UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021
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SECTION TABLE OF CONTENTS

DIVISION 10 - SPECIALTIES

SECTION 10 14 00.20

INTERIOR SIGNAGE

08/20

PART 1 GENERAL

1.1 REFERENCES
1.2 SUBMITTALS
1.3 EXTRA MATERIALS
1.4 QUALITY ASSURANCE
1.4.1 Samples
1.4.2 Detail Drawings
1.4.3 Sign Fabricator
1.4.4 Cybersecurity
1.5 DELIVERY, STORAGE, AND HANDLING
1.6 WARRANTY

PART 2 PRODUCTS

2.1 ROOM IDENTIFICATION AND DIRECTIONAL SIGNAGE SYSTEM
2.1.1 Panel Sign Systems
2.1.2 Modular Sign Systems
2.1.3 Standard Room Signs
2.1.3.1 Tactile Letters, Symbols and Braille
2.1.4 Directional Signs
2.1.5 Message Inserts
2.1.6 Type of Mounting for Signs
2.1.7 Character Proportions and Heights
2.2 ROOM IDENTIFICATION SIGN WITH PATIENT INFORMATION
2.2.1 Sign Faces
2.2.2 Sign Backs
2.2.3 Room Identification Tactile Letters
2.2.4 Risk Management Alert Inserts (RM)
2.2.5 Isolation Precaution Signage Inserts (IP)
2.3 STAIR SIGNAGE
2.4 EXIT DOOR TACTILE SIGN
2.5 BUILDING DIRECTORIES
2.5.1 Header Panel
2.5.2 Directory Graphics
2.5.2.1 Orientation Map

2.5.2.2 Monitor Graphic Displan
2.5.2.3 Other Graphics
2.5.3 Doors
2.5.3.1 Door Glazing
2.5.3.2 Door Construction
2.5.3.3 Door Locks
2.5.4 Fabrication
2.5.5 Illuminated Units
2.5.5.1 Construction
2.5.5.2 Message Strips
2.5.6 Non-Illuminated Unit
2.5.6.1 Construction
2.5.6.2 Message Strips
2.5.7 Electronic Directory System
2.5.7.1 Hardware Requirements
2.5.7.2 Accessibility Requirements
2.5.7.3 Wayfinding Requirements
2.5.7.4 Management and Support Requirements
2.6 DOOR TAGS
2.6.1 Engraved Copy
2.7 METAL PLAQUES
2.7.1 Cast Metal Plaques
2.7.1.1 Fabrication
2.7.1.2 Border
2.7.1.3 Finish
2.7.1.4 Mounting
2.7.2 Chemically Etched Metal Plaques
2.7.2.1 Fabrication
2.7.2.2 Finish
2.8 DIMENSIONAL BUILDING LETTERS
2.8.1 Fabrication
2.8.2 Size
2.8.3 Finish
2.8.4 Mounting
2.9 PRESSURE SENSITIVE LETTERS
2.9.1 Fabrication
2.9.2 Size
2.10 MATERIALS
2.10.1 Aluminum Alloy Products
2.10.2 Anodic Coating
2.10.3 Organic Coating
2.10.4 Plastic Laminate Sheet
2.10.5 Fabrication and Manufacture
2.10.5.1 Factory Workmanship
2.10.5.2 Dissimilar Materials
2.10.6 Typeface
2.11 GRAPHICS
2.11.1 Subsurface Copy
2.11.2 First Surface Copy Direct Print (Non-Tactile)
2.11.3 Photopolymer
2.11.4 Engraved Copy
2.11.5 Graphic Blast Raised Copy
2.11.6 [Cast][Fabricated][Solid] Aluminum Letters
2.12 COLOR, FINISH, AND CONTRAST

PART 3 EXECUTION

3.1 PLACEMENT SCHEDULE
3.2 INSTALLATION

3.2.1 Anchorage
3.2.2 Protection and Cleaning

-- End of Section Table of Contents --

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USACE / NAVFAC / AFCEC / NASA	**UFGS-10 14 00.20 (August 2020)**

Preparing Activity: USACE	**Superseding**
	UFGS-10 14 00.20 (August 2017)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021
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SECTION 10 14 00.20

INTERIOR SIGNAGE
08/20

****
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 item(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

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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; Architectural Barriers Act (ARA) Accessibility Guidelines except for Army buildings excluded by TI 800-01 Design Criteria.

Reference UFC 3-120-01 available at Unified Federal Criteria Design: Sign Standard for design, construction and placement of signs.

In combination with this specification, drawings and attachments will include a location plan, 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 must be based on quality, functionality, 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 59 00 SYSTEMS FURNITURE.

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 identifying stairs, when those identification signs are placed at doorways to permanent spaces.

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 UFC 4-510-01 Design: Medical Military Facilities). Room numbering will be consistent throughout the facility. For inpatient medical facilities, rooms with audiovisual nurse call must 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. Symbols are not required to be raised. Recommended symbols include men/women symbol for toilet rooms and showers, men/women symbol with wheel chair for accessible toilets, men/women symbol with key for locker rooms, telephone symbol for public telephone areas, information symbol (?), radiation symbol, biohazard symbol, and the international symbol for accessibility.

3. Arrow placement order on interior signage will comply with UFC 4-510-01 Design: Medical Military Facilities. Left pointing arrows at top of sign, followed by up pointing arrows, then right pointing arrows at bottom of sign. Messages per arrow direction will be organized alphabetically. Example follows:

< EMERGENCY
< Pediatrics
< Radiology
^ 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 203 mm by 203 mm 8 by 8 inch or 229 mm by 229 mm 9 by 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.

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1.1 REFERENCES

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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.

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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	(2015) Pink Sheets: Designations and Chemical Composition Limits for Aluminum Alloys in the Form of Castings & Ingot

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 2604	(2017a) 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	(2015) Safety Glazing Materials Used in

Buildings - Safety Performance Specifications and Methods of Test

AMERICAN WELDING SOCIETY (AWS)

AWS D1.2/D1.2M	(2014; Errata 1 2014; Errata 2 2020) Structural Welding Code - Aluminum

ASTM INTERNATIONAL (ASTM)

ASTM B209	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B209M	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B221M	(2013) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM C1048	(2018) Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass
ASTM D635	(2018) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

INTERNATIONAL CODE COUNCIL (ICC)

ICC A117.1 COMM	(2017) Standard And Commentary Accessible and Usable Buildings and Facilities
ICC/ANSI A117.1	(2009) Accessible and Usable Buildings and Facilities

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3	(2005) Standard for High-Pressure Decorative Laminates

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2020; ERTA 20-1 2020; ERTA 20-2 2020; TIA 20-1; TIA 20-2; TIA 20-3; TIA 20-4) National Electrical Code
NFPA 101	(2021) Life Safety Code

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST SP 800-82	(2015; Rev 2) Guide to Industrial Control Systems (ICS) Security

U.S. DEPARTMENT OF DEFENSE (DOD)

DOD 8510.01	(2014; Change 1-2016; Change 2-2017) Risk Management Framework (RMF) for DoD Information Technology (IT)
DODI 8500.01	(2014) Cybersecurity
UFC 4-010-06	(2016; with Change 1, 2017) Cybersecurity of Facility-Related Control Systems

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 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified 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 Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters 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.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for

Contractor Quality Control approval.][for information only. When used, a code following the "G" classification 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[, [_____]]

SD-03 Product Data

Room Identification And Directional Signage System; G[, [_____]]

Room Identification Sign with Patient Information; G[, [_____]]

Stair Signage; G[, [_____]]

Exit Door Tactile Sign; G[, [_____]]

Building Directories; G[, [_____]]

Door Tags; G[, [_____]]

SD-04 Samples

Interior Signage; G[, [_____]]

Software; G[, [_____]]

Room Identification And Directional Signage System; G[, [_____]]

Room Identification Sign with Patient Information; G[, [_____]]

Stair Signage; G[, [_____]]

Exit Door Tactile Sign; G[, [_____]]

Building Directories; G[, [_____]]

Door Tags; G[, [_____]]

SD-10 Operation and Maintenance Data

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

Protection and Cleaning; G[, [_____]]

[1.3 EXTRA MATERIALS

Provide [_____] extra frames and extra stock of the following: [[_____] blank plates of each color and size for [all sign types included in project][_____].] [[_____] changeable message strips for sign type [_____].] Provide [[_____] paper inserts and [laser print templates to support end-user printing copy] [one][_____] copy of the software for user produced signs and inserts after project completion] [and equipment necessary for removal of signage parts and pieces.]

]1.4 QUALITY ASSURANCE

1.4.1 Samples

Submit interior signage samples of each of the following sign types showing typical quality, workmanship and color: [all sign types included in project] [Room Identification and Directional Signage System] [Room Identification with Patient Information], [Stair Signage], [Exit Door Tactile Sign], [Door Tags], [Building Directories], [Metal Plaques], [Dimensional Building Letters], [Pressure Sensitive Letters]. Approved samples may be installed in the work, provided each sample is identified and location recorded.

1.4.2 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.

1.4.3 Sign Fabricator

Sign Fabricator to follow room number strategies created by designer. The room numbering system to be reviewed and approved by the Contracting Officer and command end users during the shop drawing phase, and prior to fabrication.

1.4.4 Cybersecurity

a. The Risk Management Framework (RMF) is the process by which information systems are accredited for operation by a designated official from the Using Military Department. It is the standard process under which all DoD information systems achieve and maintain their Authority To Operate. The cybersecurity process is documented in DOD 8510.01 and NIST SP 800-82. Refer to UFC 4-010-06 and DODI 8500.01 for additional requirements.

b. All systems that are IP addressable or interface with the Assured Network required certification to operate. Coordinate with the Government to initiate and complete the accreditation process.

c. Cybersecurity requires input from the system vendor or provider and support from the local IMD. The local IMD-IA office is the point of contact for all Cyber Security requirements. The local CMIO is the point of contact for all clinical and functional system requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

Package materials to prevent damage and deterioration during shipment, handling, storage and installation. Deliver products to the jobsite in manufacturer's original packaging and store in a clean, dry area in accordance with manufacturer's instructions.

1.6 WARRANTY

Provide manufacturer's warranty to repair or replace defective interior signage materials and workmanship for a period of [2] [_____] years from date of final acceptance of the work.

PART 2 PRODUCTS

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

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2.1 ROOM IDENTIFICATION AND DIRECTIONAL SIGNAGE SYSTEM

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NOTE: Depending on the complexity of the project consider a modular signage system or a panel sign system. A modular sign system is one comprised of extruded aluminum structural rails and end caps. Each part of the sign is inserted into these rails separately. Modular signs are easily updatable in the field and do not require the whole sign to be removed to make changes. Panel signs are made up of a single backer unit, each portion of the sign is permanently attached to this backer unit. These signs are typically more affordable however any changes to the sign requires that the entire sign is removed and remade, except when using changeable inserts. Coordinate project requirements and specific signage system with user.

For the purpose of this specification, message strips are made of vinyl with applied or direct print characters or messages that slide into the aluminum extrusions of a modular sign. Inserts are paper or acetate that allow ease in changing and updating as required. These inserts are under a non-glare acrylic window.

****

Provide signs, plaques, directories, and dimensional building letters that are standard products of manufacturers 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 letter forms and graphics true and clean.

[2.1.1 Panel Sign Systems

Provide [direct print acrylic with applied [tactile] [second surface] graphics, sign is fabricated of 10 mm 0.375 inch acrylic in two layers with smooth edge conforming to ANSI Z97.1] [decorative laminate face with applied [tactile] graphics, sign is fabricated of a balanced core sandwiched between 0.89 mm 0.035 inch standard grade high pressure laminated faces]. Provide signs that can accept [images] [raised copy and Braille with printable message inserts] [printable message inserts]. Provide paper or acetate inserts with a 2 mm 0.080 inch thick non glare acrylic window to allow sign to be updated.[_____]

][2.1.2 Modular Sign Systems

Provide manufactured pre-engineered component-based sign system,

consisting of a combination of aluminum extrusions and injection molded parts, pre-engineered and designed to create an updatable sign system that allows for easy and inexpensive updates and changes. Provide system with incremental widths and heights that permit the assembly of multiple inserts of variable size to create a single sign. Provide a tamper-resistant sign which requires a special tool to change inserts composed of [extruded aluminum for applied graphics] [rigid plastic for applied graphics] [extruded aluminum with slots for secondary inserts]. [Provide continuous [extruded aluminum] [_____] [[interlocking] [removable]] endcaps in [[square] [radius] [bevel] [contour]][3 mm 1/8 inch][6 mm 1/4 inch] [_____] thick] profile. Sign inserts are required to be [front] [side] loading.

]2.1.3 Standard Room Signs

Provide signs that include tactile letters, symbols and Braille for interior rooms or spaces where the sign is not likely to change over time. Tactile text descriptions are required for pictograms that are provided to identify a permanent room. Examples include interior signs that label restrooms, stairs, room numbers or letters, and room names. These permanent room signs can include paper inserts for updatable information.

2.1.3.1 Tactile Letters, Symbols and Braille

Provide ADA compliant material per 36 CFR 1191 which is raised 0.79 mm 1/32 inch from the first surface, has a minimum 16 mm 5/8 inch in height and is an ADA acceptable font. The color of the tactile letters is required to contrast with the sign face color per ADA standards. The ADA required Braille has a minimum durometer reading of 90. All raised letters, numbers and symbols are to comply.

2.1.4 Directional Signs

Directional signs provide arrows with messages which point to critical destinations such as departments, offices, or other pertinent destinations. These can be a panel sign system with a series of permanently attached messages or a modular system with updatable inserts. Directional signs have header panels with applied or direct print messages.

2.1.5 Message Inserts

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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.

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Provide updatable message inserts covered with a clear matte 0.38 mm 0.015 inch vinyl protective overlay. The insert is [typeset message laser printed on paper card stock] [large format color print on white photo paper] [direct printed clear acetate over large format color print on white photo paper].[Provide[paper and] software with message template for creating text and symbols for computers identified for Government

production of paper inserts after project completion.] Manufacturer is required to offer online ordering capabilities to facilitate and expedite ordering packages of replacement, color-coated paper inserts.[Furnish one [suction][_____] device to assist in removing face sheet.][Provide sliding inserts that slide horizontally exposing different graphic information as identified on the drawings.]

2.1.6 Type of Mounting for Signs

Provide surface mounted signs mounted with [concealed mechanical fastening through the holders] [countersunk mounting holes in plaques and mounting screws]. Secure inserts in holders [with flexible plastic clips] [when captured by side profiles of extruded aluminum holders]. [Mount framed plaques with manufacturer's standard (1/6 inch) 1.59 mm thick closed cell vinyl foam with adhesive backing. Adhesive must be transparent, long aging, high tech formulation on two sides of the vinyl foam. Double-faced tape consisting of acrylic adhesive on polyurethane foam used in conjunction with silicone adhesive [magnetic tape].] Provide signs with aluminum ceiling/projecting mount attachment extrusion to secure to ceiling or wall surface, along with matting ceiling/projecting mount track extrusion for hanging, projecting, and double-sided signs. Provide mounting for ceiling/projecting mount attachment extrusion by mechanical fasteners, selected based on wall or ceiling conditions. Mount track extrusion hinges over width of mount attachment and secured with 3.5 by 0.06 mm (6-32 inch) by 6 mm (1/4 inch) cone point stainless steel set screws.

2.1.7 Character Proportions and Heights

Letters and numbers on signs conform to 36 CFR 1191.

[2.2 ROOM IDENTIFICATION SIGN WITH PATIENT INFORMATION

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NOTE: Maintain this Article if designing a medical facility with in-patient rooms. Use this sign instead of room sign at the entrance to patient rooms.
****

2.2.1 Sign Faces

Provide sign faces of clear acrylic or PETG plastic with 3 mm 0.125 inch thickness minimum, with dimensions of sign face being [manufacturer's standard] [as indicated]. Sign faces can be direct printed and contain two window openings for acrylic inserts; include a space for ADA compliant room tactile and Braille. Sign faces may also have approved printed logos for brand recognition.

2.2.2 Sign Backs

Provide sign backs of acrylic or PETG plastic that is welded to the sign face and has two window openings for inserts. The window openings are minimum 5 mm 0.1875 inch in depth. The dimensions of the sign back are equal to the sign face.

2.2.3 Room Identification Tactile Letters

Provide ADA compliant material per 36 CFR 1191 which is raised 0.79 mm

1/32 inch from the first surface, has a minimum 16 mm 5/8 inch in height and is an ADA acceptable font. The color of the tactile letters is required to contrast with the sign face color per ADA standards. The ADA required Braille has a minimum durometer reading of 90.

2.2.4 Risk Management Alert Inserts (RM)

Provide all signs with RM inserts. The RM inserts are required to fit into one of the two window openings in the sign back and be visible through one of the two window openings of the sign face. The tabs can be in the same position on all the RM inserts and labeled differently.

2.2.5 Isolation Precaution Signage Inserts (IP)

Provide all signs with 5 IP inserts. The IP inserts are required to fit into the larger of the two window openings in the sign back and be visible through the corresponding window opening of the sign face. Stagger the tabs on each of the inserts.

]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. Provide tactile for floor level designation in accordance with ICC A117.1 COMM.

2.4 EXIT DOOR TACTILE SIGN

Provide tactile sign with the message EXIT at each exit door that requires an exit sign to conform with NFPA 101. Sign tactile message is to comply with ICC/ANSI A117.1.

2.5 BUILDING DIRECTORIES

Provide building directories as lobby directories or floor directories, with a changeable directory listing consisting of the areas, which can include departments, offices, personnel and other destinations located within the facility as well as a map with "you are here" locations. Provide dimensions, details, and materials of sign and message content as indicated on the drawings.

2.5.1 Header Panel

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

2.5.2 Directory Graphics

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NOTE: All artwork is the responsibility of the sign fabricator for graphic content and nomenclature. The concept design and final solution will be developed with the Government's review and final approval.

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Provide graphics and text that are first generation from camera ready art.

[2.5.2.1 Orientation Map

Provide a color-coded floor plan graphic outline for each building level. Individual building functions and public accessible departments are identified using a unique color and numerical "address" number. Building and department names are tied to the floor plan's numerical address.

][2.5.2.2 Monitor Graphic Displan

The orientation map for each level of the building is displayed at all times, along with the Department listing of names. The Government will verify their preference to list the names in alphabetical order, followed by the plan "address", or an alternate sequence.

][2.5.2.3 Other Graphics

Graphic artwork is used to indicate the location of elevators, stairways, public restrooms, and information stations. Graphic artwork includes the macro-wayfinding terminology and locations, i.e. 1A, 1B, 2A, & 2B, or alternate language developed by the Government for wayfinding destinations.

]2.5.3 Doors

2.5.3.1 Door Glazing

Provide door glazing with 6 mm 1/4 inch thick polished [clear] [tinted] glass, fully tempered in accordance with ASTM C1048 (Kind FT) and ANSI Z97.1.

2.5.3.2 Door Construction

Provide extruded aluminum door frame of same finish as surrounding frame; mitered corners [, welded], and assembled with concealed fasteners. Provide continuous concealed hinges in [finish to match frames and trim] [stainless steel]. Set glazing in frame with clear silicone adhesive.

2.5.3.3 Door Locks

Provide manufacturer's standard door locks; keyed alike. Provide two sets of keys.

2.5.4 Fabrication

Provide extruded aluminum frames and trim with welded corners and mitered to a hairline fit, with no exposed fasteners.

2.5.5 Illuminated Units

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

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Provide illuminated directory units with concealed internal [top] [back] lighting with [LED] [_____] light source, internal wiring, and lead at

wire for connection. [Units using LED light sources shall have integral LED drivers. Units with remote LED drivers are not acceptable.] Electrical work complies with NFPA 70; UL or FM listed. Directory consists of [backlit photo negative directory strips and a black background.][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] [updatable photo paper insert, printed and laminated] [changeable aluminum bands, painted and direct printed] [changeable aluminum insert slots that accept a user-printed cardstock insert]. Design of unit as indicated on the drawings. Provide unit with tinted [tempered safety solar glass][_____] door.

2.5.5.1 Construction

The directory is [25][51][102] mm [1][2][4][_____] inch[es] deep frame constructed of [aluminum with [[satin [black][painted][dark bronze]][natural satin] [_____] anodized finish]] [_____] [wood with [natural] [stained] finish]. Unit is [[semi][fully] recessed][surface][_____] mounted. Unit has a [76][_____] mm [3][_____] inch header size and lettering as shown. Unit has a [10][_____] mm [3/8][_____] inch face door frame with concealed hinges and locking system or other secure method. Door frame matches [directory material and finish][_____].

2.5.5.2 Message Strips

Message strips are [photo negative type updatable photo paper by user][sized in accordance with manufacturer's standard][as indicated on the drawings][_____]. Provide letters and numbers in accordance with the drawings.

2.5.6 Non-Illuminated Unit

Directory consists 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][updatable photo paper insert, printed and laminated] [changeable aluminum bands, painted and direct printed] [changeable aluminum insert slots that accept a user-printed cardstock insert]. Design of unit as indicated on the drawings.

2.5.6.1 Construction

The directory is [25][51][102] mm [1][2][4][_____] inch[es] deep frame constructed of [aluminum with [[satin [black][painted][dark bronze]][natural satin] [_____] anodized finish]] [_____] [wood with [natural] [stained] finish]. Unit is [[semi][fully] recessed][surface][_____] mounted. Unit has a [76][_____] mm [3][_____] inch header size and lettering as shown. Unit has a [10][_____] mm [3/8][_____] inch face door frame with concealed hinges and locking system or other secure method. Door frame matches [directory material and finish][_____].

2.5.6.2 Message Strips

Message strips are [updatable by user][sized in accordance with manufacturer's standard][as indicated on the drawings][_____]. Provide letters and numbers in accordance with the drawings.

2.5.7 Electronic Directory System

****
NOTE: The electronic directory system is a limited usage item and must be fully justified prior to being specified. Coordinate power and data requirements with electrical drawings. When system is integrated into building or other electronic controls, coordinate with the requirements of UFC 4-010-06 CYBERSECURITY OF FACILITY-RELATED CONTROL SYSTEMS and include the appropriate, edited Division 25 INTEGRATED AUTOMATION UFGS sections in the project.
****

Coordinate electronic directory system requirements with Division 25 INTEGRATED AUTOMATION UFGSs. Provide [non-interactive][interactive] electronic directory. Provide electronic directory system as a complete turnkey system consisting of digital display, hardware, software connected through the local area network (LAN) to a [server][cloud]. Electrical equipment is UL listed and complies with NFPA 70. Unit is [free-standing][wall mounted].

2.5.7.1 Hardware Requirements

Provide hardware as standard products of manufacturers regularly engaged in the production of electronic directory and digital wayfinding solutions. Hardware is [surface-mounted], [recessed], [free-standing kiosk] or [component system with mounting bracket]. [Landscape] [Portrait] orientation. Provide commercial grade, HD or UHD resolution flat panel LCD monitors. Provide commercial grade touch interfaces that can be serviced independently of the monitor itself. Enclosures and kiosks fabricated in a US based facility.

2.5.7.2 Accessibility Requirements

Provide an electronic display [with interactivity] that meets the following ADA requirements: Directory does not protrude more than 102 mm 4 inches from the wall, maintains a maximum touchable height of 1219 mm 48 inches with a reach of 254 mm 10 inches installed at a minimum of 686 mm 27 inches off the floor, and supports ADA compliance for hearing impaired by providing text based or video based messaging for any calling functionality.

2.5.7.3 Wayfinding Requirements

Provide mapping with animated wayfinding capable of sending maps digitally to users via SMS or QR codes.

2.5.7.4 Management and Support Requirements

All management of the digital directory is provided centrally through a password authenticated server. All listings and content must be backed up

to a secondary or "cloud-based" location for redundancy. Providers of directory solutions must be capable of offering full initial input of tenant data, creation of all wayfinding maps, and any modifications to design through service or support offers.

****

NOTE: The comprehensive sign documents include a "Door Tag"sign type that reflects the architectural floor plan room number. These signs are used by facilities for reference to system schedules and are not for public wayfinding purpose.

****

2.6 DOOR TAGS

Provide one door tag plate for each room entry door. In size [as indicated on drawings][_____]. Provide room number [to match architectural floor plan room number][as determined by Contracting Officer].

2.6.1 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 is three-ply lamination contrasting color core meeting ASTM D635.

2.7 METAL PLAQUES

2.7.1 Cast Metal Plaques

2.7.1.1 Fabrication

Provide cast metal plaques with the logo, emblem and artwork cast in the [bas relief] [flat relief] [_____] technique; fabricated from [prime aluminum] [bronze] [brass] [_____].

2.7.1.2 Border

Border is [flat band][single line][straight edge][single line bevel][double line][bevel][custom ornamental][_____].

2.7.1.3 Finish

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

2.7.1.4 Mounting

Provide [concealed] [rosettes and anchors] [rosettes and toggle bolts] [_____] mounting.

2.7.2 Chemically Etched Metal Plaques

2.7.2.1 Fabrication

Plaque is chemically etched one-piece or photochemically engraved metal sheet or plate [aluminum][stainless steel][brass][commercial bronze][zinc][magnesium][_____] [0.81][1.63][3][6][_____] mm [0.032][0.064][0.125][0.250][_____] inch thick.

2.7.2.2 Finish

[Single-etched raised areas are [gold-tone] [silver-tone] [bronze-tone] finish and recessed areas are color filled.] [Double-etched raised areas are [gold-tone] [silver-tone] and recessed textured areas are [gold-tone] [silver-tone] color filled.]

2.8 DIMENSIONAL BUILDING LETTERS

****

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

****

2.8.1 Fabrication

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

2.8.2 Size

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

2.8.3 Finish

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

2.8.4 Mounting

[Threaded studs][Steel U-bracket, cap screws, and expansion bolts][concealed screw through structural rail] of number and size recommended by manufacturer; concealed anchorage. Letters which project from the mounting surface have [stud spacer sleeves] [_____]. Letters, studs, and sleeves are of the same material. Supply templates for mounting.

2.9 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.

****

2.9.1 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.

2.9.2 Size

Letter size: [as indicated][_____].

2.10 MATERIALS

2.10.1 Aluminum Alloy Products

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

2.10.2 Anodic Coating

Anodized finish conforms 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.]

2.10.3 Organic Coating

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

2.10.4 Plastic Laminate Sheet

ANSI/NEMA LD 3, general purpose HGS grade, 1.22 mm 0.048 inch nominal thickness.

2.10.5 Fabrication and Manufacture

2.10.5.1 Factory Workmanship

Holes for bolts and screws are drilled or punched. Drilling and punching produces clean, true lines and surfaces. Exposed surfaces of work have a smooth finish; exposed riveting is flush. Conceal fastenings where practicable.

2.10.5.2 Dissimilar Materials

Where dissimilar metals are in contact, protect surfaces prevent galvanic or corrosive action.

2.10.6 Typeface

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

2.11 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 direct print first surface copy method is generally used for mass produced signs. Surface applied graphics that can be easily picked off or peeled will not be accepted.
****

Provide signage graphics for modular signs to the following:

[2.11.1 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.

][2.11.2 First Surface Copy Direct Print (Non-Tactile)

Message may be applied to panel using a direct print process. Original art is defined as artwork that is a first generation reproduction of the specified art. Provide clean edges and corners.

][2.11.3 Photopolymer

Integral graphics and Braille achieved by photomechanical stratification processes. Provide photopolymer used for ADA compliant graphics of the type that has a minimum durometer reading of 90. Tactile graphics are raised 0.79 mm 1/32 inch from the first surface of plaque by photomechanical stratification process.

][2.11.4 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 is three-ply lamination contrasting color core meeting ASTM D635.

][2.11.5 Graphic Blast Raised Copy

Background is sandblasted to a uniform depth of 0.79 mm 1/32 inch leaving raised text and Braille. Background is factory-finished with polyurethane paint.

][2.11.6 [Cast][Fabricated][Solid] Aluminum Letters

Provide [3][6][_____] mm [1/8][1/4][_____] inch thick and fasten to the message panel with concealed fasteners.

]2.12 COLOR, FINISH, AND CONTRAST

****

NOTE: Editing of color reference sentence(s) must be coordinated with the Government. Generally, Section 09 06 00 SCHEDULES FOR FINISHES or drawing is used when the project is designed by an architect or interior designer. Color must be selected from manufacturers' standard colors or identified as a manufacturers' standard color 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 must 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.

When a manufacturer's name, stock number, pattern, and color is used, be certain that the product conforms to this specification, as edited.

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

****

Provide color [as specified in Section 09 06 00 SCHEDULES FOR FINISHES] [as indicated; colors listed are not intended to limit the selection of equal colors from other manufacturers]. Finish of eggshell, matte, or other non-glare finish for all signs as required in handicapped-accessible buildings.

PART 3 EXECUTION

[3.1 PLACEMENT SCHEDULE

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

]3.2 INSTALLATION

Install signs plumb and true and in accordance with approved

manufacturer's instructions at locations shown on the [detail drawings] [schedule below] [attachments]. Submit operating instructions outlining the step-by-step procedures required for system operation. The instructions 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. Provide each set permanently bound with a hard cover. The following identification must be inscribed on the covers: "OPERATING AND MAINTENANCE INSTRUCTIONS", name and location of the facility, name of the Contractor, and contract number. Submit in accordance with Section 01 78 23 OPERATING AND MAINTENANCE DATA. Mounting height and mounting location complies with 36 CFR 1191. Install required blocking. Do not install signs on doors or other surfaces until finishes on such surfaces have been installed. Signs installed on glass surfaces are installed with matching blank back-up plates in accordance with manufacturer's instructions. [Provide illuminated signage in conformance with the requirements of Section 26 51 00 INTERIOR LIGHTING.]

Do not install items that show visual evidence of biological growth.

3.2.1 Anchorage

Provide anchorage in accordance with approved manufacturer's instructions. Anchorage not otherwise specified or shown includes 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. Provide exposed anchor and fastener materials compatible with metal to which applied with matching color and finish.

a. Signs mounted to painted gypsum board surfaces must be removable for painting maintenance.

b. Mount signs 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.

e. Install signs to workstation panels with panel clips.

3.2.2 Protection and Cleaning

Protect the work against damage during construction. Adjust hardware and electrical equipment for proper operation. Clean glass, frames, and other sign surfaces at completion of signage installation in accordance with the manufacturer's written instructions.

-- End of Section --