



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 248-2007

**SUPPLY AND DELIVERY OF CHLORINE RAILCAR EMERGENCY ISOLATION
SYSTEM COMPONENTS**

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	3

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Enquiries	1
B4. Addenda	1
B5. Substitutes	2
B6. Bid Submission	2
B7. Bid	3
B8. Prices	4
B9. Qualification	4
B10. Opening of Bids and Release of Information	5
B11. Irrevocable Bid	5
B12. Withdrawal of Bids	5
B13. Evaluation of Bids	6
B14. Award of Contract	6

PART C - GENERAL CONDITIONS

C1. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	2
D5. Notices	2

Submissions

D6. Authority to Carry on Business	2
------------------------------------	---

Schedule of Work

D7. Commencement	3
------------------	---

Measurement and Payment

D8. Payment Schedule	3
----------------------	---

PART E - SPECIFICATIONS

General

E1. General	1
E2. Goods	1
E3. Manuals	2
E4. Delivery	2
E5. Installation	2

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SUPPLY AND DELIVERY OF CHLORINE RAILCAR EMERGENCY ISOLATION SYSTEM COMPONENTS

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 16, 2007.
- 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 regularly and shortly before the Submission Deadline, as may be amended by addendum.
- 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 may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B6.4 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Branch
185 King Street, Main Floor
Winnipeg Manitoba R3B 1J1
- B6.4.1 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.
- B6.5 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178
- B6.5.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B6.6 Bid Submissions submitted by internet electronic mail (e-mail) will not be accepted.

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;

- (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.

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 unit price in Canadian funds for the Work on Form B: Prices.

B8.1.1 The price on Form B: Prices shall include:

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

B9. 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.

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 After the Submission Deadline, the names of the Bidders and their 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.

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.

B14.3.1 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.

B14.4 Notwithstanding GC.3.01 and GC.3.02, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.

B14.5 The Contract Documents, as defined in GC.1.01(7), in their entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that they are not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

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 supply and delivery of chlorine railcar emergency isolation system components as indicated in E2.

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.
- D3.2 Notwithstanding GC.1.01, when used in this Bid Opportunity:
- (a) "**CSA**" means the Canadian Standards Association that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.
 - (b) "**ANSI**" means the American National Standards Institute that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.
 - (c) "**NEMA**" means the National Electrical Manufacturers Association that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.
 - (d) "**CGA**" means the Compressed Gas Association that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.
 - (e) "**ASTM**" means the American Society for Testing and Materials" that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work.

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is:
David Crocker
Senior Project Manager
SNC-Lavalin Engineers & Constructors Inc.
148 Nature Park Way
Winnipeg, Manitoba
Canada R3P 0X7

Telephone No.: (204) 786-8080
Facsimile No.: (204) 786-7934

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 following address or facsimile number:
The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg Manitoba 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 Manitoba 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 Purchase Order authorizing the commencement of the Work.

MEASUREMENT AND PAYMENT

D8. PAYMENT SCHEDULE

- D8.1 Further to GC.9.01 and GC.9.03, payment for shall be made, in Canadian funds:
- (a) 90% payment on delivery.
 - (b) 10% payment on installation verification, after receipt and approval of contractor's invoice.

PART E - SPECIFICATIONS

GENERAL

E1. GENERAL

E1.1 These Specifications shall apply to the Work.

E2. GOODS

- E2.1 The Contractor shall supply and deliver chlorine railcar emergency isolation system components, or equivalents, in accordance with the requirements hereinafter specified.
- E2.2 Item No. 1 – shall be: six (6) automated ball valves, as manufactured by Metso, model number 730SC 31 7173 XTZ4. Valves shall be 1", standard port, with 300# flanged Monel body, Hastelloy C ball, Hastelloy C stem, high cycle extreme Teflon seats and seals, with self relieving seats for liquid chlorine and spring to close rack and pinion pneumatic actuator. Actuator shall be Metso model number VPVL200SR4/5 - LX, with Stonel limit switch / high visibility indicator, model number SR2VBLDS.
- E2.3 Item No. 2 – shall be: three (3) break away couplings, as manufactured by Hiltap, model number HTBA-10-11-F-3114. Coupling shall be 1", dry chlorine, inline breakaway type, with Hastelloy C wetted parts, carbon steel sleeve, and Viton / Teflon seals. Breakaway force shall be set for a working pressure of 375 psig, a test pressure of 750 psig, and a hose weight of 50 lb.
- E2.4 Item No. 3 – shall be: three (3) rupture disks, as manufactured by Fike. Rupture disks shall be Poly SD, 1", scored, forward acting, non fragmenting, fabricated of Monel, with a burst pressure of 350 psig at 68F. Burst tolerance shall be +/- 5%.
- E2.5 Item No. 4 – shall be: three (3) rupture disks, as manufactured by Fike. Rupture disks shall be Conventional, Prebulged, P-UT style, for union type holder, 3/4", fabricated of Monel, with a burst pressure of 400 psig at 68F. Burst tolerance shall be +/- 5%
- E2.6 Item No. 5 – shall be: three (3) rupture disk holders, as manufactured by Fike. Rupture disk holders shall be 1" ANSI Class 300, Assembly G Insert style, PSD seat, fabricated from carbon steel (base and holddown).
- E2.7 Item No. 6 – shall be: three (3) rupture disk holders, as manufactured by Fike. Rupture disk holders shall be 3/4" Union type, Assembly BU with 1" female national pipe thread inlet and outlet, rated at 3000#, fabricated from carbon steel (base and holddown).
- E2.8 Item No. 7 – shall be: one (1) nitrogen cylinder storage cabinet, of heavy duty construction, sized to safely enclose a minimum of 6 "T" size (5'-6" tall, 35 kg weight) nitrogen cylinders, with safety chain restraints. The cabinet frame shall be fabricated from structural steel angles or hollow structural sections, with a checker plate floor, steel plate roof, and expanded metal sides. Access to the cylinders shall be provided through full width doors, fitted with locks and tamper proof hardware. All carbon steel surfaces shall be primed and finished with coatings suitable for a minimum of 10 years outdoor service. The cabinet shall be equivalent in construction and capacity to High Pressure Cylinder Storage Cabinet model HP12302D, as manufactured by L. K. Goodwin Co.
- E2.9 Item No. 8 – shall be: six (6) solenoid valves, as manufactured by Asco, model number 8320G184-MB, normally closed, complete with mounting bracket.
- E2.10 Item No. 9 – shall be: three (3) pressure gauges, as manufactured by Ashcroft, model number 45 1010 S 02L 600, with 4 1/2" dial, 316 stainless steel Bourdon tube, 1/4" bottom connection, 0 to 600 psi range.

- E2.11 Item No. 10 – shall be: two (2) pressure switches, as manufactured by Barksdale, model number B1T-H-12-SS-FX, with NEMA 4X housing, ¼” NPT female pressure connection, single setpoint, 10 amp @ 120/250 VAC, adjustable range down to 50 psi, and stainless steel Bourdon tube.
- E2.12 Item No. 11 – shall be: two (2) insulated enclosures, as manufactured by Intertec, Multibox type 150SE-ASSP. Enclosure shall be 30”x20”x17”, hot pressed glassfibre reinforced polyester, insulated, with 316 stainless steel hinges and clasps, style KBBC-WP mounting plate, painted “steel white”, each complete with style WB wall mounting bracket kit.
- E2.13 Item No. 12 – shall be: two (2) filters, as manufactured by Intertec, model number KUAA-M. Filter shall be sintered metal type SM.
- E2.14 Item No. 13 – shall be: two (2) enclosure heaters, as manufactured by Intertec. Heater shall be electric, 200W, 120 V, CSA approved, with group C-D junction box, 10° celcius thermostat, mounting bracket, heating block of seawater-proof aluminum with heat transfer fins on both sides.
- E2.15 Item No. 14 – shall be: two (2) pressure relief valves, as manufactured by Anderson Greenwood Crosby, model number 951102MA, set to relieve at 125 psig, with an overpressure of 12.5 psi when flowing 210 scfm nitrogen. Relief valve shall be constructed of 316 stainless steel (body / base / nozzle), ASTM AS216 WCB steel (bonnet / cylinder), 17-7 PH SS (spring).
- E2.16 Item No. 15 – shall be: two (2) gas cylinder changeover regulators, as manufactured by Swagelok. Each regulator shall be a complete assembly consisting of one (1) changeover regulator, model number KCM1GGL412AD0010; two (2) purge valves, model number SS-4P-4T; two (2) three way valves, model number SS-43GXS4; two (2) ¼” Teflon (PTFE) hose assemblies, model number SS-4BHT-36; two (2) female connectors, model number SS-400-7-4; and two CGA-580 fittings.

E3. MANUALS

- E3.1 The Contractor shall insure the following manuals must be supplied for clauses (E2.2, E2.4, E2.5, E2.6, E2.7, E2.15 and E2.16) six (6) sets in total for each clause when delivered, and shall contain a section in **English**:
- (a) parts and service manuals, including preventative maintenance schedules for the life of the unit(s) – one (1) set required for each unit.
 - (b) Spare parts listing for all the above items – one (1) complete set.

E4. DELIVERY

- E4.1 Goods shall be delivered on this contract, f.o.b. destination, freight prepaid to:
Water and Waste
598 Plinguet Street, Winnipeg, Manitoba
- E4.1.1 Goods shall be delivered within ninety (90) Calendar Days of the placing of an order.
- E4.2 The contractor, prior to delivery, shall contact the Contract Administrator in D4.1, ten (10) Calendar Days prior to the delivery of the goods.

E5. INSTALLATION

- E5.1 Installation shall be by City of Winnipeg forces, or by a subcontractor retained by the City of Winnipeg.