SECTION 10 14 19

DIMENSIONAL LETTER SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Cast dimensional characters.
   2. Cutout dimensional characters.
   3. Fabricated channel dimensional characters.
   4. Illuminated, fabricated channel dimensional characters.
   5. Molded plastic dimensional characters.
   6. Illuminated, molded plastic dimensional characters.

1.2 DEFINITIONS

A. Illuminated: Illuminated by lighting source integrally constructed as part of the sign unit.

1.3 ACTION SUBMITTALS

A. Product Data: Technical data for each type of product including installation methods.

B. Shop Drawings: Indicate fabrication and installation details and attachments to other work.
   1. Show sign mounting heights, locations of supplementary supports provided by other installers, and accessories.
   2. Show message list, typestyles, graphic elements, and layout for each sign at least half size.
   3. Show locations of electrical service connections.
   4. Include diagrams for power, signal, and control wiring.

C. Samples: Submit for each type of sign assembly showing all components and with the required finish(es):
   1. Dimensional Characters: Full size sample of each type of dimensional character.
   2. Exposed Accessories: Full size sample of each accessory type.

D. Product Schedule: Use same designations indicated on Drawings or specified.

E. Delegated Design Submittal: Submit fo**r** signage indicated, including structural analysis calculations for signs indicated to comply with design loads; signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: Submit data for signs to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. 2010 ADA Standards for Accessible Design.
   2. ICC A117.1.

B. Single Source Responsibility: Provide products of each type by a single manufacturer.

1.6 COORDINATION

A. Furnish templates for placement of electrical service embedded in permanent construction by other installers.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify locations of electrical service embedded in permanent construction by other installers by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 WARRANTY

A. Written warranty signed by manufacturer 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 finishes beyond normal weathering.
      b. Separation or delamination of sheet materials and components.
   2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer to design sign structure and anchorage of rooftop , fixed pedestal or façade mounted sign type(s) according to structural performance requirements.

B. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.
   1. Uniform Wind Load: Indicated on Drawings.
   2. Concentrated Horizontal Load: Indicated on Drawings.
   3. Other Design Load: Indicated on Drawings.

4. Uniform and concentrated loads need not be assumed to act concurrently.

C. Thermal Movements: For exterior signage, including fabricated channel dimensional characters, allow for thermal movements from ambient and surface temperature changes.
   1. Temperature Change: 120 degrees F (67 degrees C), ambient; 180 degrees F (100 degrees C), material surfaces.

D. Accessibility Standard: Comply with applicable provisions in the USDOJ 2010 ADA Standards for Accessible Design and ICC A117.1.

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 DIMENSIONAL CHARACTERS

A. Cast Characters: Characters with uniform faces, sharp corners, and precisely formed lines and profiles, and as follows:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. A.R.K. Ramos.
      b. ACE Sign Systems, Inc.
      c. ASI Sign Systems, Inc.
      d. Cosco.
      e. Gemini Incorporated.
      f. Matthews International Corporation; Bronze Division.
      g. Metal Arts.
      h. Metallic Arts.
      i. Southwell Company (The).
   2. Character Material: Cast aluminum unless otherwise indicated.
   3. Character Height: Indicated on Drawings.
   4. Thickness: As Indicated on Drawings but not less than 1/4 inch..
   5. Finishes:
      a. Integral Metal Finish: Selected by Architect..
      b. Integral Aluminum Finish: Selected by Architect for application.
      c. Baked Enamel or Powder Coat Finish: Color selected by Architect.
      d. Overcoat: Clear organic coating.
   6. Mounting: Concealed studs.
   7. Typeface: As selected by Architect.

B. Cutout Characters: Characters with uniform faces; square cut, smooth, eased edges; precisely formed lines and profiles; and as follows:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. A.R.K. Ramos.

b. ACE Sign Systems, Inc.
c. APCO Graphics, Inc.
d. ASI Sign Systems, Inc.
e. Cosco.
f. Gemini Incorporated.
g. InPro Corporation (IPC).
h. Matthews International Corporation; Bronze Division.
i. Metal Arts.
j. Metallic Arts.
k. Southwell Company (The).
l. Steel Art Company.

2. Character Material: Sheet or plate aluminum stainless steel acrylic as indicated by application.
3. Character Height: As indicated on Drawings.
4. Thickness: 0.125 inch (3.18 mm) minimum and to meet all performance and other requirements.
5. Finishes:
   a. Integral Metal Finish: Selected by Architect.
   b. Integral Aluminum Finish: selected by Architect.
   c. Integral Stainless Steel Finish: No. 4.
   d. Integral Acrylic Color: Selected by Architect.
   e. Baked Enamel or Powder Coat Finish: Selected by Architect.
   f. Overcoat: Clear organic coating.
   g. Painted Edges: Paint edges of acrylic characters with laminated metal facing as recommended in writing by manufacturer.
6. Mounting: Concealed studs or Concealed, stainless steel back bar or bracket assembly.
7. Typeface: as selected by Architect.

C. Fabricated Channel Characters: Metal face and side returns and Translucent face with metal side returns as indicated, formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability, to meet structural performance loading without oil canning or other surface deformation, and for securing fasteners; and as follows.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. A.R.K. Ramos.
   b. ACE Sign Systems, Inc.
   c. Allen Industries Architectural Signage.
   d. APCO Graphics, Inc.
   e. ASI Sign Systems, Inc.
   f. Charleston Industries, Inc.
   g. Cosco.
   h. Gemini Incorporated.

i. Metallic Arts.
j. Signs & Decal Corp.
k. Steel Art Company.

2. Illuminated Characters: Backlighted character construction with LED lighting, including transformers, insulators, and accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from character surfaces as needed to illuminate evenly. Utilize lighting certified for wet locations for all exterior applications.
   a. Power: Indicated on electrical Drawings and as coordinate by Contractor.
   b. Weeps: Provide weep holes to drain water at lowest part of exterior characters. Equip weeps with permanent baffles to block light leakage without inhibiting drainage.
3. Character Material: Sheet or plate aluminum steel stainless steel or acrylic as indicated..
4. Material Thickness: minimum 0.050 inch (1.27 mm) thick for face and 0.031 inch (0.79 mm) thick for returns sized to meet performance requirements.
5. Translucent Face Sheet: Acrylic sheet with integral color selected by Architect.
   a. Sheet Thickness: 0.25 inch (6.35 mm).
6. Character Height: Indicated on Drawings.
7. Character Depth: Indicated on Drawings.
8. Finishes:
   a. Integral Metal Finish: Selected by Architect.
   b. Integral Aluminum Finish: as selected by Architect.
   c. Integral Stainless Steel Finish: No. 4.
   d. Baked Enamel or Powder Coat Finish: Color selected by Architect.
   e. Overcoat: Clear organic coating.
9. Mounting: Concealed, painted aluminum back bar or bracket assembly.
   a. Hold characters at 2 inch (51 mm) distance from wall surface.
10. Typeface: as indicated or selected by Architect.

D. Molded Plastic Characters: Injection molded or thermoformed characters having uniform faces and profiles:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ACE Sign Systems, Inc.
      b. ASI Sign Systems, Inc.
      c. Cosco.
      d. Gemini Incorporated.
      e. Metallic Arts.
      f. Signs & Decal Corp.
   2. Illuminated Characters: Characters with concealed LED lighting, including transformers, insulators, and other accessories; with provision for servicing and concealing connections to building electrical system. Space lamps apart from each other and away from character surfaces as needed to illuminate evenly.

a. Power: Indicated on electrical Drawings and coordinated by Contractor.
b. Weeps: Provide weep holes to drain water at lowest part of exterior characters. Equip weeps with permanent baffles to block light leakage without inhibiting drainage.

3. Color: Integral color or Painted finish process as indicated, in color selected by Architect.
4. Typeface: as indicated or selected by Architect.

2.3 DIMENSIONAL CHARACTER MATERIALS

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

B. Aluminum Sheet and Plate: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

D. Stainless Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304, stretcher leveled standard of flatness.

E. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

F. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 ACCESSORIES

A. Fasteners and Anchors: Fasteners necessary for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
1. Use concealed fasteners and anchors unless indicated to be exposed.
2. For exterior exposure, furnish stainless steel devices unless otherwise indicated.
3. Exposed Metal Fastener Components:
a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
b. Fastener Heads: For nonstructural connections, use screws and bolts with tamper resistant spanner head or one way head slots unless otherwise indicated.
4. Sign Mounting Fasteners:
a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
b. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into

tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

c. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, installed in predrilled holes.

B. Adhesive: Type recommended by sign manufacturer.

C. Two Face Tape: High bond, foam core tape, 0.045 inch (1.14 mm) thick, with adhesive on both sides. Provide VHB Heavy Duty Mounting Tape by 3M.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.5 FABRICATION

A. Provide sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
5. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
7. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.

B. Brackets: Fabricate brackets, fittings, and hardware for bracket mounted signs to suit sign construction and mounting conditions indicated. Modify brackets as required.

1. Aluminum Brackets: Factory finish brackets with baked enamel or powder coat finish to match sign background color color unless otherwise indicated.
2. Stainless Steel Brackets: Factory finish brackets to match sign background finish unless otherwise indicated.

2.6 FINISH REQUIREMENTS

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

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

E. Aluminum Finishes
   1. Clear Anodic Finish: AAMA 611, **Class I, 0.018 mm** or thicker.
   2. Color Anodic Finish: AAMA 611, **Class I, 0.018 mm** or thicker.
   3. Baked Enamel or Powder Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

F. Stainless Steel Finishes:
   1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
   2. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
      a. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
      b. Directional Satin Finish: No. 4.
      c. Dull Satin Finish: No. 6.
      d. Reflective, Directional Polish: No. 7.
      e. Mirrorlike Reflective, Nondirectional Polish: No. 8.

G. Clear Organic Coating For Copper-Alloy Finishes
   1. Clear Organic Coating: Clear, waterborne, ai -drying, acrylic lacquer (Incralac); specially developed for coating copper alloy products; consisting of a solution of methyl methacrylate copolymer with benzotriazole to prevent breakdown of the film in UV light; shop applied in two uniform coats according to manufacturer's written instructions, with interim drying between coats and without runs or other surface imperfections, to a total dry film thickness of 1 mil (0.025 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and conditions affecting performance.

B. Verify substrates and sign support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Verify that electrical service is correctly sized and located to accommodate signs.

D. Proceed with installation after correcting unsatisfactory conditions.

3.2 INSTALLATION

A. Install signs using mounting methods indicated and according to manufacturer's written instructions.
   1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
   2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
   3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:
   1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
      a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
      b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
   2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
      a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
      b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.

3. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
4. Back Bar and Brackets: Remove loose debris from substrate surface and install back bar or bracket supports in position, so that signage is correctly located and aligned.
5. Adhesive: Clean bond breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.
6. Two Face Tape: Clean bond breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION