



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 342-2013**

**PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT  
SUBDIVISION: RAIL SHOOFLY GRADE PREPARATION AND MISCELLANEOUS  
WASTEWATER SEWER, WATERMAIN AND LAND DRAINAGE WORKS**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

- B1.1 PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION: RAIL SHOOFLY GRADE PREPARATION AND MISCELLANEOUS WASTEWATER SEWER, WATERMAIN AND LAND DRAINAGE WORKS**

### **B2. SUBMISSION DEADLINE**

- B2.1** The Submission Deadline is 12:00 noon Winnipeg time, May 31, 2013.
- 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 (except on private properties) without making an appointment.
- B3.2** A non-mandatory Site meeting will be held to provide Bidders access with the CN right-of-way on Thursday May 23, 2013 at 3:30 p.m. Meet at the northeast corner of Plessis Road and the CN Redditt Subdivision. No additional site visits on Railway property will be permitted without prior arrangements with the Contract Administrator.
- B3.3** The Bidder is required to complete CN's Contractor Orientation Training as outlined in Appendix "B", prior to entering CN property for the site investigation.
- B3.4** The Bidder is not authorized to enter private property such as CN right-of-way or private residences.
- B3.5** The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

### **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/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he/she 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.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

## **B6. SUBSTITUTES**

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
  - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
  - (c) identify any anticipated cost or time savings that may be associated with the substitute;
  - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
  - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her 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/she 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/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B6.10 Notwithstanding B6.2 to B6.9, in accordance with B7.6, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B15.1(a).

## **B7. BID COMPONENTS**

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices, hard copy;
  - (c) Bid Security
    - (i) Form G1: Bid Bond and Agreement to Bond, or
    - (ii) Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
    - (iii) a certified cheque or draft.
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B7.4.2 A hard copy of Form B: Prices must be submitted with the Bid. If there is any discrepancy between the Adobe PDF version of Form B: Prices and the Microsoft Excel version of Form B: Prices, the PDF version shall take precedence.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.8 Bids shall be submitted to:  
The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

**B8. BID**

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

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

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her 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/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

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

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

B8.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her 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, shall be affixed;
- (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

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

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

**B9. PRICES**

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

B9.1.1 For the convenience of Bidders, and pursuant to B7.4.2 and B15.4.2, an electronic spreadsheet Form B: Prices in Microsoft Excel (.xls) format is available along with the Adobe PDF documents for this Bid Opportunity on the Bid Opportunities page at the Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

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 Payments to Non-Resident Contractors are subject to 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 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
  - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

## **B11. BID SECURITY**

B11.1 The Bidder shall provide bid security in the form of:

- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
- (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
- (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.

B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

B11.1.2 All signatures on bid securities shall be original.

B11.1.3 The Bidder shall sign the Bid Bond.

B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

## **B12. OPENING OF BIDS AND RELEASE OF INFORMATION**

B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B12.1.1 Bidders or their representatives may attend.

B12.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B11 will not be read out.

B12.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page

at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

- B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

### **B13. IRREVOCABLE BID**

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

### **B14. WITHDRAWAL OF BIDS**

- B14.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
  - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

### **B15. EVALUATION OF BIDS**

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation therefrom (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.
- B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other

irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B15.4.1 Further to B15.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B15.4.2 The electronic Form B: Prices and the formulas imbedded in that spreadsheet are only provided for the convenience of Bidders. The City makes no representations or warranties as to the correctness of the imbedded formulas. It is the Bidder's responsibility to ensure the extensions of the unit prices and the sum of Total Bid Price performed as a function of the formulas within the electronic Form B: Prices are correct.

## **B16. AWARD OF CONTRACT**

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

B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.

B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

## **PART C - GENERAL CONDITIONS**

### **C0. GENERAL CONDITIONS**

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](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:

- (a) Construction of grade for CN rail shoofly and north track realignment;
- (b) Utility crossings under CN rail shoofly and existing track;
- (c) Miscellaneous wastewater sewer, watermain, and land drainage sewer works;
- (d) Provisional Items.

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

- (a) Construction of Grade for CN Rail Shoofly and North Track Realignment
  - (i) Clearing and grubbing;
  - (ii) Excavation and pavement removal;
  - (iii) Compaction of existing subgrade;
  - (iv) Installation of subdrains and culverts;
  - (v) Placement of separation/reinforcement fabric;
  - (vi) Placement of geogrid;
  - (vii) Placement of suitable site material for track embankments;
  - (viii) Placement of sub-ballast.
- (b) Utility Crossings Under CN Rail Shoofly and Existing Track
  - (i) Installation of approximately 90 m of 450 mm diameter C76-V wastewater sewer pipe;
  - (ii) Installation of approximately 70 m of 200 mm diameter PVC watermain pipe;
  - (iii) Installation of approximately 35 m of 500 mm diameter PVC watermain pipe;
  - (iv) Installation of approximately 95 m of 525 mm diameter C76-V land drainage sewer pipe.
- (c) Miscellaneous Wastewater Sewer, Watermain and Land Drainage Sewer Works
  - (i) Clearing and grubbing;
  - (ii) Installation of approximately 55 m of 250 mm diameter land drainage sewer pipe;
  - (iii) Installation of approximately 15 m of 375 mm diameter wastewater sewer pipe;
  - (iv) Installation of approximately 320 m of 450 mm diameter wastewater sewer pipe;
  - (v) Installation of approximately 315 m of 525 mm diameter land drainage sewer pipe by various methods;
  - (vi) Installation of approximately 75 m of 900 mm diameter land drainage sewer pipe;
  - (vii) Installation of approximately 105 m of 1050 mm diameter land drainage sewer pipe;
  - (viii) Installation of approximately 325 m of 200 mm diameter PVC watermain pipe by various methods;
  - (ix) Installation of approximately 230 m of 500 mm diameter PVC watermain pipe by various methods;
  - (x) Installation of manholes;
  - (xi) Installation of catchbasins, catchpits and sewer service pipe;

- (xii) Installation of ditch inlets and subdrains;
  - (xiii) Construction of a weir manhole;
  - (xiv) Installation of valves and hydrants;
  - (xv) Abandonment or removal of existing wastewater sewer, watermains, land drainage sewer, hydrants and valves.
- (d) Provisional Items
- (i) Tree removal.

### D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) “**Contract #1**” means the Plessis Road Twinning and Grade Separation at CN Redditt Subdivision: Rail Shoofly Grade Preparation and Miscellaneous Wastewater Sewer, Watermain and Land Drainage Works;
- (b) “**Contract #2**” means the Plessis Road Twinning and Grade Separation at CN Redditt Subdivision: Shoofly Track Installation and Permanent Track Construction at Mileage 246.64;
- (c) “**Contract #3**” means the Plessis Road Twinning and Grade Separation at CN Redditt Subdivision: Plessis Road Reconstruction, Underpass Structures, Land Drainage Sewer and Miscellaneous Underground and Landscaping Works;
- (d) “**AREMA**” means American Railway Engineering and Maintenance of Way Association;
- (e) “**CN**” means Canadian National Railway Company or designated representative definition;
- (f) “**AWWA**” means American Waterworks Association;
- (g) “**CSA**” means Canadian Standard Association;
- (h) “**NSF**” means National Sanitation Foundation;
- (i) “**ASTM**” means American Society for Testing and Materials; and
- (j) “**Project**” means the construction of an underpass and bi-directional rail bridge, and relocation and improvement of certain roadways and intersections, involving certain sections of Plessis Road, Pandora Avenue West and Dugald Road in east Winnipeg, including the Work of Contracts #1-3.

### D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is AECOM, represented by:

Tanya Worms, M.Sc., P.Eng.  
Transportation Engineer  
99 Commerce Drive, Winnipeg, Manitoba R3P 0Y7  
Telephone No. 204-928-9210  
Facsimile No. 204-284-2040

D4.2 At the pre-construction meeting, Tanya Worms, M.Sc., P.Eng. will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4.3 Bids Submissions must be submitted to the address in B7.8.

**D5. CONTRACTOR'S SUPERVISOR**

- D5.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.
- D5.2 At least two (2) business days prior to the commencement of any Work on the site, the Contractor shall provide the Contract Administrator with a phone number where the supervisor identified in D5.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

**D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE**

- D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.
- D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.
- D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;
- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
  - (b) the Contract, all deliverables produced or developed; and
  - (c) any statement of fact or opinion regarding any aspect of the Contract.
- D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

**D7. NOTICES**

- D7.1 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.
- D7.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D7.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D4.1.
- D7.3 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 facsimile number:
- The City of Winnipeg  
Chief Financial Officer  
Facsimile No.: 204-949-1174
- D7.4 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 facsimile number:
- The City of Winnipeg  
Legal Services Department  
Attn: Director of Legal Services  
Facsimile No.: 204-947-9155



## **D8. FURNISHING OF DOCUMENTS**

- D8.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him/her at cost.

## **SUBMISSIONS**

### **D9. AUTHORITY TO CARRY ON BUSINESS**

- D9.1 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.

### **D10. SAFE WORK PLAN**

- D10.1 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.
- D10.2 The Safe Work Plan shall 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>
- D10.3 Notwithstanding D10.1, D10.2 and Appendix "B" CN Safety Requirements, the Contractor shall conform and operate in accordance with the CN "Safety Guidelines for Contractors".

### **D11. INSURANCE**

- D11.1 The City shall provide and maintain the following owner controlled project insurance coverage to remain in place at all times during the performance of the Work:
- (a) Wrap-up liability insurance in an amount of no less than twenty-five million dollars (\$25,000,000) inclusive per occurrence and twenty-five millions dollars (\$25,000,000) general aggregate, covering bodily injury, personal injury, property damage and products and completed operations consistent with industry standard insurance policy wordings. Wrap up liability insurance to also include evidence of contractual liability and cross liability clauses.
  - (b) Project specific Contractors Pollution Liability (CPL) insurance in the amount of at least five million dollars (\$5,000,000) per occurrence and five million dollars (\$5,000,000) aggregate insuring against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder performed by the Contractor, its agents, representatives, employees or subcontractors.
    - (i) The Contractor shall be responsible for deductibles up to \$50,000 maximum of any one loss.
    - (ii) The City of Winnipeg will carry such insurance to cover the Owner, Province, Federal Government, contractors, sub-contractors and all consultants as insured's. Provision of this insurance by the City of Winnipeg is not intended in any way to relieve the Contractor from his obligations under the terms of the Contract. Specifically, losses relating to deductibles for insurance, as well as losses in excess of limits of coverage and any risk of loss that is not covered under the terms of the insurance provided by the City of Winnipeg remains with the contractor.
    - (iii) Wrap-up liability insurance shall be maintained from the date of the commencement of the Work until the date of Total Performance of the work and shall include an

additional 24 months completed operation coverage which will take affect after Total Performance.

- D11.2 The Contractor shall provide and maintain the following insurance coverage at all times during the performance of the work:
- (a) Commercial General Liability insurance, in the minimum amount of ten million dollars (\$10,000,000.00) inclusive. The said Commercial General Liability insurance shall include coverage for products and completed operations, blanket contractual liability, cross liability, non-owned automobile, and unlicensed motor vehicle liability. The Province of Manitoba, the Federal Government of Canada and their ministers, officers, employees and agents, the City of Winnipeg and CN shall be added as additional insured's.
  - (b) Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than two million dollars (\$2,000,000) inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.
  - (c) Property insurance for equipment and tools used on the project that may be owned, rented, leased or borrowed.
- D11.3 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D11.4 The Contractor shall not cancel, or cause any such policy or policies to lapse without a minimum thirty (30) days prior written notice to the City.
- D11.5 The Contractor shall provide the Contract Administrator with evidence of insurance at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of the Contract. The evidence shall be in a form of a certificate of insurance and must be satisfactory to the City Solicitor.
- D11.6 All policies shall be in a form satisfactory to the City of Winnipeg and shall be kept in full force during the Work.

## **D12. PERFORMANCE SECURITY**

- D12.1 The Contractor shall provide and maintain performance security until the later of the expiration of the warranty period or twenty-four (24) months after the Total Completion Date of the Project 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.
- D12.1.1 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.
- D12.2 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B11.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site and in no event later than the date specified in the C4.1 for the return of the executed Contract.

**D13. SUBCONTRACTOR LIST**

D13.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at or prior to a pre-construction meeting, or at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the C4.1 for the return of the executed Contract.

**D14. EQUIPMENT LIST**

D14.1 The Contractor shall provide the Contract Administrator with a complete list of the equipment which the Contractor proposes to utilize (Form K: Equipment List) at or prior to a pre-construction meeting, or at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the C4.1 for the return of the executed Contract.

**D15. DETAILED WORK SCHEDULE**

D15.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

D15.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work;
  - (b) a Gantt chart for the Work based on the C.P.M. schedule; and
- all acceptable to the Contract Administrator.

D15.3 Further to D15.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:

- (a) 500 mm watermain utility crossing;
- (b) 200 mm watermain utility crossing;
- (c) 450 mm wastewater sewer utility crossing including manholes;
- (d) 525 mm land drainage sewer utility crossing including manholes;
- (e) Stripping and topsoil removal;
- (f) Common excavation;
- (g) Ditch excavation;
- (h) Removal of pavement;
- (i) Installation of chain link fence;
- (j) Removal and salvage of chain link fence;
- (k) Subgrade compaction and placement of geotextile/geogrid;
- (l) Culvert and subdrain installation;
- (m) Placement of 100 mm granular sub-base material;
- (n) Placement of sub-ballast;
- (o) Installation of 250 mm land drainage sewer;
- (p) Installation of 375 mm wastewater sewer;
- (q) Installation of 450 mm wastewater sewer;
- (r) Installation of 525 mm land drainage sewer;
- (s) Installation of 900 mm land drainage sewer;

- (t) Installation of 1050 mm land drainage sewer;
- (u) Installation of 200 and 500 mm diameter watermains;
- (v) Construction of weir manhole;
- (w) Installation of manholes;
- (x) Tie-ins to watermain/subfeedermain;
- (y) Tie-ins to existing sewers;
- (z) Abandonment or removal of underground pipes.

D15.4 Further to D15.2(b), the Gantt Chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

## **D16. ENVIRONMENTAL PROTECTION PLAN**

D16.1 Prior to commencing construction activities or delivery of materials to Site, submit an Environmental Protection Plan for review and approval by Contract Administrator. The Environmental Protection Plan shall present a comprehensive plan to address known or potential environmental issues which may be present during construction. Where applicable, the Environmental Protection Plan shall include sub-contractor activities. The submission of the Environmental Protection Plan to the Contract Administrator shall in no way relieve the Contractor of full responsibility for the success or failure of all environmental management practices and procedures.

D16.2 The contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:

- (a) Federal
  - (i) Canadian Environmental Assessment Act (CEAA) C.37;
  - (ii) Fisheries Act C.F-14;
  - (iii) Transportation of Dangerous Goods Act and Regulations C.34; and
  - (iv) Navigable Waters Protection Act.
- (b) Provincial
  - (i) The Dangerous Goods Handling and Transportation Act D12;
  - (ii) The Endangered Species Act E111;
  - (iii) The Environment Act C.E125;
  - (iv) The Fire Prevention Act F80;
  - (v) The Manitoba Heritage Resources Act H39-1;
  - (vi) The Manitoba Noxious Weeds Act N110;
  - (vii) The Manitoba Nuisance Act N120;
  - (viii) The Public Health Act C.P210;
  - (ix) The Workplace Safety and Health Act W210;
  - (x) Current applicable Associated Regulations (Note: Provincial Regulations updated as of September 1999) and
  - (xi) The Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, Manitoba National Resources, 1996.
- (c) Municipal
  - (i) The City of Winnipeg By-law No. 1/2008 and all amendments up to and including 110/2012,
  - (ii) The City of Winnipeg By-law No. 1573/77 and all amendments up to and including 154/2012; and
  - (iii) Any other applicable Acts, Regulations, and By-laws.

D16.3 The Environmental Protection Plan shall address the following:

- (a) Name[s] of person[s] responsible for ensuring adherence to Environmental Protection Plan.
- (b) Name[s] and qualifications of person[s] responsible for manifesting hazardous waste to be removed from Site.
- (c) Name[s] and qualifications of person[s] responsible for training Site personnel.
- (d) Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- (e) Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features including vegetation to be preserved within authorized Work areas.
- (f) Environmental Emergency Response: including procedures, instructions, and reporting in the event of unforeseen spill of regulated substance.
- (g) Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- (h) Hazardous materials and waste management plan outlining storage, transportation and disposal.
- (i) Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project Site.
- (j) Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- (k) Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete wash or curing water, clean-up water, dewatering of ground water, hydrostatic test water, and water used in flushing of lines.
- (l) Monitor and report to ensure implementation of environmental protection measures.

D16.4 Fires

- (a) Fires and burning rubbish or waste materials on Site is not permitted.

D16.5 Disposal of Waste

- (a) Dispose all waste at licensed facilities or with licensed haulers.
- (b) All waste disposal grounds receiving debris and construction waste from this project must be operated under the authority of a valid permit issued pursuant to MR 150 (latest edition) Waste Disposal Grounds Regulation under the Environment Act.
- (c) Dispose of all sewage and seepage from the on-site sanitary facilities in accordance with the Onsite Wastewater Management Systems Regulation MR 83/2003.
- (d) Do not bury waste materials on Site.
- (e) Do not dispose of solid or liquid wastes in drains or waterways.

D16.6 Hazardous Waste

D16.6.1 Definitions

- (a) Dangerous Goods: product, substance, or organism that is specifically listed or meets hazard criteria established in the Dangerous Goods Handling and Transportation Act or regulations including hazardous materials and wastes.

- (b) Hazardous Material: product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- (c) Hazardous Waste: any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment or disposal.
- (d) Workplace Hazardous Materials Information System (WHMIS): a Canada-wide system designed to give employers and workers information about hazardous materials used in workplace. Under WHMIS, information on hazardous materials is provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by combination of federal and provincial laws.

#### D16.6.2 Materials Management

- (a) Only bring on Site quantity of hazardous materials required to perform Work.
- (b) Maintain MSDSs in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.
- (c) Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.

#### D16.6.3 Storage and Handling

- (a) Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
  - (i) Sign storage areas.
  - (ii) Store and handle flammable and combustible materials in accordance with current Manitoba and National Fire Code of Canada requirements.
  - (iii) Do not transfer of flammable and combustible liquids in vicinity of open flames or heat-producing devices.
  - (iv) Do not use flammable liquids having flash point below 38 degrees C, such as naphtha or gasoline as solvents or cleaning agents.
  - (v) Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
  - (vi) Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
- (b) Keep no more than 100 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
  - (i) Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.
  - (ii) Storage of quantities of flammable and combustible liquids exceeding 100 litres for Work purposes requires the written approval of the Contract Administrator.
  - (iii) Fuel storage exceeding 100L shall be a minimum distance of 100 metres from any water body and in compliance with the requirements of the Storage and Handling of Petroleum Products and Allied Products Manitoba Regulation 188/2001 of the Dangerous Goods Handling and Transportation Act.
- (c) Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
  - (i) Store hazardous materials and wastes in closed and sealed containers.
  - (ii) Label containers of hazardous materials and wastes in accordance with WHMIS.
  - (iii) Store hazardous materials and wastes in containers compatible with that material or waste.
  - (iv) Segregate incompatible materials and wastes. Ensure that different hazardous materials or hazardous wastes are not mixed.

- (v) Store hazardous materials and wastes in secure storage area with controlled access.
  - (vi) Maintain clear egress from storage area.
  - (vii) Store hazardous materials and wastes in location that will prevent them from spilling into environment.
  - (viii) Store products on spill trays or berms with 110% capacity.
  - (ix) Do not store within 30 metres of a waterway or drain
  - (x) Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
  - (xi) Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began and disposal occurred. Maintain tipping and other disposal receipts.
- (d) Report spills or accidents immediately:
- (i) to the Contract Administrator.
  - (ii) to Manitoba Conservation Accident Reporting Line at 204-944-4888 in accordance with Manitoba Regulation 439/87 of the Dangerous Goods and Transportation Act.
  - (iii) Submit a written spill report to the Contract Administrator outlining cause and proposed corrective action and Manitoba Conservation as required. Provide copies of reports submitted to Manitoba Conservation to the Contract Administrator.

#### D16.6.4 Transportation

- (a) Transport hazardous materials and wastes in accordance with the Manitoba Dangerous Goods Handling and Transportation Act.
- (i) Ensure that trained personnel handle, offer for transport, or transport dangerous goods.
  - (ii) Use licensed carrier authorized by provincial authorities to accept subject material.
  - (iii) Label container[s] with legible, visible safety marks as prescribed by federal and provincial regulations.
  - (iv) Provide photocopy of shipping documents and waste manifests to the Contract Administrator.
  - (v) Track receipt of completed manifest from consignee after shipping dangerous goods. Provide a photocopy of completed manifest to the Contract Administrator.
  - (vi) Report discharge, emission, or escape of hazardous materials immediately to the Contract Administrator and appropriate provincial authority. Take measures to control release.

#### D16.6.5 Disposal

- (a) Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
- (i) Recycle hazardous wastes for which there is approved, cost effective recycling process available.
  - (ii) Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
  - (iii) Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
  - (iv) Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.

D16.6.6 Erosion and Sediment Control

- (a) Develop an erosion control plan to control negative impacts on water and air quality; plan should meet these objectives:
  - (i) Prevent loss of soil during construction by storm water run-off and wind erosion.
  - (ii) Protect against erosion from stockpiled topsoil aggregates.
  - (iii) Prevent sedimentation of the land drainage system and receiving streams with dust, particulate matter or eroded sediment.
- (b) Supply, install, maintain and remove (as applicable and when no longer required) effective sediment control barriers and erosion control before starting Work that may result in the deposit of sediment into a ditch or water body to avoid potential impacts to fish and fish habitat.
  - (i) Erosion and sediment control measures and installations include, as required, silt socks around storm drains, silt fence barriers, erosion control blanket, straw wattles, and geotextile fabric as appropriate.
  - (ii) Routinely inspect all erosion and sediment control measures and installations and immediately repair any deficiencies.

D16.6.7 Work to Adjacent Waterways

- (a) Do not operate construction equipment in waterways and, where possible, avoid operating equipment within 30 metres of the waterway.
- (b) Do not use waterway beds for borrow material.
- (c) Do not dump excavated fill, waste material or debris in ditches or waterway.
- (d) Design and construct temporary crossings to minimize erosion to waterways.
- (e) Dispose of excavated materials above the high water mark and 30 metres way from a watercourse.

D16.6.8 Drainage

- (a) Provide temporary drainage and pumping as necessary to keep excavations and Site free from water.
- (b) Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- (c) Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

D16.6.9 Reducing Site Disturbances

- (a) Do not disturb, in any way, the embankment slopes, roadway shoulders, and adjacent ground surfaces areas outside the limits of the construction areas including the approved lay down, staging and access unless written permission has been obtained from the Contract Administrator. Such written permission will be granted only if it can be shown that there is no alternative.
- (b) Minimize disturbance of any undeveloped areas on Site and maintain existing Site grading where indicated and where possible.
  - (i) Minimize stripping of topsoil and vegetation
  - (ii) Re-grade and plant vegetation on construction Site as soon as possible.
  - (iii) Avoid soil compaction where possible.

D16.6.10 Pollution Control

- (a) Maintain temporary erosion and pollution control features installed under this contract.
- (b) Maintain construction equipment in good working order. Control emissions from equipment.
- (c) Cover or wet down dry materials and stockpiled soils to prevent blowing dust and debris. Provide dust control for the construction Site, temporary and access roads.



- (d) Bring only clean fill, granular, rip rap and other similar construction materials to the project Site.

**D16.6.11 CN Environmental Requirements**

- (a) Carry out all measures which CN, in its sole discretion considers necessary to keep the work free and clear of all environmental contaminants or residue results from the Contractor's occupation or use of the CN's premises (Premises), such condition to be confirmed by a post-termination environmental inspection/audit of the Premises to be carried out by CN. The Contractor shall be solely responsible for the cost of all work carried out to correct any environmental contamination which occurs on the Premises, or which occurs on other lands as a result of the Contractor's occupation or use of the Premises.
- (b) CN shall have the right to enter upon the Premises, at all reasonable times and from time to time, in order to inspect the Premises and conduct or require the Contractor to conduct, at the Contractor's expense, such tests as may be required to verify the condition of the Premises.
- (c) The Contractor shall be responsible to notify CN of all environmental contamination that the Contractor suspects is occurring on or escaping onto the Premises from adjacent lands or resulting from third party occupation.
- (d) If the Contractor fails to correct any environmental contamination to the satisfaction of CN and any public authority having jurisdiction, CN may perform such work by its employees or agents. CN may charge the Contractor from time to time for all the costs incurred by CN in correcting such environmental contamination, plus fifteen per cent (15%) for overhead, and the Contractor shall pay CN's invoice or invoices for such costs within ten (10) days of receipt of each invoice. In the event such remedial work is carried out by any public authority, the cost of such work shall be borne by the Contractor.
- (e) Upon completion of the contract, the Contractor shall leave the Premises in a clean and tidy condition, free of any environmental contamination resulting from or occurring during the Contractor's occupation or use of the Premises. If the Contractor has installed any facility on or under the Premises, the Contractor shall remove such facility. The Contractor shall have the burden of proving that any environmental contamination has not resulted from or occurred during its occupation or use of the Premises.
- (f) The responsibility of the Contractor to CN with respect to the environmental obligations contained herein shall continue to be enforceable by CN.

**SCHEDULE OF WORK**

**D17. COMMENCEMENT**

D17.1 The Contractor shall not commence any Work until he/she is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D17.2 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 D9;
  - (ii) evidence of the workers compensation coverage specified in C6.15;
  - (iii) the twenty-four (24) hour emergency response phone number specified in D5.2;
  - (iv) the Safe Work Plan specified in D10;
  - (v) evidence of the insurance specified in D11;
  - (vi) the performance security specified in D12;
  - (vii) the subcontractor list specified in D13;
  - (viii) the equipment list specified in D14;

- (ix) the detailed work schedule specified in D15;
  - (x) the Environmental Protection Plan specified in D16 and
  - (xi) the security clearances specified in Part F.
- (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;
  - (c) The Contractor has provided proof of CN Contractor Safety Training for each individual proposed to work on the Site to the Contract Administrator and;
  - (d) The Contractor has completed the CN Work Permit Application (Appendix B) and submitted with the permit fee to the Contract Administrator.
- D17.3 The Contractor shall commence the Work on Site on June 27, 2013 to participate in a sod-turning ceremony. Further work shall not commence until the Contract Administrator has confirmed compliance by the Contractor with the requirements of D17.2.
- D17.3.1 Work east of Plessis Road, north and south of the CN Redditt Subdivision shall not commence until the Contract Administrator confirms that arrangements have been made for access and/or possession. The City of Winnipeg is anticipating agreements will be in place by July 15, 2013.
- D17.3.2 Plessis Road may not be closed to vehicular and pedestrian traffic until after July 31, 2013.
- D17.4 The City intends to award this Contract by June 14, 2013.
- D17.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

## **D18. RESTRICTED WORK HOURS**

- D18.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission forty-eight (48) hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.
- D18.2 In accordance with the Manual of Temporary Traffic Control, Sections 2.03, 2.04, 2.05 and 2.06, should the Traffic Management Branch of the Public Works Department require that work on Regional Streets be carried out at night or on Sundays or on public holidays, where permitted by the City of Winnipeg Police Department, or that work be restricted or suspended during peak traffic hours, no additional compensation will be considered to meet these requirements.

## **D19. SCHEDULE RESTRICTIONS**

- D19.1 CN Flagmen
- (a) The following work restrictions may be limited by CN Flagmen availability. See Specification E11 Co-ordination of Construction with CN.
- D19.2 Watermain and Sub-Feedermain Shutdowns
- (a) Watermain and Sub-Feedermain shutdown periods are based on a number of factors including routine maintenance and repair work along the watermain and Sub-Feedermain and adjacent regional water distribution system, water demand, weather, reservoir operation and other factors. The City shall endeavour to make the specified time periods available to the Contractor to schedule his work requiring removal of the watermain and Sub-Feedermain from service, without limiting the City's control over the operation of the watermain and Sub-Feedermain and the regional water infrastructure system, to complete other work, maintain adequate water supply and storage of water and maintain the integrity of the infrastructure. The City shall reserve the right to cancel and/or delay these schedule dates at any time, due to any circumstances that could adversely affect the water supply,

including but not limited to high water demand, abnormal weather, failures of related water system components and/or security concerns.

- (b) The Contractor shall note that it is intended to allow for depressurization of the Sub-Feedermain during the construction period, for installation of the tie-ins, to safeguard against a catastrophic failure of the pipeline. During normal summer demands, it is anticipated that the Sub-Feedermain can be taken out of service, with minimal disruption to water service levels. However, it is noted that during high water demand season, typically between June 1 and September 15, the risk of an emergency reinstatement of the Sub-Feedermain is elevated.
- (c) The Contractor shall note that short term shutdown periods of less than eight (8) hours in duration that do not require drainage of the Sub-Feedermain will be permitted, subject to receipt of specified notification to the Contract Administrator. Such shutdowns may be limited to off-peak periods of the day.
- (d) The Contractor shall note that longer term shutdown periods of greater than eight (8) hours in duration that require drainage of the Sub-Feedermain will only be permitted during periods of low water demands, typically between September 15 and June 1. Scheduling of work outside of this window may be permitted by the Contract Administrator, subject to review of demand forecasts, approval of the Water and Waste Department, receipt of detailed work planning and contingency plan.
- (e) The Contractor shall note that during portions of the Work involving removal of Sub-Feedermain from service, including depressurization or draining of the Sub-Feedermain, the Contractor shall be prepared to take immediate actions to be prepared to return the Sub-Feedermain to service, upon receipt of notification from the Contract Administrator. This work may include, but is not limited to backfill of adjacent trenches in close proximity to the Sub-Feedermain, re-installation of and piping or appurtenances removed for construction and installation of bracing as directed.

## **D20. WORK BY OTHERS**

D20.1 Work by others on or near the Site will include but not necessarily be limited to:

- (a) Manitoba Telecom Services – Relocation/protection of existing lines;
- (b) Shaw – Relocation/protection of existing lines;
- (c) Shell Canada Products Limited – Relocation/protection of existing lines;
- (d) Imperial Oil Limited – Relocation/protection of existing lines;
- (e) Manitoba Hydro – Removal of existing hydro poles and street lighting;
- (f) Manitoba Hydro – Relocation of 24 kV Feeder;
- (g) Manitoba Hydro Gas Division – Abandonment of 200 mm gas line;
- (h) Pattison Sign Structure – Relocation of billboard;
- (i) CN – CN Signal and Communication Works;
- (j) City of Winnipeg Traffic Signals – Adjustment of traffic signal timing to accommodate Plessis Road Closure;
- (k) City of Winnipeg Traffic Services – Erection and maintenance of temporary traffic control signs. Supply and installation of permanent traffic signs and bases. Closure of Plessis Road between Dugald Road and Kernaghan Avenue shall not occur prior to July 31, 2013,
- (l) Watermain Renewal Bid Opportunity No. 175-2013 – Watermain renewal on Dugald Road West of Plessis and;
- (m) Contract #2 – Shoofly Track Installation and Permanent Track Construction is expected to commence on August 29, 2013. Designated work areas on the southwest and southeast corners of Plessis Road and the CN Redditt Subdivision will be required for track assembly.

## D21. SEQUENCE OF WORK

D21.1 Further to C6.1, the sequence of work shall be as follows:

D21.1.1 The Work shall be divided into three phases. Each Phase shall be subdivided into stages. Stages are further subdivided into major items of work. Phase I and II construction can occur concurrently.

D21.1.2 **Phase I** – Rail Shoofly and North Track Realignment

(a) **Stage I** – Construct Rail Embankment west of Plessis Road as Shown on the Drawings

- (i) Excavation;
- (ii) Compaction of existing subgrade;
- (iii) Installation of subdrains and culverts;
- (iv) Placement of separation/reinforcement fabric;
- (v) Placement of suitable site material;
- (vi) Placement of sub-ballast.

(b) **Stage II** – Construct Rail Embankment east of Plessis Road as Shown on the Drawings

- (i) Install new chain link fence;
- (ii) Remove and salvage chain link fence;
- (iii) Asphalt removal;
- (iv) Excavation;
- (v) Compaction of existing subgrade;
- (vi) Installation of subdrains and culverts;
- (vii) Placement of separation/reinforcement fabric;
- (viii) Placement of suitable site material;
- (ix) Placement of sub-ballast.

(c) **Stage III** – Construct Rail Embankment through Plessis Road as Shown on the Drawings (Plessis Road may close after July 31, 2013)

- (i) Remove existing pavement;
- (ii) Excavation;
- (iii) Compaction of existing subgrade;
- (iv) Installation of subdrains and culverts;
- (v) Placement of separation/reinforcement fabric;
- (vi) Placement of geogrid;
- (vii) Placement of suitable site material;
- (viii) Placement of sub-ballast.

D21.1.3 Phase I - Stages I to III must occur consecutively. The Contractor shall not begin a subsequent stage until the current stage has been completed or approved by the Contract Administrator.

D21.1.4 The Contractor is advised that no work shall take place on Plessis Road prior to July 31, 2013.

D21.1.5 **Phase II** – Utility Crossings under CN Rail Shoofly and Existing Track as Shown on the Drawings

(a) **Stage I** – 450 mm Wastewater Sewer: Drawing P-3346-1104

- (i) Installation of approximately 28 m of 450 mm diameter wastewater sewer by trenchless methods;
- (ii) Installation of MH.W2 and MH.W3;

- (iii) Installation of 450 mm diameter wastewater sewer from Station 1+150 to 1+235.10.
- (b) **Stage II** – 200 mm Watermain: Drawing P-3346-1104
  - (i) Installation of approximately 46 m of 350 mm diameter steel casing;
  - (ii) Installation of approximately 24 m of 200 mm PVC watermain by trenchless methods;
  - (iii) Installation of 200 mm PVC watermain from station 1+151 to 1+216;
  - (iv) Installation of valves and/or plugs at the north and south limits as noted.
- (c) **Stage III** – 525 mm Land Drainage Sewer: Drawing P-3346-1106
  - (i) Installation of approximately 25 m of 525 mm diameter land drainage sewer by trenchless methods;
  - (ii) Installation of MH.L2 and MH.L3;
  - (iii) Installation of 525 mm diameter land drainage sewer from station 1+149.7 to 1+243.3.
- (d) **Stage IV** – 500 mm Watermain: Drawing P-3346-1108
  - (i) Installation of approximately 33 m of 750 mm diameter steel casing;
  - (ii) Installation of approximately 35 m of 500 mm PVC watermain by trenchless methods from station 1+118 to 1+153;
  - (iii) Installation of temporary plugs at the north and south limits as noted.

D21.1.6

**Phase III** – Construct Miscellaneous Underground Works

- (a) **Stage I** – Installation of Wastewater Sewer
  - (i) Video of existing 375 mm wastewater sewer;
  - (ii) Installation of manholes;
  - (iii) Installation of wastewater sewer pipe;
  - (iv) Reconnection or renewal of services if required.
- (b) **Stage II** – Installation of 200 mm Watermain
  - (i) Installation of 200 mm diameter watermain;
  - (ii) Installation of valves and hydrants;
  - (iii) Reconnection or renewal of water service connections.
- (c) **Stage III** – Installation of 525 mm Land Drainage Sewer
  - (i) Installation of weir manhole;
  - (ii) Installation of manholes;
  - (iii) Installation of land drainage sewer pipe;
  - (iv) Installation of catchbasins, catchpits and 250 mm LDS pipe.
- (d) **Stage IV** – Installation of 900 mm Land Drainage Sewer
  - (i) Installation of manholes;
  - (ii) Installation of land drainage sewer pipe;
- (e) **Stage V** – Installation of 1050 mm Land Drainage Sewer
  - (i) Installation of manholes;
  - (ii) Installation of land drainage sewer pipe;
- (f) **Stage VI** – Installation of 500 mm Watermain
  - (i) Installation of 500 mm diameter watermain;
  - (ii) Installation of valves;
  - (iii) Abandonment of existing land drainage sewer, wastewater sewer, watermains, hydrants, and valves;
  - (iv) Restoration of pavement and boulevard areas.

## **D22. BUILDING CANADA FUND – MAJOR INFRASTRUCTURE COMPONENT**

D22.1 Funding for the Plessis Road Twinning and Grade Separation at CN Redditt Subdivision Project (also known as the Plessis Road Underpass Project) is being provided to the City of Winnipeg by the Government of Canada (“Canada”) and The Province of Manitoba (“Manitoba”). As required by the City’s funding agreements with Canada and Manitoba, the Contractor must:

- (a) Establish and maintain for a period of at least six (6) years following the date of substantial completion of the Plessis Road Twinning and Grade Separation at CN Redditt Subdivision Project proper and accurate financial accounts and records, including but not limited to its contracts, invoices, statements, receipts and vouchers, (including supporting documents), prepared in accordance with generally accepted accounting principles, as are necessary to properly account for the services or goods provided by the Contractor to the City;
- (b) Permit The City, Manitoba, Canada, the Auditor General of Canada, and/or their designated representatives, to the extent permitted by law, at all times, to inspect the terms of the Contract and any records and accounts respecting the Project, and to have free access to the Project sites and any documentation relevant for the purpose of audit;
- (c) Permit the City, Canada and/or Manitoba and its agents, and their respective authorized representatives, to monitor the Work and to inspect and audit the accounting and other records relating to the Work for a period of six (6) years following June 30, 2015;
- (d) Indemnify and save Manitoba and its Ministers, officers, employees and agents harmless from and agents harmless from and against all claims and demands, losses, costs, damages, actions, suit or other proceedings brought or pursued in any manner in respect of any matter caused by the Contractor or arising from the contract or from the goods or services provided, or required to be provided, by the Contractor, except those resulting from the negligence of any of Manitoba’s Ministers, officers, servants, employees or agents;
- (e) Respect and comply with all applicable legislation and standards, whether federal, provincial or municipal, including (without limitation) labour, environmental, and human rights legislation;
- (f) Consent to the City providing a copy of the Contract to Manitoba and its agent upon request from Manitoba; and
- (g) Consent to the City providing Manitoba and its agents with the results of the City’s inspections and audits of the Work and of the Contractor’s accounts and records.

## **D23. CRITICAL STAGES**

D23.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) Phases I and II as described in D21 shall be completed by August 28, 2013.

D23.2 When the Contractor considers the Work associated with critical stages listed in D23.1 to be completed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. 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.

D23.3 The date on which the critical stage Work has been accepted by the Contract Administrator as being completed to the requirements of the Contract is the date on which completion of critical stage has been achieved.

## **D24. SUBSTANTIAL PERFORMANCE**

D24.1 The Contractor shall achieve Substantial Performance by October 8, 2013.

D24.2 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.

- D24.3 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.

## **D25. TOTAL PERFORMANCE**

- D25.1 The Contractor shall achieve Total Performance by October 15, 2013.
- D25.2 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.
- D25.3 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.

## **D26. LIQUIDATED DAMAGES**

- D26.1 If the Contractor fails to achieve Critical Stages Phase I and Phase II to the extent required to allow the Work of Contract #2 – Shoofly Track Installation to commence on or before August 28, 2013, the Contractor shall pay the City ten thousand dollars (\$10,000) per Calendar Day for each and every Calendar Day following the day fixed herein for same during which such failure continues:
- D26.2 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:
- (a) Substantial Performance – five thousand dollars (\$5,000);
  - (b) Total Performance – one thousand dollars (\$1,000).
- D26.3 The amounts specified for liquidated damages in D26.1 and D26.2 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.
- D26.4 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **CONTROL OF WORK**

### **D27. JOB MEETINGS**

- D27.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D27.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

**D28. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

D28.1 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).

**D29. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS**

D29.1 Further to B10.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B10.4.

**D30. WORK PRACTICES ON ASBESTOS-CEMENT PIPE**

D30.1 Further to C.6.26(d), the Contractor's attention is directed to the possible health dangers associated with working with asbestos cement pipe and all work associated with the existing AC watermains shall conform to the following publications:

D30.1.1 "Work Practices for Asbestos-Cement Pipe", AWWA No. M16, published by the American Water Works Association.

D30.1.2 "Recommended Work Practices for AC Pipe", 1977, published by the AC Pipe Producers Association.

D30.2 The Contractor shall state in the "job specific safe work plan" the proposed procedure for working on AC Pipe. Contractor shall also provide proof of asbestos handling training or certification.

**MEASUREMENT AND PAYMENT**

**D31. PAYMENT**

D31.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

**D32. PROVISIONAL ITEMS**

D32.1 The Provisional Items listed in the Schedule of Prices are a part of the Contract.

D32.2 The Contractor shall not perform Work included in the Provisional Items without prior authorization from the Contract Administrator. All Work included in the Provisional Items will be carried out within the construction areas shown on the drawings.

D32.3 Notwithstanding C7, the City reserves the right to diminish all or any portion of the items of Work listed in the Provisional Items and no claim shall be made for damages on grounds of loss of anticipated profit or for any other reason.

**WARRANTY**

**D33. WARRANTY**

D33.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D33.2 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work



cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.

- D33.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

**FORM H1: PERFORMANCE BOND**  
(See D12)

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. 342-2013

**PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION: RAIL SHOOFLY GRADE PREPARATION AND MISCELLANEOUS WASTEWATER SEWER, WATERMAIN AND LAND DRAINAGE WORKS**

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 D12)

\_\_\_\_\_  
(Date)

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

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 342-2013

**PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION:  
RAIL SHOOFLY GRADE PREPARATION AND MISCELLANEOUS WASTEWATER SEWER,  
WATERMAIN AND LAND DRAINAGE WORKS**

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 (2007 Revision), International Chamber of Commerce Publication Number 600.

\_\_\_\_\_  
(Name of bank or financial institution)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

**FORM J: SUBCONTRACTOR LIST**  
 (See D13)

**PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION: RAIL  
 SHOOFLY GRADE PREPARATION AND MISCELLANEOUS WASTEWATER SEWER, WATERMAIN  
 AND LAND DRAINAGE WORKS**

| <u>Portion of the Work</u>                 | <u>Name</u> | <u>Address</u> |
|--|-------------|----------------|
| <i><u>SURFACE WORKS:</u></i>               |             |                |
| <i><u>Supply of Materials:</u></i>         |             |                |
| <i>Embankment Material</i>                 |             |                |
| <i>Sub-ballast</i>                         |             |                |
| <i>Geotextile Fabric</i>                   |             |                |
|  |             |                |
| <i><u>Installation/Placement:</u></i>      |             |                |
| <i>Embankment Material</i>                 |             |                |
| <i>Sub-ballast</i>                         |             |                |
|  |             |                |
| <i><u>UNDERGROUND WORKS:</u></i>           |             |                |
| <i><u>Supply of Materials:</u></i>         |             |                |
| <i>Catchpits, Catchbasins and Manholes</i> |             |                |
| <i>Frames and Covers</i>                   |             |                |
| <i>Subdrain Pipe</i>                       |             |                |
| <i>Culverts – Corrugated Steel Pipe</i>    |             |                |
| <i>Land Drainage Sewer</i>                 |             |                |
| <i>Wastewater Sewer</i>                    |             |                |
| <i>Watermain</i>                           |             |                |
| <i>Hydrants</i>                            |             |                |
| <i>Valves</i>                              |             |                |
| <i>Tees</i>                                |             |                |
| <i>Couplers</i>                            |             |                |
| <i>Sluice Gate</i>                         |             |                |
| <i>Knife Gate</i>                          |             |                |



**FORM K: EQUIPMENT**  
(See D14)

**PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION: RAIL  
SHOOFLY GRADE PREPARATION AND MISCELLANEOUS WASTEWATER SEWER, WATERMAIN  
AND LAND DRAINAGE WORKS**

|  |
|--|
| <p><b>1. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> |
| <p><b>2. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> |
| <p><b>3. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> |



**FORM K: EQUIPMENT**  
(See D14)

**PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION: RAIL  
SHOOFLY GRADE PREPARATION AND MISCELLANEOUS WASTEWATER SEWER, WATERMAIN  
AND LAND DRAINAGE WORKS**

|  |
|--|
| <p><b>4. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> |
| <p><b>5. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> |
| <p><b>6. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> |

## 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*.
- E1.3 Appendix "B" CN Safety Requirements take precedence on all matters within CN property.
- E1.4 The following are applicable to the Work:

| <u>Drawing No.</u>                                       | <u>Drawing Name/Title</u>  | <u>Drawing<br/>(Original) Sheet<br/>Size</u> |
|--|--|--|
| <u>CN Redditt Subdivision Mile 246.64 – Rail Shoofly</u> |  |  |
| P-3346-1000  | Cover Sheet  | A1   |
| P-3346-1001  | Overall Plan, Legend and General Notes   | A1   |
| P-3346-1010  | Shoofly Plan and Profile Sta. 397+100 to 397+300   | A1   |
| P-3346-1011  | Shoofly Plan and Profile Sta. 396+750 to 397+100   | A1   |
| P-3346-1012  | Shoofly Plan and Profile Sta. 396+400 to 396+750   | A1   |
| P-3346-1013  | Shoofly Plan and Profile Sta. 396+280 to 396+400   | A1   |
| P-3346-1014  | WM01 Shoofly Plan and Profile Sta. 1+000 to 1+200.330  | A1   |
| P-3346-1015  | Plessis West Ditch Plan and Profile Sta. 0+000 to 0+090.890  | A1   |
| P-3346-1030  | Grading Sections Sta. 396+300 to 396+700   | A1   |
| P-3346-1031  | Grading Sections Sta. 396+760 to 397+160   | A1   |
| P-3346-1032  | Grading Sections Sta. 1+100 to 1+200 (Track MU01)  | A1   |
| P-3346-1060  | Standard Details – Typical Sections  | A1   |
| P-3346-1061  | Standard Details – Typical Sections  | A1   |
| P-3346-1062  | Standard Details – Typical Sections  | A1   |
| P-3346-1063  | Standard Details – Typical Sections  | A1   |
| P-3346-1064  | Standard Details – Typical Sections  | A1   |
| P-3346-1065  | Standard Details – Typical Sections  | A1   |
| R7A-80_2   | Culvert Details  | A1   |
| <u>Plessis Road – Miscellaneous Underground Works</u>    |  |  |
| P-3346-1103  | Key Plan - Utilities   | D  |
| P-3346-1104  | Plessis Road – 450 WWS & 200 WM from Dugald Road to 350 m South of Kernaghan Avenue                        | D  |
| P-3346-1105  | Plessis Road – 450 WWS & 200 WM from 205 m North of Plessis Road to 100 m South of Kernaghan Avenue        | D  |
| P-3346-1106  | Plessis Road – 525 LDS from Dugald Road to 350 m South of Kernaghan Avenue                                 | D  |
| P-3346-1107  | Plessis Road – LDS from 205 m North of Plessis Road to 100 m South of Kernaghan Avenue                     | D  |
| P-3346-1108  | Existing 500 Watermain Renewal – 200 m West of Plessis Road, Dugald Road to Paul Martin Dr (S. Leg) R.O.W. | D  |

| <u>Drawing No.</u> | <u>Drawing Name/Title</u>  | <u>Drawing (Original) Sheet Size</u> |
|--------------------|--|--------------------------------------|
| P-3346-1109        | Existing 500 Watermain Renewal – 55 m North of Dugald Road, 170m West of Plessis Road to 50 m West of Plessis Road | D                                    |
| P-3346-1110        | Utility Details  | D                                    |
| P-3346-1111        | Weir Manhole, Sections & Details   | D                                    |

E1.5 The following Reference Drawings contained in Appendix “C” are applicable to the Work:

| <u>Drawing No.</u> | <u>Drawing Name/Title</u>  | <u>Drawing (Original) Sheet Size</u> |
|--------------------|--|--------------------------------------|
|                    | <u>Existing Water &amp; Sewer Relocations</u>  |                                      |
| P-3346-1100        | Proposed 200 WM and 450 WWS Crossings – Dugald Road to 350m South of Kernaghan Avenue                    | D                                    |
| P-3346-1101        | Proposed 525 LDS Crossing – Dugald Road to 350m South of Kernaghan Avenue                                | D                                    |
| P-3346-1102        | Existing 500 Watermain Renewal – 200m West of Plessis Road Dugald Road to Paul Martin Dr (S. Leg) R.O.W. | D                                    |

**E2. GEOTECHNICAL REPORT**

E2.1 Further to C3.1, the geotechnical report is provided to aid the Contractor’s evaluation of the existing soil conditions. The geotechnical report is contained in Appendix ‘A’.

**E3. OFFICE FACILITIES**

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) The field office shall be for the exclusive use of the Contract Administrator.
  - (b) The building shall be conveniently located near the site of the Work.
  - (c) The building shall have a minimum floor area of 25 square metres, a height of 2.4 m with two windows for cross ventilation and a door entrance with a suitable lock.
  - (d) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.
  - (e) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
  - (f) The building shall be furnished with one desk, one drafting table, 3 m x 1.2 m table, one stool, one four-drawer legal size filing cabinet and a minimum of twelve chairs.
  - (g) A portable toilet shall be located near the field office building. The toilet shall have a locking door and be for the exclusive use of the Contract Administrator and other personnel from the City.
  - (h) The field office building and the portable toilet shall be cleaned on a weekly basis immediately prior to each site meeting. The Contract Administrator may request additional cleaning when he/she deems it necessary.
- E3.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.
- E3.3 The office facilities will be provided from the date of the commencement of the Work to the date of Total Performance.

E3.4 On a one time basis, where directed by the Contract Administrator, the Contractor shall relocate the office facilities to a location more convenient for the remaining Work.

#### **E4. GEOTECHNICAL INSTRUMENTATION**

##### **E4.1 General Requirements**

E4.1.1 Geotechnical instrumentation for the purpose of construction and post-construction performance monitoring is expected for the site. The instrumentation of the site may include, but not limited to, the installation of monitoring wells, vibrating wire piezometers, settlement gauges and slope inclinometers within the construction area.

##### **E4.2 Monitoring**

E4.2.1 The instrumentation shall be monitored by the Contract Administrator during construction. Contractors are advised that it may be necessary to limit equipment movement in the vicinity of the monitoring work. The Contract Administrator shall make every effort to coordinate the monitoring with the Contractor's operation so as to minimize disruption of the Work.

##### **E4.3 Protection of Instrumentation**

E4.3.1 The Contractor shall take all necessary precautions to prevent damage to geotechnical instrumentation. Should instrumentation become damaged as a result of the Contractor's operation, it shall be repaired or replaced, if necessary, at the Contractor's expense.

##### **E4.4 Additional Instrumentation**

E4.4.1 It may become necessary during the Work to install additional geotechnical instrumentation. The Contractor shall facilitate this work. The Contract Administrator shall make every effort to coordinate the installation of additional instrumentation with the Contractor's operation so as to minimize disruption of the Work.

#### **E5. PROTECTION OF EXISTING TREES**

E5.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
- (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400 mm wood planks, or suitably protected as approved by the Contract Administrator.
- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- (d) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (e) Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

E5.2 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his/her designate.

- E5.3 No separate measurement or payment will be made for the protection of trees.
- E5.4 Except as required in clause E5.1(c) and E5.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

## **E6. TRAFFIC CONTROL**

- E6.1 Further to clauses 3.6 and 3.7 of CW 1130:
- (a) Where directed, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planing drop-offs to the satisfaction of the Contract Administrator. Payment shall be in accordance with CW 3410.
  - (b) In accordance with the Manual of Temporary Traffic Control in Work Areas on City Streets, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Branch of the City of Winnipeg to place all temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by the Traffic Services Branch of the City of Winnipeg in connection with the works undertaken by the Contractor.

## **E7. TRAFFIC MANAGEMENT**

- E7.1 Further to D21. Sequence of Work:
- E7.1.1 The Contractor shall schedule construction activities to meet the following:
- (a) Site access for railway traffic shall be maintained at all times.
- E7.2 Further to clause 3.7 of CW 1130:
- E7.2.1 Plessis Road 150 m south of Kernaghan Avenue and Dugald Road will be closed to thru traffic from July 31, 2013, until the completion of Contract 3, December 30, 2014. The City of Winnipeg Traffic Services Department shall barricade and sign the street "Road Closed" for the duration of the Project.
- E7.2.2 Maintain a minimum of one lane of traffic eastbound and one lane westbound on Dugald Road during construction. The Contractor will be responsible for all signage related to the temporary closures and securing of his work and diversion of traffic around his work area.
- E7.2.3 Where left turn lanes exist, an additional lane to accommodate the left turn storage lane shall be maintained at all times.
- E7.2.4 North/South traffic on Plessis Road south of Dugald Road and the intersection of Plessis Road and Dugald Road must be maintained during construction to allow for one lane of traffic in each direction to go straight through and another lane in each direction to turn left except from Westbound Plessis Road. When no work is being performed in the intersection and providing it is safe for vehicles, north and south lane closures in the intersection will not be permitted.
- E7.2.5 Intersecting street and private approach access south of Kernaghan Avenue shall be maintained at all times.
- E7.2.6 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he/she shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.
- E7.2.7 Ambulance/emergency vehicle access must be maintained at all times.

## **E8. PEDESTRIAN SAFETY**

- E8.1 During embankment construction on Plessis Road, a temporary snow fence shall be installed along Plessis Road until Plessis Road is closed after July 31, 2013. The Contractor shall be

responsible for maintaining the snow fence in a proper working condition. No measurement for payment shall be made for this work.

## **E9. WATER USED ON CITY OF WINNIPEG CONSTRUCTION PROJECTS**

E9.1 Further to clause 3.7 of CW 1120, the Contractor shall pay for all costs, including sewer charges, associated with obtaining water from the City in accordance with the Waterworks and Sewer By-laws.

## **E10. EXISTING CONCRETE FOUNDATION**

### DESCRIPTION

E10.1 General

E10.1.1 This Specification covers the removal of an existing visible concrete foundation located east of Plessis between the proposed shoofly tracks and the mainline tracks.

E10.2 Referenced Standard Construction Specifications

E10.2.1 CW 1130 – Work Site Requirements.

### CONSTRUCTION METHODS

E10.3 Removal of Concrete Foundation

E10.3.1 Remove the existing concrete foundation by demolishing, loading, hauling and disposing of the existing concrete and any other materials encountered from the site.

E10.3.2 Dispose of the removed concrete in accordance with Section 3.4 of CW 1130.

### MEASUREMENT AND PAYMENT

E10.4 Removal of Concrete Foundation

E10.4.1 Removal of the Existing Concrete Foundation shall be measured on a cubic metre basis. The number of cubic metres paid for shall be the total number of cubic metres of concrete foundation removed, in accordance with this Specification, as accepted and measured by the Contract Administrator.

## **E11. COORDINATION OF CONSTRUCTION WITH CN**

### DESCRIPTION

E11.1 General Requirements

E11.1.1 The Contractor shall be responsible to meet all CN constraints, requirements, and safety measures.

E11.1.2 CN safety requirements are included in Appendix "B".

E11.2 Flag Protection of Work

E11.2.1 The City of Winnipeg will be supplying Flag protection for this project.

E11.2.2 Flagman's availability is Monday to Friday from 7 am to 7 pm. Should the Contractor require additional hours the Contractor is to inform the Contract Administrator a minimum of 10 days in advance.

E11.2.3 The Contractor is not responsible for arranging or paying for flagging. The Contractor to inform the Contract Administrator of flagging requirements a minimum of 48 hours in advance.

## **E12. ENCROACHMENT ON PRIVATE PROPERTY**

- E12.1.1 Further to Section 3.11 of CW 1130 of the General Requirements, the Contractor shall confine his work to the public right-of-ways and construction easements at all times, except if he has received written permission from the property owner. The Contractor shall provide the Contract Administrator with a copy of any written permission he has received to enter onto private property.
- E12.1.2 The Contractor's construction activities shall be confined to the minimum area necessary for undertaking the work and he shall be responsible for all damage to private property resulting from his work. Particular care shall be taken to assure no damage is done to building, fencing, trees and plants, and provision shall be made to maintain full drainage for private properties during construction.

## **E13. HYDRO EXCAVATION**

### DESCRIPTION

- E13.1 General
- E13.1.1 This Specification shall cover the removal of earthen material immediately adjacent to underground utilities infrastructure by means of high pressure water spray, and the recovery of evacuated material by vacuum type means or equivalent method as approved by the Contract Administrator.
- E13.2 Equipment
- E13.2.1 Hydro excavation unit shall be capable of maintaining a minimum working pressure of 10,000 psi, at a rate of flow of 10 to 12 gallons per minute. unit should be adjustable, so as to provide adequate pressure to remove earthen material identified by the Contract Administrator.
- E13.2.2 Spray head shall be equipped with a rotating type nozzle, in order to provide a wider path of cut.

### CONSTRUCTION METHODS

- E13.3 Hydro-Removal of Earthen Material
- E13.3.1 Earthen material adjacent to utility entity shall be sprayed with high pressure water so as to remove all such material identified by the Contract Administrator.
- E13.4 Recovery of Excavated Material
- E13.4.1 The recovery of excavated material shall be done using vacuum type method, or other type method as approved by the Contract Administrator.
- E13.4.2 The recovery of material shall follow immediately behind the excavation, to avoid excavated areas from filling with excavated material.
- E13.4.3 The use of mechanical sweepers will not be allowed.
- E13.4.4 Dispose of material in accordance with Section 3.4 of CW 1130.
- E13.5 Backfill of Hydro Excavated Hole
- E13.5.1 The Contractor shall be responsible for the backfill of the hydro excavated hole with flowable cement-stabilized fill upon completion of the work described herein, to the approval of the Contract Administrator.

## MEASUREMENT AND PAYMENT

### E13.6 Hydro Excavation

E13.6.1 Hydro excavation of earthen material will be measured on an hourly basis and paid for the contract unit price per hour for "Hydro Excavation". The hours to be paid for will be the total number of hours of hydro excavation in accordance with this specification, accepted and measured by the Contract Administrator. Travel to and from the site will not be accounted for in the payment of this item.

### E13.7 Backfill

E13.7.1 Cement-Stabilized fill is considered incidental to Hydro Excavation and no separate measurement or payment will be made.

## E14. RAILWAY PROPERTY CLEANING

### DESCRIPTION

#### E14.1 General

E14.1.1 Conduct cleaning and disposal operations to comply with local ordinances and anti pollution laws.

E14.1.2 Store volatile wastes in covered metal containers and remove from premises daily.

E14.1.3 Prevent accumulation of wastes which create hazardous conditions.

E14.1.4 Provide adequate ventilation during use of volatile or noxious substances.

### MATERIALS

E14.2 Use only cleaning materials recommended by manufacturer of surface to be cleaned and as recommended by cleaning material manufacturer.

### CONSTRUCTION METHODS

#### E14.3 Cleaning During Construction

E14.3.1 On a daily basis maintain premises free from debris and waste material.

E14.3.2 Maintain project site and public properties free from accumulations of waste materials and rubbish.

E14.3.3 Remove waste materials and rubbish from site.

E14.3.4 Disposal of wastes on Railway property by burial or burning shall not be permitted.

### MEASUREMENT AND PAYMENT

#### E14.4 Cleaning

E14.4.1 Cleaning and disposal operations are considered incidental to the Work and no separate measurement or payment will be made

## E15. RAILWAY GRADING AND DRAINAGE

### DESCRIPTION

#### E15.1 General

E15.1.1 Further to CW 3010, CW 3110, CW 3120, CW 3130, CW 3170 and CW 3610 the following shall apply.



## E15.2 Definitions

E15.2.1 Embankment Fill: material derived from borrow material and placed above original ground or stripped surface to construct the sub-base for the rail bed or gravel pad.

E15.2.2 Sub-base elevation: elevation immediately below sub-ballast or road surface gravel.

## E15.3 Requirements of Regulatory Agencies

E15.3.1 Adhere to municipal, provincial and national government requirements relating to safety of excavations and protection of workers.

## E15.4 Soil Conditions

E15.4.1 A soil investigation has been carried out at the site to determine soil conditions, soil characteristics and water levels.

(a) The results are included with the Contract Documents in the attachments.

(b) Study these results and be familiar with the soil conditions at the site.

E15.4.2 Accept responsibility for any interpretation of this data.

E15.4.3 The City will not accept unfamiliarity with encountered soil conditions and water levels as a basis for a claim for additional payment.

## MATERIALS

E15.5 Embankment materials require approval by Contract Administrator.

E15.6 Material used for embankment shall not contain organic matter, frozen lumps, snow, ice, weeds, roots, logs, stumps or any other objectionable matter.

## E15.7 Borrow Material

E15.7.1 Borrow material from off Railway property shall consist of 100 mm crushed limestone sub-base materials with properties as specified in CW 3110.

E15.7.2 The Contractor shall identify his proposed source of borrow material after award, no later than one week prior to commencement of construction.

E15.7.3 The borrow site shall be accessible to the Contract Administrator for the purpose of sampling and evaluating the proposed borrow material.

E15.7.4 The Contractor shall provide at no cost to the City necessary equipment to excavate test pits at the borrow site and recover samples or shall provide representative samples to the Contract Administrator if requested.

E15.7.5 Borrow material shall not be used for embankment construction prior to approval by the Contract Administrator.

## CONSTRUCTION METHODS

### E15.8 Preparation of Areas for Earth Works

E15.8.1 Strip fill areas of unsuitable materials as designated by Contract Administrator.

E15.8.2 Stripped material shall be classified as "Topsoil Excavation".

(a) Unless specified otherwise, this material is paid under "Topsoil Excavation".

(b) Strip organic material to necessary depth or as directed by the Contract Administrator.

(c) Salvage stripping material.

(d) The maximum depth of stripping in ditches shall be the ditch invert.

(e) After completion of embankment, spread stripping uniformly against embankment cut and fill slopes or as directed by the Contract Administrator.

## E15.9 Excavating

### E15.9.1 General

- (a) Advise Contract Administrator sufficiently in advance of excavation operations for initial cross-sections to be taken.
- (b) Maintain excavation to typical cut sections indicated on drawings or as directed.
- (c) Take particular note of the following:
  - (i) Where necessary, the Contract Administrator may design cuts and fills especially for stability, which will affect dimensions indicated on the drawings.
  - (ii) Remove unsuitable materials encountered in cut sections to depth and extent directed.
    - 1. Replace with approved material and compact.
  - (iii) When slides occur in cuts after they are properly formed, remove the material, modify the slopes and adopt other precautions as directed.
    - 1. The materials shall be classified as "Common Excavation" and Contractor will be paid for its removal at the unit contract price for "Common Excavation".
  - (iv) Complete all excavation as far in advance of fill construction as practical.
  - (v) Maintain all work in a well-drained condition, free of debris and other obstructions.
- (d) The City will not pay for additional excavation (borrow or common) which the Contractor may require for his convenience or movement of equipment.

### E15.9.2 Waste Material

- (a) Remove and dispose of unsuitable material as directed.
  - (i) Refill depressions and holes from this work. This work shall be paid for at the contract unit price for "Common Excavation".
- (b) Remove and dispose of material off Railway property in excess of requirements for embankment construction as directed.

### E15.9.3 Ditch Excavation

- (a) Complete ditch excavation as far in advance of embankment construction as practical, to the grades set by the Contract Administrator, to permit ready flow of surface water.
- (b) Excavate ditches in cuts at the same time as the main cut in order that the excavated material can be used in adjacent embankments.
- (c) Use suitable equipment to ensure cut slopes and sub-base sections are not undercut.
- (d) Maintain and keep ditches open and free from debris and other obstructions until final acceptance.

## E15.10 Embankments

E15.10.1 Where indicated or directed by Contract Administrator, key existing slopes to ensure a proper bond between new materials and existing surfaces.

- (a) The City will not pay extra compensation for this operation.

E15.10.2 Prior to placement of fill material, scarify the top 150 mm (6 inches) of existing ground surface and compact to 95% for Track Grade of Standard Proctor maximum density, in accordance with this Specification.

E15.10.3 Obtain, place and compact approved materials from excavation areas in the locations indicated on the drawings.

- (a) In general, material approved for fill shall have a natural water content close to optimum, as determined by the Standard Proctor Test.

- (b) Where fill contains lumps larger than 150 mm (6 inches), use scarifiers or disks to break down lumps before compacting.
- E15.10.4 Do not place material which is frozen or place material on frozen surfaces.
- E15.10.5 Maintain a crowned surface during construction to ensure ready run-off of surface water.
- E15.10.6 Take particular note of the following:
  - (a) Where fills are to be placed over areas with weak formation soils, use a stage loading technique to construct embankments.
  - (b) Where significant long term settlements are expected, Contract Administrator will increase the top width of embankments from the standard dimensions indicated.
- E15.10.7 Maintain fill to typical sections indicated on drawings.
- E15.10.8 Placement of Geotextile
  - (a) Place geotextile in accordance with CW 3130 and this specification.
  - (b) The geotextile shall be installed full width for the required length of the embankment in accordance with the manufacturer's recommended procedure. Align machine direction parallel to the rail line, free of tension, stress, folds, wrinkles, or creases. Joints in the fabric shall be overlapped not less than 2 feet.
  - (c) The fabric shall be placed within a key in the existing embankment and secured as directed by the Contract Administrator.
  - (d) The fabric shall be placed and wrapped back upon itself at the end away from the track as directed by the Contract Administrator.
  - (e) Dumping of material or equipment movement directly on the geotextile will not be allowed.
  - (f) The geotextile shall not be exposed more than 48 hours before covering.
- E15.10.9 Execution
  - (a) Compact all embankment fill material and excavations to a density of not less than 98% maximum dry density in accordance with Standard Proctor Compaction Test (ASTM D698).
  - (b) Place and compact embankment fill to full width of section in uniform layers not exceeding 200 mm (8 inches) loose thickness. Contract Administrator may authorize thicker lifts if specified compaction can be achieved.
    - (i) Do not place boulders exceeding 200 mm (8 inches) in diameter in the fill.
    - (ii) Do not place boulders exceeding 150 mm (6 inches) in size within 600 mm (2 feet) of sub-base level.
  - (c) Apply water uniformly by means of an approved distributor to any fill which, in the opinion of the Contract Administrator, is deficient in water content for thorough compaction.
    - (i) Apply water to reduce dust nuisance.
  - (d) Scarify or disk and aerate fill material which is too wet, until proper water content for compaction is attained. With approval of Contract Administrator, blend drier material with wet material to achieve a water content satisfactory for compaction as specified in 3.4.4.
  - (e) Remove material not thoroughly compacted at no cost to the City.
  - (f) Where compaction is not being obtained, cease placing material and give additional compaction to material in place.
  - (g) Operate sufficient compaction equipment to thoroughly compact the fill at the rate being placed.
  - (h) Place and compact side slopes of fills simultaneously with core of fill.

- (i) Do not construct fill by means of central core finished off by side dumping of materials to make up the section.
- (i) In areas incapable of supporting earth moving equipment, increase the cover over the areas to sufficiently support equipment.
  - (i) Place the layer over full width of embankment.
  - (ii) Thoroughly compact the surface.
  - (iii) Build remainder of fill in layers of specified normal thickness.
  - (iv) Use granular material for initial fill layer in soft swampy areas, as directed.
- (j) Route all loaded earth-hauling equipment over entire width of embankment.
- (k) Construct and maintain embankments in a well-drained condition.

#### E15.11 Field Quality Control

- E15.11.1 During fill placement, Contract Administrator may perform density and other tests to control construction and may also install stand-pipes, settlement gauges and other apparatus to measure and observe fill performance.
- (a) Facilitate such work and promptly replace, at no cost to the City, any such apparatus damaged from the operations.
  - (b) Do not claim for delays to the operations resulting from field tests.
- E15.11.2 Contract Administrator shall take representative samples at expense of the Contractor and submit them for laboratory tests for approval of its quality and nature prior and/or during its use.
- (a) Provide necessary personnel and equipment to permit adequate investigation and sampling.
  - (b) Advise Contract Administrator at least one week in advance of use of any material to allow sufficient time for sampling and testing.
  - (c) Contract Administrator will pay for testing of material.
- E15.11.3 Final acceptance of materials made after materials dumped, spread and compacted in place.
- (a) Contract Administrator may reject at source, on transportation vehicle or in place.
  - (b) Contract Administrator will not pay for removal and disposal of any rejected material.

#### E15.12 Finishing

- E15.12.1 Remove soft or other unstable material that will not compact properly and fill resulting depressions with approved material.
- E15.12.2 Shape and compact entire rail bed to design elevations within 13 mm (0.5 inch) of design but not uniformly high or low.
- E15.12.3 Do scarifying, blading, compacting or other methods of work as necessary to provide thoroughly compacted rail bed shaped to grades and cross-sections indicated or directed.
- E15.12.4 Finish back and side slopes of common material to neat condition, true to line and grade.
- E15.12.5 Trim all waste and stockpile areas neatly and maintain in a well-drained condition.
- E15.12.6 Maintain finished surfaces in a condition conforming to this section until acceptance and surveyed by the Contract Administrator.

### MEASUREMENT AND PAYMENT

#### E15.13 General

- E15.13.1 The Unit Prices, submitted in the Bid, shall include the entire cost of supplying all labour, material, equipment and tools for stripping, excavation and grading of all classes of

material; all as required to construct the rail bed for the shoofly and final embankment as shown on the Drawings and specified in this Specification.

E15.13.2 The Unit Prices shall also include the cost of supplying all pumping, bailing, shoring and sheeting, etc. and also the furnishing of all necessary pumps, tools and equipment required to keep all excavations dry.

E15.13.3 All measurement and payment will be in accordance with applicable City of Winnipeg Specifications.

## **E16. RAILWAY GRANULAR MATERIALS**

### DESCRIPTION

E16.1 Supply, placement and compaction of granular material for sub-ballast material.

### MATERIALS

E16.2 State on Bid Submission the source of granular materials to be incorporated into work.

E16.2.1 Contract Administrator will investigate quality of material after award of contract.

E16.3 Materials require approval before being used in the work.

E16.4 Provide access for sampling.

E16.5 The Contractor shall provide, at no cost to the City, necessary equipment to obtain samples of granular materials.

E16.6 If requested, the Contractor shall submit samples of the proposed granular material for testing and evaluation.

E16.7 If, in opinion of Contract Administrator, materials from proposed source do not meet, or cannot reasonably be processed to meet specified requirements, locate an alternate source or demonstrate that material from source in question can be processed to meet specific requirements.

E16.8 Should a change of material source be proposed during work, advise Contract Administrator 2 weeks in advance of proposed change to allow sampling and testing.

E16.9 Acceptance of a material at source does not preclude future rejection if it is subsequently found to lack uniformity, or if it fails to conform to requirements specified, or if its field performance is found to be unsatisfactory.

E16.10 When common excavation material is suitable for use as granular material, use such common excavation materials as granular material in preference to obtaining granular material from other sources.

E16.11 Include in unit price for granular material entire cost of constructing and/or maintaining suitable access roads, opening work faces, clearing, grubbing and stripping of pit areas, and royalties.

E16.12 Sub-ballast:

E16.12.1 Material to be crushed or screened pit run gravel, containing no more than 3% organics by weight as determined by ASTM C 123.

E16.12.2 Gradations to be within limits specified.

| <u>Sieve Size</u> | <u>Percent Passing</u> |
|-------------------|------------------------|
| 75 mm (3")        | 100                    |
| 25 mm (1")        | 60 - 90                |
| 4.75 mm (#4)      | 35 - 60                |

|                   |        |
|-------------------|--------|
| 425 micro m (#40) | 10 -40 |
| 75 micro m (#200) | 3 - 10 |

## CONSTRUCTION METHODS

### E16.13 Placing

- E16.13.1 Use granular material to construct sub-ballast course and other work as indicated or directed.
- E16.13.2 Do not place granular material until finished sub-base surface is inspected and approved by Contract Administrator.
- E16.13.3 Place material only on a clean unfrozen surface, properly shaped and compacted and free from snow and ice.
- E16.13.4 Place, using methods which do not lead to segregation or degradation of material.
- E16.13.5 Place material to full width of section in uniform layers not exceeding 6" loose thickness and compact to specified density. Contract Administrator may authorize thicker lifts if specified compaction can be achieved.
- E16.13.6 Replace fouled material with approved material and compact, at no cost to the City.

### E16.14 Compaction

- E16.14.1 Compact full width to density not less than 95% maximum dry density in accordance with Standard Proctor Compaction Test (ASTM D698).
  - (a) Sub-ballast – 95% Standard Proctor Maximum Dry Density.
- E16.14.2 Apply water as necessary during compaction to obtain specified density. If material is excessively moist, aerate by scarifying with suitable equipment until moisture content is corrected.
- E16.14.3 Apply water to reduce dust nuisance.
- E16.14.4 In areas not accessible to rolling equipment, compact to specified density with approved mechanical tampers.

### E16.15 Field Quality Control

- E16.15.1 Contract Administrator shall take representative samples at expense of Contractor and submit them to laboratory tests for approval of its quality and nature prior and/or during its use.
  - (a) Provide necessary personnel and equipment to permit adequate investigation and sampling.
  - (b) Advise Contract Administrator at least two weeks in advance of use of any material to allow sufficient time for sampling and testing.
  - (c) The City will pay for testing of material.
- E16.15.2 Contract Administrator may perform density and other tests on site, to control construction.
  - (a) Facilitate such work and pay for any testing apparatus damaged from the operations.
  - (b) Do not claim for delays to the operations resulting from field tests.
- E16.15.3 Final acceptance of materials made after materials dumped, spread and compacted in place.
  - (a) Contract Administrator may reject at source, on transportation vehicle or in place.
  - (b) Contract Administrator will not consider for payment the removal and disposal of any rejected material.

## E16.16 Finishing

- E16.16.1 Finished sub-ballast surface shall be within 15 mm (0.5 inches) of design elevations but not uniformly high or low.
- E16.16.2 Maintain surface in a clean condition, free draining and conforming to the specification until final acceptance.

### MEASUREMENT AND PAYMENT

- E16.17 The Unit Price, submitted in the Bid, shall include the entire cost of supplying all labour, material and equipment to supply, load, haul, place and compact suitable granular materials in the work as shown on the drawings and specified in this specification.
- E16.18 Granular material will be measured in cubic metres of material in place and accepted by Contract Administrator. Calculation of quantities will be based on granular material compacted in place based on surveyed quantities. Granular material will be paid for at the Contract Unit Price for "Supply and Placing Sub-Ballast Material".
- E16.19 Granular material placed outside design sections as staked by the Contract Administrator will not be considered for payment.

## E17. SUBDRAINS

### DESCRIPTION

- E17.1 Further to CW 3120, this section specifies requirements for supplying and installing subdrains.

### CONSTRUCTION METHODS

- E17.2 Connection of Subdrain to Existing CSP
- E17.2.1 Connect drainage pipe to existing culverts as shown on the Drawings or as directed by the Contract Administrator.
- E17.2.2 Cut neat hole in wall of culvert to a maximum of 25 mm larger than the outside diameter of the drainage pipe.
- E17.2.3 Ensure drainage pipe does not protrude more than 150 mm beyond inside wall of culvert.
- E17.2.4 Connect drainage pipe to existing culvert with a coupler.
- E17.2.5 No bends greater than 45° will be permitted to alter the grade or alignment of the drainage pipe for the culvert connection.

### MEASUREMENT AND PAYMENT

- E17.3 Supply and installation of subdrains will be measured on a length basis and paid for at the Contract Unit Price per metre for "Installation of Subdrains". The length to be paid for will be the total number of metres of subdrains supplied and installed in accordance with CW 3120 and this Specification, accepted and measured by the Contract Administrator.
- E17.4 Connecting proposed subdrain to existing culverts will be included in the payment for "Installation of Subdrains".

## E18. CORRUGATED STEEL PIPES

### DESCRIPTION

- E18.1 Further to CW 3610 and CW 3615, this section specifies requirements for supplying and installing corrugated steel pipes complete with riprap.

## MATERIALS

- E18.2 Corrugated Steel Pipe (C.S.P.) size and gauge to be as indicated on drawings.
- E18.3 Manufacture all culverts to the CN specification contained on Plan Number R7A-80\_2, dated September 29, 2003.
- E18.4 Asphalt coating is not required.
- E18.5 Coupling bands to be 600 mm (24 inches) wide and annularly corrugated unless indicated otherwise.
- E18.6 Pipe ends to be annularly corrugated over length of 300 mm (12 inches).
- E18.7 Granular Backfill:
- E18.7.1 Material to be pit-run gravel.
- E18.7.2 Gradation to be a maximum of 8% fines passing the 75 micrometer sieve size and maximum size not to exceed 100 mm.
- E18.7.3 Liquid limit shall not exceed 25 and the plasticity index shall not exceed 6.
- E18.7.4 The Contractor shall provide a sieve analysis of the granular backfill or provide samples of the granular backfill to the Contract Administrator for testing if requested.
- E18.8 Bedding Sand
- E18.8.1 Bedding material shall be clean sand consisting of hard durable particles free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- E18.8.2 Material shall meet the following gradation:
- | <u>Sieve Size (mm)</u> | <u>Percent Passing (by weight)</u> |
|------------------------|------------------------------------|
| 12.5                   | 100%                               |
| 5.0                    | 95%                                |
| 0.63                   | 2 - 10%                            |
| 0.075                  | 0 - 3%                             |
- E18.8.3 The Contractor shall provide a sieve analysis of the sand for the Contract Administrator's approval or provide samples of the sand to the Contract Administrator for testing if requested.

## CONSTRUCTION METHODS

- E18.9 General
- E18.9.1 Install culverts in accordance drawings, CW 3610 and this Specification and.
- E18.10 Placing of Pipes
- E18.10.1 C.S.P.:
- (a) Culverts are to be installed in the upgrade direction to allow flow of water at all times.
- E18.11 Backfilling
- E18.11.1 Do not place backfill until culverts are inspected and approved by the Contract Administrator.



- E18.11.2 Place and compact approved granular backfill material in layers not exceeding 200 mm (8 inches) loose thickness.
- (a) Compact granular backfill material as specified in Section E17 – Railway Granular Materials.
  - (b) Place granular backfill material simultaneously on both sides of culvert to avoid eccentric loading.
    - (i) For culverts not under railway tracks, carry material to height of  $\frac{1}{4}$  diameter of pipe but not less than 300 mm above top of culvert.
    - (ii) For culverts under railway tracks, carry compacted granular material to height equal to diameter of culvert above top of culvert, prior to constructing embankment over the culvert.
    - (iii) When placing culverts the minimum allowable distance below base of rail, carry the compacted granular material to sub-base level.
  - (c) Compacted granular backfill material is to extend horizontally from the outside of culvert, a distance equal to diameter of pipe but not less than 600 mm (24 inches), except where pipe is laid in excavated trenches, then backfill and compact to full width of trench.
  - (d) In areas not accessible to rolling equipment, place in lifts not exceeding 150 mm (6 inches) and compact to specified density with approved mechanical tampers.
  - (e) Do not place large stones, rocks or other sharp objects within 1.2 metres (4 feet) of culvert.
  - (f) Do not damage nor distort the culvert.
    - (i) Replace damaged culverts at no cost to the Contract Administrator.
  - (g) Do not place frozen material, ice and snow in backfill material.
  - (h) Use approved embankment fill (common excavation or borrow material) material to bring up the remaining backfill to sub-base and compact to required density as specified in Section E16 - Railway Granular Materials.
- E18.12 Protection of Pipes During Construction
- E18.12.1 Where applicable, place a sufficient depth of common material over the granular backfill to protect culverts against heavy construction equipment.
- E18.13 Culvert Removal
- E18.13.1 Excavate, relocate/remove existing culverts indicated on the drawings or as directed by the Contract Administrator.
- E18.13.2 Culverts are to be salvaged and placed on site as directed by the Contract Administrator.
- E18.13.3 Shape the slopes around culverts to match the ditch and embankment lines and grades.
- E18.14 Riprap at Ends of Pipe
- E18.14.1 Shape and trim the slopes and ditch bottom neatly prior to placing riprap as indicated on the drawings or as directed by the Contract Administrator.
  - (a) Fill all depressions and compact.
- E18.14.2 Place riprap in accordance with CN plan number R7A-80\_2 dated September 29, 2003.
- E18.14.3 Place riprap as indicated on typical sections, fill all voids and trim neatly prior to final acceptance by the Contract Administrator.

## MEASUREMENT AND PAYMENT

- E18.15 The Unit prices submitted in the Bid shall include the entire cost of supplying all labor, material and equipment to supply and place in the work, corrugated steel pipes as shown on the drawings and specified in this Specification.
- E18.16 The removal of existing culverts shall be incidental to this work and no separate payment shall be made.
- E18.17 Supply and installation of corrugated steel pipe culvert shall be measured and paid in accordance with CW 3610.
- E18.18 Separate measurement and payment will be made for the Supply and Installation for each size and gauge of culvert.
- E18.19 Measurement and payment for relocation of existing culverts shall be measured horizontally, at grade above the centre line of the pipe culvert, as computed by measurements made by the Contract Administrator.
- E18.20 Connections to existing culverts shall be measured and paid for in accordance with CW 3610.

## **E19. REMOVAL, SALVAGE AND INSTALLATION OF FENCING**

### DESCRIPTION

- E19.1 General
- E19.1.1 This specification covers the removal, salvaging and installation of chain link fencing.
- E19.1.2 Referenced Standard Construction Specifications  
(a) CW 3550 - Chain Link Fencing

### MATERIALS

- E19.2 Barbed Wire
- E19.2.1 Barbed wire shall be 2 mm diameter galvanized steel wire to ASTM A121, 4 point barbs with 125 mm spacing.

### CONSTRUCTION METHODS

- E19.3 Installation Chain Link Fencing
- E19.3.1 Install chain link fence in accordance with CW 3550.
- E19.3.2 New fence posts shall be supplied and installed to match the removed posts.
- E19.3.3 Install 3 strand barbed wire, where the existing fence had barbed wire, 0.300 m high on top of the installed fence at the same angle that existing barbed wire was.
- E19.3.4 Chain link fence shall be installed prior to removal and salvage of existing chain link fence to maintain security at 2125 Dugald Road (East Side Self Storage) and 2129 Dugald Road (Big Freight Systems Inc).
- E19.3.5 The Contractor shall have limited access to both properties. The Contractor is to notify the Contract Administrator a minimum of 48 hours in advance to arrange for access to the properties.

#### E19.4 Removal and Salvage of Existing Chain Link Fence

- E19.4.1 Existing chain link fencing designated for removal shall be carefully removed and salvaged. All chain link fencing components and all hardware shall be salvaged for reuse and stockpiled at locations designated by the Contract Administrator for reinstallation in Contract 3.
- E19.4.2 The Contractor shall remove the fence posts and concrete bases. The post holes remaining following the removal of the fencing shall be backfilled and compacted to the satisfaction of the Contract Administrator. All concrete rubble shall be removed and disposed of by the Contractor.
- E19.4.3 All chain link fencing materials judged by the Contract Administrator to be in unsatisfactory condition shall be disposed of by the Contractor and replaced with equivalent new materials at the Contractor's cost.
- E19.4.4 In the event of damage to any materials by the Contractor, the Contractor shall immediately notify the Contract Administrator and make all repairs or replacements necessary, at his own expense, to the satisfaction of the Contract Administrator.

#### MEASUREMENT AND PAYMENT

#### E19.5 Install Chain Link Fence

- E19.5.1 The installation of chain link fences will be measured on a length basis and paid for at the Contract Unit Price for "Install Chain Link Fence". The length to be paid for will be the total number of metres of chain link fence installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E19.5.2 No measurement or payment will be made for barbed wire. Barbed wire shall be included in payment for installing the salvaged chain link fence.

#### E19.6 Remove and Salvage Chain Link Fence

- E19.6.1 The removal and salvaging of existing chain link fences will be measured on a length basis and paid for at the Contract Unit Price for "Remove and Salvage Chain Link Fence". The length to be paid for will be the total number of metres of chain link fence removed and salvaged in accordance with this specification, accepted and measured by the Contract Administrator.
- E19.6.2 The cost of backfilling post holes and removing and disposing of old fence posts and concrete rubble shall be included in the payment for "Remove and Salvage Chain Link Fence".

#### E19.7 Install Salvaged Chain Link Fence

- E19.7.1 The installation of salvaged chain link fences will be measured on a length basis and paid for at the Contract Unit Price for "Install Salvaged Chain Link Fence". The length to be paid for will be the total number of metres of salvaged chain link fence installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E19.7.2 No measurement or payment will be made for barbed wire. Barbed wire shall be included in payment for installing the salvaged chain link fence.

#### **E20. WATERMAINS INSTALLED IN CASING PIPES**

- E20.1 Further to Section 3.5 of CW 2110 Casing pipes for pipe crossings under railways shall be Standard Black Steel ASTM A53 Grade B ERW, wall thickness 7.2 mm for 350 mm diameter

casing and 11.9 mm for 750 mm diameter casing, minimum yield strength 241 MPa nominal diameter as indicated on the construction drawings.

- E20.2 Install casing pipe by jacking methods. The casing pipe must be advanced to maintain a 0.5 metre soil plug behind the head of the casing at all times until the casing reaches the receiving pit.
- E20.3 Support pipe on casing spacers as indicated on the drawings.
- E20.4 Ends of the casing shall be sealed against the watermain pipe with PSI Buna-N Model W. Pipe and casing shall be carefully bedded and backfilled with sand to 200 mm above the casing.
- E20.5 Notify Contract Administrator a minimum of ten (10) days prior to commencement of work.

## **E21. WARNING SIGNS**

### DESCRIPTION

- E21.1 This Specification covers the supply and installation of permanent warning signs required to identify the presence of new pipelines at railway crossings.

### MATERIALS

- E21.2 Galvanized Steel Posts
  - (a) 38 mm nominal diameter schedule 40 steel pipe conforming to the latest revision of CAN-Z245.1;
  - (b) O.D. = 48.3 mm;
  - (c) Wall thickness = 3.7 mm.
- E21.3 Warning Sign
  - (a) Aluminum sheet size as indicated on the drawings;
  - (b) Black lettering on white Type VIII retro-reflective sheeting (ASTM D4956).

### CONSTRUCTION METHODS

- E21.4 Install warning signs as indicated on the Construction Drawings.

### MEASUREMENT AND PAYMENT

- E21.5 Supply and installation of warning signs shall be measured on a unit basis and paid for at the Contract Unit Price for "Warning Signs". The number of units to be paid for will be the total number of warning signs supplied and installed in accordance with these specifications.

## **E22. PIPELINE CROSSINGS**

### DESCRIPTION

- E22.1 Construction equipment crossing Shell Canada Products Limited and Imperial Oil Limited pipelines.
- E22.2 Installation of wastewater sewer, watermains and land drainage sewer under pipelines.

### CONSTRUCTION METHODS

- E22.3 The Contractor will be required to construct the construction access over existing buried pipelines. The existing pipelines that are known and shown on the Drawings are:
  - (a) Two Shell Canada Products Limited pipelines on the north side of the CN Redditt Subdivision Track;

- (b) Two Imperial Oil Limited pipelines on the east side of Plessis Road south of the valve station; and
- (c) One Imperial Oil Limited pipeline on the east side of Plessis Road north of the valve station.

E22.4 The Contractor is required to verify prior to construction the depth of existing underground pipelines by means of hydro-excavation in accordance with E13 Hydro Excavation. Verification shall be performed at a minimum of one (1) point above each pipeline at each proposed construction access crossing location and at each utility crossing (wastewater, watermain and land drainage sewer).

E22.5 All hydro-excavations shall be backfilled with sand that is approved by the Contract Administrator.

E22.6 All construction access crossings shall be removed prior to or upon completion of the Work, to the satisfaction of the Contract Administrator.

E22.7 The work required by the Contractor for each of the utility crossings are as follows:

E22.7.1 Oil Pipelines

- (a) The Contractor is responsible to steel plate or place rig matting over the construction access crossings of the pipelines taking into account vehicle weight, wheel or track configuration, material size and utility depth of bury. The Contractor's design must be submitted to the Contract Administrator for approval in advance of any construction access crossings with a drawing showing the locations and depths of the pipes.

E22.7.2 Wastewater Sewer, Watermain and Land Drainage Sewer Crossings

- (a) Notify Contract Administrator a minimum of ten (10) days prior to commencement of work to arrange for a representative from the pipeline companies to be on-site. A representative from the pipeline companies will be required to be on-site during installation of the utility pipes under the pipelines to ensure there is no disruption to the pipeline.
- (b) All backfill for the utility crossings at each pipeline crossing will be Class 4 backfill in accordance with standard City of Winnipeg Specifications. No vibratory compaction will be allowed within 3 m of the exposed pipelines.

## MEASUREMENT AND PAYMENT

E22.8 Hydro-excavation and cement-stabilized fill are to be measured and paid for in accordance with E13 Hydro Excavation.

E22.9 All other items of work covered by this specification shall be incidental to the applicable type of Work and no additional payment shall be made.

## E23. TRENCHLESS EXCAVATION

E23.1 Further to Clause 3.4.1 of CW 2130, all underground utilities to be installed by trenchless methods are as shown on the drawings. All crossings under the railway and existing roadways are to be installed by trenchless methods.

E23.2 Selection of excavation equipment for installation of sewers by trenchless methods shall be the responsibility of the Contractor and shall be made based on the basis of expected soil conditions outlined in the geotechnical report and as detailed on the soil logs. The Contractor shall make allowances in the choice of equipment to account for reasonable and minor deviations in ground conditions and shall have contingency plans for the removal of boulders and other minor changes in ground conditions.

- E23.3 In the event that there is a substantial change in the character or nature of the subsurface conditions or that obstructions are encountered, which adversely impact the Contractor's production or construction procedure, the Contractor shall immediately notify the Contract Administrator.
- E23.4 The notice shall provide details of the change in subsurface soil conditions or obstructions encountered, any proposed construction procedure revision that the Contractor intends to undertake, as well as any other relevant supporting information.
- E23.5 The Contract Administrator shall review the notice as expeditiously as possible to assess whether the change in conditions and revised construction procedures amount to a Change in Work. In the case of obstructions due to boulders in the silt/till or hardpan strata where that stratum is evident in the soils logs, no consideration will be made for a Change in Work as boulder obstructions can be reasonably anticipated when working in this stratum. Obstructions such as "random boulders" in the clay strata well above the till interface may be considered as a Change in Work dependent on the level of effort required to facilitate their removal.
- E23.6 Where the Contract Administration deems that a Change in Work is necessary, it shall be valued in accordance with the provisions of GC: 7 and the supplementary requirements of E24.

#### **E24. TRENCHLESS EXCAVATION OBSTRUCTIONS**

- E24.1 Contingency plans for removal of the obstructions encountered in trenchless excavations must be approved by the Contract Administrator and may consist of but not limited to one of the following.
- (a) Drill or excavate a shaft at the location of the obstruction and remove the obstruction.
  - (b) Remove the obstruction through the jacking head or core hole following drilling, splitting or breaking the obstruction into smaller components as required.
  - (c) Other removal methods.
- E24.2 Where the Contract Administrator deems that the obstruction encountered represents a Change in Work, it shall be valued in accordance with GC: 7.4 (c) and the following supplemental requirements:
- E24.2.1 The first four (4) hours of handling obstructions for each occurrence shall be the responsibility of the Contractor.
- E24.2.2 Equipment rates for equipment required in support of the obstruction removal shall be compensated at the MHCA rental rates. Equipment not listed in the MHCA rate schedule shall have their rates established by the Contractor prior to the commencement of Work in accordance with the procedure documented in the MHCA rental guide for establishing equipment rental rates and shall be subject to the approval of the Contract Administrator.
- E24.2.3 Standby equipment that cannot reasonably be deployed elsewhere during the duration of the obstruction removal shall be compensated at 50% of its established rate as noted in E24.1(b)above.
- E24.2.4 Labour rates and material costs associated with obstruction removal shall be compensated as per GC: 7.4 (c) and 7.4.1 with the provision that any removal and replacement of pavements shall be compensated at the Contract Unit Price for such Work.

#### **E25. EXCAVATION, BEDDING AND BACKFILL**

- E25.1 On-Site Disposal Excavated Material from Gravity Sewer Installation (a) If the Contractor wishes to dispose of suitable excess material from the Gravity Sewer installation on-site in areas where clean fill is required for the embankments, the Contractor shall strip all organics to the satisfaction of the Contract Administrator prior to placement of the material.

## E25.2 Disposal of Unsuitable or Surplus Excavated Material

E25.2.1 There shall be no measurement of surplus soil material disposed of at any disposal site. No additional payment will be made for disposal of surplus soil materials. It shall be considered incidental to the cost of the Work.

## E25.3 Foundation, Bedding and Backfill

E25.3.1 Type 3 foundations shall be used in all shafts for trenchless excavations.

E25.3.2 Type 3 bedding and initial backfill shall be used in place of sand in all shafts.

E25.3.3 All shafts located within paved areas of Dugald Road shall be backfilled with Class 1 Backfill as per SD-002.

## E26. MAINTAINING EXISTING SEWER FLOWS, FLOW CONTROL, DIVERSIONS AND BYPASS PUMPING

E26.1 Maintaining Existing Sewer Flows, Flow Control, Diversions and Bypass Pumping required to complete the Works in the Contract shall be incidental to the Contract as per Clause 4.16.1 of CW 2130.

## E27. WATERMAINS

### E27.1 Description

(a) This specification shall amend and supplement CW 2110 and CW 2125.

### E27.2 Materials

#### (a) Gate Valves and Couplings

- (i) AWWA C515 500 millimetre diameter resilient seat gate valve, c/w flanged ends.
- (ii) AWWA C219 500 millimetre diameter flanged coupling adaptors suitable for coupling valves to AWWA C905 PVC.

#### (b) Polyvinyl Chloride (PVC) Pipe

- (i) Dimension Ratio (DR) PVC pipe shall conform to the latest revision of AWWA C905 and CSA B137.3, with a dimension ratio (DR) of DR18 for pipe 350 millimetre to 600 millimetre diameter.
- (ii) Further to AWWA C905, 4.3.2.2 Elastomeric-gasket bell ends shall conform to the requirements of Section 4.3.2.2 a). Designs not meeting the requirements of Sec. 4.3.2.2(a) will not be permitted.

#### (c) Gaskets

- (i) Further to CW 2110 Clause 2.4 gas and oil resistant gaskets shall be used in all pipe and fittings. Gaskets shall be oil and gas resistant Nitrile conforming to ASTM F477 and shall be supplied by the pipe manufacturer.

#### (d) Fabricated Fittings

- (i) Fabricated fittings shall be thermally butt welded segments, with overwrapped reinforcement, conforming with AWWA C905 and CSA B137.3. Where non-standard fittings and bend angles are required, fittings shall be constructed in every way to conform to the nearest CSA certified standard fitting.

#### (e) Closures

- (i) Main line PVC to PVC closures for large diameter pipe shall be fabricated PVC slide collars conforming to AWWA C905 and CSA B137.3. Pipe class to be the same as for mainline piping.

- (f) Joint Restraints
  - (i) PVC fitting joint restraints shall be constructed of ductile iron to ASTM A536 Grade 65-45-12, EBAA Iron Series 2500, Uniflange Series 1360 or Approved Equal in accordance with B6, c/w 316 stainless steel hardware. Restraints to be tested in accordance with ASTM F1674.
- (g) Buried metallic pipe couplers and flange connections shall be protected against corrosion by wrapping with Denso Tape system, consisting of Denso Profiling Mastic, Denso Paste and Densyl Tape to AWWA C217, or approved equal in accordance with B6.
- (h) Grout
  - (i) Portland cement shall be CSA A3000 Type HS Sulphate Resistant Cement;
  - (ii) Minimum 28 day strength 20 MPa;
  - (iii) Pumpable consistency.

#### E27.3 Submittals

- (a) Fittings
  - (i) Submit details of all fabricated fittings and specials, including details of proposed connections to existing pipelines.
  - (ii) Submit fabricated fitting design notes and overwrap reinforcing details.
  - (iii) Fabrication details to be stamped by a Professional Engineer, registered in the Province of Manitoba.
- (b) Affidavit of Compliance
  - (i) An affidavit of compliance signed by an officer of the pipe manufacturing company shall be provided stating that the pipe and fittings comply with this Specification, in accordance with Section 6.3 of AWWA C905-97.

#### E27.4 Quality Control

- (a) Inspection
  - (i) The Contractor shall afford the Contract Administrator every facility to access and inspect all plant to be provided, work to be performed, materials to be supplied and equipment or machinery to be installed in accordance with the provisions of C5.03.
- (b) Testing of Pipe and Materials
  - (i) The Contractor shall provide access to the Contract Administrator or his appointed representative to conduct plant inspections, in accordance to Section 5.3 of AWWA C905-97. The Contractor shall provide a minimum of 7 calendar days notice of commencement of pipe manufacture, for the purposes of scheduling plant inspections.
  - (ii) The Contract Administrator reserves the right to conduct third party quality control testing.
- (c) Dimensional Checks
  - (i) Provide dimensional checks in accordance to AWWA C905, Section 5.1.1.

#### E27.5 Construction

- (a) Excavation
  - (i) The Contractor shall note that previous work in this area has uncovered rails, ties and other debris. If encountered notify the Contract Administrator. Remove and dispose of this material in accordance with E33.
  - (ii) Excavation for on line renewals shall include removal and disposal of all existing pipes, thrust blocks and fittings. No additional payment will be made.
- (b) Trenchless Installations
  - (i) Confirm elevations and locations of all pipelines prior to coring. Confirm elevation of pilot holes crossing under pipelines prior to coring.



- (ii) Confirm elevation of the base of any bedding under pipelines prior to coring. Prevent loss of bedding material under pipelines.
  - (iii) Further to CW 2110, for installation in cored hole, a neat hole shall be cored out for the installation of the watermain pipe to a maximum of 25 mm larger than the largest pipe outside dimension. "Plugging", "reaming" or other construction methods that displace soil shall not be permitted.
- (c) Existing Pipe Closures
  - (i) Existing pipe diameters at proposed closure points are unknown. The Contractor shall expose piping at proposed connection points and verify pipe outside diameter prior to cutting pipes.
  - (ii) The Contractor shall, where required to meet project schedule, procure sufficient pipe couplers, sleeves, followers, end rings or gaskets and have available on site such that connections can be made in a timely manner. No additional compensation will be made for additional materials or re-stocking charges.
- (d) Trench Backfill
  - (i) Further to CW 2030, Class 2 and Class 4 backfill shall be used in all trenches.
- (e) Restrained Pipe Joints
  - (i) Where indicated on the Drawings, or where ground conditions and adjacent structures do not permit use of conventional concrete thrust blocks, restrained joints shall be used.
- (f) Removal and Demolition of Existing Structures
  - (i) Where indicated on the Drawings as "Remove", completely demolish and remove existing structures.
  - (ii) Where structures are identified on the drawings as "Abandon", structures shall be demolished to a minimum depth of 1.5 metres below finish grade and backfilled to Class 3 standards.
  - (iii) Where structures are required to be removed to facilitate installation of pipe, structures must be removed completely within 1.0 metres of the outside of the pipe being installed.
- (g) Leakage Testing for Large Diameter Watermains
  - (i) Perform Hydrostatic leakage testing procedures in accordance with CW 2125.
  - (ii) Allowable apparent leakage rates for 500 mm watermains is 7.0 (l/hr) per 100 joints at a test pressure of 1.0 MPa.

#### E27.6 Method of Measurement and Basis of Payment

- (a) Installation of Valves
  - (i) Valve installation will be measured on a unit basis for each size and type and paid for at the Contract Unit Price for "Watermain Valve".
  - (ii) Valve installations with bypass assemblies shall include all fittings and bypass valve, including tees, bends, 150 mm bypass valves and all restraint materials, thrust blocks and accessories including valve box and extension stem.

### E28. GRAVITY SEWERS

#### DESCRIPTION

- E28.1 This specification shall cover the supply and installation of a precast manhole complete with a knife gate and a sluice gate and shall supplement CW 2130 Gravity Sewers.

## MATERIALS

### E28.2 Precast Concrete Box Sections

- E28.2.1 Precast reinforced concrete box sections to ASTM C1433 complete with slab top, base, and precast concrete weir.
- E28.2.2 Concrete weir section shall be designed structurally to resist hydrostatic loading to the top of the weir.
- E28.2.3 Submit shop drawings in accordance with CW 1110 and E28.5.6 of this specification showing pipe openings, reinforcing, and joint details for precast concrete box sections, weir and accessories, signed and stamped by a Professional Engineer registered in the Province of Manitoba.

### E28.3 Manhole Frame and Cover

- E28.3.1 Frame and covers as per CW 2130.

### E28.4 Knife Gate

- E28.4.1 Knife gate valve shall be wafer type, all stainless steel ASTM A-276 Type 304 construction with a Nitrile (Buna-N, Hycar, NBR) resilient seat. Acceptable product; Fabri-Valve Figure C67 (ITT Industries), or approved equal.
- E28.4.2 Knife gate valves shall be supplied with a Schedule 80 Stainless Steel ASTM A-276 Type 304 non-rising stems. Length to suit extension of operating nut to within 300 mm of proposed final grade, fitted with 38 mm square operating nut generally conforming to City of Winnipeg Approved Product drawing AP-002. Shall include stainless steel wall thimble, stainless steel retainer ring, and other accessories required to mount the gate.
- E28.4.3 Submit shop drawings of knife gates, operators, stems, wall brackets and accessories in accordance with CW 1110 and E28.5.6 of this specification.

### E28.5 Sluice Gate

- E28.5.1 Shall be to AWWA 560-07 Cast-Iron Slide Gates.
- E28.5.2 Gates shall be wall mounted complete with non-rising stem.
- E28.5.3 Maximum design seating head shall be from invert of gate to the top of the gate chamber.
- E28.5.4 Parts and Materials:
  - (a) Frame, slide, guides and yoke: ASTM A48 Cast Iron, Class 30
  - (b) Seating faces: ASTM B21 Naval Bronze, Alloy 482 or ASTM B98, Alloy 655
  - (c) Wedges: ASTM A584 Manganese Bronze, Alloy 865
  - (d) Wedge blocks: ASTM A48 Cast Iron, Class 30
  - (e) Fasteners and anchors: ASTM A276 Type 304 Stainless Steel
  - (f) Stem: ASTM A276 Type 304 Stainless Steel
  - (g) Stem couplings: ASTM A276 Type 304 Stainless Steel
  - (h) Stem guide: ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B) with bronze bushings.
  - (i) An EPDM gasket shall be provided and installed between the frame and concrete mounting surface.
- E28.5.5 Submit shop drawings of cast iron sluice gates, operators, stems, wall brackets and accessories in accordance with CW1110 and with E28.5.6 of this specification.

## SUBMISSIONS

### E28.5.6 Shop Drawings

- (a) At least twenty-one (21) Calendar Days prior to the scheduled commencement of any fabrication, the shop drawings shall be submitted to the Contract Administrator for his review.
- (b) Submit Shop Drawings as per CW1110.
- (c) The shop drawings shall clearly show shapes, weights, dimensions, details, connections, bolt holes and accessories.
- (d) The Contractor shall field measure all dimensions as required prior to submission of the shop drawings.

## CONSTRUCTION METHODS

### E28.6 Precast Box Sections

#### E28.6.1 Excavation, bedding and backfill to CW 2030.

### E28.7 Knife Gate

#### E28.7.1 The knife gate shall be mounted onto a stainless steel flanged wall thimble that is to be cast into the concrete weir as shown on the Drawings.

### E28.8 Sluice Gate Installation

#### E28.8.1 Where sluice gates are to be installed, ensure the manhole wall is true and uniformly constructed within gate installation tolerances as specified by the gate manufacturer. High spots less than 6 millimetres in depth may be removed by grinding. Low areas shall be levelled with an approved epoxy grout.

#### E28.8.2 Field Testing

- (ii) Perform leakage test in the Contract Administrator's presence once sluice gate has been installed to ensure compliance with the allowable leakage rate indicated in the latest edition of AWWA C501.
- (iii) Arrange for a qualified field representative of the sluice gate supplier/manufacturer to be present during field testing.
- (iv) Generally, the tests for seating head will be performed by closing the gates, plugging land drainage sewers with inflatable plugs and filling the weir chamber/pipe sections with water.
- (v) Inflatable plugs shall be inflated from, anchored to and removable from the ground surface.
- (vi) The test for seating head will be performed by closing the sluice gate, plugging the south invert of the weir manhole and filling the chamber.
- (vii) The tests for the unseating head will be performed by closing the sluice gate, plugging the north invert of MH L.2 and filling the pipe and manhole section between the gate and MH L.2.
- (viii) The Contractor will be responsible to pump supply water from a hydrant into the chambers for testing purposes.
- (ix) If the gates fail the field leakage tests due to a manufacturing error, the supplier/manufacturer shall be responsible for the cost associated to repeat the tests, and shall undertake all adjustments, replacements or other modifications necessary to facilitate the tests at their own expense. The sequence shall be repeated until the gates pass the allowable leakage rates.

## MEASUREMENT AND PAYMENT

### E28.9 The precast concrete manhole c/w weir shall be measured and paid for on a lump sum basis and shall include the supply and installation of all concrete components of the valve chamber.

- E28.10 The sluice gate shall be measured and paid for on a lump sum basis and shall include the supply, installation and field testing of the cast iron sluice gate.
- E28.11 The knife gate shall be measured and paid for on a lump sum basis and shall include the supply and installation of the knife gate and all accessories required to mount the gate.

### **E29. PRE-CONSTRUCTION SEWER INSPECTION**

- E29.1 Video of the existing 375 wastewater sewer is to be completed and submitted to the Contract Administrator for review prior to construction. No previous inspection of the sewer main has been completed. It is therefore unknown if it has any service connections. If upon the completion of the pre-construction sewer inspection, no service pipes are found to connect to MA40012158 then abandonment of the main can proceed after the 450 mm wastewater sewer has been installed. Should a sewer service(s) be found, then the Contract Administrator will provide direction to the Contractor as to how to proceed.

#### **MEASUREMENT AND PAYMENT**

- E29.2 Measurement and payment will be in accordance with CW 2145.

### **E30. ABANDON EXISTING UTILITIES UNDER THE RAIL EMBANKMENTS**

- E30.1 Abandon existing sewers, watermains and culverts within the CN Right-of-way after the new services are live.
- E30.2 Abandon existing utilities by filling with cement-stabilized flowable fill. The Contractor to ensure entire pipe is filled with cement-stabilized flowable fill by means of filling a coffer dam to a level above the top of the pipe at the downstream end or by capping the ends of the pipe, leaving an air vent at the downstream end and filling the pipe until the flowable fill exits the air vent.

#### **MEASUREMENT AND PAYMENT**

- E30.3 Abandoning existing utilities with cement-stabilized flowable fill will be measured for payment on a volume basis and paid for at the Contract Unit Price for "Abandoning Existing Utilities With Cement-Stabilized Flowable Fill". Volume to be paid for will be the total number of cubic metres of sewers, watermains and culverts abandoned in accordance with this specification, accepted and measured by the Contract Administrator.

### **E31. DITCH INLET GRATES**

#### **DESCRIPTION**

- E31.1 General
- E31.1.1 This Specification covers the supply and installation of ditch inlet grates on catchbasins and catchpits.

#### **MATERIALS**

- E31.2 Ditch Inlet Grate
- E31.2.1 All steel shall be supplied in accordance with details on the Drawings. All steel shall be hot dip galvanized and all hardware shall be stainless steel. Ditch Inlet Grates shall be Shopost Iron Works MK-A1 or approved equal.

#### **CONSTRUCTION METHODS**

- E31.3 Ditch Inlet Grates
- E31.3.1 The Contractor shall be required to supply and install ditch inlet grates on drainage inlets shown on the Drawings.

- E31.3.2 The ditch inlet grate shall be understood to include the supply and installation of all anchor steel, grate steel, and hardware. All concrete material shall be included in the unit price bid for the catchbasins.
- E31.3.3 The ditch inlet grate shall be securely fastened to the drainage inlets as shown on the Drawings and as approved by the Contract Administrator.
- E31.3.4 Any galvanized surfaces that are damaged shall be coated with a galvanizing compound approved by the Contract Administrator.

#### MEASUREMENT AND PAYMENT

- E31.4 Ditch Inlet Grates
- E31.4.1 The supply and installation of ditch inlet grates will not be measured for payment and shall be included in the payment for catchbasins or catchpits.

#### **E32. TREE REMOVAL**

- E32.1 Further to CW 3010 - Clearing and Grubbing, tree removal including the roots shall be measured on a unit basis for the number of trees (larger than 75 mm in diameter) removed in accordance with CW 3010. Payment shall be at the Contract Unit Price bid for "Tree Removal" measured as specified herein for the total number of trees removed in accordance with this Specification, accepted and measured by the Contract Administrator.
- E32.2 The Contractor shall identify trees that may be affected by Work and inform the Contract Administrator of trees that need to be removed. No trees shall be removed from the project without written approval from the Contract Administrator.

#### **E33. REMOVAL OF CONTAMINATED SOIL**

- E33.1 Description
- (a) Further to CW 1130 Clause 3.4, this Specification outlines the requirements for the disposal of hydrocarbon contaminated soil.
- E33.2 Construction Methods
- (a) Excavate test pits in advance of construction to allow for sampling and determination of the level of contaminants.
- (b) Soils requiring removal and disposal will be identified by the Contract Administrator.
- (c) Handle all contaminated soils in accordance with provincial regulations.
- (d) All hydrocarbon impacted soil removed as part of the construction works shall be transported directly to a Licensed Waste Disposal Grounds in accordance with provincial regulations.
- E33.3 Measurement and Payment
- (a) Disposal of hydrocarbon contaminated soil at a Licensed Waste Disposal Grounds in accordance with provincial regulations will be measured on a volume basis paid for at the Contract Unit Price per cubic metre for "Disposal of Hydrocarbon Contaminated Soil". The volume to be paid will be calculated from measurements of the trench taken by the Contract Administrator. The volume to be paid for will be the total number of cubic metres of hydrocarbon material excavated, and disposed of in accordance with this Specification, accepted and measured by the Contract Administrator.

#### **E34. COMPOSITE GEOGRID**

- E34.1 Further to CW 3130 and CW 3135 a composite geogrid is an approved substitute at the locations where geogrid is shown on the drawings.

- E34.2 The composite geogrid is to meet the non-woven and geogrid fabric specifications of CW 3130 and CW 3135.
- E34.3 The Contractor to submit the product specifications for proposed material to the Contract Administrator for approval in Accordance with B6.
- E34.4 Should the material be approved by the Contract Administrator the material supplied and placed will be measured and paid at the Contract Unit Price for the "Supply and Install Geogrid".

## **PART F - SECURITY CLEARANCE**

### **F1. SECURITY CLEARANCE**

- F1.1 Each individual proposed to perform the following portions of the Work:
- (a) any Work on private property;
  - (b) communicating with residents and homeowners in person or by telephone;
- F1.1.1 Each Individual shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his/her place of residence. Or
- (a) BackCheck, forms to be completed can be found on the website at: <http://www.backcheck.net/> ; or
  - (b) Commissionaires (Manitoba Division), forms to be completed can be found on the website at: <http://www.commissionaires.mb.ca/> .
- F1.2 Prior to the commencement of any Work specified in F1.1, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.
- F1.3 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person will not be permitted to perform any Work specified in F1.1.
- F1.4 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- F1.5 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work specified in F1.1.