

## SECTION 02891

# TRAFFIC SIGNS

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Materials and procedures for installing traffic signs.

#### **1.2 RELATED SECTIONS**

- A. Section 02317: Structural Excavation.
- B. Section 03055: Portland Cement Concrete.
- C. Section 03211: Reinforcing Steel and Welded Wire.
- D. Section 05120: Structural Steel.
- E. Section 06055: Timber and Timber Treatment.

#### **1.3 REFERENCES**

- A. APA: American Plywood Association Product Standard.
- B. ASTM A153: Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- C. ASTM A 314: Stainless Steel Billets and Bars for Forging.0
- D. ASTM A500: Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- E. ASTM A513: Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
- F. ASTM A653: Steel, Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process
- G. ASTM A1011: Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

H. ASTM B 209: Aluminum and Aluminum-Alloy Sheet and Plate.

#### **1.4 TRAFFIC SIGN COMPONENTS**

- A. Substrate: The base material, usually plywood or aluminum, upon which the background sheeting is attached.
- B. Panel: Assembly of substrate and attached sheeting. Several panels may be necessary to complete one sign. Panel types are:
  - 1. Type
    - a. A: Reflective sheeting on sheet aluminum.
    - b. P: Reflective sheeting on plywood.
  - 2. Legend:
    - a. 1 With non-reflective legend, symbols, and borders.
    - b. 2 With reflective legend, symbols, and borders.
- C. Sheeting: The reflective or non-reflective material that comprises the background legend, border, and symbols.
- D. Sign: A complete assembly comprised of post, frame, and panel.
- E. Auxiliary Sign: A sign including frame, if required, attached and supplemental to a complete sign assembly.
- F. Panel replacement: Removing the existing panel and attaching a new panel to the frame.
- G. Panel Overlay: Attaching new panels to all or part of an existing panel.
- H. Size: Horizontal x vertical

#### **1.5 SIGN CODES**

- A. New Sign: N
- B. Auxiliary Sign: Aux
- C. Relocation: R
- D. Removal: X
- E. Panel Replacement: PR
- F. Panel Overlay: PO

## 1.6 SUBMITTALS

- A. Submit 3 sets of drawings for overhead structures for prefabrication approval. Allow 14 calendar days for approval.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Fabricate sign and posts as specified per Standard Drawings SN 7 through SN 12C.
- B. Substrate: 0.080 inch thick. ASTM B 209 alloy 6061-T6, or 5052-H38.
- C. Plywood as specified below and which meets the American Plywood Association product standard 1 PSI-83, Group 1, 5/8 inch thick.
  - 1. 90/90, high density BB exterior (Douglas Fir) B Grade.
  - 2. Plugged-core (Douglas Fir) with 1/2 inch maximum gaps.
  - 3. Use acrylic laminate that is compatible with the reflective sheeting adhesive, and that does not require the removal of the release agents before applying the sheeting.
- D. Posts:
  - 1. Timber Sign Post (P1)
    - a. Follow Section 06055
  - 2. Tubular Steel Sign Post (P2)
    - a. Post: ASTM A513
    - b. Finish: Galvanize ASTM A653
    - c. Shape: As shown, wall thickness 0.080
    - d. Color: Powder coated as required
  - 3. Square Steel Sign Post (P3)
    - a. Post: ASTM A1011 Grade 50
    - b. Finish: Galvanize ASTM A653
    - c. Shape: 12 gauge or 10 gauge steel
    - d. Color: Powder coated as required
  - 4. Slip Base Tubular Steel Sign Post (P4)
    - a. Post ASTM A500 Grade C; 46,000 psi minimum yield
    - b. Finish: Galvanize ASTM A153 B
    - c. Shape: As shown; schedule 80
    - d. Color: Powder coated as required
  - 5. Steel Sign Post (P5)
    - a. Follow Section 05120

- E. Reflective Sheeting:
  - 1. Encapsulated lens sheeting or encapsulated lens (flexible) as specified.
  - 2. Meet Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-92, Type III.
- F. Nonreflective Sheeting: As specified. Meet Military Specification MIL-M 4371B, Type I, Class I.
- G. Fasteners: As specified. Meet ASTM A 314, Class 304, 18-8, Stainless Steel.
- H. Foundation
  - 1. Concrete: Class A (AE). Refer to Section 03055.
  - 2. Reinforcing steel: Refer to Section 03211.
  - 3. Anchor bolts: Refer to Section 05120.
- I. Structural Steel: Structural Steel frame. Refer to Section 05120.
- J. Temporary covering: Opaque material.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. Coordinate utility location.
- B. Excavate following Section 02317 requirements.
- C. Install traffic control devices before work activities begin.

### **3.2 INSTALLATION - GENERAL**

- A. Furnish a daily record of the number and location of all traffic control devices in use.
- B. Do not reverse screen sign larger than 7 square feet per color.
- C. Do not remove a sign which is being replaced until the new sign is placed and uncovered.
- D. Compact backfill to a density equal to surrounding materials.
- E. Establish proper elevation and orientation of all signs, structures, and determine proper sign post lengths as dictated by construction slopes.

- F. Cover signs that require temporary covering with an opaque material. Secure at the rear of the sign so that the sign is not damaged. Maintain covering until removed.
- G. Construct sign post foundations with concrete conforming to indicated dimensions.

### **3.3 RELOCATING EXISTING SIGN**

- A. Retrofit as required to meet current standards.
- B. Provide new posts and accessories as required.
- C. Remove foundations to a minimum of 6 inches below the ground line, and backfill.

### **3.4 REMOVING EXISTING SIGN**

- A. Remove foundations to a minimum of 6 inches below the ground line and backfill.

END OF SECTION