APPENDIX ‘G’

WINNIPEG TRANSIT SPECIFICATIONS

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TRANSIT SHELTER FOUNDATIONS

DESCRIPTION

1. This Specification shall cover the installation of concrete bus shelter pad foundations as identified on the Drawings.

2. The Work to be done by the Contractor under this Specification shall include the furnishings of all superintendence, overhead, labour, materials, equipment, tools, supplies and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

REFERENCES

3. Referenced Specification and Drawings
   (a) The latest version of the City of Winnipeg Standard Construction Specifications:
      (i) CW 3310 – Portland Cement Concrete Pavement Works; and
      (ii) CW 3325 – Portland Cement Concrete Sidewalk.

MATERIALS AND EQUIPMENT

4. General
   (a) All materials supplied under this Specification shall be of a type approved by the Contract Administrator and shall be subject to inspection and testing by the Contract Administrator.
   (b) The Contractor shall be responsible of the supply, safe storage and handling of all materials set forth in this Specification. All materials shall be handled in a careful and workmanlike manner, to the satisfaction of the Contract Administrator.

5. Concrete and Reinforcing Steel
   (a) Concrete shall be Type 5 as per the latest version of the CW 3310 Specification.
   (b) All other materials as per Clause 2 of the latest version of the CW 3310 Specification.

CONSTRUCTION METHODS

6. Construction shall take place in accordance with the Drawings, CW 3310 and CW 3325.

7. All forming is incidental to the unit price Bid for the Specification.

8. Verify dimensions of bus shelter pads prior to construction.

9. Meet existing grades and slopes unless otherwise indicated on the Drawings. Notify the Contract Administrator where this requirement will not result in positive drainage.

10. Removal of an existing concrete bus shelter pad shall be incidental to the Work.

MEASUREMENT AND PAYMENT

11. Transit Shelter Foundations

D2.11.1 Construction of the Transit Shelter Foundations shall be paid for at the Contract Unit Price per square metre for “Transit Shelter Foundations”, measured as specified herein, performed in accordance with this Specification and accepted by the Contract Administrator, which price shall be payment in full for supplying all materials and

performing all operations herein described and all other items incidental to the Work. The area to be paid for shall be the total number of square metres of Transit Shelter Foundations constructed in accordance with this Specification and as measure and accepted by the Contract Administrator.

BUS STOP FLAG FOUNDATION

DESCRIPTION

1. The Work covered under this item shall include all concreting operations related to construction of cast-in-place concrete foundations for bus stop flags in accordance with this Specification and as shown on the Drawings.

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

MATERIALS

3. General
   (a) The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this Specification.
   (b) Materials as specified on the Drawings.

4. Handling and Storage of Materials
   (a) All materials shall be handled and stored in a careful and workmanlike manner, to the satisfaction of the Contract Administrator. Storage of materials shall be in accordance with CSA Standard A23.1-04.

5. Testing and Approval
   (a) All materials supplied under this Specification shall be subject to inspection and testing by the Contract Administrator or by the Testing Laboratory designated by the Contract Administrator. There shall be no charge to the City for any materials taken by the Contract Administrator for testing purposes.
   (b) All materials shall be approved by the Contract Administrator at least seven (7) days before any construction is undertaken. If, in the opinion of the Contract Administrator, such materials in whole or in part, do not conform to the Specifications detailed herein or are found to be defective in manufacture or have become damaged in transit, storage or handling operations, then such materials shall be rejected by the Contract Administrator and replaced by the Contractor at their own expense.

CONSTRUCTION METHODS

6. Salvaging of Existing Flag Signs
   (a) Salvage existing flag signs and/or base plates for reuse in new locations. Store the materials until needed for reinstallation.
   (b) Demolish existing flag foundation to at least 0.5 metres below grade. Alternatively, remove entire flag foundation.

7. Location and Alignment of Foundations
   (a) Foundation construction shall not commence until the Contractor has obtained clearance from the appropriate Utility Authorities.

(b) Foundations shall be placed in the positions shown on the Drawings and as directed by the Contract Administrator in the field.

(c) The deviation of the axis of any finished foundation shall not differ by more than one percent (1%) from the vertical.

8. Excavation

(a) The Contractor is responsible for determining the excavation method at each foundation location.

(b) Excavations for foundations shall be made with equipment designed to remove a core of the diameter shown on the Drawings, or hydro-jet excavation to a depth to bypass and/or expose adjacent utilities.

(c) Upon reaching the required elevation, the bottom of the excavation shall be cleaned as directed by the Contract Administrator in the field.

(d) All excavated Material from the foundations shall be promptly hauled away from the Site to an approved disposal area as located by the Contractor.

(e) Upon completion of the cleaning out of the bottom to the satisfaction of the Contract Administrator, the reinforcement and anchor bolts shall be set in place and the concrete poured immediately. Under no circumstances shall a hole be left to stand open after boring has been complete.

9. Sleeving

(a) Timber or steel sleeving shall be used to temporarily line the bore to prevent bulging or caving of the walls and to protect men at Work in the bore.

(b) The sleeving shall be designed by the Contractor and constructed to resist all forces that may tend to distort it.

(c) The sleeving shall be withdrawn as the concrete is placed in the bore. The sleeving shall extend at least one (1) metre below the top of the freshly deposited concrete at all times.

(d) The clearance between the face of the bore hole and the sleeving shall not exceed seventy-five (75) mm.

10. Inspection of Bores

(a) Concrete shall not be placed in a bore until the bore has been inspected and approved by the Contract Administrator.

(b) The Contractor shall have available suitable light for the inspection of each bore throughout its entire length.

(c) All improperly set sleeving, bore, or bottom shall be corrected to the satisfaction of the Contract Administrator.

11. Placing Reinforcing Steel

(a) Reinforcement shall be:

(i) placed in accordance with the details shown on the Drawings;

(ii) rigidly fastened together; and

(iii) lowered into the bore intact before concrete is placed;

(b) Spacers shall be utilized to properly locate the reinforcing steel cage in the bore.

12. Placing Anchor Bolts

(a) The anchor bolts shall be aligned with a steel template matching the bolt holes in the sign structure base plate. **Extreme care shall be used in this operation to ensure bolts are**

aligned properly. Placement of anchor bolts without the steel template will not be permitted.

(b) The threaded portion of the anchor bolts projecting above the top surface of foundation shall be coated with oil, before the concrete is poured, to minimize the fouling of threads splattered by concrete residue.

13. Placing Metal Bases

(a) Contractor to install/reinstall metal bases following curing of concrete foundations.

(b) Metal bases are to be installed plumb, level, and flush to the concrete foundation. Contractor to use stainless steel washers to level bases as required.

14. Placing Concrete

(a) Care shall be taken to ensure that anchor bolts are vertically aligned and that anchor bolts and conduits are properly positioned prior to placement of concrete.

(b) Concrete shall not have a free fall of more than two (2.0) metres and shall be placed so that the aggregates will not separate or segregate. The slump of the concrete shall not exceed one hundred ten (110) mm. The concrete shall be vibrated throughout the entire length of the foundation.

(c) Concrete shall be placed to the elevations as shown on the Drawings. The top surface of the foundation shall be finished smooth and even with a hand float.

(d) The shaft shall be free of water prior to placing of concrete. Concrete shall not be placed in or through water unless authorized by the Contract Administrator.

15. Protection of Newly Placed Concrete

(a) Newly laid concrete threatened with damage by rain, snow, fog, or mist shall be protected with a tarpaulin or other approved means.

16. Curing Concrete

(a) The top of the freshly finished concrete foundations shall be covered and kept moist by means of wet polyester blankets immediately following finishing operations and shall be maintained at above ten (10) degrees Celsius for at least seven (7) consecutive days thereafter.

(b) After the finishing is completed, the surface shall be promptly covered with a minimum of a single layer of clean, damp polyester blanket.

(c) Concrete shall be protected from the harmful effects of sunshine, drying winds, surface dripping or running water, vibration and mechanical shock. Concrete shall be protected from freezing until at least twenty-four (24) hours after the end of the curing period.

(d) Changes in temperature of the concrete shall be uniform and gradual and shall not exceed three (3) degrees in one (1) hour or twenty (20) degrees in twenty-four (24) hours.

17. Reinstall Existing Flag Signs

(a) Reinstall flag sign on metal base.

(b) Restore sidewalk and pavers as necessary such that pavers are flush with adjacent sidewalk.

QUALITY CONTROL

18. All workmanship and all Materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator, including all operations from the selection and production of Materials, through to final acceptance of the Work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any

inspection or approval that may have been previously given. The Contract Administrator reserves the right to reject any Materials or Works that are not in accordance with the requirements of this Specification.

19. The Contractor shall be responsible for making a thorough inspection of Materials to be supplied under this Contract. All Material shall be free of surface imperfections and other defects.

MEASUREMENT AND PAYMENT

20. Bus Stop Flag Foundations

D2.20.1 Salvaging of existing bus stop flags, demolition of existing foundations, and construction of new bus stop flag foundations will be measured on a unit basis and will be paid for at the Contract Lump Sum Price per foundation for “Transit Bus Flag Foundation” for Works constructed in accordance with this Specification and accepted by the Contract Administrator.