



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 320-2010

JOHN BLUMBERG SOCCER COMPLEX- FIELD NO: 4 RECONSTRUCTION

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. Site Investigation	1
B4. Enquiries	1
B5. Addenda	1
B6. Substitutes	2
B7. Bid Components	3
B8. Bid	3
B9. Prices	4
B10. Qualification	4
B11. Opening of Bids and Release of Information	5
B12. Irrevocable Bid	5
B13. Withdrawal of Bids	5
B14. Evaluation of Bids	6
B15. Award of Contract	6

PART C - GENERAL CONDITIONS

C0. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	1
D5. Contractor's Supervisor	1
D6. Notices	1

Submissions

D7. Authority to Carry on Business	2
D8. Safe Work Plan	2
D9. Insurance	2
D10. Performance Security	3

Schedule of Work

D11. Commencement	3
D12. Substantial Performance	4
D13. Total Performance	4
D14. Liquidated Damages	4
D15. Scheduled Maintenance	4

Control of Work

D16. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	5
--	---

Measurement and Payment

D17. Payment	5
--------------	---

Warranty

D18. Warranty	5
Form H1: Performance Bond	6
Form H2: Irrevocable Standby Letter of Credit	8

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
E2. Existing Work	1
E3. Borrow Soil Fill Source	1
E4. Soccer Play Season	2
E5. Layout of Work	2
E6. Site Restoration	3
E7. Site Safety	3
E8. Existing Field No: 4 Surfacing	3
E9. Earthwork and Rough Grading	4
E10. Sodding	5
E11. Irrigation System	5

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 JOHN BLUMBERG SOCCER COMPLEX- FIELD NO: 4 RECONSTRUCTION

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, May 11, 2010.

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

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

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Bidder may view the Site without making an appointment.

B3.2 The Bidder is advised that the Contractor will be required to haul fill from a private Site owned by the Catholic Cemeteries Management Inc., which Site is located on the south side of Portage Avenue, and immediately west of the west perimeter highway, as shown on drawing detail 6-L1. The Bidder shall inspect the fill Site to determine the access route and nature of all obstacles ie. boulders within the Site.

B4. ENQUIRIES

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

B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. ADDENDA

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

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.2.3 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.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.7, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

B7. BID COMPONENTS

B7.1 The Bid shall consist of the following components:

- (a) Form A: Bid;
- (b) Form B: Prices;

B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.

B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.

B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.

B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:

The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg, MB R3B 1J1

B7.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.

B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B14.1(a).

B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.

B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B7.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B8. BID

B8.1 The Bidder shall complete Form A: Bid, making all required entries.

B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

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

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

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

B8.4 Paragraph 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.

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

B8.4.2 All signatures shall be original.

B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

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

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

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

B10. QUALIFICATION

B10.1 The Bidder shall:

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

B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);

B10.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B10.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

B11.1 Bids will not be opened publicly.

B11.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

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

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

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B13. WITHDRAWAL OF BIDS

B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B13.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

- B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B14. EVALUATION OF BIDS

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B14.4.2 Further to B14.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B15. AWARD OF CONTRACT

- B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

- B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B14.
- B15.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.
- B15.4 Notwithstanding C4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B15.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the reconstruction of one soccer field at the John Blumberg Soccer Complex.

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

- (a) Loading and hauling fill from an off Site source
- (b) Rough grading and earthwork
- (c) Supply and installation of an irrigation system
- (d) Supply and installation of imported topsoil
- (e) Supply and installation of sod
- (f) Maintenance and establishment of the sod

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**Catholic Cemeteries Management Inc**" means owner of the off Site fill source;

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is Ken Rech Landscape Architects Inc., represented by:

Ken Rech
Landscape Architect
1480 Wellington Crescent, Winnipeg, Manitoba, R3N 0B3
Telephone No. (204) 489.6616
E-mail. kenrech@mts.net

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

D5. CONTRACTOR'S SUPERVISOR

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

D6. NOTICES

D6.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3,

D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.

D6.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg
Chief Financial Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174

D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg
Internal Services Department
Legal Services Division
Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

D7.1 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.

D8. SAFE WORK PLAN

D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D8.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>

D9. INSURANCE

D9.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg, Ken Rech Landscape Architects Inc., Catholic Cemeteries Management Inc., Roman Catholic Archiepiscopal Corp. of Winnipeg, and the Archdiocese of Winnipeg, added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;

- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than seven (7) Calendar Days from notification of the award of Contract by Purchase Order.

D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D10. PERFORMANCE SECURITY

D10.1 If the Contract Price exceeds twenty-five thousand dollars (\$25,000.00), the Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

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

D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D10.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of Purchase Order and prior to the commencement of any Work on the Site.

SCHEDULE OF WORK

D11. COMMENCEMENT

D11.1 The Contractor shall not commence any Work until he is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.

D11.2 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 D7;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D11.3 The Contractor shall not commence the Work on the Site before July 5, 2010.

D12. SUBSTANTIAL PERFORMANCE

- D12.1 The Contractor shall achieve Substantial Performance within thirty five (35) consecutive Working Days of the commencement of the Work as specified in D11.
- D12.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D12.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D13. TOTAL PERFORMANCE

- D13.1 The Contractor shall achieve Total Performance within forty (40) consecutive Working Days of the commencement of the Work as specified in D11.
- 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 re-inspected.
- 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 Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City five hundred dollars (\$500.00) per Calendar Day for each and every Calendar Day following the day fixed herein for Substantial 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 Substantial 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.

D15. SCHEDULED MAINTENANCE

- D15.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Sod maintenance as specified in E:10 Sodding;
- D15.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D16. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D16.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D17. PAYMENT

D17.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D18. WARRANTY

D18.1 Warranty is as stated in C13.

FORM H1: PERFORMANCE BOND
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$ _____)

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

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

BID OPPORTUNITY NO. 320-2010

JOHN BLUMBERG SOCCER COMPLEX- FIELD NO: 4 RECONSTRUCTION

which is by reference made part hereof and is hereinafter referred to as the "Contract".

NOW THEREFORE the condition of the above obligation is such that if the Principal shall:

- (a) carry out and perform the Contract and every part thereof in the manner and within the times set forth in the Contract and in accordance with the terms and conditions specified in the Contract;
- (b) perform the Work in a good, proper, workmanlike manner;
- (c) make all the payments whether to the Obligee or to others as therein provided;
- (d) in every other respect comply with the conditions and perform the covenants contained in the Contract; and
- (e) indemnify and save harmless the Obligee against and from all loss, costs, damages, claims, and demands of every description as set forth in the Contract, and from all penalties, assessments, claims, actions for loss, damages or compensation whether arising under "The Workers Compensation Act", or any other Act or otherwise arising out of or in any way connected with the performance or non-performance of the Contract or any part thereof during the term of the Contract and the warranty period provided for therein;

THEN THIS OBLIGATION SHALL BE VOID, but otherwise shall remain in full force and effect. The Surety shall not, however, be liable for a greater sum than the sum specified above.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

IN WITNESS WHEREOF the Principal and Surety have signed and sealed this bond the

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D10)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 320-2010

JOHN BLUMBERG SOCCER COMPLEX- FIELD NO: 4 RECONSTRUCTION

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
L1	Field No: 4 Reconstruction

E2. EXISTING WORK

- E2.1 In 2009 a new 100 mm diameter HDPE irrigation perimeter water supply line, complete with decoder wiring was installed south of Field No: 4 along the north side of the bottom of the berm. The Contractor will be connecting the new decoder wiring for Field No: 4 to this system.
- E2.2 There is an existing 75 mm diameter HDPE water line running along the west side of Field No: 4, and the Contractor will be connecting the zones lines to this water service. There is no decoder wiring within Field No: 4 and the Contractor will have to install the wiring along the west side of the field.

E3. BORROW SOIL FILL SOURCE

- E3.1 The City of Winnipeg has made an arrangement to purchase fill from the Catholic Cemeteries Management Inc., which has a stockpile of borrow fill located immediately south of Portage Avenue and west of the West Perimeter Highway. This fill will be supplied at no cost to the Contractor. The location of the fill is shown on drawing detail 6-L1.
- E3.2 Prior to submitting a Bid the Contractor shall investigate the Site to determine the access route to the fill and any obstacles which must be dealt with.
- E3.3 The Contractor is responsible for any damage to the existing road system and shall haul fill loads based on what the existing road system can support. Any damage to the existing road system will have to be made the governing authority's requirements. Prior to commencing any Work the Contractor is to video or photograph the existing road condition, for future reference if required.
- E3.4 Prior to excavating the Contractor shall obtain all utility clearances where the borrow fill will be excavated.
- E3.5 The Contractor is to install a temporary culvert in the north drainage ditch, to allow access across the small ditch, in order to access the Site. The culvert shall be located where there are two existing steel posts. This will allow the Contractor to close off the road approach to the Site when it is not being used with a chain and lock system. Upon completion of the Work at the borrow Site the Contractor shall remove the culvert and restore the Site to prior construction condition.

- E3.6 The fill is anticipated to be taken from the entire south edge of the existing borrow pile area. The fill is to be excavated down to a depth to the existing surrounding natural grade while maintaining a 5% - 10% slope towards the existing surrounding natural grade, to prevent water ponding.
- E3.7 Any rock, timber, or unusable fill is to be pushed aside and stockpiled in one neat pile upon completion in an area designated by the Contract Administrator.
- E3.8 Suitable borrow fill shall be clay, silt, or soil based material free of stones, roots and foreign debris, and subject to the Contract Administrator's approval.
- E3.9 The Contractor shall provide all equipment necessary to excavate, load, and haul the borrow fill to the Work area.
- E3.10 Upon completion at the borrow fill area the Site shall be left in a neat and tidy condition. All excavated unsuitable borrow material shall be piled in a location as determined by the Contract Administrator. All disturbed areas shall be graded smooth to allow for future grass cutting operations. At steep drop off edges the grade shall not exceed 2 horizontal to 1 vertical slope.

Measurement and Payment

- E3.11 Excavation, loading, and hauling of the Fill from the off Site borrow pit area will be paid on lump sum basis, and shall include all materials, equipment, temporary culverts, and all other Work incidental to the hauling of the fill from the borrow pit to the Work area. The cost for this Work shall be included in Lump Sum Unit Cost Items No. 1 "Haul Fill from Offsite Borrow Pit to Work Area".

E4. SOCCER PLAY SEASON

- E4.1 The Contractor is made aware No Work can commence on this Site until July 5, 2010 due to the facility being utilized for the spring soccer season. The Contractor must commence Work immediately on July 5 and expedite the Work as quickly as possible so the new field can re-establish and allow to be returned to play.

E5. LAYOUT OF WORK

- E5.1 The Contractor is responsible to set control lines and bench marks by means of stakes, buoys or marks and the Contractor shall make the completed Works conform to the lines and patterns shown on the drawings. The Contractor is responsible for protecting and replacing any stakes that have been removed as a result of construction or vandalism.
- E5.2 All layout Work shall be inspected and approved by the Contract Administrator prior to construction.
- E5.3 Before commencing Work the Contractor shall satisfy himself as to the meaning and correctness of all stakes and marks and no claims shall be entertained by the City of Winnipeg on account of any alleged inaccuracies. If any error is suspected in the plans, specifications or the directions of the Contract Administrator, Work shall be discontinued until the errors are rectified, but no claims shall be made on account of any delay occasioned thereby.
- E5.4 The Contractor shall locate all underground utilities prior to Construction and shall protect the same. Repair all damage to existing utilities as a result of the Contractor's Work at no cost to the City. The Contractor is made aware there are major underground hydro lines which are located along the west side of the Work area. There are two hydro poles at the northwest corner of the Work area and the hydro lines run underground to the transformers located on the north side of the baseball diamond facility.

E6. SITE RESTORATION

- E6.1 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all plant, tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the Site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator. The Contractor shall pay all costs associated with this Work.
- E6.2 Excavated fill removed from the trenches and sprinkler locations may be stockpiled in the location shown on drawing detail 1-L1, or utilized as part of the filling of Field No: 4 rough grading.

E7. SITE SAFETY

- E7.1 The Work area is a highly used Public park and athletic space and due to the inherit nature of the Site being utilized extensively by soccer players, baseball players, and recreational users, the Contractor will have to ensure all their Work and operations of equipment protects the Public and the City from harm.
- E7.2 All Work and scheduling of Work, shall be undertaken to provide the least Site disturbance or impact, and so as not to conflict with when the soccer fields and surrounding areas are being utilized.
- E7.3 When operating equipment while the public is present the Contractor must place a Safety flagman between the equipment and the public to keep the public away from the Work area.
- E7.4 Any excavation pits must not be left open for any length of time while the public is on Site, or while unattended, and must be clearly marked with protective flagging or barriers. The Contract Administrator shall have the authority to shut down the Work if the Contract Administrator feels the Work areas are not properly protected, and the public may be harmed.
- E7.5 The Contractor must provide suitable traffic barriers to City of Winnipeg Standards when working on or near the vehicle roads.
- E7.6 The Contractor shall access the Work area via the existing baseball diamond gravel service road, and take the shortest route to the Field No: 4. The Contractor shall not cross over any portion of Soccer Field No: 3. The Contractor shall install minimum 19 mm thick temporary plywood protection sheets covered with a minimum 200 mm depth of granular paving, over top of the existing underground granular French Drains, to protect the drains. Upon completion of the Work, the protection sheets are to be removed.

Measurement and Payment

- E7.7 There will be no Separate Payment for providing Safety markers, protection devices and workers.

E8. EXISTING FIELD NO: 4 SURFACING

- E8.1 Soccer field No. 4, within the Work area shown in detail 1-L1 is essentially grass covered. The existing grass top 25 mm thatch layer, within 15 metres of the west and east sides of the field, and 5 metres from the north and south sides of the field, shall completely removed by cultivating and spreading out over the entire centre portion of the existing Field. The grass must first be cultivated using a soil conditioner type mechanical attachment for a skid steer, or by running over the grass several times with a metal track bulldozer type of machinery. Upon completion of scarifying the grass, the grass residue shall be spread out so as not to be greater than 100 mm at any location. The grass shall then be covered with the imported fill. In lieu of using the stripped grass for fill, it may be deposited in the existing fill pile located west of Field No: 10, as located on drawing detail 1-L1. Using the existing grass for fill, will only be permitted subject to

approval by the Contract Administrator, of the type of equipment to be utilized, process, and ability for the material to be spread out uniformly without risk of settlement.

E8.2 The soccer field is surrounded on two sides by the underground granular drainage channel, which is to be protected. A two metre wide width of sod along the west side and a one metre strip of sod along the east side of the drainage channels is also to be retained and protected.

E8.3 Removal of the existing grass covering is to be included in the lump sum price of Unit Price No: 2 "Earthwork and Rough Grading".

E9. EARTHWORK AND ROUGH GRADING

E9.1 This specification shall amend and supplement City Specification CW 3170-R3 and cover the operations relating to the earthwork and grading of the Site as shown on the Construction Drawings.

E9.2 The Contractor shall protect the perimeter underground granular drainage lines and sodded areas adjacent to the drainage lines, from damage during this operation. The Contractor shall also protect the existing quick coupler irrigation valve boxes located along the west side of the field.

E9.3 The Contractor shall re-construct the soccer fields within the limits indicated and as shown on the Construction Drawings. The Contractor shall strip existing sodded surfacing, as indicated in Section E8.

E9.4 The Contractor shall excavate or fill to the design grades shown less the appropriate allowance for surface treatment, topsoil and sod. All unsuitable materials of whatever nature encountered shall be excavated, removed and disposed of by the Contractor to the satisfaction of the Contract Administrator. Where design grades are not shown, the new surface materials shall be installed to meet flush with surrounding grades, and sloped so as not to impede the existing drainage pattern.

E9.5 Construction to the new design grades shall be accomplished by the excavation of material from high areas (around perimeter edge), and using the suitable excavated material along with imported clean earth fill for filling in the low areas as indicated by the elevations shown on Construction Drawings. Backfill shall be placed in a dry, thawed condition and shall be maintained free of moisture or frost.

E9.6 The perimeter area along the outside edges of the field, as defined by the heavy broken line shown on drawing detail 2-L1 shall be cut with a vertical shearing operation, such as using a sharp spade or edger, to create a clean and definite line for the new sod to abut flush to.

E9.7 The design gradient for all other areas shall be considered to be straight grade between the finished design elevations shown. Changes in grade at swales or where it meets existing sod to remain shall be gently contoured as directed by the Contract Administrator to provide future ease of grass mowing operations.

E9.8 In fill areas where the difference between the existing ground elevation and the new finished design elevation is less than 300 mm, the Contractor shall scarify the existing ground to a minimum depth of 50 mm prior to placement of any fill.

E9.9 The Contractor shall haul and import the fill from the off Site borrow pit as identified in E3: Borrow Soil Fill Source.

E9.10 The Contractor shall construct all sub-grades in accordance with Specification CW 3110-R9. This shall include the use of suitable compaction equipment as approved by the Contract Administrator to achieve a minimum compaction of 95% Standard proctor Density. Lifts shall not exceed a compacted thickness of 150 mm.

- E9.11 Following earthmoving, rough grading and compaction, the Work areas shall be fine graded to provide a maximum deviation of 25 mm in 10 metres from the design grade with no low areas that hold water. The finished surface of all disturbed areas shall be dragged and smoothed in such a manner that there are no loose soil particles greater than 25 mm in maximum dimensions.

Measurement and Payment

- E9.12 Earthwork and rough grading will be paid on a lump sum basis and is included is to be included in Unit Cost Item No. 2 "Earthwork and Rough Grading". The price shall include all costs associated with stripping the existing grass, grading the imported and on Site fill, compaction and fine grading of the rough grade and all other Work incidental to preparing the rough grade.

E10. SODDING

- E10.1 This specification shall amend C.W. 3510-R9.
- E10.2 The Contractor is responsible to repair any damage to the existing sod, outside the Work Area, at no cost to the City.
- E10.3 Further to CW 3510-R9, Item 9.6 Watering and Rolling, the Contractor is informed they may use the new irrigation system as well as the manual quick coupler irrigation system for establishing the sod; however, depending on the river water levels, the City cannot guarantee when the system will be operable. The City will not be held responsible for any equipment failures with regards to operation of the irrigation pumps and equipment. The Contractor shall schedule the installation of the sod to occur commencing at the beginning of a work week, instead of the end, in case there are problems with the irrigation system and the City needs to have Worker's repair it.
- E10.4 Should the river irrigation system not be in operation when the sod is to be laid, the Contractor shall hold off installing the sod until the irrigation system is operable. The Contract Administrator must be notified of any delays, due to the irrigation system not being operable, so the delay in time is not counted in the total number of Working days allocated. In the event there is an equipment failure with the City irrigation system, the Contractor will have to either pump water from the Assiniboine River, or haul water from off Site sources, at no further cost to the City.
- E10.5 The Contractor is responsible for supplying all hoses, sprinklers, and fittings necessary, to connect to the existing irrigation quick couplers. The approximate location of the irrigation quick coupler head system is shown in Detail 5-L1.
- E10.6 All areas of new sod shall have a 150 mm depth of screened topsoil installed below the sod and not 75 mm as identified in CW 3540-R4. Specified depth shall be measured after the topsoil has been rolled with a 50kg roller, minimum 900 mm wide.

Measurement and Payment

- E10.7 Measurement and payment will be measured and paid at the Contract Unit Price per square metre for "Topsoil (150 mm depth) and Sod", which price shall be payment in full for performing all operations herein described and all other Work incidental to the Work included in the Specification.

E11. IRRIGATION SYSTEM

- E11.1 This specification shall amend C.W. 3530-R3.

- E11.2 Sprinkler heads shall be Toro model S2001, 25 mm full circle c/w rubber cover and stainless steel riser (54/min)
- E11.3 Provide PVC Sch 80 nipples (length to suit) and PVC Sch 40 fittings for extensions, to obtain correct head elevation while maintaining positive swing joint drainage back to the lateral line. Wrap Teflon tape on all the PVC tapered pipe thread connections.
- E11.4 Swing joints riser assemblies shall be a Spears model or Lasco 364-251 2" x 1 ½" MACME inlet and 1" MIPToutlet, 200 mm lay length. Provide positive drainage back into the HDPE lateral lines.
- E11.5 Sprinkler take off saddles shall be Lasco 364-251 2" x 1 ½" (FACME), for attaching swing joints to lateral irrigation pipe.
- E11.6 The pressure regulated solenoid valves shall be a Hunter model # PGV-201-AS (set point 3.5 bars), 50mm angle style configuration. Pre install Flo-Loc model # 135-20-41FL transition fittings into the valve outlet...
- E11.7 Provide PVC Sch 80 nipples (length to suit) and PVC Sch 40 fittings for extensions, to obtain correct valve elevation, see drawing detail 3-L1. Install 50 mm BII isolation valve below the assembly
- E11.8 Solenoid valve take off saddles shall be a Clamp-It model # 444020 or 443020; respective sizes are 100 mm x 50 mm (fpt) or 75 mm x 50 mm (fpt), or Lasco equivalent, for attaching solenoid valves to mainline irrigation pipe.
- E11.9 Provided a Hunter ICD-100 single station decoder with surge suppression and ground wire at every solenoid valve. Connect wires and ground according to the manufacturer's specifications. Record all locations with decoder serial numbers and program into the system controller (provide in the new pump house).
- E11.10 Decoder wiring connections to be made with 3M DBR/Y wire splice kit. All wire splices are to be made in valve boxes. Provide as-built drawing of the wire splice locations (not including solenoid valves locations).
- E11.11 Provide Carson Model # 1419-12 valve boxes with bolt down Loc-Kit to cover the solenoid valves along play field. Centre the solenoid valve in the valve box. See drawing detail 7-L1.
- E11.12 Provide Hunter IDWIRE1 #14 gauge colour coded decoder wire. From the field junction points use a vibratory plow with a wire chute on the blade to feed the decoder wire 400mm into the ground. Leave two (2) meters of slack at all the solenoid valves.
- E11.13 Provide a 100 mm wide x 900 mm long x 1.6 mm thick Paige part # 182201 copper ground plate with three (3) meters of #10 bare copper wire at designated locations, see drawing detail 1L1. Install as per manufacture recommendations. Bury the grounding plate 600 mm deep along side of the lateral line, three (3) metres from and perpendicular to the decoder wire path. Splice the #10 bare copper wire to the decoder ground wire with a King yellow nut connector. The maximum radius of bend of the #10 ground wire is 200 mm through a 90 degree turn. Megger test and record the earth to ground resistance of each grounding circuit (include the date tested/ohms on the as-built drawing)
- E11.14 Provide PE3408 HDPE SDR17 50 mm lateral line irrigation pipe through playing fields, (see drawing 5-L1 for schematic). Pull a full length lateral line with a vibratory plow (no mechanical connections in fields). Install the pipe in the playing field to a depth of minimum 300 mm, but not greater than 400 mm, to the top of the pipe. Connect to the solenoid valve using a Flo-Lock transition adapter. Seal the end of the lateral line with a butt-fusion or socket fusion cap.
- E11.15 Flush mainline irrigation pipes in sections that are isolated by butterfly valves. Start-up and test all pressurized mainlines. Protect all installed equipment by completing installation and back filling before the end of a work day.

Measurement and Payment

- E11.16 Supply and Installation of the irrigation system will be paid on a lump sum bases and shall include all materials and labour for the water valves, valve box and fittings, water lines, sprinkler heads, decoder wiring, and all other Work incidental to the installation of the irrigation system. The cost for Irrigation System shall be indicated in the Lump Sum Unit Cost Items No. 4 "Supply and Installation of the Irrigation System".