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**Part 1 General****1.1 RELATED DOCUMENTS**

- .1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY OF WORK**

- .1 Work Included: The work of this Section includes the provision of all labour, materials, equipment and services required to fabricate and install site signage, as indicated on the drawings, as specified herein and as required for a complete project.
- .2 Related Work:
  - .1 Section 03 33 00 - Cast-in Place Concrete.
  - .3 Section 31 23 33.01 - Excavating, Trenching and Backfilling for Site Works.

**1.3 REFERENCES**

- .1 American Society for Testing and Materials (ASTM):
  - .1 ASTM A123/A123M-13, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - .2 ASTM B209-10, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .2 Canadian General Standards Board (CGSB):
  - .1 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.
  - .2 CAN/CGSB-1.94-M89, Xylene Thinner (Xylol).
  - .3 CAN/CGSB-1.104-M91, Semigloss Alkyd Air Drying and Baking Enamel.
  - .4 CAN/CGSB-1.132-M90, Zinc Chromate Primer, Low Moisture Sensitivity.
  - .5 CGSB 31-GP-101Ma-89, Chemical Conversion Films for Aluminum and Aluminum Alloys.
  - .6 CGSB 62-GP-9M-80, Prefabricated Markings, Positionable, Exterior, for Aircraft Ground Equipment and Facilities.
- .3 Canadian Standards Association (CSA):
  - .1 CSA-G40.20-04/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.

**1.4 SUBMITTALS**

- .1 General: Submit each item in this Article according to the Conditions of the Contract and the applicable Division 01 Specification Sections.
- .2 Shop Drawings: Clearly indicate the dimensions, layout and colours of each sign.
- .3 Samples:
  - .1 Submit a full-size sample sign fabricated from actual materials and finished in actual colours.

.2 Attach sample sign to a suitable length of galvanized steel post to illustrate method of fastening.

.4 Product Data:

.1 Provide product data for the signs.

.2 Include installation instructions.

## **1.5 FIELD SAMPLES**

.1 Install a complete sample sign for the approval of the Consultant.

.2 Locate where directed by the Consultant.

.3 The accepted sample may be incorporated into the finished work.

.4 The accepted sample shall be the standard of acceptance for the work of this Section.

## **1.6 REGULATORY REQUIREMENTS**

.1 The work of this Section shall conform to the requirements of the Russell Township Bylaws, latest revision [Section 3.41.4], and all other applicable codes and regulations, to the satisfaction of the authorities having jurisdiction.

## **1.7 DELIVERY, STORAGE AND HANDLING**

.1 Deliver products in original unopened packaging with legible manufacturer's identification.

.2 Store materials in strict accordance with the manufacturer's recommendations.

## **1.8 WASTE MANAGEMENT AND DISPOSAL**

.1 Separate and recycle waste materials, including packaging materials, in accordance with Section 01 74 21 Waste Management and Disposal.

## **Part 2 Products**

### **2.1 MANUFACTURERS**

.1 This specification is based on exterior site signs by Western Signs.

.2 Requests for substitutions will be considered in accordance with provisions of Section 01 25 00 Substitution Procedures. Acceptance of alternative products is subject to the approval of the Consultant.

## 2.2 MATERIALS

- .1 Sign supports.
  - .1 Steel posts: to CAN/CSA-G40.21, 4 m long, flanged "U" shaped in cross section, measuring 65 mm wide by 30 mm deep. Metal thickness: 4.5 mm. Hot dipped galvanized to ASTM A-123, minimum zinc coating 600 g/m<sup>2</sup>.
  - .2 Fasteners: bolts, nuts, washers and other hardware for signs to be galvanized steel.
- .2 Signboards
  - .1 Aluminum sheet: to ASTM B209, precut to required dimensions. Thickness: 2.1 mm.
  - .2 Paint materials:
    - .1 Xylene thinner: to CAN/CGSB-1.94.
    - .2 Chemical conversion coating for aluminum: to CGSB 31-GP-101Ma.
    - .3 Primer for aluminum: to CAN/CGSB-1.132.
    - .4 Finish paint: to CAN/CGSB-1.59.
  - .3 Signs to conform to Russell Township By-laws & Standards, as follows:
    - .1 Fire route signs.
    - .2 One-way signs.
    - .3 Barrier-free parking signs.
    - .4 Visitor parking signs.
    - .5 Staff parking signs.
    - .6 Drop-off only signs.
    - .7 Barrier-free Path of Travel
  - .4 Quantities and locations as indicated on the drawings.

## 2.3 FABRICATION

- .1 Aluminum blanks:
  - .1 Degrease, etch and bonderize with chemical conversion coating.
  - .2 Clean surfaces with xylene thinner. Dry.
  - .3 Spray sign face with one coat vinyl pretreatment coating and two finish coats of required colour. Spray and bake face of signboards with two coats of enamel in accordance with CAN/CGSB-1.104.
- .2 Lettering and symbols: Cut from vinyl film as specified in CGSB 62-GP-9M, or paint using required colour of finish paint.
  - .1 Clean signboards completely and apply transparent tape over top edge and extending 25 mm minimum down back and front of signboard.
  - .2 Protect finished signboard faces with one coat of clear varnish.
- .3 Sign identification: Apply sign number and date of installation with 25 mm high black letters on lower left back face of each signboard.

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**Part 3 Execution****3.1 INSTALLATION**

- .1 Sign support:
  - .1 Erect supports as indicated. Permissible tolerance: 25 mm maximum departure from vertical for direct buried supports.
  - .2 Erect posts plumb and square to details as indicated.
    - .1 Drive to required depth without damage to posts.
    - .2 If rock or concrete is encountered, drill hole to required depth and set post in sand.
    - .3 In finished concrete surfaces, backfill with concrete or grout. Protect from adverse conditions until cured.
  - .3 Set posts in concrete foundations where indicated.
- .2 Signboard: Fasten signboards to supporting posts as indicated.

**3.2 CLEANING**

- .1 Upon completion of the installation remove from the premises all surplus material, dirt and debris caused by the work of this Section and leave the installation clean.
- .2 Make good any damage caused by the work of this Section.

**3.3 PROTECTION**

- .1 Place weatherproof temporary covering on signboards of a type which is non-injurious to the signboard. Remove as directed by the Consultant.

**3.4 CORRECTION OF DEFECTS**

- .1 Correct defects identified by the Consultant in the sign message, consistency of reflectivity, colour or illumination.
- .2 Correct the angle of the signboard and, where applicable, adjust the luminaire aiming angle for optimum performance during night conditions.

**END OF SECTION**