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- 1 General
- 1.1 **SUMMARY**
- .1 Section Includes
- .1 Labour, Products, equipment and services necessary to complete the Work of this section.
- 1.2 **REFERENCES**
- .1 Conform to the latest edition of the following:
- .1 ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- .2 CAN/CSA-G40.20/G40.21 - General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steels
- Aluminum Association Designation System for Aluminum Finishes
- .3 CAN/CSA-G164 - Hot Dip Galvanizing of Irregularly Shaped Articles
- .4 CSA W47.2 - Certification of Companies for Fusion Welding of Aluminum
- .5 CSA W59-M - Welded Steel Construction (Metal Arc Welding)
- .6 CAN/CGSB-1.108 - Bituminous Solvent Type Paint
- .7 AODA - Accessibility for Ontarians with Disabilities Act
- 1.3 **DESIGN**
- .1 Design signs to withstand wind loading equal to 1.67 kPa without failure of sign faces, posts or connections.
- 1.4 **SUBMITTALS**
- .1 Shop Drawings
- .1 Submit in accordance with Section 01 33 00.
- .2 Show material information, thicknesses, sizes, finishes, colours of materials, construction details, letter typeface, posts and concrete bases.
- .2 Samples
- .1 Submit samples in accordance with Section 01 33 00.
- .2 If requested, submit sample of each type sign, sign image and mounting method.
- 1.5 **QUALIFICATIONS**
- .1 Manufacturer of signs shall be specialist in this field having minimum five years proven experience in sign manufacturing and installation of type of signs specified.

2 Products

2.1 **MATERIALS**

.1 Acceptable Manufacturers

.1 Forward Signs Inc.

.2 or accepted equal

.2 Sign blanks: Steel sign blanks fabricated from galvanized/galvalume steel made from sheets. Galvanized steel shall conform to ASTM A653/A653M, regular type, coating designation Z-275.

.1 Galvalume steel shall conform to ASTM A 792, coating designation AZ-150.

.2 The coated steel shall be minimum 1.5 mm thick.

.3 Fasteners: Hardened aluminum or stainless steel or of type that will not permit galvanic action **for attachment direct to building.**

~~.4 Sign posts: Breakaway installed, 50 mm square posts fabricated from 14 ga galvanized steel tube with pre-punched holes on 25 mm centers on all four sides. Posts, spacers, bolts, nuts and lock washers shall be galvanized after fabrication conforming to ASTM A-123.~~

~~.1 All holes shall be punched or drilled cleanly prior to galvanizing and shall be freed of excess deposits of zinc.~~

~~.2 Design posts to allow removal and replacement without breaking out concrete.~~

~~.5 Sign anchors: Direct buried minimum 609.6 mm and 50-75 mm above finish grade. Hammered down anchor for concrete and asphalt complete with non-shrink grout. Hammered down omni-directional anchor for soil.~~

.6 Sign graphics: Self-sticking UV resistant, premium quality vinyl film by 3M.

.7 Bituminous paint: Henry 410-02.

~~.8 Concrete bases: Air entrained 20 MPa concrete at 28 days, conforming to Section 03-30-00.~~

~~.9 Concrete base forms: "Sonotube".~~

2.2 **PROJECT INFORMATION SIGNAGE FOR PUBLIC**

.1 Refer to Section 10 14 00.01 City of Toronto Construction-Improvement Signs for information on the standard template to be used for projects accessible to the public.

2.3 **SIGN SCHEDULE**

.1 Refer to ~~accompanying sheet following this section~~ **Drawings for Schedule.**

2.4 **GENERAL FABRICATION REQUIREMENTS**

.1 Fabricate signs in accordance with details on Drawings, Specifications and Shop Drawings to present a safe and rigid installation.

.2 Build units square, true, accurate to size, and free from visual or performance defects.

.3 Accurately fit and securely join sections to obtain tight, closed joints.

- .4 Do steel welding to CSA W59 and aluminum welding to CSA W47.2 Finish exposed welds flush and smooth.
- .5 Apply bituminous paint to aluminum in contact with dissimilar metals, concrete or masonry.
- .6 Sign Faces
  - .1 Fabricate sign faces in one piece.
  - .2 Installed face to present rigid surface with minimal distortion.
  - .3 Degrease sign blanks before applying vinyl.

3 Execution

~~3.1~~ **EXCAVATION AND CONCRETE WORK**

- ~~.1 Excavate post holes to suit depth of concrete bases, cleanly cut to diameters as specified, ready to receive posts set in concrete fill. Remove excavated earth from the site.~~
- ~~.2 Form the top 200 mm of the concrete bases with specified form.~~
- ~~.3 Mix concrete with a minimum amount of water and ram solidly into the excavations and around posts.~~
- ~~.4 Unless Drawings show otherwise, concrete bases shall be of diameter as specified below and approximately 50 mm above grade with tops pitching away from posts and finished smooth and even.~~
  - ~~.1 For all posts: 300 mm diameter, 1200 mm deep~~

3.2 **INSTALLATION**

- .1 Build and erect signs plumb true, square, straight level and accurate to sizes detailed on reviewed Shop Drawings, free from distortion of defects detrimental to appearance and performance.
- .2 Comply with sign manufacturer's installation instructions and approved Shop Drawings.
- ~~.3 Install poles in concrete foundation. Refer to and comply with Section 03 30 00 for concrete requirements.~~

3.3 **CLEANING**

- .1 Leave signs clean and polish all exposed surfaces.
- .2 Touch up any damaged finishes.

End of Section

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