DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington, DC 20314-1000

CECW

*EP 310-1-6a
Change 2

Pamphlet
No. 310-1-6a

1 May 2019

Project Operation
SIGN STANDARDS MANUAL, VOL 1

1. This Change 2 to Pamphlet 310-1-6a, 01 June 2006, aligns the guidance on posting warning signs for overhead power lines with requirements set in ER 1110-2-4401.

2. Make the following change:

   a. *Remove* page 7-37 and *insert* new page 7-37.

3. This change references *ER 1110-2-4401 (Engineering and Design Clearances for Electric Power Supply Lines and Communication Lines over Reservoirs) for specific guidance on minimum vertical clearances, sag heights, and the reference to pool elevation when determining sign placement.*

FOR THE COMMANDER:

KIRK E. GIBBS
COL, EN
Chief of Staff

It is the responsibility of the U.S. Army Corps of Engineers to provide appropriate signs and markers at each project to guide, inform, and protect visitors and employees.

This manual has been prepared as part of the Corps Graphic Standards Program and is intended to:

- Develop a sign standard for the Corps.
- Establish standard guidelines for all signage including: planning, use, placement, materials, and maintenance.
- Define the design standard for each category of signs.
- Catalog all standard signs with specifications for procurement.

The purpose of this manual is to provide guidance for effective management of the Corps sign program. Through successful management, the goals of signage are to:

- Deliver a readable and understandable message to the intended viewer.
- Establish a cohesive and distinctive image for all Corps signs. This image is like a corporate "brand" that requires strategic and long-term management similar to any other asset owned by the Corps.
- Establish visual and verbal consistency for signs at each project.
- Increase effectiveness of project management.
- Maximize the effectiveness of each individual sign and the collective statement of all signs placed at a project.
- Reduce overall procurement and maintenance costs.

The effective use of signs is an integral part of project management. Both Corps policy and individual project requirements must be satisfied. This manual has been designed to provide the tools necessary to implement the Corps sign program. It sets forth basic principles that govern the design of all signs. It outlines the process by which a comprehensive sign plan is developed: determining the need for new or replacement signs as well as evaluating the effectiveness of existing signs. This manual also provides information on procurement, fabrication, installation, and maintenance of signs.

Where appropriate, this manual incorporates excerpts from existing sign manuals, including: the Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices* for highway signs, and the U.S. Coast Guard (USCG) U.S. Aids to Navigation System.

The manual has been organized into three basic, sequential groups of sections.

Group 1. Sections 2-4 provide basic guidelines that apply to all Corps signs.

Section 2
Principles and Guidelines

Guidelines for the development of sign messages: descriptions of available materials, explanations of mounting methods, and directions for maintenance procedures.

Section 3
Program Plan and Documentation

Guidelines for developing a comprehensive sign plan for a given project: locating signs, coding them, and preparing documentation of existing and proposed signs.
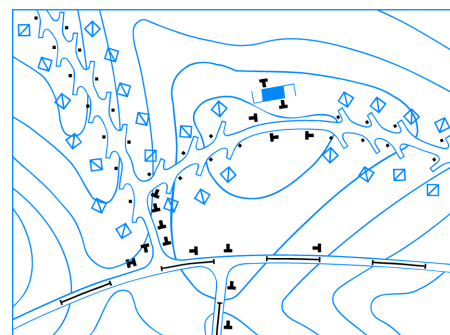
Section 4
Design Standards

Description of the design elements that are used in the design and layout of signs, including: use of the Corps Signature, letter-spacing guidelines, color standards, and use of directional arrows.
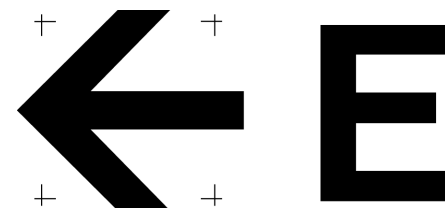
Group 2. Sections 5-18 describe specific types of signs or sign use areas. Each section contains descriptions, layout formats, mounting methods, and specification codes for the sign types included in that section.

Section 5 Identification Signs	Standard Identification signs for Corps projects and cooperatively managed areas. Secondary Identification signs for individual facilities within a project, and a Corps Participation Credit Sign for outgranted areas.	**Eagle Point Campground** John H. Kerr Dam and Reservoir **Beaver Falls Campground** Campsites 21-40
Section 6 Directional Signs	Signs directing the public to a Corps facility including: Approach Roadway Directional signs and Approach Roadway Directional signs with symbols. Project Roadway Directional signs are used to direct the public within a project. Directional signs using symbols exclusively are described in Section 8.	↑ **J. Percy Priest Dam 1.5 Miles** ← **Cook Recreation Area** **Cook Recreation Area** → ← **Exit** **Campground** → **Swimming Beach** **Picnic Area**
Section 7 Recreation Area Signs	Standard signs for use within an area, including instruction, information and regulatory signs specific to recreational uses. Examples show the various standard grid formats and colors. Traffic signs that are governed by the *Manual on Uniform Traffic Control Devices* (MUTCD) are found in Section 9.	**Campground** Open 6:00 am Closed 10:00 pm **Fee Collection** 1. Select campsite. 2. Fee will be collected by uniformed park ranger on patrol. 3. Retain permit receipt and display at campsite. **Boaters Warning** Overhead Power Lines Cross This Lake **Danger** Submerged Rocks No Diving
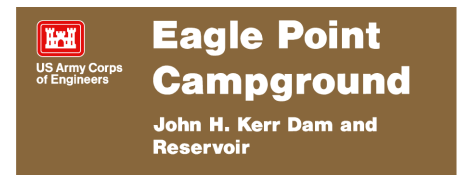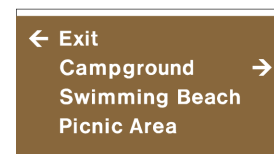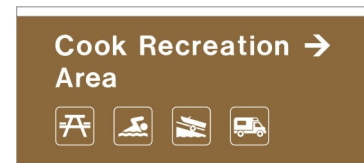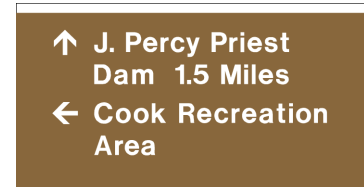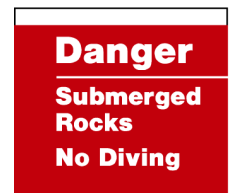
Section 8
Symbol Signs

A display of approved symbol signs and guidelines for their use for Identification, Direction, Prohibition and Area Regulation signs.

Section 9
Traffic Signs

General use guidelines, along with a display of the most frequently used traffic signs from the MUTCD. Parking regulation signs, specially adapted for use on Corps projects, are specified in this section.

Section 10 Property Markers	Markers used for the identification and marking of government property. This includes witness posts, boundary lines, easement lines, and identification of wildlife management areas.	**Boundary Line** Please Do Not Disturb For Information Contact U.S. Army Corps of Engineers Portland District P. O. Box 2870 Portland, OR 97208 (000) 000-0000 US Army Corps of Engineers **Wildlife Management Area** **No Hunting** Please Do Not Disturb For Information Contact: U.S. Army Corps of Engineers Portland District P. O. Box 2870 Portland, OR 97208 (000) 000-0000 US Army Corps of Engineers
Section 11 Workplace Safety Signs	All safety signs placed in and around power plants, maintenance shops, and mechanical equipment. These signs are Danger, Caution, Safety, Notice and Directional, and are used in compliance with Occupational Safety and Health Administration (OSHA) Standards.	**Danger** High Voltage **Caution** Keep This Door Closed **Safety** Keep Work Area Clean and Safe **Notice** Face Shield Required In This Area Fire Blanket ←
Section 12 Regulatory Signs	Rules governing the posting of Title 36 and other general rules. Regulatory signs specific to particular types of public use areas will appear in the section covering those areas. For example: signs adjacent to a boat ramp identifying regulations and restrictions are shown in the Recreation Area Signs section (Section 7). Signs regulating the use of a lock are specified in the Lock, Dam and Waterway Signs section (Section 14).	US Army Corps of Engineers **Shoreline Management Permit** Permit Number **3772** Expires: **01/06** This permit is non-transferable and may be revoked at any time.
Section 13 Interpretive Signs	Informative and educational signage describing manmade, ecological, and conservation systems in a project area as well as historical points of interest to visitors. This section provides design parameters rather than specific sign layouts.	**White Oak Interpretive Trail** Welcome to the White Oak Interpretive Trail! This trail will lead you to some of Crater Lakes most interesting features. It will take about one hour to walk the trail (about one mile in length). There are some steep slopes along the way and sturdy walking shoes are recommended! Interpretive signs along the trail will reveal many secrets of the unique history of this area. Your first stop is just up ahead- enjoy your walk!
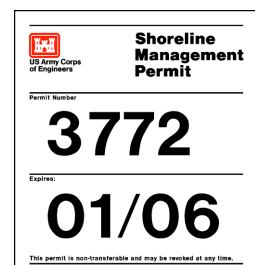
Section 14
Lock, Dam and Waterway Signs

Informational, safety, and instructional signs located on or near waterways, locks, dams, and canals.

Restricted
No Boats
Here to Dam

Warning
Submerged
Dam Ahead

**Arrival
Point**

Section 15
Aids to Navigation

General guidelines for the use of the *U.S. Aids to Navigation System* established by the U.S. Coast Guard.

Section 16
Construction Project Signs

Designs and specifications for Construction Project and Safety Record signs.

Construction
Supervised by:

**US Army Corps
of Engineers
Pittsburgh District**

**Expansion of Fish
Hatchery**

Bonneville Lock and Dam

Contractor:
Will Construction Co.
Portland, Oregon

Consulting Engineer:
Internation Engineering
Company Inc.
Dallas, Texas
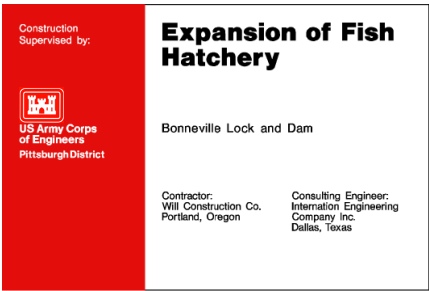
Section 17
Outgrant, Cost Share and
Concession Signs

Guidelines for out-grant and cooperating agency signs placed on Corps property, and design guidelines for commercial enterprises signing on Corps project lands.

Section 18
Office Interior Signs

Complete sign system for building interiors.

271
Resource Mangement
Office

Group 3. Volume 2 of the manual is made up of Appendices A-E. They contain support reference material including: procurement instructions, fabrication specifications, maintenance procedures, a glossary of terminology, and additional reference material.

Appendix A
Procurement Procedures

Explanation of procurement procedures as well as the review process necessary to purchase signs. Also a sample order worksheet with instructions on filling it out.

Appendix B
Materials and Specifications

Specifications for materials, fabrication techniques, and installation.

Appendix C
Sign Maintenance Procedures

Guidelines for maintenance of all project signs. Included is a sample field report and instructions on how to use it.

Appendix D
Typography Reference

Standards for use of typography on signs. Guidelines are provided for letter-spacing, word-spacing, and legend length sizing for the three Corps typefaces. In addition, there are displays of commonly used words properly typeset and letter-spaced in Helvetica Bold, Helvetica Medium, and Helvetica Regular.

Appendix E
Reference Materials

Reference materials that support, explain or document the information outlined in this manual. Included are technical standards, a bibliography, a glossary, and a list of suppliers.

Implementation and management of the sign standards outlined in this manual follow the procedures described below. With each procedure, there is an explanation of required actions, along with page references for the corresponding data in the manual.

Reading the entire manual will provide an understanding of the principles of the Corps sign program. This understanding will be helpful in using the information and instructions outlined for each specific sign type.

The legends used on the signs in this manual have been carefully developed, reviewed, and approved for nationwide use. The purpose of developing a uniform system is twofold: to establish a cohesive look for signs at all Corps projects and to reduce costs. The system discourages costly, one-of-a-kind signs. However, should the need occur for a sign not displayed, there are grids provided in their respective sections for layout purposes. Consult the district Sign Program Manager for ordering procedures. It is important that special application signs with site-specific legends follow the format, color, and letter style outlined in this manual.

Although every effort has been made to standardize sign legends, individual sign conditions vary from project to project so that the appropriateness of an individual sign to a given setting must be determined on a case-by-case basis as part of the sign plan. The project Sign Program Manager is responsible for making a sign plan for each specific site based on: geography, hazards, audience, traffic, and the uses for each site. Site-specific sign legends will follow the standard sign formats to maintain a uniform and cohesive look throughout a project. The section below outlines the implementation process with page references for the various support materials contained in this manual.

Documentation of Existing Conditions	1) All signs currently in place must be inventoried and located on a site map. A photograph showing each sign and its surrounding area is recommended.	Explanation of documentation process; pp. 3-1 to 3-2. Sign Inventory Worksheet; p. 3-3. Example of map; p. 3-4.
Preparation of Sign Plan	1) Evaluate the data collected to determine required signs, replacement signs, and unnecessary signs. 2) Schedule the removal of existing signs that are unnecessary or the replacement of noncomplying signs.	The principles and guidelines governing the sign standards program; pp. 2-1 to 2-12. Explanation of sign plan process; pp. 3-1 to 3-2. Illustrations and descriptions of the signs available for use on a Corps project; pp. 5-1 to 18-21. Sign Inventory Worksheet; p.3-3. Example of map; p. 3-6.
Implementation of Sign Plan	1) Upon approval of the district Sign Program Manager, carry out the plan by removing unnecessary signs and replacing noncomplying and missing signs. 2) Order and install new signs. 3) Update project Sign Inventory Worksheet and site map as required.	Sign Order Worksheet; Appendix A. Material and installation specifications; Appendix B. Example of implementation drawing; p. 3-6.
Maintenance of Sign Plan	1) Inspect the signs on a regular basis to ensure that signs are in place and in good condition. 2) Continue to order and install new signs to replace noncomplying signs. 3) Evaluate site conditions continually to determine if new signs are required or if existing signs are no longer necessary. 4) Review and update project Sign Inventory Worksheet and site map annually or as required. 5) Provide routine maintenance of signs.	Explanation of maintenance process; p. 2-12. Maintenance guidelines; Appendix C.

Every sign in this manual has an alpha-numeric code associated with it. The letters in the code show the sign type, and the numbers identify the particular sign within that type.

The Sign Code Matrix below is an example of the charts that appear throughout the manual to give specifications for each sign. Below the matrix is a chart showing the sign codes in alphabetical order by sign type. The section numbers show where that sign type is described and illustrated. (Note that the sign type UNS, for the eleven "undesignated" safety signs, has been retained to maintain continuity in existing project sign plans.)

There is a separate chart below showing the codes for custom signs (CST) that use standard grid formats. Note that CST signs differ slightly depending on whether they are to be viewed from land or from the water.

Sign Code Matrix Example

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-11	1.5"	18" x 15.75"	4" x 4"	HDO-5	36"	RD/WH
UNS-11	2"	24" x 21"	4" x 4"	HDO-5	36'"	RD/WH
UNS-11	3"	36" x 31.5"	4" x 4"	HDO-3	36"	RD/WH
UNS-11	4"	48.125" x 42"	4" x 6"	HDO-3	36"	RD/WH

Sign Type

Code	Sign Type	Sec.	Code	Sign Type	Sec
AC-000	Symbol of Access	8	RES-00	Undesignated Restricted	7
APRDIR	Approach Roadway Directional	6	RSID-0	Recreation Symbol	8
APRS-0	Approach Roadway Directional with Symbols	6	RSV-00	Facility Reservation	7
BLM-00	Boundary	10	SAF-00	Workplace Safety; Safety	11
BTR-00	Boat Ramp	7	SCA-00	Workplace Safety; Caution	11
CID-00	Construction Project Identification	16	SDA-00	Workplace Safety; Danger	11
CMP-00	Campground	7	SDR-00	Workplace Safety; Directional	11
CREDIT	Corps Participation Credit	5	SECNID	Secondary Identification	5
DNG-00	Undesignated Danger	7	SLAT-0	Slat System	8
DRSS-0	Directional Symbol	8	SNO-00	Workplace Safety; Notice	11
ENT-00	Entrance Station	7	STANID	Standard Identification	5
FDI-00	Fire Danger Index	7	STANIN	Individual Letterforms Standard Identification	5
FEESYM	U.S. Fee Area Symbol	7	SWM-00	Swimming Beach	7
HRS-00	Opening Hours	7	TR-000	Trail Marker	7
HSID-0	Hazard Symbol	14	UNS-00	Undesignated Safety	7
HSLAT-0	Hazard Slat Symbol	14	W00-00	Traffic Warning (MUTCD)	9
INT-00	Office Interior	18	WDA-00	Waterway Danger	14
INTERP	Interpretive	13	WLI-00	Waterway Lock Instruction and Information	14
NPK-00	No Parking	9	WPM-00	Lake Mile Marker (Primary)	14
PRJDIR	Project Roadway Directional	6	WRE-00	Waterway Restricted	14
PRK-00	Parking	9	WRN-00	Undesignated Warning/ Caution	7
PRK-AC	Parking w/ Symbol of Access	9			
PS-000	Prohibition Symbol	8	WS-000	Waterway Symbol	14
PTNR	Corps Identification w/ Partner Logo(s)	5	WSM-00	Lake Mile Marker (Secondary)	14
R00-00	Traffic Regulatory (MUTCD)	9	WWA-00	Waterway Warning	14
REG-00	Regulatory	12	WWSTID	Waterway Identification	14

Custom Signs Using Standard Grids

Custom Recreation Signs with Helvetica Bold legend (standard letterspace)

CST-01	Grid 1	p. 7-63
CST-02	Grid 2	p. 7-64
CST-03	Grid 3	p. 7-65

Custom Waterway Signs with Helvetica Medium legend (+30% extended letterspace)

CST-04	Grid 1	p. 7-63
CST-05	Grid 2	p. 7-64
CST-06	Grid 3	p. 7-65

Legend Size

The height of the capital letters in the primary legend is also known as A. All dimensions of worded signs will be described in terms of A. The size of the sign legend (A) is determined by the distance at which the sign is to be read. This letter size is calculated using the Viewing Distance Guide (see page 2-6). For symbol signs without worded legends, the signs are built around the dimension of the margin, known as M.

Panel Size

Built around the length and size of the legend. The first number in the matrix is the panel width, which is based on the longest legend line, plus left and right margins. The second number is the panel height, which is based on the number of legend lines, the size of the legend A, and the spacing between lines. All of these elements are shown on the grid format for that sign type. For catalog signs, panel sizes are fixed and appear in the matrix. For site-specific (custom) signs such as identification or directional, panel sizes will vary with the legend, and cannot be determined until the typeset legend has been laid out on the format grid. All dimensions are in decimals; a conversion chart is provided in Appendix E. When determining panel sizes, round off all dimensions to the nearest .125 inch.

Specification Code

Refers to the materials and fabrication techniques available for Corps signs as outlined in Appendix B. The specification for a given sign type may vary with the panel size, placement location or intended use. The number on the matrix following the specification code shows the mounting configuration and type of post assembly. Each material and sign assembly method is individually specified in Appendix B.

RRW-00	Routed Signs
HDO-00	HDO Plywood Signs
ALU-00	Aluminum Signs
ICL-00	Individual Letter-forms
SCP-00	Screen Printed Signs
FRP-00	Fiber Reinforced Polyester
IMP-00	Injection Molded Plastic
PES-00	Porcelain Enamel/Steel
FSM-00	Flexible Sign Markers
WTW-00	Waterway Signs

Post Size

Sizes are given for nominal dimensions, not the actual cross section size of the post. For example, a nominal 4" x 4" post may be as small as 3.5" x 3.5", depending on how it is milled.

Mounting

The distance from the ground to the bottom edge of a sign panel, also known as the HAGL (Height Above Grade Level) or HAWL (Height Above Water Level) for waterway signs.

Color

Refers to both the background (Bkg) and the legend (Lgd) as displayed on pp. 4-5 to 4-9.

FHA: Federal Highway Administration

ANSI: American National Standards Institute

BR	Corps Brown	p. 4-5
WH	White	pp. 4-5 to 4-8
BK	Black	pp. 4-5 to 4-8
CR	Communication Red	p. 4-5
RD	Red (FHA)	pp. 4-6, 4-8
YL	Yellow (FHA)	p. 4-6
OR	Orange (FHA)	p. 4-6
GR	Green (FHA)	p. 4-6
SR	Safety Red (ANSI)	p. 4-7
SY	Safety Yellow (ANSI)	p. 4-7
SG	Safety Green (ANSI)	p. 4-7
SB	Safety Blue (ANSI)	p. 4-7
SK	Safety Black (ANSI)	p. 4-7
SW	Safety White (ANSI)	p. 4-7
LY	Lemon Yellow	p. 4-8
MB	Medium Blue	p. 4-8
DG	Office Dark Grey	p. 4-9
OD	Office Red	p. 4-9
OL	Office Blue	p. 4-9
OG	Office Green	p. 4-9
WG	Office Warm Grey	p. 4-9

Program management will be the responsibility of trained individuals assigned as Sign Program Managers. There will be a Sign Program Manager for each project. At the district and division levels there will be a Sign Program Manager to review sign planning and program implementation at all projects within that jurisdiction. The National Sign Program Manager will serve as a technical resource for all districts and divisions. The functions and responsibilities of project, district, division, and national Sign Program Managers are described in the chart below. The qualifications and grade level of the person assigned to this role will vary depending on the size and complexity of the project, district or division. The basic job functions remain the same.

The guidelines provided in this manual will be used to implement and maintain a viable sign program at each project. All new and replacement signs will be designed and constructed in accordance with this manual. Existing signs that do not conform to these guidelines will be scheduled for replacement on a priority basis.

Contact your district Sign Program Manager for assistance or advice when preparing a sign plan, ordering new signs or maintaining existing project signage.

Sign Advisory Work Group

Provides oversight of MCX activities

Reviews safety critical sign related items

In cooperation with the MCX, reviews, recommends and approves technical program changes and recommends policy changes

HQ Sign Program Proponents

Establish policy and coordinate final decision on safety critical sign related items

Oversight of the National Sign Program Manager and the Sign Advisory Work Group

National Sign Program Manager and Mandatory Center of Expertise

Management of the Corps Sign Program Mandatory Center of Expertise (MCX)

Evaluation of and revisions to the sign manual

Verification that sign plans are properly implemented

Division Sign Program Manager

Assistance in preparation of signs for special applications or situations

Implementation of division-wide sign plans

Management of division sign program

Recommendations of program management improvements

District Sign Program Manager

Review and approval sign plans for lakes, projects, building interiors, waterways, etc.

Verification that signs ordered conform to the guidelines in this manual

Assistance in preparation of signs for special applications or situations

Implementation of multilocation or district-wide sign plans

Management of sign program

Sign Fabricator

Fabrication/installation of signs according to the standards outlined in the sign manual

Project Sign Program Manager

(Lakes, project, waterway, building interiors, etc.)

Documentation and evaluation of existing conditions

Development of sign plan

Implementation of sign plan through purchase of new signs and removal of nonconforming or unnecessary signs

Management of sign plan through regular inspection, routine maintenance, and replacement as required

The Sign Standards Manual is an ever evolving management tool. Users are encouraged to make recommendations that they feel will improve the overall program effort. Using the worksheet below, submit your recommendation to your district/division Sign Program Manager. Approved recommendations should be forwarded to the National Sign Program Manager for review by the National Sign Advisory Work Group. Changes in the manual will be made accordingly. Written responses will be provided.

1. Requested (check appropriate item): ☐ Revision   Change   ☐ Deletion   ☐ Addition   ☐
   ☐ Other

2. Briefly describe action requested. Note Sign Standards Manual page numbers where and how proposed revision is to be used if applicable.

3. Briefly state reason for recommendation and alternatives tried.

4. Identify all benefits of change.

5. Identify all attached graphics and/or drawings included to illustrate the issue.

Prepared by Project
Sign Program Manager:

Name	Telephone
Office	Symbol
Address	
City	State Zip Code

Concurrence by District
Sign Program Manager:

Name	Telephone
Office	Symbol

Concurrence by Division
Sign Program Manager:

Name	Telephone
Office	Symbol

When the Sign Standards Manual was developed, project managers identified common safety sign requirements from surveys sent to all districts and divisions. From those surveys, standard safety sign legends were established for clarity and brevity. Specific hazardous conditions may be identified that require a special or site-specific safety sign not included in the manual. Once this need is identified, a procedure has been established to allow review of the proposed safety legend by the Chief Counsel's office. This process allows Sign Program Managers to make recommendations for additions to the manual. As a national system, specific signs developed by one project or district may be applicable to others. Through communications, the Corps attempts to reduce potential safety hazards for visitors and others using our facilities. To request a new or site-specific safety sign, fill out the following description of the condition to be signed and the sign(s) proposed to help notify viewers of the hazard.

1. Describe the specific hazard that requires a nonstandard Danger, Warning, or Caution sign. Reference the Sign Standards Manual where applicable.

2. Describe what is currently being done to warn viewers and why this approach is not effective.

3. Identify the proposed sign format and legend.

Format (Danger, Warning, or Caution)

Legend: Reason for Warning

Legend: Specific Prohibition

4. What unique conditions at this location prohibit the use of existing standardized signs?

5. Describe how this proposed sign will be used to address this condition. Attach any photographs, site plans or related visual materials that will help to illustrate your proposal. State whether this sign will be viewed from land or from water.

Requested by (office responsible for placing this sign):

Name

Office   Telephone   Date

Approved by (Sign Program Manager);

Name   Symbol

Reviewed by, and in concurrence with this request as presented:

District Sign Program Manager   Telephone   Date

Division Sign Program Manager   Date

National Sign Program Manager   Date

Office of Counsel (CECC-K)   Date

Safety and Occupational Health Office (CESO-P)   Date

This section describes the principles of signing. Included is information on: message preparation and sign legend content, mounting methods and placement guidelines, material selection, and maintenance procedures. It is important that these guidelines be followed when planning, specifying, and placing signs at Corps projects.

Each sign in this manual has been designed for a specific purpose and is available from approved sources.

All Standard Identification and directional signs are made to order. They follow specified grids, material specifications, and fabrication techniques. All signs shown in this manual are part of a total Corps sign system.

Each type of sign used on a Corps project or facility has been specified in this manual either by function (identification, direction, information, safety, etc.), or by location (campground, boat ramp, lock, dam, building interior, etc.).

All signs in this manual have been designed around their intended function. For example, signs requiring an immediate response from the viewer are succinctly worded. Signs viewed from moving vehicles are sized larger than signs read by pedestrians. Safety and traffic signs adopt standard colors for maximum recognition. Informational signs placed at recreation areas are designed to be visually harmonious with the environment.

Because of the variety of environmental conditions affecting sign placement, and because of the different legends on signs for specific locations, effective sign program implementation requires a clear understanding of the following principles and guidelines.

Design and installation of directional signs on public roads must be fully coordinated with the local or state highway department.

Questions not answered in this manual should be referred to the district Sign Program Manager.

Standards set forth by this manual, including , but not limited to, those related to color, type face/fonts, formats, proportions, and Danger, Warning and Caution legends, are mandatory. Only the HQ Sign Program Proponent may grant authority for deviation. The balance of this manual constitutes guidance based on signage principles. This guidance should be followed to the greatest degree possible.

A sign is designed for the first-time viewer, so sign legends must be brief and easy to understand. Use as few words as possible to communicate the desired message.

All signs, with the exception of directionals, should convey no more than one concept or thought. Two thoughts require two separate signs. For this reason, the Corps Communication Mark (logo) should not be placed on signs other than those used specifically for identification, approach roadway direction, or as indicated in this manual.

↑ Boonton Lake
Fishing Creek →

Incorrect - Use of Corps Mark on Project Roadway Directional sign is not acceptable

↑ Boonton Lake
Fishing Creek →

Correct - No unnecessary information on Project Roadway Directional sign

Sign messages should be concise, preferably no more than ten words. If a longer legend is necessary, break it up into a short headline, in larger letters, over the rest of the text. This increases the sign's "glance" legibility (see page 2-3).

Shelter May Be Reserved. For Information, Visit or Call the Project Office: 000-0000
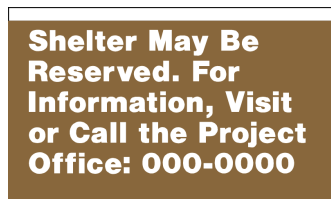
Incorrect - Message long and wordy

Shelter May Be Reserved
Contact the project office for more information (000) 000-0000

Correct - Headline gives priority to most important information

Naturally, sign messages for motorists must be briefer than those viewed by pedestrians.

To decide what words should be placed on a sign, here are some guidelines to follow:

1) Legend: Evaluate what information is needed at that specific point.
    a) Only provide the information necessary to make a decision at that particular location.
    b) On directional signs, do not anticipate decisions that can be made later; unnecessary information will confuse the viewer.
    c) Provide a second sign at the next decision point. As the user moves through a project, the information on signs should progress from general to specific.

← Boonton Lake
Overlook
Fishing Creek →

Most general

← Campground
Shoal Beach

↑ Sites 1-20
← Sites 21-40
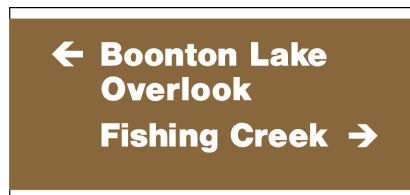
More specific   Most specific

2) Sign Type: Define the type of sign that is required at that location to communicate the necessary information. Each sign should have a single purpose. For example, a site identification sign should only identify a site as outlined in Section 5. It should not have other kinds of information on it such as: directional instructions (Section 6), regulatory restrictions (Section 8), or fee symbol (Section 7). A dual-purpose sign dilutes the impact of both messages.

Eagle Point Campground
Camping Fee: $3.00 per night
Open 6am -10 pm

Incorrect - Inappropriate information on an identification sign

Eagle Point Campground
US Army Corps of Engineers
John H. Kerr Dam and Reservoir

Campsite Fees
May 15-October 15
Campsite: $0.00 per Night
Guests: $0.00 per Day
14 Day Limit

Campground
Open   6:00 am
Closed   10:00 pm
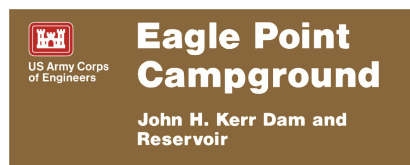
Correct - Three signs, each with the appropriate information
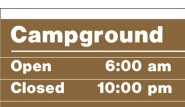
3) Language: Use proper and consistent nomenclature. The words used to convey information should be familiar and comfortable to the viewer. The same wording should be used throughout a project.

Danger
Weir Dam
6 Miles
Downstream

Incorrect - Technical language not obvious to the public

Danger
Submerged
Dam 6 Miles
Downstream
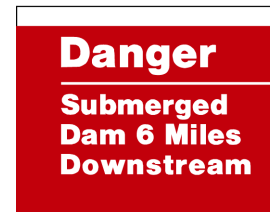
Correct - Simplified language

4) Non-English Signs: In areas where a significant percentage of the population speaks primarily in a foreign language, the use of symbol signs (see Section 8) is strongly encouraged. When no symbols exist or where words are essential, two signs - one in English and one in the foreign language - should be placed side by side. These signs will follow the same format: same overall size, letter size and style, color, and mounting. Because of variations in dialect, the legends on non-English signs shall be developed at the local level. Two languages should never appear on the same sign.

Danger
Submerged
Rocks
No Diving

Peligro
Piedras
Sumergidas
Prohibido
Saltar o
Zambullirse
Al Agua
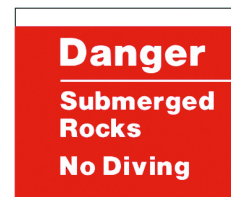
Correct - Two signs with the same message in English and Spanish

5) Positive Tone: Whenever possible, messages should be presented using positive wording, unless it dilutes the clarity of the thought being communicated.

6) Information Order: Determine the hierarchy of information. Western cultures read line-to-line from top to bottom, left to right. In general, the most important message should appear on the first line.

An effectively designed sign integrates a clear, succinct legend with legible, well-spaced typography. The typography should be sized, spaced, and positioned so that the type does not appear to bleed off the edge.

Following are elements that are to be considered in the design of a sign:

1) Legibility: Typography and panel size must be appropriate for the distance and speed at which a sign is viewed. The qualities of an effective sign should also include the following: pure legibility, glance legibility, target value, and priority value.

   a) Pure legibility is the maximum distance at which sign copy can be read under optimum conditions, i.e., with no distraction and unlimited time.

   b) Glance legibility is the distance at which a sign can be read swiftly and accurately, such as when a driver must remain aware of other cars and has only a fleeting glimpse of the sign.

   c) Target value is the characteristic by which a sign stands out as different from background objects.

   d) Priority value is the characteristic by which one sign is seen first from among a number of other similar or identical signs.

2) Sign Format: The philosophy of this manual is that all signs within a project should follow a similar format. This continuity of design will provide a finished look to the area and will assist the visitor to identify quickly the message that is conveyed. The majority of signs used at Corps projects have been standardized. However, some signs may be required for specific purposes not covered in this manual. All special signs should use the grid format for signs of the same functional type as shown in this manual.
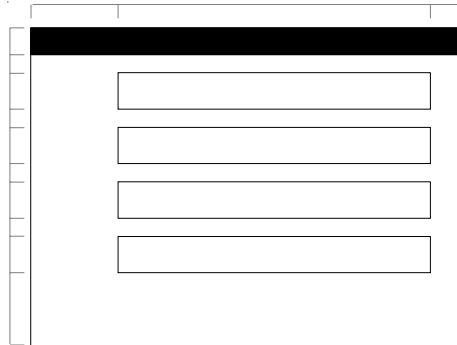
Grid format

   a) Sign Background: The space on the sign panel around the sign legend is important for the readibility of the sign. The border creates a field that separates the sign legend from distracting environmental conditions behind the sign. This increases the target value of the sign and creates a neutral field for the placement of the legend. If the legend is placed too close to the edge of the sign panel, it may appear to bleed off the edge of the panel when viewed from the targeted distance.

Incorrect - Panel too small for type

Correct - Proper size panel for type

To maximize the target value of a sign, it must have sufficient background area and contrast so that a driver can distinguish it in complex driving environments. There must also be sufficient contrast between the letters and the sign background so that a driver can read the message easily. It is generally recognized that maximizing the background area around the legend will dramatically increase the legibility of the message.

b) Border: The function of the border is that of a "visual container" of the message. It is most effective at night when the border on the top and bottom of the panel is caught and illuminated by headlights, which heightens the target value and signals to the driver the location of the sign. On dark background signs, the border will generally be the same color as the lettering. Contrasting the border with the background heightens the target value of the sign when the color value in the surrounding environment is similar to the value of the sign panel.

↑ Boonton Lake
Fishing Creek →

Incorrect - Sign without borders

↑ Boonton Lake
Fishing Creek →

Correct - Sign with borders

c) Flush Left Legends: The legends of most signs shown in this manual use a flush left/rag right format. This means that the legend is aligned flush to the left of the layout grid margin. The look of the unjustified right margin is determined by line-break and legend placement within the format.

This type of layout has greater readibility than if the legend is centered or justified. By using this format throughout, visual consistency is added to all types of signs used in the Corps sign system.

Vehicles
with Permits
Only
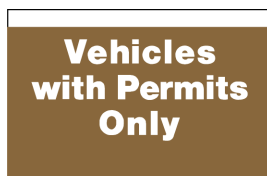
Incorrect - Centered type

V e h i c l e s
with permits
O n l y

Incorrect - Justified type

Vehicles
with Permits
Only
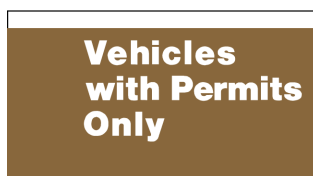
Correct - Flush left type on grid format

d) Legend Line Length: When preparing signs with site-specific legends, visualize the selected message on the sign panel. The look of the sign will be determined in part by the number of words and their layout on the sign panel. How many words, their length, and the length of each line of copy are all factors affecting the look of the sign. The appropriate layout of a sign legend should be carefully designed for: visual balance, legibility, and communicative impact.

It should be noted that words with the same number of letters may have different lengths. The actual length will depend on the letters in each word. For example, the words "campground" and "recreation" each have ten letters. Yet

when set in type, "campground" is longer because it has individual letters that are wider.

A single message on a sign may be placed on two or more lines to maintain the proportions of the sign panel, except where limited by established grids.

Camping in Designated Sites Only

Incorrect - Single line creates awkward panel

Camping in Designated
Sites Only

Incorrect - Line-break good, but panel unnecessarily long

Camping in
Designated
Sites Only

Correct - Proper line-break for visual balance and pleasing panel shape

A two-line message is visually stronger if the first line is slightly longer than the second.

A three-line message generally has greater visual balance if the middle line is slightly longer than the other two. Obviously, some sign legends will not line-break with this visual consistency. However, it is most important that extreme differences in line length should be minimized, if possible.

Line length can be reduced by utilizing commonly recognized abbreviations, such as St. for Saint or Mt. for Mount. Proper names, however, should always be written out in full and placed on one line. Additional examples of proper line-break formats are shown on pages 5-9 to 5-11.

The actual length of a legend can be calculated using the method outlined on page D.2.

The Corps sign system uses the Haas Helvetica letter style for all sign legends. This sans serif typeface is both highly legible and readily available to manufacturers. Used in the system are three different weights (stroke widths), each for a specific purpose.

The primary weight, Helvetica Bold, is used for all Standard Identification signs and primary legends on most other types of signs specified in this manual.

Helvetica Medium is used for waterway signs, recreation signs meant to be viewed from the water, and directional signs.

Helvetica Regular is used for all building interior signs and for selected support legends in combination with the Helvetica Bold typeface.

Complete displays of these letter-styles are shown in Appendix D.

The following examples describe the correct use of typography on Corps signs.

1) Upper and Lower Case Legends: For optimum readability, the legends of most signs specified in this manual have upper and lower case legends with initial capital letters. Studies have shown that lower case legends (initial capitals only) are read and understood considerably faster than all upper case sign legends. Upper and lower case words create forms and patterns making each word unique. This increases perceptibility and legibility.

NO LIFEGUARD SWIM AT YOUR OWN RISK

Incorrect - All capital letters

No Lifeguard Swim at Your Own Risk

Correct - Initial capital letters

Tests show that legends set in all upper case letters must be read letter for letter, with the exception of only the most common words like LEFT, RIGHT, CAUTION, or STOP, which are read as a form because of a lifetime of conditioning.

2) Letter- and Word-Spacing Typography viewed from a distance, such as on signs, must have more open letter spacing than typography viewed at close proximity. The spacing between letters in words and between words must be correct for optimum readability. To ensure correct letter- and word-spacing for all Corps signs, a spacing guide is provided in Appendix D.

Cordell Hull
Spacing too tight for signs

Cordell Hull
Spacing too open for signs

Cordell Hull
Correct spacing for signs

3) Line-Space: The space between multiple-line sign legends is called line-space. The line-space of the examples shown in this manual have been calculated for good legibility and readibility. Multiple-line messages are intended to be read as a group without the lines bleeding together when viewed from a distance. Line-space between two different messages is greater than line-space between lines of the same multiple-line message group.

Boat Ramp
Loading and
Unloading Only
No Wake Zone
Idle Speed Only

Incorrect - Equal line-spacing between all legend lines

Boat Ramp
Loading and
Unloading Only
No Wake Zone
Idle Speed Only

Correct - Line-spacing varies according to the sense of the legend

4) Legend Sizes and Viewing Distance Guidelines: The appropriate size letter is selected for a sign so that the legend will be readable from the viewing distance desired. To that end, most of the signs shown in the manual are available in more than one size so that the properly sized sign can be viewed for the specific location.

Once the appropriate viewing distance has been calculated, use the chart on page 2-6 to determine the appropriate size of the primary legend typography of the sign. All signs in the system will be sized around the capital letter height (A) of the primary legend of the sign.

When measuring the size of a capital letter-form, only use flat letters (ABDEFHIKLMNPRTVWXYZ). Round letters (CGJOQSU) will not give an accurate measurement because they are drawn to extend slightly above and below the base line and height line, respectively. This enlargement compensates for the fact that round shapes appear smaller than square shapes placed in the same size border.

EO
Incorrect - Same size round letter looks smaller than flat letter

EO
Correct - Round letter looks the same as smaller flat letter

The viewing distance charts below are a guide to sign letter size. Sizes are based on the distance at which a proposed sign is to be viewed. Type sizes are calculated to meet the U.S. Department of Transportation-Federal Highway Administration (FHWA) Standards for visual acuity.

To determine the legend size for signs where reaction time is not a critical factor, use Table A. The capital letter height sizes provided in the second column correspond to the standard type sizes specified throughout this manual.

To keep Standard Identification signs from becoming overly large relative to their placement location, use Table A.

Table B is used for signs read from approaching automobiles, and incorporates reaction time and advanced sign placement location into the formula. This is used primarily for directional signs.

All legends use upper and lower case type. The type size is calculated from the height of the initial capital letter. This size is referred to as "A" throughout this manual.

Remember that these charts provide guidelines, not mandatory specifications. However, necessary deviations from the charts shall be documented in the sign plan.

Table A: This table identifies the correct sign legend size as calculated from the proposed viewing distance, for signs read on project roads at slow approach speeds, as viewed by pedestrians, or from slow moving water craft. This chart is applicable for most all signs shown in the manual except where reaction time is a factor.

Legend size calculations for vehicles are shown for low MPH viewing. Adjustments for higher speed reaction times, or viewing from a wider cone of vision are not included in Table A. Letter sizes for these conditions must be calculated on a site-by-site basis, using FHWA standards or refer to the viewing distance/reaction time calculations.

For waterway signs, refer to the sign legend sizes shown to the right. For distances greater than 1,512 feet, the capital letter height (A) of the sign legend is calculated by dividing the viewing distance by 28 and rounding up to the nearest inch. For example, a sign viewed from 2,000 feet would require a legend height of 72" (2,000 ÷ 28 = 71.428, and round up to 72"). Sign placement guidelines for waterways are provided in Section 14.

Viewing distance (In feet):	Capital letter height (In inches):	Application:		
0-20	.75	person		
21-27	1	person		
28-41	1.5	person		
42-55	2	person	car	
56-83	3	person	car	
84-111	4	person	car	boat
112-167	6		car	boat
168-251	9		car	boat
252-335	12		car	boat
336-503	18			boat
504-671	24			boat
672-839	30			boat
840-1007	36			boat
1008-1175	42			boat
1176-1343	48			boat
1344-1512	54			boat

Table B: This table identifies letter size as a function of viewing distance and reaction time. It describes the location in which the sign is to be placed in advance of the destination when viewed from an approaching vehicle.

This table is only to be used for comparative purposes and general reference. A detailed guideline for determining legend size, sign placement, and required reaction time is provided on pages 2-17 to 2-19.

All letter sizes are calculated for people with a minimum visual acuity of 20/40, in compliance with FHWA standards.

*Operating speed is the 85th percentile speed.

Note: All dimensions have been rounded up to the nearest standard size. All desired sign placement distances (higher number) have been rounded up to the nearest 100 feet.

Legend: 200/600 = minimum distance/desired distance.

Operating Speed* (MPH)	Detection & Recognition Time (Seconds)	Viewing Distance (Feet)	Letter Size (Inches)	Sign Placement Distance in Advance of Location	
				Single Lane Approach (Feet)	Multi-Lane Approach (Feet)
0-20	3	90	4	200/600	400/900
21-25	3	110	4	200/600	500/900
26-30	3	135	6	250/600	600/900
31-35	3	155	6	300/600	725/900
36-40	3	180	9	375/1300	875/1300
41-45	3	200	9	475/1300	1000/1300
46-50	3	220	9	500/1300	1100/1300
51-55	3	250	12	575/2600	1250/2600
56-60	3	275	12	650/2600	1400/2600
61-65	3	300	12	725/2600	1550-2600

Viewer response time is a function of target value and legibility. In turn, these factors are dependent on contrast between the legend and background color of the sign and on the contrast between the sign and the environment. The primary factors in obtaining a high target value are size of the panel used and color of the sign background. Of color combinations, black and white combinations offer the greatest color contrast but are the least desirable because of poor contrast with the environment, which is predominantly black, white, and gray. Appropriate colors have been specified for each different type of sign shown in this manual. Three functional criteria are used in the selection of the appropriate color for sign legend and panel combinations. These include: color association, contrast, and target value.

1) Color Association: Many sign types inherit their color standards from other sign color systems. These include the *Manual on Uniform Traffic Control Devices* for traffic signs, and the *Occupational Safety and Health Administration Standards* for safety-related signs. Generally these adopted color systems are quite appropriate for their intended purposes. Viewers are familiar with the coded messages of these color combinations - red and white: danger; yellow and black: caution; etc.

The communicative value of signs with similar functions is heightened by their association with these recognized functional color combinations.

2) Contrast: The difference in color value (light and dark) between message and background must be great enough for good legibility. Legibility is increased when a light color is used on a dark background. The reverse combination tends to "wash out" the legend because of the diffusion of light from the lighter background.
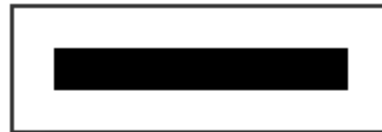
Dark on light

Light on dark

Tone on tone

3) Target Value: This characteristic causes a sign to stand out from other signs and objects in the environment. The target value of a sign is increased by size, color contrast to the environment, and sign layout. The signs shown in this manual have been sized and designed for good target value for their functions and intended placement locations.

The color of a sign contributes to its target value

The following are general guidelines for placing signs viewed from an approaching vehicle as well as for mounting signs for pedestrian viewing. Guidelines for specific sign types are shown in their respective sections, and general traffic sign placement guidelines are shown on page 9-8.

1) Straight Ahead: Sign placement must be within the approaching driver's immediate cone-of-vision. Drivers cannot be expected to turn their heads to read a sign. Signs mounted more than 40 feet off the roadway because of special circumstances may require use of a larger panel to increase readability because the sign is outside the normal cone-of-vision.
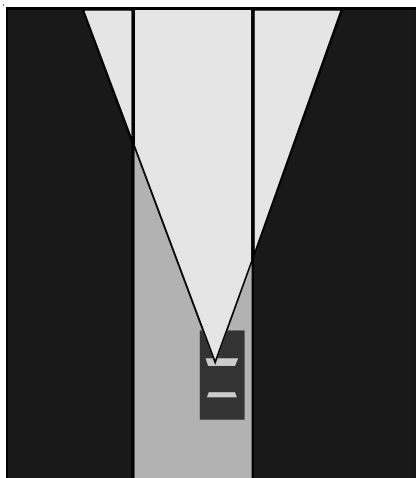
A driver's cone of vision

2) Perpendicular: The sign face should be perpendicular to the approaching viewer. Never place a sign parallel to passing traffic.
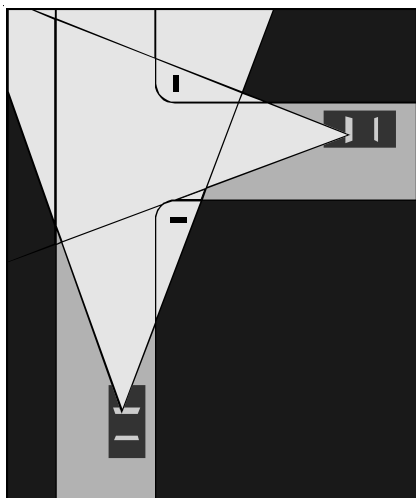
Signs placed perpendicular to the viewer

3) Right Side: Place signs on the right side of the roadway whenever possible. Drivers are not conditioned to look to the left side of the road for critical driving information.
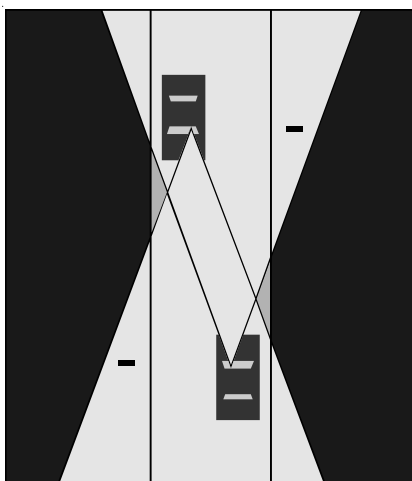
Signs placed on the right side of a roadway

An exception to this rule is the use of a double-face Standard Identification sign mounted parallel to a facility entrance roadway. This double-face sign would be used instead of two single-face signs, each mounted on the opposite right sides of the approach road. Such a double-face sign should be sized and placed with clear target value and readibility from both directions.
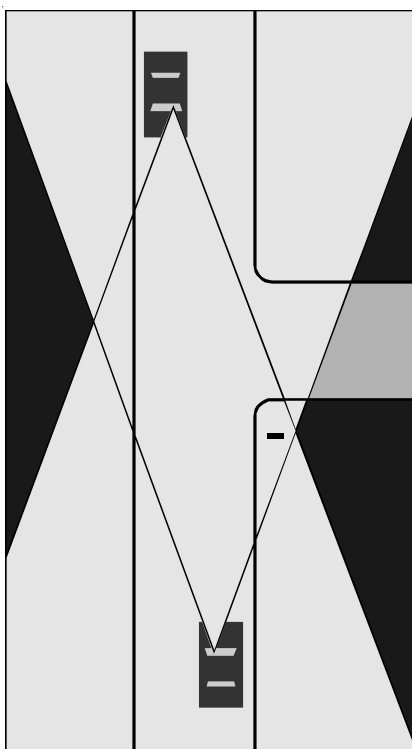
Double-face Standard Identification sign

4) Distance Legibility: All signs must be clearly legible from the distance at which they are to be read. The Viewing Distance Guide in this section shows the appropriate legend size for each type of sign.

5) Advance Warning: Signs on roadways that communicate a desired reaction, such as "Turn Right at Corner", must be placed in advance of the intersection to afford a safe distance for reaction to and execution of the maneuver.
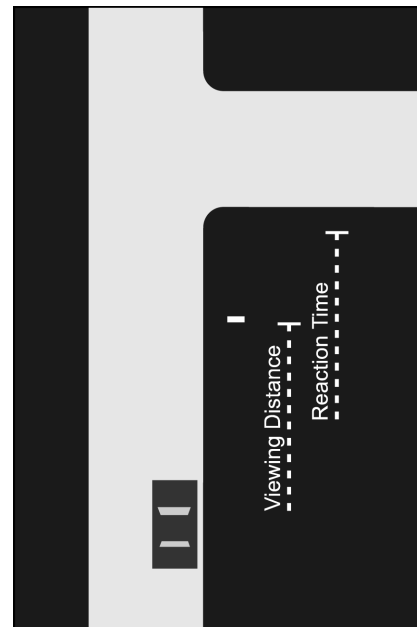
Sign placed well in advance of required action

Refer to Section 14, Lock, Dam and Waterway Signs, for guidance about placing signs on a waterway to be viewed from both water and land.

6) Viewing Angle: Mount signs at eye level. The height of the average viewer's eye level is 5'6" standing, and 4'6" driving a car. Eye level of a viewer driving a truck or recreational vehicle is higher. Signs placed for viewing from long distances will be mounted higher than those in the immediate foreground. Mounting height requirements are shown in each section for each specific sign type.

Pedestrian viewing

Vehicular viewing

Mounting height is measured from the ground level to the bottom edge of the sign panel. For signs mounted along roadways, the grade of the road is considered ground level. When ground-mounted signs on two posts are placed on sloping or inclined grades, adjustments must be made to the post lengths and mounting heights. Extreme differences between post lengths should be minimized whenever possible.
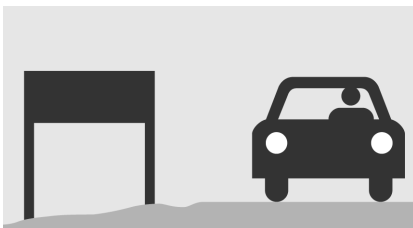
Post lengths adjusted for a grade sloping down from the road

Post lengths adjusted for a grade sloping up from the road

7) Spacing: Signs must be located with respect to other signs. Mounting sites should be carefully selected so that groups of signs are placed without creating a cluttered appearance. Also, drivers must be given time to read and react to one sign before another is presented.
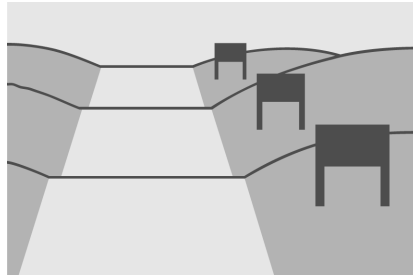
Signs spaced to allow driver to read and react to each one independently

8) Sign Location and Site Preparation: Placement must be carefully considered to ensure that each sign fits its location and achieves optimum visibility. Signs should be placed against a simple uniform background of a building wall, native vegetation or open sky to reduce distraction and visual confusion. Traffic signs and directional signs are normally located along roadways or walkways and should not receive any ornamental landscaping which would distract the viewer or obscure the sign. Avoid excessive clearing or the need for continual grounds maintenance, but it may be necessary to do some site work prior to placing a sign.

Standard Identification sign siting may require special consideration of views or the visual relationship with the named project area or structure. Where possible, an identification sign should be located near the entrance of the facility being signed. Carefully designed landscaping may be permitted around Standard Identification signs only. The siting and landscaping of identification signs should be reviewed by the district Sign Program Manager and a district landscape architect.

Landscape planting may be permitted with Standard Identification signs. This planting is ideally used to frame the background behind the sign, creating an orderly overall area view. Elaborate, domestic planting around the base of the sign is not recommended. A simple use of low growing ground covers around the

sign with shrubs in the background is appropriate. Plants selected should be native or locally naturalized species that blend well with their surroundings and do not visually compete with the sign itself. Effective plant selection should be used to reduce maintenance.
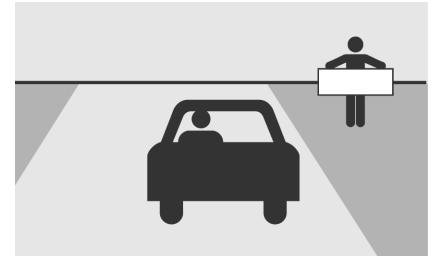
Field test to verify proper sign placement

9) Field Test: An effective way to determine a sign placement location is to place the actual sign in the proposed location for verification. This is relatively simple for pedestrian signs; they are viewed from relatively short distances. For signs viewed from a moving vehicle, testing will include driving the approach from which it is viewed to verify the appropriateness of the proposed location. Since sign location plans are usually prepared prior to the ordering of the actual sign, a cardboard or brown paper banner, the same size as the proposed sign, can be used to check placement against the criteria above.

10) Breakaway Posts: Normally, signs should be placed 14 to 16 feet from the outer edge of the shoulder, but no closer than 6 feet from that edge. If there is no shoulder, signs should be no closer than 12 feet from the edge of the traveled way. In areas where sign posts must be placed closer than 12 feet from the edge of the traveled way, the posts should be of a suitable breakaway or yielding design. Refer to Appendix B for more information.

Sign mounting methods have been standardized to create visual uniformity for all signs placed around a facility. Mounting heights and locations have been determined for ease of reading.

There are two principal methods of mounting signs. These are:

1) Ground-Mounted: Placing a sign panel on one or more posts fixed in the ground.

Ground-mounted with two posts
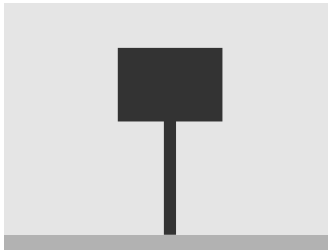
Ground-mounted with a single post

2) Wall-Mounted: Placing a sign on a vertical surface such as the wall or door of a building or fence.
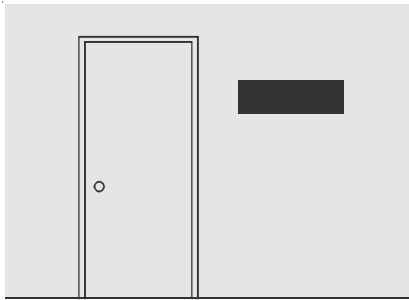
Wall- mounted

Each type of sign utilizes a mounting method appropriate to the viewing requirements. A sign must be positioned with a clear line-of-sight from the viewing point to the sign face. General sign locations will be established on the sign plan. Specific locations should be drawn on detailed site plans only after the placement location has been field-checked for accuracy.

When a new sign replaces an old sign that does not comply with the standards shown in this manual, the entire sign assembly should be replaced. All old sign bases should be removed and the site cleared prior to the placement of the new sign.

Mount signs using wood posts unless otherwise specified. Wooden signposts used consistently throughout a project are visually more harmonious with the surrounding landscape. They also provide a more finished look to a sign installation than metal posts. The standard for most small signs will be a nominal 4" x 4" wooden post (No. 2 grade or better, well-seasoned, treated, and free from defects). Larger signs may be mounted with structural grade posts of larger dimensions.
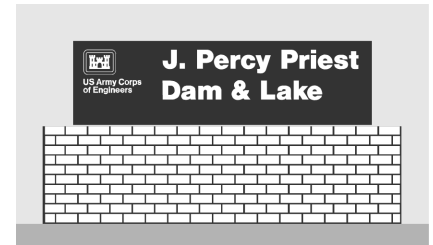
Incorrect - New sign panel on old base
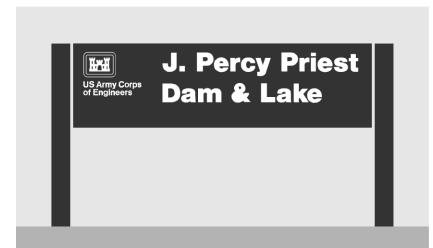
Correct - Appropriate mounting for this sign type

Within each section there are recommendations concerning materials to be used for each category of sign. These materials have been identified because of their proven suitability for these applications. Few of the materials or fabrication techniques identified in this manual are exotic or proprietary, and the majority have been tailored to their respective uses and employ standard industry practices and supplies.

Most project identification signs and those signs placed in recreation areas and on waterways use the following materials and fabrication processes:

- Plan section through HDO plywood or aluminum sign and post, with applied or screen-printed legend on reflective sheeting background:

Reflective sheeting letter-forms
Reflective sheeting background
HDO or aluminum panel
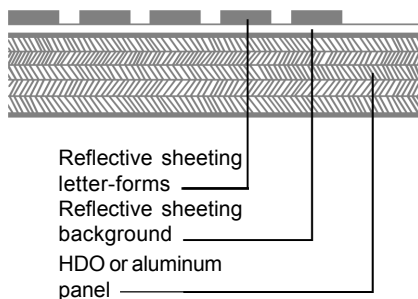
(scale of sheeting exaggerated)

- Plan section through a sign with routed and paint-filled legend:

Routed, paint-filled letter-forms
Sign panel
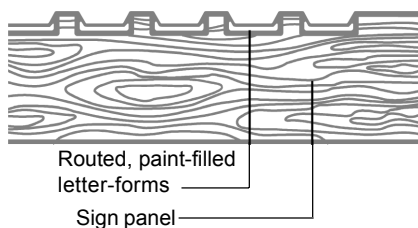
Special-use signs are made from a variety of materials and reproduction processes suited to the requirements of the sign. For example: interpretive signs can be made from porcelain enamel; boundary markers from fiber-reinforced polyester; and building interior signs from injection-molded plastic with screen printed legends.

All of the various alternatives are outlined in the respective sections for each sign type. Assuming that all of the possible materials are equally appropriate, materials selection will be determined by the following criteria:

1) Longevity: All of the materials identified have a long life if properly maintained.

Reflective sheeting is guaranteed for 5-7 years and will generally last longer. Signposts that are not pressure-treated may need to be replaced on a shorter life cycle, depending on environmental conditions.

Though some signs may have to be replaced due to damage and periodic updating before the projected lifetime of the materials expires, using lower grade materials than those recommended is ultimately more costly. This is because signs made with high grade materials will need replacing less often than signs made with inferior materials which deteriorate faster. The cost difference between the high grade and inferior materials is minimal because labor costs for fabrication and placement account for a significant portion of the overall expense.

2) Budget: Generally, the single most expensive sign in an area will be the Standard Identification sign. Because of the impression it will make over its 10-20 year life, this expense is justified.

Signs with custom legends will be more expensive than signs with the standard legends shown in this manual.

The cost of the sign includes not just purchase and installation, but also the cost of maintenance over its lifetime. A sign that costs less to purchase than another may actually be more expensive when refinishing and replacement costs are considered.

3) Maintenance Requirements: The maintenance requirements of a sign depend upon the material chosen. Routed signs should be cleaned with a mild soap on a regular basis. Reflective sheeting signs will last between 7-10 years, but need to be cleaned routinely. All recommended materials have been chosen for durability and ease of maintenance, but there are variations. Assess the requirements of each possible material against the maintenance capabilities and costs at a given site. All materials require some maintenance: frequent, scheduled inspections are necessary to ensure that they are in place and undamaged. All of the materials outlined in this manual have been designed to be vandal resistant. Fabrication techniques such as the use of tamper-resistant hardware have been specified. However, no sign is completely vandal-proof. Some materials and methods of construction are more resistant than others. Often a vandalism problem is

4) Material Legibility: A sign with a flat face is generally more legible than one with a routed legend. Light creates shadows in routed letters that may lessen their legibility. Therefore, signs requiring a consistently high level of glance legibility (such as highway directional and traffic control signs) should not be fabricated from routed material. On the other hand, routed identification signs may be placed at entrances and within projects where a small percentage of legibility loss may be sacrificed for the harmonious visual effect created by the use of natural materials.

Sign programs at most projects will use a variety of sign materials. The selected material will depend on the intended function of the sign.
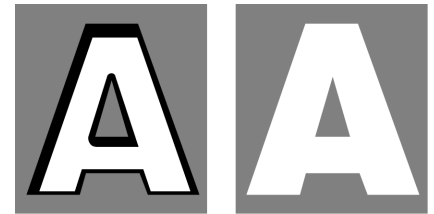
5) Other Materials: Substrate materials not mentioned in this manual may be considered for use. Check with the Sign Program MCX before using new materials.

6) Aesthetics: Regardless of sign material selected, the overall aesthetic effect of a project's signage should be a uniform and tailored look. Sign placement should reflect a sense of visual order. Nothing is more visually chaotic than too many signs placed randomly in a small area. Proper sign maintenance is critical to upholding a high aesthetic standard. Finally, mounting materials and heights shall be standardized for visual uniformity.

It is essential to recognize that each sign is part of a family of signs within a Corps facility, and as such the selection of materials for each location should maintain visual continuity.

In summary, to evaluate materials: compare the initial costs to material longevity; determine maintenance costs over time; and evaluate the overall visual effect of all signs in the project. Keep in mind that aesthetic quality will depend more on the appropriate use of materials and the proper layout of typography than on the amount of money spent on an individual sign.

The maintenance of signs is an integral part of comprehensive sign program management. This includes inspecting, repairing, replacing, removing, cleaning, and refinishing. The effectiveness of the total sign system is only as good as the maintenance rendered. Missing, broken, or illegible signs cause confusion and accidents and diminish the cumulative effect of the whole sign program. Poor maintenance reflects an attitude of neglect, which in turn can lead to abuse of an area and encourage vandalism.

A maintenance program begins with a comprehensive field inspection of all signs. Use a site plan to locate signs, along with a sign schedule describing the message, materials, mounting methods, and installation dates of each (see Section 3, Planning). Establish a schedule and designate an individual to check each sign on the plan and evaluate the following:

1) Is the sign in place?
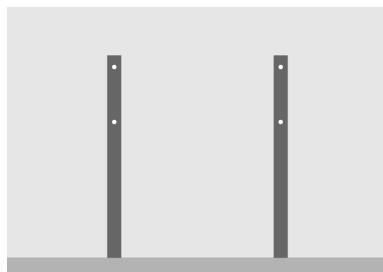
Sign panel missing

2) Is the sign still necessary?

Redundant signs

3) Is the sign upright and facing in the right direction?
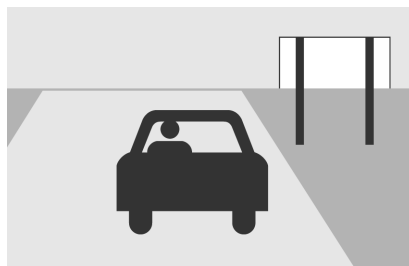
Sign facing in wrong direction

4) Are the supports in good condition?
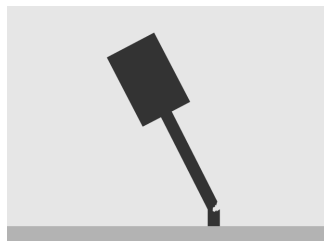
Broken post

5) Is the face in good condition?
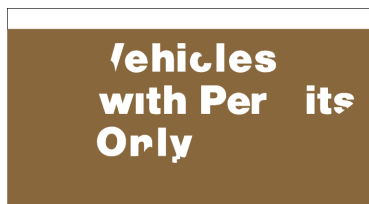
Missing letters

Bent face

6) Is the surface dirty?
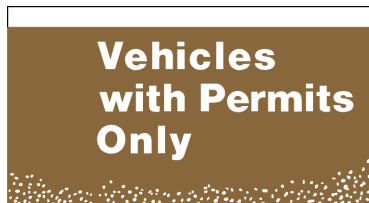
Mildew or fungus

7) Is the sign obscured by foliage?

Leaves in front of sign

8) Is the sign in compliance with this manual?
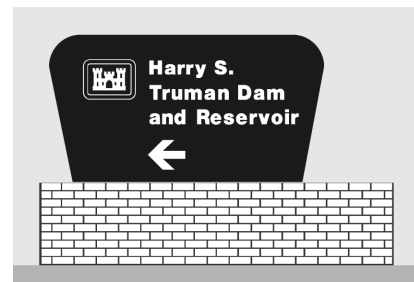
Sign not in compliance

9) Should maintenance work be requested to correct deficiency?

Following this evaluation, orders for removal, replacement or maintenance should be prepared, and maintenance work done in a systematic manner. It is important that maintenance crews and park rangers note damaged signs on maintenance work orders as part of their routine work. The frequent scheduled inspections and routine observations are complementary, forming a total maintenance program. Appendix C outlines in detail the procedures necessary for a comprehensive sign maintenance program. This information should be incorporated into the sign plan (see Section 3) so that maintenance and replacement are coordinated.

The appropriate and effective communications of safety-related information is a key component of the Corps Sign Standards Program. Throughout all areas, including recreation facilities, waterways, locks and dams, construction sites, and industrial facilities, safety signs are used to restrict, warn and inform visitors and employees of imminent danger or possible hazardous conditions.

Because of the interrelationship of Corps projects and facilities, two different types of safety signs may be used at the same location. This would be most common in and around a navigation lock where Workplace Safety signs are used along with standard waterway signs.

The Sign Standards Manual specifies which types of signs are to be used for each different condition. If you have questions concerning the appropriate type or classification of sign to be used for a particular application, consult your Sign Program Manager for assistance.

1) Sign Types:
There are two basic types of safety signs used on Corps projects. These include standard Workplace Safety signs as shown in Section 11 for use in Corps shops and equipment, on a dam, powerhouse or locking device, and around construction activity. The second type are public-oriented safety signs used at recreation projects and along the waterway system as shown in Sections 7 and 14.

The major difference between these two types of signs is the layout grid or graphic format of the sign. Both sign types follow the established color system; i.e., red and white for Restricted and Danger signs, and yellow and black for Warning and Caution signs. For illustrative purposes, two symbol sign applications that are commonly used are also shown as part of this review.

2) Sign Classifications:
Although all safety signs share a common function, there are differences as to which classifications and types of signs are used for each particular condition. The illustrations shown on the following pages identify both the sign classifications (Danger, Caution, etc.) and the various types of safety signs within a specific classification (recreation, waterway, workplace safety). The determination of the appropriate sign classification will depend on the severity of the hazard.

3) Standardized Safety Sign Legends:
Most commonly used safety-related signs are shown in the appropriate sections throughout the manual. The legends for these signs have been carefully developed so that the signs will communicate the intended message as effectively as possible and maintain a common visual format to increase the recognition value of each individual sign as used throughout Corps facilities.

The Danger, Caution, and Warning safety sign legends appearing in this manual have been approved by HQUSACE, Office of Counsel, and cannot be changed. If the wording of a safety sign is not appropriate to the condition being signed, consult the district Sign Program Manager. Requests for modified sign legends or a new sign should be made using the procedure and worksheet on page 1-13.

4) Legend System:
A safety sign legend is made up of two parts. These include a banner headline with signal word (Danger, Warning, or Caution) and a specific descriptive legend. Safety signs are placed to warn or instruct viewers and have been worded in such a manner that the viewer is not endangered in a hazardous location.

5) Signal Word:
The headline banner shows a signal or key word which designates the degree of hazard and calls attention to the action/emphasis section below the signal word. It is always located in the upper section of the sign panel.

6) Specific Description:
The action/emphasis section of a sign contains those words which state the appropriate protective action to be taken or clarify the nature of the hazard.

7) Sign Color:
The sign classifications rely on color associations. This standard system of safety sign colors reflects accepted industry standards and should be maintained as specified in this manual. It must be emphasized that Danger signs be white on red and Warning and Caution signs be black on yellow to maintain the basic integrity of the safety sign standards. The basic colors for each sign are described in the illustrations contained in this review. Note that on Warning/Caution signs as used on waterways and recreation sites, a chartreuse (ultra-bright retro-reflective Lemon Yellow color) is used instead of workplace Safety Yellow.

8) Scope:
These standards apply to the design, application and use of signs intended to indicate hazards in the environment and provide information so that injury or property damage resulting from such hazards may be avoided.

9) Purpose:
It is the purpose of these standards to reduce the proliferation of non-standard signs and the use of a variety of signs to indicate similar hazards.

10) Sign Plan:
Prior to placing any safety-related signs, they must first be made part of the project sign plan. Legends must be reviewed for consistency and their relationship to all other signs in the project.

11) Clarity and Legibility:
All signs must adhere to the graphic format and color system specified in this manual. Legends should be brief and use language that is easily understood by the viewing audience. The size of the sign shall be determined by the size of the letters as required for a safe viewing distance and by the length of the message.

12) Posting Policy:
Unless signs are placed on a waterway with a long viewing distance, most safety signs are relatively small and are placed for viewing near the condition being identified. If the hazard covers a large area, additional signs should be used. The sign must be readily viewed in relation to the hazard.

Safety-related signs should be placed to alert and inform in sufficient time to avoid hazards or take appropriate action. Signs should be so placed as to be legible, create no distractions or be hazards in themselves. Care should be taken to avoid grouping too many signs together in one location. Do not place signs on movable objects or adjacent to movable objects such as behind a door, which, when moved, can obscure the sign.

13) Maintenance:
Once a safety sign is installed, it must be properly maintained until the hazard being signed no longer exists, or until a policy decision has been made by the district or division that the warning no longer be used. All safety-related signs must be inspected on a systematic basis and repaired or replaced on a timely basis, as required.

1. Danger/Restricted Signs

These signs indicate immediate and grave danger, a hazard capable of producing irreversible damage or injury and prohibitions against harmful activity.

1.1 *Recreation Sites*

To denote a hazard and identify specific prohibitions.

Typeface:	*Helvetica Bold*
Legend color:	*White*
Panel color:	*Red*
Rule/bar:	*White*
Grid format:	*1*

Danger
Deep Drop
No Swimming
or Wading
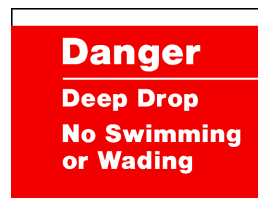
1.2 *Waterways*

To indicate entry into a dangerous area as viewed from the water.

Typeface:	*Helvetica Medium*
Legend color:	*White*
Panel color:	*Red*
Rule/bar:	*White*
Grid format:	*1*

Danger
Submerged
Dam 2500 Ft.
Ahead
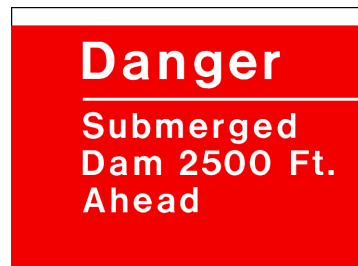
1.3 *Waterways*

To prohibit watercraft entry into a dangerous area with alternate banner "Restricted".

Typeface:	*Helvetica Medium*
Legend color:	*White*
Panel color:	*Red*
Rule/bar:	*White*
Grid format:	*1*

Restricted
Strong Currents
Keep Out

1.4 *Workplace Safety*

In shops and around dams to identify hazards.

Typeface:	*Helvetica Bold*
Legend color:	*White on red headline and black on white description*
Panel color:	*White*
Rule/bar:	*Safety Red*
Grid format:	*A*

Danger
High
Voltage
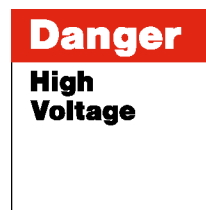
2. Warning/Caution Signs

These signs are used to call attention to a potential danger, or a hazard capable of resulting in moderate to severe injury or damage. In some instances, the hazards may be the same as those associated with Danger signs but are of significantly less magnitude.

2.1 *Recreation Sites*

To caution viewers about potential hazardous conditions.

Typeface:	*Helvetica Bold*
Legend color:	*Black*
Panel color:	*Lemon Yellow*
Rule/bar:	*Black*
Grid format:	*1*
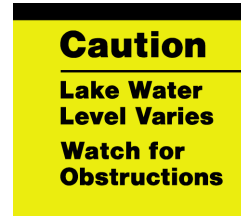
2.2 *Waterways*

To warn boaters approaching a hazardous area.

Typeface:	*Helvetica Medium*
Legend color:	*Black*
Panel color:	*Lemon Yellow*
Rule/bar:	*Black*
Grid format:	*1*

2.3 *Workplace Safety*

In shops and around dams to warn of hazards.

Typeface:	*Helvetica Bold*
Legend color:	*Yellow on black bar, black on yellow panel*
Panel color:	*Safety Yellow*
Grid format:	*A*

3. Symbol Signs

Within a facility a symbol sign may be used in lieu of a safety sign as a more user friendly method to define specific rules at a location. Used with other symbol signs at the same location, these pictographs rely on a common graphic shorthand for all prohibitions in public areas.

3.1 *Slat System with Prohibition Symbol*

Used at the entry to introduce prohibitions and safety-related information for a facility.

Typeface:	*Helvetica Bold*
Legend color:	*White*
Panel color:	*Corps Brown*
Symbol:	*Black*
Circle/slash	*Red on white background*
Grid format:	*-*

3.2 *Prohibition Symbol*

Used at specific locations where applicable in lieu of a written safety sign.

Typeface:	*Helvetica Bold*
Legend color:	*Black*
Panel color:	*White*
Symbol:	*Black*
Circle/slash:	*Red*
Grid format:	*A*

These additional two classifications are used in the Workplace Safety sign format. They include "Notice" and general "Safety" information informing viewers of general practices, but should not be used in lieu of hazard warnings.

4. Notice Signs

These signs are used to control or define access and circulation. They are used primarily for information and are not placed to identify a hazard.

4.1 *Workplace Safety*

In shops and around dams to warn of hazards.

Typeface:	*Helvetica Bold*
Legend color:	*White on Safety Blue header with black on white panel*
Panel color:	*White*
Grid format:	*A*

5. General Safety Signs

These signs identify rules and facilities relating to health, first aid, medical equipment, sanitation, housekeeping practice and general safety information.

5.1 *Workplace Safety*

In shops and around dams to identify safety practices.

Typeface:	*Helvetica Bold*
Legend color:	*White on Safety Green header with black on white panel*
Panel color:	*White*
Grid format:	*A*

Foreword

This report provides a guide on letter size and the placement of directional signs on roadways leading to, or in Corps recreation projects.

The primary references utilized in this report include the following:

• *Geometric Design of Highways and Streets, by the American Association of State Highway and Transportation Officials (AASHTO), dated 1984.*

• *Manual on Uniform Traffic Control Devices (MUTCD) Revision 4, by the U.S. Department of Transportation, dated 1986.*

Principals

Careful selection of letter size and sign location will enable the motorist to detect and understand the sign message before passing the sign. There should be time for the motorist to comfortably react to the sign message, to slow from the operating speed and then to turn at the appropriate crossroad or access road. On multi-lane roadways, the motorist may have to change lanes before slowing to the crossroads or access road.

Detection and Recognition Time

The information handling process of a motorist[1] includes time periods for the delay between the time a directional sign is presented and the time the eyes begin to move, the eye fixation, and the recognition or perception of the sign message. These times vary between two-thirds of a second to six seconds[2] depending on the complexity of the information and whether it is expected or unexpected. A detection and recognition time of up to three seconds is recommended for signs on road up to 70 miles per hour[3] and a 3.0 second time is used for general warning signs[4].

It is concluded from the information presented by AASHTO and the MUTCD that a three-second detection and recognition time would be appropriate for directional signs on roadways of all speeds.

Viewing Distance

The viewing distance is the distance a motorist travels during the detection and recognition time. This distance must be unobstructed and the directional sign must be within the motorist's cone of vision. The viewing distance in feet is calculated by the following formula:

$$D = 1.47 \ TV$$

Where: D = viewing distance in feet
T = detection and recognition time in feet
V = operating speed in miles per hour

The operating speed is defined as the 85th percentile speed (the speed at or below which 85% of the vehicles are moving).

Letter Size

The size of the upper case letters in the sign message consisting of upper and lower case letters is determined by the motorists ability to read the sign throughout the viewing distance.

Research in 1939[5] established a viewing standard of 50 feet per inch of letter height for daylight conditions and 40 feet per inch for nighttime conditions. These values were for a static visual acuity of 20/20 and represented the 80th percentile of the distribution of the observed legibility distances. A 20/40 visual acuity is to be used for design to comply with Federal Highway Administration Standards since drivers licenses are commonly issued with that minimum vision. Therefore, the

[1]AASHTO, *Geometric Design of Highways and Streets*, Washington D.C., 1984, p. 146.
[2]Ibid, pp. 42-45
[3]Ibid, p. 147
[4]U.S. Department of Transportation, *Manual on Uniform Traffic Control Devices* (MUTCD), Revision 4, 1986.
[5]Forbes, T. W. and Holmes, R. S., Legibility Distances of Highway Destination Signs in Relation to Letter Height, Letter Width and Reflectorization, H. R. B. Proceedings, Vol. 19, 1939, pp. 321-334

viewing standard for 20/40 vision would result in a 25 feet per inch of letter height for daylight conditions and 20 feet per inch for nighttime conditions.

The research ophthalmologist working with the Corps on this project has established a viewing distance for 28 feet per inch of letter height for Helvetica Medium typeface with upper and lower case letters in the sign message for a visual acuity of 20/40. It is believed that this most recent research is more applicable for this project, but that a slightly larger letter size or smaller viewing standard be used to compensate for nighttime conditions and for a dynamic visual acuity.

Consequently, a standard utilizing a minimum letter height of four inches is recommended for conditions with operating speeds under 25 miles per hour and a minimum viewing standard of 27.5 feet per inch of letter height. A maximum letter height of 12 inches is recommended for operating speeds of 65 miles per hour and a viewing standard of 25 feet per inch of letter height. The letter height size would increase by one inch for each fives miles per hour above 25 miles per hour.

It should be noted that the motorist with 20/20 vision and an unobstructed viewing distance would have twice the time to read the sign message than the motorist with 20/40 vision. Therefore, it is also recommended that directional signs be located where the sight distance would be double the viewing distance.

Sign Placement

The placement of directional signs is to be far enough in advance of the location of the site so that the motorist can react and slow the vehicle or change lanes, if necessary, prior to reaching the appropriate crossroad or access road. In some cases, such as high speed highways, two signs may be necessary.

For conditions on a single lane approach, the minimum sign placement distance is calculated to permit a motorist to comfortable slow the vehicle prior to stopping or turning off the roadway approach. This distance is calculated by the following formula[6]:

$$D = (\frac{V2 + V1}{2}) \times (\frac{V2 - V1}{6}) \times 1.47$$

Where D = Distance in feet
$V2$ = Operating speed in mph roadway
$V1$ = Final speed in mph at leaving roadway, assumed to be zero

$\frac{V2 + V1}{2}$ = Average speed during deceleration

$\frac{V2 - V1}{6}$ = Time required to comfortably decelerate

However, AASHTO[7] has indicated a longer distance traveled during a comfortable deceleration than the formula implies. Because the AASHTO results use longer distances than the calculated results, it is recommended that the AASHTO results be used for the minimum distance a sign should be placed in advance of the appropriate crossroad or access point.

It is common for some highway departments to locate directional signs on rural highways one-half mile in advance of the appropriate crossroad. This is a desirable condition and not the minimum condition. Therefore, a minimum and desirable location is recommended for the placement of directional signs. The minimum placement would be used only when in urban areas or where the desirable placement is not possible. In no case should the directional sign be placed less than 200 feet or more than 2600 feet from the appropriate crossroad or access road. A secondary directional sign may be necessary if the desired placement is used and the appropriate crossroad cannot be seen by the motorist when approaching the initial directional sign. The secondary sign would be located at the minimum distance to the crossroad.

The minimum distance a sign is to be placed in advance of the crossroad is to be increased on multi-lane roadway approaches. This also allows the motorist time to change lanes. This distance is normally traveled in approximately eight seconds in moderate to heavy traffic. Therefore, it would add approximately 200 feet at operating speeds under 20 miles per hour and 800 feet at operating speeds at 65 miles per hour.

[6]Woods, D. L. and Rowan, N. J., Street Name Signs for Arterial Streets, H.R.B. Record 325, 1970, p. 54.
[7]AASHTO, p. 36 and p. 1044.

Recommendations

Table 1 contains the recommended viewing distances, letter sizes, and sign placement for operating speeds up to 65 miles per hour.

The decision to use a particular size sign at a specific location should be made on the basis of a thorough study of the area. Table 1 provides the fundamental criteria for directional sign letter sizing and placement.

Ambiguous and/or complicated situations may require a more indepth analysis performed by a qualified engineer. This assessment is needed to exercise the judgment inherent in the selection of traffic signs just as it is needed to locate and design the roads and streets which the signs complement.

Table 1
Directional sign letter size and placement guide

Operating Speed*	Detection Recognition Time	Viewing Distance	Letter Size	Sign Placement Distance in Advance of Location	
				Single Lane Approach	Multi Lane Approach
(MPH)	(Seconds)	(Feet)	(Inches)	(Feet)	(Feet)
0-20	3	90	4	200/600	400/900
21-25	3	110	4	200/600	500/900
26-30	3	135	6	250/600	600/900
31-35	3	155	6	300/600	725/900
36-40	3	180	9	375/1300	875/1300
41-45	3	200	9	450/1300	1000/1300
46-50	3	220	9	500/1300	1100/1300
51-55	3	250	12	650/2600	1400/2600
56-60	3	275	12	650/2600	1400/2600
61-65	3	300	12	725/2600	1550/2600

*Operating speed is the 85th percentile speed

Note: All dimensions have been rounded
Legend: 200/600 = minimum distance/desired distance

This section has been provided to instruct Sign Program Managers in the proper procedure for developing a project sign plan. This includes:

- inventory of existing conditions,
- analysis of sign requirements,
- preparation of sign plan, and
- implementation program.

Illustrations showing worksheets for written documentation and examples of corresponding site plans with inventory and sign plan notation are provided for instruction and reference.

The sign plan is a written record identifying each sign by type and legend, along with a site plan showing its placement location. The preparation of a sign plan for each project is the first step in implementing the goals of the Corps sign program. This sign plan provides the framework for managing an effective sign program. It becomes the database for decisions involving: new installations, replacements, removals, maintenance, and budget preparation. Once it has been prepared, it will also become part of the project's operational management plan (OMP).

Where there are large numbers of similar signs (e.g., boundary markers, campsite markers, trail markers), the signs do not need to be individually identified. They may be grouped together, with the number of signs listed in the remarks box. This does not include safety-related signs, e.g., traffic signs.

The project Sign Program Manager is responsible for the development of a comprehensive sign plan. This plan should include all project recreation areas, waterways, buildings, and peripheral roadway signs. The district Sign Program Manager is responsible for the review and approval of the plan.

On Corps concession leased lands, Corps sign standards compliance is encouraged. Project staff should work to enlist the support and participation of lessees or licensees in implementing a sign program that incorporates the principles and objectives outlined in this manual.

The graphic format and design standard for each type of sign must be maintained. If a sign requires a unique legend not provided in this manual, it will be prepared following the applicable grid format. Although every effort has been made to standardize sign legends where possible, individual site conditions vary from project to project. The appropriateness of an individual sign to a particular setting is to be determined by the project Sign Program Manager on a case-by-case basis based upon an approved sign plan. The sign plan should be based on local need, site geography, existent hazards, and the way the site is being used by the public.

The steps described on page 3-2 outline the process of developing a sign plan.

The following is an outline describing the procedures for developing a sign plan:

1) Inventory of Existing Conditions: The first step in developing a project sign plan is to inventory all existing signs. Materials used for this field work are:

  a) Copies of the Sign Inventory Worksheet (see page 3-3).

  b) Site plans: Because of the large scale of most projects, this process may require a number of drawings: an area map for off-project signs, individual site maps to show more detail, and floor plans of buildings that have interior signs. The drawing scale should be large enough to allow accurate location notation of existing signs.

  c) Tape measure.

  d) Camera: Instant-print, negative print film, or digital.

Existing conditions and field recommendations are to be inventoried on Sign Inventory Worksheets (page 3-3) with the sign location shown on a corresponding site plan (page 3-4). On the site plan, a "T"-shaped graphic for single-face signs or an "H" for double-face signs, to indicate orientation (shown on attached illustrations) should be placed on the plan at the location of each sign.

The signs are then numbered and keyed to the Sign Inventory Worksheet. This worksheet becomes the written inventory that includes sign type, legend, size, mounting, and related field notes.

A photograph showing each sign and its surrounding area is recommended.

This inventory and site plan become part of the base information needed to develop a project sign implementation plan.

Corps-related signs that have been installed by the local jurisdiction should also be noted in the sign plan. These signs are part of a comprehensive view of the project. It is important to know where these signs are and what they say to determine what signs are needed at a project and whether there are duplicate signs that should be removed.

2) Evaluation: Once the project has been inventoried and the base data is complete, an analysis of the inventory can be made. Be familiar with the design guidelines in Section 2 and the various sign types shown in Sections 5-18 as you analyze sign requirements. Evaluate the following:

  a) Are there signs missing?

  b) Are the signs in good condition?

  c) Are the signs in compliance with the standards outlined in this manual?

  d) Are there any signs which are no longer necessary or appropriate?

  e) Are all the signs in their proper locations?

Based on this evaluation, identify new signs required, replacement signs needed, and signs that can be removed, remounted or moved to be in compliance with these guidelines.

One goal of this evaluation is to reduce the unnecessary proliferation of signs. Too many signs in a given area dilute the impact of each individual sign. It is preferable to have fewer signs than too many.

3) Preparation of Project Sign Plan: The sign plan specifies and identifies the placement location for all signs on the project. This is a fluid record that will be revised and updated on an ongoing basis as noncomplying signs are replaced, new signs are added, or when signs that are no longer needed are removed. The sign plan will be recorded using the following materials:

  a) Sign software program.

  b) Site plans

  c) Photographic record of signs where applicable

With a thorough knowledge of this manual including Principles and Guidelines, Design Standards, and the respective sign types shown in Sections 5-18, a sign plan will be prepared using the inventory of existing conditions and requirements evaluation described above.

The sign plan drawings will show only those signs that exist or are scheduled in the current year's implementation schedule.

4) Implementation: Next, prepare an implementation schedule to phase in new signs that conform to the guidelines established in this manual. To accelerate the phasing-in of new signs, either of the following methods may be used to supplement replacement through routine maintenance:

  a) Replacement by site: This involves changing all the signs in a given area. If there are 10 recreation areas at a project, schedule replacement of all of the signs in two of the areas annually. In five years, the entire project will be in full compliance with the manual without a major expenditure in any one year. This comprehensive method of implementation affords the greatest visual impact of the collective look of the sign program at each signed facility.

  b) Replacement by category: This involves changing all of the signs of the same type throughout a project; for example, replacing all the signs at each of the boat ramps on a project. This would include a complete change of all signs at each boat ramp, including directional, regulatory, traffic, recreation area, and safety. Because multiples in each category may be ordered, there could be a cost savings. Also, since all signs of one type are installed at the same time, they will all be on the same maintenance schedule.

Once an implementation schedule has been developed, it should be incorporated into the sign inspection and maintenance program. In this way, the sign plan also serves as a management tool for preparing budget requests and for reviewing sign requisitions. This will also allow a coordinated replacement and maintenance schedule.

If a sign is to be located off-project on state, county or city right-of-way, the project Sign Program Manager should contact the appropriate managing agency and request that they install the sign. If they provide the sign, it will be designed to meet their standards. If they do not, the Corps should offer to install the sign utilizing this manual for design guidance.

Shown below is a reduced version of the Sign Inventory Worksheet. This worksheet is used in the field to document existing conditions when preparing a project sign plan. This sample worksheet has been filled out to show how the initial field documentation of a site is recorded. The instructions to the left of the worksheet describe what information is to be placed on the worksheet. A corresponding site plan is shown on page 3-4.

Instructions: Refer to the guidelines below when preparing a sign inventory.

1) Plan ID Number: Each sign is given a Plan Identification Number. Using this number, identify the sign on a corresponding plan view drawing. It is recommended that only a simple consecutive numeric be used to identify each sign on the worksheet. Plan to keep this initial phase of work as simple as possible.

2) Sign Legend: Describe the sign type and the legend that appears on the sign. If the sign has a multiple-line legend, note the legend line-for-line as it appears. If the sign is identical to a previous sign listed on this worksheet, reference the previous sign by the Plan ID Number. If the sign is a traffic sign, note if it is in compliance with the MUTCD.

3) Panel Size: Enter overall size of sign panel.

4) Legend Size: Enter the capital letter heights of primary and secondary legends.

5) Post Size: Enter nominal dimensions of the existing post size.

6) Viewing Distance: Enter the distance at which the sign is to be read.

7) Mounting Height: Enter the distance from the grade to the base of the sign panel (Height Above Grade Level).

8) Photographic Record: A photographic record of signs and their locations is recommended. If an instant-print camera is used, place the Plan ID Number directly on the photograph. If the film used must be processed, note the exposure number in this column to make it easier to number and file the print once returned from processing. Digital photos are best for use with the sign software.

9) Notes: In this space describe any information on environmental or site conditions that will be useful when developing the sign plan. This may include: unusual road edge grades, speed of approach, impaired lines of sight, topological and geologic constraints such as surface bedrock or high water table. If the existing sign is unnecessary, redundant, or should be replaced, it should be noted in this space.

10) Title Block: Because of the number of sheets that will be used for an inventory, the space at the bottom of the worksheet is provided for identification of each sheet.

The example below is a portion of a standard plan used to show the design of a project including: roads, trails, buildings, and related site improvements.

The information noted on the drawing is a companion to the Sign Inventory Worksheet shown on page 3-3. Note that the "T" or "H" graphic identifies the orientation of the sign and if it is double or single face. The number corresponds to the Plan ID Number on the worksheet.

The scale of this drawing (400 ft. per inch) is a convenient size for general inventory and sign placement location records. Exact mounting detail drawings for sign implementation are shown on larger scale drawings (see page 3-6).
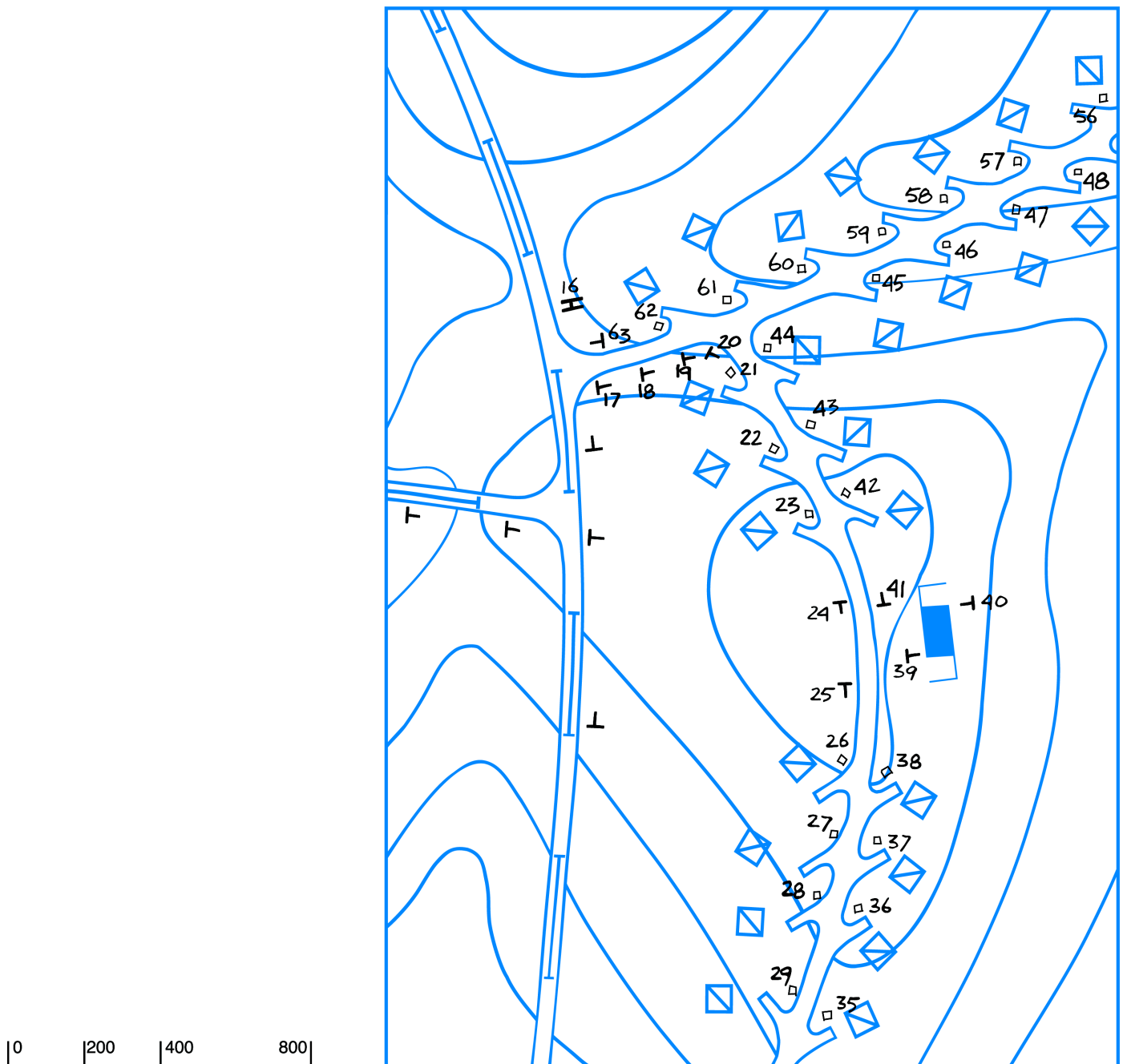
The section of the site plan shown below is identical to the plan on page 3-4. This illustration shows how a completed sign plan is noted on the drawing. Noted are both noncomplying signs that currently exist but are scheduled for replacement and signs that are in compliance with this manual. The placement drawing on page 3-6 shows the mounting and placement location in greater detail for installation.
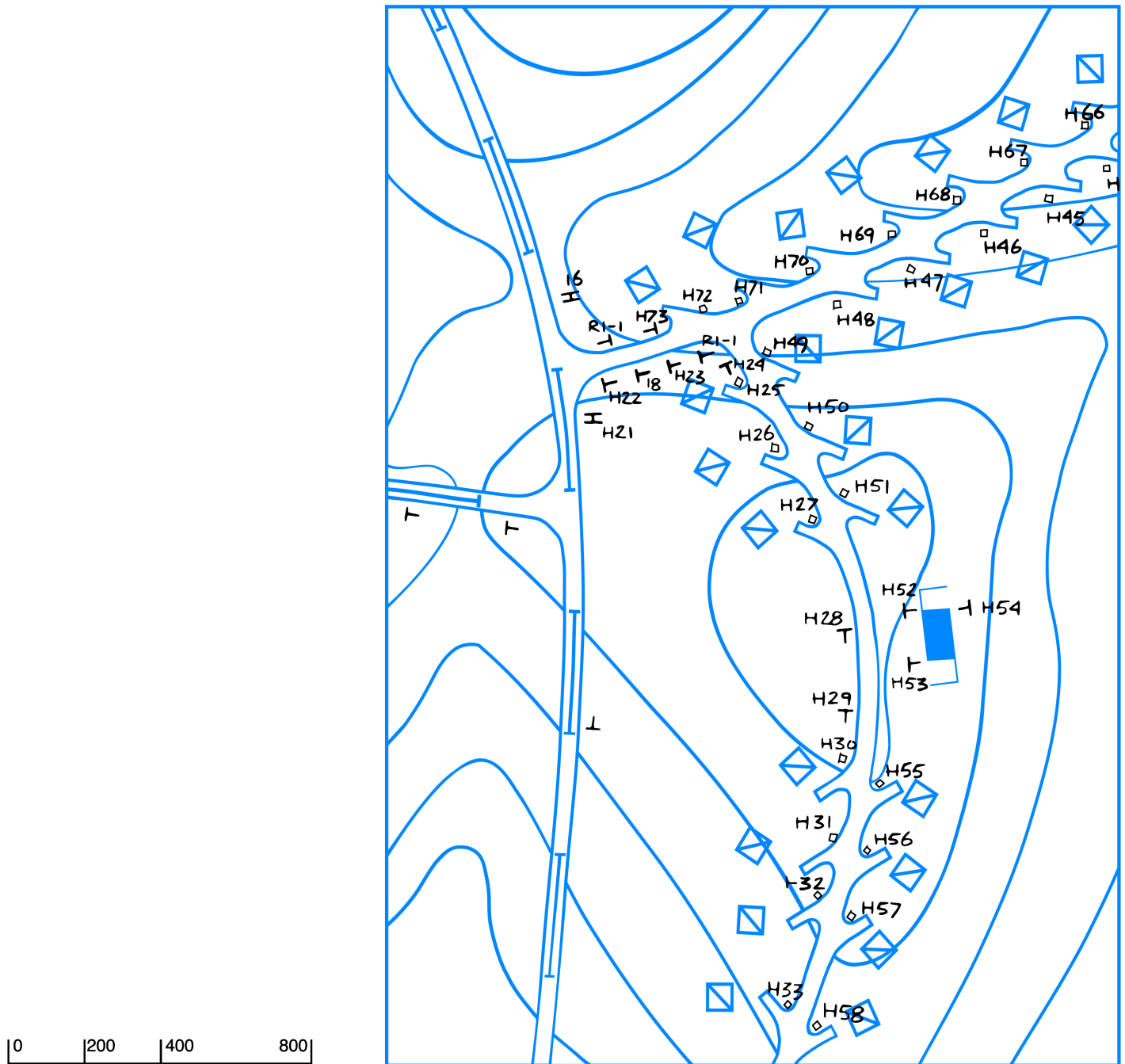
A detailed series of actual placement location drawings for individual signs or groups of signs in an area should be prepared for proper location of signs for installation. The scale of the example shown is 1" = 100'. The scale will vary depending on the detail of the information that needs to be shown. The base drawings for this purpose may be pre-pared as needed or use existing grading or paving plans. The key items to be specified are the distance of sign post from edge of pavement (or roadway center line), the measured distance from the intersection, condition, or item being signed, and the distance between signs where more than one sign is placed in a progression in a specific area.

Prior to actual sign mounting, the project Sign Program Manager will identify the placement location for each new sign. This location will be identified in the field with a stake to verify the sign plan prior to actual installation.

The example shown below is a typical sign placement detail implementation drawing.
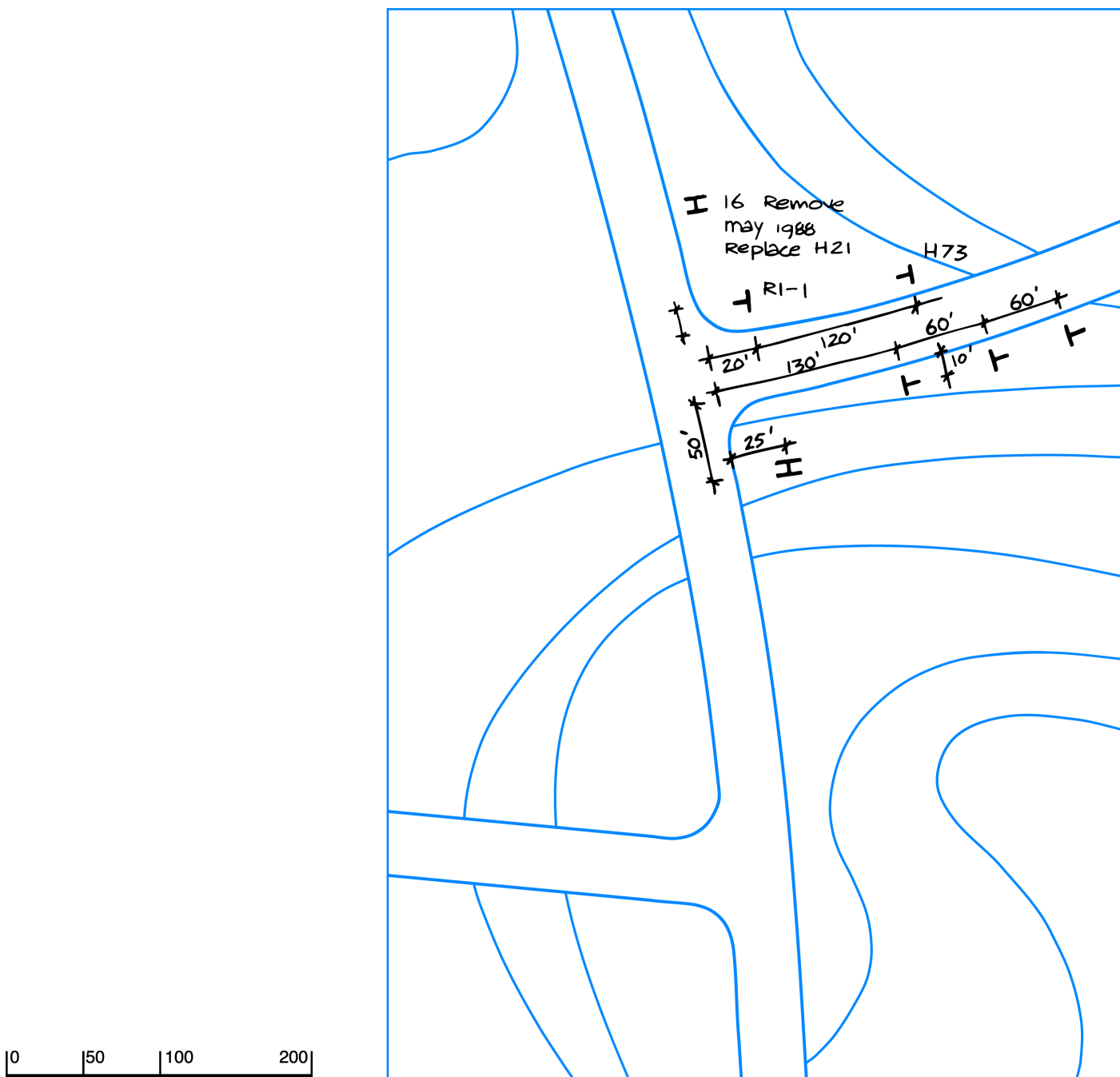
The Corps sign system has been designed using a selected group of common graphic elements and visual standards. These graphic elements include: the Corps Signature for agency identification, color standards for each type of sign, three weights of the Haas Helvetica typeface for the lettering on sign faces, specifications for letter- and word-spacing, the visual relationship of sign legend to sign panel size, recommended viewing distances for each size of legend typography (page 2-6), and sign placement guidelines (page 2-8 to 2-9).

These standards become the graphic building blocks around which the signs are designed. They have been adopted because they provide a functional base for the graphic format of each sign. These design standards also become one of the visual threads common to the design of each sign in the system.

This section defines the common graphic elements and visual standards and describes how they are to be used. These standards incorporate the principles contained in the Corps Graphic Standards Manual (EP 310-1-6). Each standard, however, has been adapted for application to signage.

Contact the National Sign Program Manager for advice and assistance concerning specialized or unique applications of these Corps design standards as they are applied to signs.

The Corps Signature is the key graphic element used to identify the Corps to the public. The Signature consists of the Mark and the Corps name set in Helvetica Medium typeface. Both elements are placed flush left.

In applications to signage, the Signature is to be used only on signs where Corps identification is important and integral to the message being communicated. This use is limited to: Standard Identification, Approach Roadway Directional, Boundary (ownership), Construction Project Identification, and Corps Participation Credit signs. Each of these examples is shown in its respective section of this manual.

The two basic forms of the Signature are shown below. The positive version (top) is used on signs with a white or light tone background. The reverse version is used on signs where the Signature is placed on a dark background.

Refer to the *Graphic Standards Manual* (EP 310-1-6) for a complete description of the Mark and Signature. Note the Signature registration symbol ® is not to be used on signs.

The form of the Mark is derived from the traditional Castle symbol used by the Corps since its inception.

The Mark has been redesigned for greater strength and adaptability, both visually and for reproduction purposes. In its new form, the Mark is a simplified contemporary rendering of the traditional symbol.

Do not place the Corps Mark or Signature on Project Roadway Directional, recreation area, informational, safety, or waterway guide signs. Indiscriminate use of the Signature only dilutes the primary communicative intent of the sign on which it is placed.

No district, division or other field-operating activity names are to be added to the basic Corps Signature when used on signs (other than sign CID-01 on page 16-2)
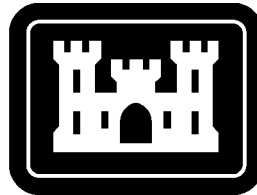
![US Army Corps of Engineers signature positive version](castle mark) **US Army Corps of Engineers**
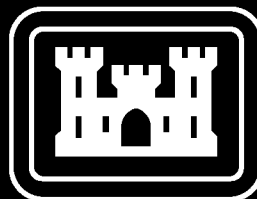
![US Army Corps of Engineers signature reverse version](castle mark reversed on black) **US Army Corps of Engineers**

The illustrations below show the various color configurations possible when using the Corps Signature on signs. Note that there are fewer possible ways to render the Signature on a sign panel than are specified for print applications (see *Graphic Standards Manual*, pages 1-5).

a) The most prominent use of the Signature will be on identification signs. For Standard Identification, post and panel signs, the reverse Signature is used; the Mark is Communication Red, the Signature type is white.
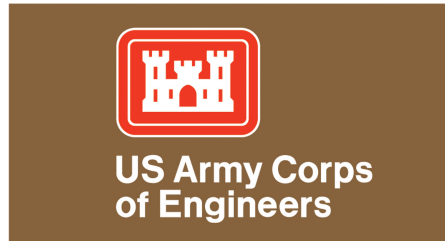
b) For large-scale Standard Identification signs of individual fabricated letters, the positive version is used; the Mark is Communication Red and the Signature typography is white (see page 5-7).
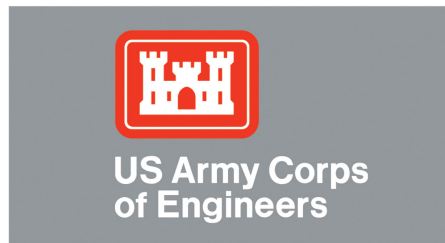
c) The Corps Participation Credit sign uses an all white reverse Signature on a Corps Brown background.
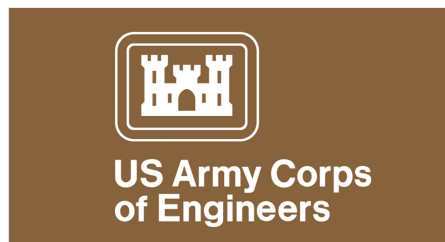
d) The header panels on Building Office Directories use a reverse Signature in white on Dark Grey.

e) Construction Project Identification signs use an all white reverse Signature on a Communication Red background.
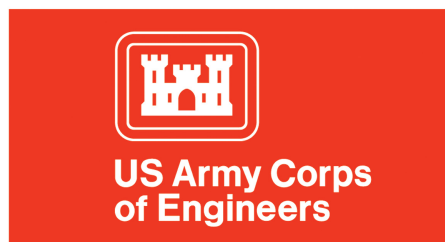
f) Boundary signs use the positive Signature in black on a white background.

Within the Corps sign system there are five standard color palettes. Three have been developed by the Corps and include: 1) Recreation Area signs, 2) Lock, Dam and Waterway signs, and 3) Office Interior signs. Two color groups have been adopted from existing standards: 1) Traffic signs (MUTCD) and 2) Workplace Safety signs (ANSI). Each of these is illustrated on the following pages with descriptions for their use. The two-character color code is in parentheses immediately after the color. Additional color application instructions are included in each respective section.

Colors must conform to the standards presented on the following pages when preparing signs.

For many of the colors shown on the next five pages, a corresponding Federal Standard Color number is listed. These numbers refer to color samples contained in a fan deck titled *Federal Standard 595B Colors*. The fan deck is published by the General Services Administration, order number 7690-01-162-2210.

Shown below are the colors for use on Corps identification, directional, and recreation area signs.

Corps Brown (BR): Background for identification, directional, recreation, and symbol signs. The closest Federal Standard Color is 20095.

White (WH): Legend for identification, directional, and recreation signs. Background for boundary signs. The closest Federal Standard Color is 27925, but the match with the 595B fan deck is not exact.
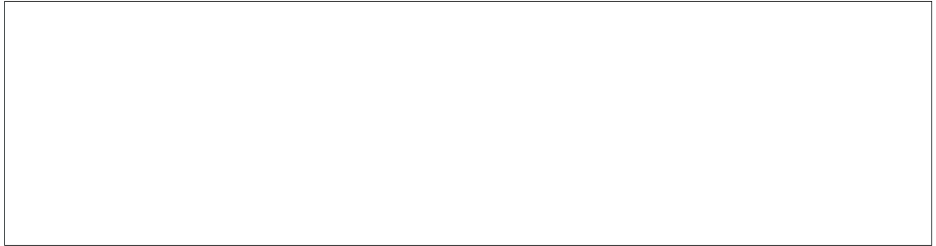
Communication Red (CR): Corps Mark (Castle) on identification signs. The closest Federal Standard Color is 11350, but the match with the 595B fan deck is not exact. The Graphics Standards Manual (EP 310-1-6) specifies Communication Red shall match Pantone Red 032.

Black (BK): Legend and Signature for boundary signs. The closest Federal Standard Color is 17038.
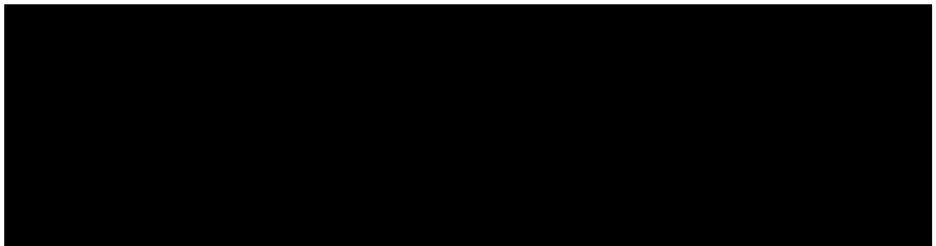
The colors shown below are adopted from the *Manual on Uniform Traffic Control Devices* (MUTCD), Section 2A-11, for use on signs within the right-of-way of all classes of public highways. Adjacent to the color display is a description of the sign types on which it is used. Refer to Section 9 for a description of the standard type of traffic signs used on Corps projects.

Red (RD): Background for Danger Signs (Stop, Do Not Enter, Wrong Way, Yield, etc.). Circle and Slash on Prohibition and No Parking Signs. The closest Federal Standard Color is 11310, but the match with the 595B fan deck is not exact.

Yellow (YL): Background for Warning/road hazard signs. The closest Federal Standard Color is 13637.

Orange (OR): Background for construction and maintenance Warning signs. The closest Federal Standard Color is 12473.

Green (GR): Background for guidance and directional signs. Circle around "P" of Parking sign. The closest Federal Standard Color is 14120, but the match with the 595B fan deck is not exact.

Safety White (WH): Legend for Danger, guidance, and information signs. Background for regulatory signs. The closest Federal Standard Color is 27925, but the match with the 595B fan deck is not exact.

Safety Black (BK): Legend for Warning and Regulatory signs. The closest Federal Standard Color is 17038.
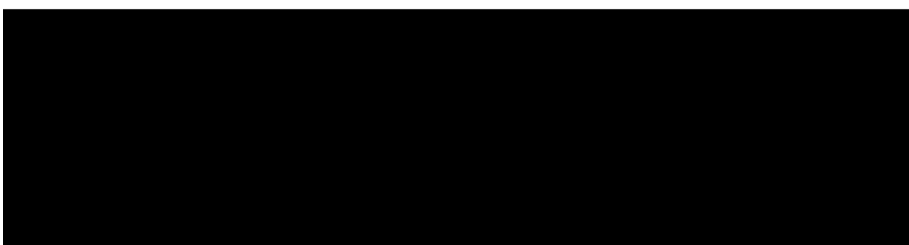
The colors shown below are used on all safety signs as described in Section 11 of this manual.

Safety Red (SR): Federal Standard Color 11310, but the match with the 595B fan deck is not exact. Danger; warning of an immediate hazard.

Safety Yellow (SY): Federal Standard Color 13591, but the match with the 595B fan deck is not exact. Caution; warning of potential hazard.

Safety Green (SG): Federal Standard Color 14109, but the match with the 595B fan deck is not exact.   Notice; for safety.

Safety Blue (SB): Federal Standard Color 15092. Information; general.

Black (SK): Federal Standard Color 17038. Directional and all descriptive legends.
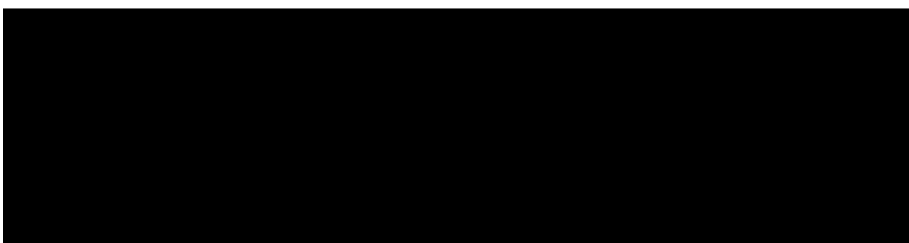
White (SW): Federal Standard Color 27875. All sign backgrounds, except for Caution.

This color group has been developed for all waterway safety and information signs placed around locks and dams, on jetties and breakwaters, and to mark orientation points on lakes. Specifications and illustrations for their use are shown in Section 14 of this manual.

Color shall conform to the chromaticity coordinates as specified by the Corps. The material to be used for the colors below (other than black) is Diamond Grade sheeting. Color reference numbers are available from the National Sign Program Manager. Material specifications are provided on page B-13c-d. Recommended material product numbers are provided in Appendix B.

Lock, dam and waterway signs are used in conjunction with the *Aids to Navigation Marking System* (U.S. Coast Guard).

Red (RD): Background for Danger and Restricted signs; denoting an immediate hazard, and identification of restricted areas.

Lemon Yellow (LY): Background for Warning and Caution signs; warning of potential hazards.
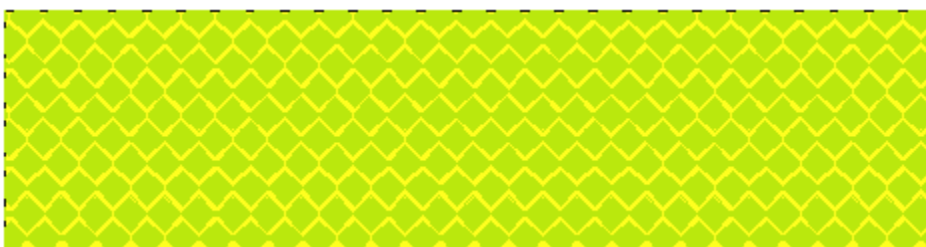
Medium Blue (MB): Legend for Lock information/instruction signs; identifies arrival point, locking procedures, and general lock use information.

Alternate figure and field color (with white) for Lake Mile Markers and Lake Symbol Guide signs.

White (WH): Background for Lock Information Instruction signs.

Legend for Danger and Restricted signs.
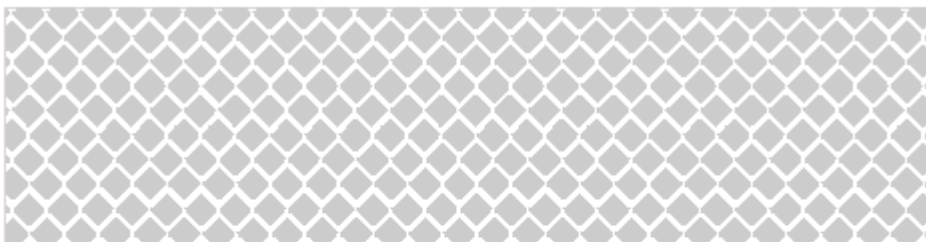
Black (BK): Legend for Warning and Caution signs.
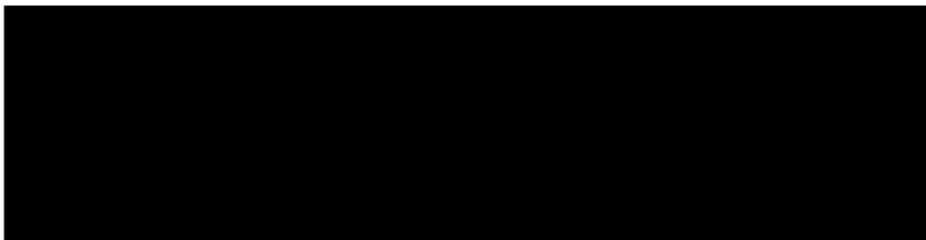
Office Interior signs for Corps buildings use the sign system described in Section 18. Shown below are the standard colors for use in this system. Only one of the standard accent colors (OD, OL, OG or WG) would be selected for a given office area. Color selected should be compatible with the existing office color scheme.

All sign legends are white (WH) and are identified using color number (01).

Office Dark Grey (DG): Background and frame color for identification and information plaques and directories (color number 44).

Office Red (OD): Background and frame color for ceiling-mounted assemblies (color number 24).

Office Blue (OL): Background and frame color for ceiling-mounted assemblies (color number 13).

Office Green (OG): Background and frame color for ceiling-mounted assemblies (color number 27).

Communication Red (CR): Background for safety-related plaques (color number 032). Panel frame to be Office Dark Grey.

Office Warm Grey (WG): Background and frame color for ceiling-mounted assemblies (color number 03).

Three different weights of the Haas Helvetica typeface have been adopted as the standard letter-style to be used on all Corps signs. These include Helvetica Bold, Helvetica Medium, and Helvetica Regular. These alphabets were selected because they are highly legible, contemporary in character, and readily available to manufacturers preparing signs for the Corps.

Shown below is a full upper/lower case display for each weight of the Helvetica letter-style. The comparative diagram on the following page illustrates the designated applications of each different weight.

Do not substitute any other typestyle for use on Corps signs.

Helvetica Bold: The wide stroke width of this letter-style creates a distinctive looking sign with simplicity. The bold letter-forms are ideally suited for signs with short legends. This typeface is used for the primary and secondary legends in identification, recreation area, industrial safety and parking signs.

ABCDEFGHIJKLMNOPQ RSTUVWXYZabcdefghij klmnopqrstuvwxyz 1234567890($?!&-—""."",;:)

Helvetica Medium: This medium weight letter-style is used for all roadway and recreation area directional sign legends. This type is ideally suited for signs viewed from a moving vehicle. Its 5:1 letter height to stroke width ratio and large, open, lower case letters make it a very legible typeface. The Helvetica Medium typestyle should not be used on signs where the Helvetica Regular or Helvetica Bold typefaces are used.

ABCDEFGHIJKLMNOPQ RSTUVWXYZabcdefghijk lmnopqrstuvwxyz 1234567890($?!&-—"".,;:)

Helvetica Regular: This is a thin stroke letter-style used for selected secondary legends on signs with Helvetica Bold primary legends, such as interpretative signs, and boundary signs. Helvetica Regular is also the typeface used for all interior signs.

ABCDEFGHIJKLMNOPQR STUVWXYZabcdefghijklm nopqrstuvwxyz 1234567890($?!&-— "".,;:)

Designed in 1957 by Edourd Hoffman and Max Miedinger, the Helvetica family of type is registered and copyrighted by the Haas type foundry in Switzerland. Use only versions of this typeface family that have been prepared from Haas originals and licensed for use by Haas on the typesetting method used. Many unauthorized versions exist. Some differ only minutely from the authorized versions. In others, the letter-forms are distorted enough to cause a significant difference in the length of words and, consequently, in panel length. In addition, many versions are not as legible, nor visually pleasing as the correct one.

The examples below illustrate how the three different weights of the Helvetica typeface are used on the various types of signs in the Corps sign program. Although each sign type has been designed for a specific purpose, the shared typographic system gives a cohesive look to these many different types of signs.

The basic sizes of these typefaces (capital letter height) have been predetermined for each type of sign depending on the distance at which they will be viewed (see Viewing Distance Guide, page 2-6).

For optimum legibility, a spacing guide has been developed for each type weight (see Appendix D).

Helvetica Bold is used for all legends on Standard and Secondary Identification signs.

US Army Corps of Engineers

Cook Recreation Area

J. Percy Priest Lake

Helvetica Bold is used for all legends on recreation signs and as the support legends for Prohibition Symbol and Area Regulation signs.

Fee Collection

1. Select campsite.

2. Fee will be collected by uniformed park ranger on patrol.

3. Retain permit receipt and display at campsite.

No Smoking

Helvetica Bold is used for all legends on Workplace Safety signs and for support legends on Parking/No Parking signs.

Danger

High Voltage

P

Visitors Only
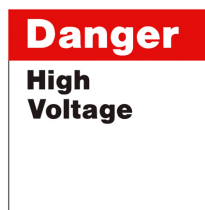
Helvetica Medium is used for all directional and water-viewed signs.

Restricted

No Boats Here to Dam

↑ **J. Percy Priest Dam 1.5 Miles**

← **Cook Recreation Area**
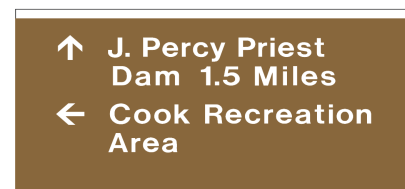
Helvetica Regular is used with Helvetica Bold on Construction Project Identification signs and Property Markers.

Construction Supervised by:

US Army Corps of Engineers Baltimore District

Andrews Air Force Base Hangar Field Maintenance

A Project of the U.S. Air Force

Consulting Engineer: International Engineering Company Inc. Dallas, Texas

General Contractor: Fred J. Early. Co. Inc. Atlanta, Georgia

Witness Post

Please Do Not Disturb For Information Write To U.S. Army Corps of Engineers Portland District P.O. Box 2870 Portland, Oregon 97208

US Army Corps of Engineers

Proper letter spacing is critical to the legibility of a sign. Individual letters spaced too closely will cause them to run together, making it difficult to read the word. If the space between letters is too great, it is difficult to distinguish words. For this reason, letter-spacing standards have been established for all Corps signs. A list of typesetting systems that conform to Corps standards is in Appendix D.

In cases where typesetting systems that meet the Corps standards are not available, legends can be prepared using the manual letter-spacing guide described in Appendix D. This guide, while very time-consuming to use, is extremely accurate.

For reference purposes, a display of commonly used words is provided in Appendix D (pages D-18 through D-34) These words can be used to prepare legends or to verify the type and letter spacing provided by a fabricator. Note that the letter-spacing standards for identification, directional and recreation signs use one standard, while safety signs viewed from the water use a more open version to increase legibility.

For more information on letter spacing, consult your district Sign Program Manager.

The arrows shown below are for use on Corps signs. Each arrow has been designed to be legible and, at the same time, compatible with its respective typeface.

Arrows may be placed in the directions shown. Position straight-up and left-directed arrows to the left of the legend.

Place right-directed arrows to the right of the legend.

On signs with numerous destinations, a single arrow may be used for a group of destinations with a common direction. Place the arrow alongside the top destination in the group, either left or right of the legend as specified above.

Helvetica Bold Arrow
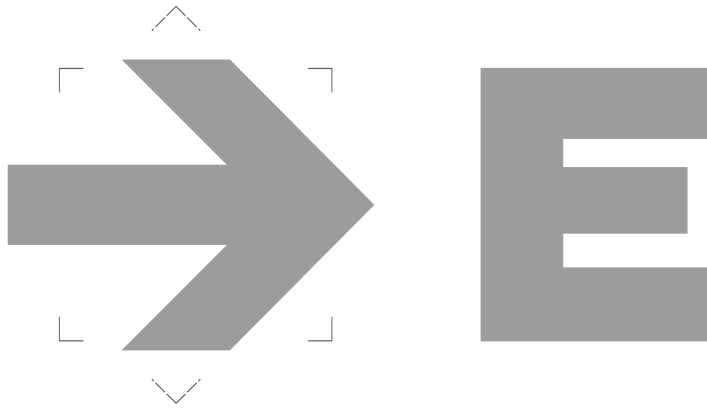
Helvetica Medium Arrow
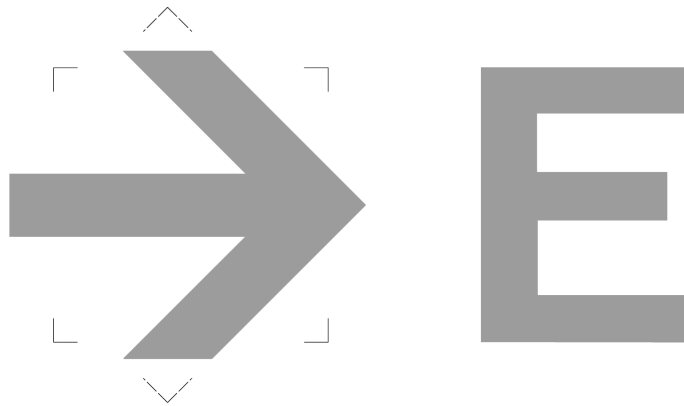
Panel illustrates arrow alignment for the five different directions in which arrows may be placed on signs. Reading from left to right, the arrows show the priority of placement on a sign (see page 6-4).
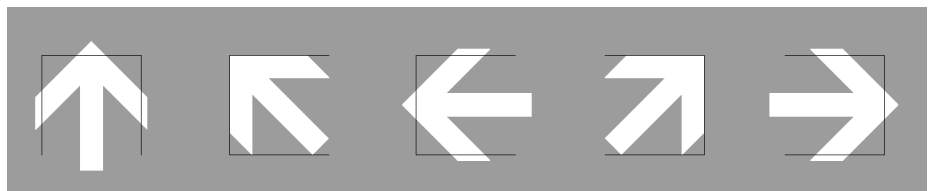
All Corps projects and facilities are identified with a Standard Identification sign. The graphic format has been standardized for use at all locations. The Standard Identification sign is intended for use along public access routes and incorporates the Corps Signature on the sign panel. It is designed to provide clear and consistent identification of the Corps at each location. The format of this design accommodates a variety of legends used to identify the many types of facilities. The different legends and their applications are shown in this section. The designs use a standard grid, shown on pages 5-12 to 5-14, for reproduction in various sizes.

This section describes: preparation of the sign legend, typographic format, selection of sign panel size, and identification of cooperating sponsors or out-granted facilities. Fabrication drawings and material specifications can be found in Appendix B. These specifications are used in conjunction with existing Corps procurement procedures when ordering signs.

The most frequent use of the Standard Identification sign will be as a free-standing sign mounted between two posts (page 5-5). Small versions of the sign, mounted on building exteriors, follow the same panel layout (page 5-6). For large-scale applications, such as the face of a powerhouse, the sign is made from individual letters. Each letter is applied directly to the concrete surface of the wall (page 5-7).

At locations where, under the terms of a lease, a different managing agency has placed their own identification sign, a Corps Participation Credit sign is used. This sign has its own grid format shown on page 5-19.

A Secondary Identification sign is available for use within a Corps project. It is placed along project roadways to identify individual facilities within a project. Because it is placed within a project, the Corps Signature is not used on the panel. The types of legends and their applications are shown on page 5-20.

Helvetica Bold typeface is used on all Identification signs in upper and lower case, initial capitals only. Letter- and word-spacing is to follow standards outlined in Section 4. The Corps Signature is used on Standard Identification, Credit, and (optional) Approach Roadway Directional signs. Once a sign is located within a project boundary, the Signature is no longer appropriate.

Special applications and situations not covered in these guidelines should be referred to the district Sign Program Manager.

The sign panels below illustrate the methods used to identify Corps projects or facilities. Examples (a), (b), and (c) are Standard Identification signs. Example (a) has the full name of the project as the primary legend, with no secondary legend.

At entrances to individual recreation areas which are part of a larger project, the name of the area is the primary legend, and the overall project is the secondary legend, as in example (b).

A local cost-sharing sponsor who operates or manages a Corps facility or area will be identified in the secondary legend, as in example (c).

At Corps projects where all management and maintenance responsibilities have been relinquished, lessees may use an identification sign of their own design. In this situation the Corps should place a Participation Credit sign (d) designed for this situation. The sign is placed on the entrance road into the facility.

Secondary Identification signs (e) are used to identify areas within a project.

a) Standard Identification sign with full name of the project.

a)

b) Standard Identification sign with the area name as the primary legend and the project identification placed as the secondary legend.

b)

c) Identification sign with area name as the primary legend and cooperating sponsor identified in the secondary legend.

c)

d) Identification sign of the cooperating agency with a second sign identifying Corps participation in the project.

d)

e) Secondary Identification sign placed within a project or area at the entrance to a specific facility.

e)

Selection of the most appropriate identification for a given location is determined by the way the project is built and managed. The facility identification sign system can accommodate a variety of legends depending on identification requirements. These requirements may vary.

The diagram below illustrates the variety of identification signs possible at the entrances to a project.
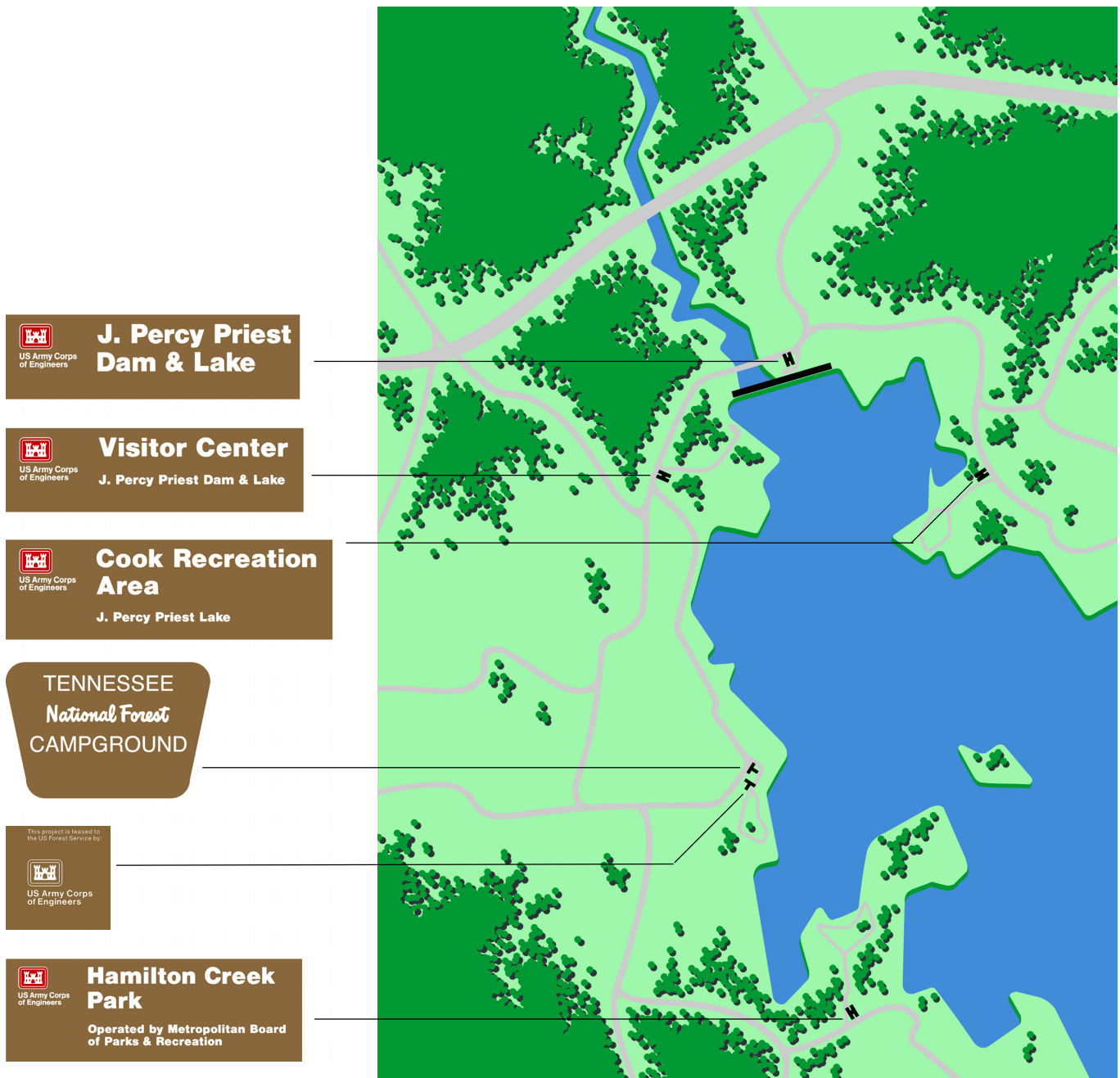
The examples below illustrate the Standard Identification sign format. The elements of this design are described in the captions next to the illustrations.

All Standard Identification signs use a grid (pages 5-12 to 5-14) for layout and sizing. The height of capital letters for the primary legend is referred to as A, and is the standard unit of measurement used to determine legend size, Signature size, and panel format. Secondary legends, used for either cooperating agency or project identification, use letters equal to .5A; the Corps Mark is 1.33A. These proportions are the same, regardless of letter size used for the primary legend.

The size of the primary legend lettering, or A, is determined by viewing distance, viewer's speed of approach, and by the appropriateness of the overall size of the sign to the site. To calculate the appropriate letter size, refer to the Viewing Distance Chart on page 2-6.

Follow the legend format guidelines on pages 5-9 to 5-11 when developing the identification panel text.

Size: The standard sign format is sized proportionally on an established grid. The size of the panel is determined by letter size and length of primary legend.

Sign Color: For ground or wall-mounted signs, Corps Brown background with white sign legend. The Corps Mark is Communication Red, as shown on page 4-5.

Layout: Place lettering on the sign using layout grids shown on pages 5-12 to 5-14.

Typography: All legends are Helvetica Bold, upper and lower case typography, aligned flush left on the grid. Letter- and word-spacing to follow typographic standards in Section 4.

Signature: Signature placed on grid in upper-left corner. No district or division identification will be placed on signs.

Signature Size: The Mark size is 1.33A (where A = the capital letter height of the primary legend). Bottom of castle aligns to base of first primary legend line.

Primary Legend: The name of the facility or project being identified. This may be a one- or two-line legend and should identify the specific project, area or location.

Secondary Legend: (Optional) Descriptive support identification. Legend type is one-half the size of the primary legend. The secondary legend can be one or two lines and identifies the overall project or the cooperating sponsor.
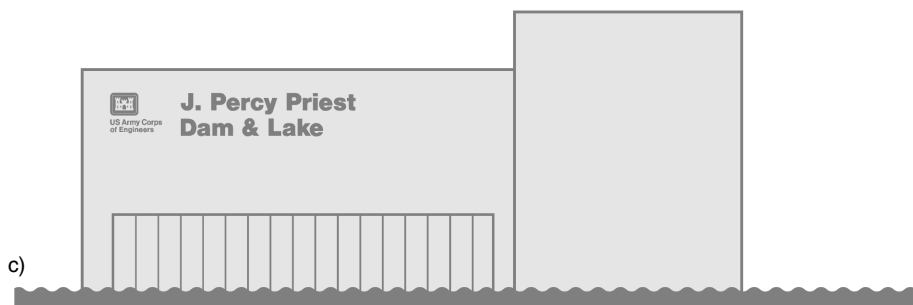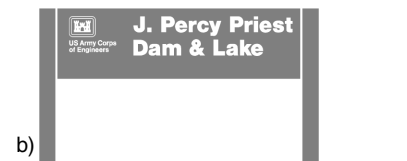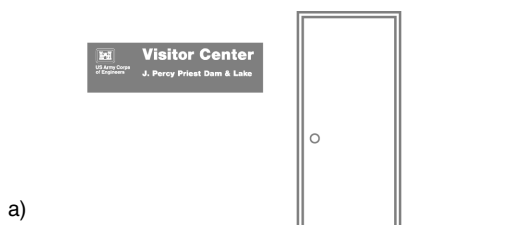
Standard Identification signs shown as: a) wall-mounted sign; b) ground-mounted sign; c) individual letterforms applied to a surface.

The most common use of the Standard Identification sign will be a post and panel sign located at the entrance to a Corps facility or recreation area. The sign panel is mounted on an interior frame that is attached to wooden posts. Nominal post width is equal to A. The color of the sign panel background and posts is Corps Brown. The legend is white. The reverse Corps Mark is Communication Red.

Eagle Point Campground

US Army Corps of Engineers

John H. Kerr Dam and Reservoir
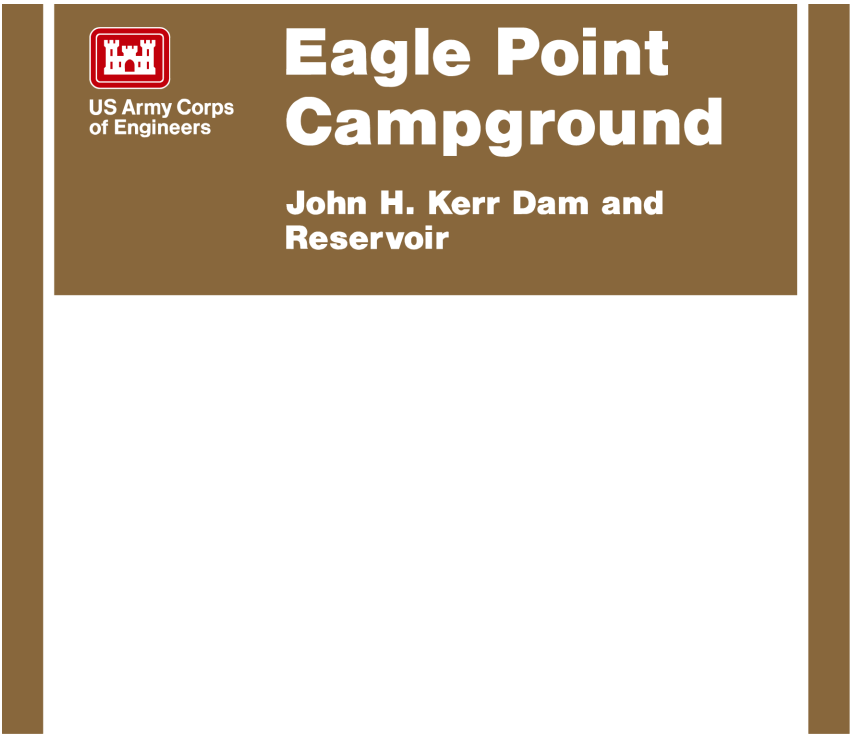
*Panel size varies with legend length and configuration (see pages 5-13 to 5-14).

Note: Signs with 12" legend will be engineered on a one-of-a-kind basis to follow the design intent as shown in these specifications.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
STANID	4"	*	4" x 6"	RRW-1/HDO-1/ALU-1	36"	BR/WH
STANID	6"	*	6" x 8"	RRW-1/HDO-1/ALU-1	36"	BR/WH
STANID	9"	*	9" x 8"	RRW-1/HDO-1/ALU-1	40"	BR/WH
STANID	12"	*	12" x 12"	RRW-1/HDO-1/ALU-1	48"	BR/WH

Post length and mounting height for signs placed on sloping or inclined grade may require adjustment as shown for appropriate installation.

A Standard Identification sign panel can be mounted on a building exterior rather than attached to posts. This will most often occur on a lock, to identify it to river traffic. The sign panel is usually located on the wall of the lockmaster's office. For assistance with other applications that may require wall-mounted identification signs, consult your district Sign Program Manager.

The panel background is Corps Brown, the legend is white. The sign is fabricated with a retroreflective sheeting face or as a routed panel.

Buckman Canal
Cross Florida Barge Canal
US Army Corps of Engineers

*Panel size varies with legend length and configuration (see pages 5-13 to 5-14).

For larger panels, mounting height may vary. Signs mounted on buildings should align to architecture and be positioned for optimum visibility.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
STANID	2"	*	-	HDO-6/ALU-6	60"	BR/WH
STANID	3"	*	-	HDO-6/ALU-6	60"	BR/WH
STANID	4"	*	-	HDO-6/ALU-6	57" (varies)	BR/WH
STANID	6"	*	-	HDO-6/ALU-6	54" (varies)	BR/WH

Wall-Mounted Standard Identification sign shown adjacent to an entrance door, or on the wall of a building.

60"

57"
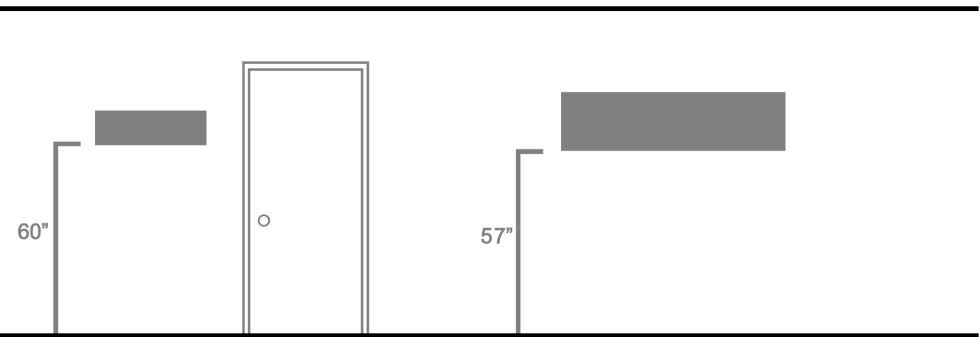
Standard Identification signs may be placed on the face of a powerhouse or lock master's house as individual letterforms applied directly to the concrete surface. This type of sign is intended for application to very large surfaces, and where the sign can be viewed from a long distance.

Building-mounted letterforms become an integral part of the architecture and are not appropriate for all facilities. They are more expensive when compared to most ground-mounted installations. A sign of this type should be specified only if the structure is highly visible to viewers and the visibility can justify the expense. This type of application is also used when ground-mounted or smaller panel signs are not practical, either because of limited viewing distance or mounting constraints.

Each structure is designed differently, so it is important to review the size and location of a proposed placement with an architect and the district Sign Program Manager, prior to placing an order.

a) Left margin not less than A
b) Top margin not less than .75A
c) Right margin not less than 2A

The sign should be mounted flush left on the building surface with the space between the end of the longest line and the right-side building edge being a minimum of twice as wide (2A) as the left margin. Each letterform is to be mounted directly onto the surface. Use of a common mounting frame or visible brackets is not allowed.

Placement, letter spacing and alignment of the Signature and identification legend should follow the panel layout grids 1-0 or 2-0 (primary legend only) as shown on page 5-14. For further assistance contact your district Sign Program Manager.

Signs of this type are most effective when mounted on flat concrete surfaces. Unique configurations of the wall and form of a structure will determine the actual placement location on the structure. Mounting individual letterforms on a highly irregular surface, or one with a strong structural element crossing under the graphic is discouraged.

Each individual letter is fabricated from aluminum and finished in white. The castle Mark is fabricated as an aluminum pan and finished in Communication Red (page 4-5), with the white castle graphic applied to the suface of the red rectangular panel.

The Signature is used in positive format. Each letter is individually pin-mounted into the surface of the structure. The size of the sign is proportional to the depth of the return on each letter.

Specifications are shown in 6" increments. Each installation should however be sized appropriate to the placement location. Three different assembly specifications are provided in Appendix B, pages B-12 through B-12-3. Signs are to be fabricated following the next larger material specification.
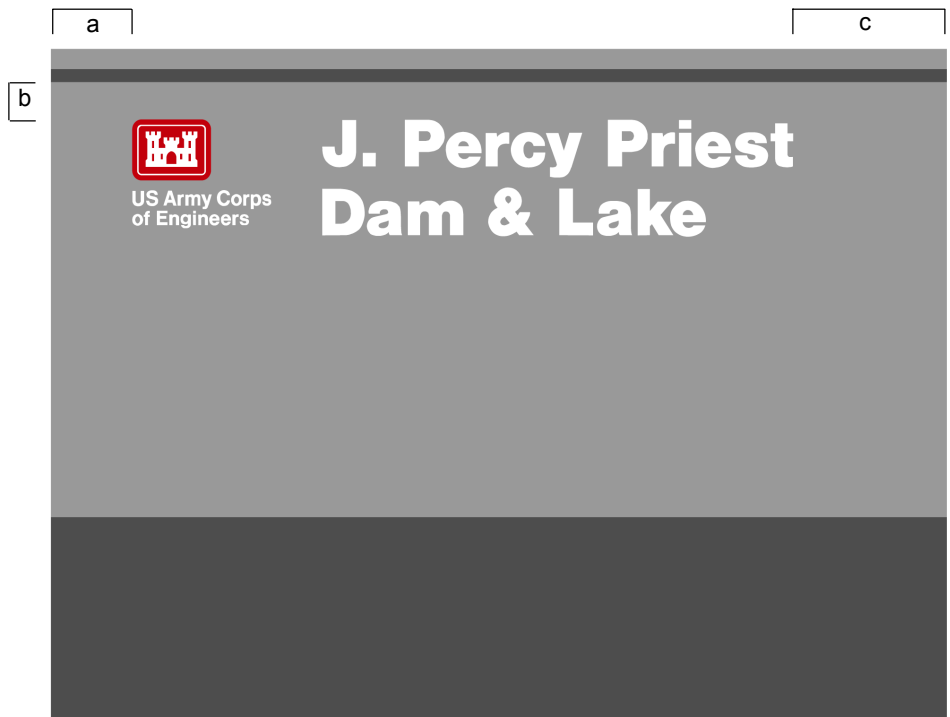
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
STANIN	12"	-	-	ICL-01	-	-/WH-CR
STANIN	18"	-	-	ICL-02	-	-/WH-CR
STANIN	24"	-	-	ICL-02	-	-/WH-CR
STANIN	30"	-	-	ICL-03	-	-/WH-CR
STANIN	36"	-	-	ICL-03	-	-/WH-CR
STANIN	48"	-	-	ICL-03	-	-/WH-CR

Standard Identification signs can accommodate a variety of legend configurations; project name; area and project names; area name and cooperating sponsor.

The diagrams below illustrate the six different sign legend configurations and

the possible number of lines they would occupy when placed on sign panel. The diagrams on pages 5-9 to 5-11 illustrate how the format accommodates legends from the shortest (8.5 units) to the longest (16.5 units) within the Standard Identification sign grid format.

Note that the type size of the secondary legend (cooperating agency name or project identification) is one-half the size of the primary legend, A. This relationship remains the same regardless of the size of A.

Grid 1-0:
One line primary legend
No secondary legend

Hansen Dam

Grid 1-1:
One line primary legend
One line secondary legend

Floating Mill
Center Hill Lake

Grid 1-2:
One line primary legend
Two line secondary legend

Fairfield Access
Harry S. Truman Dam
and Reservoir

Grid 2-0:
Two line primary legend
No secondary legend

Lake Washington Ship Canal

Grid 2-1:
Two line primary legend
One line secondary legend

North Bend Park Recreation Area
John H. Kerr Dam and Reservoir

Grid 2-2:
Two line primary legend
Two line secondary legend

Robert S. Kerr Lock and Dam
McClellan-Kerr Arkansas River Navigation System
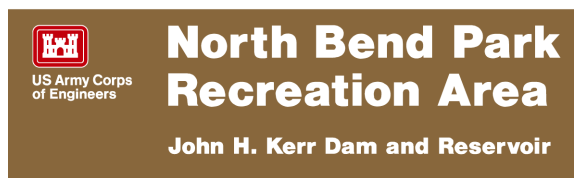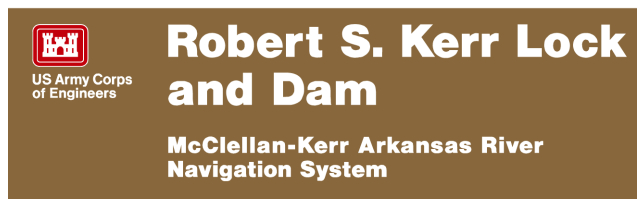
The following display is used as a guide to determine the most appropriate legend layout and panel width when specifying a sign legend.

1) Write out the primary and secondary messages that will appear on the sign.
2) Use the method outlined on page D-2 to determine the length of the primary legend.
3) Determine the length of the secondary legend using the method on D-2.
4) Check the layout against the examples below.
5) Using the form on page D-4, determine the appropriate panel width. Example A: refer to the panel for "Kirk Park". The primary legend is short; the secondary message is too long to fit on the panel in one line. Instead of making the sign panel larger, the secondary legend is shown in two lines. Example B: refer to the panel for "Whitley Creek Access Area" (page 5-10). The primary legend is long; the secondary is short. The primary legend is placed on two lines.

14 Unit Sign
Legend length to 8.5 Units

Oahe Dam
US Army Corps of Engineers

One line primary legend

16 Unit Sign
Legend length to 10.5 Units

Atwood Lake
US Army Corps of Engineers

Galts Ferry
US Army Corps of Engineers
Allatoona Lake

One line primary, one line secondary

LePage Park
US Army Corps of Engineers
Lake Umatilla

Kirk Park
US Army Corps of Engineers
Fern Ridge Lake Project

One line primary, two line secondary

St. Lucie Lock
US Army Corps of Engineers
Sam Rayburn Dam and Reservoir

Watts Bar Lock
US Army Corps of Engineers

Two line primary legend

Cordell Hull Lock & Dam
US Army Corps of Engineers

McGregor Park
US Army Corps of Engineers
Lost Creek Lake

Two line primary, one line secondary

Mill Creek Campground
US Army Corps of Engineers
Berlin Lake

Monterey Park
US Army Corps of Engineers
Sam Rayburn Dam and Reservoir

Two line primary, two line secondary

Eagle Point Campground
US Army Corps of Engineers
John H. Kerr Dam and Reservoir

5-9

The actual length of a legend depends on the letters that make up the legend. For example, the words "campground" and "recreation" have the same number of letters but "campground" is longer; it has an "m" which is a very long letter. "Recreation" on the other hand, has a "t" and an "i", which are short letters.

There are two important rules in determining how to format a multiline legend into two lines:

1) A person's name should always be on a single line.

2) A two-line legend is stronger visually if the first line is longer than the second. This line-break rule is applicable to both primary and secondary legends. Note that the legend should contain logical line-breaks and look balanced on the panel. Do not try to squeeze a large sign onto a smaller panel.

18 Unit Sign

Legend length to 12.5 Units

Lake Ashtabula

US Army Corps of Engineers

20 Unit Sign

Legend length to 14.5 Units

Lake O' the Pines

US Army Corps of Engineers

Buckman Lock

Cross Florida Barge Canal

US Army Corps of Engineers

Wilderness Camp

Allatoona Lake

US Army Corps of Engineers

Bucksaw Park

Harry S. Truman Dam and Reservoir

US Army Corps of Engineers

Satterwhite Point

North Hills Recreation Area
John H. Kerr Dam and Reservoir

US Army Corps of Engineers

The Dalles Lock and Dam

US Army Corps of Engineers

Stillhouse Hollow Dam and Lake

US Army Corps of Engineers

Whitley Creek Access Area

Lake Shelbyville

US Army Corps of Engineers

Dredge Cuts Recreation Area

Fort Peck Lake

US Army Corps of Engineers

Bigbee Valley Campground

Tennessee-Tombigbee Waterway

US Army Corps of Engineers

Backbone Branch Public Use Area

Black Warrior and Tombigbee Lake

US Army Corps of Engineers

The cost difference between panel widths is minimal. The primary goal is to make a legible sign.

Do not routinely use the secondary legend portion of identification signs for street addresses. Even when a local emergency agency requires such information, try to find an alternative - such as a separate, small custom sign - that complies with Corps sign standards.

22 Unit Sign

Legend length to 16.5 Units

Mahoning Creek Lake

US Army Corps of Engineers

Observation Pavilion

Mississinew Lake

US Army Corps of Engineers

Linton Picnic Area

Barkley Lock and Dam
Lake Barkley

US Army Corps of Engineers

John W. Flannagan Dam and Reservoir

US Army Corps of Engineers

Island View Circle & Lake Shore Meadow

West Fork at Mill Creek Lake

US Army Corps of Engineers

Boudreaux Memorial Visitor Center

Clarence Cannon Dam and Mark Twain Lake

US Army Corps of Engineers

All Standard Identification signs use the grid shown on pages 5-13 to 5-14. Shown below are the six different line configurations possible with this grid. The examples on pages 5-9 to 5-11 follow the grids shown below for both sign length and depth.

Refer to the examples on pages 5-9 to 5-11 to determine the proper legend configuration. There may be more than one layout possible. Select the appropriate line configuration using the following rules:

1) Does the line-break make sense?
2) Does the layout look similar to examples shown on pages 5-9 to 5-11?

Grid 1-0:
One line primary legend
No secondary legend

Grid 1-1:
One line primary legend
One line secondary legend

Grid 1-2:
One line primary legend
Two line primary legend

Grid 2-0:
Two line primary legend
No secondary legend

Grid 2-1:
Two line primary legend
One line secondary legend

Grid 2-2:
Two line primary legend
Two line secondary legend

The grid, used for layout of Standard Identification signs, is shown below. The top grid illustrates the five different panel widths possible (see pages 5-9 to 5-11).

The six grids (page 5-14) represent the possible legend configurations with their corresponding panel depths. All dimensions are based on A, the size of capital letters used in the primary legend. The

relationship of the secondary legend, Signature, and space between legends is always in the same proportion to A.

Once the letter size for the primary legend is selected, the size for the secondary legend will follow accordingly in the relationship shown on page 5-14.

To determine the appropriate panel size

for a given legend, calculate the legend length and lay out the panel (see pages D-2-4). Then, knowing the legend length, refer to the matrix below to determine the panel width. Knowing the number of primary and secondary legend lines, determine the appropriate grid number and refer to the matrix on page 5-14 for the panel height.

For Standard Identification signs, the Mark is 1.33A. Align the base of the castle to the baseline of the first line of the primary legend.

Legend Length	Panel Width
Up to 8.5A	14A
8.51A-10.5A	16A
10.51-12.5A	18A
12.51-14.5A	20A
14.51-16.5A	22A

Grid 1-0:
One line primary legend
No secondary legend

.5A
A
3A

Grid 1-1:
One line primary legend
One line secondary legend

.5A
A
A
.5A
1.5A

Grid 1-2:
One line primary legend
Two line secondary legend

.5A
A
A
.5A
.25A
.5A
A

Grid 2-0:
Two line primary legend
No secondary legend

.5A
A
.5A
A
1.5A

Grid 2-1:
Two line primary legend
One line secondary legend

.5A
A
.5A
A
A
.5A
A

Grid 2-2:
Two line primary legend
Two line secondary legend

.5A
A
.5A
A
A
.5A
.25A
.5A
A

The grids 1-0 through 2-2 above show partial sections of sign panels.

Grid	Panel Height
1-0	4.5A
1-1	4.5A
1-2	4.75A
2-0	4.5A
2-1	5.5A
2-2	6.25A

To maintain a cohesive, uniform look among all Corps projects, it is important that the grid format is used correctly. Examples of correct and incorrect legend placement and format are shown on pages 5-16 and 5-17.

In addition to format, there are a number of other elements which must be executed consistently. These are as follows;

Fabrication: Follow the specifications indicated in the matrix and outlined in Appendix B.

- Do not modify the materials or methods, nor intermix different techniques such as mounting individual letters on a wood panel.

Mounting: Avoid mounting post and panel signs on steep grades.

- Do not embellish the support with masonry bases.
- Carefully designed landscaping may be permitted (page 2-9).
- Lighting, if necessary, should be of the general area in which the sign is located, not on the sign itself.
- Do not use colors other than those specified in this manual.

Refer to Section 2, Principles and Guidelines, for additional examples of standards.

Upper Overlook
Lake Sidney Lanier

1a Correct Use - Helvetica Bold typeface for sign legend, upper and lower case type, initial capital letters only.

UPPER OVERLOOK
LAKE SIDNEY LANIER

1b Incorrect - Do not use all capital letters, initial capital letters only.

Upper Overlook
Lake Sidney Lanier

1c Incorrect - Do not substitute another typeface for sign legend. Use only the specified typeface.

Lake Sidney Lanier
Upper Overlook

1d Incorrect - Do not invert primary and secondary type sizes. Place legend on grid in order of importance.

Cherry Creek Lake

2a Correct Use - Place Signature as specified on sign panel in upper left corner.

Cherry Creek Lake

2b Incorrect - Do not use the old Corps Castle. Only use Communication Mark with Signature.

Cherry Creek Lake

2c Incorrect - Do not place additional Castles on sign face. Use only one Communication Mark and Signature on sign.

Cherry Creek Lake

2d - Incorrect - Do not use wrong size Signature. Use proper Signature size to legend relationship.

Fisherman's Landing
Robert S. Kerr
Lock and Dam

3a Correct Use - Maintain flush left alignment of type using specified grid.

Fisherman's Landing
Robert S. Kerr
Lock and Dam

3b Incorrect - Do not center Signature or legend. Centered sign legends are difficult to read.

Fisherman's Landing
Robert S. Kerr
Lock and Dam

3c Incorrect - Do not deviate from specified grid. Signature is always placed in the flush left position.

Fisherman's Landing
Robert S. Kerr
Lock and Dam

3d Incorrect - Do not align type flush right on grid. Type should align flush left with margin of legend.

4a Correct Use - Place full name of person on single line if possible.

4b Incorrect - Do not break a person's name. Break sign legend for readable layout.

4c Incorrect - Do not place district or division name in Signature or legend area. Place only Corps Signature on sign panel.

4d Incorrect - Do not place other graphic symbols on sign panel. Only the Corps Signature and sign legend are to be placed on sign panel.

5a Correct Use - Identification signs will generally be more readable if the first line of the legend is longer than the second.

5b Incorrect - Second line of secondary legend is too long. In a two-line legend group, the top line should be longer than the bottom line.

5c Incorrect - Secondary line too long. Balance the length of the primary legend with that of the secondary legend.

5d Incorrect - Primary line too long. Where possible, place long legends on two lines instead of one.

6a Correct Use - Sign is proper length and height (depth) for legend required.

6b Incorrect - Sign blank is too short for this legend length. Legends placed on the wrong size panel are difficult to read.

6c Incorrect - Sign blank is too long for this legend length. Select sign panel width after legend length is determined.

6d Incorrect - Sign blank is too high (deep) for given legend depth. Follow the correct layout grid to determine sign panel depth.

The preferred method to identify Corps participation at a facility or project is shown below. This subordinate identification sign is used in conjunction with a lessee's identification sign.

The Corps Participation Credit sign shown below is used at locations where, under the terms of a lease, a different managing agency has placed a main identification sign of its own. The Participation Credit sign is used to inform visitors of the Corps role in the planning and construction of this project. The one- to four-line descriptive legend uses the Helvetica Regular typeface.

The sign is mounted on the entry road into a project.

The descriptive legend on the top of the panel should clearly explain the Corps relationship to the lessee or to the project.

Legend size A, is the height of the capital letters in the descriptive legend at the top, not the capital letters in the Corps Signature.
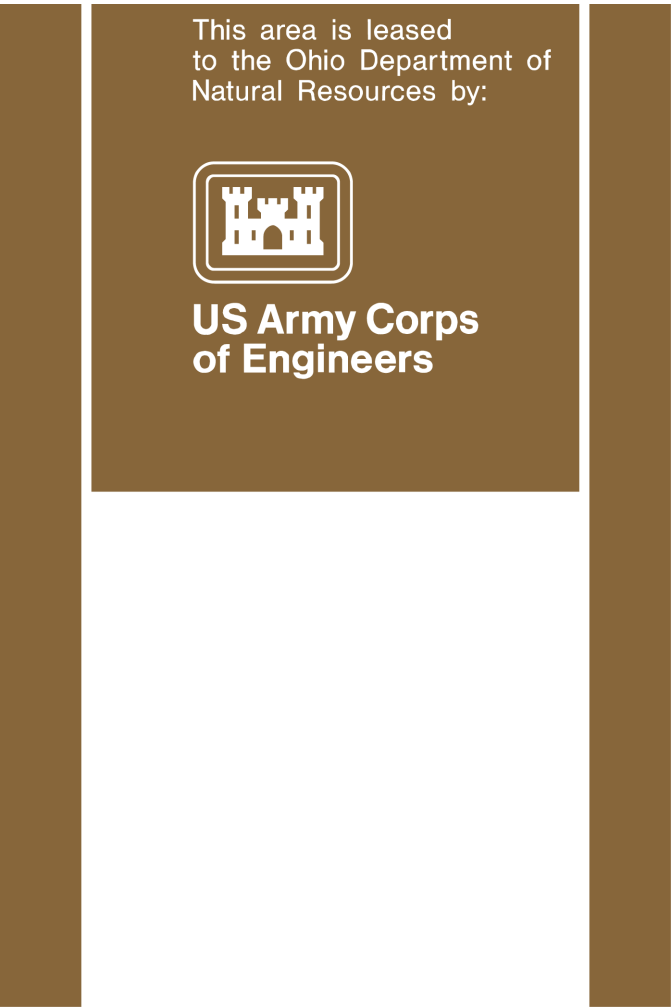
This area is leased to the Ohio Department of Natural Resources by:

US Army Corps of Engineers

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CREDIT	1"	24" x 24"	4" x 4"	HDO-2	36"	BR/WH
CREDIT	1.5"	36" x 36"	4" x 4"	HDO-2	36"	BR/WH

36"

Shown below is the grid used for layout of
Corps Participation Credit signs. All
dimensions are based on A, the size of
the capital letters used in the legend.

Grid 1
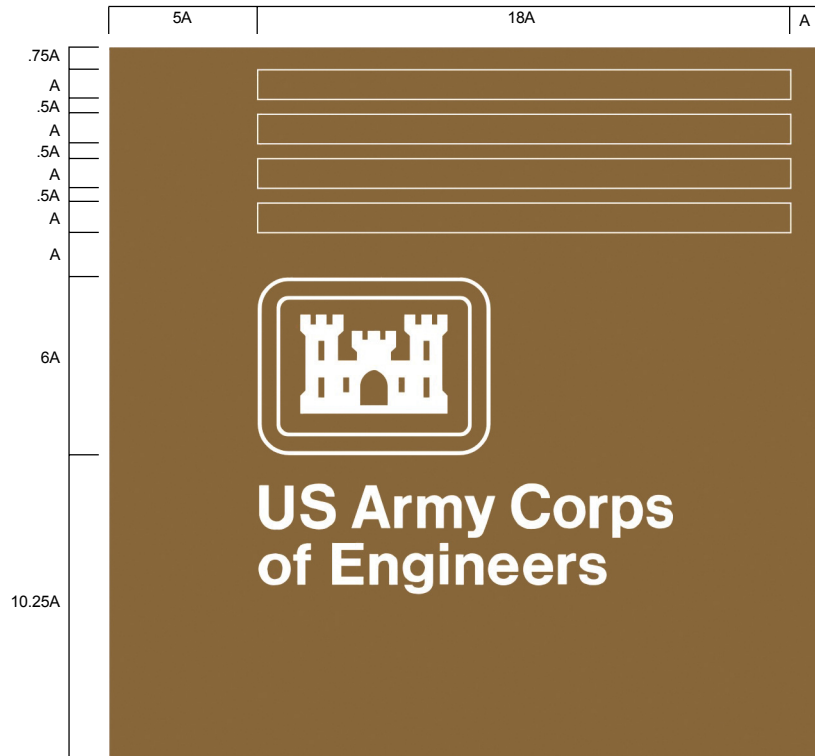
The map below illustrates the use of Secondary Identification signs and their relationship to the Standard Identification sign.

The Standard Identification sign is placed along the public access roadway at the entrance to a park or recreation area. Individual facilities within that project can be identified with a Secondary Identification sign or with a symbol sign. If the

facility has a name (e.g. Elm Picnic Area or Beaver Falls Campground), a Secondary Identification sign should be used. If the facility does not have a name (e.g. boat launch or ranger station), a Symbol sign is appropriate.

The Secondary Identification signs can be ground-mounted with two posts or wall-mounted on a building.

Only the Standard Identification sign uses the Corps Signature. Once a sign is located within a project boundary, the Signature is no longer appropriate.

The Secondary Identification sign is used on project roadways to identify individual facilities. It is smaller in scale than the Standard Identification sign. A separate grid for layout is illustrated on page 5-23. The height of the capital letters of the primary legend is referred to as A and is the standard unit of measurement to determine legend and panel size.

Typography: All legends to be Helvetica Bold, upper and lower case typography, aligned flush left on the grid. Letter and word spacing to follow Corps typographic standards in Section 4.

Sign Panel: Layout based on grid on page 5-23. Overall size is determined by the letter size and length of legend.

Sign Color: Corps Brown background with white sign legend. Refer to color standards on page 4-5.

Material: Signs are constructed of routed wood (4" or 6" primary legend unit) or HDO plywood or aluminum with applied retroreflective sheeting (all sizes).

The size of the primary legend, A, is determined by viewing distance (see page 2-6), and by the relationship of the overall size of the sign to its site.

The panel with 2" legend size is for wall mounting.

The example below illustrates the Secondary Identification sign format. The use of the Corps Signature is not permitted.

Oak Camp
Campsites 1-20
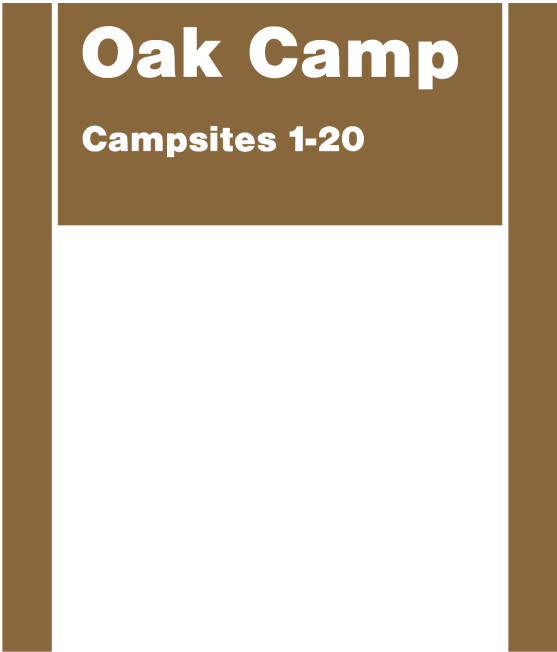
*Sign panel size varies with legend length and configuration (see page 5-23).

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SECNID	2"	*	-	HDO-6/ALU-2	60"	BR/WH
SECNID	4"	*	4" x 6"	RRW-2/HDO-2/ALU-2	36"	BR/WH
SECNID	6"	*	6" x 6"	RRW-2/HDO-2/ALU-2	36"	BR/WH

Secondary Identification signs shown as both a ground-mounted sign and as a wall-mounted sign.
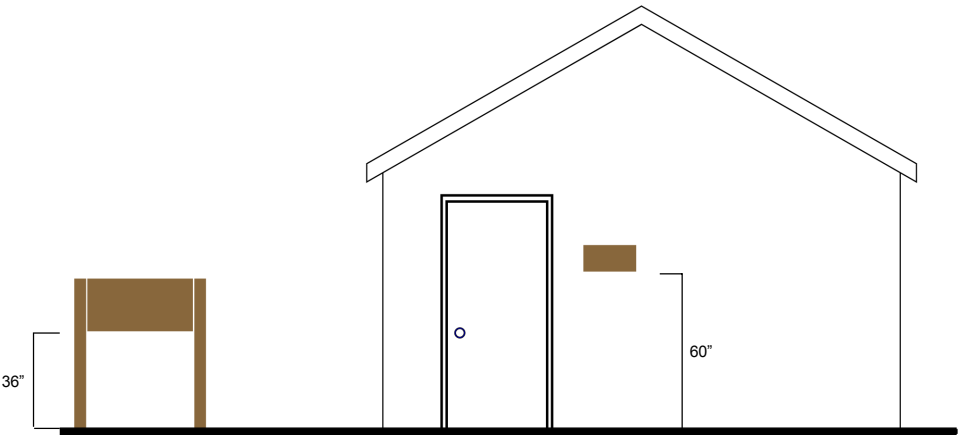
The sign panels below illustrate the four legend configurations possible on a Secondary Identification sign. All are accommodated on the grid shown on page 5-23.

Grid 1-0:
One line primary legend
No secondary legend

Shoal Beach

Grid 1-1:
One line primary legend
One line secondary legend

Oak Camp

Campsites 1-20

Grid 2-0:
Two line primary legend
No secondary legend

Elm Picnic Area

Grid 2-1:
Two line primary legend
One line secondary legend

Beaver Falls Campground

Campsites 21-40

The grids shown below are used for the layout of Secondary Identification signs. The top grid illustrates the three panel widths possible.

The bottom four grids represent the possible legend configuration with their corresponding panel depths. All dimensions are based on A, the size of capital letters used in the primary legend. The relationship of all of the elements, secondary legend, and space between legends is always in the same proportion to A, regardless of the size of A or the overall sign size.

To determine the appropriate panel size for a given legend, calculate the legend length and lay out the panel (see pages D-2 through D-4). Then, knowing the legend length, refer to the matrix below, to determine the panel width. Knowing the number of primary and secondary legend lines, determine the appropriate grid number and refer to the matrix below, left, for the panel height.

The sign legend is always placed flush left on the panel.

If a required legend length exceeds the maximum length shown, seek the help of the district Sign Program Manager.
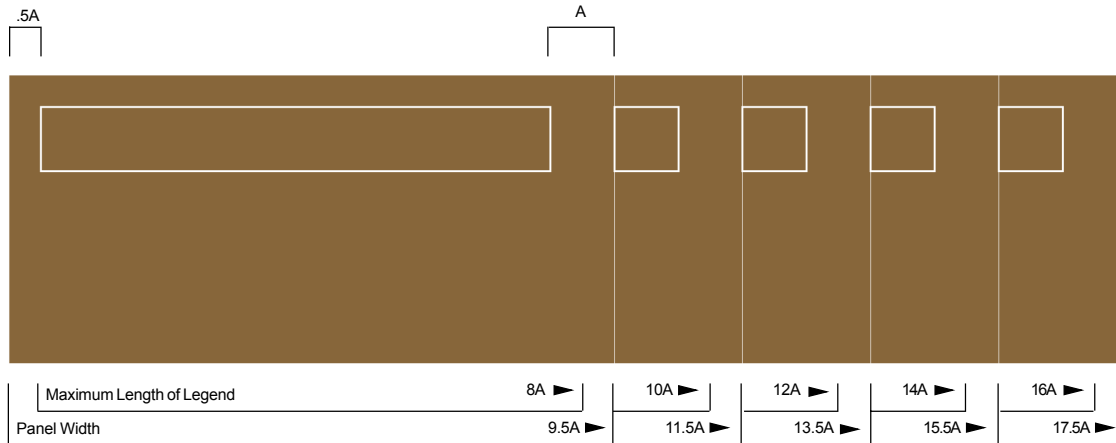
Legend Length	Panel Width
Up to 8A	9.5A
8.1A-10A	11.5A
10.1A-12A	13.5A
12.1A-14A	15.5A
14.1A-16A	17.5A
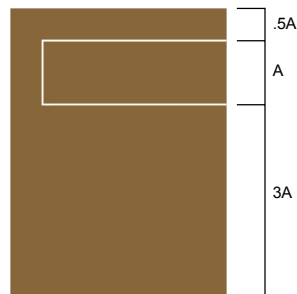
Grid 1-0:
One line primary legend
No secondary legend
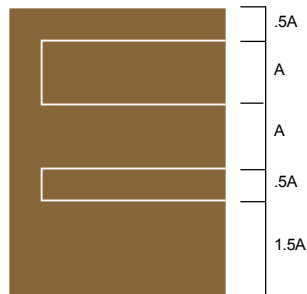
Grid 1-1:
One line primary legend
One line secondary legend
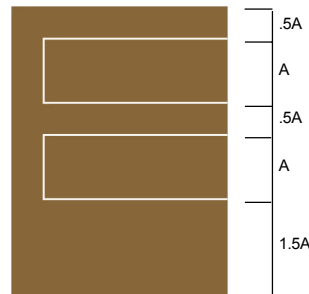
Grid 2-0:
Two lines primary legend
No secondary legend

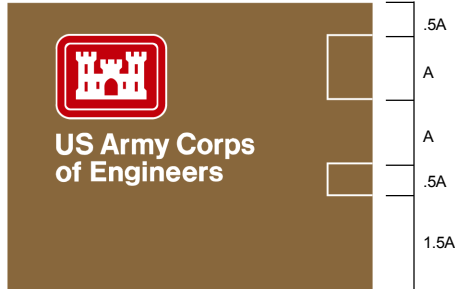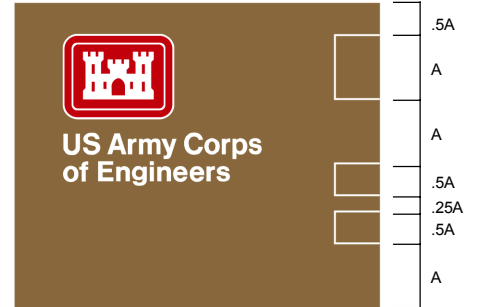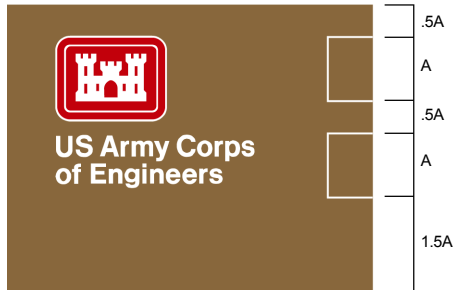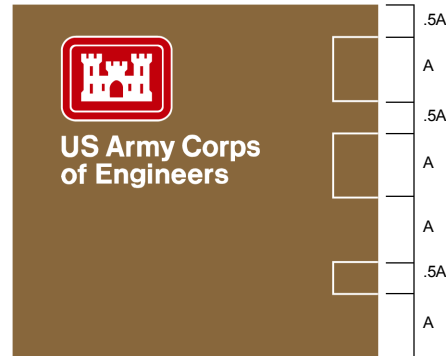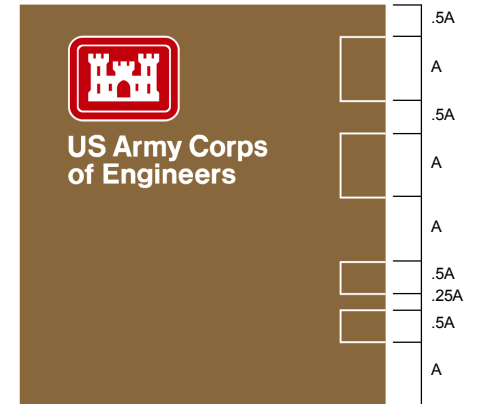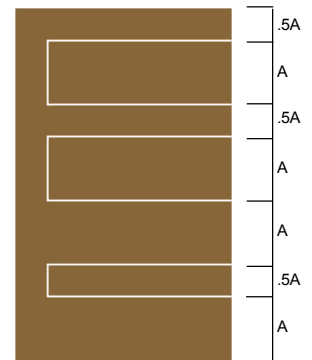Grid 2-1:
Two lines primary legend
One line secondary legend

The grids 1-0 through 2-1 show partial sections of sign panels

Grid	Panel Height
1-0	4.5A
1-1	4.5A
2-0	4.5A
2-1	5.5A

In managing recreation and natural resources, it is often necessary that agencies work together with neighbors and local communities - in everything from wildlife protection and habitat improvement to recreational facility enhancements and customer service.

The Corps Identification Sign with Partner Logo(s) provides a way to

recognize other agencies or organizations that share in the operation and management of facilities on Corps fee owned land.

These signs are mounted and placed the same as the Standard Identification sign to identify the entrance to a jointly managed or funded area or facility. A formal agreement must be in place before this sign may be used.

There are two formats. One format is for one partner and places the Corps Signature and the partner logo on either side of the legend.

The second format allows for more than one partner and places the Corps Signature and partner logos below the legend.

*Sign panel size varies with legend length and configuration (see following pages).

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PTNR	4"	*	4" x 6"	RRW-1/HDO-1/ALU-1	36"	BR/WH
PTNR	6"	*	6" x 8"	RRW-1/HDO-1/ALU-1	36"	BR/WH
PTNR	9"	*	9" x 8"	RRW-1/HDO-1/ALU-1	40"	BR/WH
PTNR	12"	*	12" x 12"	RRW-1/HDO-1/ALU-1	48"	BR/WH

.75A | 5A | Varies | A | Varies | .5A

US Army Corps of Engineers

Grid 1-0:
One line primary legend
No secondary legend

.5A
A
3A

Grid 1-1:
One line primary legend
One line secondary legend

.5A
A
A
.5A
1.5A

Grid 1-2:
One line primary legend
Two lines secondary legend

.5A
A
A
.5A
.25A
.5A
A

Grid 2-0:
Two lines primary legend
No secondary legend

.5A
A
.5A
A
1.5A

Grid 2-1:
Two lines primary legend
One line secondary legend

.5A
A
.5A
A
A
.5A
A

Grid 2-2:
Two lines primary legend
Two lines secondary legend

.5A
A
.5A
A
A
.5A
.25A
.5A
A

.75A   .5A

Varies

Signature Size

US Army Corps of Engineers

.75A   Proportional   A   Varies   A   Varies   A   Varies

.5A minimum

.5A
A
A
2.25A
.5A

Grid 1-0:
One line primary legend
No secondary legend

.5A
A
A
.5A
A
2.25A
.5A

Grid 1-1:
One line primary legend
One line secondary legend

.5A
A
A
.5A
.25A
.5A
A
2.25A
.5A

Grid 1-2:
One line primary legend
Two lines secondary legend

.5A
A
.5A
A
A
2.25A
.5A

Grid 2-0:
Two lines primary legend
No secondary legend

.5A
A
.5A
A
A
.5A
A
2.25A
.5A

Grid 2-1:
Two lines primary legend
One line secondary legend

.5A
A
.5A
A
A
.5A
.25A
.5A
A
2.25A
.5A
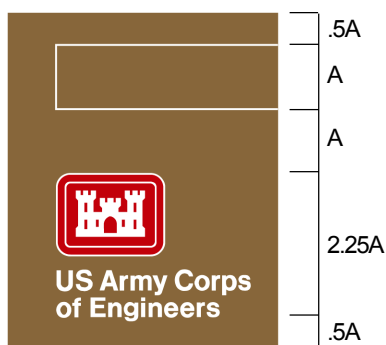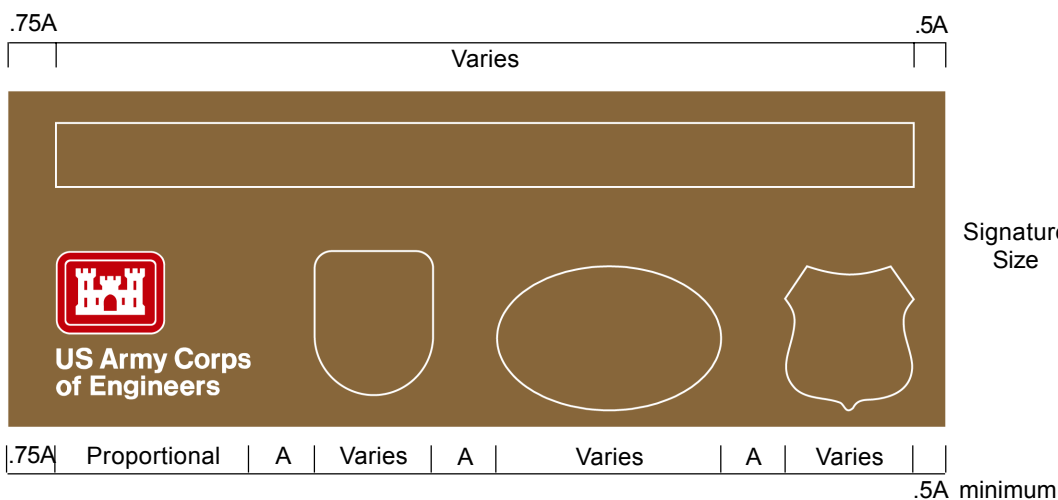
Grid 2-2:
Two lines primary legend
Two lines secondary legend

Well planned and properly designed directional signs are important visitor aids. They lead visitors to a Corps project, direct them to the various recreation areas, and then guide them to the facilities within each area. Directional signs are highly visible, seen not only by the boaters, campers, swimmers, and picnickers using a facility, but also by the many people traveling in the vicinity of a Corps project. It is important, therefore, that directional signs are correctly fabricated, carefully placed, and properly maintained.

The Corps does not have authority to erect signs on the national system of interstate and defense highways. This responsibility is reserved for the respective state highway departments. However, under the signing policy and standards set forth in the *Manual on Uniform Traffic Control Devices* (MUTCD) for signing such highways, signs may be placed by the governing jurisdiction in cooperation with the Corps to direct travelers to Corps projects. A cordial working relationship with state agencies is essential to serve travelers' needs and make them aware of project features and facilities.

Directional signs must be provided on access roads to guide the visitor to a Corps project and its recreation areas. These signs should logically begin at the nearest state or U.S. highway used to approach the project and continue along the best route to a specific site. A sign should be provided at all intersections where a change of direction is necessary or where directional reinforcement is required. Design and installation of these directional signs must be fully coordinated with the local or state highway department. In some cases, these agencies will furnish and install needed signs. If they cannot, permission to install Corps signs should be obtained. These signs are illustrated on pages 6-3 through 6-11. Consultation with the respective highway department should be made to ensure that signs satisfy local desires and standards.

Signs directing potential users to a Corps project may be located several miles from that project. In such cases, it would be desirable to indicate the services available at that project using the recreation area symbols. These should logically include major services such as camping, RV accommodations, and boat launches. Users should be made aware of available services before visiting the site, which will often save a futile trip. In addition, an indication of services available is good public relations: passersby note what is available for future reference. There are two formats available for placing symbols indicating services on directional signs; these are illustrated on pages 6-10 and 6-11.

Directional signs within a project or recreation area are designed for viewing at slower speeds. Therefore, there is a different sign specifically designed for use on project roadways. Its use and format are shown on pages 6-12 to 6-16.

In addition, within a recreation area, symbols can be used for directional signs instead of words. Guidelines for their use will be found in Section 8, pages 8-10 to 8-14. Only positive symbols (no prohibition symbols) are to be used on directional signs.

The diagrams below illustrate the use of directional signs on the roads leading to a Corps project and within that project. On access roads, the signs are words alone (pages 6-3 to 6-9) or words accompanied by three or four symbols (pages 6-10 and 6-11). Once inside a project, the signs are either words alone (pages 6-12 to 6-16) or symbols alone (pages 8-10 to 8-14).

Cook Recreation → Area

↑ J. Percy Priest Dam 1.5 Miles
← Cook Recreation Area

↑ J. Percy Priest Dam 2 Miles
Cook Recreation Area .5 Miles

→

← Exit
Campground →
Swimming Beach
Picnic Area

↑ Exit
← Boat Ramp
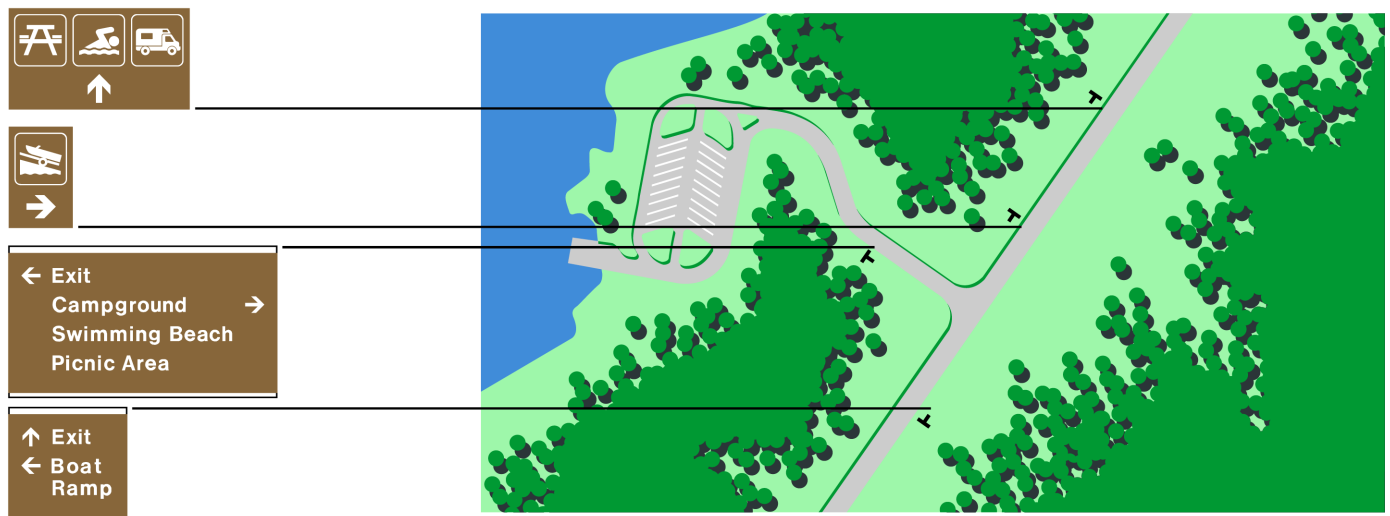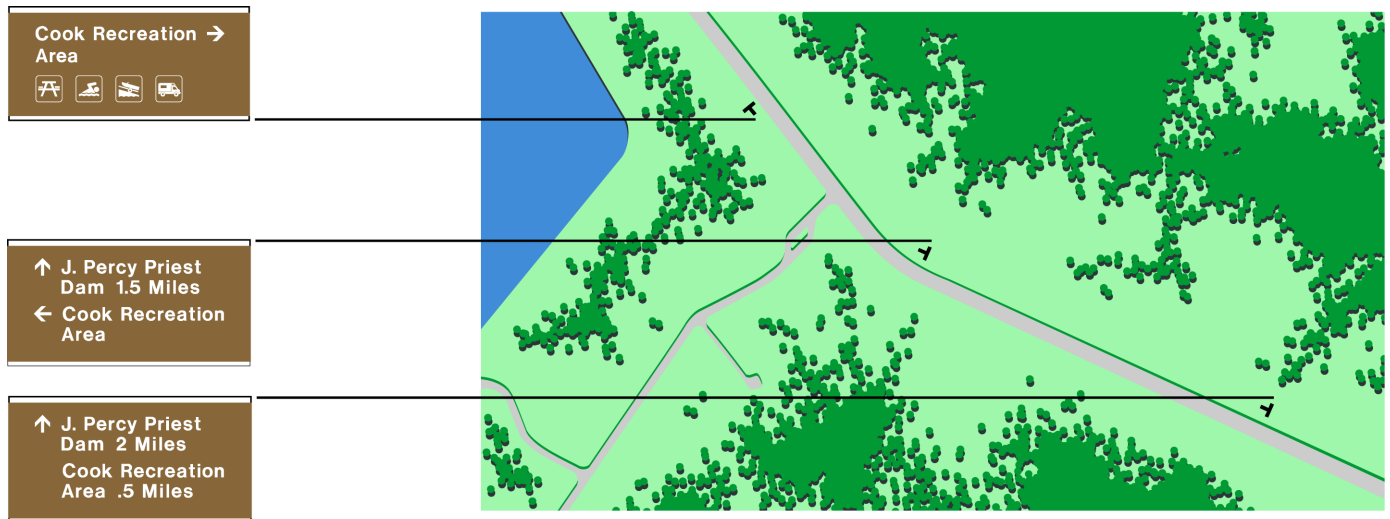
The design of directional signs on public roadways has been standardized to maintain consistent visual identification for visitors approaching Corps projects. They have been designed for optimum legibility. The illustration below shows a typical directional sign. The elements of the sign design are described in the captions to the left of the illustration.

These signs are usually made of aluminum or HDO plywood with applied retroreflective sheeting. The background color is Corps Brown (page 4-5); the lettering and borders are white. Typography is Helvetica Medium, initial capitals only. To specify the size of typography, refer to the Viewing Distance Guide on page 2-6.

Border: Top border is one-half the size of basic grid unit A; bottom border is .375A.

Typography: Helvetica Medium, initial capitals only. The size of the capital letters determines the basic unit A of the layout grid (page 6-6). Letter size is the same for all messages on a given sign. All messages are aligned flush left.

Sign Panel: Layout based on grid. Overall size of panel determined by length and number of messages.

Color: Corps Brown background with white borders, arrows, and typography. Refer to color standards (page 4-5).
Note: If local rules or regulations prohibit use of Corps Brown on Approach Roadway Directionals, Recreation Brown (as per the *Specifications for Standard Highway Sign Colors,* published by the Federal Highway Administration) can be substituted.

Post: Attached to the back of the sign panel, set in two units (2A) from the outside edge of the panel. Size and material determined by panel size.

Materials: Signs are fabricated from HDO plywood or aluminum. The face is applied reflective sheeting. Refer to matrix shown below and specifications in Appendix B.

Arrows: An arrow may be placed on a sign panel to indicate one of five possible directions. (see page 4-13).

*Panel size varies with legend length and configuration (see page 6-6).

**Post size and number of posts required will depend on size of sign. Refer to the Directional Sign Post and Footing Specification in Appendix B.

Post length and mounting height for sign placed on sloping or inclined grade may require adjustment as shown for appropriate installation. For break-away posts, see page B-2a in Volume 2.
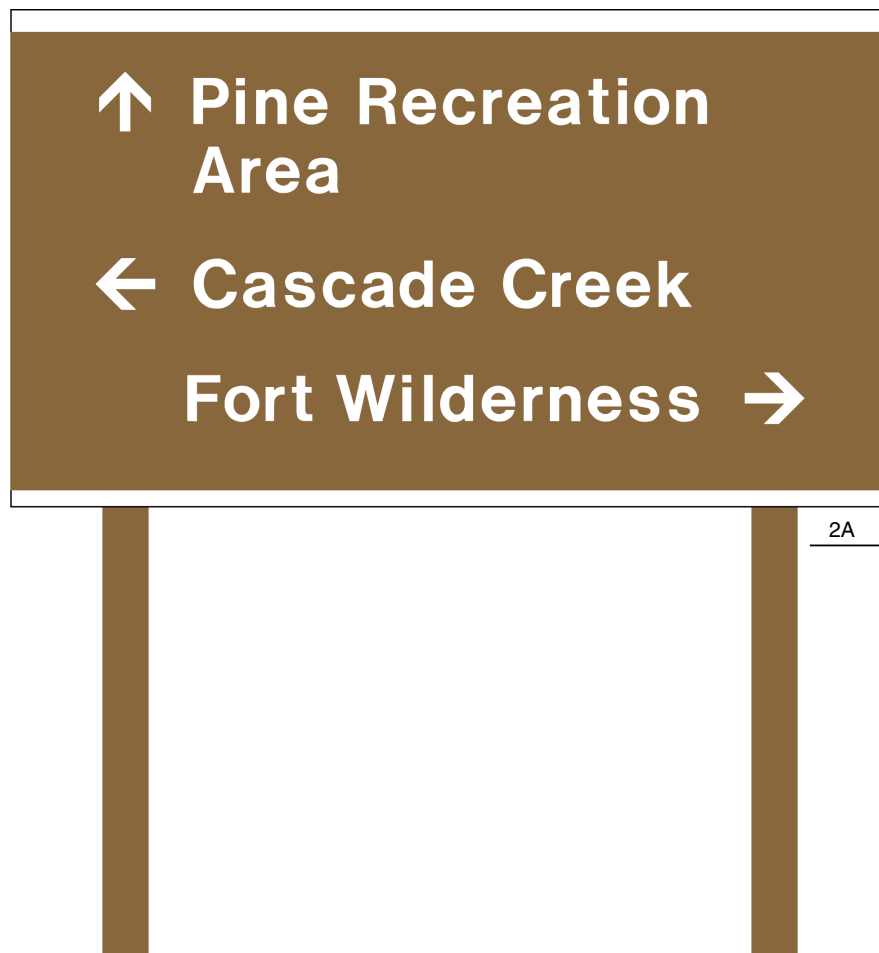
↑	Pine Recreation Area
←	Cascade Creek
	Fort Wilderness →

2A

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
APRDIR	4"	*	**	HDO-4/ALU-4	60"	BR/WH
APRDIR	6"	*	**	HDO-4/ALU-4	60"	BR/WH
APRDIR	9"	*	**	HDO-4/ALU-4	66"	BR/WH

60"

6-3

The sign panels below illustrate the variety of configurations possible on Approach Roadway Directional signs. The lettering is always flush left and rag right. As a general rule, directional arrows should be horizontal or vertical, but at irregular intersections an oblique arrow will sometimes convey a clearer indication of the direction to be followed.

Arrows pointing left, oblique left, or straight ahead are placed to the left of the type. An arrow pointing right or oblique right is placed to the right of the type. An arrow indicating a destination straight ahead is placed first on a sign. Second priority is given to an oblique (45°) left arrow. Next is an arrow indicating a left turn. A 45° right arrow is given fourth priority. An arrow indicating a right turn is given lowest priority on a sign. Note that there is only one arrow placed on the sign panel for each direction, regardless of the number of destinations associated with a given direction. Letter size is the same for all messages.

One line, one destination

← Boonton Lake

Arrow can be straight, 45° left, or left

Boonton Lake →

Arrow can be 45° right or right

Boonton Lake →

Arrow can be 45° right or right
Shown with optional Corps Signature

Two lines, one destination

← Boonton Lake
   Overlook

Arrow can be straight, 45° left, or left

Boonton Lake →
Overlook

Arrow can be 45° right or right

Two lines, two destinations

← Boonton Lake
   Fishing Creek

Arrow can be straight, 45° left, or left

Boonton Lake →
Fishing Creek

Arrow can be 45° right or right

↑ Boonton Lake
← Fishing Creek

Arrows can be straight, 45° left, or left

↑ Boonton Lake
   Fishing Creek →

Top arrow can be straight, 45° left or left
Bottom arrow can be 45° right or right

↑ Boonton Lake
   Campground →

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right
Shown with optional Corps Signature

Three lines, two destinations

← Boonton Lake
   Overlook
   Fishing Creek

Arrow can be straight, 45° left, or left

Boonton Lake →
Overlook
Fishing Creek

Arrow can be 45° right or right

↖ Boonton Lake
   Overlook
← Fishing Creek

Arrows can be straight, 45° left, or left

← Boonton Lake
   Overlook
   Fishing Creek →

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

Destinations placed on signs to be read from a moving vehicle must be concise. To ensure brevity, follow these rules when preparing directional sign legends:

1) Not more than eight words per sign.

2) Not more than three destinations per sign.

3) Not more than four words per destination, except where the proper name of a destination is made up of more than four words.

4) If there are more than eight words contained in three destinations, the third destination may be more appropriately put onto a separate sign.

Three lines, three destinations

← Boonton Lake
Fishing Creek
Long Meadow

Arrow can be straight, 45° left, or left

Boonton Lake →
Fishing Creek
Long Meadow

Arrow can be 45° right or right

↑ Boonton Lake
Fishing Creek
← Long Meadow

Top arrow can be straight or 45° left
Bottom arrow can be 45° left or left

↑ Boonton Lake
Fishing Creek
Long Meadow →

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

↑ Boonton Lake
← Fishing Creek
Long Meadow →

Top arrow can be straight or 45° left
Middle arrow can be 45° left or left
Bottom arrow can be 45° right or right

Four lines, two destinations

← Boonton Lake
Overlook
Seminole Bay
Sanctuary

Arrow can be straight, 45° left, or left

Boonton Lake →
Overlook
Seminole Bay
Sanctuary

Arrow can be 45° right or right

↑ Boonton Lake
Overlook
← Seminole Bay
Sanctuary

Top arrow can be straight or 45° left
Bottom arrow can be 45° left or left

↑ Boonton Lake
Overlook
Seminole Bay ↗
Sanctuary

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

Four lines, three destinations

← Boonton Lake
Seminole Bay
Sanctuary
Fishing Creek

Arrow can be straight, 45° left, or left

Boonton Lake →
Seminole Bay
Sanctuary
Fishing Creek

Arrow can be be 45° right or right

↑ Boonton Lake
← Seminole Bay
Sanctuary
Fishing Creek

Top arrow can be straight or 45° left
Bottom arrow can be 45° left or left

↑ Boonton Lake
Seminole Bay →
Sanctuary
Fishing Creek

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

↑ Boonton Lake
← Seminole Bay
Sanctuary
Fishing Creek →

Top arrow can be straight or 45° left
Middle arrow can be 45° left or left
Bottom arrow can be 45° right or right

6-5

All directional signs on public roadways use the grid illustrated below for message format and typographic layout. The height of lettering used for legends, referred to as A, is the basic unit on which all dimensions are based. Letter size is based on viewing distance (see chart on page 2-6). Once the letter size is determined, all other dimensions follow. No matter what letter size is chosen, the relationships shown in the grid will remain the same.

This grid format system consists of five parts, including the top and bottom borders. The top border equals .5A, the bottom border equals .375A. The first destination is placed one unit A below the edge of the top border. The placement of the next message depends on its relationship to the first destination. The different possibilities are: a continuation of the first line, a new destination with the same directional, or a new destination with a different directional.

The length of the legends can be determined by typesetting (see D-1 for approved systems) or by calculating using the method outlined on page D-2. When there are no arrows on the right side of the sign, the sign panel ends 2A beyond the last letter on the longest line.
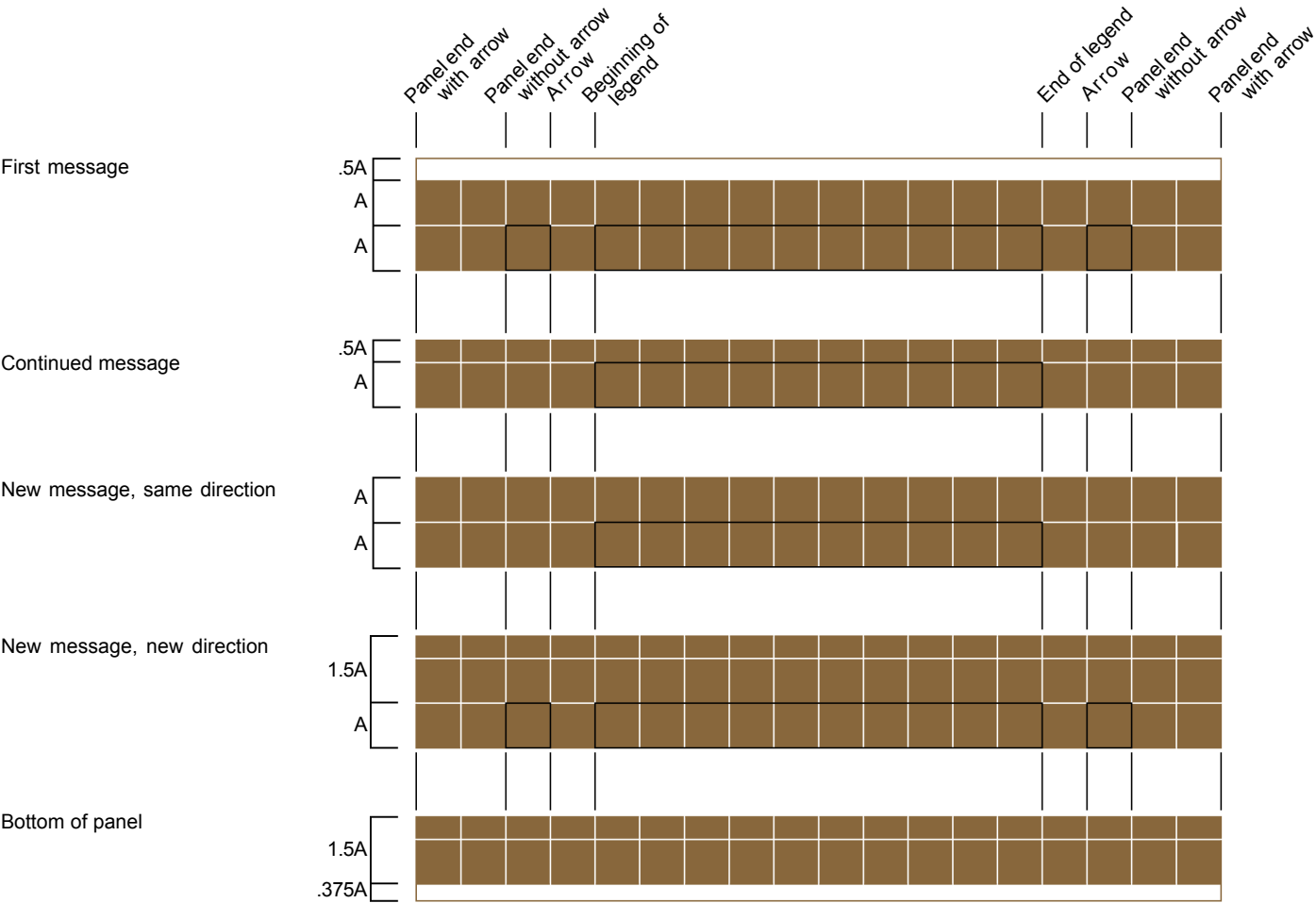
The width of the sign panel is based on the longest destination, plus space for arrows. When mileage to a destination is indicated, numerals are considered part of the message, just as if they were letters. Double the standard word-space between the legend and the mileage number. Place the word "Miles" after the number (see page 6-10). Directional legends with three or more words may be placed on two lines for ease of reading and to keep the panel from becoming overly long. For an explanation of how to divide a destination onto two lines, see page 2-4.

Arrows left or straight ahead are placed one unit A to the left of the first destination in that direction. The left edge of the sign panel is 2A units to the left of the arrow. An arrow right is placed to the right of the first destination with that directional, one unit A beyond the end of the longest destination on the sign panel. In some cases, this may mean that the arrow right is more than one unit from the lettering. The right edge of the sign panel is then 2A to the right of the arrow. When there are no arrows on the right side of the sign, the sign panel ends 2A beyond the last letter on the longest line.

The examples shown on pages 6-7 to 6-11 illustrate the use of the directional sign grid. Variations of the basic grid are shown below and on page 6-8. Directional signs displaying the optional Corps Signature are shown on page 6-9. Finally, directional signs with recreational symbols are shown on pages 6-10 and 6-11.

The signs on pages 6-7 and 6-8 have the same messages but different directional arrows. As the examples show, spacing between lines and sign dimensions change with the use of different directionals. For instance, the sign panel on page 6-8 is two units wider than the panel on page 6-7 in order to accommodate arrows on both sides of the sign. Also note that the height is one unit more because all of the destinations have different directionals, requiring more space between the lines than destinations with the same directionals.

Sign proportions are the same regardless of letter size. To determine the actual size of a sign, multiply the letter size A times the number of units. For example, if the type is 6", then the width of the sign below is 6" x 17.25 units, which equals 103.5". The height is 6" x 9.875 units, which equals 59.25". Following the same procedure, the sign on page 6-8

First message

.5A
A
A
↑ **Cascade Creek**

New message, same direction

A
A
Pine Recreation

Continued message

.5A
A
Area

New message, same direction

A
A
Fort Wilderness

Panel bottom

1.5A
.375A

In this example, all of the destinations are in the same direction. The messages could be in any order, based on importance, proximity or visual layout on the sign panel. "Cascade Creek" is the most important destination in this example, and is placed first, one unit below the border. The next line "Pine Recreation Area" is a different destination in the same direction. Because it is significantly longer than the other two destinations, it should be divided into two lines. The first line is placed one A below the first destination, "Cascade Creek". Because "Area" is a continuation of the message, it is placed with a .5A line space below "Pine Recreation". The last destination, "Fort Wilderness," is also in the same direction, so it is placed one unit A below the preceding line. The bottom border is then placed with a 1.5A space below the last line. The overall size is 17.25 units wide and 9.875 units high.

17.25A

9.875A

↑ **Cascade Creek**
Pine Recreation
Area
Fort Wilderness
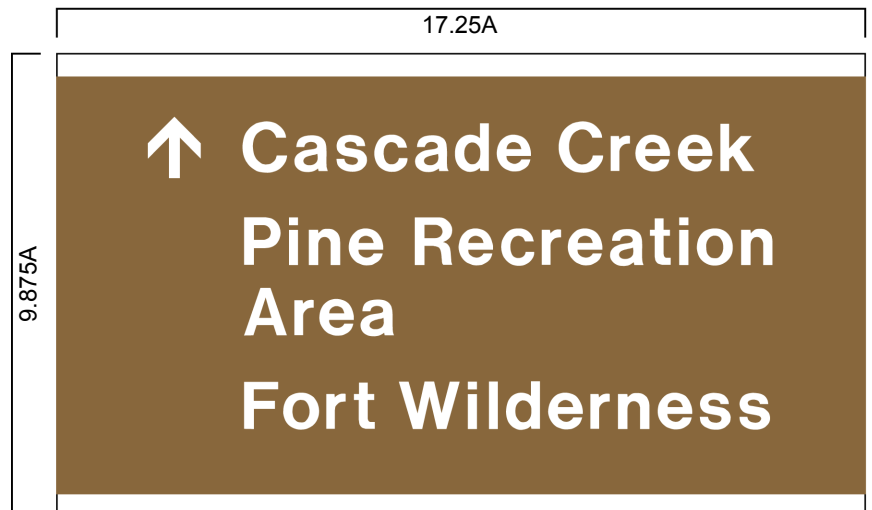
is 115.5" x 65.25" with 6" lettering and
173.25" x 97.875" with 9" lettering.

First message

.5A
A
A

↑ Pine Recreation

Continued message

.5A
A

Area

New message, new direction

1.5A
A

← Cascade Creek

New message, new direction

1.5A
A

Fort Wilderness →

Panel bottom

1.5A
.375A

In this second example, all of the destinations are in different directions: "Pine Recreation Area" is straight ahead; "Cascade Creek" is to the left; "Fort Wilderness" is to the right.

Destinations with arrows directed straight ahead are placed first (see page 6-4 and 6-5), so "Pine Recreation" is placed on the first line, one unit below the top border. The continuation of the previous line "Area" is placed below with a .5A line space separating the first and second line of the group. Since "Cascade Creek" is a different destination, it is separated with a 1.5A space below the previous line. The last line, "Fort Wilderness" is again a different destination in a new direction, so it is separated with a 1.5A space below the previous line. As in the example on the previous page, the bottom border is 1.5A below the last line. The finished sign is 19.25 units wide and 10.875 units high.

19.25A

10.875A

↑ Pine Recreation
Area

← Cascade Creek

Fort Wilderness →
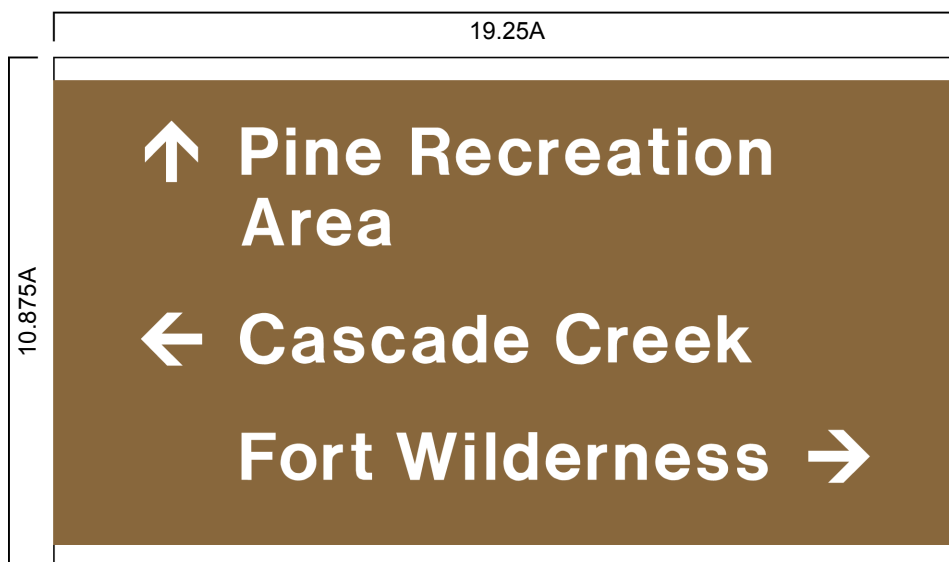
The use of the Corps Signature on Approach Roadway Directional signs can be an effective device to promote public awareness of the Corps presence in a region and our contributions to a local community. Using the Signature on our directional signs can also guide motorists who specifically seek Corps recreation areas or other points of interest as they travel the country.

The Corps Signature consists of the Corps Mark (the castle logo) above the name "US Army Corps of Engineers."

Because Approach Roadway Directional signs are usually placed on highway rights-of-way owned by another agency, the use of the Signature may not always be permitted.

If the other agency has given permission, using the Corps Signature on these signs is optional. The Sign Program Manager should consider such factors as usefulness to travelers, cost, maintenance, vandalism potential, etc., when deciding whether to use the Signature.

First message — .5A / A / A — ↑ Pine Recreation

Continued message — .5A / A — Area

New message, new direction — 1.5A / A — ← Cascade Creek

New message, new direction — 1.5A / A — Fort Wilderness →

Bottom of panel — A / 1.5A / .5A / .375A — US Army Corps of Engineers

19.25A

12.375A

↑ Pine Recreation Area

← Cascade Creek

Fort Wilderness →

US Army Corps of Engineers
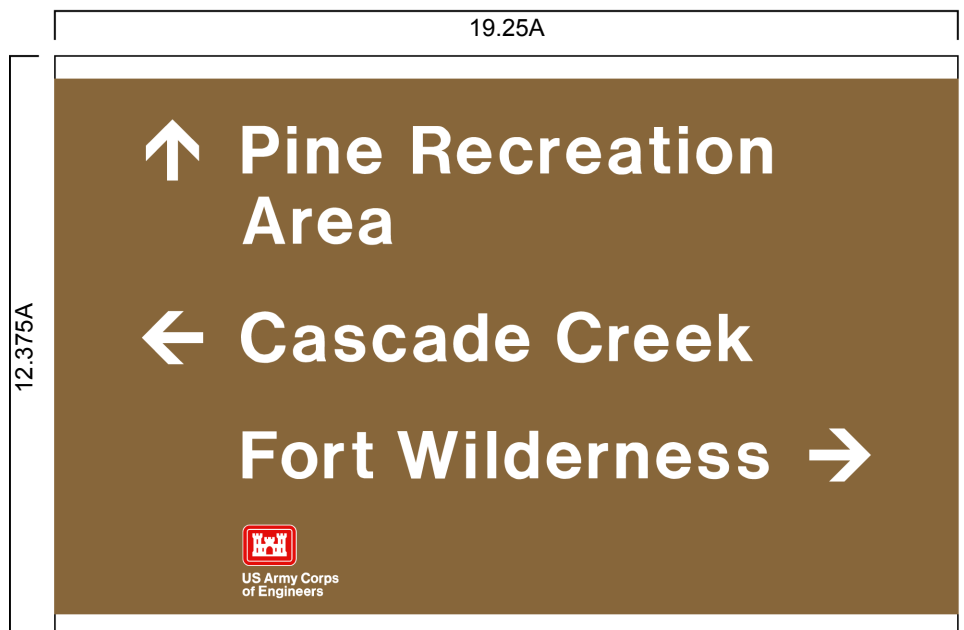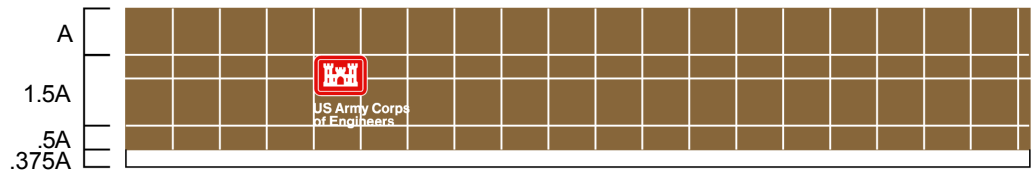
Two formats, one shown below and one on the following page, are provided for placing symbols indicating services on an Approach Roadway Directional sign. In both cases, there is to be only one written destination placed on a maximum of two lines. The first format is for use with three symbols. The second format is for use with four symbols. The pictograms in the three-symbol configuration are slightly larger than those in the four-symbol layout.

Where mileage to a destination is indicated, double the standard word-space between the last letter of the message and the numeral.

First message

.5A
A
A

← **Pine Recreation**

Continued message

.5A
A

Area 8 Miles

Three symbols

A

2A

Panel bottom

A
.375A

The symbols are equal to 2A in height, as measured to the outside edge of the holding line around the image, and are placed with a one unit A line-space below the previous line. The first symbol is aligned flush left with the typography. Each symbol is one unit A to the right of the previous symbol. The bottom of the panel is one unit A deep.

Option: the Corps Signature may be used on this sign either in place of the first recreation symbol or on a separate line below the recreation symbols (use panel bottom grid on page 6-9, but make the Signature height 2A).

17.25A

8.375A

← **Pine Recreation Area 8 Miles**

*Panel size varies with legend length and configuration.

**Post size and number of posts required will depend on size of sign. Refer to the Directional Sign Post and Footing Specification Matrix in Appendix B.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
APRS-3	4"	*	**	HDO-4/ALU-4	60"	BR/WH
APRS-3	6"	*	**	HDO-4/ALU-4	60"	BR/WH
APRS-3	9"	*	**	HDO-4/ALU-4	66"	BR/WH

The layout of a sign with four symbols is identical to that for three symbols, except for the reduced size of the symbols. When there are four symbols, their height is equal to 1.5A as measured to the outside edge of the holding line around the image rather than 2A as shown on the previous page. The symbols are placed one unit A line space below the legend line. One unit A space is placed between each symbol. The bottom panel is one unit A deep.

Refer to the display on pages 8-15 to 8-27 to select symbols.

First message

.5A
A
A

← Pine Recreation

Continued message

.5A
A

Area 8 Miles

Four symbols

A
1.5A

Bottom of panel

A
.375A

Option: the Corps Signature may be used on this sign either in place of the first recreation symbol or on a separate line below the recreation symbols (use panel bottom grid on page 6-9).

17.25A

7.875A

← Pine Recreation Area 8 Miles
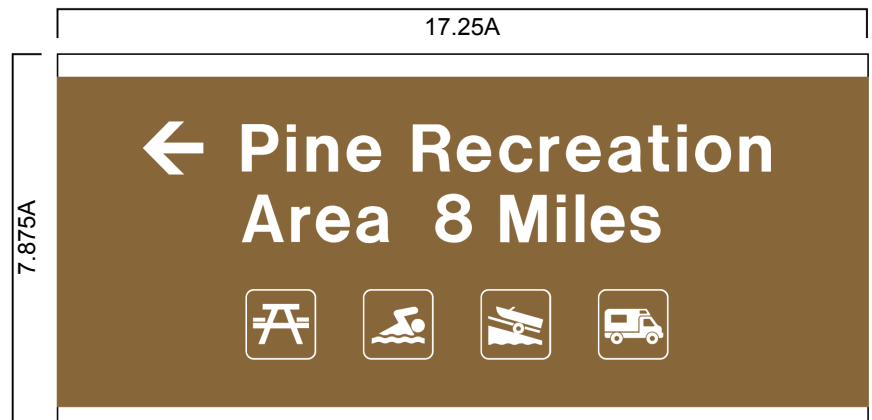
*Panel size varies with legend length and configuration (see page 6-6).

**Post size and number of posts required will depend on size of sign. Refer to the Directional Sign Post and Footing Specification in Appendix B.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
APRS-4	4"	*	**	HDO-4/ALU-4	60"	BR/WH
APRS-4	6"	*	**	HDO-4/ALU-4	60"	BR/WH
APRS-4	9"	*	**	HDO-4/ALU-4	66"	BR/WH

Directional signs within the boundaries of a Corps project or facility are similar in look to the Approach Roadway Directionals, but are simpler, more compact, and more appropriate for viewing at slower speeds. The typography is Helvetica Medium. To specify the size of typography, refer to the Viewing Distance Guide on page 2-6. Because they are viewed at a slower speed, the panel has a different layout configuration. The signs can be made of HDO plywood or aluminum with retroreflective sheeting. The colors, Corps Brown and white (page 4-5), are the same as those used for Approach Roadway Directionals.

The illustration below shows a typical directional sign for use within a Corps project. The elements of the sign design are described in the sidebar to the left of the illustration. The use of the Corps Signature is not permitted.

Sign Panel: Layout based on grid. Overall size of panel determined by length and number of destinations.

Typography: Helvetica Medium, initial capitals only. The size of the capital letters determines the basic unit A of the layout grid (page 6-15). Letter size is the same for all messages on a given sign. All messages are aligned flush left.

Color: Corps Brown background with white typography and arrows.

Post: Nominal width is equal to A. Post is attached to the back of the sign panel, set in 2 units (2A) from the outside edge of the panel.

Arrows: An arrow may be placed on a panel to indicate one of five possible directions (see page 4-13).

Materials: Signs can be constructed of HDO plywood or aluminum with retroreflective sheeting background and graphics.

↑ **Daniel Oscar Picnic Area**
← **Nature Area**
Swim Beach →

2A

*Panel size varies with legend length and configuration (see page 6-15).

**Post size and number of posts required will depend on size of sign. Refer to the Directional Sign Post and Footing Specification in Appendix B.

Post length and mounting height for sign placed on sloping or inclined grade may require adjustment as shown for appropriate installation.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRJDIR	2"	*	**	HDO-5/ALU-5	36"	BR/WH
PRJDIR	3"	*	**	HDO-4/ALU-4	36"	BR/WH
PRJDIR	4"	*	**	HDO-4/ALU-4	36"	BR/WH
PRJDIR	6"	*	**	HDO-4/ALU-4	48"	BR/WH

36"

The sign panels below illustrate the variety of configurations possible on directional signs on Corps projects. The lettering is always flush left. Arrows pointing left, oblique left, or straight ahead are placed to the left of the type. An arrow pointing oblique right or right is placed to the right of the type. An arrow indicating a destination straight ahead is placed first on a sign. Second priority is given to an oblique (45°) left arrow. Next is an arrow indicating a left turn. A 45° right arrow is given fourth priority. An arrow indicating a right turn is given lowest priority on a sign. Note that there is only one arrow placed on the sign panel for each direction, regardless of the number of destinations associated with a given direction. Letter size is the same for all destinations.

One line, one destination
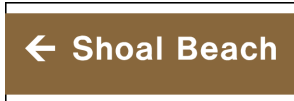
← **Shoal Beach**

Arrow can be straight, 45° left, or left

Shoal Beach →
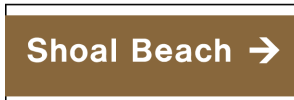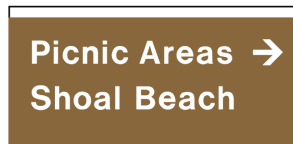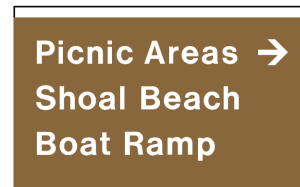
Arrow can be 45° right or right

Two lines, one destination

← **Maple Picnic Shelter**

Arrow can be straight, 45° left, or left

Maple Picnic → **Shelter**

Arrow can be 45° right or right

Two lines, two destinations

← **Picnic Areas Shoal Beach**

Arrow can be straight, 45° left, or left

Picnic Areas → **Shoal Beach**

Arrow can be 45° right or right

Three lines, two destinations

← **Shoal Beach Maple Picnic Shelter**

Arrow can be straight, 45° left, or left

Shoal Beach → **Maple Picnic Shelter**

Arrow can be 45° right or right

← **Shoal Beach Maple Picnic** → **Shelter**

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

Three lines, three destinations

← **Picnic Areas Shoal Beach Boat Ramp**

Arrow can be straight, 45° left, or left

Picnic Areas → **Shoal Beach Boat Ramp**

Arrow can be 45° right or right

← **Picnic Areas Shoal Beach** → **Boat Ramp**
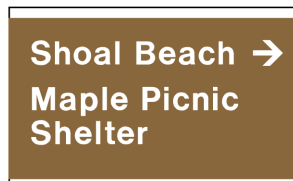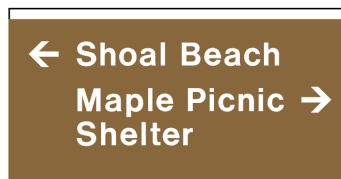
Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

Messages placed on signs to be read from a moving vehicle must be concise. To ensure brevity, follow these rules when preparing directional sign legends.

1) Not more than ten words per sign.

2) Not more than four destinations on four lines per sign.

3) Not more than four words per destination, except where the proper name of a destination is made up of more than four words.

4) If there are more than ten words contained in four destinations, the fourth destination may be more appropriately put onto a separate sign.

Four lines, two destinations

← Beaver Falls
Campground
Maple Picnic
Shelter

Arrow can be straight, 45° left, or left

Beaver Falls →
Campground
Maple Picnic
Shelter

Arrow can be 45° right or right

↖ Beaver Falls
Campground
Maple Picnic →
Shelter

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

Four lines, three destinations

↑ Beaver Falls
Campground
← Picnic Areas
Shoal Beach

Arrows can be straight, 45° left, or left

Beaver Falls →
Campground
Picnic Areas
Shoal Beach

Arrow can be 45° right or right

← Beaver Falls
Campground
Picnic Areas
Shoal Beach →

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

Four lines, four destinations

← Picnic Areas
Shoal Beach
Boat Ramp
Crane Beach

Arrow can be straight, 45° left, or left

Picnic Areas →
Shoal Beach
Boat Ramp
Crane Beach

Arrow can be 45° right or right

← Picnic Areas
Shoal Beach
Boat Ramp ↗
Crane Beach

Top arrow can be straight, 45° left, or left
Bottom arrow can be 45° right or right

All directional signs on roadways within Corps boundaries use the grid illustrated below for message format and typographic layout. The height of lettering used for legends, referred to as A, is the basic unit on which all dimensions are based. Letter size is based on viewing distance (see chart on page 2-6). Once the letter size is determined, all other dimensions follow basic unit A. No matter what letter size is chosen, the relationships shown in the grid will remain the same.

The grid consists of four parts, including the top and bottom borders. Just as on the Approach Roadway Directional, the top border equals .5A, the bottom border equals .375A. The first destination is placed one unit A below the top border of the sign. The placement of the next line depends on whether it is a continuation of the destination, or a new destination. Unlike Approach Roadway signs (page 6-6), the spacing between lines is the same for new legends of the same direction or for legends to a different direction.
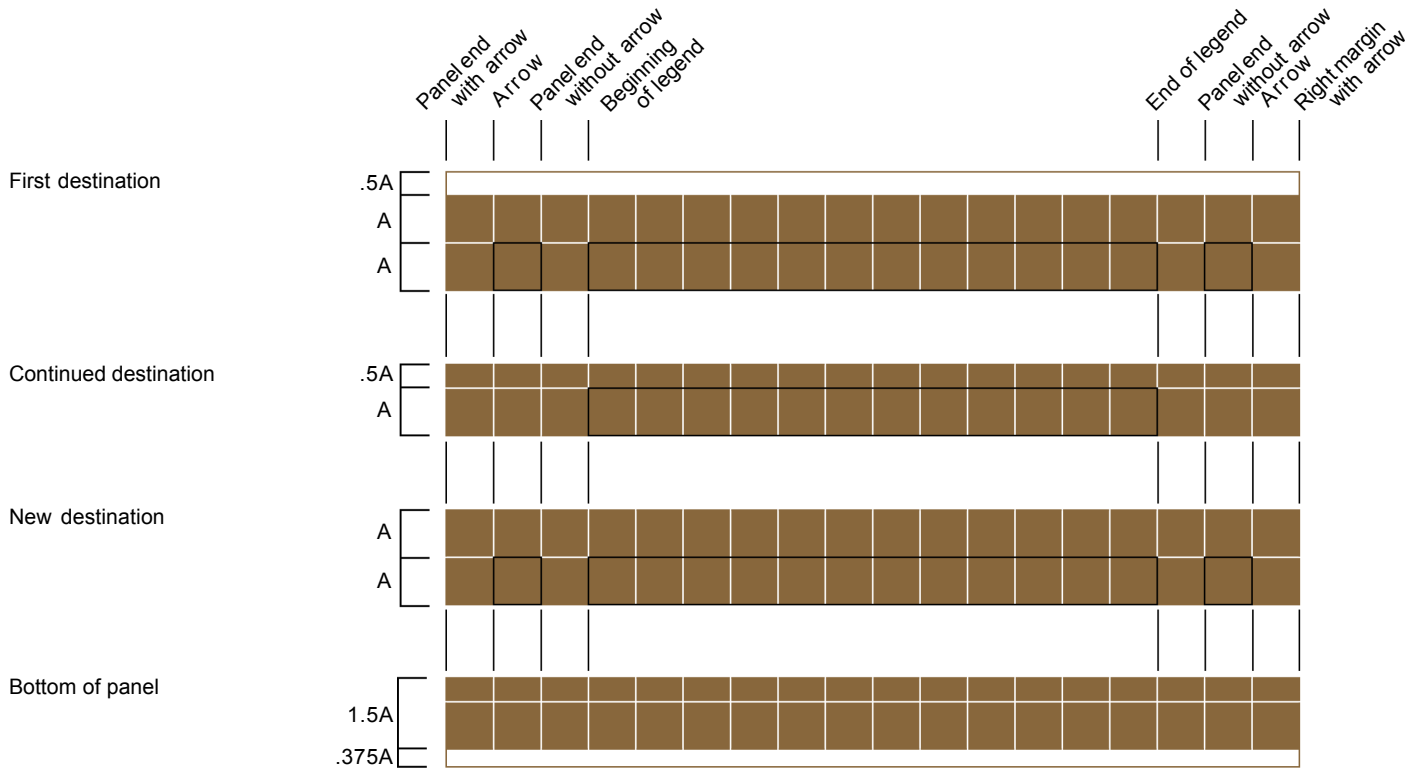
The width of the sign panel is based on the longest destination, plus space for arrows. Arrows straight ahead, 45° left, or left are placed one unit A to the left of the first destination in that direction. The left edge of the sign panel is one A unit to the left of the arrow. An arrow 45° right or right is placed to the right of the first destination with that directional, one unit A beyond the end of the longest destination on the sign panel. In some cases this means that the arrow right is more than one unit from the lettering. The right edge of the sign panel is then 1 A to the right of the arrow. When there is an arrow on only one side of the sign, the sign panel ends 1 A beyond the last letter on the longest line.

The legend length can be determined by typesetting (see D-1 for approved systems) by calculating using the method outlined on page D-2, or by using the sign software.

The example below illustrates the use of Project Roadway Directional sign grid. The first destination, "Daniel Oscar Picnic Area", is the one with a straight-ahead arrow. Because it is significantly longer than the other two messages, it is divided into two lines. The first line is located one unit A below the border. "Picnic Area", being a continuation of the same destination, is placed with a .5A line-space below the first line. The next destination, "Nature Area", has a left-turn arrow. It is placed with a one unit A line-space below the first destination. The last destination, "Swim Beach", has a right-turn arrow. It is placed with a one unit A line-space below the last destination. The bottom of the sign panel is 1.5A plus border below the last destination. The total height of the sign is 9.875 units. The width is 15.125 units.

First destination

Continued destination

New destination

New destination

Bottom of panel

Sign proportions are the same regardless of letter size. To determine the size of the sign panel, multiply the letter size, A, times the number of units. For example, if the type is 4", the length of the sign shown to the right is 4" x 15.125 units, which is 60.5". The depth is 4" x 9.875 units which equals 39.5". With 3" lettering, the length is 45.375" (3" x 15.125 units) and the depth is 29.625" (3" x 9.875 units).

6-16

This section covers recreation signs. This group of signs has a variety of purposes and applications. They outline fees charged, hours of operation, services available, and procedures to be followed when launching a boat, using a dump station or reserving a picnic shelter. This diverse group of signs is brought together through visual consistency: color, typography, border treatment, and panel layout, as illustrated on page 7-2.

This section has been divided into the basic functional areas: entrance station, campground, picnic area, swimming area, and boat ramp. Each of these subsections has a schematic diagram of the respective area showing generic locations for the signs relating to that facility. Shown on the diagrams, but not included in this section, are the necessary traffic signs (Section 9), directional signs (Section 6), and identification signs (Section 5). In addition, there is a display and explanation of safety signs and signs for hours of operation.

The legends used on these signs have been carefully developed, reviewed, and approved for nationwide use. The purpose of developing a uniform system is twofold: to establish a uniform look for signs at all Corps projects and to reduce costs. The system discourages costly, one-of-a-kind signs. However, should the need occur for a sign not displayed in this section, there are grids provided on pages 7-63 to 7-65 for layout purposes. Consult the district Sign Program Manager for ordering procedures. It is important that special application signs follow the format outlined in this section. Nonconforming signs dilute the strength of the system as a whole.

This section is a catalog of recreation signs. All options – legend size, substrate, graphic application, and mounting – are described in the sign code, displayed in the matrix beneath each illustration. Legend sizes have been chosen for viewing from a vehicle moving at slow speeds or by pedestrians. The panel size for each legend size is fixed. Should local conditions require a different legend size, any given sign can be fabricated at a different scale using the dimensions shown next to the display of the sign.

Each page has an illustration showing available mounting methods and corresponding mounting heights. The dimensions shown adjacent to the illustrations specify the distance from the ground to the bottom of the sign panel (except for pages 7-16 to 7-18, which show the distance to the top of the panel).

Embedment depth and the required post length are not shown. These dimensions will vary with location, soil density, and local frost line conditions. Refer to Design Criteria in Appendix B, or consult a project engineer for proper post embedment depth.

Typography for all signs is Haas Helvetica Bold, initial capitals only. Letter- and word-spacing are to follow standards outlined in Section 4.

Sign color for signs with recreation applications in recreation areas (except for Danger, Warning or Caution signs) is Corps Brown background with white typography and border.

Caution and Warning signs are Lemon Yellow background with black typography and border. Danger signs are red background with white typography and border. Though they are rarely used in recreation areas, waterway information/ instruction signs are white with blue typography and border (Section 14).

The basic difference between Recreation Area signs and Waterway signs is that the latter are generally viewed from the water, whereas Recreation Area signs are viewed from the land. Secondly, Recreation Area signs are used to identify and inform people on the use of facilities. Because the inherent dangers are less, there are fewer safety related signs. Waterway signs are predominantly used to communicate safety related information. Graphically, the main difference is that the legends on Waterway signs use Helvetica Medium typeface instead of Helvetica Bold as is used on Recreation Area signs. For Waterway signs refer to Section 14. A comparative illustration of safety sign types and applications is provided on pages 2-13 to 2-16.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

The group of signs illustrated in this section is unified visually through the use of three common elements – typography, border, and panel layout – on three related formats.

Layout grids for the three formats shown below are illustrated on pages 7-63 to 7-65. All use Helvetica Bold typography as per Corps letter-spacing and word-

Top Border: Equal to the basic grid unit A. It serves as an implied border.

Headline: Gives emphasis to a key word or words. The size of the headline type is 1.5A. Signs with a one-line headline use Grid I; those with a two-line headline use Grid 2.

Underrule: All signs with headlines have a rule to separate the headline from the body copy. It is equal to .125A. The rule starts flush left with the type and extends to the right edge of the sign panel.

Body Copy: The bulk of the legend. Grid 3 has only body copy. The viewing distance of the sign is based on the height of the capital letters, A, of the body copy.

Panel Size: Based on two elements: the height of the capital letters of the legends, known as A, and the length of the longest legend line. Vertical dimensioning of the panel is based on A. Horizontal dimensioning is based on the length of the longest legend line plus 1.5A, which is referred to as X. The overall panel width is equal to 1.25X. There are four signs which are exceptions: the Campsite Fee sign (7-7), and the three Dumping Station signs (7-16 to 7-18). The panel width of these signs is 1.5X. The extra sign width allows for the placement of symbols in the left-hand margin.

When determining panel size, round off all calculations to the nearest .125".

Typography: Helvetica Bold, initial capitals only, aligned flush left on the grid. Letter- and word-spacing to follow typographic standards in Section 4.

Color: Informational signs in recreation areas have a Corps Brown background with white typography and rules, as shown on page 4-5. Safety related signs (Danger/Caution/Warning/Restricted) use the safety colors shown on page 4-6 through 4-8.

spacing standards (see Section 4). The size of the sign panel is based on the length of the longest line of type. Grids 1 and 2 incorporate a headline and secondary descriptive body copy. The headline type is 1.5 times larger than the size of the body copy. Grid 1 has a headline with a single legend line; Grid 2 has a headline with two legend lines; Grid 3 has no headline. Viewing distance is

based on the size of the legend in the body copy, not the headline. To specify size of body copy, refer to the Viewing Distance Guide on page 2-6.

All signs shown in this section adopt these grid formats with the exception of the Opening Hours sign (page 7-56) which uses a special format.

Example: Grid 1

Example: Grid 2

Example: Grid 3

The diagrams below show fee and fee collection information sign placement for both attended and unattended entrances. The specific location will depend on the layout of and circulation in an actual site.

Because there are a number of signs concentrated around an entrance station, a few placement guidelines should be observed. Signs should be mounted so that they are easily read from a motor vehicle, rather than by a pedestrian. Where there is an entrance station in a center island, fee and registration signs should be mounted on the driver's left side. Through traffic will use the right lane.

The second diagram shows the entrance to an unattended fee area. Fee and fee collection signs are to be placed on the right side of the roadway. Careful consideration should be given to placing signs so that they can be seen, read, and understood before encountering another sign.

Additional signs which may be required for this area will include: project identification (Section 5), directional (Section 6), prohibition (Section 8), symbols (Section 8), and traffic (Section 9).

Campsite Fees

May 15-October 15
Campsite: $0.00 per Night
Guests: $0.00 per Day
14 Day Limit

Campers

Stop Here to Register

Standard Identification

Opening Hours

Traffic Control

Area Regulations

Fee Collection

1. Select campsite.
2. Fee will be collected by uniformed park ranger on patrol.
3. Retain permit receipt and display at campsite.

Campground Closed

Campsite Fees

May 15-October 15
Campsite: $0.00 per Night
Guests: $0.00 per Day
14 Day Limit

Standard Identification

Directional

Area Regulations

7-3

Fee areas with a controlled entrance compound may use one-way tire puncture gates to allow egress but prevent unauthorized access into a project. Other applications are for projects with strictly enforced one-way in, one-way out circulation, where a remote egress point cannot be monitored by project personnel.

The two signs specified below are mounted for view by both the exiting driver and the driver attempting an improper entry. The two specified signs are to be mounted approximately ten feet beyond the gate mechanism as illustrated below. Prepare as a back-to-back sign assembly with WRN-03 sized as shown and placed at eye level on the exiting driver's right side. With this assembly, sign WRN-02 will be mounted on the opposite side of the same post for view by a driver attempting an improper entry.

Because viewing is at close proximity and at a common site location, only one size sign has been specified. Both signs have black legends and Lemon Yellow backgrounds.

As an additional warning to a driver attempting an improper entry, sign R5-1 ("Do Not Enter") may be placed as shown in the sketch below.

Warning
Severe Tire Damage
Do Not Enter

WRN-02

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-02	1.5"	20.5"x16.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK

Warning
Severe Tire Damage
Do Not Back Up

WRN-03

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-03	1.5"	24.625"x16.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK

DO NOT ENTER

R5-1
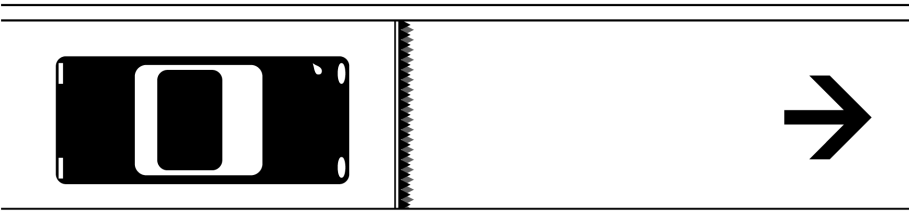
WRN-03   WRN-02

Approximately 10'

7-4

This sign is used at locations where campers are required to stop at the entrance station to register or obtain a permit. It is placed either adjacent to the entrance station, or along the approach road, slightly in advance of the entrance station. Its precise location will depend on the configuration of the area.

There are three sizes available. The smaller one is for placement on the entrance station, and the larger two are freestanding and ground-mounted on posts.

The sign is fabricated from retroreflective sheeting on HDO plywood or aluminum.

Underrule is .125A

Campers

Stop Here to Register
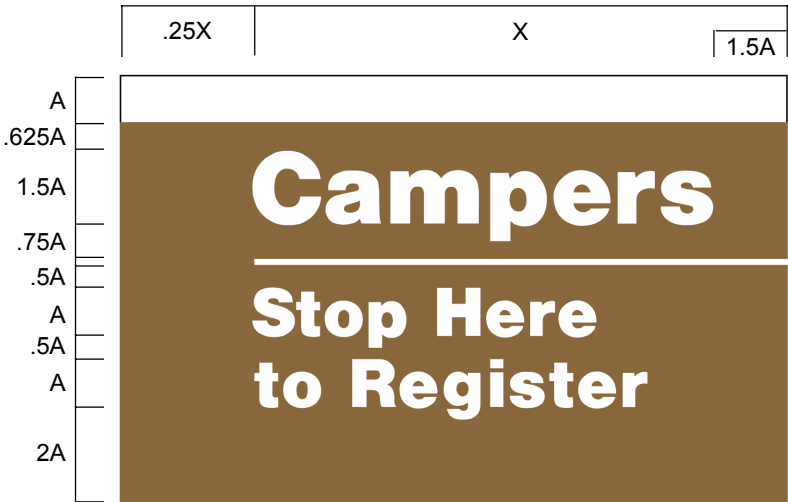
*The mounting height for the wall-mounted panel will vary according to design of entrance station building.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
ENT-01	1.5"	21.125"x13.5"	-	HDO-6/ALU-6	48"-60"*	BR/WH
ENT-01	2"	28.125"x18"	4"x4"	HDO-5/ALU-5	36"	BR/WH
ENT-01	3"	42.125"x27"	4"x4"	HDO-3/ALU-3	36"	BR/WH

The illustration shows both wall-mounted and ground-mounted signs.

48-60"

36"
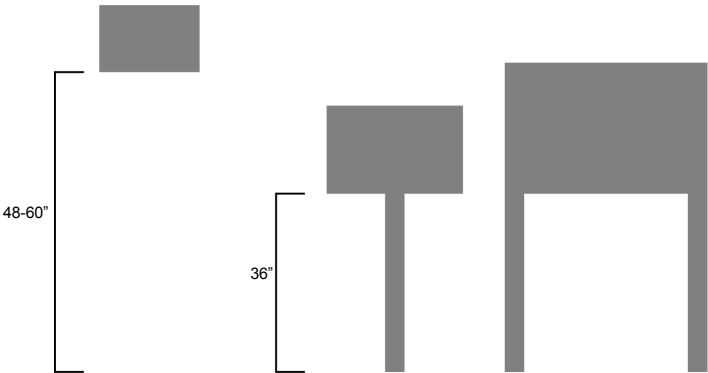
Entrances to areas that collect fees can be identified using this symbol. Below is an illustration that shows how this symbol may be used on approach roadways, project roads and on buildings.

The symbol is available in three sizes.

The largest panel (18") is intended for placement along approach roadways going into a designated fee area. Similarly the 9" panel is for placement along slow speed project roadways. The smaller panel is to be placed on buildings.

Artwork for the U.S. Fee Area Symbol is found in Appendix F, page F.137.

The background color is gold (PMS 130) and the foreground color is blue (PMS 282). The interior circle is white.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
FEESYM	6"	6"x6"	-	HDO-5	60"	*
FEESYM	9"	9"x9"	4"x4"	HDO-5	48"	*
FEESYM	18"	18"x18"	4"x4"	HDO-5	60"	*

*see margin text for symbol colors

Sign fabricators should follow this diagram for proper panel size and shape. The centerlines of the sign are noted with "c/l".
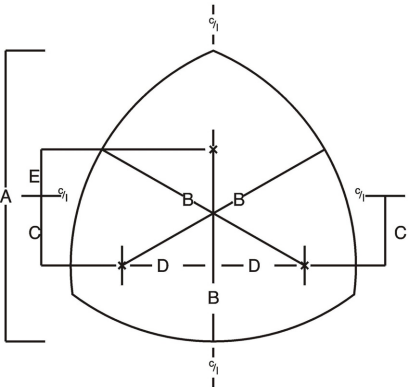
A	B (radius)	C	D	E
6"	4.8005"	1.431"	1.8795"	0.96"
9"	7.20075"	2.1465"	2.81925"	1.44"
18"	14.4015"	4.293"	5.6385"	2.88"

Signs may be mounted along fee area roads or on buildings at fee area entrances.
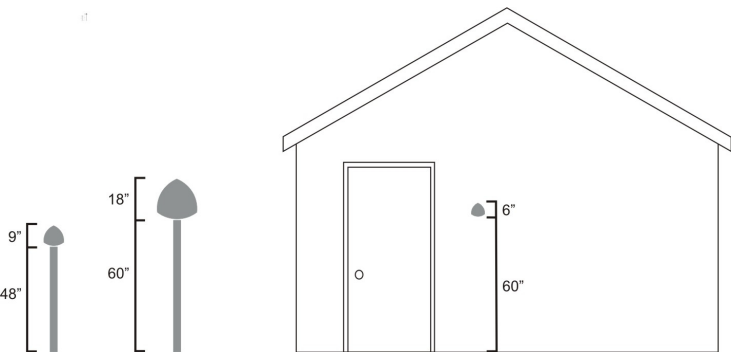
The Campsite Fee sign shown below is used to inform the public that there is a fee for using the campsites, what that fee is, and the fee season (varies according to location). It also serves as the location to display the U.S. Fee Area symbol.

The sign is located on the entrance station or, if there is no entrance station, next to the Fee Collection sign (see p. 7-8).

The fee season, costs, and length of stay limits will vary from project to project. Indicate the applicable legends when ordering this sign type.

The legend on this sign should be limited to the dates that the facility is open, fees, limit of stay and availability. Addition of other legends to this panel will dilute the purpose for which it was intended.

When prices change, a replacement patch should be used.

Of the four sizes available, the smallest is frequently mounted on the entrance station, with the larger freestanding sizes used in conjunction with ENT-03 on page 7-8.

Underrule is .125A.
Fee Season: Indicate dates, if applicable.
Indicate campsite fee.

Optional legend: Indicate guest fee, if applicable.

Optional legend: Indicate limit of stay, if applicable.

Optional panel may be attached using hook and eye hardware. If panel is subject to removal by vandals, it can be mounted as per the specifications for HDO-3 or HDO-5 provided in Appendix B.

Fee listings with a range of prices should be placed on the sign panel in the format illustrated.

Campsite Fees
May 15-October 15
Campsite: $0.00 per Night
Guests: $0.00 per Day
14 Day Limit

Campground Full

Campsite: $0.00-0.00 per Night

Panel height varies depending on legends used. Panel height shown in matrix is for sign as illustrated above, without the "Campground Full" attachable panel.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
ENT-02	.75"	20.25"x11.25"	-	HDO-6/ALU-6	60"	BR/WH
ENT-02	1"	27"x15"	4"x4"	HDO-5/ALU-5	36"	BR/WH
ENT-02	1.5"	40.5"x22.5"	4"x4"	HDO-3/ALU-3	36"	BR/WH
ENT-02	2"	54"x30"*	4"x4"	HDO-3/ALU-3	36"	BR/WH

The illustration shows both wall-mounted and ground-mounted signs.

60"

36"
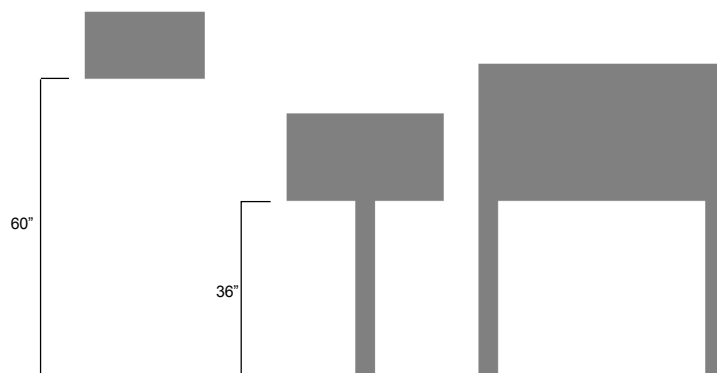
At locations where there is no entrance station and campsite fees are collected by a roving ranger, the sign illustrated below is used. It is placed on the roadway approaching the campground, where it is easily viewed by entering vehicles.

An optional "Campground Full" attachable panel is available.

The sign is ground mounted on one or two wood posts, depending on the size of the sign. The size chosen is determined by the viewer's speed of approach and by the appropriateness of the size of the sign to the site.

Underrule is .125A.

Optional panel may be attached using hook and eye hardware. If panel is subject to removal by vandals, it can be mounted as per the specifications provided in Appendix B.

Dimension
.25X
X
1.5A

A
.625A
1.5A
.75A
.5A
A
A
A
.5A
A
.5A
A
A
A
.5A
A
2A

Fee Collection

1. Select campsite.

2. Fee will be collected by uniformed park ranger on patrol.

3. Retain permit receipt and display at campsite.

.5A
A
.75A

Campground Full

The panel height shown is without the "Campground Full" attachable panel.

Sign Type	Legend Size (A)	Panel Size Size	Post Code	Specification Height	Mounting Bkg/Lgd	Color
ENT-03	1"	24.375" x 16"	4"x4"	HDO-5/ALU-5	36"	BR/WH
ENT-03	1.5"	36.625" x 24"	4"x4"	HDO-3/ALU-3	36"	BR/WH
ENT-03	2"	48.875" x 32"	4"x4"	HDO-3/ALU-3	36"	BR/WH

36"

Where fees are charged at day use or other fee areas, the sign provided below should be clearly posted at the entrance to inform entering visitors of costs. Actual legend content may vary depending on local rules, fee season, and recreation area. The Grid 1 format as modified to include the fee symbol should be maintained at all locations.

The example shown below assumes that the fees are applicable all year round or that the sign is removed at the end of the season. If the sign will remain posted all year round but patrons will only be charged during the recreation season, an optional legend that includes the fee period should be added (see example on page 7-7 for Campsite Fees).

If the area is not attended, a second panel that includes instruction procedures for registration and payment is to be placed in conjunction with this panel (see page 7-10)*.

*These signs will be placed on separate posts. See page 7-3 for typical sign placement.

Underrule is .125A.
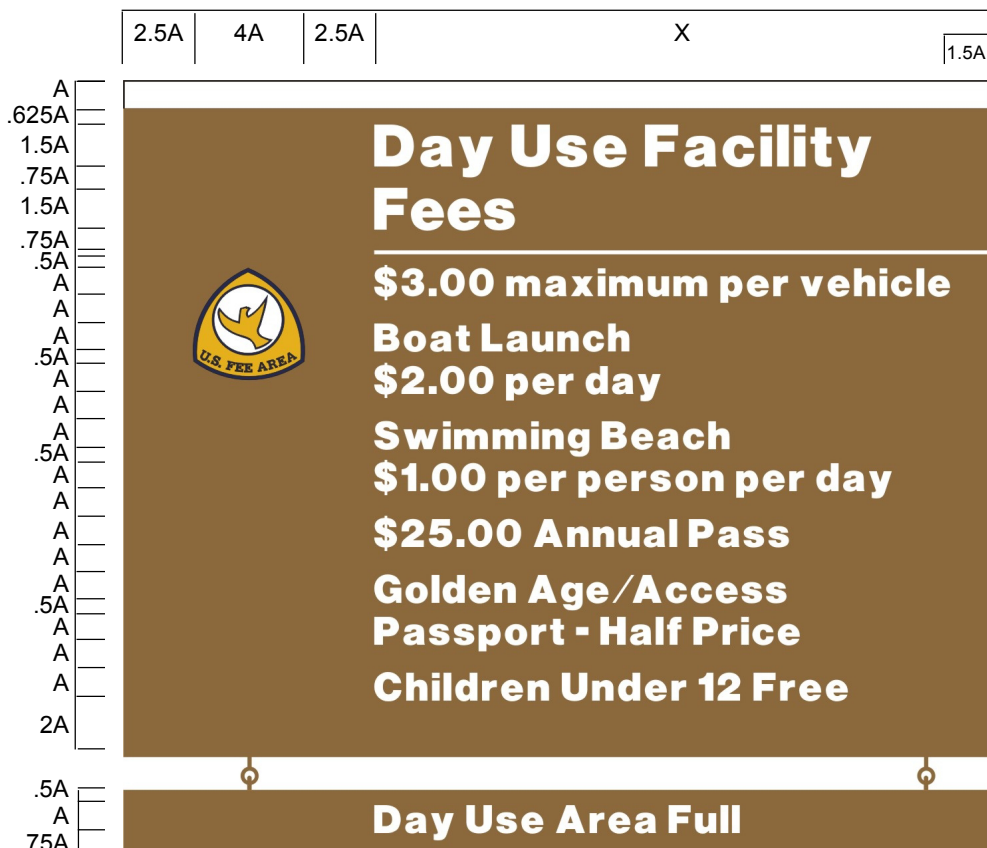
| 2.5A | 4A | 2.5A | | X | | 1.5A |

A
.625A
1.5A
.75A
1.5A
.75A
.5A
A
A
A
.5A
A
A
A
.5A
A
A
A
A
A
.5A
A
A
A
2A

Day Use Facility Fees

$3.00 maximum per vehicle

Boat Launch $2.00 per day

Swimming Beach $1.00 per person per day

$25.00 Annual Pass

Golden Age/Access Passport - Half Price

Children Under 12 Free

.5A
A
.75A

Day Use Area Full

The panel height shown is without the "Day Use Area Full" attachable panel.

Sign Type	Legend Size (A)	Panel Size*	Symbol Size (Y)	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
ENT-05	1"	31.125"x24.25"	4"	4"x4"	HDO-5/6/ALU-5/6	60"	BR/WH
ENT-05	1.5"	46.75"x36.375"	6"	4"x4"	HDO-3/6/ALU-3/6	48"-60"	BR/WH
ENT-05	2"	62.25"x48.5"	8"	4"x4"	HDO-3/ALU-3	48"-60"	BR/WH

60"   48" - 60"
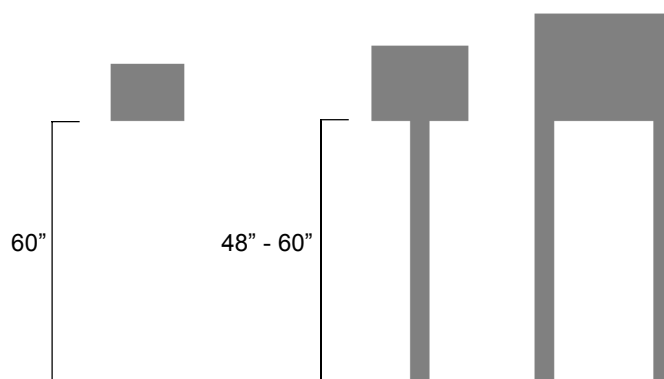
Fee areas that are not attended or where staff may not be on-duty at all times should be posted with a fee payment procedure panel in conjunction with the fee schedule sign (see page 7-9).

Actual legend content may vary depending on local procedure; omit line 4 for districts that do not accept checks and adjust panel size accordingly. Where checks are accepted the legend will read, Make check payable to FAO, USA, XXX., with the three letter symbol (e.g., NWD for Northwestern Division) in the space shown with the XXX. The Grid 1 format (see page 7-63) should be maintained at all locations.

Underrule is .125A.

Specify three letter division code for space shown with XXX.

For areas with reservable campsites, the sign should read: "4. Make check payable to: National Recreation Reservation Service."
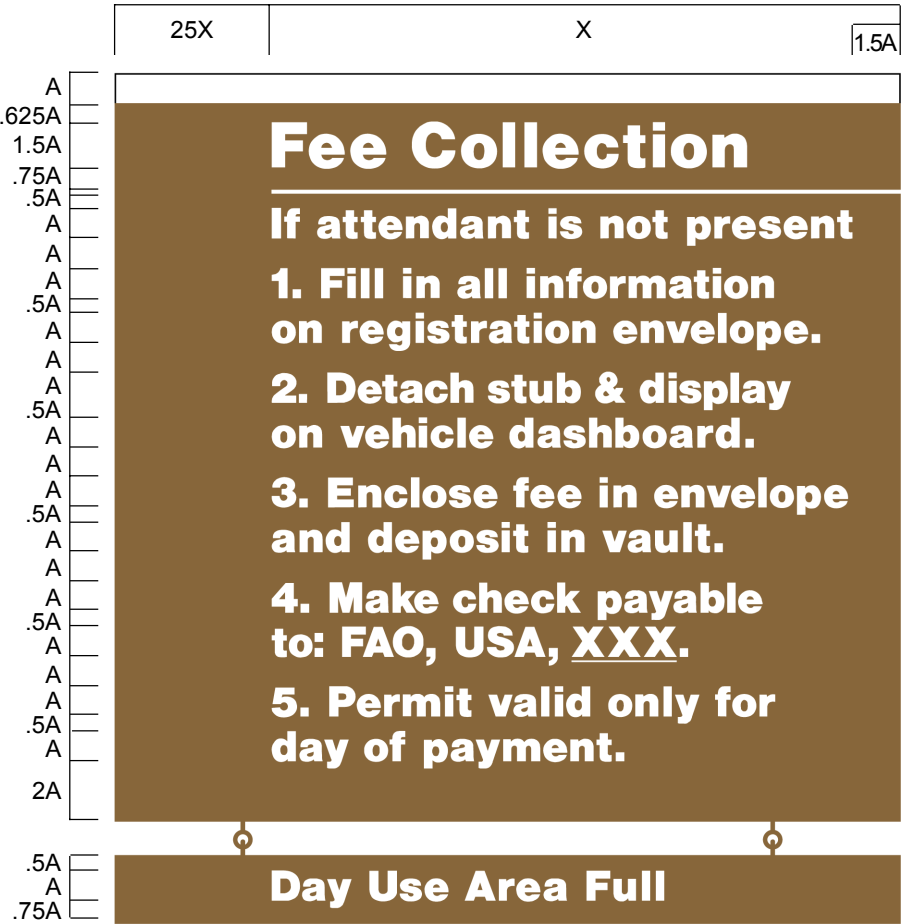
25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
A
A
.5A
A
A
A
.5A
A
A
A
.5A
A
A
A
.5A
A
A
A
.5A
A

2A

.5A
A
.75A

Fee Collection

If attendant is not present

1. Fill in all information on registration envelope.

2. Detach stub & display on vehicle dashboard.

3. Enclose fee in envelope and deposit in vault.

4. Make check payable to: FAO, USA, XXX.

5. Permit valid only for day of payment.

Day Use Area Full

The panel height shown is without the "Day Use Area Full" attachable panel.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
ENT-06	.75"	19.625"x18.75"	4"x4"	HDO-5/6/ALU-5/6	48"-60"	BR/WH
ENT-06	1"	26.125"x25"	4"x4"	HDO-3/ALU-3	48"-60"	BR/WH

60"

48"-60"
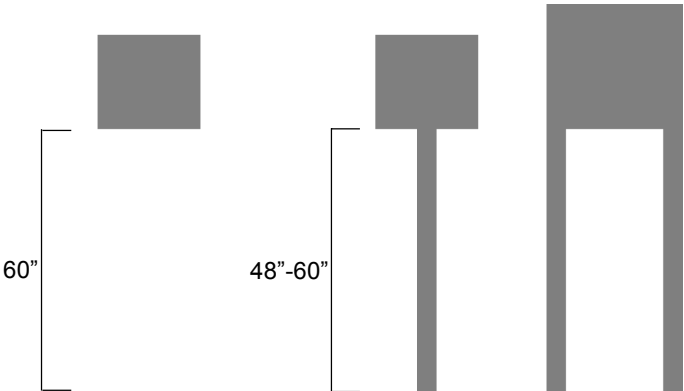
This sign is available in two sizes. It may be mounted on a building, on a gate to close off a roadway, or on a single wood post.
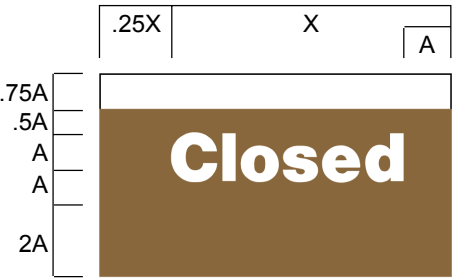
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
ENT-04	2"	14.75"x8.5"	4"x4"	HDO-5/6/ALU-5/6	36"/60"	BR/WH
ENT-04	3"	22.125"x12.75"	4"x4"	HDO-5//ALU-5/6	36"/60"	BR/WH

The illustration shows both wall-mounted and ground-mounted signs.
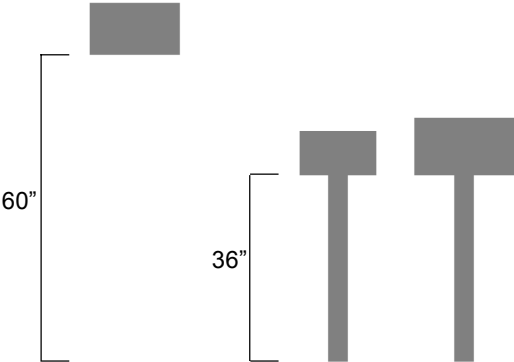
Illustrated below is a schematic diagram of a campground. It shows the general location of the six possible recreation sign types for this area. The specific location will depend on the layout of and circulation in the actual site.

Additional signs which may be required for this area will include: Secondary Identification (Section 5), directional (Section 6 and 8), symbols (Section 8), prohibition (Section 8), and traffic (Section 9).

Dumping Station Instructions

1. Connect your hose to trailer holding tank.
2. Insert hose end securely into drain, holding cover open with foot. Open trailer drain valve.
3. Wash any spillage into drain using water provided.

Water unsafe to drink.
No washing of vehicles.

Cleaning Water

For cleaning and flushing tanks only. Unsafe to drink.

Drinking Water Only

Not to be used for flushing tanks.

123

Camping in Designated Sites Only

Opening Hours

Directional

Area Regulations

Directional
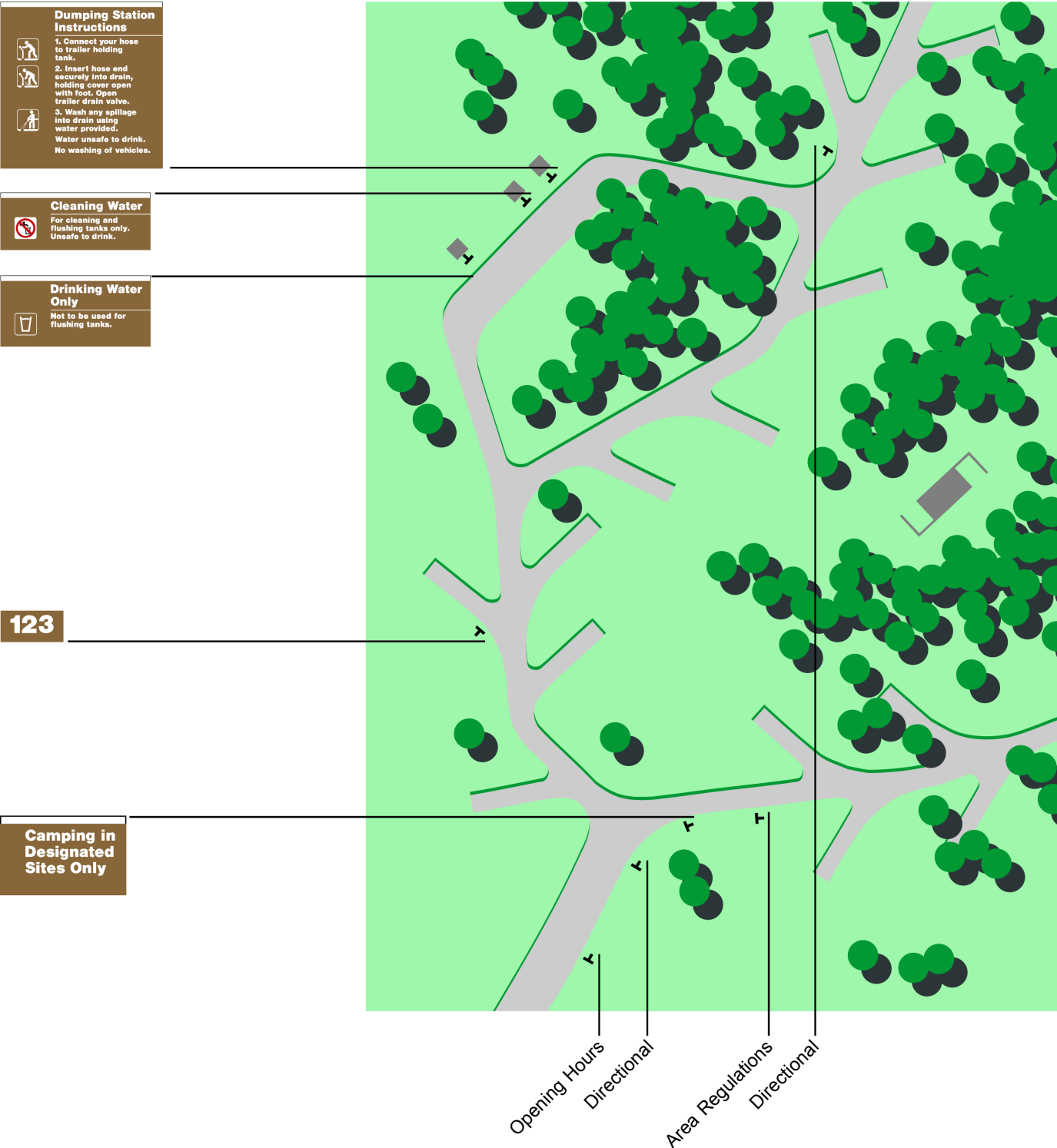
Each individual campsite is identified with a one to three digit number or combination of numbers and a letter. The sign shown below will accommodate up to three characters (numbers or numbers with letters) with the alphanumeric identifier centered on the sign panel.

The Campsite Identification sign is placed in a dadoed receiving slot on the top of a sign post using a standard T-nut

to cap bolt attachment with the joints between the sign panel and the post caulked with silicone adhesive.

A flexible sign post (dark brown formed fiberglass product) with identification graphics applied vertically may be used as an alternate. If adopted, this method must be used consistently throughout the installation. The graphics are to be centered with a (.25A) vertical line space between the characters.

Both versions use retroreflective sheeting for legend and background.

Use of large dimension timber bollards is discouraged because they become prohibitively expensive.

Optional bollard systems are discussed on page B.6-7.

a) One-digit number: centered horizontally on HDO panel.

b) Two-digit number: centered horizontally on HDO panel

c) Three-digit number: centered horizontally on HDO panel.

d) If the alpha-numeric legend requires any additional characters, the length of the sign panel should be adjusted accordingly.

e) Three-digit number: centered vertically on flexible post assembly.
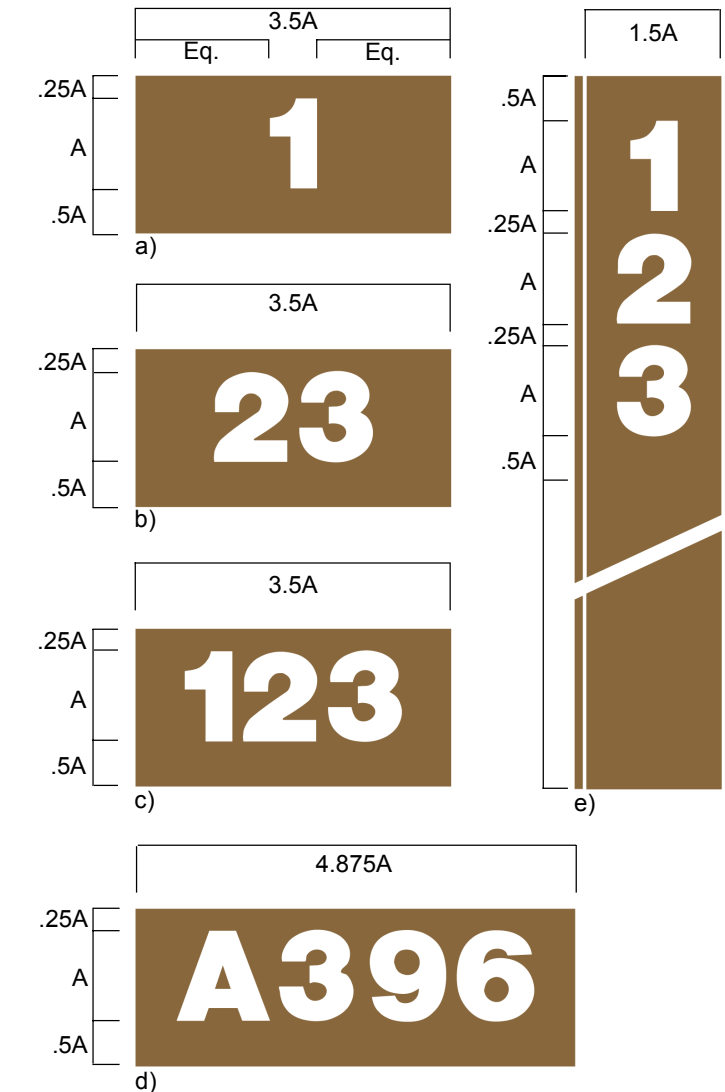
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-09	2"	7"x3.5"	4"x4"	HDO-7	31"	BR/WH
CMP-09	2"	9.75"x3.5"	4"x4"	HDO-7	31"	BR/WH
CMP-09	2"	none	4"wide	FSM-7	31"	BR/WH

f) Wood post with HDO-7 panel

g) Flexible post with numbers applied
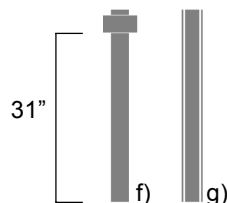
This sign is placed in areas within or adjacent to campgrounds to remind visitors that camping is permitted only on numbered campsites.

A similar legend can also be used on the Area Regulation sign (see page 8-42).
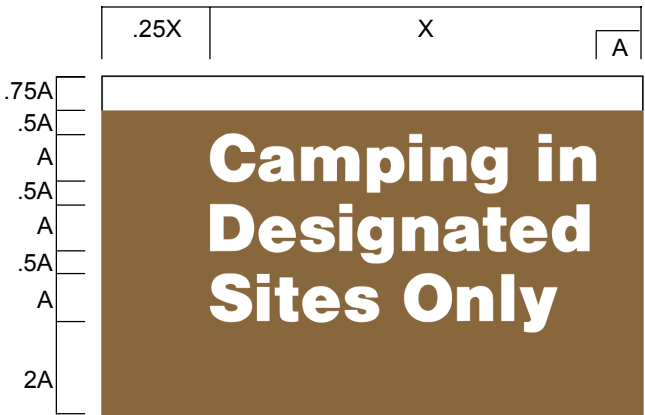
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-02	1.5"	17.375"x10.875"	4"x4"	HDO-5/ALU-5	36"	BR/WH
CMP-02	2"	23.125"x14.5"	4"x4"	HDO-5/ALU-5	36"	BR/WH

7-14
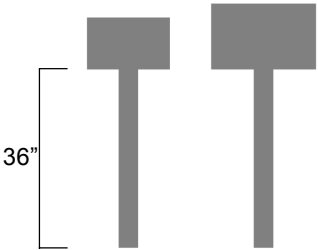
This sign is posted at the entrance of a facility that is restricted to those vehicles having permits.
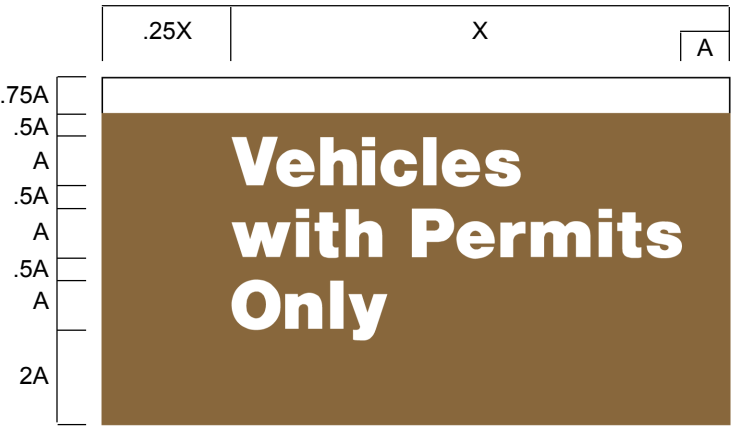
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-03	1.5"	19.75"x10.875"	4"x4"	HDO-5/ALU-5	60"	BR/WH
CMP-03	2"	26.25 "x14.5"	4"x4"	HDO-5/ALU-5	60"	BR/WH
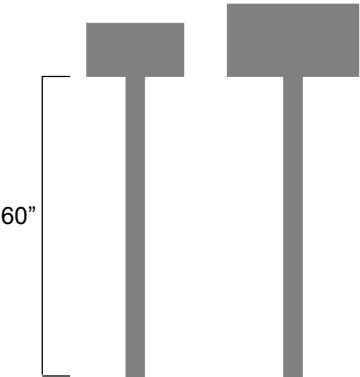
This sign serves as both an identification of the dump station location and as a guide for its use. It must be visible from an approaching recreation vehicle as well as from a pedestrian's viewpoint.

It is available in two sizes. Since it is part of a total package of signs used in conjunction with the Drinking Water (page 7-17) and Cleaning Water (page 7-18) signs, the same legend size should be used for all three of the signs.

This and the following two signs may be two-sided where a dump station has traffic approaching in both directions.

Underrule is .125A.

The symbols are 4A, measured to the outside edge of the border.
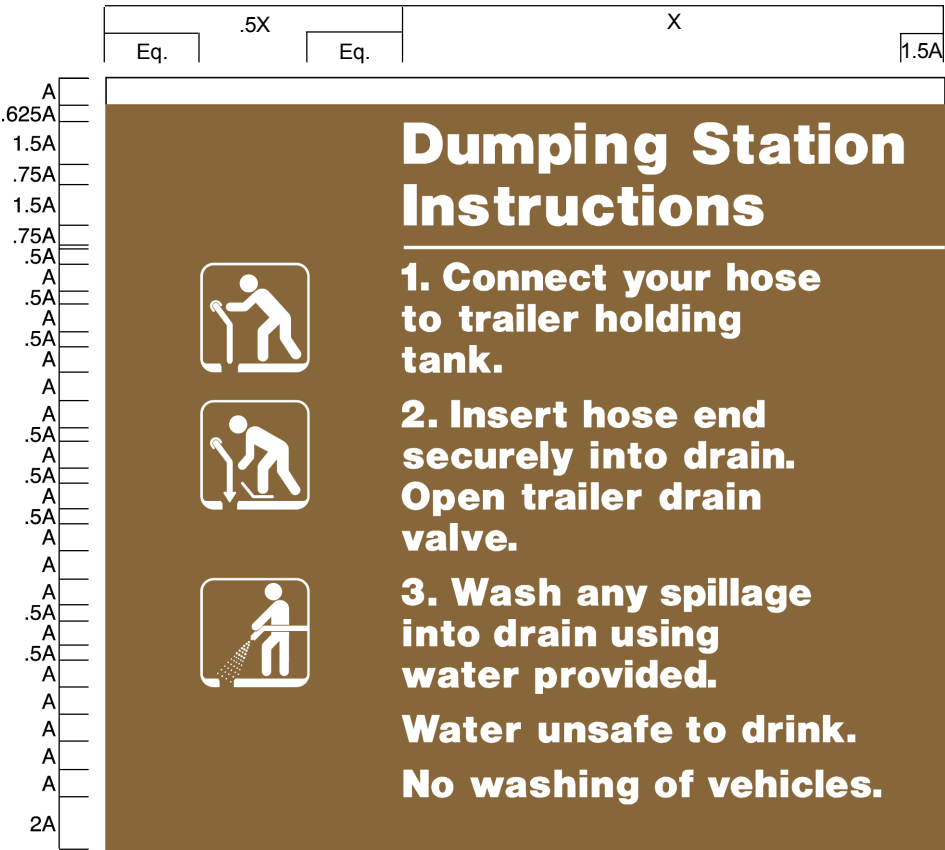
Dumping Station Instructions

1. Connect your hose to trailer holding tank.

2. Insert hose end securely into drain. Open trailer drain valve.

3. Wash any spillage into drain using water provided.

Water unsafe to drink.

No washing of vehicles.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-04	.75"	23"x22.3125"	4"x4"	HDO-5/ALU-5	58"	BR/WH
CMP-04	1"	30.625"x29.75"	4"x6"	HDO-5/ALU-5	65"	BR/WH

Mounting height is measured to the top of the sign panel rather than to the bottom of the panel. This mounting method visually aligns the group of Dumping Station signs (pages 7-16 to 7-18).

58"

65"
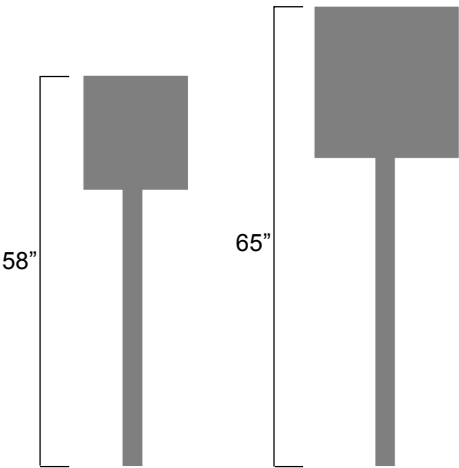
This sign identifies the tap for potable water. The legend size and mounting should match that of the Dumping Station sign.

Underrule is .125A.

The symbol is 4A, measured to the outside edge of the border.

Drinking Water Only

Not to be used for flushing tanks.
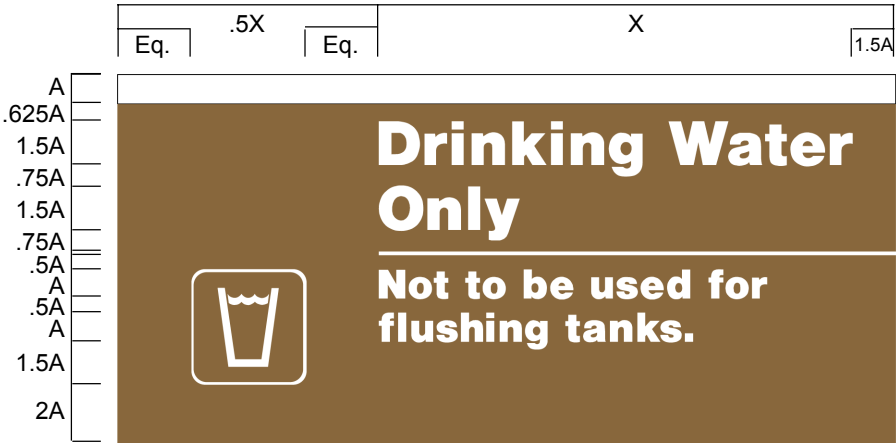
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-05	.75"	19.5"x9.5"	4"x4"	HDO-5/ALU-5	58"	BR/WH
CMP-05	1"	26"x12.75"	4"x4"	HDO-5/ALU-5	65"	BR/WH

Mounting height is measured to the top of the sign panel rather than to the bottom of the panel. This mounting method visually aligns the group of Dumping Station signs (pages 7-16 to 7-18).
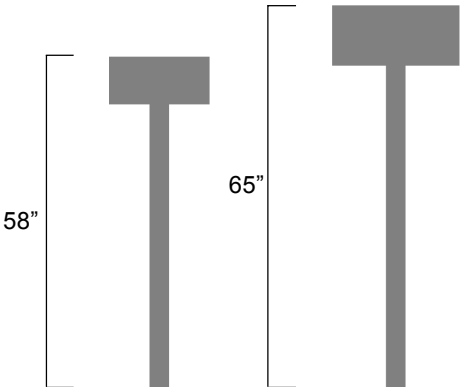
This sign identifies the tap for water that is not potable and should be used only for flushing tanks. The legend size and mounting should match that of the Dumping Station sign.

Underrule is .125A

The symbol is 4A, measured to the outside edge of the border.

Cleaning Water
For cleaning and
flushing tanks only.
Unsafe to drink.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-06	.75"	20.375"x7.875"	4"x4"	HDO-5/ALU-5	58"	BR/WH
CMP-06	1"	27.125"x10.5"	4"x4"	HDO-5/ALU-5	65"	BR/WH

Mounting height is measured to the top of the sign panel rather than to the bottom of the panel. This mounting method visually aligns the group of Dumping Station signs (pages 7-16 to 7-18)

58"

65"
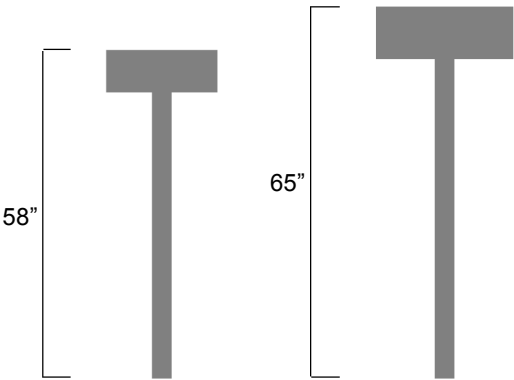
The quiet hours sign shown below may be used at the main entrance, on loop roads, or at other points around a campground.

This sign is used as an alternative to a slat sign (see page 8-42), with the sign placed at the entry to each campground area loop. The designated 10:00 pm -

6:00 am quiet hours period corresponds to the standard hours as regulated in Title 36. To avoid a proliferation of signs, do not place a quiet hours sign in locations where slat signs are used.

The quiet hours sign is provided in two sizes, and is ground mounted.

Underrule is .125A.
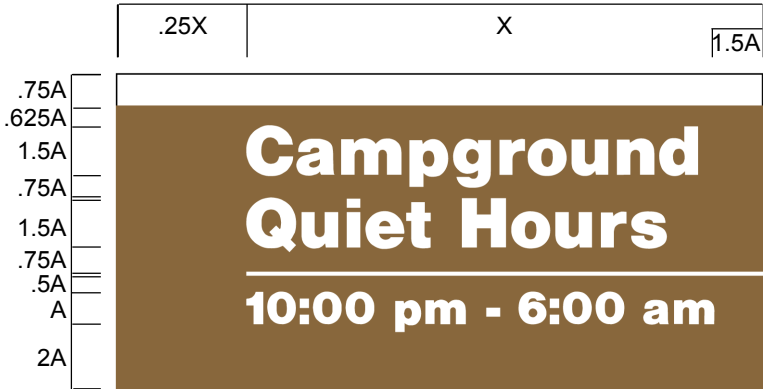
Campground Quiet Hours
10:00 pm - 6:00 am

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-07	1"	20.875"x9.5"	4"x4"	HDO-5/ALU-5	36"	BR/WH
CMP-07	1.5"	31.25"x14.25"	4"x4"	HDO-3/ALU-3	36"	BR/WH

36"
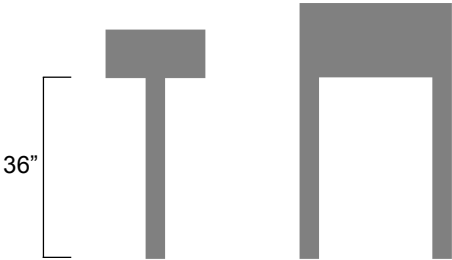
The campground full sign shown below is used within a campground roadway system for temporary notification to potential users that the facility is fully occupied. The function of this sign is to aid in the reduction of unnecessary traffic through occupied areas.

These signs are used in addition to a Campground Full panel that is attached to the Campsite Fee and Fee Collection signs (pages 7-7 to 7-8) which are mounted on or adjacent to the entrance station.

The sign shown below is specified in two sizes. For most applications the smaller panel should be sufficient. Signs can be mounted at the entrance to an area using either a post-mounted sign or a sign on a barricade structure that can be placed across internal loop roadways.

Note: Because there are a variety of gate types, the mounting method should be determined on a site by site basis. Attachment to be tamper resistant while being easy to attach or remove by park staff. If mounted on a gate order an HDO sign without hardware. Attach panel to gate from back without penetrating sign face.
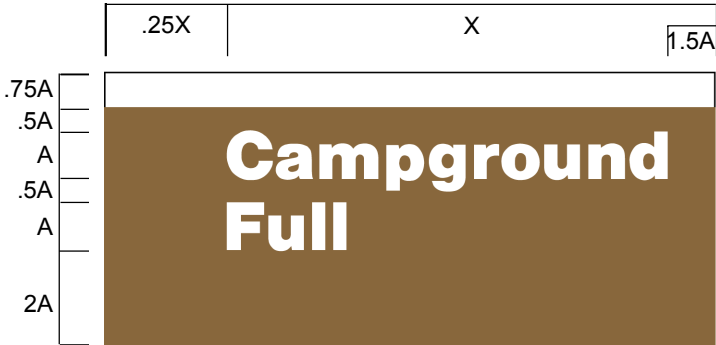
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CMP-08	2"	25.75"x11.5"	4"x4"	HDO-5/ALU-5	36"	BR/WH
CMP-08	3"	38.625"x17.25"	4"x4"	HDO-5/ALU-5	36"	BR/WH

Examples show post mount and mounted on barricade (see detail 13, page B.7-4).
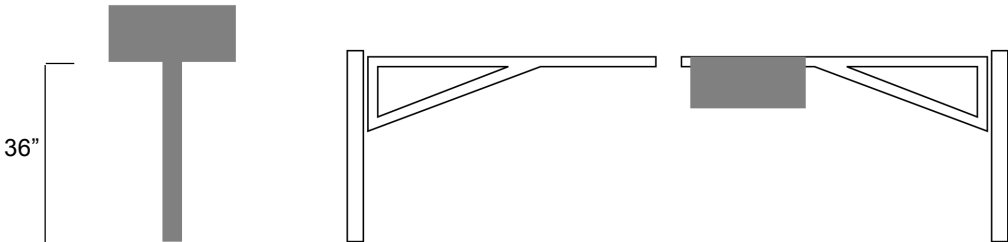
The sign shown below is used to inform the public that sites may be reserved in advance through a national reservation service. The sign is located at the entrance to the area. The sign may be modified to show site-specific information.

Underrule is .125A.

*Mounting height for sign attached to building will depend on building design.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSV-05	1"	25.625"x12.75"	-	HDO-3/ALU-6	*	BR/WH
RSV-05	1.5"	38.5"x19.125"	4"x4"	HDO-3/ALU-3	36"	BR/WH
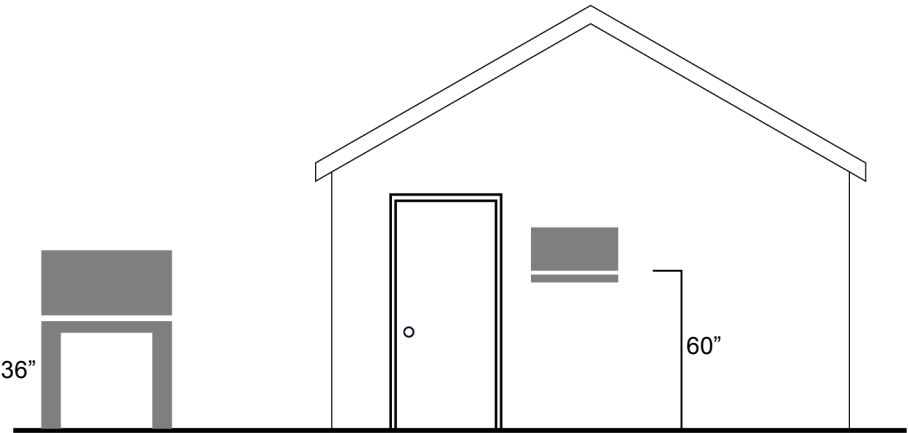
Illustrated below is a schematic diagram of a picnic area. It shows the general location for the one recreation sign type for this area. The specific location will depend on the layout of and circulation in an actual site.

Additional signs which may be required for this area will include: Secondary Identification (Section 5), directional (Section 6 and 8), symbols (Section 8), prohibition (Section 8), and traffic (Section 9).

Shelter May Be Reserved

Contact the project office for more information
(000) 000-0000
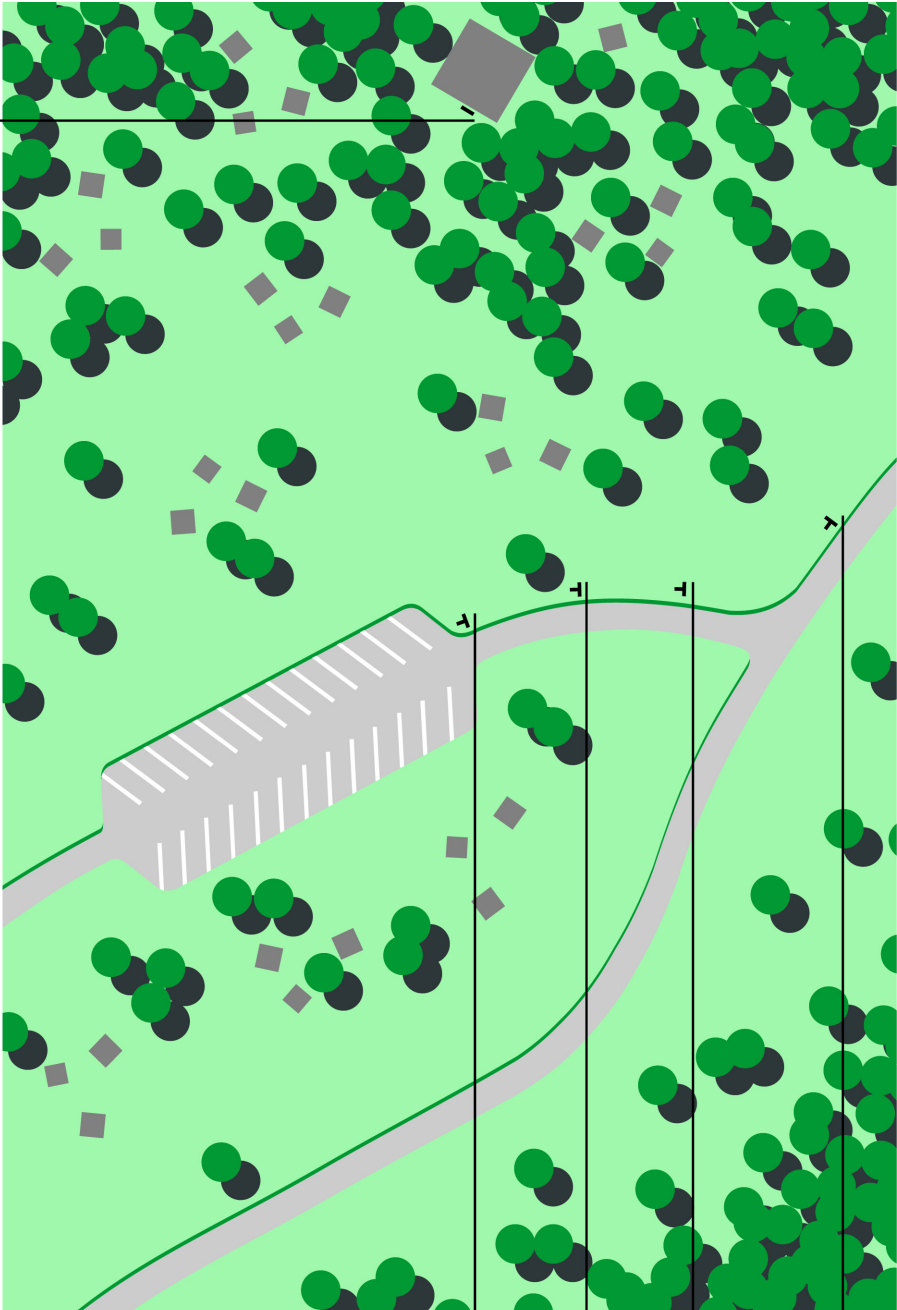
Area Regulations

Traffic Control

Opening Hours

Directional

The signs shown below are provided for mounting on or adjacent to the facility or structure, and are used on projects where picnic shelters, group camping facilities, picnic areas and athletic fields may be reserved in advance. The picnic shelter sign is shown below. Signs for group camping, picnic areas, and athletic fields are specified on page 7-24.

An additional detachable panel may be affixed as shown to the base to advise users that the facility has been already reserved for that day.

There are two legend sizes available.

The smaller one is for ground mounting or for mounting to a structure. The larger legend size is for a free-standing, ground-mounted installation that may require a larger sign.

Include local project phone number when ordering reservation signs.

Underrule is .125A.

Optional panel may be attached using hook and eye hardware. If panel is subject to removal by vandals, it can be mounted as per the specifications for HDO-3 provided in Appendix B.

.25X   X   1.5A

A
.625A
1.5A
.75A
1.5A
.5A
.5A
A
.5A
A
.5A
A
2A

Shelter May Be Reserved

Contact the project office for more information (000) 000-0000

.5A
A
.75A

Reserved Today
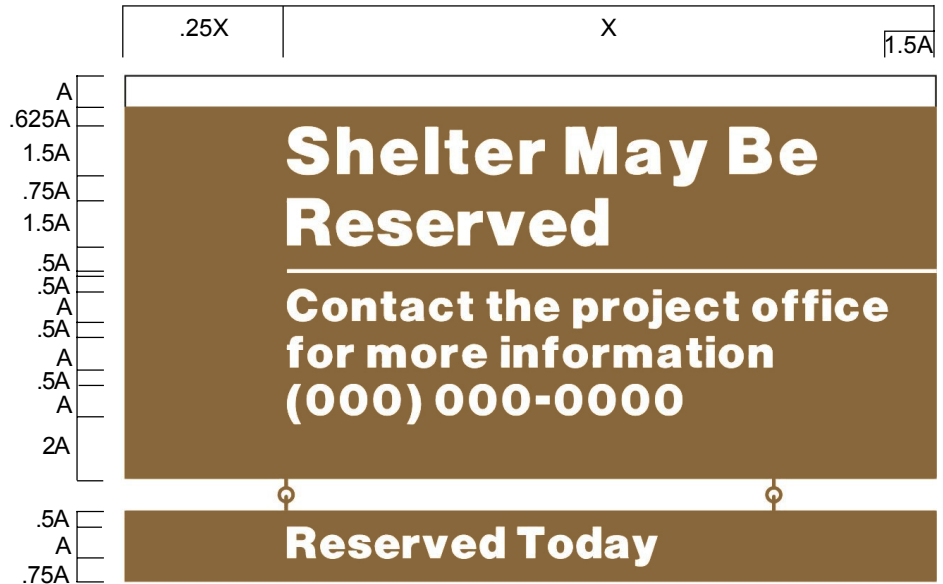
*Mounting height for sign attached to shelter will depend on shelter design.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSV-01	1"	25.625"x12.75"	-	HDO-3/HDO-6 ALU-3/ALU-6	*	BR/WH
RSV-01	1.5"	38.5"x19.125"	4"x4"	HDO-3/ALU-3	36"	BR/WH

The illustration shows both wall-mounted (HDO-6/ALU-6) and ground-mounted (HDO-3/ALU-3) signs.

8'

36"
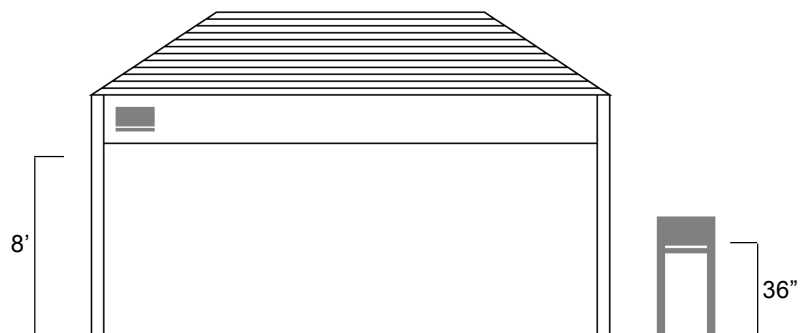
Shown below are examples of the various reservation facility signs and respective specification matrices. To implement, refer to the guidelines provided on page 7-23. For consistency, all reservation information panels follow the grid format and size as seen on page 7-23. This allows for one common panel size.

Include local project phone number when ordering reservation signs.

Group Camping May Be Reserved

Contact the project office for more information (000) 000-0000

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSV-02	1"	25.625"x12.75"	-	HDO-3/HDO-6 ALU-3/ALU-6	*	BR/WH
RSV-02	1.5"	38.5"x19.125"	4"x4"	HDO-3/ALU-3	36"	BR/WH

Picnic Area May Be Reserved

Contact the project office for more information (000) 000-0000

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSV-03	1"	25.625"x12.75"	-	HDO-3/HDO-6 ALU-3/ALU-6	*	BR/WH
RSV-03	1.5"	38.5"x19.125"	4"x4"	HDO-3/ALU-3	36"	BR/WH

Athletic Field May Be Reserved

Contact the project office for more information (000) 000-0000

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSV-04	1"	25.625"x12.75"	-	HDO-3/HDO-6 ALU-3/ALU-6	*	BR/WH
RSV-04	1.5"	38.5"x19.125"	4"x4"	HDO-3/ ALU-3	36"	BR/WH

Illustrated below is a schematic diagram of a swimming area. It shows the general location of four possible signs for this area. The specific location will depend on the physical characteristics, layout of and circulation in an actual site. Additional signs which may be required for this area will include: Secondary Identification (Section 5), directional (Section 6 and 8), symbols (Section 8), prohibition (Section 8), traffic (Section 9), and Waterway Restricted signs (Section 14).

Restricted

No Boats in Swimming Area

No Lifeguard

Swim at Your Own Risk

For Emergency Use Only

Coast Guard Approved Flotation Devices Only

Area Regulations

Parking Control

Opening Hours
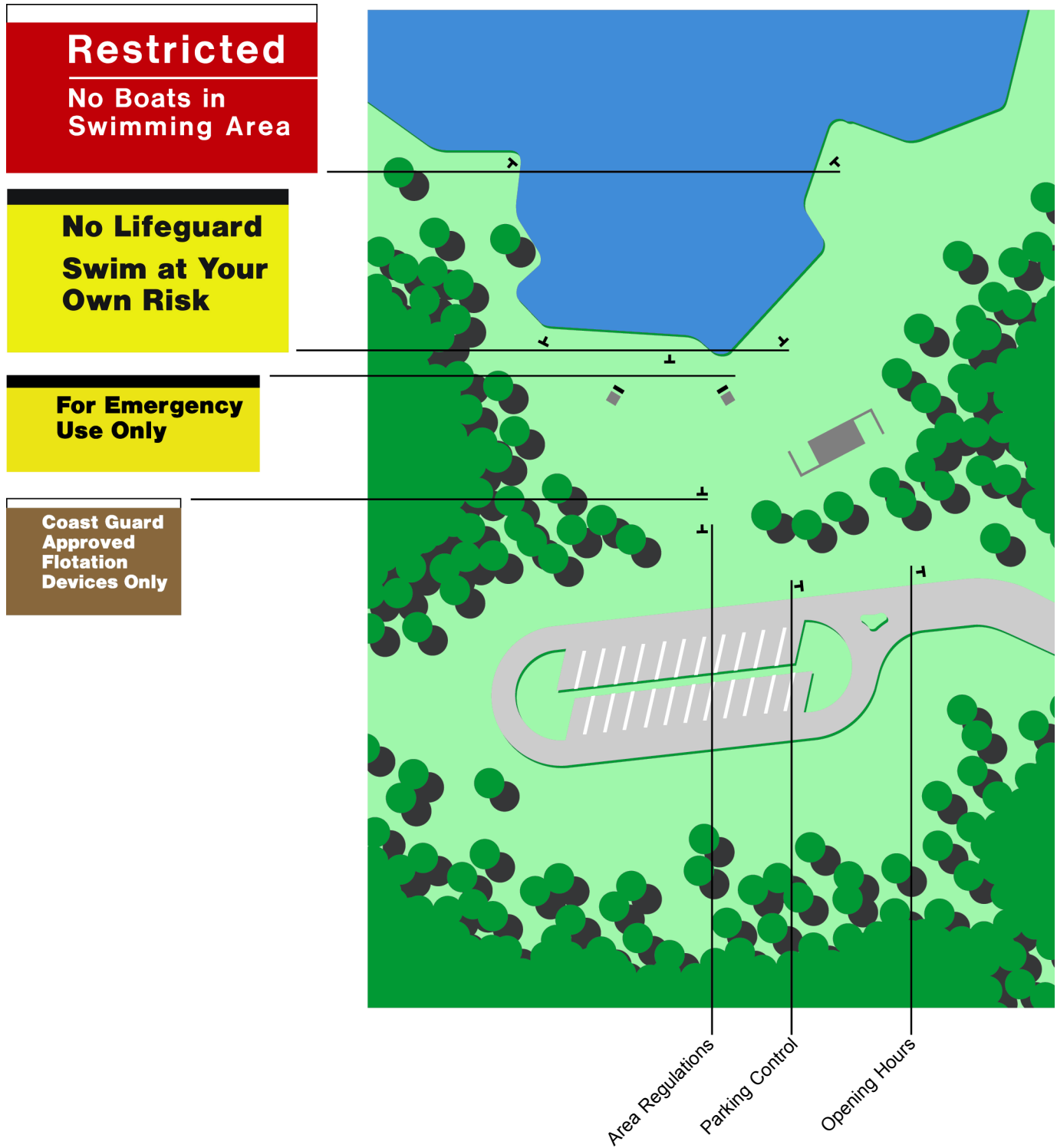
The sign illustrated below must be located on Corps-maintained access routes to the beach to advise there is no lifeguard service. If there is a single path leading from the parking lot to the beach, and no other access, one sign mounted along the path will be sufficient. If there are many access routes to the beach, a number of signs will be needed along the primary approach and for optimum visibility from water's edge. If the beach is very large, it is preferable to locate a number of signs along it rather than place one large sign centrally.

If vandalism is a problem, the sign can be fabricated with a black screen-printed legend. It is available in three sizes. The size chosen is determined by the viewing distance required and by the appropriateness of the size of the sign to the site.
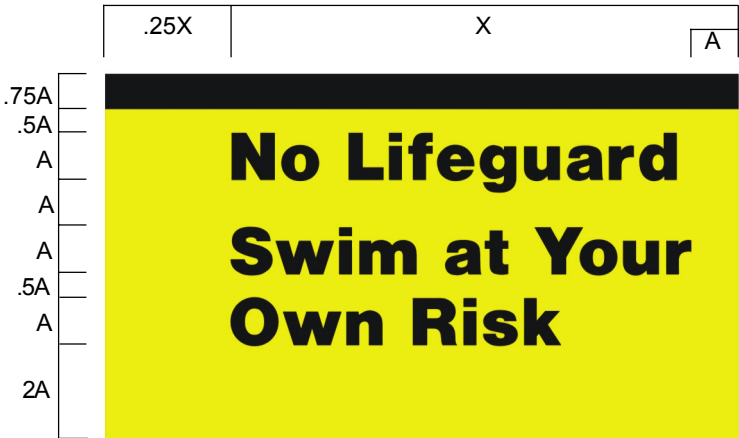
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SWM-01	2"	26.75"x15.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
SWM-01	3"	40.125"x23.25"	4"x4"	HDO-3/ALU-3	36"	LY/BK
SWM-01	4"	53.5"x31"	4"x4"	HDO-3/ALU-3	36"	LY/BK

The sign illustrated below is to be mounted toward the water to alert boaters not to enter the swimming area. It may be used in addition to the floats or buoys at the perimeter of the designated swimming area.

Mounting height varies according to the

water level fluctuation in a given location. Three sizes are available. The size chosen is determined by the viewing distance.

The sign must be visible from a distance beyond the buoy line or designated swimming area with sufficient margin of

safety to ensure that boats will remain outside the swimming area.

This sign is intended to be viewed from the water; therefore, the legend uses Helvetica Medium typography and adopts the ALU specification code for all applications larger than the A=4" sign size.

Underrule is .125A
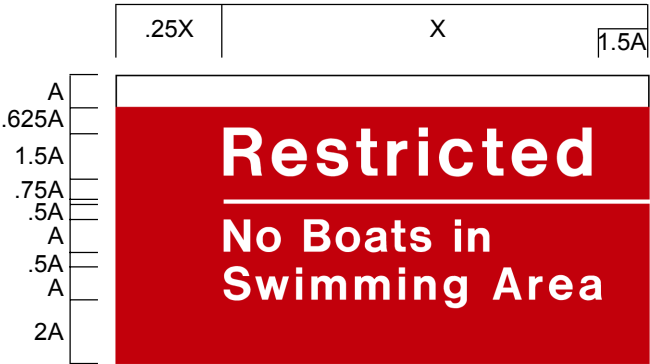
*Mounting height will vary with local conditions.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRE-23	4"	66.5"x36"	4"x6"	HDO-3/ALU-3	36-60"*	RD/WH
WRE-23	6"	99.875"x54"	6"x8"	ALU-3	36-60"*	RD/WH
WRE-23	8"	133.125"x72"	8"x8"	ALU-3	36-60"*	RD/WH
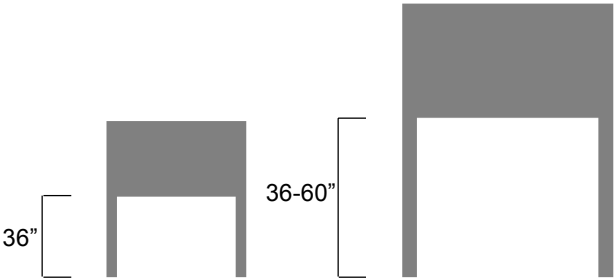
This sign is posted on the beach when the use of inner tubes, water wings, and rubber rafts is restricted. It is fabricated of retroreflective sheeting applied to HDO plywood or aluminum. There are two sizes suggested. The size chosen is determined by the viewing distance required and by the appropriateness of the size of the sign to the site.

This same legend can also be used on the Area Regulation sign slat shown on page 8-42.
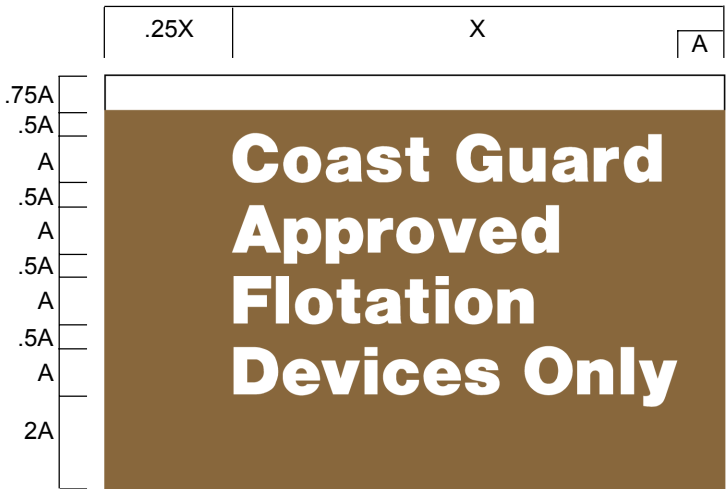
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SWM-03	1.5"	19.75"x13.125"	4"x4"	HDO-5/ALU-5	36"	BR/WH
SWM-03	2"	26.25"x17.5"	4"x4"	HDO-5/ALU-5	36"	BR/WH

This sign is used in conjunction with a life ring placed along the water's edge. The mounting posts also serve as a support for the ring. If vandalism is a problem, this sign can be fabricated with a black screen printed legend on retroreflective sheeting and applied to HDO plywood or aluminum. It is available in one size. If a beach is large, more than one of these signs may be required.

.25X	X	A

.75A
.5A
A
.5A
A

2A

For Emergency Use Only

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SWM-04	3"	45.125"x17.25"	4"x4"	HDO-3/ALU-3	36"	LY/BK

Sign shown with life ring attached.

36"
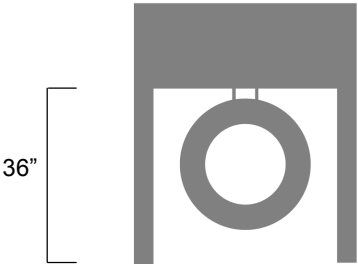
If a swimming beach must be closed or swimming/wading banned due to water quality problems such as high bacteria counts, the swimming beach or recreation area can be posted with the Warning sign shown here.

The primary wording was chosen to be generic enough to cover a range of water quality problems and health standards, which may vary by state.

The primary wording can be complemented by two optional messages below: "Beach Closed" and "No Swimming or Wading."

These signs are intended for temporary use. Sign must be removed as soon as this situation no longer exists.

This sign follows the Grid 1 format.

.25X   X   1.5A

Underrule is .125A

Mandatory legend

Optional legend

Optional legend

A
.625A
1.5A
.75A
.5A
A
.5A
A
.5A
A
.5A
A
A
A
A
A
.5A
A
2A

Warning

Water Quality Does Not Meet Safe Health Standards

Beach Closed

No Swimming or Wading
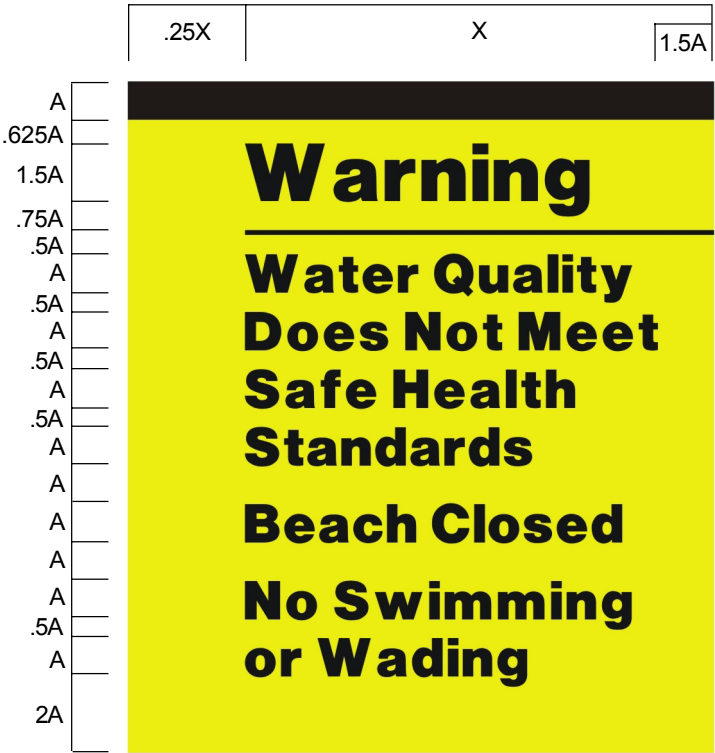
Panel size variations:

No optional legends:
15.25A x 12A

"Beach Closed" only:
15.25A x 14A

"No Swimming or Wading" only:
15.25A x 15.5A

Sign Type	Legend Size (A)	Panel Size*	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-21	1"	15.25"x17.5"	4"x4"	HDO-5	36"	LY/BK
WRN-21	1.5"	22.875"x26.25"	4"x4"	HDO-5	36"	LY/BK
WRN-21	2"	30.5"x35"	4"x4"	HDO-3	36"-48"	LY/BK

*size with both optional legends; see sidebar notes for panel size variations

36"
At Beach

48"
Along
Roadway
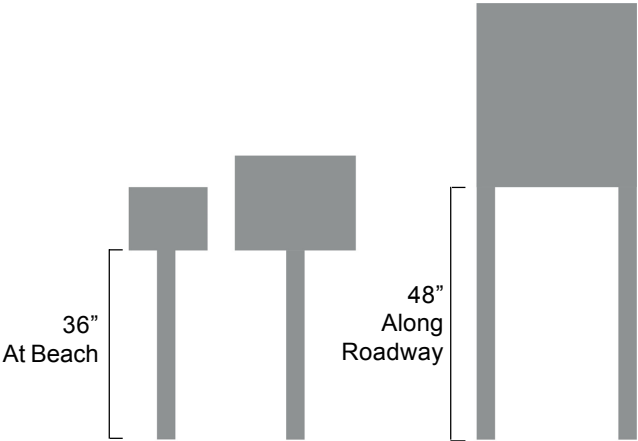
Illustrated below is a schematic diagram of a boat ramp. It shows the general location of the six recreation signs that have application in this area. Not all of the signs shown will be used at every boat ramp. The signs used will depend on the conditions of and regulations at a given project. The

specific locations will depend on the layout of and circulation in an actual site.

The mounting heights shown in the matrix for each sign are minimum dimensions intended for ramps with unobstructed sight lines. At locations where viewing may be obstructed,

mounting heights should be raised as required.

Additional signs which may be required for this area will include: Secondary Identification (Section 5), directional (Section 6 and 8), symbols (Section 8), prohibition (Section 8), and traffic (Section 9).

Boat Ramp
Loading and Unloading Only
No Swimming or Wading
No Wake Zone Idle Speed Only
10 Horsepower Maximum

Warning
Submerged Dam 00 Miles Downstream

Warning
Dam 0 Miles Downstream

Caution
No Wake Zone Within 00 Feet of Shoreline
Idle Speed Only

Caution
Water Level Varies
Watch for Obstructions

Boaters Warning
Overhead Power Lines Cross This Lake
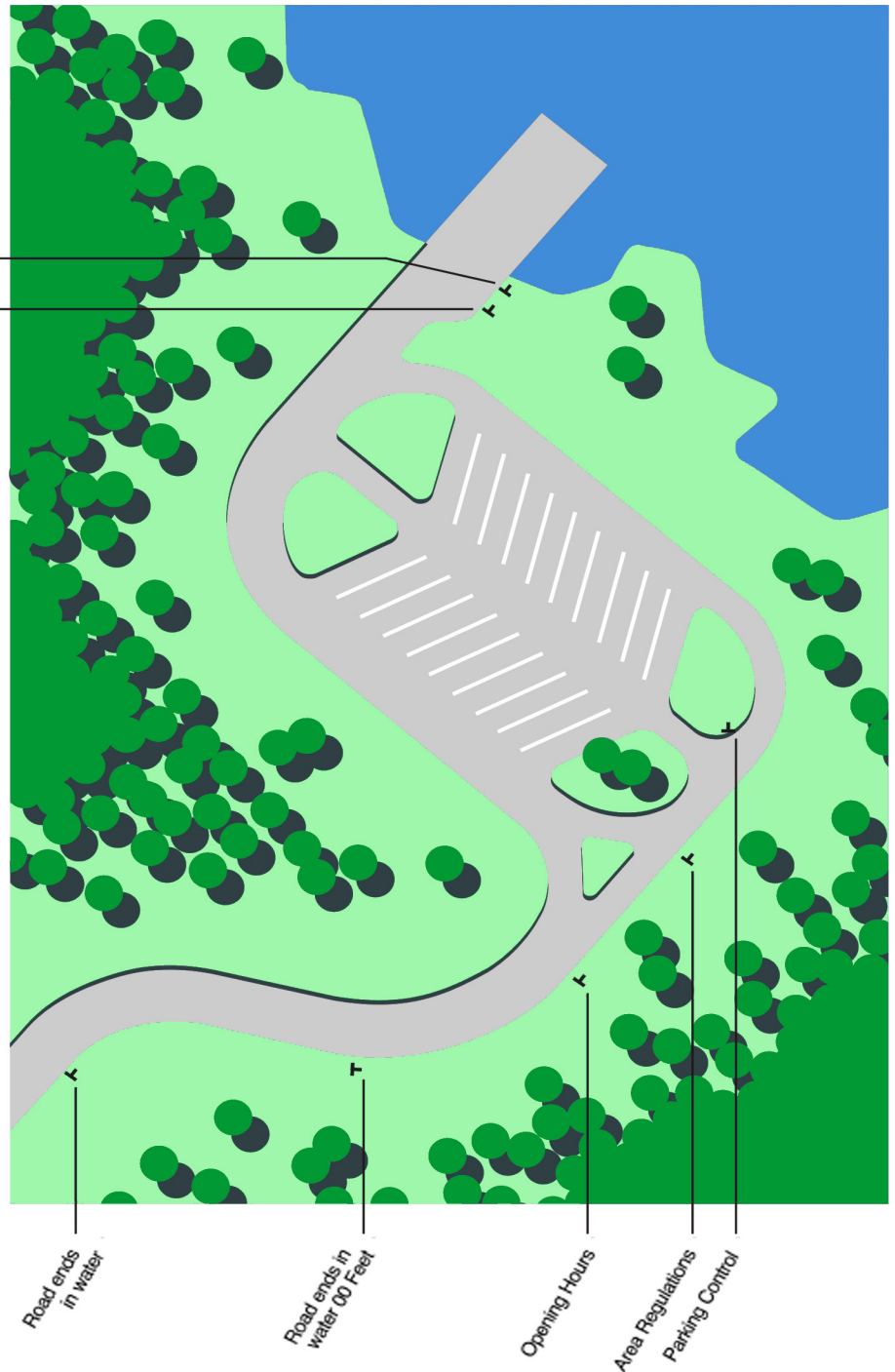
*Optional signs: use depends on local conditions. Each sign is mounted on its own post. Legends may not be altered.

This sign is used adjacent to the boat ramp and outlines the rules to follow at the ramp and on the lake or river. The first two messages are mandatory and the third message is mandatory unless sign type BTR-03 (page 7-36) is used.

The fourth message is optional, depending on local project regulations.

It is available in two sizes. The smaller size is used on single lane ramps. The larger size is placed at multilane ramps.

This sign may be created with two to four legends. The standard panel base is 2A below the last legend.

Underrule is .125A.
Mandatory Legend

Mandatory Legend

Mandatory Legend, unless BTR-03 (page 7-36) is used.

Optional Legend

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A
A
A
.5A
A
A
A
.5A
A
A
2A

Boat Ramp

Loading and Unloading Only

No Swimming or Wading

No Wake Zone Idle Speed Only

10 Horsepower Maximum
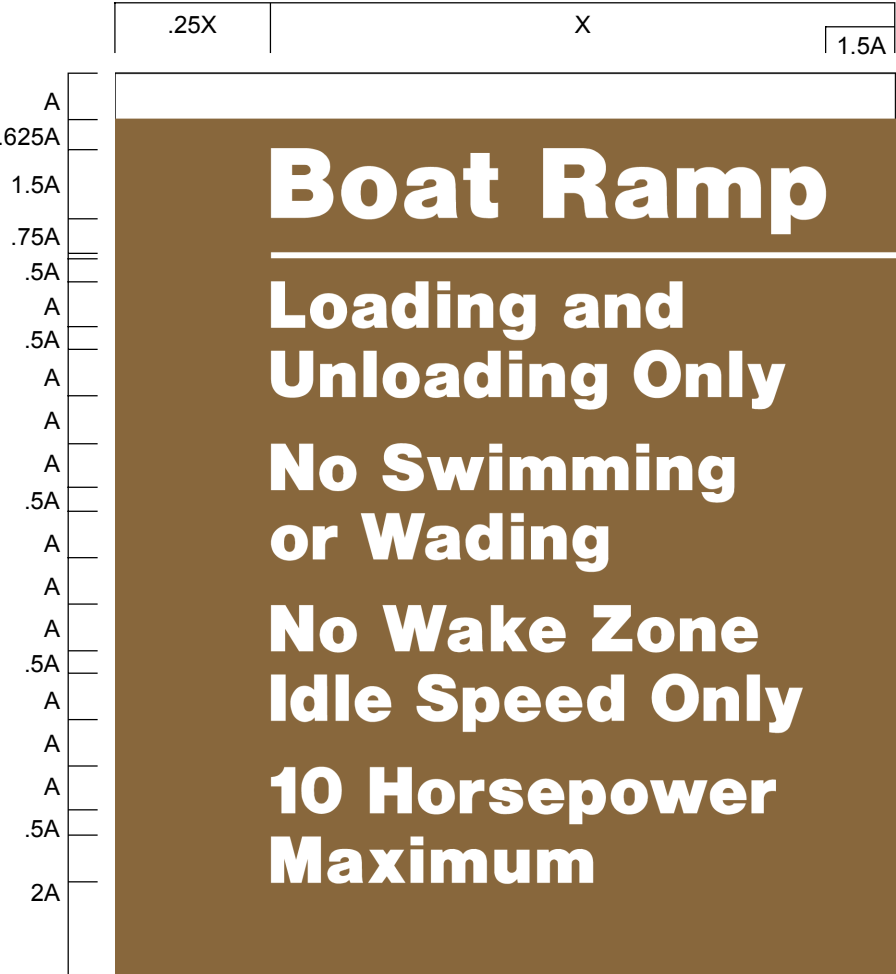
*Panel sizes will vary according to the number of legends.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-01	1.5"	25.375"x29.25"*	4"x4"	HDO-5/ALU-5	36"	BR/WH
BTR-01	2"	33.75"x39"*	4"x4"	HDO-3/ALU-3	48"	BR/WH

36"

48"
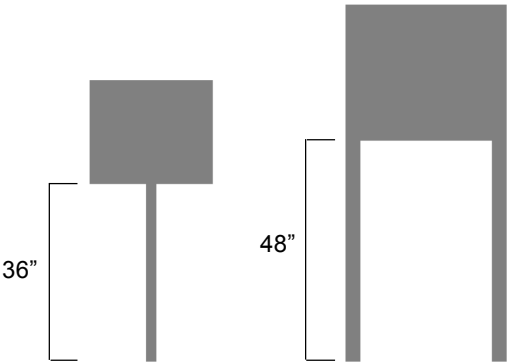
This sign is provided to identify the area at a launch ramp or adjacent to a marina designated for short-term docking to allow boaters to load and unload as needed. This sign is intended for viewing from relatively short distances and should be sized accordingly. Two sizes are specified below.

Because of the wide variety of dock structures and types, mounting format will be specified at the discretion of the project. The sign may be mounted along the edge of a dock or on adjacent piling.

Underrule is .125A
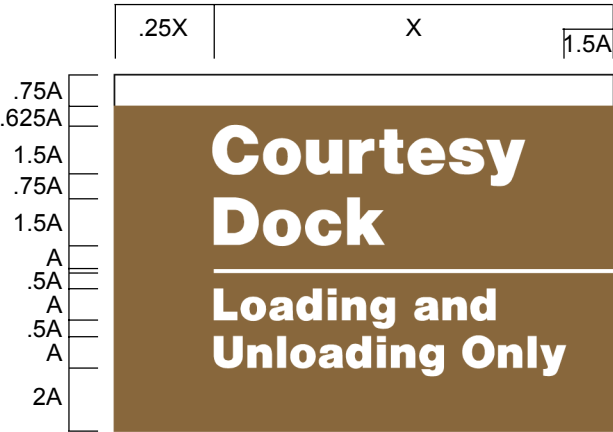
Courtesy Dock
Loading and Unloading Only

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-07	2"	31.5"x22"	4"x4"	HDO-3/HDO-6 ALU-3/ALU-6	varies	BR/WH
BTR-07	3"	47.25"x33"	4"x4"	HDO-3/HDO-6 ALU-3/ALU-6	varies	BR/WH
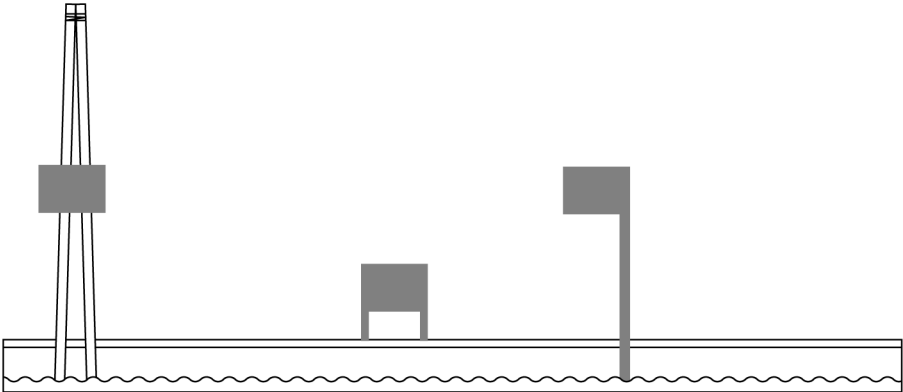
The signs below are designated for placement at the boat ramp for easy view by those launching boats.

The first sign is intended to notify boaters where the ramp ends in cases where there is a steep drop beyond the paved area. Specify the distance to be made part of the sign legend when ordering. If this sign is posted, the yellow line must be maintained as part of the installation.

At lake projects where there are under-water obstructions which may be hazardous to boaters, this condition should be identified using the sign specified below.

If vandalism is a problem, signs may be fabricated with a black screen-printed legend on retroreflective sheeting and applied to HDO plywood or aluminum. There are two sizes available. The smaller size sign is used on single lane ramps; the larger sign on multilane ramps.

The graphic format shown below follows Grid 1, page 7-63. If local conditions dictate alternate wording consult your district Sign Program Manager for assistance in preparing a request for a nonstandard safety sign (p.1-13).

Note the actual distance on the Sign Order Worksheet when ordering this sign.

Caution

Ramp Ends 00 Feet Beyond Yellow Line

BTR-08

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-08	1.5"	18.5"x18"	4"x4"	HDO-5	36"	LY/BK
BTR-08	2"	24.625"x24"	4"x4"	HDO-3	48"	LY/BK

Caution

Lake Water Level Varies

Watch for Obstructions

BTR-02

Caution

Water Level Varies

Watch for Obstructions
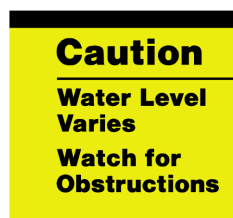
BTR-11

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-02,11	1.5"	20.375"x18"	4"x4"	HDO-5	36"	LY/BK
BTR-02,11	2"	27.25"x24"	4"x4"	HDO-3	48"	LY/BK

Caution

Orange Buoys Mark Fish Habitat Structures Close to Lake Surface
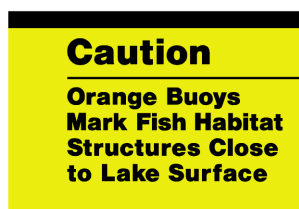
BTR-12

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-12	1.5"	27.375"x18"	4"x4"	HDO-5	36"	LY/BK
BTR-12	2"	36.5"x24"	4"x4"	HDO-3	48"	LY/BK

36"   48"

Areas where there are site specific hazards on lakes and waterways need to be marked at relatively close proximity to the hazardous condition. The three signs illustrated below reflect a sign need common to many Corps facilities. These Warning signs are designed to be viewed from the water, placed either on the shoreline facing the water or mounted on piles or structures located in the water.

These signs are fabricated using specifications for waterway signs (see B.13). These site-specific signs are to be placed near the hazard and are not generally intended for larger-scale posting. Three common sizes are identified below.

If the black adhesive legend of the Warning sign is subject to vandalism, the sign may be fabricated with black screen printed legend on reflective sheeting in lieu of computer cut and applied graphics.

Warning

Beware of Floating Debris, Submerged Objects and Shallow Water
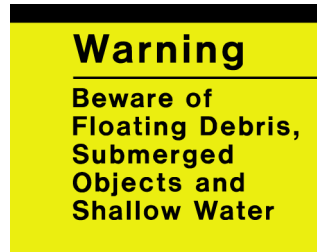
WRN-08

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-08	3"	50.625"x40.5"	4"x4"	WTW-5	60"	LY/BK
WRN-08	4"	67.5"x54"	Engineered	WTW-5	60"	LY/BK
WRN-08	6"	101.25"x81"	Engineered	WTW-5	60"-72"	LY/BK

Warning

Cold Water Conditions May Exist at All Water Levels

WRN-09

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-09	3"	50.375"x36"	4"x4"	WTW-5	60"	LY/BK
WRN-09	4"	67.25"x48"	Engineered	WTW-5	60"	LY/BK
WRN-09	6"	100.75"x72"	Engineered	WTW-5	60"-72"	LY/BK

Warning

Submerged Hazard

Keep to Center of Channel
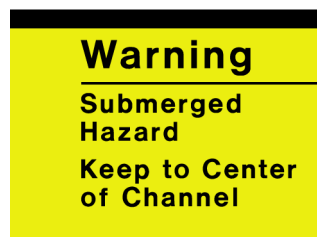
WRN-10

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-10	3"	48.625"x37.5"	4"x4"	WTW-5	60"	LY/BK
WRN-10	4"	64.75"x50"	Engineered	WTW-5	60"	LY/BK
WRN-10	6"	97.125"x75"	Engineered	WTW-5	60"-72"	LY/BK

The two signs below are specified for placement adjacent to a boat ramp.

The first sign is intended to inform boaters of the designated "no wake" zone on the lake or river. If a "no wake" zone has not been established, this sign is not to be posted. Instead, the third legend of BTR-01 (page 7-32) is used to notify boaters that the area immediately around a boat ramp is a no wake zone. When ordering, specify the distance to be made part of the sign legend.

The second sign is to be posted adjacent to ramps along rivers and waterways if there is a potential hazard from the wake of commercial traffic.

If vandalism is a problem, signs may be fabricated with black screen-printed legend on retroreflective sheeting and applied to HDO plywood or aluminum. There are two sizes available. The smaller size sign is used on single lane ramps; the larger sign on multilane ramps.

If local conditions dictate alternate wording consult your district Sign Program Manager for assistance in preparing a request for a nonstandard safety sign (p.1-13).

The typeface is Helvetica Bold and follows Corps standard letter and word spacing. The sign panel format uses standard Grid 1, page 7-63.

Note size of no wake zone on each Sign Order Worksheet when ordering sign BTR-03.

Caution

No Wake Zone Within 00 Feet of Shoreline

Idle Speed Only
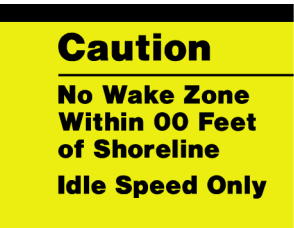
BTR-03

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-03	1.5"	24.375"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
BTR-03	2"	32.5"x24"	4"x4"	HDO-3/ALU-3	48"	LY/BK

Warning

Do Not Launch Boats Until Waves From Tows and Barges Pass

BTR-09

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-09	1.5"	27.875"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
BTR-09	2"	37.125"x24"	4"x4"	HDO-3/ALU-3	48"	LY/BK

36" 48"
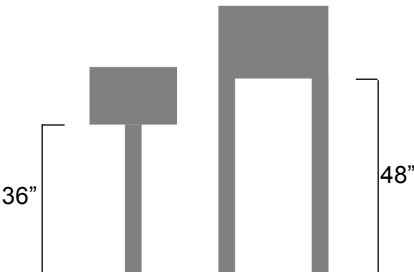
The signs below (BTR-04, BTR-04a) are to be posted at boat ramps at projects where overhead lines cross the water low enough to pose a hazard to sailboat masts, and is applicable to all reservoirs and associated waters and rivers not managed under commercial navigation.

The following sign (BTR-10) is placed and along park roads where boaters confront low overhead lines when trailering a sailboat to a launching area.

Since water levels and sag heights vary with environmental conditions, overhead lines will not be a constant height above the water level. Therefore, safe clearance limits are not included in the sign legend, nor are they listed in the *Sign Standards Manual*.

Refer to ER 1110-2-4401 (*Engineering and Design Clearances for Electric Power Supply Lines and Communication Lines over Reservoirs*) for specific guidance on minimum vertical clearances, sag heights, and the reference pool elevation. This regulation is available at the USACE Official Publications website.

Signs mounted to identify power lines that cross roads should be placed at the ramp site or at the entrance to a facility or area as appropriate. This may include placement at both the boat ramp and area entrances as well as at the specific hazard site.

There are two sizes available. The smaller size sign is used on single-lane ramps; the larger sign on multi-lane ramps. Both signs use the Grid 2 format.

Format: Grid 2

For placement at boat ramp where water levels could create a hazard for a boater with a mast or tall antenna.

Optional Legend:
Overhead Power Lines Cross This River

BTR-04

BTR-04a

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-04 (a)	1.5"	19.5" x 21.375"	4" x 4"	HDO-5/ALU-5	36"	LY/BK
BTR-04 (a)	2"	26" x 28.5"	4" x 4"	HDO-5/ALU-5	48"	LY/BK

For placement at entrances or along facility roadways where needed to warn motorists towing a sailboat to a launch location with mast upright.

BTR-10

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-10	1.5"	19.5" x 21.375"	4" x 4"	HDO-5/ALU-5	36"	LY/BK
BTR-10	2"	26" x 28.5"	4" x 4"	HDO-5/ALU-5	48"	LY/BK

It is important that boaters be appropriately informed if there are areas where moorage is restricted because of shallow conditions, submerged hazards, or currents that are not consistent. The two signs illustrated below may be used for placement on the shoreline facing toward the water, or on piles or structures located in the water.

These site specific signs are for placement within close proximity of the hazard, and are not generally intended for larger scale posting. Three common sizes are identified below. If a larger size sign is required, follow layout Grid 1, page 7-63.

These Danger signs are primarily viewed by boaters from the water. The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs (see Typeface and Alternate Letterspacing for Waterway Signs, page 14-1).

If this sign is placed at a boat ramp, it is to be displayed using Helvetica Bold typeface with panel resized accordingly.

The Danger, Caution, and Warning signs used in this manual cannot be changed without approval from the National Sign Program Manager. For the signs listed below, identical legends are approved as both Danger and Warning signs.

* DNG-12 (above) and sign WWA-22 on page 14-50.

Determination of whether a Danger or Warning sign is to be used will be made by the project manager after considering the conditions and severity of the hazard. Please refer to Safety Signs, Section 2, pages 2-13 through 2-16.

Danger
Submerged Hazards
Stay Clear No Mooring

DNG-12

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-12	2"	26.375"x25"	4"x4"	HDO-5/ALU-5	48"-60"	RD/WH
DNG-12	3'	39.5"x37.5"	4"x4"	HDO-3/ALU-3	48"-60"	RD/WH
DNG-12	4"	52.75"x52"	4"x6"	HDO-3/ALU-3	48"-60"	RD/WH

Danger
Changing Water Levels and Strong Currents
Do Not Anchor or Tie to Trees
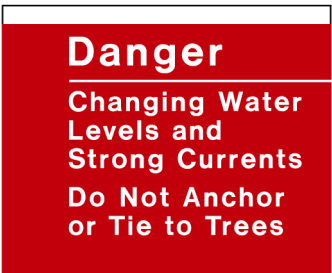
DNG-13

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-13	2"	34.125"x28"	4"x4"	HDO-5/ALU-5	48"-60"	RD/WH
DNG-13	3"	51.25"x42"	4"x4"	HDO-3/ALU-3	48"-60"	RD/WH
DNG-13	4"	68.25"x56"	4"x6"	HDO-3/ALU-3	48"-60"	RD/WH

48" 60"

Seasonal and construction related activities may temporarily affect boating conditions at Corps lakes, rivers, and waterways. The three signs illustrated below are available and may be placed adjacent to the boat ramp or other appropriate water access points to warn of potential hazards or unusual conditions that may exist.

These signs are intended for temporary use. Sign must be removed as soon as these hazards no longer exist.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing. The sign panel format uses standard Grid 1, page 7-63.

These signs are fabricated of retroreflective sheeting and applied to HDO plywood or aluminum.

There are two common sizes identified below. If a larger size sign is required, follow layout Grid 1, page 7-63.

Warning

Boating Hazardous Due to Unusually Low Water
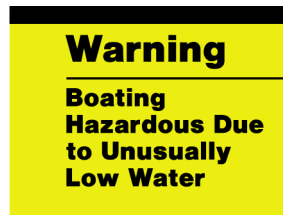
WRN-05

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-05	1.5"	23.5"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-05	2"	31.375"x24"	4"x4"	HDO-3/ALU-3	48"	LY/BK

Warning

Passage May Be Blocked for Channel Dredging

WRN-06

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-06	1.5"	27.25"x15.75"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-06	2"	36.375"x21"	4"x4"	HDO-3/ALU-3	48"	LY/BK

Warning

Periodic Dredging Causes Steep Dropoff and Strong Currents
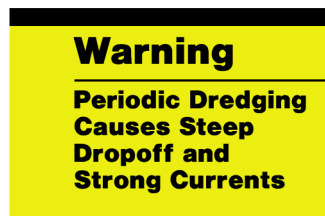
WRN-07

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-07	1.5"	27.125"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-07	2"	36.25"x24"	4"x4"	HDO-3/ALU-3	48"	LY/BK

36"   48"

The sign illustrated below and the one on page 7-41 coordinate with and reinforce the lock, dam and waterway safety signs outlined in Section 14. They provide early warning of conditions that exist downstream, using the same format and color scheme as the signs used around the dam.

This sign is used whenever a boat ramp is located 5 miles or fewer upstream from a gated dam. It is mounted adjacent to the boat ramp, so that all boaters will see it. If vandalism is a problem, signs may be fabricated with black screen-printed legend on retro-reflective sheeting and applied to HDO plywood or aluminum. The sign is available in two sizes. The smaller size sign is used on single lane ramps; the larger sign on multilane ramps.

Underrule is .125A.

Indicate mileage.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-05	1.5"	20"x13.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
BTR-05	2"	26.625"x18"	4"x4"	HDO-3/ALU-3	48"	LY/BK

The sign illustrated below and the one on page 7-40 coordinate with and reinforce the lock, dam, and waterway safety signs described in Section 14. They provide early warning of conditions that exist downstream, using the same format and color scheme as the signs used around the dam.

This sign is placed at all boat ramps located upstream from submerged dams, regardless of distance. It is mounted adjacent to the boat ramp. If vandalism is a problem, signs may be fabricated with black screen-printed legend on retroreflective sheeting and applied to HDO plywood or aluminum. The sign is available in two sizes. The smaller size sign is used on single lane ramps; the larger sign on multilane ramps.

Underrule is .125A.

Indicate mileage.

Warning

Submerged Dam 00 Miles Downstream
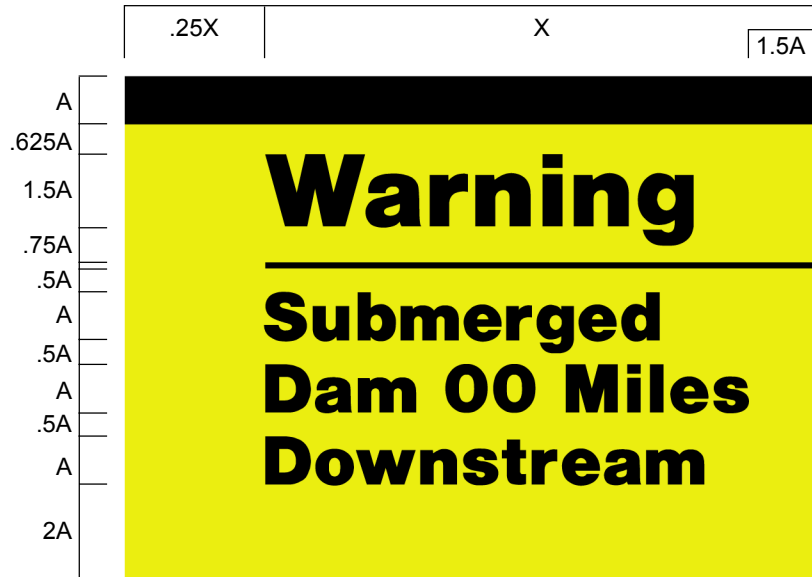
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BTR-06	1.5"	21.875"x15.75"	4"x4"	HDO-5/ALU-5	36"	LY/BK
BTR-06	2"	29.125"x21"	4"x4"	HDO-3/ALU-3	48"	LY/BK
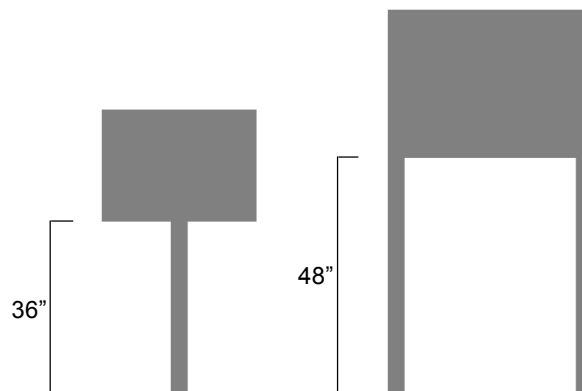
The signs illustrated below may be used to warn project visitors about hazards and to restrict potentially dangerous activity. Unlike the other signs illustrated in this section, they do not relate to a specific functional area at a Corps project, but may be needed anywhere along a lake or river.

These signs are intended for relatively short viewing distances. If a large area is to be signed, use more than one sign rather than depending on a single large sign. Placement and sizing of these Undesignated Safety signs should be reviewed with the project Safety Officer.

**In an earlier revision to the Corps Sign Standards Manual, a sign type identification code was added for the new Danger signs (DNG). The original Undesignated Safety signs (UNS) retain the original code to maintain continuity on all plans and program records.

The color, typography, and wording of these signs have been chosen for readability and comprehension. They are consistent with the safety signs placed around a lock or dam (see Section 14). Because of this, the wording of particular sign legends should not be changed. If a condition requires a sign with wording other than what is shown in this manual, there is a procedure for requesting approval for site-specific safety signs (page 1-13).

Danger
Keep Back

UNS-01

Danger
Keep Off

DNG-01

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-01/DNG-01**	1.5"	17.375"x11.25"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-01/DNG-01**	2"	23.175"x15"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-01/DNG-01**	3"	34.75"x22.5"	4"x4"	HDO-3/ALU-3	36"	RD/WH
UNS-01/DNG-01**	4"	46.375"x30"	4"x4"	HDO-3/ALU-3	36"	RD/WH

Danger
Shallow Water
No Diving

UNS-06

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-06	1.5"	22.5"x13.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-06	2"	30"x18"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-06	3"	45"x27"	4"x4"	HDO-3/ALU-3	36"	RD/WH
UNS-06	4"	60"x36"	4"x4"	HDO-3/ALU-3	36"	RD/WH

Danger
Submerged
Obstructions
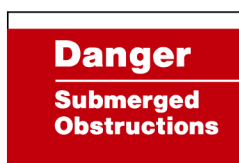
DNG-02

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-02	1.5"	20.375"x13.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-02	2"	27.25"x18"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-02	3"	40.75"x27"	4"x4"	HDO-3/ALU-3	36"	RD/WH
DNG-02	4"	54.375"x36"	4"x4"	HDO-3/ALU-3	36"	RD/WH

36"

48"

The function of the site-specific custom sign is to alert project visitors to conditions which potentially could affect their use of the area. Undesignated safety signs are for general application. Since conditions requiring these signs are largely project or regionally specific, sizing and mounting information is not detailed.

** In an earlier revision to the Corps Sign Standards Manual, a sign type identification code was added for the new Danger signs (DNG). The original Undesignated Safety signs (UNS) retain the original code to maintain continuity on all plans and program records.

Enter sign type code on sign order as shown under respective sign panel display.

The approved signs are fabricated with retroreflective sheeting applied to HDO plywood or aluminum. This sign panel format uses Standard Grid 1, p. 7-63. Other site-specific Danger, Restricted, Warning, and Caution signs are illustrated throughout this section, and waterway versions are displayed in Section 14. All signs viewed from the

land have legends in the Helvetica Bold typeface. Legends on waterway signs are Helvetica Medium typeface and are to be sized to site-specific viewing requirements. Approved Danger and Caution messages using the Workplace Safety sign formats are provided on pages 11-4 through 11-7.

Danger Slippery When Wet — UNS-02
Danger Turbulent Water — UNS-03
Danger Collapsing Bank — UNS-04
Danger Slippery Surface — UNS-05

Danger Keep Off Railing — DNG-03
Danger Boating Prohibited — DNG-04
Danger Keep Off Wall — DNG-05
Danger Hazardous Bottom — DNG-16

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-00/DNG-00**	1.5"	17.375"x13.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-00/DNG-00**	2"	23.125"x18"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-00/DNG-00**	3"	34.75"x27"	4"x4"	HDO-3/ALU-3	36"	RD/WH
UNS-00/DNG-00**	4"	46.25"x36"	4"x4"	HDO-3/ALU-3	36"	RD/WH
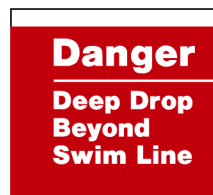
Danger Deep Drop Beyond Swim Line — DNG-06

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-06	1.5"	17.375"x15.75"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-06	2"	23.125"x21"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-06	3"	34.75"x31.5"	4"x4"	HDO-3/ALU-3	36"	RD/WH
DNG-06	4"	46.25"x42"	4"x4"	HDO-3/ALU-3	36"	RD/WH

Public use and enjoyment of the recreational opportunities afforded by Corps navigation and flood control projects remain important goals of project operations. While the Corps endeavors to make project visitors and boaters aware of and respectful towards potential hazards, it also recognizes that not all such visitors have basic knowledge of common dangers, or are cognizant of safety practices. The responsibility for these matters must rest primarily with project visitors, aided to the extent practical by an aggressive public information and signage program. With careful consideration and planning for the placement of cautionary signs, public safety and enjoyment can be maximized without infringing on the effective and productive management of the project.

These signs are intended for relatively short viewing distances. If a large area is to be signed, use more than one sign rather than depending on a single large sign. Placement and sizing of these Undesignated Safety signs should be reviewed with the project safety officer.

Danger
Deep Drop
No Swimming
or Wading

UNS-07

Danger
Strong
Undertow
No Swimming

UNS-08

Danger
Hazardous
Bottom
No Swimming
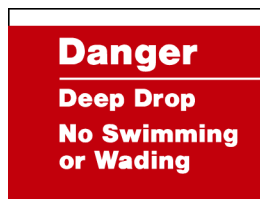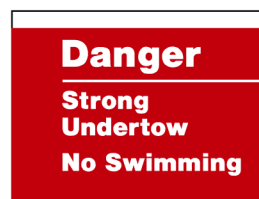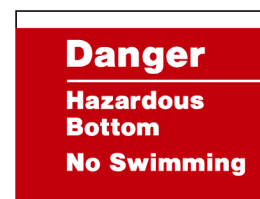
UNS-09

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-07(08,09)	1.5"	21.625"x15.75"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-07(08,09)	2"	28.75"x21"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-07(08,09)	3"	43.125"x31.5"	4"x4"	HDO-3/ALU-3	36"	RD/WH
UNS-07(08,09)	4"	57.625"x42"	4"x6"	HDO-3/ALU-3	36"	RD/WH

Danger
Submerged
Rocks
No Diving
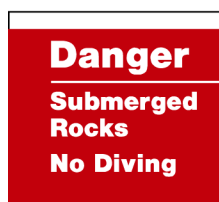
UNS-10

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-10	1.5"	18.25"x15.75"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-10	2"	24.375"x21"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-10	3"	36.5"x31.5"	4"x4"	HDO-3/ALU-3	36"	RD/WH
UNS-10	4"	48.75"x42"	4"x6"	HDO-3/ALU-3	36"	RD/WH

Danger
Swim in
Designated
Areas Only

UNS-11

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
UNS-11	1.5"	18"x15.75"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-11	2"	24"x21"	4"x4"	HDO-5/ALU-5	36"	RD/WH
UNS-11	3"	36"x31.5"	4"x4"	HDO-3/ALU-3	36"	RD/WH
UNS-11	4"	48.125"x42"	4"x6"	HDO-3/ALU-3	36"	RD/WH

Caution

Pesticides Recently Applied in This Area

WRN-12

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-12	1.5"	26"x15.75"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-12	2"	34.625"x21"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-12	3"	51.875"x31.5"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-12	4"	69.25"x42"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Caution

Unsafe Ice Conditions May Exist

WRN-13

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-13	1.5"	18.5"x15.75"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-13	2"	24.625"x21"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-13	3"	37"x31.5"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-13	4"	49.375"x42"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Caution

Watch for Trains

WRN-14

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-14	1.5"	18.5"x13.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-14	2"	24.625"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-14	3"	37"x27"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-14	4"	49.375"x36"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Warning

Beware of Alligators

WRN-16

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-16	1.5"	19.5"x13.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-16	2"	26"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-16	3"	39.125"x27"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-16	4"	52"x36"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Warning

**Gates Close
Automatically**

DGN-17

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-17	1.5"	21.875"x13.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-17	2"	29.125"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-17	3"	43.625"x27"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-17	4"	58.25"x36"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Warning

**River Level May
Rise Suddenly**

WRN-18

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-18	1.5"	24.5"x13.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-18	2"	32.625"x18"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-18	3"	49"x27"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-18	4"	65.25"x36"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Warning

**Sewage Lagoon
No Trespassing**

WRN-19

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-19	1.5"	24.25"x14.25"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-19	2"	32.375"x19"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-19	3"	48.5"x28.5"	4"x4"	HDO-3/ALU-3	48"	LY/BK
WRN-19	4"	64.75"x38"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Danger

**Alligators Present
Do Not Feed
No Swimming or
Wading**
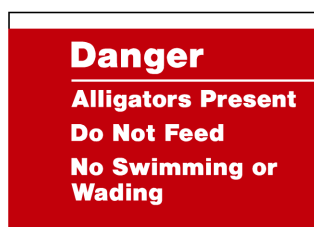
DNG-14

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-14	1.5"	27.625"x19.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
DNG-14	2"	36.75"x26"	4"x4"	HDO-5/ALU-5	36"	LY/BK
DNG-14	3"	55.125"x39"	4"x4"	HDO-3/ALU-3	48"	LY/BK
DNG-14	4"	73.5"x52"	4"x6"	HDO-3/ALU-3	48"	LY/BK

Danger

Floating Debris
and Boat Traffic

No Jumping or
Diving From Bridge

No Swimming or
Wading Within 000
Feet of Bridge
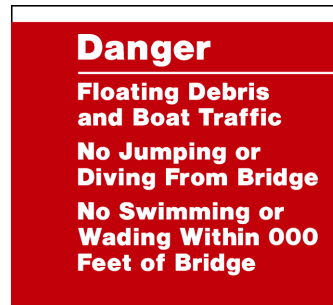
DNG-15

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-15	1.5"	29.25"x26.25"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-15	2"	39"x35"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-15	3"	58.5"x52.5"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-15	4"	78"x70"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

Hazardous Bottom

No Swimming or
Wading

No Diving
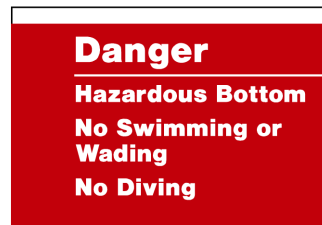
DNG-17

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-17	1.5"	28.125"x19.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-17	2"	37.5"x26"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-17	3"	56.25"x39"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-17	4"	75"x52"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

Hazardous Bottom

No Swimming,
Wading or Diving
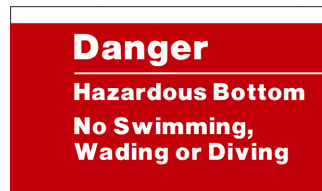
DNG-17r

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-17r	1.5"	28.125"x16.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-17r	2"	37.5"x22"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-17r	3"	56.25"x33"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-17r	4"	75"x44"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

Narrow Levee
Steep Dropoffs
Strong Currents

DNG-18

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-18	1.5"	24.875"x17.25"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-18	2"	33.25"x23"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-18	3"	49.875"x34.5"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-18	4"	66.5"x46"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

Shooting Range
Keep Out

DNG-19

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-19	1.5"	24.5"x14.25"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-19	2"	36.625"x19"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-19	3"	49"x28.5"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-19	4"	65.25"x38"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

Steep Incline
Slippery Surface
Keep Out
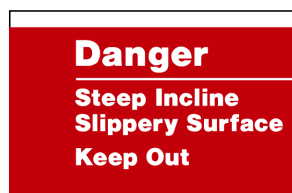
DNG-20

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-20	1.5"	25.75"x16.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-20	2"	34.375"x22"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-20	3"	51.5"x33"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-20	4"	68.625"x44"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

Turbulent Water
Keep Out

DNG-21

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-21	1.5"	25"x14.25"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-21	2"	33.375"x19"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-21	3"	50.125"x28.5"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-21	4"	66.875"x38"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Danger

When Water is on Spillway Keep Off

DNG-22

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-22	1.5"	22.875"x16.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-22	2"	30.5"x22"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-22	3"	45.625"x33"	4"x4"	HDO-3/ALU-3	48"	RD/WH
DNG-22	4"	60.875"x44"	4"x6"	HDO-3/ALU-3	48"	RD/WH

Specific areas in and around a water project are restricted to maintain safety and security.   Access to restricted or hazardous areas around a dam or waterway should be controlled using the appropriate combination of fencing and signs.

However, an over-proliferation of less important signs will cause critically important messages to lose their impact. Secondly, signs should only be as large as necessary. Overly large signs of this type will not necessarily increase the quality of communications desired.

All restricted and U.S. Government property signs specified in Section 14 and Workplace Safety signs shown in Section 11 may be used in lieu of the signs shown below if more appropriate; however, all sign placement of a given type must be consistent throughout the area being signed.

These signs are for land-side viewing only and are shown with Helvetica Bold legends. These land-side signs are generally placed for pedestrian viewing and need not be overly large; see Viewing Distance Guide, page 2-6.

Restricted
Keep Out

RES-01

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RES-01	.75"	11.875"x5.625"	4"x4"	HDO-5/HDO-6/ALU-5/ALU-6	36"-60"	RD/WH

Restricted
Employees Only

RES-01

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RES-02	.75"	11.875"x6.75"	4"x4"	HDO-5/HDO-6/ALU-5/ALU-6	36"-60"	RD/WH
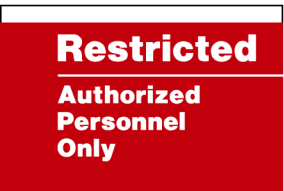
Restricted
Authorized Personnel Only

RES-01

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RES-03	.75"	11.875"x7.875"	4"x4"	HDO-5/HDO-6/ALU-5/ALU-6	36"-60"	RD/WH

60"

7-50
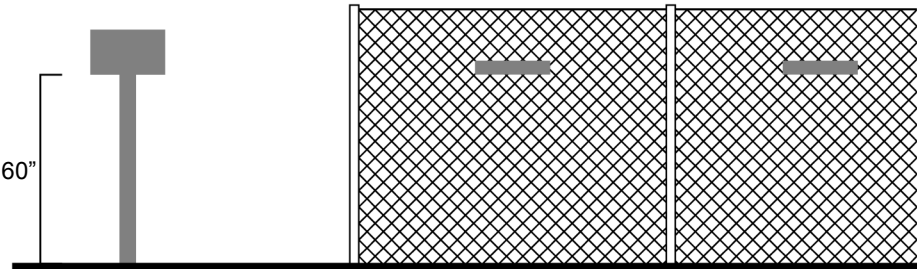
If trail users do not respect the trail environment they may suffer injury, their action may destabilize the trail, or others could be injured as a result. The three safety signs shown below are intended for use along trails to identify potentially hazardous conditions and instruct trail users on the basic rules of trail environments.

Because trails are narrow and viewing distances relatively short, the sizes specified for these three signs are small.

Generally the smaller (A=1") size is recommended unless viewing conditions require a larger sign. This small size is also intended to make maintenance easier and less expensive, assuming out of the

way installations may be vandalized more frequently than a sign within a developed project area.

The graphic format shown below follows Grid 1, page 7-63. If conditions dictate alternate wording consult your district Sign Program Manager for assistance.

Danger
Rock Slides
Do Not Climb
on Bluffs
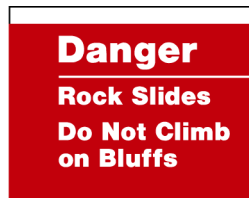
DNG-07

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-07	1"	13.875"x11"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-07	1.5"	20.875"x16.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH

Warning
Steep Bluffs
Ahead
Stay on Trail

WRN-01

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-01	1"	13.5"x11"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-01	1.5"	20.25"x16.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK

Danger
Steep Bluff &
Loose Rock
Keep Back

DNG-08

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-08	1"	14.125"x11"	4"x4"	HDO-5/ALU-5	36"	RD/WH
DNG-08	1.5"	21.25"x16.5"	4"x4"	HDO-5/ALU-5	36"	RD/WH

36"

Caution

**Hazardous Terrain
and Riding Conditions
Ride at Own Risk**
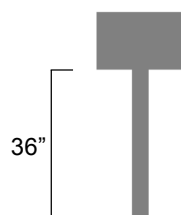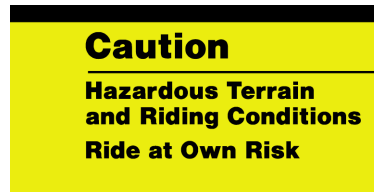
WRN-15

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-15	1"	22.125"x11"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-15	1.5"	33.125"x16.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK

The word "Trail" may be replaced with "Park," "Area," etc., as the situation dictates.

Warning

**Trail Closed
During Hunting
Season**

WRN-20

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-20	1"	15.75"x10.5"	4"x4"	HDO-5/ALU-5	36"	LY/BK
WRN-20	1.5"	23.5"x21"	4"x4"	HDO-5/ALU-5	36"	LY/BK

Seasonal flooding or unusually high water conditions may create public hazards at Corps facilities. During these conditions, access to flooded areas shall be prohibited. The three Danger signs displayed below may be placed at swimming areas, entrances, and along project roads. These flood condition signs are intended for temporary use and it is imperative that they be removed once flood waters recede or when the hazard no longer exists.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing. The sign panel format uses standard Grid

1. If a larger size sign is required, follow the specified format on page 7-63.

The signs are fabricated with retro-reflective sheeting applied to HDO plywood or aluminum. There are two common sizes identified below.

Danger
Flooded Area
No Swimming
No Diving

DNG-09

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-09	2"	28.75"x21"	4"x4"	HDO-3/ALU-3	36"-60"	RD/WH
DNG-09	3"	43.125"x31.5"	4"x4"	HDO-3/ALU-3	36"-60"	RD/WH

Danger
Flooded Area
No Entry

DNG-10

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-10	2"	28"x18"	4"x4"	HDO-3/ALU-3	36"-60"	RD/WH
DNG-10	3"	42"x27"	4"x4"	HDO-3/ALU-3	36"-60"	RD/WH

Danger
Flooded Area
Road Closed

DNG-11

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DNG-11	2"	28"x18"	4"x4"	HDO-3/ALU-3	36"-60"	RD/WH
DNG-11	3"	42"x27"	4"x4"	HDO-3/ALU-3	36"-60"	RD/WH

Bicycle riding on dam structures can be extremely dangerous because bicycle tires can easily get caught in expansion joints, mechanical access points, and the seating frame around a walkway grate. On structures that are also part of the state or county highway system, or where access is open to the public, bike riders must be warned that these conditions exist.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing. The sign panel format uses standard Grid 1, page 7-63.

The sign illustrated below is designed for placement at access points to roads on top of dam structures and areas adjacent to lock walls where a hazard exists and the facilities are used by bicycle riders.

These signs are fabricated with retrore-flective sheeting applied to HDO plywood or aluminum. These signs are to be placed on the right side of the roadway. If there is a sidewalk that is physically separated from the road by a barrier, place the sign on the barrier for view from either approach. There are two sizes available, with the smaller size sign used on single-lane roadways; the larger sign on multilane roads.

Warning

Hazardous Road Surface

Bicyclist Beware

WRN-04

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-04	1.5"	19.5"x21"	4"x4"	HDO-5/ALU-5	48"	LY/BK
WRN-04	2"	26"x28"	4"x4"	HDO-5/ALU-5	60"	LY/BK

48-60"
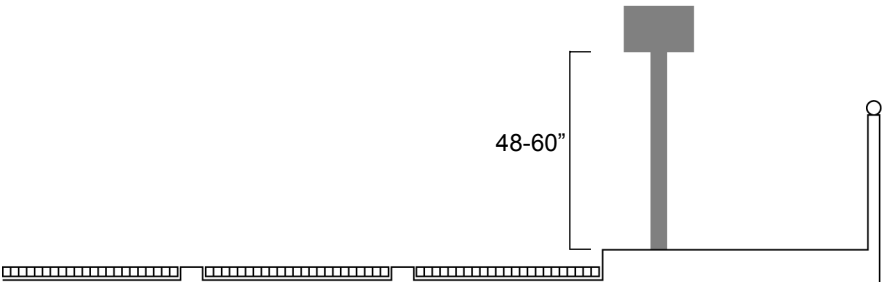
The sign shown below is used to notify boaters traveling upstream and downstream of underwater cables to prevent anchoring and dredging in this area.

The sign can be used anywhere to protect communication cables or other transmission systems lying on the river bed. This can be either temporary while construction is in progress, or permanently to protect electrical cables connected to water meters or other lock and dam signal devices.

Mounting configuration is to be determined by local conditions and may be perpendicular or parallel to the boaters approach.

Place signs on both sides of the marked section of waterway.

It is recommended that the sign be mounted so that it tilts slightly forward and is slightly angled so that it is not directly head on to approaching vessels. Tilting it forward will provide some protection from environmental damage (e.g., precipitation and bird droppings). Both the tilting and the angling will prevent the sign from reflecting back a blinding glare when towboats shine their powerful searchlights on it as they approach a lock at night.

Underrule is .125A
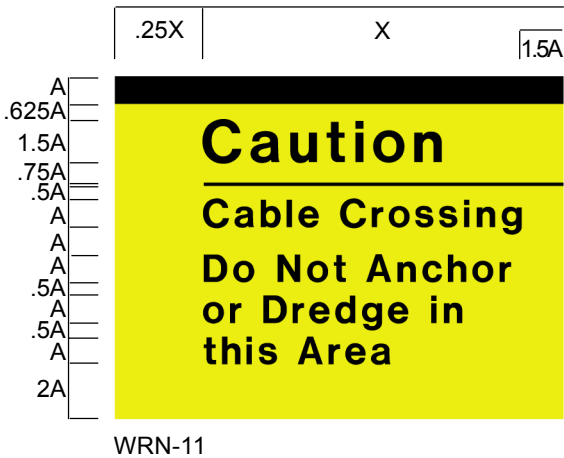
.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
A
A
.5A
A
.5A
A

2A

Caution
Cable Crossing
Do Not Anchor
or Dredge in
this Area

WRN-11

Sign background color is Lemon Yellow retroreflective sheeting with black non-retroreflective legend, overbar and rule.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs (see note, page 14-1). The sign panel format is the same format used for the sign on page 7-32.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRN-11	A	16.375A x 12A	Engineered	WTW-3/5/6	60"	LY/BK
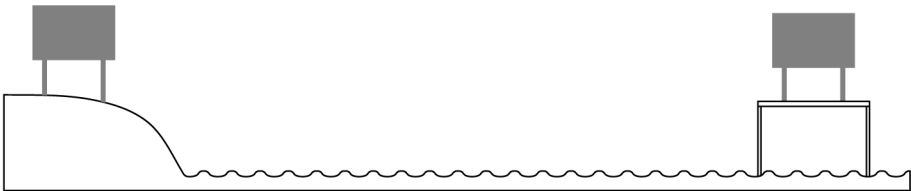
The Opening Hours sign shown below informs project or facility users of public operating hours and seasonal closures. It is placed at the entrance of a project, or at the entrance to individual facilities within a project.

The sign panel is fabricated of retroreflective sheeting applied to HDO plywood. The header panel and base strip are permanently attached to the back-up HDO panel, with glue and wood screws. The two insert strips, one for the opening time and one for the closing time, are individually screw-mounted to the back-up panel, without glue. With this mounting method, the strips with specific times can be changed, without replacing or refinishing the entire sign panel.

The two formats for this sign are modified versions of the standard recreation Grids 1 and 2.

There are three legend sizes available. The small one is for mounting on walls. The larger two are for free standing ground-mounted signs on two posts. Note that the legend size of the header panel is 1.5A.

Header panel and base; Format A

A

18A

A

1.5A

.75A
.5A
.25A

Underrule is .125A.

Opening Hours insert strip

A

.75A
.25A

Campground

Open   6:00 am

Closing Hours insert strip

A

.75A

Note: 5A measurement is from right edge of 0 in 10:00, not from left edge of p in pm.

1.25A

Closed   10:00 pm

5A

Header panel and base; Format B

A
.625A

1.5A

.75A

1.5A

.75A
.5A
.25A

A

.75A
.25A

A

.75A

1.25A

Ranger Station

Closed for Season

Open   May 15

11A
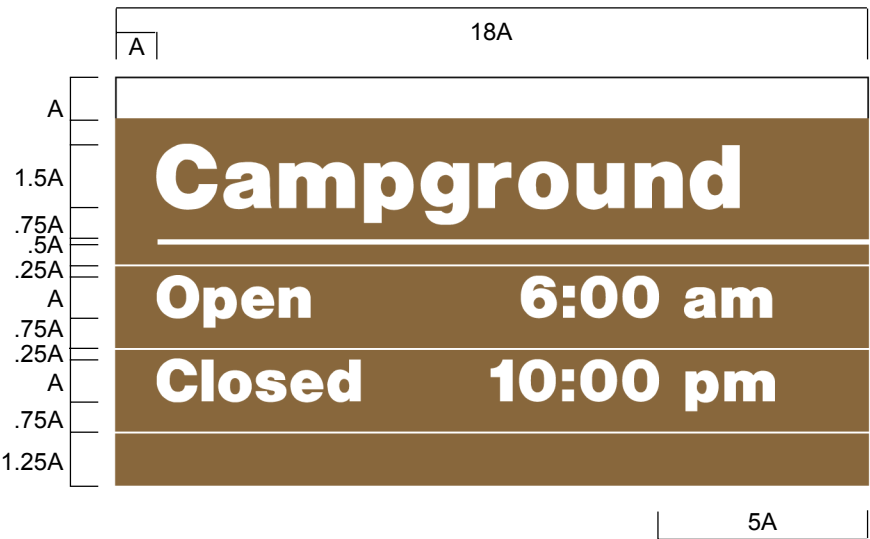
Underrule is .125A.

Example shows use of strips to inform visitors that an area is closed. The second strip gives the opening date.

Illustration shows both wall and ground-mounted signs.

Panel Assembly: Header panel (.5" HDO plywood) and base strip are attached to sign back (.75" HDO plywood). Replaceable Hours strips (.5" HDO plywood) are screwed to sign panel assembly. Refer to Appendix B for complete HDO-8 specifications.

60"

36"
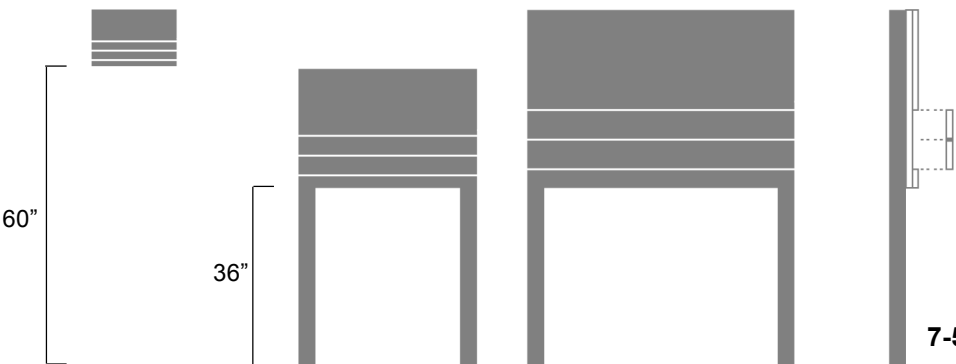
Shown below are standard Opening Hours panels. Only the different header panels are shown in the display. The panel size noted in the matrix below includes the entire panel assembly.

When ordering, specify the opening and closing times to be placed on individual strips by the fabricator. Individual replacement strips may be ordered separately.

Custom headers can be created to fit local situations.

Header panel: Format A

Note: (A) is size of individual replacement hours strips. Header panel letters are 1.5(A).

Park Hours
HRS-01

Visitor Center
HRS-02

Dam Crossing
HRS-03

Campground
HRS-04

Picnic Area
HRS-05

Boat Ramp
HRS-06

Power House
HRS-07

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
HRS-00	1"	18"x9.75"	-	HDO-8	60"	BR/WH
HRS-00	2"	36"x19.5"	4"x4"	HDO-8	36"	BR/WH
HRS-00	3"	54"x29.25"	4"x4"	HDO-8	36"	BR/WH

Header panel: Format B

Note: (A) is size of individual replacement hours strips. Header panel letters are 1.5(A).

Entrance Station
HRS-09

Ranger Station
HRS-10

Observation Area
HRS-11

Swimming Beach
HRS-12

Fish Viewing Area
HRS-13

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
HRS-00	1"	18"x12"	-	HDO-8	60"	BR/WH
HRS-00	2"	36"x24"	4"x4"	HDO-8	36"	BR/WH
HRS-00	3"	54"x36"	4"x4"	HDO-8	36"	BR/WH

Individual replacement hours strips

Open   00:00 am
HRS-14

Closed   00:00 pm
HRS-15

Closed for Season
HRS-16

Open   Month 00
HRS-17

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
HRS-00	1"	18"x2"	-	HDO-8	-	BR/WH
HRS-00	2"	36"x4"	-	HDO-8	-	BR/WH
HRS-00	3"	54"x6"	-	HDO-8	-	BR/WH

Entrances to designated national trails that traverse Corps projects are to be identified using approved trail markers. These include the Pacific Crest National Scenic Trail, Appalachian Trail, Oregon National Historic Trail, Lewis and Clark National Historic Trail, and other designated national recreation trails.

Below are some of the trail marker crests with an illustration that shows how these markers are to be used on approach roadways, project roads, and trails. The identification marker is available in three sizes. The largest panel (18") is intended for placement along approach roadways where a designated trail may originate or cross the roadway. Similarly the 9" panel is for placement along slow speed project roadways. The smaller panel is to be placed for trail identification by pedestrians.

For signing trails other than national trails, consult the district Sign Program Manager.

The name of the national recreation trail must be incorporated into the crest artwork on TR-001 in a way that is similar to the way trail names are displayed on TR-002, TR-003 and TR-004 in the three displays to the right.

TR-001   TR-002   TR-003   TR-004

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
TR-000	-	3"x3"	4"x4"	FSM-7	36"	BR/WH
TR-000	-	9"x9"	4"x4"	HDO-5	48"	BR/WH
TR-000	-	18"x18"	4"x4"	HDO-5	60"	BR/WH

a) Trail mount: 3"

b) Road mount: 9"

c) Highway mount: 18"
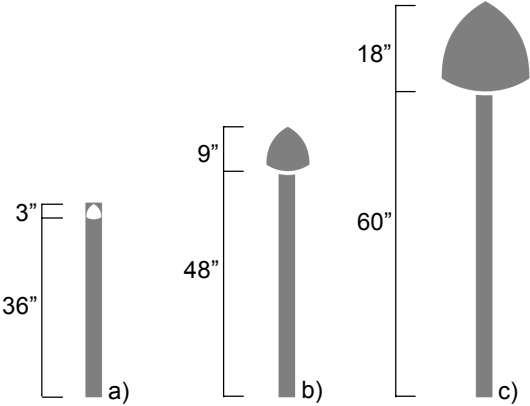
At many projects, especially in the areas west of the Mississippi River that become very dry in late summer and fall, the danger of forest fires is extreme. This sign may be used to inform visitors of fire danger. Fire Danger Index signs may be placed on the road fronting a project, or at the entrance to a specific area. Two different sizes of the signs are shown. The larger is intended for high- way applications and may be constructed as a double-face installation mounted perpendicular to the road. The small size is for intraproject installations.

The sign is shown with a moveable indicator that can be appropriately placed by project personnel. The indicator scale consists of vinyl strips in standard retro- reflective colors.

Sign background is Corps Brown with white legend. The rectangular vinyl strips denoting levels of fire danger use the same standard retroreflective colors used for highway sign applications. These include red, orange, yellow and green as shown on page 4-6.

Underrule is .125A
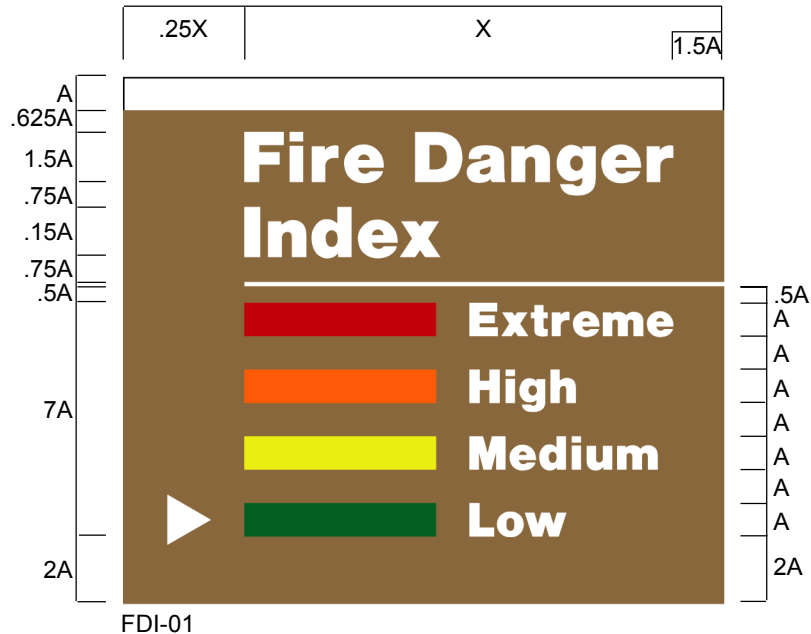
The indicator arrow is an aluminum triangle, cut to the proportions noted. Weld two threaded aluminum studs to the back of the arrow with one projecting far enough through the back of the sign so that a wing nut can be screwed on. The other is used for alignment.
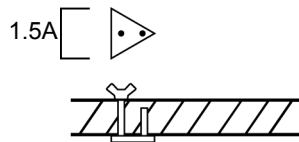
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
FDI-01	1"	18"x15.75"	4"x4"	HDO-5/HDO-6/ ALU-5/ALU-6	60"	BR/WH
FDI-01	3"	53.875"x47.25"	4"x4"	HDO-3/ALU-3	36"	BR/WH
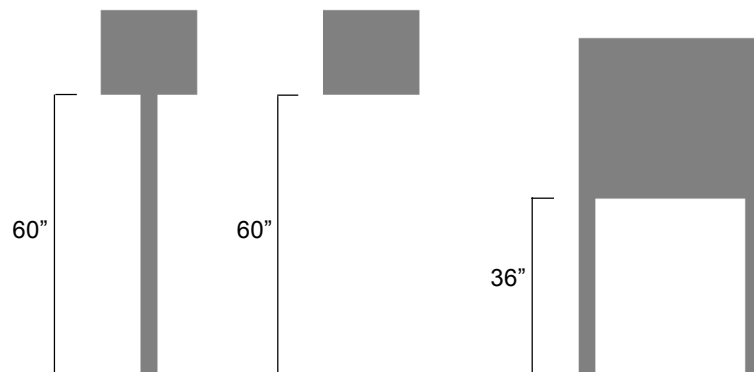
During dry seasons and drought conditions, the danger of forest fires increases dramatically. The sign specified below is provided for use as needed to warn visitors that this hazard exists. The Fire Danger Index sign may also be used to inform visitors of current conditions (see

The typeface is Helvetica Bold and follows Corps standard letter- and word- spacing. The sign panel format uses standard Grid 1, page 7-63.

page 7-59). If fires are not allowed in an area, post the "No Fires" Prohibition Symbol sign PS-042 (Section 8).

The standard sizes specified are relatively small and are intended for site specific posting similar to the way

Undesignated Safety signs and Prohibition Symbol signs are displayed.

This sign is intended for temporary use, and must be removed as soon as the hazard no longer exists.

Warning

Dry Conditions

Be Careful with Fire

FDI-02

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
FDI-02	1"	15.375"x10.5"	4"x4"	HDO-5/ALU-5	48"	LY/BK
FDI-02	1.5"	23.125"x15.75"	4"x4"	HDO-5/ALU-5	48"	LY/BK

48"
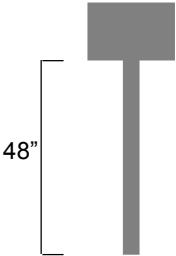
The system of recreation signs illustrated in this section is comprehensive. It addresses the basic activities occurring on Corps projects. However, there may be local situations or conditions that will need site-specific signs. It is important that these signs follow the format of recreation signs. Standard sign layout grids are specified on pages 7-63 through 7-65. The grid used will be determined by the legend required. For assistance in formulating special legends and utilizing the grids, contact your district Sign Program Manager.

Shown below are three examples of one-of-a-kind signs.

Special sign using Grid 1, page 7-63.

Road Closed

Use Entrance on Route 23
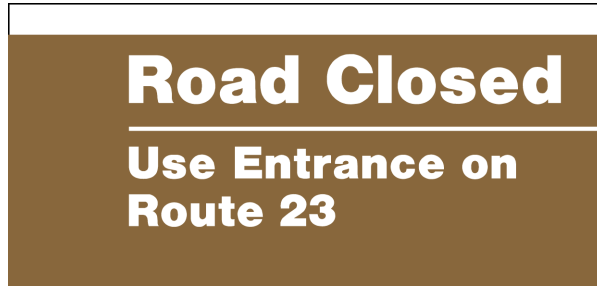
Special sign using Grid 2, page 7-64.

Turn Off All Transmitters

FCC and AMA License Required
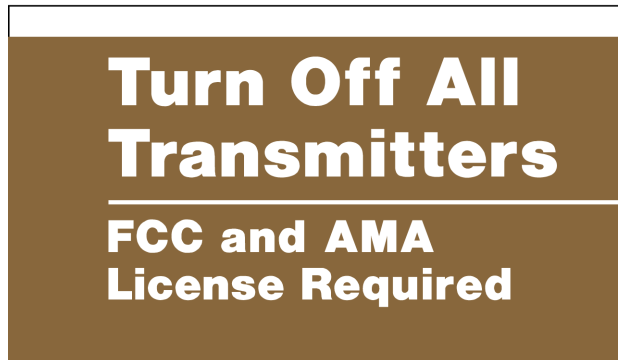
Special sign using Grid 3, page 7-65.

Please Register With Attendant in Site 123
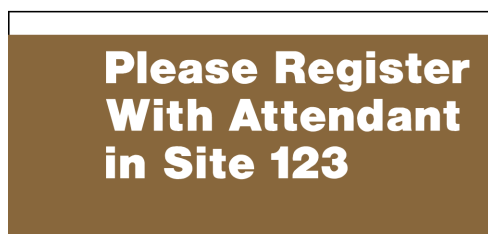
An Electronic Display Sign (EDS), also known as a variable message sign, is a programmable lighted sign that can be used indoors as well as out. The messages displayed can be easily changed to meet current needs. Signs of this type may be used to enhance communications with visitors and to supplement approved signs.

An EDS <u>may not</u> be used in lieu of existing signs approved in the sign manual. An EDS might typically be used at a visitor center or the entrance to a major recreation area or other high traffic area to advertise interpretive programs, announce special events, display water safety messages, or to advise of special conditions.

The National Sign Standards Program does not provide specifications for these signs, nor does it recommend or list specific manufacturers.

For custom signs with a one-line headline, use the grid illustrated below. The height of capital letters used for the legend, referred to as A, is the basic unit on which all measurements are based. Refer to the chart on page 2-6, Viewing Distance Guide, to determine the required letter size for the primary sign legend. No matter what letter size is chosen, the proportional relationships shown in the grid will remain the same.

The legend can be one or more lines. Regardless of the number of lines used, the bottom of the sign panel is 2A units below the baseline of the last legend line.

This grid is used for creating custom signs with codes CST-01 and CST-04. (The CST-04 version of the grid is used for signs intended to be viewed from the water. The spacing between the letters is slightly wider.)

Signal words or headline

Underrule

Primary sign legend

The grid shown is for a legend with a single message. For signs with more than one message (see BTR-01, page 7-32), place a line space equal to A between the messages.

The distance X indicates the width of the longest line of the sign legend plus the distance (1.5A) from the end of that line to the right edge of the panel. To calculate the overall width of the sign panel, multiply the distance X by 1.25.

.25X	X
	1.5A

A
.625A
1.5A
.75A
.125A
.5A
A
.5A
A
.5A
A
.5A
A
2A
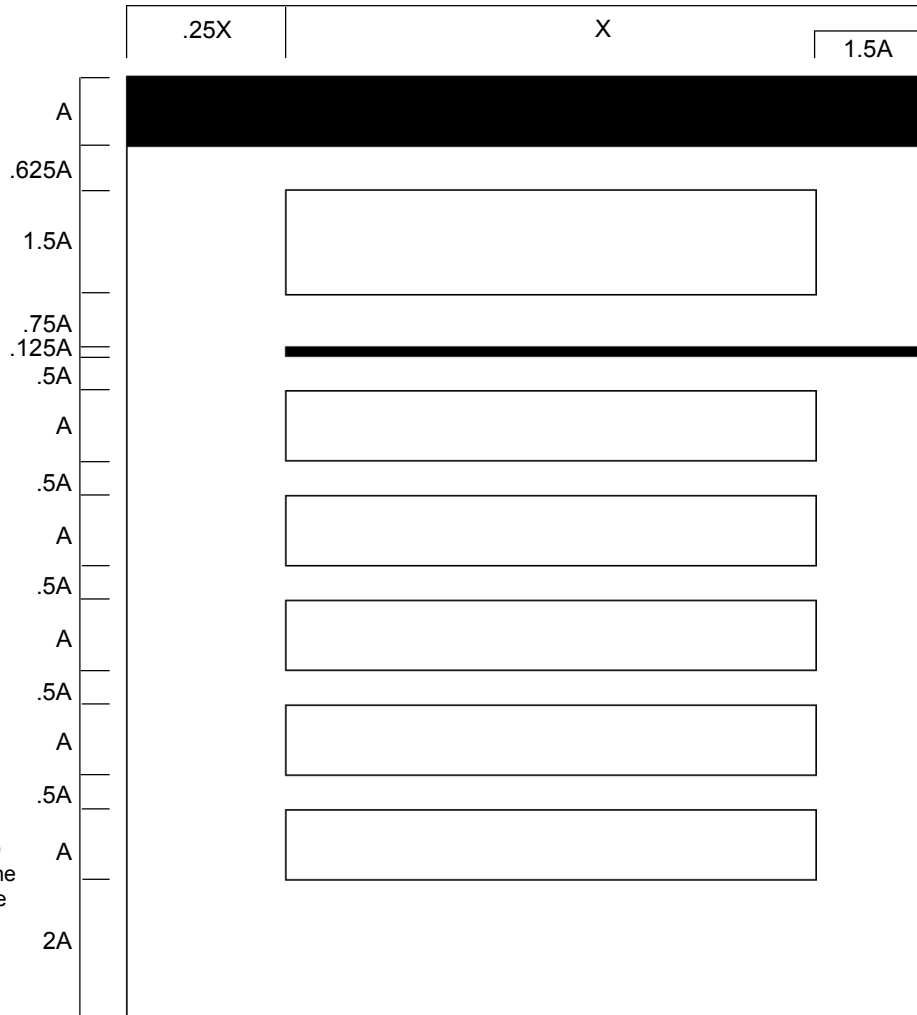
For custom signs with a two-line head-line, use the grid illustrated below. The height of capital letters used for the legend, referred to as A, is the basic unit on which all measurements are based. Refer to the chart on page 2-6, Viewing Distance Guide, to determine the required letter size of the primary sign legend. No matter what letter size is chosen, the proportional relationships shown in the grid will remain the same.

The legend can be one or more lines. Regardless of the number of lines used, the bottom of the sign panel is 2A units below the baseline of the last legend line.

This grid is used for creating custom signs with codes CST-02 and CST-05. (The CST-05 version of the grid is used for signs intended to be viewed from the water. The spacing between the letters is slightly wider.)

Signal words or headline

Underrule

Primary sign legend

The grid shown is for a legend with a single message. For signs with more than one message (see BTR-01, page 7-32), place a line space equal to A between the messages.

The distance X indicates the width of the longest line of the sign legend plus the distance (1.5A) from the end of that line to the right edge of the panel. To calculate the overall width of the sign panel, multiply the distance X by 1.25.

.25X

X

1.5A

A

.625A

1.5A

.75A

1.5A

.75A
.125A
.5A

A

.5A

A

.5A

A

.5A

A

.5A

A

2A
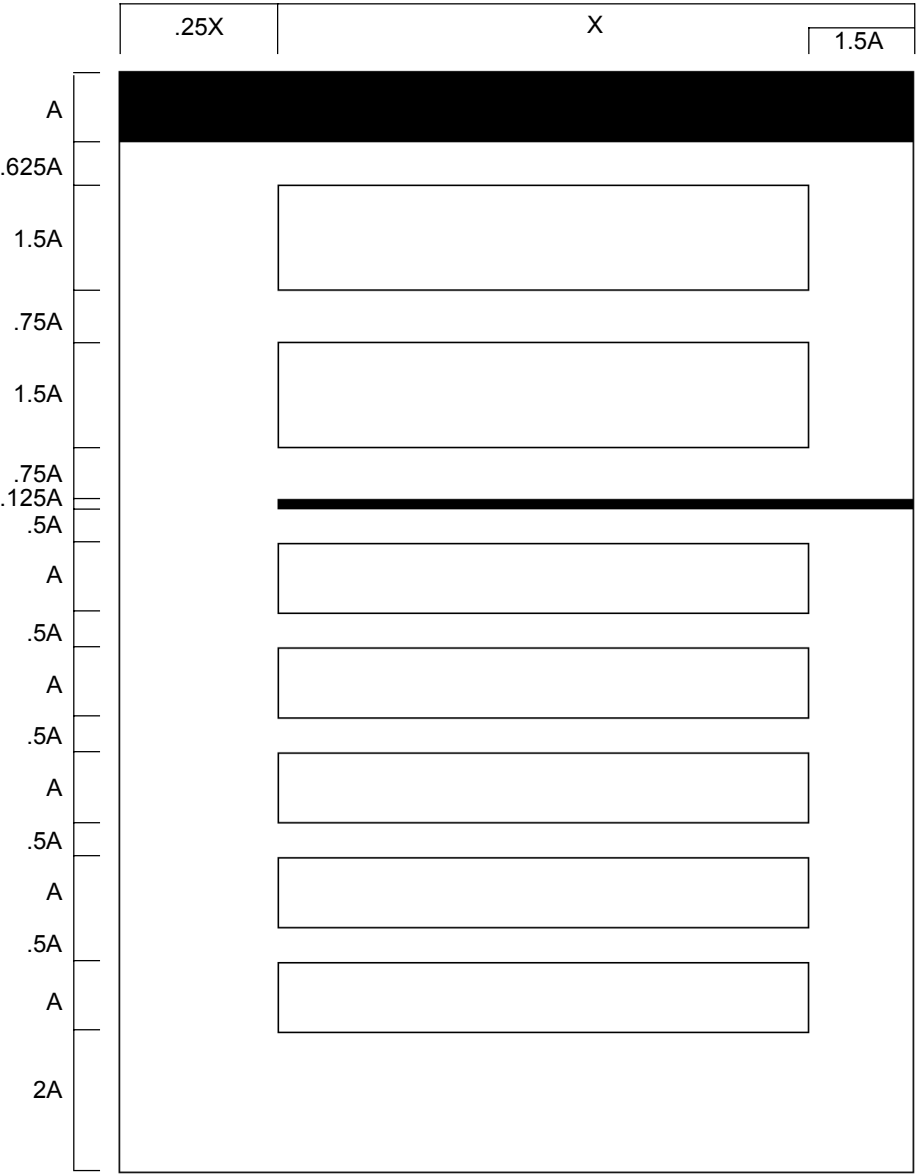
For custom signs with a legend and no headline, use the grid illustrated below. The height of capital letters used for the legend, referred to as A, is the basic unit on which all measurements are based. Refer to the chart on page 2-6, Viewing Distance Guide, to determine the required letter size. No matter what letter size is chosen, the relationships shown in the grid will remain the same.

The legend can be one or more lines. Regardless of the number of lines used, the bottom of the sign panel is 2A units below the baseline of the last legend line.

This grid is used for creating custom signs with codes CST-03 and CST-06. (The CST-06 version of the grid is used for signs intended to be viewed from the water. The spacing between the letters is slightly wider.)

The grid shown is for a legend with a single message. For signs with more than one message (see BTR-01, page 7-32), place a line space equal to A between the messages.

The distance X indicates the width of the longest line of the sign legend plus the distance (1.5A) from the end of that line to the right edge of the panel. To calculate the overall width of the sign panel, multiply the distance X by 1.25.

.25X	X	1.5A

.75A

.5A

A

.5A

A

.5A

A

.5A

A

2A
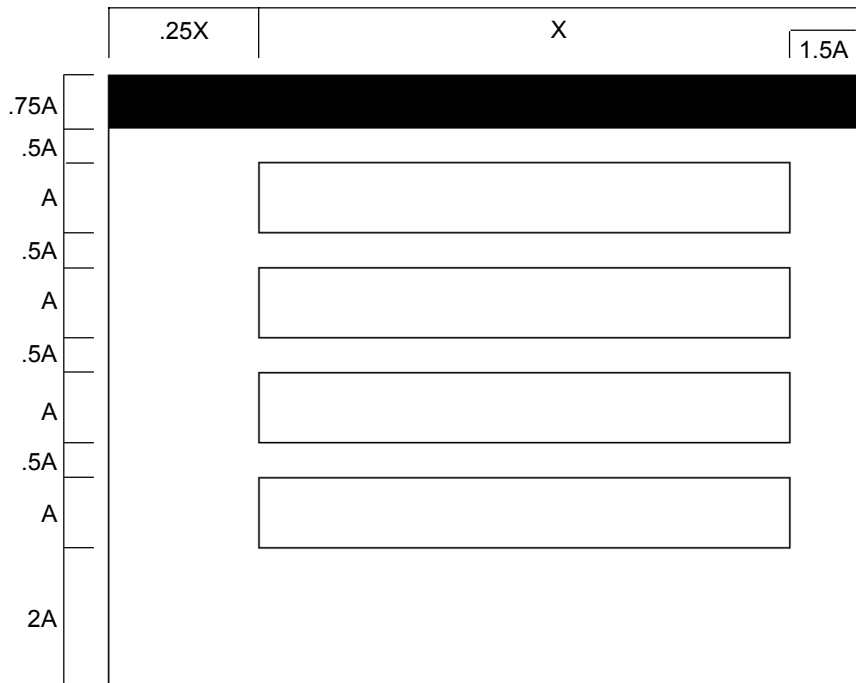
Symbols should be used whenever possible.

There are two types of symbols used. Those shown with dark background and white symbol are positive symbols, which are used to indicate the availability of a service, accommodation or activity. The second type is used to indicate a prohibition, such as "No Camping", "No Motor Bikes", etc. In this case, the symbol has a white background and black symbol with a red circle and a slash through the symbol.

Positive symbols are used for identification signs (pages 8-2 to 8-4), on Approach Roadway Directional signs (pages 6-10 to 6-11), and on directional signs within projects (pages 8-10 to 8-14), and as a discrete identification of a service or activity such as the drinking water symbol placed adjacent to a potable water faucet.

Recreation Symbol signs can also be used on an Area Regulation Slat System sign to emphasize the allowable activities at that facility (pages 8-40 to 8-42).

Prohibition symbols are used in two locations, each with a worded legend. Upon entering an activity area, they are shown on an Area Regulation Slat System sign identifying the 2 to 4 major prohibitions for that area (pages 8-43 to 8-46).

Individual prohibition signs with large symbol and smaller legend are placed at specific areas where the prohibition is applicable (pages 8-28 to 8-39). Use these signs judiciously to prevent a proliferation of prohibition signs.

Parking and No Parking signs also use the same graphic format as Prohibition signs. Guidelines are provided in Section 9: Traffic Signs.

The guidelines in this section encourage the use of symbols when identifying facilities, services, and activities that are accessible to the disabled. For these applications, symbols may be displayed with Corps Brown or Safety Blue background with white symbol and border graphic.

A complete list of the symbols, listed by number and alphabetically with applications, is provided on pages 8-15 and 8-16.

The symbols shown in this manual have been carefully designed to be easily recognized and understood; they correspond to accepted international standards. No symbol may be altered and no symbol may be added without formal approval. A request for a new symbol must be initiated through the National Sign Program Manager.

Shown below are illustrations and explanations of five ways symbols may be used and mounted to identify accommodations, services, and recreation resources. This same mounting is used for post mounted directional signs. For additional guidance on the use of symbols for directional signs, see page 8-10.

For safety, place a radius on the corners of all symbol sign panels that use a single, ground-mounted post. The radius should be .1875" for HDO signs and 1" for ALU signs.

a) Bollard mount

b) Wall mount: Surface mounting may not be possible with certain types of construction materials (split-face concrete, for example). Adapt as required.

c) Door mount

d) Single post mount, with variable length post

e) Double post mount

The sign panels are made of reflective sheeting applied to HDO plywood or aluminum. The symbol is cut out of white sheeting, using a thermal die or a computer-aided cutting system, and applied to the background. The background color is Corps Brown; the symbol and outline are white (see page 4-5).

The sign type used to order symbol signs uses the same number for each symbol that the National Park Service uses. It is a combination of the prefix "RS" plus the three-number code shown next to each symbol on pages 8-17 to 8-27. For example, a boat launch sign is RS-054; a campground symbol sign is RS-038.
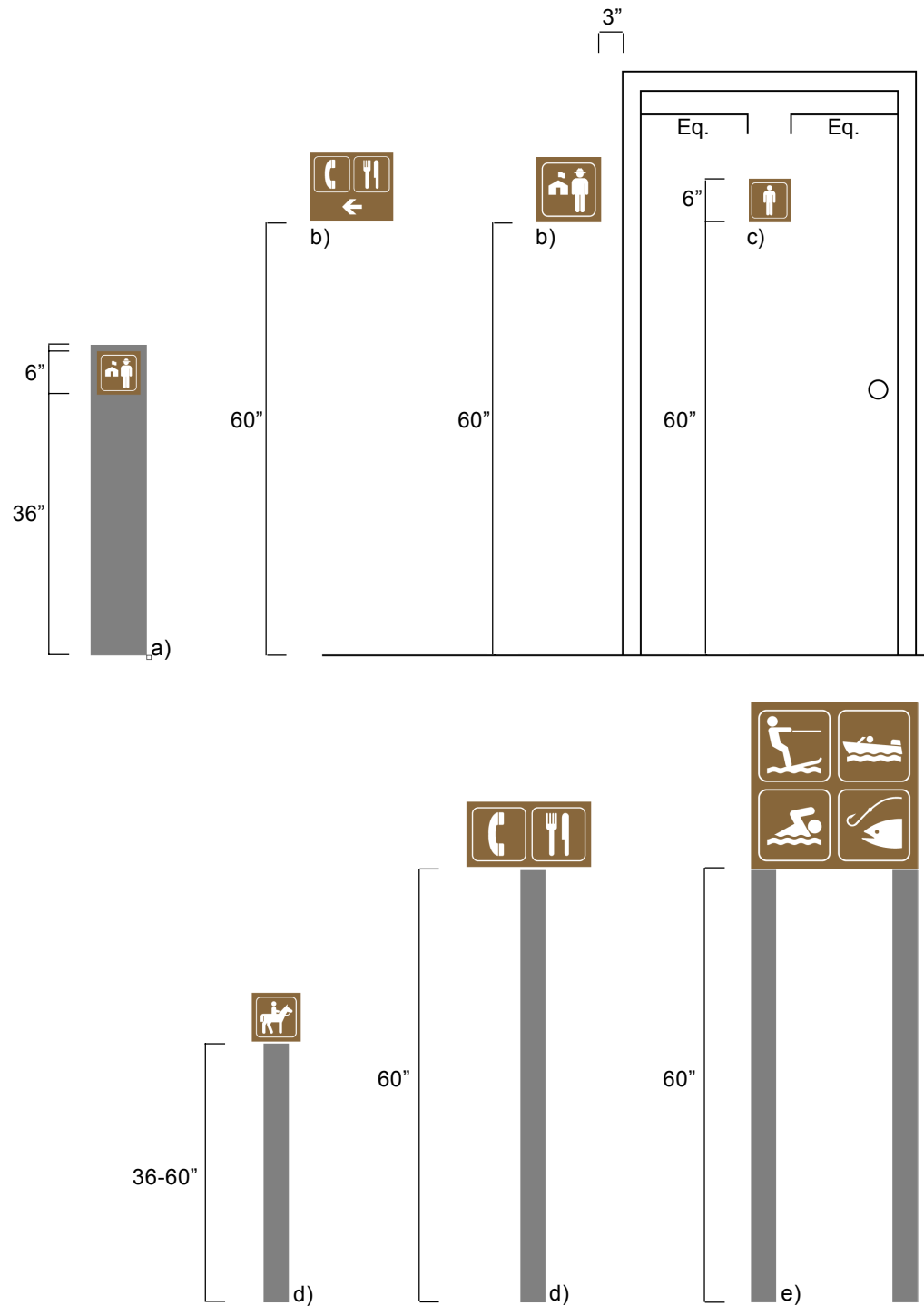
Symbols placed as identification panels may be used individually or as a group with two, three, or four symbols ganged on a panel as shown below and on page 8-4. These applications may be used to identify a multiple facility installation, an area with more than one available activity, or the variety of accommodations and services within a facility. The symbols within the system are displayed on pages 8-17 to 8-27. Use of prohibition symbols in this application is discouraged.

Follow the grid format provided on page 8-5 to lay out the symbols within the respective panel sizes shown in the matrix provided for each format display below and on the following page.

M is one-tenth the symbol size. Symbol sizes can be determined from the chart on page 8-14.

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSID-1	.5"	6"x6"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-1	.75"	9"x9"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-1	1"	12"x12"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
RSID-1	1.5"	18"x18"	4"x4"	HDO-5/ALU-5	60"	BR/WH
RSID-1	2"	24"x24"	4"x4"	HDO-5/ALU-5	60"	BR/WH

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSID-2	.5"	11.5"x6"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-2	.75"	17.25"x9"	4"x4"	HDO-5/HDO-6/ALU-6	36"- 60"	BR/WH
RSID-2	1"	23"x12"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
RSID-2	1.5"	34.5"x18"	4"x4"	HDO-5/ALU-5	60"	BR/WH
RSID-2	2"	46"x24"	4"x4"	HDO-3/ALU-3	60"	BR/WH

Use the identification panels shown below in a three symbol and four symbol configuration. Although there are situations where four symbols may be needed, this is not recommended for general application. Identification signs with one symbol and two symbols are shown on the preceding page. The panel formats for preparing one-, two-, three-, and four-symbol signs are shown on page 8-5.

M is one-tenth the symbol size. Appropriate symbol sizes can be determined from the chart on page 8-14.

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSID-3	.5"	17"x6"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-3	.75"	25.5"x9"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-3	1"	34"x12"	4"x4"	HDO-3/ALU-3	36" - 60"	BR/WH
RSID-3	1.5"	51"x18"	4"x4"	HDO-3/ALU-3	60"	BR/WH
RSID-3	2"	68"x24"	4"x4"	HDO-3/ALU-3	60"	BR/WH

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSID-4	.5"	11.5"x11.5"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-4	.75"	17.25"x17.25"	4"x4"	HDO-5/HDO-6/ALU-6	36" - 60"	BR/WH
RSID-4	1"	23"x23"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
RSID-4	1.5"	34.5"x34.5"	4"x4"	HDO-3/ALU-3	60"	BR/WH
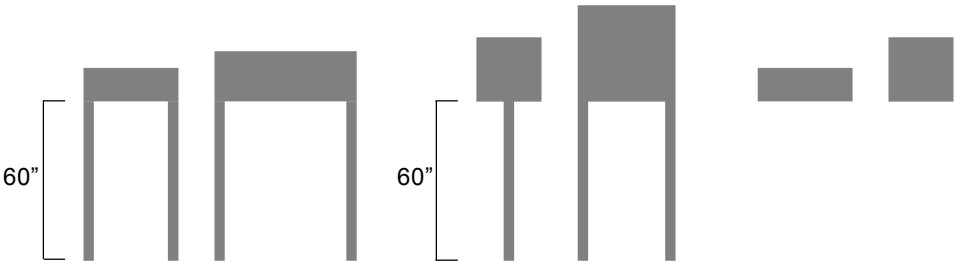
The panel format for symbol signs has been standardized to ensure readability and maintain visual consistency. These symbols have been designed for use without a verbal description. In special cases where text is required, use the grid on page 8-6.

An individual facility within a project can be identified with a symbol sign or with a Secondary Identification sign. If the

facility does not have a name (e.g., boat launch ramp or ranger station), a symbol sign is appropriate. If the facility has a name (e.g., Mushroom Picnic Area or Woodrow Wilson Amphitheater), it must use the Secondary Identification sign.

The illustrations below show the layout of individual and ganged symbol sign panels. The relationships of symbol, outline, and margin remain constant

regardless of overall panel size. The chart provided on page 8-14 specifies the correct symbol size for each sign placement location.

The symbol sign and outline border are always placed on a square field in the proportions shown in this illustration.

The margin from the symbol outline to the edge of the sign panel is equal to M.

For safety, place a radius on the corners of all symbol sign panels that use a single, ground-mounted post. The radius should be .1875" for HDO signs and 1" for ALU signs.

Two symbols

Three symbols

Four symbols

River Trail
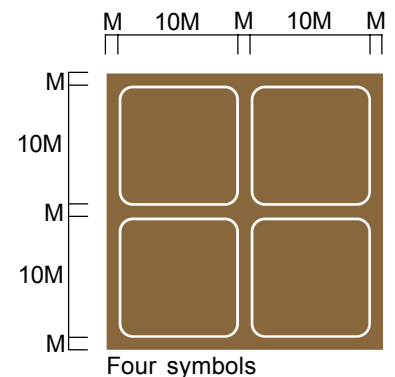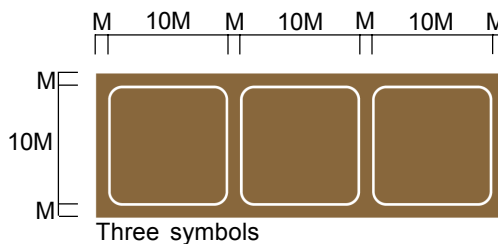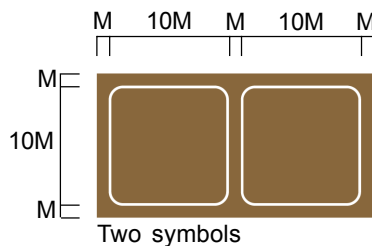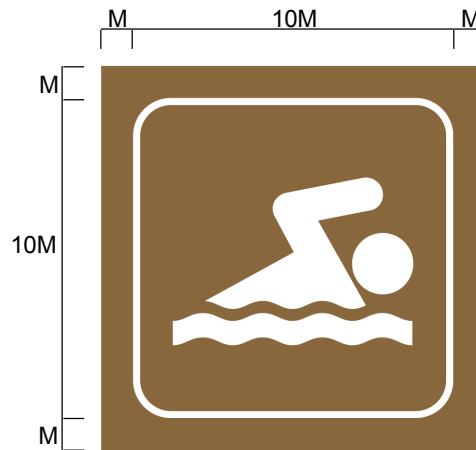
Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSID	.5"	6"x7.5"	4"x4"	HDO-5,ALU-6/ALU-6	30" - 60"	BR/WH
RSID	.75"	9"x11.25"	4"x4"	HDO-5/ALU-5	30" - 60"	BR/WH
RSID	1"	12"x15"	4"x4"	HDO-5/ALU-6	30" - 60"	BR/WH
RSID	1.5"	18"x22.5"	4"x4"	HDO-5/ALU-5	30" - 60"	BR/WH

Bike Trail 7.5 Miles

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
RSID	.5"	6"x8.25"	4"x4"	HDO-5,ALU-6/ALU-6	30" - 60"	BR/WH
RSID	.75"	9"x12.375"	4"x4"	HDO-5/ALU-5	30" - 60"	BR/WH
RSID	1"	12"x16.5"	4"x4"	HDO-5/ALU-6	30" - 60"	BR/WH
RSID	1.5"	18"x24.75"	4"x4"	HDO-5/ALU-5	30" - 60"	BR/WH

A special panel format is provided to identify activities or accommodations that are accessible to disabled persons. The system incorporates the national recreation symbol version of the international Symbol of Access. The panel format with the positive Symbol of Access has been standardized to ensure readability and maintain visual consistency. The illustration below shows the layout of a sign panel which is based on M. Refer to the matrix below to determine the size of the Symbol of Access for each value of M. The relationships of the Symbol of Access to the positive symbol are the same, regardless of size of panel used.

The Symbol of Access is sized to equal one-half of the size of the symbol and is vertically centered in the panel as shown below. This proportional relationship ensures that both symbols are easily viewed from the same distance.

Signs placed for disabled viewers should be placed for ease of view for a person approaching a service or accommodation.

The Symbol of Access can be used with any positive Corps Recreation Symbol sign. The most common applications will be with the following symbols: picnic table, campsite, men's room, women's room, restroom, parking, point of interest, and restaurant.

Signs using the Symbol of Access may use a Corps Brown (BR) or Safety Blue (SB) background.

The margin from the symbol outline to the edge of the sign panel is equal to M.

For safety, place a radius on the corners of all symbol sign panels that use a single, ground-mounted post. The radius should be .1875" for HDO signs and 1" for ALU signs.
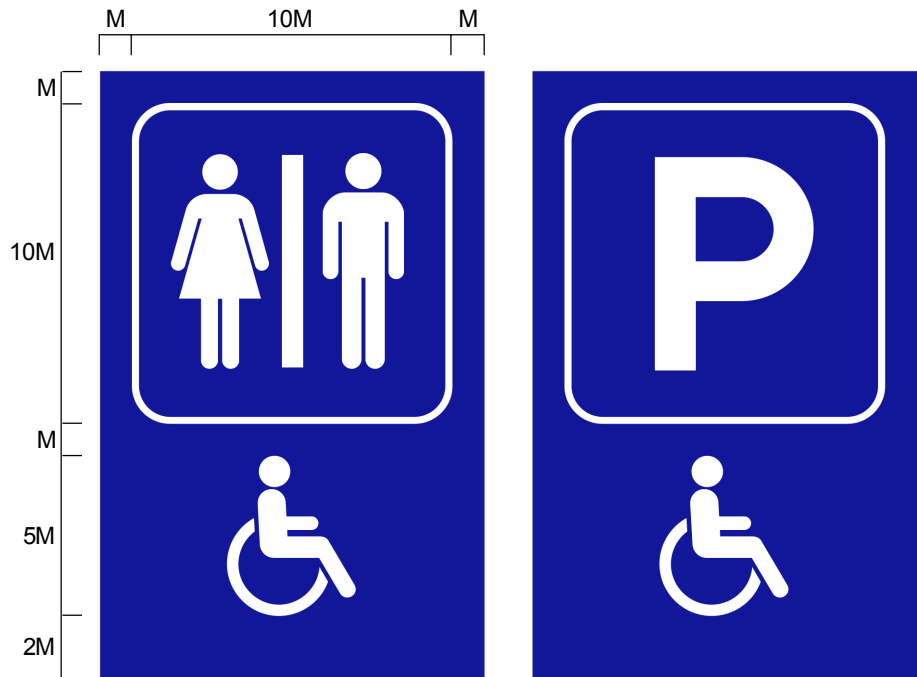
Use the calculations provided in the adjacent matrix to properly size the Symbol of Access.

Size: Sign Panel	M	Size: Symbol of Access
6"x9.5"	.5"	2.5"
9"x14.25"	.75"	3.75"
12"x19"	1"	5"
18"x28.5"	1.5"	7.5"

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
AC-000	.5"	6"x9.5"	4"x4"	HDO-5,HDO-6/ALU-6	30" - 60"	SB/WH
AC-000	.75"	9"x14.25"	4"x4"	HDO-5/ALU-5	30" - 60"	SB/WH
AC-000	1"	12"x19"	4"x4"	HDO-5/ALU-6	30" - 60"	SB/WH
AC-000	1.5"	18"x28.5"	4"x4"	HDO-5/ALU-5	30" - 60"	SB/WH

Two additional panel formats are provided on this and the following page to illustrate the use of text on signs when identifying activities or accommodations that are accessible to disabled persons.

Use the calculations provided in the adjacent matrix to properly size the Symbol of Access.

Size: Sign Panel	M	Size: Symbol of Access
6"x10.125"	.5"	2.5"
9"x15.1875"	.75"	3.75"
12"x20.25"	1"	5"
18"x30.375"	1.5"	7.5"

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
AC-000	.5"	6"x10.125"	4"x4"	HDO-5,ALU-6/ALU-6	30" - 60"	SB/WH
AC-000	.75"	9"x15.1875"	4"x4"	HDO-5/ALU-5	30" - 60"	SB/WH
AC-000	1"	12"x20.25"	4"x4"	HDO-5/ALU-6	30" - 60"	SB/WH
AC-000	1.5"	18"x30.375"	4"x4"	HDO-5/ALU-5	30" - 60"	SB/WH
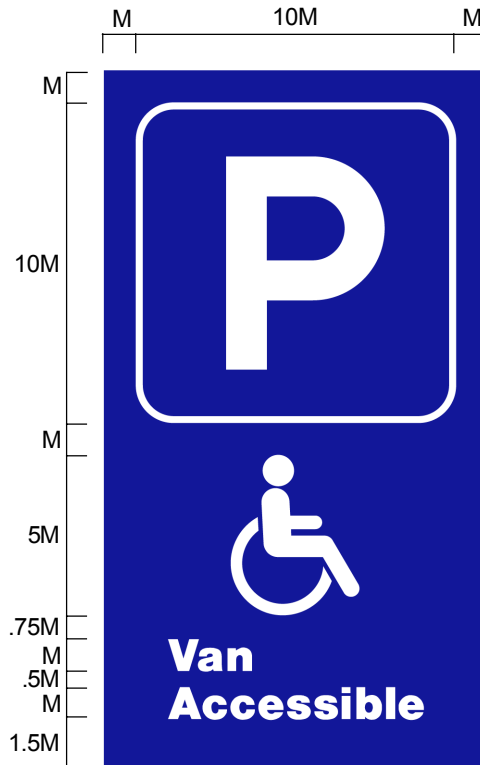
Use the calculations provided in the adjacent matrix to properly size the Symbol of Access.

Size: Sign Panel	M	Size: Symbol of Access
6"x10.875"	.5"	2.5"
9"x16.3125"	.75"	3.75"
12"x21.75"	1"	5"
18"x32.625"	1.5"	7.5"

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
AC-000	.5"	6"x10.875"	4"x4"	HDO-5,ALU-6/ALU-6	30" - 60"	SB/WH
AC-000	.75"	9"x16.3125"	4"x4"	HDO-5/ALU-5	30" - 60"	SB/WH
AC-000	1"	12"x21.75"	4"x4"	HDO-5/ALU-6	30" - 60"	SB/WH
AC-000	1.5"	18"x32.625"	4"x4"	HDO-5/ALU-5	30" - 60"	SB/WH

Within the boundaries of a Corps project, the use of symbols on directional signs is encouraged. The symbols displayed on pages 8-17 to 8-27 contain almost all of the possible destinations. If no symbol exists for a particular destination or piece of information, a worded sign must be used. See page 8-13 if special circumstances require text on a symbol directional sign.

Symbols may be used singly, or grouped two, three or four to a sign. The illustrations below and on the next page show the layouts of these signs. Directional Symbol signs with more than one arrow are not used. A separate sign is used for each symbol or symbol group requiring a different arrow.

All arrows are centered vertically and horizontally in the panel below the symbols as shown.

The sign panels are made of retroreflective sheeting applied to HDO plywood or aluminum. The symbol is cut out of white sheeting, using a thermal die or a computer-aided cutting system, and applied to the base. The background color is Corps Brown; the symbol, outline, and arrow are white.

M is one-tenth the symbol size. Appropriate symbol sizes can be determined from the chart on page 8-14.

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DRSS-1	.5"	6"x9.5"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
DRSS-1	.75"	9"x14.25"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
DRSS-1	1"	12"x19"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
DRSS-1	1.5"	18"x28.5"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-1	2"	24"x38"	4"x4"	HDO-5/ALU-5	60"	BR/WH
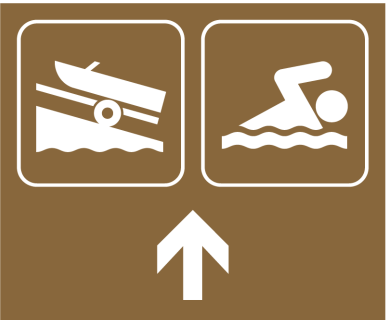
Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DRSS-2	.5"	11.5"x9.5"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
DRSS-2	.75"	17.25"x14.25"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
DRSS-2	1"	23"x19"	4"x4"	HDO-5/ALU-5	36" - 60"	BR/WH
DRSS-2	1.5"	34.5"x28.5"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-2	2"	46"x38"	4"x4"	HDO-3/ALU-3	60"	BR/WH

60"

60"
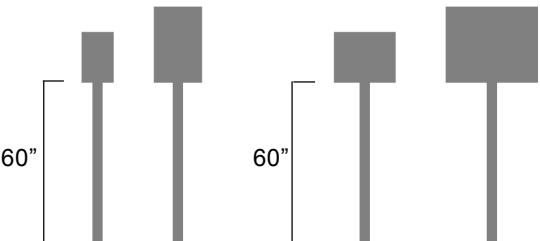
Shown below are directional signs with arrows in a grouping of three and four symbols. Directional signs with one symbol and two symbols are shown on the preceding page. The sign panel format for preparing directional signs with arrows is shown on page 8-12.

M is one-tenth the symbol size. Appropriate symbol sizes can be determined from the chart on page 8-14.

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DRSS-3	.5"	17"x9.5"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-3	.75"	25.5"x14.25"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-3	1"	34"x19"	4"x4"	HDO-3/ALU-3	60"	BR/WH
DRSS-3	1.5"	51"x28.5"	4"x4"	HDO-3/ALU-3	60"	BR/WH
DRSS-3	2"	68"x38"	4"x4"	HDO-3/ALU-3	60"	BR/WH

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DRSS-4	.5"	11.5"x15"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-4	.75"	17.25"x22.5"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-4	1"	23"x30"	4"x4"	HDO-5/ALU-5	60"	BR/WH
DRSS-4	1.5"	34.5"x45"	4"x4"	HDO-3/ALU-3	60"	BR/WH
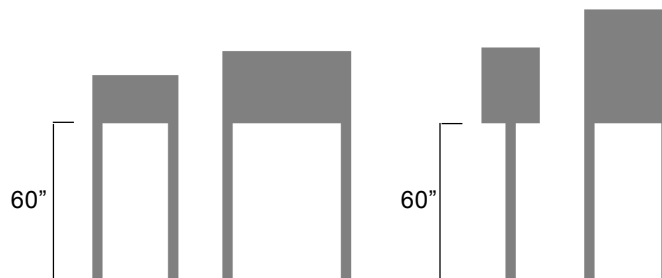
The panel format of directional signs with symbols has been standardized to ensure readability and maintain visual consistency. The illustration below shows the elements of a symbol directional panel. All dimensions are based on the size of the margin, M. The relationships shown are the same, regardless of which symbol sizes are used.

When placing two or more symbols on a panel, the border area between symbols should be equal to the top and side borders of the assembly. This directional panel utilizes a Helvetica Bold arrow that is centered both vertically and horizontally on the panel as shown. Place only one directional arrow on a sign panel. Use a separate sign panel for each different direction.

Layout grid for symbol directional signs

Arrow shown for placement only
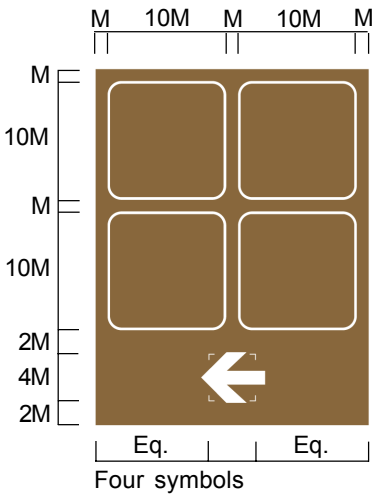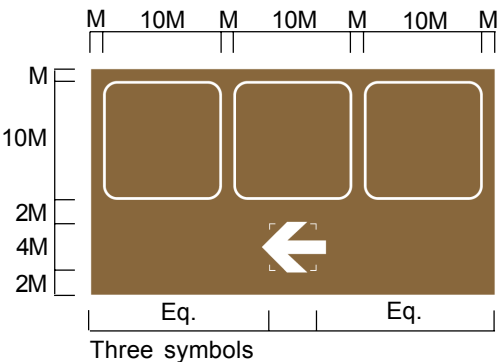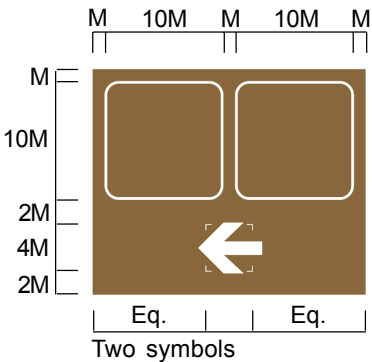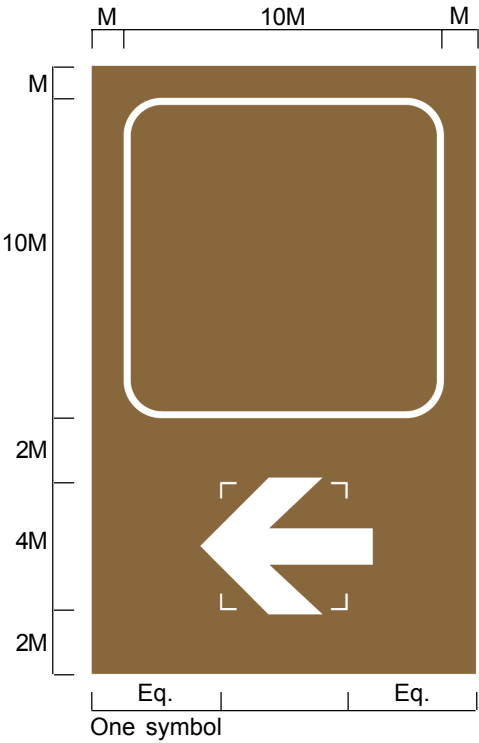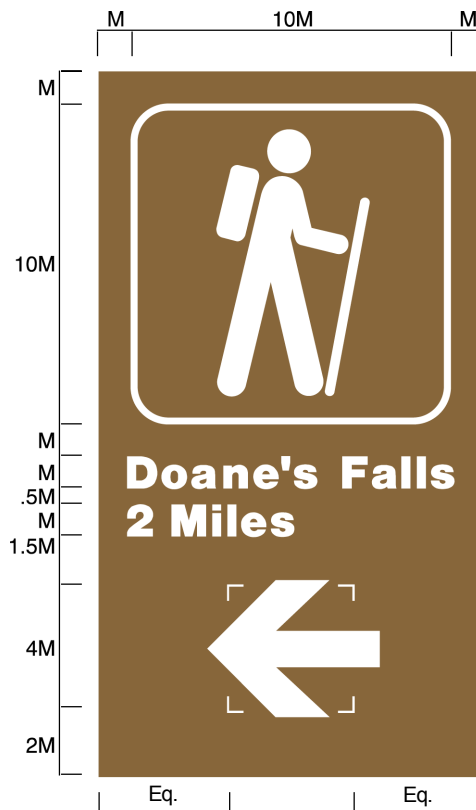
One symbol

Two symbols

Three symbols

Four symbols

Sign Type	Margin Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
DRSS-1	.5"	6"x11"	4"x4"	HDO-5,ALU-6/ALU-6	30" - 60"	BR/WH
DRSS-1	.75"	9"x16.5"	4"x4"	HDO-5/ALU-5	30" - 60"	BR/WH
DRSS-1	1"	12"x22"	4"x4"	HDO-5/ALU-6	30" - 60"	BR/WH
DRSS-1	1.5"	18"x33"	4"x4"	HDO-5/ALU-5	30" - 60"	BR/WH

Symbols viewed from vehicular traffic are sized to accomodate the approach speed. Symbols placed on trails, structures, and facilities are sized based on the distance from which they are viewed. Refer to the chart below for the symbol sizes appropriate for different vehicular approach speeds and for pedestrians.

In locating Directional Symbol signs, the most important factor to take into account is reaction time. On faster roads (over 45 mph), the 20" symbol sign should be placed at a minimum of 350 feet in advance of an intersection. For slower roads, the 15" or 10" symbol sign should be placed at 225 feet in advance of the intersection.

On pedestrian paths, visibility, not reaction time, is the major consideration for symbol placement and sizing.
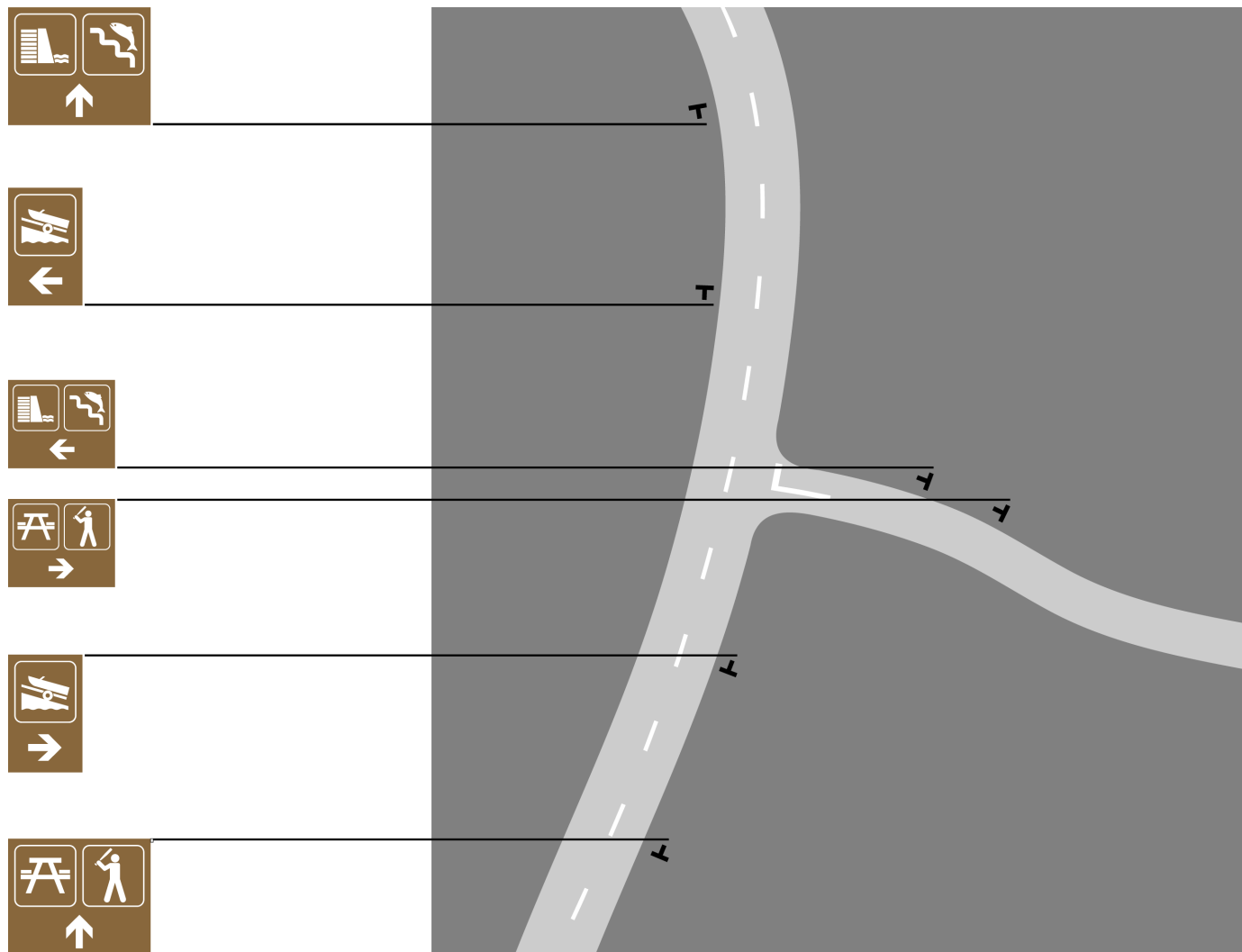
For placement on conventional roads, the symbols should be sized in accordance with the Federal Highway Administration's functional classification of roadways as shown.

Symbols placed on trails, structures, and facilities should be sized for their appropriateness to the surroundings using the guidelines provided in the adjacent matrix.

Symbol Size	Placement Location
20"x20"	Roadway: more than 45 mph
15"x15"	Roadway: 30 mph to 45 mph
15"x15" / 10"x10"*	Roadway: less than 30 mph
10"x10" / 7.5"x7.5"**	Trails: Pedestrian, equestrian, bicycle, off-road vehicle, motorized vehicles
5"x5" or 7.5"x7.5"	Structures, facilities, and bollards; interior and exterior

*15" x 15" when used singly or in pairs, 10" x 10" when used in assembly of three or more.

**10" x 10" when used singly or in pairs, 7.5" x 7.5" when used in assembly of three or more.

For easy reference, the symbols are listed numerically and alphabetically (page 8-16). Where a symbol is used in the Prohibition format, its number is also provided.

	PS-001	Firearms	RS-061	PS-061	Swimming
RS-002	PS-002	Smoking	RS-062	PS-062	Diving
RS-003	PS-003	Cars, Automobiles	RS-063	PS-063	Fishing Area
RS-004	PS-004	Trucks	RS-064	PS-064	Horse Trail
RS-005	PS-005	Tunnel	RS-065	PS-065	Motor Bike Trail
RS-006		Lookout Tower	RS-066	PS-066	Bicycle Trail
RS-007		Lighthouse	RS-067	PS-067	Off-Road Vehicle Trail
RS-008		Falling Rocks	RS-068		Hiking Trail
RS-009		Dam	RS-069		Playground
RS-010		Fish Hatchery			
			RS-070		Amphitheater
RS-011		Deer Viewing Area	RS-071		Tramway
RS-012		Bear Viewing Area	RS-072	PS-072	Hunting
RS-013	PS-013	Drinking Water	RS-073		Stable
RS-014		Information	RS-076		Wildlife/Nature Viewing
RS-015		Ranger Station	RS-077		Winter Recreation Area
RS-016	PS-016	Pedestrian Crossing	RS-078		Snowshoeing
RS-017	PS-017	Pets on Leash	RS-079		Canoeing
RS-018		Lodging			
RS-019		Restaurant/Food Service	RS-080		Point of Interest
			RS-081	PS-081	Technical Rock Climbing
RS-020		Grocery Store	RS-082	PS-082	Climbing
RS-021		Men's Restroom	RS-083	PS-083	Rock Collecting
RS-022		Restrooms	RS-084		Spelunking/Caving
RS-023		Women's Restroom	RS-085		Laundry/Laundromat
RS-024		First Aid	RS-086		Litter Receptacle
RS-025		Telephone	RS-087		Tour Boat
RS-026		Post Office	RS-088	PS-088	Wading
RS-027		Mechanic	RS-089		Fish Ladder
RS-028		Symbol of Access			
RS-029		Airport	RS-090		Fire Extinguisher
			RS-091		Trash Dumpster
RS-030		Lockers	RS-092	PS-092	Ice Fishing
RS-031		Bus Stop	RS-093	PS-093	Fish Cleaning
RS-032		Gas Station	RS-094		Life Jackets
RS-033		Vehicle Ferry	RS-095	PS-095	All-Terrain Vehicle Trail
RS-034	PS-034	Parking	RS-096		Baseball
RS-035		Showers	RS-097		Exercise Fitness Area
RS-036		Viewing Area	RS-098	PS-098	Skateboard
RS-037		Sleeping Shelter	RS-099		Rattlesnakes
RS-038	PS-038	Campground			
RS-039		Picnic Shelter		PS-100	Alcoholic Beverages
				PS-101	Cans or Bottles
RS-040	PS-040	Trailer Sites	RS-102	PS-102	Snack Bar/Food or
RS-041		Trailer Sanitary Station			Drinks
RS-042	PS-042	Campfires		PS-103	Radios
RS-043		Trail Shelter	RS-104	PS-104	Recreation Vehicles
RS-044		Picnic Site	RS-105		Ski Lift/Chair Lift
RS-045		Kennel	RS-106		Seal/Sea Lion Viewing
RS-046		Cross Country Skiing	RS-107		Whale Viewing
RS-047	PS-047	Downhill Skiing	RS-108		Wind Surfing
RS-048	PS-048	Ski Jumping	RS-109		Theater
RS-049	PS-049	Sledding			
			RS-110		Library
RS-050	PS-050	Ice Skating	RS-111	PS-111	Strollers
RS-052	PS-052	Snowmobiling	RS-112	PS-112	Wood Cutting
RS-053		Marina			
RS-054	PS-054	Boat Launch Ramp	RS-121	PS-121	Personal Watercraft
RS-055	PS-055	Motorboating	RS-122		Disc Golf
RS-056		Sailing	RS-123		Dog Sledding
RS-057		Rowboating		PS-124	Fireworks
RS-058	PS-058	Water-skiing	RS-125	PS-125	Inline Skating
RS-059	PS-059	Surfing	RS-126	PS-126	Golf Course
				PS-127	Digging for Artifacts
RS-060	PS-060	Scuba Diving	RS-128		Life Ring

Symbols are listed below in alphabetical order. If a symbol is also available in the prohibition format, the appropriate number is listed after the symbol name (PS-000). In cases where one symbol could be described by different names, all names are listed (for instance, "baby carriages" is also listed as "strollers").

Name	RS	PS
Airport	RS-029	
Alcoholic Beverage		PS-100
All -Terrain Vehicle Trail	RS-095	PS-095
Amphitheater	RS-070	
Automobiles	RS-003	PS-003
Baby Carriages	RS-111	
Baseball	RS-096	
Bear Viewing Area	RS-012	
Bicycle Trail	RS-066	PS-066
Boat Launch Ramp	RS-054	PS-054
Boat Marina	RS-053	
Boat Tour	RS-087	
Bottles or Cans		PS-101
Bus Stop	RS-031	
Campfires	RS-042	PS-042
Campground	RS-038	PS-038
Cans or Bottles		PS-101
Canoeing	RS-079	
Cars, Automobiles	RS-003	PS-003
Caving, Spelunking	RS-084	
Chair Lift/Ski Lift	RS-105	
Cleaning, Fish	RS-093	PS-093
Climbing	RS-082	PS-082
Collecting, Rock	RS-083	PS-083
Cross Country Skiing	RS-046	
Cross Walk	RS-016	PS-016
Dam	RS-009	
Deer Viewing	RS-011	
Disc Golf	RS-122	
Digging, Artifacts		PS-127
Diving	RS-062	PS-062
Diving, Scuba	RS-060	PS-060
Dogs, Pets on Leash	RS-017	PS-017
Dog Sledding	RS-123	
Downhill Skiing	RS-047	PS-047
Drinking Water	RS-013	PS-013
Dumpster, Trash	RS-091	
Environmental Study Area	RS-076	
Exercise Fitness Area	RS-097	
Falling Rocks	RS-008	
Ferry, Vehicle	RS-033	
Fire Extinguisher	RS-090	
Firearms, Guns		PS-001
Fireworks		PS-124
First Aid	RS-024	
Fish Cleaning	RS-093	PS-093
Fish Hatchery	RS-010	
Fish Ladder	RS-089	
Fishing Area	RS-063	PS-063
Fishing, Ice	RS-092	PS-092
Fitness Area, Exercise	RS-097	
Food Service/Restaurant	RS-019	
Fuel, Gas Station	RS-032	
Garage/Mechanic	RS-027	
Gas Station	RS-032	
Golf Course	RS-126	PS-126
Grocery Store	RS-020	
Handicapped Access	RS-028	
Hatchery, Fish	RS-010	
Hiking Trail	RS-068	
Horse Stable	RS-073	
Horse Trail	RS-064	PS-064
Hotel, Lodging	RS-018	
Hunting	RS-072	PS-072
Ice Fishing	RS-092	PS-092
Ice Skating	RS-050	PS-050
Information	RS-014	
Inline Skating	RS-125	PS-125
Jeep, Off Road Vehicle Trail	RS-067	PS-067
Kennel/Pet	RS-045	
Ladder, Fish	RS-089	
Launching Ramp	RS-054	PS-054
Laundry/Laundromat	RS-085	
Library	RS-110	
Life Jackets	RS-094	
Life Ring	RS-128	
Lighthouse	RS-007	
Litter Receptacle	RS-086	
Lockers/Storage	RS-030	
Lodging	RS-018	
Lookout Tower	RS-006	
Marina/Boat	RS-053	
Mechanic/Garage	RS-027	
Men's Restroom	RS-021	
Moorage/Marina	RS-053	
Motel/Lodging	RS-018	
Motor Bike Trail	RS-065	PS-065
Motorboating	RS-055	PS-055
Off-Road Vehicle Trail	RS-067	PS-067
Overlook/Viewing Area	RS-036	
Parking	RS-034	PS-034
Pedestrian Crossing	RS-016	PS-016
Pets on Leash	RS-017	PS-017
Pet Storage/Kennel	RS-045	
Personal Watercraft	RS-121	PS-121
Picnic Shelter	RS-039	
Picnic Site	RS-044	
Playground	RS-069	
Point of Interest	RS-080	
Post Office	RS-026	
Power Boats	RS-055	PS-055
Radios		PS-103
Ramp, Launching	RS-054	PS-054
Ranger Station	RS-015	
Rattlesnakes	RS-099	
Receptacle, Litter	RS-086	
Receptacle, Trash Dumpster	RS-091	
Recreation Vehicle Sites	RS-104	PS-104
Recreation, Winter	RS-077	
Restaurant/Food Service	RS-019	
Restroom, Men's	RS-021	
Restroom, Women's	RS-023	
Restrooms	RS-022	
Rock Climbing, Technical	RS-081	PS-081
Rock Collecting	RS-083	PS-083
Rocks, Falling	RS-008	
Rowboating	RS-057	
Sail Boarding, Wind Surfing	RS-108	
Sailing	RS-056	
Sanitary Station, Trailer	RS-041	
Scuba Diving	RS-060	PS-060
Sea Lion/Seal Viewing	RS-106	
Shelter, Picnic	RS-039	
Shelter, Sleeping	RS-037	
Shelter, Trail	RS-043	
Showers	RS-035	
Site, Picnic	RS-044	
Site, Trailer	RS-040	PS-040
Skateboard	RS-098	PS-098
Skating, Ice	RS-050	PS-050
Ski Jumping	RS-048	PS-048
Ski Lift/Chair Lift	RS-105	
Skiing, Cross Country	RS-046	
Skiing, Downhill	RS-047	PS-047
Sledding	RS-049	PS-049
Sleeping Shelter	RS-037	
Smoking	RS-002	PS-002
Snakes	RS-099	
Snack Bar	RS-102	PS-102
Snowshoeing	RS-078	
Snowmobiling	RS-052	PS-052
Spelunking/Caving	RS-084	
Stable	RS-073	
Storage, Lockers	RS-030	
Store, Grocery	RS-020	
Strollers	RS-111	PS-111
Surfing	RS-059	PS-059
Surfing, Wind	RS-108	
Swimming	RS-061	PS-061
Technical Rock Climbing	RS-081	PS-081
Telephone	RS-025	
Theater	RS-109	
Tour Boat	RS-087	
Tour, Bus	RS-031	
Tower, Lookout	RS-006	
Trail Shelter	RS-043	
Trail, All-Terrain Vehicle	RS-095	PS-095
Trail, Bicycle	RS-066	PS-066
Trail, Hiking	RS-068	
Trail, Horse	RS-064	PS-064
Trail, Motor Bike	RS-065	PS-065
Trail, Off-Road Vehicle	RS-067	PS-067
Trailer Sanitary Station	RS-041	
Trailer Sites	RS-040	
Tramway	RS-071	
Trash Dumpster	RS-091	
Trucks	RS-004	PS-004
Tunnel	RS-005	
Vehicle Ferry	RS-033	
Viewing Area/Overlook	RS-036	
Viewing Area, Bears	RS-012	
Viewing, Deer	RS-011	
Viewing, Seals/Sea Lions	RS-106	
Viewing, Whales	RS-107	
Viewing, Wildlife/Nature	RS-076	
Wading	RS-088	PS-088
Water, Drinking	RS-013	PS-013
Water-skiing	RS-058	PS-058
Whale Viewing	RS-107	
Wildlife Viewing Area	RS-076	
Wind Surfing	RS-108	
Winter Recreation Area	RS-077	
Women's Restroom	RS-023	
Wood Cutting	RS-112	PS-112

Shown below and on the following pages are the Recreation Symbol signs available for use on Corps projects. They are grouped into six divisions: General, Accommodations, Services, Land Recreation, Water Recreation and Winter Recreation.

The symbols are used exactly as shown: white image and holding line (outline) on a Corps Brown background (page 4-5). Do not use the symbol in reverse (brown image on a white background). To use a symbol as a prohibition, refer to pages 8-28 to 8-39.

General

Smoking RS-002		Falling Rocks RS-008	
Automobiles RS-003		Dam RS-009	
Trucks RS-004		Deer Viewing Area RS-011	
Tunnel RS-005		Bear Viewing Area RS-012	
Lookout Tower RS-006		Pedestrian Crossing RS-016	
Lighthouse RS-007		Pets on Leash Permitted RS-017	

General (cont'd)

Bus Stop
RS-031

Snack Bar
RS-102

Viewing Area
RS-036

Strollers
RS-111

Campfires Permitted
RS-042

Point of Interest
RS-080

Fire Extinguisher
RS-090

Rattlesnake
RS-099

Accommodations

Lodging
RS-018

Parking
RS-034

Restaurant
(Food Service)
RS-019

Sleeping Shelter
RS-037

Men's Restroom
RS-021

Campground
RS-038

Restrooms
RS-022

Trailer Sites
RS-040

Women's Restroom
RS-023

Recreation Vehicle
Sites
RS-104

Handicapped
RS-028
(International
Symbol of Access)

Services

Drinking Water RS-013		Post Office RS-026	
Information RS-014		Mechanic RS-027	
Ranger Station RS-015		Airport RS-029	
Grocery Store RS-020		Lockers RS-030	
First Aid RS-024		Gas Station RS-032	
Telephone RS-025		Vehicle Ferry RS-033	
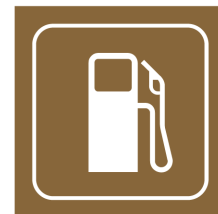
Services (cont'd)

Showers
RS-035

Tramway
RS-071
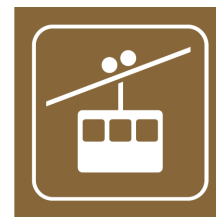
Picnic Shelter
RS-039

Stable
RS-073

Trailer Sanitary
Station
RS-041
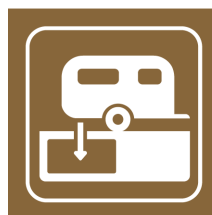
Laundry
RS-085

Trail Shelter
RS-043
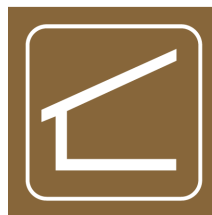
Litter Receptacle
RS-086

Picnic Site
RS-044

Trash Dumpster
RS-091

Kennel
RS-045

Theatre
RS-109

Services (cont'd)

Library
RS-110

Wood Cutting
RS-112

Land Recreation

Horse Trail
RS-064

Amphitheater
RS-070

Motor Bike Trail
RS-065

Hunting
RS-072

Bicycle Trail
RS-066

Wildlife/Nature
Viewing
RS-076

Off-Road Vehicle
Trail
RS-067

Technical Rock
Climbing
RS-081

Hiking Trail
RS-068

Rock Climbing
RS-082

Playground
RS-069

Rock Collecting
RS-083

Land Recreation (cont'd)

Spelunking
RS-084

Inline Skating
RS-125

All-Terrain Vehicle
Trail
RS-095

Golf Course
RS-126

Baseball
RS-096

Exercise Fitness
Area
RS-097

Skateboard
RS-098

Disc Golf
RS-122

Water Recreation

Fish Hatchery
RS-010

Water-Skiing
RS-058

Marina
RS-053

Surfing
RS-059

Boat Ramp
RS-054

Scuba Diving
RS-060

Motorboating
RS-055

Swimming
RS-061

Sailing
RS-056

Diving
RS-062

Rowboating
RS-057

Fishing
RS-063

Water Recreation (cont'd)

Canoeing
RS-079

Seal/Sea Lion
Viewing
RS-106

Tour Boat
RS-087

Whale Viewing
RS-107

Wading
RS-088

Wind Surfing
RS-108

Fish Ladder
RS-089

Personal Watercraft
RS-121

Fish Cleaning
RS-093

Life Ring
RS-128

Life Jackets
RS-094

Winter Recreation

Cross Country Skiing
RS-046

Winter Recreation Area
RS-077

Downhill Skiing
RS-047

Snowshoeing
RS-078

Ski Jumping
RS-048

Ice Fishing
RS-092
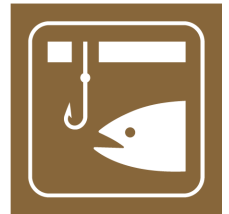
Sledding
RS-049

Ski Lift/Chair Lift
RS-105

Ice Skating
RS-050

Dog Sledding
RS-123

Snowmobiling
RS-052

Prohibition Symbol sign panels are used to identify specific restrictions. They are placed near the area where the rule is applicable.

Prohibitions will always be used with an explanatory message. This message reinforces the impact of the sign and clarifies its meaning for enforcement

purposes. The typography is Helvetica Bold, initial capital letters only, following Corps typographic standards.

Shown below are illustrations of prohibition sign use. Prohibitions are placed individually on panels as shown. Do not place more than one prohibition symbol on a sign panel.

To order Prohibition Symbol signs, the sign type code uses a combination of the prefix "PS" plus the three number code shown next to each symbol on pages 8-31 to 8-39. For example, "No Smoking" is PS-002; "No Scuba Diving" is PS-060.

Panel heights vary according to grid used. Refer to Grid A on page 8-29, and Grids B and C on page 8-30, for specific panel heights.

All panel sizes use the single post mounting configuration.
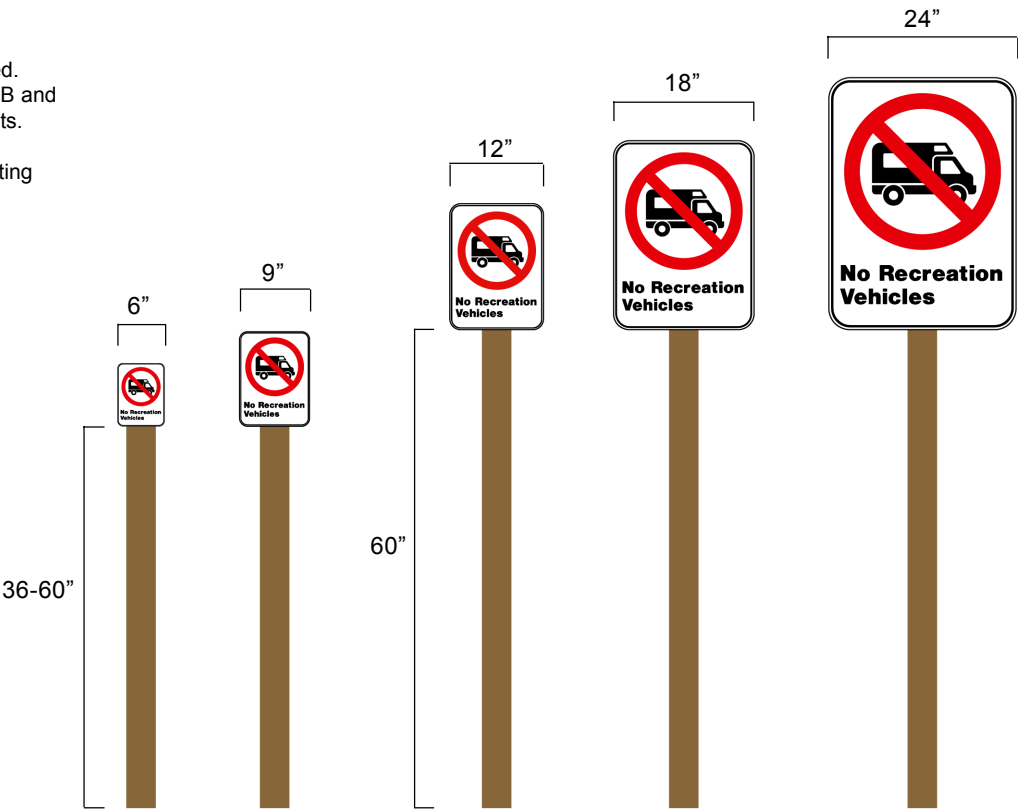
The panel format of prohibition symbols has been standardized to ensure readability and maintain visual consistency. Because the length and configuration of the legends vary, there are three grid formats to accommodate the type. In all three grid formats, the relationship of the symbol, circle, and slash to the panel is the same. The difference is in the number and placement of legend lines and the corresponding panel heights.

Grid Format A, for one-line legends, is shown below. Two-line legends use either Grid Format B or C shown on page 8-30.

Grid Format A: Single-line legend.
Legend is centered in panel.

Matrix: Grid Format A

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PS-000	.5"	6"x7.33"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	.75"	9"x11"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	1"	12"x14.66"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	1.5"	18"x22"	4"x4"	HDO-5/ALU-5	60"	WH/BK-RD
PS-000	2"	24"x29.32"	4"x4"	HDO-5/ALU-5	60"	WH/BK-RD

The sign panels are made of reflective sheeting applied to HDO plywood or aluminum. The images and type most often will be screen-printed on the reflective sheeting. In some cases, the type, symbol, circle, and slash will be cut out of black and red sheeting, using a thermal die or a computer-aided cutting system, and applied to the base sheeting. The background color is white, the symbol and panel holding line are black, and the circle and slash are red (see page 4-5).

Regardless of the grid format used or legend size, the relationship of the type size to symbol size is always the same.

Grid formats B and C, for two-line legends, are shown below.

Grid Format B: Two-line legend. The two lines are aligned flush left, and then the longer line is centered on the panel.

Grid Format C: Two-line legend with the word "No" alone on the first line. The first legend line is closer to the circle than in Grid Format B, to compensate for the empty space after the word "No".

Matrix: Grid Format B

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PS-000	.5"	6"x8"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	.75"	9"x12.12"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	1"	12"x16.16"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	1.5"	18"x24.24"	4"x4"	HDO-5/ALU-5	60"	WH/BK-RD
PS-000	2"	24"x32.32"	4"x4"	HDO-5/ALU-5	60"	WH/BK-RD

Matrix: Grid Format C

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PS-000	.5"	6"x7.95"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	.75"	9"x11.93"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	1"	12"x15.91"	4"x4"	HDO-5/ALU-5	36" - 60"	WH/BK-RD
PS-000	1.5"	18"x23.865"	4"x4"	HDO-5/ALU-5	60"	WH/BK-RD
PS-000	2"	24"x31.82"	4"x4"	HDO-5/ALU-5	60"	WH/BK-RD

Shown below and on the following pages are prohibition symbols available for use on Corps projects. They are grouped into the same six categories as the symbols on pages 8-17 to 8-27: General, Accommodations, Services, Land Recreation, Water Recreation, and Winter Recreation.

These prohibitions are used exactly as shown: black image, white background, with a red circle and slash. Do not use the symbols in this display for reproduction purposes.

General

No Firearms
PS-001

No Pets
PS-017

No Smoking
PS-002

No Fires
PS-042

No Motor Vehicles
PS-003

No Alcoholic Beverages
PS-100

No Trucks
PS-004

No Bottles or Cans
PS-101

No Crossing
PS-016

No Food or Drinks
PS-102

General (cont'd)

No Radios
PS-103

No Radios

No Strollers
PS-111

No Strollers

No Fireworks
PS-124

No Fireworks

No Digging for
Artifacts
PS-127

Grid B modified. Add
1.5A to panel height
for each additional
line of text.

Optional Legend

No Digging or
Collecting Artifacts on
Tribal, State, or
Federal Land.

No Digging
or Collecting
Artifacts on
Federal Land

The No Digging symbol must be used with great caution and only after taking into account all of its pros and cons. It will not be used to identify any archeological area or used at any new archeological site or at sites that are unknown to the general public. It is to be used only as an information sign at the entrances to recreation areas, at the beginning of trail heads and other locations where the general public needs to be notified that this activity is not permitted. Interpretive panels and education programs are the best way of educating the public and addressing this issue.

Accommodations

No Parking
PS-034

Refer to Section 9 for
a complete display of
Parking and No
Parking signs.

No Parking

No Camping
PS-038

No Camping

No Recreation
Vehicles
PS-104

**No Recreation
Vehicles**

No Trailers
PS-040

No Trailers

Services

No Drinking
PS-013

No Wood Cutting
PS-112

Land Recreation

No Horses
PS-064

No Technical Rock
Climbing
PS-081

No Motor Bikes
PS-065

No Climbing
PS-082

No Bicycles
PS-066

No Rock Collecting
PS-083

No Off-Road
Vehicles
PS-067

No All-Terrain
Vehicles
PS-095

No Hunting
PS-072

No Skateboards
PS-098

Land Recreation (cont'd)

No Golfing
PS-126

No Inline Skating
PS-125

Water Recreation

No Boat Launching
PS-054

No Boat
Launching

No Swimming
PS-061

No Swimming

No Motorboats
PS-055

No
Motorboats

No Diving
PS-062

No Diving

No Water-Skiing
PS-058

No
Water-Skiing

No Fishing
PS-063

No Fishing

No Surfing
PS-059

No Surfing

No Wading
PS-088

No Wading

No Scuba Diving
PS-060

No
Scuba Diving

No Fish Cleaning
PS-093

No
Fish Cleaning

Water Recreation (cont'd)

No Personal
Watercraft
PS-121

Winter Recreation

No Downhill Skiing
PS-047

No Ski Jumping
PS-048

No Sledding
PS-049

No Skating
PS-050

No Snowmobiles
PS-052

No Ice Fishing
PS-092

To reduce the proliferation of signs in and around a Corps facility, a system of grouping prohibitions on a single sign, as shown below, has been developed. Each prohibition is contained on its own panel or slat. Two, three or four slats are grouped together into a single sign. Displays of the prohibition slats are shown on pages 8-43 to 8-46. A limited group of positive symbols may be used in conjunction with the prohibitions. A display of these symbols, along with the appropriate text, is shown on page 8-42. If a positive symbol slat is used, it is placed above any prohibition symbol slat.

This slat system sign is placed in a highly visible location to maximize the number of visitors who will read it. At a campground, this would be at the entrance station or at the entrance to a facility within the project. At a beach, it might be next to the path leading to the beach from the parking lot. The precise location will depend on the layout of a facility. It should not be placed where it needs to be read from a rapidly moving vehicle.

Sign Panel: Composed of two to four individual slats. Layout of each slat based on grid. Length of panel based on A.

Typography: All legends to be Helvetica Bold, initial capitals only, aligned flush left on the grid. Letter- and word-spacing to follow Corps standards in Section 4.

Color: Corps Brown background with white typography See color standards on page 4-5.

Post: Slats are mounted between the posts.

When ordering slats, specify the legend for each slat by name, as shown on pages 8-42 to 8-46, with each corresponding symbol designated by alphanumeric identifier (RS-000 or PS-000).

The slat sign system is designed for use with a minimum of two and a maximum of four slats. Place only the most important area regulations on this type of sign.

Individual replacement slats are ordered using sign type code (SLAT-1) with post assembly (HDO-9) deleted.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SLAT-0	3"	45"x10.5"	4"x4"	HDO-9	30"	BR/WH
SLAT-0	4"	60"x14"	4"x4"	HDO-9	30"	BR/WH
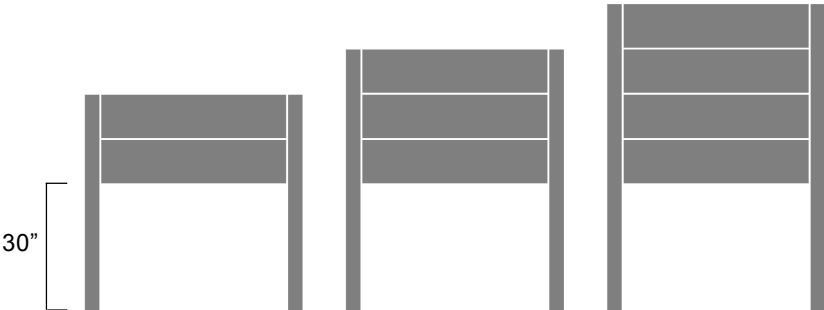
The layout of an individual slat is shown in the grid below. All dimensions are based on the size of the legend A. The relationship of the type to the symbol is the same, regardless of which of the two possible legend sizes are used. The circle and slash graphic is placed in a centered position within the square space with radius corners shown on the left of the panel. The black borders shown on individual Prohibition Symbol signs are deleted from Slat System signs.

When placing a positive symbol on a slat panel, the symbol is to be sized to the outside of and including the outline placed around the symbol.
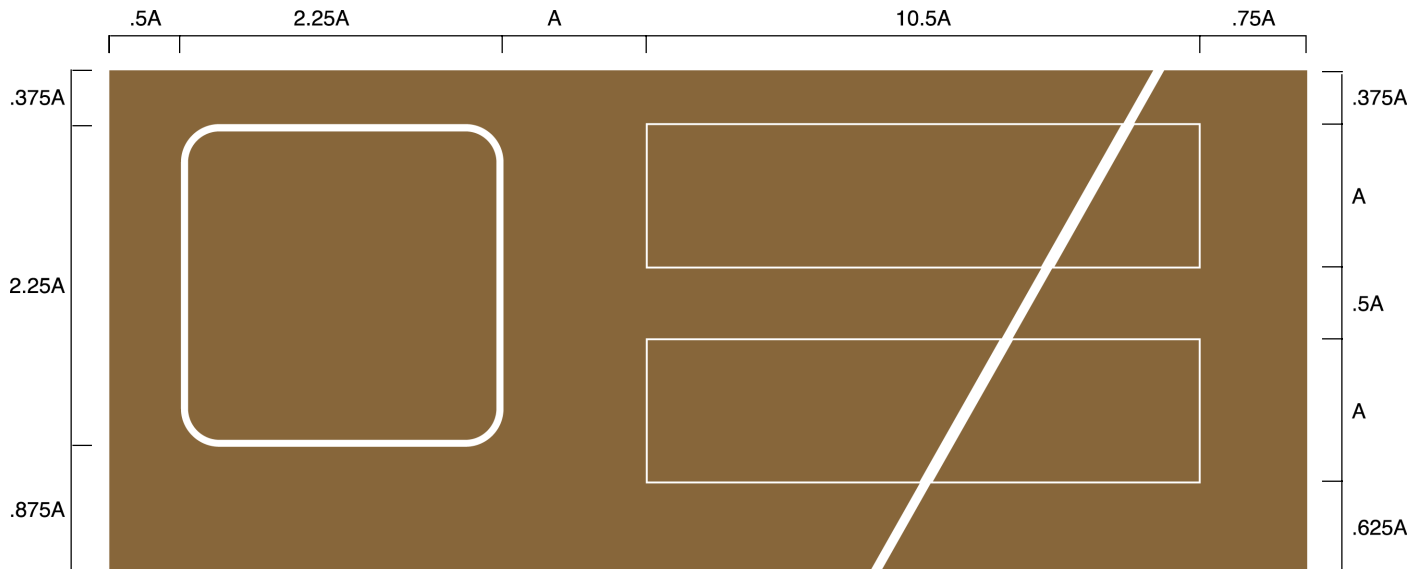
Preparing artwork for Prohibition Slats for those sign makers using Appendix F of the original Corps sign manual.

Step 1: Take the appropriate prohibition symbol from Appendix F and reproduce circle, slash, and image at 100%.
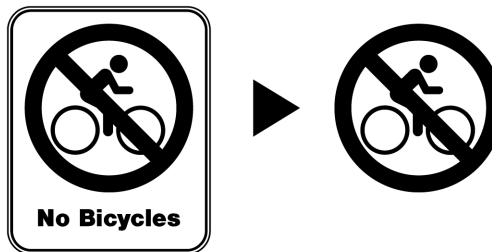
Step 2: Place circle, slash, and image in the Slat Sign Window, provided on page F.148. Easy alignment can be obtained by using a light box and placing the prohibition symbol on top of the non-reproducible blue circle and slash in the window.
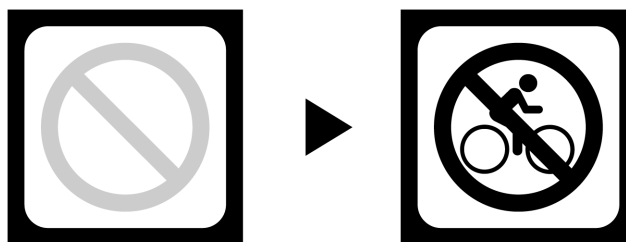
Step 3: Reproduce the composite artwork to the size needed, defined by your legend size (A). If A=3", the window dimension will be 6.75" (3" x 2.25A); when A=4", the window will be 9" (4" x 2.25A).

No Bicycles

Shown below are the positive legends available for use on the slats. The first three legends can only be used with the symbols shown. The next four legends can be used with more than one symbol; the options are listed along the left of the page.

USCG Approved Only
RS-094 (Life Jackets)

USCG Approved Only

Pets on Leash
RS-017

Pets on Leash

Quiet Hours 10pm - 6am
RS-038 (Campground)

Quiet Hours 10 pm - 6 am

Use Waste Receptacles (*)
RS-091 (Dumpster)
RS-086 (Litter Receptacle)

Use Waste Receptacles

On Paved Roads Only (*)
RS-003 (Automobiles)
RS-104 (Recreation Vehicles)
RS-065 (Motor Bikes)

On Paved Roads Only

On Roadways Only (*)
RS-003 (Automobiles)
RS-052 (Snowmobiles)
RS-065 (Motor Bikes)
RS-067 (Off-Road Vehicle)
RS-095 (All-Terrain Vehicle)

On Roadways Only

Designated Areas Only(*)
RS-002 (Smoking)
RS-017 (Pets on Leash)
RS-034 (Parking)
RS-038 (Campground)
RS-040 (Trailers)
RS-042 (Campfires Permitted)
RS-044 (Picnic Site)
RS-050 (Ice Skating)
RS-052 (Snowmobiles)
RS-058 (Water-Skiing)
RS-061 (Swimming)
RS-063 (Fishing)
RS-065 (Motor Bikes)
RS-067 (Off-Road Vehicle)
RS-072 (Hunting)
RS-095 (All-Terrain Vehicle)
RS-098 (Skateboards)
RS-104 (Recreation Vehicles)

Designated Areas Only

(*) Slats identified with asterisk (*) may be used with any of the symbols listed below the legend.

8-42

Shown below and on the following pages are the prohibitions and legends available for use on the slats. These prohibitions are to be used exactly as shown: Corps Brown panel background, white typography and symbol background, black symbol with a red circle and slash (see page 4-5). The slats shown below may be fabricated with a 3" legend (45" x 10.5") for viewing by pedestrians or slow moving vehicles or with a 4" legend (60" x 14"). The larger slat system sign is intended for placement at the entrance of a facility for viewing from entering vehicles.

No Motor Vehicles
PS-003

No Motor Vehicles

No Trucks
PS-004

No Trucks

No Recreation Vehicles
PS-104

No Recreation Vehicles

No Smoking
PS-002

No Smoking

No Bottles or Cans
PS-101

No Bottles or Cans

No Food or Drinks
PS-102

No Food or Drinks

No Alcoholic Beverages
PS-100

No Alcoholic Beverages

No Pets
PS-017

No Pets

No Firearms
PS-001

No Firearms

No Skateboards
PS-098

No Skateboards

No Hunting
PS-072

No Hunting

No Horses
PS-064

No Horses

No Fires
PS-042

No Fires

No Radios
PS-103

No Radios

No Bicycles
PS-066

No Bicycles

No Motor Bikes
PS-065

No Motor Bikes

No All-Terrain Vehicles
PS-095

No All-Terrain Vehicles

No Off-Road Vehicles
PS-067

No Off-Road Vehicles

No Motor Boats
PS-055

No Motorboats

No Water-skiing
PS-058

No Water-Skiing

No Scuba Diving
PS-060

No Scuba Diving

No Swimming
PS-061

No Swimming

No Wading
PS-088

No Wading

No Fishing
PS-063

No Fishing

No Ice Fishing
PS-092

No Ice Fishing

No Fish Cleaning
PS-093

No Fish Cleaning

No Snowmobiles
PS-052

No Snowmobiles

No Sledding
PS-049

No Sledding

No Skating
PS-050

No Skating

No Camping
PS-038

No Camping

No Trailers
PS-040

No Trailers

No Wood Cutting
PS-112

No Wood Cutting

The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) has been adopted as the standard for all Regulatory and Warning signs used on Corps project roadways for vehicular traffic. Each state also has a supplement to the MUTCD, which lists additional approved signs. It is recommended that each district purchase a copy of the MUTCD and the state supplement for reference purposes. Three important traffic-related sign types in the Corps sign standards vary from the MUTCD. These include: Approach and Roadway Directional signs (see Section 6), Recreation Symbol signs (see Section 8), and Parking and No Parking signs. A complete display of the standard Corps Parking and No Parking signs is shown in this section (pages 9-10 to 9-19) along with mounting and placement guidelines. A display of the most commonly used Regulatory and Warning Traffic signs is included in this section as a convenience to users (pages 9-2 to 9-7). Additional traffic control devices are displayed in the current *UNICOR Sign and Decal Products* catalog. For a complete display of all regulatory, warning, and other traffic control devices, refer to the MUTCD. The Forest Service publication, *Placement Guide for Traffic Control Devices,* is another good reference. Check district and division offices to see if a copy is available. A general traffic sign mounting and placement guideline has been included on pages 9-8 to 9-9. For detailed instructions, refer to the latest edition of the MUTCD.

The identification code number shown for Regulatory and Warning signs on pages 9-2 to 9-7 is a federal standard for this type of sign and is unrelated to the Corps sign code used for all other types of signs in this manual. Shown below is a description of how this code is constructed. The dimensions below the code on pages 9-2 to 9-7 identify the

standard size for each respective sign. Refer to the MUTCD for guidelines on the selection of the appropriate size sign for a specific roadway condition.

The control of vehicle parking is one of the difficult aspects of managing Corps projects and facilities. This problem is compounded when parking regulations are different for various types of vehicles such as cars with trailers, recreation vehicles, etc.

The Corps Parking and No Parking signs have adopted a standard design format. The "Parking Allowed" sign uses a capital letter "P" placed within a bold green circle. The "P" and qualifying legend are in black on a white background (see page 4-6). To designate parking for the disabled, this format is also used with the Symbol of Access (see page 9-12) and a blue background.

No Parking signs integrate the red prohibition circle and slash used on all Prohibition Symbol signs. This is placed over the letter "P". The qualifying legend and "P" are printed in black (see page 4-6).

Consistent use of this sign design with the graphically conspicuous red and green circles will establish a visual uniformity for all parking regulation signs on a project. The effect of each individual sign and the cumulative effect of the overall parking control program will be heightened with the standardized use of these signs.

The parking regulation sign formats are shown on pages 9-10 and 9-12 to 9-16. Lists of approved parking regulation sign legends are shown on pages 9-11 through 9-19. Refer to page 9-20 for mounting instructions.

Pavement markings are not considered signs for the purposes of the Corps Sign Standards Program. The MUTCD contains guidance on the use of pavement markings.

W1-3R 24" x 24"

W

Type: Denotes functional type of sign (R = regulatory, W = warning, D = guide signs, and M = route markers)

1-3

Number: A unique two-number, hyphenated identifier assigned to this sign

R

Arrow Direction: Denotes direction of arrow as needed (R = right, L = left, S = straight ahead, UR = 45° right, UL = 45° left)

24" x 24"

Size: Denotes dimension of panel

Shown below and on the following page are commonly used regulatory type traffic signs from the *Manual on Uniform Traffic Control Devices.* For regulatory signs not shown in this display, refer to the MUTCD.

The signs are available in a variety of sizes depending on the speed and distance from which they will be viewed. For size and placement guidelines, refer to the MUTCD.

Group 1: Regulatory Signs

R1-1

24" x 24"
30" x 30"
36" x 36"

R1-3

12" x 6"

R1-2

30" x 30" x 30"
36" x 36" x 36"

R3-1R
R3-2L

24" x 24"
30" x 30"

R3-4

24" x 24"
30" x 30"

R4-7B

18" x 24"
24" x 30"

R4-7

24" x 30"
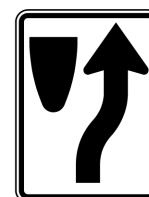
R4-1

18" x 24"
24" x 30"

R5-1

30" x 30"
36" x 36"

R5-2

24" x 24"
30" x 30"

R5-9

36" x 24"

R6-2L
R6-2R

12" x 18"
18" x 24"
24" x 30"

ONE WAY →

R11-2

48" x 30"

ROAD CLOSED

Group 2: Regulatory Signs

R2-1

18" x 24"
24" x 30"
Specify Speed

SPEED LIMIT 25

R2-2

24" x 24"
36" x 36"
Specify Speed

TRUCKS 20

R2-4

18" x 24"
24" x 30"
Specify Speed

MINIMUM SPEED 15

R2-5C

18" x 24"
24" x 30"

SPEED ZONE AHEAD

R3-7L
R3-7R

30" x 30"

LEFT LANE MUST TURN LEFT

R2-5A

18" x 24"
24" x 30"

REDUCED SPEED AHEAD

R5-6

24" x 24"
30" x 30"

R5-5

18" x 24"
24" x 30"

VEHICLES WITH LUGS PROHIBITED

R6-3

24" x 24"
30" x 30"

DIVIDED HIGHWAY

R6-3A

24" x 24"
30" x 30"

R12-1A

24" x 30"
30" x 36"

WEIGHT LIMIT
8 T
12 T
16 T
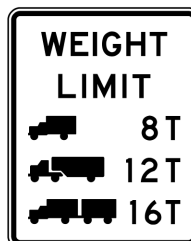
R12-1

12" x 18"
18" x 24"
24" x 30"

WEIGHT LIMIT 10 TONS

9-3

Shown below and on the following three pages are commonly used Warning signs intended to advise the driver of existing road hazards. Refer to the adjacent code and size availability information when ordering. A complete display is shown in the latest edition of the *Manual on Uniform Traffic Control Devices.*

The signs are available in a group of sizes and are sized to the specific viewing distance and approach conditions. Refer to the MUTCD for size and placement guidelines.

W1-1L
W1-1R

24" x 24"
30" x 30"
36" x 36"

W2-2

24" x 24"
30" x 30"
36" x 36"

W1-2R
W1-2L

24" x 24"
30" x 30"
36" x 36"

W2-3

24" x 24"
30" x 30"
36" x 36"

W1-3R
W1-3L

24" x 24"
30" x 30"
36" x 36"

W2-4

30" x 30"
36" x 36"

W1-4R
W1-4L

30" x 30"
36" x 36"

W2-5

24" x 24"
30" x 30"
36" x 36"

W1-5R
W1-5L

24" x 24"
30" x 30"
36" x 36"

W3-1A

30" x 30"
36" x 36"

W2-1

24" x 24"
30" x 30"
36" x 36"

W3-2A

30" x 30"
36" x 36"

W3-3

30" x 30"
36" x 36"

W6-2

30" x 30"
36" x 36"

W4-1

30" x 30"
36" x 36"

W6-3

30" x 30"
36" x 36"

W4-2

30" x 30"
36" x 36"

W7-1

30" x 30"
36" x 36"

W5-1

24" x 24"
30" x 30"
36" x 36"

ROAD NARROWS

W8-1

24" x 24"
30" x 30"
36" x 36"

BUMP

W5-2A

24" x 24"
30" x 30"
36" x 36"

W8-2

24" x 24"
30" x 30"
36" x 36"

DIP

W5-3

24" x 24"
30" x 30"
36" x 36"

ONE LANE BRIDGE

W8-3A

24" x 24"
30" x 30"
36" x 36"

W6-1

30" x 30"
36" x 36"

W8-4

24" x 24"
30" x 30"
36" x 36"

SOFT SHOULDER

W8-8

24" x 24"
30" x 30"
36" x 36"

ROUGH ROAD

W13-1
Specify Speed

18" x 18"
24" x 24"
30" x 30"

15 M.P.H.

W8-9

24" x 24"
30" x 30"
36" x 36"

LOW SHOULDER

W14-3

36" x 48" x 48"
48" x 64" x 64"

NO PASSING ZONE

W9-1L
W9-1R

30" x 30"
36" x 36"

LEFT LANE ENDS

W1-8

12" x 18"
18" x 24"
24" x 30"
30" x 36"

W10-1

24" x 24"
30" x 30"
36" x 36"

R X R

W1-6

48" x 24"

W12-2
Specify Height

30" x 30"
36" x 36"

12'-6"

W1-7

48" x 24"

Sign W41-1 can be used to sign traffic-related hazards that are specific to a site. This sign should not be used to circumvent the requirement for formal review of nonstandard safety sign legends.

W41-1

24" x 24"
30" x 30"
36" x 36"
48" x 48"
Blank Panel
Specify Legend

W14-1

24" x 24"
30" x 30"
36" x 36"
48" x 48"

DEAD END

W8-5

30" x 30"
36" x 36"

W14-2

24" x 24"
30" x 30"
36" x 36"
48" x 48"

NO OUTLET

9-6

The signs designated "Special" are examples of signs that might be created using the blank Warning sign W41-1.

W11-1

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-8

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-2A

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-9

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-4

30" x 30"
36" x 36"

W11-10

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-4

30" x 30"
36" x 36"

W15-1

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-5

24" x 24"
30" x 30"
36" x 36"
48" x 48"

Special

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-6

24" x 24"
30" x 30"
36" x 36"

Special

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W11-7

24" x 24"
30" x 30"
36" x 36"
48" x 48"

W8-7

24" x 24"
30" x 30"
36" x 36"
48" x 48"

9-7

Standardization of sign positions cannot always be attained. The general rule, however, is to locate signs on the right-hand side of the roadway where drivers would be looking for them. Signs in other locations, except for those mounted overhead, should be considered supplementary to signs in their normal locations.

A reference handbook, *Placement Guide for Traffic Control Devices (FS* 8171 2603), has been prepared by the Forest Service and supplements the MUTCD. It contains detailed information on signs as well as pavement markings, delineators, and road closures. The text and illustrations that follow are for general reference.

In general, signs should be located to optimize nighttime visibility and minimize the effects of mud splatter. Signs should be located so that they do not obscure each other or are hidden from view by other roadside objects. Signs should be placed with regard to the alignment of approaching traffic. This may not necessarily follow a predetermined angle with the roadway edge on curved or rolling roads.

Whenever possible, each traffic sign should be mounted on an individual post to provide minimum competition among groups of signs. Speed advisory signs are an exception because they should serve as a supplementary message to a Warning sign.

The lateral clearance for Regulatory and Warning signs or the smaller directional signs should be from 6 to 12 feet from the edge of the pavement, as shown in the following illustrations. For larger Approach Roadway Directional signs (see Section 6), the lateral clearance may be up to 30 feet from the edge of the pavement.

Regulatory and Warning signs are placed 6' to 12' from the edge of the roadway pavement.
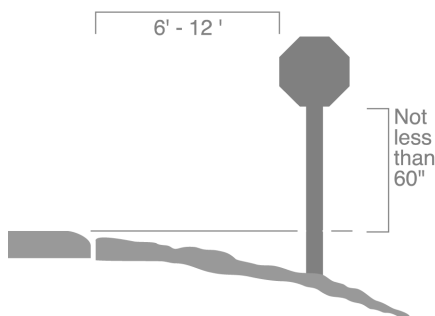
To make certain that the sign is not obscured by parked or standing vehicles,
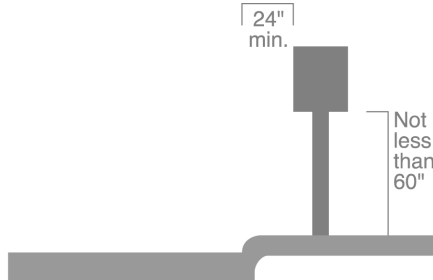
the recommended minimum mounting height of 5 feet should always be followed in order to ensure uniformity in sign placement.

The exact placement location of Regulatory and Warning signs will differ depending on the type of sign and road condition. In general, Regulatory signs are to be installed where the mandate or prohibition applies or begins; Warning signs are to be placed in advance of the conditions to which they call attention; Guide signs are to be placed as needed to keep drivers adequately informed.
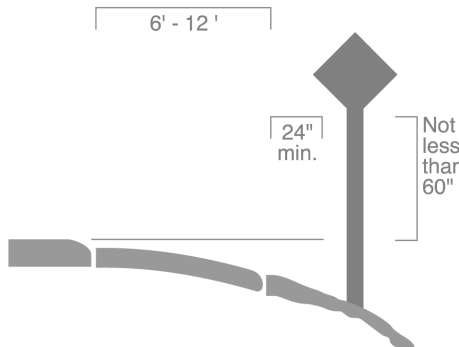
Regulatory and Warning signs are placed 24" from the edge of a paved shoulder.

More specifically, the following guidelines should be followed on conventional streets and highways:

1) General Traffic Sign Mounting Guidelines:

a) STOP and YIELD signs should be placed at the point at which compliance is to be made. Even in open areas, STOP signs should not be placed more than 50 feet from the intersecting roadway. A suitable stop line or other marking device should be placed on the roadway at the intended point of compliance to supplement the STOP sign if the sign is not at or near the point at which the vehicle should stop.

b) Warning signs are generally placed slightly in advance of the point of compliance. On projects where speeds are relatively low, Warning signs should be

posted no more than 250 feet in advance of the hazardous condition to which they are directing attention. On higher-speed roadways, Warning signs should be posted at a distance from 750 to 1,500 feet in advance of the hazard. These distances are necessary to permit the driver to make the appropriate response to the information conveyed by the sign.

c) Symbol signs and road number guide signs are posted in advance of intersections and within the intersections themselves. Placement locations should follow a uniform plan so that motorists, once accustomed to the plan, will be able to find signs easily. Junction signs and advance turn arrows should be erected no less than 400 feet in advance of the intersections.

d) Directional signs are to be located not less than 200 feet or more than 300 feet in advance of the intersection. Within projects, shorter distances are permissible (see Section 6).

2) Posts and Mountings: The standard mounting for all Regulatory and Warning signs that are less than 36" square is 4" x 4" posts. Signs larger than 36" x 36" will use two 4" x 4" posts or one 6" x 6" post. These posts break easily when struck by a car. More than one (1) 6" x 6" post and/or larger posts when placed less than 12' from the edge of the road must be of a suitable breakaway or yielding design.

3) Liability: Missing, damaged or deteriorated traffic control devices or those that do not conform with national or state standards can cause accidents. An improper installation, the failure to replace or repair a damaged or missing control device, or failure to conform to standards outlined in the MUTCD may lead to liability on the part of the Corps or the responsible Corps employees themselves.

4) Sign Maintenance: Adequate maintenance of the traffic sign system is of equal importance to adherence to guidelines and good installation practices. An inspection program for the system should be made during daylight hours and during darkness on a routine basis to ensure proper visibility, legibility, and material integrity. To ensure adequate maintenance, a suitable schedule for inspection, cleaning, and replacement of signs should be established. Corps employees whose duties require that they travel on Corps project roadways should report any damaged or

obscured signs immediately. Maintenance should include washing signs with a good soap or detergent as often as local conditions demand or cleaning by means of a steam generator unit. The cleaning cycle may range from once every two years for self-cleaning surfaces in clean areas to once every few months. Special attention and necessary action should be taken to see that weeds, trees, shrubbery, and construction materials do not obscure the face of any sign.

The Corps standard format for signs to identify allowable parking areas is shown below. This sign has a green circle around the capital letter "P". The "P" and qualifying legend below are black on a white sign panel (see page 4-6).

A series of Parking signs with commonly used legends are displayed with order code numbers on page 9-11.

Parking signs with legends not included in this manual should be constructed according to the grids below.

All legend lettering should follow Corps guidelines for Helvetica Bold type (see Section 4).

Grid A

Grid B
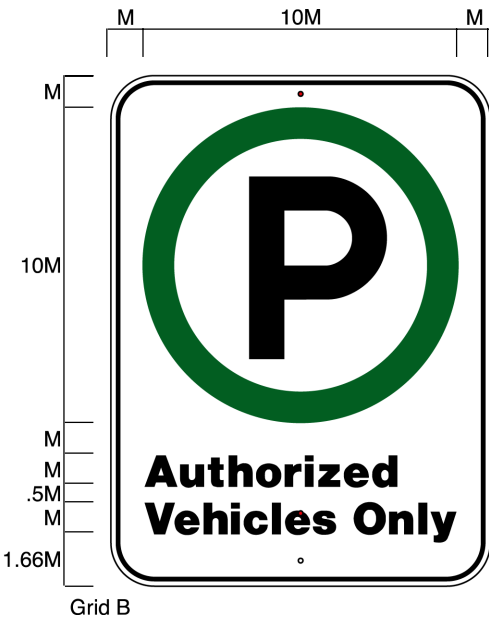
Grid A

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-00	.5"	6"x7.33"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	.75"	9"x11"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	1"	12"x14.66"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	1.25"	15"x18.325"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	1.5"	18"x22"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR

Grid B

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-00	.5"	6"x8"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	.75"	9"x12"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	1"	12"x16.16"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	1.25"	15"x20.20"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR
PRK-00	1.5"	18"x24.24"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR

Shown in the display below are commonly used Parking sign panels. These are available in five sizes. Appropriate size will be determined by sign placement location and viewing distance requirements. For Parking signs requiring legends not included below, refer to page 9-10 for layout guidelines.

To order Parking signs, specify the sign by the code number shown to the left along with the sign size.

P-Visitors Only
PRK-01

P-Government
Vehicles Only
PRK-06

P-Employees
Only
PRK-02

P-Authorized
Vehicles Only
PRK-07

P-Buses Only
PRK-03

P-Tie-down Only
PRK-08

P-Boat Trailers
PRK-04

P-On Paved
Roads Only
PRK-09

P-Cars With
Trailers Only
PRK-05

P- Recreation
Vehicles Only
PRK-10

Parking areas that are reserved for individuals with disabilities are identified using the version of the parking sign shown below. Below the parking symbol, place the national recreation symbol version of the International Symbol of Access. The Symbol of Access and the parking symbol are sized as shown below. The Symbol of Access is white on a blue background. Earlier versions of the sign with black symbols on a white background may be retained while they remain serviceable.

Signs designating parking for disabled people must be mounted high enough above the ground to be seen from the drivers seat, and located at the front end of a parking space.

Size: Sign Panel	M	Size: Symbol of Access
6" x 9"	.5"	2.25"
9" x 13.5"	.75"	3.375"
12" x 18"	1"	4.5"

Sign Type	Legend Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-AC	.5"	6"x9"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-GR-SB
PRK-AC	.75"	9"x13.5"	4"x4"	ALU-5/HDO-5	42-72"	WH/BK-GR-SB
PRK-AC	1"	12"x18"	4"x4"	ALU-5/HDO-5	42-72"	WH/BK-GR-SB

The optional signs on this page may be used with the Symbol of Access parking sign when necessary. The signs mount directly below the PRK-AC panel. Only one worded message panel per sign is to be used.

The format is adopted from the MUTCD but uses the Corps parking sign standards. The sign legends are black on a white background with a black border. Border thickness and margin is the same as the PRK-AC panel.

The maximum legend length is equal to 10 M. All legend lettering should follow Corps guidelines for Helvetica Bold type (see Section 4).
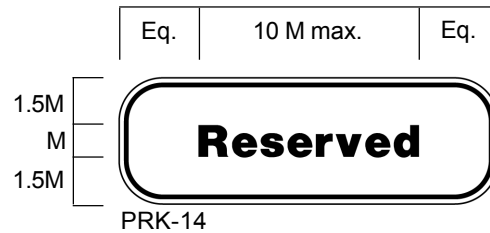
Sign Type	Legend Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-14	.5"	6"x2"	4"x4"	ALU-5/HDO-5	*	WH/BK
PRK-14	.75"	9"x3"	4"x4"	ALU-5/HDO-5	*	WH/BK
PRK-14	1"	12"x4"	4"x4"	ALU-5/HDO-5	*	WH/BK
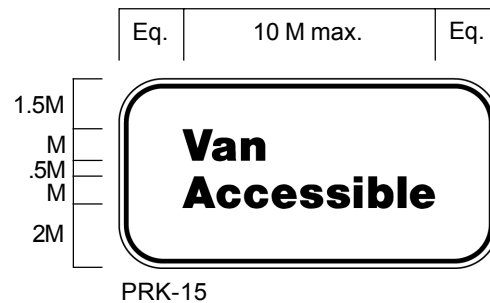
Sign Type	Legend Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-15	.5"	6"x3"	4"x4"	ALU-5/HDO-5	*	WH/BK
PRK-15	.75"	9"x4.5"	4"x4"	ALU-5/HDO-5	*	WH/BK
PRK-15	1"	12"x6"	4"x4"	ALU-5/HDO-5	*	WH/BK

It is often useful to be able to designate the limits of a parking area. For example, a project might allow parking along only a certain stretch of a street or roadway. In these cases, arrows can be added to standard parking signs so that the limits of the designated parking area are clear to motorists.

As shown below, parking signs with a single arrow pointing either left or right can be placed at each end of a designated parking area. Signs with arrows pointing both left and right can be placed, as appropriate, along the parking area between the end signs. Remember to avoid sign clutter.

If an additional line of text is needed, add 1.5A to height of sign panel.

Helvetica Bold arrow sized according to the guide in Section 4.

PRK-11

PRK-12
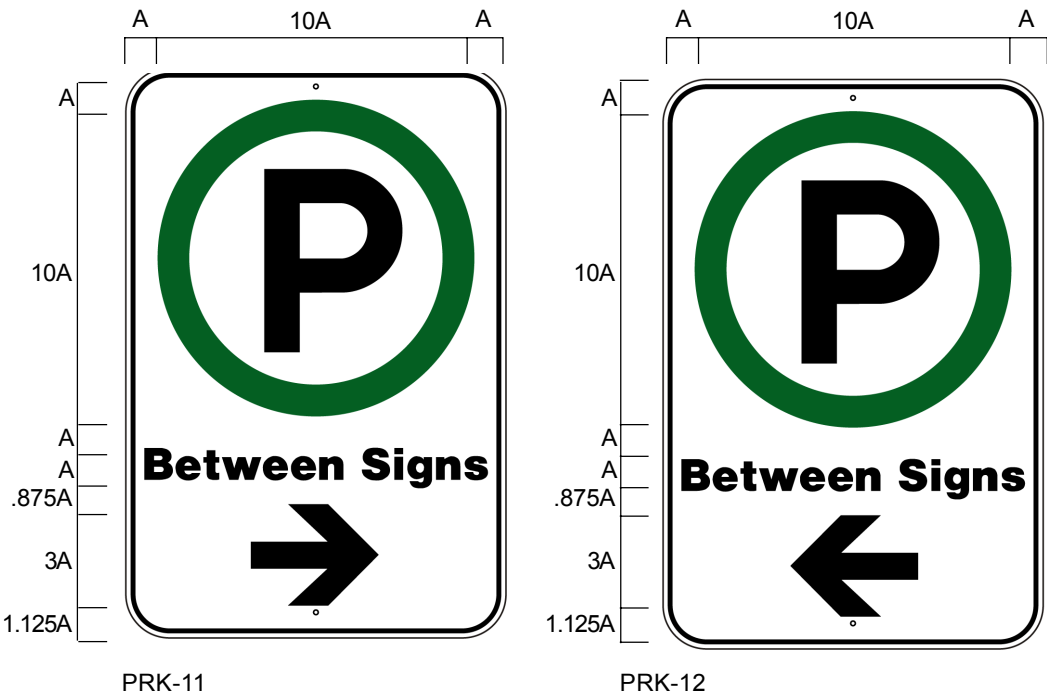
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-11,12	.5"	6"x9"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-11.12	.75"	9"x13.5"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-11.12	1"	12"x18"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-11.12	1.25"	15"x22.5"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-11,12	1.5"	18"x27"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK

A   10A   A

A

10A

A

A

.875A

3A

1.125A

PRK-13

If an additional line of text is needed, add 1.5A to height of sign panel.

Helvetica Bold arrow sized according to the guide in Section 4.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
PRK-13	.5"	6"x9"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-13	.75"	9"x13.5"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-13	1"	12"x18"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-13	1.25"	15"x22.5"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK
PRK-13	1.5"	18"x27"	4"x4"	ALU-5/HDO-5	60"	WH/GR/BK

The No Parking sign format is shown below. This sign is white with the red prohibition circle and slash graphic placed over the capital "P" parking symbol. The legend below the symbol qualifies the type of No Parking regulation being imposed. Both the "P" symbol and sign legend are black (see page 4-6).

Commonly used No Parking signs are displayed on page 9-17. Fabrication of signs not shown should follow the grid formats shown below.

The Helvetica Bold legend lettering is to follow Corps spacing guidelines (see Section 4).
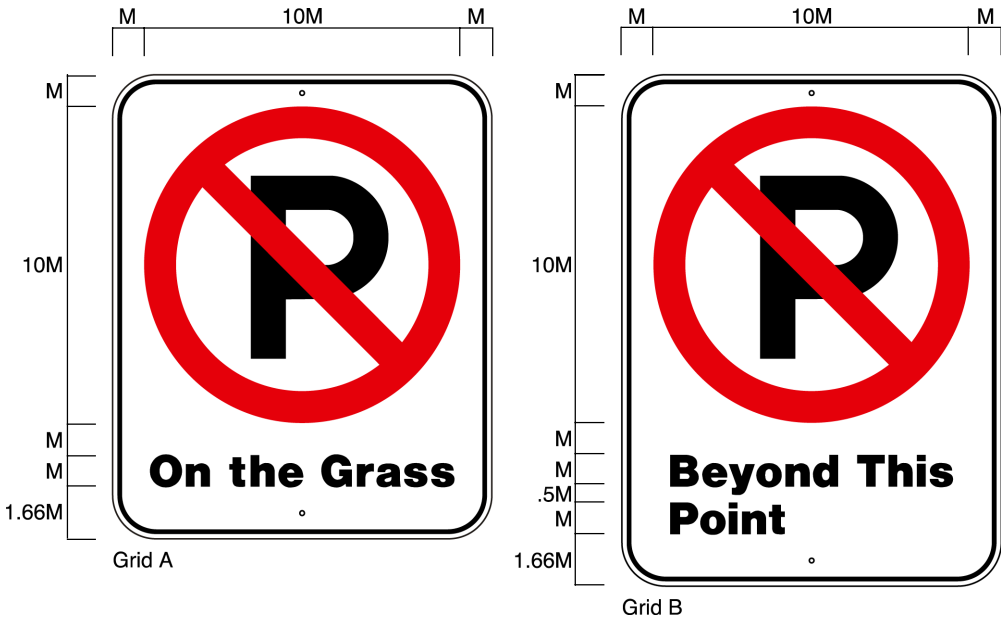
Grid A

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
NPK-00	.5"	6"x7.33"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	.75"	9"x11"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	1"	12"x14.66"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	1.25"	15"x18.325"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	1.5"	18"x22"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD

Grid B

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
NPK-00	.5"	6"x8"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	.75"	9"x12"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	1"	12"x16.16"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	1.25"	15"x20.20"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD
NPK-00	1.5"	18"x24.24"	4"x4"	ALU-5/HDO-5	36-60"	WH/BK-RD

Shown below are frequently requested No Parking signs. To order, use the sign identification code number to the left of each display along with the sign size. Refer to mounting guidelines on page 9-20 to determine appropriate panel size requested. To fabricate a sign with legend not shown in the display below, refer to the grid format guide on page 9-16.

NP-Any Time
NPK-01

NP-On the
Grass
NPK-04

NP-Fire Lane
NPK-02

NP-Beyond
This Point
NPK-05

NP-Along
Roadway
NPK-03

NP-am-pm
Indicate Times
NPK-06

It is often useful to be able to designate the limits of a no parking area. For example, a project may prohibit parking along only a certain stretch of a street or roadway. In these cases, arrows can be added to standard No Parking signs so that the limits of the designated no parking area are clear to motorists.

As shown below, No Parking signs with a single arrow pointing either left or right can be placed at each end of a designated parking area. Signs with arrows pointing both left and right can be placed, as appropriate along the no parking area between the end signs. Remember to avoid sign clutter.

If an additional line of text is needed, add 1.5A to height of sign panel.

Helvetica Bold arrow sized according to the guide in Section 4.

NPK-07

NPK-08
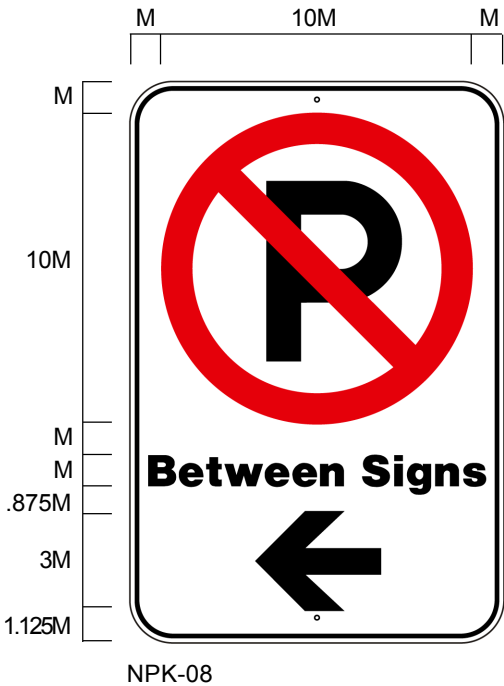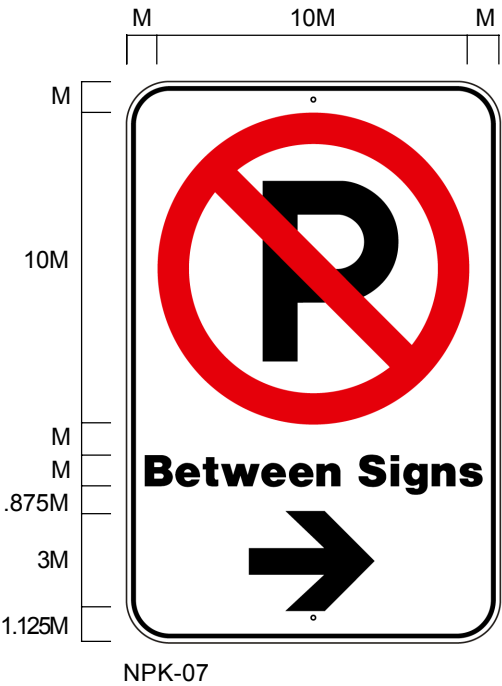
Sign Type	Legend Size (M)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
NPK-07,08	.5"	6"x9"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-07,08	.75"	9"x13.5"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-07,08	1"	12"x18"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-07,08	1.25"	15"x22.5"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-07,08	1.5"	18"x27"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD

M   10M   M

M

10M

M
M
.875M

3M

1.125M

NPK-09

If an additional line of text is needed, add 1.5A to height of sign panel.
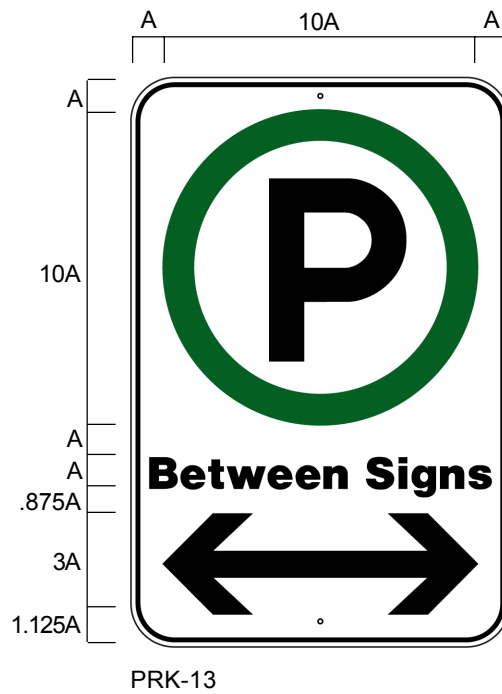
Helvetica Bold arrow sized according to the guide in Section 4.
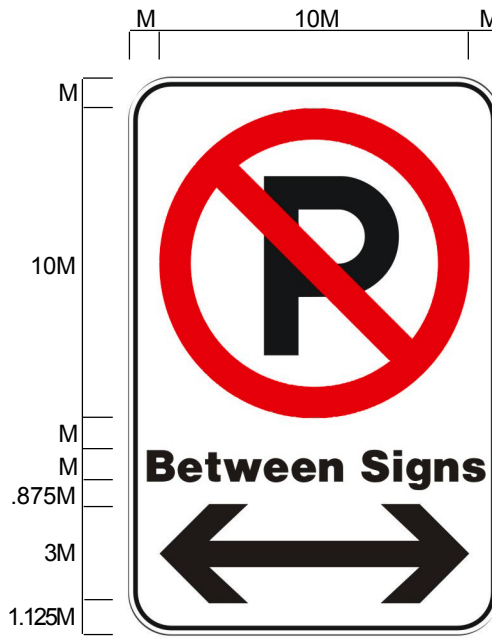
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
NPK-09	.5"	6"x9"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-09	.75"	9"x13.5"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-09	1"	12"x18"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-09	1.25"	15"x22.5"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD
NPK-09	1.5"	18"x27"	4"x4"	ALU-5/HDO-5	60"	WH/BK-RD

The Corps guidelines for mounting and placement of Parking and No Parking signs are different from those of the Regulatory and Warning signs shown on pages 9-8 to 9-9.

The signs are generally placed at eye level as viewed from an automobile.

The 12" wide panel (height will vary depending on which format grid is used to lay out sign) mounted on a 4"x 4" wood post is to be considered the standard size Parking and No Parking sign for use on project roadways.

On low speed roadways that are free of other types of signs a smaller 9" wide panel mounted on a 4"x4" post may be more appropriate. The mounting height for 9" wide Parking and No Parking signs can be reduced to 48" in selected areas to minimize unnecessary clutter. These are ideally placed behind guard rails on roads and within a camping or picnic area.

Within a recreation area, use of the small 6" wide No Parking signs is preferred because it is not obtrusive on the landscape. Use only if it can have the visual prominence to be effective.

The two larger size panels (15" wide and 18" wide) are provided for use in unusual conditions where the smaller panels will not be effective.

The mounting distance required between signs will need to be determined by a field review because conditions vary greatly.

Although eye level (5' to bottom of sign panel) mounting heights are recommended wherever possible, it is allowable to post the signs up to standard (MUTCD) mounting heights if sight lines require.

Parking and No Parking Signs Panel Size and Viewing Distance Guide

Panel Size	Viewing Distance
6"	80'
9"	120'
12"	160'
15"	200'
18"	240'

Placing these signs at a lower height will help to reduce visual clutter on project roadways. The size of Parking and No Parking signs is considerably smaller than traffic signs because they are viewed at slower speeds, and have high target values and easy-to-read legends.

Shown below are the standard mounting and placement guidelines as well as a Viewing Distance Guide to be used when determining the appropriate size sign panel.

The identification and marking of government property is an important part of project management. Boundary marking serves as a guide for Corps personnel and informs users that they are on government land.

Several different sign types are provided for this purpose. These include witness posts, boundary lines, easement lines, and identification of wildlife management areas.

There are two graphic formats, a large and a small format, for all property markers. Both formats have a primary legend identifier using the Helvetica Bold typeface, and a secondary legend that includes a local district address which is shown in the Helvetica Regular typeface. A positive version of the Corps Signature appears on every marker.

The shoreline management permit may be issued to land owners whose property abuts a water project. This marker is displayed on page 12-4.

Hiking trails which cross government lands should be clearly identified. See page 7-58 for identification with trail shield, and Section 8 for use of the hiking trail symbol to mark these routes.

Sign Panel Size: Small panel sizes are recommended for most marking situations. These signs are rarely read from a great distance and as a small panel they are less susceptible to damage from vandalism. Markers that are larger than those specified in this manual should be placed only as required on a site-by-site basis. Generally, as long as the white panel can be seen from the desired viewing distance, the sign is appropriately sized.

Materials: Two basic types of property markers are specified:

1. An individual polyethylene panel with screen printed (epoxy) legend. Polyethylene is recommended because it is a low cost marker that has a long life span in harsh exterior environments, is less susceptible to deterioration from ultraviolet rays, and does not become brittle under extreme low temperature conditions. The flexible panel can easily be mounted on a wooden post or on a structure. Specifications for mounting on a wooden post are not included in this section.

2. An integrated post and panel marker, consisting of a flexible post and a screen printed, reflective marker. The post, composed of glass fiber, marble, and thermosetting polymers, will not rust or become brittle from cold or ultraviolet exposure. It has a sign graphic that is factory-applied to the property marker post. Although white is the preferred color; red, yellow, orange, or brown flexible posts may be used. Refer to Appendix B for material and assembly specifications.

The small format property marker is shown below. Examples of other legends are shown on the following pages.

A review of recommended sign materials is provided on page 10-1. Placement guidelines are shown on page 10-8. All property markers have black legends and are placed on white panels.

Three different types of posts are specified, each with a different size graphic. These include a wide flexible stake and a narrow rigid fiberglass stake, both with a factory applied graphic; and a polyethylene panel that can be applied to existing posts. The size of the graphic will differ depending on the type of post used.

1) Rigid fiberglass stake with a 2.5" x 3.66" graphic on a 2.625" wide upright (single face only).

2) Flexible fiberglass stake with a 3" x 4.4" graphic on a 4" wide upright (single or double face).

3) Polyethylene panels with a 3.75" x 5.5" graphic are for mounting on existing posts or structures.

Artwork for each panel is provided in Appendix F. The address and telephone number should not contain more than five lines of type as shown, with no line having more than 28 characters (including word space). The typography is 12 pt. Helvetica Regular with 12 pt. leading.

Boundary Line

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

Grid A

Limited Development Area

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers
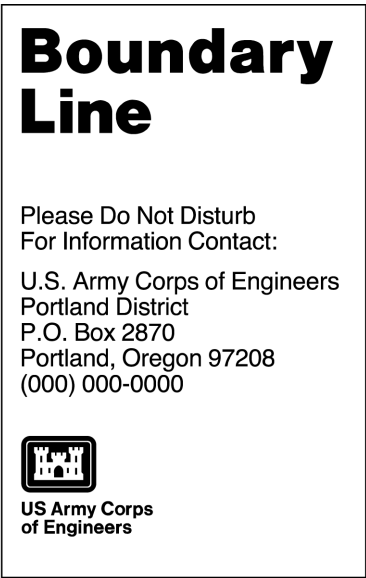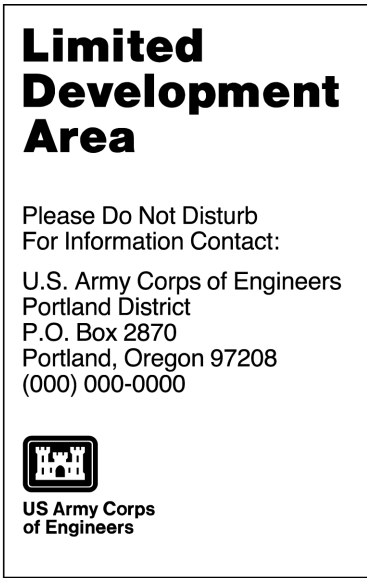
Grid B: For primary legend lengths that are too long for the Grid A format.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BLM-00	-	none	2.625"x.125"	FSM-7	36"	WH/BK
BLM-00	-	none	4"x.125"	FSM-7	36"	WH/BK
BLM-00	-	3.75"x5.5"	4"x4"	FSM-7	36"	WH/BK

1) Narrow flexible post with screen printed, reflective vinyl marker

2) Wide flexible post with screen printed, reflective marker

3) Wooden post with screen printed, polyethelene panel

36"

1) 2) 3)
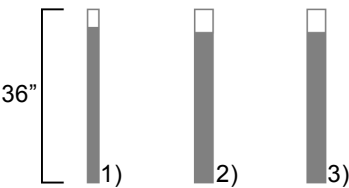
Shown below are approved small format property marker signs.

Grid A

Boundary Line: Boundary line signs are used to delineate the government fee property line at Corps projects.

Witness Posts: These survey markers are used to identify the location of government witness posts. Witness posts are used as a reference point from which surveyors may triangulate to locate a government fee property corner, easement corner, or other surveying marker on government land.

Property Boundary: Same as Witness Post.

Survey Marker: Used as alternate to Witness Post per local convention.

Easement Line: These signs are used to delineate flowage easements at Corps projects, as well as other government easements on land that is not government fee property.

Boundary Line

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-07

Witness Post

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-08

Property Boundary

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-09

Survey Marker

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-010

Easement Line

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-011

Grid B

Permitted Mowing Area: Delineates an area within government land in which mowing is permitted.

Limited Development Area: These signs serve as guides for Corps personnel.

Permitted Mowing Area

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-12

Limited Development Area

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

BLM-13

Shown below is the alternate "book spine" type boundary marker with the legend shown on a vertical baseline. It is specified for use where the legend must be readable from a distance greater than a few feet from the marker. Using these grids can extend the distance at which the sign can be read up to 75 feet.

This sign may be used as a double or single face sign. All property markers have black legends and are placed on white panels.

This graphic is only to be used with the wide flexible stake with the ribbed edges. Do not use this graphic with the narrow rigid stake or on polyethylene panels.

Flexible fiberglass stake with 3" x 22" graphic on a 4" wide upright (single or double face).

The contact address and telephone number should not contain more than five lines of type as shown, with no line having more than 28 characters (including word space). The typography is 14 pt. Helvetica Regular with 14 pt. leading.

US Army Corps of Engineers

Boundary Line

Please Do Not Disturb
For Information Contact:
U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

US Army Corps of Engineers

Limited Development Area

Please Do Not Disturb
For Information Contact:
U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

Grid D

Grid E: For primary legends which are too long for the Grid D format.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BLM-00	-	none	4"x.125"	FSM-7	36"	WH/BK

36"

Shown below are approved large format property marker signs, as they appear on posts.

Grid D

BLM-14   BLM-15   BLM-16   BLM-17

Grid E

BLM-18   BLM-19   BLM-20
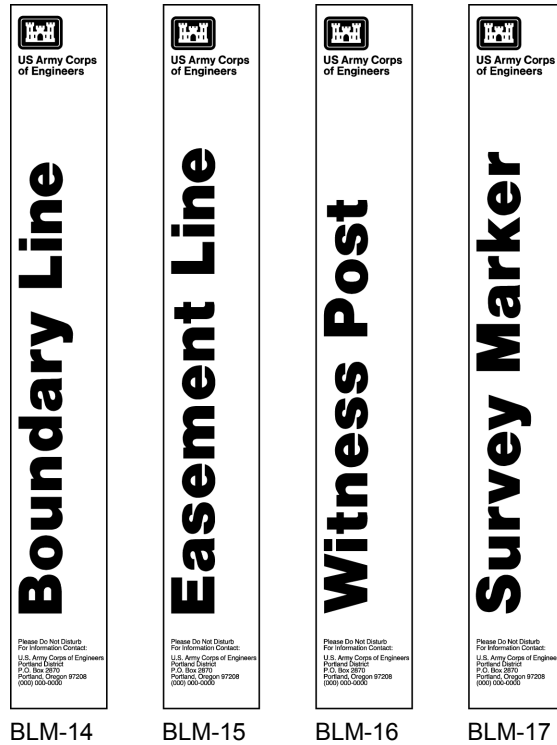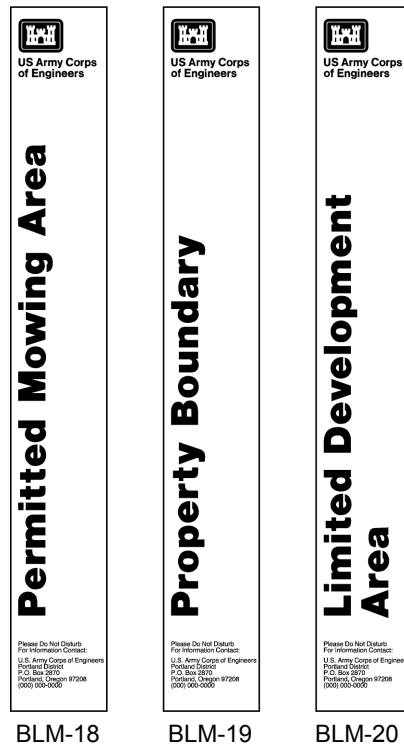
Shown below are three versions of the Wildlife Management Area identification markers. They are used primarily for information purposes and may be used to delineate a property line.

The selection of the appropriate subhead legend will depend on local requirements.

The signs are generally placed around wildlife management areas, along access roads and fire trails, or in other locations where special respect for wildlife is requested.

This sign follows the same color and graphic format as the property markers shown on page 10-2.

Three different types of posts are specified, each with a different size graphic. These include a wide flexible stake and a narrow rigid fiberglass stake, both with a factory applied graphic, and a polyethylene panel that can be applied to existing posts. The size of the graphic will differ depending on the type of post used.

1) Rigid fiberglass stake with a 2.5" x 3.66" graphic on a 2.625" wide upright (single face only).

2) Flexible fiberglass stake with a 3" x 4.4" graphic on a 4" wide upright (single or double face).

3) Polyethylene panels with a 3.75" x 5.9" graphic are for mounting on existing posts or structures.

Insert contact address and telephone number. The address and telephone number should not contain more than five lines of type as shown, with no line having more than 28 characters (including word space). The typography is 12 pt. Helvetica Regular with 12 pt. leading.
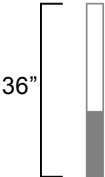
Wildlife Management Area

No Hunting

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

**US Army Corps
of Engineers**

Grid C: For panels with a subhead

Wildlife Management Area

No Hunting

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

**US Army Corps
of Engineers**

BLM-21

Wildlife Management Area

No Trespassing

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

**US Army Corps
of Engineers**

BLM-22

Wildlife Management Area

No Motor Vehicles

Please Do Not Disturb
For Information Contact:

U.S. Army Corps of Engineers
Portland District
P.O. Box 2870
Portland, Oregon 97208
(000) 000-0000

**US Army Corps
of Engineers**

BLM-23

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BLM-00	-	none	2.625"x.125"	FSM-7	36"	WH/BK
BLM-00	-	none	4"x.125"	FSM-7	36"	WH/BK
BLM-00	-	3.75"x5.9"	4"x4"	SCP-7	36"	WH/BK

Shown below is the alternate "book spine" type Wildlife Management Area identification marker. It is specified for use where the legend must be readable from a distance greater than a few feet from the marker. Using these grids can extend the distance at which the sign can be read up to 75 feet.

This sign may be used as a double or single face sign. The signs are always white with black legends.

Grid F: For panels with a subhead.

This graphic is only to be used with the wide flexible stake with the ribbed edges. Do not use this graphic with the narrow rigid stake or on a polyethylene panel.

Flexible fiberglass stake, with 3" x 22", graphic on a 4" wide upright (single or double face).

The contact address and telephone number should not contain more than five lines of type as shown, with no line having more than 28 characters (including word space). The typography is 14 pt. Helvetica Regular with 14 pt. leading.


BLM-24

BLM-25

BLM-26
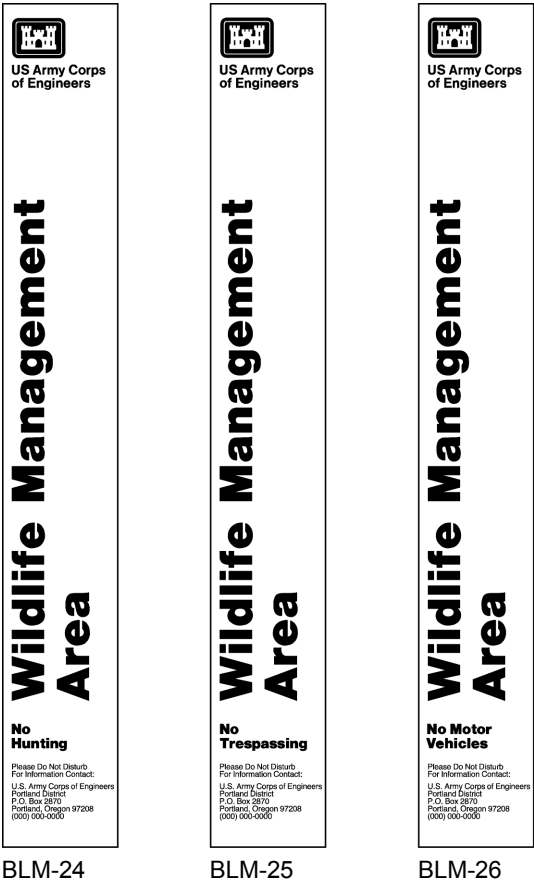
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
BLM-00	-	none	4"x.125"	FSM-07	36"	WH/BK

36"
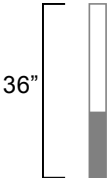
The procedure for boundary marking will vary depending on site conditions and local Corps policy. It is however important to be scrupulous in the placement of boundary line markers so they are as close as possible to the boundary. A viewer reading a boundary line marker will be under the assumption that it is placed on the boundary and therefore placement is crucial. The sign should always face away from the project land being marked.

Both aesthetics and frequency of placement are factors that need to be taken into consideration when marking boundary lines. Accessibility of the boundary, usage of adjoining land, presence or absence of line fencing or other physical or natural features should be evaluated to determine specific boundary marking requirements. Refer to ER 1130-2-540, 2-2, g., Boundary Surveys and Marking, for additional information.

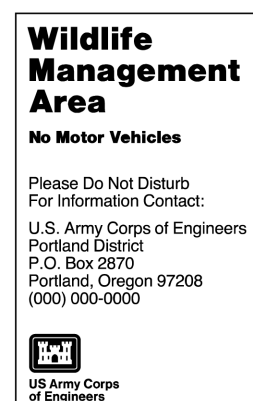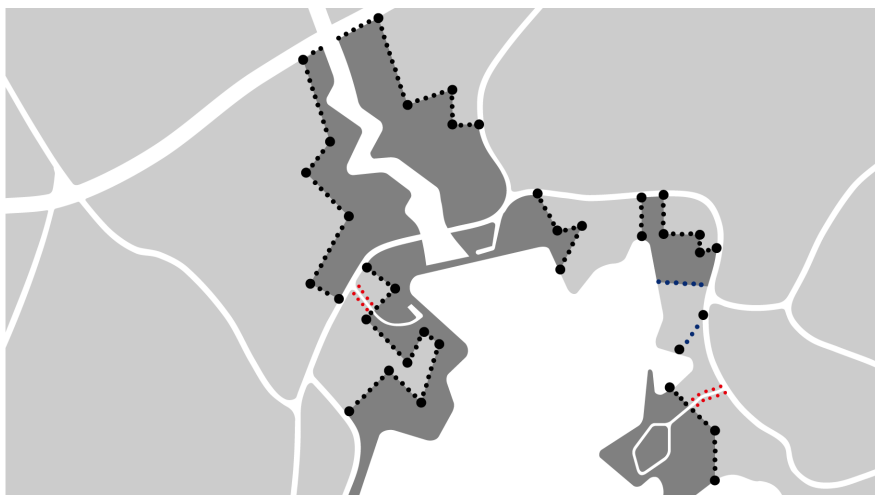● ● Boundary line signs should be placed as close to the actual government boundary line as possible and will be placed only on government property and not on adjoining private property. These signs should be placed (where terrain, vegetation, and common sense permit) so that at least two of them can be clearly viewed by an individual approaching the government property line from any point on adjacent private property. These signs will be used to identify the limits of government fee acquisition on all Corps projects. The actual extent of boundary line marking will be agreed upon between the district and project Sign Program Managers and the project manager. In areas that are adjacent to a private housing development or private dwelling, it may be appropriate to place the sign on both sides of the upright.

● Witness posts, property boundary markers and survey markers are placed as a reference point from which surveyors may triangulate to locate a government fee property corner, easement corner or other surveying marker on government fee property. These signs may be used where they are deemed appropriate and necessary.

● ● Easement line signs should be placed as close to the actual easement line as possible and will be placed only on easement property and not on adjoining private properly. These signs should be placed (where terrain, vegetation, and common sense permit) so that at least two of them can be clearly viewed by an individual approaching the easement line from any point on adjacent private property. These signs may be used where they are deemed appropriate and necessary.

● ● Wildlife management area signs should be placed using the same guidance mentioned under boundary line signs. Where permission has been granted by the property owner, these signs may also be placed to show the limits of wildlife management areas on land that is not held in fee by the Corps.

The Workplace Safety sign system shown in this section has been developed for both public and restricted areas of Corps projects and facilities. The functions of the signs are: to alert or warn people about workplace hazards of which they may not be aware; to restrict access to workplaces that present dangerous conditions; or to inform people of safety requirements.

The system has been designed in compliance with the standards set for safety signs by:

- The American National Standards Institute,
- The Occupational Health and Safety Administration,
- The *U.S. Army Regulations for Safety Color Code Markings and Signs* and
- EM 385-1-1 (the Corps *Safety and Health Requirements Manual).*

Each of the Corps safety signs is designed for a specific intended purpose. Use of this group of signs is intended to eliminate haphazard selection and posting of visually unrelated safety messages. Implemented as a uniform system, both the singular and total effects of more than one sign in an area will be increased.

There are five basic types of signs in this group: Danger, Caution, Safety, Notice, and Directional signs.

Danger Signs (red): Indicate immediate and grave danger or hazard capable of producing irreversible damage or injury. These signs can include prohibitions against dangerous activity.

Caution Signs (yellow): Call attention to a potential danger or a hazard capable of resulting in severe but not irreversible injury or damage. In some instances, the hazards may be those associated with Danger signs but are of significantly less magnitude.

Safety Signs (green): Include general practices and rules relating to health, first aid, and housekeeping for a safe workplace.

Notice Signs (blue): Control or define access and circulation and/or inform the viewer of other safety requirements. Notice signs are used primarily for information.

Directional Signs (black): Point the way to fire extinguishing equipment, emergency exits, and other emergency-related destinations.

The color format of each of the five sign types described above is shown on page 11-2. Color standards for Workplace Safety signs are provided on page 4-7.

A display of commonly used safety signs is shown on pages 11-4 to 11-10. Adjacent to each sign is a catalog order number for procurement. The wording of these signs has been carefully chosen to be both easy to read and easy to understand. (Refer to the viewing distance and panel size guidelines on page 11-3 to determine appropriate sign size needed.)

Workplace safety legends displayed in the *UNICOR Sign and Decal Products* catalog have been preapproved for use as long as the format follows the grids shown on page 11-3.

The Workplace Safety signs with Danger and Caution headings have standard legends that must be used just as shown in this manual. If a sign with a unique legend not appearing on pages 11-4 to 11-7 or in the UNICOR catalog is needed, the procedures detailed on page 1-13 should be followed. The sign legend should be concise and easy to read and should contain enough information to be easily understood. A positive rather than a negative tone is desired. The function of the site specific custom sign is to alert employees and project visitors to uncommon conditions in a work area that potentially could affect their safety. Since conditions requiring these signs are largely project or regionally specific, sizing and mounting information are not detailed.

Danger signs follow the format illustrated on pages 11-4 and 11-5. Danger and Caution legends appearing in the *UNICOR Sign and Decal Products* catalog are also approved if they follow the format illustrated on page 11-4.

Mounting guidelines are shown on page 11-11.

For assistance in signing for safety, contact your district Safety Officer. For additional information on ordering the signs included in this section contact your district Sign Program Manager.

The Corps Safety signs have a visual impact created by the use of Helvetica Bold typography for the sign legends along with clear, simple colors. The signs are devoid of any unnecessary lines, shapes or graphic devices. The examples below show the use of the standard colors for each of the various types of safety signs in the system. Reference numbers for each of the colors are specified on page 4-7, Workplace Safety Sign Color Standards.

a) Danger Signs: The word "Danger" is white on a red background. The lettering describing the specific danger is black on a white background.
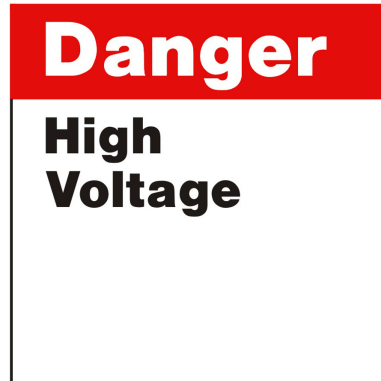
b) Caution Signs: The word "Caution" is bright yellow on a black background. This color combination is reversed for the descriptive legend with black legend and yellow background.

c) Notice Signs: These signs have a distinctive blue top panel with the legend "Notice" in white. The information on the sign is printed black on a white background.

d) Safety Signs: This type of sign always has a bright green top panel with the "Safety" legend in white. The lettered information on the sign is black on a white background.
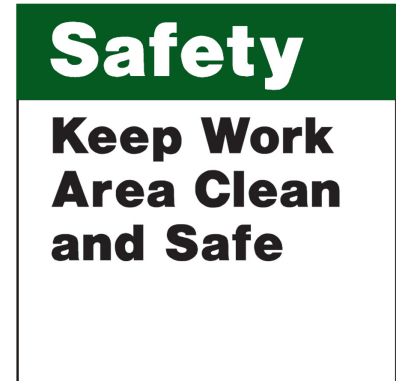
e) Directional Signs: The top section of the sign is black with a white legend identifying the subject of the Directional sign. The directional arrow that matches the weight of Helvetica Bold type is printed black on a white background.

Danger
High Voltage

a)

Safety
Keep Work Area Clean and Safe

d)

Caution
Keep This Door Closed

b)

Fire Blanket
←

e)

Notice
Face Shield Required In This Area

c)

All of the Safety signs on pages 11-4 to 11-10 were prepared using the grid formats shown below. The dimensions of the sign are derived from A, which is the height of a capital letter in the descriptive legend. The lettering is upper and lower case (initial capitals only) Helvetica Bold typeface placed flush to the left with a ragged right margin.

Most legends will use Grid A. A small number of the signs that have longer

descriptive legends are to be constructed on Grid B. Directional Safety signs use Grid C. Refer to page 4-13 for arrow use guidelines.

These grids are to be used when preparing artwork for any Safety sign required that is not included in the following displays. In rare cases where approved Workplace Caution or Danger legends are too long to fit either Grids A or B, the panel height may be increased

1.5A for Grid A and 1.25A for Grid B for each additional line of text.

Workplace Safety signs are to be mounted for optimum viewing. Specify a panel size with enough target value so that it is easily seen in a busy shop environment. The matrix below specifies a standard viewing distance for each panel size using signs constructed on Grids A and C.

Grid A

For SNO, SAF, and approved SDA and SCA legends that exceed four lines, add 1.5A for each additional line of text to panel height. If there is more than one message, place a line space equal to A between the messages.

Workplace Safety Signs Panel Size and Viewing Distance Guide

Panel Size	Legend Size	Viewing Distance
8"x8"	A = .75"	21 ft
12"x12"	A = 1.125"	31.5 ft
16"x16"	A = 1.5"	42 ft
24"x24"	A = 2.25"	63 ft

The viewing distance calculation is to be reduced by 16% for signs constructed with Grid B.

Grid B

For SNO, SAF, and approved SDA and SCA legends that exceed four lines, add 1.25A for each additional line of text to panel height. If there is more than one message, place a line space equal to 0.834A between the messages.
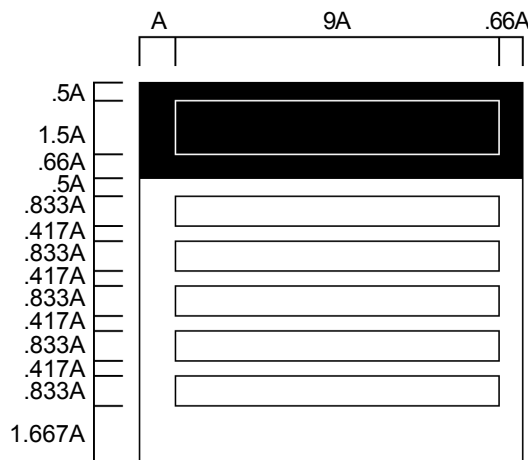
Grid C

Square inside the grid indicates location of arrow.
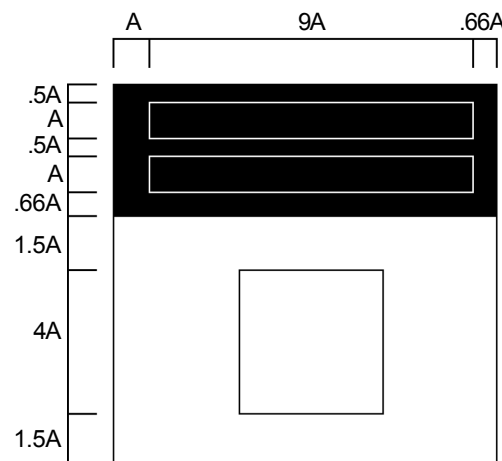
Red, white, and black Danger signs are used to warn of the existence of an immediate hazard or specific danger. Shown below and on page 11-5 are standard Corps Danger signs. These may be ordered using the code number adjacent to each display. Refer to guidelines on page 11-3 to determine appropriate panel size. Follow specified grid formats to fabricate any Danger sign needed that is not included in this display. See page 1-13 for requesting approval of nonstandard safety sign legends. For color standards, see page 4-7.

Grid A

Danger High Voltage	**Danger** No Smoking	**Danger** No Smoking Beyond This Point	**Danger** No Smoking or Open Flame
SDA-01	SDA-02	SDA-03	SDA-04
Danger People Working Above	**Danger** Crane Overhead	**Danger** Eye Protection Required in This Area	**Danger** Asbestos
SDA-05	SDA-06	SDA-09	SDA-10
Danger Automatic CO_2 System	**Danger** Do Not Watch Welding Arc	**Danger** Hard Hat Area	**Danger** Chemical Storage
SDA-11	SDA-12	SDA-13	SDA-14
Danger Flammable Material	**Danger** Keep Off Crane When In Operation	**Danger** Open Manhole	**Danger** Moving Cables Stay Clear
SDA-15	SDA-19	SDA-20	SDA-27
Danger Open Hatch			
SDA-29			

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SDA-00	.75"	8"x8"	-	ALU-6	65"	SR-SW/SK
SDA-00	1.125"	12"x12"	-	ALU-6	65"	SR-SW/SK
SDA-00	1.5"	16"x16"	-	ALU-6	78"	SR-SW/SK
SDA-00	2.25"	24"x24"	-	ALU-6	78"	SR-SW/SK

Grid B

Danger	**Danger**	**Danger**	**Danger**
High Voltage Authorized Personnel Only	Loud, High Pitch Noise Hearing Protection Required	High Intensity Noise Hearing Protection Required	Permit-Required Confined Space Do Not Enter
SDA-16	SDA-17	SDA-18	SDA-21

Danger	**Danger**	**Danger**	**Danger**
Keep Out of Yellow Area When Crane is Operating	Automatic CO_2 System Leave Area When Horn Sounds	No Smoking or Open Flame Within OOO Feet	High L.P. Gas Concentration In Building When Light is On or Horn Sounds
SDA-22	SDA-26	SDA-28	SDA-30

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SDA-00	.75"	8"x8"	-	ALU-6	65"	SR-SW/SK
SDA-00	1.125"	12"x12"	-	ALU-6	65"	SR-SW/SK
SDA-00	1.5"	16"x16"	-	ALU-6	78"	SR-SW/SK
SDA-00	2.25"	24"x24"	-	ALU-6	78"	SR-SW/SK

Caution signs are used to warn against potential hazards or to caution against unsafe practices. The standard Corps Caution signs are shown below and on page 11-7 with their respective order codes. Sizing guidelines for Caution signs are on page 11-3. For color standards, see page 4-7.

Grid A

Caution Keep This Door Closed	**Caution** High Voltage	**Caution** Protective Equipment Required In This Area	**Caution** Keep Aisles Clear
SCA-01	SCA-02	SCA-03	SCA-04
Caution Flammable No Smoking Within 50 Feet	**Caution** Low Clearance	**Caution** Watch Your Step	**Caution** Electric Fence
SCA-05	SCA-06	SCA-07	SCA-08
Caution Step Down	**Caution** Step Up	**Caution** Buried Electric Cables	**Caution** Low Overhead
SCA-09	SCA-10	SCA-11	SCA-12
Caution Emergency Use Only	**Caution** Hearing Equipment Required In This Area	**Caution** Do Not Use	**Caution** This Equipment Remote Controlled
SCA-13	SCA-14	SCA-15	SCA-16
Caution Slippery When Wet	**Caution** Shut Off Valve Keep Clear	**Caution** People Working Below	
SCA-17	SCA-18	SCA-19	

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SCA-00	.75"	8"x8"	-	ALU-6	65"	SK-SY/SK
SCA-00	1.125"	12"x12"	-	ALU-6	65"	SK-SY/SK
SCA-00	1.5"	16"x16"	-	ALU-6	78"	SK-SY/SK
SCA-00	2.25"	24"x24"	-	ALU-6	78"	SK-SY/SK

Grid B

Sign				
Caution Wear Goggles When Operating This Machine	**Caution** Stop Machinery to Clean, Oil or Repair	**Caution** Wear Snug-Fitting Clothing When Operating This Machine	**Caution** Lock Out Controls Before Making Electrical Repairs	
SCA-20	SCA-21	SCA-22	SCA-23	

Caution Stay Behind Yellow Line When Gate is in Motion	**Caution** Life Jackets Required Beyond This Point	**Caution** Wear Face Shield When Operating This Machine	**Caution** Water Unsafe for Drinking, Washing or Cooking
SCA-24	SCA-33	SCA-34	SCA-35

Caution
Asbestos Hazard

Do Not Disturb Without Proper Training and Equipment

SCA-36

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SCA-00	.75"	8"x8"	-	ALU-6	65"	SK-SY/SK
SCA-00	1.125"	12"x12"	-	ALU-6	65"	SK-SY/SK
SCA-00	1.5"	16"x16"	-	ALU-6	78"	SK-SY/SK
SCA-00	2.25"	24"x24"	-	ALU-6	78"	SK-SY/SK

Notice signs provide information to control or define access and circulation at a site and/or inform the viewer of other safety requirements. Examples of commonly used Notice signs are shown in the display below. To order, refer to the adjacent code with the appropriate sign size needed (see page 11-3). To fabricate Notice signs, see the grid format instructions also on page 11-3. For color standards, see page 4-7.

Grid A

Notice Keep Aisles Clear
SNO-01

Notice Fire Door Do Not Block
SNO-02

Notice No Exit
SNO-03

Notice No Smoking
SNO-04

Notice No Pedestrians Allowed
SNO-05

Notice Employees Only
SNO-06

Notice Authorized Personnel Only
SNO-07

Notice Full Cylinders
SNO-08

Notice Empty Cylinders
SNO-09

Notice No Vehicles Allowed Without Permit
SNO-10

Notice No Vehicles Allowed
SNO-11

Notice Face Shield Required In This Area
SNO-13

Grid B

Notice Make Your Workplace Safe Before Starting the Job
SNO-12

Notice Wear Ear and Eye Protection When Using All Equipment In This Shop
SNO-15

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SNO-00	.75"	8"x8"	-	ALU-6	65"	SB-SW/SK
SNO-00	1.125"	12"x12"	-	ALU-6	65"	SB-SW/SK
SNO-00	1.5"	16"x16"	-	ALU-6	78"	SB-SW/SK
SNO-00	2.25"	24"x24"	-	ALU-6	78"	SB-SW/SK

Safety signs call attention to the general rules or good practices that create a safe workplace. The standard Corps Safety signs are shown below with their respective order codes. Sizing guidelines for Safety signs are on page 11-3. For color standards, see page 4-7.

Grid A

Safety
Make Your Workplace Safe

SAF-01

Safety
Keep Work Area Clean and Safe

SAF-02

Safety
Permission Required Before Entering

SAF-03

Safety
Report All Injuries

SAF-04

Grid B

Safety
Wear Ear and Eye Protection When Using All Equipment In This Shop
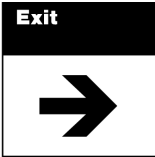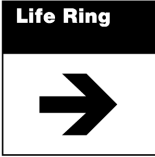
SAF-05

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SAF-00	.75"	8"x8"	-	ALU-6	65"	SG-SW/SK
SAF-00	1.125"	12"x12"	-	ALU-6	65"	SG-SW/SK
SAF-00	1.5"	16"x16"	-	ALU-6	78"	SG-SW/SK
SAF-00	2.25"	24"x24"	-	ALU-6	78"	SG-SW/SK

Directional signs that relate to accident prevention use a format similar to all other Workplace Safety signs (see Grid C, page 11-3). Shown in the display below are commonly used signs of this type. To order, identify the sign by the adjacent code. Indicate sign panel size required (see page 11-3) and arrow direction on the order. For color standards, see page 4-7.

Grid C

Fire Extinguisher	Fire Hose	Exit	Fire Alarm
SDR-01	SDR-02	SDR-03	SDR-04

Eye Wash Fountain	Emergency Exit	Stretcher	Fire Blanket
SDR-05	SDR-06	SDR-07	SDR-08

First Aid	Fire Fighting Equipment	Life Ring
SDR-09	SDR-10	SDR-11

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
SDR-00	.75"	8"x8"	-	ALU-6	65"	SK-SW/SK
SDR-00	1.125"	12"x12"	-	ALU-6	65"	SK-SW/SK
SDR-00	1.5"	16"x16"	-	ALU-6	78"	SK-SW/SK
SDR-00	2.25"	24"x24"	-	ALU-6	78"	SK-SW/SK

Signs are placed to alert and inform in sufficient time to avoid the hazard or take appropriate action. They should be sized for easy reading from the viewing distance required. In visually complex industrial shops, a sign that is too small will be lost. Conversely, an overly large sign can overwhelm an area.

Signs should be placed where they will not create distractions. Care should be taken to avoid grouping too many signs together in one location. Small sign panels placed for close viewing are appropriately placed at eye level: (5'-5"). Larger signs posted in big spaces or for viewing at greater distances should be placed proportionally higher. Signs

should not be placed where moveable objects may obscure them. Only place those signs that relate to a specific piece of equipment on that equipment.

Before ordering a sign, place a cardboard panel in the proposed location to verify the size and placement location.

a) 8" x 8" panel mounted at eye level for viewing up to 21 feet.

b) 12" x 12" panel mounted at eye level for viewing up to 31.5 feet.

c) 16" x 16" panel mounted 6'-6" or higher level for viewing up to 42 feet.

d) 24" x 24" panel mounted 6'-6" or higher level for viewing up to 63 feet.
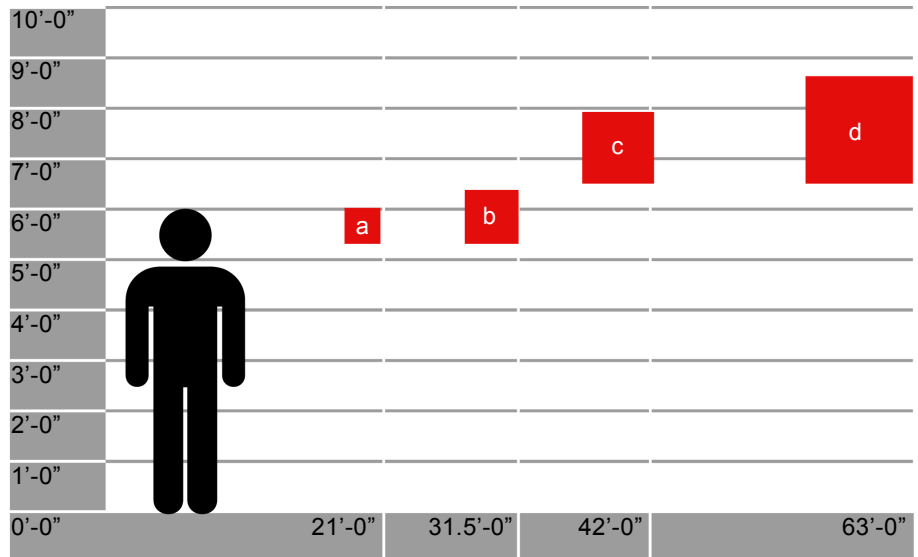
Various types of regulatory signs are used throughout Corps water resource development projects to warn, inform, and restrict where necessary. The four basic reasons regulatory signs are used are:

- to warn visitors of hazardous conditions of which they might otherwise be unaware.
- to restrict access in those areas of a project which present extremely dangerous conditions.
- to control visitor actions that may result in damage to the physical environment or government property.
- to limit visitor activities that may be objectionable to others.

The regulation that governs all Corps projects is Title 36 (Chapter III Part 327) of the U.S. Code of Federal Regulations. This document describes allowable and prohibited activities at Corps projects. In addition, all other federal, state, and local laws and regulations remain in full force and effect where applicable to those water resource development projects.

A copy of the full Title 36 (Chapter III Part 327) must be posted at each project for public information purposes. It should be placed where it can be easily viewed. The most appropriate location is at the resource manager's office and at major recreation facilities.

Because this is a "fine-print" regulation, it is unfair to assume that visitors will read and retain the information contained in Title 36. It is, however, important that this information is available for those who need to know the regulations. A standardized format has been designed as shown on page 12-2 to display this regulation in a uniform way. The large "Rules and Regulations" headline graphically calls attention to the purpose of this display.

Regulatory signs that are placed to control activity are very specific and should be placed in close proximity to the danger or activity being controlled.

For this purpose, various types of specific regulatory signs have been carefully designed and integrated into the Corps Sign Standards in the appropriate sections of this manual. These include:

1) Area Regulation Signs: These are two- to four-message Slat System signs placed at the entrance to a project or recreation facility identifying the major regulations within that area of which

visitors should be aware. These Slat signs have the worded prohibition and the respective symbol and slash on a panel (see Section 8).

2) Prohibition Symbol Signs: These signs incorporate a large symbol with prohibitive slash and the specific prohibition placed below in bold typography. These are placed in close visual proximity to where an activity is prohibited or a known safety hazard exists (see Section 8).

3) Workplace Safety Signs: These are Danger and Caution signs placed primarily in and around power plants and maintenance shops and are used to notify both visitors and employees of potential safety hazards (see Section 11).

4) Waterway Safety Signs: These are signs placed for viewing both from the water and/or land to warn or restrict people from existing dangers. See Section 14 for lock, dam, and waterway signs, and Section 7 for recreation hazard warning signs.

The coloring, lettering, and wording of these signs have been carefully chosen for easy legibility and understanding. Because of this, the wording of particular sign legends should not be altered unless unusual circumstances exist. In areas that are extremely hazardous, such as the tailwater area below a dam, public safety will be best protected by forbidding access to the area. This remains true regardless of public pressure exerted to allow access to these areas for such activities as fishing or boating.

The placement of signs prohibiting or restricting dangerous or unapproved activities requires caution and careful consideration. Because of the potentially serious consequences which may occur if the signs are not heeded or noticed, it is important that the principles and guidelines detailed in this manual be followed.

Public use and enjoyment of the recreational opportunities afforded by Corps navigation and flood control projects remain important goals of project operations. While the Corps endeavors to make project visitors and boaters aware of and respectful towards potential hazards, it also recognizes that not all such visitors will have basic knowledge of common dangers, or be cognizant of safety practices. The responsibility for these matters must rest primarily with project visitors, aided to a practical extent

by an aggressive public information and signing program. With careful consideration and planning for the placement of cautionary signs, public safety and enjoyment can be maximized without infringing on the effective and productive management of the project.

The panel with typographic masthead has been designed for posting Title 36 Regulations at project information kiosks, resource managers' offices, and entrance stations.

The panel uses a format for this display that provides good legibility. This graphic is screen-printed on non-reflective vinyl and mounted to an HDO plywood or aluminum panel. Properly mounted and maintained, this medium is vandal-resistant and will look good for many seasons. If damaged, the panel can be resurfaced in the field at nominal cost.

The same graphic is also available on a polyethylene panel with screen graphics for temporary posting.

For information on ordering Standard Title 36 Rules & Regulations display panels, contact your district Sign Program Manager.

For mounting of HDO plywood panel, use standard keyhole plates inserted on back of assembly. Secure attachment with a mechanical stop (nail or screw) to discourage removal. Keyhole attachment detail is shown in Appendix B, page B.7-1.

For temporary or seasonal postings, use white screen-printed polyethylene panels mounted with large head galvanized or stainless steel shingle nails.

Typical mounting on bulletin board or information kiosk. Structure of kiosk can vary from project to project.

30"

24.3125"

Rules & Regulations

US Army Corps of Engineers

Governing Public Use of Corps of Engineers Water Resources Development Projects
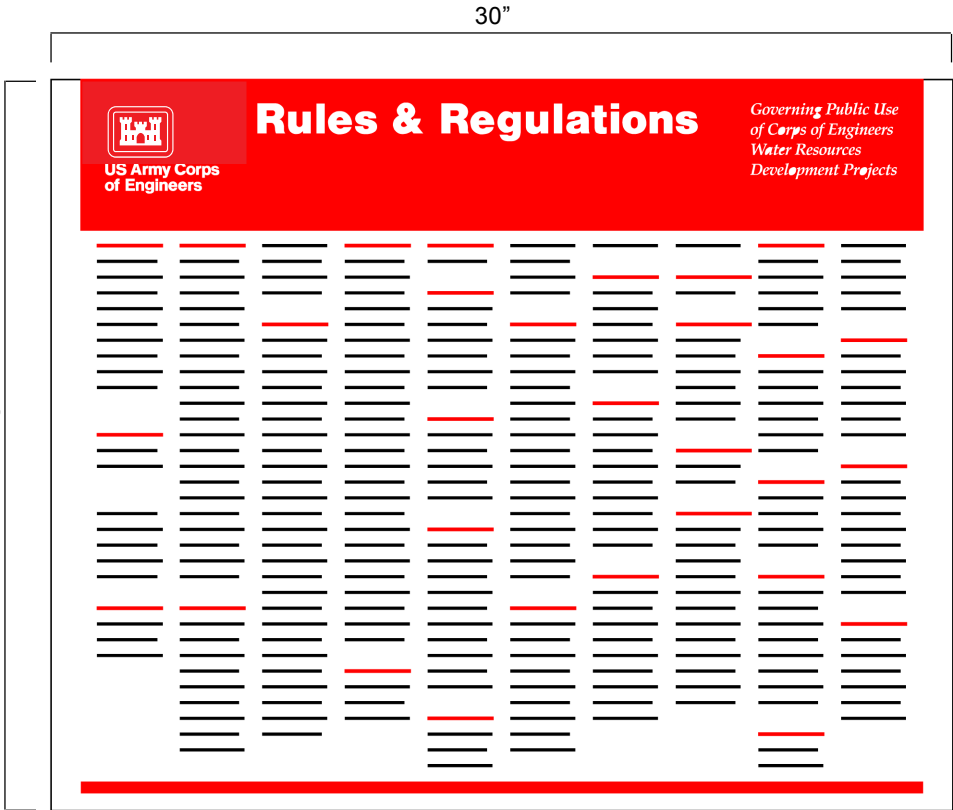
REG-02

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
REG-02	na	30"x24.3125"	-	SCP-6	48"	WH/CR-BK

48"
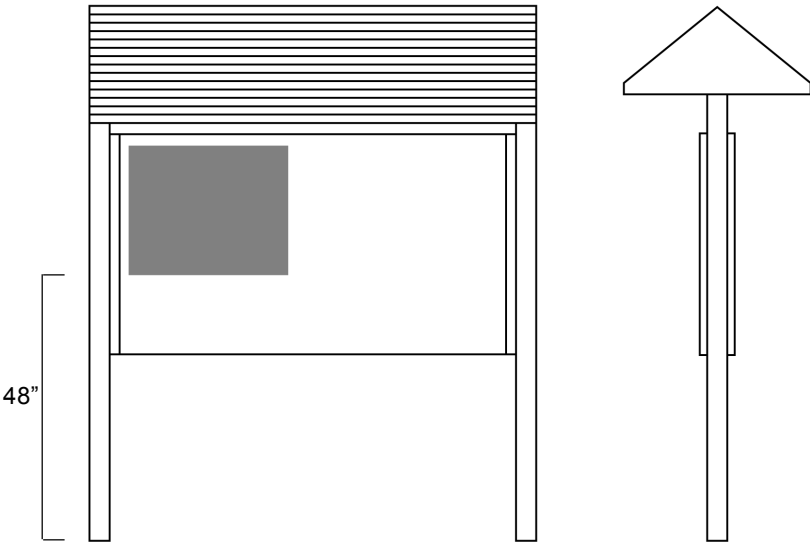
Rules and regulations for public use of Corps projects are shown on the posted displays of Title 36 and in a printed version available to visitors at entrance stations or at the resource manager's office.

A second sign, shown below, can be

displayed as needed. This lets project staff use a relatively small sign panel to highlight the Title 36 rules that are especially important at that Corps project. Local posting policy will vary from project to project and may include all entry points or just those that are in remote areas.

The panel is shown in two sizes and is designed using a modified version of the standard grid layout.

Large and small scale panels may be reproduced using the HDO-5 specification with screen-printed legend on white reflective sheeting. Small panels may also use the SCP-6 specification code and be screen printed on heavy gage white polyethylene. Aluminum may also be used as the substrate for this sign.

Notice to Visitors

This public land is provided for safe and healthful recreation use by the visiting public. All visitors are welcome to enjoy this area under the provisions of applicable federal laws and regulations.

Camping, picnicking, hiking, boating and swimming are allowed within the specific posted rules governing the use of these federal lands.

Prohibited uses or activities include, but are not limited to:
• Defacement of any federal property or natural features.
• Littering and discharge of contaminants or sewage.
• Fires in undesignated areas.
• Use of any vehicle off authorized roadways.
• Operation of watercraft without regard to posted regulations.
• Use of any firearm or lethal weapon outside designated areas.
• Unrestrained pets or domestic animals.

Any person who violates the rules and regulations established by the Secretary of the Army in 36 CFR, Part 327, will be cited and referred to the U.S. Magistrate in accordance with Section 234 of the Flood Control Act of 1970.
A complete copy of 36 CFR, Part 327, is available at the Corps of Engineers Project Office.

REG-05

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
REG-05	.5"	7.5"x10"	4"x4"	HDO-5/SCP-6	42"-60"	WH/SB
REG-05	1.125"	18"x24"	4"x4"	HDO-5	42"-60"	WH/SB

60"

42"
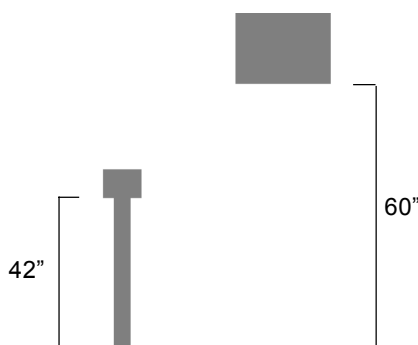
The Corps may issue shoreline management permits to land owners whose property abuts a water project. To receive a permit, owners must be in compliance with project shoreline management regulations, and pay the required permit fees. Permit recipients must conspicuously display a permit for view in accordance with posting guidance contained in ER 1130-2-406, page A-4.

For information on ordering standard Corps Shoreline Management Permit panels with numbers attached, contact your district Sign Program Manager.

This panel can be used as an option to the Shoreline Management Permit shown on page D-1 of ER 1130-2-406.

The Shoreline Management Permit is to be mounted in a conspicuous position for view from the water. Permit may be placed on a dock or as a free-standing post mounted sign placed on the permittee's property line.

Permits on flexible posts are white retroreflective sheeting with screen-printed base legend with permit numbers applied.

Larger panels are white polyethylene with white retroreflective background (appears light grey) with screen-printed base legend with permit numbers applied.

The Corps Signature is printed Communication Red with all other type printed black.

The permit numbers and expiration date are to be factory applied using non-removable opaque black legend (heat embossed, permanent computer cut vinyl or screen-printed). Typeface for individual permit numbers is to be Helvetica Medium and aligned flush left as shown.

Eq.   **Eq.**

.3125A
1.625A
.1875A
.1875A
1A
.5A
.1875A
.1875A
1A
.5A
.1875A
.1875A

.1875A
.25A
.125A
.25A
.125A
.25A

US Army Corps of Engineers

Shoreline Management Permit

Permit Number

3772

Expires:

01/96

This permit is non-transferable and may be revoked at any time.

.3125A   .3125A
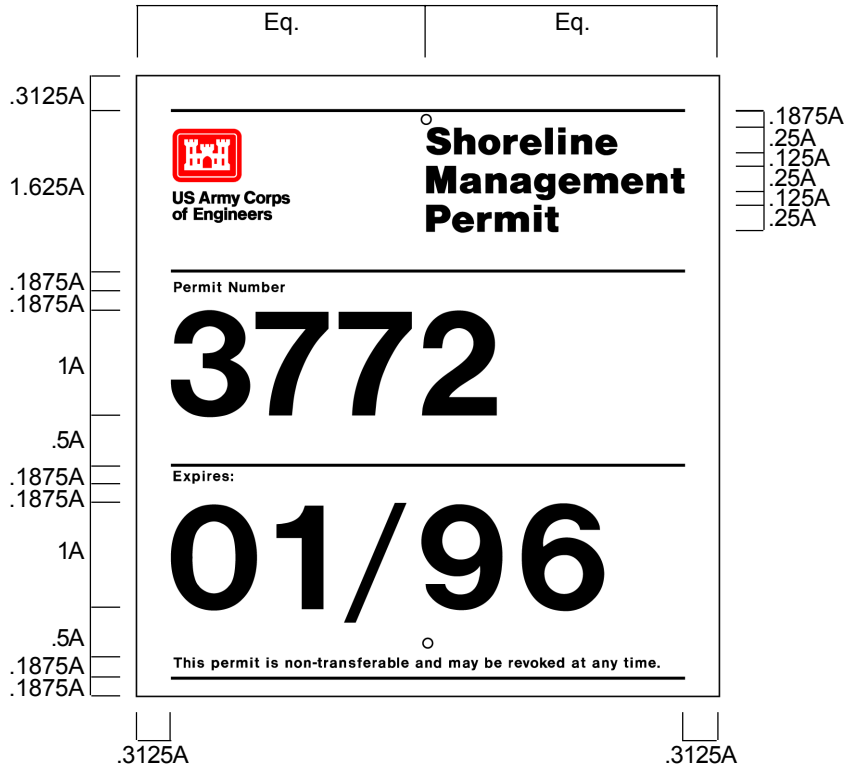
* Panel to be .075 gage white polyethylene sheet. A panel made of .080 aluminum may be substituted as a substrate.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
REG-03	.5"	2.8125"x3"	4" wide	FSM-7	36"	WH/BK
REG-03	1"	5.625"x6"*	4"x4"	SCP-6/SCP-7	36"	WH/BK

36"
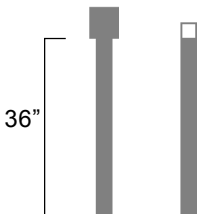
Discharge prohibition signs can be posted at any location where discharge of pollutants is a problem. Examples include boats discharging sewage or reoccurring problems with unauthorized dumping on public lands. These signs may also be located where particular emphasis is desired. Title 36, CFR, Chapter III, Part 327.9, Sanitation.

The sign is fabricated of reflective sheeting applied to HDO plywood or aluminum. Since it is intended for locations with short viewing distances, it is specified for small site specific postings.

Sign background is Safety Blue retro-reflective sheeting with white retro-reflective legend, overbar, and rule.

Underrule is .125A

The typeface used is Helvetica Bold and follows Corps standard letter and word spacing, Appendix D, page D.9. The sign panel format uses standard Grid 1, page 7-63.
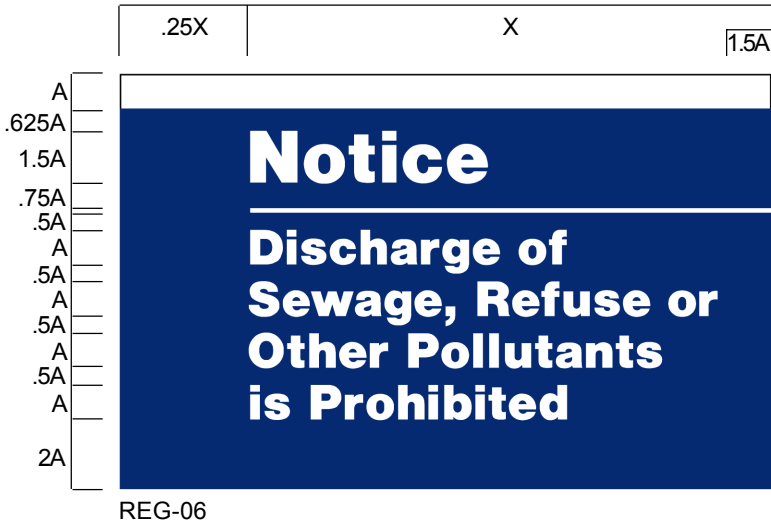
REG-06

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
REG-06	.75"	14.125"x9"	4"x4"	HDO-5/ALU-5	60"	SB/WH
REG-06	1"	18.875"x12"	4"x4"	HDO-5/ALU-5	60"	SB/WH
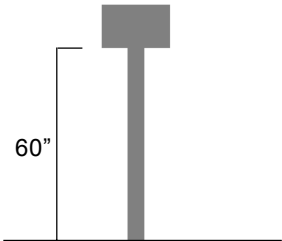
Access to some areas on Corps property is prohibited. This sign is usually mounted on a fence or a post and is intended to deter people from entering areas that are not open to the public.

This sign is also listed on page 14-30, "Restricted Area."

Sign background color is Safety Blue retroreflective sheeting with white retroreflective legend, overbar, and rule.

Underrule is .125A

The typeface used is Helvetica Bold and follows Corps standard letter and word spacing, Appendix D, page D 9. The sign panel format uses standard Grid 1, page 7-63.

This sign may be fabricated using engineering grade reflective sheeting. The sign may be screen printed on white retroreflective sheeting or fabricated using white cut graphics applied to base color.

No Trespassing
U.S. Government Property

REG-04

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
REG-04	.75"	19.25"x5.625"	4"x4"	HDO-5/ALU-5	60"	SB/WH
REG-04	.75"	19.25"x5.625"	-	HDO-6/ALU-6*	60"	SB/WH
REG-04	1.5"	38.375"x11.25"	4"x4"	HDO-5/ALU-5	60"	SB/WH
REG-04	1.5"	38.375"x11.25"	-	HDO-6/ALU-6*	60"	SB/WH

*Fence mounting detail shown on page B.7-5, detail 14.

20'-30'

60"
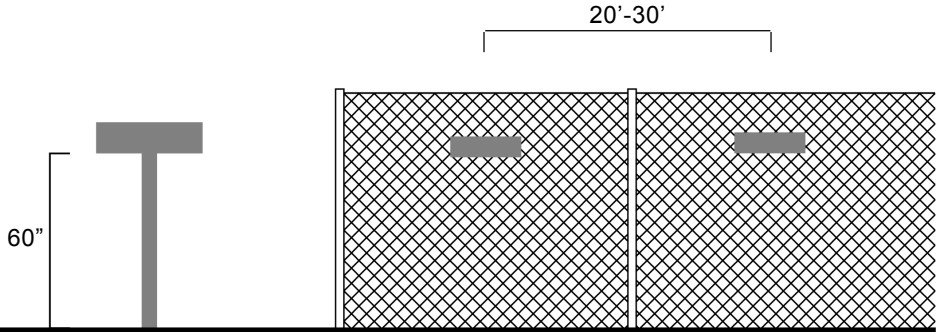
Interpretive signs, trail panels, and wayside exhibits are connectors. They give meaning to the experience of the visitor. Their function is to communicate specific messages to visitors that may be educational or relate to management concerns. Interpretive signs are most commonly used for visitor information kiosks or orientation signs, for self-guiding trails, or as wayside exhibits at viewing areas or resource management areas.

Interpretive signs will vary greatly in content and design; therefore, this section will focus on interpretive planning, writing guidelines, and format suggestions.

It is not the intent of this section to control the visual look of the finished signs; rather, the intent is to provide guidance in developing interpretive signs. Interpretive signs need to reflect creativity and flexibility, as they relate to specific sites, themes, goals, and objectives.

Interpretive signs are to be used for interpretive purposes only. Interpretive signs will not be used to circumvent requirements for approval of, or as a replacement for, Danger, Caution, and Warning signs. Interpretive signs may be used to supplement information about hazardous areas.

It is important at the beginning to have an idea of what interpretive signs are, and what "interpretation" is. Interpretation is defined by Interpretation Canada as:

"A communication process designed to reveal meanings and relationships of our cultural and natural heritage, to the public, through first-hand involvement with objects, artifacts, landscapes, and sites."

The Corps has used this definition, in modified form, to focus on its missions. The Corps defines interpretation as:

"Communication and education processes provided to internal and external audiences, which support the accomplishments of the agency's missions, tell the agency's story and reveal the meanings of and the relationships between natural, cultural, and created environments and their features."

To be "interpretive," the communication process should be based on Interpretive Principles. Freeman Tilden first developed six Interpretive Principles in 1957. Cable and Beck further developed the principles. The following are most pertinent to interpretive signage (Beck, Larry and Ted Cable, 2002, *Interpretation for the 21st Century: Fifteen Guiding Principles for Guiding Nature and Culture* (2nd Edition), page8):

1. To spark an interest, interpreters must *relate* the subject to the lives of the people in their audience.

2. The purpose of interpretation goes beyond providing information to *reveal* deeper meaning and truth.

3. The interpretive presentation -- as *a work of art* -- should be designed as a story that informs, entertains, and enlightens.

4. The purpose of the interpretive story is to *inspire* and to *provoke* people to broaden their horizons.

5. Interpretation should present a complete theme or thesis and address the *whole person*.

6. *Technology* can reveal the world in exciting new ways. However, incorporating this technology into the interpretive sign must be done with foresight and thoughtful care.

7. Interpreters must concern themselves with the quantity and quality (selection and accuracy) of information presented.

Focused, well-researched interpretation will be more powerful than a longer discourse.

8. Interpretation should *instill* in people the ability, and the desire, to sense the beauty in their surroundings – to provide spiritual uplift and to encourage resource preservation.

Unity is key. Interpretive signs should be integrated into the project's sign plan and interpretive programs. They should not stand alone, but be part of a planned whole. There should be unity of themes and of design. In planning interpretive signs, it is recommended that the following planning model be followed:

1. *Resource Analysis*. Determine what resource, object, or concept you will be interpreting to visitors. Conduct research to find all the facts, interesting viewpoints, provocative information, etc., that you can about the subject or site.

2. *Developing Objectives for Interpretive Signs*. For each interpretive sign or panel, determine the objectives for interpretive message(s). These should include at least one each of the following:

- *Learning Objective*. Facts or information you feel are important for the reader to remember. An example of a learning objective is "the majority of the visitors will be ale to distinguish a salmon from a rainbow trout."

- *Behavioral Objective*. Behavioral objectives are the physical behaviors or actions that you want the visitor to do either while reading the interpretive sign (e.g. look for, see if you can find, listen for, etc.) or an action desired after the visitor has read the sign (e.g. attend more interpretive programs, be a safer swimmer, wear their PFD when in the boat, etc.).

- *Emotional Objective*. The emotional objective is perhaps the most important objective. Unless the visitor is motivated to "remember" learned information, or "do" the desired behavior, those objectives cannot be accomplished. An example of an emotional objective is that "after reading the interpretive panel, the majority of the visitors will feel that it is important to wear a PFD while in their boats."

3. *Know Your Visitor.* This section involves considering who the audience is that will be using the interpretive signs.

Are they boaters, anglers, hikers, campers, etc.? Likewise the demographics of the user (urban, rural, age groups, income, gender, etc.) all play a role in determining what the content of the sign should be, and how best to relate the message to the target group.

4. *Develop an interpretive theme for the display*. The theme must:

- Be based on the goals and objectives for the trail, overlook, etc.;

- Contain your key message;

- Be a complete sentence;

- Combine the tangible objects on the trail with the universal concepts or ideas that help people relate to this site so they find it meaningful in some way.

5. *Determining How / When / Where to Use Interpretive Signs*. Considerations include site location, how many signs to use, what size they should be, should they be permanent or seasonal, and if a sign should be used rather than some other interpretive service or medium.

6. *Evaluate Effectiveness*. The communication effectiveness of proposed interpretive signs must be evaluated prior to fabrication, so that necessary changes can be made without incurring major costs. This planning step is a review of the effectiveness of the interpretive sign including text, graphics, and total communication presentation. Are the objectives being met? To evaluate interpretive signs, some techniques include:

- In-house review;

- Review by a panel of visitors;

- Review by experts (teachers, resource specialists, etc.).

7. *Implementation and Operations*. This section of the planning process can be used as a checklist for all the items needed to go from plan to reality. This includes concerns such as:

- Funds available;

- Actual versus desired production time;

- Material selection. See the Natural Resources Management Gateway at

http://corpslakes.usace.army.mil/ employees/interpretive/sign.html for the advantages and disadvantages of various materials;

- Who will write the text and do the design?
- Who will review graphics and text?

- Approval steps;

- Who will fabricate the panels?

- Who will install completed signs?

Finding More Information:

For more help in developing quality interpretive signage, attend the Interpretive Services PROSPECT course or you may consult the Interpretation page of the NRM Gateway at http:// corpslakes.usace.army.mil/employees/ interpretive/interpretive.html.

Among other good references that you may consult are:

- *Interpretation for the 21st Century: Fifteen Guiding Principles for Interpreting Nature and Culture* by Larry Beck and Ted Cable, published by Sagamore Publishing of Champaign, Illinois

- *Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets*, by Sam H Ham, North American Press.

- *Interpreting for Park Visitors* by William J. Lewis, Eastern Acorn Press.

- *Interpreting Our Heritage* by Freeman Tilden, University of North Carolina Press

- *Signs, Trails, and Wayside Exhibits: Connecting People and Places* by Suzanne Trapp, Michael Gross, and Ron Zimmerman published by the University of Wisconsin, Stevens Point.

Self-guiding interpretive trails use two different types of signs: one large trail orientation sign and several smaller trail station signs located at various sites along the trail.
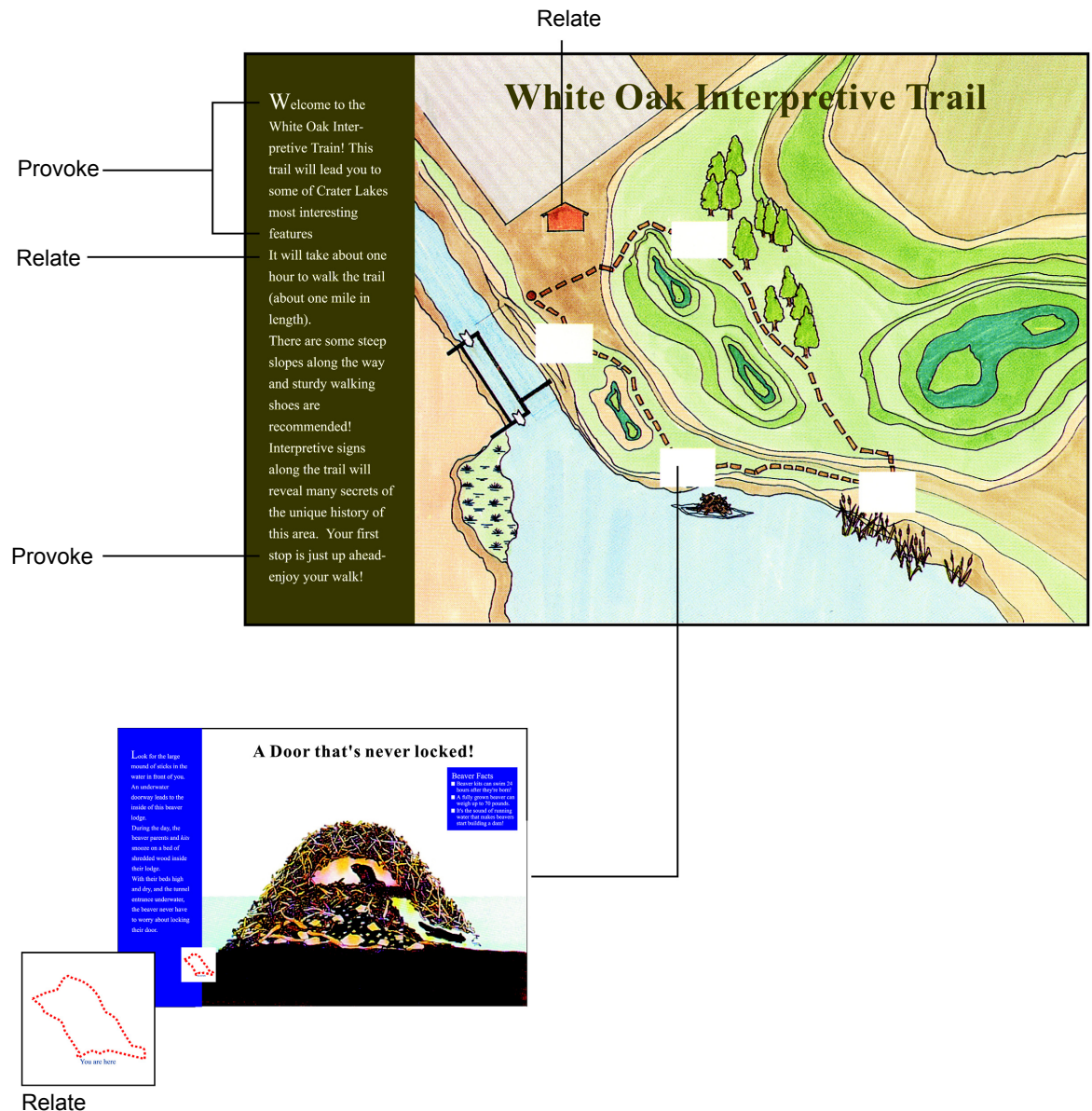
The role of the trail orientation sign is to give the visitor a general overview of what the trail is about and what kind of recreational experience to expect.

Based on this information, the visitors can decide whether or not to walk the trail. Every trail orientation sign should include:

- The name of the trail;

- Introduce the interpretive theme of the trail;

- A brief introduction to the trail length and walking time;

- A map of the trail so visitors can see where the trail may take them, and where the trail ends;

- Any necessary safety information (e.g., sturdy hiking shoes recommended, steep hills, etc.), or overview of the storyline the trail will be interpreting (e.g., provide a firsthand look at some of the ways we are managing forest resources).

Relate

Provoke

Relate

Provoke

White Oak Interpretive Trail

Welcome to the White Oak Interpretive Train! This trail will lead you to some of Crater Lakes most interesting features

It will take about one hour to walk the trail (about one mile in length).

There are some steep slopes along the way and sturdy walking shoes are recommended!

Interpretive signs along the trail will reveal many secrets of the unique history of this area. Your first stop is just up ahead- enjoy your walk!

A Door that's never locked!

Look for the large mound of sticks in the water in front of you. An underwater doorway leads to the inside of this beaver lodge.

During the day, the beaver parents and kits snooze on a bed of shredded wood inside their lodge.

With their beds high and dry, and the tunnel entrance underwater, the beaver never have to worry about locking their door.

Beaver Facts
■ Beaver kits can swim 24 hours after they're born!
■ A fully grown beaver can weigh up to 70 pounds.
■ It's the sound of running water that makes beavers start building a dam!
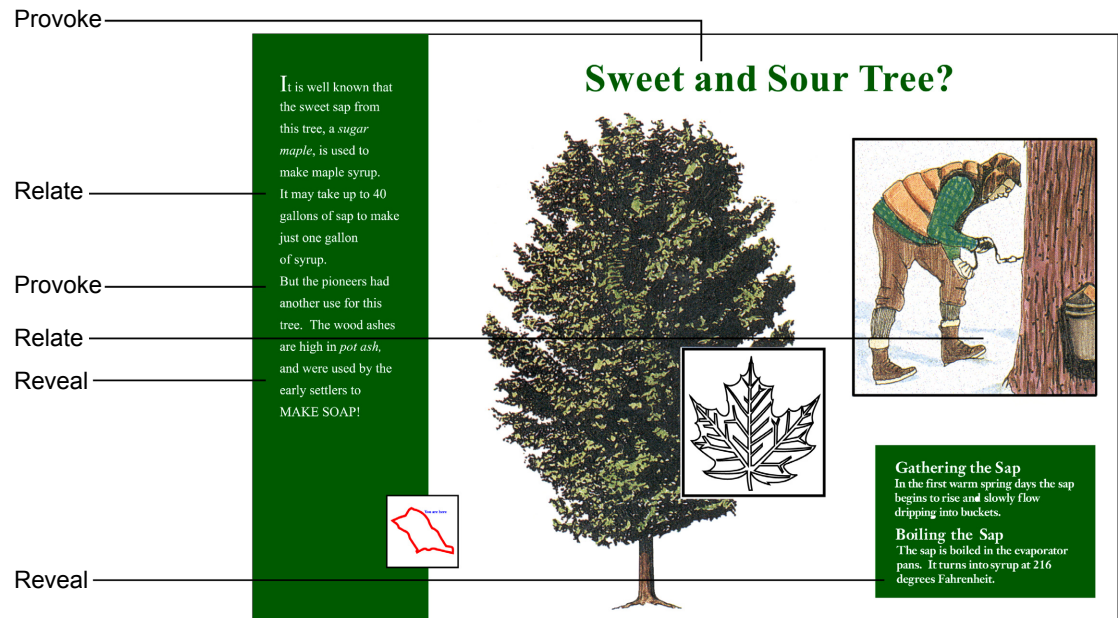
You are here

Relate

In planning and developing signs for self-guiding trails it is important to remember that the interpretive story for the entire trail should be developed first. Then each trail stop interprets a part of that whole story. A self-guiding trail should not have more than 7-10 stops.

Each station sign should be considered a sub-theme of the main theme. These sub-themes reinforce the main theme and are part of the story being told. Like themes, sub-themes should:

- Be based on the goals and objectives of the trail;

- Support the key message in both its title and message;

- Be complete sentences;

- Combine the tangible objects with universal concepts or ideas that help people relate to this station on the trail or this part of the story.

The last stop on the trail should be the conclusion to your story. It should:

- Relate and restate the theme;

- Reveal and summarize the key points;

- Provoke the visitor to find additional information;

- Direct people, if necessary, to the starting point.

Provoke ——

Relate ——

Provoke ——

Relate ——

Reveal ——

Reveal ——

Sweet and Sour Tree?

It is well known that the sweet sap from this tree, a *sugar maple*, is used to make maple syrup. It may take up to 40 gallons of sap to make just one gallon of syrup.
But the pioneers had another use for this tree. The wood ashes are high in *pot ash,* and were used by the early settlers to MAKE SOAP!

Gathering the Sap
In the first warm spring days the sap begins to rise and slowly flow dripping into buckets.

Boiling the Sap
The sap is boiled in the evaporator pans. It turns into syrup at 216 degrees Fahrenheit.

In general, the design of interpretive trail signs should follow the following guidelines:
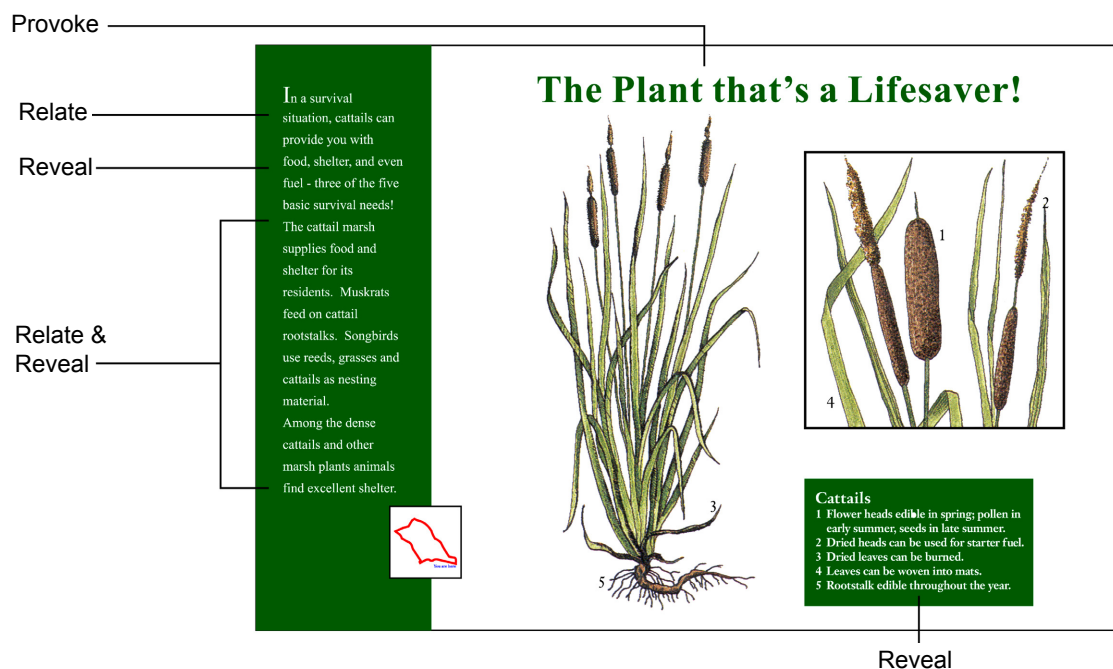
- Size: 20" x 30"

- Content format will generally be left to the creativity of the planning team. Planning for the sign should follow the planning steps presented earlier. Sign content should employ the Interpretive Principles.

- Use the message pyramid. Text length should not exceed 50-60 words. If more text is required, it should be broken up into several paragraphs of 50 words or less.

- Graphic Selection should be chosen to best illustrate the concept being communicated, rather than duplicate what the visitor has already seen.

- Nonverbal communication: remember that the colors, label type style, and label size all affect the visitor a communicate part of the message. For example, a sign about poisonous plants would be more effective with red than green because red connotes danger.

Provoke

Relate

Reveal

Relate &
Reveal

The Plant that's a Lifesaver!

In a survival situation, cattails can provide you with food, shelter, and even fuel - three of the five basic survival needs! The cattail marsh supplies food and shelter for its residents. Muskrats feed on cattail rootstalks. Songbirds use reeds, grasses and cattails as nesting material.
Among the dense cattails and other marsh plants animals find excellent shelter.

Cattails
1 Flower heads edible in spring; pollen in early summer, seeds in late summer.
2 Dried heads can be used for starter fuel.
3 Dried leaves can be burned.
4 Leaves can be woven into mats.
5 Rootstalk edible throughout the year.

Reveal

Wayside exhibits are located at points of interest such as powerhouses, forest management areas, locks and dams, roadside pull-offs, or vistas and viewing platforms.

Developing interpretive exhibit panels follows the same interpretive planning steps and use of interpretive techniques as does developing interpretive trail signs. In general, interpretive exhibit panels should follow the same guidelines.

- Avoid square panels or large rectangles. A 5 to 3 or a 5 to 4 ratio is more visually appealing. Use materials that are appropriate to your site.

- Content format will generally be left to the creativity of the planning team. Planning for the sign should follow the planning steps presented earlier. Sign content should employ the Interpretive Principles.

- Text should be kept short. Create a message pyramid: Title (no more than 5 words), subtitle (up to 25 words), text. Each text block should not exceed 50-60 words.

- Graphic images have more impact than words. Their selection is key to successfully communicating the concept or topic to the visitor. The graphics should best illustrate the concepts, or serve to achieve one or more of the stated objectives of the exhibit panel.

Provoke
Provoke
Relate
Reveal
Reveal
Relate
Relate & Reveal

A door that's never locked!

Look for the large mound of sticks in the water in front of you. An underwater doorway leads to the inside of this beaver lodge.
During the day, the beaver parents and *kits* snooze on a bed of shredded wood inside their lodge.
With their beds high and dry, and the tunnel entrance underwater, the beaver never have to worry about locking their door.

Beaver Facts
- Beaver kits can swim 24 hours after they're born!
- A fully grown beaver can weigh up to 70 pounds.
- It's the sound of running water that makes beavers start building a dam!

Provoke
Provoke
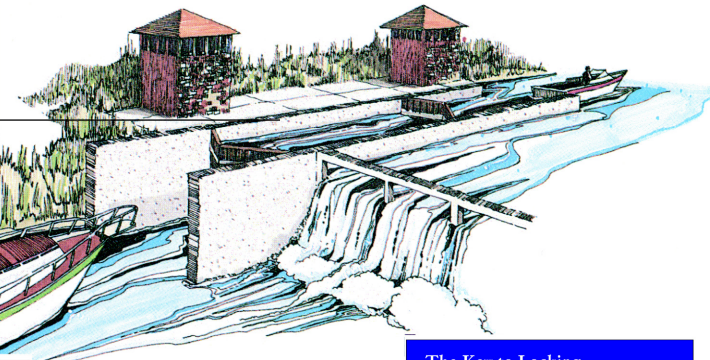Relate & Reveal
Graphics Relate & Reveal
Reveal

A door that's always locked?

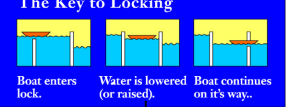Most natural rivers could not be navigated by boats without using a lock system.
Locks help by removing potential river hazards (such as snag and shoals) by raising water levels.
Boats can then travel on the river, in any direction, safely above any dangerous sites.
This system of locks and dams allows commercial and pleasure boats to use the entire length of many rivers, using special doorways that are always locked!

The Key to Locking

Boat enters lock.
Water is lowered (or raised).
Boat continues on it's way..

Graphics Relate & Reveal

13-7

Interpreting Cultural Resources

Care must be taken when interpreting any cultural resources or sites because of the potential for theft and vandalism problems.

Corps resource management staff should seek the advice of their district archaeologist in determining how best to interpret sensitive cultural resources. Sometimes it may be best not to interpret at all.

Remember the Visitor

In planning and designing interpretive signs, it is important to remember how people learn. Consider the following:

- People learn better when they are actively involved in the learning process;

- People learn better when using as many senses as possible;

- People retain about:
  - 10% of what they hear,
  - 30% of what they read,
  - 50% of what they see, and
  - 90% of what they do.

Remember this when planning the graphics and writing the text for interpretive signs or exhibit panels.

Hints for Writing Text for Interpretive Signs

1. Keep your sentences short.

2. Avoid using technical or unfamiliar terms, abbreviations, acronyms, and jargon.

3. Write about what visitors can see or experience.

4. Use active verbs.

5. Add touches of humanity. Use first person quotations, make references to people's common experiences, and write with warmth and emotion.

6. Encourage visitor involvement.

7. Use colorful language such as meta phors, puns, quotations, etc.

8. Use Interpretive Principles as developed by Tilden, Cable, and Beck.

9. Do not try to influence the visitor. Present the facts, benefits, and rationale of the activity and let the visitor decide.

10. Remember to stay focused on the theme so your writing does not stray from the key message in the story.

11. Consider having different themes for the same trail for different seasons or different interests (e.g. birding trail, botany trail, history trail, all on the same trail) with different guides for each.

12. Consider access for people with disabilities in all aspects of trail design.

13. Keep it simple. Make it fun!

The development of the waterway sign system represents an important step in making the waterways, lakes, and rivers easier to use. Corps waterway signs are intended to complement the U.S. Coast Guard (USCG) Aids to Navigation (ATON) System; they are not intended to be a substitute for the ATON system. To find out more about the ATON system, visit the USCG website at http://www.uscgboating.org/safety/aton/aids.htm, or call your USCG District ATON office. See Section 15 for a detailed discussion of the use of the ATON system at Corps facilities.

The Corps waterway sign program is a fixed sign system and does not address buoys. For the use of buoys, see Section 15. Waterway signs are primarily used above and below dams to warn of dangerous conditions and to instruct boaters of local locking procedures.

The primary purpose of this program is to increase boater safety. Each element of the program has been carefully designed to be part of this comprehensive system. It employs very specific standards for legend, color, format, typography and size.

This section contains basic visual standards and signing principles. Implementation for lock, dam, and waterway signing must follow a detailed study and plan approved by the district Sign Program Manager and then submitted to the Chief of Operations for final approval.

Sign Legends
Caution, Warning, and Danger legends have been developed by the HQUSACE Chief Counsel's office and Operations personnel. The standardized sign legends in this section have been specified because of their brevity and clarity to appropriately warn, instruct, describe or identify. These sign legends cannot be changed without HQUSACE approval. If the wording of these critical safety signs is not appropriate to the condition being signed, consult the district Sign Program Manager to apply for approval of a nonstandard legend.

Sign Types
Three basic sign types are used to identify a specific zone or area around the dam. To be effective, each lock, dam and waterway configuration must be signed as a total package. The basic sign types are:

1) Warning: Used to caution boaters of impending dangerous conditions, generally placed the farthest up and downstream to notify boaters they are approaching a dam.

2a) Restricted: Placed in closer proximity to the dam and on the structures to prohibit access.

2b) Danger: To inform viewers of an immediate and grave danger.

3a) Lock Approach: Used to direct traffic to the lock chamber, including "Arrival Point". Can be used at considerable distance from lock to ensure correct traffic flow into the lock channel.

3b) Lock Information/Instruction: Used both along the lock wall to instruct on the proper entry and within the lock chamber to describe lock procedures and indicate distance markings.

Workplace Safety signs (Caution, Danger, Notice, and Safety) as shown in Section 11, will also be used in and around a dam or navigation facility, as required, to warn or instruct Corps employees, contractors and visitors.

Shown on the following pages are the four basic dam configurations common to Corps projects. Each one uses the sign types described above in a zone pattern specific to the particular types of dam, as listed below.

• Submerged/fixed crest dam without lock
• Submerged/fixed crest dam with lock
• Gated dam with lock
• Dam with reservoir

The actual signs and zones used at the projects will depend on the type of the facility and local conditions as determined by ER/EP 1130-2-520, Chapter 10, Restricted Areas for Hazardous Waters at Dams and Other Civil Works Structures.

Placement
Extreme care should be taken to specify the correct sign, legend and size, and placement of these signs following the guidelines and specifications in this section. For the program to be successful, it is imperative that the viewer have every possible chance to read and heed the signs to help avoid potential accidents.

General sign placement guidelines are provided on pages 14-57 through 14-61. These are provided to illustrate the rationale of the system but are not intended to be implemented without a review. Existing conditions must be evaluated on a site-by-site basis, followed by the development of a sign plan, using the signs and engineering criteria contained in this section.

Color
Colors have been developed through scientific research and controlled testing. All sign colors and sign materials used must be in compliance with this manual. Color standards are described on pages 14-7 and 14-34. Viewing distance requirements and sign formats were developed by the Corps specifically for this program.

Typeface
The lettering for the sign legends adopts the Haas Helvetica Medium typeface. The exception is for smaller signs viewed from the land, which are similar to the Corps recreation signs and use the Helvetica Bold typeface. This Helvetica Medium typeface has a nearly exact 1:5 stroke-width to letter height ratio.

Alternate Letter-spacing for Waterway Signs
To increase legibility for all signs viewed from the water, a special letter- and word-spacing specification and guide has been incorporated in the size formula for these signs. In this version, the space between letters has been increased thirty percent for signs with Haas Helvetica Medium typeface legends. This differs from the standard letter- and word-spacing shown for all other signs in this manual. This alternate letter- and word-spacing guide is provided in Appendix D, pages D-29 through D-34 (Helvetica Medium: Waterway Letterspacing Matrix, and Helvetica Medium: Waterway Word Display Reproduction Art). Formulas in the matrices use values that are "rounded off", and will thus vary slightly from panels precisely calculated in Corps sign software. To prepare any large waterway sign legend, it is advisable to use the software to determine the length of the word or multiword line legend.

There is no change for signs with Helvetica Bold legends, other land viewed signs, or information and identification signs within a navigation lock.

This is a system of nonilluminated, retroreflective signs, intended for viewing from dawn to dusk. Specific locations may be illuminated using external lighting should local conditions dictate.

Sign layout adopts the standard grid formats used throughout the manual. Proportional grid layout charts are provided in Section 7, pages 7-63 through 7-65.

The net effect is an overall sign design that has good target value in the environment, high legibility, and is part of a comprehensive nationwide system.

Sign Type Specifications
Each sign is identified with a standard sign type code and related information in a matrix below the panel. Sign footings and structures for most large waterway signs will need to be engineered on a site-by-site basis because of the variation in conditions. For those signs, the note "Engineered" indicates that there is no standard specification for that sign. However, general fabrication and material specifications for waterway signs are provided in Appendix B, pages B.13 through B.13-16. The National Sign Program MCX can be consulted for help with the engineering of waterway signs.

14-1

Safety zones are determined in accordance with ER/EP 1130-2-520, Chapter 10, Restricted Areas for Hazardous Waters at Dams and Other Civil Works Structures.

The ATON system as described in Section 15, is the primary means used to identify safety zones and conditions above and below dam structures. Signs are a compliment to that system.

This section describes the use of signs for this purpose.

The diagram below illustrates the possible safety zones above and below dam structures. These zones, each progressively closer to the dam, are to be identified using signs specifically designed and worded to notify boaters of the pool and tailwater regulations for that dam.

Sign placement, the number of zones signed, and size of each respective zone will be determined by the district and will vary from one project to the next.

To the left of the diagram are the descriptions of each zone. The diagrams on the following four pages show how signs may be placed depending on the type of dam being signed.

Zone 1, Warning Area
Upon entry into the zone, either up or downstream, boaters are warned that they are approaching a dam. This warning is most critical for submerged or fixed crest structures. For Zone 1 signs, see page 14-10.

Zone 2, Danger Area
Upon entry into this section of the river, the boater is notified with a Danger sign that the dam is a specific distance ahead. These signs are placed at a distance where the dam is generally perceptible if the boater is conscientiously looking for it. Refer to page 14-13 through 14-16 for examples of Zone 2 signs.
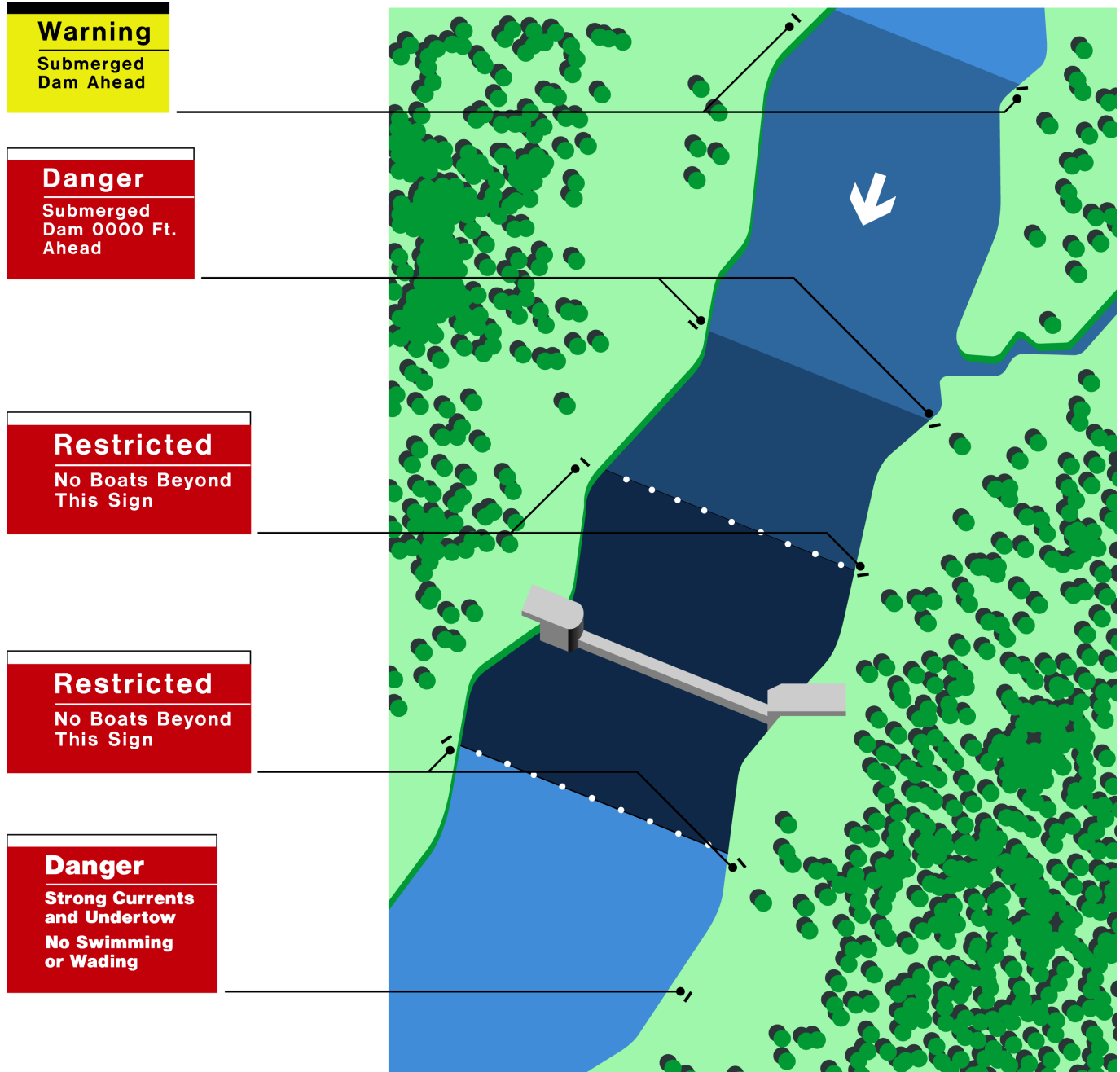
Zone 3, Restricted Area
Signs are placed both on the outside of this zone, restricting access beyond that point, and as supporting signs on the face of the dam structure or on special pylons instructing boaters to stay back the designated distance. Restricted areas are established on both the upstream and downstream side of the dam. The Restricted signs used in this zone are shown on pages 14-17 through 14-19.
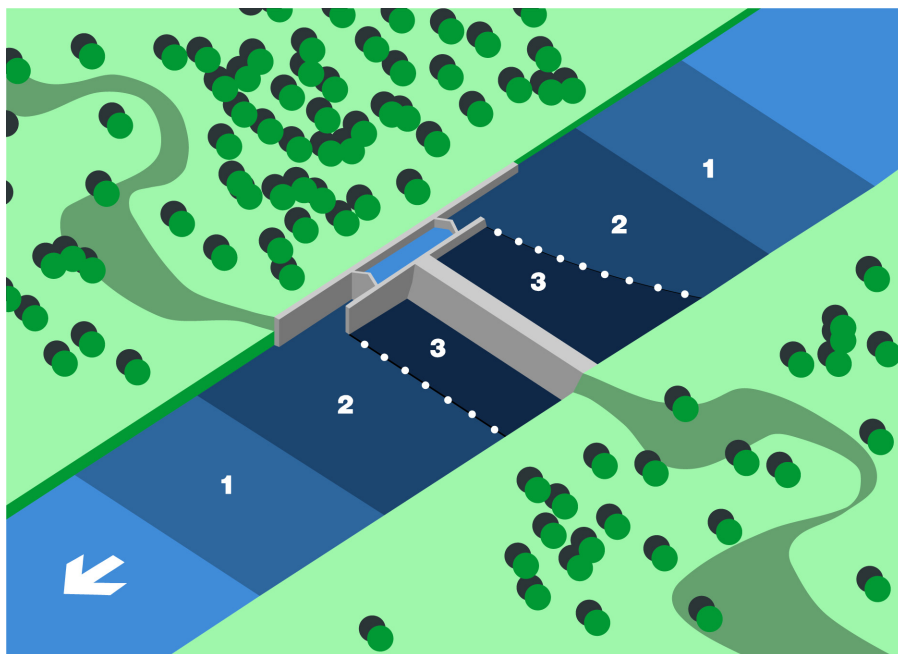
Illustrated below is a typical sign plan for a submerged or fixed crest dam that is not part of a navigable waterway. Because this type of structure can be very hazardous to pleasure boaters in kayaks or canoes and small fishing boats, care should be given to placement and maintenance of safety and Warning signs.

Pedestrian access from the river bank onto the dam itself and swimming or wading during low-water should be prohibited.

Warning
Submerged Dam Ahead

Danger
Submerged Dam 0000 Ft. Ahead

Restricted
No Boats Beyond This Sign

Restricted
No Boats Beyond This Sign

Danger
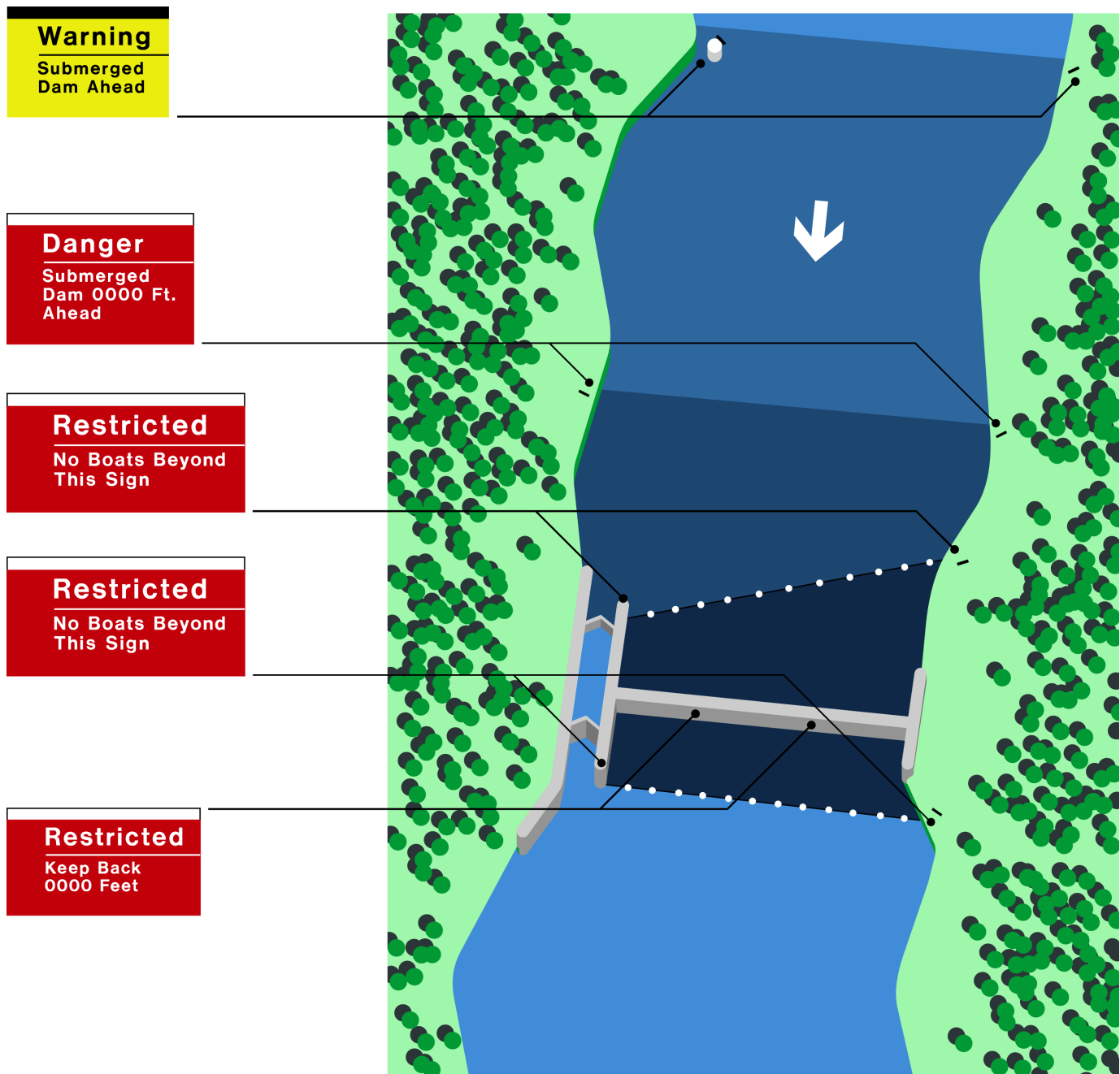Strong Currents and Undertow
No Swimming or Wading

Illustrated below is a typical sign plan for a submerged or fixed crest dam with navigation lock. The configuration of safety zones is similar to a submerged dam without lock. The effective placement of the signs is much more complex because the river is generally wider. Where possible, the restricted areas should be reaffirmed with a buoy line to inform boaters that they are at a restricted area.

Fixed crest dams are difficult to see from low riding small boats moving downriver since the crest (top of the concrete) is normally covered with a smooth ribbon of flowing water. To keep boaters from being caught in a strong current and drawn over the dam, the safe distance away from the hazardous area should be identified using the appropriate sign. Likewise, boaters should never approach the down-river side of the dam as they may be pulled into the face of the dam by strong reverse currents which roll back toward the dam.

Warning
Submerged
Dam Ahead

Danger
Submerged
Dam 0000 Ft.
Ahead

Restricted
No Boats Beyond
This Sign

Restricted
No Boats Beyond
This Sign

Restricted
Keep Back
0000 Feet

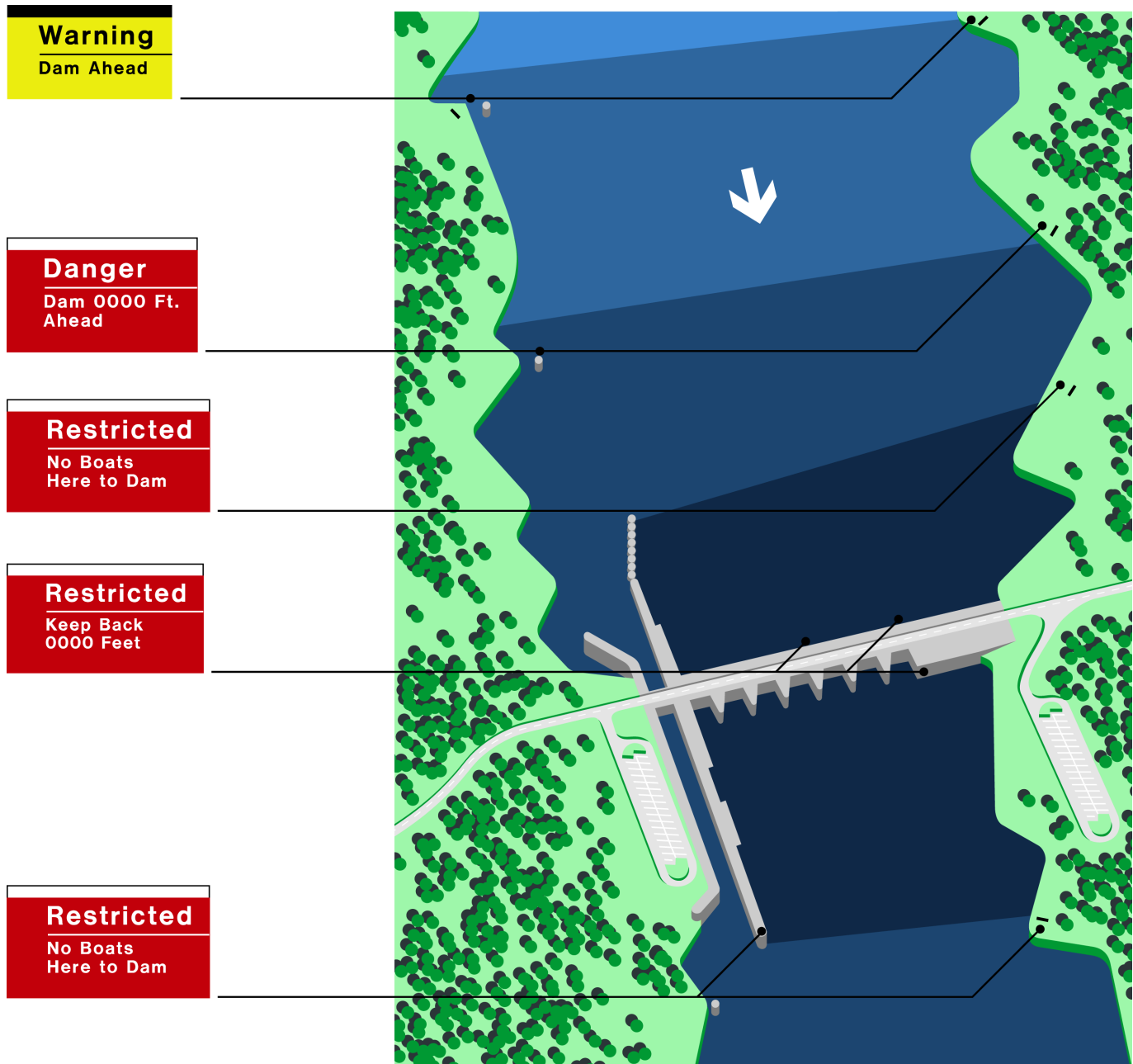Illustrated below is a typical sign plan for a gated dam with navigation lock. Typically, there may be as many as three zones: Warning, Danger and Restricted. These areas are to be signed for boaters traveling downstream towards the dam.

The dam structure is generally visible from upstream. If hazards from open spillways and intakes can be mitigated using fewer signs closer to the structure, there may be no need for a multizone sign warning system.

If the area around the dam is more dangerous than it appears because of strong undertows created with opened gates and intakes, the restricted areas close to the dam must be thoroughly signed.
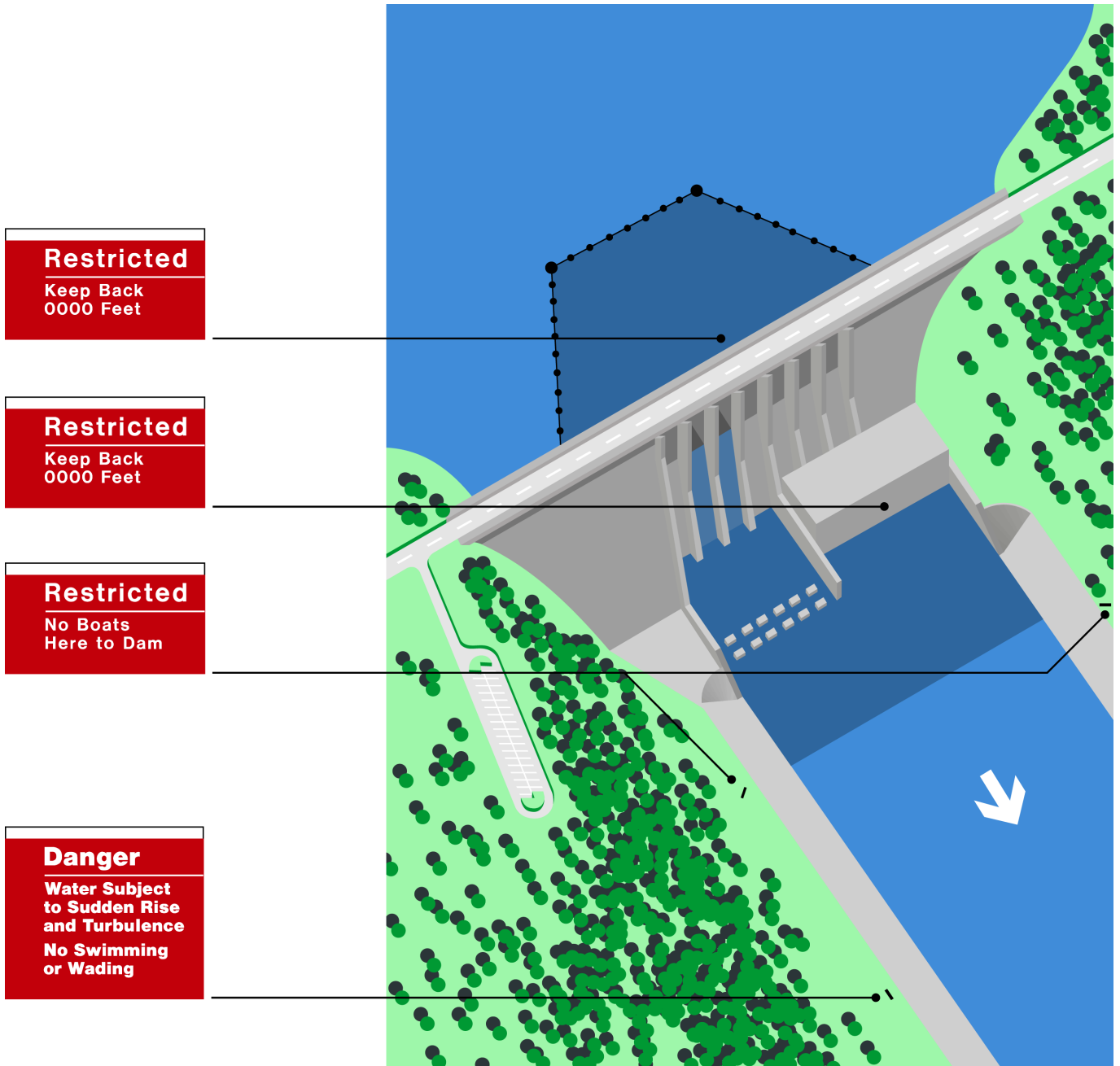
There are critical safety hazards below the dam such as turbulent discharge from the dam as well as side currents adjacent to the lock which may require site specific warnings in addition to restricted zone signs. Water access along the river bank by pedestrians can be controlled by the use of signs along the shoreline.

Warning
Dam Ahead

Danger
Dam 0000 Ft. Ahead

Restricted
No Boats Here to Dam

Restricted
Keep Back 0000 Feet

Restricted
No Boats Here to Dam

The major zone to be signed at a flood control dam is the tailwater area. Signs are placed to notify both the boaters in the tailwater and people along the riverbank of the restricted area.

Since the tailwater is subject to sudden rise and violent turbulence as a dam is operated, standardized Danger signs are to be used to inform viewers along the river's edge of the hazardous conditions and restrict access to the water in this area. The size of this danger or restricted area depends on local conditions. A typical sign plan for a dam creating a lake for flood control and hydropower is illustrated below.

Restricted
Keep Back
0000 Feet

Restricted
Keep Back
0000 Feet

Restricted
No Boats
Here to Dam

Danger
Water Subject
to Sudden Rise
and Turbulence
No Swimming
or Wading

The Corps waterway safety signs are based on a standard referential color system. Consistent use of the standard colors for safety marking of waterways is important using Warning, Danger and Restricted signs for the effectiveness of this program.

Shown below are the only allowable color combinations that are to be used on signs to warn and/or restrict boaters on a Corps water project. See Section 15 for the colors to be used on daymarks and buoys.
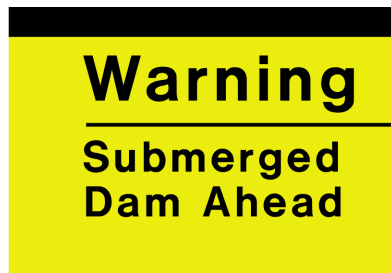
Zone 1, Warning Signs
Lemon Yellow diamond grade retroreflective sheeting background with black nonreflective legend, overbar and rule.
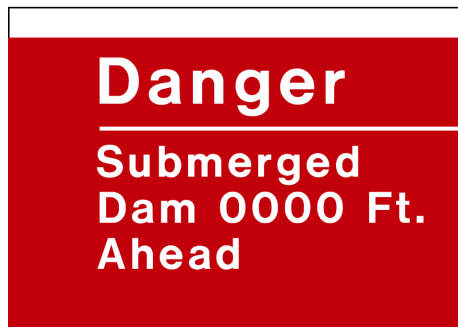
Zone 2, Danger Signs
Red diamond grade retroreflective sheeting with white diamond grade retroreflective legend, overbar and rule.

Zone 3, Restricted Signs
Red diamond grade retroreflective sheeting with white diamond grade retroreflective legend, overbar and rule.

Waterway Sign Material
Diamond grade retroreflective material shall be used for all waterway sign applications. Diamond grade materials are available in Lemon Yellow, red and white (for Medium Blue, see lock signs, page 14-34).

Lemon Yellow diamond grade is a color that has an ambient light brightness that is two times (2x) brighter than engineering grade material, and the brighter (almost fluorescent) color will be more easily seen by viewers at low light levels of dawn and dusk.

White diamond grade is a bright white color. Red diamond grade also has greater ambient light brightness at low light levels than standard engineering grade products.

Most critical to waterway sign applications, diamond grade sheeting is extremely effective with ten times (10x) more retroreflective brightness, and provides high levels of performance, longer than conventional materials. The cost benefit of the material with minimal surface deterioration and reduced retroreflective fall-off makes it very cost effective for waterway signage applications.

Sign material specifications are provided in Appendix B (pages B.13 through B.13-16) with product numbers and identification of manufacturers listed in Appendix E.

A display of Warning, Danger and Restricted signs is provided on pages 14-10 through 14-30.

The color that surrounds a sign should be either natural or a complement to the information shown on the sign. For example, a midriver cell on which a yellow and black Warning sign is placed should not be painted red because it will confuse the viewer of the sign's functional intent. Shown below are the three acceptable ways cells may be painted. Local convention will determine which color system is appropriate. Where possible for visual consistency, all cells within a district or river system should be painted in the same way.
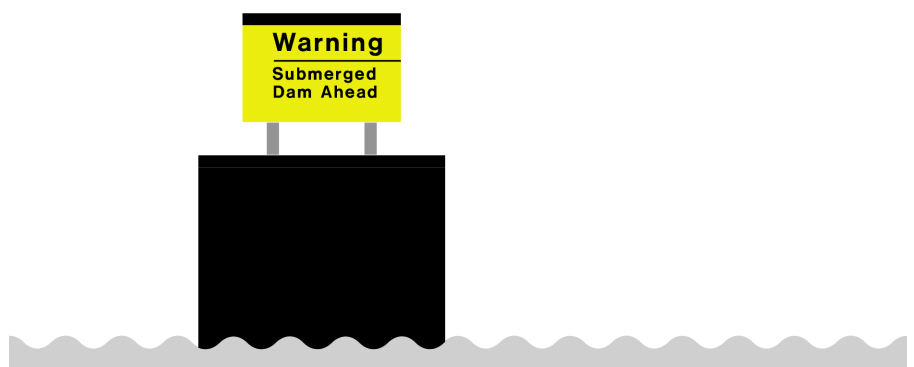
1) Silver or gray cell with gray sign supports
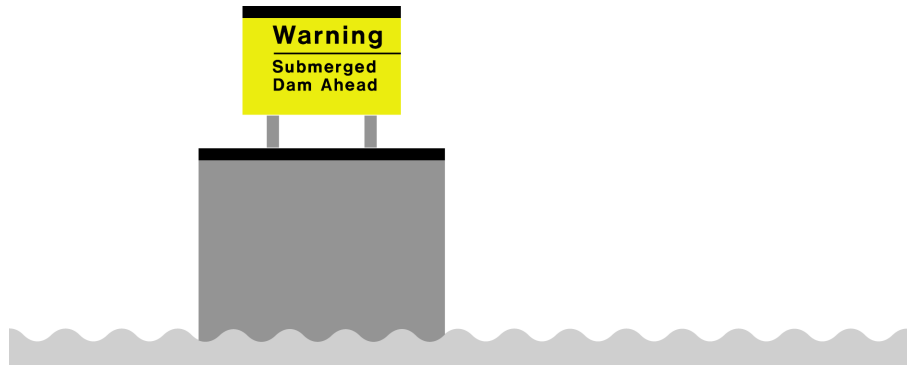
2) Black and white or black and yellow stripe pattern, with gray sign supports

3) Black cell with gray sign supports

The lock wall may be painted to visually identify this large structure on the horizon or to differentiate it from the dam. The referential color of the structure must complement, not conflict with the implied danger message in the color of the sign for structures to which Danger and Restricted signs are mounted. To this end, the use of yellow adjacent to these types of Danger signs should be avoided. Shown below are the three acceptable ways that dams and lock walls may be painted. Local convention will determine which color system is appropriate. Where possible for visual consistency, all lock walls and abutting structures within a district or river system should be painted in the same way.

Some locations have painted the edge of the lock walls and the perimeter of the lock chamber Safety Yellow. The outer portion of any structures that have red and white Danger or Restricted signs mounted on them should not be painted. This will reduce possible confusion about the level of danger present.

1) Silver or gray cell with gray sign supports

2) Black and white stripe pattern with gray sign supports

3) Black cell with gray sign supports

The signs shown below are used to notify boaters traveling upstream and downstream that they are approaching a dam. This is the first advisory warning that boaters will see.

These will be large ground-mounted signs placed on the river's edge, and in special cases on midriver pylons. Signs are mounted perpendicular to the boaters' approach.

The exact size and placement distance from the dam will be determined by flow speed, width of river, and related local conditions.

Mounting size and placement guidelines are shown on pages 14-57 through 14-61.

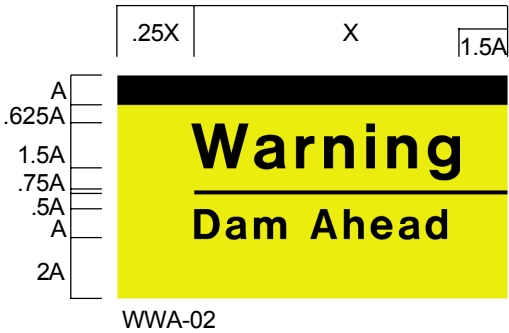1) For fixed-crest, nongated structures
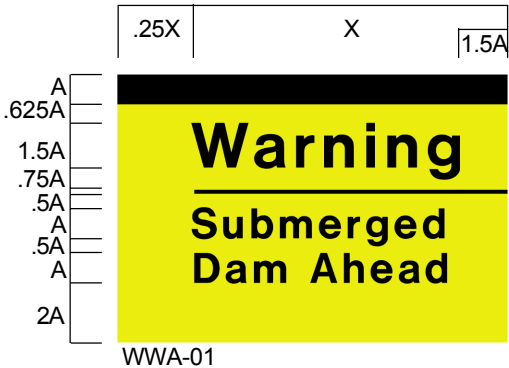
Underrule is .125A

Warning

Submerged Dam Ahead

WWA-01

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-01	A	13.125Ax9A	Engineered	WTW-1/2/4	>9.5A	LY/BK
WWA-01	A	13.125Ax9A	-	WTW-6/7	>9.5A	LY/BK

2) For gated structures

Underrule is .125A

Warning

Dam Ahead

WWA-02

Sign background color is Lemon Yellow retroreflective sheeting with black nonretroreflective legend, overbar and rule.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard Grid 1, Section 7.

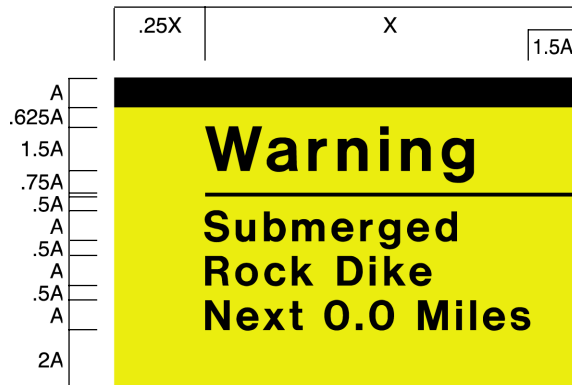| Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-02	A	13.125Ax7.5A	Engineered	WTW-1/2/4	>7.5A	LY/BK
WWA-02	A	13.125Ax7.5A	-	WTW-6/7	>7.5A	LY/BK

Underrule is .125A

Warning

Dam Ahead

Strong Cross
Currents Possible
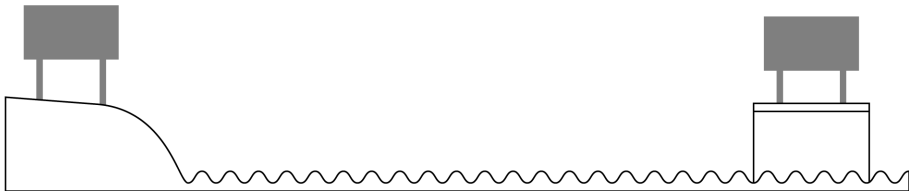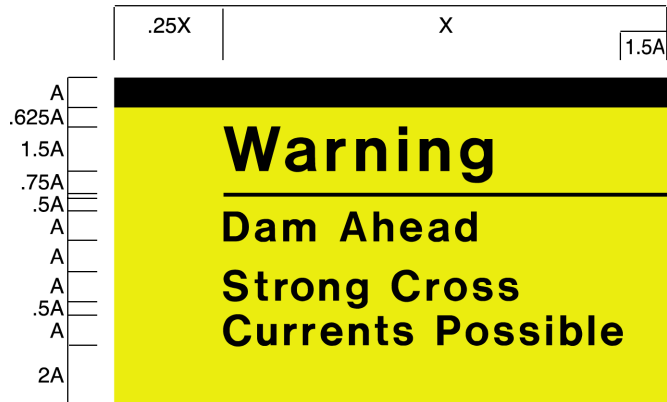
WWA-35

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-35	A	18.625Ax11A	Engineered	WTW-1/2/4	>7.5A	LY/BK
WWA-35	A	18.625Ax11A	-	WTW-6/7	>7.5A	LY/BK

Underrule is .125A

Warning

Submerged
Rock Dike
Next 0.0 Miles

WWA-36

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-36	A	15.5Ax10.5A	Engineered	WTW-1/2/4	>7.5A	LY/BK
WWA-36	A	15.5Ax10.5A	-	WTW-6/7	>7.5A	LY/BK

Underrule is .125A

Warning

Submerged Rock Dike

Stay 75 Feet Clear
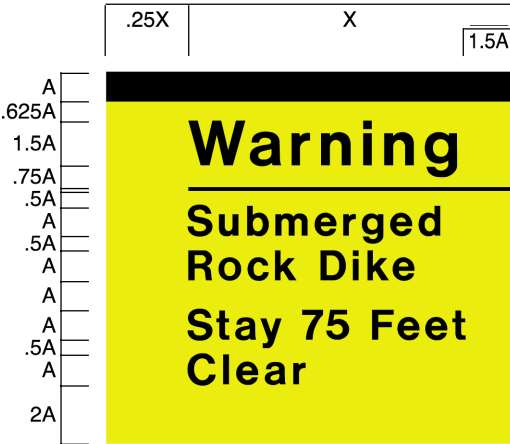
WWA-37

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-37	A	13.625Ax12.5A	Engineered	WTW-1/2/4	>7.5A	LY/BK
WWA-37	A	13.625Ax12.5A	-	WTW-6/7	>7.5A	LY/BK

Underrule is .125A

Warning

Water Intake

Strong Currents Ahead
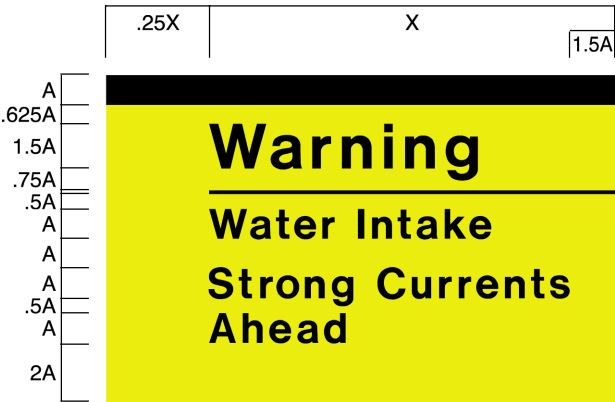
WWA-38

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-38	A	17.125Ax11A	Engineered	WTW-1/2/4	>7.5A	LY/BK
WWA-38	A	17.125Ax11A	-	WTW-6/7	>7.5A	LY/BK

These Danger signs are used to inform boaters traveling upstream and downstream that a dam is a specific distance ahead.

This is the next sign following the initial Warning sign (Zone 1). Use of this level of safety notification is recommended for all fixed-crest and nongated structures. Placement of this level of notification may not be necessary at gated structures where the overall level of hazard may be sufficiently controlled by the restricted areas around the dam.

This will be a large ground-mounted sign placed on the river's edge, and in special cases on a midriver pylon, mounted perpendicular to the boaters' approach for good legibility within a 60' cone-of-vision. The exact size and placement distance from the dam will be determined by flow speed, width of river, and related local conditions.

1) For fixed-crest, nongated structures

Underrule is .125A

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A
.5A
A
2A

Danger
Submerged
Dam 0000 Ft.
Ahead
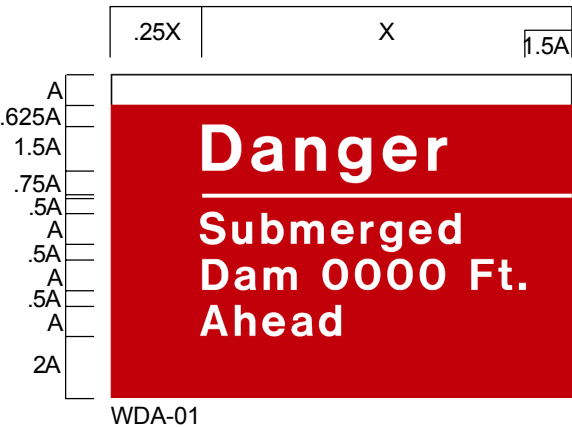
WDA-01

*Panel lengths will vary according to the distance used.

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-01	A	* x10.5A	Engineered	WTW-1/2/4	>10.5A	RD/WH
WDA-01	A	* x10.5A	-	WTW-6/7	>10.5A	RD/WH

2) For gated structures

Underrule is .125A

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A
2A

Danger
Dam 0000 Ft.
Ahead

WDA-02
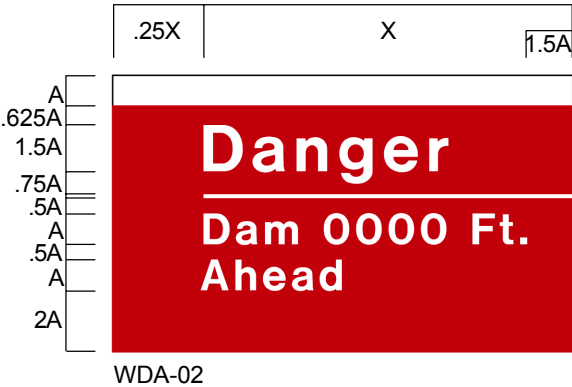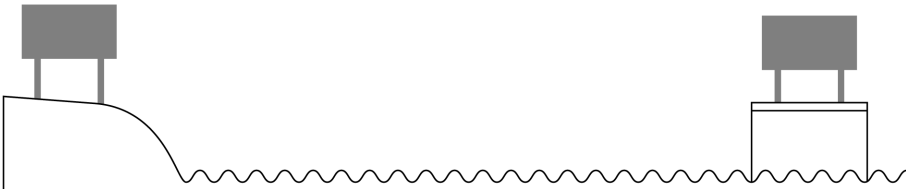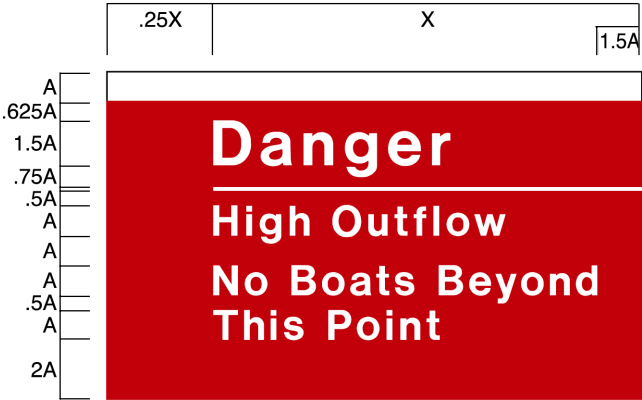
Sign may be mounted on the bank of the river or on midriver cells as required.

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule. The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway. The sign panel format uses standard Grid 1, Section 7.

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-02	A	* x9A	Engineered	WTW-1/2/4	>9A	RD/WH
WDA-02	A	* x9A	-	WTW-6/7	>9A	RD/WH

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
A
A
.5A
A
2A

Underrule is .125A

Danger
High Outflow
No Boats Beyond
This Point

WDA-38

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-38	A	18Ax11A	Engineered	WTW-1/2/4	>7.5A	RD/WH
WDA-38	A	18Ax11A	-	WTW-6/7	>7.5A	RD/WH

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A
2A

Underrule is .125A

Danger
Lock Discharge
Ahead
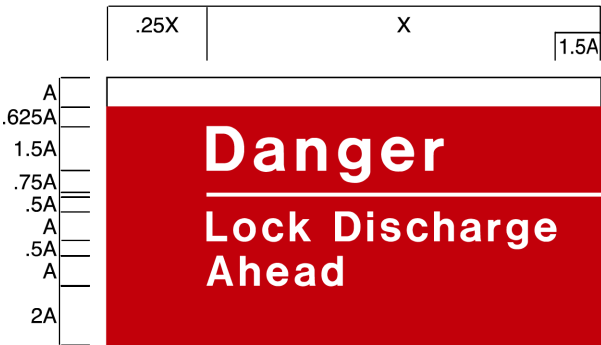
WDA-39

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-39	A	16.625Ax9A	Engineered	WTW-1/2/4	>7.5A	RD/WH
WDA-39	A	16.625Ax9A	-	WTW-6/7	>7.5A	RD/WH

Underrule is .125A

```
.25X          X          1.5A
A
.625A
1.5A
.75A
.5A
A
.5A
A
A
A
A
A

2A
```

Danger

Submerged Dam
OOO Feet

Turbulent Water

Hazardous Undertow
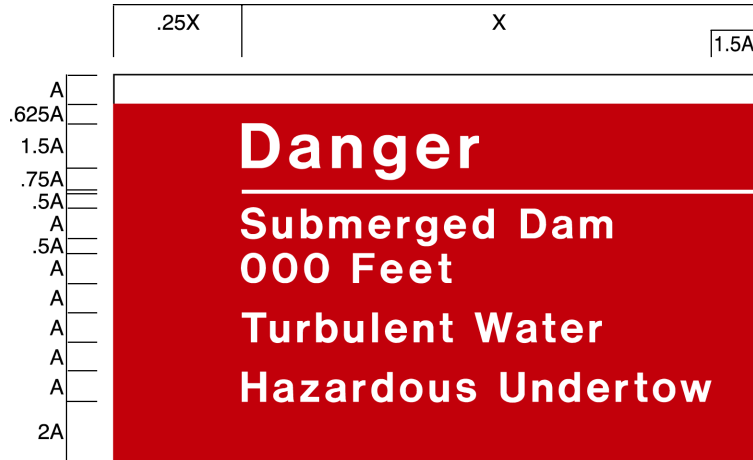
WDA-40

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-40	A	21.625Ax13A	Engineered	WTW-1/2/4	>7.5A	RD/WH
WDA-40	A	21.625Ax13A	-	WTW-6/7	>7.5A	RD/WH

Underrule is .125A

```
.25X          X          1.5A
A
.625A
1.5A
.75A
.5A
A
A
A

2A
```

Danger

Submerged Dam
Take Out Now

WDA-41

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-41	A	17.5Ax9.5A	Engineered	WTW-1/2/4	>7.5A	RD/WH
WDA-41	A	17.5Ax9.5A	-	WTW-6/7	>7.5A	RD/WH

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
A
A
.5A
A
2A

Underrule is .125A

Danger
Submerged Dam
Take Out
This Side
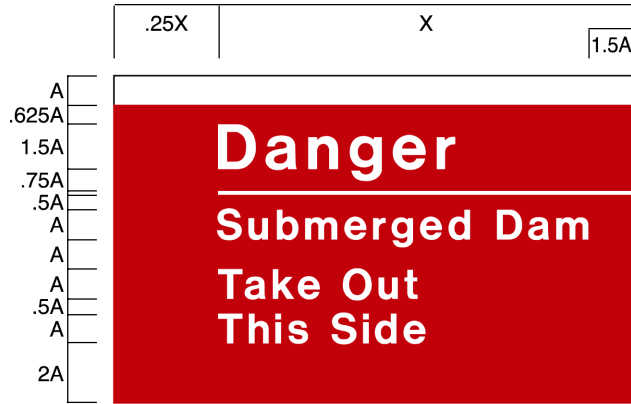
WDA-42

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-42	A	17.5Ax11A	Engineered	WTW-1/2/4	>7.5A	RD/WH
WDA-42	A	17.5Ax11A	-	WTW-6/7	>7.5A	RD/WH

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A
2A

Underrule is .125A

Danger
Waterfalls 000
Feet Downstream

WDA-44

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-44	A	18.125Ax9A	Engineered	WTW-1/2/4	>7.5A	RD/WH
WDA-44	A	18.125Ax9A	-	WTW-6/7	>7.5A	RD/WH

The designated restricted area above and below a dam must be delineated for approaching watercraft. This Restricted sign may be used for this purpose.

Sign placement will depend on the configuration of the dam. For submerged or fixed-crest dams see page 14-18. Generally, the signs will be placed on the river's edge on one side of the channel and on the end of the lock wall on the opposite side to denote the edge of the restricted area.

On wide rivers with submerged dams, additional signs mounted on midriver pylons may be required. This restricted area should be reaffirmed on the upstream side where possible, with a buoy line to prevent people from drifting into the dam. Signing the restricted area on both the right and left side may not be adequate for all river conditions. On gated structures, a series of "Restricted, Keep Back 0000 Feet" signs, as shown on page 14-19, may be placed on the face of the structure to reaffirm the restricted area.

Underrule is .125A

.25X   X   1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A
2A

Restricted
No Boats
Here to Dam

WRE-01

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard Grid 1, Section 7.

Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRE-01	A	16.25Ax9A	Engineered	WTW-1/2/4	>9A	RD/WH
WRE-01	A	16.25Ax9A	-	WTW-6/7	>9A	RD/WH

Identifying the restricted area around a fixed-crest or submerged dam is difficult because there are few visible physical reference points. The edge of the dam is difficult to identify by a boater approaching from upstream. For this type of structure, the restricted zone may need to be extended upstream for added safety; the sign shown below is placed at opposite points around a dam to denote the boundary of the restricted area.

.25X　　　　　X　　　　1.5A

A
.625A
1.5A
.75A
.5A
A
.5A
A

2A

Restricted
No Boats Beyond
This Sign

WRE-02

Underrule is .125A

The signs will be placed on the river's edge on one side of the channel and on the end of the lock wall on the opposite side. On wide rivers with submerged dams, additional signs mounted on midriver pylons may be required. This restricted area should be reaffirmed, where possible, with a buoy-line to prevent people from drifting into the dam.

The signs are placed facing up-stream, mounted perpendicular to the boaters' approach for good legibility. The exact size and placement distance above the dam will be determined by flow speed, width of river, and related local conditions.

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard Grid 1, Section 7.
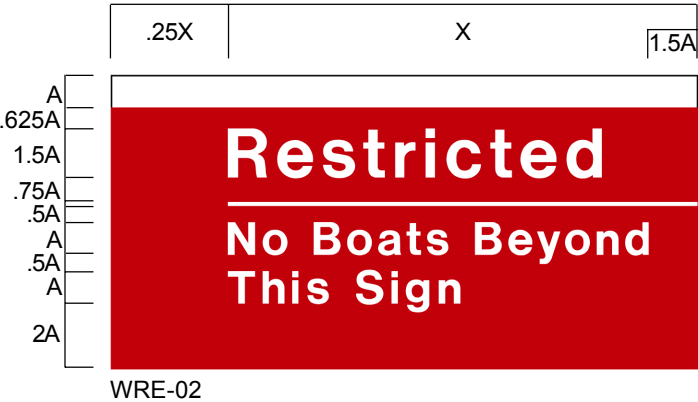
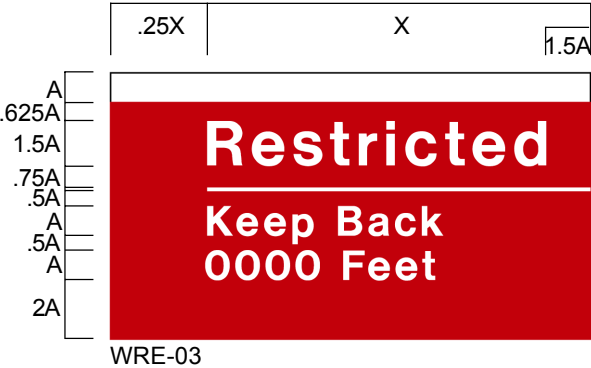| Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRE-02	A	18Ax9A	Engineered	WTW-1/2/4	>9A	RD/WH
WRE-02	A	18Ax9A	-	WTW-6/7	>9A	RD/WH
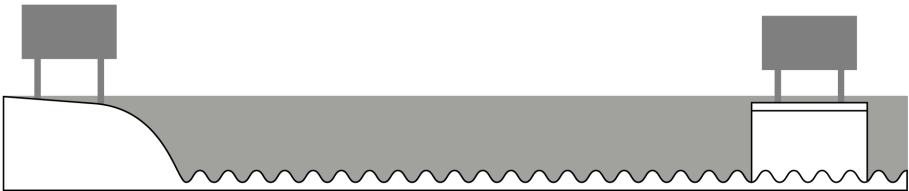
The restricted area immediately above and below a dam is identified by the signs specified on pages 14-17 through 14-18. Because of the inherent dangers of this restricted area, a redundant level of information identifying area restrictions may be added if the district feels it is necessary. These signs are to be placed flush on both front and back of the structure to give notification of the

designated restricted area. These are optional signs to be used in conjunction with the signs shown on pages 14-17 through 14-18, and should never be used as a substitute for these signs.

The size of the restricted area will be determined by local conditions. At the very least, the legend must be sized to be legible when viewed from outside the

boundary of the restricted area being signed. The number of signs required will depend on the width of the dam, flow speed, sign height above water level, and other local conditions. If mounting this sign is not possible, careful controlling of the restricted area will need to be done with the signs outside the area.

Underrule is .125A

Restricted

Keep Back
0000 Feet

WRE-03

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard Grid 1, Section 7.

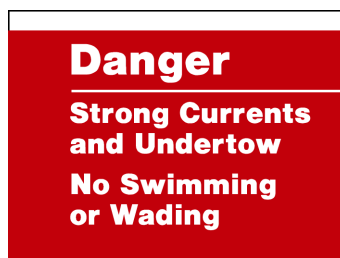| Sign Type	Legend Size (A)	Panel Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRE-03	A	16.25Ax9A	Engineered	WTW-1/2/4	>9A	RD/WH
WRE-03	A	16.25Ax9A	-	WTW-6/7	>9A	RD/WH
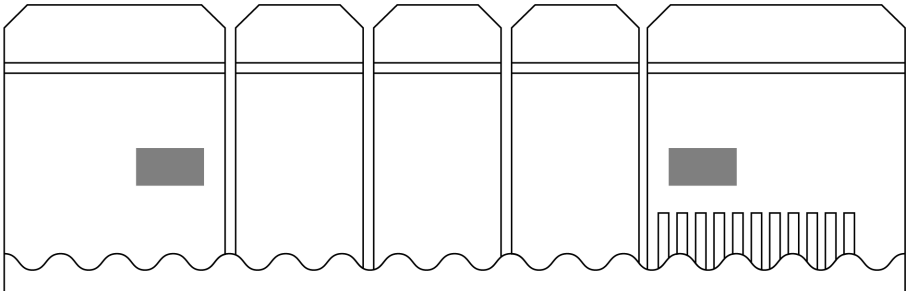
The Danger signs shown below are used to identify a dangerous waterway or shoreline condition, and establish prohibitions for swimming or wading.

These ground-mounted signs are placed for viewing by people approaching the water's edge from the land-side.

Three legend formats are provided for use to identify this dangerous shoreline condition. Selection of the appropriate sign will be determined by local requirements.

These signs may be mounted to face away from the water's edge, or be placed in a double face configuration and mounted perpendicular to the bank. Placement should be high enough to keep sign above high water levels while accommodating for special conditions when the shoreline is dramatically different at low water.

As a land-viewed sign, it is preferable that several smaller signs be placed closer to the viewer in series, instead of one overly large sign viewed from a greater distance.

Danger
Strong Currents and Undertow
No Swimming or Wading

WDA-21

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-21	2"	33.25"x25"	Engineered	WTW-1/3/5	36"-60"	RD/WH
WDA-21	2"	33.25"x25"	-	WTW-6	36"-60"	RD/WH
WDA-21	3"	49.875"x37.5"	Engineered	WTW-1/3/5	36"-60"	RD/WH
WDA-21	3"	49.875"x37.5"	-	WTW-6	36"-60"	RD/WH

Danger
Strong Currents
No Swimming or Wading

WDA-22

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-22	2"	33.25"x22"	Engineered	WTW-1/3/5	36"-60"	RD/WH
WDA-22	2"	33.25"x22"	-	WTW-6	36"-60"	RD/WH
WDA-22	3"	49.875"x33"	Engineered	WTW-1/3/5	36"-60"	RD/WH
WDA-22	3"	49.875"x33"	-	WTW-6	36"-60"	RD/WH

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9. The sign panel format uses standard Grid 1, Section 7.

Danger
Strong Currents and Hazardous Undertow
No Swimming or Wading
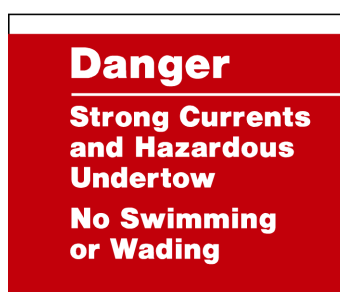
WDA-30

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-30	2"	33.25"x28"	Engineered	WTW-1/3/5	36"-60"	RD/WH
WDA-30	2"	33.25"x28"	-	WTW-6	36"-60"	RD/WH
WDA-30	3"	49.875"x42"	Engineered	WTW-1/3/5	36"-60"	RD/WH
WDA-30	3"	49.875"x42"	-	WTW-6	36"-60"	RD/WH

These signs are specified for use along the shoreline below the dam for viewing by pedestrians. Their function is to identify dangerous conditions resulting from sudden increases or decreases in water flow from turbine discharges and/ or gate openings and closings.

These ground-mounted signs are to be placed for viewing by people approaching the water's edge from the land side.

The sign is mounted on the bank facing away from the water's edge or as a double-face sign mounted perpendicular to the bank.

As a land-viewed sign, it is preferable that several smaller signs be placed closer to the viewer in series, instead of one overly large sign viewed from a greater distance.

The Danger, Caution, and Warning signs used in this manual cannot be changed without HQUSACE approval. For all signs listed below, identical legends are approved as both Danger and Warning signs.

• WDA-23 (right) and WWA-30 on page 14-51.
• WDA-31 (below) and WWA-23 on page 14-50.

Determination of whether a Danger or Warning sign is to be used will be made by the project manager after considering the conditions and severity of the hazard. Please refer to the discussion of safety signs in Section 2, pages 2-13 through 2-15.

At locations where people do not swim or wade, the smaller sign shown at the right may provide all notification required.

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9. The sign panel format uses standard Grid 1, Section 7.
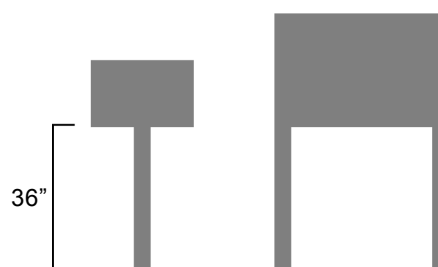
Danger

Water Subject to Sudden Rise and Turbulence

No Swimming or Wading
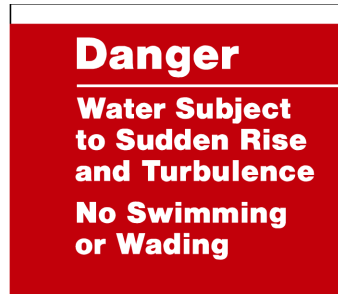
WDA-23

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-23	2"	32.375"x28"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-23	2"	32.375"x28"	-	WTW-6	36"-60"	RD/WH
WDA-23	3"	48.5"x42"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-23	3"	48.5"x42"	-	WTW-6	36"-60"	RD/WH

Danger

Water Subject to Sudden Rise and Turbulence
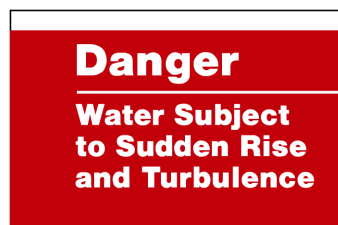
WDA-31

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-31	2"	32.375"x21"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-31	2"	32.375"x21"	-	WTW-6	36"-60"	RD/WH
WDA-31	3"	48.5"x31.5"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-31	3"	48.5"x31.5"	-	WTW-6	36"-60"	RD/WH

36"

Underrule is .125A

Danger

Water Subject to Sudden Rise and Turbulence

No Swimming or Wading

No Fishing
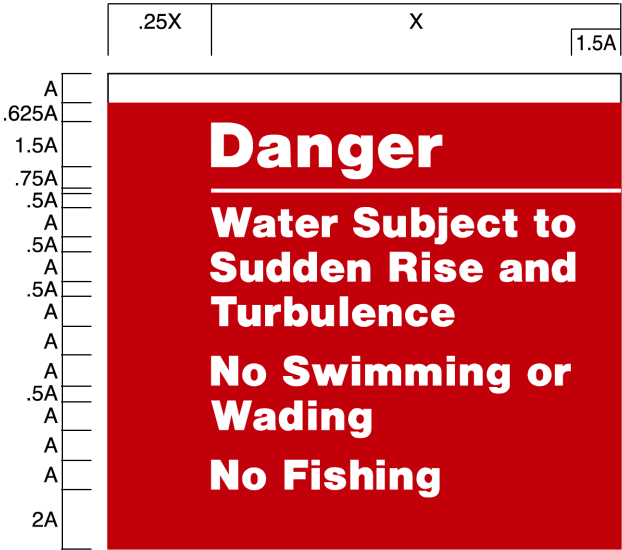
WDA-36

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-36	2"	34.5"x32"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-36	2"	34.5"x32"	-	WTW-6	36"-60"	RD/WH
WDA-36	3"	51.75"x48"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-36	3"	51.75"x48"	-	WTW-6	36"-60"	RD/WH

Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule.

Underrule is .125A

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9. The sign panel format uses standard Grid 1, Section 7.

Danger

Water Subject to Sudden Rise and Turbulence

No Swimming, Wading or Boating
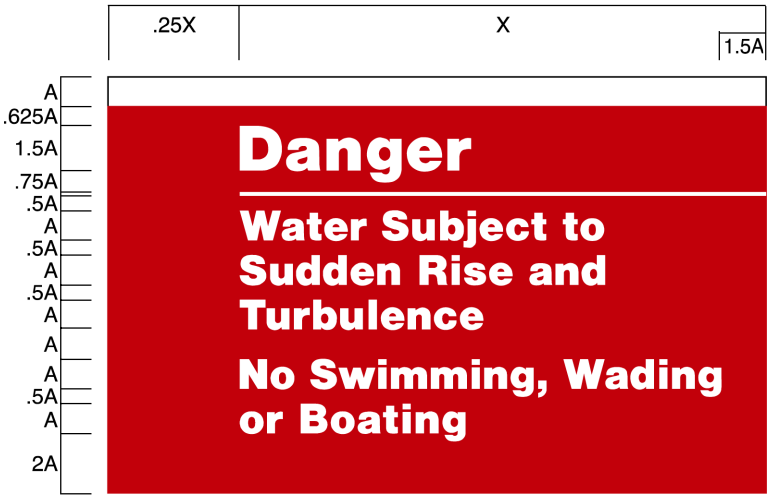
WDA-37

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-37	2"	44.25"x29"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-37	2"	44.25"x29"	-	WTW-6	36"-60"	RD/WH
WDA-37	3"	66.375"x43.5"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-37	3"	55.375"x43.5"	-	WTW-6	36"-60"	RD/WH

The function of the signs illustrated below (and on the following page) is to warn project visitors about hazards at a specific functional area at a Corps project. **These signs are only to be used in locations where siren, horn and/or flashing light warning systems already exist.** Because of the potentially serious consequences which may occur if the signs are not heeded, it is important that the principles and guidelines in this manual be followed. While these signs are shown here, the use of additional horns, sirens, and flashing light systems is not encouraged. The primary warning system should be signs alone.

Signs must be mounted for ease of view so viewers entering an area are advised of the potential hazard and are aware of the warning systems used at this location. These may be double face panels mounted perpendicular to the edge of the shoreline or single face signs directed toward a viewer's approach. It is preferable that several smaller signs be placed along the shoreline in series instead of fewer overly large signs placed at a greater distance from each other.

Danger

When Horn Sounds Beware of Rapid Rise in Water Level

WDA-32

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-32	2"	39.625"x21"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-32	2"	39.625"x21"	-	WTW-6	36"-60"	RD/WH
WDA-32	3"	59.375"x31.5"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-32	3"	59.375"x31.5"	-	WTW-6	36"-60"	RD/WH

Danger

When Siren Sounds Beware of Rapid Rise in Water Level
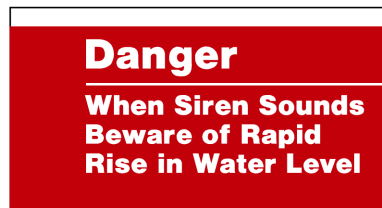
WDA-33

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-33	2"	39.625"x21"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-33	2"	39.625"x21"	-	WTW-6	36"-60"	RD/WH
WDA-33	3"	59.375"x31.5"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-33	3"	59.375"x31.5"	-	WTW-6	36"-60"	RD/WH

Sign background color is red retroreflective sheeting with white retroreflective legend overbar and rule.

The typeface for signs viewed from the water is Helvetica Medium. Helvetica Bold is used for signs viewed from the land. Refer to Appendix D for Corps standard letter- and word-spacing for both waterway and land applications. The sign panel format uses standard Grid 1, Section 7.

Danger

Water Subject to Sudden Rise and Turbulence

When Horn Sounds Proceed Immediately to Shore
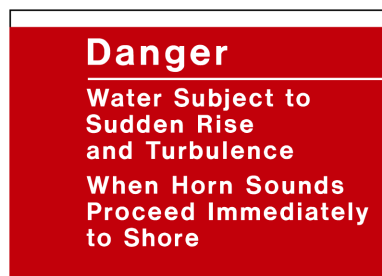
WDA-34

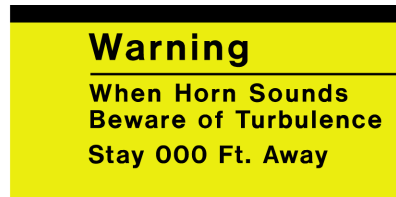| Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-34	2"	43.875"x31"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-34	2"	43.875"x31"	-	WTW-6	36"-60"	RD/WH
WDA-34	3"	65.875"x31.5"	Engineered	WTW-2/3/5	36"-60"	RD/WH
WDA-34	3"	65.875"x31.5"	-	WTW-6	36"-60"	RD/WH

Underrule is .125A
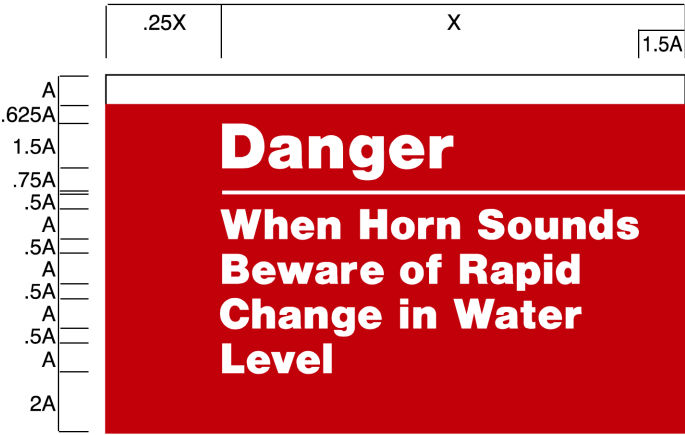
Sign background color is red retroreflective sheeting with white retroreflective legend, overbar, and rule.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9. The sign panel format uses standard Grid 1, Section 7.
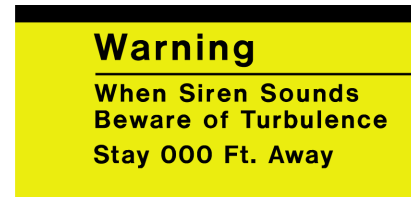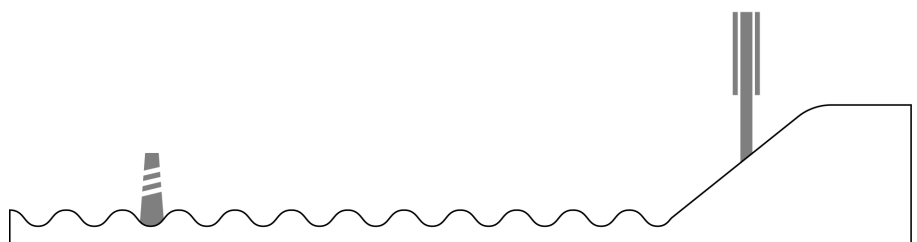
Danger

When Horn Sounds Beware of Rapid Change in Water Level

WDA-47

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-47	2"	39"x24"	Engineered	WTW-2/3/5	36"-60"	LY/BK
WDA-47	2"	39"x24"	-	WTW-6	36"-60"	LY/BK
WDA-47	3"	58.375"x36"	Engineered	WTW-2/3/5	36"-60"	LY/BK
WDA-47	3"	58.375"x36"	-	WTW-6	36"-60"	LY/BK

Signs may be used where existing auditory or visual systems are used to notify viewers of signal system procedures. For use, see guidelines provided on page 14-23.

Distance to be displayed on this sign will be determined by the project Sign Program Manager on a site-by-site basis.

Warning

When Horn Sounds
Beware of Turbulence
Stay 000 Ft. Away

WWA-27

Warning

When Siren Sounds
Beware of Turbulence
Stay 000 Ft. Away

WWA-28

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-27/28	2"	45.125"x22"	Engineered	WTW-2/3/5	36"-60"	LY/BK
WWA-27/28	2"	45.125"x22"	-	WTW-6	36"-60"	LY/BK
WWA-27/28	3"	67.75"x33"	Engineered	WTW-2/3/5	36"-60"	LY/BK
WWA-27/28	3"	67.75"x33"	-	WTW-6	36"-60"	LY/BK

Warning

Flashing Lights
Indicate Dangerous
Wind Conditions

WWA-29

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-29	2"	39.375"x21"	Engineered	WTW-2/3/5	36"-60"	LY/BK
WWA-29	2"	39.375"x21"	-	WTW-6	36"-60"	LY/BK
WWA-29	3"	59"x31.5"	Engineered	WTW-2/3/5	36"-60"	LY/BK
WWA-29	3"	59"x31.5"	-	WTW-6	36"-60"	LY/BK

Sign background color is Lemon Yellow retroreflective sheeting with black nonretroreflective legend, overbar and rule.

The typeface for signs viewed from the water is Helvetica Medium. Helvetica Bold is used for signs viewed from the land. Refer to Appendix D for Corps standard letter- and word-spacing for both waterway and land applications. The sign panel format uses standard Grid 1, Section 7.

When using the Warning signs that indicate a distance that a viewer must stay back from, the sign must be readable from the prescribed distance and a marker must be placed to designate the area for which it applies.

Specific locations, both within and outside restricted areas surrounding a dam or a lock may be individually signed to notify boaters and pedestrians of dangerous, turbulent water conditions. This includes areas that are very hazardous but may appear calm on the surface.

These signs are primarily used in addition to the Restricted signs shown on pages 14-17 through 14-18 at dangerous locations adjacent to a lock or dam. Other uses will depend on local conditions.

The signs should be sized and mounted for viewing outside the area being signed (see size charts on page 2-6 and the placement guidelines in this section pages 14-57 through 14-61).

Underrule is .125A
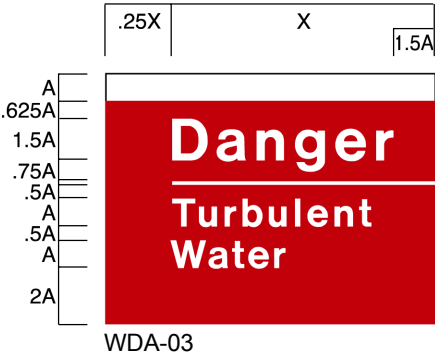
Danger

Turbulent Water

WDA-03

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-03	A	11.875Ax9A	Engineered	WTW-3/5	>9A	RD/WH
WDA-03	A	11.875Ax9A	-	WTW-6/7	>9A	RD/WH

Underrule is .125A
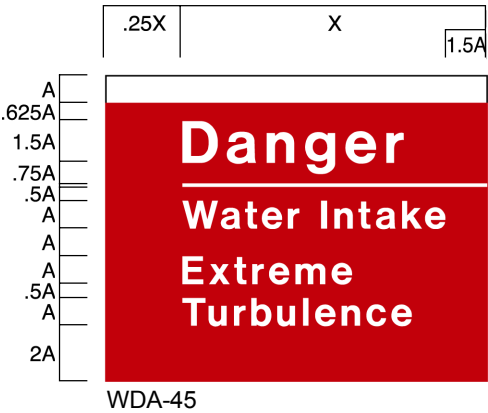
Danger

Water Intake

Extreme Turbulence

WDA-45

Sign background is red retroreflective sheeting with white retroreflective legend, overbar and rule.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard Grid 1, Section 7.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-45	A	13.75Ax11A	Engineered	WTW-3/5	>9A	RD/WH
WDA-45	A	13.75Ax11A	-	WTW-6/7	>9A	RD/WH

Underrule is .125A

```
  .25X              X            1.5A
```

A
.625A
1.5A
.75A
.5A
A
A
A
.5A
A
2A

Danger
Water Outlet
Extreme
Turbulence
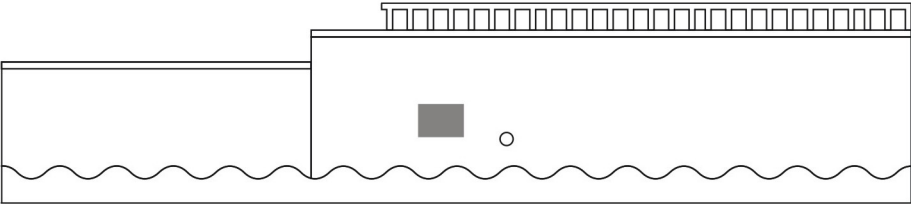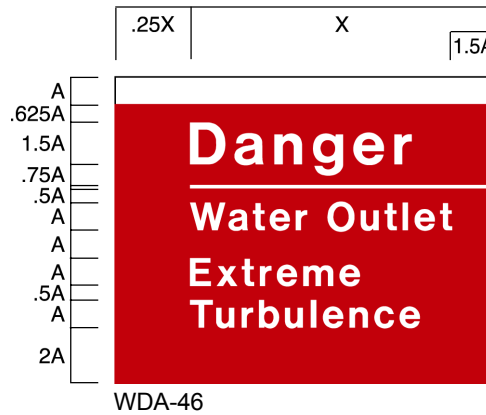
WDA-46

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-46	A	13.625Ax11A	Engineered	WTW-3/5	>9A	RD/WH
WDA-46	A	13.625Ax11A	-	WTW-6/7	>9A	RD/WH

Caution

Narrow Channel

WWA-31

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-31	A	12.75Ax9A	Engineered	WTW-3/5	>9A	LY/BK
WWA-31	A	12.75Ax9A	--	WTW-6/7	>9A	LY/BK

Caution

Watch for Boats Leaving Dock
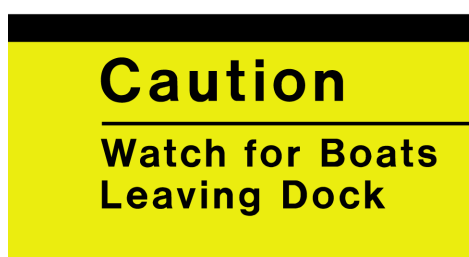
WWA-32

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-32	A	16.75Ax9A	Engineered	WTW-3/5	>9A	LY/BK
WWA-32	A	16.75Ax9A	--	WTW-6/7	>9A	LY/BK

Warning

Beware of Large Waves From Tows and Barges

Proceed to Pull Chain When Approach is Clear
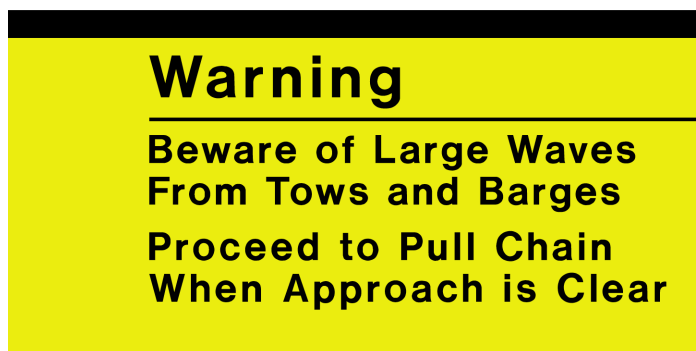
WWA-34

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-34	A	22.25Ax12.5A	Engineered	WTW-3/5	>9A	LY/BK
WWA-34	A	22.25Ax12.5A	--	WTW-6/7	>9A	LY/BK

Danger

Do Not Approach
Channel When
Light is Red

WDA-35

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-35	A	18.125Ax10.5A	Engineered	WTW-3/5	>9A	LY/BK
WDA-35	A	18.125Ax10.5A	--	WTW-6/7	>9A	LY/BK

Danger

Suspended Cables

Do Not Operate
Vessels between
Barge and Shoreline
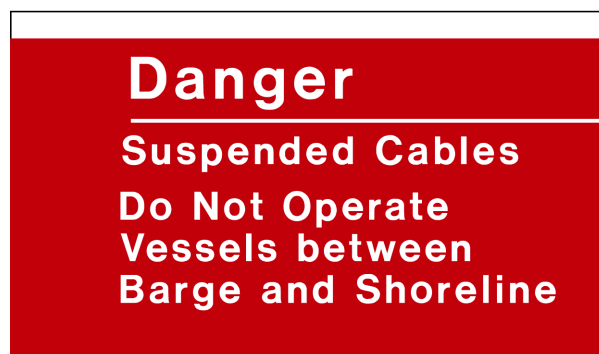
WDA-43

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-43	A	21.5Ax12.5A	Engineered	WTW-3/5	>9A	LY/BK
WDA-43	A	21.5Ax12.5A	--	WTW-6/7	>9A	LY/BK

Trespassing on locks, dams or other United States Government property at Corps projects is strictly prohibited. Access to restricted or hazardous areas around a dam or waterway should be controlled using the appropriate combi-nation of fencing and signing. The primary use of these signs is for mounting on dam structures, fences or pylons to deter people from climbing on to the dam or entering into dangerous areas around a water project.

These land viewed signs are generally placed for pedestrian viewing and need not be overly large; see Viewing Distance Guide, page 2-6.

1) Sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule.

Underrule is .125A
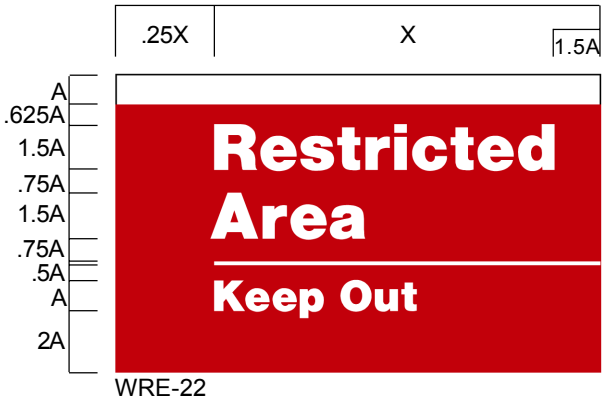
WRE-22

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRE-22	.75"	11.875"x7.375"	4"x4"	HDO-5	36-60"	RD/WH
WRE-22	.75"	11.875"x7.375"	-	HDO-6*	36-60"	RD/WH
WRE-22	1.5"	23.875"x14.625"	4"x4"	HDO-5	36-60"	RD/WH
WRE-22	1.5"	23.875"x14.625"	-	HDO-6*	36-60"	RD/WH

2) Sign background color is Medium Blue retroreflective sheeting with white retroreflective legend, overbar and rule.

Underrule is .125A

REG-04

The typeface used on both signs is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9. The sign panel format uses standard Grid 1, Section 7.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
REG-04	.75"	19.25"x5.625"	4"x4"	HDO-5	60"	MB/WH
REG-04	.75"	19.25"x5.625"	-	HDO-6*	60"	MB/WH
REG-04	1.5"	38.375"x11.25"	4"x4"	HDO-5	60"	MB/WH
REG-04	1.5"	38.375"x11.25"	-	HDO-6*	60"	MB/WH

*Fence mounting detail shown on page B.7-5, detail 14.

These signs are to be fabricated using engineering grade reflective sheeting only. These signs may be screen printed on white retroreflective sheeting or fabricated using white cut graphics applied to base color.
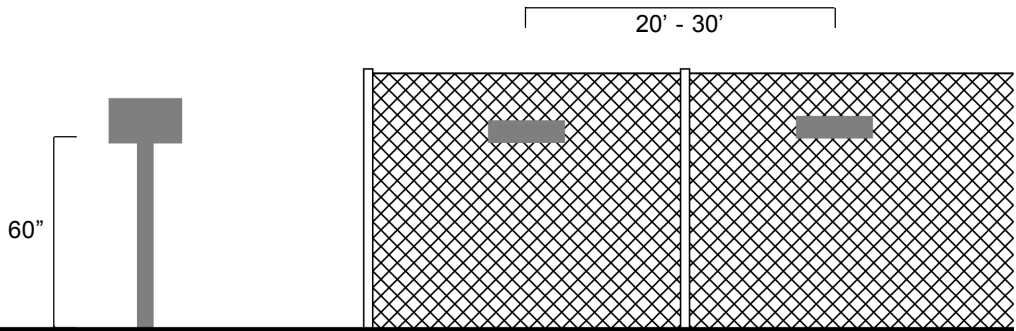
The following guidelines specify the signs used to direct boaters to the lock and instruct them as they lock through. Although the basic principles of locking are common to most locks, regardless of size or location, the procedures and rules differ somewhat from one project to the next project.

There are two types of signs placed in and around a lock. The first are signs informing boaters of the lock approach including the "Arrival Point" sign. This sign is a large panel designed for viewing from midriver by approaching lock traffic. The use of optional traffic flow instruction signs should be determined on a site-by-site basis depending on the project and river configuration.

All of the other signs specified within the immediate area around the dam are provided to give boaters information and instructions for entering the lock channel, chamber, and locking through. These signs are intended for viewing from relatively short distances by boaters moving at low speed. Signs in the lock area are mounted on the lock wall, on posts placed specially for the signs, or on the guard-railing around the lock chamber.

To help maintain an orderly appearance, the capital letter height (A) for signs with similar viewing distance should be the same. Where more than one sign is used in an area, they should be mounted at a common height and aligned on top of the panel.

Should any information or instruction type sign (other than Caution, Warning, Danger or Restricted) be required that is not shown in this manual, it should be prepared using standard grid formats provided in Section 7.

Use only the Haas Helvetica Medium typeface for lock, dam and waterway signs, and the Helvetica Bold typeface for land viewed signs. Letter- and word-spacing must follow the Corps standards, Appendix D, page D-9 through D-12. Use the Viewing Distance Guide shown in Section 2, page 2-6, to determine proper legend size for each respective sign.

Information and instruction signs placed on the lock structure use standard signs that should not require custom engineering. A size matrix for each sign type is shown on the respective display page for each individual type of sign.

Sign background color for all lock information and instruction signs is white diamond grade retroreflective sheeting with Medium Blue diamond grade retroreflective sheeting legend, arrow and overbar. For an overview of the diamond grade retroreflective material see page 14-7. Sign material specifications are provided in Appendix B (pages B.13 through B.13-16), with product numbers and identification of manufacturers provided in Appendix E.

When placing signs, it is important that each sign is visible from its proposed viewing location. To maximize the effectiveness, the overall installation must be uncluttered and orderly in appearance. This can be achieved by uniformly aligning the top of adjacent panels, and where appropriate, using a common size panel throughout an installation.

When developing a sign plan for a lock or structure, it is advisable to field test complicated situations to ensure good legibility. This includes sign placement in a lock chamber and areas with changing water levels.

Signs can be placed either above high water level in lock chambers, or attached to the guard railing on top of the lock structure. When placed within the lock chamber, placement should be such as to prevent damage to signs by passing vessels.

The diagram below shows the three primary areas of a lock to be signed. These include: approach area, entry channel and lock chamber. At each project, the sign requirements will vary depending on lock and dam configuration, and the river conditions.

Area 1, Lock Approach
Primarily used to identify arrival point and direct boat traffic upstream and downstream. These signs are placed on the river bank, on the end of the lock walls, on midriver pylons or on mooring cells as appropriate.

Area 2, Lock Entry
Within this area the boaters are instructed, as required, how to manually signal for lockage, and informed about entry procedures. Entry channel signs generally placed along the lock wall are located for easy viewing. Mount panels so that they will not be damaged by passing boats and barges.

Area 3, Lock Chamber
These signs are located within the chamber area and include length increments, related safety signs, and locking instructions. Signs within the chamber should be kept to a minimum and placed to provide greatest visibility to boaters locking through.
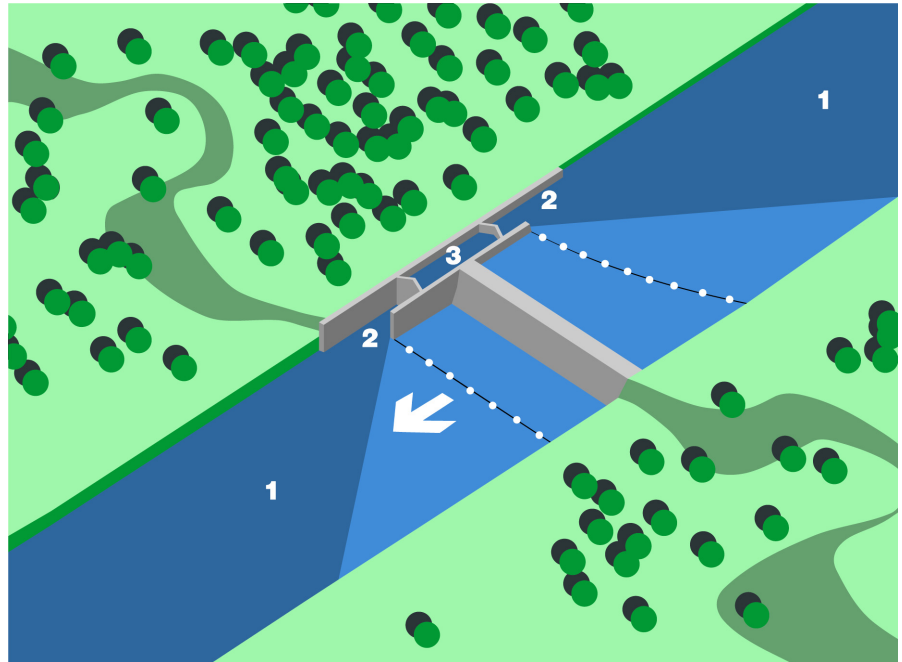
The number of signs placed in any area of a lock will vary depending on chamber size, local conditions and type of boater traffic. Where there is more than one sign needed at a specific location, place signs in a logical order, giving the viewer time to respond to each message as needed. Carefully select placement and size of the signs. Keep in mind that the signs are intended for the first time user and that signs placed on lock walls parallel to the viewer are more difficult to read than signs placed perpendicular to a viewer. These constraints may require placement of several smaller panels, repeating the message, instead of one big panel.

Signs placed in advance of a lock are used primarily to identify the arrival point and to guide boat traffic to and into the lock channel. Secondary signs may be provided to identify signal locations and/or procedures, as well as locking through (queuing) regulations.

Inside the lock chamber and on the approach walls are chamber length markers, gate opening and required Workplace Safety signs.

Arrival Point

Lock Traffic Keep Right

800

0

600

300

0

Pike Island Gate Opening   **00.0** Ft.

Pull Signal Cord for Lockage
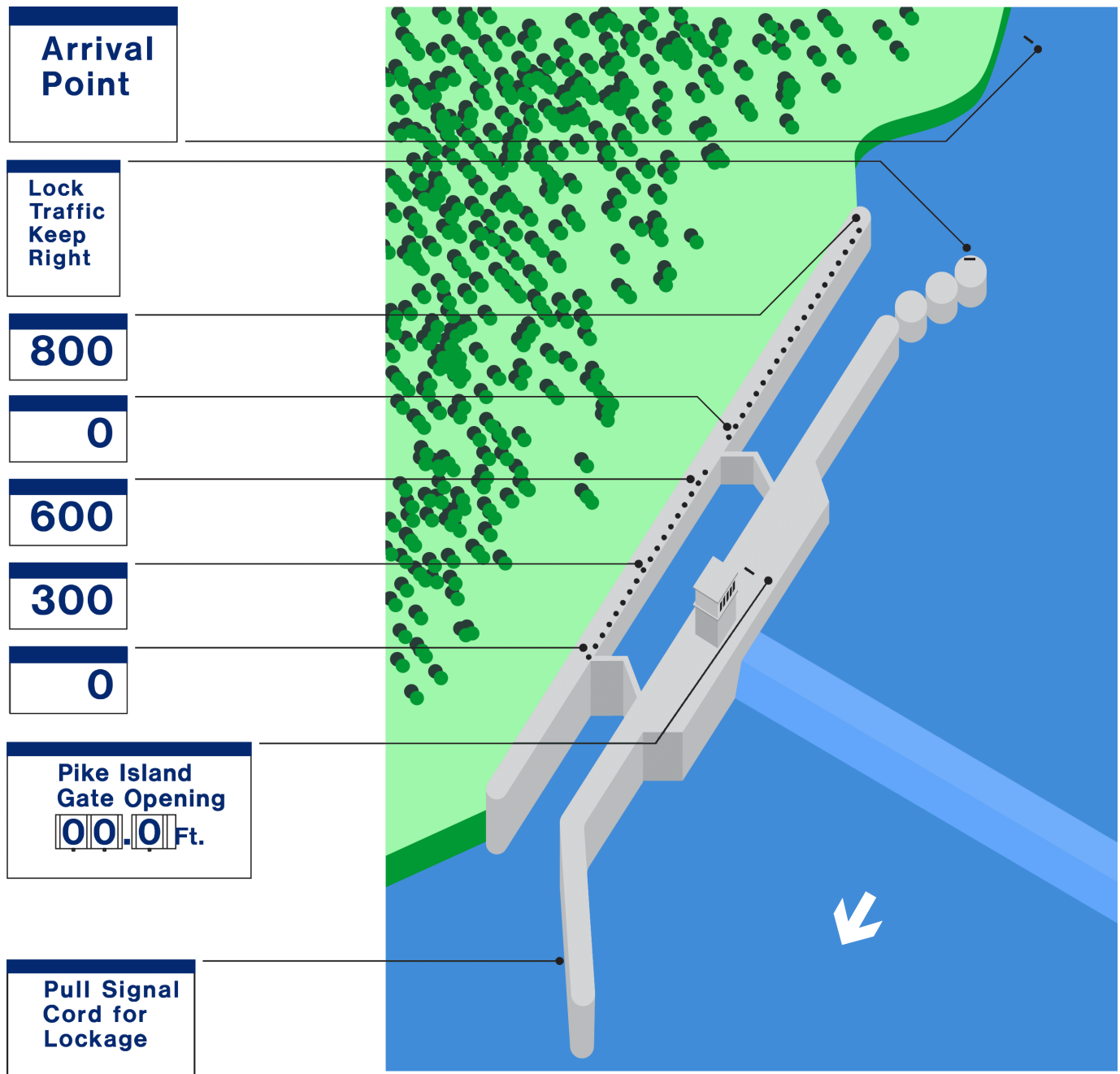
These signs are provided to display general lock information to boaters. They augment waterway safety signs.

All lock approach, lock entry channel and lock chamber signs use a color combination of Medium Blue and white. Depending on function, the figure and background relationship will vary. Consistent use of these color standards is important for the effectiveness of this program.

All regulated information, instruction and guide signs will have a white retroreflective background with Medium Blue retroreflective legend and overbar.

A lock area sign installation will also include Workplace Safety signs as required (see Section 11).

Information Signs
White retroreflective background with Medium Blue retroreflective legend and overbar. These signs are to be used in the approach into a lock beginning at the arrival point. Refer to page 14-36 for sign display.

General Instruction Signs
White retroreflective background with Medium Blue retroreflective legend and overbar. These signs are optional and are to be used in the approach channel to the lock chamber. Refer to page 14-37 through 14-38 for sign displays.

Workplace Safety Signs
These signs are used to augment the two basic types of lock signs described above. Refer to page 14-39 for sign display, with additional safety signs provided in Section 11.

Arrival Point

Pull Chain In Recess For Lockage

Danger
No Smoking or Open Flame

Caution
Stern Line First

Safety
Keep Work Area Clean and Safe

Notice
Authorized Personnel Only
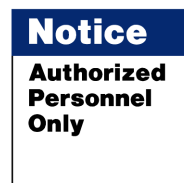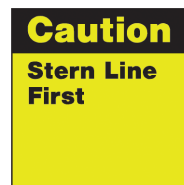
The signs shown below may be used to advise traffic to the arrival point or into the lock channel. These signs, placed on bridge piers, lock walls, river banks and midriver pylons, are used to direct traffic and provide an orderly flow of boats towards and into the lock.

It is recommended to use the signs with arrows (shown below) for locations viewed from midriver (distances greater than 200') because their legibility is three times greater than worded signs. Viewed from close range, either sign format can be used.

1) Information signs with arrows for viewing from midriver and at close proximity to lock channel.

Capital letter height not recommended larger than A=12"

Refer to guidelines on page 4-13 for arrow sizing.

25%	75%

.75A
.5A
A
Lock
1.5A

3.5A →

2A

WLI-01

25%	75%

.75A
.5A
A
Lock
1.5A

3.5A ←

2A
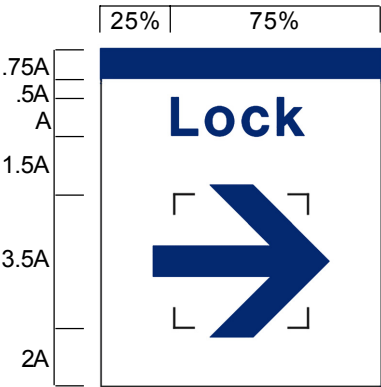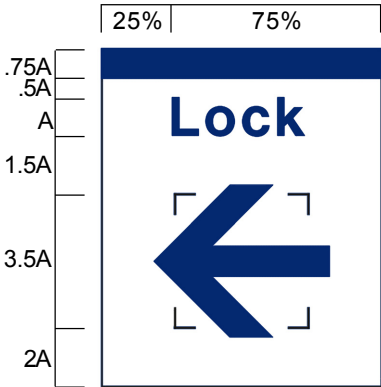
WLI-02

2) Information signs with worded legend for viewing at distances less than 200'.

Capital letter height not recommended larger than A=8"

Sign background color is white retroreflective sheeting with Medium Blue retroreflective sheeting legend, arrow and overbar.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard grid 3, Section 7.

Reproduction artwork for the Helvetica Medium Arrow is provided on page F. 141.

25%	X	A

.75A
.5A
A
.5A
A
.5A
A
.5A
A

Lock Traffic Keep Right

2A

WLI-03

25%	X	A

.75A
.5A
A
.5A
A
.5A
A
.5A
A

Lock Traffic Keep Left

2A
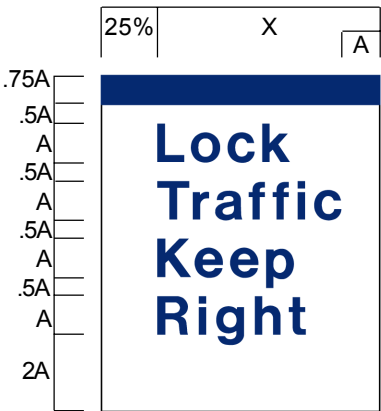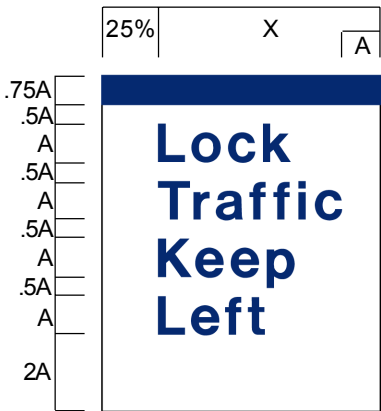
WLI-04

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-00	A	7.25Ax8.75A	Engineered	WTW-2/4/5	>8.75A	WH/MB
WLI-00	A	7.25Ax8.75A	-	WTW-6/7	>8.75A	WH/MB

Signs placed along the edge of the lock wall may be flag mounted away from the edge to prevent damage from passing boats.
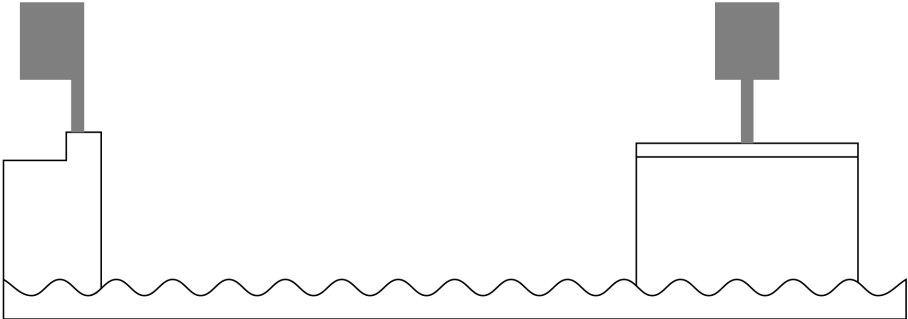
For the purpose of lock regulations, the lock area is considered to be the area between the upstream and downstream arrival points.

Shown below is the standard sign to identify the arrival point. The navigation regulations for each location dictates the requirements at this point. The signs are to be viewed from midriver and should be sized accordingly.

Arrival point signs are to be mounted perpendicular to the boaters' approach on the river's edge or midriver cells.

Sign background color is white retroreflective sheeting with Medium Blue retroreflective legend and overbar.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs. The sign panel format uses standard Grid 3, Section 7.
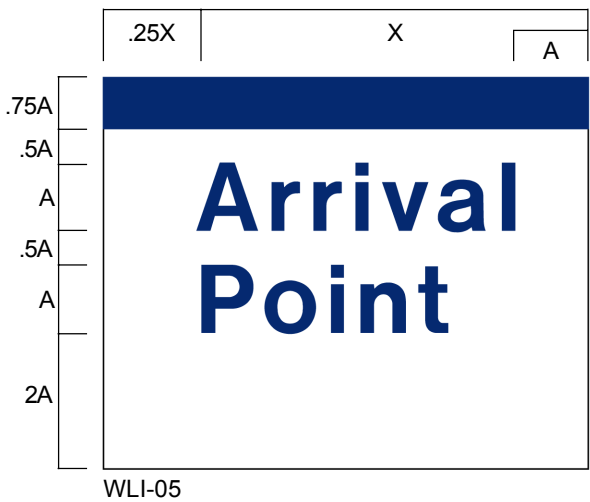
WLI-05

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-05	A	7.125Ax5.75A	Engineered	WTW-2/4/5	>5.75A	WH/MB
WLI-05	A	7.125Ax5.75A	-	WTW-6/7	>5.75A	WH/MB
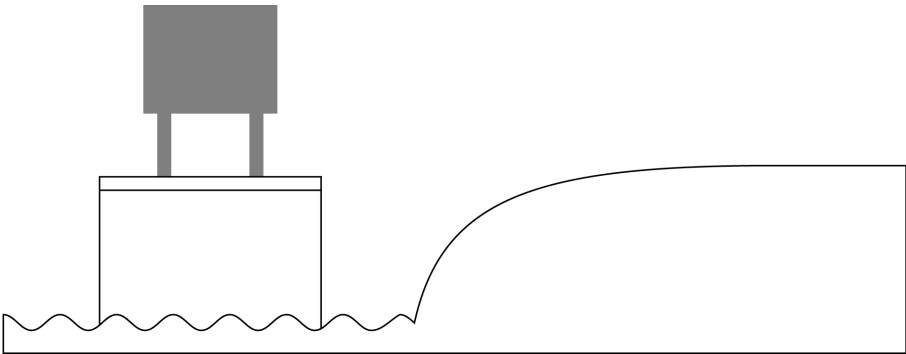
The four standard signs shown below are used to instruct boaters within the lock access channel. These signs may be placed as required on a site-by-site basis.

Mount within the boaters' field of view. Care should be taken when mounting signs so that they will not be damaged by passing barge tows. In areas with multiple signs, visual order should be created by sizing and aligning signs with the same capital letter height (A) for an orderly looking installation.
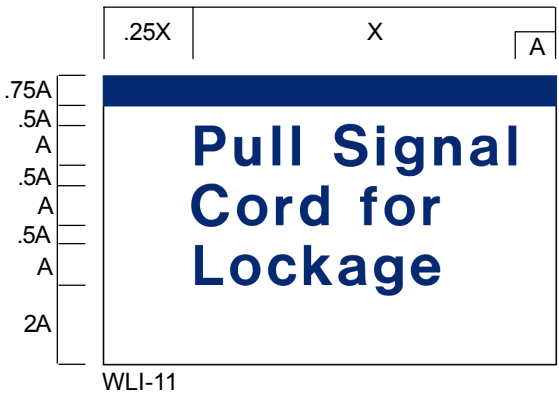
These signs are primarily intended to instruct the recreational boater and are viewed at relatively short distances (50'-125'). Signs should not be larger than necessary to prevent sign clutter around the entrance to the lock.

WLI-06

WLI-07
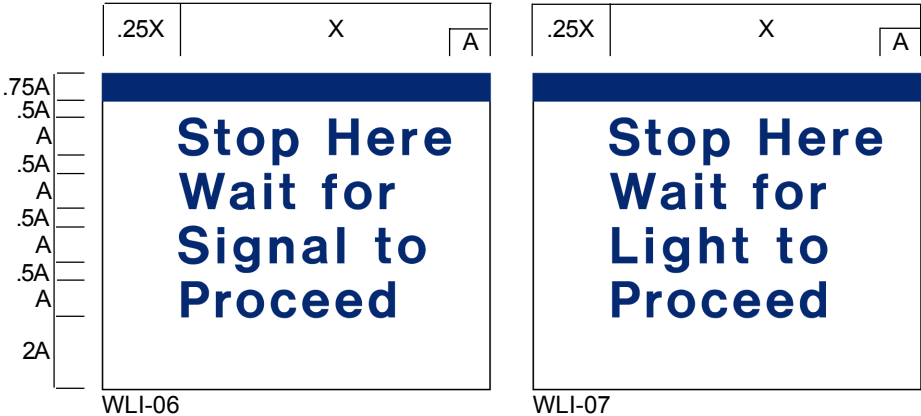
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-06/07	A	10.75Ax8.75A	Engineered	WTW-4/5	>8.75A	WH/MB
WLI-06/07	A	10.75Ax8.75A	-	WTW-6/7	>8.75A	WH/MB

Guide signs for boats entering lock chamber.

Refer to guidelines on page 4-13 for arrow sizing.
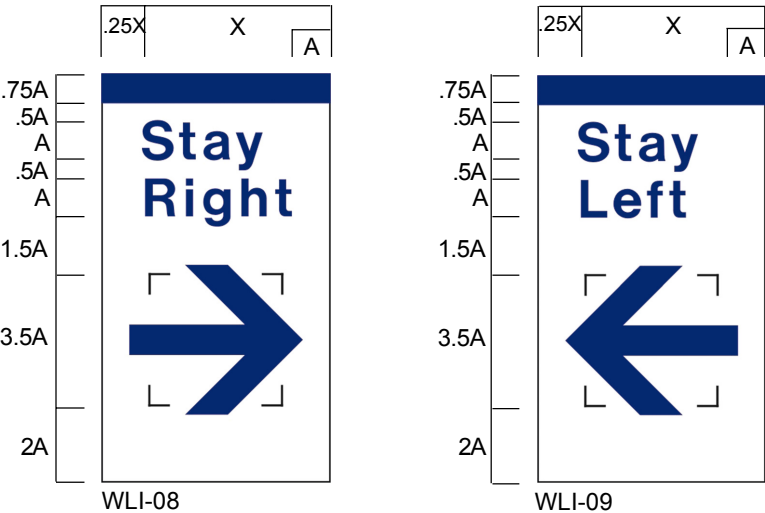
WLI-08

WLI-09

Sign background color is white retroreflective sheeting with Medium Blue retroreflective legend, arrows, and overbar.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway Signs. The sign panel format uses standard Grid 3, Section 7.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-08/09	A	6Ax10.75A	Engineered	WTW-4/5	>11.25A	WH/MB
WLI-08/09	A	6Ax10.75A	-	WTW-6/7	>11.25A	WH/MB
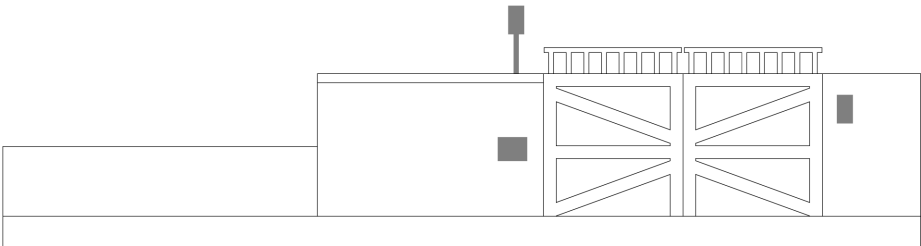
The signs below are used to identify the location of manual signal devices, and are generally located on the lock wall for boaters unable to use radio communications to signal the lock operator.

These signs are primarily intended to instruct the recreational boater and are viewed at relatively short distances (50'-125'). Signs should not be larger than necessary to prevent sign clutter around the entrance to the lock.

Mount within the boaters' view when approaching the lock. Care should be taken when mounting signs so that they will not be damaged by passing barge tows. In areas with multiple signs, visual order should be created by aligning the sign panels and sizing the signs to a uniform capital letter height (A).

Sign background color is white retroreflective sheeting with Medium Blue retroreflective legend and overbar.

```
   .25X              X              A

.75A ┌────────────────────────────┐
.5A  │ ████████████████████████   │
A    │                            │
.5A  │  Pull Chain                │
A    │  In Recess                 │
.5A  │  For Lockage               │
A    │                            │
2A   └────────────────────────────┘
```
WLI-10
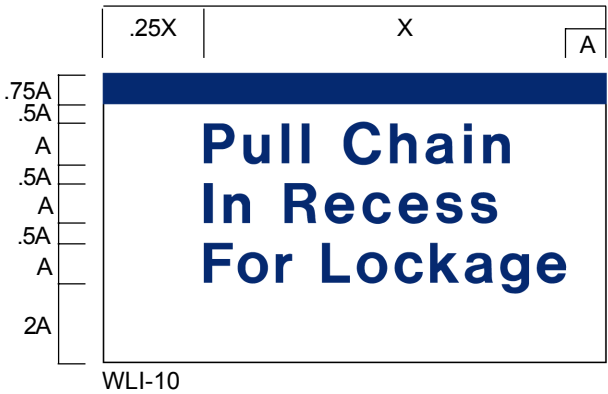
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-10	A	12.625Ax7.25A	Engineered	WTW-4/5	>7.25A	WH/MB
WLI-10	A	12.625Ax7.25A	-	WTW-6/7	>7.25A	WH/MB

```
   .25X              X              A

.75A ┌────────────────────────────┐
.5A  │ ████████████████████████   │
A    │                            │
.5A  │  Pull Signal               │
A    │  Cord for                  │
.5A  │  Lockage                   │
A    │                            │
2A   └────────────────────────────┘
```
WLI-11

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway. The sign panel format uses standard Grid 3, Section 7.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-11	A	11.375Ax7.25A	Engineered	WTW-4/5	>7.25A	WH/MB
WLI-11	A	11.375Ax7.25A	-	WTW-6/7	>7.25A	WH/MB
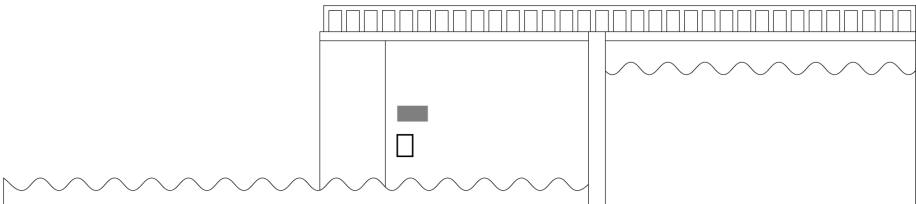
The safety signs shown below are used within the lock entry channel and lock chamber to instruct boaters of local safety regulations and are to be placed as needed on a site-by-site basis.

These signs follow the standard format for Corps Workplace Safety signs as shown in Section 11. The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing (see Appendix D, page D.9). For grid formats and viewing distance information, refer to page 11-3, with color standards provided on page 11-2.

Place signs within the boat operator's field of view, and mount so that passing boats and lock equipment and vehicles will not damage the sign panel. Where possible, mount signs with common alignments for visually uniform installations. For additional Workplace Safety signs, see Section 11.

Danger: These signs indicate immediate and grave danger, a hazard capable of producing irreversible damage or injury. Danger signs are intended to prohibit harmful activities.

It is recommended that "Danger, No Smoking During Lockage" (SDA-25) be used in the observation area or on the upper deck, and "Danger, No Smoking, or Open Flame" (SDA-04) be used in the lock chamber.

Warning/Caution: These signs are used to call attention to a potential danger or a hazard capable of resulting in moderately severe injury or damage. In some instances, the hazards may be the same as those associated with Danger signs but are of significantly less magnitude.

Notice: These signs are used to control or define access and circulation. They are used primarily for information and are not placed to identify a hazard.

Panels are to be used in and around lock chamber area, and are not intended to be used in place of no wake zone buoys.

Danger No Smoking or Open Flame	**Danger** No Smoking During Lockage	**Danger** Do Not Tie To Fixed Mooring Posts	
SDA-04	SDA-25	SDA-24	
Caution Slippery When Wet	**Caution** Stern Line First	**Caution** Do Not Get On or Off Boat During Lockage	**Caution** Do Not Tie Boat To Ladder
SCA-17	SCA-25	SCA-26	SCA-27
Caution Life Jackets Required in Lock Area	**Caution** No Wake Zone	**Caution** Test Reverse Before Entering	**Caution** Edge of Sill Keep Back OO Feet
SCA-28	SCA-29	SCA-30	SCA-31*
Notice Authorized Personnel Only	**Notice** Have Documents Ready		
SNO-07	SNO-14		

*Add distance for each installation (SCA-31)

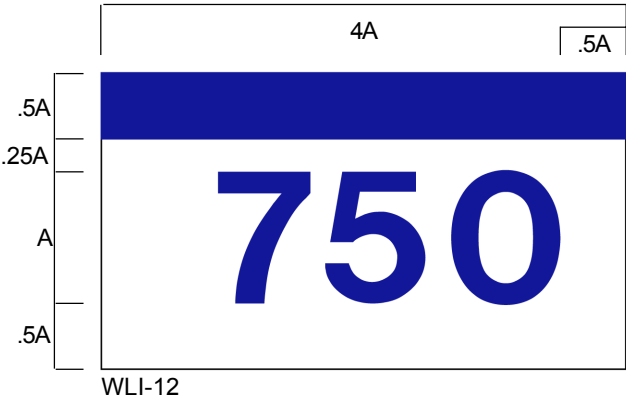Specific sign type code is to be inserted when ordering sign.

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
-	.75"	8"x8"	-	ALU-6	65"	varies
-	1.125"	12"x12"	-	ALU-6	65"	varies
-	1.5"	16"x16"	-	ALU-6	78" min	varies
-	2.25"	24"x24"	-	ALU-6	78" min	varies

The signs shown below are used to identify the length of the lock chamber, at 50' increments.

They are placed along the upper portion of the guide walls. Within the chamber, the distance markers will be placed in ascending order beginning 50 feet from the downstream end and continuing to the upstream end. Signs are to be placed 50' on-center on mounting posts that are inside the guard railing and at a common height. Existing hand rails and cables may also be used. Calculate placement locations carefully to give accurate information to the boat operator while he is navigating through the lock chamber. Where chamber markers cannot be viewed from low water level, additional submergible indicators may be placed in recessed areas along the lock chamber. 3" x 5" durable high brightness pavement markers are fastened to the chamber wall in groups of nine (3 x 3). These markers are placed between 12-20 feet above low water level, following manufacturers specifications. Product numbers and manufacturer's are provided in Appendix E.

4A   .5A

.5A
.25A
A
.5A

750

WLI-12

0

One digit

50

Two digits

250

Three digits

1250

Four digits

Sign background color is white retrore-flective sheeting with Medium Blue retroreflective number and overbar.

The typeface is Helvetica Medium and follows Corps standard letter- and word-spacing, Appendix D page D. 12.

*See engineered example, page B.13-13

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-12	9"	36"x20.25"	3"x3"	WTW-3	20-25"	WH/MB
WLI-12	12"	48"x27"	3"x3"	WTW-3	27"	WH/MB
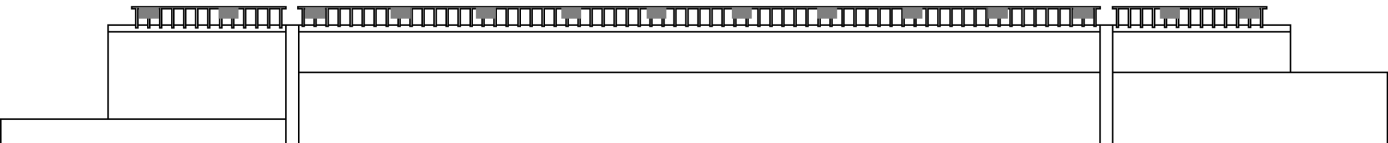
The gate opening sign shown below is used to inform boaters of the size of the gate opening at the next dam, and is used to calculate the flow speed to the next lock. This sign is used primarily by commercial operators with barge tows.

The name of the next facility is also shown on the sign to aid orientation. This sign is generally placed on the walkway beside the lock chamber within the sightline of the boat operators entering and leaving the lock when the chamber is at the high water level.

The gate opening is indicated in feet. These increments are displayed on individual aluminum insert panels that can be easily changed by lock personnel. The bracket on the sign panel consists of a vertical retainer or guide with a fixed stop at the base of each guideway. The open assembly prohibits the collection of dirt, moisture on the panel, maintaining the life and overall appearance of the sign.

Sign background color is white retroreflective sheeting with Medium Blue retroreflective legend and overbar.

WLI-13
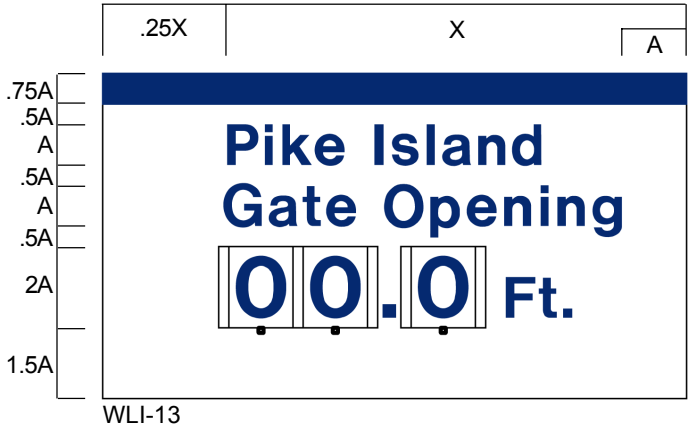
The insert panels are sheet aluminum with white retroreflective background and Medium Blue retroreflective numbers mounted to the surface.

The typeface is Helvetica Medium and follows Corps standard width letter- and word-spacing, Appendix D, page D-12. The sign panel format uses standard Grid 3, Section 7.
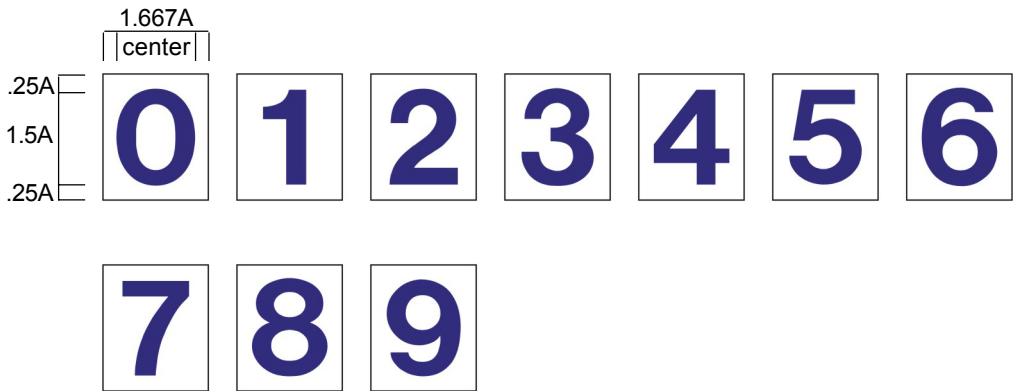
* Panel length may vary with longer dam names

**See engineered example, page B.13-10

Sign Type	Legend Size (A)	Panel Size*	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WLI-13	6"	86.25"x48"	3"x3"**	WTW-2	6"	WH/MB
WLI-13	6"	86.25"x48"	-	WTW-6	6"	WH/MB
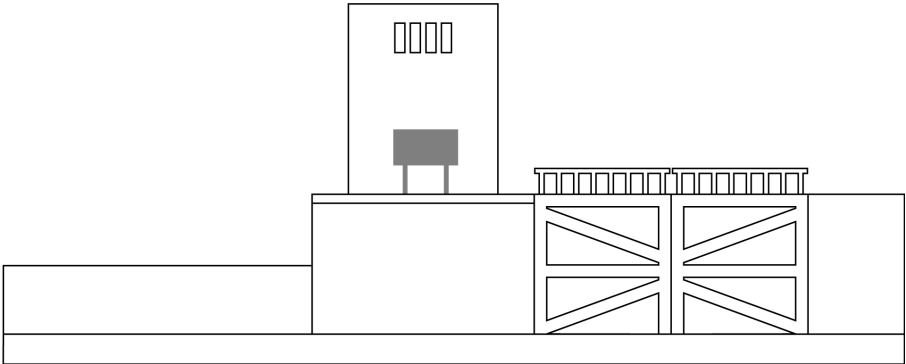
For the unfamiliar user, orientation for boaters on a lake project can be very confusing. This problem is compounded on lakes that have inlets or secondary channels that appear as large as the main channel when viewed from the water.

The two types of signs shown below are provided for use on lakes. These are optional and include shoreline mile markers and guide signs to principal lake services, using a limited group of recreation symbols. The mile and inlet marker system is intended to aid navigation by boaters who are unfamiliar with the project. These signs are placed along the shore at prominent points at appropriate increments. Although the mile marker indicates the mile point, exact placement should be conspicuous and may not be at the precise mile point. Mile markers are used in addition to USCG Aids to Navigation, and are not to be used as a substitute.

The guide signs are used to direct boaters to key service destinations or designated recreation areas on the lake.

To introduce a marking system, the mile marker and guide sign program may also be illustrated in the project folder map, showing the location of each point for boaters reference.
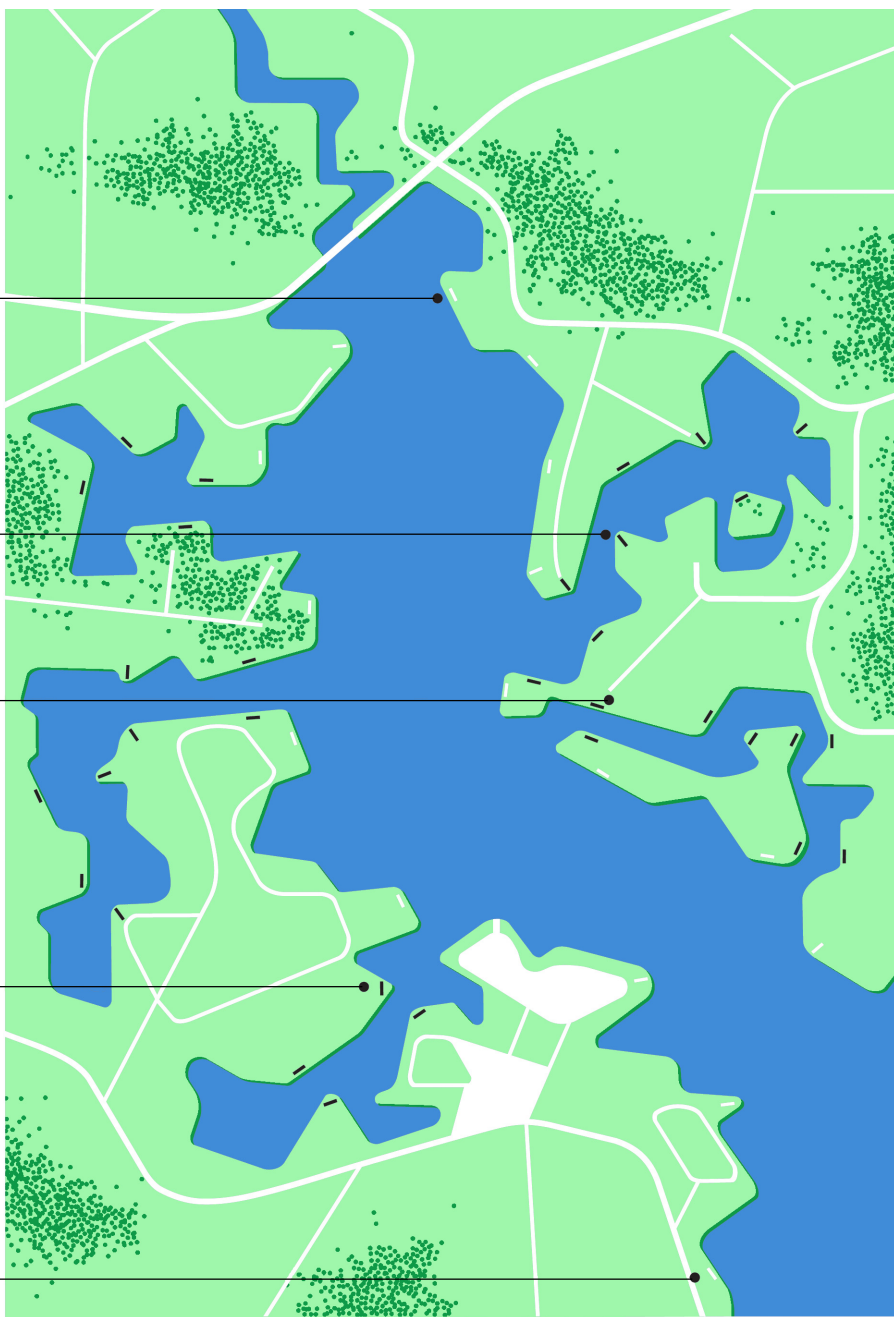
Mile markers are used as a guide for lake visitors and as reference points for law enforcement and emergency personnel. The most common approach to planning a mile marker program is to place mile marker signs in increments from the dam to the upper end of the lake. The first mile marker would typically be one mile from the dam. Local conditions will dictate distance between mile marker signs and if signs should be mounted on both sides of the main lake channel.

Secondary channels are differentiated by using a reversed color format, and smaller size panel, and may be shown with a letter used in conjunction with the mileage from the mouth to its upper extent at the respective mile points as illustrated.

Mile markers are designed as single face signs mounted parallel to the shoreline. Certain locations may require a double face assembly for optimal viewing from all approaching directions.

Consult with the district Sign Program Manager if this method of marking a lake project is not appropriate to a specific project because of unique characteristics of the shoreline that may dictate an alternate method of marking.

The mile marker has a broad border and uses the Helvetica Medium typeface for maximum legibility when viewed from a long distance. Refer to Corps standard letter-spacing, Appendix D, page D-12.

The design of both the mile markers and the symbols are built on a square format. Mile markers with multiple digit legends will be wider depending on the length of the legend. The legend is always centered on the panel. The minimum distance between the number or letter and the inside edge of the border is never less than 1.5M.

The panel color is shown with Medium Blue figure and border on a white field for primary channel marking. Secondary channel markers use the same colors, only in reverse with white border and legend on a Medium Blue field. The panel graphics are fabricated using retroreflective sheeting.

The size of the panels for primary channels should be uniform throughout. The size of the secondary channel signs may be smaller if the channel width is appreciably reduced. For example, if a 60" panel is necessary for the primary channel, then a 48" panel may be more appropriate for the secondary channels. Mile markers are sized using the standard viewing calculation (1 inch per each 28 feet of distance). The basic goal is to provide the marker as a reference point, even though the sign may not always be easily read from every mile point along the channel.

To minimize wind load, the mounting height above grade level (HAGL) is kept low, reducing the need for overly elaborate footings, and preventing too much disruption of the quality of view. The base of the sign panel is to be mounted above the high water line of normal recreation pool. Carefully plan placements so that during low water the installation will not be so far from the waterline that its function is not easily understood.

For placement guidelines refer to page 14-57.

WPM-01
Primary channel marker

WSM-01
Secondary channel marker

Two digit character

Three digit character

Four digit character
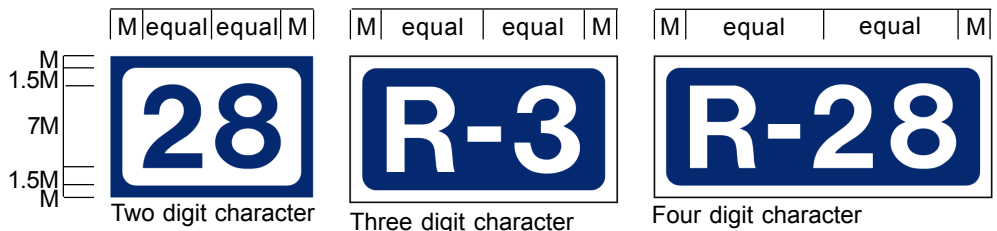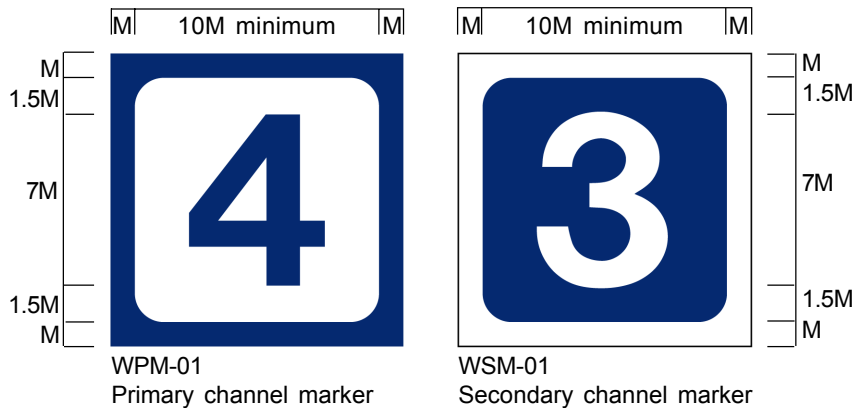
| Sign Type	Margin Size (A)	Legend Size (A)	Panel Height Formula	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
*	2"	14"	24"	2"x2"**	WTW-2	48"	***
*	3"	21"	36"	2"x2"**	WTW-2	48"	***
*	4"	28"	48"	2"x2"**	WTW-2	48"	***
*	5"	35"	60"	2"x2"**	WTW-2	48"	***
*	6"	42"	72"	2"x2"**	WTW-2	48"	***

*   WPM-01 for primary channel, WSM-01 for secondary channel
** See Engineered example, page B. 13-11
*** Secondary channel, W/B

Viewing Distance Guide

Panel Size	Viewing Distance
24" x 24"	400'
36" x 36"	600'
48" x 48"	800'
60" x 60"	1,000'
72" x 72"	1,200'

14-43
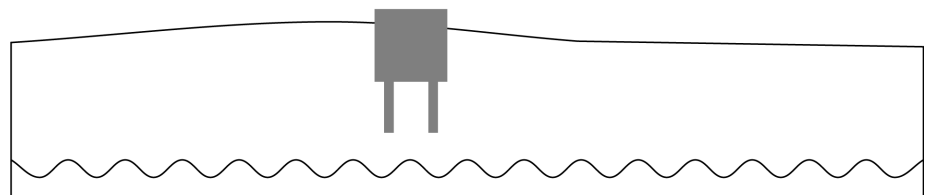
These guide signs are used to eliminate the need for guide and identification signs with worded legends, and any commercial signing being placed along Corps lakes and waterways.

The guide signs provide a uniform format directing boaters to key destinations including marinas, boat ramps, and where appropriate, to designated swimming and waterskiing areas. These signs are the same as the recreation symbols shown in Section 8, although they are built to a different format for this shoreline application.

The size of the panels, scaled for long distance viewing is similar to the mile markers using the simple size formula provided below, and are to be placed at key decision points only, and not along the length of the shoreline.

The sign color is Medium Blue with a white figure, outline border and arrow. It is always shown with a lower panel containing the directional arrow to guide boaters to the specific destination. The panel graphics are fabricated using retroreflective sheeting.

Two formats are shown for the section of the panel below the symbol. Standard applications use only a Helvetica Medium arrow centered on the panel. Where applicable, distance to the services or special areas may be displayed in the format illustrated.

The typeface is Helvetica Medium and follows Corps standard letter- spacing, Appendix D, page D-12. Reproduction artwork for the six symbols and the Helvetica Medium arrow are provided in Appendix F.

These panels are to be mounted low to the ground to reduce wind loading and the need for overly large foundations. Make sure signs are mounted above the high water line of normal recreation pool. Signs are mounted parallel (single face) or perpendicular (double face) to the shoreline. For placement guidelines, refer to page 14-57.

Viewing Distance Guide

Panel Size	Viewing Distance
24" x 36"	400'
36" x 54"	600'
48" x 72"	800'
60" x 90"	1,000'
72" x 108"	1,200'
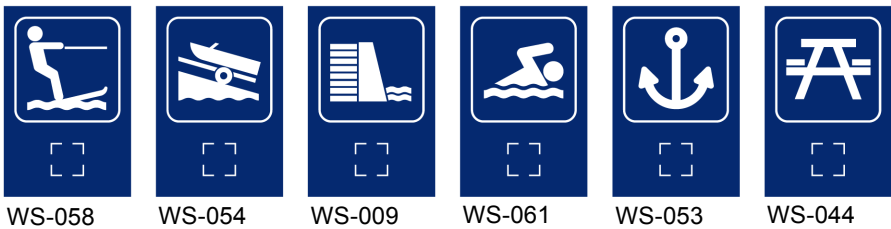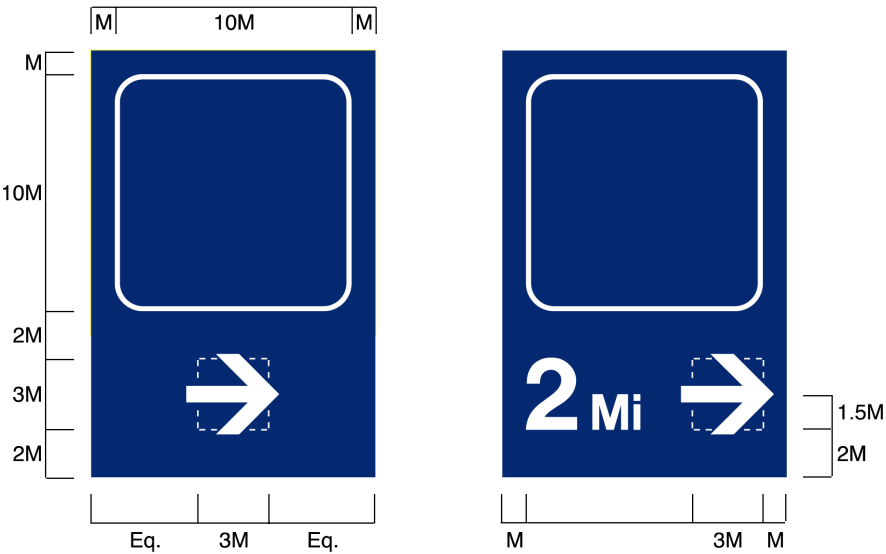
WS-058 WS-054 WS-009 WS-061 WS-053 WS-044

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WS-000	2"	24"x36"	2"x2"*	WTW-5	48"	MB/WH
WS-000	3"	36"x54"	3"x3"*	WTW-5	48"	MB/WH
WS-000	4"	48"x72"	3"x3"*	WTW-2	48"	MB/WH
WS-000	5"	60"x90"	4"x4"*	WTW-2	48"	MB/WH
WS-000	6"	72"x108"	4"x4"*	WTW-2	48"	MB/WH

* See engineered example, page B. 13-12
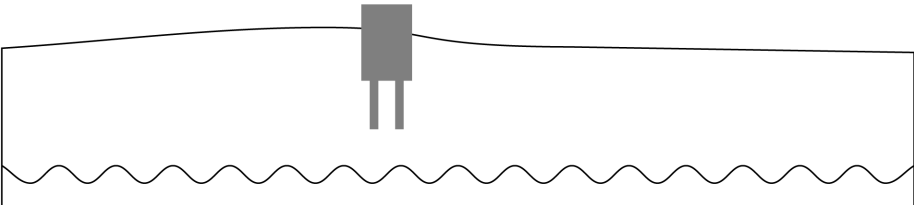
It is the policy of the Corps to operate and maintain jetties, groins, and breakwaters to aid navigation and to protect shorelines in a manner that does not enhance or encourage recreational or other public use unless a nonfederal entity has sponsored recreation.

Authority
As described in Engineer Pamphlet 1130-2-520, Chapter 3, Protection of Public Health and Safety at Jetties, Groins and Breakwaters, the Division Commander may select one of three alternative approaches as described in this section to meet minimum health and safety needs, including the place-ment of Danger, Restricted and Warning signs at Corps maintained jetties, groins and breakwaters. The determina-tion of which alternative or combination of alternatives to select is based upon site-specific rationale.

Program Implementation
At each location, the district or project office should analyze and select one of the below listed alternative approaches to safety marking the area or structure.

No Action: This "do nothing" alternative provides the lower end of a range of options and may be appropriate for instances where the district considers that negligible safety hazards exist or public access is not readily provided.

Post Danger Signs: Under this alterna-tive, Danger signs would be posted, regularly inspected and replaced as often as necessary to inform and alert the public of hazardous conditions related to the jetty, groin or breakwater. This alternative provides safety informa-tion for public visitors while not encour-aging public use of these structures. Because recreational use of jetties, groins and breakwaters is normally not encouraged, this alternative should be carefully considered before being selected.

Deny Entry or Access: This alternative is to be employed normally. Consideration should be given to the extent of public use and determination of potential hazards. Installation of a fence, barri-cade or other suitable construction that precludes entry or access onto jetties, groins and breakwaters on an individual project basis, may be necessary in dealing with a particularly dangerous jetty, groin or breakwater.

Evaluation Criteria
Conditions at each structure will need to be evaluated on a site-by-site basis to determine what restrictions, warnings, or type of access may be allowed at a particular structure.

The evaluation of each structure should be carefully formulated against locally developed criteria. Once an approach is defined, a sign plan and appropriate controls and maintenance systems must be developed to implement and support the plan.

Listed below are criteria that may be used to determine what level of control is implemented at a location to restrict or allow access.

Restrict Access: Because these facilities were not built for recreational use, they do not include the standard provisions for public safety such as guardrails, wide or smooth walkways, or the availability of lifesaving equipment. To this end, access should be allowed only when the following conditions are not considered to be extreme.

a) Water subject to sudden rise and cresting over the structure during storm conditions.

b) Strong currents, violent turbulence or air-entrainment on either side of the structure would prohibit someone from treading water until they are rescued.

c) Dangerous breaks in the structure, sharp, unprotected drops, unsafe pave-ment, or possible slippery surface conditions.

d) Length of the structure is so long that safe egress under storm conditions is not possible.

e) Winter season access is unsafe because of icing, waves cresting over structure, or other hazardous environmen-tal conditions.

f) Water above a normal level may dictate access limitations.

g) No nearby electronic communications, emergency medical services or related life saving equipment within a reasonable time or distance zone.

h) History of severe accidents on the structure that could be avoided if access were prohibited.

i) No local assistance provided for costs associated with recreation related uses of the structure.

Allow Access: Access to a structure is allowed only when it is determined to be appropriately safe for the general public. Listed below are the conditions under which public access may be allowed.

a) The adjacent water conditions are determined to be safe for use within the posted limitations and cautionary warnings.

b) Policed and managed by cost share sponsor.

c) Available for use within the posted recreation season.

d) Access allowed out to, but not beyond a certain point.

e) Structure has appropriate guardrails, safe walking surfaces and good mainte-nance of these systems as to not entrap the public or falsely create the appear-ance of safety.

f) Access to communications equipment and medical services within proximity to the structure.

Sign Types

The signs used to restrict access or identify a danger will follow Corps standards for white on red Danger and Restricted Area signs. The signs used to alert the public of a potential hazard will follow Corps standards for black on Lemon Yellow Warning signs. For a description of Safety Signs and their application, refer to page 2-13 through 2-16 of this manual.

Prohibition Symbol signs as specified in Section 8, may also be used when signing jetty and breakwater structures where appropriate.

Sign Format

Signs on jetties and breakwaters use the standard grid formats as shown in Section 7. The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9.

Aids to Navigation

It is the responsibility of the Coast Guard to properly mark all jetties, dikes, groins and breakwaters for navigation purposes.

All Corps safety signs used on or around jetties, groins and breakwaters are to be used in conjunction with the United States Coast Guard Aids to Navigation. Generally the signs placed by the Corps are intended for viewers approaching these structures from land, not water, and should not conflict with Aids to Navigation (see Section 15).

Weather and Vandalism

Signs mounted on structures are subject to accelerated wear and damage by harsh weather conditions and are frequently defaced through malicious acts. The design, selection of materials and mounting of these signs should be such that these problems will be minimized.

Maintenance

Once signs are placed on or around a navigation structure, they must be inspected and maintained on a routine schedule that minimizes the chance that the sign will be damaged beyond usefulness. For general maintenance planning and procedures refer to Appendix C.

Materials and Sign Fabrication

The materials generally specified for normal Corps recreation project signing may not be adequate because of harsh environmental or weather conditions or because of presence of excessive vandalism. Where these conditions require, alternate material specifications may be used. The fabrication and material specifications should use heavier gauge materials for both sign panel and posts with welded construction to over-come actions that destroy normal struc-tures. Most sign faces that are defaced or destroyed can be resurfaced in the field at minimal cost. Although the initial cost will be higher for these types of installa-tions, the long term benefits should outweigh this one-time investment.

Since jetty and breakwater signs are intended for pedestrian viewing, smaller panels that are less easily vandalized may be used, or where possible be mounted beyond the normal reach of visitors. The welded construction will limit access to mechanical hardware for purposes of tampering.

Placement

Place jetty or breakwater safety signs on the structure or in close visual proximity to the access point. The function is to identify dangerous conditions on or around the structures. The signs may be placed for viewing from land-side or water-side depending on viewers' approach and conditions identified. The sign is mounted on the bank facing away from the water's edge or as a double face sign mounted perpendicular to the bank. As a land-viewed sign, it is preferable that several smaller signs be placed closer to the viewer in series, instead of one overly large sign viewed from a greater distance.

Illustrated below is a schematic plan showing both an improved and an unimproved jetty, and an unconnected breakwater.

Access to the freestanding breakwater at the mouth of the harbor is not allowed, and is appropriately marked around the perimeter with "Danger: Restricted Area, Keep Out" signs.

The jetty on the right is also designated as a restricted area, and has been signed accordingly because conditions on the jetty are very unsafe.

The jetty extending out into the water on the left side of the diagram is adjacent to a state park and is considered safe enough for controlled recreational use during the recreation season.
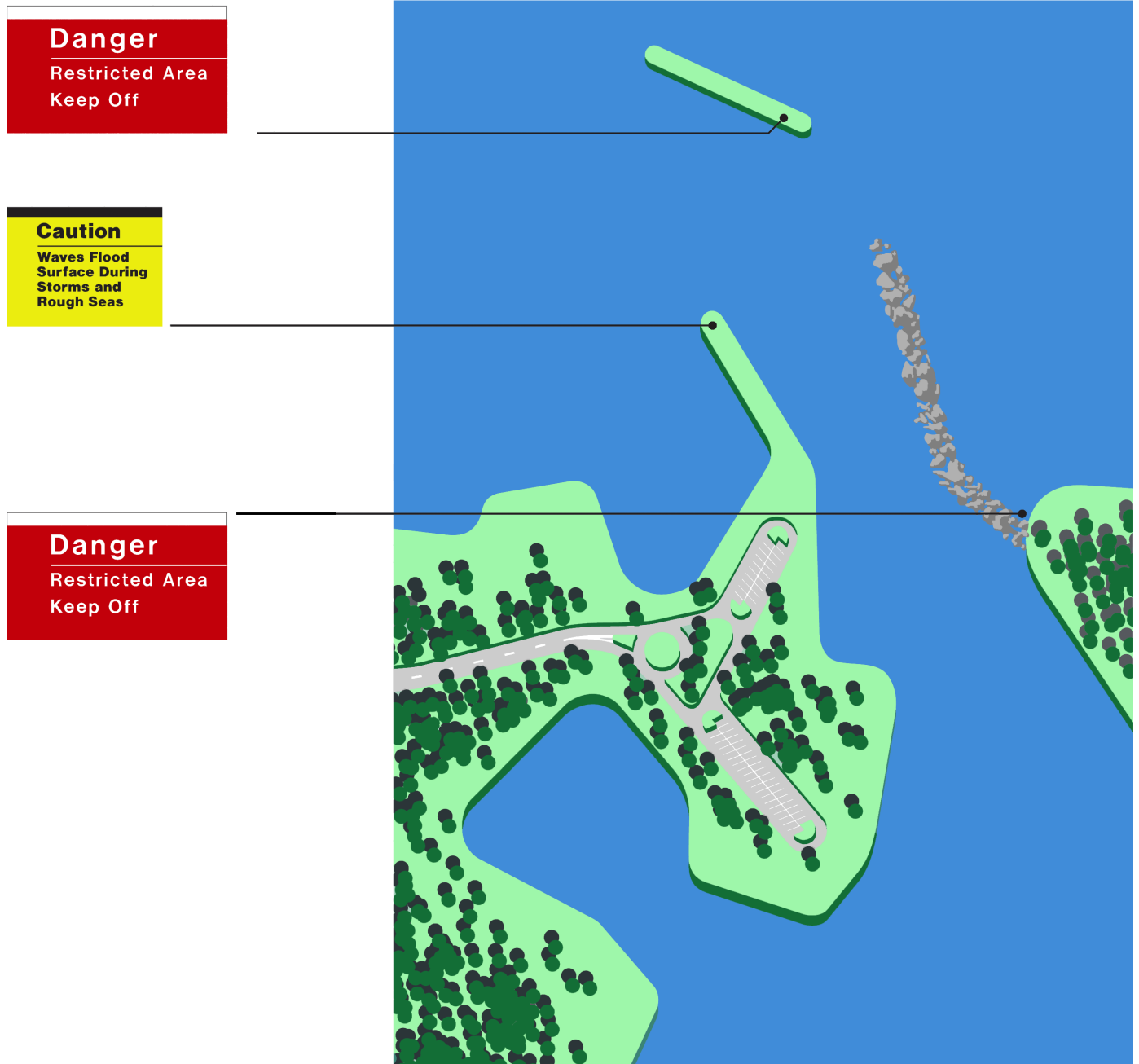
If access is prohibited onto a structure for purposes of maintaining reasonable public safety, signs and appropriate fences and barricades may be limited to the structure's access points. Once public access has been restricted, all signage and physical barriers should be maintained. Shown below are the various signs that may be used for this purpose. If the structure is too dangerous to allow access, the restrictive signs are Danger signs, not Warnings.

Signs are placed to clearly notify that access is not allowed. They should be sized for easy reading from an appropriately safe distance. A sign that is undersized relative to viewing requirements may not be seen as needed. Conversely, an overly large sign can unnecessarily overwhelm an area. To properly size signs for a location, refer to the Viewing Distance Guide on page 2-6.

The sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule. Sign to use the standard grid formats as shown in Section 7.

The typeface for WDA-24 and WRE-24 below is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9.

Danger
Restricted Area
Keep Out

WDA-24

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-24	2"	32.25"x18"	Engineered	WTW-3/5/6	36"	RD/WH
WDA-24	3"	48.5"x27"	Engineered	WTW-3/5/6	36"	RD/WH

For viewing from water. For larger sizes refer to standard Grid 1 in Section 7.

The typeface for WDA-25 is Helvetica Medium and follows Corps standard letter- and word-spacing for waterway signs.

Danger
Restricted Area
Keep Off

WDA-25

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-25	2"	33"x19"	Engineered	WTW-3/5/6	36"	RD/WH
WDA-25	3"	49.5"x28.5"	Engineered	WTW-3/5/6	36"	RD/WH

Restricted Area
Water Levels Change Rapidly
Walkway Subject to Sudden Flooding
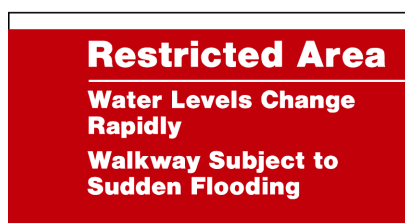
WRE-24

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WRE-24	2"	46.625"x25"	Engineered	WTW-3/5/6	36"	RD/WH
WRE-24	3"	69.875"x37.5"	Engineered	WTW-3/5/6	36"	RD/WH

If the public is permitted to use a jetty or breakwater for recreation purposes, they are instructed that they are proceeding at their own risk (see 14-49). If the Corps allows public access, specific hazards or dangerous conditions must also be marked in such a way that the public is not endangered or unaware of the nature of the hazardous condition. For this purpose, standard Corps Danger signs are provided in Section 7 and on pages 14-20 through 14-27 of this section. Additional Danger signs are shown below for use on jetties and breakwaters.

Some prohibitions may more appropriately be signed using Prohibition Symbol signs (see Section 8), while only using the standard Danger signs where they are necessary.

Signs are sized for easy reading from an appropriately safe distance. To properly size signs for a location, refer to the Viewing Distance Guide on page 2-6.

The sign background color is red retroreflective sheeting with white retroreflective legend, overbar and rule. Sign to use the standard grid formats as shown in Section 7.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D-9.

These signs are intended for relatively short viewing distances. If a long structure is to be signed, use smaller signs more frequently rather than a few larger signs. Place an appropriate number of signs to adequately identify the hazard without over-signing the structure. However, balance is required because if there are too many signs, viewers may disregard the most important ones.

The Danger, Caution, and Warning signs used in this manual cannot be changed without HQUSACE approval. For all signs listed below, identical legends are approved as both Danger and Warning signs.

WDA-28 (right) and WWA-21 on page 14-50.

Determination of whether a Danger or Warning sign is to be used will be made by the project manager after considering the conditions and severity of the hazard. Please refer to the discussion of safety signs in Section 2, pages 2-13 through 2-15.
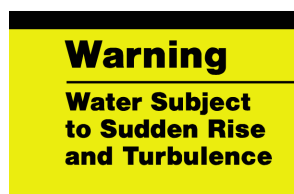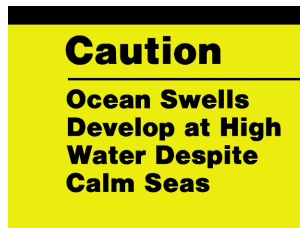
Danger
No Hand Rails
Uneven Surface
Deep Water

WDA-26

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-26	2"	32.75"x23"	Engineered	WTW-3/5/6	36"	RD/WH
WDA-26	3"	49.125"x34.5"	Engineered	WTW-3/5/6	36"	RD/WH

Danger
No Swimming or Diving Within 000 Ft. of Breakwater
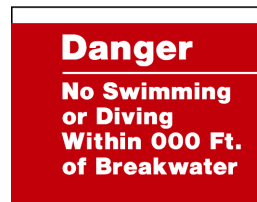
WDA-27

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-27	2"	30.5"x24"	Engineered	WTW-3/5/6	36"	RD/WH
WDA-27	3"	45.75"x36"	Engineered	WTW-3/5/6	36"	RD/WH

Danger
Surface Uneven and Slippery When Wet
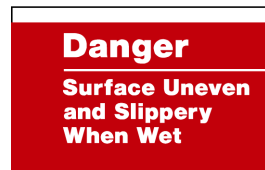
WDA-28

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-28	2"	32.75"x21"	Engineered	WTW-3/5/6	36"	RD/WH
WDA-28	3"	49.25"x31.5"	Engineered	WTW-3/5/6	36"	RD/WH

Danger
Waves Flood Surface
Keep Off During Storms
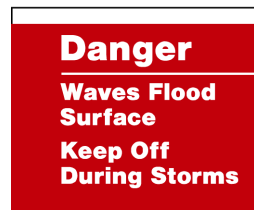
WDA-29

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WDA-29	2"	30.125"x25"	Engineered	WTW-3/5/6	36"	RD/WH
WDA-29	3"	45.125"x37.5"	Engineered	WTW-3/5/6	36"	RD/WH

At locations where public access is allowed, Warning or Caution signs are used on jetties and breakwaters to call attention to a potential hazard or a hazard capable of resulting in injury or damage. In some instances, the hazards may be those associated with Danger signs but are of a significantly less magnitude to warrant only using a Warning sign.

Shown below are a group of Warning signs specified for use on jetties and breakwaters on a site specific basis.

Signs should be sized for easy reading from an appropriately safe distance. To properly size signs for a location, refer to the Viewing Distance Guide on page 2-6.

The sign background color is Lemon Yellow retroreflective sheeting with black nonreflective legend, overbar and rule. Sign to use the standard grid formats as shown in Section 7.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D.9.

For viewing from water. For larger sizes refer to waterway sign specifications on pages B. 13 through B. 13-13.

The Danger, Caution, and Warning signs used in this manual cannot be changed without HQUSACE approval. For all signs below, identical legends are approved as both Danger and Warning signs.

- WWA-21 (above) and sign WDA-28 on page 14-49.

- WWA-22 (right) and DNG-12 in Section 7.

- WWA-23 (below) and WDA-31 on page 14-21.

Determination of whether a Danger or Warning sign is to be used will be made by the project manager after considering the conditions and severity of the hazard. Please refer to the discussion of safety signs in Section 2, pages 2-13 through 2-15.
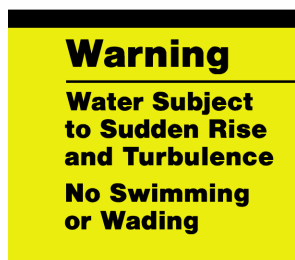
Warning

Surface Uneven and Slippery When Wet

WWA-21

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-21	2"	32.75"x21"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-21	3"	49.125"x31.5"	Engineered	WTW-3/5/6	36"	LY/BK

Warning

Submerged Hazards

Stay Clear

No Mooring

WWA-22

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-22	2"	26.375"x26"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-22	3"	39.5"x39"	Engineered	WTW-3/5/6	36"	LY/BK

Warning

Water Subject to Sudden Rise and Turbulence

WWA-23

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-23	2"	32.375"x21"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-23	3"	48.5"x31.5"	Engineered	WTW-3/5/6	36"	LY/BK

Caution

Surface Hazardous for Walking

WWA-24

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-24	2"	24.625"x21"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-24	3"	37"x31.5"	Engineered	WTW-3/5/6	36"	LY/BK

The sign background color is Lemon Yellow retroreflective sheeting with black nonreflective legend, overbar and rule. Sign to use the standard grid formats as shown in Section 7.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing, Appendix D, page D.9.

The Danger, Caution, and Warning signs used in this manual cannot be changed without HQUSACE approval. For all cases below, identical legends are approved as both Danger and Warning signs.

Determination of whether a Danger or Warning sign is to be used will be made by the project manager after considering the conditions and severity of the hazard. Please refer to the discussion of safety signs in Section 2, pages 2-13 through 2-15.

Caution

Ocean Swells Develop at High Water Despite Calm Seas

WWA-25

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-25	2"	32.5"x24"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-25	3"	48.75"x36"	Engineered	WTW-3/5/6	36"	LY/BK

Caution

Waves Flood Surface During Storms and Rough Seas
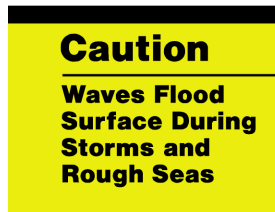
WWA-26

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-26	2"	31.375"x24"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-26	3"	47"x36"	Engineered	WTW-3/5/6	36"	LY/BK

Warning

Water Subject to Sudden Rise and Turbulence

No Swimming or Wading

WWA-30

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWA-30	2"	32.375"x28"	Engineered	WTW-3/5/6	36"	LY/BK
WWA-30	3"	48.5"x42"	Engineered	WTW-3/5/6	36"	LY/BK

Two symbols have been developed to communicate specific hazards of jetties and breakwaters. They have been formatted as slat signs or symbol signs. These signs may be placed near the entry to jetties or breakwaters.

The use of symbols in regions that contain diverse populations where multilingual barriers exist is an effective way of conveying a message and eliminates the need for separate signs for each language.

The sign background color is Lemon Yellow retroreflective sheeting with black nonreflective legend and symbol. Sign to use the standard grid formats for symbol and slat signs as shown in Section 8.

The typeface is Helvetica Bold and follows Corps standard letter- and word-spacing.

HS-001

HS-002

Deadly Waves at Any Time
HS-001

Jetty Unsafe for Walking
HS-002

The Waterway Identification sign is used to identify Corps managed waterway and navigation channels to auto traffic on bridge and causeway crossings. This is part of an ongoing effort by the Corps to comprehensively identify the nation's waterway system in a uniform way, showing that it is part of a nationwide navigation system.

A secondary benefit is to enhance the image of the Corps and identify the Corps as the primary managing agency of this waterway system. The hundreds of waterway viewpoints at bridge crossings provide an excellent opportunity to identify the Corps and its facilities to the thousands of people crossing at these various points.

The sign developed for this purpose follows the basic design used to identify the Corps recreation and flood control projects. This includes the name of the waterway shown in a one-to-three line flush-left format using the Corps Standard Helvetica Bold typeface. To the left of the waterway name is the Corps Communication Mark and Signature. No district or division names are placed on these panels.

The coastal and inland waterway systems should be identified only where signs can be placed effectively. These signs are generally mounted adjacent to the approaches to bridges and causeways that cross the arteries of this system. Although the signs should not be overly large, they must afford a driver "glance recognition" at normal roadway speeds. A sign with a 4" primary legend will be the standard size for most locations.

These signs are to be placed on the right side of roadways, perpendicular to the approaching viewer. Signs are placed on both sides of the bridge for viewing from each respective approach. They should be located within the approaching viewer"s cone of vision. This means that the left edge of the sign will generally be between 10'-14' off the paved right-of-way.

Local approvals may be required prior to placing signs. Consult with the local highway department on all Waterway Identification sign placements.

A smaller sign with 2" primary legend may be mounted on a guard rail or post if there is not adequate space for the larger sign.

For most two-to-four lane roads, a sign with a 4" primary legend (initial capital letters) is appropriate.
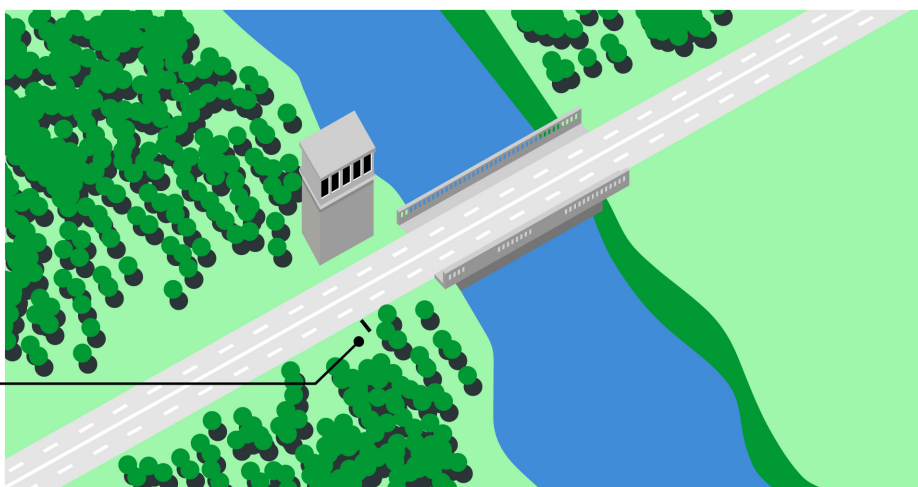
On wider, high-speed roads a sign with a 6" primary legend may be easier to read without appearing too large or out of place. Larger panels are placed at least 100 feet in advance of the crossing.
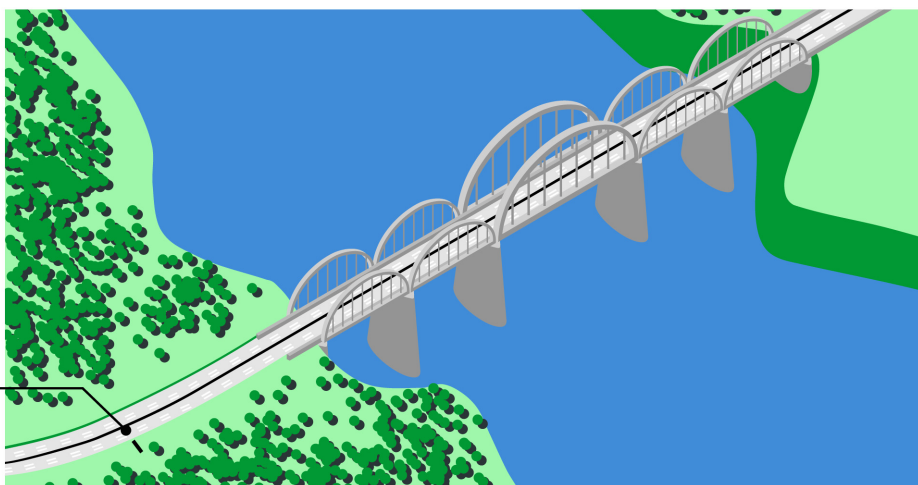
Displayed below are examples of a Waterway Identification sign. As shown, the name on the sign may differ from the legislated project name. These modifications are made in an attempt to communicate clearly and succinctly to passing traffic.

On many waterway systems such as the Monongahela River where the Corps manages the locks and dams, but not the bridges, placement of the Waterway Identification sign may not be appropriate at each crossing.

The sign has a Corps Brown retroreflective background with white retroreflective legend. The Corps Mark is Communication Red, as shown on page 4-3.

The layout grid format for the Waterway Identification sign has been modified from the Standard Identification sign in Section 5 with the following modification to increase glance legibility. For this application, a third line has been added to the layout grid for the primary legend for longer legends. This allows the

width of the panel to be slightly shorter for the few legends that would normally be placed on a sign with a two-line primary legend like Tennessee-Tombigbee Waterway. The procedure for calculating a sign panel's length and height follow the standards shown in Section 5. Because secondary legends place too many words

on a sign that is being read at a glance, their use is discouraged for this type of sign. If a secondary legend is placed on a sign, follow the Standard Identification sign grid format as provided in Section 5.

Grid diagram for a panel with three-line primary identification legend. Panel width and size of Corps Signature follows Standard Identification sign grid format provided in Section 5 with allowance of third line of primary legend.

Because these signs are to be mounted to the right side of the roadways edge, local site conditions such as rapid fall-off of grade, drainage culverts, and rocky fill may make placement difficult. Each installation should be carefully planned to ensure the most appropriate sign location.

The assembly method follows the HDO-4 or ALU-4 specification code. The legs of the HDO-4 and ALU-4 sign are closer together making the sign easier to mount on steep grades common to the edges of roads. This assembly also requires fewer structural members, resulting in lower installations costs.

Since this sign is always placed to the right of the approaching lane of traffic, a double face assembly should not be required.

Mounting posts are attached to the sign panel at an inboard distance of twice the legend height (if A=4, then 8") from the outside edge of the post to the edge of the sign panel.

* Panel size varies with legend length and configuration.

** Post size and number of posts required will depend on size of the sign panel. Refer to specifications in Appendix B.

This diagram illustrates mounting of the Waterway Identification sign using the HDO-4 or ALU-4 assembly as applied to various grade configurations.
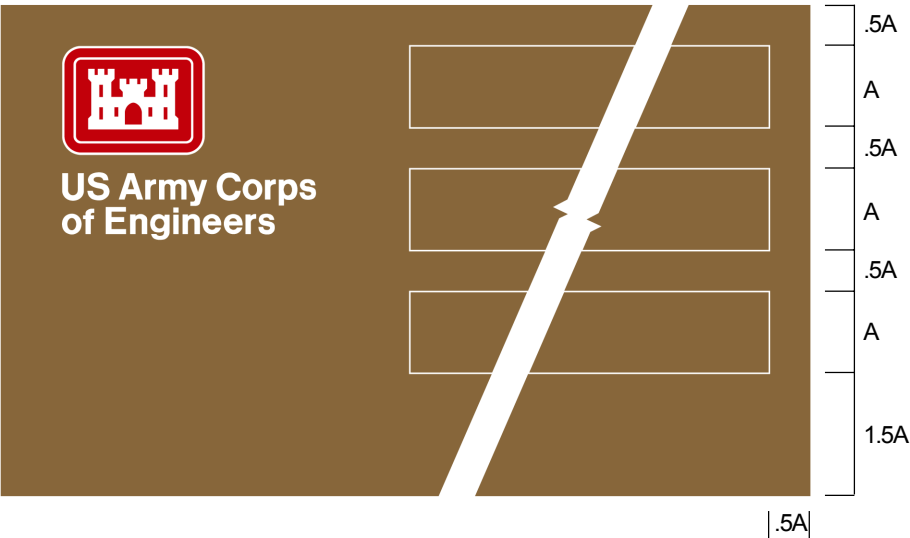
US Army Corps of Engineers

.5A
A
.5A
A
.5A
A
1.5A
.5A

Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
WWWSTID	2"	*	**	HDO-4/ALU-4	36"	CB/WH
WWWSTID	4"		**	HDO-4/ALU-4	36"	CB/WH
WWWSTID	6"	*	**	HDO-4/ALU-4	36"	CB/WH
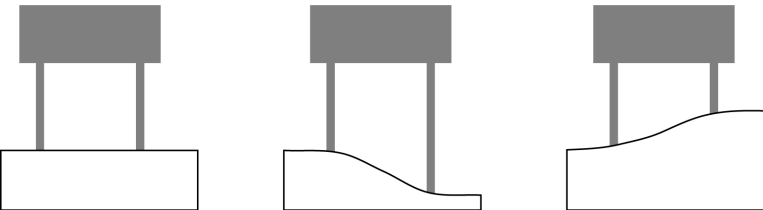
The actual plan for sign placement will be developed for each project site on a site-by-site basis. The guidelines on the following pages determine the best size, location, and viewing distance for maximum sign legibility. Other sign type and placement information is provided on the respective display pages in this section.

It is impossible for these guidelines to anticipate all conditions. Questions concerning interpretation of these guidelines relative to a specific site should be referred to the project Sign Program Manager. Please note that to effectively sign many locations will be a difficult design and engineering challenge that may require considerable field work and the assistance of district and division specialists before the most effective approach is developed and refined.

Once a sign plan is developed, refer to the waterway sign sections of Appendix B: Materials and Specifications for engineering intent reference materials for each respective mounting.

Small safety signs are placed on the riverbank, dam and on lock structures. Most of these signs are intended for viewing at relatively short distances and need not be overly large. Standard signs have been specified in common sizes on the respective display pages for each sign type in this section. They can also be specified in larger sizes and engi-neered for placement on site-by-site basis.

Local conditions will dictate whether this sign is placed parallel to the edge of a river or structure (single-faced panel), or perpendicular (double-faced sign). It is recommended that signs not be over-sized. Place several smaller signs along a structure or riverbank. More frequent placement is more effective because viewers are provided with the information close to the area being signed. Generally, smaller signs are also easier to maintain and less expensive to install. Placement should be such that the sign is not submerged during high water or placed too far from the water's edge during low water levels.

Single face signs mounted perpendicular to entry of an area being signed. Restricted access should be posted in conjunction with the appropriate fencing or buoy lines.

To control access or warn of hazards, single face signs are placed at equal increments along a waterline.
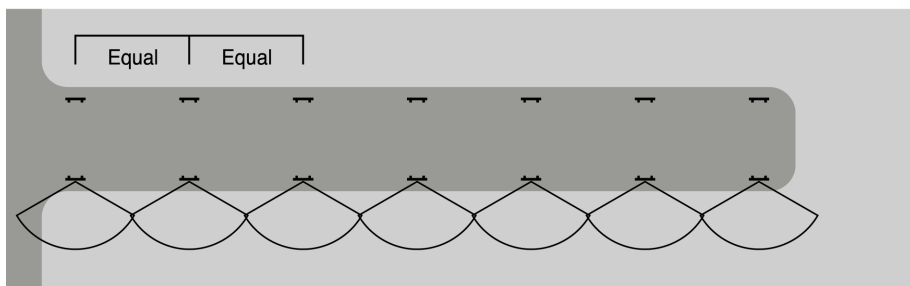
To periodically warn viewers or restrict access, single or double face signs may be placed at appropriate increments along a structure or shoreline. These signs are placed perpendicular to the viewers approach. If access is allowed, warnings should be affirmed along the entire area of exposure.
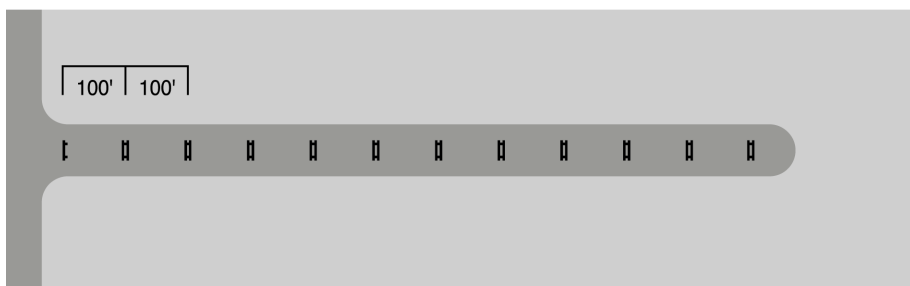
Depending on configuration of the site, shorelines below a dam may be signed for viewing perpendicular to the waters edge or parallel. Signs mounted perpen-dicular to the edge are generally double face. Signs parallel may be double or single face depending on the needs for warning.
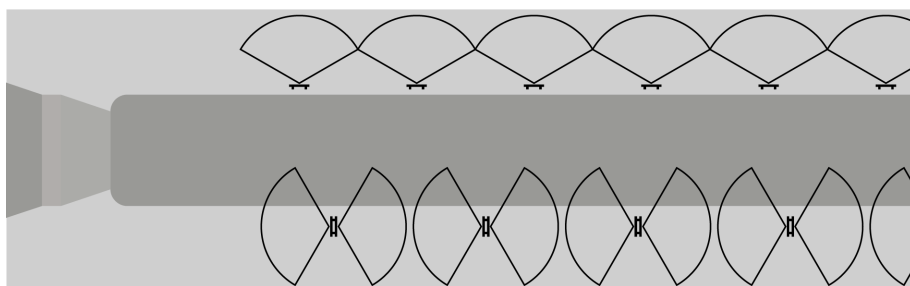
Lake mile markers are placed parallel to the shoreline. Symbol directional signs may be placed either perpendicular or parallel to the shoreline depending on the site lines of the specific location.
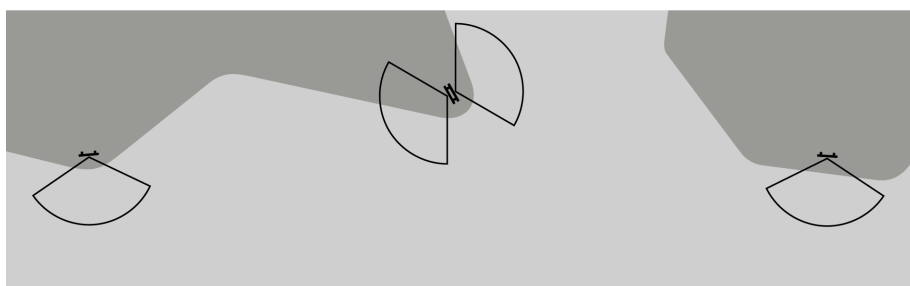
Water-viewed safety signs are placed on river banks and/or on midriver stanchions in approach to a dam. Sign panels identify hazards and provide information for boaters within each respective safety zone as described on pages 14-2 through 14-6. Determination of need, location and size for these large Warning, Danger and Restricted signs are identified and engineered on a project-by-project, site-by-site basis. Sign size and placement guidelines and calculations are provided in this section. Local conditions will dictate the precise number of safety zones needed to be signed above a dam (as illustrated below).

The dam structure is generally visible from upstream. If hazards from open spillways and intakes can be mitigated using fewer signs closer to the structure, there may be no need for a multi-zone sign warning system.

Sign panels are sized using a standard viewing distance/legend size formula (as shown on the following page), but the large number of variables makes the preparation of a sign plan specific to each location.

Placement of these signs requires a review of high and low water levels. The sign must be positioned so that during high water level the sign panel is not submerged, while at low water level the distance of the sign to the boater does not create a confusing viewing condition. Vegetation in front of and next to a sign will need to be properly controlled to ensure good visibility.

Compared to signs viewed from land, placement and sizing for water-viewed signs is extremely difficult. Varying water flow, fluctuating river widths, structural obstacles, extreme light conditions and unpredictable viewing situations make this a complex environment in which to effectively place signs. These issues influence the specific safety zones including warning, danger and restricted areas. These random viewing conditions necessitate the planning for a "worst case condition" to accommodate the multiple viewing constrictions that may occur. Through scientific research and field testing, general standards in this manual have been developed to create a system that accommodates the appropriate legend size, panel format and correct sign placement.

Although many unsafe conditions resulting from poor judgement, such as navigating under the influence of alcohol or proceeding during storm conditions, cannot be controlled, standards have been developed around conditions that can make the sign more effective during difficult viewing conditions. This includes sizing legends for viewers with 20/40 visual acuity, using common referential colors that use viewers' prior experience, making legends succinct and simple, placing signs visible across an entire area and providing a sign placement system with adequate warning so viewers are not entrapped within unsafe areas. In summary, the safety of boaters is enhanced if they can see a sign, read the message, understand or interpret the information and respond accordingly, all within a calculated margin of safety before they enter the indicated safety zone.
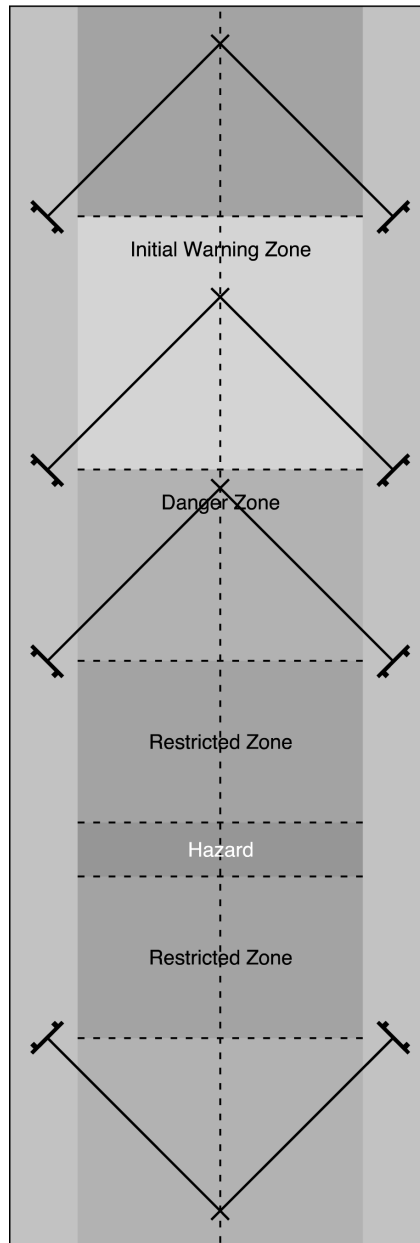
Safety zone diagram

Selection of the appropriate sign size and placement is described below. First, determine the appropriate size of the safety zones for each unique dam configuration. Mark these safety zones on a site plan of the waterway and verify the river widths at the indicated zones, see Diagram 1.
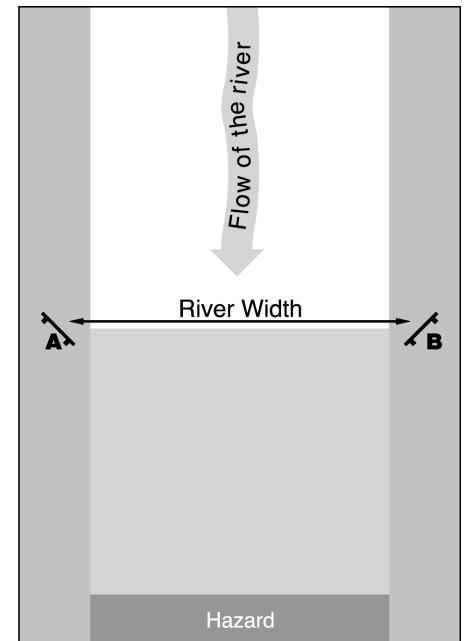

Diagram 1

Signs are to be placed at an angle of 45° to the river, thus creating a 90° angle (AM1-B), see diagram 2. This will allow for use of the smallest size panel that is needed in this particular location while allowing for good legibility within the area being
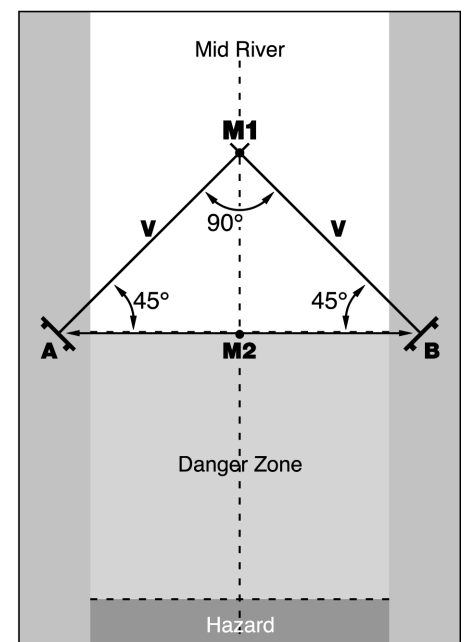

Diagram 2

signed. By placing both sign panels at the same angle to the river, the farthest viewing distance from the sign is at a midriver location (M1) under most conditions. Do not exceed the angle to the river by 45° since this will deteriorate the legibility of the sign panel. The viewing distance (V) from midriver (M1) to the sign panel is now:

$$V = (M1 - M2) / Cos\ 45°$$

$$M1 - M2 = 0.5\ River\ width\ (for\ 45°\ only)$$

$$V = (0.5\ River\ width) / 0.707$$

For example, a river width of 300 feet, results in a viewing distance of 150 feet divided by 0.707 = 212 feet (rounded off). Once the viewing distance is determined, the capital letter height (A) and the correct panel dimensions can be calculated. A is defined as $A = V / 28$ where 28 feet has been determined as the distance a person with 20/40 visual acuity can read a one (1) inch high letter that has a 1:5 ratio of stroke width to letter height adjusted to accommodate upper and lower case legends (initial capitals only). Translating (A) to a number gives the exact size for each sign panel, using the proportional dimensions provided on the specific sign display page.

In summary, the smallest sign panel is acquired by using an angle to the river of 45°. The viewing distance is then calculated by using the indicated formula. This system results in a reaction distance (Ml -M2) which is equal to half the river width. Reaction time is the time used to view a sign, read the message, process the information and act, before the indicated safety zone is reached and should be accomplished on a project-by-project basis as local conditions dictate. Due to local conditions, it may sometimes be desirable to enlarge this reaction time to allow the boater more time to respond to a message. Such conditions are, but are not limited to:

Water Flow
The speed of the water will affect the reaction time of the boater. Fast flowing water at high water levels will shorten the reaction time, in which case a longer reaction distance is needed to give the boater more time to respond to a warning. This problem is a primary concern for fixed crest dams where a boater needs time to avoid the spillway or intake area.

River Width
Distances to location will affect the reaction time of the boater. At midriver location on a wide river, a boater will need more time to get to a safe location than a boater located close to shore. This also results in a larger sign panel to warn the boater earlier.

Natural or Structural Elements
Obstructions in the river can require placement of multiple signs or expanding the length of the safety zone. Midriver islands may create the need to sign each side of the river as an independent channel. Structural elements such as bridge piers can create an additional hazard as well as lend themselves to convenient sign placement that may otherwise require the use of midriver pylons. It is therefore crucial to make a thorough field study to investigate local conditions and determine possible alternatives for sign placements. Do not sacrifice safety for the convenience of an inappropriate mounting location.

Light Conditions
At critical locations rising and setting sunlight can obscure a clear line of sight to a sign or the dam itself. Placement of multiple signs, height to panel base and angle of sign panel should be reviewed on a site-by-site basis to make sure the sign is fully readable at critical periods when the sun is low in the sky.

Angle of Vision
This indicates the maximum angle at which a sign panel can be viewed without unacceptable distortion and loss of legibility. An angle of 60° to the normal of the sign face has been established as the maximum readable rotation.
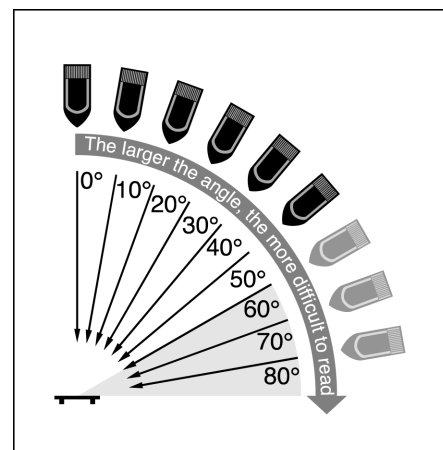
Angle of vision diagram

To accomodate these conditions, several approaches are possible.

1) Enlarge the danger zone and move the sign panels further up- and down-stream, see Diagram 3.
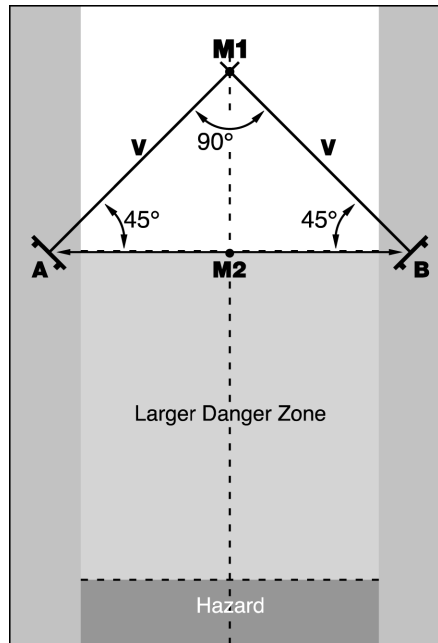
3) Make use of existing structures such as bridges, to mount multiple sign panels across a river. Enlarge the size of the sign to increase the viewing distance, see Diagram 5.
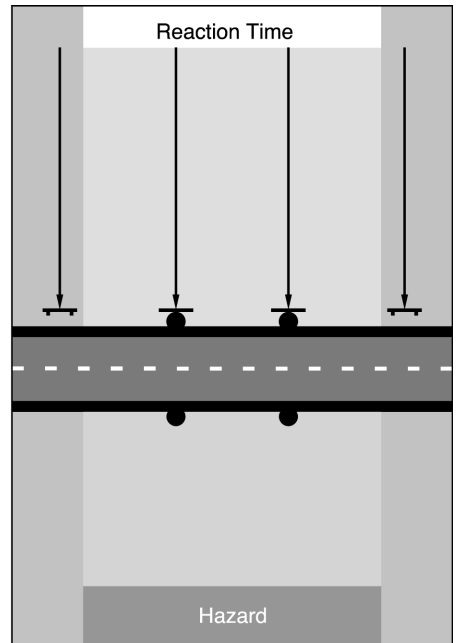

Diagram 3

2) Enlarge the reaction distance by rotating the sign panels, see Diagram 4, reducing the angle and enlarging the sign panels.
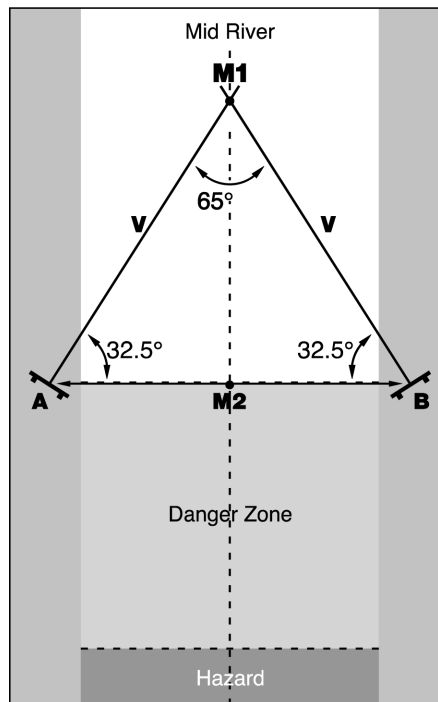

Diagram 5

Extreme care should be given to both the size calculation and sign placement location(s) in the attempt to implement an effective waterway sign system.

Diagram 4

The United States Coast Guard (USCG) Aids to Navigation system marks waterways to assist boaters in navigation and alert them to obstructions and hazards. On waterways with Corps facilities, the Corps sign program complements the Aids to Navigation (ATON) system (see Section 14).

The Coast Guard provides guidance on the ATON system at the following website: http://www.uscgboating.org/safety/aton/aids.htm. There is more detailed information, including marking specifications, in the USCG's *Aids to Navigation Manual - Technical*, COMDTINST M16500.3A. You can get this document at a USCG District Office or at the following website: http://www.uscg.mil/ccs/cit/cim/directives/CIM/CIM_16500_3A.pdf.

The ATON system includes devices such as lights, sound signals, buoys, and dayboards. It is Corps policy that restricted areas and other hazards at our locks and dams and other waterway facilities may use a combination of buoys and dayboards with the USCG ATON symbols as the primary marking system. Signs as described in Section 14 are a compliment to this system.

Safety zones are determined in accordance with ER/EP 1130-2-520, Chapter 10, Restricted Areas for Hazardous Waters at Dams and Other Civil Works Structures.

Buoys and Dayboards
In the ATON system, buoys are typically used to delineate borders of regulatory areas or individual points on the waterway. The symbols and words on buoys are called daymarks. The Corps generally uses buoys to delineate the borders of restricted areas at its facilities and to mark other hazardous areas on waterways. Details including the size,

type, and mooring requirements of the various ATON buoys can be found in Chapter 2 of the USCG Technical Manual. General information on buoys is provided on page 15-7 of this manual.

Dayboards are signs that can be used as ATON. As with buoys, the symbols and words on dayboards are called daymarks. The Corps uses dayboards to mark the danger and restricted areas around the Corps locks and dams. The daymarks on dayboards are described in detail in Chapter 5 of the USCG Technical Manual. General information on dayboards is provided on page 15-8 of this manual.

Note that Corps policy on using buoys and dayboards does not eliminate the need for safety-critical, verbal waterway signs (see Section 14). It is the responsibility of the staff at each project, in coordination with the district Sign Program Manager and consistent with this manual, to determine the most effective mix of buoys, dayboards, and Corps signs.

ATON Design
An ATON design plan includes both the layout/placement and the technical design of the buoy mooring systems and the placement and installation of dayboards and their supports. When considering an ATON design, the USCG office in your area can be a valuable resource. The USCG will be familiar with the waterways and have experience with designs that will perform best in your area. The USCG is also a resource for supplying ATON on a cost basis. On waterways where the USCG has a significant presence, installation partnerships should be developed to reduce costs.

A conceptual approach to using ATON at Corps facilities is shown on pages 15-3 through 15-6.

USCG Review
The USCG requires that plans for local or private ATON, including Corps buoys and dayboards, be submitted for their review. The initial design of the ATON layout is the responsibility of the Corps. After the initial plan drawings have been prepared, submit them with a written request for review to the USCG Division Office.

Placement
As required with regular signage, the required viewing distance dictates the size and spacing of buoys and dayboards. The USCG uses the term "identification range" (equivalent to the Corps "viewing distance") to designate the distance at which the numbers and letters on a buoy or dayboard can be read and the meaning of symbols can be determined.

When marking restricted areas and other hazards around Corps locks and dams, the identification range/viewing distance (in feet) should be about 40 times the legend/symbol height (in inches). The great advantage of using the USCG ATON system at Corps locks and dams is that relatively small dayboards with symbols can convey the same message at the same distance as much larger (and therefore more expensive) verbal signs.

In considering placement of signs and ATON, remember that for overhead dams the superstructure becomes a detectable object at a large viewing distance, which by itself helps alert the boater to the hazard ahead. Submerged dams, on the other hand, may require more signs and/or ATON because the crest of the dam is difficult to detect from its surroundings.

For more detailed guidance on the sizing and placement of buoys and dayboards, see the discussions later in this section.

General guidelines from Section 14, Placement of Water-Viewed Safety Signs, pages 14-59 through 14-61, should be used except as follows:

Dayboards: (A), capital letter height, shall be taken as the Uniform State Waterway Marking System (USWMS) symbol height.

Buoys: (A), capital letter height, shall be taken as the USWMS symbol height.

Where (A) is the main legend height, which equals V/40; where, V = viewing distance. Secondary legend or other wording shall be as specified in COMDTINST M 16500.3A. The following are viewing distances for USCG dayboards and a typical regulatory buoy.

Practical Dayboard Example:
From USCG 16500.3, Aids to Navigation - Technical Manual: A warning mark dayboard sign with a 3-nautical mile nominal visual range classification has a 72 by 72 inch symbol with a primary legend height of 10 inches and any other wording with a legend height of 6 inches.

	Height (inches)	USCG Identification Range (feet)
Symbol	72	2,880
Primary Legend	10	400
Other	6	240

Practical Regulatory Buoy Example:
Using a Class 5 or 6 buoy with a visual range of about 1/2 nautical mile, typical symbols have a 2-inch orange border strip with a symbol height of 12 inches and 3-inch black letters.

	Height (inches)	USCG Identification Range (feet)
Symbol	12	480*
Primary Legend	3	120

*Assuming symbol and word legend legibility is similar.

Required buoy spacing is based on V, viewing distance and any other specific site conditions.
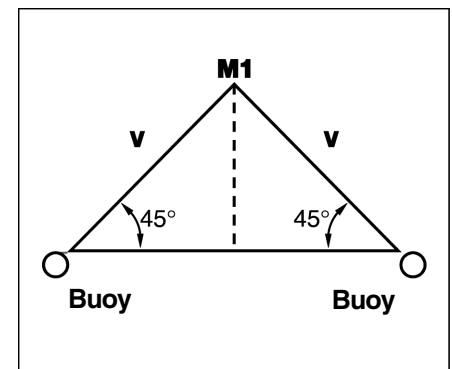
Diagram 1

Referring to Diagram 1, using the USCG identification range as V, the viewing distance (480 feet), the maximum buoy spacing is 680 feet (2*0.707*480).

This is considered an upper limit on buoy spacing. Site-specific conditions for the waterway or its users will often dictate a shorter spacing and higher aid density. This is especially true for very hazardous areas, as it is common for the upstream area of a submerged/ fixed-crest dam to have buoy spacing of less than 100 feet.
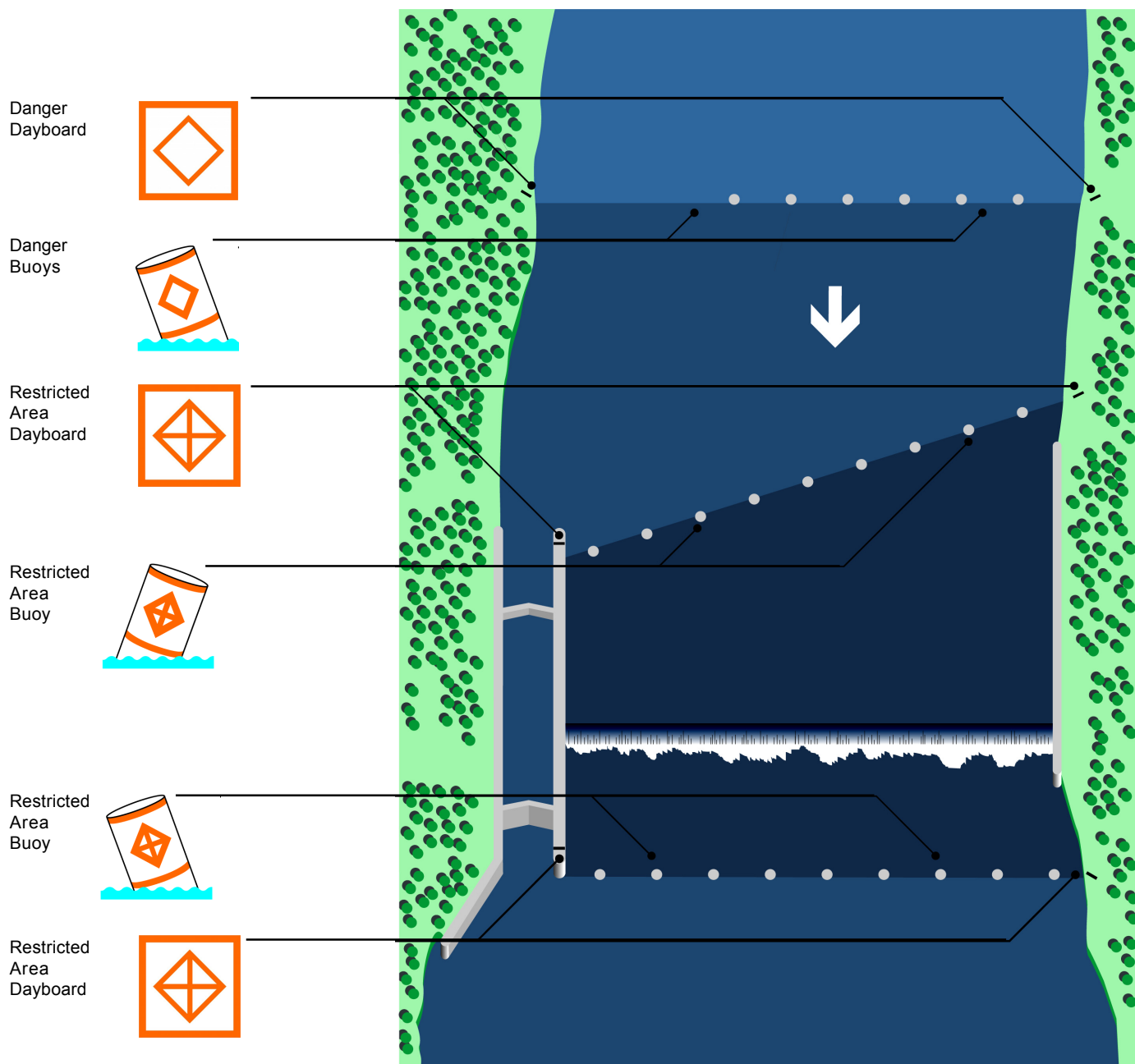
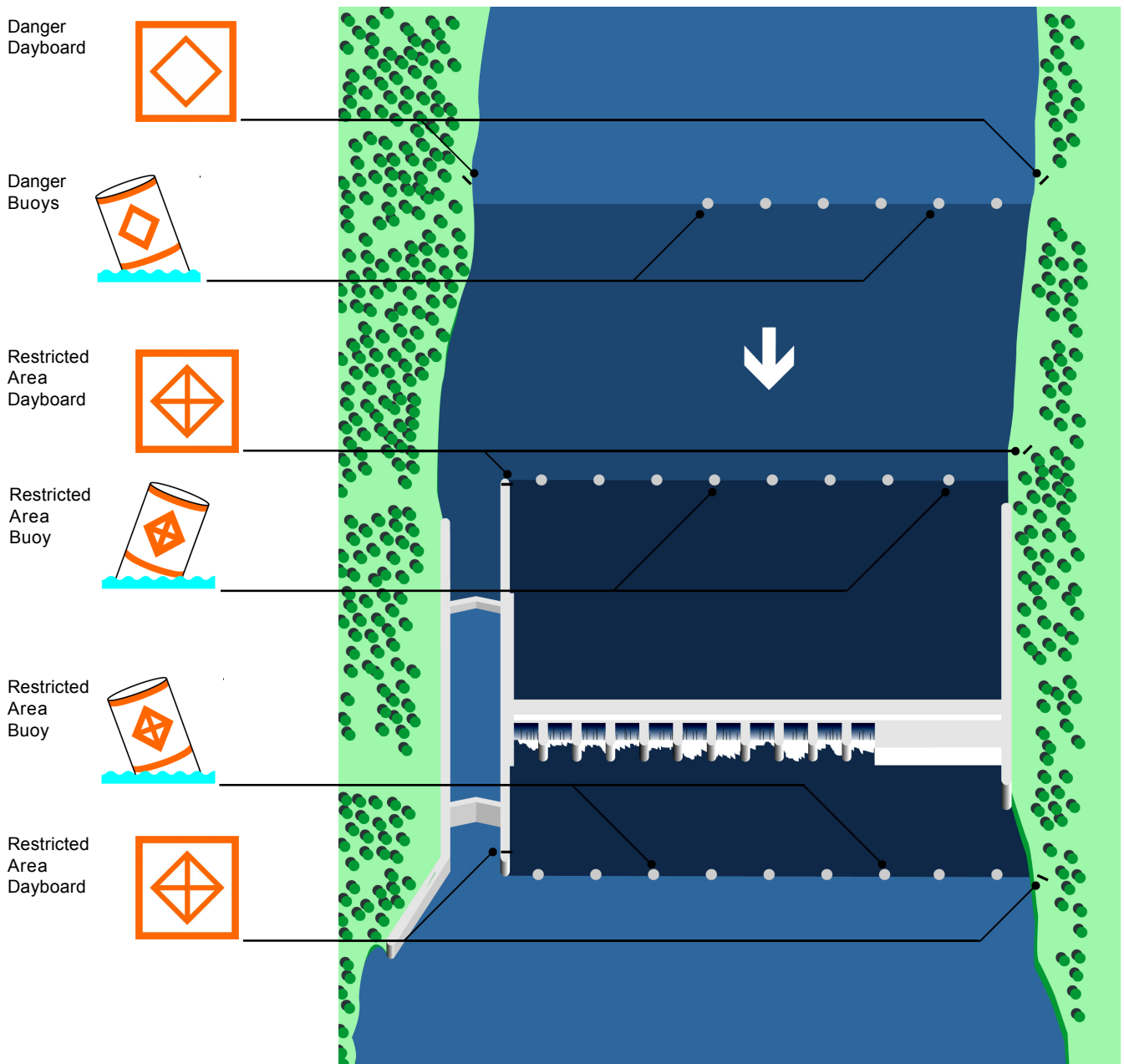Illustrated below is a typical ATON plan for a submerged or fixed-crest dam that is not part of a commercially navigable waterway. The danger and restricted zones are delineated using dayboards and buoys. Because this type of structure can be very hazardous to pleasure boaters in kayaks or canoes and small fishing boats, care should be given to placement and maintenance of ATON. Where required, warning zones could be delineated using the Warning signs in Section 14.

Warning
Submerged Dam Ahead

Danger Dayboard

Restricted Area Dayboard

Restricted Area Buoy

Restricted Area Dayboard

Restricted Area Buoy

Danger
Water Subject to Sudden Rise and Turbulence
No Swimming or Wading
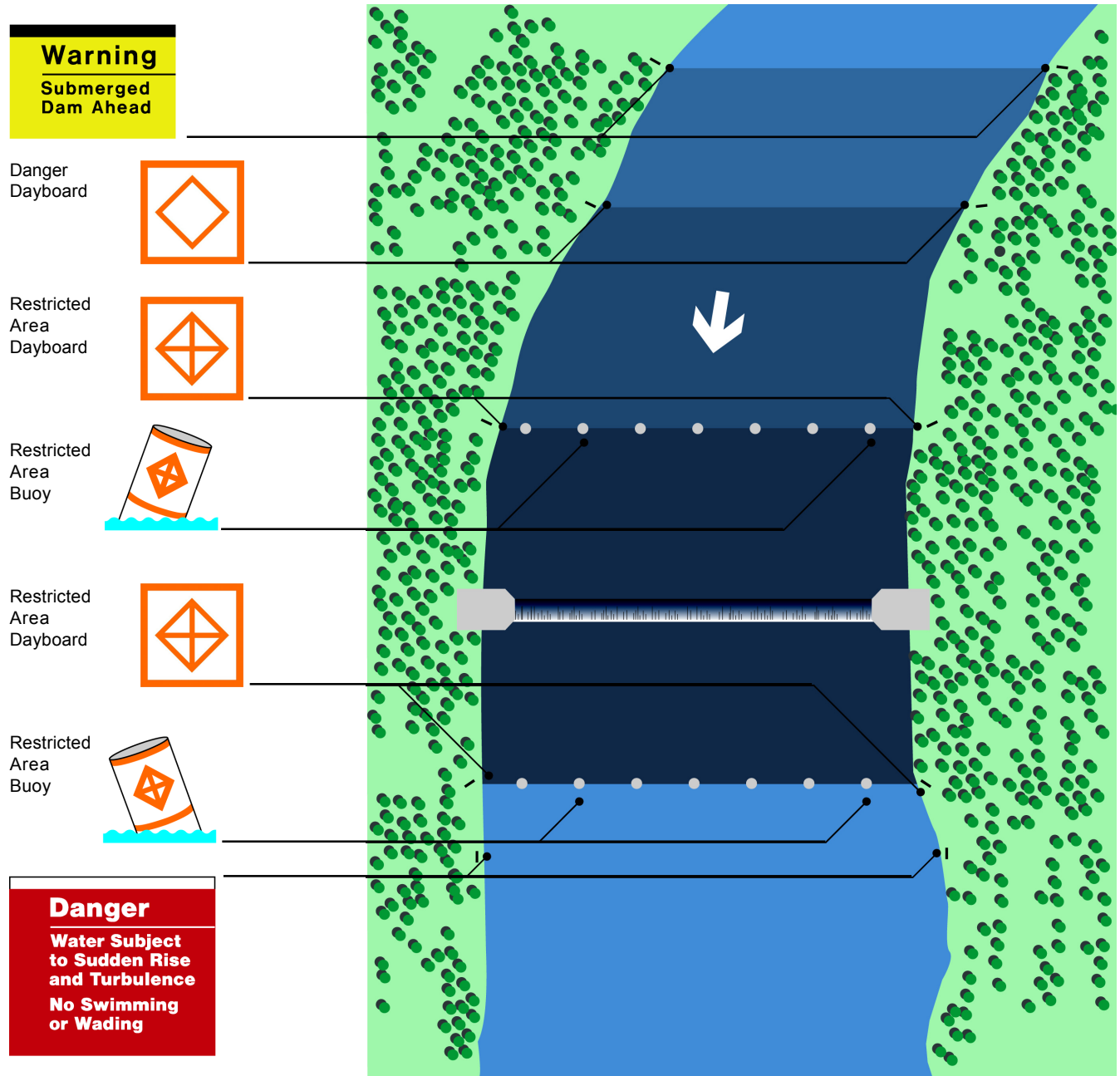
Illustrated below is a typical ATON plan for submerged or fixed-crest dam with a navigable lock. The effective placement of ATONs becomes more complex because the river is generally wider and the navigable channel must remain clear for boat passage.

The restricted and danger areas are delineated using buoys and dayboards. Because this type of structure can be very hazardous to pleasure boaters and small fishing boats, a tethered buoy line can be used as an extra precaution to keep boaters out of the restricted area. This is especially applicable to higher head dams with high flows. As with other submerged dams, care should be given to placement and maintenance of ATON. Where deemed necessary, upstream warning zones could be delineated using the Warning signs in Section 14.

Danger
Dayboard

Danger
Buoys

Restricted
Area
Dayboard

Restricted
Area
Buoy

Restricted
Area
Buoy

Restricted
Area
Dayboard

Illustrated below is a typical ATON plan for an overhead gated dam with a navigable lock. The effective placement of ATON becomes more complex because the river is generally wider and the navigable channel must remain clear for boat passage. The restricted and danger areas are delineated using dayboards and buoys.

There are critical safety hazards below the dam as turbulent discharge from the dam, side currents adjacent to the lock, and reversing eddies that may require other site-specific Warning signs. The dam structure is generally visible from long distances upstream, and in most cases, a warning zone is not necessary. Where deemed necessary, warning zones could be delineated using the Warning signs in Section 14.

Danger Dayboard

Danger Buoys

Restricted Area Dayboard

Restricted Area Buoy

Restricted Area Buoy

Restricted Area Dayboard

Illustrated below is a generalized ATON plan for a flood control dam or hydro-power dam with a reservoir. Typically, the critical area to be marked is the tailwater area. Since the tailwater is subject to sudden rise and violent turbulence as turbines are operated, buoys may prove impractical. Large dayboards and

Danger or Restricted signs may be the only practical way to mark the tailwater area. The size of the danger or restricted area depends on the local operating conditions.

The upstream restricted area is delineated with buoys and fixed dayboards.

Restricted
Area
Buoy

Restricted
Area
Dayboard

Restricted
Area
Dayboard

Restricted
Area
Buoy

Danger
Water Subject
to Sudden Rise
and Turbulence
No Swimming
or Wading

Danger
Buoys
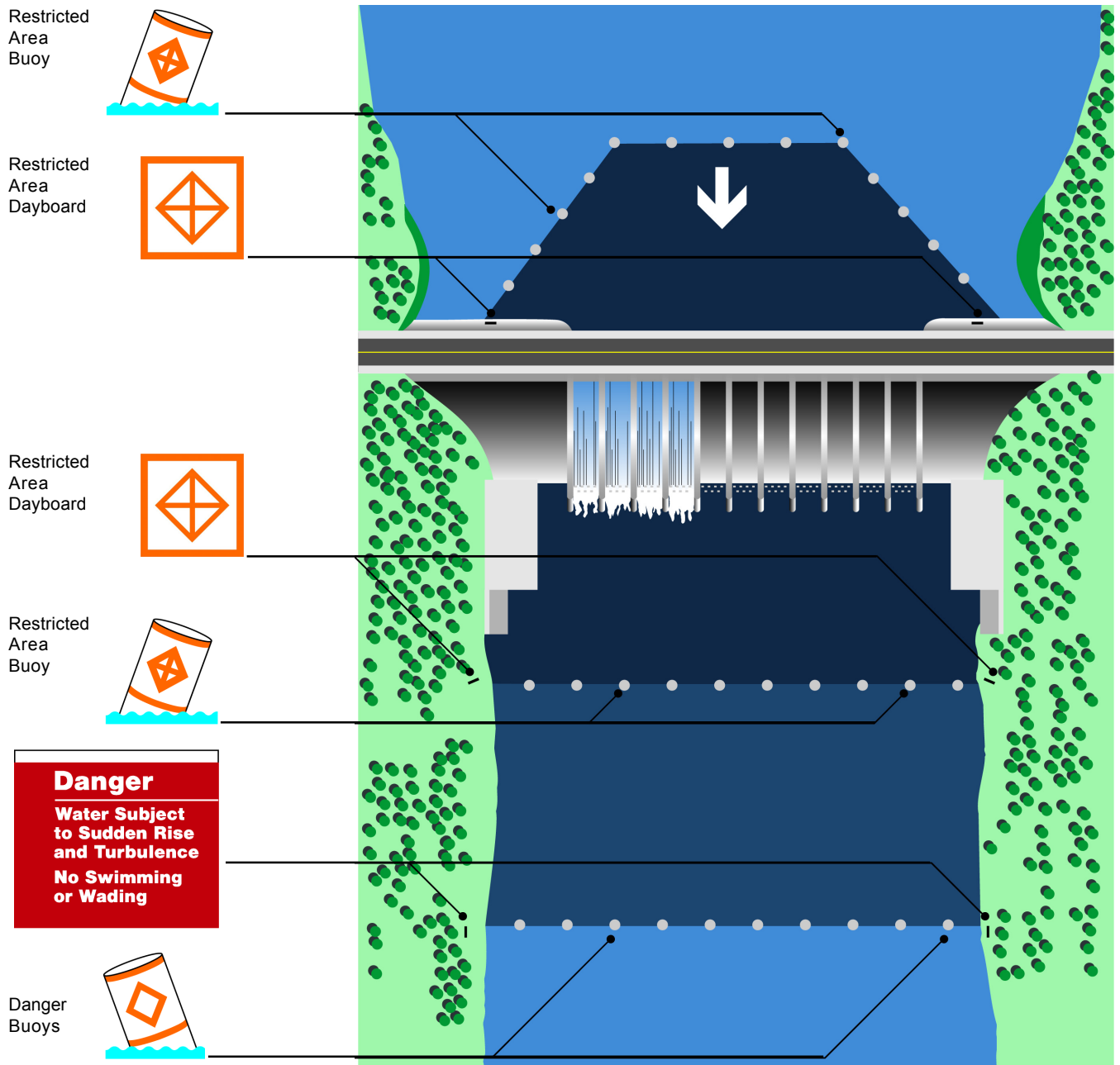
Buoys are unmanned, floating ATON moored to the riverbed or tethered in some manner.

Detailed information about buoys, including the size, type, and mooring requirements, can be found in Chapter 2 of the USCG Technical Manual.

The mooring requirements are somewhat subjective, as there are several factors to consider (water depth, current, debris, ice, etc.). Typically, the mooring system is selected over time, on a trial and error basis. If the USCG has worked in the area, their experience is invaluable in selection of a buoy mooring system.

The USCG has cataloged several standard buoy designs for different performance criteria. The size is unlimited, but standard buoys generally range from 1 to 9 feet in diameter and are up to 36 feet tall.

Proper buoy selection requires consideration of the environmental conditions, operational characteristics, and physical characteristics of the buoys available. The USCG Technical Manual has specific guidance for buoy selection and the exposures they can withstand. The buoys can be removed during the winter and reinstalled each spring. A spar buoy is used during the winter to minimize damage to the mooring line from ice.

Performance of the buoys varies between the upstream and downstream sides of structures. The upstream buoys are likely to remain usable and in good condition longer than the downstream or tailwater buoys. This is expected, as the downstream side typically has a more severe exposure.

Practical Buoy Example:
Using a Class 5 or 6 buoy, typical symbols have a 2-inch orange strip forming the edges of the symbol, with a symbol height of 12 inches and (if used) 3-inch black letters. A typical buoy is shown below.
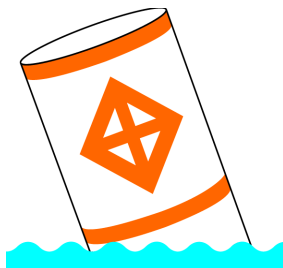
This buoy's daymark is the standard USCG symbol meaning "no boats beyond this point." The diamond is a general mark of warning, and the cross inside is equivalent to the word "Restricted" on a Corps sign.

Assuming each side of the diamond is 12 inches, this buoy has a viewing distance of 480 feet.

Required buoy spacing is based on the viewing distance and any other specific site conditions.

Diagram 1

Referring to Diagram 1, with the viewing distance V being 480 feet, the maximum buoy spacing is 680 feet (2*0.707*480). This is considered an upper limit on buoy spacing. Site-specific conditions for the waterway or its users will often dictate a shorter spacing and higher buoy density. This is especially true for very hazardous areas. For instance, it is common to mark the restricted area upstream of a submerged/fixed-crest dam with buoys spaced less than 100 feet apart.
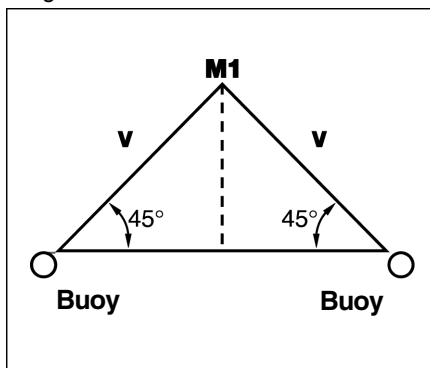
Dayboards are essentially signs that can be used for ATON. As with buoys, the symbols and legends are called daymarks.

The Coast Guard classifies the daymarks on dayboards as warning, information, or regulatory marks, depending on their purpose. The basic mark of warning in the ATON system is an orange diamond. It can be combined with words or another symbol to explain the hazard being warned against or to convey a regulatory message, such as the presence of a restricted area.

It is recommended that the daymarks on Corps dayboards be kept simple. Those used to delineate danger and restricted areas around locks and dams will usually be the plain orange warning diamond or the diamond with a cross inside. A one or two word informational legend may be used with the daymarks to explain the warning.

Size and Viewing Distance
The USCG has three standard symbol sizes for daymarks: 36-inch, 48-inch, and 72-inch. For the diamond warning symbol, the square dimension (i.e., the length of one side) of the symbol should be used. For the circle symbol (used to convey caution), the outside diameter should be used.

The required viewing distance shall be used for determining daymark sizes. The viewing distance (feet) shall be 40 times the symbol size (inches). As required, larger than standard daymark sizes can be specified. See Chapter 5 of the USCG Technical Manual for detailed information about daymarks.

The sign panels for dayboards are rectangular and based on USCG requirements as specified for waterway information and regulatory marks.

Dayboards shall be sized for viewing the symbol from mid-channel with a minimum angle of vision of 45 degrees. The required viewing distance = (0.5 river width)/cos 45 degrees. A minimum daymark symbol size for restricted areas shall be 36 inches.

Practical Dayboard Example
According to Chapter 5 of the USCG Technical Manual, a daymark with a 72-by 72-inch orange diamond warning symbol has a 3-nautical mile nominal visual range. (The 72-inch measurement is along one side of the diamond.)

Note that the USCG manual relates the size of symbols to a "nominal visual range" that is measured in nautical miles. This measurement is generally not useful for planning signs and ATON at Corps facilities. It is recommended that Corps sign managers adhere to the concept of "viewing distance" when placing signs and ATON.

If words are used along with the symbol, the letter height of the primary legend would be 10 inches, and the letter height of any other wording would be 6 inches. The symbol on the dayboard represented by the table below is considered by the Coast Guard to have an "identification range" of 2,880 feet. Using Corps terminology, this corresponds to a viewing distance of 2,880 feet.

It's very important to note that the viewing distance of the symbol by itself is much greater than that of any verbal legend that might be added. Sign managers should weigh carefully the advantages of adding words versus the costs of more and/or larger ATON. If a symbol by itself is adequate to alert boaters to hazards, it may be unnecessary to add words. Always consult the USCG, your district Sign Program Manager, and your Office of Counsel when marking hazards around locks and dams.

Dayboard with an orange diamond daymark:

	Height (inches)	Viewing Distance (feet)
Symbol	72	2,880
Primary Legend	10	400
Other	6	240

Mounting
Dayboards can be mounted on typical sign structures, any structural surface, and standardized USCG structures.

The standardized USCG structures are intended for dayboards placed on the shoreline. Each of these structures consists of a small radio tower truss embedded in a concrete block. A dayboard sign panel is attached to the top of the truss. These structures are economical to replace and can be reset easily after a large water event.

This dayboard conveys the message "Warning, there are dangerous boating conditions." The nature of the danger may be indicated inside the diamond shape, such as rock, dam or dam ahead, etc.

This dayboard conveys the following message "Warning, boats keep out because of dangerous conditions beyond this point."

This dayboard conveys the message "Restricted Operations" or "Controlled Area". An example is a Slow No Wake zone.

This dayboard conveys the message "Warning, Immediate Danger". The nature of the danger may be indicated with informational wording placed above and/or below the word DANGER.

The use of signs to identify Corps managed or supervised design, construction, and rehabilitation projects - both for military and civil works - is an important part of efforts to keep the public informed of Corps work. For this purpose, a construction project sign package has been adopted. This package consists of two signs: one for project identification and the other to show on-the-job safety performance of the contractor.

These two signs are to be displayed side by side and mounted for reading by passing viewers. Exact placement location will be designated by the contracting officer's representative.

The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

Panels are fabricated using HDO plywood or aluminum with dimensional lumber uprights and bracing. The sign faces are nonreflective vinyl.

All legends are to be die-cut or computer-cut in the sizes and typefaces specified and applied to the white panel background following the graphic formats shown on pages 16-2 and 16-3. The Communication Red panel on the left side of the construction project sign with Corps Signature (reverse version) is screen-printed onto the white background.

A display of these two signs is shown on the following two pages. Mounting and fabrication details are provided on page 16-4.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Below are two samples of the Construction Project Identification sign showing how this panel is adaptable for use to identify either military (top) or civil works projects (bottom). The graphic format for this 4'x 6' sign panel follows the legend guidelines and layout as specified below. The large 4'x 4' section of the panel on the right is to be white with black legend. The 2'x 4' section of the sign on the left

with the full Corps Signature (reverse version) is to be screen-printed Communication Red on the white background The designation of a sponsor in the area indicated is optional with Military or Civil Works construction signs. Signs may list one sponsoring entity. If agreement on a sponsor designation cannot be achieved, the area should be left blank.

This sign is to be placed with the Safety Performance sign shown on the following page. Mounting and fabrication details are provided on page 16-4.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Legend Group 1: One- to two-line description of Corps relationship to project.
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional). Placed below 10.5" reverse Signature (6" Castle).
Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 2a: One- to three-line identification of Military or Civil Works sponsor (optional). Place below Corps Signature to cross-align with Group 5a-b.
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 3: One- to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.
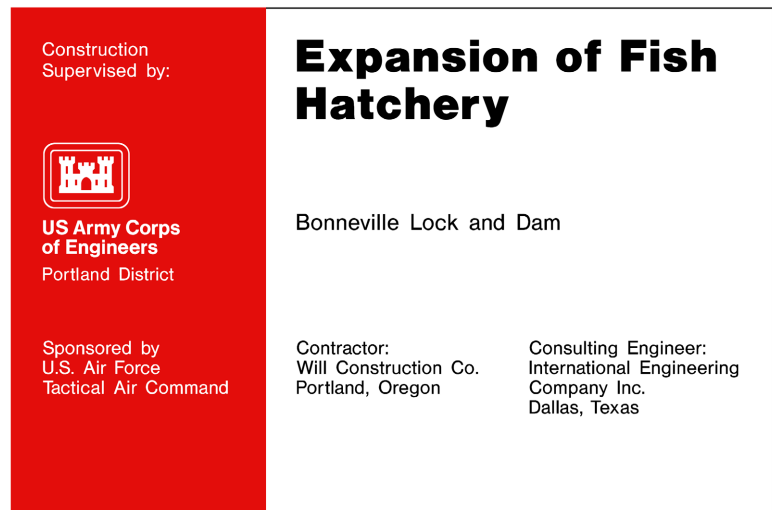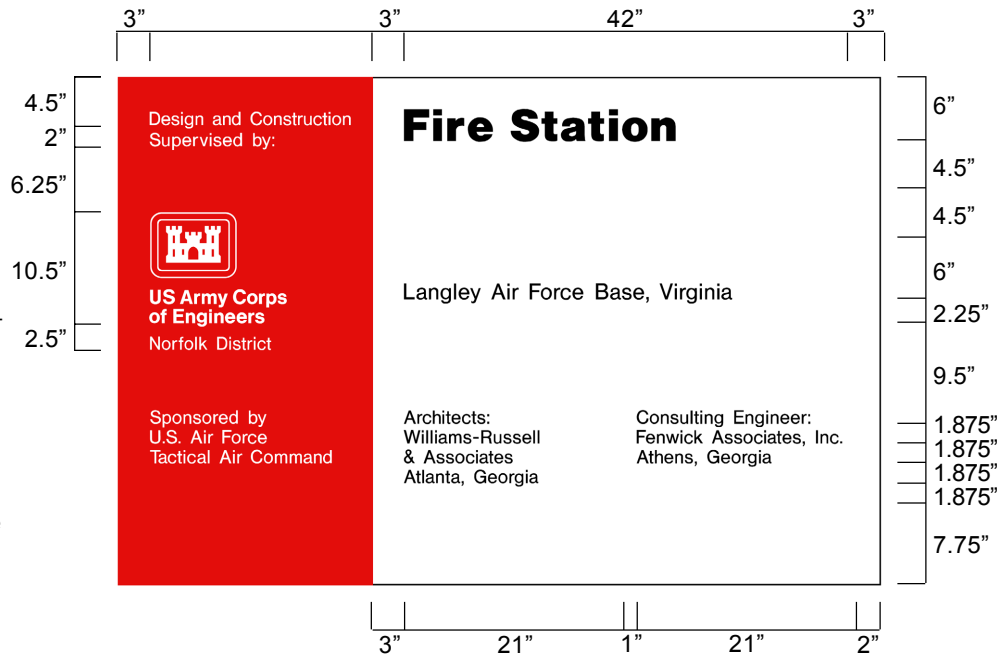
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4'x6'	4"x4"	HDO-3	48"	WH-RD/BK

Each contractor's safety record is to be posted on Corps managed or supervised construction projects and mounted with the Construction Project Identification sign specified on page 16-2.

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The

title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown.

Safety record numbers are mounted on individual metal plates and are screw-

mounted to the background to allow for daily revisions to posted safety performance record.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Legend Group 1: Standard two-line title "Safety is a Job Requirement" with 8" (outside diameter) Safety Green first aid logo.
Color: To match Pantone system 347
Typeface: 3" Helvetica Bold
Color: Black

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 3: One- to two-line identification: name of prime contractor and city, state address. Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5" x 4.5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.
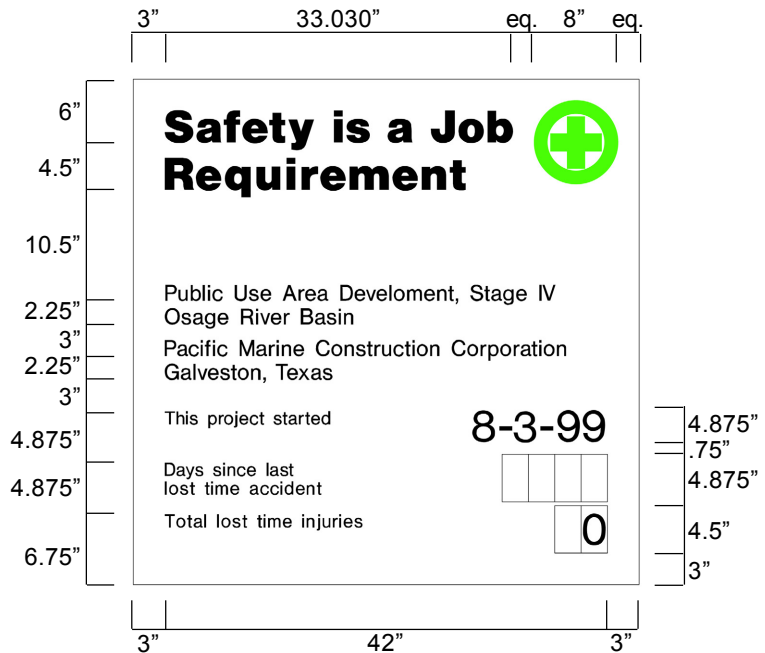
Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4'x4'	4"x4"	HDO-3	48"	WH/BK-SG
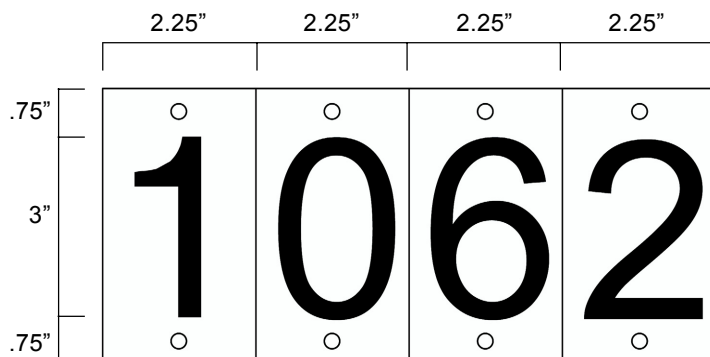
All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer representative and shall conform to the size, format, and typographic standards shown on pages16-2 and 16-3. Detailed specifica-tions for HDO plywood panel preparation are provided in Appendix B.

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.

For additional information on the proper method to prepare sign panel graphics, contact the district Sign Program Manager.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B.

Sign graphics to be prepared on a white nonreflective vinyl film with positionable adhesive backing.

All graphics except for the Communication Red background with Corps Signature on the project sign are to be die-cut or computer-cut nonreflective vinyl, prespaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on pages 16-2 and 16-3.

The 2'x 4' Communication Red panel (to match Pantone system 032) with full Corps Signature (reverse version) is to be screen-printed on the white background. Identification of the district or division may be applied under the signature with white cut vinyl letters prepared to Corps standards.

Drill and insert six (6) .375" T-nuts from the front face of the HDO sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4" x 4" treated Douglas Fir or Southern Yellow Pine, No.1 or better. Post to be 12' long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4" x .375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4' hole. Local soil conditions and/or wind loading may require bolting additional 2" x 4" struts on inside face of uprights to reinforce installation as shown.

48"

48"

18"
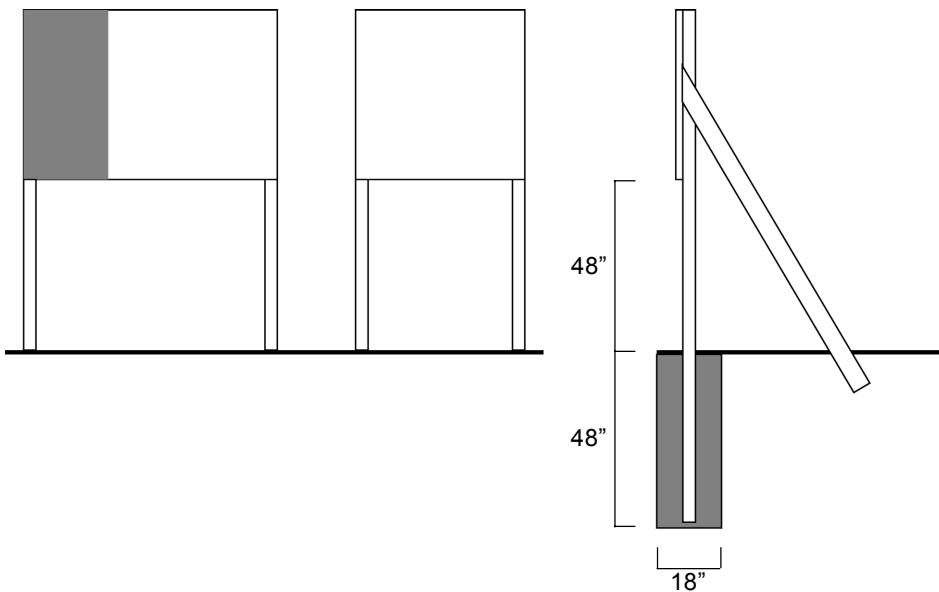
Construction Project Identification Sign
Legend Group 1: Corps Relationship

1. |_____|
2. |_____|

Legend Group 2: Division/District Name

1. |_____|
2. |_____|

Legend Group 2a: Military/Civil Works Sponsor

1. |_____|
2. |_____|

Legend Group 3: Project Title

1. |_____|
2. |_____|
3. |_____|

Legend Group 4: Facility Name

1. |_____|
2. |_____|

Legend Group 5: Contractor/A&E

1. |_____|
2. |_____|
3. |_____|
4. |_____|
5. |_____|

Legend Group 5b: Contractor/A&E

1. |_____|
2. |_____|
3. |_____|
4. |_____|
5. |_____|

Safety Performance Sign
Legend Group 2: Project Title

1. |_____|
2. |_____|

Legend Group 3: Contractor/A&E

1. |_____|
2. |_____|

16-4

This section is provided as a reference for project managers, Real Estate Division and others who are responsible for reviewing leases. These include other nonfederal government agencies, nonprofit groups and commercial vendors who are operating facilities on Corps projects.

Because Corps projects are public lands, the Corps should monitor maintenance, visual and aesthetic content to assure that the intended design is kept at a high standard of quality.

When signs are placed on Corps projects by lessees, they should be placed in a way that conforms to the visual uniformity and communicative intent of the Corps Sign Standards program.

These guidelines are intended for both commercial, for-profit leases as well as public, nonprofit leases. Regardless of the type of agreement (cost share, leased concession or for other outgranted lands), the goal is to foster placement of signs on leased property that communicate effectively, are appropriate to the natural setting and are well-made and maintained.

These guidelines are not intended to place undue hardship on lessees, either commercial, nonprofit or other nonfederal government agency.

At the same time, it is recognized that the Corps does not have the resources to ensure that signs on leased premises will conform in all respects to the sign standards for Corps controlled land.

Accordingly, the following sections are intended as guidelines for plan review purposes rather than as absolute standards.

Types of Facilities
The various types of facilities where signs may appear include, but are not limited to:

Public/Nonprofit Facilities
- State parks
- County parks
- Municipal parks
- Federal lands and parks
- Wildlife management areas
- Conservation areas
- Historical sites

Semiprivate/Nonprofit Facilities
- Private campgrounds (church, YMCA, scouts, etc.)
- Organized sports (Little League, soccer clubs, etc.)

Commercial Areas and Concessions
- Restaurant
- Grocery store
- Gas station
- Tackle shop
- Sporting goods
- Marina
- Boat docks
- Marine services
- Guide services

Commercial Recreation Facilities
- Trailer parks
- Commercial campgrounds
- Amusement parks
- Winter sports facilities
- Rental cabins
- Lodges

Other
- Utility company facilities

All identification and directional signs placed at a leased site should be of a common design. Each sign should have a single purpose, with legend easily legible, colors consistent and placed within the viewers' cone-of-vision. They should be well-constructed and properly maintained.

The general intent is to maintain visual uniformity, prohibit commercial clutter, encourage a high level of safety awareness and quality signage that respects the surrounding environment and project setting. This is primarily accomplished by curtailing the use of commercialized advance directional signs, identifying commercial facilities in a generic manner, using natural materials and colors that are complementary to the setting and discouraging brilliant illumination of signs at night.

We also recognize the existence of words, names, symbols or designs that are used by the lessees and are recognized as logos or as marks: trademarks, service marks, certification marks or collective marks. Lessees may also participate in franchises or chains which require certain "trade dress" or business images. The display of these marks is limited to identification or directional signs which identify the facility with adopted trademarks. Additional display of logos, posters or panels that advertise specific food, drink, recreation and vehicle products that are available at the aforementioned facility shall not be displayed on signs. It is important to note that this section deals with signs only. Any other use of these marks is covered by the outgrant document.

In this section, general applications and guidelines are described by type of facility.

Roadway Signs
All roadway signs will conform to applicable federal standards (Section 9).

Outgrant or Concession Sign Plan
Prior to placement of any signs on leased property, the lessee must submit a complete sign plan for the proposed site as part of the overall development plan. This will be an attachment to the lease instrument. The sign plan for leased areas is not intended to place an undue hardship on lessees and does not have to have the same level of detail as that prepared by the Corps for its own areas.

The sign plan should follow the guidance provided in Section 3 and show the placement locations on site plans with attached documentation that describes: legend content, graphic formats, size, material fabrication, construction details, and a schedule showing how and when the signs will be maintained.

Although the look of the signs may differ from the prescribed Corps format, the general sign type classifications and viewing standards should be similar to the basic principles and guidelines described in Section 2. All signs should have a single purpose: to identify, to direct, to inform, or to warn. They should not be overly wordy, should be sized appropriately for the surrounding landscape and should be placed for easy viewing.

The primary function of developing and maintaining a sign plan is to encourage the lessee to design, plan and implement an entire sign program, instead of placing an amalgam of different signs on a one-at-a-time basis. The sign plan, like all preconstruction submittals, should be thorough enough to provide the Corps reviewer with the information needed to evaluate the plan effectively.

Lease Agreement
All new leases or renewals to existing leases must include a sign plan as part of the initial development plan and a schedule for implementation.

New Lease
The guidelines included in this section will be furnished to prospective lessees together with other lease requirements so they will have thorough knowledge of the requirements.

Existing Lease
Upon renewal of the lease agreement, signs at existing leased sites, facilities or projects must be in compliance with these guidelines.

General Guidelines for Review and Approval of Sign Plans
Because there are many different types of lease and cost share agreements possible, it is difficult to prescribe specific guidelines for all locations or applications. There are, however, some common sense principles that apply; most notably, "less is more." Signage that is generic in character and appropriately

sized will generally be just as effective in attracting the viewer as are signs that are large and highly commercial. Tastefully designed and well-executed signage at a concession that appears to be professionally managed will help maintain the quality of the area and attract customers.

Whether signs are to be located inside a self-contained commercial facility or on an established roadway, consideration for the aesthetic and safety features should be given to each sign proposal. Regardless of conditions off the project, signs on Corps projects should set high standards for design quality and respect for the visual environment.

Corps Management with Charge-Back
Some projects have developed charge-back mechanisms whereby the Corps installs and maintains all signs at a lessee's installation, either public or commercial; the lessee is then charged back for the cost of the signs, including administration fees and ongoing maintenance service as required.

This method helps to maintain the integrity of the Corps Sign Standards throughout the project. If these signs are purchased from established Corps suppliers, the cost to the lessee will be competitive with signs of equal quality purchased from local suppliers. The main advantage is that should the lease agreement be terminated, the Corps or new lessee will not be required to completely resign the facility prior to taking over responsibility for management.

Conclusion
Signage to be placed on leased areas should be reviewed on a case-by-case basis and installations monitored to determine that design intent is met.

Questions or problems that arise in the process of implementing this guideline should be directed to the district Sign Program Manager.

Suggested Sign Criteria and Design Guidelines
Suggested guidelines for signing the three basic types of facilities or areas under outgrant or commercial lease agreements are described in the following section.

This example shows the identification of a state operated campground with the Corps Participation Credit sign placed along the entry road into the facility.
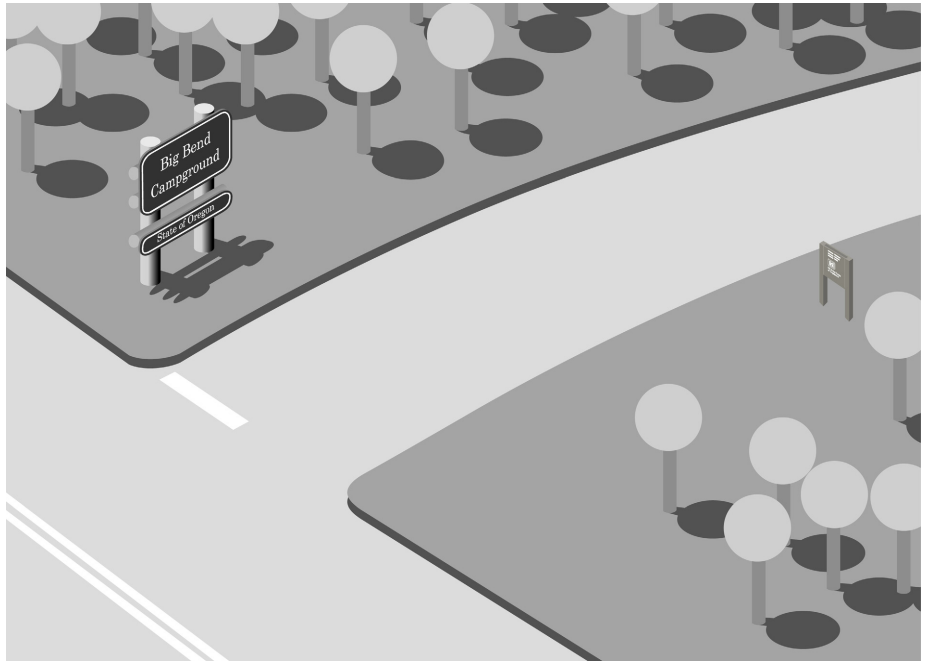
This section includes state, county, municipal parks, wildlife management and conservation areas, and historical sites that are on Corps land and open to the public, but leased out to and managed by a nonfederal public government body.

Project Identification and the Use of Standard Agency Signs
Agencies without their own sign standards may use the Corps Sign Standards or another system. The proposed signs should meet the general visual requirements for sign format, legend consistency, visual acuity, and color as described in Principles and Guidelines,

Section 2 of this manual. The signs should be visually appropriate to the site, well-crafted, and made of durable materials. Signage should be visually consistent throughout the leased areas. Refer to Section 5 for appropriate identification signs.

Roadway Directional Signs
All directional signs on project lands outside leased areas will be made part of the overall Corps project sign plan. Cost sharing and implementation of directional signs with lessees will be made part of the lease agreement on a site-by-site basis and are the Corps responsibility.

On Approach and Project Roadway Directional signs, facilities will be identified generically. For placement guidelines, refer to page 2-6 and Section 6.

This illustration shows a formal entry portal identifying a large Boy Scout Camp with the Corps Participation Credit sign placed along the entry road for viewing once drivers enter the facility.
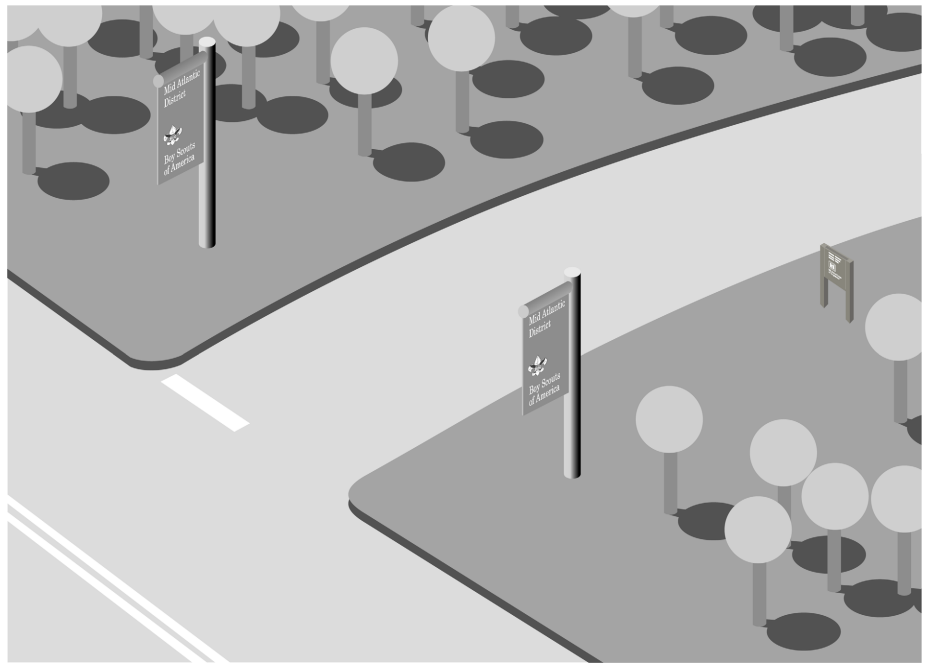
This includes campgrounds and recreation facilities leased to churches, YMCA's, Boy Scouts, Little Leagues and other nonprofit groups for their program activities.

These types of facilities will generally require minimal signage because of limited access by the general public. Where appropriate, the Corps Sign Standards may be adopted.

Project Identification Signs
If a lessee or cooperating sponsor elects to use a facility identification sign of their own design, the overall size, material and mounting methods should be similar in character to Corps Sign Standards. A Corps Participating Credit sign as shown on pages 5-18 and 5-19 shall be placed on the adjacent entry road.

If the Corps Standard Identification sign is used to identify this location, the format should follow the guidelines described in Section 5, page 5-2, example (c). This specifies that the facility shall be identified on the primary legend. The cooperative sponsor and its relationship to the project will be identified on the secondary legend. Another option is to use the Corps Identification Sign with Partner Logo(s) in Section 5, which displays both the Corps and the partner's logo.

Roadway Directional Signs
All directional signs on project lands outside leased areas will be made part of the overall Corps project sign plan. Cost sharing and implementation of directional signs with lessees will be made part of the lease agreement on a site-by-site basis and are the Corps responsibility.

On Approach and Project Roadway Directional signs, facilities will be identified generically. For placement guidelines, refer to page 2-6 and Section 6.

This section summarizes the signage principles for leased commercial areas such as marinas and commercial campgrounds, as well as for concessions within a Corps recreation area including: tackle shops, snack bars, and marine services. Commercial concessionaires will be responsible for their own sign installation. The basic principles as described in Section 2 of this manual should be followed, but the signs should be of their own design.

Individual concessions within a Corps managed location such as a tackle shop or snack bar that adjoins a multipurpose recreation site should be identified generically and may use Corps Sign Standards for all applicable ancillary signs. These include parking and no parking, traffic, safety and symbol signs and incorporate all mounting and material specifications as shown in the manual. All directional signs on project lands outside the leased areas will be made part of the overall Corps project sign plan; cost sharing and implementation of directional signs with lessees will be made part of the lease agreement on a site-by-site basis and are the Corps responsibility.

Commercial Identification Sign Standards
Identification of any commercial installation within a Corps project should be made in direct proximity to the facility as a ground-mounted sign adjacent to the entranceway or structure. Ideally, these signs are placed on double-face sign panels mounted perpendicular to the sight-lines of approaching viewers.

Main identification signs should be designed and sized to meet the objective of providing adequate information to the public with the least possible disturbance of the environment along the road and with no interference with highway safety and operation. The sign should be of a simple design that is appropriate to the environment. Basic guidelines for size and placement of signs at a commercial facility on a Corps project are described below (for service stations see the special guidelines provided in this section).

Interior Project Roads
Maximum 24 square feet per side and not exceeding 8 feet in one dimension: each face should be the same size and shape.

Two Lane Roads with Posted Speed Limit
35 mph or greater: maximum 32 square feet per side and not exceeding 8 feet in one dimension; each face shall be the same size and shape.

Four Lane Roads and Highways
Maximum 48 square feet per side and not exceeding 10 feet in one dimension; each face shall be the same size and shape.

Location
Main entrance signs are generally placed perpendicular to the approaching viewer and immediately adjacent to the entry to the facility. If the sign is located within a roadside zone, it must not create a visual hazard which will interfere with safety, visibility or operation of highway or entrance road. Any sign located within the public right of way will require approval from the government jurisdiction responsible.

Within a leased area, signs may be attached to buildings but ground-mounted signs in the front of the facility are preferred.

All main entrance signs are to be permanently affixed. No trailer-mounted or removable signs are allowed.

Top of Signs
Signs should generally be mounted low to the ground, with a recommended height to base above grade level to be between 36"-54". Top of signs should not exceed 14 feet unless prevailing snow conditions require that the sign be mounted higher.

Wording
Information is confined to the name and type of business, special service or facility. Lessees are not to post any signs that include logotypes or advertising of commercial products such as soft drinks, cigarettes, alcoholic beverages, sports equipment, etc.

Lettering
See recommended legend size chart on page 2-6.

Color
Panels should be appropriate to the environment; providing adequate visibility without garishness. Suggested options include weathered redwood or cedar sign panels or enamels in muted colors or natural earth tones with lettering of sufficient contrast for good legibility.

Lighting
Internally illuminated signs are discouraged. Retroreflective letters are permitted. Externally illuminated or indirect lighting is permitted when adequate visibility cannot be obtained by use of retroreflective letters or background. If possible, the light source should be concealed.
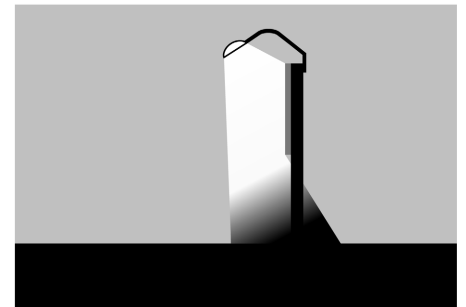
Lamps mounted on mast-arms create a cluttered looking sign assembly. It's also difficult to control over glow and glare from this type of lighting assembly.
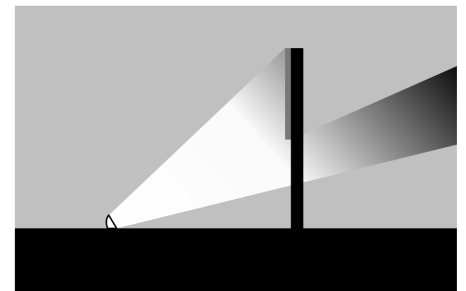
The preferred method for lighting a sign panel is using concealed ground-mounted fixtures. This provides enough light without glare or over glow.

Signage for service stations and marine gas docks will be governed by the following special standards.

Identification
The Corps may authorize the placement of one double-face company sign, mounted perpendicular to approaching traffic, within the service area. Where it is desirable from a public service standpoint, the gasoline brand name information or trademark may be displayed, but is limited to one sign as part of the identification. It is intended that the signs will be the usual type of brand symbol furnished by the oil companies. They may be indirectly lighted or internally illuminated. Gasoline pumps may be painted the usual company colors and may have the usual company markings.

Size and Mounting
The size of oil company brand name identification signs will be no larger than 21 square feet per side. Double-face signs are permitted. Ground-mounted signs with a 36-54" height above grade level are preferable. Top of pole mounted signs shall not exceed 10 feet above grade unless terrain and/or vegetation requires that the sign be mounted higher.
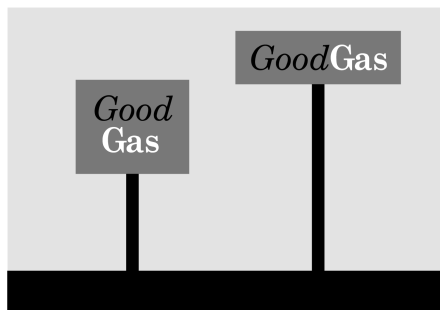
Lighting
Flashing or neon lights will not be permitted. Floodlights used for illuminating nighttime service areas must have a concealed light source to prevent overglow beyond the designated area and to keep from blinding approaching drivers or boaters.

Roadway Directional Signs
All directional signs on project lands outside leased areas will be made part of the overall Corps project sign plan. Cost sharing and implementation of directional signs with lessees will be made part of the lease agreement on a site-by-site basis and are the Corps responsibility.

On Approach and Project Roadway Directional signs, facilities will be identified generically. For placement guidelines, refer to page 2-6 and Section 6.

Multiple Facilities at One Location
A difficult signing problem develops where more than one private concession is entered at a single approach. To reduce pressures for the "Venetian Blind" type of resort signs, the Corps should place approach roadway directionals near the entranceway giving motorists adequate information so that each individual concessionaire does not feel it necessary to make an individual statement at these locations.
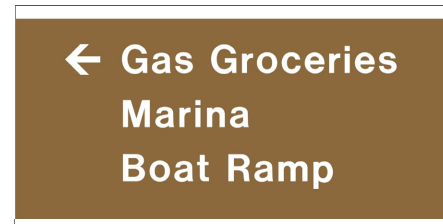
This section describes the correct use and placement of interior signs in district, division and project offices. The effective use of signs within Corps offices is an integral part of the Corps Sign Standards Program.

The signs illustrated in this section establish a sign system designed to fill most Corps office interior sign needs. It is important to unify the appearance of all interior signs being used. These signs should relate to one another so that the image they project is one of an efficient client- and service-oriented organization.

The System
The Corps interior sign program uses a high quality architectural sign system product with adaptations to fulfill the requirements of Corps facilities. The signs are available to Corps standards on General Services Administration (GSA) Schedule, and repeat orders are supplied on a rapid response delivery schedule. The basic attribute of a system like this is that the initial investment by the Corps is protected by an established system, and subsequent additions will be identical to the original installation.

The specifications and guidelines indicated here are intended to help people acquire signs with a high degree of quality control. The system is both affordable, easy to maintain and offers an important communications tool that will facilitate passage through a building.

These signs are adaptable for placement in existing GSA leased facilities and in locations managed entirely by the Corps. Sign placement in GSA facilities may require approval from the GSA building manager prior to installation. Interior signs are used to inform and direct Corps visitors and employees through the office area. Proper placement of signs will also add to the visual order in office areas.

Corps offices vary in size and layout. Some offices have an open-plan layout; others have fixed walls and doors. The majority are a combination of both open-plan and fixed wall. The interior sign system uses standard wall-mounted plaques and ceiling-mounted sign assemblies. The ceiling-mounted signs are designed to be used for directional information and area identification in large corridors and offices with an open-plan configuration. Signs that are wall-mounted include: directories and registries, direction, information and instruction signs. They are used in both open-plan and fixed wall offices.

Maintenance
Flexible features built into this program will keep updating costs to a minimum. The inserts on signs can be replaced to keep information current without requiring the purchase of an entirely new sign. Materials and production processes have been standardized to help maintain continuity as facilities change, add new signs and/or alter sign messages.

Legend Typography and Format
Haas Helvetica Regular typeface is used for all interior signs, with the exception of building directories and registries. All typography is upper and lower case, flush left and rag right on the respective grid for each type of sign.

On sign legends you are encouraged to use full division, branch, section or project names for consistency and clarity. Avoid using abbreviations, acronyms or routing codes.

The layout grid for each type of sign has been designed to accommodate the common descriptive nomenclature used within the Corps. Use language consistently when preparing legends for a sign plan.

The Corps Communication Mark (Castle Only) may be used on Office Identification signs to identify Corps areas within a building occupied by different Federal agencies.

Color
The use of color in interior signage is an integral part of the building interior design, and should be used as part of an overall interior development.

Generally for information and identification signs, the actual sign panel should be a neutral tone color that will adapt to a variety of backgrounds and mounting conditions. This approach helps to control unnecessary visual clutter to the work environment. Following this approach, wall-mounted signs are made conspicuous by standardizing with a common color, along with uniform placement throughout a location for signs of a similar function.

The recommended Corps standard color for wall-mounted sign panels and frames is Office Dark Grey (no. 44) with white legends. Companion safety signs (e.g.,

emergency exit identification) should have white legends on Communication Red backgrounds with Office Dark Grey frames. This color scheme is appropriate in most interior environments, and will help unify offices where interior colors change from one area to another.

In buildings having a common interior color scheme throughout, additional standard colors may be considered for wall-mounted sign panels and frames, if the recommended Corps standard is not appropriate. The panel and frame system is available with five alternate colors with no effect to price. These include: black (no. 2) with white legend, Puffy (no. 43) with black legend, Light Grey (no. 47) with white legend, white (no. 42) with black legend, and Harvard Green (no. 71) with white legend. Background and frame will be of the same color (color samples are available from the supplier upon request).

In large, open-plan installations, where ceiling-hung signage is used, colors should be coordinated with the building interior design. Brighter colors, however, should be considered for ceiling-hung elements as an added visual aid to improve wayfinding. The background colors for ceiling-hung signage are shown in Section 4, page 4-9. These selections include: Office Red (no. 24), Office Blue (no. 13), Office Green (no. 27), and Office Warm Grey (no. 03). Legends on these signs are to be white.

If none of the colors listed above are appropriate to the designated interior environments, custom signage may be considered. The use of nonstandard colors is more costly on the initial order, and may be difficult to acquire on reordering. Manufacturing wall signs in custom colors is not recommended because it reduces durability, increases cost and increases servicing time. Custom signage systems should be considered only if they are prepared by a qualified interior designer in consultation with the district/division Sign Program Manager.

Preparation of a Sign Plan
This section has been organized in the same lineal way that interior signs are placed in a building or office: beginning with the identification of the building and ending with the identification of each employee's desk.

To prepare a sign plan for an office,

identify the sign needs using a lineal process and categorize sign requirements by function, identification, direction and information.

After categorizing the signs, use a scaled floor plan to record the location. Identify each sign on the plan using the identification code as they will be identified on the project sign schedule. Refer to Section 3: Program Plan and Documentation for information about sign plan preparation. On a separate Sign Order Worksheet, list each sign type and the specific legends for the sign. Refer to an organizational chart or complete office listing for correct names of all offices and services when preparing legends for the directory and all other signs. Verify all information before ordering.

Sign location and legend content should be designed specifically to direct or inform someone visiting a building for the first time. Place only enough information on each sign to take the visitor to the next decision point. Do not combine the information from two different sign types onto one sign.

In leased facilities, verify that the sign systems comply with local sign codes.

The types of signs specified in this section are described in the order in which they are normally placed within a facility. Shown below is a generic office layout with a description of each sign type. Detailed descriptions and scaled layout grid are shown on the following pages.

For assistance in planning or ordering office interior signs contact the district/division Sign Program Manager.

1) Main Identification:
Placed on the building or main entrance door identifying the facility (see Section 5).

2) Building Directory:
The building or floor directory is placed prominently in the lobby for entering visitors. The type of directory used will depend on the size of offices and number of organizational groups to be listed (see pages 18-4 and 18-5).

3) Professional Registry:
A professional registry, matching the floor directory design, may be placed next to same (see page 18-6).

4) Directional signs:
Placed at decision points in corridors and office area entrances. The type of directional signs used will be determined by the configuration of the space. The wall-mounted type is more appropriate in small office areas and in narrow corridors. Overhead directional signs may be more practical in large offices and facilities with open-plan configurations. The type of directional selected should be used consistently throughout a facility. Specify directional signs for both entrance and exit (see pages 18-8 through 18-11).

5) Identification Cube:
In offices with large open-plan work spaces, each key division, branch, or other important location may be clearly identified with a ceiling mounted cube. This cube is visible from more than one direction and provides a visual reference point within a space (see page 18-13).

6) Office Identification:
Used for individual offices or work spaces. These signs have removable legend panels and may be easily updated (see page 18-15).

7) Information signs:
Used to identify all building support facilities. This type of sign is similar to the Office Identification plaque but has a different graphic layout grid (see page 18-17).

8) Safety-related signs:
Used to identify safety-related issues: stairways, safety equipment, emergency exit, etc. and are to be used in conjunction with signs required by local code (see page 18-18).

9) Employee Identification:
A small plaque has been provided for place-ment on desks or adjacent walls at the entrance of the individual office or work area (see page 18-20).
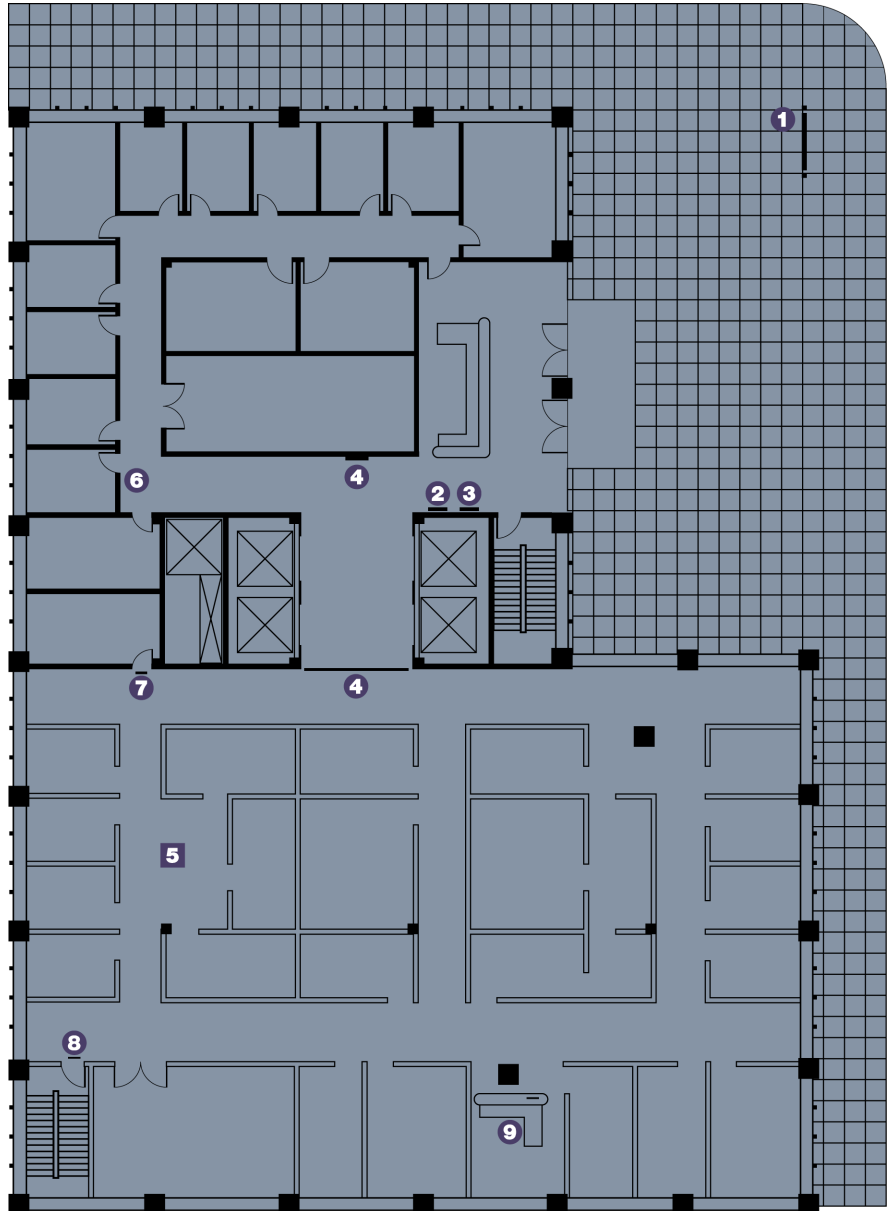
The most appropriate mounting location for a directory is within direct sight of the entrance to the lobby and in visual proximity to elevators or main floor corridors.

The directory is used to centrally list offices of the Corps in a building and to identify the location of each. There are two basic sizes of directories: a large two-column panel and an one-column panel (see page 18-5). Both types incorporate an identifying Corps header panel that includes the Corps Signature, the full facility name and sign title "Directory." Individual name strips are inserted into the frame.

The larger two-column building directory accommodates a full listing of all organizational groups in a district or division office.

The individual strips (up to 62) are easily removed or replaced to keep the office listing up-to-date. When ordering a directory, allocate space for 20-25% more strips than are currently needed so future additions can be made.

The directory shown is not internally illuminated. Nonilluminated directories are substantially less expensive to install and maintain. Should an illuminated directory be required, the basic header-panel format and typographic specifications are to be maintained.

Directory listings may be organized with all destinations listed alphabetically, or by division, office, branch, section, etc., with organizations internal to the larger parts listed under these organizational groups. This second method of listing may be confusing because a first time visitor may be coming to see someone in one group in the organizations hierarchy, but does not know what larger group this destination is a part of. Ideally, frequently visited locations are listed both alphabetically, and as part of their respective parent organization.

The secondary lines in directory listings, which include sub groups of a larger organization are to be listed with a .25" indent for clarity and ease of reading.

Lower Mississippi River Division Headquarters Directory (directory panel illustration)

* Sign Type Suffix Code
F = Frame of sign
H = Header and base panel
    with clear face
M = Message strip
S = Strip

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-1F*	-	26.125"x18.875"	IMP-1	68"	DG/WH
INT-1H*	.6875"	25.25"x18"	IMP-1	-	DG/WH
INT-1M*	.25"	1"x9"	IMP-1	-	DG/WH
INT-1S*	.25"	.5"x9"	IMP-1	-	DG/WH

Directories should to be mounted in a non-glare area. Ambient light should be bright enough for good legibility.

Place directory in building lobby or elevator lobby in unobstructed view for entering visitors.

The one-column directory is designed for placement in project offices or as a floor directory in a multistory office building.

The one-column directory accommodates up to 22 insert strips. The individual strips are easily removed or replaced as required to keep the listing up-to-date.

When ordering a registry, allocate space for 20-25% more strips than are currently needed so future additions can be made as required.
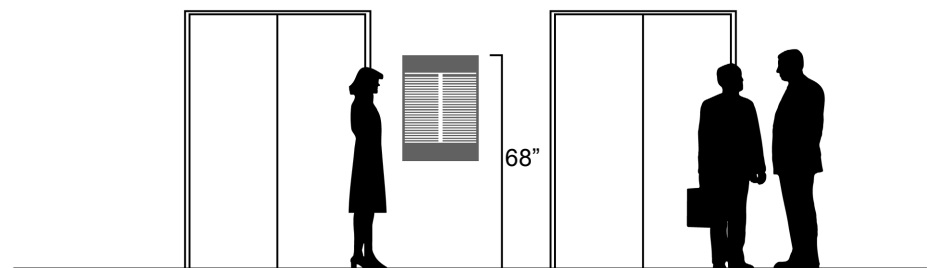
For graphic format refer to layout grid on page 18-7.

* Sign Type Suffix Code
F = Frame of sign
H = Header and base panel with clear face
M = Message strip
S = Strip

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-2F*	-	14.375" x 9.5625"	IMP-1	68"	DG/WH
INT-2H*	.375"	13.625" x 8.75"	IMP-1	-	DG/WH
INT-2M*	.25"	1" x 9"	IMP-1	-	DG/WH
INT-2S*	.25"	.5" x 9"	IMP-1	-	DG/WH

Directory to be mounted on wall 68" from the floor to the top of sign in a nonglare area. Ambient light should be bright enough for good legibility.

Place directory in building lobby or elevator lobby in unobstructed view for entering visitors.

For offices that also display a professional registry, a matching frame and header panel is available to the same specifications as the directory and mounted at a common height. Where possible, order a registry that is the same size as the companion directory.

The individual strips are easily removed or replaced as required to keep the listing up-to-date.

For graphic format refer to layout grid on page 18-7.

Each respective professional group is identified separately under a 1" insert header.

The listing is identified and organized by profession as shown. A registry is generally composed of the following licensed or certified professions:

Professional Engineer (PE)
Registered Architect (RA)
Registered Landscape Architect (RLA)
Attorney (Esq.)
Nurse (RN)
Certified Park and Recreation Professional (CPRP)
Certified Forester (CF)
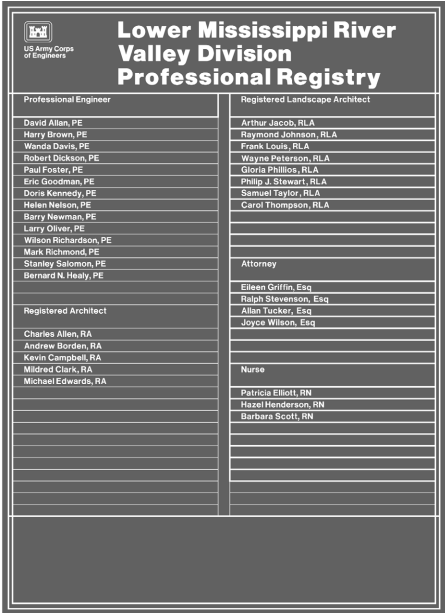
* Sign Type Suffix Code
F = Frame of sign
H = Header and base panel with clear face
M = Message strip
S = Strip

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-3F*	-	26.125"x18.875"	IMP-1	68"	DG/WH
INT-3H*	.6875"	25.25"x18"	IMP-1	-	DG/WH
INT-3M*	.25"	1"x9"	IMP-1	-	DG/WH
INT-3S*	.25"	.5"x9"	IMP-1	-	DG/WH

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-4F*	-	14.375"x9.5625"	IMP-1	68"	DG/WH
INT-4H*	.375"	13.625"x8.75"	IMP-1	-	DG/WH
INT-4M*	.25"	1"x9"	IMP-1	-	DG/WH
INT-4S*	.25"	.5"x9"	IMP-1	-	DG/WH

Professional registry to be mounted in a nonglare area. Ambient light should be bright enough for good legibility. Place registry in building lobby or elevator lobby in unobstructed view for entering visitors.

When used in combination with a directory, mount panel side-by-side at a common height.
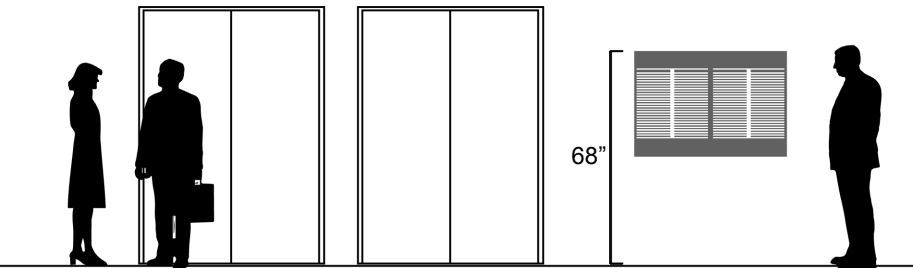
The typeface for the header panel on a two-column sign is Helvetica Bold .6875" capital letter height, upper and lower case (initial capitals only). The one-column header panel uses Helvetica Bold .375" capital letter height, upper and lower case (initial capitals only). Follow standard Corps letter- and word-spacing (see Appendix D, page D-12). Strips use Helvetica Medium 24 point, upper and lower case (initial capitals only).

All legends are surface screen-printed on the panel substrate. Sign background color is Office Dark Grey with white legend and reversed version of the Corps Communication Mark.

For fabrication and material specifications, see Appendix B, pages B-8 and B-8-1.

Two-Column (25.25"x18") Header Panel:
All type on header panel is flush left, rag right. Panel accommodates a maximum of three lines.
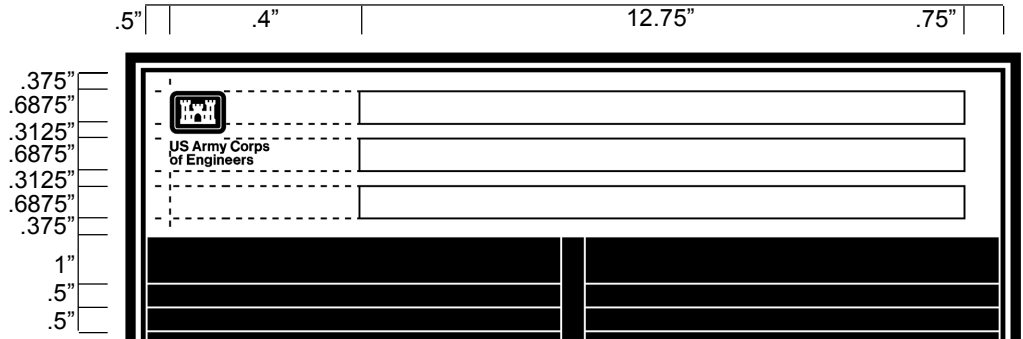
One-Column (13.625"x8.75") Header Panel:
All type on header panel is flush left, rag right. Panel accommodates a maximum of three lines.
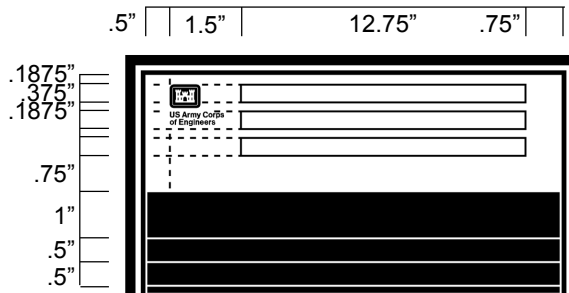
a) Directory Strips:
Message strip with indication of "Location" and "Room" are 1" high. All other strips are .5" height with type flush left, rag right and the numeral flush right.

b) Registry Strips:
Message strips indicating a professional group are 1" high. All other strips have a .5" height with type flush left, rag right. It is recommended to leave the insert preceding a 1" insert blank to improve legibility (see page 18-6).

Location	Room
Construction Division	283
Resource Management Office	291
Finance and Accounting Branch	292
Civil Works Accounting Section	B3

a)

Professional Engineer
George T. McKinsey, PE
Daniel L. Holseman, PE
Donald T. Munsey, PE
Peter R. Rofley, PE

b)

Location	Room
Resource Management Office	291
Finance and Accounting Branch	292

Numbers align flush right with "Room"

The ceiling-mounted corridor directional sign is designed for placement at the ends of elevator lobbies and at the main corridor decision points in larger open plan office areas to identify primary destinations within an area.

This type of directional sign, because of its large size, becomes an architectural element in the space. Mounting locations should not conflict with existing building details. To avoid damage, do not use where existing ceilings are lower than 9'-0". It is not recommended for use in conjunction with Small Ceiling Directional signs (see page 18-9).

This assembly may be used as a one-sided panel mounted at the end of a corridor, or as a two-sided, multi-directional unit mounted perpendicular to traffic. The interchangeable panels afford convenient message revision as changes in the use of office areas occur.

For graphic format refer to layout grid on page 18-10.

| ← Construction Operations Division | ← Library | ↑ Engineering Division | | → Emergency Management Branch |

When mounting as a modular series, place signs with left and straight directional arrows on the left, and directional signs with arrows to the right on the right of the assembly. Unused panels are left blank.

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-5	1.5"	12"x18"	SCP-2	>8'-0"	-/WH

Mount parallel to ceiling frame or the intersecting corridor; perpendicular to the approaching viewer.

>8'-0"
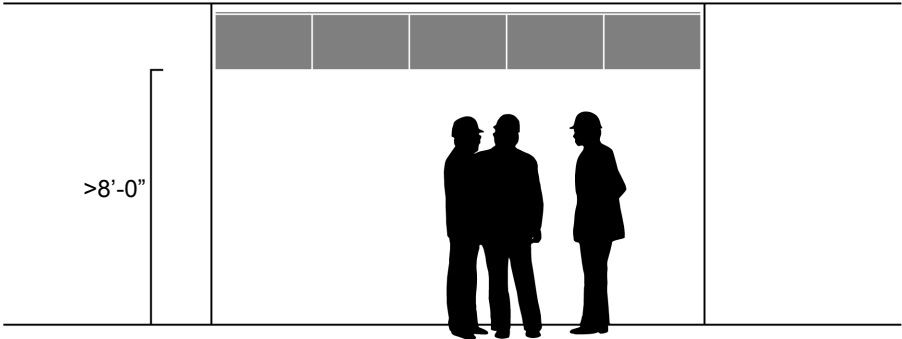
This is a double-face directional sign that is designed for traditional fixed wall, corridor type offices or open-plan configurations. These signs may be used in conjunction with wall-mounted identification signs (see page 18-15).

These signs are mounted perpendicular to the direction of the corridor and can be viewed from both directions. One or two (space permitting) legends may be placed on each panel face as shown.

The full name of the office is to be listed on the sign legend; avoid using abbreviations, acronyms or routing codes. Use the typographic and layout grid specification provided on page 18-10. Use of this type of sign is not recommended for spaces with ceilings less than 9'-0" high.

For graphic format refer to layout grid on page 18-10.

a) Two 1-line, left-directed legends

← Procurement Division
Contracts Branch
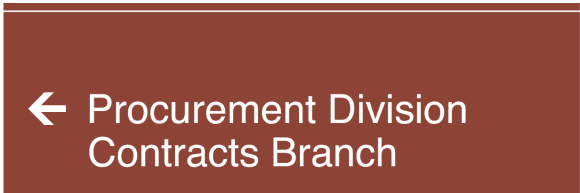
a)

b) One 2-line, straight-directed legend

↑ Facilities Engineering
Support Section
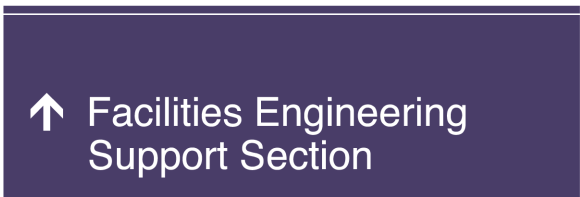
b)

c) One 2-line, right-directed legend

Emergency Management
Branch →
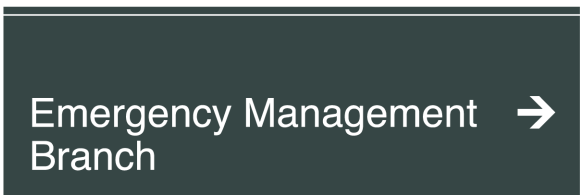
c)

d) One 1-line, right-directed legend

General Services →

d)
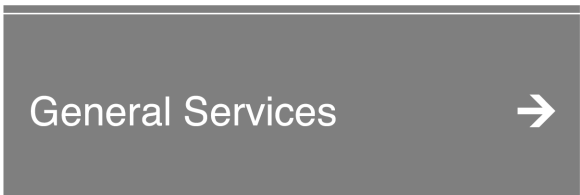
Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-6	1.5"	10"x30"	IMP-2	>8'-0"	-/WH

Placement of single 30" panels may be centered in the hallway. In corridors 60" or wider, two panels may be mounted end-to-end.

>8'-0"
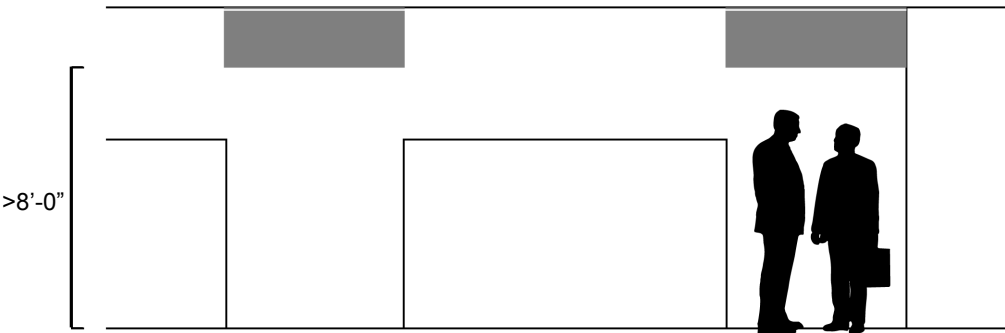
Both the Large Modular and Small Ceiling Directional attach conveniently to suspended ceiling systems without altering existing frames, using hardware provided.

Typography to be Helvetica Regular, 1.5" capital letter height, upper and lower case letters (initial capitals only), with the exception of the arrows which shall be of the medium weight. Follow standard Corps letter- and word-spacing.

Background color to be selected from Corps interior sign background colors specified on page 4-9 (Office Red, Office Blue, Office Green and Office Warm Grey). Legend color to be screen-printed white.

For fabrication and material specifications, see Appendix B, pages B-8 and B-8-2.

Large Modular Directional:
Layout to be flush left, rag right on the specified grid. Grid accommodates legends up to a maximum of three lines.

Left-, straight-, and right-directed legends are to be flush left with (medium) arrow in the upper left corner (see examples on page 18-8).
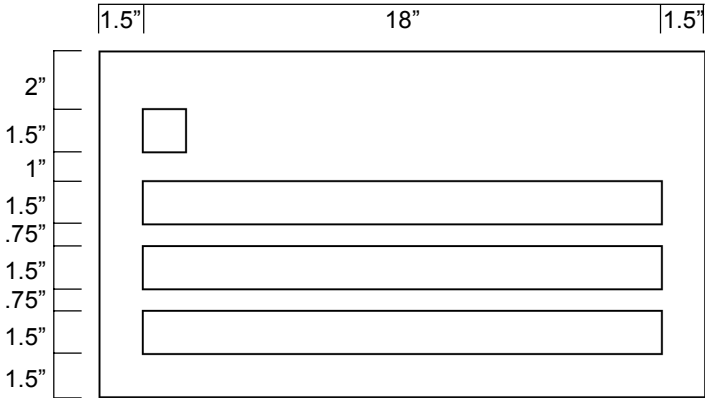
Small Directional, Grid A:
Left- and straight-directed legends to be flush left with (medium) arrow on the left.

Layout to be flush left, rag right. Grid accommodates a two-line legend maximum (see examples on page 18-9).
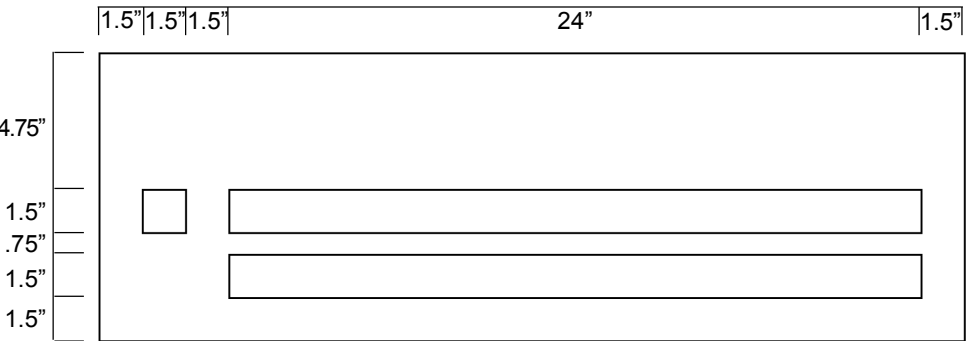
Small Directional, Grid B:
Right-directed legends to be flush left, rag right with (medium) arrow on the right.

Layout to be flush left, rag right. Grid accommodates a two-line legend maximum (see examples on page 18-9).
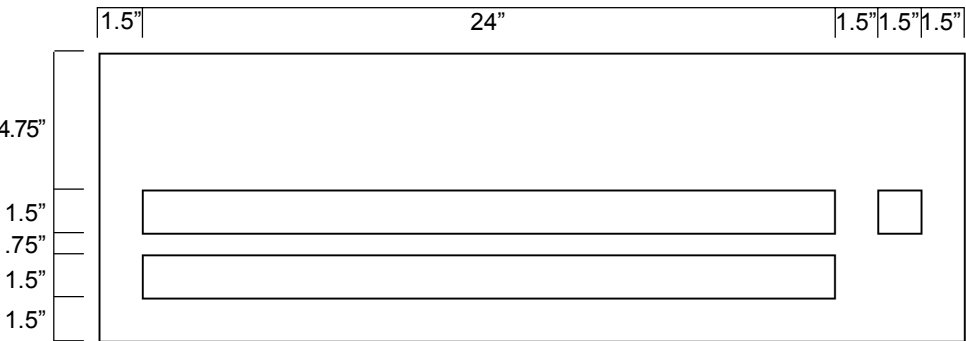
Wall-Mounted Directional signs are placed at key decision locations in office hallways and open-plan office corridors to guide visitors and Corps staff through the building. This is the most adaptable directional sign for most office interior configurations and is used in lieu of ceiling-mounted directionals.

The cost-efficient directional sign system is easy to maintain by periodically replacing the insert panel, while retaining the frame. Concise legends contribute importantly to a successful directional signage system. Because of limited space, the sign legends may be condensed as shown without departmental identification, if message clarity is not diminished.

Two basic formats are provided, a 12"x12" and a 6"x12" panel. The messages are surface screen-printed in white on the Office Dark Grey panel insert. For graphic format refer to layout grid on page 18-12. Changes on small wall-mounted directories require replacement of entire panel insert.

12"x12" Square Panel:
Multiple line legends with .5" letters.

Names of locations shown are abbreviated, deleting organizational identifications such as "Division" or "Branch."

← Engineering
Real Estate and Concessions
Office of Counsel
Flood Plain Management Services
↑ Administrative Services
Reprographics
→ Supply Control and Distribution
Construction Management

INT-7

6"x12" Panel:
Multiple line legends with .5" letters.

← Construction Division
Procurement & Supply Division
↖ Elevators & Exit
→ Restrooms

INT-7

6"x12" Panel:
Two-line room number legend with 1" letters.

← 2101-2124
2125-2176 →

INT-7

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-7	.5"	12"x12"	IMP-3	60"	DG/WH
INT-7	.5"	6"x12"	IMP-3	60"	DG/WH
INT-7	1"	6"x12"	IMP-3	60"	DG/WH

Wall-mount at eye level (60" to the top of the sign panel) in direct view of approaching visitors.

60"
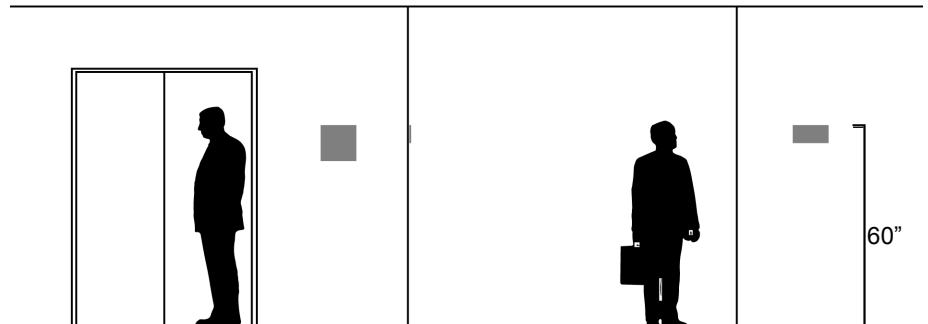
Typography to be Helvetica Regular with .5" or 1" capital letter height, upper and lower case letters (initial capitals only). Follow Corps standard letter- and word-spacing (see Appendix D, page D-15). The arrows shall be medium weight . The dimensions of the grid for multiple legend signs are for reference only. The exact

number of lines and their configuration will vary depending on the office size, layout and the number of destinations placed on the panel. The relationship of one line of type to another will not change. There is .5" space between legends, and .25" space between the second lines and first lines of a two-line legend.

Insert background and frame color to be Office Dark Grey with white legend and rule.

For fabrication and material specifications, see Appendix B, pages B-8 and B-8-3.

12"x12" Panel:
Multiple line legends with .5" capital letter height legend.

Rule to be 4 points thick.

Line space and arrow placement for a 2-line legend.

Line space between each different legend.
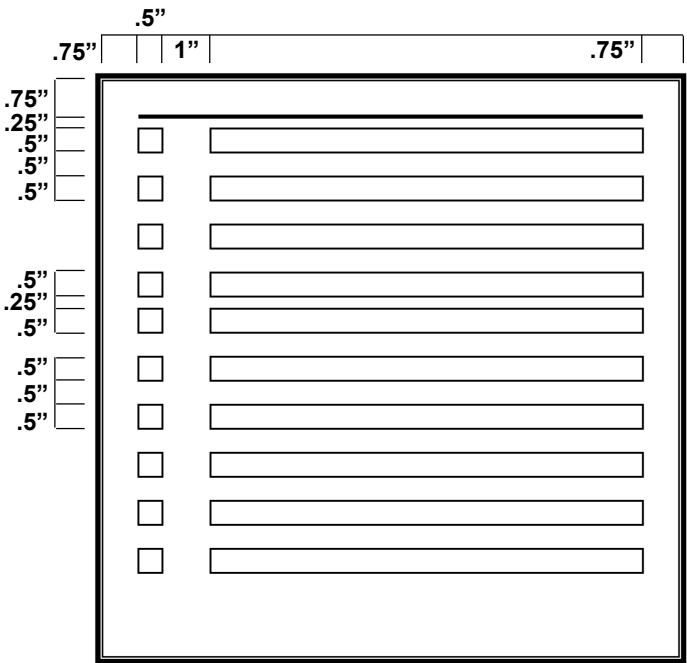
6"x12" Panel:
Multiple line legends with .5" capital letter height legend.

Rule to be 4 points thick.
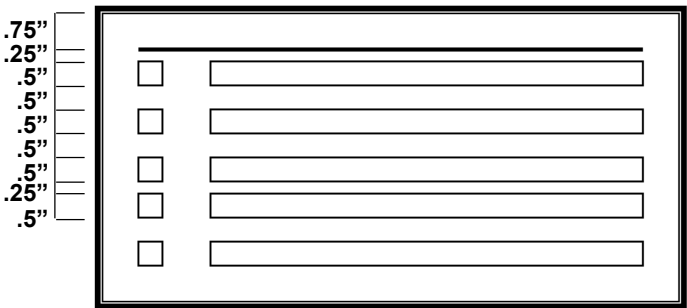
6"x12" Panel:
Three-line legend with l" capital letter height legend. Use this grid for panels with room numbers only.

Rule to be 4 points thick.
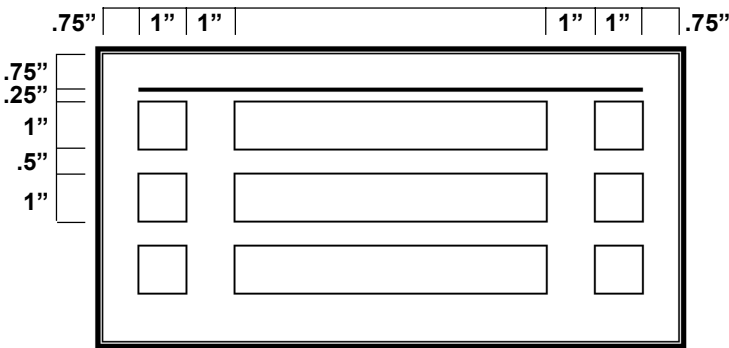
This four-sided ceiling-mounted sign is designed for placement above the central information or secretarial station of the division or branch within an open-plan office configuration. Since this Identification Cube becomes a point of reference in large open-office areas, it should be located within a clear sightline of oncoming viewers.

Only key organizational groups should be identified. An overproliferation of cubes in the space will diminish the value of a few well-placed signs.

The cube inserts into a 24"x24", or a 24"x 48" standard suspended ceiling system and may be specified with or without

interior lighting. Use of ceiling-mounted Identification Cubes is not recommended for spaces with ceilings less than 9'- 0" high.

For graphic format refer to the layout grid on page 18-14.

Planning Division

Waterways and Harbors Section

Modules may be ordered in three different configurations:

a) Nonilluminated module.

b) Module with an illuminated legend, includes an internal diffuser to distribute the light evenly through translucent legend, using existing light fixtures.

c) Illuminated module with a translucent directed lighting aperture inside the module to light legend and provide a down light, using existing light fixtures.

a) FRP-01   b) FRP-02   c) FRP-03
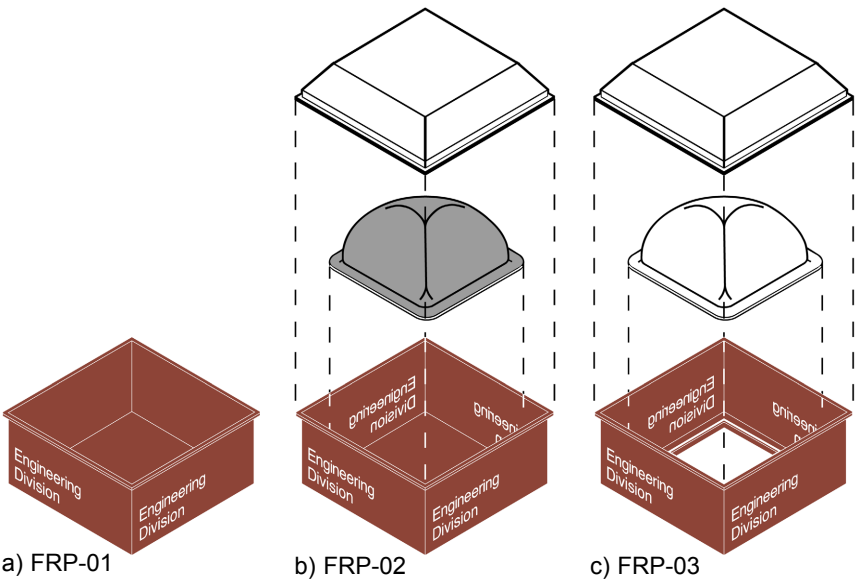
| Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-8	1.5"	24"x24"x12"H	FPR-01/02/03	>8'-0"	-/WH

>8'-0"

Typography to be Helvetica Regular, 1.5" capital letter height, upper and lower case letters (initial capitals only). Follow Corps standard letter- and word-spacing (see Appendix D, page D-15).

Background color to be selected from Corps interior sign background colors

specified on page 4-9 (Office Red, Office Blue, Office Green and Office Warm Grey). Legend color to be screen-printed white.

For fabrication and material specifications, see Appendix B, pages B-9 and B-9-1.

Place full name of organization on each side of the cube. The use of abbreviations, acronyms or routing numbers is discouraged because they are confusing to visitors.

Place typography flush left, rag right, on the three-line layout grid as shown.
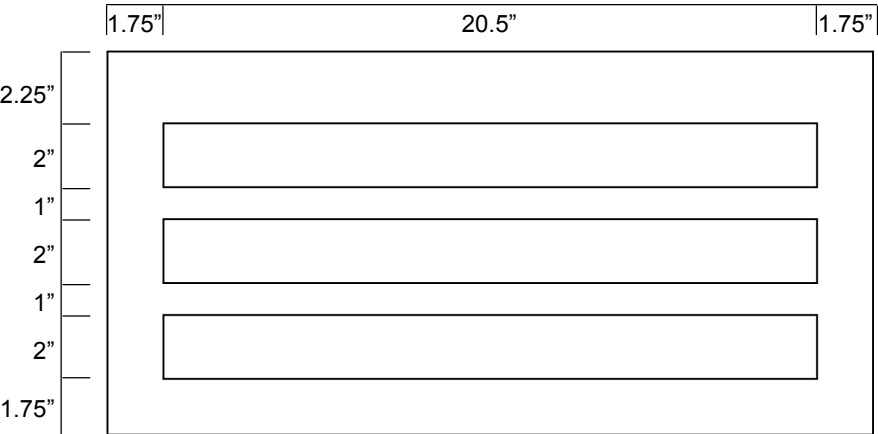
This 4"x8" sign is used to identify offices or work areas and supporting facilities. The removable sign legend panel can be changed or moved to another sign frame without removing and replacing the entire unit. Illustrated below are the many different legend formats which can be used depending on identification needs.

a) Two 2-line legend groups: branch and division identification. The Mark is placed in upper left corner.

b) One 1-line and one 2-line legend group: service office name identification with customer service information.
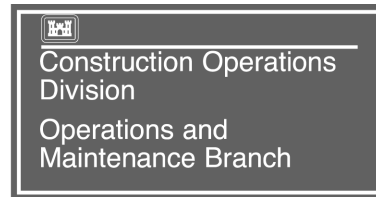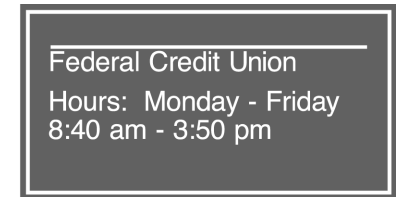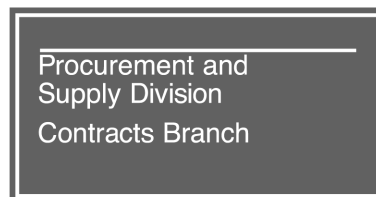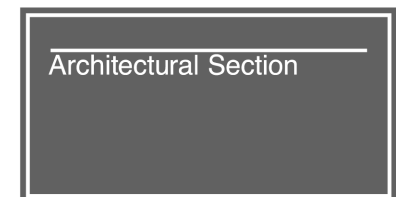
c) One 2-line and one 1-line legend group: branch and division identified.
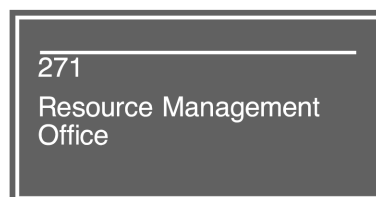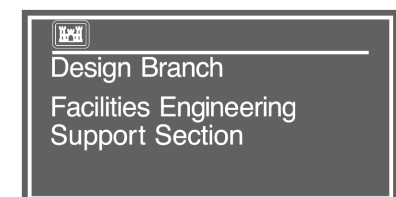
d) One 1-line legend group: section identification.

e) One 1-line and one 2-line legend group: number and office name.

f) One 1-line and one 2-line legend group: branch and section. The Mark is placed in upper left corner.

No more than two messages are to be placed on one sign. Employee names are not to be placed on identification plaques (see Employee Identification, page 18-20).

When the sign is mounted in offices shared with other federal agencies, a

.625" high reversed version of the Corps Communication Mark may be placed in the upper left corner of the identification plaque, as shown in examples "a" and "f" below.

For graphic format refer to layout grid on page 18-16.

Construction Operations Division

Operations and Maintenance Branch

a)

Federal Credit Union

Hours: Monday - Friday 8:40 am - 3:50 pm

b)

Procurement and Supply Division

Contracts Branch

c)

Architectural Section

d)

271

Resource Management Office

e)

Design Branch

Facilities Engineering Support Section

f)

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-9	.4375"	4"x8"	SCP-3	60"	DG/WH

Wall- or door-mount at eye level (60" to the top of the sign panel) in direct view of approaching visitors.

60"
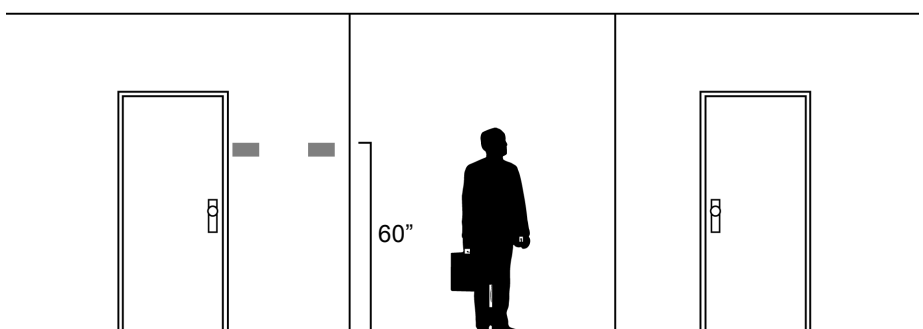
Typography to be Helvetica Regular, .4375" capital letter height, upper and lower case letters (initial capitals only). Follow standard Corps letter- and word-spacing (see Appendix D, page D-15).

The dimensions of the grid for multiple legend signs are for reference only. The number of lines and their configuration will vary depending on the length of the office name and layout. The relationship of one line of type to another will not change. There is a .4375" space between different legends and a .1875" space between the first and second line of a two-line legend.

Insert panel background and frame color to be Office Dark Grey with white legend, rule and optional Corps Communication Mark (reversed version) above rule.

For fabrication and material specifications, see Appendix B, pages B-8 and B-8-4.

4"x8" Panel:
Layout to be flush left, rag right on the grid. Grid has four-line maximum with one .4375" line space between top and bottom legend groups. Use full organizational name. For clarity, avoid using abbreviations, acronyms or routing codes.

The optional .625" high reversed version of the Communication Mark shall be placed in the upper left corner of the panel as shown on the layout grid.

Rule to be 4 points thick.
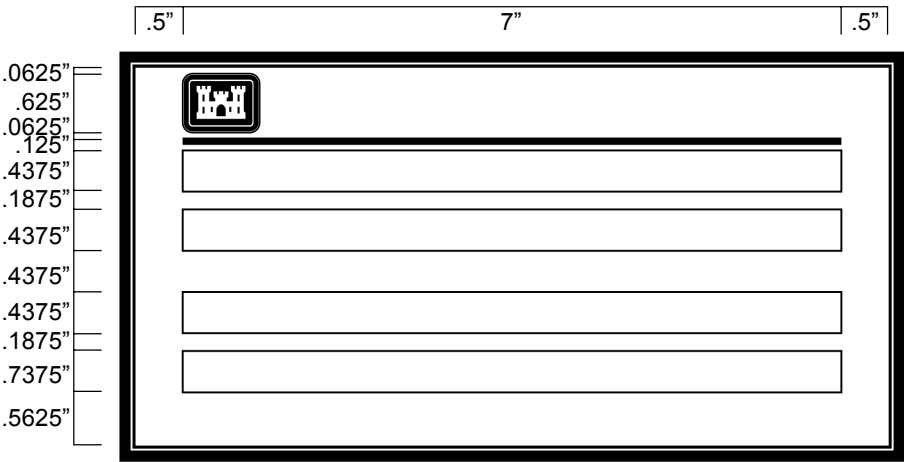
.5" | 7" | .5"

.0625"
.625"
.0625"
.125"
.4375"
.1875"
.4375"
.4375"
.4375"
.1875"
.7375"
.5625"

This 4"x8" sign is used to identify all building support facilities. This type of sign is similar to the Office Identification plaque but uses a different layout grid (see layout grid on page 18-19).
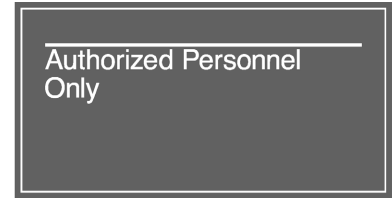
The removable sign legend panel can be changed or moved to another sign frame without removing or replacing the entire unit. Examples are shown in the illustrations below.

a) One-line legend with standard .4375" capital letter height.
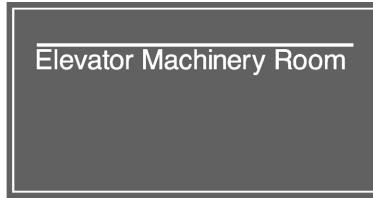
b) Two-line legend with standard .4375" capital letter height.

Elevator Machinery Room

a)

Authorized Personnel
Only

b)

c) One-line legend with 1" capital letter height.

d) One to four-line legend with standard .4375" capital letter height.

Stairs

c)

No Admittance

For Entry Contact
Security Office
Room 121

d)

e) One-line legend with 1" capital letter height.

f) Two-line legend with 1" capital letter height.

Women

e)

Exit To
Main Lobby

f)

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-12	.4375"	4"x8"	SCP-3	60"	DG/WH
INT-12	1"	4"x8"	SCP-3	60"	DG/WH

Mount at eye level 60" from floor to top of sign on doors and walls.

60"
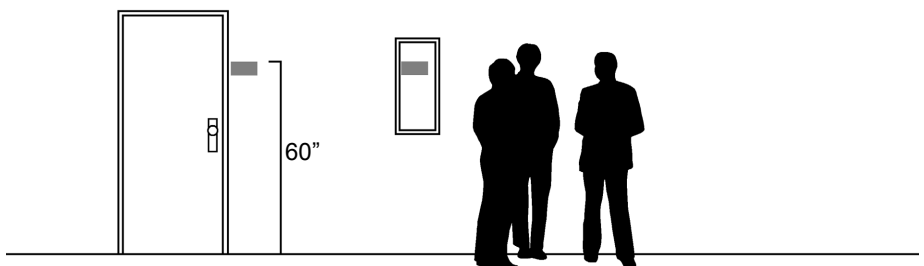
This 4"x8" sign is used to identify safety-related equipment and facilities such as: stairways, safety equipment, emergency exits, etc. This type of sign is similar to the Information plaque but is differentiated by having a Communication Red sign panel insert with the standard Office Dark Grey mounting frame as used for all other wall-mounted interior signs.

The removable sign legend panel can be changed or moved to another sign frame without removing and replacing the entire unit.

For graphic format refer to layout grid on page 18-19.

a) One to four-line legend with standard .4375" capital letter height.

Fire Extinguisher

a)

b) One to two-line legend with 1" capital letter height legend.

Emergency
Exit

b)

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-11	.4375"	4"x8"	SCP-3	60"	CR/WH
INT-11	1"	4"x8"	SCP-3	60"	CR/WH

Mount at eye level, 60" from floor to top of sign, on doors, fire extinguisher, hose cabinets, etc.

60"
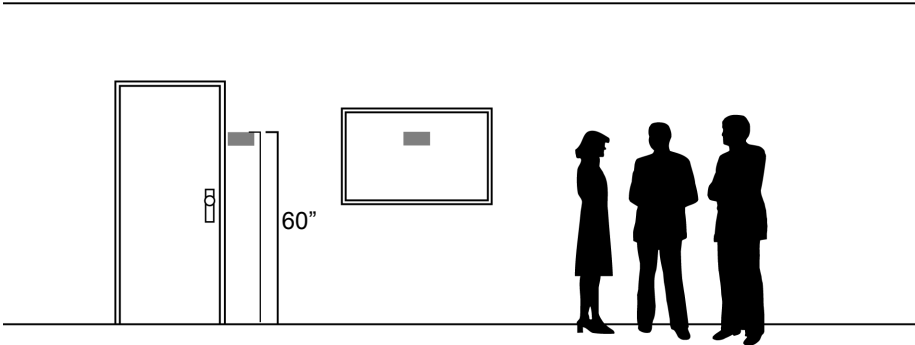
Typography to be Helvetica Regular, .4375" or 1" capital letter height, upper and lower case letters (initial capitals only). Follow standard Corps letter- and word-spacing (see Appendix D, page D-15).

Information signs have an Office Dark Grey sign frame with Office Dark Grey

insert. Safety-related signs use a Office Dark Grey frame with Communication Red insert; legend to be white.

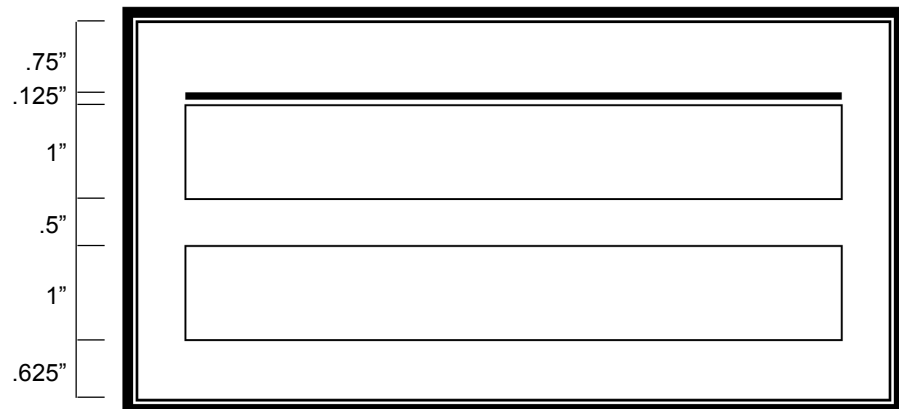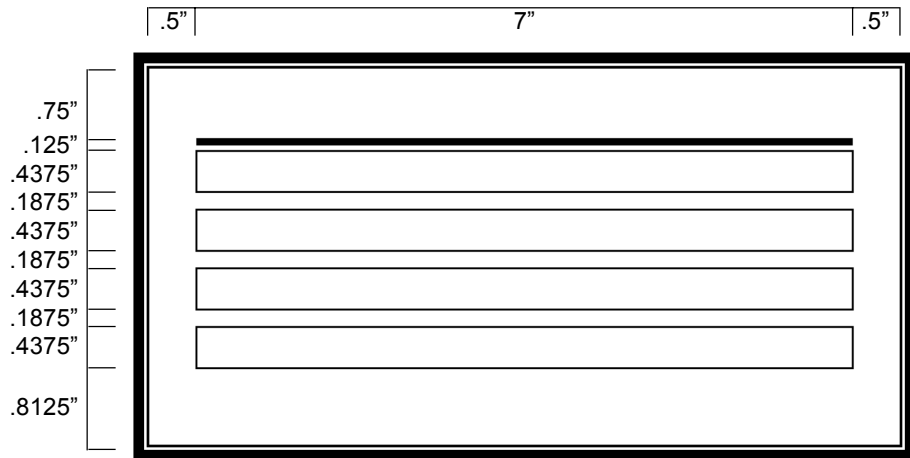For fabrication and material specifications, see Appendix B, pages B-8 and B-8-3.

4"x8" Panel:
Layout to be flush left, rag right. Grid with standard .4375" lettering will hold a maximum of 4 lines. Signs with 1" capital letter height will accommodate 2 lines as shown below.

Rules to be 4 points thick.

This sign is used to identify employee's office, desk or workstation. It may be placed adjacent to the entrance door, on the desk or on a partition wall.

The sign is designed for employee's name only. Titles and professional designations are not to be placed on this type of sign.

For fabrication and material specifications, see Appendix B, pages B-8 and B-8-3.

a) First name, middle initial and last name.

Robert W. Colsopepper

a)

b) First and middle initials and last name.

M. B. Hall

b)

Sign Type	Legend Size (A)	Panel Size	Specification Code	Mounting Height	Color Bkg/Lgd
INT-10	.375"	1.5"x8"	SCP-3	Variable	DG/WH

This small sign should be placed for easy identification of each work space. The exact placement will vary with each office layout. Where possible, placement should be consistent throughout an office area.
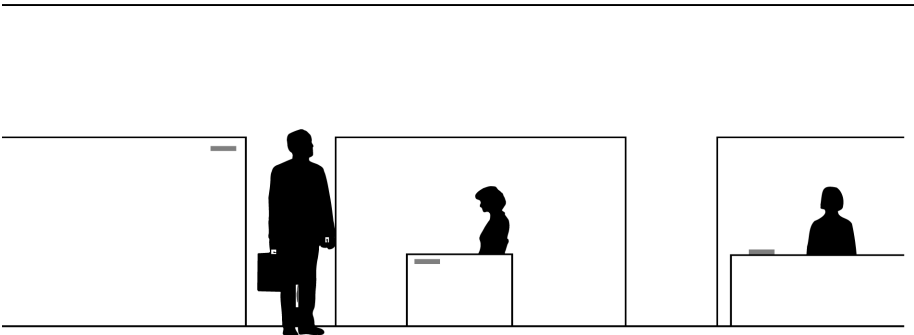
Typography to be Helvetica Regular, .375" capital letter height, upper and lower case letters (initial capitals only). Follow standard Corps letter- and word-spacing (see Appendix D, page D-15).

Insert panel background and frame color

to be Office Dark Grey with white legend and rule.

For fabrication and material specifications, see Appendix B, pages B-8 and B-8-3.

1.5x8" Panel:
Layout to be flush left, rag right on the grid. For consistency, the use of titles, nicknames, professional degrees or affiliation after a name is strongly discouraged.

Rule to be 4 points thick.

.25"   7.5"   .25"

.25"
.125"
.375"
.75"