

# Item 636

## Signs



### 1. DESCRIPTION

- **Installation.** Furnish, fabricate, and erect aluminum signs. Sign supports are provided for under other Items.
- **Replacement.** Replace existing signs on existing sign supports.
- **Refurbishing.** Refurbish existing aluminum signs on existing sign supports.

### 2. MATERIALS

- 2.1. **Sign Blanks.** Furnish sign blank substrates in accordance with [DMS-7110](#), "Aluminum Sign Blanks," and in accordance with the types shown on the plans. Use single-piece sheet-aluminum substrates for Type A (small) signs and extruded aluminum substrates for Type G (ground-mounted) or Type O (overhead-mounted) signs.
- 2.2. **Sign Face Retroreflectorization.** Retroreflectorize the sign faces with flat surface reflective sheeting. Furnish sheeting that meets [DMS-8300](#), "Sign Face Materials." Use retroreflective sheeting from the same manufacturer for the entire sign face background. Ensure that sign legend, symbols, borders, and background exhibit uniform color, appearance, and retroreflectivity when viewed both day and night.
- 2.3. **Sign Messages.** Fabricate sign messages to the sizes, types, and colors shown on the plans. Use sign message material from the same manufacturer for the entire message of a sign. Use screen ink and background reflective sheeting that are from the same manufacturer when fabricating signs.
- Ensure that the screened messages have clean, sharp edges and exhibit uniform color and retroreflectivity. Prevent runs, sags, and voids. Furnish screen inks in accordance with [DMS-8300](#), "Sign Face Materials."
  - Fabricate colored, transparent film legend, and retroreflectorized sheeting legend from materials that meet [DMS-8300](#), "Sign Face Materials."
  - Fabricate non-reflective black film legend from materials meeting [DMS-8300](#), "Sign Face Materials."
  - Furnish direct-applied route markers and other attachments within the parent sign face unless otherwise specified on the plans.
- 2.4. **Hardware.** Use galvanized steel, stainless steel, or dichromate-sealed aluminum for bolts, nuts, washers, lock washers, screws, and other sign assembly hardware. Use plastic or nylon washers to avoid tearing the reflective sheeting. Furnish steel or aluminum products in accordance with [DMS-7120](#), "Sign Hardware."

When dissimilar metals are used, select or insulate metals to prevent corrosion.

### 3. CONSTRUCTION

- 3.1. **Fabrication.** Sign fabrication plants that produce permanent highway signs must be approved in accordance with DMS-7390, "Permanent Highway Sign Fabrication Plant Qualification." Furnish signs from prequalified fabrication plants listed in the Department's MPL.
- 3.1.1. **Sign Blanks.** Furnish sign blanks to the sizes and shapes shown on the plans and that are free of buckles, warps, burrs, dents, cockles, or other defects. Do not splice individual extruded aluminum panels.

Complete the fabrication of sign blanks, including the cutting and drilling or punching of holes, before cleaning and degreasing. After cleaning and degreasing, ensure the substrate does not come into contact with grease, oils, or other contaminants before the application of the reflective sheeting.

- 3.1.2. **Sheeting Application.** Apply sheeting to sign blanks in conformance with the sheeting manufacturer's recommended procedures.

When using rotational sensitive white sheeting, fabricate signs by applying the sheeting for cut-out legend, symbols, borders, and route marker attachments within the parent sign face with the identification marks or other orientation features in the optimum rotation as identified by the sheeting manufacturer.

Clean and prepare the outside surface of extruded aluminum flanges in the same manner as the sign panel face.

Minimize the number of splices in the sheeting. Overlap the lap-splices by at least 1/4 in. for encapsulated glass bead sheeting unless otherwise recommended by the reflective sheeting manufacturer. Use butt splices for prismatic reflective sheeting. Provide a 1 ft. minimum dimension for any piece of sheeting. Do not splice sheeting for signs fabricated with transparent screen inks or colored transparent films.

- 3.1.3. **Sign Assembly.** Assemble extruded aluminum signs in accordance with the details shown on the plans. Sign face surface variation must not exceed 1/8 in. per foot. Surface misalignment between panels in multi-panel signs must not exceed 1/16 in. at any point.

- 3.1.4. **Decals.** Code and apply sign identification decals in accordance with Item 643, "Sign Identification Decals."

- 3.2. **Storage and Handling.** Ship, handle, and store completed sign blanks and completed signs so that corners, edges, and faces are not damaged. Damage to the sign face that is not visible when viewed at a distance of 50 ft., night or day, will be acceptable. Replace unacceptable signs.

Store all finished signs off the ground and in a vertical position until erected. Store finished sheet aluminum substrate signs in a weatherproof building. Extruded aluminum substrate signs may be stored outside.

Stockpile salvageable materials at the location shown on the plans or as directed. Accept ownership of unsalvageable materials and dispose of them in accordance with federal, state, and local regulations.

- 3.3. **Cleaning.** Wash completed signs in the fabrication shop with a biodegradable cleaning solution acceptable to the manufacturers of the sheeting, colored transparent film, and screen ink to remove grease, oil, dirt, smears, streaks, finger marks, and other foreign material. Wash again before final inspection after erection.

- 3.4. **Installation.** Install signs as shown on the plans or as directed.

- 3.5. **Replacement.** Remove the existing signs from the existing supports and replace with new signs, including mounting hardware, as shown on the plans.

- 3.6. **Refurbishing.** Refurbish existing signs by providing and installing new messages and mounting hardware. Install new retroreflectorized legend and supplemental signs as shown on the plans.

- 3.7. **Documentation.** Provide the following documentation from the sign fabricator with each shipment of furnished signs:

- A notarized original of the Signing Material Statement (Form 2273) with the proper attachments for verification of compliance, and
- A notarized certification stating that the completed signs were fabricated in accordance with this Item and the plans.

---

#### 4. MEASUREMENT

Signs installed or replaced will be measured by the square foot of the sign face. Signs refurbished will be measured by each sign.

This is a plans quantity measurement item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2., "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

---

#### 5. PAYMENT

The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid for "Aluminum Signs," "Replacing Existing Aluminum Signs," or "Refurbishing Aluminum Signs," of the type specified.

- 5.1. **Installation.** This price is full compensation for furnishing and installing new signs and hardware; fabrication of sign panels; treatment of sign panels required before application of the background materials; application of the background materials and messages to the sign panels; furnishing and fabricating frames, wind beams and stiffeners; furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections; assembling and erecting the signs; preparing and cleaning the signs; and materials, equipment, labor, tools, and incidentals.
- 5.2. **Replacement.** This price is full compensation for furnishing and installing new aluminum signs and hardware; removal of existing signs; fabrication of sign panels; treatment of sign panels required before application of the background materials; application of the background materials and messages to the sign panels; furnishing and fabricating frames, wind beams and stiffeners; furnishing bolts, rivets, screws, fasteners, clamps, brackets, and sign support connections; assembling and erecting the signs; preparing and cleaning the signs; salvaging and disposing of unsalvageable materials; and materials, equipment, labor, tools, and incidentals.
- 5.3. **Refurbishing.** This price is full compensation for modifying existing sign messages; removing and replacing existing route markers, reflectorized legend, or supplemental signs attached to the parent sign; preparing and cleaning the signs; furnishing sheeting and hardware; salvaging and disposing of unsalvageable materials; and materials, equipment, labor, tools, and incidentals.