

\*\*\*\*\*  
USACE / NAVFAC / AFCEA / NASA UFGS-10 14 02 (February 2009)  
-----  
Preparing Activity: USACE Superseding  
UFGS-10 14 02 (April 2006)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated April 2011

\*\*\*\*\*

### SECTION TABLE OF CONTENTS

#### DIVISION 10 - SPECIALTIES

##### SECTION 10 14 02

##### INTERIOR SIGNAGE

02/09

#### PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SYSTEM DESCRIPTION
- 1.3 SUBMITTALS
- 1.4 DELIVERY, STORAGE, AND HANDLING
- 1.5 EXTRA MATERIALS

#### PART 2 PRODUCTS

- 2.1 STANDARD PRODUCTS
- 2.2 ROOM IDENTIFICATION/DIRECTIONAL SIGNAGE SYSTEM
  - 2.2.1 Standard Room Signs
  - 2.2.2 Changeable Message Strip Signs
  - 2.2.3 Type of Mounting For Signs
  - 2.2.4 Graphics
  - 2.2.5 Character Proportions and Heights
  - 2.2.6 Raised and Braille Characters and Pictorial Symbol Signs  
(Pictograms)
- 2.3 BUILDING DIRECTORIES
  - 2.3.1 Header Panel
  - 2.3.2 Doors
    - 2.3.2.1 Door Glazing
    - 2.3.2.2 Door Construction
    - 2.3.2.3 Door Locks
  - 2.3.3 Fabrication
  - 2.3.4 Illuminated Units
  - 2.3.5 Negative Graphics Directory System
    - 2.3.5.1 Construction
    - 2.3.5.2 Message Strips
  - 2.3.6 Changeable Letter/Message Strip Directory System
    - 2.3.6.1 Construction
    - 2.3.6.2 Message Strips
  - 2.3.7 Touchscreen Electronic Directory System
    - 2.3.7.1 Directory Unit
    - 2.3.7.2 Update Terminal

- 2.4 METAL PLAQUES
    - 2.4.1 Cast Metal Plaques
      - 2.4.1.1 Fabrication
      - 2.4.1.2 Border
      - 2.4.1.3 Background
      - 2.4.1.4 Mounting
      - 2.4.1.5 Finish
    - 2.4.2 Chemically Etched Metal Plaques
      - 2.4.2.1 Fabrication
      - 2.4.2.2 Finish
    - 2.4.3 Frost and Surface Oxidized Plaques
      - 2.4.3.1 Fabrication
      - 2.4.3.2 Finish
  - 2.5 DIMENSIONAL BUILDING LETTERS
    - 2.5.1 Fabrication
    - 2.5.2 Typeface
    - 2.5.3 Size
    - 2.5.4 Finish
    - 2.5.5 Mounting
  - 2.6 PRESSURE SENSITIVE LETTERS
    - 2.6.1 Typeface
    - 2.6.2 Size
  - 2.7 ALUMINUM ALLOY PRODUCTS
  - 2.8 ANODIC COATING
  - 2.9 ORGANIC COATING
  - 2.10 FABRICATION AND MANUFACTURE
    - 2.10.1 Factory Workmanship
    - 2.10.2 Dissimilar Materials
  - 2.11 COLOR, FINISH, AND CONTRAST
- PART 3 EXECUTION
- 3.1 INSTALLATION
    - 3.1.1 Anchorage
    - 3.1.2 Protection and Cleaning

-- End of Section Table of Contents --

\*\*\*\*\*  
USACE / NAVFAC / AFCEA / NASA UFGS-10 14 02 (February 2009)  
-----  
Preparing Activity: USACE Superseding  
UFGS-10 14 02 (April 2006)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated April 2011

\*\*\*\*\*

### SECTION 10 14 02

#### INTERIOR SIGNAGE 02/09

\*\*\*\*\*

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, 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.

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 in 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
```

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 DAF-45 (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 B 209 (2007) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

ASTM B 209M (2007) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)

ASTM B 221 (2008) Standard Specification for Aluminum

and Aluminum-Alloy Extruded Bars, Rods,  
Wire, Profiles, and Tubes

ASTM B 221M

(2007) Standard Specification for Aluminum  
and Aluminum-Alloy Extruded Bars, Rods,  
Wire, Profiles, and Tubes (Metric)

ASTM C 1036

(2006) Standard Specification for Flat  
Glass

ASTM D 635

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

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70

(2011) National Electrical Code

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

36 CFR 1191

Americans with Disabilities Act (ADA)  
Accessibility Guidelines for Buildings and  
Facilities

## 1.2 SYSTEM DESCRIPTION

Submit samples of each of the following sign types showing typical quality, workmanship and color: Directional sign, Standard Room sign, Changeable message strip sign, [\_\_\_\_]; submit interior signage samples of the design, detail, sizes, types, and message content shown on the detail drawings, attachments, signage placement schedule (as applicable), conforming to the requirements specified, and placed at the locations indicated. The samples may be installed in the work, provided each sample is identified and location recorded. Submit 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. A schedule showing the location, each sign type, and message shall be included. Signs shall be complete with lettering, framing as detailed, and related components for a complete installation. Signage shall be obtained from a single manufacturer with edges and corners of finished letterforms and graphics true and clean. Recyclable materials shall conform to EPA requirements in accordance with Section 01 62 35 RECYCLED / RECOVERED MATERIALS.

## 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. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's

Quality Control system. Only add a "G" 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, [\_\_\_\_\_]]

#### 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, [\_\_\_\_\_]]

### 1.4 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.

### 1.5 EXTRA MATERIALS

\*\*\*\*\*

NOTE: A sufficient number of identification signs and letters for future use for changes and message



replacement shall be specified.

\*\*\*\*\*

Provide [ ] extra frames and extra stock of the following: [ ] blank plates of each color and size for sign types [ ].] [ ] pressure-sensitive letters in each color and size for sign type [ ].] [ ] changeable message strips for sign type [ ].] [ Provide [ ] paper inserts and [one] [ ] copy of the software for user produced signs and for creating text and symbols for [IBM compatible] [Macintosh] [ ] computers for Owner production of paper inserts after project completion.] [equipment necessary for removal of signage parts and pieces.]

## PART 2 PRODUCTS

\*\*\*\*\*

NOTE: Delete signage systems, directories, etc., not required for project. Coordinate electrical requirements with Division 16 and available electric service.

\*\*\*\*\*

### 2.1 STANDARD PRODUCTS

Signs, plaques, 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.

### 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 B 221M ASTM B 221 and ASTM B 209M ASTM B 209] [ ] and shall conform to the following:

- a. Frames shall be [[aluminum] [wood] [molded acrylic]] [[3 mm 1/8 inch] [6 mm 1/4 inch] [ ] wide.]
- 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] [dry transfer letters applied to paper card stock] [typeset message photographically enlarged to size and mounted on paper card stock] [typewritten message photographically enlarged or used at actual size] [\_\_\_\_]. [ Provide [ paper and] software for creating text and symbols for [IBM compatible] [Macintosh] [\_\_\_\_] computers for Owner production of paper inserts after project completion.] [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 [1.6 mm 1/16 inch thick vinyl foam tape] [countersunk mounting holes in plaques and mounting screws] [magnetic tape [silicone adhesive]] [\_\_\_\_] 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. [Silkscreened First Surface Copy (non-tactile): Message shall 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 D 635.]

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 Raised and Braille Characters and Pictorial Symbol Signs (Pictograms)

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

### 2.3 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] [and signage placement schedule].

#### 2.3.1 Header Panel

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

#### 2.3.2 Doors

##### 2.3.2.1 Door Glazing

Door glazing shall be [in accordance with ASTM C 1036, 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] [\_\_\_\_\_] .

##### 2.3.2.2 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.

#### 2.3.2.3 Door Locks

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

#### 2.3.3 Fabrication

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

#### 2.3.4 Illuminated Units

\*\*\*\*\*  
**NOTE: Coordinate illumination with Division 16 and available electric service.**  
\*\*\*\*\*

Illuminated directory units shall have concealed internal [top] [back] lighting with [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.

#### 2.3.5 Negative Graphics Directory System

Directory shall consist of internally illuminated unit with backlit photo negative directory strips and a black background. Unit shall have a tinted [tempered safety solar glass] [\_\_\_\_] door. Design of unit shall be as shown.

##### 2.3.5.1 Construction

The directory shall be constructed of an aluminum [100] [150] mm [4] [6] inch deep frame with satin [black] [dark bronze] [\_\_\_\_] anodized finish. Unit shall be [[semi] [fully] recessed] [[pedestal] [\_\_\_\_]] 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. Door frame shall be [aluminum with [satin] [black] [dark bronze]] [solid [polished] [satin] [chrome plated] brass] [solid architectural bronze] [\_\_\_\_].

##### 2.3.5.2 Message Strips

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

#### 2.3.6 Changeable Letter/Message Strip Directory System

Directory shall consist of [an internally illuminated] [a non-illuminated] unit with [step or groove, laser or rotary engraved removable name strips] [felt grooved for changeable letters] [cast vinyl to receive molded changeable letter tiles] [laminated plastic magnetic back message strips]. Design of unit shall be as shown in the drawings.

#### 2.3.6.1 Construction

The directory shall be constructed of an aluminum [50] [ ] mm [2] [ ] inch deep frame with satin [black] [dark bronze] [ ] anodized finish. Unit shall be [surface] [[semi] [fully] recessed] [[pedestal] [ ]] mounted. Unit shall have a [75] [ ] mm [3] [ ] inch high header with lettering as shown. Unit shall have a [9.3] [ ] mm [3/8] [ ] inch face [[concealed hinge door and locking system] [lift off frame]] with [[tempered safety glass] [ ]] [fixed frame] [ ]. Door frame shall be [aluminum with satin [black] [dark bronze]] [solid [polished] [satin] [chrome plated] brass] [solid architectural bronze] [ ].

#### 2.3.6.2 Message Strips

[Namestrips shall be updatable by user. Namestrips shall be [[acrylic] [ ]] [sized in accordance with manufacturer's standard] [ ].] [Namestrips shall be felt grooved background with changeable upper and lower case [Helvetica Medium] [ ] letters. Tabbed vinyl letters and numbers shall be provided in accordance with the [drawings] [and] [schedule].]

#### 2.3.7 Touchscreen Electronic Directory System

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

Touchscreen electronic directory system shall be a complete turnkey system consisting of touchscreen monitor, processor, update terminal with software connected through a [telephone network] [or] [local area network (LAN)]. The system shall be in compliance with the layout and number shown. Electrical equipment shall be UL listed and shall comply with NFPA 70. Unit shall be [free-standing] [wall mounted].

##### 2.3.7.1 Directory Unit

Directory unit shall consist of [[1] [ ]] [350] [400] [ ] mm [14] [16] [ ] inch touchscreen monitor and membrane keypad with [alphabetic 28] [alphanumeric 38] [alphabetic braille 30] keys. Screen resolution shall be [SVGA [800 x 600] [1280 x 1024]] [ ]. Monitor shall be full color. Processor shall be Pentium 75 or better with sound peripherals and have a listing capacity of [96,000] [1,000,000] [ ] items. Directory unit shall be of design and finishes as shown.

##### 2.3.7.2 Update Terminal

Update terminal unit shall consist of a [300] [350] [ ] mm [12] [14] [ ] inch color monitor with [84] [101] key keypad. Unit shall have a 132 column report printer. Unit shall include a Pentium 75 or better PC processor with floppy disk from update terminal to each directory. System shall include [network from update to each directory] [and] [network from mainframe to update terminal to each directory]. Communications shall be over a telephone network or a LAN.

## 2.4 METAL PLAQUES

### 2.4.1 Cast Metal Plaques

#### 2.4.1.1 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] [yellow brass].

#### 2.4.1.2 Border

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

#### 2.4.1.3 Background

Background texture shall be [leather] [fine pebble] [\_\_\_\_\_].

#### 2.4.1.4 Mounting

Mounting shall be [concealed] [rosettes and anchors] [rosettes and toggle bolts] [invisible] [\_\_\_\_\_].

#### 2.4.1.5 Finish

Finishes shall consist of [aluminum light colored sandblasted background. Letters shall be satin polished and entire plaque shall be sprayed with two coats of clear lacquer.] [aluminum with background sprayed dark gunmetal colored lacquer. Letters shall be satin polished and entire plaque sprayed with two coats clear lacquer.] [bronze with dark finish oxidized background. Letters shall be satin polished and entire plaque sprayed with two coats of clear lacquer.] [[aluminum] [bronze] with background sprayed with standard color. Letters shall be satin polished.]

### 2.4.2 Chemically Etched Metal Plaques

#### 2.4.2.1 Fabrication

Plaque shall be chemically [single-] [double-] etched one-piece [brass] [bronze] [zinc] [magnesium] [\_\_\_\_\_] [0.8128] [1.6256] [3.175] [6.35] mm [0.032] [0.064] [0.125] [0.250] inch thick.

#### 2.4.2.2 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.]

### 2.4.3 Frost and Surface Oxidized Plaques

#### 2.4.3.1 Fabrication

Plaque shall be frosted and surface oxidized one-piece [anodized aluminum] [brass] [bronze] [stainless steel] [1.02] [3.175] mm [0.040] [0.125] inch thick.

#### 2.4.3.2 Finish

[Material finish shall be [satin] [polished].] [Frosted areas shall be oxidized [black for aluminum or stainless steel] [or] [black or brown, for brass or bronze].]

### 2.5 DIMENSIONAL BUILDING LETTERS

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

#### 2.5.1 Fabrication

Letters shall be fabricated from [[cast aluminum] [cast bronze]] [[2.29] [3.17] mm [0.090] [0.125] inch aluminum sheet] [extruded aluminum] [injection molded plastic]. Letters shall be cleaned by chemical etching or cleaned ultrasonically in a special degreasing bath. Letters shall be packaged for protection until installation.

#### 2.5.2 Typeface

Typeface shall be [helvetica medium] [\_\_\_\_\_].

#### 2.5.3 Size

Letter size shall be [\_\_\_\_\_].

#### 2.5.4 Finish

[Anodized aluminum] [Baked enamel or two-component acrylic polyurethane] [[Polished] [Oxidized] bronze with clear coat] finish shall be provided.

#### 2.5.5 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.

### 2.6 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.**  
\*\*\*\*\*

Ensure that 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.

### 2.6.1 Typeface

[Helvetica medium] [\_\_\_\_\_].

### 2.6.2 Size

[As indicated] [\_\_\_\_\_].

## 2.7 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 B 221M ASTM B 221; plate and sheet shall conform to ASTM B 209M ASTM B 209. 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.

## 2.8 ANODIC COATING

Anodized finish shall conform to AA DAF-45 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.]

## 2.9 ORGANIC COATING

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

## 2.10 FABRICATION AND MANUFACTURE

### 2.10.1 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.

### 2.10.2 Dissimilar Materials

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

## 2.11 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 on the drawings] [\_\_\_\_\_]. Finish of all signs shall be eggshell, matte, or other non-glare finish as required in handicapped-accessible buildings.

## 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 and requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA, package 1. [Illuminated signage shall be in conformance with the requirements of Section 26 51 00 INTERIOR LIGHTING.]

[SIGNAGE PLACEMENT SCHEDULE:

[DOOR]				
[ROOM]	SIGN			
[NUMBER]	TYPE	TEXT	INSERT(S)	SYMBOL/REMARKS]

#### 3.1.1 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. Where recommended by signage manufacturer, foam tape pads may be used for anchorage. Foam tape pads shall be minimum 2 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. Adhesive surfaces shall be protected with a 0.13 mm 5 mil green flatstock treated with silicone. Foam pads shall be sized for the signage in accordance with signage manufacturer's recommendations. Signs mounted to painted gypsum board surfaces shall be removable for painting maintenance. Signs mounted to lay-in ceiling grids shall be mounted with clip connections to ceiling tees.

#### 3.1.2 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 --