SECTION 101400 - SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Prime Agreement, including General and Supplementary Conditions, when referenced by the Prime Agreement, and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. This Section includes the following:
   1. Plaques.
   2. Panel signs.
   3. Illuminated panel signs.

1.3 DEFINITIONS

1.4 ACTION SUBMITTALS
A. Product Data: For each type of product indicated.
B. Shop Drawings: Show fabrication and installation details for signs.
   1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
   2. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign.
C. Samples for Verification: For each of the following products and for the full range of color, texture, and sign material indicated, of sizes indicated:
   1. Plaque Casting: 6 inches square including border.
   2. Aluminum: For each form, finish, and color, on 6-inch-long sections of extrusions and squares of sheet at least 4 by 4 inches.
   3. Acrylic Sheet: 8 by 10 inches for each color required.
   4. Polycarbonate Sheet: 8 by 10 inches for each color required.
   5. Fiberglass Sheet: 8 by 10 inches for each color required.
   6. Panel Signs: Not less than 12 inches square including border.
7. Trim: 6-inch-long sections of each profile.
8. Accessories: Manufacturer's full-size unit.

D. Sign Schedule: Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS
A. Qualification Data: For fabricator.
B. Warranty: Special warranty specified in this Section.

1.6 CLOSEOUT SUBMITTALS
A. Maintenance Data: For signs to include in maintenance manuals.

1.7 QUALITY ASSURANCE
A. Installer Qualifications: Fabricator of products.
B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
C. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.

1.8 PROJECT CONDITIONS
A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit installation of signs in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.
B. Field Measurements: Verify recess openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.9 COORDINATION
A. Coordinate placement of anchorage devices with templates for installing signs.
1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Deterioration of metal and polymer finishes beyond normal weathering.
   b. Deterioration of embedded graphic image colors and sign lamination.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 LOCATIONS

A. Provide signage as required in the following reference standards
   1. International Building Code (applicable version): Chapter 11 Accessibility
   2. International Fire Code (applicable version)
   3. ADA-ABA Accessibility Guidelines (applicable version)

B. Coordinate exact locations and quantities with signage vendor as required.

2.2 MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M, of alloy and temper recommended by sign manufacturer for casting process used and for use and finish indicated.

B. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.

C. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6063-T5.

D. Fiberglass Sheet: Molded, seamless, thermosetting, glass-fiber-reinforced polyester panels with a minimum tensile strength of 15,000 psi when tested according to ASTM D 638 and with a minimum flexural strength of 30,000 psi when tested according to ASTM D 790.

E. Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).

F. Polycarbonate Sheet: Of thickness indicated, manufactured by extrusion process, coated on both surfaces with abrasion-resistant coating:
   1. Impact Resistance: 16 ft-lbf/in. per ASTM D 256, Method A.
   2. Tensile Strength: 9000 lbf/sq. in. per ASTM D 638.
   3. Flexural Modulus of Elasticity: 340,000 lbf/sq. in. per ASTM D 790.
5. Abrasion Resistance: 1.5 percent maximum haze increase for 100 revolutions of a Taber abraser with a load of 500 g per ASTM D 1044.

G. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.

2.3 PANEL SIGNS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   Basis-of-Design Product: Subject to compliance with requirements, provide ASI-Modulex, Inc., Infinity Series or a comparable product by one of the following:
   1. ACE Sign Systems, Inc.
   2. Advance Corporation; Braille-Tac Division.
   3. Allen Industries Architectural Signage
   4. Allenite Signs; Allen Marking Products, Inc.
   5. APCO Graphics, Inc.
   6. ASI-Modulex, Inc.
   7. Best Sign Systems Inc.
   11. Grimco, Inc.
   12. Innerface Sign Systems, Inc.
   13. InPro Corporation
   14. Matthews International Corporation; Bronze Division.
   18. Star Signs
   19. 2/90 Sign Systems
   20. Takeform

B. Interior and Exterior Panel Signs: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner, complying with the following requirements:
   1. High-Pressure Decorative Laminate: 0.048 inch thick.
   2. Laminated, Etched Photopolymer: Raised graphics with Braille 1/32 inch above surface with contrasting colors in finishes and color combinations indicated and laminated to acrylic back or aluminum alloy.
   3. Edge Condition: Square cut.
   5. Mounting: Manufacturer’s standard anchors for substrates encountered.
   6. Custom Paint Colors: as indicated in the drawings.
   7. Color: As indicated.
   8. Tactile Characters: Characters and Grade 2 Braille raised 1/32 inch above surface with contrasting colors.
C. Brackets: Fabricate brackets and fittings for bracket-mounted signs from extruded aluminum to suit panel sign construction and mounting conditions indicated. Factory paint brackets in color matching background color of panel sign.

D. Changeable Message Inserts: Fabricate signs to allow insertion of changeable messages in the form of transparent covers with paper inserts printed by Owner.
   1. Furnish insert material and software for creating text and symbols for PC-Windows computers for Owner production of paper inserts.
   2. Furnish insert material cut-to-size for changeable message insert.

E. Tactile and Braille Sign: Manufacturer's standard process for producing text and symbols complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1. Text shall be accompanied by Grade 2 Braille. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.
   1. Raised-Copy Thickness: Not less than 1/32 inch.

F. Engraved Copy: Machine engrave letters, numbers, symbols, and other graphic devices into panel sign on face indicated to produce precisely formed copy, incised to uniform depth.
   1. Engraved Plastic Laminate: Engrave through exposed face ply of plastic-laminate sheet to expose contrasting core ply.
   2. Engraved Metal: Fill engraved copy with enamel.

G. Panel Sign Schedule:
   1. See the End of this section.

2.4 ACCESSORIES

A. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

2.5 FABRICATION

A. General: Provide manufacturer's standard signs of configurations indicated.
   1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.
   2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
   3. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

2.6 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 ALUMINUM FINISHES

A. Clear Anodic Finish: Manufacturer's standard Class 1 clear anodic coating, 0.018 mm or thicker, over a satin (directionally textured) mechanical finish, complying with AAMA 611.

B. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.

1. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Verify that items, including anchor inserts, are sized and located to accommodate signs.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions.
1. Install signs level, plumb, and at heights indicated, with sign surfaces free of distortion and other defects in appearance.

2. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3 inches of sign without encountering protruding objects or standing within swing of door.

B. Wall-Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply.

   1. Two-Face Tape: Mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.
   2. Mechanical Fasteners: Use nonremovable mechanical fasteners placed through predrilled holes. Attach signs with fasteners and anchors suitable for secure attachment to substrate as recommended in writing by sign manufacturer.
   3. Signs Mounted on Glass: Provide matching opaque plate on opposite side of glass to conceal mounting materials.

C. Bracket-Mounted Signs: Provide manufacturer's standard brackets, fittings, and hardware for mounting signs that project at right angles from walls and ceilings. Attach brackets and fittings securely to walls and ceilings with concealed fasteners and anchoring devices to comply with manufacturer's written instructions.

3.3 CLEANING AND PROTECTION

A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

END OF SECTION 101400