THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 404-2009

PROVINCE OF MANITOBA/CITY OF WINNIPEG: MCPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 18, 2009.

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

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

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

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

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

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

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

B4. ADDENDA

B4.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/bidopp.asp

B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B4.3 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.

B5. SUBSTITUTES

B5.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B5.4 The Bidder shall ensure that any and all requests for approval of a substitute:

(a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the 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.

B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.

B5.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.

B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

B5.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.

B5.9 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.

B5.10 Notwithstanding B5.2 to B5.9, in accordance with B6.6, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

B6. BID COMPONENTS

B6.1 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
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;

B6.2 Further to B6.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B5.

B6.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.

B6.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B6.4.1 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.

B6.4.2 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.

B6.5 Bidders are advised not to include any information/literature except as requested in accordance with B6.1.

B6.6 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 B14.1(a).

B6.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B6.8 Bids shall be submitted to:

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

B7. BID

B7.1 The Bidder shall complete Form A: Bid, making all required entries.

B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

(a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;

(b) if the Bidder is a partnership, the full name of the partnership shall be inserted;

(c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

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

B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.

B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B7.4 Paragraph 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 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 own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

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

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

B8. PRICES

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

B8.1.1 For the convenience of Bidders, and pursuant to B6.4.2 and B14.4.3, 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

B8.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B8.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B9. QUALIFICATION

B9.1 The Bidder shall:

(a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and

(b) be financially capable of carrying out the terms of the Contract; and

(c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B9.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

B9.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

(a) have successfully carried out work similar in nature, scope and value to the Work; and

(b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and

(c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);

B9.4 Further to B9.3(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 Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment 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)

B9.5 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.

B9.6 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.

B10. BID SECURITY

B10.1 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.

B10.1.1 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.

B10.1.2 All signatures on bid securities shall be original.

B10.1.3 The Bidder shall sign the Bid Bond.

B10.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B10.2 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.

B10.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B10.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B10.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B10.3 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.

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

B11.1 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.

B11.1.1 Bidders or their representatives may attend.

B11.1.2 Bids determined by the Manager of Materials, or his designate, to not include the bid security specified in B10 will not be read out.

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

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

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

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.

B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work 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.

B13. WITHDRAWAL OF BIDS

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

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

B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

(a) retain the Bid until after the Submission Deadline has elapsed;

(b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and

(c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.

B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B14. EVALUATION OF BIDS

B14.1 Award of the Contract shall be based on the following bid evaluation criteria:

(a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation therefrom (pass/fail);

(b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);

(c) Total Bid Price;

(d) economic analysis of any approved alternative pursuant to B5.

B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.

B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B14.4.2 Further to B14.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B14.4.3 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.

B15. AWARD OF CONTRACT

B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

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

B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:

(a) the prices exceed the available City funds for the Work;

(b) the prices are materially in excess of the prices received for similar work in the past;

(c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;

(d) only one Bid is received; or

(e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B14.

B15.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.

C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm

C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix "**C**" designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of:

(a) Pavement Widening, Concrete Repairs and Asphalt Resurfacing

(i) McPhillips Street from Selkirk Avenue to CPR Underpass

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

(i) Installation of new Manitoba Hydro manholes;
(ii) Supply and Installation of Steel Casing pipe for Manitoba Hydro under CP tracks;
(iii) Remove existing concrete pavement;
(iv) Excavation;
(v) Installation of sub-drains;
(vi) Compaction of existing sub-grade;
(vii) Installation of catchbasins and connection pipe;
(viii) Placement of separation/reinforcement fabric;
(ix) Placement of sub-base and base course materials;
(x) Construction of 200mm concrete pavement (plain dowelled);
(xi) Adjustment of existing manholes, catchbasins and water valves;
(xii) Planing of asphalt overlay;
(xiii) Full depth concrete repairs of existing slabs and joints;
(xiv) Construction of 180 mm barrier curb with asphalt overlay utilizing slip-form paving equipment;
(xv) Construct concrete sidewalk complete with paving stone band;
(xvi) Construction of median slab;
(xvii) Construction of safety median;
(xviii) Placement of asphalt overlay (average thickness 100mm);
(xix) Boulevard grading;
(xx) Landscaping
(xxi) Streetscaping

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is Stantec Consulting Ltd, represented by:

Vilko Maroti, P.Eng
Senior Transportation Engineer
905 Waverley Street
Winnipeg, MB R3T 5P4

Telephone No. (204) 928-8834
Facsimile No. (204) 453-9012

D3.2 At the pre-construction meeting, Vilko Maroti, P.Eng will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4. CONTRACTOR'S SUPERVISOR

D4.1 At the pre-construction meeting, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D4.2 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 D4.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

D5. NOTICES

D5.1 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.

D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.

D5.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg
Chief Financial Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: (204) 949-1174

D5.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

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

Facsimile No.: (204) 947-9155

D6. FURNISHING OF DOCUMENTS

D6.1 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 at cost.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

D7.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D8. SAFE WORK PLAN

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

D8.2 The Safe Work Plan 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

D9. INSURANCE

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

(a) commercial general liability insurance, in the amount of at least two million dollars ($2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;

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

(c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in the C4.1 for the return of the executed Contract.

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

D10. PERFORMANCE SECURITY

D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

(a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or

(b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in

the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or

(c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

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

D10.2 If the bid security provided in his Bid was not a certified cheque or draft pursuant to B10.1(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.

D11. SUBCONTRACTOR LIST

D11.1 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.

D12. EQUIPMENT LIST

D12.1 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.

D13. DETAILED WORK SCHEDULE

D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: 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.

D13.2 The detailed work schedule shall consist of the following:

(a) Form L: Detailed Work Schedule; and

(b) a Gantt chart for the Work based on the C.P.M. schedule; and

all acceptable to the Contract Administrator.

D13.3 Further to D13.2(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.

SCHEDULE OF WORK

D14. COMMENCEMENT

D14.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D14.2 The Contractor shall not commence any Work on the Site until:

(a) the Contract Administrator has confirmed receipt and approval of:
  (i) evidence of authority to carry on business specified in D7;
  (ii) evidence of the workers compensation coverage specified in C6.15;
  (iii) the twenty-four (24) hour emergency response phone number specified in D4.2.
  (iv) the Safe Work Plan specified in D8;
  (v) evidence of the insurance specified in D9;
  (vi) the performance security specified in D10;
  (vii) the subcontractor list specified in D11;
  (viii) the equipment list specified in D12;
  (ix) the detailed work schedule specified in D13; and

(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.

D14.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D15. WORKING DAYS

D15.1 Further to C1.1(gg);

D15.1.1 The Contract Administrator will determine daily if a Working Day has elapsed and will record his assessment. On a weekly basis the Contract Administrator will provide the Contractor with a record of the Working Days assessed for the preceding week. The Contractor shall sign each report signifying that he agrees with the Contract Administrator's determination of the Working Days assessed for the report period.

D15.1.2 Work done to restore the Site to a condition suitable for Work, shall not be considered "work" as defined in the definition of a Working Day.

D15.1.3 When the Work includes two or more major types of Work that can be performed under different atmospheric conditions, the Contract Administrator shall consider all major types of Work in determining whether the Contractor was able to work in assessing Working Days.

D16. RESTRICTED WORK HOURS

D16.1 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.

D17. WORK BY OTHERS

D17.1 Work by others on or near the Site will include but not necessarily be limited to:

(a) Geomatics Services Branch of Property Planning and Development – Various work on survey monuments at various locations through the site;

(b) Manitoba Hydro - Relocation of the wood pole line along the west side and installing new street lights along the length of the project is anticipated to be completed by Manitoba Hydro. The Contractor is expected to cooperate with Manitoba Hydro to facilitate construction;

(c) Manitoba Hydro – Installation of two new duct lines along the east side of the project followed by installation of cable and electrical plants with two crossings under McPhillips Street and lowering of existing manholes. The abandonment of existing Manitoba Hydro Manholes on the west side of the project following the completion of the new plant on the

east side. The Contractor is expected to cooperate with Manitoba Hydro to facilitate construction;

(d) City of Winnipeg Traffic Signals - Modifications to the existing traffic signals lights at Jarvis Avenue and Selkirk Avenue will be completed during construction. The Contactor is expected to cooperate with City of Winnipeg Traffic Signals to facilitate construction;

(e) City of Winnipeg Traffic Services Department– Replace signs and paint lines. The Contactor is expected to cooperate with City of Winnipeg Traffic Services to facilitate construction;

(f) Winnipeg Transit – Performing Installation of Bases and Signs for Transit Diamond Lane on McPhillips Street under Bid Opportunity No. 400-2009;

(g) MTS – Relocation of pedestals. The Contactor is expected to cooperate with MTS to facilitate construction;

(h) Canadian Pacific Railway – Widen existing crossing, level the tracks, renew the track bed, install new signals and protection arms. The Contactor is expected to cooperate with City of Winnipeg Traffic Services to facilitate construction.

(i) Winnipeg Transit – Maintaining bus-stops and temporary signage. The Contactor is expected to cooperate with Winnipeg Transit to facilitate construction.

D18. SEQUENCE OF WORK

D18.1 Further to C6.1, the sequence of work shall be as follows:

D18.1.1 The Work shall be divided into 3 Phases. Each Phase shall be subdivided into stages. Stages are further subdivided into major items of work.

D18.1.2 **Phase I** – McPhillips Street Northbound - Pavement Widening, Concrete Repairs and Asphalt Resurfacing

(a) **Stage I** –Northbound Gutter Lane

(i) Installation of new Manitoba Hydro manholes;
(ii) Supply and Install Steel Casing Pipe under CP tracks;
(iii) Removal of existing curbs, and sidewalk;
(iv) Removal of existing pavement where required;
(v) Excavation of northbound gutter lane;
(vi) Installation of catchbasins and connection pipe;
(vii) Installation of subdrains;
(viii) Compaction of existing sub-grade;
(ix) Placement of separation/reinforcement fabric;
(x) Placement of sub-base base course materials;
(xi) Adjustment of existing manholes and catchbasins;
(xii) Construction of 200mm concrete pavement (plain-dowelled);
(xiii) Construction of new curb utilizing slip-form paving equipment;
(xiv) Construction of east sidewalk (landscaping)

(b) **Stage II** –Northbound - Concrete Repairs and Asphalt Resurfacing (Existing Gutter Lane)

(i) Planing of existing asphalt and concrete where required;
(ii) Removal of existing pavement where required;
(iii) Excavation and placement of base course material where required;
(iv) Adjustment of existing water valves, and manholes;
(v) Full depth concrete repairs of existing slabs and joints;
(vi) Placing of scratch course of asphalt on existing gutter lane and new gutter lane;

(c) **Stage III** –Northbound - Concrete Repairs and Asphalt Resurfacing (Existing Median Lane and Left Turn Lane)

(i) Planing of existing asphalt and concrete where required;
(ii) Removal of existing pavement where required;
(iii) Removal of existing median lane curbs, Bullnoses and medians;
(iv) Excavation and placement of base course material where required;
(v) Adjustment of existing water valves, and manholes;
(vi) Full depth concrete repairs of existing slabs and joints;
(vii) Construction of new curb utilizing slip-form paving equipment
(viii) Placing of scratch course of asphalt;

(d) **Stage IV** –Northbound – Final Asphalt works

(i) Placing of final lift of asphalt overlay using automatic grade control for all main lines
(ii) Placing of asphalt overlay in all cross street, and private approaches on East side of McPhillips Street
(iii) All asphaltic concrete work shall be performed using a lane-at-a-time method (see E6 for minimum requirements of traffic lanes to be left open at various times).
(iv) At the end of any day, there shall be no drop-off along any longitudinal joint, excepting the longitudinal joint between the gutter and approaches.

D18.1.3 **Phase II** – McPhillips Street Southbound - Pavement Widening, Concrete Repairs and Asphalt Resurfacing

(a) **Stage I** –Southbound Gutter Lane

(i) Removal of existing curbs, and sidewalk;
(ii) Removal of existing pavement where required;
(iii) Excavation of northbound gutter lane;
(iv) Installation of catchbasins and connection pipe;
(v) Installation of subdrains
(vi) Compaction of existing sub-grade
(vii) Placement of separation/reinforcement fabric;
(viii) Placement of sub-base base course materials;
(ix) Adjustment of existing manholes and catchbasins
(x) Construction of 200mm concrete pavement (plain-dowelled)
(xi) Construction of new curb utilizing slip-form paving equipment
(xii) Construction of east sidewalk (landscaping)

(b) **Stage II** –Southbound - Concrete Repairs and Asphalt Resurfacing (Existing Gutter Lane)

(i) Planing of existing asphalt and concrete where required;
(ii) Removal of existing pavement where required;
(iii) Excavation and placement of base course material where required;
(iv) Adjustment of existing water valves, and manholes;
(v) Full depth concrete repairs of existing slabs and joints;
(vi) Placing of scratch course of asphalt on existing gutter lane and new gutter lane;

(c) **Stage III** –Southbound - Concrete Repairs and Asphalt Resurfacing (Existing Median Lane and Left Turn Lane)

(i) Planing of existing asphalt and concrete where required;
(ii) Removal of existing pavement where required;
(iii) Removal of existing median lane curbs, Bullnoses and medians;

(iv) Excavation and placement of base course material where required;

(v) Adjustment of existing water valves, and manholes;

(vi) Full depth concrete repairs of existing slabs and joints;

(vii) Construction of new curb utilizing slip-form paving equipment

(viii) Placing of scratch course of asphalt;

(d) **Stage IV** –Southbound – Final Asphalt works

(i) Placing of final lift of asphalt overlay using automatic grade control for all main lines

(ii) Placing of asphalt overlay in all median openings, cross street, and private approaches on Westside of McPhillips Street

(iii) All asphaltic concrete work shall be performed using a lane-at-a-time method (see E6 for minimum requirements of traffic lanes to be left open at various times).

(iv) At the end of any day, there shall be no drop-off along any longitudinal joint, excepting the longitudinal joint between the gutter and approaches.

(e) Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of the asphaltic concrete overlay, including the scratch course.

D18.1.4 Immediately following the completion of the asphaltic concrete works of Phase I, the Contractor shall clean up the Site and remove all plant, surplus material, waste and debris, other than that left by the City or other Contractors.

D18.1 Further to C6.1, the sequence of work shall be as follows:

D18.1.1 The Contractor shall delay placing the final lift of asphalt on the roadway, so that the final lift of all lanes is placed in one operation.

D18.1.2 The Contractor shall begin excavation of Phase I – Stage I Northbound Gutter Lane at the south end of the Site and work towards the North. The Contractor will install the new Manitoba Hydro Manholes as the excavation progresses. Manitoba Hydro will follow behind and install their ductline. The Contractor shall prioritize the installation of the new Manitoba Hydro Manholes so that they do not delay Manitoba Hydro's schedule.

D18.1.3 Phase II from the CP tracks to the south limit of the Work cannot commence until Manitoba Hydro has successfully abandoned the existing Manitoba Hydro manholes south of the CP tracks on the west side.

(a) This abandonment of the existing Manitoba Hydro Manholes on the west side of the Work south of the CP tracks cannot proceed until the new plant along the east side including the two crossings across McPhillips Street has been completed.

D18.1.4 Phase II from Selkirk Avenue to CP tracks cannot commence until Manitoba Hydro successfully relocates the existing overhead plant on the west side.

(a) The relocation of the existing overhead plant along the west side, north of CP tracks may not be completed in 2009. The schedule of this work will be determined primarily on the availability of the materials. Manitoba Hydro will provide a schedule.

D19. SUBSTANTIAL PERFORMANCE

D19.1 The Contractor shall achieve Substantial Performance within eighty (80) consecutive Working Days of the commencement of the Work as specified in D14.

D19.2 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.

D19.3 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.

D20. TOTAL PERFORMANCE

D20.1 The Contractor shall achieve Total Performance within eighty-five (85) consecutive Working Days of the commencement of the Work as specified in D14.

D20.2 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.

D20.3 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.

D21. LIQUIDATED DAMAGES

D21.1 If the Contractor fails to achieve, Substantial Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

(a) Substantial Performance - Three thousand dollars ($3000.00);

D21.2 The amounts specified for liquidated damages in D21.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve, Substantial Performance by the days fixed herein for same.

D21.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D22. SCHEDULED MAINTENANCE

D22.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Reflective Crack Maintenance (during the one year warranty period) as specified in in CW 3250-R7;

(b) Sod maintenance as specified in CW 3510-R9;

(c) Extended Two Year Maintenance as specified in E28.

D22.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D23. JOB MEETINGS

D23.1 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.

D23.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D24. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D24.1 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).

WARRANTY

D25. WARRANTY

D25.1 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.

D25.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

D25.2 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.

D25.2.1 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 D10)

KNOW ALL MEN BY THESE PRESENTS THAT

_____
(hereinafter called the "Principal"), and

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

_____

_____ dollars ($_____.____)

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

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

BID OPPORTUNITY NO. 404-2009

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING
which is by reference made part hereof and is hereinafter referred to as the “Contract”.

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

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

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

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

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

_____ day of _____ , 20____ .

SIGNED AND SEALED
in the presence of:

_____
(Witness as to Principal if no seal)

_____
(Name of Principal)

Per: _____ (Seal)

Per: _____

_____
(Name of Surety)

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

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

_____
(Date)

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

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 404-2009

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

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

_____ ,
(Name of Contractor)

_____
(Address of Contractor)

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

_____

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

_____
(Address)

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

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

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

_____ .
(Date)

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

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

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

_____
(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

FORM J: SUBCONTRACTOR LIST
(See D11)

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

Portion of the Work	Name	Address
SURFACE WORKS:		
Supply of Materials:		
Geotextile Fabrics		
Sub-base and Base Course		
Concrete		
Asphalt		
Joint Sealant		
Installation/Placement:		
Geotextile Fabrics		
Planing		
Pavement Removal/Excavation		
Sub-base and Base Course		
Concrete		
Asphalt		
Topsoil / Sod		
Joint Sealant		
UNDERGROUND WORKS:		
Supply of Materials:		
Precast Concrete Catch Pit/Catch Basin/Risers		
Catch Pit/Catch Basin/Manhole Frames, Covers, Boxes and Ring Sections		
Drainage Pipe/ Sewer Service Pipe/ Fittings		
Watermain Valve/service Boxes		
Subdrains		
Steel Casing Pipe		
Installation/Placement:		
Precast Concrete Riser/Catch Pit/Catch Basin/Risers		
Catch Pit/Catch Basin/Manhole Frames, Covers, Boxes and Ring Sections		
Precast Concrete Manitoba Hydro Manhole		
Drainage Pipe/ Sewer Service Pipe/Fittings		
Watermain Valve/service Boxes		
Subdrains		
Steel Casing Pipe		

FORM K: EQUIPMENT
(See D12)

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

1. Category/type: Underground Works

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

2. Category/type: Excavation

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

3. Category/type: Compaction and Grading

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

FORM K: EQUIPMENT
(See D12)

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

4. Category/type: Asphalt Planing

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

5. Category/type: Concrete Curb Paving (Slip Form)

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

6. Category/type: Asphalt Paving

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

FORM K: EQUIPMENT
(See D12)

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

7. Category/type: Manitoba Hydro Vaults

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

8. Category/type: Steel Casing Pipe

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

Make/Model/Year: _____ Serial No.: _____

Registered owner: _____

FORM L: DETAILED WORK SCHEDULE

(See D13)

PROVINCE OF MANITOBA/CITY OF WINNIPEG: McPHILLIPS STREET: SELKIRK AVENUE TO CPR UNDERPASS
WIDENING, CONCRETE REPAIRS AND ASPHALT RESURFACING

For each item of Work, indicate the cumulative percentage proposed to be completed by the end of each time period until 100% completion is achieved.

Items of Work	Time Period in Working Days															
	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
Phase I – McPhillips Street Northbound - Pavement Widening, Concrete Repairs and Asphalt Resurfacing																
Stage I –Northbound Gutter Lane																
Installation of new Manitoba Hydro Manholes;																
Installation of Steel Casing Pipe;																
Removal of existing curbs, and sidewalk;																
Removal of existing pavement where required;																
Excavation of northbound gutter lane;																
Installation of catchbasins and connection pipe;																
Installation of subdrains;																
Compaction of existing sub-grade;																
Placement of separation/reinforcement fabric;																
Placement of sub-base base course materials;																
Adjustment of existing manholes and catchbasin																
Construction of 200mm concrete pavement (plain-dowelled);																
Construction of new curb utilizing slip-form pavin equipment;																
Construction of east sidewalk;																
Landscaping.																
Stage II –Northbound - Concrete Repairs and Asphalt Resurfacing (Existing Gutter Lane)																
Planing of existing asphalt and concrete where required;																
Removal of existing pavement where required;																
Excavation and placement of base course material where required;																
Adjustment of existing water valves, and manholes;																
Full depth concrete repairs of existing slabs and joints;																

Placing of scratch course of asphalt on existing gutter lane and new gutter lane;																
Stage III –Northbound - Concrete Repairs and Asphalt Resurfacing (Existing Median Lane and Left Turn Lane)																
Planing of existing asphalt and concrete where required;																
Removal of existing pavement where required;																
Removal of existing median lane curbs, Bullnoses and medians;																
Excavation and placement of base course material where required;																
Adjustment of existing water valves, and manholes;																
Full depth concrete repairs of existing slabs and joints;																
Construction of new curb utilizing slip-form paving equipment;																
Placing of scratch course of asphalt																
Stage IV –Northbound – Final Asphalt works																
Placing of final lift of asphalt overlay using automatic grade control for all main lines																
Placing of asphalt overlay in all cross street, and private approaches on East side of McPhillips Street																
Phase II – McPhillips Street Southbound - Pavement Widening, Concrete Repairs and Asphalt Resurfacing																
Stage I –Southbound Gutter Lane																
Removal of existing curbs, and sidewalk;																
Removal of existing pavement where required;																
Excavation of northbound gutter lane;																
Installation of catchbasins and connection pipe;																
Installation of subdrains;																
Compaction of existing sub-grade;																
Placement of separation/reinforcement fabric;																
Placement of sub-base base course materials;																
Adjustment of existing manholes and catchbasins;																
Construction of 200mm concrete pavement (plain-dowelled);																
Construction of new curb utilizing slip-form paving equipment;																
Construction of west sidewalk;																
Landscaping																

Stage II –Southbound - Concrete Repairs and Asphalt Resurfacing (Existing Gutter Lane)																
Planing of existing asphalt and concrete where required;																
Removal of existing pavement where required;																
Excavation and placement of base course material where required;																
Adjustment of existing water valves, and manholes;																
Full depth concrete repairs of existing slabs and joints;																
Placing of scratch course of asphalt on existing gutter lane and new gutter lane																
Stage III –Southbound - Concrete Repairs and Asphalt Resurfacing (Existing Median Lane and Left Turn Lane)																
Planing of existing asphalt and concrete where required;																
Removal of existing pavement where required;																
Removal of existing median lane curbs, Bullnoses and medians;																
Excavation and placement of base course material where required;																
Adjustment of existing water valves, and manholes;																
Full depth concrete repairs of existing slabs and joints;																
Construction of new curb utilizing slip-form paving equipment;																
Placing of scratch course of asphalt																
Stage IV –Southbound – Final Asphalt works																
Placing of final lift of asphalt overlay using automatic grade control for all main lines;																
Placing of asphalt overlay in all median openings, cross street, and private approaches on Westside of McPhillips Street																

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 The following are applicable to the Work:

Drawing No.	Drawing Name/Title	Drawing (Original) Sheet Size
P-3302-1	Cover Sheet	A1
P-3302-2	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+200 to Sta. 0+325 – North Bound	A1
P-3302-3	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+200 to Sta. 0+325 – South Bound	A1
P-3302-4	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+325 to Sta. 0+450	A1
P-3302-5	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+450 to Sta. 0+575	A1
P-3302-6	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+575 to Sta. 0+700	A1
P-3302-7	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+700to Sta. 0+825	A1
P-3302-8	McPhillips Street– Selkirk Avenue to CPR Underpass Sta. 0+825to Sta. 0+950	A1
P-3302-9	McPhillips Street– Selkirk Avenue to CPR Underpass Miscellaneous Details	A1
P-3302-10	McPhillips Street– Selkirk Avenue to CPR Underpass Streetscape and Landscape Works	A1
P-3302-11	McPhillips Street– Selkirk Avenue to CPR Underpass Streetscape and Landscape Works	A1
P-3302-12	McPhillips Street– Selkirk Avenue to CPR Underpass Streetscape and Landscape Works	A1
P-3302-13	McPhillips Street– Selkirk Avenue to CPR Underpass Landscape Details	A1
8833	McPhillips Street- 1st & 2nd Set of CBs South of Jarvis Avenue 250 Catchbasin Leads	A3
8834	McPhillips Street – MH @ McPhillips Street to 1st MH W of McPhillips Street 250 WWS and 375 CS Point Repairs	A3
106-A2	McPhillips Street– Selkirk Avenue to CPR Underpass Manitoba Hydro Manhole- Standard Product	11X17
DA0451	McPhillips Street– Selkirk Avenue to CPR Underpass Standard Manhole P-Trap, Backflow Valve & Clean-Out Valve	Letter

E2. GEOTECHNICAL REPORT

E2.1 Further to C3.1, the geotechnical report is provided to aid the Contractor's evaluation of the pavement structure and/or 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 20 square metres, a height of 2.4m 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^{o}C or 24-25^{o}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, a legal size filing cabinet and a table with enough chairs to accommodate weekly Site meetings.

(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 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 Substantial 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. PROTECTION OF EXISTING TREES

E4.1 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 2400mm 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.

E4.2 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 designate.

E4.3 No separate measurement or payment will be made for the protection of trees.

E4.4 Auguring under existing trees will be the only acceptable method of underground installations. Any other excavations must be approved by the Forestry Branch.

E4.5 Except as required in clause E4.1(c) and E4.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

E5. TRAFFIC CONTROL

E5.1 Further to clauses 3.6 and 3.7 of CW 1130-R1:

(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 CW3410.

(b) In accordance with the Manual of Temporary Traffic Control, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Section 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 Section of the City of Winnipeg in connection with the works undertaken by the Contractor.

E6. TRAFFIC MANAGEMENT

E6.1 Further to clause 3.7 of CW 1130-R1:

E6.1.1 Maintain a minimum of one lane of traffic Northbound (Phase I) and one lane of traffic Southbound (Phase II) during their respective construction times;

E6.1.2 No lane closures of Southbound traffic will be permitted during Phase I and no lane closures of Northbound traffic will be permitted during Phase II, without the written permission of the Contract Administrator; and

E6.1.3 Where left turn lanes exist, an additional lane to accommodate the left turn storage lane shall be maintained at all times.

E6.1.4 East/West traffic at an intersection 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. 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.

E6.1.5 Intersecting street and private approach access shall be maintained at all times.

E6.1.6 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he 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.

E6.1.7 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E7. PEDESTRIAN SAFETY

E7.1 During the project, a temporary snow fence shall be installed at open excavations to replace CB's or make connections, to install the new Manitoba Hydro Manholes and the Steel Casing Pipe that are adjacent to pedestrian facilities. 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.

E8. WATER USED BY CONTRACTOR

E8.1 Further to clause 3.7 of CW 1120-R1, the Contractor shall pay for all costs associated with obtaining water in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.

E9. SURFACE RESTORATIONS

E9.1 Further to clause 3.3 of CW 1130-R1, when Total Performance is not achieved in the year the Contract is commenced, the Contractor shall temporarily repair any Work commenced and not completed to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

E10. INFRASTRUCTURE SIGNS

E10.1 The Contractor shall obtain infrastructure signs from the Traffic Services Sign Shop at 421 Osborne Street. The Contractor shall mount each sign securely to a rigid backing material approved by the Contract Administrator. The Contractor shall fasten each sign to a suitable support and erect and maintain one sign at each street as directed by the Contract Administrator. When the Contract Administrator considers the Work on the street complete, the Contractor shall remove and dispose of the signs and supports. No measurement for payment will be made for performing all operations herein described and all other items incidental to the work described

E11. SAWCUTTING PAVEMENT

E11.1 At the limits of excavation as directed by the Contract Administrator, the Contractor shall saw cut the existing pavement to produce a clean straight edge when excavated. The edge must be clean and straight prior to pouring new concrete pavement.

E11.2 For asphaltic concrete pavements, the cost of saw cutting and disposal of any surplus material shall be included in the unit price bid for "Pavement Removal – Asphalt Pavement". For concrete pavements, the cost of saw cutting and disposal of surplus material shall be included in the unit price bid for "Pavement Removal – Concrete Pavement".

E11.3 For locations of existing separate barrier curb that are to be removed, the pavement shall be saw cut full depth at a location no greater than 150mm from the face of the existing curb. The saw cut shall be straight and consistent. The full depth saw cut for existing separate barrier curb removal shall be paid for at the Contract Unit Price for "Full-Depth Saw Cutting" measured per metre, which price shall be payment in full for performing all operations described in E11.3 and all other items incidental to the work included in E11.3.

E12. TREE REMOVAL

DESCRIPTION

E12.1 General

E12.1.1 This Special Provision shall amend the City of Winnipeg Standard Construction Specification CW 3010-R4 “Clearing and Grubbing”, and shall cover the removal of trees as specified on the Contract Drawings.

CONSTRUCTION METHODS

E12.2 General

E12.2.1 Remove Trees in accordance with CW 3010-R4.

MEASUREMENT AND PAYMENT

E12.3 Tree Removal

E12.3.1 Tree removal will be measured on a unit basis. The Contractor will be paid according to the total number of trees removed within the limits of the work and approved by the Contract Administrator.

E12.3.2 The removal of trees shall be paid for at the Contract Unit Price per tree for “Tree Removal”, measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification.

E13. ASPHALT PATCHING OVER FULL DEPTH CONCRETE REPAIRS

DESCRIPTION

E13.1 General

E13.1.1 This specification covers placing asphalt over full depth concrete repairs to match the grade of the remaining adjacent asphalt overlay prior to placing the asphalt scratch course. The patching is necessary to prevent transverse rutting from sudden depth changes where the existing overlay is removed over a concrete repair.

E13.1.2 Referenced Standard Construction Specifications

(a) CW 3410-R6 – Asphaltic Concrete Pavement Works.

(b) CW 3450-R3 – Planing of Pavement.

MATERIALS

E13.2 Asphalt Material

E13.2.1 Asphalt material will be Type 1A and will be supplied in accordance with Sections 5 and 6 of CW 3410-R6.

CONSTRUCTION METHODS

E13.3 General

E13.3.1 Asphalt patch to be placed where there is a minimum of 35 millimetres of remaining asphalt overlay immediately adjacent to a full depth concrete repair in accordance with Paragraph 3 of Clause 9.1.2 (a) of CW 3410-R6

E13.3.2 Place tack coat in patch area by hand, hand sprayer, or broom as necessary in accordance with Clause 9.2 of CW 3410-R6.

E13.3.3 Place and compact using mechanical rollers. Place the asphalt material to a compacted depth matching the top of the existing asphalt overlay. Compact to an average of 95% percent of the 75 Blow Marshall Density of the paving mixture with no individual test being less than 90% percent.

MEASUREMENT AND PAYMENT

E13.4 Asphalt Patching over Full Depth Concrete Repairs

E13.4.1 Asphalt Patching over Full Depth Concrete Repairs will be measured on a weight basis and paid for at the Contract Unit Price per tonne for "Asphalt Patching over Full Depth Concrete Repairs". The weight to be paid for will be the total number of tonnes of asphalt placed and compacted in accordance with this specification, as measured on a certified weigh scale, and accepted by the Contract Administrator.

E14. PATCHING OF EXISTING PAVEMENT

DESCRIPTION

E14.1 General

E14.1.1 This specification covers patching of existing concrete pavement in preparation for an asphalt overlay.

E14.1.2 Referenced Standard Construction Specifications

(a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction.

(b) CW 3130 – Supply and Installation of Geotextile Fabrics.

(c) CW 3410 – Asphaltic Concrete Pavement Works.

MATERIALS

E14.2 Crushed Sub-Base Material

E14.2.1 Crushed Sub-base material will have a maximum aggregate size of 50 millimetre and be supplied in accordance with Section 2.1 of CW 3110.

E14.3 Geotextile Fabric

E14.3.1 Geotextile fabric will be supplied in accordance with Section 2 of CW 3130.

E14.4 Asphalt Material

E14.4.1 Asphalt material will be Type 1A and will be supplied in accordance with Sections 5 and 6 of CW 3410.

CONSTRUCTION METHODS

E14.5 General

E14.5.1 Remove existing concrete pavement to a minimum width of 1.5 metres at locations as shown on the Drawings or as directed by the Contract Administrator in accordance with Section 3.1 of Specification CW 3110.

E14.5.2 Excavate to a depth of 350 millimetres below the top of the existing pavement.

E14.5.3 Compact existing sub-grade to a minimum of 95% Standard Proctor Density.

E14.5.4 Place separation/reinforcement geotextile fabric in accordance with Specification CW 3130.

E14.5.5 Place and compact crushed sub-base material in accordance with CW 3110 to a 300 millimetres compacted depth. Compact to a minimum of 100% Standard Proctor Density.

E14.5.6 Place and compact asphalt material to a 50 millimetres compacted depth matching the top of the existing concrete pavement. Compact to an average of 95% percent of the 75 Blow Marshall Density of the paving mixture with no individual test being less than 90% percent.

E14.5.7 Each layer must be levelled and accepted by the Contract Administrator before the succeeding layer may be placed.

E14.5.8 Additional excavation and placement of sub-base material beyond the identified pavement structure will be completed in accordance with CW 3110 as directed by the Contract Administrator.

MEASUREMENT AND PAYMENT

E14.6 Pavement Patching

E14.6.1 Pavement patching will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Pavement Patching". The area to be paid for will be the total number of square metres of pavement patched in accordance with this specification, accepted and measured by the Contract Administrator.

E15. RECYCLED CONCRETE BASE COURSE MATERIAL

DESCRIPTION

E15.1 General

E15.1.1 Further to CW 3110, this specification covers supply and placement of recycled concrete base course material for Full-Depth Partial Slab Patches (Class A, B, C, & D), miscellaneous concrete slabs and sidewalks.

E15.2 Definitions

E15.2.1 Deleterious material – are materials such as vegetation, organic material, wood, glass, plastic, metal, reinforcing steel, building rubble, brick, salvaged asphalt materials, clay, shale, and friable particles.

E15.3 Referenced Standard Construction Specifications

(a) CW 3110 – Sub-Grade. Sub-Base and Base Course Construction.

(b) CW 3230 – Full-Depth Patching of Existing Pavement Slabs and Joints.

(c) CW 3235 – Renewal of Existing Miscellaneous Concrete Slabs.

(d) CW 3325 – Portland Cement Concrete Sidewalk.

MATERIALS

E15.4 Recycled Concrete Base Course Material

E15.4.1 Recycled concrete base course material when used for Full-Depth Partial Slab Patches (Class A, B, C, & D), miscellaneous concrete slabs and sidewalks will be considered equal to granular or limestone base course material specified in Section 2.2 of CW 3110.

E15.4.2 Recycled concrete base course material will be approved by the Contract Administrator.

E15.4.3 Recycled concrete base course material will consist of sound durable particles produced by crushing, screening, and grading of recovered concrete materials, free from soft material that would disintegrate through decay or weathering.

E15.4.4 The recycled concrete base course material will be well graded and conform to the following grading requirements:

Recycled Concrete Base Course Material Grading Requirements

CANADIAN METRIC SIEVE SIZE	PERCENT OF TOTAL DRY WEIGHT PASSING EACH SIEVE
20 000	100%
5 000	40% - 70%
2 500	25% - 60%
315	8% - 25%
80	6% - 17%

E15.4.5 Recycled concrete base course material when subjected to the abrasion test will have a loss of not more than 35% when tested in accordance with grading B of ASTM C131, Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

E15.4.6 The amount of deleterious material will be limited to a maximum of two percent of the total dry weight.

CONSTRUCTION METHODS

E15.5 Placement of Recycled Concrete Base Course Material

E15.5.1 Place and compact recycled concrete base course material as a levelling course to a maximum thickness of 50 millimetres.

E15.5.2 Spread materials uniformly to avoid segregation free of pockets of fine and coarse material.

E15.5.3 Level and compact to the finished elevation. Compact to 100% Standard Proctor Density for Full-Depth Partial Slab Patches (Class A, B, C, & D) and 90% Standard Proctor Density for miscellaneous concrete slabs and sidewalks.

E15.5.4 Maintain the finished material until the pavement or sidewalk is placed.

MEASUREMENT AND PAYMENT

E15.6 Recycled Concrete Base Course Material

E15.6.1 The supplying, placing and compaction of recycled concrete base course material will be measured on a volume basis and paid for at the Contract Unit Price per cubic metre for the "Supplying and Placing Base Course Material" as specified in accordance with CW 3110.

E15.6.2 No measurement or payment will be made for material placed as a levelling course under miscellaneous concrete slabs and sidewalks where the costs are included in accordance with CW 3235 and CW 3325.

E15.6.3 No measurement or payment will be made for materials rejected by the Contract Administrator.

E16. 100MM CRUSHED CONCRETE SUB-BASE MATERIAL

DESCRIPTION

E16.1 Further to CW 3110, this specification covers the supply and placement of 100mm crushed concrete sub-base material for unstable sub-grades.

E16.2 Referenced Standard Construction Specifications

E16.2.1 CW 3110 – Sub-grade, Sub-base and Base Course Construction

MATERIALS

E16.3 100mm crushed concrete sub-base material will be approved by the Contract Administrator. The 100mm crushed concrete sub-base material will conform to the following grading requirements:

CANADIAN METRIC SIEVE SIZE	PERCENT OF TOTAL DRY WEIGHT PASSING EACH SIEVE 100MM MAX. AGGREGATE
100 000	97% - 100%
25 000	30% - 50%
80	5% Max.

E16.3.1 Maximum size of material shall not exceed 150mm.

E16.4 100mm crushed concrete sub-base material will be a mixture of reclaimed concrete and asphaltic concrete. The contents of the material will be limited to the following percentages based on weight.

(a) minimum of 85% recycled concrete

(b) maximum of 15% recycled asphaltic concrete

(c) maximum of 3% clay

(d) maximum of 1% foreign material

CONSTRUCTION METHODS

E16.5 Place sub-base material by end dumping down the centre of the excavation. The sub-base shall be pushed forward and levelled to thickness equal to cover the entire sub-grade width, thickening the section to allow support for the hauling operations and avoid damage to the geotextile and/or geogrid. This procedure shall continue until all sub-base material has been placed down the centre of the excavation.

E16.6 Level sub-base material utilizing a track type dozer.

E16.7 Initial compaction of the sub-base material shall consist of two complete passes utilizing vibratory type equipment capable of setting the material. Each pass shall be over lapped by half the width of the roller. All additional compaction shall be completed utilizing static type equipment. No trucks, rubber tire loaders or graders will be allowed to travel on the sub-base material until the Contract Administrator has approved the compaction of the sub-base.

E16.8 The final compacted thickness of the sub-base material shall be a minimum of 300 mm thickness.

MEASUREMENT AND PAYMENT

E16.9 The supplying, placing and compaction of crushed sub-base material will be measured on a weight basis and paid for at the Contract Unit Price per tonne for the “100mm Crushed Concrete Sub-base Material”. The weight to be paid for will be the total number of tonnes of 100mm crushed concrete sub-base material supplied and placed in accordance with this specification, accepted and measured by the Contract Administrator.

E16.10 The weight to be paid for will be the total number of tonnes of 100mm crushed concrete sub-base material as measured on a certified weigh scale.

E16.11 Only material placed within the limits of excavation will be included in the payment for 100mm crushed concrete sub-base material.

E16.12 No measurement or payment will be made for materials rejected by the Contract Administrator.

E17. PARTIAL DEPTH PATCHING OF EXISTING JOINTS

DESCRIPTION

E17.1 General

E17.1.1 This specification covers the Partial Depth Patching of existing concrete pavement joints.

E17.2 Referenced Standard Construction Specifications

(a) CW 3230 – Full-Depth Patching of Existing Slabs and Joints

(b) CW 3410 – Asphalt Concrete Pavement Works

(c) CW 3450 – Planing of Pavement

MATERIALS

E17.3 Asphalt Materials

E17.3.1 Asphalt material will be Type 1A supplied in accordance with Sections 5 and 6 of CW 3410.

E17.4 Tack Coat

E17.4.1 Tack Coat will be undiluted SS-1 emulsified asphalt or approval equal.

CONSTRUCTION METHODS

E17.5 Planing of Joints

E17.5.1 Plane existing joints designated by the Contract Administrator to a minimum depth of 50 mm and a maximum of depth 90 mm to remove ravelled or deteriorated concrete. Width of joint to be planed will vary with depth.

E17.5.2 Should the depth of joint deterioration exceed the maximum indicated, as determined by the Contract Administrator, the entire joint shall be renewed and paid for in accordance with CW 3230 as a full depth joint repair. Planing completed shall be paid for in accordance with Section 15.7 of this specification

E17.5.3 Dispose of material in accordance with Section 3.4 of CW 1130.

E17.6 Placement of Asphalt Material

E17.6.1 Prior to placement of asphalt material, the planed joint shall be swept or blow clean of any loose material.

E17.6.2 Apply Tack Coat uniformly on the entire surface of the planed joint. The application rate shall not exceed 0.23 litres per square metre. The planed joint shall be dry prior to applying the tack coat.

E17.6.3 Place and compact asphalt material in accordance with Section 9.3 of CW 3410 to the satisfaction of the Contract Administrator. The finished elevation of the patch shall be flush with surrounding pavement surface.

E17.6.4 Compact the asphalt material to an average 95% of the 75 blow Marshall Density of the paving mixture with no individual test being less than 90 %.

E17.6.5 Ensure that no traffic is allowed to travel over the patched area until the asphalt has cooled to atmospheric temperature.

MEASUREMENT AND PAYMENT

E17.7 Partial Depth Planing of Existing Joints

E17.7.1 Partial Depth Planing of Existing Joints will be measured on an area basis and paid for at the Contract Unit Price per square metre for “Partial Depth Planing of Existing Joints”. Work completed on ”Partial Depth Planing of Existing Joints” that have been discontinued due to deteriorated concrete as outlined in E.15.5.2 will be measured on an area basis and paid for at the contract unit price per square meter for “Partial Depth Planing of Existing Joints”. The area to be paid for will be the total number of square metres of joints planed in accordance with this specification, accepted and measured by the Contract Administrator.

E17.8 Asphalt Patching of Partial Depth Joints

E17.8.1 Asphalt Patching of Partial Depth Joints will be measured on a weight basis and paid for at the Contract Unit Price per tonne for “Asphalt Patching over Partial and full Depth Joints”. The weight to be paid for will be the total number of tonnes of asphalt supplied and placed in accordance with this specification and accepted by the Contract Administrator, as measured on a certified weigh scale.

E18. PLANING OF EXISTING MONOLITHIC BARRIER CURB

E18.1 Existing monolithic concrete barrier curb shall be removed by planing with self-propelled planning equipment. The Contractor, if he chooses, may break the top 100 mm of the existing monolithic concrete barrier curb prior to the planing of the curb. Breaking the top 100 mm shall be considered part of the planing process and no additional payment shall be made. Following completion of planing, the existing curb shall be a minimum depth of 50 mm below finished grade or as directed by the Contract Administrator. Planing of existing monolithic concrete barrier curb will be measured on a length basis and paid for at the Contract Unit Price per metre for "Planing of Existing Monolithic Concrete Barrier Curb". The length to be paid for will be the total number of metres of curb planed in accordance with this Specification, accepted and measured by the Contract Administrator.

E18.2 If reinforcing steel is found to be present in the curb, removal shall be completed as per SD-206A, Alternative 2. Removal of curb containing reinforcing steel will be measured on a length basis and paid for at the Contract Unit Price per metre for "Concrete Curb Removal, Barrier (Integral)".

E19. REMOVAL OF EXISTING AND INSTALLATION OF NEW ASPHALT AT RAIL CROSSING

DESCRIPTION

E19.1 General

E19.1.1 This specification covers the removal of existing and installation of new asphalt at rail crossing

E19.2 Remove existing asphalt and install new asphalt as shown on the drawings or as directed by the Contract Administrator.

CONSTRUCTION METHODS

E19.3 The Contractor shall be responsible for removing the existing asphalt at the railway crossing at the existing roadway. The Contractor shall coordinate with Canadian Pacific Railway (CP), as directed by the Contract Administrator.

E19.4 The Contractor shall be responsible for installing a new asphaltic concrete overlay at the railway crossing. The Contractor shall coordinate with Canadian Pacific Railway (CP), as directed by the Contract Administrator.

E19.5 It is anticipated that CP will perform the rail crossing renewal during a weekend with a complete shut down of the railway crossing.

MEASUREMENT AND PAYMENT

E19.6 Removal of the asphalt will be measured on a unit basis and shall be paid for at the Contract Unit Price for "Pavement Removal – Asphalt Pavement".

E19.7 Installation of a new asphalt crossing will be measured on a unit basis and shall be paid for at the Contract Unit Price for "Construction of Asphaltic Concrete Overlay – Tie-ins and Approaches".

E20. COORDINATION OF CONSTRUCTION WITH THE RAILWAY COMPANIES

E20.1 General Requirements

E20.1.1 The Contractor shall be responsible to meet all railway companies, Canadian Pacific Railway (CP), constraints, requirements, and safety measures.

E20.2 Description of Work

E20.2.1 Prior to the Contractor commencing Work within the railway property, the railway companies will have prepared their tracks such that the Contractor will construct the new travelled surface of the road and sidewalk to the outer face of the track crossing surfaces. The Contractor shall construct the proposed road and sidewalk to the requirements of the drawing details.

E20.3 Temporary Construction Crossing

E20.3.1 The Contractor may make an agreement with the railway whereby a temporary use crossing may be constructed prior to the completion of the road. The successful Contractor will be required to enter into an agreement with The City of Winnipeg whereby they become jointly named user of the crossings should they wish to use them during construction.

E20.3.2 These crossings will be restricted to the use of the Contractors equipment and designated supervisory personnel only unless approved by the Contract Administrator. Crossings will be used only during Working hours and will be left such that unauthorized access is prevented unless approved by the Contract Administrator.

E20.3.3 The Contractor shall be responsible for construction and removal of temporary crossings. No measurement for payment will be made for performing all operations herein described and all other items incidental to the Work described.

E20.3.4 The Contractor shall be responsible for installing and maintaining a temporary stop sign in both directions for the temporary construction crossing. No measurement for payment will be made for performing all operations herein described and all other items incidental to the Work described.

E20.3.5 CP has advised there is normally a few trains per day.

E20.3.6 All sections of Appendix ‘B’ covering railway requirements apply.

E20.4 Railway Flagging Costs

E20.4.1 The railway companies will provide a Protecting Foreman for the protection of the railway’s plant and equipment and the cost of such shall be borne by the Contractor. No measurement for payment will be made for performing all operations herein described and all other items incidental to the Work described.

E20.5 CP Requirements

E20.5.1 CP Requirements are included in Appendix ‘B’. The Contractor is advised that the requirements are applicable to all of the Contractor’s personnel and equipment crossing CP tracks and property.

E20.6 Working Within the Rail Right-of-Way

E20.6.1 The Contractor shall minimize the time working within the rail right-of-way. The Contractor shall only enter the right away for;

(a) Construction of the new rail crossing;

(b) Construction of the pavement and related works adjacent to the rail and only if required;

(c) Working with CP within the right-of-way and;

(d) Using the Temporary Crossing.

E20.7 Installation of the Steel Duct Line Casing Pipe

E20.7.1 The Contractor is to coordinate the installation of the steel duct line under the CP tracks with CP and the track renewal work by CP.

E21. INSTALLATION OF NEW MANITOBA HYDRO MANHOLES

DESCRIPTION

E21.1 Scope of Work

E21.1.1 The Work shall consist in the supply of all labour and supervision including labour and equipment required for pick-up, transporting and unloading the precise concrete subsurface chambers from Manitoba Hydro yard located at 1311 Notre Dame Avenue, Winnipeg, plant, equipment, tools, transportation, mobilization and demobilization (including personnel, plant, equipment and tools), insurance, installation of chambers including sewage connection and temporary restoration to work site, warranty of workmanship supplied by the Contractor and all other requirements necessary for the installation of seven precast concrete subsurface chambers and associated sewer connections on McPhillips Street, all in accordance with the technical requirements and Manitoba Hydro construction drawings.

CONSTRUCTION METHODS

E21.2 Technical Requirements

E21.2.1 Manitoba Hydro will supply all survey layout and will determine the final location of the precast concrete subsurface chambers subsequent to utility clearances being obtained by the Contractor.

E21.2.2 The contractor will be required to pickup, transport, and unload the precast concrete subsurface chambers from 1311 Notre Dame Avenue in Winnipeg to the construction site.

E21.2.3 The Contractor will install each precast concrete subsurface chamber as per the Manitoba Hydro Construction Drawings. Preliminary sketches provided in the tender package are for tendering purposes only and are not to be used for construction.

E21.2.4 The Contractor will be required to install the frame cover, concrete risers, steel rings or lifter rings where necessary, Ramneck, ladder and two (2) 10 ft x 3/4. copperweld ground rods for each precast concrete subsurface chamber installation. The Contractor will drill holes at the time of the precast concrete subsurface chambers installation, install the ground rods at a depth that allows for eight (8) inches of the ground rod to be exposed at the top of the rod, and grout the ground rods at the floor.

E21.2.5 The Contractor will be required to supply and seal the ground rods with grout. The grout shall be unshrinkable hydraulic grout. All openings in the floor of the precast subsurface chambers shall be grouted by the contractor (ie. ground rods, back-up valve access, sump access, sewer connection, etc).

E21.2.6 The Contractor shall comply with all Municipal and Provincial regulations regarding signing and barricading of the construction work site needed for the Contractor's work. The contractor shall supply all necessary signage and flag persons (if necessary) to safely and properly direct pedestrian and vehicular traffic around obstructions, equipment, etc. at the work site.

E21.2.7 The Contractor will saw cut full depth, break, remove and properly dispose of existing concrete and asphalt and any other excavated material as required to install the precast concrete subsurface chambers.

E21.2.8 The Contractor will supply and install the required sewer connection from the precast concrete subsurface chamber to the existing sewer main as per the Construction Drawings.

E21.2.9 Prior to the installation of any component of the precast concrete subsurface chambers, the Contractor will be required to expose the existing sewer at the tie-in location. Subsequently, Manitoba Hydro will establish the final grade of the sewer connection invert and the final grade of the bottom of the precast concrete subsurface chambers.

E21.2.10 The Contractor will supply and install the p-trap and sewer backup valve in accordance with Manitoba Hydro drawings DA0451, Sheets 1 of 1 and with current City of Winnipeg Standard Construction Specifications.

E21.2.11 The Contractor will be required to acquire all utility clearances required prior to construction.

E21.2.12 The subsurface chamber excavations to be backfilled in accordance with City of Winnipeg Standard Construction Specification CW 2030 and SD-002 Class 3 Backfill with Type 1 Fill material to the roof of the subsurface chamber. This includes jetting, flooding and tamping in accordance with City of Winniper specifications for Class 3 backfill with Type 1 fill material. The remainder of the excavation (or the top 0.6 m, whichever is greater) to be backfilled to grade with City of Winnipeg Base Course material (crushed limestone) as referenced in CW 3110-R10 compacted to City of Winnipeg Standard Construction Specifications. Where traffic is allowed onto affected areas prior to permanent repairs a temporary asphalt cap will be required.

E21.2.13 The excavation for the installation of the Manitoba Hydro manhole shall not be completely backfilled until Manitoba Hydro has completed connecting their new ductline to the manhole. When the ductline has been connected to both sides of a new manhole the Contractor shall backfill accordingly.

E21.2.14 All excavations for sewer line connections under pavement and/or within one metre of a pavement edge will be backfilled in accordance with City of Winnipeg Standard Construction Specification CW 2030 and SD-002 Class 3 Backfill and Type 1 Fill. Note the top 0.6 metres of backfill to consist of City of Winnipeg Base Course material (crushed limestone) as referenced in CW 3110-R10 and compacted to City of Winnipeg Standard Construction Specifications. Where traffic is allowed onto trench areas prior to permanent repairs a temporary asphalt cap will be required.

E21.2.15 Sewer tie-ins under boulevards (utilizing PVC sewer service pipe) to be backfilled in accordance with City of Winnipeg Standard Construction Specification CW 2030 and SD-002 Class 5 Backfill. Contractor to note, if excavation trench is within one metre of the nearest pavement edge, backfill to be as per item 13 above.

E21.2.16 Sewer Service Pipe (PVC only) bedding material to be as per City of Winnipeg Standard Construction Specification Detail SD-001 - Class B bedding with sand as specified in CW 2030.

E21.2.17 Affected sidewalks will be temporarily restored in accordance with City of Winnipeg Standard Construction Specifications to maintain pedestrian access.

E21.2.18 The Contractor will be required to obtain all necessary permits required (including Service Application Permit) to complete the sewer installations and the sewer installation work must be done by a licensed sewer and water contractor.

E21.2.19 Manitoba Hydro will supply the pre-cast concrete subsurface chambers including: frame, cover, ladder, two (2) ground rods, Ramneck, slab top, concrete riser rings and/or steel lifter rings as required and a sump cover.

(a) The Contractor will be required to pick-up, transport, and unload all of these above mentioned items from 1311 Notre Dame Avenue in Winnipeg to the construction site.

E21.2.20 The Contractor will supply all other materials necessary for the installation of the pre-cast concrete subsurface chambers including supply and installation of the p-trap, backflow valve assembly including cover (the cover shall be constructed of aluminum checker plate that is 9.5 mm (3/8”) thick and is 300 mm x 300 mm (12” x 12”) square).

E21.2.21 The contractor shall supply and install all required shoring and conduct work in accordance with Manitoba Workplace Safety and Health Regulation 217/2006 and Manitoba Hydro “Safe Excavating Procedures”. The Contractor shall be responsible for providing all necessary notifications to regulatory authorities.

E21.3 Notes:

E21.3.1 Only one (1) ground rod is shown on the drawings; however two (2) ground rods are required. The second ground rod is to be installed in the diagonally opposite corner from the first ground rod.

E21.3.2 The weight of the manholes is as follows:

(a) A-Type Bottom Half - 7850 kg
Top Half - 7100 kg

(b) T-Type Bottom Half - 7850 kg
Top Half - 7050 kg

E21.3.3 Any extra work must be agreed upon and approved in writing by Manitoba Hydro before any extra work is performed.

E21.3.4 In the event contaminated soil is found, the Contractor shall safely remove and dispose of, at an approved site, the contaminated soil, and replace the soil with clean fill. This work shall be paid as extra work.

E21.3.5 Manitoba Hydro will install the ductline between the manholes after the manholes installation is complete.

MEASUREMENT AND PAYMENT

E21.4 The installation of New Manitoba Hydro Manhole will be measured on a unit basis and paid for at the Contract Unit Price for the “Installation of New Manitoba Hydro Manhole”, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The installation of Hydro Manhole to be paid for the total number of New Manitoba Hydro Manhole installed in accordance with this specification, accepted and measured by the Contract Administrator.

E21.5 The installation of the manhole sewer service will be measured on a unit basis and shall be paid for at the Contract Unit Price for “Sewer Service 150mm PVC SDR-35”, “Sewer Service Risers – 150mm” and the correct corresponding “Connecting to Existing…” Item.

E22. SUPPLY AND INSTALL OF DUCT LINE STEEL CASING PIPE

DESCRIPTION

E22.1 General

E22.1.1 This specification shall cover the supply and installation of the duct line steel casing pipe to be installed within the CP Right-of-Way.

E22.1.2 This specification shall supplement CW2130 and CW2110.

E22.1.3 The Contractor shall submit to the Contract Administrator a Material Order List prior to ordering the steel duct line casing.

E22.1.4 The Contractor shall provide a material properties sheet to the Contract Administrator showing the steel source, composition and grade.

MATERIALS

E22.2 The duct line steel casing pipe shall be black steel and shall conform to ASTM A53. The steel shall meet all the requirements of GO E-10 and have a minimum yield strength of 245 MPa.

E22.3 The steel casing pipe shall have an outside diameter of 1219mm and a thickness of 17.5mm.

CONSTRUCTION METHODS

E22.4 General

E22.4.1 The installation procedures shall conform to CW2130 and CW2110.

MEASUREMENT AND PAYMENT

E22.5 The supply of the steel pipe shall be measured on a unit basis and shall be paid for at the Contract Unit Price for “Supply of Steel Casing Pipe – 1219mm” which price shall be payment in full for transporting, and supplying the steel casing pipe.

E22.6 The installation of the steel pipe by Trenchless methods shall be measured on a unit basis and shall be paid for at the Contract Unit Price for “Install Duct Line Steel Casing Pipe – 1219mm – Trenchless Installation” which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification including excavation of the shaft, shoring, placing the steel segmental pieces and welding the steel pieces together.

E22.7 The installation of the steel pipe in a Trench shall be measured on a unit basis and shall be paid for at the Contract Unit Price for “Install Duct Line Steel Casing Pipe – 1219mm – in a Trench” which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification including placing the steel segmental pieces and welding them together.

E23. HYDRANT RELOCATION

DESCRIPTION

E23.1 General

E23.1.1 This specification shall supplement the Type A Relocation of a fire hydrant and shall supplement CW2110.

E23.1.2 The hydrant relocation shall conform to CW2110 Type A relocation and shall include a new hydrant on the existing tee.

MEASUREMENT AND PAYMENT

E23.2 The relocation of the hydrant shall be measured on a unit basis and shall be paid for at the Contract Unit Price for “Type A Relocation of Hydrant (Supply and Install New Hydrant on Existing Tee)” which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification including removal of existing hydrant, supply and install new hydrant and connecting to the existing tee.

E24. 100 MM CONCRETE SIDEWALK WITH PAVING STONE, AND BRICK INSET

E24.1 Further to Specification CW 3325 the Contractor shall construct the proposed concrete sidewalk with block-outs (for paving stone and brick) with a minimum 100 mm depth of Concrete as shown on the Drawings. The "block-outs" shall be constructed utilizing forming techniques capable of accommodating the proposed paving stone and brick paving to the dimensions and tolerances as shown on the Drawings and as confirmed with paving stone and brick manufacturer.

E24.2 The concrete sidewalk shall be poured such that the block-outs and remaining sidewalk act as a monolithic section.

E24.3 All costs in connection with the additional forming and placement of concrete as a result of the "block-outs", and additional depths in areas as shown on the Drawing are incidental and shall be included in the unit price bid for "100 mm Concrete Sidewalk c/w reveal for paving band". Minimum 75mm depth compacted granular levelling course shall be included in unit price bid for “100 mm Concrete Sidewalk c/w reveal for paving band”.

E24.4 Sidewalk to be poured adjacent to transformer pits, areaways and buildings with approved bond breaker. Cost of bond breaker and shall be included in the unit price bid for "100 mm Concrete Sidewalk c/w reveal for paving band".

E24.5 All saw cutting required and shall be included in the unit price bid for "100 mm Concrete Sidewalk c/w reveal for paving band". All sawcut joints shall be laid out as shown on the drawings, on Site for review and approval by Contract Administrator prior to construction. All sawcutting to City of Winnipeg Specifications.

E25. REMOVAL OF EXISTING INTERLOCK PAVING STONE

E25.1 Description

E25.1.1 This Specification shall supplement Standard Construction Specification CW 3330 – R3 and shall cover all operations related to the removal of existing Interlock Paving Stones.

E25.2 Construction Method

E25.2.1 Removal of existing interlock paving stones shall be understood to include removal and disposal of interlock concrete sidewalk pavement and lean mix, regardless of depth. The removal of existing lean mix or concrete sidewalk shall be paid for as a separate item.

E25.2.2 Removal of interlock concrete paving stone for reinstallation shall include removal of paving stones and lean mix as required, disposal of unusable paving stone and base course material and stockpiling of paving stones in approved area for future reinstallation.

E25.2.3 Any existing lean mix concrete base at the limits of the designated removal area shall be sawcut for the full depth of the pavement prior to the demolition and removal operations. All costs in connection with sawcutting are incidental and shall be included in the unit price bid for "Removal of Interlock Paving Stone" and Removal of Interlock Paving Stone for Reinstallation".

E25.2.4 The Contractor shall exercise due caution during the Interlock paving stone removal Works so as to limit vibration. The Contractor shall take all necessary precautions when Working in the vicinity of any existing areaways, coal chutes, duct lines, trees, hedges, etc.

E25.2.5 The Contractor shall take care when removing the paving stones not to damage them, and shall stockpile them.

E25.3 Method of Measurement

E25.3.1 Removal of existing interlock paving stone will be measured on a surface area basis as follows:

(i) Salvage Existing Paving Stones.

E25.3.2 Removal of existing lean mix or concrete sidewalk underneath existing paving stones will be measured on a surface area basis as follow:

(i) Miscellaneous Concrete Slab Removal – Sidewalk.

E25.4 Basis of Payment

E25.4.1 Removal of Existing Interlocking Paving Stone will be measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification and shall include removal, salvage and stockpiling.

E25.4.2 Removal of existing lean mix or concrete sidewalk underneath existing paving stones will be paid for at the Contract Unit Price for "Miscellaneous Concrete Slab Removal – Sidewalk".

E26. INTERLOCKING PAVING STONES

DESCRIPTION

E26.1 Further to CW 3335 this Specification shall cover the:

(a) reinstallation of stockpiled interlocking paving stones (unit pavers),

(b) supply and installation of interlocking paving stones (unit pavers),

(c) supply and installation of sand setting bed,

(d) supply and installation of grout,

E26.2 Delivery of unused stockpiled interlocking paving stone. If required, the delivery of the unused stockpiled paving stones will be delivered to a destination less than 5 km from the Site.

E26.3 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary or and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

MATERIALS

E26.4 Concrete interlocking paving stones (unit pavers) shall be Holland Stone Pavers, supplied by Barkman Concrete, contact Wayne Wiebe, phone 667-3310, as shown on the Drawings, or an equivalent product, and as follows:

(a) Blue Holland Stone 105x210x60mm

(b) Natural Holland Square Stone 210x210x60mm

(c) Holland pavers in autumn brown to match existing 105x210x60mm

E26.5 Sand:

(a) Clean brick sand as joint filler.

(b) Clean brick sand as minimum 13mm depth setting bed

E26.6 Grout Under Modular Retaining Wall:

(a) Grout as specified hereinafter shall be used for grouting paving stone and brick in areas indicated on the drawings. The grout shall have a compressive strength of 25 MPA at 28 days, determined on 50 mm cubes stored and tested in accordance with ASTM C109, and shall consist of normal Portland cement, sand and water.

(b) The water-cement ratio shall be kept in the range of 0.45 to 0.55.

(c) The grout shall have between 3% and 5% entrained air.

(d) Acryl-Stik or approved equal to be used in grout at approximately 4 litres Acryl-Stik to 3 litres water.

(e) Admixtures to be used in the grout shall be supplied in accordance with the requirements of the City of Winnipeg Standard CW 3310.

(f) The grout shall be of a consistency suitable for the application intended as approved by the Contract Administrator.

(g) The Contractor shall provide the Contract Administrator with a mix design statement certifying the constituent materials and mix proportions that will be used in the grout for approval prior to construction.

CONSTRUCTION METHODS

E26.7 Interlocking paving stones shall be installed in block out in concrete sidewalk as per the Drawings.

INSTALLATION

E26.8 Contractor to install stockpiled pavers prior to supply and installation of new pavers.

E26.9 Install sand setting bed for pavers on granular base as shown on the Drawings.

E26.10 Contractor to verify the exact dimensions of pavers and panels prior to construction of block outs in concrete sidewalk.

(a) Install concrete sidewalk as specified on Drawings.

(b) Install sand bed to minimum 13mm depth as specified on Drawings. Adjust depth of pavers under areas to be relevelled to ensure surface of pavers is flush with adjacent paving.

(c) Do not compact setting bed prior to installation of pavers.

(d) Spread only sufficient area which can be covered with pavers same day.

(e) Lay pavers on sand bed hand tight.

(f) In areas where pavers are to be grouted in place clean existing concrete, install grout bed and then place pavers on grout.

(g) Grout between pavers as required to ensure stability.

(h) Remove adjacent pavers in bands as required to ensure that bricks do not require cutting on straight bands.

(i) Where paving pattern is interrupted by vertical structural elements pavers must be sawcut and fit true and hand tight.

(j) Commence installation of pavers against edge to obtain straightest possible course for installation.

(k) Pavers shall be cut with a saw only, to obtain true even undamaged edges. Chipped pavers are unacceptable.

(l) Crews shall Work on installed pavers, not on sand layer.

(m) Spread and fine grade brick sand over paving surface and sweep into joints, in several directions. Sand is included in the price for supply and installation of pavers.

(n) Compact pavers with vibratory plate compactor having mass of at least 113kg. Compaction is incidental to the price for supply and installation of paving stone.

(o) Sweep remaining sand over all paving areas and remove from Site.

(p) Replace at no extra cost all whole or cut stones marked as unacceptable.

(q) Remove cracked, chipped, broken or otherwise damaged paving materials from Site immediately.

(r) Upon completion, clean in accordance with manufacturer's recommendations.

METHOD OF MEASUREMENT

E26.11 Reinstallation of stockpiled interlocking paving stones will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

E26.12 Supply and installation of interlocking paving stones will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

BASIS OF PAYMENT

E26.13 Reinstallation of stockpiled interlocking paving stones will be paid for at the Contract Unit Price per square metre for “Reinstall Stockpiled Unit Pavers” measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E26.14 Supply and installation of interlocking paving stones will be paid for at the Contract Unit Price per square metre for “Interlocking paving stones” measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E27. PLANT MATERIAL

DESCRIPTION

E27.1 The following list generally describes the scope of this section:

(a) Supply and planting of trees and shrubs;

(b) Supply and planting of perennials and vines;

(c) Supply and planting of native plug plants.;

(d) Maintenance to date of substantial performance;

GENERAL

E27.2 Obtain approval of plant material at source.

E27.3 Notify Contract Administrator of source of material at least 7 days in advance of shipment. No Work under this Section is to proceed without approval.

E27.4 Acceptance of plant material at source does not prevent rejection at Site prior to or after planting operations.

E27.5 Source of all plant material to be from an area within the same hardiness zone and soil conditions as Winnipeg.

SHIPMENT AND PRE-PLANTING CARE

E27.6 Co-ordinate shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting. Tie branches of trees and shrubs securely and protect plant material against abrasion, exposure and extreme temperature change during transit. Avoid binding of planting stock with rope or wire which would damage bark, break branches or destroy natural shape of plant. Give full support to root ball of large trees during lifting.

E27.7 Cover plant foliage with tarpaulin, and protect bare roots by means of dampened straw, peatmoss, sawdust or other acceptable material to prevent loss of moisture during transit and storage.

E27.8 Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 50 mm diameter with wound dressing.

E27.9 Keep roots moist and protected from sun and wind. Heel-in shrubs, which cannot be planted immediately, in shaded areas, and water well.

MATERIALS

E27.10 Water

E27.10.1 Water should be potable and free of minerals, which may be detrimental to plant growth.

E27.11 Anti-Desiccant

E27.11.1 Anti-desiccant should be wax-like emulsion to provide film over plant surface reducing evaporation but permeable enough to permit transpiration.

E27.12 Wound Dressing

E27.12.1 Wound dressing should be horticulturally accepted non-toxic, non-hardening emulsion.

E27.13 Plant Material

E27.13.1 Quality and Source: Comply with City of Winnipeg tree planting guidelines, referring to size and development of plant material and root ball. All plant material to be approved by City and Contract Administrator at source.

E27.13.2 Measure plants when branches are in their natural position. Height and spread dimensions refer to main body of plant and not from branch tip to branch tip. Use trees of No. 1 grade.

E27.13.3 Additional plant material qualifications:

(a) Use perennials and plant plugs with strong fibrous root system free of disease, insects, defects or injuries and structurally sound. Plant must have been root pruned regularly, but not later than one growing season prior to arrival on Site.

E27.14 Cold Storage

E27.14.1 Approval required for plant material, which has been held in cold storage.

E27.15 Container – Grown Stock

E27.15.1 Acceptable if containers large enough for root development. Shrubs and vines must have grown in container for minimum of one growing season but not longer than two. Root system must be able to "hold" soil when removed from container. Plants that have become root bound are not acceptable. Container stock must have been fertilized with slow releasing fertilizer.

E27.16 Substitutions

E27.16.1 Substitutions to plant material as indicated on plantings plan are not permitted unless written approval has been obtained as to type, variety and size prior to award of Contract. Plant substitutions must be similar species and of equal size to those originally specified.

E27.17 Root balls

E27.17.1 Deciduous trees in excess of 3 m height must have been dug with large firm ball. Root balls must include 75% of fibrous and feeder root system. This excludes use of native trees grown in light sandy or rocky soil. Lift root ball from hole, place in wire basket designed for purpose and line with burlap. Secure root balls with burlap, heavy twine and wire basket. Protect root balls against sudden changes in temperature and exposure to heavy rainfall. Take care not to injure trunk of tree with wire basket ties or rope.

E27.17.2 Tree spade material shall not be accepted. Unless dug in field and secured as above.

CONSTRUCTION METHODS

E27.18 Workmanship

E27.18.1 Stake out location of trees and shrubs as per the Construction Drawings. Obtain approval by City and Contract Administrator prior to excavating.

E27.18.2 Apply anti-desiccant in accordance with material manufacturer's instructions only as required.

E27.18.3 Co-ordinate operations. Keep Site clean and planting holes drained. Immediately remove soil or debris spilled onto pavement.

E27.19 Planting Time

E27.19.1 Plant deciduous plant material during dormant period, before buds have broken. Plant material noted for spring planting only, must be planted in dormant period.

E27.19.2 When permission has been obtained to plant materials after buds have broken, spray plants with anti-desiccant to slow down transpiration prior to transplanting.

E27.19.3 When permission has been obtained, shrubs and perennials growing in containers may be planted throughout growing season.

E27.19.4 Plant only under conditions that are conducive to health and physical conditions of plants.

E27.19.5 Provide planting schedule. Executing planting operations over long period using limited crew will not be accepted.

E27.20 Excavations

E27.20.1 Prepare planting areas as shown on the Drawings.

E27.20.2 Provide drainage for planting holes in heavy soil if natural drainage does not exist. Have method approved.

E27.20.3 Protect bottom of excavations against freezing.

E27.20.4 Remove water, which enters excavations prior to planting. Ensure source of water is not ground water.

E27.21 Planting

E27.21.1 Scarify sides of planting hole to depth of 150 mm where tree is planted in isolated tree pit.

E27.21.2 Plant trees, shrubs and perennials vertically with roots placed straight out in hole. Orient plant material to give best appearance in relation to structure, roads and walks.

E27.21.3 Place plant material to depth equal to depth they were originally growing in nursery. Allow for soil settlement in planting.

E27.21.4 With balled and burlapped roots balls, loosen burlap and cut away minimum top 1/2 without disturbing root ball. Cut vertical slits in remaining burlap around root ball at 250mm intervals. Remove all rope, string, or other ties from around trunk. Do not pull burlap or rope from under root ball. With container stock, remove entire container without disturbing root ball. Non bio-degradable wrappings must be removed including wire baskets.

E27.21.5 Tamp planting soil around root system in layers of 150mm eliminating air voids. Frozen or saturated planting soil is unacceptable. When 2/3 of planting soil has been placed, fill hole with water. After water has completely penetrated into soil, complete backfilling.

E27.21.6 Build 100 mm deep saucer around outer edge of hole to assist with maintenance watering. Install 100mm depth wood chip mulch in saucer as shown on drawings.

E27.21.7 When planting is completed, give surface of planting saucer dressing of organic 10-6-4 fertilizer at rate of 12 kg/100 m for shrub beds or 40 to 50 g/mm of calliper for trees. Mix fertilizer thoroughly with top layer of planting soil and water in well.

E27.22 Pruning

E27.22.1 Prune trees and shrubs after planting only as required to remove broken diseased or dead branches. Employ clean sharp tools and make cuts flush with main branch, smooth and sloping as to prevent accumulation of water.

E27.23 Maintenance

E27.23.1 After completion of planting operation to the satisfaction of the Contract Administrator and City of Winnipeg, the Contractor shall be responsible for the maintenance of the plant material until date of Substantial Performance and commencement of two year warranty.

E27.23.2 After completion of planting operation to the satisfaction of the Contract Administrator and City of Winnipeg, within the Manitoba Lotteries Property, the Contractor shall be responsible for the maintenance of the plant material for 60 days or until it can be confirmed that the plant material is growing.

E27.23.3 Replace any dead or damaged plant material during the maintenance period, including replacement of vandalized material.

E27.23.4 Water sufficiently to maintain optimum growing conditions. Ensure adequate moisture in root zone at freeze-up.

E27.23.5 The Contractor shall provide all necessary equipment, including: tractors, mowers, hand mowers, trimmers, fertilizer spreaders, pruning tools, hoses, water meters, and any other items necessary for the maintenance of the plant material indicated in this Specification.

E27.23.6 Remove all weeds and debris from mulch beds, planting beds and tree wells on a weekly basis.

E27.23.7 Turn and top up mulch in beds and tree wells each spring and piror to start of extended maintenance.

E27.24 Personnel

E27.24.1 The Contractor shall provide all necessary personnel for the ongoing maintenance operations.

E27.24.2 Personnel should have at least one year of experience in landscape maintenance and should be under the direction of a foreman, in all cases, with not less than five years of experience with similar maintenance operations.

MAINTENANCE METHODS

E27.25 Watering

E27.25.1 Trees shall be watered twice weekly, or during the summer, if temperatures are fairly high and there has been no rainfall, water approximately once a week.

E27.25.2 To determine the need for watering, make a soil test weekly with a one-inch auger. Take a test sample from both the planting soil and from the root ball by drilling to a minimum depth of 600 mm. The soil shall contain enough moisture to hold together when compressed in the hand, but not be muddy.

E27.26 Fertilizing

E27.26.1 Because of the specialized nature of such operations, fertilizing is to be done by a qualified local arborist.

E27.26.2 Fertilize in the fall over the surface of the ground surrounding the plants, then soak the area thoroughly, use 10-6-4 analysis fertilizer spreading a maximum of 0.13 kg per square metre.

E27.27 Spraying

E27.27.1 Spray trees to control insect pests and diseases. Use horticulturally recommended compounds specific for the problem to be contained.

E27.28 Insects and Diseases

E27.28.1 Spray plants to combat pests and diseases. Do not use DDT or sprays prohibited by Agriculture Canada.

METHOD OF MEASUREMENT

E27.29 Supply and Installation of Plant Material will be measured on a unit basis. The number of units to be paid shall be the total number of each type and size of units supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

BASIS OF PAYMENT

E27.30 Supply and Installation of Plant Material will be paid for at the Contract Unit Price per unit type and size specified for "Supply and install plant material", measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

E28. EXTENDED MAINTENANCE

DESCRIPTION

E28.1 This Specification shall deal with the maintenance of the trees, mulch beds, and perennials for Two (2) calendar years after the date of the Substantial Performance

MATERIALS AND PERSONNEL

E28.2 The Contractor shall provide all necessary equipment, including: tractors, trimmers, fertilizer spreaders, pruning tools, water trucks, hoses, water meters, and any other items necessary for the maintenance of the area indicated in this Specification.

E28.3 The Contractor shall provide all necessary personnel for the ongoing maintenance operations

WORK INCLUDED

E28.4 The following areas shall be part of the maintenance jurisdiction:

(a) The trees, shrubs perennials and vines as indicated on the Drawings

(b) Mulch beds as indicated on the Drawings.

E28.5 Maintenance of Trees, Shrubs and Perennials

E28.5.1 Watering

(a) All plant material shall be watered bi-weekly, or during the summer, if temperatures are fairly high and there has been no rainfall, water approximately once a week. Where irrigation is not available this should be executed by leaving a hose, with a gentle rate of flow, running into the saucer of the root ball for about one hour

(b) To determine the need for watering, make a soil test weekly with a one-inch auger. Take a test sample from both the planting soil and from the root ball by drilling to a minimum depth of 600 mm. The soil shall contain enough moisture to hold together when compressed in the hand, but shall not be muddy.

E28.5.2 Fertilizing and pest control

(a) Fertilizing, Pruning and Spraying Deciduous Trees and Shrubs. Because of the specialized nature of such operations, this should be done by a qualified local arborist

(b) Fertilize in the fall over the surface of the ground surrounding the plants, then soak the area thoroughly. Use 10-6-4 analysis fertilizer spreading a maximum of 0.13 kg per square meter.

(c) Spray to control insect pests and diseases. Use horticulturally recommended compounds specific for the problem to be contained.

E28.5.3 Weeding

(a) Remove all weeds in tree wells planting beds and mulch beds by hand on a weekly basis. Do not use chemical weed killer.

(b) Remove all debris from beds, including weeds, and dispose of off Site in a legal manor.

E28.5.4 Other Maintenance

(a) Tighten, or remove, turnbuckles or guy wires for trees as required or directed by the Contract Administrator.

(b) Straighten trees as required and directed by the Contract Administrator.

E28.5.5 The Contractor shall agree and guarantee to replace and replant any nursery stock found dead or in poor condition during and at the completion of the maintenance period. All plant material to be replaced and maintained for a minimum of 30 days prior to end of maintenance period. "Poor Condition" shall be interpreted as meaning nursery stock in

which branches are dead or dying, or have not shown satisfactory growth of leaves. All replacements shall be of same size and species, as specified.

E28.5.6 Upon the end of the required maintenance period, a Site inspection shall be held. If at this time, all material and Works is satisfactory the Contract for maintenance and warranty shall be terminated. If materials and Works are found unacceptable the warranty shall be extended by 30 days for a follow up inspection. Extension of warranty will continue in 30 day increments for inspection until all work and material are satisfactory.

E28.6 Maintenance of Sod

E28.6.1 Sod maintenance as per CW 3510.

METHOD OF MEASUREMENT

E28.7 Extended Maintenance will be measured on a per year lump sum basis and paid for in accordance with this Specification and accepted by the Contract Administrator.

BASIS OF PAYMENT

E28.8 Extended Maintenance will be paid for each year at the Contract per Year Lump Sum Price for "Extended Two Year Maintenance"; which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the work included in this Specification.

E29. FENCING, FENCE PILES AND GRADE BEAM

DESCRIPTION

E29.1 This specification shall cover the supply and installation of fencing, concrete grade beam and concrete piles.

MATERIALS

E29.2 Fencing to be Golden Eagle III fencing by Iron Eagle as supplied by:

Wallace and Wallace
Lowson Crescent
Winnipeg MB, R3P 2H8
Ph: 204-452-2700
Attn. Kori Buhler

E29.3 Fence colour and height to match existing.

INSTALLATION

E29.4 Measure length of fencing to be installed prior to construction. Install posts as per detail and adjust post spacing at ends of fencing runs to provide minimum 1.5m length panels at ends. Post spacing maybe adjusted for up to 5 panels.

E29.5 Construct fence as per manufacturers' specifications and details.

E29.6 Install bolt covers on posts prior to installation of fence panels.

E29.7 Cast-in-place concrete piles for fence posts and grade beam shall be constructed as per the Drawings.

E29.8 Existing grade beam to be removed or abandoned as directed by the Contract Administrator.

METHOD OF MEASUREMENT

E29.9 Fencing shall be measured on a linear metre basis for each type of fence. The number to be paid shall be the total number of lineal metres constructed in accordance with the Drawings and Specifications and as measure and accepted by the Contract Administrator.

E29.10 Cast-in-Place Concrete Piles 400mm Diameter will be paid for on a unit basis accepted by the Contract Administrator and will measured per each unit installed. All reinforcement will be included in the Unit Price.

E29.11 Concrete Grade Beam will be paid for on a unit basis accepted by the Contract Administrator and will measured per lineal meter. All reinforcement will be included in the Unit Price.

BASIS OF PAYMENT

E29.12 Supply and install fence will be paid for at the contract unit price per lineal metre for "Supply and install fencing" for each type of fence measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification.

E29.13 Cast-in-Place concrete piles shall be paid for at the Contract Unit Price for "Cast-in-Place Concrete Piles 400mm Diameter", which price shall be payment for all operations herein described including the cost of furnishing all necessary labour, materials and all other items incidental to the work included in this Specification.

E29.14 Concrete Grade Beam shall be paid for at the Contract Unit Price for "Concrete Grade Beam", which price shall be payment for all operations herein described including the cost of furnishing all necessary labour, materials, reinforcement and all other items incidental to the work included in this Specification.

E30. REMOVALS, DISPOSALS AND RELOCATIONS

E30.1 Relocation of existing transit totem sign will be measured on a unit basis. The number of units to be paid shall be the total number of signs relocated in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

E30.2 Relocation of existing bus stop flags will be measured on a unit basis. The number of units to be paid shall be the total number of flags relocated in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

E30.3 Relocation of existing 5x11 shelter will be measured on a unit basis. The number of units to be paid shall be the total number of shelters relocated in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

E30.4 Removal of existing fence will be measured on a linear basis. The length to be paid shall be the total number of metre of fence removed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

E30.5 Removal of existing shrub bed will be measured on an area basis. The area to be paid shall be the total area of shrub bed removed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator

E30.6 Removal of existing shrubs will be measured on a lump sum basis.

E31. MODIFICATION TO EXISTING CONCRETE PLANTER

DESCRIPTION

E31.1 This specification shall cover the removal and disposal if the existing section of planter including the wall, shrubs, foundation, soil and trees.

E31.2 This specification shall cover the installation of a new section of the concrete tree planter including the footing and base and the relocation any electrical outlets or conduit and irrigation sprinkler.

E31.3 The irrigation sprinkler shall conform to CW3530.

MATERIALS

E31.4 Concrete to conform to specifications shown on the Drawings.

E31.5 Granular base to be limestone base course wet compacted to 98% proctor density.

METHOD OF MEASUREMENT

E31.6 Modification to Existing Concrete Planter will be paid for on a unit basis. The number of units to be paid shall be the total number metres of new concrete planter installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator. All reinforcement will be included in the Unit Price.

BASIS OF PAYMENT

E31.7 The modification of the existing concrete planter shall be paid for at the Contract Unit Price for "Modification to Existing Concrete Planter" measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification. The price shall include the removal of the existing planter, preparation of all granular base work, backfill, new concrete section, supply and install of reinforcement, formwork, modification to the existing irrigation system and relocation of any electrical outlets.

E32. REPAIR EXISTING MODULAR BLOCK RETAINING WALL

DESCRIPTION

E32.1 This specification shall cover the repair of the existing modular block retaining wall.

MATERIALS

E32.2 The modular blocks shall be the same type, size, shape, finish and color as the existing blocks. A sample must be provided to the Contract Administrator for approval.

BASIS OF PAYMENT

E32.3 The repair of the existing modular block retaining wall shall be paid for at the Contract Unit Price for "Repair Existing Modular Block Retaining Wall", which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification. The price shall include the removal, salvage, stockpiling, reinstallation of stockpiled blocks, and supply of new blocks.

E33. CONCRETE FOR BUS STOPS

METHOD OF MEASUREMENT

E33.1 Supply and installation of concrete base for bus stop totem will be measured on a per unit basis. The number of units to be paid shall be the total number of each unit supplied and installed in

accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

E33.2 Supply and installation of concrete base for bus stop flag will be measured on a per unit basis. The number of units to be paid shall be the total number of each unit supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator

E33.3 Supply and installation of concrete concrete curb will be measured on a lineal metre basis. The number of metres to be paid shall be the total number of metres supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator

E33.4 No adjustments in price will be made should actual pile or base lengths in place be lesser or greater than anticipated by the Contractor or indicated on the Drawings.

BASIS OF PAYMENT

E33.5 Supply and installation of concrete base for bus stop totem will be paid for at the contract unit price for each unit installed for “Concrete base for totem” as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification.

E33.6 Supply and installation of concrete base for bus stop flag will be paid for at the contract unit price for each unit installed for “Concrete base for bus stop flag” as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification.

E33.7 Supply and installation concrete pinned curb will be paid for at the contract unit price for each unit installed for “Pinned concrete curb” as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the work included in this Specification.

APPENDIX 'A'

GEOTECHNICAL REPORT

APPENDIX 'A' - GEOTECHNICAL REPORT

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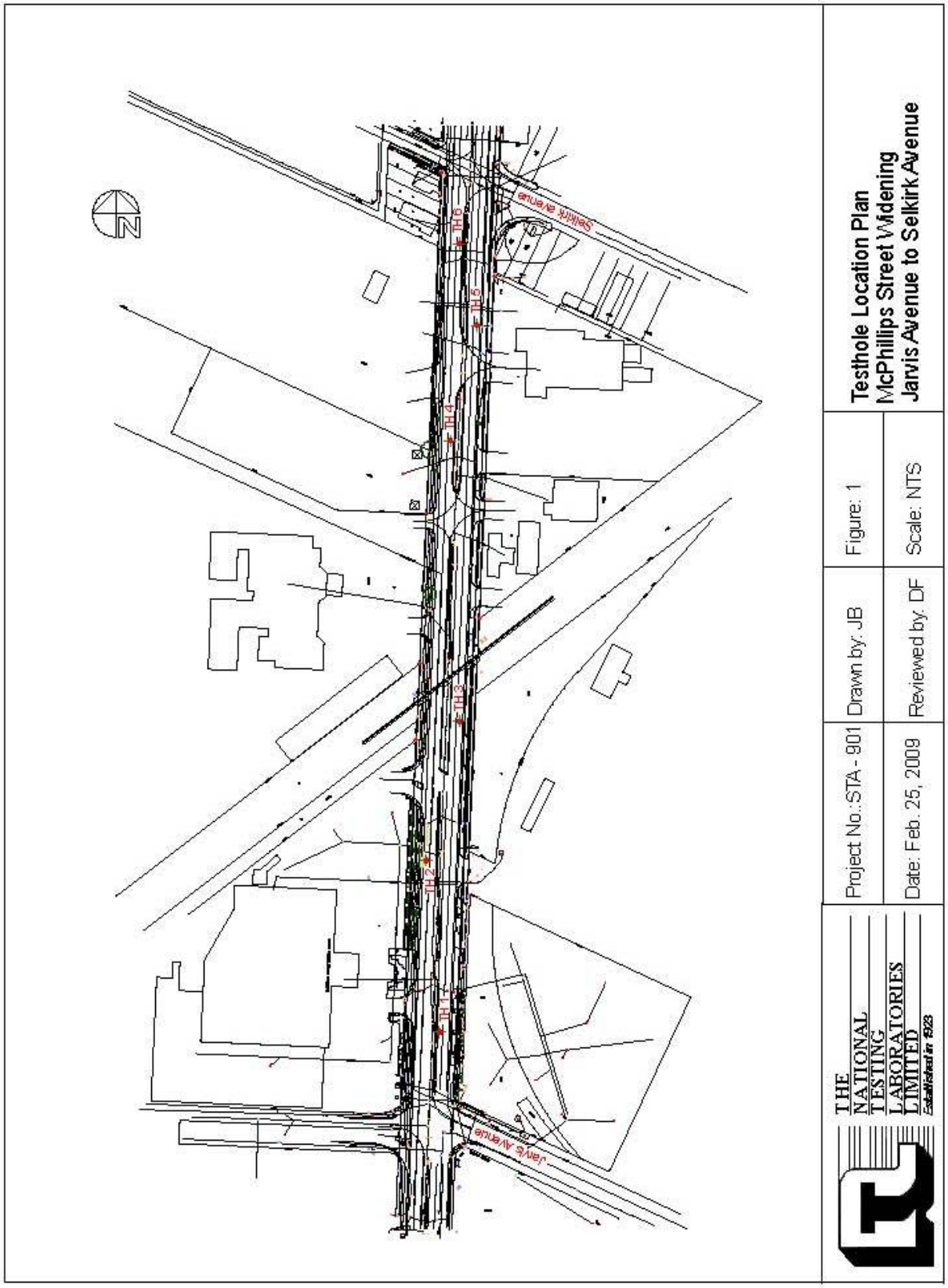
The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

Geotechnical Report for McPhillips Street

Test Hole Locations



Summary of Core Samples

McPhillips Street Widening Geotechnical Investigation
Jarvis Avenue to Selkirk Avenue

Testhole ID	Testhole Location	Pavement Surface		Pavement Structure Material		Sample Description	Sample Depth (m)	Moisture Content (%)	Particle Size Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
TH1	Northbound median lane 36 m north of the north curb of Jarvis Avenue center of lane	Asphalt / Concrete	92 / 250	Granular and clay fill	270	Silty Clay	0.9	28	0	3.3	30.4	66.4	50	18	32
TH2	Southbound curb lane 122 m north of the north curb of Jarvis Avenue center of lane	Asphalt / Concrete	112 / 202	Granular Base	unknown	-	-	-	-	-	-	-	-	-	-
TH3	Northbound curb lane 200 m north of the north curb of Jarvis Avenue center of lane	Asphalt / Concrete	70 / 185	Granular Base	unknown	-	-	-	-	-	-	-	-	-	-
TH4	Southbound median lane 139 m south of the south curb of Selkirk Avenue center of lane	Asphalt / Concrete	110 / 205	Granular and clay fill	200	Clay	0.9	31	0.0	4.4	18.6	77.0	72	21	51
TH5	Northbound centre lane 74 m south of the south curb of Selkirk Avenue center of lane	Asphalt / Concrete	45 / 215	Granular Base	915	-	-	-	-	-	-	-	-	-	-
TH6	Northbound median lane 36 m south of the south curb of Selkirk Avenue center of lane	Asphalt / Concrete	130 / 240	Granular and clay fill	unknown	-	-	-	-	-	-	-	-	-	-

Notes

1. Testholes TH2, TH3 and TH6 were drilled to a depth of approximately 100 mm below the existing concrete pavement

2. Based upon particle size analysis, the soil sample from Testhole TH1 is classified as silty clay. Visual examination of soil samples from the same stratigraphic layer indicated the silt content increased with depth and therefore, the soil has been classified as a clayey silt on the testhole logs.

Test Hole Log for TH1

TESTHOLE TH1

Project Name: McPhillips Street Widening
Client: Stantec Consulting Ltd.
Site: McPhillips Street, Jarvis Ave. to Selkirk Ave
Testhole Location: Northbound median lane, 36 m north of the north curb of Jarvis Ave, center of lane

Date Drilled: February 23, 2009
Depth of Testhole: 2.1 m
Logged by: Jeff Brant

Subsurface Profile			Laboratory Testing				
Depth (m)	Symbol	Description	Water Content (%) PL ---- LL (0 25 50 75 110)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
0.0		Ground Surface					
		Asphalt					
		Concrete					
		Fill - mixture of black/brown, firm, moist, high plasticity clay with fine to coarse grained sand, trace fine gravel					
0.5		**Clay** - black, stiff, moist, high plascticity	30				
		Clayey Silt - tan, firm, moist, low to intermediate plasticity with layers of clay to 1.1 m	28	0.0	3.3	30.4	66.4
1.0			25				
1.5		**Clay** - brown, firm, moist, high plasticity with layers of tan silt to a depth of 1.7 m	22				
			40				
2.0			48				
		• Frost present to 1.7 m • No water seepage or sloughing observed during or upon completion of drilling • Testhole terminated at 2.1 m					
2.5							

Test Hole Log for TH2

TESTHOLE TH2

THE NATIONAL TESTING LABORATORIES LIMITED

Project Name: McPhillips Street Widening
Client: Stantec Consulting Ltd.
Site: McPhillips Street, Jarvis Ave. to Selkirk Ave
Testhole Location: Southbound curb lane, 122 m north of the north curb of Jarvis Ave, center of lane

Date Drilled: February 23, 2009
Depth of Testhole: 414 mm
Logged by: Jeff Brant

Subsurface Profile

Depth (m)	Symbol	Description
0.0		Ground Surface
		Asphalt
		Concrete
		Granular Base
0.5		
1.0		
1.5		
2.0		• Testhole was terminated at 100 mm below the existing concrete pavement
2.5		

Test Hole Log for TH3

TESTHOLE TH3

THE NATIONAL TESTING LABORATORIES LIMITED

Project Name: McPhillips Street Widening
Client: Stantec Consulting Ltd.
Site: McPhillips Street, Jarvis Ave. to Selkirk Ave
Testhole Location: Northbound curb lane, 200 m north of the north curb of Jarvis Ave, center of lane

Date Drilled: February 23, 2009
Depth of Testhole: 355 mm
Logged by: Jeff Brant

Subsurface Profile

Depth (m)	Symbol	Description
0.0		Ground Surface
		Asphalt
		Concrete
		Granular Base
0.5		
1.0		
1.5		
2.0		• Testhole was terminated at 100 mm below the existing concrete pavement
2.5		

Test Hole Log for TH4

TESTHOLE TH4

THE NATIONAL TESTING LABORATORIES LIMITED

Project Name: McPhillips Street Widening
Client: Stantec Consulting Ltd.
Site: McPhillips Street, Jarvis Ave, to Selkirk Ave.
Testhole Location: Southbound median lane, 139 m south of the south curb of Selkirk Avenue, center of lane

Date Drilled: February 23, 2009
Depth of Testhole: 2.1 m
Logged by: Jeff Brant

Subsurface Profile			Laboratory Testing				
Depth (m)	Symbol	Description	Water Content (%) PL ---- LL (0 25 50 75 100)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
0.0		Ground Surface					
		Asphalt					
		Concrete					
		Fill - mixture of black/brown, firm, moist, high plasticity clay with fine to coarse grained sand, trace fine gravel	24				
0.5		**Clay** - black, stiff, moist, high plasticity - brown, silt layers below 0.8 m	27				
			31	0.0	4.4	18.6	77.0
1.0			30				
		Clayey Silt - tan, firm, moist, low to intermediate plasticity	27				
1.5			32				
2.0			22				
		• Frost present to 1.7 m • No water seepage or sloughing observed during or upon completion of drilling • Testhole terminated at 2.1 m					
2.5							

Test Hole Log for TH5

TESTHOLE TH5

Project Name: McPhillips Street Widening
Client: Stantec Consulting Ltd.
Site: McPhillips Street, Jarvis Ave. to Selkirk Ave.
Testhole Location: Northbound centre lane, 74 m south of the south curb of Selkirk Ave., center of lane

Date Drilled: February 23, 2009
Depth of Testhole: 2.1 m
Logged by: Jeff Brant

Subsurface Profile			Laboratory Testing
Depth (m)	Symbol	Description	Water Content (%) 0 20 40 60 80 100
0.0		Ground Surface	
		Asphalt	
		Concrete	
		Granular Base - brown, compact, moist, fine to medium grained sand with some fine gravel	13
0.5			13
			11
1.0			23
		Clayey Silt - tan, firm, moist, low to intermediate plasticity	21
1.5			25
		Clay - brown, firm, moist, high plascticity	35
2.0		• Frost present to 1.7 m • No water seepage or sloughing observed during or upon completion of drilling • Testhole terminated at 2.1 m	
2.5			

Test Hole Log for TH6

TESTHOLE TH6

THE NATIONAL TESTING LABORATORIES LIMITED

Project Name: McPhillips Street Widening
Client: Stantec Consulting Ltd.
Site: McPhillips Street, Jarvis Ave. to Selkirk Ave
Testhole Location: Northbound median lane, 36 m south of the south curb of Jarvis Ave, center of lane

Date Drilled: February 23, 2009
Depth of Testhole: 470 mm
Logged by: Jeff Brant

Subsurface Profile

Depth (m)	Symbol	Description
0.0		Ground Surface
		Asphalt
		Concrete
0.5		**Fill** - mixture of black/brown, firm, moist, high plasticity clay with fine to coarse grained sand, trace fine gravel
1.0		
1.5		
2.0		• Testhole was terminated at 100 mm below the existing concrete pavement
2.5		

Pavement Core Photos

THE NATIONAL TESTING LABORATORIES LIMITED

Testhole TH1

Testhole TH2

Testhole TH3

Testhole TH4

THE NATIONAL TESTING LABORATORIES LIMITED

Testhole TH5

Testhole TH6

APPENDIX 'B'

RAILWAY REQUIREMENTS

APPENDIX 'B' – RAILWAY REQUIREMENTS

CANADIAN PACIFIC RAILWAY

MINIMUM SAFETY REQUIREMENTS FOR CONTRACTORS WORKING ON RAILWAY PROPERTY

Calgary, July 1999

_____ Engineer

_____ Contractor

TABLE OF CONTENTS

SR1 INTRODUCTION

1.1 At Canadian Pacific Railway, Safety is an integral part of the way we do business. We expect everyone working on Canadian Pacific Railway's property to be unconditionally committed to safety. Safety must be given top priority and will take precedence over deadlines, production schedules, and all other considerations.

SR2 GENERAL

2.1 The Contractor shall be solely responsible for the safety of it's agents, employees and subcontractors.

2.2 The Contractor shall comply with all safety laws and regulations applicable to the work.

2.3 All Contractor's personnel, and those under contract to him, shall comply to the following safety requirements when working on the Railway's property and on the property of Railway's customers. The Contractor shall have a copy of the following documents on site at all times:

2.3.1 Canadian Pacific Railway's Minimum Safety Requirements for Contractors Working on Railway Property.

2.3.2 Contractor's Safety Plan.

2.3.3 Contractor's Emergency Information Sheet.

2.3.4 Contractor's Safety Policy, Rules and Work Procedures.

SR3 PERSONAL ATTIRE

3.1 Clothing must be suitable to perform job functions safely, protect against hazards to the skin and be adequate for existing weather conditions. Shirts must be worn at all times, pants should be at least ankle length.

_____ _____
Engineer Contractor

SR4 PERSONAL PROTECTIVE EQUIPMENT

4.1 All personal protective equipment shall be approved by the Canadian Standards Associations (CSA) or by the American National Standards Institute (ANSI).

4.2 The following mandatory protective equipment shall be supplied by the Contractor at his own expense; it shall be in good condition and be properly fitted.

4.2.1 Safety hard hat shall be worn at all times, except inside enclosed vehicles or equipment.

4.2.2 Safety boots shall be worn at all times. They must meet CSA Z195 Grade One, Green Triangle, or US ANSI Z41-83 standards. They must be laced and the laces must be tied securely to provide adequate support for the ankle, and have a minimum six inch high upper and a 5/8" heel measured from the sole.

4.2.3 Safety eyeglasses with side shields shall be worn at all times except when alternate mandatory equipment is being used as prescribed in appended Table A.

4.2.4 Hearing protectors shall be worn in all designated locations and also wherever noise level exceeds 85 decibels.

4.2.5 Appropriate respirators shall be worn whenever work involving dust or fumes is performed.

4.2.6 Fluorescent orange work wear with reflective striping shall be worn whenever work is being done in the vicinity of tracks, crossings and roadways, and in whatever areas used by moving vehicles or equipment, and in all other designated areas, except when fall protection or pole climbing equipment is being used.

SR5 PERSONAL CONDUCT

5.1 Entry upon Railway property when under the influence of intoxicants, narcotics, controlled substances or medication which may in any way adversely affect alertness, concentration, reaction response time or safety is prohibited.

5.2 Possessing or using any drug or alcoholic beverage are prohibited when working on the Railway's property.

5.3 Smoking is prohibited in all buildings and in all areas where there is a risk of fire or explosion such as fueling stations.

SR6 PROTECTION OF RAILWAY TRAFFIC AND PROPERTY

6.1 The work shall be organized and executed in such a manner as to ensure no interference with the regularity and safety of railway operations. No step in any sequence of operations which might either directly or indirectly affect the regularity or safety of railway traffic shall be started until approval of the project manager has been obtained. No temporary structure, materials, or equipment shall be permitted closer than 12 feet (3.66 meters) to the nearest rail of any track without prior approval in writing of the project manager.

6.2 No work shall be done on, or use made of, any trackage of the Railway without approval by the project manager and then only under the direct supervision of a qualified Railway flagperson.

6.3 The Contractor shall, at all times, conduct his operation in a wholly responsible manner to avoid damage to the Railway's trackage or property.

6.4 Signs, signals and flags necessary for the safe operation of the railway shall not be obstructed, removed, relocated, or altered in any way without proper authorization.

6.5 Blue flag protection on tracks signifies Railway employees are on, under or between rolling-stock equipment. Blue flags are important safety devices and must not be touched or obstructed.

6.6 Only qualified personnel are permitted to operate switch, derail, electric locking mechanisms or other appliances. The Contractor shall keep equipment, material and personnel clear of these facilities at all times.

6.7 While railway traffic is passing through the work area, the mechanisms for securing rotating equipment must be used to prevent rotational movement. Buckets on shovels must be lowered to the ground to rest. Operators shall get out of their equipment and position themselves in a safe area.

6.8 Construction equipment parked on Railway property on nights or weekends shall be secured in a safe position well clear of all tracks. As much as possible, materials shall be stored in locations where they are not subject to public viewing in order to prevent vandals from using them to cause

_____ _____
Engineer **Contractor**

derailments or damage to Railway property. Scrap materials shall be disposed of as soon as possible.

6.9 Before starting excavation operations, the Contractor shall ascertain that there are no underground wires, fiber optic cables, pipelines or other facilities which could be damaged or that such installations are properly protected. Excavations shall not be left unattended unless they are properly protected; and the Railway supervisor shall be notified.

6.10 Fiber optic cables are present on most segments of the Railway's right-of-way. Prior to commencing any excavation, the Contractor shall contact the proper authority to locate and protect such cables.

6.11 Railway pole lines carry electric power and should be treated as any other power wires.

612 Any Contractor's personnel discovering a hazardous or potentially unsafe condition which may affect the safe passage of railway traffic must advise the Railway's flagperson(s) or site supervisor immediately.

SR7 TRAIN MOVEMENTS AND WORKING NEAR TRACKS

7.1 The Contractor's personnel shall be alert to train movement. Unless protected by a Railway flagperson, the Contractor's personnel shall expect the movement of trains, engines, cars, or other moveable equipment at any time, on any track, and in either direction, even cars on sidings that appear to be stationary or in storage. Personnel shall stay at least 50 feet (15 meters) away from the ends of stationary cars when crossing the track, and never climb on, under or between cars. To cross tracks, personnel shall look both ways, and if the tracks are clear, walk at a right angle to them.

7.2 The Contractor's personnel shall never rely on others to protect them from train movement, unless while working under the direct supervision of a Railway flagperson. Personnel shall watch for themselves. The responsibility is theirs for safety on the railway.

7.3 The Contractor's personnel shall not stand on the track in front of an approaching engine, car or other equipment.

7.4 The Contractor's personnel shall be aware of the location of structures or obstructions where clearances are close.

7.5 The Contractor's personnel shall never stand or walk on railroad tracks, either between the rails or on the ends of ties unless absolutely necessary. Personnel shall stay clear of tracks whenever possible.

7.6 Within the United States, "ON TRACK SAFETY" rules apply. This is a set of rules, developed and promulgated by the Federal Railroad Administration (FRA), that must be complied with to work on or near Railroad property. Specific training and obedience of there rules are a requirement of the FRA. Significant fines can result from the violation of these rules.

7.7 No work is allowed within 50 feet (15 meters) of the track centerline while trains are passing through the work site. The Contractor's personnel shall always stand as far back as possible to prevent injury from flying debris or loose rigging. Also, personnel shall observe the train as it passes and be prepared to take evasive action in the event of an emergency.

7.8 The Contractor's personnel shall not remain in a vehicle that is within 50 feet (15 meters) of a passing train, and shall not drive near moving trains. Personnel shall move vehicles away from the tracks at least 50 feet (15 meters), or park the vehicle away from the tracks and walk to a safe distance whenever trains pass.

7.9 The Contractor's personnel shall not stand on or between adjacent tracks in multiple track territory when a train is passing except when working under the direct supervision of a Railway flagperson and only under specific Railway instructions. The Contractor's personnel shall be especially alert in yards and terminal areas; engines may be pushing cars, or cars may be moving without any engine attached.

7.10 The Contractor's personnel shall not walk, stand or sit on the rails. The rail surface can be extremely slippery. Personnel shall step over rails when crossing tracks and shall stay away from track switches. Remotely operated switch points can move unexpectedly with enough force to crush ballast rock. Personnel shall also stay away from any other railway devices they are unsure of. Personnel shall not disturb or foul the ballast at any time.

7.11 The Contractor's personnel shall not foul the track with any piece of equipment without a Railway flagperson and proper protection.

7.12 Certain projects will require the assistance of a qualified Railway flagperson. The decision as to where flagpersons are required rests with the Railway. One week advance notice is required before entering the Railway's property so that flagging protection requirements may be determined and arranged for.

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7.13 Good communication between the Contractor's personnel and the Railway's flagperson is imperative. Everyone must have a knowledge of the flagging limits, time limits and location to clear for any train movements. The Railways' flagperson will be responsible for clearing any movement of workers and equipment near the tracks, no mater how minor.

7.14 The Contractor's personnel shall not interfere with the Railway's flagperson who is communicating by radio with the dispatcher or other Railway employees. The Contractor's personnel shall wait until the flagperson is finished and able to give them full attention. Personnel shall not assume a move is cleared by something overheard on a radio conversation.

7.15 The Contractor's personnel shall not move equipment across the tracks except at established road crossings or unless under the protection of a Railway flagperson and only if the job site has been properly prepared for such a move. Tracked equipment will require the supervision of a Railway flagperson any time railroad tracks are crossed.

7.16 The Contractor's personnel shall not move equipment across railroad bridges or through tunnels, unless under the direct supervision of a Railway flagperson and only under specific Railway instructions.

7.17 The Contractor shall keep all employees informed of current weather conditions. Personnel shall stay alert for possible high water conditions or flash floods. During severe weather conditions:

- Personnel shall be prepared to take cover in the event of a tornado.
- Personnel shall not work while lightening is occurring.

If storm conditions arise unexpectedly, the Contractor's personnel shall ensure that equipment is in the clear of the tracks and secured before seeking cover. Personnel shall stay away from railroad tracks when visibility is poor, such as during fog or blizzard conditions.

SR8 TOOLS, EQUIPMENT AND MACHINERY

8.1 All equipment, machinery and highway vehicles must:

- Be properly serviced and maintained;
- Be safe for their proposed use;
- Be equipped with a 5 lb. fire extinguisher and a first aid kit;
- Comply with all applicable regulatory requirements or standards.

8.2 Drivers of highway vehicles must be in possession of a valid driver's license of the proper class of the vehicle being operated. The use of seat belts is

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mandatory for all drivers and passengers. Operators of vehicles and construction equipment must observe all facility/area's traffic rules. Unless otherwise posted, the speed limit on the Railway's roads is 15 mph (24 km/h) or less as conditions warrant. No Contractor's personnel shall be carried in Railway vehicles except in case of an emergency or unless specifically authorized.

8.3 Tools must be used only for the purpose for which they are designed. Defective tools must be repaired or replaced.

8.4 Machinery and equipment must be operated and maintained only by persons properly trained and qualified for that duty.

8.5 All equipment shall be in compliance with applicable regulatory requirements or standards and be equipped with appropriate safety apparatus. In particular, all mobile equipment, including excavators, shall be equipped with beacons and backup alarms.

8.6 The Contractor shall provide adequate lighting when performing work between sunset and sunrise.

SR9 CRANES

9.1 Cranes and their operation shall be in compliance with applicable regulatory requirements or standards and be equipped with appropriate safety apparatus. A copy of the latest annual crane inspection shall be provided to the Railway's project manager prior to the work's debut.

9.2 All cranes shall be equipped with anti-two-blocking devices and safety latches on every hook.

9.3 All lifting apparatus such as steel cables, nylon slings, chains, shackles, etc., must be safety certified.

9.4 All power lines that can be reached by cranes shall be de-energized or relocated.

9.5 While railway traffic is passing through the work area, loads on cranes must be lowered to the ground to rest. Cranes without bucket or load must have their load line tightened or retracted to prevent movement.

9.6 Cranes parked on Railway's property on nights or weekends shall be secured in a safe position well clear of all tracks. Crane booms shall be

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lowered onto ground supports so that it will be impossible for them to rotate and cause a track to be fouled.

SR10 CLEANUP, ENVIRONMENT AND FIRE PREVENTION

10.1 The Contractor shall maintain the Railway's property in a tidy condition and free from the accumulation of waste products and debris. The Contractor shall not permit any debris, products used in the work, or water used to rinse out equipment, to be discharged or spilled on the Railway's property or into any adjacent lands, ditches, streams, ponds, sewers, etc.

10.2 Precautions must be taken to prevent fires. All flammable material such as paper, rubbish, sawdust, oily or greasy rags, etc. must be kept away from buildings, structures and other facilities subject to fire damage. All flammable material must be disposed of daily.

10.3 Storing or transporting fuel or gasoline in unapproved containers is prohibited.

10.4 If possible, the use of cutting or welding torches will be avoided during the last one-half hour of shifts.

10.5 Suitable, charged fire extinguishers and/or full water pump cans must be readily available at all times on the work site.

10.6 The Railway's flagperson(s) or site supervisor must be advised promptly of any fire. Such fire must be fully extinguished or protection provided prior to leaving the work site.

10.7 Upon completion of the work, the Contractor shall remove his surplus materials and equipment from the Railway's property. He shall also remove all waste products and debris, including rinseout water, and leave the Railway's property clean and suitable for occupancy.

SR11 HAZARDOUS MATERIALS

11.1 If chemicals are required by the Contractor to carry out it's contractual obligations, he must transport, label, use and store them in accordance with all relevant laws and regulations.

11.2 For all chemicals to be used, the Contractor must have available on site the latest Material Safety Data Sheet (MSDS) and provide the Railway's project manager with a list of employees' names who have been trained in Work place Hazardous Materials Information System (WHMIS), or in OSHA's Hazard Communication Standard.

11.3 The Contractor shall dispose of all surplus waste materials in accordance with all relevant laws and regulations.

SR12 FIRST AID, INCIDENT AND ACCIDENT REPORTING

12.1 A first aid kit must be available in the immediate vicinity of the work site. It must be examined prior to the work's debut, after each use and regularly each month to ensure that it is properly equipped. Any missing or altered articles must be promptly replaced.

12.2 Where required, other first aid equipment such as stretchers, emergency showers, eye wash stations, etc. must be available at the work site.

12.3 All accidents, personal injury, occupational illness, damage to Railway or Customer property, and incidents, such as environmental spills, must be reported promptly to the Railway's flagperson or site supervisor.

SR13 JOB BRIEFINGS

13.1 When required by the Railway or by the Contractor, a job briefing must be conducted.

13.2 The Contractor's supervisor(s), employees and subcontractor(s), along with Railway's representative(s) and employee(s) must participate in the job briefing. For those who are not able to be present at the main briefing, a separate briefing must be held with them. The Contractor must ensure that all personnel on the work site understand the content of the job briefing.

13.3 The following topics should be covered in the job briefing:
- Tasks to be accomplished;
- Work location;
- Employees' responsibilities;
- Equipment to be used;
- Specific safety reminder due to a hazardous condition;
- Identification of all potential hazards;
- Special instructions due to an unusual situation or practice;
- Type of track protection along with it's time and physical limits;
- Identification of the Railway's employee responsible for the protection.

SR14 CONTRACTOR SAFETY POLICY

14.1 Prior to the commencement of the work, the Contractor shall provide the Railway's project manager with his corporate Safety Policy, Rules and Work Procedures.

SR15 CONSTRUCTION SAFETY PLAN

15.1 Prior to commencement of the work, the Contractor shall provide the Railway's project manager with a Construction Safety Plan for his review and approval.

15.2 The Safety Plan shall:

15.2.1 List and define the construction methods that will be used for each major phase of the work and describe the process and safety procedures to be incorporated.

15.2.2 Integrate the necessary safeguards implementation in the work's planning schedules.

15.2.3 List all safety activities and their frequency including:
- Employee's review of:
  - Canadian Pacific Railway's Minimum Safety Requirements for Contractors Working on Railway Property;
  - Contractor's Safety Plan;
  - Contractor's Emergency Information Sheet;
- Employee Orientation Meetings;
- Site Hazard Assessments;
- Site Inspections and Monitoring;
- Safety Meetings.

15.2.4 Provide for each heavy equipment to be used, such as loaders, excavators and cranes, a summary of the operator's experience, past performance and safety tests, and list of previous accidents resulting from the equipment's operation.

15.2.5 Provide the layout of temporary construction buildings and facilities, including how the Contractor will ensure safe use.

15.2.6 Provide details of emergency procedures for work near or over water. Emergency equipment such as ring buoys, floating vests and, if physically possible, a powered boat must be readily available in the downstream vicinity of the work site.

15.2.7 Provide details of safety procedures for blasting work. Explosive materials must be handled, stored and used in accordance with all applicable laws and regulations.

15.2.8 Provide details of safety procedures for work in confined spaces including:

- Atmosphere test results;
- Evaluation of hazard within the confined space;
- Procedures for entering/existing the confined space;
- Required protection equipment;
- Emergency procedures and equipment.

Prior to entry of any personnel into a confined space, a permit must be issued by a competent Atmosphere Tester for each person and location. Permits shall be renewed at the beginning of each shift and posted at all access locations. Personal protection equipment shall include a full body harness connected to a lifeline and, if appropriate, an approved respirator.

15.2.9 Provide the layout of cranes, proposed lifting procedures and other pertinent information such as cranes' capacity charts, working radius, loads, possible obstacles or site restrictions, etc.

15.2.10 Provide an Emergency Information Sheet for notifying medical assistance, emergency transportation and direction of rescue operations as per appended Table B. Copies of this document shall be present on site at all times and be in a location readily accessible to all personnel on the site. It's content shall be reviewed at the beginning of each week and when job location changes. The Contractor must ensure that all personnel on the work site are familiar with it's contents.

15.3 The Safety Plan shall also include drawings and specifications prepared, sealed and signed by a qualified professional engineer, for each of the following items, whenever applicable to the work:

15.3.1 Details of the design, erection, use and inspection of fall prevention structures such as scaffolding, work platforms and other staging. These are mandatory wherever personnel are working at heights in excess of 8 feet (2.44 meters), in Canada or 12 feet (3.66 meters), in the USA, above the nearest permanent safe level or where a drowning hazard exists. This requirement does not apply where pre-engineered scaffolding is used as a fall prevention device; provided it is used in accordance with the manufacturer specifications and is designed to meet all legislations applicable to the work site.

15.3.2 Details of fall protection systems when it is physically impossible to provide safe fall prevention structures or when working on a temporary structure more than 20 feet (6.10 meters) above the nearest permanent safe level. Personal fall protection equipment shall include a CSA or ANSI approved full body harness, lanyard and shock-absorbing device, attached to a CSA or ANSI approved or engineered anchored lifeline or fixed anchor. The system shall also provide a retrieval device or equipment readily available on the work site. Safety nets are acceptable in lieu of personal fall protection equipment, if it is impracticable to use a fall protection system.

15.3.3 Details of shoring systems for excavations which may endanger nearby personnel or structures. Shoring systems shall be designed to comply with the applicable laws and regulations. Excavations must be properly covered or barricaded with appropriate reflective equipment. Lights or flares must be used where practicable.

SR16 COMPLIANCE WITH RAILWAY SAFETY REQUIREMENTS

16.1 If ever the Contractor's personnel does not comply with the Railway safety requirements, the Contractor's site supervisor will be reminded of the requirements by the Railway's representative. Personnel refusing to comply with the safety requirements will be required to leave the property immediately.

16.2 Any working procedures not conforming to the Railway safety requirements will result in the closing down of the work site.

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16.3 The Railway will not accept any claims for delays or lost time due to safety compliance or procedures issues.

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TABLE A - EYE AND FACE PROTECTION GUIDE

	Spectacles Clear Lens	Spectacles Filter Lens	Goggles	Face Shields	Welding Goggles	Welding Helmets
Abrasive Saws			M	and M		
Acids & Caustics			M	and M		
Adzing	M	or	M			
Applying Rail Anchors	M	or	M			
Buffing	M	or	M			
Chain Saw			M	and M		
Chemicals			M			
Chisels (Wood-Stone-Metal)	M	or	M			
Chipping	M	or	M			
Compressed Air			M			
Cutting (Wire-Steel Strapping)	M	or	M			
Drilling	M	or	M			
Dusts	M	or	M			
Furnace Operations		M or	M			
Glare (Harmless)		M or	M			
Glare (Harmful) Infra-Red/Ultra-Violet					M	
Green Machine (Blower)			M	and M		
Grinding-light	M	or	M			
Grinding-heavy			M			
Hand & Power Tools	M	or	M			
Jack Hammers	M	or	M			
Machine Shop Operations	M	or	M			
Molten Metals			M			
Picking (Ice-Ballast)	M	or	M			
Plant Visitors	M	or	M			
Riveting	M	or	M			
Rivet Busting	M	or	M	and M		
Soil Compactors	M	or	M			
Spiking	M	or	M			
Spike Pulling	M	or	M			
Steam Boiler Operation			M			
Welding Cutting & Burning (Acetylene)					M or	M(i)
Welding (Electric Arc)	M	or	M		and	M
Welding (Spot & Buff)		M or	M		or M	
Welding (Helpers or Adjacent to)		M or	M		or M	
Whipper Snipper - cord	M	or	M			
Whipper Snipper -blade	M	or	M	and M		
Woodworking	M	or	M			

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TABLE A - EYE AND FACE PROTECTION GUIDE.....CONT'D.

Keys:

M : Mandatory Protection;

or : Either type of mandatory protection may be used;

and : If the use of a polycarbonate faceshield or a welding helmet is mandatory, they must be worn in combination with safety spectacles or goggles;

(i) : Welding helmets must be worn in combination with safety spectacles or goggles.

To determine the type of equipment required for the hazards listed, read the table from left to right. The first outlined basic device must be used for minimum protection. Other devices indicated in the following columns shall be used in addition to, or instead of the minimum requirement.

Photo-colored prescription lenses do not meet CSA Standards, therefore their use is prohibited.

CANADIAN PACIFIC RAILWAY COMPANY

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TABLE B - EMERGENCY INFORMATION SHEET

Work Site Location :

(Mileage, Subdivision)
(Address – Number and Street)

Contractor' Supervisor :
(Name) (Title)

Site Telephone :

Emergency Site Access Route :
(Provide sketch)

Nearest Town :

Certified First Aid Attendant :

Location of First Aid :
Supplies at Site

Location of Fire :
Extinguishing Equipment

Emergency Contacts	Phone	Location
Railway Traffic Controller	( )	
Firefighter	( )	
Police	( )	
Ambulance	( )	
Hospital	( )	
Physician	( )	
Aircraft Service (if applicable)	( )	
Watercraft Service (if applicable)	( )	

TABLE B - EMERGENCY INFORMATION SHEET.....CONT'D.

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Stretcher location at site :

Location of WHIMS data sheets :

Type and location of retrieval systems at bridges (if applicable) :

Type and location of emergency equipment for work near or over water (if applicable):

Employee(s) responsible for rescue operations (if applicable) :

Designated Evacuation Vehicle :

Emergency Evacuation Route (Provide sketch) :

Utilities Contact	Phone	Location
Natural Gas	( )	
Electrical	( )	
Water & Sewer	( )	
Telephone	( )	
Cable System	( )	

Qualified employee(s) in Confined Space Entry (if applicable) :

Equipment requirements for Confined Space Entry (if applicable) :

All job sites will be open to audits by the Railway' Safety and Health representatives.

Date: _____ Signed: _____
CONTRACTOR'S SUPERVISOR