
USACE / NAVFAC / AFCEA / NASA UFGS-10440 (September 2004)

Preparing Activity: USACE MasterFormat™ 2004 - 10 14 02
Superseding
UFGS-10440 (July 2002)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 23 June 2005

SECTION TABLE OF CONTENTS

DIVISION 10 - SPECIALTIES

SECTION 10440

INTERIOR SIGNAGE

09/04

PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 GENERAL
- 1.4 QUALIFICATIONS
- 1.5 DELIVERY AND STORAGE
- 1.6 EXTRA STOCK

PART 2 PRODUCTS

- 2.1 ROOM IDENTIFICATION/DIRECTIONAL SIGNAGE SYSTEM
 - 2.1.1 Standard Room Signs
 - 2.1.2 Changeable Message Strip Signs
 - 2.1.3 Type of Mounting For Signs
 - 2.1.4 Graphics
 - 2.1.5 Character Proportions and Heights
 - 2.1.6 Raised and Brailled Characters and Pictorial Symbol Signs
(Pictograms)
- 2.2 BUILDING DIRECTORIES
 - 2.2.1 Header Panel
 - 2.2.2 Doors
 - 2.2.2.1 Door Glazing
 - 2.2.2.2 Door Construction
 - 2.2.2.3 Door Locks
 - 2.2.3 Fabrication
 - 2.2.4 Illuminated Units
 - 2.2.5 Negative Graphics Directory System
 - 2.2.5.1 Construction
 - 2.2.5.2 Message Strips
 - 2.2.6 Changeable Letter/Message Strip Directory System
 - 2.2.6.1 Construction
 - 2.2.6.2 Message Strips

2.2.7	Touchscreen Electronic Directory System
2.2.7.1	Directory Unit
2.2.7.2	Update Terminal
2.3	METAL PLAQUES
2.3.1	Cast Metal Plaques
2.3.1.1	Fabrication
2.3.1.2	Border
2.3.1.3	Background
2.3.1.4	Mounting
2.3.1.5	Finish
2.3.2	Chemically Etched Metal Plaques
2.3.2.1	Fabrication
2.3.2.2	Finish
2.3.3	Frost and Surface Oxidized Plaques
2.3.3.1	Fabrication
2.3.3.2	Finish
2.4	DIMENSIONAL BUILDING LETTERS
2.4.1	Fabrication
2.4.2	Typeface
2.4.3	Size
2.4.4	Finish
2.4.5	Mounting
2.5	PRESSURE SENSITIVE LETTERS
2.5.1	Typeface
2.5.2	Size
2.5	ALUMINUM ALLOY PRODUCTS
2.6	ANODIC COATING
2.7	ORGANIC COATING
2.8	FABRICATION AND MANUFACTURE
2.8.1	Factory Workmanship
2.8.2	Dissimilar Materials
2.9	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 --

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SECTION 10440

INTERIOR SIGNAGE 09/04

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

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

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. Army buildings not excluded by TI 800-01 Design Criteria will be accessible in accordance with 36 CFR, Part 1191, Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.

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 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 future signage required on individual workstations.

Where appropriate for medical facilities, include the following requirements for signage:

1. Permanent information on room identification signs will have 0.80 mm (0.0312 inch) raised characters and accompanying Grade 2 Braille. Permanent information 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.

2. 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, with odd numbers on the right and even numbers on the left. For inpatient medical facilities, rooms with audiovisual nurse call need to 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 #).

3. 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.

4. Signage background color should be in high contrast with signage copy (note: dark background with white copy is preferred).

5. 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:

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< EMERGENCY
^ Orthopedic Clinic
> Admissions
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6. 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.

7. 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.

8. 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.

9. 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.

10. 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".

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

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

13. 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) Designation System for Aluminum Finishes
AA PK-1	(2002) Pink Sheets: Designations and Chemical Composition Limits for Aluminum Alloys in the Form of Castings and Ingot

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 2604	(2002) Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
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AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z97.1	(1984; R 1994) Safety Glazing Materials Used in Buildings
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AMERICAN WELDING SOCIETY (AWS)

AWS D1.2	(2003) Structural Welding Code - Aluminum
AWS D1.2M	(2003) Structural Welding Code - Aluminum (Metric)

ASTM INTERNATIONAL (ASTM)

ASTM B 209	(2004) Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B 209M	(2004) Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
ASTM B 221	(2004a) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B 221M	(2004) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM C 1036	(2001) Flat Glass
ASTM D 635	(2003) Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2005) National Electrical Code
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1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01330 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.] [for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

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

Drawings showing elevations of each type of sign, dimensions, details and methods of mounting or anchoring, shape and thickness of materials, and details of construction. A schedule showing the location, each sign type, and message shall be included.

SD-03 Product Data

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

Manufacturer's descriptive data, catalogs cuts, installation and cleaning instructions.

SD-04 Samples

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

One sample of each of the following sign types showing typical quality, workmanship and color. The samples may be installed in the work, provided each sample is identified and location recorded.

- a. Directional sign.
- b. Standard Room sign.
- c. Changeable message strip sign.
- d. [].

SD-10 Operation and Maintenance Data

Approved Manufacturer's Instructions[; G][; G, [_____]]
Protection and Cleaning[; G][; G, [_____]]

[Six][_____] copies of operating instructions outlining the step-by-step procedures required for system operation shall be provided. The instructions shall include simplified diagrams for the system as installed. [Six][_____] copies of maintenance instructions listing routine procedures, repairs, and guides shall be provided. The instructions shall include 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.

1.3 GENERAL

Interior signage shall be of the design, detail, sizes, types, and message content shown on the drawings/attachments/signage placement schedule (as applicable), shall conform to the requirements specified, and shall be provided at the locations indicated. 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 01670 RECYCLED / RECOVERED MATERIALS.

1.4 QUALIFICATIONS

Signs, plaques, and dimensional letters shall be the standard product of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate signs that have been in satisfactory use at least 2 years prior to bid opening.

1.5 DELIVERY AND STORAGE

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.

1.6 EXTRA STOCK

NOTE: A sufficient number of identification signs and letters for future use for changes and message replacement shall be specified.

The Contractor shall 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 [_____.]

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 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.

2.1.1 Standard Room Signs

Signs shall consist of [acrylic plastic 2 mm .080" 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:

[Frames shall be [aluminum] [wood] [molded acrylic]]. [Frames shall be [.32 mm 1/8 inch] [6.35 mm 1/4 inch] [_____] wide.]

[End caps shall be [aluminum] [wood] [molded acrylic] with [round] [square] [_____] style] corners.]

[Units shall be frameless. Corners of signs shall be [squared] [rounded to [10] [13] [19] [_____] mm [3/8] [1/2] [3/4] [_____] inch radius].]

2.1.2 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.

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 .38 mm .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]. [Furnish 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].]

2.1.3 Type of Mounting For Signs

Extruded aluminum brackets shall be furnished 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.

2.1.4 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 shall not be permitted.

Signage graphics for modular signs shall conform to the following:

[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.]

[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 shall be defined as artwork that is a first generation reproduction of the specified art. This method is generally used for mass produced signs. Edges and corners shall be clean.]

[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 must be raised .8 mm 1/32 inch from the first surface of plaque by photomechanical stratification process.]

[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]

[Graphic Blast Raised Copy: Background is sandblasted to a uniform depth of .8 mm 1/32 inch leaving raised text and Braille. Background shall be painted with polyurethane paint.]

[Embossed: Methods other than sandblasting such as vacuum formed to create ADA compliant projected graphics.]

[[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.]

2.1.5 Character Proportions and Heights

Letters and numbers on indicated signs which do not designate permanent rooms or spaces shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10. Characters and numbers on indicated signs shall be sized according to the viewing distance from which they are to be read. The minimum height is measured using an upper case letter "X". Lower case characters are permitted. Suspended or projected overhead signs shall have a minimum character height of 75 mm 3 inches.

2.1.6 Raised and Brailled Characters and Pictorial Symbol Signs (Pictograms)

Raised and brailled characters and symbols are only required on signs that designate permanent rooms or spaces, including restrooms and room numbers. They are not required for information or way-finding signs. Raised letters and numbers on signs must protrude 0.8 mm 1/32 inch upper case, sans serif

or simple serif type and shall be accompanied with Grade 2 Braille. Raised characters shall be at least 16 mm 5/8 inch in height, but no higher than 50 mm 2 inches. Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram. The border dimension of the pictogram shall be 152 mm 6 inches minimum in height. Indicated accessible facilities shall use the international symbol of accessibility.

2.2 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].

2.2.1 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] [_____].

2.2.2 Doors

2.2.2.1 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] [_____].

2.2.2.2 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.

2.2.2.3 Door Locks

Door locks shall be manufacturer's standard, and shall be keyed alike.

2.2.3 Fabrication

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

2.2.4 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.

2.2.5 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.

2.2.5.1 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] [_____] .

2.2.5.2 Message Strips

**NOTE: Photo negative replaceable message strips are
available from manufacturer via 7-10 day delivery,
FAX order, or coupon book order.**

Message strips shall be photo negative type updatable by user with book reordering and with 7 to 10 day delivery. Message strips shall be [9.3 x [87] [175] [275] mm 3/8 x [3.5] [7] [11] inches] [12.5 x [175] [275] mm 1/2 x [7] [11] inches] [_____] .

2.2.6 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.

2.2.6.1 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] [_____] .

2.2.6.2 Message Strips

[Namestrips shall be updatable by user with coupon book reordering and with 5 to 7 day delivery. Namestrips shall be [[acrylic] [_____]] [sized per 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 furnished in accordance

with the [drawings] [and] [schedule].]

2.2.7 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].

2.2.7.1 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.

2.2.7.2 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.

2.3 METAL PLAQUES

2.3.1 Cast Metal Plaques

2.3.1.1 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].

2.3.1.2 Border

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

2.3.1.3 Background

Background texture shall be [leather] [fine pebble] [____].

2.3.1.4 Mounting

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

2.3.1.5 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.]

2.3.2 Chemically Etched Metal Plaques

2.3.2.1 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.

2.3.2.2 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.]

2.3.3 Frost and Surface Oxidized Plaques

2.3.3.1 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.

2.3.3.2 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].]

2.4 DIMENSIONAL BUILDING LETTERS

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

2.4.1 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.

2.4.2 Typeface

Typeface shall be [helvetica medium] [____].

2.4.3 Size

Letter size shall be [____].

2.4.4 Finish

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

2.4.5 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.

2.5 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.

2.5.1 Typeface

[Helvetica medium] [____].

2.5.2 Size

[____] [As indicated].

2.5 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 D1.2MAWS D1.2.

2.6 ANODIC COATING

Anodized finish shall conform to AA DAF-45 as follows:

[Clear (natural) designation AA-M10-C22-A31, Architectural Class II

0.010 mm 0.4 mil or thicker.]

[Integral color anodized designation AA-M10-C22-A32, Architectural Class 0.010 to 0.018 mm 0.4 to 0.7 mil.]

[Electrolytically deposited color-anodized designation AA-M10-C22-A34, Architectural Class II 0.010 to 0.018 mm 0.4 to 0.7 mil.]

2.7 ORGANIC COATING

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

2.8 FABRICATION AND MANUFACTURE

2.8.1 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.

2.8.2 Dissimilar Materials

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

NOTE: Editing of color reference sentence shall be coordinated with the Government. Generally the 09915 Color Schedule or drawing is used when the project is designed by an Architect or Interior Designer. Color shall be selected from manufacturer's standard colors or identified in this specification only when the project is very simple and has minimal finishes.

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."

Prior to specifying a custom color finish, research to determine if additional cost and lead time is feasible. Note there is often a minimum order requirement; this requirement will also affect future orders.

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

2.9 COLOR, FINISH, AND CONTRAST

Color shall be [in accordance with Section 09915 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]. Mounting height shall be 1.5 meters 60" above the finish floor to the centerline of the sign. Distance from edge of door frame to edge of sign shall be [] [as indicated on drawings] [as indicated on attachments]. Required blocking shall be installed. Signs shall be installed on the wall adjacent to the latch side of the door. Where there is no wall space to the latch side of the door, including at double leaf doors, signs shall be placed on the nearest adjacent wall. Mounting location for such signage shall be so that a person may approach within 75 mm3 inches of signage without encountering protruding objects or standing within the swing of a door. 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 16510 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 as per 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

The work shall be protected 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.

-- End of Section --