



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 16-2006**

**SUPPLY, DELIVERY AND INITIAL START-UP INSPECTION OF PORTABLE  
PUMPING UNITS**

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## **PART B - BIDDING PROCEDURES**

### **B1. PROJECT TITLE**

B1.1 SUPPLY, DELIVERY AND INITIAL START-UP INSPECTION OF PORTABLE PUMPING UNITS

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, February 2, 2006.

B2.2 Bid Submissions determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. ENQUIRIES**

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

B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

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

### **B4. ADDENDA**

B4.1 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.

B4.2 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.

B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda shortly before submitting his Bid.

B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

## **B5. SUBSTITUTES**

- B5.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 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.
- B5.4 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.
- B5.5 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.
- B5.6 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.
- B5.6.1 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.
- B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B13.
- B5.9 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. BID SUBMISSION**

- B6.1 The Bid Submission consists of the following components:

- (a) Form A: Bid;
  - (b) Form B: Prices;
- B6.2 All components of the Bid Submission 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 in ink, to constitute a responsive Bid.
- B6.3 The Bid Submission shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B6.3.1 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.
- B6.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B6.5 Bid Submissions shall be submitted to:  
The City of Winnipeg  
Corporate Finance Department  
Materials Management Branch  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

**B7. BID**

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 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.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.
- B7.3 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.
- B7.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
  - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
  - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers 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.

B7.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.

B7.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.

B7.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

## **B8. PRICES**

B8.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B8.1.1 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.

B8.1.2 Prices on Form B: Prices shall not include the Manitoba Association for Resource Recovery Corporation (MARRC) Environmental Handling Charge (EHC) which shall be extra where applicable.

B8.2 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.

B8.2.1 The City reserves the right to increase the quantities of the "Portable Pumping Units" on Form B: Prices from four (4) to a maximum of six (6) units, at the unit price indicated, providing sufficient budget funding is available.

B8.2.2 If the Total Bid Price of the Low Bidder exceeds The City's Budget funds for this contract, the City then reserves the right to decrease the quantities listed on Form B: Prices, at the unit prices indicated, until the Total Bid Price is within available Budget funding.

B8.3 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. QUALIFICATION**

B9.1 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;
- (b) be responsible and not be suspended, debarred or in default of any obligation to the City;

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

B9.2 The Bidder shall be prepared to submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B9.3 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

#### **B10. OPENING OF BIDS AND RELEASE OF INFORMATION**

B10.1 Bid Submissions will not be opened publicly.

B10.2 Within two (2) Business Days 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

#### **B11. IRREVOCABLE BID**

B11.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B11.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

## **B12. WITHDRAWAL OF BIDS**

- B12.1 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.
- B12.1.1 Notwithstanding GC.7.05(2), 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.
- B12.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B12.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:
- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
  - (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B12.1.3(b), declare the Bid withdrawn.
- B12.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B11.2 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.

## **B13. EVALUATION OF BIDS**

- B13.1 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 (pass/fail);
  - (c) Total Bid Price;
  - (d) economic analysis of any approved alternative pursuant to B5.
- B13.2 Further to B13.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.
- B13.3 Further to B13.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.
- B13.4 Further to B13.1(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.
- B13.4.1 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.
- B13.5 This Contract will be awarded as a whole.

**B14. AWARD OF CONTRACT**

- B14.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B14.2 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.
- B14.2.1 Without limiting the generality of B14.2, 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.
- B14.3 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.
- B14.4 Notwithstanding D2, the type and quantity of Work to be performed under this Contract is subject to approval of monies in a budget by Council.

## **PART C - GENERAL CONDITIONS**

### **C1. GENERAL CONDITIONS**

C1.1 The *General Conditions for the Supply and Delivery of Goods* (Form 21: 88 03) are applicable to the Work of the Contract.

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

## PART D - SUPPLEMENTAL CONDITIONS

### GENERAL

#### D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for the Supply and Delivery of Goods*, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.2 The General Conditions are amended by striking out "The City of Winnipeg Act" wherever it appears in the General Conditions and substituting "The City of Winnipeg Charter".
- D1.3 The General Conditions are amended by striking out "Board of Commissioners" or "Commissioner" wherever it appears in the General Conditions and substituting the "Chief Administrative Officer".
- D1.4 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.5 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.6 The General Conditions are amended by striking out "Bidding Instructions" wherever it appears in the General Conditions and substituting "Bidding Procedures".

#### D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of the supply, delivery and initial operating inspection of four (4) diesel powered Portable Pumping Units, mounted on trailer towing chassis complete with wheels, hitches, lights and ready to be put into immediate service by the City.
- D2.2 The major components of the Work are as follows:
- (a) Supply and delivery of the pumping units and accessories.
  - (b) Provide initial start-up inspection by manufacturer's representative.
  - (c) Provide operator training for use of equipment.

#### D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**Business Day**" means any Calendar Day, other than a Saturday, Sunday, or a Statutory or Civic Holiday;
  - (b) "**Submission Deadline**" and "**Time and Date Set for the Final Receipt of Bids**" mean the time and date set out in the Bidding Procedures for final receipt of Bids;

#### D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is:
- Mr. Doug Berg, C.E.T.  
Design and Construction Technologist  
849 Ravelston Avenue W. R3W 1S8  
Telephone No. (204) 986-4452

Facsimile No. (204) 986-5345

## **D5. NOTICES**

- D5.1 GC.7.05 is hereby amended to delete reference to "registered mail" and to replace same with "ordinary mail".
- D5.2 GC.7.05 is further amended hereby to include delivery by facsimile transmission (fax) as an acceptable means of delivering notices, consents, approvals, statements, authorizations, documents or other communications required or permitted to be given under this Contract. Deliveries by fax will be deemed to have been received on the day of delivery, if a business day, or if not a business day, on the business day next following the day of delivery.
- D5.3 Further to GC.7.05, all notices, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.4, D5.5 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.
- D5.4 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:  
The City of Winnipeg  
Chief Administrative Officer Secretariat  
Administration Building, 3rd Floor  
510 Main Street  
Winnipeg MB R3B 1B9  
Facsimile No.: (204) 949-1174
- D5.5 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:  
The City of Winnipeg  
Corporate Services Department  
Legal Services Division  
185 King Street, 3rd Floor  
Winnipeg MB R3B 1J1  
Facsimile No.: (204) 947-9155

## **SUBMISSIONS**

### **D6. 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.

## **SCHEDULE OF WORK**

### **D7. COMMENCEMENT**

- D7.1 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.

**D8. CRITICAL STAGES**

D8.1 Delivery of all the portable pumping units and accessories shall be by April 18, 2006.

**D9. LIQUIDATED DAMAGES**

D9.1 If the Contractor fails to achieve the delivery date specified in D8.1, the Contractor shall pay the City five hundred dollars (\$500.00) per pumping unit per Calendar day for each and every Calendar day following this date during which such failure continues.

D9.2 The amount specified for liquidated damages in D9.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Critical Stage by the day specified.

D9.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

**MEASUREMENT AND PAYMENT**

**D10. PAYMENT SCHEDULE**

D10.1 Further to GC.9.01 and GC.9.03, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice

**WARRANTY**

**D11. WARRANTY**

D11.1 Further to GC.10.01, if a defect or deficiency prevents the full and normal use or operation of the Work or any portion thereof, for purposes of calculating the warranty period, time shall be deemed to cease to elapse for the defective or deficient portion, and for any portion of the Work whose use or operation is prevented by such defect or deficiency, as of the date on which the defect or deficiency is observed or the use or operation is prevented and shall begin to run again when the defect or deficiency has been corrected or the Work may be used or operated to the satisfaction of the Contract Administrator.

D11.2 Notwithstanding GC.10.01, GC.10.02 and D11.1, if any law of Manitoba or of the jurisdiction in which the Work was manufactured requires, or if the manufacturer provides, a longer warranty period or a warranty which is more extensive in its nature, then the provisions of such law or manufacturer's warranty shall apply.

## **PART E - SPECIFICATIONS**

### **GENERAL**

#### **E1. GENERAL**

E1.1 These Specifications shall apply to the Work.

#### **E2. GOODS**

E2.1 The Contractor shall supply four (4) identical, portable pumping units mounted on trailer towing units in accordance with the Specifications.

#### **E3. DELIVERY**

E3.1 Goods shall be delivered F.O.B., destination and freight prepaid to the Water Services Division Stores compound located at 552 Plinguet Street, Winnipeg, Manitoba.

E3.2 Goods shall be delivered between 8:30 a.m. and 4:30 p.m. on Business Days. The successful bidder shall give forty-eight (48) hours notice to the Contract Administrator before delivery so that arrangements for receiving can be made.

E3.3 The Contractor shall off-load goods and place into storage at the delivery location as directed by the Contract Administrator or representative.

E3.4 The Contractor shall carefully prepare equipment for shipment as follows:

- (a) Clearly tag and identify each item.
- (b) Cover or plug openings in equipment.
- (c) Securely crate or strap equipment to pallets and cover to prevent movement and damage during transport.
- (d) Ensure corners or castings do not extend beyond crate or pallet.
- (e) Provide suitable lifting hooks for handling crates, pallets and any other heavy pieces.
- (f) All equipment shall be delivered complete with fuel, oil, coolant and all other fluids and accessories required for the pumping units to be put into immediate operation by the City.

E3.5 The Contract Administrator or a representative will inspect and record the condition of all equipment upon delivery and will reject equipment found to be damaged to the extent that it cannot be put into the use for which it was intended.

E3.6 The Contract Administrator or representative will check for sphere handling capability by passing a wooden test sphere through each pump. Pumps not passing the required sphere size will be rejected.

E3.7 The Contractor shall take possession of rejected equipment, make the necessary arrangements and pay the costs for prompt repair and return or replacement of the equipment so as not delay date to be put into operation by the City and to the Contract Administrator's satisfaction.

E3.8 The Contractor shall promptly repair superficially damaged equipment at their own expense and to the Contract Administrator's satisfaction so as not to delay date to be put into operation by the City.

#### **E4. SHOP DRAWINGS**

- E4.1 The Contractor shall submit shop drawings for all equipment to be supplied to the Contract Administrator for review before equipment is produced for this Contract.
- E4.2 The Contractor shall, at the time of submission, inform the Contract Administrator in writing of any deviation in the shop drawings from the requirements of the contract documents.
- E4.3 The Contractor shall submit five (5) prints on a sheet size appropriate for item and information being depicted or an electronic file in a format acceptable to the Contract Administrator within two (2) Business Days of request for such drawings.
- E4.4 Show following information in the lower right hand corner of each shop drawing
- (a) Drawing Title.
  - (b) City's project number.
  - (c) City's Purchase Order Number.
  - (d) Manufacturer's name and description or model number of the item.
  - (e) Serial number(s) of equipment.
  - (f) Date (to be revised per resubmission)
- E4.5 The Contract Administrator will review the shop drawings and will release them for construction within three (3) Business Days so as to cause no delays. The review is only for conformance with the design concept of the project and with the information given in the specifications. The Contract Administrator's review of a separate item shall not indicate approval of an assembly in which the item functions.
- E4.6 Make any corrections required by the Contract Administrator and resubmit the specified number of corrected copies of each shop drawing. Direct specific attention in writing or on resubmitted shop drawings for revisions other than the corrections requested by the Contract Administrator on previous submissions.
- E4.7 By approving and submitting shop drawings, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data, or will do so, and that he has checked and coordinated each shop drawing and sample with the requirements of the work and of the specifications.

#### **E5. OPERATING AND MAINTENANCE MANUALS**

- E5.1 The Contractor shall provide the Contract Administrator with seven (7) copies of the manufacturer's operating and maintenance manuals containing technical literature for the equipment supplied and detailing correct operating procedures, recommended maintenance schedules, grades of lubricants required and assembly/disassembly instructions.
- E5.2 The Contractor shall provide all of the operating and maintenance manuals at the time of delivery.

#### **E6. OPERATING AND MAINTENANCE TRAINING SESSIONS**

- E6.1 The Contractor shall arrange to provide a technical representative from the pumping equipment manufacturer to instruct two separate operator training sessions for City staff on the safe and correct use of the equipment, including regular maintenance of equipment.

- E6.2 The training sessions shall be a maximum of ½ day in duration and be completed during the normal business hours of 7:00 a.m. to 6:00 p.m., Monday to Friday. The location of the training sessions will be at 552 Plinguet Street, Winnipeg, Manitoba.
- E6.3 Dates and times of the training sessions shall be made through the Contract Administrator at times that are convenient by attendance of City staff responsible for operating the equipment. The training sessions will be held within two weeks of accepted delivery of equipment and successful completion of initial start-up inspection.
- E6.4 The cost of the two operating and maintenance training sessions shall be included on Form B: Prices for "Portable Pumping Units".
- E6.4.1 If the Contract Administrator determines that additional training sessions are required for City staff, then the Contractor will provide additional training sessions at times and dates determined by the Contract Administrator within thirty (30) days of accepted delivery of equipment and successful completion of initial start-up inspection.
- E6.4.2 The cost of the additional operating and maintenance training sessions shall be paid for on Form B: Prices at the unit bid price for "Additional Operator Training Sessions".
- E6.5 Final payment for the pumping equipment will be made only after the successful completion of the operator training sessions.

## **E7. PUMP TESTS AND INITIAL START-UP INPECTION**

### **E7.1 Testing Methods**

- E7.1.1 Pump tests shall be conducted in accordance with Hydraulic Institute Standards - Centrifugal Pumps Test Code. All definitions for the purpose of testing shall be as set forth by Hydraulic Institute Standards - Centrifugal Pumps Ratings.

### **E7.2 Shop Tests**

- E7.2.1 Each pump shall be tested in the manufacturer's shops over the range of operation from shut-off to run-out. A certified test curve in duplicate showing the head, capacity, pump efficiency and power for each pump shall be furnished to the Contract Administrator for approval prior to the pumps being shipped. Test curves shall be signed by the pump manufacturer's official responsible for the test.
- E7.2.2 Final payment for the pumping equipment will be made only after the Contract Administrator has received the certified test curve for each pump supplied.

### **E7.3 Field Tests**

- E7.3.1 Field tests will be performed on each pumping unit as soon as possible after the Contractor has supplied and delivered the pumping units. Field tests will be to determine and check for the following.
- (a) Capacity.
  - (b) Noise (bearing, mechanical seal, cavitation, other).
  - (c) Vibration.
- E7.3.2 The liquid pumped during the field test will be water or raw sewage with a density taken to be 1.00 kilogram per litre.
- E7.3.3 If the field pump tests indicate the equipment supplied does not meet the requirements specified in E8, the Contractor shall promptly correct the problem at his expense to the Contract Administrator's satisfaction.

- E7.3.4 If the Contractor is not satisfied with the procedure of the tests or the City's interpretation of the results thereof, the Contractor may have the tests repeated, or their interpretation referred to a referee acceptable to both the City and himself. The cost of the services of such referee shall be borne by the City if the referee rules that the tests as reported by the City were to the detriment of the Contractor, but if otherwise, the Contractor shall pay the cost of the services of the referee and of repeating the tests. The decision of the referee shall be final and binding both on the City and the Contractor.
- E7.4 The Contractor shall provide the services of a qualified technical representative from the portable pumping unit manufacturer to be present at the initial start-up of each pumping unit supplied under this contract.
- E7.4.1 The Contractor shall allow for one (1) full working day of supervision for each pumping unit.
- E7.4.2 The representative shall perform an inspection of the pumping units and associated equipment and materials to ensure they have been properly installed, in accordance with the manufacturer's instructions, conduct and document, rotation and speed tests, check for unusual vibration or noises and instruct City personnel in the operation and maintenance of the equipment.
- E7.4.3 The price provided for "Pump Tests and Initial Start-up Inspection" shall cover all costs associated with this item of work including travel expenses, accommodations, meals, and wages.
- E7.5 After successfully completing the pump tests and initial start-up inspections on the pumping units supplied and delivered, to the satisfaction of the Contract Administrator and the manufacturer's Representative, the Contractor will proceed to ensure that all pumping units are fully fuelled and all necessary fluids, such as oil and coolant, are correctly filled according to the manufacturer's recommendations for correct operations and the units should be immediately ready to be put in service by the City.

## **E8. PORTABLE PUMPING UNITS**

- E8.1 General Requirements
- (a) Four (4) identical portable pumping units mounted on approved trailers, in accordance with these specifications are required.
  - (b) The units will be used to pump water or raw sewage having a temperature range of 0° to 30°C.
  - (c) The pumps must be self-priming and capable of running totally dry for periods up to 24 hours of continuous operations.
  - (d) All pumping units shall be equipped with a 45 degree elbow on the suction line.
  - (e) Each pump shall be a single stage, non-clogging, centrifugal flow, horizontal mounted, pump close-coupled to a diesel motor in line with the pump with a direct connected intermediate drive plate.
  - (f) Manufacturer's shall be Godwin, Gorman-Rupp, Power Prime, Monarch or approved equal.
- E8.2 Pumps
- E8.2.1 General pump specifications as follows:
- (a) Rated capacity: 63 l/s (1000 US gpm) at 27.4 meters (90 feet) Total Head
  - (b) Minimum Vertical Suction Lift 6.1 metres (20 feet)
  - (c) Rotation (viewed from above): Clock-wise

- |   |                             |
|---|-----------------------------|
| (d) Type of impeller:                           | non-clog                    |
| (e) Operating Speed (Maximum)                   | 2200 rpm                    |
| (f) Size of sphere pump<br>impeller shall pass: | 75mm dia.                   |
| (g) Required size of Suction and Discharge:     | 150mm dia.                  |
| (h) Net Positive Suction<br>Head Available:     | 3.7metres (12 feet) maximum |
| (i) Self Priming                                | Automatic                   |

#### E8.2.2 Casings

- (a) Pump casings shall be cast iron conforming to ASTM Specification A 48, for Gray Iron Castings, Class 30 or approved equal.
- (b) The pump casing shall be of the centrifugal volute type of ample thickness and rigidity to withstand stresses due to hydraulic forces, weight of hose piping, erection loads, operating and testing.
- (c) The casings shall be so proportioned that the change in energy of the sewage from the kinetic form as it leaves the impeller, to the pressure form as it leaves the casing will take place gradually without eddy formation or shock. It shall be so designed that radial forces of the impeller shaft and bearings shall be balanced. Inside water passages shall be smooth and free from any projections.
- (d) The front head shall permit equal distribution of sewage to all parts of the impeller without the use of stationary guides or vanes on the suction side of the impeller.
- (e) The casing shall be designed to permit the removal of the rotating assembly without disturbing the suction and discharge piping.
- (f) The volute shall be equipped with a handhole to permit access to the inside for cleaning and unclogging of the volute. A tapped 10mm NPT hole shall be provided on the top of the volute to allow trapped air within the volute to be bled off. The tapped hole shall be provided with a suitable length of brass pipe and a shut off ball valve.
- (g) The fully assembled casing shall be shop tested and certified to successfully withstand a hydrostatic test pressure of not less than 1.5 times the shut-off head of the largest impeller size as shown by the characteristic curve.
- (h) The casing shall be equipped with a lifting ring or lug capable of lifting the entire pumping unit from the motor and trailer mount.

#### E8.2.3 Backhead and Stuffing Box

- (a) The backhead shall be a separate piece from the volute casing and of cast iron conforming to ASTM Specification A 48, for Gray Iron Castings, Class 30 or approved equal.
- (b) The backhead shall be designed to rigidly support the bearing frame and be a self-centering and self-indexing fit with the volute casing to ensure proper alignment.
- (c) A minimum of two large openings opposite each other adjacent to the stuffing box shall be provided to allow access for maintenance.
- (d) Provision shall be made on the backhead for external axial adjustment of the rotating element to maintain proper clearance between the impeller and front head wearing rings.
- (e) The stuffing box shall be integral with the backhead and suitable for the use of a double mechanical seal and provided with a bolt down two piece split gland plate.

- (f) Tapped 10mm NPT inlet and vent holes complete with suitable lengths of brass pipe and shut-off ball valves shall be provided on the stuffing box for seal water inlet and outlet.
- (g) The stuffing box shall be provided with a tapped drain hole.

#### E8.2.4 Bearing Frame

- (a) Bearing frame shall be cast iron conforming to ASTM Specification A 48, for Gray Iron Castings, Class 30 or approved equal machined for accurate and permanent bearing alignment completely enclosing the shaft between the bearings.
- (b) The bearing frame shall be designed to rigidly support the motor adapter frame and be a self-centering and self-indexing fit with the backhead to ensure proper alignment.
- (c) Provide lip type grease seals in contact with the shaft complete with grease fittings for bearing lubrication.

#### E8.2.5 Suction and Discharge

- (a) Suction and discharge shall be flanged, faced and drilled to conform to ANSI B 16.1 (Class 125) with quick connect/disconnect fittings.
- (b) Pumps shall be equipped with a 45° suction elbow and a handhole to permit access to the suction side of the impeller for cleaning and inspection. Both suction and discharge lines shall be equipped with quick connect/disconnect camlock fittings.
- (c) Gauge connections, tapped for 10mm NPT threaded pipe, shall be provided on each suction and discharge nozzle located close to flanges. Tapped holes shall be provided with suitable removable plugs.

#### E8.2.6 Impeller

- (a) The impeller shall be fabricated from cast iron conforming to ASTM Specification A 48, for Gray Iron Castings, Class 30 or approved equal. The cast iron shall contain not less than 3 percent nickel.
- (b) The impeller shall be of the non-clog enclosed channel type. The impeller shall be cast in one piece and shall be balanced both statically and dynamically. If the impeller supplied has been trimmed from a larger impeller, it shall be trimmed over its full height, no lip or protrusion shall be left around the bottom edge. Trimmed impellers shall be balanced after trimming. The impeller shall be machined and polished to a smooth finish.
- (c) The impeller shall be designed to ensure smooth operation without cavitation or vibration and shall be keyed securely to the tapered shaft and held in place by an impeller nut and stainless steel set screw. The impeller nut shall be dome shaped with a smooth face and blend into the hub so as not to allow any stringy material to accumulate around the nut. Hex shaped nuts shall not be used. The assembly of the impeller and shaft shall be so constructed and the parts so interlocked that the impeller cannot become loosened by torque resulting from rotation.

#### E8.2.7 Wear Rings

- (a) Removable wear rings of the axial or radial type shall be provided for the front head and impeller. Wear rings shall be fabricated from stainless steel conforming to ASTM Standard A296, for Corrosion-Resistant Iron Chromium, Iron-Chromium-Nickel, and Nickel-Base Alloy Castings for General Application, Grade CA-15 or approved equal.
- (b) The rings shall be machined for a close fit to minimize the leakage of sewage from the discharge to the suction. The rings shall be attached in such a way as to allow for ready adjustment or replacement and to prevent loosening under normal operation or under reverse pump rotation. The impeller ring hardness shall be not less than 300 Brinell and shall exceed the front head ring hardness by not less than 50 Brinell.

#### E8.2.8 Shaft Assembly

- (a) The shaft assembly shall be fabricated from steel conforming to ASTM A108, Grade 1141 or approved equal.
- (b) The shaft shall be of sufficient diameter to assure rigid support of the impeller and to transmit loads without slip, vibration or undue deflection at all operating speeds and loads.
- (c) The shaft shall be accurately machined along its entire length and keyways shall be provided at both ends.
- (d) A replaceable shaft sleeve fabricated from stainless steel conforming to ASTM A296, Grade CA-15 or approved equal shall be provided where the shaft passes through the stuffing box. The hardness shall not be less than 350 Brinell.
- (e) Shaft sleeve shall be fitted and securely fastened in place after shaft grinding and sealed to prevent leakage between the sleeve and shaft.
- (f) The shaft sleeve shall extend no less than 2mm above the top of the gland cover.

#### E8.2.9 Bearings

- (a) Bearings shall be of the heavy duty anti-friction type suitable for oil or grease lubrication. Radial bearings shall be of the self-aligning plain roller or ball type and thrust bearings shall be of the tapered roller or angular contact type. All bearings shall be amply proportioned for all possible loads without undue heating and shall be rigidly supported so as to counteract any possible tendency towards vibration. Duplex bearings, if used, shall be ground and matched.
- (b) Lubrication shall be adapted to the operation of the units without full-time attendance.
- (c) The bearings shall be designed for a B-10 life of not less than 100,000 hours in accordance with AFBMA.

#### E8.2.10 Mechanical Seals

- (a) The pumps shall be equipped with double mechanical seals. The primary and secondary sealing faces shall be carbon to ceramic. Seals shall be as manufactured by John Crane, Durametallic or approved equal.
- (b) Seals shall be capable of withstanding minimum suction pressures of 100 psi.
- (c) Seals shall be cooled and lubricated by in an oil bath reservoir requiring no maintenance or adjustment.
- (d) Pump shall be capable of running dry, with no damage, for continuous periods of up to 24 hours.

#### E8.2.11 Pump Gaskets

- (a) Shall be a compressed fibre and/or Teflon or an approved equal material.

#### E8.2.12 Pump O-Rings

- (a) Shall be Viton or an approved equal material.

#### E8.2.13 Non-Return or Check Valve

- (a) Pump shall be supplied with a check valve mounted on the suction inlet of the pump, allowing unrestricted flow into the impeller.
- (b) The check valve shall prevent in-line return of flow when the pump is shut off.
- (c) Check valve elastomers shall be nitrile rubber and be field replaceable.

#### E8.2.14 Level Sensors

- (a) Pumping units to be able to operate automatically from remote level sensors.

- (b) Level sensors will have a dry set of contacts.

E8.2.15 Nameplates

- (a) Durable metal nameplates shall be securely attached to each pumping unit supplied. Pump nameplates shall indicate the serial number, capacity, head, rpm, and other pertinent data.

E8.2.16 Pump Support

- (a) To be rigid structural steel mounted to trailer.

E8.3 Motors

E8.3.1 General motor specifications as follows:

- (a) Engine: Air or Liquid Cooled, Four Cycle Diesel Engine
- (b) Governor: Mechanical
- (c) Starter: 12 volt electric
- (d) Fuel Tank Capacity: see section E8.3.5(a)
- (e) A certified continuous duty engine curve shall be supplied to the Contract Administrator.

E8.3.2 Engines

- (a) Diesel engines shall be of the same model type by a single manufacturer for all pumping units.
- (b) Manufacturers shall be John Deere, Deutz or approved equal

E8.3.3 Governor

- (a) Shall be mechanical type.
- (b) Engine speed shall be adjustable to operate the pump between maximum and minimum design operation speeds.

E8.3.4 Starter

- (a) The 12 volt electric starting system shall include an adequately sized battery and alternator capable of deep cycle charging.

E8.3.5 Fuel Tank

- (a) Integral trailer fuel tank capacity shall be sufficient to provide a minimum of 24 hours operating time at full load.
- (b) Fuel tank shall come with a lockable, tamper-proof filling cap. Contractor to provide two (2) keys per pumping unit and all pumping units shall be identically keyed for ease of refuelling operations.
- (c) Fuel tank storage located directly above the engine will not be acceptable.

E8.3.6 Exhaust

- (a) Exhaust systems shall include mufflers and silencers sized for engine.
- (b) Exhaust systems to come with muffler guards and weather caps.

E8.3.7 Security

- (a) Operator control/instrument panels shall come with a lockable, tamper-proof metal cover or shield to prevent unauthorized use or tampering of equipment during usage.
- (b) Battery to come with a lockable, tamper-proof metal cover or container for protection.

- (c) Pumping units to have a keyed on/off switch. All locks for the fuel tank, control/instrument panel and battery covers shall be keyed identically to facilitate ease of operation and maintenance. Contractor to provide two (2) security keys per pumping unit.

#### E8.3.8 Operating Features

- (a) Each pumping unit engine shall be equipped with the following:
  - (i) Low oil pressure safety shut-down switch.
  - (ii) High coolant temperature safety shut-down switch.
  - (iii) Instrument panel shall include Tachometer, Hourmeter, Coolant Temperature Gauge, Oil Pressure Gauge, Voltmeter, Throttle Control and On/Off Key Switch.

#### E8.3.9 Nameplates

- (a) Durable metal nameplates shall be securely attached to each engine motor supplied. Engine nameplates shall indicate the serial number, displacement, horsepower, rpm, and other pertinent data.

#### E8.4 Trailers

E8.4.1 The trailers shall comply with all Canadian Motor Vehicle Safety Standards (C.M.V.S.S.) and the Manitoba Highway Traffic Act regulations and requirements.

E8.4.2 The pumping unit trailers shall include the following as a minimum:

- (a) Fabricated structural steel frame components sized to handle all weight and operational loads.
- (b) Single axle with torsion bar or leaf spring suspension located for proper weight distribution and adequately sized for the safe required load range ratings.
- (c) Trailer hitch shall be a 76 millimetre (I.D) Lunette Eye type for use with a pintle style receiving hitch on the towing vehicle.
- (d) Front and rear retractable, crank operated swivel jacks of adequate size and strength, capable of stabilizing the pumping unit during maximum pumping operations.
- (e) 12 volt electrical system complete with round (25 millimeter dia.), six-pin trailer connection plug for towing vehicle. All trailer wiring shall be secured, loomed and protected from wear points, soldered and sealed with heat shrink tubing.
- (f) Trailer wiring and lighting to meet all regulations. Trailer to be complete with tail, brake, turn signal, clearance and licence plate lights.
- (g) Licence plate bracket c/w light.
- (h) Surge brakes with reverse lockout and a self-contained actuator system to automatically engage trailer brakes when slowing down.
- (i) Fabricated steel wheel fenders.
- (j) Access steps to have non-skid pads or coatings.
- (k) Radial tires to be adequately sized for safe required load range ratings, capable of handling speeds in excess of 80 kilometres per hour (kph) and able to meet all other regulations. Wheel rims shall be a minimum 0.381 meters (15 inch) diameter and have a five (5) hole bolt pattern.
- (l) Safety chains and hooks for towing operations.

E8.5 Supply and delivery of the portable pumping units as detailed in section E8 will be measured for payment on a unit basis at the Contract Unit Price for "Portable Pumping Units". Number of

units to be paid for will be the total number of units supplied and delivered in accordance with this specification, accepted and measured by the Contract Administrator.

**E9. PAINT**

- E9.1 Pumping unit, engine, base and trailer shall be shop primed and finish painted at the place of manufacture.
- E9.2 Materials and thickness for prime coat and finish coat shall be in accordance with the manufacturer's standards.
- E9.3 Nameplates shall not be painted over.

**E10. SPARE PARTS**

- E10.1 The Contractor shall provide the following spare parts for the portable pumping units:
  - (a) 2 sets of wear rings.
  - (b) 2 mechanical seals.
  - (c) 2 impellers.
  - (d) 2 volute gaskets
  - (e) 2 suction valves
- E10.1.2 Spare parts shall be properly packaged to resist damage and the package shall be clearly identified as to its contents.
- E10.1.3 Spare parts shall be identical to those supplied in the pumping units.

**E11. TOOLS AND ACCESSORIES**

- E11.1 The Contractor shall provide any special tools or accessories required for maintenance, adjustment, assembly or disassembly of the equipment supplied.