



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 54-2008

**THE SUPPLY AND DELIVERY OF SACRIFICIAL ZINC ANODES AND ASSOCIATED
MATERIALS – CONTRACT NO. 9**

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
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PART D - SUPPLEMENTAL CONDITIONS

General

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

Submissions

D6. Authority to Carry on Business	2
D7. Material Safety Data Sheets	3
D8. Workplace Health and Safety Act	3

Schedule of Work

D9. Commencement	3
D10. Forfeiture of Contract	3
D11. Critical Stages	4
D12. Delivery	4
D13. Total Performance	4
D14. Liquidated Damages	4

Measurement and Payment

D15. Payment	4
D16. Payment Schedule	5

Warranty

D17. Warranty	5
---------------	---

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
E2. 45 Kg Zinc Anodes	1
E3. Bagged Anode Backfill	2
E4. Cable	3
E5. Wire Connectors	3

E6. Cable Warning Tape	4
E7. Method of Measurement and Basis of Payment	4
E8. Testing	4

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 THE SUPPLY AND DELIVERY OF SACRIFICIAL ZINC ANODES AND ASSOCIATED MATERIALS – CONTRACT NO. 9

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, March 28, 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. 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 promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B3.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

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 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 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 shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;

- B6.2 Further to B6.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B5.
- B6.3 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.
- B6.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B6.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Branch
185 King Street, Main Floor
Winnipeg MB R3B 1J1
- B6.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B6.6 Bidders are advised not to include any information/literature except as requested in accordance with B6.1.
- B6.7 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.
- B6.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.
- B6.9 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

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 should 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 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.

B8.3 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; 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.

B9.2 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B9.3 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);

B9.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B9.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B10. OPENING OF BIDS AND RELEASE OF INFORMATION

B10.1 Bids will not be opened publicly.

B10.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements or evaluated prices) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management 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 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 will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in 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 or minor informalities or irregularities 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 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.

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 sacrificial zinc anodes and associated materials.
- D2.2 The major components of the Work are as follows:
- (a) 45 kg Zinc Anodes;
 - (b) Bagged Anode Backfill;
 - (c) C-taps;
 - (d) Eye Crimps;
 - (e) Warning Tape;
 - (f) #8 Stranded Copper Cable;
 - (g) #10 Stranded Copper Cable;

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**Award Authority**" means the authority having the jurisdiction to award the Contract according to the City's by-laws, policies or procedures;
 - (b) "**Business Day**" means any Calendar Day, other than a Saturday, Sunday, or a Statutory or Civic Holiday;
 - (c) "**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;
 - (d) "**ASTM**" stands for the American Society for Testing and Materials.
 - (e) "**AWG**" stands for American Wire Gauge.

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is:

Mr. Stacy Cournoyer, P. Eng.
Design Engineer
110-1199 Pacific Avenue, Wpg., MB, R3E 3S8

Telephone No. (204) 986-2142

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 following address or facsimile number:

The City of Winnipeg
Chief Administrative Officer Secretariat
Attn: Chief Administrative Officer
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
Attn: City Solicitor
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.

D7. MATERIAL SAFETY DATA SHEETS

- D7.1 The Contractor shall provide the Contract Administrator with one (1) copy of Material Safety Data Sheets (MSDS's) for the following products to be supplied under the Contract:
- (a) Zinc Anodes
 - (b) Bagged Anode Backfill
- D7.2 The Material Safety Data Sheets shall be submitted at least two (2) Business Days prior to the commencement of Work but in no event later than the date specified in GC.3.01 for the return of the executed Contract.
- D7.3 Throughout the term of the Contract, the Contractor shall provide the Contract Administrator with revisions or updates of the MSDS's as soon as may be reasonably possible.

D8. WORKPLACE HEALTH AND SAFETY ACT

- D8.1 The Contractor shall ensure that each individual product supplied must be labelled in accordance with the requirements of the Workplace Safety and Health Act, Workplace Hazardous Materials Information System MR52/88, this information is available at The Province of Manitoba's website: <http://www.gov.mb.ca/labour/safety/actregnew.html>.
- D8.2 The Contractor shall ensure that each individual product supplied is labelled in accordance with the requirements of the Health Canada Environmental and Workplace Legislation and Guidelines Act located at The Government of Canada website: http://www.hc-sc.gc.ca/ewh-semt/index_e.html.
- D8.3 The Contractor shall ensure that each end product container supplied shall contain the following information on the label regardless of public or consumer exemptions:
- (a) product identifier (name of product);
 - (b) supplier identifier (name of company manufacturer or distributor that sold it);
 - (c) a statement that MSDS data sheets are available as per D7;
 - (d) WHMIS hazard symbols (depicting pictures of the classifications);
 - (e) risk phrases (words that describe the main hazards of the product);
 - (f) precautionary measures (how to work with the product safely);
 - (g) first aid measures (what to do in an emergency); and
 - (h) have all text in English and French.

SCHEDULE OF WORK

D9. COMMENCEMENT

- D9.1 The Contractor shall not commence any Work until he is in receipt of a notice of award from the City authorizing the commencement of the Work.
- D9.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D6;
 - (ii) the Material Safety Data Sheets specified in D7.

D10. FORFEITURE OF CONTRACT

- D10.1 Notwithstanding GC.8.02 (1) and GC.8.02 (3), the City shall have the full right and power to take the whole of the Work, or any part or parts thereof, out of the hands of the Contractor, without process or action at law, upon giving the Contractor written Notice.

D11. CRITICAL STAGES

- D11.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Delivery of the sacrificial zinc anodes and associated materials shall be June 2, 2008.

D12. DELIVERY

- D12.1 The delivery of the material may be staged, if necessary. The Contractor must deliver all the Work on or before the Total Performance date stated in D13.
- D12.2 The Contractor shall deliver and unload the material, f.o.b. destination, freight prepaid, to the City of Winnipeg storage warehouse located at 1500 Plessis Road.
- D12.3 Goods shall be delivered between 9:00a.m. and 4:00p.m. on business days only.
- D12.4 The Contractor shall off-load goods as directed at the delivery location.
- D12.5 The Contractor shall notify the Contract Administrator two (2) working days prior to delivery so that the goods may be received at the delivery location.

D13. TOTAL PERFORMANCE

- D13.1 The Contractor shall achieve Total Performance by June 2, 2008.
- D13.2 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.
- D13.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D14. LIQUIDATED DAMAGES

- D14.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City six-hundred dollars (\$600.00) per Calendar Day for each and every Calendar Day following the day fixed herein for Total Performance during which such failure continues.
- D14.2 The amount specified for liquidated damages in D14.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.
- D14.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

MEASUREMENT AND PAYMENT

D15. PAYMENT

- D15.1 Further to GC.9.03, effective January 1, 2007 the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D16. PAYMENT SCHEDULE

- D16.1 Further to 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

D17. WARRANTY

- D17.1 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.
- D17.2 Notwithstanding GC.10.01, GC.10.02 and D17.1, if any law of Manitoba or 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 provisions of such law or manufacturer's warranty shall apply.

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

E1.1 These Specifications shall apply to the Work.

E1.2 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
F-1	45 KG Zinc Anode Detail
F-2	Cable / Steel Weld Assembly

E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B5.

E2. 45 KG ZINC ANODES

E2.1 Approval

E2.1.1 All anodes supplied under this Specification shall be subject to inspection and testing by the Contract Administrator or by the Testing Laboratory designated by the Contract Administrator. There shall be no charge to the City for any materials taken by the Contract Administrator for testing purposes.

E2.1.2 If, in the opinion of the Contract Administrator, such material, in whole or in part, do not conform to the Specification detailed herein or found to be defective in manufacture or have been damaged in transit, storage or handling operations, then such material shall be rejected by the Contract Administrator and replaced by the Contractor at his expense.

E2.2 Chemical Composition

E2.2.1 Zinc Anode chemical composition shall be Type II as per ASTM B418-95. The anode shall be composed primarily of zinc. Other element impurity amounts are allowed up to the following limits:

COMPOSITION	PERCENTAGE
Aluminium	0.005% Maximum
Copper	0.002% Maximum
Iron	0.0014% Maximum
Lead	0.003% Maximum
Cadmium	0.003% Maximum
Zinc	Remainder

E2.2.2 The zinc anode ingot shall be cast with a 6.35mm diameter galvanized steel core.

E2.2.3 The galvanized steel core shall be the full length of the Anode and shall be made flush to the opposite end of the anode where the lead cable is to be connected.

E2.3 Anode Dimensions

- E2.3.1 Nominal anode ingot dimensions shall be a minimum of 63mm x 63mm x 63mm x 1.52m and shall weigh 45 kg.
- E2.4 Anode Potential
- E2.4.1 Anode open circuit potential shall be 1100 millivolts \pm 5% with respect to a copper sulphate reference electrode.
- E2.5 Anode Heat Number
- E2.5.1 The heat number shall be clearly marked on each anode. The digits shall be of a size that is legible. The digits shall also be imbedded on the surface of the anode to a depth that makes them clearly identifiable. The digits 6 & 9 shall be identified in such a way that there will be no confusion between them.
- E2.6 Anode Lead Wire
- E2.6.1 Cable Insulation
- (a) All cable insulation, except where specifically indicated otherwise, shall be provided with high molecular weight or cross-linked polyethylene insulation specifically designated for cathodic protection service. The cable shall be suitable for direct burial in corrosive soil and water, and shall conform to ASTM D 1248, Type 1, Class C, Grade 5 and CSA 22.2 – 10.38M. The outside of all wiring insulation shall be marked at intervals not exceeding 1 m to indicate the size of the conductor and the type of wire insulation.
- (b) Anode lead wire shall be No. 10 AWG, RWU or XLPE stranded (7 strand) copper conforming to DSA C22.2 No. 38M, 4 m long, and white in colour.
- E2.7 Anode Lead Wire Connections
- E2.7.1 The wire shall be crimped to the anode core with a suitable connector. The connection shall be mechanically secure before silver soldering and shall have at least one and one-half turns of wire around the anode core wire at the connection point. The entire connection shall then be insulated by a shrink sleeve and/or by filling the remainder of the recess with electrical potting compound so no part of the connection is exposed. The shrink sleeve shall overlap the cable insulation by a minimum of 15 mm. The shrink sleeve shall be of such a length as to cover all the exposed metal parts of both the lead cable and the steel core.
- E2.7.2 The wire connection must be able to withstand a minimum tensile force of 0.5 KN
- E2.8 Anode Mold
- E2.8.1 The anode mold shall be coated with such material so as not to allow any foreign particles to adhere to the zinc anode.
- E2.9 Further to D12, anodes shall be placed on the shipping pallets in such a manner as to allow for each pallet of anodes to be stacked two (2) pallets high. To protect the anode lead cables, 2 x 4 wooden spacer boards shall be used between the bottom pallet of anodes and the second pallet of anodes. The supply, delivery and off loading of the pallets complete with spacer boards shall be considered incidental to the supply, delivery and offloading of the zinc anodes.
- E3. BAGGED ANODE BACKFILL**
- E3.1 The anode backfill shall be a blended gypsum and bentonite in plastic lined bags with a total dry weight of 22.7 kg per bag with the following proportions:

Gypsum	75% \pm 1%
Powdered Bentonite	20% \pm 1%

Anhydrous Sodium Sulphate 5% ± 1%

- E3.2 The backfill shall have a grain size so that a minimum of ninety percent (90%) is capable of passing through a #20 mesh screen and a minimum of seventy percent (70%) will be retained by a #100 mesh screen.
- E3.3 Further to D12, Bagged Anode Backfill shall be placed on the shipping pallets in such a manner as to allow for each pallet of bags to be safely stacked two (2) pallets high. The supply, delivery and offloading of the pallets shall be considered incidental to the supply, delivery and offloading of the bagged anode backfill.

E4. CABLE

E4.1 Cable Insulation

- E4.1.1 All cable insulation, except where specifically indicated otherwise, shall be provided with high molecular weight and cross-linked polyethylene insulation. The cable shall be suitable for direct burial in corrosive soil and water, and shall conform to ASTM D 1248, Type 1, Class C, Grade 5 and CSA 22.2-10. 38 M. The outside of all wiring insulation shall be marked at intervals not exceeding 1m to indicate the size of the conductor and the type of wire insulation.

E4.2 Size No. 8

- E4.2.1 Cables shall be stranded copper wire conforming to ASTM B3 and ASTM B8. Required wire size is No. 8 AWG RWU90 and any colour other than black or white.
- E4.2.2 All No. 8 AWG cables shall be supplied complete with a 9mm diameter x 90mm steel stud. The steel stud shall have a hole drilled through the middle of it and silver soldered to one end of the cable. See drawing F-2. Each No. 8 AWG cable shall be four (4) metres in length.

E4.3 Size No. 10

- E4.3.1 Cables shall be stranded copper wire conforming to ASTM B3 and ASTM B8. Required wire size is No. 10 AWG RWU90 and black in colour.
- E4.3.2 All No. 10 AWG cables shall be supplied complete with a 9mm diameter x 90mm steel stud. The steel stud shall have a hole drilled through the middle of it and silver soldered to one end of the cable. See drawing F-2. Each No. 10AWG cable shall be five (5) metres in length.

- E4.4 No. 8 AWG and No. 10 AWG Cables shall be coiled (approx. 75mm diameter coils) in separate boxes with 100 coils per box.

E5. WIRE CONNECTORS

E5.1 C-Taps

- E5.1.1 Wire connectors shall be high strength copper alloy, compression lug type terminals with grey colour key for No. 8 AWG cable. Wire connectors shall be Thomas & Betts 54715 (for No. 8 cable) or equivalent in accordance with B5. The wire connectors shall be supplied separate.

E5.2 Eye Crimps

- E5.2.1 Wire connectors shall be 6mm eye crimp lugs for No. 8 AWG wire made from high conductivity electro tin plated copper, as manufactured by Thomas & Betts or equivalent in accordance with B5. The wire connectors shall be supplied separate.

E6. CABLE WARNING TAPE

- E6.1 Rolls of cable warning tape shall each be 300m long and a minimum 75 mm wide, heavy duty gauge, coloured yellow, have the following custom message printed at minimum 1m intervals: "CAUTION – CATHODIC PROTECTION CABLE BURIED BELOW". The plastic tape shall be inert and shall not degrade when exposed to alkalis, acids, and other destructive elements commonly found in soil. The ink used to print the message on the tape shall be permanent and cannot be removed by normal handling or upon prolonged burial.

E7. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- E7.1 The supply, delivery and offloading of:
- (a) Anodes shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "45 kg Zinc Anodes". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.
 - (b) Anode Backfill shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "Bagged Anode Backfill". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.
 - (c) No. 8 AWG cables shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "No. 8 Stranded Copper Cable". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.
 - (d) No. 10 AWG cables shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "No. 10 Stranded Copper Cable". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.
 - (e) Compression lug type connectors, grey in colour key, shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "C-Taps". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.
 - (f) 6mm stainless steel eye crimp lugs shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "Eye Crimps". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.
 - (g) Rolls of cable warning tape shall be measured for payment on a unit basis and paid for at the Contract Unit Price for "Cable Warning Tape". Number of units to be paid for will be total number of units delivered in accordance with this specification as measured and accepted by the Contract Administrator.

E8. TESTING

- E8.1 All material listed in Form B: Prices of this Bid shall be subject to inspection and testing by the Contract Administrator or by the Testing Laboratory designated by the Contract Administrator.
- E8.2 Other than the rolls of warning tape, two (2) additional items of each material listed in Form B: Prices shall be included with the supply, delivery and off-loading of the material to allow for random testing. There shall be no charge to the City for these materials to be used for testing purposes.