
USACE / NAVFAC / AFCEA / NASA UFGS-10 14 00.20 (November 2012)

Preparing Activity: USACE Superseding without Revision
UFGS-10 14 02 (February 2009)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated October 2012

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SECTION 10 14 00.20

INTERIOR SIGNAGE 11/12

NOTE: This guide specification covers the requirements for common types of signs, dimensional letters, and metal plaques used inside buildings.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

PART 1 GENERAL

NOTE: This section covers some of the more common interior sign types. When other sign types are to be used, such as elevator-related signs, occupancy load signs and structural load limit signs, specifications will be modified accordingly. Buildings will be accessible in accordance with 36 CFR, Part 1191, Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities except for Army buildings excluded by TI 800-01 Design Criteria.

Reference UFC 3-120-01 available at
http://www.wbdg.org/ccb/DOD/UFC/ufc_3_120_01.pdf>http://www.wbdg.org/ccb/DOD/UFC/ufc_3_120_01.pdf Unified Federal Criteria Sign Standard for

design, construction and placement of signs. Defer to the most current version of ADA for Chapter 3 and throughout the UFC because the UFC has not been updated to include the most recent ADA revisions.

In combination with this specification, drawings and attachments will include location, dimensions, elevations, schedules, content, details and such other information as required to indicate the extent of the work. The same terminology and designations used in the specification will be used on the drawings, schedules and attachments.

Product selections shall be based on quality, aesthetic values, appearance, and cost as related to project needs.

Use of personal names on interior signage is discouraged. If personal names are required, changeable message strips will be used. Consider coordination of interior signage within this specification with signage required on individual workstations which is specified in Section 12 50 00 FURNITURE SYSTEMS.

Interior stairwell signage will be provided in accordance with Life Safety Code NFPA 101, Chapter 5, and applicable occupancy chapters. Clearly define interstitial spaces or other doorways within stairwell that do not lead to a horizontal exitway with signage that states "Not an Exit".

Permanent information on room identification signs includes the room number on all room identification signs, symbol and message on toilet rooms, message on janitor closets, mechanical/electrical and communications rooms, and message on stairs.

Where appropriate for MEDICAL FACILITIES, include the following requirements for signage:

1. Room numbering for spaces within the medical facility will be determined jointly by the using facility and the design team. User room number will be different than architectural room number (see MIL-HDBK 1191, 4.15.3). Room numbering will be consistent throughout the facility. For inpatient medical facilities, rooms with audiovisual nurse call shall have a unique user room number, since audiovisual nurse call is tied into a digital paging system. For outpatient clinics, rooms with tonevisual nurse call, do not need a unique user room number, since tonevisual nurse call is hardwired to a panel located at a nursing station. Room numbering should address the following issues:

- a. Wayfinding within clinics and other departments (user room #).

- b. Facility Maintenance (architectural room #).
- c. Audiovisual Nurse Call (inpatient) (unique user room #).
- d. Tonevisual Nurse Call (outpatient) (user room #).

2. The use of symbols/graphics on interior signage will be limited. International symbols and graphics will be used where needed. Recommended symbols include men/women symbol for toilet rooms and showers, men/women symbol with key for locker rooms, telephone symbol for public telephone areas, information (?), radiation symbol, biohazard symbol, and handicap symbol.

3. Arrow placement order on interior signage will comply with MIL-HDBK 1191, 4.15.2.2. Left pointing arrows at top of sign, followed by up pointing arrows, then right pointing arrows at bottom of sign. Example follows:

```
< EMERGENCY
^ Orthopedic Clinic
> Admissions
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4. Signage schedule should be provided in electronic spreadsheet format. Schedule will include architectural room number, user room number, type of sign, message, symbol (if needed), color, and mounting location.

5. Building directories and accompanying orientation maps for the medical facility will be determined jointly by the using facility and the design team. Orientation maps, if required, will be included as part of the interior signage package, and should be of the same manufacturer. Include international symbols for information (?), parking areas (upper case P within circle), public toilet rooms, public telephones, and graphic north arrow on orientation maps. Orientation map is to be positioned so that building left is viewer's left.

6. Large, easy to read signs over reception counters, check-in counters, information desks, or departments will be provided. Signs should be either ceiling mounted or affixed to soffit directly above counters.

7. Room identification signs should be 20.32 cm x 20.32 cm (8 x 8 inch) or 22.86 cm x 22.22.86 cm (9 x 9 inch). Justification of room number and message will be flush left.

8. Fire evacuation signs will be provided in accordance with the local Fire Marshal, if required.

9. Overhead directional signs should not block fire exit signs.

10. Signage will clearly define all staff, public, or patient toilet rooms.

1.1 REFERENCES

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System for Aluminum Finishes

AA PK-1 (2009) Pink Sheets: Designations and Chemical Composition Limits for Aluminum Alloys in the Form of Castings & Ingot

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 2604 (2005) Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z97.1 (2009; Errata 2010) Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test

AMERICAN WELDING SOCIETY (AWS)

AWS D1.2/D1.2M (2008) Structural Welding Code - Aluminum

ASTM INTERNATIONAL (ASTM)

ASTM B209 (2010) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

ASTM B209M (2010) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)

ASTM B221 (2012) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

ASTM B221M (2012) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)

ASTM C1036 (2010e1) Standard Specification for Flat Glass

ASTM D635 (2010) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

INTERNATIONAL CODE COUNCIL (ICC)

ICC/ANSI A117.1 (2009) Accessible and Usable Buildings and Facilities

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101 (2012; Amendment 1 2012) Life Safety Code

NFPA 70 (2011; Errata 2 2012) National Electrical Code

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED NC (2009) Leadership in Energy and Environmental Design(tm) New Construction Rating System

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191 Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

1.2 SUSTAINABILITY REQUIREMENTS

Materials in this technical specification may contribute towards contract compliance with sustainability requirements.

1.2.1 LEED Requirements

NOTE: The following bracketed items are representative of LEED material documentation and requirements that may apply to this project. These items should be edited to reflect the project requirements.

See Section 01 33 29 LEED DOCUMENTATION for project LEED NC [local/regional materials,] [recycled content,] [low emitting materials,] [optimize energy performance,] [,] [and] [rapidly renewable materials] requirements.

1.2.2 EPA Comprehensive Procurement Guidelines

See Section 01 62 35 RECYCLED/RECOVERED/BIOBASED MATERIALS for requirements associated with EPA designated products.

1.3 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project.

The Guide Specification technical editors have designated those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00

SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Detail Drawings[; G][; G, [_____]]

SD-03 Product Data

Installation[; G][; G, [_____]]

Warranty[; G][; G, [_____]]

SD-04 Samples

Interior Signage[; G][; G, [_____]]

Software[; G][; G, [_____]]

SD-10 Operation and Maintenance Data

Approved Manufacturer's Instructions[; G][; G, [_____]]

Protection and Cleaning[; G][; G, [_____]]

SD-11 Closeout Submittals

LEED Documentation

1.4 EXTRA MATERIALS

Provide [_____] extra frames and extra stock of the following: [[_____] blank plates of each color and size for sign types [_____.] [[_____] changeable message strips for sign type [_____.] Provide [[_____] paper inserts and [one][_____] copy of the [software](#) for user produced signs and inserts after project completion] [and equipment necessary for removal of signage parts and pieces.]

1.5 QUALITY ASSURANCE

1.5.1 Samples

Submit [interior signage](#) samples of each of the following sign types showing typical quality, workmanship and color: Directional sign, Standard Room sign, Changeable message strip sign, [_____.]. The samples may be installed in the work, provided each sample is identified and location recorded.

1.5.2 Detail Drawings

Submit detail drawings showing elevations of each type of sign, dimensions, details and methods of mounting or anchoring, mounting height, shape and thickness of materials, and details of construction. Include a schedule showing the location, each sign type, and message.

1.6 DELIVERY, STORAGE, AND HANDLING

Materials shall be packaged to prevent damage and deterioration during shipment, handling, storage and installation. Product shall be delivered to the jobsite in manufacturer's original packaging and stored in a clean, dry area in accordance with manufacturer's instructions.

1.7 WARRANTY

Warrant the interior signage for a period of [2][] year[s] against defective workmanship and material. Warranties shall be signed by the authorized representative of the manufacturer. Submit warranty accompanied by the document authenticating the signer as an authorized representative of the guarantor. Guarantee that the signage products and the installation are free from any defects in material and workmanship from the date of delivery.

PART 2 PRODUCTS

NOTE: Delete signage systems, directories, etc.,
not required for project. Coordinate electrical
requirements with Division 26 and building
electrical design.

2.1 STANDARD PRODUCTS

Signs, plaques, directories, and dimensional letters shall be the standard product of a manufacturer regularly engaged in the manufacture of such products that essentially duplicate signs that have been in satisfactory use at least 2 years prior to bid opening. Obtain signage from a single manufacturer with edges and corners of finished letterforms and graphics true and clean.

2.2 ROOM IDENTIFICATION/DIRECTIONAL SIGNAGE SYSTEM

NOTE: Depending on the complexity of the project
consider a modular signage system such as structural
rails and end caps. Coordinate project requirements
and specific signage system with user.

2.2.1 Standard Room Signs

Signs shall consist of [acrylic plastic 2 mm 0.080 inch thickness minimum conforming to ANSI Z97.1] [laminated thermosetting Type MP plastic (three-ply melamine plastic laminate with phenolic core)] [6063-T5 extruded aluminum in accordance with ASTM B221M ASTM B221 and ASTM B209M ASTM B209] [] and shall conform to the following:

- a. Frames shall be [[aluminum] [wood] [molded acrylic]], [[flat] [radius]] [[3 mm 1/8 inch] [6 mm 1/4 inch] []] thick.]
- b. End caps shall be [aluminum] [wood] [molded acrylic] with [round] [square] [] style corners.
- c. Units shall be frameless. Corners of signs shall be [squared] [rounded to [10] [13] [19] [] mm [3/8] [1/2] [3/4] [] inch radius].

2.2.2 Changeable Message Strip Signs

NOTE: The insert preparation method most
appropriate to each building should be chosen, and

the same method should be used consistently throughout the building. Requirements for sign-making equipment or software will be determined jointly by the using facility and the designer. If using other than standard paper, require extra stock be provided.

Changeable message strip signs shall be of same construction as standard room signs to include a clear sleeve that will accept a paper or plastic insert identifying changeable text. The insert shall be prepared [die-cut vinyl letters applied to 0.38 mm 0.015 inch rigid vinyl film] [typeset message mounted on paper card stock] [typewritten message] [____]. [Provide [paper and] software for creating text and symbols for computers identified by owner for Owner production of paper inserts after project completion.] [Furnish one [suction] [____] device to assist in removing face sheet.] [Sliding inserts or slide knobs that slide horizontally exposing different graphic information shall be provided as identified in the signage placement schedule and [drawings] [attachments.]]

2.2.3 Type of Mounting For Signs

Provide extruded aluminum brackets for hanging, projecting, and double-sided signs. Mounting for framed, hanging, and projecting signs shall be by mechanical fasteners. Surface mounted signs shall be mounted with [countersunk mounting holes in plaques and mounting screws] [1.6 mm 1/16 inch thick closed cell vinyl foam with adhesive backing. Adhesive shall be transparent, long aging, high tech formulation on two sides of the vinyl foam.] [magnetic tape [silicone adhesive]] [[hook and loop tape consisting of hooked part on sign back and looped side on mounting surface] [pin mount] for textile surfaces] [____] fabricated from materials that are not corrosive to sign material and mounting surface.

2.2.4 Graphics

NOTE: Edit the following requirements as necessary for the project. Graphics methods that are easily vandalized, such as vinyl first surface copy and acrylic characters bonded to acrylic, will not be permitted. The silkscreened first surface copy method is generally used for mass produced signs.

Signage graphics for modular signs shall conform to the following:

- a. [Subsurface copy: Copy is transferred to the back face of clear acrylic sheeting forming the panel face to produce precisely formed opaque image. This method bonds all sign elements (color, graphics, lettering, Braille and substrate) into a single unit.]
- b. [First Surface Copy Direct Print or Silkscreened (non-tactile): Message may be applied to panel using the silkscreen process. Silkscreened images shall be executed with photo screens prepared from original art. Handcut screens will not be accepted. Original art is defined as artwork that is a first generation reproduction of the specified art. Edges and corners shall be clean.]
- c. [Surface Applied Photopolymer: Integral graphics and Braille achieved

by photomechanical stratification processes. Photopolymer used for ADA compliant graphics shall be of the type that has a minimum durometer reading of 90. Tactile graphics shall be raised 0.8 mm 1/32 inch from the first surface of plaque by photomechanical stratification process.]

- d. [Engraved Copy: Machine engrave letters, numbers, symbols, and other graphics into panel sign on face to produce precisely formed copy and sharp images, incised to uniform depth. Melamine plastic engraving stock used for ADA compliant graphic shall be three-ply lamination contrasting color core meeting ASTM D635.]
- e. [Graphic Blast Raised Copy: Background is sandblasted to a uniform depth of 0.8 mm 1/32 inch leaving raised text and Braille. Background shall be painted with polyurethane paint.]
- f. [Embossed: Methods other than sandblasting such as vacuum formed to create ADA compliant projected graphics.]
- g. [[Cast] [Fabricated] [Solid] Aluminum Letters: [3] [6] [_____] mm [1/8] [1/4] [_____] inch thick shall be provided and fastened to the message panel with concealed fasteners.]

2.2.5 Character Proportions and Heights

Letters and numbers on signs conform to 36 CFR 1191.

2.2.6 Tactile Letters, Symbols and Braille

Raised letters and numbers on signs shall conform to 36 CFR 1191.

2.3 STAIR SIGNAGE

Provide signs on stairs serving three or more stories with special signage within the enclosure at each floor landing conforming to NFPA 101.

Indicate the floor level, the terminus of the top and bottom of the stair enclosure, and the identification of the stair enclosure. Also, state the floor level of, and the direction to, exit discharge. Locate the signage inside the enclosure in a position that is visible when the door is in the open or closed position and install in conformance with 36 CFR 1191. The floor level designation shall also be tactile in accordance with ICC/ANSI A117.1.

2.4 BUILDING DIRECTORIES

Building directories shall be lobby directories or floor directories, and shall be provided with a changeable directory listing consisting of the areas, offices and personnel located within the facility. Dimensions, details, and materials of sign and message content shall be as shown on the [drawings] [attachments] [signage placement schedule].

2.4.1 Header Panel

Header panel shall [have background metal to match frame] [be acrylic with raised acrylic letters] [be ES/MP plastic with raised letters] [_____].

2.4.2 Doors

2.4.2.1 Door Glazing

Door glazing shall be [in accordance with ASTM C1036, Type 1, Class 1, Quality 3, minimum 3 mm 1/8 inch thick] [clear acrylic sheet 4.8 mm 3/16 inch thick conforming to [____]] [clear polycarbonate sheet 4.8 mm 3/16 inch thick] [____].

2.4.2.2 Door Construction

Extruded aluminum door frame shall be of same finish as surrounding frame. Corners shall be mitered [, reinforced] [, welded], and assembled with concealed fasteners. Hinges shall be standard with the manufacturer, in finish to match frames and trim. Glazing shall be set in frame with resilient glazing channels.

2.4.2.3 Door Locks

Door locks shall be manufacturer's standard, and shall be keyed alike. Provide two sets of keys.

2.4.3 Fabrication

Extruded aluminum frames and trim shall be assembled with corners [reinforced] [welded] and mitered to a hairline fit, with no exposed fasteners.

2.4.4 Illuminated Units

NOTE: Coordinate illumination with Division 26 and building electrical design.

Illuminated directory units shall have concealed internal [top] [back] lighting with [LED] [rapid start fluorescent tube lamp] [____], internal wiring, and lead at wire for connection. Electrical work shall comply with NFPA 70 and shall be UL or FM listed. Directory shall consist of backlit photo negative directory strips and a black background. Unit shall have a tinted [tempered safety solar glass] [____] door.

2.4.4.1 Construction

The directory shall be [50] [100] [150] mm [1] [2] [4] [____] inch deep frame constructed of an [aluminum with [[satin [black] [painted] [dark bronze] [____] anodized finish]] [[red oak] [walnut] [____] with [natural] [stained] finish]]. Unit shall be [[semi] [fully] recessed] [surface] [____] mounted. Unit shall have a [75] [____] mm [3] [____] inch high header lettering as shown. Unit shall have a [9.3] [____] mm [3/8] [____] inch face door frame with concealed hinges and locking system or other secure method. Door frame shall [match directory material and finish] [____].

2.4.4.2 Message Strips

Message strips shall be photo negative type updatable by user. Message strips shall be [as shown on the drawings] [____].

2.4.5 Non-Illuminated Unit

Directory shall consist of a non-illuminated unit with [machine or laser engraved copy in interchangeable acrylic, metal, or high-pressure plastic laminate strips] [screen printed or vinyl copy applied to acrylic, metal, or high-pressure plastic laminate strips] [vinyl or screen printed lettering on plastic film held in interchangeable plastic carriers] [screen printed or vinyl copy laminated to magnetic tape]. Design of unit shall be as shown in the drawings.

2.4.5.1 Construction

The directory shall be constructed of an aluminum [50] [100] [150] mm [2] [4] [6] inch deep frame with [satin [black] [painted] [dark bronze] [_____] anodized finish] [[red oak] [walnut] [_____] with [natural] [stained] finish]. Unit shall be [[semi] [fully] recessed] [surface] [_____] mounted. Unit shall have a [75] [_____] mm [3] [_____] inch high header lettering as shown. Unit shall have a [9.3] [_____] mm [3/8] [_____] inch face door frame with concealed hinges and locking system or other secure method. Door frame shall [match directory material and finish] [_____] .

2.4.5.2 Message Strips

[Message strips shall be updatable by user.]Message strips shall be [sized in accordance with manufacturer's standard] [_____] . Letters and numbers shall be provided in accordance with the [drawings] [schedule] .

2.4.6 Electronic Directory System

NOTE: The electronic directory system is a limited usage item and must be fully justified prior to being specified.

Provide [non-interactive] [interactive] electronic directory. Electronic directory system shall be a complete turnkey system consisting of digital display, hardware, software connected through the local area network (LAN) to a [server] [cloud] . Electrical equipment shall be UL listed and shall comply with NFPA 70. Unit shall be [free-standing] [wall mounted] .

2.5 METAL PLAQUES

2.5.1 Cast Metal Plaques

2.5.1.1 Fabrication

Cast metal plaques shall have the logo, emblem and artwork cast in the [bas relief] [flat relief] [_____] technique. Plaques shall be fabricated from [prime aluminum] [bronze] [brass] [_____] .

2.5.1.2 Border

Border shall be [flat band] [plain edge] [bevel] [custom ornamental] [_____] .

2.5.1.3 Finish

Letter Finish	[satin] [polished]
Background Finish	[[light] [dark] aluminum] [[dark] [] bronze]
Background Texture	[leather] [pebble] [smooth] []

2.5.1.4 Mounting

Mounting shall be [concealed] [rosettes and anchors] [rosettes and toggle bolts] [_____].

2.5.2 Chemically Etched Metal Plaques

2.5.2.1 Fabrication

Plaque shall be chemically etched one-piece or photochemically engraved metal sheet or plate [aluminum] [brass] [bronze] [zinc] [magnesium] [_____] [0.8128] [1.6256] [3.175] [6.35] [_____] mm [0.032] [0.064] [0.125] [0.250] [_____] inch thick.

2.5.2.2 Finish

[Single-etched raised areas shall be in [gold-tone] [silver-tone] [bronze-tone] finish and recessed areas shall be colorfilled.]
[Double-etched raised areas shall be [gold-tone] [silver-tone] and recessed textured areas shall be [gold-tone] [silver-tone] colorfilled.]

2.6 DIMENSIONAL BUILDING LETTERS

**NOTE: These letters are for direct application to
interior building surfaces. Drawings must show
mounting type details.**

2.6.1 Fabrication

Letters shall be [cast] [cutout] [fabricated channel] [molded plastic].
Letters shall be [aluminum] [bronze] [brass] [_____]. Package letters for protection until installation.

2.6.2 Size

Letter size shall be [_____] [as indicated]. Provide letter thickness that is [manufacturer's standard for the size of letter] [_____].

2.6.3 Finish

Provide [[mill] [clear anodized] [[light] [medium] [dark] anodized bronze]]
[[polished] bronze with clear coat] [baked enamel] [powder coat]
[two-component acrylic polyurethane] finish.

2.6.4 Mounting

[Threaded studs] [Steel U-bracket, cap screws, and expansion bolts] of

number and size recommended by manufacturer, shall be supplied for concealed anchorage. Letters which project from the mounting surface shall have [stud spacer sleeves] [_____]. Letters, studs, and sleeves shall be of the same material. Templates for mounting shall be supplied.

2.7 PRESSURE SENSITIVE LETTERS

NOTE: Use pressure sensitive letters for direct application to building interior surfaces such as glass and doors. Be sure surface of material will accept adhesion of letters. Show locations, message content, sizes, and colors on drawings or in a message schedule.

2.7.1 Fabrication

Ensure that vinyl letter edges and corners of finished letterforms and graphics are true and clean. Do not use letterforms and graphics with rounded positive or negative corners, nicked, cut, or ragged edges.

2.7.2 Size

Letter size: [as indicated] [_____].

2.8 ALUMINUM ALLOY PRODUCTS

Aluminum extrusions shall be at least 3 mm 1/8 inch thick, and aluminum plate or sheet shall be at least 1.3 mm 0.0508 inch thick. Extrusions shall conform to ASTM B221M ASTM B221; plate and sheet shall conform to ASTM B209M ASTM B209. Where anodic coatings are specified, alloy shall conform to AA PK-1 alloy designation 514.0. Exposed anodized aluminum finishes shall be as shown. Welding for aluminum products shall conform to AWS D1.2/D1.2M.

2.9 ANODIC COATING

Anodized finish shall conform to AA DAF45 as follows:

- a. [Clear (natural) designation AA-M10-C22-A31, Architectural Class II 0.010 mm 0.4 mil or thicker.]
- b. [Integral color anodized designation AA-M10-C22-A32, Architectural Class 0.010 to 0.018 mm 0.4 to 0.7 mil.]
- c. [Electrolytically deposited color-anodized designation AA-M10-C22-A34, Architectural Class II 0.010 to 0.018 mm 0.4 to 0.7 mil.]

2.10 ORGANIC COATING

Organic coating shall conform to AAMA 2604, with total dry film thickness not less than 0.030 mm 1.2 mils.

2.11 FABRICATION AND MANUFACTURE

2.11.1 Factory Workmanship

Holes for bolts and screws shall be drilled or punched. Drilling and

punching shall produce clean, true lines and surfaces. Exposed surfaces of work shall have a smooth finish and exposed riveting shall be flush. Fastenings shall be concealed where practicable.

2.11.2 Dissimilar Materials

Where dissimilar metals are in contact, the surfaces will be protected to prevent galvanic or corrosive action.

2.12 COLOR, FINISH, AND CONTRAST

NOTE: Color shall be selected from manufacturer's standard colors and indicated in SECTION 09 06 90 COLOR SCHEDULE or identified in this specification only when the project is very simple and has minimal finishes. Custom colors shall be limited due to additional cost and impact on future orders.

Signage background color should be in high contrast with signage copy. Dark background with light copy is preferred.

When the government directs that color be located in the drawings a note shall be added that states: "Where color is shown as being specific to one manufacturer, an equivalent color by another manufacturer may be submitted for approval. Manufacturers and materials specified are not intended to limit the selection of equal colors from other manufacturers. The word "color" as used herein includes surface color and pattern."

Color shall be [in accordance with Section 09 06 90 COLOR SCHEDULE] [as indicated] [_____]. Finish of all signs shall be eggshell, matte, or other non-glare finish as required in handicapped-accessible buildings.

2.13 TYPEFACE

[ADA-ABA compliant font for Room Signs] [Helvetica Regular] [_____].

PART 3 EXECUTION

3.1 INSTALLATION

Signs shall be installed plumb and true and in accordance with approved manufacturer's instructions at locations shown on the [detail drawings] [schedule below] [attachments]. Submit [six] [_____] copies of operating instructions outlining the step-by-step procedures required for system operation. The instructions shall include simplified diagrams for the system as installed, the manufacturer's name, model number, service manual, parts list, and brief description of all equipment and their basic operating features. Each set shall be permanently bound and shall have a hard cover. The following identification shall be inscribed on the covers: the words "OPERATING AND MAINTENANCE INSTRUCTIONS", name and location of the facility, name of the Contractor, and contract number. Mounting height and mounting location shall conform to 36 CFR 1191. Required blocking shall be installed. Signs on doors or other surfaces

shall not be installed until finishes on such surfaces have been installed. Signs installed on glass surfaces shall be installed with matching blank back-up plates in accordance with manufacturer's instructions. [Illuminated signage shall be in conformance with the requirements of Section 26 51 00 INTERIOR LIGHTING.]

SIGNAGE PLACEMENT SCHEDULE				
Door/Room Number	Sign Type	Text	Insert(s)	Symbol/Remarks
[_____]	[_____]	[_____]	[_____]	[_____]

3.1.1.1 Anchorage

Anchorage shall be in accordance with approved manufacturer's instructions. Anchorage not otherwise specified or shown shall include slotted inserts, expansion shields, and powder-driven fasteners when approved for concrete; toggle bolts and through bolts for masonry; machine carriage bolts for steel; lag bolts and screws for wood. Exposed anchor and fastener materials shall be compatible with metal to which applied and shall have matching color and finish.

- a. Signs mounted to painted gypsum board surfaces shall be removable for painting maintenance.
- b. Mount signs mounted to lay-in ceiling grids with clip connections to ceiling tees.
- c. Install signs mounted on metal surfaces with magnetic tape.
- d. Install signs mounted on fabric surfaces with hook and loop tape or pin mount.

3.1.1.2 Protection and Cleaning

Protect the work against damage during construction. Hardware and electrical equipment shall be adjusted for proper operation. Glass, frames, and other sign surfaces shall be cleaned at completion of sign installation in accordance with the manufacturer's approved instructions and the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA, Package 1. Submit [six] [_____] copies of maintenance instructions listing routine procedures, repairs, and guides.

-- End of Section --