



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 437-2007

**SUPPLY AND DELIVERY OF TRAFFIC SIGNAL LIGHT DUTY DAVIT POLE SHAFT
FOR DAVIT ARMS 8', 12' AND 16' (FT) REACH AND DOUBLE DAVIT ARMS 8' AND
12' (FT) REACH**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 SUPPLY AND DELIVERY OF TRAFFIC SIGNAL LIGHT DUTY DAVIT POLE SHAFT FOR DAVIT ARMS 8', 12' AND 16' (FT) REACH AND DOUBLE DAVIT ARMS 8' AND 12' (FT) REACH

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, August 1, 2007.
- 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. ADDENDA

- B4.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B5. SUBSTITUTES

B5.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.

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

B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.

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

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

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

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

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

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

B5.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B13.

B5.9 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.

B6. BID SUBMISSION

B6.1 The Bid shall consist of the following components:

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

- B6.2 Further to B6.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B5.
- B6.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B6.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B6.5 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 Branch
185 King Street, Main Floor
Winnipeg, MB R3B 1J1
- B6.5.1 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.
- B6.6 Bidders are advised not to include any information/literature except as requested in accordance with B6.1.
- B6.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, may result in the Bid being determined to be non-responsive.
- B6.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.
- B6.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B6.9 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B7. BID

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted; and
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.

- B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B7.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed; and
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B7.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B7.4.2 All signatures should be witnessed, except where a corporate seal has been affixed.
- B7.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B8. PRICES

- B8.1 The Bidder shall state a price in Canadian funds for each item and for each year of the Work identified on Form B: Prices.
- B8.1.1 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; and
 - (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.
- B8.1.2 Prices on Form B: Prices shall not include the Manitoba Association for Resource Recovery Corporation (MARRC) Environmental Handling Charge (EHC) which shall be extra where applicable.
- B8.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9. QUALIFICATION

- B9.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, 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.

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

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

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

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

B9.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B9.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B10. OPENING OF BIDS AND RELEASE OF INFORMATION

B10.1 Bids will not be opened publicly.

B10.2 Following the Submission Deadline, the names of the Bidders and their 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.3 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.4 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.

B11. IRREVOCABLE BID

B11.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B11.2 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.

B12. WITHDRAWAL OF BIDS

- B12.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B12.1.1 Notwithstanding GC.7.05(2), 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.
- B12.1.2 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.
- B12.1.3 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 B12.1.3(b), declare the Bid withdrawn.
- B12.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B11.2 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.

B13. EVALUATION OF BIDS

- B13.1 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 (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
 - (c) Total Bid Price; and
 - (d) economic analysis of any approved alternative pursuant to B5.
- B13.2 Further to B13.1(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.
- B13.3 Further to B13.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B13.4 Further to B13.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item and for each year shown on Form B: Prices.

B14. AWARD OF CONTRACT

- B14.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B14.2 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.
- B14.2.1 Without limiting the generality of B14.2, 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.

B14.3 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.

B14.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

C1.1 The *General Conditions for the Supply and Delivery of Goods* (Form 21: 88 03) are applicable to the Work of the Contract.

C1.1.1 The *General Conditions for the Supply and Delivery of Goods* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for the Supply and Delivery of Goods*, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.2 The General Conditions are amended by striking out "The City of Winnipeg Act" wherever it appears in the General Conditions and substituting "The City of Winnipeg Charter".
- D1.3 The General Conditions are amended by striking out "Board of Commissioners" or "Commissioner" wherever it appears in the General Conditions and substituting the "Chief Administrative Officer".
- D1.4 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.5 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.6 The General Conditions are amended by striking out "Bidding Instructions" wherever it appears in the General Conditions and substituting "Bidding Procedures".

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of the supply and delivery of traffic signal light duty davit pole shaft for davit arms 8', 12' and 16' foot reach and double davit arms 8' and 12' foot reach for the period of December 1, 2007 to November 30, 2010
- 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 GC.4.08, the City shall have no obligation under the Contract to purchase any quantity of any item in excess of its actual operational requirements.
- D2.3 Notwithstanding **Error! Reference source not found.**, in the event that operational changes result in substantial changes to the requirements for Work, the City reserves the right to alter the type or quantity of work performed under this Contract, or to terminate the Contract, upon thirty (30) Calendar Days written notice by the Contract Administrator. In such an event, no claim may be made for damages on the ground of loss of anticipated profit on Work.

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**AASHTO**" means the American Association of State Highways and Transportation Officials, that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work;
 - (b) "**ASTM**" means the American Society for Testing and Materials' that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work;
 - (c) "**Award Authority**" means the authority having the jurisdiction to award the Contract according to the City's by-laws, policies or procedures;
 - (d) "**Business Day**" means any Calendar Day, other than a Saturday, Sunday, or a Statutory or Civic Holiday;

- (e) "**CSA**" means the Canadian Standards Association, that complies with the latest edition of standards including amendments and supplements in effect on the date of issue of this Bid Opportunity shall apply to the Work;
- (f) "**Submission Deadline**" and "**Time and Date Set for the Final Receipt of Bids**" mean the time and date set out in the Bidding Procedures for final receipt of Bids; and
- (g) "**User**" means a person, department or other administrative unit of the City authorized by the Contract Administrator to order Work under this Contract.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is:

Mr. Bill Woroby, P. Eng
Staff Engineer, Public Works
103-1155 Pacific Avenue
Winnipeg, MB R3E 3P1

Telephone No.: (204) 986-5326
Facsimile No.: (204) 986-7358

D5. NOTICES

D5.1 GC.7.05 is hereby amended to delete reference to "registered mail" and to replace same with "ordinary mail".

D5.2 GC.7.05 is further amended hereby to include delivery by facsimile transmission (fax) as an acceptable means of delivering notices, consents, approvals, statements, authorizations, documents or other communications required or permitted to be given under this Contract. Deliveries by fax will be deemed to have been received on the day of delivery, if a business day, or if not a business day, on the business day next following the day of delivery.

D5.3 Further to GC.7.05, all notices, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.4, D5.5 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.

D5.4 All notices of appeal to the Chief Administrative Officer shall be sent to the following address or facsimile number:

The City of Winnipeg
Chief Administrative Officer Secretariat
Attn: Chief Administrative Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg, MB R3B 1B9

Facsimile No.: (204) 949-1174

D5.5 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

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

Facsimile No.: (204) 947-9155

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

- D6.1 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.

CONTROL OF WORK

D7. COMMENCEMENT

- D7.1 The Contractor shall not commence any Work until he is in receipt of a notice of award from the City authorizing the commencement of the Work.
- D7.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D6.

D8. ORDERS

- D8.1 The Contractor shall provide a local Winnipeg telephone number or a toll-free telephone number at which orders for delivery may be placed.

D9. RETURNED GOODS

- D9.1 Further to GC.5.04 and GC.10.01, The Contract Administrator or his/her designate shall call the Contractor and inform them of the item(s) being returned and the reason why. The Contractor shall then send a Return Material Authorization (RMA) notice with all the necessary shipping instructions, within five (5) Calendar Days to the Contract Administrator.
- D9.2 The Contractor shall pay all transportation charges on goods in accordance with D9.1. The goods will be held at the Contractor's risk pending instruction.
- D9.3 The Contractor shall provide the Contract Administrator, as a minimum the following information on how the goods are to be returned:
- (a) RMA notice, for authorized collect shipments;
 - (b) Company name(s) and ship to addresses;
 - (c) Preference of carrier/ shipping method, a contact person with either a local Winnipeg telephone number or a toll-free telephone number; and
 - (d) For questions or concerns provide a contact person with a toll-free telephone number.
- D9.4 The Contract Administrator shall provide the Contractor, as a minimum the following information when the goods are being returned:
- (a) The RMA will accompany the shipment, with one (1) copy on the outside and one (1) within the package;
 - (b) The Contractors / Customers account number;
 - (c) The City of Winnipeg's Department and address;
 - (d) Total number of packages, weight and dimensions; and
 - (e) A contact name and phone number at the pick-up point.

D10. RECORDS

- D10.1 The Contractor shall keep detailed records of the goods supplied under the Contract.
- D10.2 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.
- D10.3 The Contractor shall provide the Contract Administrator with a copy of the usage records for each year within fifteen (15) Calendar Days of the end of that year and within thirty (30) Calendar Days at the end of the Contract.

MEASUREMENT AND PAYMENT

D11. INVOICES

- D11.1 Further to GC.9.01 and notwithstanding GC.9.03, the Contractor shall submit an invoice for each order delivered.
- D11.2 Further to D5.3, the Contractor shall submit invoices to the locations designated at the time of ordering.
- D11.3 Invoices must clearly indicate, as a minimum:
- (a) the City's order number;
 - (b) date of delivery;
 - (c) delivery address;
 - (d) type and quantity of goods delivered;
 - (e) the amount payable with GST and MRST shown as separate amounts; and
 - (f) the Contractor's GST registration number.
- D11.4 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D12. PAYMENT

- D12.1 Further to GC.9.01 and GC.9.03, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.
- D12.2 Further to GC.9.03, effective January 1, 2007 the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

INDEMNITY

D13. INDEMNITY

- D13.1 Notwithstanding GC 7.03, the Contractor shall indemnify the City in the amount of a minimum of twice the Contract value plus two (2) million dollars.

WARRANTY

D14. WARRANTY

D14.1 Warranty is as stated in GC 10.01.

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</u>
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ST-107	Test Template for Arm and Shaft (Rev. No. 1) page 1 of 1
ST-111	4 3/4" x 24" Access Panel (38 Circuit) for Traffic Signal Pole (Rev. No. 2) page 1 of 1
ST-161	Traffic Signal Light Duty Davit Pole Shaft (Rev. No. 3) page 1 of 2
ST-161	Traffic Signal Light Duty Davit Pole Shaft (Rev. No. 3) page 2 of 2
ST-136	Traffic Signal Light Duty Double Davit Arms of 8' and 12' ft reach (Rev. No. 1) page 1 of 1
ST-164	Cover for the 38 Circuit Wiring Access Panel (rev. No. 1) page 1 of 1
ST-169	Traffic Signal Light Duty Davit Arms of 8', 12' and 16' ft Reach (Rev. No. 0) page 1 of 1

E1.3 Certified Detailed Drawings

E1.3.1 The engineer certified detailed drawings include a material list and all dimensions and tolerances applicable to all critical dimensions. On the drawings, details are included for every element of the traffic signal light duty davit pole shaft (for use with davit arms of 8 feet, 12 feet and 16 feet horizontal reach), including:

- (a) base plate;
- (b) 4 3/4 inch x 24 inch (38 circuit) access panel detail;
- (c) removable terminal strip bracket/mounting bracket assemblies;
- (d) 4 3/4 inch x 24 inch access panel cover; and
- (e) tamper proof cup washer.

Note: Single Davit Arms and Double Davit Arms are not part of this order.

E1.4 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B5.

E2. CERTIFIED STRUCTURAL STRESS ANALYSIS

E2.1 The engineer certified structural stress analysis, of the traffic signal light duty davit pole shaft, includes calculations of stresses at the base of the pole and at the access panel. Placement of all attachments to the pole are as described in detail in E3.3 "Pole Attachment Configurations". Loading is prescribed in E3.1 "AASHTO Standards" and E3.2 "Wind Loading".

E2.2 For the purposes of the stress analysis, the nominal spread of compatible davit arms as shown on Drawing ST-169, latest revision and ST-136, latest revision, as measured to the end of the octagonal section of the arm are: eight feet, zero inches (8' 0"); twelve feet, zero inches (12' 0"); and sixteen feet, zero inches (16' 0").

E2.3 The davit arms as shown in Drawing ST-169, latest revision, are to have an eighteen (18) degree rise section with a one (1) foot (nominal) straight level section at the end of the davit arm to provide for a tenon height of nineteen feet, three inches (19' 3"; +3", -0") above the base of the pole for both the 8 foot and 12 foot davit arms and twenty feet six inches (20' 6"; +3", -0") above the base of the pole for the 16 feet davit arms.

E2.4 Drawing ST-136, latest revision, is the double davit arm described in E3.3(f) **Configuration 6** and in E3.3(g) **Configuration 7** of "Pole Attachment Configurations".

E3. DESIGN STANDARDS

- E3.1 **AASHTO Standards:** The traffic signal light duty davit pole shaft for use with designated davit arms is designed in accordance with the 2001 4th edition and latest revisions of The American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals.
- E3.2 **Wind Loading:** The traffic signal light duty davit pole shaft is designed to withstand design wind pressure $P_z = 0.00256 K_z G V^2 I_r C_d$ pounds per square foot, where $(0.00256 G V^2) = 25.6$ psf, K_z as per AASHTO table 3-5 except not less than 1.0, $I_r = 1.0$ for 50 year design life and C_d as per AASHTO table 3-6. This pressure is applied to the pole including davit arms, with specific signal head and sign attachments as herein described in E3.3 "Pole Attachment Configurations".
- E3.3 **Pole Attachment Configurations:** The light duty davit pole shaft is designed to support traffic signal heads, pedestrian corridor units and traffic signs when loaded as specified without distress. The structural design calculations and stress analysis takes into account the following configurations of attachments to the light duty davit pole shaft and arms (Drawing ST-161, sheet 2, latest revision):
- (a) **Configuration 1:** For single davit arms of 12 feet and 16 feet reach only, Signal Head Mounting Style – Hanger;
- (i) Attachment on the 12 and 16 foot davit arm and hanger: One (3 section x 12 inch) signal head: dimensioned 14 inches wide x 42 inches high - weight 50 lbs. (top of signal head mounted 8 inches below centreline of davit arm tenon) and
 - (ii) Attachment on the davit pole shaft: Two pedestrian heads at 90 degrees: each dimensioned 13 ½ inches wide x 13 ½ inches high – total weight 50 lbs. (mounted 8 feet 7 inches above base to bottom of head, and 16 inches out from edge of pole) and
 - (iii) Attachment on the davit pole shaft: One traffic sign: dimensioned 24 inches wide x 36 inches high - weight 14 lbs. (mounted 12 feet above base to bottom of sign) and
 - (iv) Attachment on the davit pole shaft: One traffic sign: dimensioned 36 inches wide x 12 inches high - weight 10 lbs. (mounted 10 feet above base to bottom of sign) and
 - (v) Attachment on the davit pole shaft: One traffic sign: dimensioned 5 inches wide x 8 inches high - weight 5 lbs. (mounted 4 feet above base to bottom of sign).
- (b) **Configuration 2:** For single davit arms of 12 feet and 16 feet reach only: Signal Head Mounting Style – Plumbizer:
- (i) Attachment on the 12 and 16 foot davit arm and plumbizer: One (5 section x 12 inch) signal head: dimensioned 14 inches wide x 72 inches high - weight 80 lbs.(mounted 29 inches from tenon centreline to top, 43 inches from tenon centreline to bottom) and
 - (ii) Attachment on the davit pole shaft: Two pedestrian heads at 90 degrees: each dimensioned 13 ½ inches wide x 13 ½ inches high – total weight 50 lbs. (mounted 8 feet 7 inches above base to bottom of head, and 16 inches out from edge of pole) and
 - (iii) Attachment on the davit pole shaft: One traffic sign: dimensioned 24 inches wide x 36 inches high - weight 14 lbs. (mounted 12 feet above base to bottom of sign) and
 - (iv) Attachment on the davit pole shaft: One traffic sign: dimensioned 36 inches wide x 12 inches high - weight 10 lbs. (mounted 10 feet above base to bottom of sign) and
 - (v) Attachment on the davit pole shaft: One traffic sign: dimensioned 5 inches wide x 8 inches high - weight five (5) lbs. (mounted 4 feet above base to bottom of sign).
- (c) **Configuration 3:** For single davit arm of 8 feet reach only: Signal Head Mounting Style – Hanger;
- (i) Attachment on the 8 foot davit arm and hanger: One (3 section x 12 inch) signal head: dimensioned 14 inches wide x 42 inches high - weight 50 lbs. (top of signal head mounted 8 inches below centreline of davit arm tenon) and

- (ii) Attachment on the 8 foot davit arm:
EITHER
One street name sign: dimensioned 84 inches wide x 12 inches high - weight seventeen (17) lbs. (mounted 17.5 feet above base to bottom of sign)
OR
One traffic sign: dimensioned 24 inches wide x 36 inches high - weight 14 lbs. (mounted next to the signal head).
 - (iii) Attachments on the davit pole shaft: If neither of item (ii) of davit arm attachments is used above, then;
EITHER
One (5 section x 12 inch) signal head: dimensioned 14 inches wide x 70 inches high – weight 80 lbs. (bottom of signal head mounted 10 feet above base);
OR
One traffic sign: dimensioned 24 inches wide x 36 inches high - weight 14 lbs. (mounted 12 feet above base to bottom of sign) and
 - (iv) Attachment on the davit pole shaft: One traffic sign: dimensioned 36 inches wide x 12 inches high - weight 10 lbs. (mounted 10 feet above base to bottom of sign) and
 - (v) Attachment on the davit pole shaft: Two pedestrian heads at 90 degrees: each dimensioned 13 ½ inches wide x 13 ½ inches high – total weight 50 lbs. (mounted 8 feet 7 inches above base to bottom of head, and 16 inches out from edge of pole) and
 - (vi) Attachment on the davit pole shaft: One traffic sign: dimensioned 24 inches wide x 12 inches high - weight 8 lbs. (mounted 11 feet above base to bottom of sign) and
 - (vii) Attachment on the davit pole shaft: One traffic sign: dimensioned 5 inches wide x 8 inches high - weight 5 lbs. (mounted 4 feet above base to bottom of sign).
- (d) **Configuration 4:** For single davit arm of 8 feet reach only: Signal Head Mounting Style – Plumbizer:
- (i) Attachment on the 8 foot davit arm and plumbizer: One (5 section x 12 inch) signal head: dimensioned 14 inches wide x 72 inches high - weight 80 lbs. (mounted 29 inches from tenon centreline to top, 43 inches from tenon centreline to bottom) and
 - (ii) Attachment on the 8 foot davit arm:
EITHER
One street name sign: dimensioned 84 inches wide x 12 inches high – weight 17 lbs. (mounted 17.5 feet above base to bottom of sign),
OR
One traffic sign: dimensioned 24 inches wide x 36 inches high - weight 14 lbs. (mounted next to the signal head).
 - (iii) on the davit pole shaft: If neither of item (ii) of davit arm attachments is used above, then,
EITHER
One (5 section x 12 inch) signal head: dimensioned 14 inches wide x 70 inches high - weight 80 lbs. (mounted 10 feet above base to bottom of signal head);
OR
One traffic sign: dimensioned 24 inches wide x 36 inches high - weight 14 lbs. (mounted 12 feet above base to bottom of sign) and
 - (iv) Attachment on the davit pole shaft: One traffic sign: dimensioned 24 inches wide x 12 inches high - weight 8 lbs. (mounted 11 feet above base to bottom of sign) and
 - (v) Attachment on the davit pole shaft: One traffic sign: dimensioned 36 inches wide x 12 inches high - weight 10 lbs. (mounted 10 feet above base to bottom of sign) and
 - (vi) Attachment on the davit pole shaft: Two pedestrian heads at 90 degrees: each dimensioned 13 ½ inches wide x 13 ½ inches high – total weight 50 lbs. (mounted 8 feet 7 inches above base to bottom of head, and 16 inches out from edge of pole) and
 - (vii) Attachment on the davit pole shaft: One traffic sign: dimensioned 5 inches wide x 8 inches high - weight 5 lbs. (mounted 4 feet above base to bottom of sign).

- (e) **Configuration 5.** For Pedestrian Corridor Unit Mounting: Light duty davit pole shaft shall be designed to carry a pedestrian corridor unit (suspended from the end of a single davit arm of 12 feet maximum reach) dimensioned 36 ½ inches wide x 32 ½ inches high x 18 inches deep and four flashing lights, each dimensioned 10 inches wide x 10 inches high – total weight 100 lbs.
- (f) **Configuration 6.** For Pedestrian Corridor Unit Mounting: Light duty davit pole shaft shall be designed to support a double davit arm attachment (Drawing ST-136, latest revision) where individual arms are each of 12 feet maximum reach, 180 degrees apart. The double davit arms shall support two pedestrian corridor units only (per **Configuration 5** above).
- (g) **Configuration 7.** For Traffic Signal Mounting: Light duty davit pole shaft shall be designed to support a double davit arm attachment (Drawing ST-136, latest revision) where one arm is of 12 feet maximum reach and other arm is of 8 feet maximum reach, 180 degrees apart. The double davit arms shall support two (3 section x 12 inch) signal heads suspended from end of each arm. Each signal dimensioned 14 inches wide x 42 inches high – weight 50 lbs. Attachment on the davit pole shaft is one (5 section x 12 inch) signal head: dimensioned 14 inches wide x 70 inches high – weight 80 lbs. (mounted 10 feet above base to bottom of signal).

E4. GOODS

- E4.1 The Contractor shall supply and deliver traffic signal light duty davit pole shaft for davit arms of 8', 12' and 16' foot and double davit arms 8' and 12' foot reach, the materials used for fabrication shall be new and not previously used in accordance with the requirements hereinafter specified.
- E4.2 The octagonal pole shaft walls of the traffic signal light duty pole shaft shall be fabricated from 7 gauge structural steel meeting as a minimum the requirements of the ASTM A570 Grade 50 (50 ksi Design Yield Strength).

NOTE: Steel shall not be acceptable unless the mill test certificate states the grade to be 50 ksi minimum yields. Lower grade steel shall not be acceptable (despite favourable published mill test yield results) and pole shafts fabricated without steel certification shall be rejected.
- E4.3 The 7 gauge structural steel shaft and access panel cover shall have silicon content less than or equal to 0.06 percent. Other components shall have silicon content controlled as required to prevent detrimental galvanizing effects.
- E4.4 The base plate material shall be steel meeting the requirements of CSA G40.21 44W.
- E4.5 The access panel cover shall be 7 gauge steel meeting the requirements of ASTM A570 Grade 50.
- E4.6 Type 316 stainless steel (non-magnetic) hardware shall be used for:
 - (a) the ¼ inch x 1 ½ inches long grounding bolt and the two grounding bolt nuts inside the access panel;
 - (b) the two 3/8 inch x 2 ½ inches long hex head bolts which fasten the access panel cover to the wiring access panel; and
 - (c) the 3/8 inch x 1 ½ inches long hex head bolt which secures the removable terminal strip bracket to the upper mounting bracket within the wiring access panel.
- E4.7 Aluminum shall be used for the tamper-proof cup washers (Drawing No. ST-164, latest revision), associated with the wiring access panel.

E5. DELIVERY

- E5.1 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

- E5.1.1 Goods shall be delivered within sixty (60) Calendar Days of the placing of an order, except where otherwise agreed at the time of ordering.
- E5.2 Goods shall be delivered between 7:30 a.m. and 2:30 p.m. on Business Days.
- E5.3 The Contractor shall off-load goods as directed at the delivery location.
- E5.4 A minimum release shall be approximately twenty-five (25) pieces.

E6. FABRICATION

- E6.1 Welding of steel structures shall be in accordance with the requirements of:
 - (a) CSA W59-03 Welded Steel Construction (Metal Arc Welding);
 - (b) The fabricator shall be fully approved by the Canadian Welding Bureau (CWB) as per CSA W47.1-03 Certification of Companies for Fusion Welding of Steel.
- E6.2 All seams shall be continuously welded and free from any slag or splatter.
- E6.3 The longitudinal seam weld shall be a minimum of 60% penetration, except that within 6 inches of base plate and 4 inches from upper end of shaft shall be complete penetration.

Note: A sixty (60) percent penetration longitudinal seam weld in the vicinity of the access panel will be acceptable, provided this seam weld does not intercept the circumference of the access panel.
- E6.4 Only one (1) longitudinal seam weld is permitted in each davit pole shaft.
- E6.5 Davit pole shaft shall be one continuous length with no circumferential butt joint welds.
- E6.6 The surface of exposed welds shall be free of any slag and splatter.
- E6.7 All openings and surfaces of internal passages, through which cables will be routed, shall be free of burrs, sharp edges and points.

E7. TESTING

- E7.1 Notwithstanding the Contractor's own quality control testing of all materials, the Contract Administrator may arrange for inspection of welding procedures and steel fabrication to ascertain compliance with the Specifications and Drawings.
- E7.2 A testing agency may be engaged to work with the Contract Administrator to carry out shop inspections and fabrication testing of the work throughout the manufacturing process. The Contractor shall cooperate fully with the testing firm. The firm shall have access to all the Contractor's normal quality control records associated with this Contract.
- E7.3 Testing may include radiographic inspection and magnetic particle inspection, as determined by the Contract Administrator.
- E7.4 Weld inspection will be carried out in accordance with the requirements of CSA W59-03. Welds found by any of the inspection methods to be inadequate and unsatisfactory shall be repaired in accordance with CSA W59-03 and then retested. The cost of the repairs and the cost of the retest shall be paid for by the Contractor. No repair shall be made until agreed to by the Contract Administrator.

E8. PROTECTIVE COATING SYSTEMS

- E8.1 The sole approved protective coating system for the traffic signal light duty davit pole shaft is hot dip galvanizing.
- E8.2 Hot dip galvanizing shall be carried out in accordance with CSA Standard G164-M92 to a net minimum retention of 600 grams per square metre.
- E8.3 After hot dip galvanizing, all sharp edges and shards of galvanizing material on exterior of pole shafts shall be removed. The same standard of care shall apply to all accessible interior surfaces.
- E8.4 All areas of damaged galvanizing shall be repaired with self fluxing low temperature zinc based alloy rod. Use of spray on coatings is not acceptable.

E9. DESIGN FEATURES

- E9.1 Each traffic signal light duty davit pole shaft shall be complete in all respects. Shaft shall be of shell type construction, octagonal in cross-section and uniformly tapered.
- E9.2 **Base Plate:** Each davit pole shaft will be base mounted and therefore suitable for installation on a concrete foundation, break away base or on a steel screw-in base using 1 inch diameter anchor bolts or connecting bolts.
- (a) Light duty davit pole shaft shall have base plate as shown on Drawing No. ST-161, latest revision. The base plate shall be G40.21 44W steel, 1 inch thick, 12 inches square, having 1 3/8 inches wide slotted bolt holes designed to suit 1 inch diameter anchor bolts which are spaced on a bolt square ranging from 6 3/4 inches to 8 1/8 inches square (9 1/2 inches to 11 1/2 inches bolt circle). The base plate shall have an octagonal centre opening slightly larger than 7 inches "across flats" into which the bottom portion of the pole shaft wall shall be inserted and welded. The base plate corners shall be chamfered 3/4 inch. Flame access slots (if necessary) shall radiate from the anchor bolt holes to the outer corners of the base plate and shall be 1/4 inch maximum width; and
- (b) Pole shaft shall be welded to the base plate by means of both interior and exterior continuous circumferential fillet welds. The interior weld shall be ground smooth prior to applying the protective coating (galvanizing). The tolerance for alignment of the base plate to the pole shaft shall be plus or minus one inch at the top of the pole shaft from perpendicular to the base plate.
- E9.3 **Davit Pole Shafts:** The davit pole shall consist of a straight shaft, which tapers uniformly from the base plate to the upper end of shaft.
- (a) The davit pole shaft (Drawing ST-161, latest revision) shall support a davit arm by means of a slip joint which permits feed through of internal wires.
- Note:** The davit arms currently in the City's stock must inter-mate with the light duty davit pole shafts being supplied.
- (b) Overall height of the davit shaft from the top opening to the bottom of the base plate shall be 13 feet, +1, -0 inch;
- (c) The exterior dimensions measured "across the flats" of the davit shaft, after welds are cleaned of slag and splatter (but prior to galvanizing), shall be as follows:
- (i) exterior dimensions "across flats" at top of the shaft shall be 4 5/16 inches +0, -1/8 inch; and
- (ii) exterior dimensions "across flats" at the bottom of the shaft shall be 7 inches +0, -1/8 inch.
- (d) Davit pole shafts shall have detailed, repeatable, close tolerance dimensions. The slip joint, at the top of the davit shafts, will make interchange ability possible with davit arms (currently in the City's stock).

- (e) Each davit pole shaft must be able to accept eight (8) foot davit arms, twelve (12) foot davit arms, sixteen (16) foot davit arms and eight (8) eight and/or twelve (12) twelve foot double davit arms.

E9.4 Test Template for Shafts: The Contractor shall confirm the slip joint tolerance and adequacy of fit of davit arms on the light duty davit pole shafts by the use of a test template for shafts. The Contractor shall fabricate the test template for shafts, for testing each davit pole shaft individually and it shall be delivered to the City upon final delivery of davit pole shafts.

- (a) The test template for shafts shall **not** be galvanized;
- (b) The test template for shafts shall conform to the critical dimensions shown on the attached Drawing No. ST-107, latest revision;
- (c) The test template for davit shafts represents the smallest and largest possible davit arm slip joint which the shaft could be required to support. The Contractor shall ensure a slip joint overlap of at least 8 inches and at most 12 inches for each davit shaft; and
- (d) The Contractor shall deliver the test template for shafts to the City with the final shipment of davit pole shafts, for final acceptance testing by the City. The test template shall become the property of the City after testing is completed.

E9.5 4 3/4 inch x 24 inch (38 Circuit) Wiring Access Panel: Each pole shall be provided with a 4 3/4 inches wide x 24 inches long (38 circuit) wiring access panel for termination of signal control cables. The (38 circuit) wiring access panel, upper and lower mounting brackets, removable terminal strip bracket and lower terminal strip bracket support arrangement is shown on attached Drawing No. ST-111, latest revision. The (38 circuit) wiring access panel shall be located at a height of 46 ± 2 inches [3 feet, 10 inches] measured from centre line of panel to bottom of base plate. The (38 circuit) access panel shall have a minimum clear opening of 4 3/4 inches wide x 24 inches long except at the corners (which are rounded as per Drawing No. ST-111, latest revision). The (38 circuit) access panel shall be fabricated either of one continuous length of steel plate formed into a ring and welded at the junction, or may be formed of two symmetrical halves welded at the top and bottom of the panel opening.

- (a) The (38 circuit) access panel shall contain a removable terminal strip bracket, of 1 1/4 inches wide by 7 GA thick steel, having 12 drilled and tapped holes precisely located as specified on Drawing No. ST-111, latest revision, to accommodate both a 0.438 inch density double row 16 conductor terminal strip and a 0.438 inch density double row 22 conductor terminal strip. These 12 holes are located such that either the longer or the shorter terminal strip may be mounted higher or lower on the removable terminal strip bracket. The lower end of the removable terminal strip bracket shall be held captive by means of a lower terminal strip support bracket, serving as a retainer clip, welded across the interior flats near the bottom opening of the (38 circuit) access panel opening. A backing piece of 11 GA material, 1 inch wide shall be stitch welded to the back centreline of the removable terminal strip bracket as per ST-111, latest revision, to render the bracket more rigid.
- (b) **Upper Mounting Bracket and the Electrical Grounding Bolt:** An upper mounting bracket shall be provided with a 1/4 inch diameter x 1 1/2 inches long full-threaded Type 316 stainless steel grounding bolt and two stainless steel hexagonal nuts, for the connection of ground wire(s). The grounding bolt shall be installed in a drilled and tapped hole as shown on the upper mounting bracket, its threaded portion facing outwards, and its head welded to the rear of the upper mounting bracket. The threads of the grounding bolt shall be kept clean and free of welding splatter etc. and shall either be protected during galvanizing, or rethreaded after. The upper mounting bracket shall have two 3/8" - 16 UNC (Unified Standard Coarse Thread) General Purpose U-type nuts installed (Au-ve-co Part Number 10054, or equal). A lower mounting bracket shall also be installed as shown with one 3/8" - 16 UNC General Purpose U -type nut to fasten the access panel cover. Three U-type nuts are required: two fasten the access panel cover, the other secures the removable terminal strip mounting bracket to the upper mounting bracket. The three U-nuts must be installed after galvanizing. All three U-nuts shall be installed "edgewise" (that is, with the fold of the U-nut facing the side of the access panel ring, not facing the top or bottom of the ring). Three corresponding Type 316 stainless steel full-thread hexagonal head bolts (9/16 inch

across flats) are required. Two (2) stainless steel full-thread hexagonal head bolts (9/16 inch across flats), both 3/8 inch diameter x 2 1/2 inches long shall fasten the cover to the wiring access panel. A stainless steel full-thread hexagonal head bolt (also 9/16 inch across flats), 3/8 inch diameter x 1 1/2 inches long shall secure the removable terminal strip bracket to the upper mounting bracket.

- (c) Prior to galvanizing, all sharp edges within the (38 circuit) access panel shall be ground smooth to eliminate any sharp edges or corners. The lower perimeter edge of the access panel ring, upper and lower mounting bracket and the removable terminal strip bracket shall be so treated.

E9.6 Cover for the (38 Circuit) Wiring Access Panel: The (38 circuit) access panel shall be provided with a flanged, weatherproof steel cover. The access panel cover is detailed in Drawing No. ST-164, latest revision.

- (a) The cover shall be fabricated of 7 gauge steel.
- (b) The access panel cover shall have a continuous circumferential perimeter flange. The flange shall overlap the access panel ring sufficient to prevent driven snow or rain entry into the access panel, even at 25.6 psf design wind pressure. Flat covers will be rejected.
- (c) The two (2) holes in the cover for the mounting bolts shall be circular, 1/2 inch diameter and centred over the upper and lower bracket mounting holes both vertically and horizontally to match the U-nuts.
- (d) Covers shall have a smooth, continuous perimeter flange edge. All rough edges on the covers shall be ground smooth.
- (e) Covers shall have both interior and exterior surfaces galvanized.
- (f) After galvanizing, a weather strip of closed cell foam, 1/4 inch thick and 3/4 inch wide, shall be applied to form a continuous perimeter around the outer edge of the interior flat portion of the cover. This interior perimeter weather strip shall bear down onto the access panel ring to effectively seal the access panel when the cover is attached
- (g) The Contractor shall install the access panel covers after the poles have been galvanized, prior to final delivery.
- (h) An alternate access panel cover manufactured from "non-steel" material may be substituted for the galvanized steel cover, subject to review and approval of the Contract Administrator prior to manufacturing. "Non-steel" type access panel covers shall be strong, durable, ultraviolet stabilized, tamper proof and not subject to breakage or deformation under temperatures ranging from -50° C to +50° C. A sample of the proposed alternate cover shall be provided to the Contract Administrator for inspection prior to approval.
- (i) The cover shall be secured to the access panel by two 3/8 inch diameter x 2 1/2 inches long, fully threaded hexagonal head Type 316 stainless steel bolts (hex head bolts, 9/16 inch across flats), each bolt complete with tamper-proof cup washers (Drawing No. ST-164, latest revision). The tamper-proof cup washer shall have an internal diameter of 13/16 inch.

E10. MANUFACTURER'S IDENTIFICATION

E10.1 Each davit pole shaft shall be marked in a clearly legible form to identify the manufacturer and the production year. Raised lettering shall be confined to the width of one "flat," not less than 1 inch in height and shall be raised not less than 1/16 inch in weld metal at the following prescribed location:

- (a) External face of shaft within 24 inches of the bottom of shaft.

E10.2 Format of the raised lettering markings shall be as follows:

- (a) "**XX –YR**" - where "XX" shall be the abbreviation or logo of the Contractor's firm, followed by "dash", followed by the last 2 digits of the year of manufacture.