shall be maintained in tidy condition and inspected daily prior to commencement of work. Any damages shall be repaired immediately upon discovery;

E2.3 Work Area Cleanliness

- (a) All demolition and construction debris shall be removed to the outside of the building on a daily basis, prior to departure of the last Contractor's personnel. This debris shall be placed in suitable bins provided by the Contractor;
- (b) The work area shall be kept neat and tidy;
- (c) The area outside the work area shall be verified daily and any accumulation of dust generated by the Contractor's activities on building equipment and piping must be removed as required by wiping or vacuuming;
- (d) The floor in the work area shall be swept on a daily basis;
- (e) At completion of Works, the Contractor shall provide a general cleaning of the work area and the building, wiping or vacuuming all surfaces where dust from the Contractor's activities has accumulated, and washing floor areas as required.

E3. BACKGROUND

- E3.1 The City of Winnipeg operates three (3) natural gas driven pumps at the McPhillips Pumping Station; two (2) with Waukesha engines and one (1) with a Caterpillar engine. The exhaust systems on all three (3) engines require replacement from the engine exhaust manifold discharge to the end of exhaust stack outside of the building.

E4. APPLICABLE CODES AND STANDARDS

- E4.1 CSA Boiler, Pressure Vessel, and Pressure Piping Code CSA B51-03.
- E4.2 American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, ASME B31 Section VIII.
- E4.3 ASME Chemical Plant and Petroleum Refinery Piping, B31.3-2004.

E5. SUBMITTAL DATA

- E5.1 Unless otherwise specified or requested, provide submittals including shop drawings as per City of Winnipeg CW 1110 - General Instructions (available from the City's Standard Construction Specifications web site) and as stated below.
- E5.2 The Contract Administrator shall review the submittals and mark these accordingly as:
- (a) "Reviewed – No comment" (no further action required) or
 - (b) "Reviewed – Note Comments" (no further action required) or
 - (c) "Review by Engineer Not Required" (no further action required) or
 - (d) "Reviewed – Revise and Resubmit" (indicating that the Contractor is to provide a new or revised submittal with the modifications or changes as noted on the returned submittal).
- E5.3 Submittals shall be submitted to the Contract Administrator within 14 Calendar Days of award of contract for review prior to the component in question being manufactured.
- E5.4 Contractor shall supply six (6) paper copies of shop drawings, minimum size 280 mm x 430 mm (11" x 17") and one (1) electronic (pdf) copy to the Contract Administrator.
- E5.5 Submittals/shop drawings shall include but not be limited to:

- (a) Flexible connectors
- (b) Expansion joints
- (c) Gaskets
- (d) Pipe hangers, rollers, etc.
- (e) Fabricated structures.
- (f) Silencers
- (g) Air gap system components
- (h) Insulation and jacket system

E6. OPERATING AND MAINTENANCE DATA

- E6.1 Contractor shall provide six original sets of manuals (in English). These shall be submitted to the Contract Administrator for review.
- E6.2 Enclose contents in a three ring, hard-covered, plastic-jacketed binder with full cover and spine insert. Organize contents into applicable sections of work using labelled and tabbed dividers, parallel to Specifications breakdown.
- E6.3 In addition to information called for in the Specifications, include the following;
- (a) Title sheet, labelled "Operation and Maintenance Instructions for the Gas Engine Exhaust Systems". Include project name, supplier and date, Bid Opportunity # 747-2008.
 - (b) Local and 24 hour emergency technical support and service contact telephone number(s).
 - (c) Table of contents.
 - (d) All reviewed submittals and shop drawings.
 - (e) Names, addresses and telephone numbers of all major sub-Contractors and suppliers.
 - (f) Detailed Specifications and Operating and Maintenance instructions for all purchased items.
- E6.4 The Certificate of Total Performance will not be issued until the manuals have been submitted to and approved by the Contract Administrator.

E7. DELIVERY

- E7.1.1 Goods shall be delivered, F.O.B. destination, freight prepaid, to the following location within the City of Winnipeg at the dates specified in D16.
- McPhillips Pumping Station
360 McPhillips St
Winnipeg, MB.
R3E 2L1
- E7.1.2 The Contractor shall also be responsible for storage and all related handling of components until the scheduled site installation date.

E8. REMOVAL OF THREE EXISTING EXHAUST SYSTEMS

- E8.1 Contractor shall coordinate these Works with the Contract Administrator prior to commencement of removal activities for each engine.
- E8.2 The City has previously identified and labelled some components in the pumping station as containing or suspected to contain asbestos materials. The Contractor shall remove and

dispose of any existing asbestos disrupted, or likely to be disrupted by the exhaust system Works, in accordance with all applicable rules and regulations.

- E8.3 The Contractor shall cease all work and notify the City and the Contract Administrator upon discovery of any other suspect materials not previously identified as such by the City.
- E8.4 The first engine shall be completed and tested (Form 103 submitted) prior to commencement of demolition work for the second engine and likewise for start of work to the third engine systems.
- E8.5 The Contractor shall provide all necessary materials, resources, and equipment to protect City personnel and property during all phases of the demolition work.
- E8.6 Removed surplus materials shall become property of the Contractor.
- E8.7 The Contractor shall be responsible for recycling or disposal of surplus items and rubbish in accordance with all applicable legislation, regulations, and bylaws.
- E8.8 The Contractor shall direct all recyclable material to approved centers.
- E8.9 The Contractor shall provide documentation confirming the means of disposal of products from demolition and the Works in general.
- E8.10 The Contractor's work shall include but is not limited to:
 - E8.10.1 Removal of all existing exhaust system components starting with each engine exhaust flexible connector and to the end of each engine's exhaust system outside of the building.

E9. INSTALLATION OF EXHAUST SYSTEMS

- E9.1 The Contractor and the engine Manufacturer shall supply and install all necessary materials and connections for the engine exhaust systems as specified herein and on the drawings.
- E9.2 The existing external supports and guards shall be reused. New supports shall be provided by the Contractor as required for the installation.
- E9.3 The Contractor's work shall include, but is not limited to the supply and installation of:
 - E9.3.1 New engine exhaust flexible connectors, exhaust piping, gaskets, expansion joints, and pipe supports as required.
 - E9.3.2 Air gap insulation system, covered with two layers of thermal insulation and an outer metal jacket.
 - E9.3.3 Expansion joints.
 - E9.3.4 New exhaust silencers.
- E9.4 All material directly in contact with exhaust gases, except gaskets, shall be steel.
- E9.5 All first layers of insulation shall be rated for maximum operating temperature of at least 1200 °F (650 °C) and shall be asbestos free, mineral wool type, suitable for application to steel.
- E9.6 The second insulation layer shall be rated for a maximum operating temperature of at least 1000 °F (537 °C) and shall be asbestos free, mineral wool type, suitable for application to steel.
- E9.7 All layers of insulation at and within 6 inches of insulation protection shields used to directly support the pipe shall have a minimum compression resistance of 550 pounds per square foot (28 kPa) at 10% deformation as per ASTM C165.
- E9.8 Calcium Silicate insulation shall not be used unless specifically approved by the Contract Administrator or the City.

- E9.9 Cement type insulation shall be asbestos free and be rated for a minimum 1200 °F (650°C) continuous operation.
- E9.10 All flanges to be steel, standard ANSI class 125 / 150 with raised gasket face.
- E9.11 All flange fasteners to be steel.
- E9.12 Exhaust pipe gaskets shall be Garlock Heat Shield or approved equivalent in accordance with B6.
- E9.13 All exhaust pipe supports shall have saddles designed for the insulation and jacket in use, or as shown on the drawings. Saddles shall not be in direct contact with the internal exhaust pipe, except as specified on the drawings for rigid pipe supports.
- E9.14 Silencers
 - E9.14.1 The silencers shall be aluminized steel "industrial grade" low pressure drop exhaust silencers with 10" flanged connectors, end-in end-out configuration.
 - E9.14.2 The silencers shall provide a minimum sound attenuation of 15 dBA.'
 - E9.14.3 The pressure drop over the silencer shall be less than 1 kPa (4" W.C.) at the maximum rated engine exhaust flow.

E10. SYSTEM TESTING

- E10.1 After completing the installation of the insulation and jacketing, the Contractor shall perform an airflow test to confirm continuity of the air gap around the exhaust pipe as follows.
 - (a) Provide a suitable calibrated fan or blower and measuring instruments, and a leak proof connection to direct the airflow into the start of the air gap system near the engine.
 - (b) Provide a minimum flow of approximately 47 LPS (100 CFM) at 25 Pa (0.1" W.C.) at the engine end.
 - (c) Measure air flow at the outlet of the air gap system.
 - (d) The air gap system shall be considered accepted if a minimum flow of 90% of the inlet flow is measured at the outlet of the air gap system.
- E10.2 Once the air flow tests are successfully concluded, the engine is to be operated for a period of approximately 85 hours, equivalent to five (5) days of operation to provide the potable water flow normally achieved by the pump, as defined by the City of Winnipeg historical information. Upon completion of 85 hours of run time without incident, Form 103 - Certificate of Equipment Satisfactory Performance to be executed by the Contractor.

E11. WARRANTY

- E11.1 Within 4 weeks prior to the warranty expiry date the Contractor shall, in the presence of the City and the Contract Administrator, perform an inspection for deficiencies on the exhaust installation.
- E11.2 The Contractor shall make good all such deficiencies within a period of 4 weeks from the inspection date.
- E11.3 A Certificate of Acceptance shall be issued upon expiration of the Warranty period and resolution of all the identified deficiencies.

E12. FORMS

- E12.1 The following form will be used as part of the Contract.

Form 103 – Certificate of Equipment Satisfactory Performance

**CERTIFICATE OF EQUIPMENT SATISFACTORY PERFORMANCE
FORM 103**

We certify that the equipment listed below has been validated and has been operated for at least five consecutive operating days as defined in the Bid Opportunity and that the equipment operates satisfactorily and meets its Basic Design Criteria. No defects in the equipment were found. The equipment is therefore classed as "conforming".

Project: _____

Item of Equipment: _____

Tag No.: _____

Reference Specification: _____

(Authorized Signing Representative of the Contractor) (Date)

(Authorized Signing Representative of the Installation Contractor) (Date)

(Authorized Signing Representative of the Contract Administrator) (Date)

(Authorized Signing Representative of the City) (Date)