



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 354-2015

PROVISION OF ROOF REPLACEMENT AT WINNIPEG TRANSIT

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PROVISION OF ROOF REPLACEMENT AT WINNIPEG TRANSIT

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, May 21, 2015.

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

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

B3. SITE INVESTIGATION

B3.1 Further to C3.1, a Site meeting will be held at 8:00 a.m. on May 13, 2015 to provide Bidders access to the Site.

B3.2 The Bidder is advised that site setup and access will be reviewed.

B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

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

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

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

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

B5. CONFIDENTIALITY

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

B6. ADDENDA

B6.1 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.

B6.2 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.

B6.2.1 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/bidopplasp>

B6.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B6.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B7. SUBSTITUTES

B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B7.3 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.

B7.4 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 in accordance with B7. 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 in accordance with B7., 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.

B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an "approved equal in

accordance with B7.” or as an “approved alternative”, or may refuse to grant approval of the substitute.

B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.

B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

B7.7 If the Contract Administrator approves a substitute as an “approved equal in accordance with B7.”, any Bidder may use the approved equal in accordance with B7. in place of the specified item.

B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B16.

B7.9 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 in accordance with B7. or an approved alternative will be considered.

B7.10 Notwithstanding B7.2 to B7.9, and in accordance with B8.7, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B16.1(a).

B8. BID COMPONENTS

B8.1 The Bid shall consist of the following components:

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

B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.

B8.3 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.

B8.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.

B8.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:

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

B8.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.

B8.6 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.

- B8.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B16.1(a).
- B8.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204 949-1178.
- B8.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B8.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B9. BID

- B9.1 The Bidder shall complete Form A: Bid, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.
- B9.3 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.
- B9.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers;
 - (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B9.4.2 All signatures shall be original.
- B9.5 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.

B10. PRICES

- B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B10.2 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.

B10.3 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.

B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B11. DISCLOSURE

B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

- (a) N/A

B12. QUALIFICATION

B12.1 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.
- (d) Be qualified and registered installers with the roofing membrane manufacturer.

B12.2 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>

B12.3 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);

B12.4 Further to B12.3(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 copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or

- (b) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
- (c) 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/>).

B12.5 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.

B12.6 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.

B13. OPENING OF BIDS AND RELEASE OF INFORMATION

B13.1 Bids will not be opened publicly.

B13.2 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/>

B13.3 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/>

B13.4 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.

B14. IRREVOCABLE BID

B14.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B14.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B15. WITHDRAWAL OF BIDS

B15.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B15.1.1 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.

B15.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B15.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

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

- (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B15.1.3(b), declare the Bid withdrawn.

B15.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B14.2 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.

B16. EVALUATION OF BIDS

B16.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity or acceptable deviation there from (pass/fail);
- (b) qualifications of the Bidder and the SubContractors, if any, pursuant to B12 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

B16.2 Further to B16.1(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.

B16.3 Further to B16.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B16.4 Further to B16.1(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.

- (a) Further to B16.1(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.

B17. AWARD OF CONTRACT

B17.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B17.2 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.

B17.2.1 Without limiting the generality of B17.2, 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.

- B17.3 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 B16.
- B17.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.
- B17.4 Notwithstanding C4, the City may issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B17.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of removal and disposal of the existing low-slope built-up roofing system(s) and design and install a new roof system minimum R25 low-slope styrene-butadiene-styrene (SBS) modified bitumen low-slope system(s) including all accessories and metal flashings for the Building-B Facility at 421 Osborne Street in Winnipeg, Manitoba Section 1 (Roof-B1, Roof-B2, Roof-B3 and Roof-B4) with the highest performing roofing system available.

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

(a) The replaced roofing system shall be designed and installed to avoid water leaks, minimize maintenance, meets the product life expectancy at minimum, and be completed as specified in the Bid Documents. (*Base bid system to be: Soprema Soprasmart Board 180 Sopraply Traffic Cap 560. Adhesive Fastened System*) All installed roofing systems must meet Code and Regulatory Requirements along with Recommendations of the most current edition as per the followings:

- (i) The roof assembly shall be in accordance with CSA A123.21-14 as it pertains to the wind uplift resistance. ULC Standards, ULC approved membranes Class C min. ASTM D 6162-4, system membrane. (Soprema Soprasmart Board 180 (3/16") Sopraply Traffic Cap 560)
- (ii) All recommendations of the Canadian Roofing Contractors Association (CRCA) "Shall have a design slope minimum of one-fourth unit vertical in 12 units horizontal (2 percent slope) for drainage.
- (iii) Sheet Metal and Air Conditioning Contractor's National Association, (SMACNA)
- (iv) All requirements of the Roofing System Manufacturer's Warranty, (RSMW)
- (v) All applicable American Society for Testing and Materials (ASTM) Standards. (See General Reference Standards) Base sheet to CGSB 37-GP-56M weighing 180g/m²; Cap sheet to CGSB 37-GP-56M weighing 250 g/m².
- (vi) All applicable Province of Manitoba Building Codes.

(b) Steel deck replacement; if required, as per Specifications E23.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is QCA Building Envelope Limited, represented by:

Jonathon Braun
Senior Roof Consultant

Email: roofinsp@mymts.net

Telephone No. 204 371-0996

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

D3.3 Bids Submissions must be submitted to the address in B8.5

D4. CONTRACTOR'S SUPERVISOR

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

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D5.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D5.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D5.4 A Contractor who violates any provision of D5 may be determined to be in breach of Contract.

D6. NOTICES

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

D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D3.

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

The City of Winnipeg
Chief Financial Officer

Facsimile No.: 204 949-1174

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

The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services

Facsimile No.: 204 947-9155

D6.5 **Bids Submissions** must be submitted to the address in B8.5.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

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

D8. SAFE WORK PLAN

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

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

D9. INSURANCE

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

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
- (c) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

D9.2 Deductibles shall be borne by the Contractor.

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

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

D10. PERFORMANCE SECURITY

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

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

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

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

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 least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.

SCHEDULE OF WORK

D12. COMMENCEMENT

D12.1 The Contractor shall not commence any Work until he/she is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.

D12.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence that the Contractor is 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;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10; and
 - (vi) the SubContractor list specified in D11.
- (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.

D12.3 The Contractor shall commence the Work on the Site within fourteen (14) Working Days of receipt of the Purchase Order.

D13. SUBSTANTIAL PERFORMANCE

D13.1 The Contractor shall achieve Substantial Performance within sixty (60) consecutive Working Days of the commencement of the Work as specified in D12.

D13.2 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.

D13.3 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.

D14. TOTAL PERFORMANCE

D14.1 The Contractor shall achieve Total Performance within eighty (80) consecutive Working Days of the commencement of the Work as specified in D12.

D14.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D14.3 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.

D15. LIQUIDATED DAMAGES

D15.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City One Hundred dollars (\$100) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.

D15.2 The amount specified for liquidated damages in D15.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.

D15.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D16. JOB MEETINGS

D16.1 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.

D16.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D17. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D17.1 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).

D18. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D18.1 Further to B12.4, the Contractor/SubContractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B12.4

MEASUREMENT AND PAYMENT

D19. INVOICES

D19.1 Further to C12, the Contractor shall submit an invoice for each portion of Work performed. to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: 204-949-0864
Email: CityWpgAP@winnipeg.ca

D19.2 Invoices must clearly indicate, as a minimum:

- (a) the City's purchase order number;
- (b) date of delivery;
- (c) delivery address;
- (d) type and quantity of work performed;
- (e) the amount payable with GST and MRST shown as separate amounts; and
- (f) the Contractor's GST registration number.

D19.3 The City will bear no responsibility for delays in approval of invoices that are improperly submitted.

D19.4 Bids Submissions must be submitted to the address in B8.5.

D20. PAYMENT

D20.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D21. WARRANTY

D21.1 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.

D21.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

D21.2 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.

D21.2.1 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.

- D21.2.2 The membrane manufacturer will issue a written document in the owner's name, valid for a 15-year period, saying that it will repair any leaks in the roofing membrane to restore the roofing system to a dry and watertight condition, to the extent that membrane manufacturing or installation defects caused water infiltration. The warranty must cover for the entire cost of the repair(s) during the entire warranty period. The warranty must be transferable, at no extra cost, to subsequent building owners. The Contractor will issue a written and signed document in the owner's name, certifying that the work executed will remain in place and free of any workmanship defect for a period of one (1) year, starting from the date of acceptance and/or issuance of completion certificate. The warranty certificate must reflect these requirements.
- D21.2.3 The product manufacturer will issue a written and signed document in the owner's name, certifying that the roofing membranes are free of manufacturing defects for a period of 15 years, starting from the date of acceptance. This warranty will cover the removal and replacement of defective roof membrane products, including labor. The warranty must remain a full warranty for the duration of the period specified. The warranty certificate must reflect these requirements.
- D21.2.4 The Contractor will provide a written and signed document to the owner certifying that the work executed will remain in place and free of waterproofing defect for a period of one (1) year from the date of acceptance.
- D21.2.5 The Contractor will provide a CRCA warranty for this project, valid for a period of one (1) year.

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. 354-2015

PROVISION OF ROOF REPLACEMENT AT WINNIPEG TRANSIT

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
Legal Services Department
15 King Street, 3rd Floor
Winnipeg MB R3B 1J1

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 354-2015
PROVISION OF ROOF REPLACEMENT AT WINNIPEG TRANSIT

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

This credit is subject to the Uniform Customs and Practice for Documentary Credit (2007 Revision), International Chamber of Commerce Publication Number 600.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

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:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
Drawing_A-1-RO	Roof Drain Detail
Drawing_A-2-RO	Plumbing Vent Detail
Drawing_A-3-RO	Roof Drain Sump Detail
Drawing_A-4-RO	Roof Plan

E2. GENERAL

E2.1 REQUIREMENTS

- Furnish all labor, materials, tools and equipment necessary for the removal and disposal of existing roof system, including walkways, flashings, etc, and the design and installation of a complete sloped roof system capped with SBS modified bitumen two-ply system. (Soprema Soprasmart BOARD (3/16") 180) including the accessory items such as connections, scuppers, drain inserts, flashings, C-Ports, Interclips (pitch boxes), at a minimum.
- The manufacturer's application instructions for each product used are considered part of this specification and should be followed at all times.
- Raising, re-setting, and protection of air conditioning equipment, ventilators, and exhaust fans may be required. Removal and re-installing of perimeter lighting if required. Removal of walkways. Provision for temporary access onto the roof, such as scaffolding, portable railings, etc.

E2.2 SUBMITTALS

- Submit product data sheets for primers, insulation, SBS membranes, adhesives, and MSDS for all products, other safety and handling instructions and installation instructions.
- Submit a letter issued by Roofing Manufacturer stating approved licensed applicator status and approval to issue warranty for specified system on this project.
- Submit roof system(s) adhesive patterns in accordance with CSA123.21-14 including minimum resistance for the field area, edge areas and corner areas.
- Submit shop drawings showing the slope package of all roofs and flow path of rainwater.

E2.3 REFERENCE STANDARD (S)

- (a) Submit a report[s], issued by a certified materials testing laboratory, attesting that the roofing system offered, was tested in accordance with CSA A 123.21-10, Standard Test Method for the Dynamic Wind Uplift Resistance of Membrane Roofing Systems. Test results shall demonstrate the roofing system provides a Dynamic Uplift Resistance (DUR) of -0.6kPa [-13psf] for the field of the roof, -0.8kPa [-16 psf] for the edge of the roof, and -1.5kPa [-32psf] for the corners of the roof. End zone width 12 ft (3.7m).
- (b) Membranes must meet or exceed requirements of CGSB 37.56-M (9th Draft), Modified bituminous membranes, prefabricated and reinforced for roofing system.
- (c) Membranes must meet or exceed requirements of ASTM D 6162, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements. Membranes must meet or exceed requirements of ASTM D 6163, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- (d) Membranes must meet or exceed requirements of ASTM D 6164, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- (e) Mineral Wool Roof Insulation boards must meet or exceed requirements of ASTM C 726, Standard Specification for Mineral Wool Roof Insulation Board.
- (f) Polyisocyanurate thermal insulation boards must meet or exceed requirements of CAN/ULC S704-011, Thermal Insulation, Polyurethane and Polyisocyanurate, Boards Faced.
- (g) Extruded Polystyrene Insulation Boards must meet or exceed requirements of CAN/ULC-S701-11, Polystyrene Insulation Board and Pipe Covering.
- (h) Roofing system must meet or exceeds requirements of CAN/ULC-S107-10, Methods of Fire Tests of Roof Coverings, class [C].

E2.4 DEFINITIONS

- (a) Roofing terminology: Refer to ASTM D 1079 Standard Terminology Relating to Roofing and Waterproofing and CRCA Roofing Reference Manual for definition of terms related to roofing work in this Section

E2.5 COMPATIBILITY

- (a) All waterproofing materials shall be provided by same manufacturer.

E2.6 TECHNICAL DOCUMENTS

- (a) Submit two (2) copies of the most current technical data sheets. These documents must describe the materials' physical properties, and explanations about product installation, including, restrictions, limitations and other manufacturer recommendations such as long-term maintenance.

E3. INSPECTION

- (a) Allow The City and its agent access to work area and materials for inspection purposes.
- (b) If Contractor covers or permits to be covered work that has been designated for special tests, inspections or approvals before such is made, uncover such work, have inspections or test satisfactory completed and make good such work. Cost of any re-work to be borne by the Contractor.
- (c) The City will order part of work to be examined if work is suspected to be not in accordance with contract documents. If, upon examination such work is found not to be in accordance with contract documents, correct such work and pay cost of examination and correction.
- (d) If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and

irregularities as advised at no cost to The City. Contractor shall pay costs for retesting and re-inspection.

- (e) Engagement of inspection/testing agencies does not relax the Contractor from the responsibility to perform Work in accordance with Contract Documents. Independent Inspection/Testing Agencies will be engaged for purpose of testing portions and inspecting of Work. Cost of such services will be paid by the The City, except for the following: Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.

E3.2 PROCEDURES

- (a) Notify appropriate agency in advance of requirement for tests, in order that attendance arrangements can be made.
- (b) Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

E3.3 REJECTED WORK

- (a) Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by the Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- (b) Make good other Contractor's work damaged by such removals or replacements promptly.
- (c) If in opinion of the Contract Administrator it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by the Contract Administrator.

E3.4 REPORTS

- (a). Provide copies to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

E3.5 TESTS

- (a) Contractor shall perform periodic tests as per applicable standards utilizing third party testing company if required. Results of tests shall be provided to the Contract Administrator.
- (b) Cost of tests shall be the responsibility of the Contractor. Additional test may be required due to faulty material. Cost of such tests shall be borne by the Contractor.

E3.6 FIELD QUALITY CONTROL

- (a) Coordinate site work and inspections with the Contract Administrator Provide minimum 72 hours notice.
- (b) Inspection and testing of roofing membranes will be carried out by QCA Building Envelope Consultant including but not limited to membrane-substrate tensile adhesion testing conducted in general accordance with ASTM D 4541, using a Com-Ten Fastener Tester and membrane air-tightness in general accordance with ASTM E 1186.
- (c) Following project completion, The City and Contract Administrator shall conduct a detailed examination in conjunction with the Roofing Contractor.
- (d) Inspection or testing by Consultant will not augment or replace Contractor quality control nor relieve contractual responsibility.

E4. QUALITY ASSURANCE/CONTROL

E4.1 MEMBRANE ADHESION TESTING

- (a) The Consultant has the option to conduct pull tests to measure bond strength of roof air/vapour barrier membrane. Results will be compared to manufacturer's recommendations to determine if corrective action is required and if roofing insulation and membrane(s) can continue.
- (b) In the absence of manufacturer data, the standard of acceptance will be the average minus one standard deviation for the minimum bond strength.
- (c) Chain drag soundings may be completed on both the air/vapour barrier membrane installation and the cap sheet. A full and intimate bond is required. The Contractor shall rectify any de-bonded areas in accordance with manufacturer's specifications.
- (d) Airtightness testing would be conducted on the air/vapour barrier membrane. Testing may also include fasteners and penetrations. Testing would be done by using an Air-Leak Detection Unit. Testing would be performed in general accordance with ASTM E 1186 "Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Retarder Systems" (method 4.2.7 *Chamber Depressurization in Conjunction With Leak Detection Liquid*). *Level of acceptance shall be zero-leaks.* The Contractor shall rectify any unsealed areas in accordance with manufacturer's specifications.

E5. STORAGE AND DELIVERY

- (a) All materials shall be delivered and stored in their original packaging, in conformance with the requirements described in the SOPREMA Manual.
- (b) At all times, materials will be adequately protected and stored in a dry and properly ventilated area, away from any welding flame or spark and sheltered from the elements or any harmful substance.
- (c) Store adhesives and emulsion-based waterproofing mastics at a minimum 5 °C (41 °F). Store adhesives and solvent-based mastics at sufficient temperatures to ensure ease of application.
- (d) Materials delivered in rolls will be carefully stored upright; flashing will be stored to avoid creasing, buckling, scratches or any other possible damage.
- (e) Avoid material overloads, which may affect the structural integrity of specific roof areas.
- (f) Fuel must be stored in approved containers and placed in spill containments. Propane tanks must be properly stored and protected from any harms.

E6. FIRE PROTECTION

- (a) Prior to the start of work, conduct a site inspection to make sure that all procedures and proposed changes are approved to minimize the risk of fires
- (b) All nails, bolts, screws and other fasteners, etc. shall all be as recommended by the manufacturer of the materials for which they are to be used.
- (c) Respect safety measures described by the local association recommendations.
- (d) At the end of each workday, use a heat detector gun to spot any smouldering or concealed fire. Provide firewatcher for a minimum of two hours after final torch application.
- (e) Never apply the torch directly to old and wood surfaces.
- (f) Throughout roofing installation, maintain a clean site and have one approved ABC fire extinguisher within 6 m (20 ft) of each roofing torch. Respect all safety measures described in technical data sheets. Torches must never be placed near combustible or flammable products. Torches should never be used where the flame is not visible or cannot be easily controlled.

E7. MATERIALS

E7.1 DIMENSIONAL LUMBER

- (a) (a) This shall be construction grade spruce of the dimensions as outlined under the Description of Work.

E7.2 PLYWOOD SHEATHING

- (a) (a) This shall be 1/2" construction D Grade spruce plywood.

E7.3 VAPOUR BARRIER MEMBRANE

- (a) (a) Description: Self-adhesive membrane composed of SBS modified bitumen, with a surface screen made of high-density polyethylene laminated between two layers of polyethylene films. The width of the membrane is 1.14 m (45 in) to allow the membrane to fit on the top of most structural steel deck profiles. The self-adhesive underface is protected with a silicone plastic release film.
- (b) (b) Specified Product: Soprapap'r by Soprema.

E7.4 ROOFING INSULATION

- (a) Polyisocyanurate insulation
 - (i) Description: Closed-cell polyisocyanurate foam insulation board laminated on both sides to a glass fiber reinforced felt facer. (Minimum system R-25 effective value.)
 - (ii) Specified product: SOPRA-ISO by SOPREMA
- (b) Tapered Insulation Panel
 - (i) Description: Tapered insulation panel made of polystyrene designed to create a minimum two percent (2%) slope to the roof system.
 - (ii) Specified product: Plastifab or approved equal in accordance with B7.
- (c) Sump insulation panel for drain location
 - (i) Description: Sump insulation panel made of polyisocyanurate designed to facilitate proper drainage around drain.
 - (ii) Product specified: Tapered Polyisocyanurate

E7.5 INSULATION ADHESIVE

- (a) (a) Description: A highly elastomeric, two components, one step, all purpose, foamable adhesive that contains no solvents and sets in minutes. Adhesive shall be applied to obtain a minimum 90 mile-per-hour wind up with rating or as otherwise indicated within the description of work.
- (b) (b) Specified product: Mammoth Duotack,

E7.6 POURABLE SEALER

- (a) This shall be Lexcan 2 part Pourable Sealer or approved equal in accordance with B7. This shall be used to fill all pitch boxes or as otherwise specified.

E7.7 MODIFIED BITUMEN MEMBRANE

- (a) This shall be the following:
 - (i) Membrane: Two-ply Modified Styrene-Butadiene-Styrene (SBS)

E7.7.1 Base Sheet: Asphaltic-Support Board and Base Sheet Membrane.

- (a) Description: Board composed of SBS modified bitumen membrane with a polyester reinforcement, factory-laminated on a semi-rigid asphaltic board. The board measures

0.91 m x 2.44 m (3 ft x 8 ft). The top surface is covered with thermofusible plastic film. The membrane side lap is part self-adhesive and part thermofusible.

- (b) Thickness: 4.8 mm (3/16 in)
- (c) In conformance with: CGSB 37.56-M (9th Draft).
- (d) Specified product: SOPRASMART BOARD 180 by SOPREMA

E7.7.2 Base Sheet Membrane for Flashings and Parapets

- (a) In conformance with: CGSB 37.56-M (9th Draft).
- (b) Specified product: SOPRASMART BOARD 180 by SOPREMA

E7.8 Cap Sheet: The cap sheet under face is covered with a thermo-fusible plastic film and the top surface is protected by grey; colored granules.

- (a) Colour Choices for Roofing Cap Sheet Membrane Granules
 - (i) For field surfaces: **Grey**.
 - (ii) For walkway surfaces: **Red**
 - (iii) In conformance with: ASTM D6162.
 - (iv) Specified Product: SOPRAPLY TRAFFIC CAP 560 by Soprema

E7.9 ACCESSORY MEMBRANES

- (a) Cover Strip VB and BASE
 - (i) Description: Membrane strip [330 mm (13 in)] [240 mm (9.45 in)] made of SBS modified bitumen and composite reinforcement. Both faces are covered with a plastic thermofusible film. The strip ensures water-tightness in the end laps.
 - (ii) In conformance with: ASTM D6162.
 - (iii) Specified product: SOPRALAP by SOPREMA.

E7.10 COMPLEMENTARY WATERPROOFING PRODUCTS

- (a) Waterproofing mastic
 - (i) Description: Multi-purpose solvent-based mastic, containing SBS modified bitumen fibres with aluminium pigments and mineral fillers
 - (ii) Specified product: SOPRAMASTIC ALU by SOPREMA.
- (b) Pitch pocket filler
 - (i) Description: Polyurethane pre-fabricated pitch pocket system, in various size, with compounds that bond together, with solventless mastic and with one component elastomeric sealant.
 - (ii) Specified product: INTERCLIP SYSTEM by SOPREMA.
- (c) Sealing product
 - (i) Description: Bitumen/polyurethane waterproofing mono-component resin and polyester reinforcements.
 - (ii) Specified products: ALSAN FLASHING and FLASHING REINFORCEMENT by SOPREMA

E7.11 RUBBERIZED MASTIC

- (a) (a) This shall be Polyroof as manufactured by Tremco Ltd. or approved equal in accordance with B7.. All exposed rubberized asphalt shall be coated with Gray Soprema.

E7.12 MODIFIED PRIMER

- (a) (a). This is to be the compatible primer recommended by the membrane manufacturer employed. (When applicable environmentally friendly low VOC products shall be applied.)

E7.13 CAULKING

- (a) (a) This shall be Tremco Vulkem 931 or approved equal in accordance with B7. in accordance with B6.

E7.14 ALUMINUM PAINT

- (a) (a) This shall be Tremco Double Duty or approve equal in accordance with B6.

E7.15 VENT STACKS

- (a) (a) These shall be Insulated Stack Jack Flashings (with metal cap, not neoprene seal) SJ-20A as manufactured by Thaler.

E7.16 METAL FLASHING

- (a) (a) The bays and cap flashing shall be a minimum of 24 gauge in thickness. Finishes shall closely match the painted colour of the existing flashing. This shall be chosen from the range of Stelco 8000 series of colours.

E7.17 ACCESSORIES

- (a) All nails, bolts, screws and other fasteners, etc. shall all be as recommended by the manufacturer of the materials for which they are to be used.

E7.18 TRANSITION SEALANT SBS-to-BUR

- (a) This shall be Soprema Colply Adhesive Trowel Grade or approved equal in accordance with B7.

E7.19 MECHANICAL SUPPORT

- (a) UV resistant, 100% recycled rubber blocking with protective scrim sheet under blocking
- (b) Specified Product: C-Port by Clearline Technologies Inc. or approved equal in accordance with B7..

E8. EXECUTION

E8.1 The Contractor shall be responsible for the removal and reinstallation of any obstructions such as, but not limited to, drains, ducts, conduits, vents, air conditioning units and components at his own expense.

E8.2 Work must be performed during weather conditions that will not adversely affect the performance of the new Work. Surfaces must be clean and dry prior to installation.

E8.3 Cover walls and adjacent Work where materials hoisted or used.

E8.4 Clean off drips and smears of bituminous material.

E8.5 Dispose of rainwater off roof and away from face of building until roof drains or hoppers installed and connected.

E8.6 Prevent traffic over completed roofing except where required by Work above roof level. Comply with precautions deemed necessary by Bid Opportunity. Repair damage caused by non-compliance with Bid Opportunity requirements.

E8.7 At the end of each day's Work or when stoppage occurs due to inclement weather, provide protection for completed Work and materials out of storage.

E8.8 Examine roof decks and immediately inform Contract Administrator in writing of defects.

E8.9 Prior to commencement of Work ensure:

- (a) Decks are firm, straight, smooth, dry, and swept clean of dust and debris.
- (b) Curbs have been built.

- (c) Roof drains have been installed at proper elevations relative to finished roof surface.
- (d) Plywood and lumber nailer plates have been installed to walls and parapets as indicated.

E8.10 Removal of Existing Roofing

- (a) Remove existing roofing system, curbs and cant strips as required to properly install new roofing system. Avoid damage to decks, drains, and other components on roofs.
- (b) Provide temporary hoarding, other protection as may be required.
- (c) Fully protect interior of building from water penetration from any cause.

E8.11 Prepare remaining surfaces to accept new roofing system. To selected roofing manufacturer's specifications, recommendations and proven standards.

E9. PREPARATION

E9.1 If required, rooftop equipment, electrical and gas service lines, telephone lines, etc. must be disconnected, relocated and reconnected as required in accordance with all applicable codes and regulations to accommodate the Work without disrupting operations within the garage. Prior arrangement must be made with the Contract Administrator in the event a disruption of building operations is required.

E9.2 Remove and dispose of all metal flashings as required.

E9.3 Remove existing roofing system to the roof deck in the area shown on the attached drawing.

E9.4 Remove and dispose of any equipment as designated by the owner and seal any resulting openings with pre-painted 20 gauge, 1 1/2" steel decking.

E9.5 Prepare surface of existing roof 24" wide along the joint between existing and new roof systems. Remove all loose and embedded gravel and ensure that the surface is sound, clean and dry.

E9.6 Inspect and repair any deck deficiencies that would affect the installation and performance of the new roof system.

E9.7 Fill and pack all open joints, cracks, seams, and openings in the deck.

E9.8 Construct edge, expansion joint, projection, and all equipment curb blocking and nailers to accommodate insulation thickness. Extend all curbs to a minimum height of 203 mm (8") above the finished roof surface.

E9.9 All blocking to be construction grade spruce wood.

E10. VAPOUR BARRIER INSTALLATION ON STEEL DECK

E10.1 Primer must be dry prior installation of the vapour barrier membrane. Cut boards so edges rest on centre of upper ribs. Cut straight lines with adequate tools.

E10.2 Beginning at the bottom of the slope, without adhering the membrane, unroll onto the substrate for alignment. Do not immediately remove the silicone release sheet.

E10.3 Align the roll parallel to the corrugations of the steel deck. Make sure the membrane overlaps are supported along their entire length.

E10.4 Peel back one end of the silicone release sheet and adhere this part of the membrane to the substrate. Peel back the remaining release sheet at a 45° angle to avoid wrinkles in the membrane.

- E10.5 Overlap adjacent membranes by 75 mm (3 in). Overlap end laps by 150 mm (6 in). Stagger end laps by at least 300 mm (12 in).
- E10.6 When the vapour barrier is installed directly on the steel deck, place a thin sheet of metal under the end lap of the vapour barrier.
- E10.7 At all junctions with existing roof assemblies, install water/vapour retarder cut-offs consisting of self-adhesive vapour retarder. Seal to new vapour retarder and carry it vertically between existing and new insulations, sealing it to the prepared surface of the existing roof membrane. Apply compatible sealants as required at laps and joints to ensure water ingress protection of the new assembly.

E11. INSULATION

- E11.1 **ADHESIVE FASTENED SYSTEM:** Adhere insulation by using specified adhesive in continuous strips spaced as per wind-uplift calculations on the field surface, on the perimeter, and on corners. [CSA A123.21-14.] Corners and perimeters must be installed as per FM requirements listed in the PLPDS 1-29].
- E11.2 Replace any area of damaged or deteriorated existing insulation. Fill all voids and cracks with specified insulation material.
- E11.3 The insulation must be installed to ensure that water cannot pool in the newly replaced area.
- E11.4 Tightly butt all insulation panels in half lap fashion. Offset the pattern between layers so that no insulation joints are coincidental.
- E11.5 Adhered the layers of insulation using the specified adhesives. The application of the adhesive must be done in strict accordance to manufactures guidelines so as to obtain a minimum uplift equal to 90 mile-per-hour. Stagger the layers of insulation from one another to prevent jointing.
- E11.6 Leave no openings or gaps at projections or perimeters.
- E11.7 Complete vapour retarder envelope wrap by sealing ends of vapour retarder to the top on the insulation.
- E11.8 At drains and scuppers, taper insulation for 24" in all directions to ensure positive drainage.
- E11.9 Install protection layer of ½" Sopraboard as required including fire protection tape as required.

E12. SUMP INSULATION PANEL INSTALLATION

- (a) Install sump insulation panel in conformance with manufacturer's instructions and recommendations.

E13. INSTALLATION OF FLAME STOP MEMBRANES

- (a) Adhere the membrane directly onto an approved substrate by peeling back the silicone release film. SOPRAGUARD TAPE is designed to prevent flames from penetrating into empty spaces and openings while installing heat-welded membranes.
- (b) Unroll the flame-stop membrane onto the insulation without adhering, being careful to overlap adjacent strips to ensure that the flame will not come in contact with the insulation.

E14. INSTALLATION OF BOARDS AND FACTORY-LAMINATED BASE SHEET

- (a) Adhere base sheet board using adhesive applied in continuous strips spaced as per wind-uplift calculations on the field surface, on the perimeter, and on corners. [CSA A123.21-14.] [Corners and perimeters must be installed as per FM requirements listed in the PLPDS 1-29].

- (b) Mechanically fasten boards with screws and plates for membranes. [Mechanical fasteners must be installed in the centre of the membrane side selvage [and on board surface] as per wind-uplift calculations on the field surface, on the roof perimeter, and on corners.] [CSA A123.21-14.]] Follow instructions of approval reports for location of fasteners.]
- (c) Seal end laps by welding a [330-mm (13-in)] [240-mm (9.45-in)] wide protection strip centered on the joint.
- (d) Avoid the formation of wrinkles, swellings or fishmouths.

E15. BASE SHEET FLASHING INSTALLATION (SELF ADHERED)

- (a) Apply base sheet flashing only after primer coat is dry.
- (b) Before applying membranes, always remove the plastic film on the section to be covered if there is an overlap (inside and outside corners and field surface). For sanded base sheet membranes, apply primer for self-adhered membrane to the area to be covered at the foot of the parapets.
- (c) Cut off corners at end laps to be covered by the next roll.
- (d) Overlap side laps by along lines provided for this purpose, and overlap end laps by 150 mm (6 in) Stagger end joints by a minimum of 300 mm (12 in).
- (e) Position the pre-cut membrane piece. Peel back 150 mm (6 in) of the silicone release paper to hold the membrane in place at the top of the parapet.
- (f) Then, gradually peel back the remaining silicone release film, pressing down on the membrane with an aluminum applicator to ensure good adhesion. Use the aluminum applicator to ensure a perfect transition between the upstand and the field surface. Smooth the entire membrane surface with a roller for full adhesion.
- (g) Install a reinforcing gusset in all inside and outside corners.
- (h) Always seal overlaps at the end of the workday.
- (i) Avoid the formation of wrinkles, voids or fishmouths.

E15.1 INSTALLATION OF REINFORCED GUSSETS

- (a) Install a reinforcing gusset in all inside and outside corners.
- (b) Heat-weld the gussets in place after installing base sheet membrane.

E15.2 INSTALLATION OF HEAT-WELDED REINFORCEMENTS

- (a) Install reinforcements specified for various roof surfaces according to the following instructions and illustrations of membrane manufacturer.

E16. ROOFING CAP SHEET INSTALLATION (TORCH-APPLIED MEMBRANE)

- (a) Begin with double-selvage starter roll. If starter roll is not used, side laps covered in granules must be degranulated by embedding side laps in torch-heated bitumen over a 75 mm (3 in) width.
- (b) [Starting at drain] Unroll the cap sheet membrane on the base sheet without adhering, taking care to align the first strip parallel to the edge of the roof.
- (c) Cut off corners at end laps to be covered by the next roll.
- (d) Overlap side laps by along lines provided for this purpose, and overlap end laps by 150 mm (6 in) Stagger end joints by a minimum of 300 mm (12 in).
- (e) During installation, be careful not to overheat the membrane.
- (f) Avoid the formation of wrinkles, voids or fishmouths.
- (g) Conserve membrane's appearance. Avoid walking over finished surfaces; use protective walkways as needed.

E16.1 INSTALLATION OF HEAT-WELDED CAP SHEETS ON UPSTANDS AND PARAPETS

- (a) This cap sheet must be installed in one-metre-wide strips.
- (b) Overlap side laps by along lines provided for this purpose, and overlap end laps by 150 mm (6 in). The side joints must overlap and must be staggered by at least 100 mm (4 in) with respect to the joints of the cap sheet on the field surface, to avoid areas of excessive membrane thickness.
- (c) Cut off corners at end laps to be covered by the next roll.
- (d) Use a chalk line to draw a straight line on the field surface 150 mm (6 in) from the upstands and parapets.
- (e) Use a propane torch and round-nose trowel to embed the surface granules in the layer of hot bitumen starting from the chalk line on the field surface to the bottom edge of the upstand or parapet as well as on the granulated vertical surfaces that are to be overlapped.
- (f) This cap sheet will be heat-welded directly to the base sheet membrane, proceeding from bottom to top.
- (g) Avoid the formation of wrinkles, voids or fishmouths.
- (h) During installation, be careful not to overheat the membrane.

E17. MEMBRANE WALKWAY INSTALLATION

- (a) Install membrane walkways respecting requirements previously stipulated for cap sheet installation. Apply primer to cap sheet before installing walkways.

E18. WATERPROOFING FOR VARIOUS DETAILS

- (a) Install waterproofing membranes in conformance with various roofing details illustrated in the manufacturer's manual instructions and recommendations.

E19. TIE-INS

- E19.1 Carry each tier of the new membranes approximately 12" farther onto the prepared surface of the existing SBS membrane and/or BUR. Spud gravel aggregate and apply primers as required.
- E19.2 Remove all unbonded gravel within a 20" radius of the tie-in area. Take care not to delaminate BUR felts. Where wrinkles or blisters are present, cut them and remove the unbonded area of membrane.
- E19.3 Applied compatible primer services as required by roofing membrane manufacturer.

E20. PLUMBING VENTS

- E20.1 Install Thaler roof flashings embedded into a generous bed of adhesive ensuring that coverage extends beyond the edge of stack extension flashing.
- E20.2 Place stack extension over vent and over-trowel with adhesive extending a minimum of 4" beyond the edge of the flange.
- E20.3 Strip in entire flange edge with 6" reinforcing membrane embedded in and top-dressed with adhesive.
- E20.4 Fit and seal PVC pipe section to the plumbing vent hub and insulate in accordance with the manufacturer's instructions.

E21. FLASHING ROOF DRAINS

- E21.1 Carry roofing membranes down into sump to edge of drain fitting.
- E21.2 Embed flashing flange into 3 mm thickness of sealing compound on top of roofing membrane.

E21.3 Embed membrane flashings into heavy coatings on hot asphalt, sealant, extend plies onto roof beyond outer edge of flange in accordance with manufacturer direction.

E22. METAL FLASHINGS

E22.1 Cap flashings are to be 24 ga. galvanized sheet metal. The flashings are to conform to C.S.A.

E22.2 The inside and outside faces are to extend down a minimum of 76 mm (3"). Fasten the cap flashing using weatherproof screws spaced not more than 610 mm (24") on centre.

E22.3 Hem all free edges and seal all butts, joints and reglets with sealant.

E23. STEEL ROOF DECKING

E23.1 The Contractor shall assess the condition of the steel deck while doing the roof repairs. Based on the assessment, the Contractor will estimate the requirement and square footage of the steel deck replacement if any is required.

E23.2 The Contractor will inform the Contract Administrator and submit the requirement with the plan and drawings designed by a registered Structural Engineer.

E23.3 The Contract Administrator will inspect and approve, reject, reduce or increase the area of the steel deck to be replaced.

E23.4 This work will not start until the Contract Administrator approves it.

E23.5 Design Requirements

- (a) The steel roof decking replacement plan must be designed and the drawings stamped by a Structural Engineer registered with the APEGM.
- (b) Design steel deck using limit states design in accordance with CSA-S136 and CSSBI 10M.
- (c) Steel deck and connections to steel framing to carry dead, live and other loads including lateral loads, diaphragm action, composite deck action, and uplift as indicated. The design shall rely on SDI or CSSBI design procedures.
- (d) Deflection under specified live load not to exceed 1/300 of span for roof, 1/360 of span for floor and 1/180 of span for wall.
- (e) Design replacement sections to same as existing deck sections.

E23.6 Fastening

- (a) Fasten roof deck replacement sections in similar manner as existing decking.
- (b) If applicable, the installer that will be using the tools to attach the deck fasteners shall be trained & certified by fastener manufacturer's representative on the general use of powder actuated technology and fastening guidelines for the attachment of steel deck.
- (c) Locate fasteners so that clearances to edge of steel, end of decking panels, and the side of deck troughs meet fastener and deck manufacturer's installation guidelines.
- (d) Ensure nail head standoffs measurements meet fastener manufacturer's recommendations.

E23.7 Products

- (a) Materials
Materials to match existing deck
- (b) Deck Types
Metal deck to match existing deck

E23.8 Execution

(a) General

Structural steel work: in accordance with CAN/CSA S136 and CSSBI 10M.

(b) Erection

- (i) Erect steel deck as indicated and in accordance with CSA S136, CSSBI 10M, the SDI Manual of Construction MOC2, and in accordance with approved erection drawings
- (ii) Unless otherwise noted, fasteners shall be attached to the supporting steel at 300 mm on centre, and 150 mm on centre at the ends of the deck.
- (iii) Attach the roof deck perimeter that is parallel to the deck flutes at the identical spacing as the sidelap connectors.
- (iv) All sidelaps shall be attached with similar fasteners as used on existing deck.
- (v) Lap ends: to 100 mm minimum.

(c) Closures

- (i) Install closures in accordance with approved details.

(d) Openings and Areas of Concentrated Loads

- (i) No reinforcement required for openings cut in deck which are smaller than 150 mm square.
Frame deck openings with any one dimension between 150 to 300 mm as recommended by deck manufacturer, except as otherwise indicated.

E24. HAZARDOUS MATERIALS

- E24.1 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.