



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 303-2016**

**SUPPLY AND DELIVERY OF TRAFFIC SIGNAL CABLE**

## TABLE OF CONTENTS

### PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	3

### PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Enquiries	1
B4. Confidentiality	1
B5. Addenda	1
B6. Substitutes	2
B7. Bid Submission	3
B8. Bid	3
B9. Prices	4
B10. Disclosure	5
B11. Qualification	5
B12. Opening of Bids and Release of Information	6
B13. Irrevocable Bid	6
B14. Withdrawal of Bids	6
B15. Evaluation of Bids	7
B16. Award of Contract	7

### PART C - GENERAL CONDITIONS

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

### PART D - SUPPLEMENTAL CONDITIONS

#### General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	1
D5. Ownership of Information, Confidentiality and Non Disclosure	1
D6. Returned Goods	2
D7. Notices	2

#### Submissions

D8. Authority to Carry on Business	2
D9. Commencement	3
D10. Delivery	3
D11. Liquidated Damages	3
D12. Orders	4
D13. Records	4

#### Measurement and Payment

D14. Invoices	4
D15. Payment	4
D16. Purchasing Card	5

#### Warranty

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

### PART E - SPECIFICATIONS

#### General

E1. Applicable Specifications and Drawings	1
E2. Goods	1
E3. General Requirements	1
E4. Seven (7) Conductor Traffic Signal Cable	3

E5. Twenty-Two (22) & Thirty-Eight (38) Conductor Traffic Signal Cable	4
E6. Six (6) Paired Conductors Traffic Signal Cable	6
E7. Four (4) Paired Conductors Traffic Signal Cable	7
E8. Traffic Signal Service Cable (3 Cond. 8Ga.)	8
E9. Traffic Signal Service Cable (3 Cond. 4Ga.)	9
E10. Loop Detector Cable	10

## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 SUPPLY AND DELIVERY OF TRAFFIC SIGNAL CABLE

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 13, 2016.

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

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

### **B3. ENQUIRIES**

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

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

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

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

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

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

### **B4. CONFIDENTIALITY**

B4.1 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.

B4.2 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.

### **B5. ADDENDA**

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

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

## **B6. SUBSTITUTES**

- B6.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the material, equipment, method or product as either an approved equal or alternative;
  - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
  - (c) identify any anticipated cost or time savings that may be associated with the substitute;
  - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract;
  - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Contract.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B6.6.1 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.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B6.9 No later claim by the Contractor for an addition to the price(s) because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

## **B7. BID SUBMISSION**

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices.
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1
- B7.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204- 949-1178.
- B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B7.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

## **B8. BID**

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

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

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

B8.4 Paragraph 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 and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

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

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

## **B9. PRICES**

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

B9.1.1 Prices on Form B: Prices shall include:

- (a) duty;
- (b) freight and cartage;
- (c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
- (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.

B9.1.2 Prices on Form B: Prices shall not include Environmental Handling Charges (EHC) or fees, which shall be extra where applicable.

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

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

**B10. DISCLOSURE**

B10.1 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.

B10.2 The Persons are:

(a) N/A

**B11. QUALIFICATION**

B11.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B11.2 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>

B11.3 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); and
- (d) have demonstrated the ability to supply and deliver work(s) with quality control and assurance standards according to past contracted delivery and timelines; and
- (e) have demonstrated the resources, facilities, and capabilities to quickly and efficiently effect repairs or remediation to the satisfaction of the Contract Administrator on issues with Work on previous contracts to meet the specifications and requirements of the supplied Work, regardless of time of year or environmental conditions.

B11.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

**Requested Samples and Documentation**

B11.5 The Bidder shall supply within fourteen (14) Calendar Days of a request from the Contract Administrator samples of the cable jacket and ripcord assembly and / or technical documentation specific to any item or assembly that would be included in the deliverables for inspection and testing.

B11.5.1 The Bidder is responsible for all freight costs associated with the delivery and return of any requested sample(s) as described in B11.5.



- B11.6 The Bidder may be considered as non-responsive if requested information and / or sample as described in B11.4 and B11.5 is not received within the time frame specified.
- B11.7 Unsolicited samples will be returned at Bidder's expense.
- B11.8 The Bidder will be notified by the Contract Administrator whether the bid samples and / or technical documentation had any noted deficiencies.
- B11.9 The Bidder shall provide within fourteen (14) Calendar days a re-worked bid sample and / or technical documentation addressing any previous deficiencies noted by the Contract Administrator.
- B11.10 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.

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

- B12.1 Bids will not be opened publicly.
- B12.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements or evaluated prices) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>
- B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>
- B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

## **B13. IRREVOCABLE BID**

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.
- B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

## **B14. WITHDRAWAL OF BIDS**

- B14.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding C21, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;

- (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.

B14.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

## **B15. EVALUATION OF BIDS**

B15.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation therefrom (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B6.

B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.

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

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

B15.4.1 Cable Reel Deposit will not be included in total price calculation and will not be used to evaluate the bid.

B15.5 This Contract will be awarded as a whole.

## **B16. AWARD OF CONTRACT**

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

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

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

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

- B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.
- B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.
- B16.4 Notwithstanding C4 and Paragraph 6 of Form A:Bid, the City may issue a purchase order to the successful Bidder in lieu of the execution of a Contract.
- B16.5 The Contract Documents, as defined in C1.1(n)(ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for the Supply of Goods* (Revision 2008 05 26) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for the Supply of Goods* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Supply of Goods*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

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

#### **D2. SCOPE OF WORK**

D2.1 The Work to be done under the Contract shall consist of the supply and delivery of traffic signal cable from date of award until March 31, 2017, with the option of four (4) mutually agreed upon one (1) year extensions.

D2.1.1 The City may negotiate the extension option with the Contractor within ninety (90) Calendar Days prior to the expiry date of the Contract. The City shall incur no liability to the Contractor as a result of such negotiations.

D2.1.2 Changes resulting from such negotiations shall become effective on April 1<sup>st</sup> of the respective year. Changes to the Contract shall not be implemented by the Contractor without written approval by the Contract Administrator.

D2.2 The Work shall be done on an "as required" basis during the term of the Contract.

D2.2.1 The type and quantity of Work to be performed under this Contract shall be as authorized from time to time by the Contract Administrator and/or Users.

D2.2.2 Notwithstanding C7, the City shall have no obligation under the Contract to purchase any quantity of any item in excess of its actual operational requirements.

#### **D3. DEFINITIONS**

D3.1 When used in this Bid Opportunity:

- (a) "**ANSI**" means American National Standards Institute;
- (b) "**ASTM**" means American Society for Testing and Materials;
- (c) "**AWG**" means American wire gauge;
- (d) "**CSA**" means Canadian Standards Association;
- (e) "**IMSA**" means International Municipal Signal Association;

#### **D4. CONTRACT ADMINISTRATOR**

D4.1 The Contract Administrator is:  
Jason Doerksen, C.E.T.  
Traffic Signals Standards & Contracts Specialist  
Public Works Department  
Telephone No.: 204-986-4191  
Email: jdoerksen@winnipeg.ca

#### **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. RETURNED GOODS**

- D6.1 Further to C.7 and C.11, The Contract Administrator or his/her designate shall inform the Contractor of the item(s) being returned and the reason for the return. The Contractor shall provide the Contract Administrator with Return Material Authorization (RMA) including shipping instructions, within five (5) Calendar Days of the request.
- D6.1.1 The Contractor shall be responsible for all transportation charges on returned goods and further to C.8 the goods will be held at the Contractor's risk pending instruction.
- D6.2 Further to D6.1 (above) the RMA shall include the following information, as a minimum:
- (a) Company name, if different than Contractor, and ship to addresses;
  - (b) Written authorization for the return and for a collect shipment;
  - (c) Preference of carrier / shipping method, a contact person with either a local Winnipeg telephone number or a toll-free telephone number;
  - (d) A contact person, responsible for the returned goods, with a toll-free telephone number.
- D6.3 The Contract Administrator shall provide, as a minimum:
- (a) The City department returning the goods, including an address and contact information for pick up;
  - (b) The City account number; if applicable;
  - (c) The City of Winnipeg's Department and address;
  - (d) Two (2) copies of the written authorization / RMA, one (1) copy on the outside and (1) one within the package;
  - (e) Total number of packages, weight and dimensions.

## **D7. NOTICES**

- D7.1 Notwithstanding C21.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:
- The City of Winnipeg  
Chief Financial Officer  
Facsimile No.: 204- 949-1174

- D7.2 **Bids Submissions must be submitted to the address in B7.5**

## **SUBMISSIONS**

### **D8. AUTHORITY TO CARRY ON BUSINESS**

- D8.1 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.

## **D9. COMMENCEMENT**

D9.1 The Contractor shall not commence any Work until he/she is in receipt of a notice of award from the City authorizing the commencement of the Work.

D9.2 The Contractor shall not commence any Work until:

- (a) the Contract Administrator has confirmed receipt and approval of:
  - (i) evidence of authority to carry on business specified in D8;
  - (ii) evidence of the workers compensation coverage specified in C6.16;
- (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.
- (c) The Contractor has supplied within twenty-one (21) Calendar Days of a request from the Contract Administrator, a sample of the finished and tested cable. The sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.
- (d) a Purchase Order has been received from the City of Winnipeg Public Works Stores personnel noting the quantity of material required.

## **D10. DELIVERY**

D10.1 Goods shall be delivered on an "as required" basis during the term of the Contract, f.o.b. destination, freight prepaid, to:

Public Works Stores  
1277 Pacific Avenue  
Winnipeg, MB

D10.1.1 Goods shall be delivered within one hundred(100) Calendar Day(s) of the placing of an order, unless otherwise allowed by the User at the time of ordering.

D10.2 The Contractor shall confirm each delivery with the Contract Administrator or his/her designate, at least two (2) Business Days before delivery.

D10.3 Goods shall be delivered between 8:30 a.m. and 2:30 p.m. on Business Days.

D10.4 The Contractor shall off-load goods as directed at the delivery location.

## **D11. LIQUIDATED DAMAGES**

D11.1 If the Contractor fails to achieve delivery of the goods within the time specified in D10. Delivery the Contractor shall pay the City six hundred and sixty dollars (\$660) per Calendar Day for each and every Calendar Day until the goods have been delivered.

D11.2 The amount specified for liquidated damages in D11.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve delivery by the day fixed herein for same.

D11.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **D12. ORDERS**

- D12.1 The Contractor shall provide a local Winnipeg telephone number or a toll-free telephone number at which orders for delivery may be placed.
- D12.2 The minimum order placed for any item style will be one reel as described in E3.2.

## **D13. RECORDS**

- D13.1 The Contractor shall keep detailed records of the goods supplied under the Contract.
- D13.2 The Contractor shall record, as a minimum, for each item listed on Form B: Prices:
- (a) user name(s) and addresses;
  - (b) order date(s);
  - (c) delivery date(s); and
  - (d) description and quantity of goods supplied.
- D13.3 The Contractor shall provide the Contract Administrator with a copy of the records for each quarter year within fifteen (15) Calendar Days of a request of the Contract Administrator.

## **MEASUREMENT AND PAYMENT**

### **D14. INVOICES**

- D14.1 Further to C10, the Contractor shall submit an invoice for each order delivered 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](mailto:CityWpgAP@winnipeg.ca)
- D14.2 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 goods delivered;
  - (e) the amount payable with GST, MRST, and any applicable environmental handling charges/fees identified and shown as separate amounts; and
  - (f) the Contractor's GST registration number.
- D14.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.
- D14.4 Bids Submissions must be submitted to the address in B7.5

### **D15. PAYMENT**

- D15.1 Further to C10, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.
- D15.2 Further to C10, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.



**D16. PURCHASING CARD**

- D16.1 The Contractor shall allow Users to charge items to their purchasing cards at no extra cost.
- D16.2 The Contractor's credit card website/gateway shall have appropriate current Payment Card Industry Data Security standards (PCI DSS) certification, (<https://www.pcisecuritystandards.org/index.shtml>). The credit card gateway shall meet the credit card data security requirements outlined by the Payment Card Industry Security Standards Council (PCI SSC) for service providers and/or software vendors.

**WARRANTY**

**D17. WARRANTY**

- D17.1 Warranty is as stated in C11.

## **PART E - SPECIFICATIONS**

### **GENERAL**

#### **E1. APPLICABLE SPECIFICATIONS AND DRAWINGS**

E1.1 These Specifications shall apply to the Work.

E1.2 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
ST-127	Specifications for Traffic Signal Cable Geometry for 22 and 38 Conductor Cables

E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B6.

#### **E2. GOODS**

E2.1 The Contractor shall supply and deliver traffic signal cable in accordance with the requirements hereinafter specified.

E2.2 The materials used as specified for fabrication shall be new and free of splices or damage.

E2.3 Item No. 1 – Seven (7) Conductor Traffic Signal Cable shall be as per Specification E4.

E2.4 Item No. 2 – Twenty-two (22) Conductor Traffic Signal Cable shall be as per Specification E5.

E2.5 Item No. 3 – Thirty-eight (38) Conductor Traffic Signal Cable shall be as per Specification E5.

E2.6 Item No. 4 – Six (6) Paired Conductors Traffic Signal Cable shall be as per details in Specification E6.

E2.7 Item No. 5 – Four (4) Paired Conductors Traffic Signal Cable shall be as per details in Specification E7.

E2.8 Item No. 6 – Traffic Signal Service Cable (3 Cond. 8Ga.) shall be as per details in Specification E8.

E2.9 Item No. 7 – Traffic Signal Service Cable (3 Cond. 4Ga.) shall be as per details in Specification E9.

E2.10 Item No. 8 – Loop Detector Cable shall be as per details in Specification E10.

E2.11 Item No. 9 – Cable Reel Deposit shall be as per details in Specification E3.3.

#### **E3. GENERAL REQUIREMENTS**

E3.1 Cable Markings

E3.1.1 The following information shall be applied every one (1) meter or less to each shipping length of cable by means of indent printing:

- (a) name of the manufacturer
- (b) "WPG YYMM" (YY = Year and MM = Month of manufacture)
- (c) IMSA Specification number
- (d) voltage rating of the cable
- (e) cable identification code:
  - (i) for Seven (7) Conductor Traffic Signal Cable: "7C"
  - (ii) for Twenty-two (22) Conductor Traffic Signal Cable: "22C"
  - (iii) for Thirty-eight (38) Conductor Traffic Signal Cable: "38C"

- (iv) for Six (6) Paired Conductors Traffic Signal Cable: "6P"
  - (v) for Four (4) Paired Conductors Traffic Signal Cable: "4P"
  - (vi) for Traffic Signal Service Cable (3 Cond. 8Ga.): "S8"
  - (vii) Traffic Signal Service Cable (3 Cond. 4Ga.): "S4"
- (f) "### METERS" (### = Length remaining in meters, note space between "###" and "METERS")
- (i) In most cases, each shipping length of cable will bear a "zero" mark at the inner end of the cable on the reel, with incrementing meter mark values throughout the length of the cable. Exceptions may be permitted to allow "non-zero" markings at the inner end of the reel, should defective sections of cable have to be removed as a consequence of failing the voltage rating tests on the finished cable.
- E3.1.2 All markings shall have a font minimum height of five (5) millimeters, and a bolded font.
- E3.1.3 If the markings are incorrectly labelled or positioned, the cable will be returned to the Contractor for immediate remediation (maximum two [2] week turnaround from the date of notification). All costs for the cable marking repair including transportation and repair work shall be borne by the Contractor.
- E3.1.4 No cable markings are required for Item No. 8 – Loop Detector Cable.
- E3.2 Reel Packaging and Markings
- E3.2.1 Reels shall be substantially constructed and in good condition with wood free of existing rot. Broken flanges or torn arbour holes are not acceptable. The diameter of the reel drum shall be sufficient to prevent damage to the cables shipped on it. Reels shall have a maximum diameter of 48 inches and minimum diameter of 40 inches.
- E3.2.2 The width of each reel shall be 34 inches maximum and 28 inches minimum.
- E3.2.3 Each reel shall contain a continuous length of cable filled to within two (2) inches of the outer edge of the reel, except the last reel, which may be under-filled to complete the order.
- E3.2.4 The cable shall be secured on the reel to prevent inadvertent unspooling prior to delivery.
- E3.2.5 Each spool of cable shall be suitably protected. Each end of the cable shall be available for testing and visual inspection of the meter markings, and shall be properly sealed against moisture and protected against injury. The innermost cable end (normally bearing the "zero" mark) shall protrude no more than 0.5 meter through the side of the reel.
- E3.2.6 Reels shall be capable of being supported by a two (2) inch diameter shaft inserted in holes centered within the circular reel flanges. Steel arbour hole plates shall be provided on all reels and securely bolted. Steel hubs or flanges without the bolted arbour hole plates are not acceptable.
- E3.2.7 Each reel shall be plainly and permanently marked with a full description of the cable, giving the type and length of the cable on the reel, the number and size of the conductors in the cable, voltage rating, date of manufacture, name of Contractor, and name of manufacturer if different from Contractor. The marking shall be securely affixed on the outer side of the reel where the innermost cable end protrudes; the marking may be securely affixed on both sides of the reel. Each reel shall also bear a unique reel number. All required markings shall be 24 point minimum font size and independent of environmental storage effects (rain, snow, UV, etc.) remain legible for a period of not less than three years following delivery.
- E3.2.8 See Specification E10 for Item No. 8 - Loop Detector Cable reel information.
- E3.3 Reel Deposit
- E3.3.1 The Contractor shall include, if applicable, reel deposit charges on Form B: Prices. If deposit item unit price is not stated on Form B: Prices, it will be understood that there are no reel deposit charges that apply.

E3.3.2 The Contractor shall pay all transportation charges both ways (delivery and return) on all reels in accordance with D10. The reels will be used by the City of Winnipeg. When the reel is emptied, the Contract Administrator will inform the Contractor for return instructions.

E3.3.3 Reel Deposit does not apply to Item No. 8 – Loop Detector Cable.

**E4. SEVEN (7) CONDUCTOR TRAFFIC SIGNAL CABLE**

E4.1 General

E4.1.1 This specification covers the supply and delivery of seven (7) conductor polyethylene insulated, polyvinyl chloride jacketed traffic signal cable, rated 600 volts, for use in underground conduit or as aerial cable supported by a messenger as traffic signal cable.

E4.1.2 Seven (7) Conductor Traffic Signal Cable shall be supplied and delivered as per IMSA Specification 19-1 (latest edition) and associated specifications in addition to this Specification.

E4.1.3 In cases of discrepancy between this Specification and IMSA Specification 19-1 (latest edition), this Specification shall govern.

E4.2 Conductors

E4.2.1 Seven (7) #14 AWG solid conductors shall be supplied.

E4.3 Conductor Color Coding

E4.3.1 Standard color coding for cables shall be in accordance with the City of Winnipeg Traffic Signals Color Code Table E4.3.1. Base colors shall be obtained by the use of colored insulation.

**Table E4.3.1  
 City of Winnipeg Traffic Signals Color Code  
 Conductor Color and Sequence for Seven (7) Conductor Cable**

Conductor No.	Base Color	Tracer Color
1	Black	
2	White	
3	Red	
4	Green	
5	Orange	
6	Blue	
7	Light Brown	

**NOTE:** Conductor color and sequence varies from IMSA Specification 19-1 (latest edition) Table 5.1. Lower conductor numbers represent the inner most conductors in the core.

E4.4 Conductor Assembly

E4.4.1 The outer layer shall be left hand lay and as per IMSA Specification 19-1 (latest edition).

E4.5 Identification

E4.5.1 The outer surface of the jacket shall be identified by intent printing as per E3.1.

E4.6 Packing and Marking for Shipment

E4.6.1 Reel packaging and marking shall be as per E3.2.

E4.7 Ripcord

E4.7.1 Overtop of the moisture-resistant taped conductor assembly shall be supplied a continuous length of polyester or aramid cord, known as the "rip cord". The purpose of the rip cord is to assist in the skinning and removal of the jacket material. The rip cord shall be laid longitudinally along the entire length of the taped core assembly, immediately underneath the jacket material. The rip cord may be moulded into the inner surface of the outer jacket material. The rip cord shall be constructed of **braided strands**, the total diameter of which

shall be no larger than 20 mils (0.508 mm), and must be sufficiently strong to sever the jacket material without breaking.

E4.7.2 The Contract Administrator will advise the Bidder which of the available ripcords will need to be incorporated into the manufacture of this item.

E4.8 Sampling, Inspection and Acceptance

E4.8.1 In addition to IMSA Specification 19-1, the manufacturer may be required to supply the City's Contract Administrator, in advance of the delivery of the required quantity of cable, a sample of the finished and tested cable, the sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.

**E5. TWENTY-TWO (22) & THIRTY-EIGHT (38) CONDUCTOR TRAFFIC SIGNAL CABLE**

E5.1 General

E5.1.1 This specification covers the supply and delivery of both twenty-two (22) conductor and thirty-eight (38) conductor polyethylene insulated, polyvinyl chloride jacketed traffic signal cable, rated 600 volts, for use in underground conduit or as aerial cable supported by a messenger as traffic signal cable.

E5.1.2 Twenty-Two (22) & Thirty-Eight (38) Conductor Traffic Signal Cable shall be supplied and delivered as per IMSA Specification 19-1 (latest edition) and associated specifications in addition to this Specification.

E5.1.3 In cases of discrepancy between this Specification and IMSA Specification 19-1 (latest edition), this Specification shall govern.

E5.2 Conductors

E5.2.1 For Twenty-Two (22) Conductor Traffic Signal Cable, two (2) #10 AWG stranded conductors and twenty (20) #14 AWG solid conductors shall be supplied.

E5.2.2 For Thirty-Eight (38) Conductor Traffic Signal Cable, two (2) #10 AWG stranded conductors and thirty-six (36) #14 AWG solid conductors shall be supplied.

E5.3 Conductor Color Coding

E5.3.1 Standard color coding for cables shall be in accordance with the City of Winnipeg Traffic Signals Color Code Table E5.3.1. Base colors shall be obtained by the use of colored insulation.

**Table E5.3.1  
 City of Winnipeg Traffic Signals Color Code  
 Twenty-Two (22) Conductor Cable & Thirty-Eight (38) Conductor Cable**

Conductor No.**	Base Color	Tracer Color	Size	Style	22 Conductor	38 Conductor
1	Green	Black	10 ga.	Stranded	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	White	--	10 ga.	Stranded	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Red	--	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Red	Orange	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Red	Green	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Orange	Red	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Orange	--	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	Orange	Green	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	Brown	Red	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	Brown	Orange	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

11	Brown	Green	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	Blue	Red	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	Blue	Orange	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	Blue	Green	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	Black	--	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	Black	White	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	Yellow	--	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	Yellow	White	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	Violet	--	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	Violet	White	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21	Slate***	--	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22	Slate***	White	14 ga.	Solid	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23	Black	Red	14 ga.	Solid	--	<input checked="" type="checkbox"/>
24	Black	Orange	14 ga.	Solid	--	<input checked="" type="checkbox"/>
25	Black	Green	14 ga.	Solid	--	<input checked="" type="checkbox"/>
26	Yellow	Red	14 ga.	Solid	--	<input checked="" type="checkbox"/>
27	Yellow	Orange	14 ga.	Solid	--	<input checked="" type="checkbox"/>
28	Yellow	Green	14 ga.	Solid	--	<input checked="" type="checkbox"/>
29	Violet	Red	14 ga.	Solid	--	<input checked="" type="checkbox"/>
30	Violet	Orange	14 ga.	Solid	--	<input checked="" type="checkbox"/>
31	Violet	Green	14 ga.	Solid	--	<input checked="" type="checkbox"/>
32	Slate***	Red	14 ga.	Solid	--	<input checked="" type="checkbox"/>
33	Slate***	Orange	14 ga.	Solid	--	<input checked="" type="checkbox"/>
34	Slate***	Green	14 ga.	Solid	--	<input checked="" type="checkbox"/>
35	Brown	Red	14 ga.	Solid	--	<input checked="" type="checkbox"/>
36	Brown	Orange	14 ga.	Solid	--	<input checked="" type="checkbox"/>
37	Brown	Green	14 ga.	Solid	--	<input checked="" type="checkbox"/>
38	Brown	--	14 ga.	Solid	--	<input checked="" type="checkbox"/>

**NOTE:** Conductor color and sequence varies from IMSA Specification 19-1 (latest edition) Table 5.1.

\* See Drawing ST-127 for conductor assembly

\*\* Lower conductor numbers represent the inner most conductors in the core.

\*\*\* Grey may be substituted for slate.

E5.4 Conductor Assembly

E5.4.1 The outer layer shall be left hand lay and as per IMSA Specification 19-1 (latest edition).

E5.5 Identification

E5.5.1 The outer surface of the jacket shall be identified by intent printing as per E3.1.

E5.6 Packing and Marking for Shipment

E5.6.1 Reel packaging and marking shall be as per E3.2.

E5.7 Ripcord

E5.7.1 Overtop of the moisture-resistant taped conductor assembly shall be supplied a continuous length of polyester or aramid cord, known as the "rip cord". The purpose of the rip cord is to assist in the skinning and removal of the jacket material. The rip cord shall be laid longitudinally along the entire length of the taped core assembly, immediately underneath the jacket material. The rip cord may be moulded into the inner surface of the outer jacket material. The rip cord shall be constructed of **braided strands**, the total diameter of which shall be no larger than 20 mils (0.508 mm), and must be sufficiently strong to sever the jacket material without breaking.

E5.7.2 The Contract Administrator will advise the Bidder which of the available rip cords will need to be incorporated into the manufacture of this item.

**E5.8 Sampling, Inspection and Acceptance**

**E5.8.1** In addition to IMSA Specification 19-1, the manufacturer may be required to supply the City's Contract Administrator, in advance of the delivery of the required quantity of cable, a sample of the finished and tested cable, the sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.

**E6. SIX (6) PAIRED CONDUCTORS TRAFFIC SIGNAL CABLE**

**E6.1 General**

**E6.1.1** This specification covers the supply and delivery of six (6) pair polyethylene insulated, polyvinyl chloride jacketed traffic signal cable with copper electrical shielding, rated 300 volts, for use in underground conduit, as aerial cable supported by a messenger, or as traffic communications and data acquisition cable suitable for limited power use.

**E6.1.2** Six (6) Paired Conductors Traffic Signal Cable shall be supplied and delivered as per IMSA Specification 39-2 (latest edition) and associated specifications in addition to this Specification.

**E6.1.3** In cases of discrepancy between this Specification and IMSA Specification 39-2 (latest edition), this Specification shall govern.

**E6.2 Conductors**

**E6.2.1** Twelve (12) #19 AWG solid and uncoated conductors shall be supplied twisted to form six (6) individual conductor pairs.

**E6.3 Identification of Pairs**

**E6.3.1** The colors to be used for a six (6) pair sequence together with the pair numbers are shown in Table E6.3.1.

**Table E6.3.1  
 City of Winnipeg Traffic Signals Color Code  
 Six (6) Paired Conductors Cable**

<b>Pair No.</b>	<b>Wire Color</b>	<b>Mate Color</b>
1	Blue	Blue with White Tracer
2	Orange	Orange with White Tracer
3	Green	Green with White Tracer
4	Brown	Brown with White Tracer
5	Slate	Slate with White Tracer
6	Red	Red with White Tracer

**NOTE:** Conductor color and sequence varies from IMSA Specification 39-2 (latest edition) Table 5.2.

**E6.4 Core Assembly**

**E6.4.1** Unidirectional lay may be used.

**E6.5 Identification**

**E6.5.1** The outer surface of the jacket shall be identified by intent printing as per E3.1.

**E6.6 Packing and Marking for Shipment**

**E6.6.1** Reel packaging and marking shall be as per E3.2.

**E6.7 Ripcord**

**E6.7.1** Overtop of the moisture-resistant taped conductor assembly shall be supplied a continuous length of polyester or aramid cord, known as the "rip cord". The purpose of the rip cord is to assist in the skinning and removal of the jacket material. The rip cord shall be laid

longitudinally along the entire length of the taped core assembly, immediately underneath the jacket material. The ripcord may be moulded into the inner surface of the outer jacket material. The ripcord shall be constructed of **braided strands**, the total diameter of which shall be no larger than 20 mils (0.508 mm), and must be sufficiently strong to sever the jacket material without breaking.

E6.7.2 The Contract Administrator will advise the Bidder which of the available ripcords will need to be incorporated into the manufacture of this item.

E6.8 Sampling, Inspection and Acceptance

E6.8.1 In addition to IMSA Specification 39-2, the manufacturer may be required to supply the City's Contract Administrator, in advance of the delivery of the required quantity of cable, a sample of the finished and tested cable, the sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.

**E7. FOUR (4) PAIRED CONDUCTORS TRAFFIC SIGNAL CABLE**

E7.1 General

E7.1.1 This specification covers the supply and delivery of four (4) paired conductors, polyethylene insulated, polyvinyl chloride jacketed communication cable with electrical shielding on each conductor pair, rated 600 volts, for use in underground conduit, as aerial cable supported by a messenger, as traffic signal cable or as lead-in cable for inductive loop detectors.

E7.1.2 Four (4) Paired Conductors Traffic Signal Cable shall be supplied and delivered as per IMSA Specification 19-2 (latest edition) and associated specifications in addition to this Specification.

E7.1.3 In cases of discrepancy between this Specification and IMSA Specification 19-2 (latest edition), this Specification shall govern.

E7.2 Conductors

E7.2.1 Eight (8) #14 AWG solid conductors shall be supplied twisted to form four (4) individually shielded conductor pairs.

E7.3 Identification of Pairs

E7.3.1 The colors to be used for a four (4) pair sequence together with the pair numbers are shown in table E7.3.1.

**Table E7.3.1**  
**City of Winnipeg Traffic Signals Color Code**  
**Four (4) Paired Conductors Cable**

Pair No.	Wire Color	Mate Color
1	Black	Black with Green Tracer
2	Red	Red with Green Tracer
3	Blue	Blue with Green Tracer
4	Orange	Orange with Green Tracer

**NOTE:** Conductor color and sequence varies from IMSA Specification 19-2 (latest edition) Table 5.2.

E7.4 Core Assembly

E7.4.1 Unidirectional lay may be used.

E7.5 Identification

E7.5.1 The outer surface of the jacket shall be identified by intent printing as per E3.1.

E7.6 Packing and Marking for Shipment



E7.6.1 Reel packaging and marking shall be as per E3.2.

E7.7 Ripcord

E7.7.1 Overtop of the moisture-resistant taped conductor assembly shall be supplied a continuous length of polyester or aramid cord, known as the “rip cord”. The purpose of the rip cord is to assist in the skinning and removal of the jacket material. The rip cord shall be laid longitudinally along the entire length of the taped core assembly, immediately underneath the jacket material. The rip cord may be moulded into the inner surface of the outer jacket material. The rip cord shall be constructed of **braided strands**, the total diameter of which shall be no larger than 20 mils (0.508 mm), and must be sufficiently strong to sever the jacket material without breaking.

E7.7.2 The Contract Administrator will advise the Bidder which of the available rip cords will need to be incorporated into the manufacture of this item.

E7.8 Sampling, Inspection and Acceptance

E7.8.1 In addition to IMSA Specification 19-2, the manufacturer may be required to supply the City’s Contract Administrator, in advance of the delivery of the required quantity of cable, a sample of the finished and tested cable, the sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.

**E8. TRAFFIC SIGNAL SERVICE CABLE (3 COND. 8GA.)**

E8.1 General

E8.1.1 This specification covers the supply and delivery of three (3) conductor polyethylene insulated, with a single bare copper grounding wire, polyvinyl chloride jacketed traffic signal service cable, rated 600 volts, for use in underground conduit or as aerial cable supported by a messenger as traffic signal power service cable.

E8.1.2 Traffic Signal Service Cable (3 Cond. 8Ga.) shall be supplied and delivered as per IMSA Specification 19-1 (latest edition) and associated specifications in addition to this Specification.

E8.1.3 In cases of discrepancy between this Specification and IMSA Specification 19-1 (latest edition), this Specification shall govern.

E8.2 Conductors

E8.2.1 Three (3) #8 AWG stranded insulated conductors and one (1) #6 AWG stranded bare copper conductor shall be supplied.

E8.3 Conductor Color Coding

E8.3.1 Standard color coding for cables shall be in accordance with the City of Winnipeg Traffic Signals Color Code Table E8.3.1. Base colors shall be obtained by the use of colored insulation.

**Table E8.3.1  
 City of Winnipeg Traffic Signals Color Code  
 Traffic Signals Service Cable (3 Cond. 8Ga.)**

Conductor No.	Wire Color	Size
1	Black	#8 AWG, Stranded
2	White	#8 AWG, Stranded
3	Red	#8 AWG, Stranded
4	“Bare Copper”	#6 AWG, Stranded

**NOTE:** Conductor color and sequence varies from IMSA Specification 19-1 (latest edition) Table 5.1.

E8.4 Conductor Assembly

E8.4.1 The outer layer shall be left hand lay and as per IMSA Specification 19-1 (latest edition).

E8.5 Identification

E8.5.1 The outer surface of the jacket shall be identified by intent printing as per E3.1.

E8.6 Packing and Marking for Shipment

E8.6.1 Reel packaging and marking shall be as per E3.2.

E8.7 Sampling, Inspection and Acceptance

E8.7.1 In addition to IMSA Specification 19-1, the manufacturer shall be required to supply the City's Contract Administrator, in advance of the delivery of the required quantity of cable, a sample of the finished and tested cable, the sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.

**E9. TRAFFIC SIGNAL SERVICE CABLE (3 COND. 4GA.)**

E9.1 General

E9.1.1 This specification covers the supply and delivery of three (3) conductor polyethylene insulated, with a single bare copper grounding wire, polyvinyl chloride jacketed traffic signal service cable, rated 600 volts, for use in underground conduit or as aerial cable supported by a messenger as traffic signal power service cable.

E9.1.2 Traffic Signal Service Cable (3 Cond. 4Ga.) shall be supplied and delivered as per IMSA Specification 19-1 (latest edition) and associated specifications in addition to this Specification.

E9.1.3 In cases of discrepancy between this Specification and IMSA Specification 19-1 (latest edition), this Specification shall govern.

E9.2 Conductors

E9.2.1 Three (3) #4 AWG stranded insulated conductors and one (1) #6 AWG stranded bare copper conductor shall be supplied.

E9.3 Conductor Color Coding

E9.3.1 Standard color coding for cables shall be in accordance with the City of Winnipeg Traffic Signals Color Code Table E9.3.1. Base colors shall be obtained by the use of colored insulation.

**Table E9.3.1  
 City of Winnipeg Traffic Signals Color Code  
 Traffic Signals Service Cable (3 Cond. 4Ga.)**

<b>Conductor No.</b>	<b>Wire Color</b>	<b>Size</b>
1	Black	#4 AWG, Stranded
2	White	#4 AWG, Stranded
3	Red	#4 AWG, Stranded
4	"Bare Copper"	#6 AWG, Stranded

**NOTE:** Conductor color and sequence varies from IMSA Specification 19-1 (latest edition) Table 5.1.

E9.4 Conductor Assembly

E9.4.1 The outer layer shall be left hand lay and as per IMSA Specification 19-1 (latest edition).

E9.5 Identification

E9.5.1 The outer surface of the jacket shall be identified by intent printing as per E3.1.

**E9.6 Packing and Marking for Shipment**

E9.6.1 Reel packaging and marking shall be as per E3.2.

**E9.7 Sampling, Inspection and Acceptance**

E9.7.1 In addition to IMSA Specification 19-1, the manufacturer shall be required to supply the City's Contract Administrator, in advance of the delivery of the required quantity of cable, a sample of the finished and tested cable, the sample being at least two (2) meters in length, containing at least two (2) sequential meter markings. No cable shall be delivered to the City until the sample length of cable has been examined and inspected with no comments or concerns brought forth by the City. The cost to provide the sample shall be borne solely by the Contractor.

**E10. LOOP DETECTOR CABLE**

**E10.1 General**

E10.1.1 This specification covers the supply and delivery of One (1) stranded copper conductor, XPLE cross linked polyethylene insulated, #12 AWG type RWU 90, rated for -40°C, rated 1000 volts and conforming to the requirements of CSA C22.2 No. 3. for use as underground loop detector cable.

E10.1.2 Cable under this specification shall be composed of a stranded copper conductor insulated with heat-stabilized polyethylene. The insulated conductor shall be laid up in a compact cable form and bound with suitable moisture-resistant tape. The conductor reel shall be a one-time use metal reel, no bigger than 16" diameter and non-returnable. 500 meters of black cable per reel.