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Introduction

The University of Minnesota recognized the importance of coordinating and standardizing the interior and exterior signing throughout the Twin Cities and Coordinate Campuses, when the first signing standards developed in 1977.

Today the value of this area of design continues to be accepted as an essential component of facility planning and design.

Specifically the goals of the signing standards are:

To provide a system of visual orientation for students, faculty, staff and visitors to the University.

To provide consistency in design and quality from building to building.

To provide consistent design framework that departments must use in executing their identification needs.

To lend efficiencies in expediting signing programs through Facilities Management Systems Support.

It is recognized that these signing standards address only those items that are consistently used on a campus-wide basis. The need for non-standard and specialized signing applications will always exist. For these situations, the signing standards can also provide a guideline for the development of adjunct signing components.

The signing standards are therefore planned to be continually monitored and updated, allowing them to change with new developments in manufacturing techniques, building codes and design trends. Changes and modifications to these standards are reviewed and recommended by Facilities Management.

How To Use This Manual

Signs are an essential element in directing people to and identifying their destinations. An effective sign system succeeds in this. Effective signs rely on visibility, readability, noticability and legibility. Specifying properly sized and located signs as well as editing your messages for clarity, greatly increase the effectiveness of your signage.

Identifying the purpose of individual signs and determining whether or not the sign is affected by the 1992 Americans with Disabilities Act (ADA) guidelines are two of perhaps the most common questions concerning signs.

Signs can inform, direct, identify and regulate. Once the purpose of the sign has been determined refer to the table of contents to find the appropriate sign type. The specifics accompanying each sign type will help to define the proper sign type for each need.

An important concept in sign system planning is that the quantity of text to be displayed should not exclusively dictate the size of the sign. Rather, signs with like messages should be grouped, a common size module selected, and the resulting sign type used consistently, regardless of the variation in individual text quantity.

To provide flexibility in developing informational signing, a group of generic modules are included within the collection.

The Sign System

The Signage System for the University of Minnesota consists of the following:

Interior Sign System

Identification Signs

Permanent

- Suite/Room
- Specialty Classrooms
- Auditoriums
- Misc
- Facilities

- Restrooms

- Misc

Temporary

- Suites/Room
- Offices
- Multi-use Rooms

Direction/Wayfinding Signs

- Overhead

- Wall Mounted

Information Signs

- Directories

- Misc (hours, instructions, etc.)

Regulatory/Life Safety Signs

- Accessible

- Code Signs (fire, elevator)

Exterior Sign System

Identification Signs

- Campus

- Building

Direction

- Pedestrian

- Vehicular

Information Signs

- Parking

- Misc (hours, instructions, etc.)

Regulatory

- Accessible

- Traffic Control

- Parking

There is an inter-relatedness in graphic format and configuration. These consistencies promote a graphic image that becomes recognizable from building to building and throughout the campus. It is this familiarity that assists the viewer in obtaining information quickly and in orderly progression.

ADA Guidelines

The Americans With Disabilities Act went into effect on January 26, 1992. A landmark civil rights law that entitles disabled people to the same rights and access as other Americans, but affects us all. Signage guidelines have been established as a result of this law, an outline of which has been compiled here.

Signs Which Must Comply

In general, signs which designate permanent rooms and spaces and signs which provide direction or information about functional spaces of the building are affected by the ADA guidelines. Specific examples are listed below as a guide to help determine whether or not a specific sign must be compliant.

Interior Sign System

Identification Signs

Permanent spaces require signs that have a tactile message and accompanying Grade 2 braille. When identifying a permanent facility such as a restroom, a pictogram must appear in addition to the message to identify whether or not the space is accessible. Non-permanent spaces do not require tactile messages. However, it is University of Minnesota policy to identify these spaces with a tactile suite number.

Direction/Wayfinding Signs

Overhead/protruding direction signs require a minimum character height of 3" Lower case can be used and braille characters are not required. Overhead and right angle signs must allow minimum clear headroom of 80". Wall mounted direction signs must comply

with character proportion, height, finish and contrast guidelines. Lowercase is acceptable and braille is not required.

Information Signs

Directories and miscellaneous information signs, as a rule, are not affected by ADA guidelines.

Regulatory/Fire Safety Signs

The International Symbol of Accessibility shall appear on all accessible facilities (restrooms, auditoriums, etc.) and should mark the accessible path to those facilities if not readily evident.

Accessibility/Exterior Signs

Signing of facilities that are only partly accessible, as well as elements and spaces of accessible facilities (accessible by disabled persons) which shall be identified by International Symbol's of Accessibility (appropriate pictograms such as wheelchair, TDD symbol etc.) are:

- Parking spaces designed as reserved for individuals with disabilities.
- Accessible passenger loading zones.
- Accessible entrances when not all are accessible.

(Note : inaccessible restrooms, lockers & entrances to facilities shall have directional signage to indicated the route to the nearest accessible entrance. For inaccessible exterior entrances see sign types EXE 5-7).

General Specifications

Interior Sign System

Raised Characters:

Letters and numbers shall be raised a minimum of 1/32", upper case, san serif or simple serif typestyle.

Raised characters must be 5/8" high but not more than 2" high.

An eggshell or matte finish is recommended.

Character proportions shall have a height to width ratio between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10.

Contrast between characters and background must be at least 70% (Contrast = $[B1-B2]/B1 \times 100$ where B1=light reflectance value (LRV) of the darker area.

Braille Characters:

Must be Grade 2. Standard dimensions for literary braille are:

Dot Diameter (.059")

Interdot Spacing (.090")

Horizontal separation between cells (.395")

Pictograms:

Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram.

The border dimension of the pictogram shall be 6" minimum in height.

Any descriptive or braille translation must not be within the 6" pictogram field. Pictograms need not be raised.

Interior Sign System

Overhead or Protruding Signs

All overhead signs must be mounted at least 80" from the bottom of sign to the floor.

Wall Mounted Signs

They must be mounted 60 inches from the floor to the center of the sign, on the wall adjacent to the latch side of the door. When there is no wall adjacent to the latch side of the door, or in the case of double doors, the signs are to be placed on the nearest adjacent wall. People reading the sign must be able to stand within 3 inches of it without hitting anything or coming within the swing of the door.

(The University of Minnesota, because of the large variety of sign sizes and shapes, recommends a consistent mounting height of 66 inches from the floor to the top of the sign. This effectively puts the message at a consistent height and contributes to the uniform appearance of signs in a corridor.

(Note: Large signs and directories are to be located individually based on existing conditions.)

General Specifications

GENERAL

- A) The requested work will be expected to comply with all Federal and State laws, codes and regulations, and all municipal ordinances or regulations in effect at the time the work is to be performed.
- B) Materials listed shall be new, free from defects impairing strength, durability or appearance.

MATERIALS

A) Metals

1. Thickness, size, type and seam placement as specified on drawings.
2. Steel sheet must be paint-lock or galvanized. All edges of metal or aluminum shall be cut to a continuous sharp even line and finish sanded smooth.
3. Aluminum sheet to be #5052 alloy.
4. All seams to be straight and symmetrical.

B) Fastenings

1. All screws, nuts, bolts and fastening devices shall be of aluminum, stainless steel or cadmium plated non-corrosive material.
2. All anchorage and fastenings of miscellaneous metal items shall be structurally adequate and finished to match surface.

C) Electrical

1. Electrical parts and materials shall be in accordance with national electrical codes, applicable local codes, and the requirements of the Under Writers Laboratory, Inc., and should be so labeled.
2. Suitable and approved disconnect switches shall be provided under this work. Location shall be as inconspicuous as possible and approved by the U of M or designee.
3. Electrical service will be provided as specified under Electrical Section to the points and at the voltage shown on the Electrical Drawings. Extensions of wiring, conduit and transformation of voltages, if required, and final connections shall be a part of the section. Verify exact location of existing stubs and junction boxes, by reference to drawings and site constructions.
4. All signs shall provide an evenly distributed lighted surface equal to an intensity hereinafter specified. All of lighted letters shall be of equal intensity and shall be the same as all other letters in each sign.
5. All electrical parts shall be new and free of defects.

6. Signs shall be complete with all necessary lamps, tubes, ballasts, transformers, sockets and internal wiring as required for complete operable units.
7. All light sources shall be of outdoor type: all ballasts to be 800 Ma. outdoor type rated for -20 F. Transformers to be 30 Ma. or 60 Ma. outdoor type as specified on drawings.

D) Plastics

- 1 Thickness, color, size, seam placement and brand name as specified on attached drawings.
2. Embossed or flat sheet plastic shall be free of wrinkles or imperfections from forming or fabrication. All surfaces shall be free of scratches, marring and be clean and polished per manufacturer's instruction.
3. Depth of pillowed faces, seam construction and seam placement as required per attached drawings.

E) Flexible Materials

1. Thickness, color, size, seam placement and brand name as specified on attached drawings.
2. All fastening devices to meet dealer recommendations. Seam placement to be straight and symmetrical

F) Coatings and Finishes

1. All aluminum, metal and fasteners shall be finish coated with an appropriate primer and color coat with corrosion inhibitors guaranteed for four (4) years against fading, chipping, cracking, peeling and discoloration. Color as required per specification drawings.
2. All flexible face coatings shall be guaranteed for (8) years against fading, discoloration and mildew.
3. All holes, penetrations and cut edges of prefinished metals and aluminum must be free of burrs, primed and painted to maintain a corrosion proof finish.

G) Miscellaneous Materials

1. Hardware - Any metal devices used for contraction not previously covered shall be of a stainless steel, aluminum, or steel with galvanized coating.
2. Wood, Alucobond, fiberglass, brick, stainless steel or any other material must be of top grade quality as required on drawings.

General Specifications

LABOR

A) General

Any work required under this section that is not described in detail shall be constructed in accordance with approval shop drawings.

B) Accuracy of Work

All work shall be fabricated and erected square, plumb, straight and true. Cut-out letters, numbers and images shall be cut to continuous, sharp even line of profile as indicated on drawings. Provide all supporting and anchoring means as required for proper installation.

All curved areas to be true, no kinks or creases, oil-canning or dimpling will be accepted.

C) Material Thickness

Sheet materials and sampling shapes shall be of thickness recommended by sign fabricator to produce straight or evenly curved surfaces, free from waviness, wrinkles or other deformation except as otherwise herein specified or indicated on the drawings.

D) Exposed Metal Surfaces

Exposed metal surfaces shall be reinforced, braced and securely fastened to provide rigid assembly. Sign faces shall be free of all holes except those required to install letters or weepholes. Service access doors shall be concealed wherever possible. Flush-butt locked seams and fillers shall be metal screwed and bolted on filler edges to provide smooth faces free of unsightly rivets. All steel items exposed to the weather and all other steel items as indicated or specified shall be galvanized or ground and painted with zinc-chromate primer and finish coat.

E) Exposed Joints

Exposed joints shall be continuously welded, ground and polished smooth and shall not be visible. Mitered corners shall be snug, neat and tight fitting in an even, smooth plane.

F) Exterior Cabinets and Frames

Exterior cabinets and shall be fastened with stainless steel screws, Phillip type flat head countersink, or nuts and bolts as indicated. The inside of exterior signs shall be rainproof. Signs shall be provided with weep-holes in bottom edging, of sufficient size to allow full drainage of any condensate moisture collected in sign.

G) Aluminum In Contact With Ferrous Metals

Aluminum in contact with ferrous metals shall be separated with a heavy coating of bitumastic paint or sheet neoprene.

H) Accessories, Anchorage, Mounting Devices and Spacers

Accessories, anchorage, mounting devices and spacers shall be guaranteed non-staining to adjacent walls and sign finished for a period of five years from final acceptance.

Ferrous mountings may be sleeved with non-ferrous metal covers matching adjacent finishes, cemented on with non-hydroscopic glue, or other suitable protective measure may be proposed to comply with this guarantee.

Installation

All signs shall be in place as indicated on the drawings or where directed by the U of M or designee. Signs shall be secured with studs, toggle bolts, expansion bolts, or methods as approved on shop drawings specified hereinafter and of sizes required to assure rigid attachment. Survey of ground conditions related to soil content, density and compaction are the responsibility of the installer prior to submitting bid. Removal and/or replacement of asphalt, concrete, existing footings and poles are the responsibility of the installer unless otherwise specified in drawings.

Shop Drawings, if requested, for Changes or Alternates

Three (3) copies of shop drawings indicating changes or alienates in detail shall be submitted to the U of M or designee. Approval of shop drawings shall be required before any work under this section has begun.

Samples

Furnish the U of M or designee samples of the finish materials. Colors to match color samples or standard color system code furnished by U of M or designee. All colors shall be as directed by the U of M or designee.

Guarantee and Service

Contractor shall furnish a written guarantee to the effect that all material and work furnished under this section is guaranteed for one (1) year to be free from defects and faulty workmanship, and that any defective material or work shall be promptly repaired or replaced without additional cost to the U of M or designee. Contractor shall, during the first year of operation, fully maintain and service the signs, making regular inspections, and servicing and replacing tubes and electrical equipment as may be necessary to maintain the signs in operation without additional cost to the U of M or designee. Any guarantees for additional time or services as required in other sections of this document or as noted on specifications are to be in addition to this section.

Protection

All exposed surfaces shall be protected until final acceptance of the work in a manner sufficient to prevent damage or discoloration. Any work damaged or discolored in any way before final acceptance of the work shall be replaced without additional cost to the U of M or designee.

Clean-Up

During the process of the work, the premises shall be kept reasonably free of all debris and waste materials resulting from the work under this section. Upon completion and before final acceptance of work, all debris, rubbish, leftover materials, tools and equipment shall be removed from the site.

Final Cleaning

Final cleaning of all surfaces shall be carefully done strictly in accordance with the manufacturer's instructions.

Date: 6-30-92
Revisions:

Design Criteria • Graphic Techniques

The method of graphic application should be determined by the particular sign type, its location, and the potential for adjusting the text on the sign following installation. A number of graphic application techniques are available for use, including the following methods:

Silkscreening

Copy is generated from photo-set originals. Use of handcut screens is not acceptable, with the exception of large-scale custom letterforms. Screen ink may be either surface or sub-surface applied. Sub-surface screening provides a vandal-proof application, but is not changeable and should be considered only for permanent application. Surface-screened copy will allow for removal and reapplication, but is not resistant to abuse. Screened copy represents an economy when multiple occurrences of the same sign are required.

Pressure Sensitive Vinyl Graphics

Copy is computer generated and cut and provides an excellent means for graphic representation. Accuracy in letterform, the ability to modify height, proportion and spacing, color selection and ease of application account for the popularity of this graphic method.

Surface applied, the lettering is readily changeable; this flexibility also renders the sign prone to abuse and vandalism. It is necessary to assess the vulnerability of locations when specifying surface applied lettering. Vinyl lettering may also be utilized in a sub-surface application but in doing so, it is non-changeable.

Engraved Lettering

Engraved graphics are suitable for small texts and for those applications where vandalism is a concern. Like sub-surface applications, engraved graphics must be considered permanent.

Note: Engraved lettering does not conform to ADA guidelines for tactile graphics.

Reverse Engraving (ADA)

In this process, manufacturers apply adhesive-backed plastic to a substrate, engrave around the letters then remove the background. This process has the advantage of using acrylic as a substrate, allowing a more cohesive sign system when combined with existing acrylic signs.

Etched Tactile/Braille (ADA)

Etching, sandblasting or otherwise removing the background is another way to produce tactile signs. In this process, camera ready art is reproduced on a photosensitive surface by exposure to light. The background is then washed away with acids, water or alcohol. Because the original is made photographically, this system has the advantage of being able to match silkscreened letterforms and logos very accurately.

Raster & Embossed Braille

To produce above surface Braille two methods are commonly used. One uses small rasters (spheres) placed in precisely drilled holes. The other embosses Braille in formable materials such as thin polycarbonate.

Design Criteria • Coloration/Materials

Coloration

Field /Background Color
 Interior Dark Bronze
 Spray Lay #313
 or equivalent
 Exterior Dark Bronze
 US Paints #H6013
 or equivalent

Copy
 Tactile White Stock
 Silkscreen White Enamel

Vinyl White
 3M Scotchal 7725-10
 or equivalent
 Reflective White
 3M Scotchlite 5 1 0-10
 or equivalent

Reveal Burgundy Vinyl
 3M Scotchal 7728-58
 or equivalent

University Wordmark
 Field: Burgundy to match PMS #209C
 Wordmark: White Vinyl or silkscreen

Materials

Fabrication Materials
 Aluminum 5052 alloy
 Acrylic
 Clear 1/16" - Plexiglas non-glare
 or equivalent
 1/8" Plexiglas P-95
 or equivalent
 White Plexiglass 7420 (matte)
 or equivalent
 Black Plexiglas 2025 (gloss)
 or equivalent

Installation Materials
 Foam Tape
 1/16" black 3M #4016
 or equivalent

Options for Design

Sign sizes, layouts and formats have been carefully determined to meet existing codes, guidelines and to form a visually cohesive sign system.

Special requirements may require color coding of the reveals or an alternate field and copy color. Alternate color schemes are possible only with approval from University of Minnesota Facilities Management.

Design Criteria • Interline Spacing and Margins

When one subject continues on two or more lines of a sign the interline spacing should be 35% from baseline to baseline. If the subjects are different 100% spacing should be applied.

Design Criteria • Letterstyle

ADA requires all upper case on any sign designated as identifying a permanent space. This includes any permanent suite or room non-ADA signs are to use a mix of upper and lower case characters.

All upper case may be used for titles and/or where a word or phrase must be emphasized. The initial word of a sentence or title is to be capitalized.

Letterstyle • Helvetica Regular

Helvetica Regular is the letterstyle designated as the University Standard. The alphabet is shown below:

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890.,?!&\$%#/_()

Letterstyle • Helvetica Medium

Helvetica Medium letterstyle may be introduced on a limited basis for emphasizing portions of text. The alphabet is shown below:

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890.,?!&\$%#/_()

Note:

When producing reverse engraved signs utilizing Helvetica family typefaces, it may be necessary to individually digitize the letterforms to ensure correct proportioning and stroke width.

Design Criteria • Letter Sizing

Letter size is dependent upon a number of factors:

Viewing distance

Letter contrast with background color.

Lighting conditions in the area the sign is to be located.

The following matrices shall be utilized in determining sign and letter size.

Viewing Distances

Listed are the MAXIMUM viewing distance for the various letter heights.

Height of Letters Inches	Viewing Distance Feet	
-----------------------------	--------------------------	--

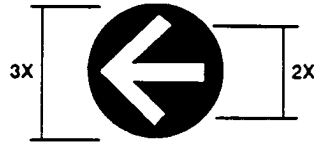
12	400	525
10	350	450
8	275	350
6	240	300
5	200	250
4-1/2	150	200
4	120	150
3-1/2	105	120
3	90	100
2-1/2	75	90
2	60	75
1-1/2	40	60
1	30	40
3/4	20	30
1/2	10	20
1/4	less than 10	

Sizing Matrix

Listed are the number of characters and spaces PER LINE for various letter heights and sign lengths.

Height of Letters (inches)	Sign Length (inches)							
	8	12	16	24	30	36	42	48
1/2	15							
5/8	13	25						
3/4	11	22						
1	8	18	24	35				
1-1/4		14	20	28				
1-1/2		11	16	22	28	32		
1-3/4			13	19	23	27		
2			11	18	20	22		
2-1/2				13	15	18	22	26
3				10	13	15	18	20

Design Criteria • Arrows & Symbols



Men & Women (DOT)



International Symbol of Access



Volume Control Phones



International TDD Symbol



International Symbol of Access for Hearing Loss



Fire Extinguisher



Fire Emergency Symbol

Arrows

The standard arrow is a square tip arrow and is reversed out of a circular field as shown. The arrow is to be justified left and precede the copy to which it applies.

Restroom Symbols

The men and women symbols are standard DOT symbols and should be accompanied by the international symbol of access if appropriate. Symbol must be in a field of at least 6" and separate from accompanying text.

ADA Symbols

The International Symbol of Access should appear at all building entrances, restrooms, & areas of refuge that are accessible to the physically disabled. There is no size restriction but it is recommended that the symbol be large enough to be identified from a decision point. The International Symbol of Access should not be used with the "No" Symbol (Circle with slash through it) when indicating non-accessible areas and should always face to the right.

Miscellaneous Symbols

The Volume Control Telephone, TDD and Assistive Listening System identify locations where telephones have been adapted for the use of persons with hearing impairments. Other miscellaneous symbols are visual clues to assist in wayfinding and identification.

Design Criteria • Installation Methods

The appropriate method is dependent upon:

- Sign Type
- Wall Surface
- Aesthetic Considerations
- Need for Permanence

Silastic Adhesive

Silicone adhesive provides a permanent bond between wall surfaces. Removal will damage wall surfaces and should only be employed in instances where security is a concern or the texture of the wall surface will not permit foam tape mounting.

Foam Tape Mounting with Mechanical Mount

This installation method is employed in instances where the mounting surface is not conducive to the use of tape or silastic adhesive. Here, an undersized backplate is mechanically anchored to the wall surface with the sign plaque then foam taped on the backer plate. Silicone adhesive may also be used.

Velcro Mounting

Velcro material is applied to small sign plaques for attachment to fabric surfaces such as modular wall panels. Fabric texture will determine the suitability of this mounting method.

Permanent Installation

Permanence may be achieved by using mechanical mounting using tamper proof screws. (see individual sip layouts for details)

Design Criteria • Use of University Wordmark

The University identification symbol developed by the University of Minnesota as part of a campus-wide identity program.

A copyrighted trademark for the University controlled by a separate group of guidelines monitored by University Relations.

A modified Times-Roman letterstyle is available for use in both one- and two-line formats.

Use should be limited to original art in order to maintain accuracy in its reproduction.

The use of the Wordmark in campus signing is reserved for:

Instances where it is appropriate to provide a broad based reference to the University of Minnesota.

Use in conjunction with other titles, but may not be merged within bodies of text, or modified from its standard form.

Campus Identification, vehicular identification and in interior signing where the University of Minnesota is used as a stand-alone title.

University Wordmark
Single line delineation

UNIVERSITY OF MINNESOTA

University Wordmark
Double line delineation
Left Justification

UNIVERSITY
OF MINNESOTA

University Wordmark
Double line delineation
Center Justification

UNIVERSITY
OF MINNESOTA