



**Minnesota Manual
on
Uniform Traffic
Control Devices**

MN

MUTCD

July 2013

**MINNESOTA
MANUAL
ON
UNIFORM
TRAFFIC
CONTROL
DEVICES**



**MN
MUTCD**

July 2013



Minnesota Department of Transportation

Office of Traffic, Safety, and Technology

Mail Stop 725
1500 West County Road B2
Roseville, MN 55113

August 19, 2013

Phone (651)234-7000

TO: Holders of the 2011 Minnesota Manual on Uniform Traffic Control Devices (2011 MN MUTCD)

Transmitted herewith is Revision Number 2 (dated July, 2013) to the "2011 Minnesota Manual on Uniform Traffic Control Devices" (2011 MN MUTCD) as adopted by the Commissioner of the Minnesota Department of Transportation (MnDOT). The attached pages to the 2011 MN MUTCD incorporate changes or corrections brought about by changes in the FHWA MUTCD and Minnesota practices or procedures.

All revised pages are attached herewith and shall replace corresponding pages in this manual. The attached Commissioner's Order No. 93799 amends Commissioner's Orders 93167 and 92452. It is important to retain all Orders because they amend but do not replace previous Orders.

The 2011 MN MUTCD including Revision Number 2 is available on the Mn/DOT website at <http://www.state.mn.us/trafficeng/publ/mutcd/index.html>. This manual will be updated annually, typically near the beginning of each calendar year. The latest version will be available on the website after it has been adopted by the Commissioner of Transportation.

Mn/DOT no longer maintains a mailing list for printed updates to this manual. Users of the the manual must fill out the "Updates Notification Form" found on the website above under "Quick Links." When an update/revision is made to the manual, an email will be sent out advising users to visit the website. The user must then download and print the revised pages and insert them into the printed version of their 2011 MN MUTCD.

To purchase additional copies of this manual or other State of Minnesota manuals call the Mn/DOT Map & Manual Sales Unit at 651-366-3017 for current costs and ordering information. They are located at the following address:

MnDOT Map & Manual Sales Unit
395 John Ireland Blvd. - MS 260
St. Paul, Minnesota 55155-1899

Comments regarding the content of the 2011 MN MUTCD should be referred to Janelle Anderson, MnDOT, Office of Traffic, Safety and Technology, phone (651) 234-7388, email address: janelle.anderson@state.mn.us.

Sincerely,

A handwritten signature in black ink that reads "Susan M. Groth".

Susan M. Groth, PE, PTOE
State Traffic Engineer

**REVISIONS TO THE
2011 MINNESOTA UNIFORM TRAFFIC CONTROL DEVICES MANUAL
ORDER NO. 93799**

The Commissioner of Transportation (Commissioner) has adopted the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD), dated December 15, 2011 establishing a uniform system of traffic control devices for streets and highways of the State of Minnesota as required by Minnesota Statutes, Section 169.06, Subdivision 1 (2011). Such uniform system shall correlate with and so far as possible conform to the current system as approved by the American Association of State Highway Officials and the national Manual on Uniform Traffic Control Devices (Federal MUTCD). (Minn. Stat. § 169.06, subd. 1 (2011); Federal Highway Administration, 23 C.F.R. § 655.603 (2011).)

A multi-agency committee has recommended the revisions and additions after reviewing changes in the 2009 Federal MUTCD.

Pursuant to Minnesota Statutes, Section 169.06, subd. 1 (2011), the Commissioner hereby adopts the revisions listed below as Record of Revisions or Additions to the MN MUTCD.

This Order revises Commissioner's Order 92452, dated December 15, 2011 as revised by Commissioner's Order 93167 dated July 12, 2012.

Record of Revisions or Additions to the MN MUTCD

Revision Number	Date Issued	Pages Revised or Added
2	6/28/13	ii, v, vii, 2A-4, 2A-18, 2A-19, 2B-2 thru 2B-6, 2B-11, 2B-12, 2B-18, 2B-21, 2B-22, 2B-37, 2B-40, 2B-47, 2B-48, 2B-51, 2B-56, 2B-59, 2C-4, 2C-5, 2C-7, 2C-10, 2C-26, 2C-32, 2D-1, 2D-9, 2D-27, 2D-39, 2E-18, 2E-47, 2E-48, 2E-51, 2G-3, 2G-4, 2H-i, 2H-2, 2H-7 thru 2H-9, 2I-2 thru 2I-4, 2I-7, 2I-10, 2J-1, 2J-4, 2J-6, 2K-1, 2K-5, 2M-i, 2M-1, 2M-2, 2M-9, 2M-12 thru 2M-14, 3B-9, 4D-2, 4D-31, 4D-33, 6F-5, 6J-4, 6J-17, 7A-i, 7B-2, 7B-10, 9B-9, 9B-16, 9B-18, C-1, C-2, C-5, C-13, C-14, C-16 thru C-21, C-24, C-26 thru C-39, C-41 thru C-57, C-59 thru C-61, C-63 thru C-66, C-82 thru C-95, INDEX-9 thru INDEX-16.

This Order revises Commissioner's Order number 92452, dated December 19, 2011 as revised by Commissioner's Order number 93167 dated July 12, 2012.

Signed this 8th day of July 2013.

A handwritten signature in blue ink, appearing to read "Charlie Zelle". The signature is stylized and cursive.

Charlie Zelle
Commissioner of Transportation

Minnesota Manual on Uniform Traffic Control Devices

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FORWARD

The 2011 “Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways” (2011 MN MUTCD) has been established to provide a uniform policy for all traffic control devices on all public streets, roads and highways within the State of Minnesota. This Manual was prepared pursuant to the authority vested in the State of Minnesota, Department of Transportation (MnDOT) as provided in Minnesota Statutes, Section 169.06, subd. 1 (2004). Standards described within this Manual may also be used by private agencies on facilities which they control. It is recommended that such be done so that the meaning of traffic control devices be uniform throughout the State.

This Manual is in substantial conformance with the 2009 edition of the “Manual on Uniform Uniform Traffic Control Devices for Streets and Highways” (MUTCD) as published by the U.S. Department of Transportation, Federal Highway Administration (Federal). Most of the text, figures and tables in this Manual are identical to those found in the Federal MUTCD, while others have been modified to meet State laws or to more closely reflect the conditions and policies of Minnesota.

There may be statements or sections in this Manual which are worded in a manner designed more for a National than a State document. References to the State Statutes in this Manual should be understood to refer to the “Minnesota Motor Vehicle and Traffic Laws” and other appropriate State Statutes.

Detail drawings for signs and traffic control devices along with supplemental details pertaining to standard signs and guide signs, can be found in the MnDOT “Standard Signs Manual” and the Federal “Standard Highway Signs and Markings” book.

MnDOT and State of Minnesota manuals are available from the Office of Systems and Support Services, Map & Manual Sales Unit. Federal manuals are available from the Government Printing Office (see Section 1A.11).

Improved designs and equipment, signs for special applications, and variations from standard sign drawings and sizes which may be developed after the publication date of this Manual may be used in research or on an experimental basis. However, all such research and/or experimentation with new designs **shall** be coordinated through the Minnesota Department of Transportation, Office of Traffic, Safety, and Technology.

Addresses for Publications Referenced in the MN MUTCD

American Automobile Association (AAA)
1000 AAA Drive
Heathrow, FL 32746
www.aaa.com
800-222-4357

American Association of State Highway and
Transportation Officials (AASHTO)
444 North Capitol Street, NW, Suite 249
Washington, D.C. 20001
www.transportation.org
202-624-5800

American National Standards Institute (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
www.ansi.org
202-293-8020

American Railway Engineering and Maintenance-of-Way
Association (AREMA)
10003 Derekwood Lane, Suite 210
Lanham, MD 20706
www.arema.org
301-459-3200

Federal Highway Administration (FHWA)
Office of Transportation Operations
400 Seventh Street SW, HOTO
Washington, DC 20590
http://mutcd.fhwa.dot.gov

Federal Highway Administration Report Center
Facsimile number: 814-239-2156
report center @fhwa.dot.gov

Government Printing Office (GPO)
Superintendent of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954
Information: 202-512-1803
http://mutcd.fhwa.dot.gov/ser-pubs.htm

Illuminating Engineering Society (IES)
120 Wall Street, Floor 17
New York, NY 10005
www.iesna.org
212-248-5000

Institute of Makers of Explosives
1120 19th St., NW, Suite 310
Washington, D.C. 20036-3605
www.ime.org
202-429-9280

Institute of Transportation Engineers (ITE)
1099 14th St., NW, Suite 300 West
Washington, D.C. 20005-3438
www.ite.org

International Organization for Standardization
1, ch. de la Voie-Creuse
Case Postale 56
CH-1211
Geneva 20, Switzerland
www.iso.ch
011-41-22-749-0111

International Safety Equipment Association (ISEA)
1901 North Moore Street, Suite 808
Arlington, VA 22209
www.safetysafetyequipment.org
703-525-1695

National Committee on Uniform Traffic Laws and
Ordinances (NCUTLO)
107 South West Street, Suite 110
Alexandria, VA 22314
www.ncutlo.org
800-807-5290

National Electrical Manufacturers Association (NEMA)
1300 North 17th Street, Suite 1752
Rosslyn, VA 22209
www.nema.org
703-841-3200

Occupational Safety and Health Administration (OSHA)
U.S. Department of Labor
200 Constitution Avenue, NW
Washington, DC 20210
www.osha.gov
800-321-6742

Office of Systems and Support Services
Map and Manual Sales Unit
Mail Stop 260, Room G-19
395 John Ireland Blvd.
St. Paul, Minnesota 55155-1899
651-296-2216

Office of Traffic, Safety, and Technology
Mail Stop 725
1500 West County Road B2
Roseville, Minnesota 55113
www.state.mn.us/trafficeng
651-234-7002

Transportation Research Board (TRB)
The National Academies
500 Fifth Street, NW
Washington, D.C. 20001
www.nas.edu/trb
202-334-3072

U.S. Architectural and Transportation Barriers
Compliance Board (The U.S. Access Board)
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
www.access-board.gov
202-272-0080

Acknowledgments

The Minnesota Commissioner of Transportation gratefully acknowledges the valuable assistance provided by the Minnesota Committee on Uniform Traffic Control Devices and other transportation professionals in the development of this Manual.

INTRODUCTION

STANDARD:

Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway, or private road open to public travel (see definition in Section 1A.13) by authority of a public agency or official having jurisdiction, or, in the case of a private road, by authority of the private owner or private official having jurisdiction. Minnesota Statute, Section 169.06, subd. 2 and subd. 3 (2004), empowers the Commissioner of Transportation and local road authorities to place and maintain traffic control devices on all roadways within their respective jurisdictions.

The Federal “Manual on Uniform Traffic Control Devices” (MUTCD) is incorporated by reference in 23 Code of FHWA Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel (see definition in Section 1A.13) in accordance with 23 U.S.C. 109(d) and 402(a). The policies and procedures of the Federal Highway Administration (Federal) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F.

The “Minnesota Manual on Uniform Traffic Control Devices” (MN MUTCD) has been developed to establish standards for the use of traffic control devices in the State of Minnesota and directed by Minnesota Statutes, Chapter 169.06, subd. 1 which states in part “The Commissioner (of Transportation) shall adopt a manual and specifications for a uniform system of traffic-control devices consistent with the provisions of this chapter (Chapter 169) for use upon highways within this state.”

In accordance with 23 CFR 655.603(a), for the purposes of applicability of the MUTCD:

A. Toll roads under the jurisdiction of public agencies or authorities or public-private partnerships shall be considered to be public highways;

B. Private roads open to public travel shall be as defined in Section 1A.13; and

C. Parking areas, including the driving aisles within those parking areas, that are either publicly or privately owned shall not be considered to be "open to public travel" for purposes of MUTCD applicability.

Any traffic control device design or application provision contained in this Manual shall be considered to be in the public domain. Traffic control devices contained in this Manual shall not be protected by a patent, trademark, or copyright, except for the Interstate Shield and any items owned by FHWA.

SUPPORT:

Pictographs, as defined in Section 1A.13, are embedded in traffic control devices but the pictographs themselves are not considered traffic control devices for the purposes of the previous paragraph.

The need for uniform standards was recognized long ago. The American Association of State and Highway Officials (AASHO), now known as the American Association of State Highway and Transportation Officials (AASHTO), published a manual for rural highways in 1927, and the National Conference on Street and Highway Safety (NCSHS) published a manual for urban streets in 1930. In the early years, the necessity for unification of the standards applicable to the different classes of road and street systems was obvious. To meet this need, a joint committee of AASHO and NCSHS developed and published the original edition of this Manual of Uniform Traffic Control Devices (MUTCD) in 1935. That committee, now called the National Committee on Uniform Traffic Control Devices (NCUTCD), though changed from time to time in name, organization, and personnel, has been in continuous existence and has contributed to periodic revisions of this Manual. The FHWA has administered the MUTCD since the 1971 edition. The FHWA and its predecessor organizations have participated in the development and publishing of the previous editions. There were nine previous editions of the MUTCD, and several of those editions were revised one or more times. Table I-1 traces the evolution of the MUTCD, including the two manuals developed by AASHO and NCSHS.

Minnesota also recognized the need for statewide uniform standards and published its first recorded “Minnesota Manual on Uniform Traffic Control Devices For Streets and Highways” in 1939. It was adopted by the Commissioner of Highways in conformity with the “Highway Traffic Regulation Act” of 1937, and the standards and regulations follow closely the recommendations embodied in the “Manual on Uniform Traffic Control Devices for Streets and Highways” of the American Association of State

Year	Name	Month/Year Revised
1927	Manual and Specifications for the Manufacture ,Display, and Erection of U.S. Standard Road Markers and Signs (for rural roads)	4/29, 12/31
1930	Manual on Street Traffic Signs, Signals, and Markings (for urban streets)	No revisions
1935	Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)	2/39
1942	Manual on Uniform Traffic Control Devices for Streets and Highways - War Emergency Edition	No revisions
1948	Manual on Uniform Traffic Control Devices for Streets and Highways	9/54
1961	Manual on Uniform Traffic Control Devices for Streets and Highways	No revisions
1971	Manual on Uniform Traffic Control Devices for Streets and Highways	11/71, 4/72, 3/73, 10/73, 6/74, 6/75, 9/76, 12/77
1978	Manual on Uniform Traffic Control Devices for Streets and Highways	12/79, 12/83, 9/84, 3/86
1988	Manual on Uniform Traffic Control Devices for Streets and Highways	1/90, 3/92, 9/93, 11/94, 12/96, 6/98, 1/00
2000	Manual on Uniform Traffic Control Devices for Streets and Highways - Millennium Edition	7/02
2003	Manual on Uniform Traffic Control Devices for Streets and Highways	11/04, 12/07
2009	Manual on Uniform Traffic Control Devices for Streets and Highways	1/15/10

Table I-1. Evolution of the Federal MUTCD

Highway Officials (AASHO) and the National Conference on Street and Highway Safety, which was adopted as an American standard by the American Standards Association on November 7, 1935. In October, 1993, the Minnesota Department of Transportation requested that the North Central Institute of Traffic Engineers (NCITE) form the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) review committee. Its purpose was to review any material to be included or revised in the MN MUTCD so that it reflects current Minnesota Statutes and/or policies as they pertain to all streets or highways within the State. It serves as an advisory body to the Commissioner of Transportation. That committee changed its name to the Minnesota Committee on Uniform Traffic Control Devices (MCUTCD) since its function is similar in nature to the National Committee on Uniform Traffic Control Devices (NCUTCD). Table I-1a traces the evolution of the MN MUTCD.

STANDARD:

The U.S. Secretary of Transportation, under authority granted by the Highway Safety Act of 1966, decreed that traffic control devices on all streets and highways open to public travel in accordance with 23 U.S.C. 109(d) and 402(a) in each State shall be in substantial conformance with the Standards issued or endorsed by the FHWA.

In Minnesota, the requirements for conformity can be found in Minnesota Statute Section 169.06, subd. 3, which states "All such traffic-control devices hereafter erected shall conform to the state manual and specifications."

SUPPORT:

The "Uniform Vehicle Code (UVC)" is one of the publications referenced in the MUTCD. The UVC contains a model set of motor vehicle codes and traffic laws for use throughout the United States.

Year	Name	Commissioner's Order Number	Month/Day/Year of Adoption
1939	Manual on Uniform Traffic Control Devices for Streets and Highways of the State of Minnesota	12328	4/21/39
1949	Manual on Uniform Traffic Control Devices for Streets and Highways of the State of Minnesota	19270	3/22/49
1956	Manual on Uniform Traffic Control Devices for Streets and Highways of the State of Minnesota	25729	5/23/56
1962	Manual on Uniform Traffic Control Devices for Streets and Highways of the State of Minnesota	32517 49894 50987	2/16/62 9/15/71 4/21/72
1974	Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways	54014	12/20/73
1986	Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways (MN MUTCD)	70797 71787	4/15/86, 12/19/86
1991	Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways (MN MUTCD)	77588 78988 79901 80748 80878 81551 82232 82843 83387 84240 85045	10/3/91 1/4/93 2/4/94 1/6/95 4/3/95 3/15/96 1/10/97 1/2/98 11/17/99 1/26/00 12/20/00
2001	Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD)	86252 87127 87570	4/15/02 5/22/03 1/2/04
2005	Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD)	88522 89453 90038 90627	5/5/05 1/2/07 2/15/08 3/26/09
2011	Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD)	92952 93167 93799	12/15/11 7/15/12 7/29/13

Table I-1a. Evolution of the Minnesota MUTCD

MN Rev. 1
MN Rev. 2

GUIDANCE:

The States should adopt Section 15-116 of the UVC, which states that "No person shall install or maintain in any area of private property used by the public any sign, signal, marking, or other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104."

SUPPORT:

The Standard, Guidance, Option, and Support material described in this edition of the MUTCD provide the transportation professional with the information needed to make appropriate decisions regarding the use of traffic control devices on streets, highways, bikeways, and private roads open to public travel (see definition in Section 1A.13).

Throughout this Manual the headings Standard, Guidance, Option, and Support are used to classify the nature of the text that follows. Figures and tables, including the notes contained therein, supplement the text and might constitute a Standard, Guidance, Option, or Support. The user needs to refer to the appropriate text to classify the nature of the figure, table, or note contained therein.

STANDARD:

When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall be as defined in the first paragraph of Section 1A.13.

SUPPORT:

Throughout this Manual all dimensions and distances are provided in English units. Appendix A2 contains tables for converting each of the English unit numerical values that are used in this Manual to the equivalent Metric (International System of Units) values.

GUIDANCE:

If Metric units are to be used in laying out distances or determining sizes of devices, such units should be specified on plan drawings and made known to those responsible for designing, installing, or maintaining traffic control devices.

Except when a specific numeral is required or recommended by the text of a Section of the Manual, numerals displayed on the images of devices in the figures that specify quantities such as times, distances, speed limits, and weights should be regarded as examples only. When installing any of these devices, the numerals should be appropriately altered to fit the specific situation.

SUPPORT:

The following information will be useful when reference is being made to a specific portion of text in this Manual.

There are nine Parts in this Manual and each Part is

comprised of one or more Chapters. Each Chapter is comprised of one or more Sections. Parts are given a numerical identification, such as Part 2-Signs. Chapters are identified by the Part number and a letter, such as Chapter 2B-Regulatory Signs, Barricades and Gates. Sections are identified by the Chapter number and letter followed by a decimal point and a number, such as Section 2B.3-Size of Regulatory Signs.

Each Section is comprised of one or more paragraphs. The paragraphs are indented but are not identified by a number. Paragraphs are counted from the beginning of each Section without regard to the intervening text headings (Standard, Guidance, Option, or Support). Some paragraphs have lettered or numbered items. As an example of how to cite this Manual, the phrase "Not less than 40 feet beyond the stop line" that appears in Section 4D-14 of this Manual would be referenced in writing as "Section 4D.14, P7, D1, A.1," and would be verbally referenced as "Item A.1 of Paragraph 1 of Section 4D.14."

STANDARD:

In accordance with 23 CFR 655.603(b)(3), Minnesota shall revise the MN MUTCD to be in substantial conformance with changes to the National MUTCD within 2 years of the effective date of the Final Rule for the changes. Substantial conformance of such State or other Federal agency MUTCDs or Supplements shall be as defined in 23 CFR 655.603(b)(1).

After the adoption and issuance of a new edition of the MN MUTCD or a revision thereto, new or reconstructed devices installed shall be in compliance with the new edition or revision.

In cases involving Federal-aid projects for new street, highway or bicycle trail construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance with the most recent edition of the MN MUTCD before that highway is opened or re-opened to the public for unrestricted travel [23 CFR 655.603(d)(2) and (d)(3)].

Unless a particular device is no longer serviceable, non-compliant devices on existing highways and bikeways shall be brought into compliance with the current edition of the MN MUTCD as part of the systematic upgrading of substandard traffic control devices (and installation of new required traffic control devices) required pursuant to the Highway Safety Program, 23 U.S.C. § 402(a). The FHWA and the State of Minnesota have the authority to establish other target compliance dates for implementation of particular changes to the MN MUTCD [23 CFR 655.603(d)(1)]. These target compliance dates established by the FHWA shall be as shown in Table I-2.

Except as provided in the following Option, when a non-compliant traffic control device is being replaced or refurbished because it is damaged, missing, or no longer serviceable for any reason, it shall be replaced with a compliant device.

In addition, the section, portion of a section or graphic which shall be in compliance for future dates shall be encased in a red box or continuation of a red box together with the compliance date which is also in red. That section, portion of a section, or graphic which shall have already been in compliance for past dates shall be encased in a red dashed box or continuation of a red box together with the compliance date which is also in red.

This user of this Manual is encouraged to refer to Table I-2 for further information.

OPTION:

A damaged, missing, or otherwise non-serviceable device that is non-compliant may be replaced in kind if engineering judgment indicates that:

- A. One compliant device in the midst of a series of adjacent non-compliant devices would be confusing to road users; and/or
- B. The schedule for replacement of the whole series of non-compliant devices will result in achieving timely compliance with the MN MUTCD.

Approved Revisions

This loose-leafed edition of the MN MUTCD incorporates all revisions which have been approved by the Federal Highway Administrator. This 2011 Edition of the MN MUTCD includes all official final rulings, interpretations, and modifications as of December 15, 2011.

A list of all official changes/revisions to this manual can be found in the Record of Revisions starting on page ix. As changes/revisions are made to each page, the revision number and date of revision will be added and so marked in the outside margin adjacent to the appropriate text or figure. The date at the bottom outside corner of each page indicates the date the official text revisions were distributed.

Symbols and Additions

This edition of the MN MUTCD continues the national trend set in the Federal MUTCD toward a broader use of symbols as alternatives to word messages. Also, the following new parts have been added to the MN MUTCD:

Appendix A1, Congressional Legislation

Appendix A2, Metric Conversions

Appendix A3, Retroreflective Sheeting
Identification Guide

Appendix B, Warrants, Standards, and Guidelines for
Traffic Control Devices used at Senior
Citizen and Disabled Pedestrian
Crossings

Appendix C, Sign Listing

2011 MN MUTCD Section Number(s)	2011 MN MUTCD Section Title	Section	Compliance Date
2A.8	Maintaining Minimum Retroreflectivity	Implementation and continued use of an assessment or management method that is designed to maintain regulatory and warning sign retroreflectivity at or above the established minimum levels (see 1st Standard, 2nd paragraph)	June 13, 2014 *
2A.19	Lateral Offset	Crashworthiness of sign supports on roads with posted speed limit of 50 mph or higher (see 1st Standard, 2nd paragraph)	January 17, 2013 (date established in the 2000 FHWA MUTCD)
2B.40	ONE WAY Signs (R6-1 , R6-2)	New requirements in the 2009 FHWA MUTCD for the number and locations of ONE WAY signs (see 1st Standard, 4th paragraph; 2nd Standard, 3rd and 4th paragraphs)	December 31, 2019
2C.6 through 2C.14	Horizontal Alignment Warning Signs	Revised requirements in the 2009 FHWA MUTCD regarding the use of various horizontal alignment signs (see Table 2C-5)	December 31, 2019
2E.31, 2E.33, and 2E.36	Plaques for Left-Hand Exits	New requirement in the 2009 FHWA MUTCD to use E1-5aP and E1-5bP plaques for left-hand exits	December 31, 2014
4D.26	Yellow Change and Red Clearance Intervals	New requirement in the 2009 FHWA MUTCD that durations of yellow change and red clearance intervals shall be determined using engineering practices (see 1st Standard, 3rd paragraph; 2nd Standard)	June 13, 2017, or when timing adjustments are made to the individual intersection and/or corridor whichever comes first
4E.6	Pedestrian Intervals and Signal Phases	New requirement in the 2009 FHWA MUTCD that the pedestrian change interval shall not extend into the red clearance interval and shall be followed by a buffer interval of at least 3 seconds (1st Standard, 4th paragraph)	June 13, 2017, or when timing adjustments are made to the individual intersection and/or corridor whichever comes first
6D.3 **	Worker Safety Considerations	New requirement in the 2009 FHWA MUTCD that all workers within the right-of-way shall wear high-visibility apparel (1st Standard; 2nd Standard, 1st and 2nd paragraphs)	December 31, 2011
6E.2 **	High-Visibility Safety Apparel	New requirement in the 2009 FHWA MUTCD that all flaggers within the right-of-way shall wear high-visibility apparel	December 31, 2011
7D.4 **	Uniform of Adult Crossing Guards	New requirement in the 2009 FHWA MUTCD for high-visibility apparel for adult crossing guards	December 31, 2011
8B.4, 8B.4	Grade Crossing (Crossbuck) Signs and Supports	Retroreflective strip on Crossbuck sign and support (see Section 8B.3, 3rd Standard, 3rd paragraph and Section 8B.4, 3rd Standard and 4th Standard, 1st paragraph)	December 31, 2019
8B.4	Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings	New requirement in the 2009 FHWA MUTCD for the use of STOP or YIELD signs with Crossbuck signs at passive grade crossings	December 31, 2019

* Types of signs other than regulatory or warning are to be added to an agency's management or assessment method as resources allow.

** FHWA MUTCD requirement is a result of a legislative mandate,

Note: All compliance dates that were previously published in Table I-2 of the 2009 FHWA MUTCD and 2011 MN MUTCD and that do not appear in this revised table have been eliminated.

Table I-2. Target Compliance Dates Established by the FHWA

RECORD OF REVISIONS OR ADDITIONS

Revision Number	Date Issued	Pages Revised or Added
	12/15/2011	Issued as a new manual
1	6/15/2012	v, viii, ix, 1A-4, 1A-28, 1A-29, 2A-5, 2A-18, 2B-1 thru 2B-6, 2B-11, 2B-15, 2B-34, 2B-35, 2B-38, 2B-41, 2B-53, 2B-56, 2B-57, 2C-3, 2C-4, 2C-11, 2C-13, 2C-17, 2C-18, 2C-20, 2C-24 thru 2C-28, 2C-30, 2C-34, 2D-23, 2D-27 thru 2D-29, 2E-6, 2E-33, 2E-37, 2E-41, 2E-51, 2F-6, 2G-11, 2G-16, 2I-2, 2I-5, 2I-10, 2I-11, 2I-13, 2J-5, 2M-1, 2M-2, 2N-2, 3B-27, 3B-35, 4D-1, 4D-39, 4D-46, 4E-3, 4E-6, 4F-3, 5C-2, 6D-1, 6D-2, 6D-4, 6E-1, 6F-3, 6F-7, 6F-20, 6F-29, 6F-37, 6F-52, 6G-1, 7B-1, 7B-5, 7B-6, 7B-9, 7B-11, 7C-1, 7D-1, 7E-a thru 7E-21, 8B-1, 8B-3, 8B-4, 8B-7 thru 8B-10, 8B-14, 8B-18, 8C-4, 8C-8, 8C-9, 9A-i, 9A-ii, 9B-2 thru 9B-4, 9B-6, 9B-9, 9B-18, 9C-1, A2-1, C-1 thru C-8, C-15 thru C-24, C-26, C-28 thru C-31, C-33 thru C-40, C-42, C-43, C-47, C-52 thru C-60, C-62 thru C-70, C-75 thru C-77, C-79 thru C-83
2	6/29/2013	ii, vi, 2A-4, 2A-18, 2A-19, 2B-2 thru 2B-6, 2B-11, 2B-12, 2B-18, 2B-21, 2B-22, 2B-37, 2B-40, 2B-47, 2B-48, 2B-51, 2B-56, 2B-59, 2C-4, 2C-5, 2C-7, 2C-10, 2C-26, 2C-32, 2D-1, 2D-9, 2D-27, 2D-39, 2E-18, 2E-47, 2E-48, 2E-51, 2G-3, 2G-4, 2H-i, 2H-2, 2H-7 thru 2H-9, 2I-2 thru 2I-4, 2I-7, 2I-10, 2J-4, 2J-6, 2K-1, 2K-5, 2M-i, 2M-1, 2M-2, 2M-9, 2M-12 thru 2M-14, 3B-9, 4D-2, 4D-31, 4D-33, 6F-5, 6J-4, 6J-17, 7A-i, 7B-2, 7B-10, 9B-9, 9B-16, 9B-18, C-1, C-2, C-5, C-13, C-14, C-16 thru C-21, C-24, C-26 thru C-39, C-41 thru C-57, C-59 thru C-61, C-63 thru C-66, C-82 thru C-95, INDEX-9 thru INDEX-16.

PART 1. GENERAL

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GUIDANCE:

Unless otherwise provided in this Manual for a specific sign, and except as provided in the Option below, phone numbers of more than four characters should not be used on any sign, supplemental plaque, sign panel (including logo panels on logo signs) or changeable message sign.

OPTION:

Internet addresses e-mail addresses, or telephone numbers with more than four characters may be displayed on signs, supplemental plaque, sign panels, and changeable message signs that are intended for viewing only by pedestrians, bicyclists, occupants of parked vehicles, or drivers of vehicles on low-speed roadways where engineering judgment indicates that an area is available for drivers to stop out of the traffic flow to read the message.

STANDARD:

Pictographs (see definition in Section 1A.13) shall not be displayed on signs except as specifically provided in this Manual. Pictographs shall be simple, dignified, and devoid of any advertising. When used to represent a political jurisdiction (such as a State, county, or municipal corporation) the pictograph shall be the official designation adopted by the jurisdiction. When used to represent a college or university, the pictograph shall be the official seal adopted by the institution. Pictorial representations of university or college programs shall not be permitted to be displayed on a sign.

2A.7 Retroreflectivity and Illumination**SUPPORT:**

There are many materials currently available for retroreflection and various methods currently available for the illumination of signs and object markers. New materials and methods continue to emerge. New materials and methods can be used as long as the signs and object markers meet the standard requirements for color, both by day and by night.

STANDARD:

Regulatory, warning, and guide signs and object markers shall be retroreflective (see Section 2A.08) or illuminated to show the same shape and similar color by both day and night, unless otherwise provided in the text discussion in this Manual for a particular sign or group of signs.

The requirements for sign illumination shall not be considered to be satisfied by street, highway, or strobe lighting.

OPTION:

Sign elements may be illuminated by the means shown in Table 2A-1.

Retroreflection of sign elements may be by the means shown in Table 2A-2.

Light Emitting Diode (LED) units may be used individually within the legend or symbol of a sign and in the border of a sign, except for Changeable Message Signs, to improve the conspicuity, increase the legibility of sign legends and borders, or provide a changeable message.

STANDARD:

Except as provided in the Option below, neither individual LEDs nor groups of LEDs shall be placed within the background area of a sign.

If used, the LEDs shall have a maximum diameter of 1/4 inch and shall be the following colors based on the type of sign:

- A. White or red, if used with STOP or YIELD signs.
- B. White, if used with regulatory signs other than STOP or YIELD signs.
- C. White or yellow, if used with warning signs.
- D. White, if used with guide signs.
- E. White, yellow, or orange, if used with temporary traffic control signs.
- F. White or yellow, if used with school area signs.

If flashed, all LED units shall flash simultaneously at a rate of more than 50 and less than 60 times per minute.

The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions.

OPTION:

For STOP and YIELD signs, LEDs may be placed within the border or within one border width within the background of the sign.

For STOP/SLOW paddles (see Section 6E.03) used by flaggers and the STOP paddles (see Section 7D.05) used by adult crossing guards, individual LEDs or groups of LEDs may be used.

SUPPORT:

Other methods of enhancing the conspicuity of standard signs are described in Section 2A.15.

Information regarding the use of retroreflective material on the sign support is contained in Section 2A.21.

Means of Illumination	Sign Element To Be Illuminated
Light behind the sign face.	<ul style="list-style-type: none"> ● Symbol or word message ● Background ● Symbol, word message, and background (through a translucent material)
Attached or independently mounted light source designed to direct essentially uniform illumination onto the sign face.	<ul style="list-style-type: none"> ● Entire sign face
Light emitting diodes (LEDs)	<ul style="list-style-type: none"> ● Symbol or word message ● Portions of the sign border
<p>Other devices, or treatments that highlight the sign shape, color, or message:</p> <p>Luminous tubing Fiber optics Incandescent light bulbs Luminescent panels</p>	<ul style="list-style-type: none"> ● Symbol or word message ● Entire sign face

Table 2A-1 Illumination of Sign Elements

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Means of Retroreflection	Sign Element
Reflector “buttons” or similar units	Symbol Word message Border
A material that has a smooth, sealed outer surface over a microstructure that reflects light	Symbol Word message Border Background

Table 2A-2 Retroreflection of Sign Elements

GUIDANCE:

In urban areas where crosswalks exist, signs should not be placed within 4 feet in advance of the crosswalk (see Drawing D in Figure 2A-3).

2A.17 Overhead Sign Installations**GUIDANCE:**

Overhead signs should be used on freeways and expressways, where some degree of lane-use control is desirable, or where space is not available at the roadside.

SUPPORT:

The operational requirements of the present highway system are such that overhead signs have value at many locations. The factors to be considered for the installation of overhead sign displays are not definable in specific numerical terms.

OPTION:

The following conditions (not in priority order) may be considered in an engineering study to determine if overhead signs would be beneficial:

- A. Traffic volume at or near capacity;
- B. Complex interchange design;
- C. Three or more lanes in each direction;
- D. Restricted sight distance;
- E. Closely spaced interchanges;
- F. Multi-lane exits;
- G. Large percentage of trucks;
- H. Street lighting background;
- I. High-speed traffic;
- J. Consistency of sign message location through a series of interchanges;
- K. Insufficient space for post-mounted signs;
- L. Junction of two freeways; and
- M. Left exit ramps.

Over-crossing structures may be used to support overhead signs.

SUPPORT:

Under some circumstances, the use of over-crossing structures as sign supports might be the only practical solution that will provide adequate viewing distance. The use of such structures as sign supports might eliminate the need for the foundations and sign supports along the roadside.

2A.18 Mounting Height**STANDARD:**

The provisions of this Section shall apply unless specifically stated otherwise for a particular sign elsewhere in this Manual.

SUPPORT:

The mounting height requirements for object markers are provided in Chapter 2C.

In addition to the provisions of this Section, information affecting the minimum mounting height of signs as a function of crash performance can be found in AASHTO's "Roadside Design Guide" (see Section 1A.11).

STANDARD:

The minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement, of signs installed at the side of the road in rural areas shall be 5 feet (see Figure 2A-2).

The minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of signs installed at the side of the road in business, commercial, or residential areas where parking or pedestrian movements are likely to occur **directly below the sign**, or where the view of the sign might be obstructed, shall be 7 feet (see Figure 2A-2).

The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet. If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway (see Section 6D.02), the secondary sign shall not project more than 4 inches into the pedestrian facility (see Figure 2A-2, Example C).

Directional signs on freeways and expressways shall be installed with a minimum height of 7 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. All route signs, warning signs, and regulatory signs on freeways and expressways shall be installed with a minimum height of 7 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. If a secondary sign is mounted below another sign on a freeway or expressway, the major sign shall be installed with a minimum height of 8 feet and the secondary sign shall be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.

Where large signs having an area exceeding 50 square feet are installed on multiple breakaway posts, the clearance from the ground to the bottom of the sign shall be at least 7 feet.

OPTION:

The height to the bottom of a secondary sign mounted below another sign may be 1 foot less than the height specified above.

Signs that are placed 30 feet or more from the edge of the traveled way may be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.

A route sign assembly consisting of a route sign and auxiliary signs (see Section 2D.12) may be treated as a single sign for the purposes of this Section.

The mounting height may be adjusted when supports are located near the edge of the right-of-way on a steep backslope in order to avoid the sometimes less desirable alternative of placing the sign closer to the roadway.

STANDARD:

Overhead mounted signs shall provide a vertical clearance of not less than 17 feet to the sign, light fixture, or sign bridge, over the entire width of the pavement and shoulders except where a lesser vertical clearance is used for the design of other structures.

OPTION:

If the vertical clearance of other structures along the roadway near the sign structure is less than 16 feet, the vertical clearance to an overhead sign structure or support may be as low as 1 foot higher than the vertical clearance of the other structures in order to improve the visibility of the overhead signs.

In special cases it may be necessary to reduce the clearance to overhead signs because of substandard dimensions in tunnels and other major structures such as double-deck bridges.

SUPPORT:

Figure 2A-2 illustrates some of the mounting height requirements contained in this Section.

2A.19 Lateral Offset

STANDARD:

For overhead sign supports, the minimum lateral offset from the edge of the shoulder (or if no shoulder exists, from the edge of the pavement) to the near edge of overhead sign supports (cantilever or sign bridges) shall be 6 feet. Overhead sign supports shall have a barrier or crash cushion

to shield them if they are within the clear zone.

Post-mounted sign and object marker supports shall be crashworthy (breakaway, yielding, or shielded with a longitudinal barrier or crash cushion) if within the clear zone.

Compliance Date: January 17, 2013

The compliance date applies only to those roads with posted or statutory speed limits 50 mph and greater.

GUIDANCE:

For post-mounted signs, the minimum lateral offset should be 12 feet from the edge of the travel way. If a paved shoulder wider than 6 feet exists, the minimum lateral offset for post-mounted signs should be 6 feet from the edge of the shoulder.

SUPPORT:

The minimum lateral offset requirements for object markers are provided in Chapter 2C.

The minimum lateral offset is intended to keep trucks and cars that use the shoulders from striking the signs or supports.

GUIDANCE:

All supports should be located as far as practical from the edge of the shoulder. Advantage should be taken to place signs behind existing roadside barriers, on over-crossing structures, or other locations that minimize the exposure of the traffic to sign supports.

SUPPORT:

Where permitted, signs may be placed on existing supports used for other purposes, such as highway traffic signal supports, highway lighting supports, and utility poles.

STANDARD:

If signs are placed on existing supports, they shall meet other placement criteria contained in this Manual.

OPTION:

Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 6 feet from the edge of the traveled way.

On conventional roads in areas where it is impractical to locate a sign with the lateral offset prescribed by this Section, a lateral offset of at least 2 feet may be used.

A lateral offset of at least 1 foot from the face of the curb may be used in business, commercial or residential areas where sidewalk width is limited or where existing poles are close to the curb.

GUIDANCE:

Overhead sign supports and post-mounted sign and object marker supports should not intrude into the usable width of a sidewalk or other pedestrian facility.

SUPPORT:

Figures 2A-2 and 2A-3 illustrate some examples of the lateral offset requirements contained in this Section.

2A.20 Orientation

GUIDANCE:

Unless otherwise provided in this Manual, signs should be vertically-mounted at right angles to the direction of, and facing, the traffic that they are intended to serve.

Where mirror reflection from the sign face is encountered to such a degree as to reduce legibility, the sign should be turned slightly away from the road. Signs that are placed 30 feet or more from the pavement edge should be turned toward the road. On curved alignments, the angle of placement should be determined by the direction of approaching traffic rather than by the roadway edge at the point where the sign is located.

OPTION:

On grades, sign faces may be tilted forward or back from the vertical position to improve the viewing angle.

2A.21 Posts and Mountings

STANDARD:

Sign posts, foundations, and mountings shall be so constructed as to hold signs in a proper and permanent position, and to resist swaying in the wind or displacement by vandalism.

SUPPORT:

The latest edition of AASHTO's "Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" contains additional information regarding posts and mounting (see Page i for AASHTO's address).

OPTION:

Where engineering judgment indicates a need to draw attention to the sign during nighttime conditions, a strip of retroreflective material may be used on regulatory and warning sign supports.

STANDARD:

If a strip of retroreflective material is used on the sign support, it shall be at least 2 inches in width, it shall be placed for the full length of the support from the sign to within 2 feet above the edge of the roadway, and its color shall match the background color of the sign, except that the color of the strip for the YIELD and DO NOT ENTER signs shall be red.

2A.22 Maintenance

GUIDANCE:

Maintenance activities should consider proper position, cleanliness, legibility, and daytime and nighttime visibility (see Section 2A.8). Damaged or deteriorated signs, gates, or object markers should be replaced.

To assure adequate maintenance, a schedule for inspecting (both day and night), cleaning, and replacing signs, gates, and object markers should be established. Employees of highway, law enforcement, and other public agencies whose duties require that they travel on the roadways should be encouraged to report any damaged, deteriorated, or obscured signs, gates, or object markers at the first opportunity.

Steps should be taken to see that weeds, trees, shrubbery, and construction, maintenance, and utility materials and equipment do not obscure the face of any sign or object marker.

A regular schedule of replacement of lighting elements for illuminated signs should be maintained.

2A.23 Median Opening Treatments for Divided Highways with Wide Medians

GUIDANCE:

Where two roadways are separated by a median and the median width at the intersection is 30 feet or more, the intersection should be signed as two separate intersections. [Minnesota Statute 169.011, Subd. 36, (b)] (see Figures 2B-12 and 2B-15).

Chapter 2B. REGULATORY SIGNS

2B.1 Application of Regulatory Signs

STANDARD:

Regulatory signs shall be used to inform road users of selected traffic laws or regulations and indicate the applicability of the legal requirements.

Regulatory signs shall be installed at or near where the regulations apply. The signs shall clearly indicate the requirements imposed by the regulations and shall be designed and installed to provide adequate visibility and legibility in order to obtain compliance.

Regulatory signs shall be retroreflective or illuminated (see Section 2A.7) to show the same shape and similar color by both day and night, unless specifically stated otherwise in the text discussion in this Manual for a particular sign or group of signs.

The requirements for sign illumination shall not be considered to be satisfied by street, highway, or strobe lighting.

SUPPORT:

Section 1A.9 contains information regarding the assistance that is available to jurisdictions that do not have engineers on their staffs who are trained and/or experienced in traffic control devices.

2B.2 Design of Regulatory Signs

STANDARD:

Regulatory signs shall be rectangular unless specifically designated otherwise. Regulatory signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the "Standard Highway Signs and Markings" book (see Section 1A.11).

OPTION:

Regulatory word message signs other than those classified and specified in this Manual and the "Standard Highways Signs and Markings" book (see Section 1A.11) may be developed to aid the enforcement of other laws or regulations.

Except for symbols on regulatory signs, minor modifications may be made to the design provided that the essential appearance characteristics are met.

SUPPORT:

The use of educational plaques to supplement symbol signs is described in Section 2A.12.

Most regulatory signs are rectangular, with the longer dimension vertical. The shapes and colors of regulatory signs are listed in Tables 2A-4 and 2A-5, respectively. Exceptions are specifically noted in the following Sections.

The use of educational plaques to supplement symbol signs is described in Section 2A.13.

GUIDANCE:

Changeable message signs displaying a regulatory message incorporating a prohibitory message that includes a red circle and slash on a static sign should display a red symbol that approximates the same red circle and slash as closely as possible.

2B.3 Size of Regulatory Signs

STANDARD:

Except as provided in Section 2A.11, the sizes for regulatory signs shall be as shown in Table 2B-1 and in Appendix C at the back of this Manual.

SUPPORT:

Section 2A.11 contains information regarding the applicability of the various columns in Table 2B-1.

Section 1A.13 contains information regarding the definitions of multi-lane street or highway and multi-lane approach with respect to inclusion of turning lanes.

STANDARD:

Except as provided in the following Option, the minimum sizes for regulatory signs facing traffic on multi-lane conventional roads shall be as shown in the Multi-lane column of Table 2B-1.

OPTION:

Where the posted speed limit is 35 mph or less on a multi-lane highway or street, other than for a STOP sign, the minimum size shown in the Single Lane column in Table 2B-1 may be used.

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Stop	R1-1	2B.5	30 x 30	36 x 36	36 x 36	---	30 x 30*	48 x 48
Yield	R1-2	2B.8	36 x 36 x 36	48 x 48 x 48	48 x 48 x 48	60 x 60 x 60	30 x 30 x 30*	---
To Oncoming Traffic (plaque)	R1-2aP	2B.10	24 x 18	24 x 18	36 x 30	48 x 36	24 x 18	---
All Way (plaque)	R1-3P	2B.5	18 x 6	18 x 6	---	---	---	30 x 12
Stop Here for Peds	R1-5b	2B.11	---	36 x 36	---	---	---	36 x 36
Stop Here for Pedestrians	R1-5c	2B.11	---	36 x 48	---	---	---	36 x 48
In-Street Ped Crossing	R1-6a,b,c	2B.12	12 x 36	12 x 36	---	---	---	---
Overhead Ped Crossing	R1-9a	2B.12	90 x 24	90 x 24	---	---	---	---
Overhead Stop for Ped	R1-9b	2B.12	90 x 30	90 x 30	---	---	---	---
Except Right Turn (plaque)	R1-10P	2B.5	24 x 18	24 x 18	---	---	---	---
Speed Limit	R2-1	2B.13	24 x 30*	30 x 36	36 x 48	48 x 60	18 x 24*	30 x 36
Truck Speed Limit (plaque)	R2-2P	2B.14	24 x 24	24 x 24	36 x 36	48 x 48	---	36 x 36
Night Speed Limit (plaque)	R2-3P	2B.15	24 x 24	24 x 24	36 x 36	48 x 48	---	36 x 36
Minimum Speed Limit (plaque)	R2-4P	2B.16	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
Combined Speed Limit	R2-4b	2B.16	24 x 48	24 x 48	36 x 72	48 x 96	---	36 x 72
End XX Mile Speed Limit	R2-6b	2B.16.1	24 x 30	24 x 30	---	---	---	---
End Work Speed Zone	R2-6c	2B.16.2	24 x 30	24 x 30	24 x 30	24 x 30	---	---
Fines Higher (plaque)	R2-6P	2B.17	24 x 18	24 x 18	36 x 24	48 x 36	---	36 x 24
Fines Double (plaque)	R2-6aP	2B.17	24 x 18	24 x 18	36 x 24	48 x 36	---	36 x 24
\$XX Fine (plaque)	R2-6bP	2B.17	24 x 18	24 x 18	36 x 24	48 x 36	---	36 x 24
Begin Higher Fines Zone	R2-10	2B.17	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
End Higher Fines Zone	R2-11	2B.17	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
Bridge Speed Limit	R2-X5	2B.13.1	24 x 36	24 x 36	---	---	---	---
Movement Prohibition	R3-1,2,3,4,18,27	2B.18	24 x 24*	36 x 36	36 x 36	---	---	48 x 48
Mandatory Movement Lane Control	R3-5, 5a	2B.20	30 x 36	30 x 36	---	---	---	---
Left Lane (plaque)	R3-5bP	2B.20	30 x 12	30 x 12	---	---	---	---
HOV 2+ (plaque)	R3-5cP	2B.20	24 x 12	24 x 12	---	---	---	---
Taxi Lane (plaque)	R3-5dP	2B.20	30 x 12	30 x 12	---	---	---	---
Center Lane (plaque)	R3-5eP	2B.20	30 x 12	30 x 12	---	---	---	---
Right Lane (plaque)	R3-5fP	2B.20	30 x 12	30 x 12	---	---	---	---
Bus Lane (plaque)	R3-5gP	2B.20	30 x 12	30 x 12	---	---	---	---
Optional Movement Lane Control	R3-6	2B.21	30 x 36	30 x 36	---	---	---	---
Right (Left) Lane Must Turn Right (Left)	R3-7	2B.20	30 x 30*	36 x 36	---	---	---	---
Two-Way Left Turn Only (overhead)	R3-9a	2B.24	30 x 36	30 x 36	---	---	---	---
Two-Way Left Turn Only (post-mounted)	R3-9b	2B.24	24 x 36	24 x 36	---	---	---	36 x 48
BEGIN	R3-9cP	2B.25	30 x 12	30 x 12	---	---	---	---
END	R3-9dP	2B.25	30 x 12	30 x 12	---	---	---	---
Reversible Lane Control (symbol)	R3-9e	2B.26	108 x 48	108 x 48	---	---	---	---
Reversible Lane Control (post-mounted)	R3-9f	2B.26	30 x 42*	36 x 54	---	---	---	---
Advance Reversible Lane Control Transition Signing	R3-9g,9h	2B.26	108 x 36	108 x 36	---	---	---	---
End Reverse Lane	R3-9i	2B.26	108 x 48	108 x 48	---	---	---	---
All Turns (U Turn) from Right Lane	R3-23,23a	2B.27	60 x 36	60 x 36	---	---	---	---
All Turns (U Turn) with Arrow	R3-24,24b,25,25b,26a	2B.27	72 x 18	72 x 18	---	---	---	---

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
U and Left Turns with Arrow	R3-24a,25a,26	2B.27	60 x 24	60 x 24	---	---	---	---
Advance Intersection Lane Control	R3-30 series	2B.22	Varies x 30	Varies x 30	---	---	---	Varies x 30
Right Lane Must Exit	R3-33	2B.23	---	---	78 x 36	78 x 36	---	---
Do Not Pass	R4-1	2B.28	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Pass With Care	R4-2	2B.29	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Slower Traffic Keep Right	R4-3	2B.30	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Trucks Use Right Lane	R4-5	2B.31	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
Keep Right	R4-7,7a,7b	2B.32	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
Narrow Keep Right	R4-7c	2B.32	18 x 30	18 x 30	---	---	---	---
Keep Left	R4-8,8a,8b	2B.32	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24	36 x 48
Narrow Keep Left	R4-8c	2B.32	18 x 30	18 x 30	---	---	---	---
Stay in Lane	R4-9	2B.33	24x 30	24 x 30	36 x 48	48 x 60	18 x 24	36 x 48
Runaway Vehicles Only	R4-10	2B.34	48 x 48	48 x 48	---	---	---	---
Slow Vehicles with XX or More Following Vehicles Must Use Turn-Out	R4-12	2B.35	42 x 24	42 x 24	---	---	---	---
Slow Vehicles Must Use Turn-Out Ahead	R4-13	2B.35	42 x 24	42 x 24	---	---	---	---
Slow Vehicles Must Turn Out	R4-14	2B.35	30 x 42	30 x 42	---	---	---	---
Keep Right Except to Pass	R4-16	2B.30	24 x 30	24 x 30	36 x 48	48 x 60	18 x 24*	36 x 48
No Driving on Shoulder	R4-17a	2B.36	30 x 36	30 x 36	48 x 54	48 x 54	---	---
No Passing on Shoulder	R4-18a	2B.36	30 x 36	30 x 36	48 x 54	48 x 54	---	---
State Law	R4-X5	2B.66.2	30 x 24	36 x 24	48 x 36	48 x 36	---	---
Do Not Enter	R5-1	2B.37	30 x 30*	36 x 36	36 x 36	48 x 48	---	36 x 36
Wrong Way	R5-1a	2B.38	36 x 24*	42 x 30	36 x 24*	42 x 30	30 x 18	42 x 30
No Trucks	R5-2,2a	2B.39	24 x 24	24 x 24	30 x 30	36 x 36	---	36 x 36
No Motor Vehicles	R5-3	2B.39	24 x 24	24 x 24	---	---	24 x 24	---
No Commercial Vehicles	R5-4	2B.39	24 x 30	24 x 30	36 x 48	36 x 48	---	---
No Vehicles with Lugs	R5-5	2B.39	24 x 30	24 x 30	36 x 48	48 x 60	---	---
No Bicycles	R5-6	2B.39	24 x 24	24 x 24	30 x 30	36 x 36	24 x 24*	48 x 48
No Non-Motorized Traffic	R5-7	2B.39	30 x 24	30 x 24	42 x 24	48 x 30	---	42 x 24
No Motor-Driven Cycles	R5-8	2B.39	30 x 24	30 x 24	42 x 24	48 x 30	---	42 x 24
No Pedestrians, Bicycles, Motor-Driven Cycles	R5-10a	2B.39	30 x 36	30 x 36	---	---	---	---
No Pedestrians or Bicycles	R5-10b	2B.39	30 x 18	30 x 18	---	---	---	---
No Pedestrians	R5-10c	2B.39	24 x 12	24 x 12	---	---	---	---
Pedestrians, Bicycles, Motorized Bicycles, Non-Motorized Traffic Prohibited	R5-10d	2B.39	18 x 24	18 x 24	---	---	---	---
Authorized Vehicles Only	R5-11	2B.39	30 x 24	30 x 24	---	---	---	---
No Snowmobiles	R5-X1	2B.39.1	18 x 18	18 x 18	---	---	18 x 18	---
One Way	R6-1	2B.40	36 x 12	54 x 18	54 x 18	54 x 18	---	54 x 18
One Way	R6-2	2B.40	24 x 30	30 x 36	36 x 48	48 x 60	18 x 24	36 x 48
Divided Highway Crossing	R6-3,3a	2B.42	30 x 24	30 x 24	36 x 30	---	---	36 x 30
Roundabout Directional (2 chevrons)	R6-4	2B.43	30 x 24	30 x 24	---	---	---	---
Roundabout Directional (3 chevrons)	R6-4a	2B.43	48 x 24	48 x 24	---	---	---	---

Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 2 of 5)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Roundabout Directional (4 chevrons)	R6-4b	2B.43	60 x 24	60 x 24	---	---	---	---
Roundabout Circulation (plaque)	R6-5P	2B.44	30 x 30	30 x 30	---	---	---	---
Begin One Way	R6-6	2B.40	24 x 30	30 x 36	---	---	---	---
End One Way	R6-7	2B.40	24 x 30	30 x 36	---	---	---	---
Parking Restrictions	R7-1, 2,2a,3,4,5,6, 7,8,21,22,23 23a,107,108	2B.46	12 x 18	12 x 18	---	---	---	---
Van Accessible (plaque)	R7-8bP	2B.48.1	12 x 6	12 x 6	---	---	---	---
Disabled Parking	R7-8m	2B.48.1	12 x 18	12 x 18	---	---	---	---
Fee Station	R7-20	2B.46	24 x 18	24 x 18	---	---	---	---
No Parking (with transit logo)	R7-107a	2B.46	12 x 30	12 x 30	---	---	---	---
No Parking/Restricted Parking (combined sign)	R7-200	2B.46	24 x 18	24 x 18	---	---	---	---
No Parking/Restricted Parking (combined sign)	R7-200a	2B.46	12 x 30	12 x 30	---	---	---	---
Tow Away Zone (plaque)	R7-201P,201aP	2B.46	12 x 6	12 x 6	---	---	---	---
This Side of Sign (plaque)	R7-202P	2B.46	12 x 6	12 x 6	---	---	---	---
Emergency Snow Route	R7-203	2B.46	18 x 24	18 x 24	---	---	---	24 x 30
No Parking on Pavement	R8-1	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
No Parking Except on Shoulder	R8-2	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
No Parking (symbol)	R8-3	2B.46	24 x 24	30 x 30	36 x 36	48 x 48	12 x 12	36 x 36
No Parking	R8-3a	2B.46	24 x 30	24 x 30	36 x 36	48 x 48	18 x 24	36 x 36
Except Sundays and Holidays (plaque)	R8-3bP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
On Pavement (plaque)	R8-3cP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
On Bridge (plaque)	R8-3dP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
On Tracks (plaque)	R8-3eP	2B.46	12 x 9	12 x 9	---	---	12 x 9	30 x 24
Except on Shoulder (plaque)	R8-3fP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
Loading Zone (plaque)	R8-3gP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
Times of Day (plaque)	R8-3hP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
Between Signs (plaque)	R8-3mP	2B.46	24 x 18	24 x 18	---	---	12 x 9	30 x 24
Emergency Parking Only	R8-4	2B.49	30 x 24	30 x 24	30 x 24	48 x 36	---	48 x 36
No Stopping on Pavement	R8-5	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
No Stopping Except on Shoulder	R8-6	2B.46	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
Emergency Stopping Only	R8-7	2B.49	30 x 24	30 x 24	48 x 36	48 x 36	---	48 x 36
Do Not Stop on Tracks	R8-8	2B.49	24 x 30	24 x 30	36 x 48	---	---	48 x 60
Walk on Left Facing Traffic	R9-1	2B.50	18 x 24	18 x 24	---	---	---	---
Cross Only at Crosswalks	R9-2	2B.51	12 x 18	12 x 18	---	---	---	---
No Pedestrians	R9-3	2B.51	18 x 18	18 x 18	24 x 24	30 x 30	---	30 x 30
No Pedestrian Crossing	R9-3a	2B.51	12 x 18	12 x 18	---	---	---	---
Use Crosswalk (plaque)	R9-3bP	2B.51	18 x 12	18 x 12	---	---	---	---
No Hitchhiking (symbol)	R9-4	2B.50	18 x 18	18 x 18	---	---	---	24 x 24
No Hitchhiking	R9-4a	2B.50	18 x 24	18 x 24	---	---	12 x 18	---
Sidewalk Closed	R9-9	2B.58.2	30 x 18	30 x 18	---	---	24 x 12	---
Crosswalk Closed Use Other Side	R9-10	2B.58.2	48 x 24	48 x 24	---	---	24 x 12	---
No Skaters	R9-13	2B.39	18 x 18	18 x 18	24 x 24	30 x 30	---	30 x 30
No Equestrians	R9-14	2B.39	18 x 18	18 x 18	24 x 24	30 x 30	---	30 x 30

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Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 3 of 5)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Cross Only on Green	R10-1	2B.52	12 x 18	12 x 18	---	---	---	---
Pedestrian Signs and Plaques	R10.2, 3,3b,3c,3d,4	2B.52	9 x 12	9 x 12	---	---	---	---
Pedestrian Signs	R10-3a,3e,3f 3g,3h,3i,4a	2B.52	9 x 15	9 x 15	---	---	---	---
Left on Green Arrow Only	R10-5	2B.53	30 x 36	30 x 36	48 x 60	---	24 x 30	48 x 60
Stop Here on Red	R10-6	2B.53	24 x 36	24 x 36	---	---	---	36 x 48
Stop Here on Red	R10-6a	2B.53	24 x 30	24 x 30	---	---	---	36 x 42
Do Not Block Intersection	R10-7,7a	2B.53	30 x 30	30 x 30	---	---	---	---
Use Lane with Greed Arrow	R10-8	2B.53	36 x 42	36 x 42	36 x 42	---	---	60 x 72
Left (Right) Turn Signal	R10-10	2B.53	30 x 36	30 x 36	---	---	---	---
No Turn on Red	R10-11	2B.54	24 x 30	36 x 48	---	---	---	36 x 48
No Turn on Red	R10-11a	2B.54	30 x 36	36 x 48	---	---	---	---
No Turn on Red	R10-11b	2B.54	36 x 36	36 x 36	---	---	---	---
No Turn on Red Except from Right Lane	R10-11c	2B.54	30 x 42	30 x 42	---	---	---	---
No Turn on Red from This Lane	R10-11d	2B.54	30 x 42	30 x 42	---	---	---	---
Left Turn Yield on Green	R10-12	2B.53	30 x 36	30 x 36	36 x 48	---	---	---
Emergency Signal	R10-13	2B.53	42 x 30	42 x 30	---	---	---	---
Emergency Signal-Stop on Flashing Red	R10-14	2B.53	36 x 42	36 x 42	---	---	---	---
Emergency Signal-Stop on Flashing Red (overhead)	R10-14a	2B.53	60 x 24	60 x 24	---	---	---	---
Stop Here on Flashing Red Arrow	R10-14b	2B.53	24 x 36	24 x 36	---	---	---	36 x 48
Turning Vehicles Stop for Peds	R10-15a	2B.53	30 x 30	30 x 30	---	---	---	---
U-Turn Yield to Right Turn	R10-16	2B.53	30 x 36	30 x 36	---	---	---	---
Right on Red Arrow After Stop	R10-17a	2B.54	30 x 36	30 x 36	---	---	---	---
Traffic Laws Photo Enforced	R10-18	2B.55	36 x 24	36 x 24	48 x 30	54 x 36	---	54 x 36
Photo Enforced (symbol plaque)	R10-19P	2B.55	24 x 12	24 x 12	36 x 18	48 x 24	---	48 x 24
Photo Enforced (plaque)	R10-19aP	2B.55	24 x 18	24 x 18	36 x 30	48 x 36	---	48 x 36
Mon-Fri (and times) (3 lines) (plaque)	R10-20aP	2B.53	24 x 24	24 x 24	---	---	---	---
Sunday (and times)	R10-20aP	2B.53	24 x 18	24 x 18	30 x 24	---	---	48 x 36
Crosswalk, Stop on Red	R10-23	2B.53	24 x 30	24 x 30	---	---	---	---
Push Button to Turn on Warning Lights	R10-25	2B.52	9 x 12	9 x 12	---	---	---	---
Left Turn Yield on Flashing Red Arrow After Stop	R10-27	2B.53	30 x 36	30 x 36	---	---	---	---
XX Vehicles on Green	R10-28a	2B.56	24 x 30	24 x 30	---	---	---	---
XX Vehicles on Green Each Lane	R10-29a	2B.56	36 x 24	36 x 24	---	---	---	---
Right Turn on Red Must Yield to U-Turn At Signal (plaque)	R10-30 R10-31P	2B.54 2B.54	30 x 36 24 x 9	30 x 36 24 x 9	---	---	---	---
Push Button for 2 Seconds for Extra Crossing Time	R10-32P	2B.52	9 x 12	9 x 12	---	---	---	---
Keep Off Median	R11-1	2B.57	24 x 30	24 x 30	---	---	---	---
Road Closed	R11-2,2a	2B.58	48 x 30	48 x 30	---	---	---	---
Road Closed - Local Traffic Only	R11-3a, 3b,3c,4	2B.58	60 x 30	60 x 30	---	---	---	---
Weight Limit	R12-1,2	2B.59	24 x 30	24 x 30	36 x 48	---	---	36 x 48
Weight Limit	R12-1a,3	2B.59	24 x 36	24 x 36	---	---	---	---
Weight Limit	R12-4	2B.59	36 x 24	36 x 24	---	---	---	---

Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 4 of 5)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Weight Limit	R12-5	2B.59	24 x 36	24 x 36	36 x 48	48 x 60	---	---
Restricted Bridge XX Miles Ahead Weight Limit XX Tons	R12-X2	2B.59.1	60 x 36	60 x 36	---	---	---	---
Restricted Bridge XX Miles Ahead Permit Weight Limit XX Tons	R12-X2a	2B.59.1	78 x 36	78 x 36	---	---	---	---
Trucks Must not Meet on Bridge	R12-X3	2B.59.1	36 x 24	36 x 24	---	---	---	---
Vehicles Must not Meet on Bridge	R12-X3a	2B.59.1	42 x 24	42 x 24	---	---	---	---
Restricted Bridge - XX Miles Ahead Weight Limit XX Tons, Clearance XX ft XX inches	R12-X4	2B.59.1	60 x 42	60 x 42	---	---	---	---
Restricted Bridge - XX Miles, Clearance XX ft XX inches	R12-X4a	2B.59.1	60 x 36	60 x 36	---	---	---	---
Weigh Station	R13-1	2B.60	72 x 54	72 x 54	96 x 72	120 x 90	---	---
Truck Route	R14-1	2B.61	24 x 18	24 x 18	---	---	---	---
Hazardous Material	R14-2,3	2B.62	24 x 24	24 x 24	30 x 30	36 x 36	---	42 x 42
National Network	R14-4,5	2B.63	30 x 30	30 x 30	36 x 36	36 x 36	---	42 x 42
Fender Bender Move Vehicles	R16-4	2B.65	36 x 24	36 x 24	48 x 36	60 x 48	---	48 x 36
Lights on When Using Wipers or Raining	R16-5,6	2B.64	24 x 30	24 x 30	36 x 48	48 x 60	---	36 x 48
Turn On Headlights Next XX Miles	R16-7	2B.64	48 x 15	48 x 15	72 x 24	96 x 30	---	72 x 24
Turn On, Check Headlights	R16-8,9	2B.64	30 x 15	30 x 15	48 x 24	60 x 30	---	48 x 24
Begin, End Daylight Headlight Section	R16-10,11	2B.64	48 x 15	48 x 15	72 x 24	96 x 30	---	72 x 24
State Law - Stop for School Bus when Red Lights Flashing	R16-X1	2B.66.2	72 x 48	72 x 48	72 x 48	---	---	---
State Law - Trucks and Vehicles with Trailers must Maintain 500 ft Interval	R16-X2	2B.66.2	78 x 48	78 x 48	78 x 48	78 x 48	---	---
Up to \$700 Fine for Littering Highways	R16-X3	2B.66.2	48 x 30	48 x 30	48 x 30	48 x 30	---	---
Emergency Stopping Only-Pedestrians, Bicycles, Motorized Bicycles, Non-Motorized Traffic Prohibited	R16-X4	2B.49	---	---	36 x 36	36 x 36	---	---
Signal Your Turn	R16-X6	2B.66.1	30 x 30	30 x 30	---	---	---	48 x 48
Right (Left) Lane Must Exit	R16-X7	2B.20	48 x 60	48 x 60	---	---	---	---
Rest Stop X Hr Limit - No Camping	R16-X8	2B.66.1	30 x 18	30 x 18	---	---	---	36 x 24
State Law - Unlawful to Pass on Shoulder	R16-X9	2B.66.2	60 x 48	60 x 48	---	---	---	---
No Fishing from Bridge	R16-X10	2B.66.1	18 x 24	18 x 24	---	---	---	24 x 30
State Law - Seat Belt Use Required	R16-X11	2B.66.2	72 x 36	72 x 36	72 x 36	72 x 36	---	---
Seat Belt (symbol) Fastened ?	R16-X12	2B.66.1	18 x 18	18 x 18	---	---	---	36 x 36
Vehicle Noise Laws Enforced	R16-X13	2B.66.1	24 x 24	24 x 24	---	---	---	36 x 42
State Law - Move Over for Stopped Emergency and Maintenance Vehicles	R16-X15	2B.66.2	---	132 x 78	132 x 78	132 x 78	---	---
Do Not Cross Double White Line	R16-X16	2B.33.1	30 x 48	30 x 48	48 x 66	48 x 66	---	48 x 66
Check Your Turn Signal	R16-X33	2B.66.1	24 x 30	24 x 30	---	---	---	---

* See Table 9B-1 for minimum size required for signs on bicycle facilities,

Notes:

1. Larger signs may be used when appropriate
2. Dimensions in inches are shown as width x height

Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 5 of 5)

GUIDANCE:

STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).

A sign that is mounted back-to-back with a STOP or YIELD sign should stay within the edges of the STOP or YIELD sign. If necessary, the size of the STOP or YIELD sign should be increased so that any other sign installed back-to-back with a STOP or YIELD sign remains within the edges of the STOP or YIELD sign.



R1-2aP

OPTION:

Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque may be mounted below the YIELD sign.

SUPPORT:

Figure 2A-3 shows examples of some typical placements of STOP signs and YIELD signs.

Section 2A.16 contains additional information about separate and combined mounting of other signs with STOP or YIELD signs.

GUIDANCE:

Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.16. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.16.

Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the crosswalk line nearest to the approaching traffic.

Except at roundabouts, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the crosswalk line nearest to the approaching traffic.

Where two roads intersect at an acute angle, the STOP or YIELD sign should be positioned at an angle, or shielded, so that the legend is out of view of traffic to which it does not apply.

If a raised splitter island is available on the left-hand side of a multi-lane roundabout approach, an additional YIELD sign should be placed on the left-hand side of the approach.

OPTION:

If a raised splitter island is available on the left-hand side of a single lane roundabout approach, an additional YIELD sign may be placed on the left-hand side of the approach.

At wide-throat intersections or where two or more approach lanes of traffic exist on the signed approach, observance of the right-of-way control may be improved by the installation of an additional STOP or YIELD sign on the left-hand side of the road and/or the use of a stop or yield line. At channelized intersections or at divided roadways separated by a median, the additional STOP or YIELD sign may be placed on a channelizing island or in the median. An additional STOP or YIELD sign may also be placed overhead facing the approach at the intersection to improve observance of the right-of-way control.

STANDARD:

More than one STOP sign or more than one YIELD sign shall not be placed on the same support facing in the same direction.

OPTION:

For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5P) supplemental plaque (see Section 2C.40) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

2B.11 Stop Here For Pedestrians Signs (R1-5 Series)



R1-5b



R1-5c

STANDARD:

Stop Here For Pedestrians (R1-5b or R1-5c) signs shall be used if stop lines are used in advance of a marked crosswalk that crosses an uncontrolled multi-lane approach. The Stop Here for Pedestrians signs shall only be used where the law specifically requires that a driver must stop for a pedestrian in a crosswalk.

OPTION:

The legend STATE LAW may be displayed at the top of the R1-5b and R1-5c signs, if applicable.

GUIDANCE:

If stop lines and Stop Here For Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, they should be placed 20 to 50 feet in advance of the nearest crosswalk line (see Section 3B.16 and Figure 3B-17), and parking should be prohibited in the area between the stop line and the crosswalk.

Stop lines and Stop Here For Pedestrians signs should not be used in advance of crosswalks that cross an approach to or departure from a roundabout.

OPTION:

Stop Here For Pedestrians signs may be used in advance of a crosswalk that crosses an uncontrolled multi-lane approach to indicate to road users where to stop even if stop lines are not used.

A Pedestrian Crossing (W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward pointing arrow (W16-7P) plaque at the crosswalk location where Stop Here For Pedestrians signs have been installed in advance of the crosswalk.

STANDARD:

If a W11-2 sign has been post-mounted at the crosswalk location where a Stop Here For Pedestrians sign is used on the approach, the Stop Here For Pedestrians sign shall not be placed on the same post as or block the road user's view of the W11-2 sign.

OPTION:

An advance Pedestrian Crossing (W11-2) warning sign with an AHEAD or a distance supplemental plaque may be used in conjunction with a Stop Here For Pedestrians sign on the approach to the same crosswalk.

In-Street Pedestrian Crossing signs and Stop Here For Pedestrians signs may be used together at the same crosswalk.

2B.12 In-Street and Overhead Pedestrian Crossing Signs (R1-6a, R1-6b, R1-9a, and R1-9b)



OPTION:

The In-Street Pedestrian Crossing (R1-6a or R1-6b) sign or the Overhead Pedestrian Crossing (R1-9b) sign may be used to remind road users of laws regarding right-of-way at an unsignalized pedestrian crosswalk. The legend STATE LAW may be displayed at the top of the R1-6a, R1-6b, and R1-9b signs, if applicable.

Highway agencies may develop and apply criteria for determining the applicability of In-Street Pedestrian Crossing signs.

GUIDANCE:

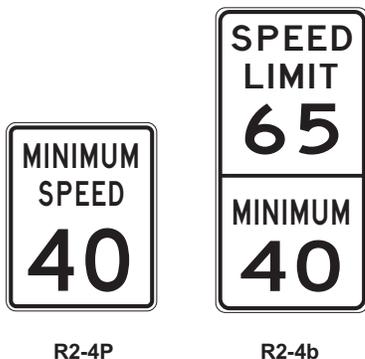
In order to avoid overuse, the In-Street Pedestrian Crossing sign should only be used at locations having high pedestrian crossings.

STANDARD:

If used, the In-Street Pedestrian Crossing sign shall be placed in the roadway at the crosswalk location on the center line, on a lane line, or on a median island. The In-Street Pedestrian Crossing sign shall not be post-mounted on the left-hand or right-hand side of the roadway.

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2B.16 Minimum Speed Limit Sign (R2-4P)



STANDARD:

A Minimum Speed Limit (R2-4P) plaque shall be displayed only in combination with a Speed Limit sign.

OPTION:

Where engineering judgment determines that slow speeds on a highway might impede the normal and reasonable movement of traffic, the Minimum Speed Limit plaque may be installed below a Speed Limit (R2-1) sign to indicate the minimum legal speed. If desired, the Speed Limit sign and the Minimum Speed Limit plaque may be combined on the R2-4b sign.

2B.16.1 End Speed Zone Sign (R2-6b)



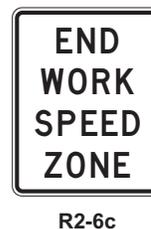
SUPPORT:

There are many secondary roads (county, township and municipal) which have had speed zones established. These zones are in and on the fringes of urban districts (as defined in Minnesota Statute, section 169.011) where the rural speed limit remains at that provided in the statutes and continuous speed zoning has not been warranted. In many instances, the posting of the statutory speed limit in order to terminate the reduced speed zone would be inappropriate because the statutory speed limit would be misleading and encourage drivers to travel too fast for conditions. Sound engineering judgement would dictate that no numerical value should be posted and that the basic rule (Minnesota Statute, section 169.14, subd. 1) should apply.

OPTION:

In order to provide for the termination of the reduced speed zone without posting another numerical speed, the END XX MILE SPEED sign may be used.

2B.16.2 END WORK SPEED ZONE Sign (R2-6c)



SUPPORT:

Certain street and highway construction and maintenance operations may justify the erection of regulatory signs with a recommended speed as determined by the appropriate road authority. It is necessary to install a regulatory sign to inform the motorists of the end of the regulatory speed zone.

STANDARD:

The sign shall be installed on its own structure at the end of the zone in accordance with standard signing practices for construction zone signs.

2B.17 Higher Fines Signs and Plaque (R2-6P, R2-10, and R2-11)



STANDARD:

If increased fines are imposed for traffic violations within a designated zone of a roadway, a BEGIN HIGHER FINES ZONE (R2-10) sign or a FINES HIGHER (R2-6P) plaque shall be used to provide notice to road users. If used, the FINES HIGHER plaque shall be mounted below an applicable regulatory or warning sign in a temporary traffic control zone, a school zone, or other applicable designated zone.

If an R2-10 sign or an R2-6P plaque is posted to provide notice of increased fines for traffic violations, an END HIGHER FINES ZONE (R2-11) sign shall be installed at the downstream end of the zone to provide notice to road users of the termination of the increased fines zone.

GUIDANCE:

If used, the BEGIN HIGHER FINES ZONE sign or FINES HIGHER plaque should be located at the beginning of the temporary traffic control zone, school zone, or other applicable designated zone and just beyond any interchanges, major intersections, or other major traffic generators.

STANDARD:

The Higher Fines signs and plaque shall have a black legend and border on a white rectangular background. All supplemental plaques mounted below the Higher Fines signs and plaque shall have a black legend and border on a white rectangular background.

GUIDANCE:

Agencies should limit the use of the Higher Fines signs and plaque to locations where work is actually underway, or to locations where the roadway, shoulder, or other conditions, including the presence of a school zone and/or a reduced school speed limit zone, require a speed reduction or extra caution on the part of the road user.

OPTION:

Alternate legends such as BEGIN (or END) DOUBLE FINES ZONE may also be used for the R2-10 and R2-11 signs.

The legend FINES HIGHER on the R2-6P plaque may be replaced by FINES DOUBLE (R2-6aP), \$XX FINE (R2-6bP), or another legend appropriate to the specific regulation.

The following may be mounted below an R2-10 sign or R2-6P plaque:

- A. A supplemental plaque specifying the times that the higher fines are in effect (similar to the S4-1P plaque), or
- B. A supplemental plaque WHEN CHILDREN (WORKERS) ARE PRESENT, or
- C. A supplemental plaque WHEN FLASHING (similar to the S4-4P plaque) if used in conjunction with a yellow flashing beacon.

SUPPORT:

Section 6F.12 contains information regarding other signs and plaques associated with increased fines for traffic violations in temporary traffic control zones. Section 7B.10 contains information regarding other signs and plaques associated with increased fines for traffic violations in designated school zones.

2B.18 Movement Prohibition Signs (R3-1 through R3-4, R3-18 and R3-27)



R3-1



R3-2



R3-3



R3-4



R3-18



R3-27

STANDARD:

Except as provided in the following second Option, where specific movements are prohibited, Movement Prohibition signs shall be installed.

GUIDANCE:

Movement Prohibition signs should be placed where they will be most easily seen by road users who might be intending to turn.

If No Right Turn (R3-1) signs are used, at least one should be placed either over the roadway or at a right-hand corner of the intersection.

If No Left Turn (R3-2) signs are used, at least one should be placed over the roadway, at the far left-hand corner of the intersection, on a median, or in conjunction with the STOP sign or YIELD sign located on the near right-hand corner.

Except as provided in Item C In the Guidance below, for signalized locations, if NO TURNS (R3-3) signs are used, two signs should be used, one at a location specified for a No Right Turn sign and one at a location specified for a No Left Turn sign.

If No U-Turn (R3-4) signs or combination No U-Turn/No Left Turn (R3-18) signs are used, at least one should be used at a location specified for No Left Turn signs.

OPTION:

If both left turns and U-turns are prohibited, the combination No U-Turn/No Left Turn (R3-18) sign may be used instead of separate R3-2 and R3-4 signs.

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facilities, but are lanes exclusively designated for buses and/or taxis, the word message R3-5dP and/or R3-5gP supplemental plaques shall be used.

The Mandatory Movement Lane Control (R3-7) sign shall include the legend RIGHT (LEFT) LANE MUST TURN RIGHT (LEFT). The Mandatory Movement Lane Control symbol signs (R3-5 and R3-5a) shall include the legend ONLY.

The R3-7 word message sign shall be for post-mounting only.

Where the number of lanes available to through traffic on an approach is three or more, Mandatory Movement Lane Control (R3-5 and R3-5a) symbol signs, if used, shall be mounted overhead over the specific lanes to which they apply (see Section 2B.19).

GUIDANCE:

If the R3-5 or R3-5a sign is post-mounted on an approach with two or fewer through lanes, a supplemental plaque, such as LEFT LANE (R3-5bP), HOV 2+ (R3-5cP), TAXI LANE (R3-5dP), CENTER LANE (R3-5eP), RIGHT LANE (R3-5fP), BUS LANE (R3-5gP), or BOTH LANES, should be added above the sign to indicate the specific lane to which the mandatory movement applies. If Mandatory Lane Movement Control (R3-5) symbol signs with supplemental R3-5bP or R3-5fP plaques are used, they should be mounted adjacent to and along only the full width portion of the turn lane.

The use of the Mandatory Movement Lane Control (R3-7) word message sign should be limited to only locations that are adjacent to the full-width portion of a mandatory turn lane. The R3-7 sign should not be installed adjacent to a through lane in advance of a turn bay taper or adjacent to a turn bay taper.

Mandatory Movement Lane Control signs should be accompanied by lane-use arrow markings, especially where traffic volumes are high, where there is a high percentage of commercial vehicles, or where other distractions exist.

OPTION:

The Straight Through Only (R3-5a) sign may be used to require a road user in a particular lane to proceed straight through an intersection.

When the Mandatory Movement Lane Control sign for a left-turn lane is installed back-to-back with a Keep Right (R4-7) sign, the dimensions of the Mandatory Movement Lane Control (R3-5) sign may be the same as the Keep Right sign.

The diamond symbol may be used instead of the word message HOV on the R3-5cP supplemental plaque.

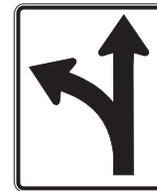


R16-X7

OPTION:

The RIGHT LANE MUST EXIT (R16-x7) sign may be used in advance of an exit ramp, in a lane drop situation, where there is no escape lane provided. This sign may be needed in addition to the black and yellow EXIT ONLY signs (E-11 series).

2B.21 Optional Movement Lane Control Sign (R3-6)



R3-6

STANDARD:

If used, the Optional Movement Lane Control (R3-6) sign (see Figure 2B-4) shall be used for two or more movements from a specific lane or to emphasize permitted movements. If used, the Optional Movement Lane Control sign shall be located in advance of the intersection, such as near the upstream end of an adjacent mandatory movement lane, and/or at the intersection where the regulation applies.

If used, the Optional Movement Lane Control sign shall indicate all permissible movements from specific lanes.

Optional Movement Lane Control signs shall be used for two or more movements from a specific lane where a movement, not normally allowed, is permitted.

The Optional Movement Lane Control sign shall not be used alone to effect a turn prohibition.

Where the number of lanes available to through traffic on an approach is three or more, an Optional Movement Lane Control (R3-6) sign, if used, shall be mounted overhead over the specific lane to which it applies (see Section 2B.19).

GUIDANCE:

If the Optional Movement Lane Control sign is post-mounted on an approach with two or fewer through lanes, a supplemental plaque (see Figure 2B-4), such as LEFT LANE (R3-5bP), HOV 2+ (R3-5cP), TAXI LANE (R3-5dP), CENTER LANE (R3-5eP), RIGHT LANE (R3-5fP), or BUS LANE (R3-5gP), should be added above the R3-6 sign to indicate the specific lane from which the optional movements can be made.

OPTION:

The word message OK may be used within the border in combination with the arrow symbols of the R3-6 sign.

STANDARD:

Because more than one movement is permitted from the lane, the word message ONLY shall not be used on an Optional Movement Lane Control sign.

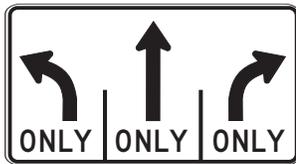
2B.22 Advance Intersection Lane Control Signs (R3-30 Series)



R3-30AE



R3-30AELA



R3-30ACA

OPTION:

Advance Intersection Lane Control (R3-30AE, R3-30AELA, and R3-30ACA) signs may be used to indicate the configuration of all lanes ahead.

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The word messages ONLY, OK, THRU, ALL, or HOV 2+ may be used within the border in combination with the arrow symbols of the R3-30 sign series. The HOV 2+ (R3-5cP) supplemental plaque may be installed at the top outside border of the R3-30 sign over the applicable lane designation on the sign. The diamond symbol may be used instead of the word message HOV. The minimum allowable vehicle occupancy requirement may vary based on the level established for a particular facility.

GUIDANCE:

If used, an Advance Intersection Lane Control sign should be placed at an adequate distance in advance of the intersection so that road users can select the appropriate lane. If used, the Advance Intersection Lane Control sign should be installed either in advance of the tapers or at the beginning of the turn lane.

OPTION:

An Advance Intersection Lane Control sign may be repeated closer to the intersection for additional emphasis.

STANDARD:

Where three or more approach lanes are available to traffic, Advance Intersection Lane Control (R3-30 series)

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signs, if used, shall be post-mounted in advance of the intersection and shall not be mounted overhead (see Section 2B.19).

2B.23 RIGHT (LEFT) LANE MUST EXIT Sign (R3-33)



R3-33

OPTION:

A RIGHT (LEFT) LANE MUST EXIT (R3-33) sign (see Figure 2B-4) may be used to supplement an overhead EXIT ONLY guide sign to inform road users that traffic in the right-hand (left-hand) lane of a roadway that is approaching a grade-separated interchange is required to depart the roadway on the exit ramp at the next interchange.

SUPPORT:

Section 2C.43 contains information regarding a warning sign that can be used in advance of lane drops at grade-separated interchanges.

2B.24 Two-Way Left Turn Only Signs (R3-9a, R3-9b)



R3-9a



R3-9b

GUIDANCE:

Two-Way Left Turn Only (R3-9a or R3-9b) signs should be used in conjunction with the required pavement markings where a non-reversible lane is reserved for the exclusive use of left-turning vehicles in either direction and is not used for passing, overtaking, or through travel.

OPTION:

The post-mounted R3-9b sign may be used as an alternate to or a supplement to the overhead R3-9a sign. The legend BEGIN or END may be used within the border of the main sign itself, or on an R3-9cP or R3-9dP plaque mounted immediately above it.

SUPPORT:

Signing is especially helpful to drivers in areas where the two-way left turn only maneuver is new, in areas subject to environmental conditions that frequently obscure the pavement markings, and on streets with two-way left turn only lanes leading to an extensive system of routes with two-way left turn only lanes.

**2B.25 BEGIN and END Plaques
(R3-9cP, and R3-9dP)**



R3-9cP



R3-9dP

OPTION:

The BEGIN (R3-9cP) or END (R3-9dP) plaque may be used to supplement a regulatory sign to inform road users of the location where a regulatory condition begins or ends.

STANDARD:

If used, the BEGIN or END plaque shall be mounted directly above a regulatory sign.



OR



R3-9g



OR



R3-9h



R3-9i

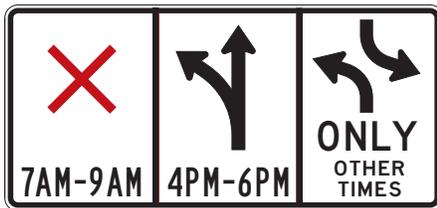
OPTION:

A reversible lane may be used for through traffic (with left turns either permitted or prohibited) in alternating directions during different periods of the day, and the lane may be used for exclusive left turns in one or both directions during other periods of the day as well. Reversible Lane Control (R3-9e through R3-9i) signs may be either static type or changeable message type. These signs may be either post-mounted or overhead.

STANDARD:

Post-mounted Reversible Lane Control signs shall be used only as a supplement to overhead signs or signals. Post-mounted signs shall be identical in design to the overhead signs and an additional legend such as CENTER LANE shall be added to the sign (R3-9f) to indicate which lane is controlled. For both word messages and symbols, this legend shall be at the top of the sign.

**2B.26 Reversible Lane Control Signs
(R3-9e through R3-9i)**



R3-9e



R3-9f

Symbol/Word Message	Meaning
Red X on white background	Lane closed
Upward pointing black arrow on white background (if left turns are permitted), the arrow shall be modified to show left / through arrow.	Lane open for through travel and any turns not otherwise prohibited
Black two-way, left-turn arrows on white background and legend ONLY	Lane may be used only for left turns in either direction (i.e., As a two-way left-turn lane)
Black single left-turn arrow on white background and legend ONLY	Lane may be used only for left turns in one direction (without opposing left turns in the same lane)

Table 2B-2. Meanings of Symbols and Legends on Reversible Lane Control Signs

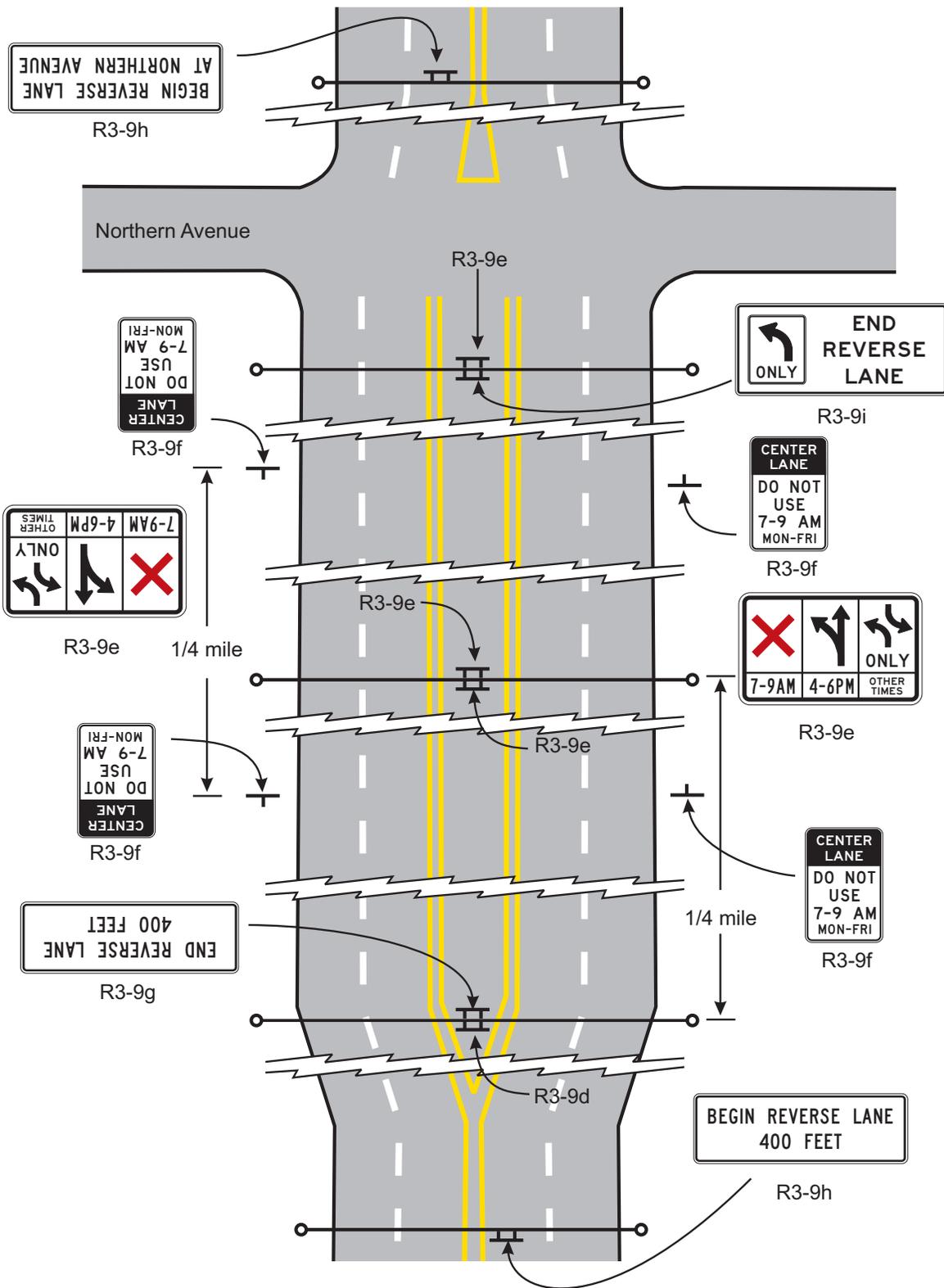


Figure 2B-7. Location of Reversible Two-Way Left-Turn Signs

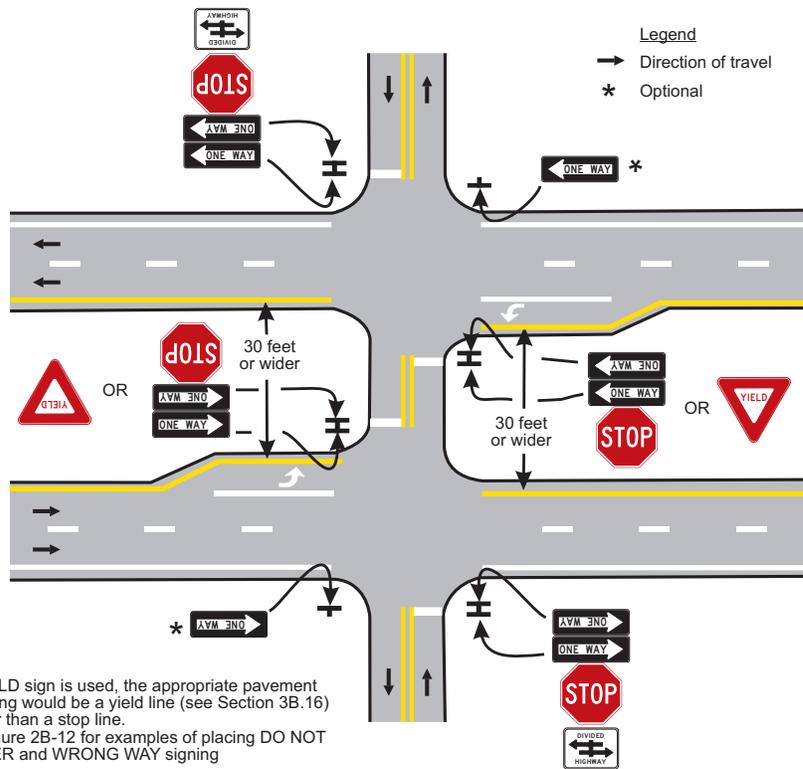


Figure 2B-15. ONE WAY Signing for Divided Highways with Median Widths of 30 Feet or Wider

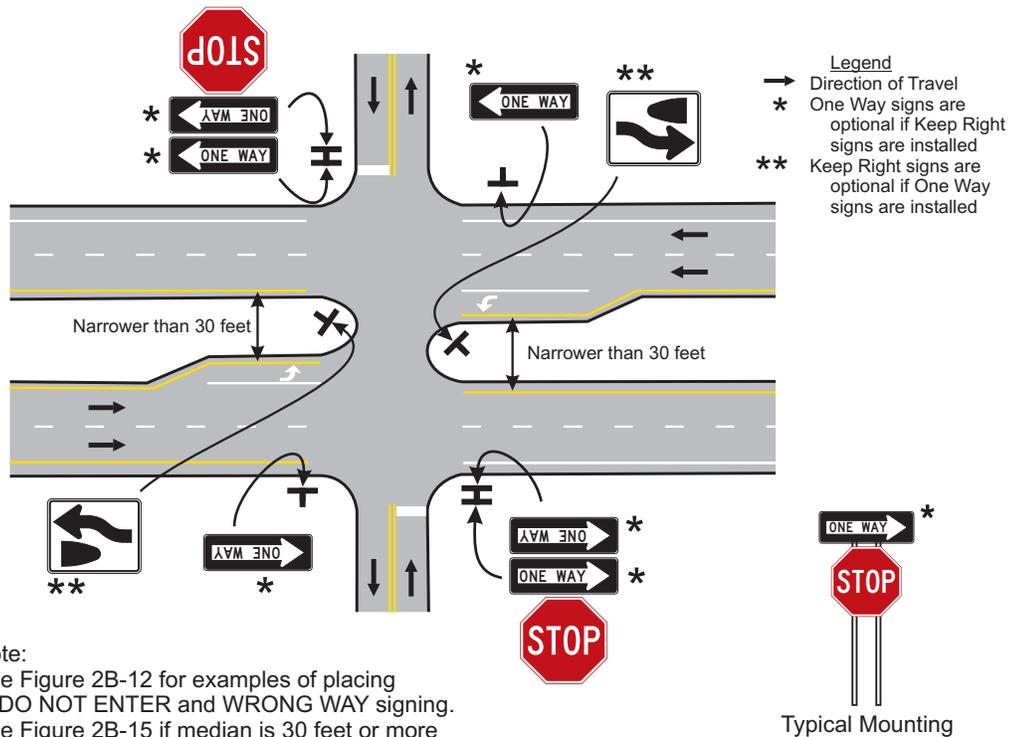
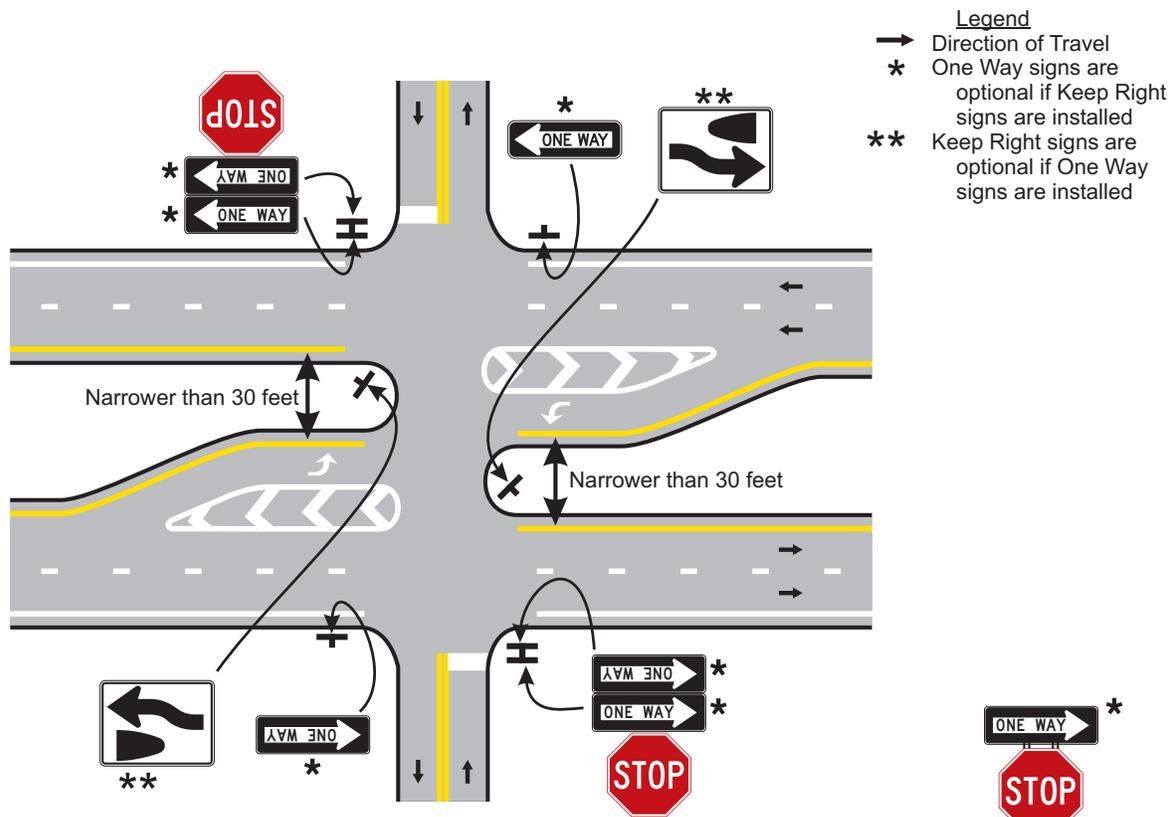


Figure 2B-16. ONE WAY Signing for Divided Highways with Median Widths Narrower Than 30 Feet



Notes:
 See Figure 2B-12 for examples of placing
 DO NOT ENTER and WRONG WAY signing.
 See Figure 2B-15 if median is 30 feet or more
 in width.



**Figure 2B-17. ONE WAY Signing for Divided Highways with Median Widths
 Narrower Than 30 Feet and Separated Left-Turn Lanes**

At unsignalized T-intersections where the roadway at the top of the T-intersection is a one-way roadway, ONE WAY signs shall be placed on the near right and the far side of the intersection facing traffic on the stem approach (see Figure 2B-14).

At signalized T-intersections where the roadway at the top of the T-intersection is a one-way roadway, ONE WAY signs shall be placed near the appropriate signal faces, on the poles holding the traffic signals, on the mast arm or span wire holding the signals, or at the locations specified for unsignalized intersections.

Compliance Date: December 31, 2019

OPTION:

Where the central island of a roundabout allows for the installation of signs, ONE WAY signs may be used instead

of or in addition to Roundabout Directional Arrow (R6-4 series) signs (see Section 2B.43) to direct traffic counter-clockwise around the central island.

GUIDANCE:

Where used on the central island of a roundabout, the mounting height of a ONE WAY sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

SUPPORT:

Using ONE WAY signs on the central island of a roundabout might result in some drivers incorrectly concluding that the cross street is a one-way street. Using Roundabout Directional Arrow signs might reduce this confusion. However, using ONE WAY signs might be necessary in States that have defined a roundabout as a series of T-intersections.

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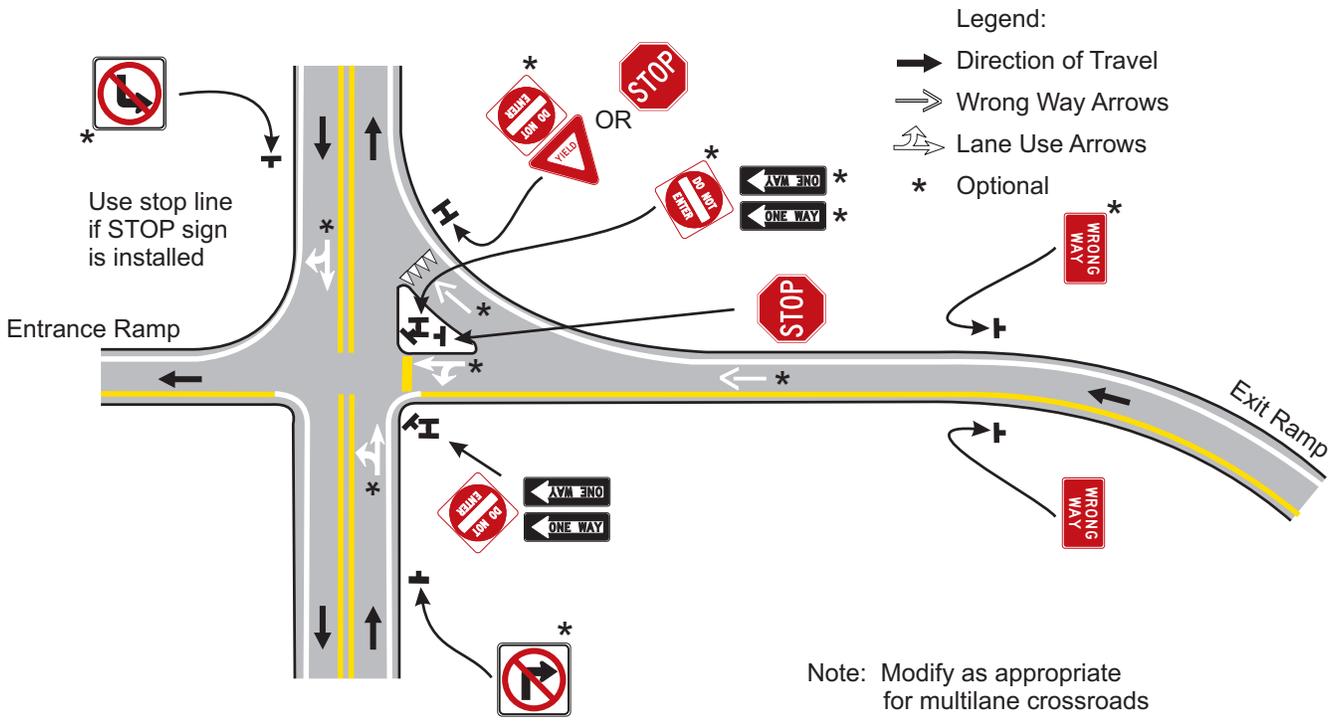


Figure 2B-18. Example of Application of Regulatory Signing and Pavement Markings at an Exit Ramp Termination to Deter Wrong-Way Entry

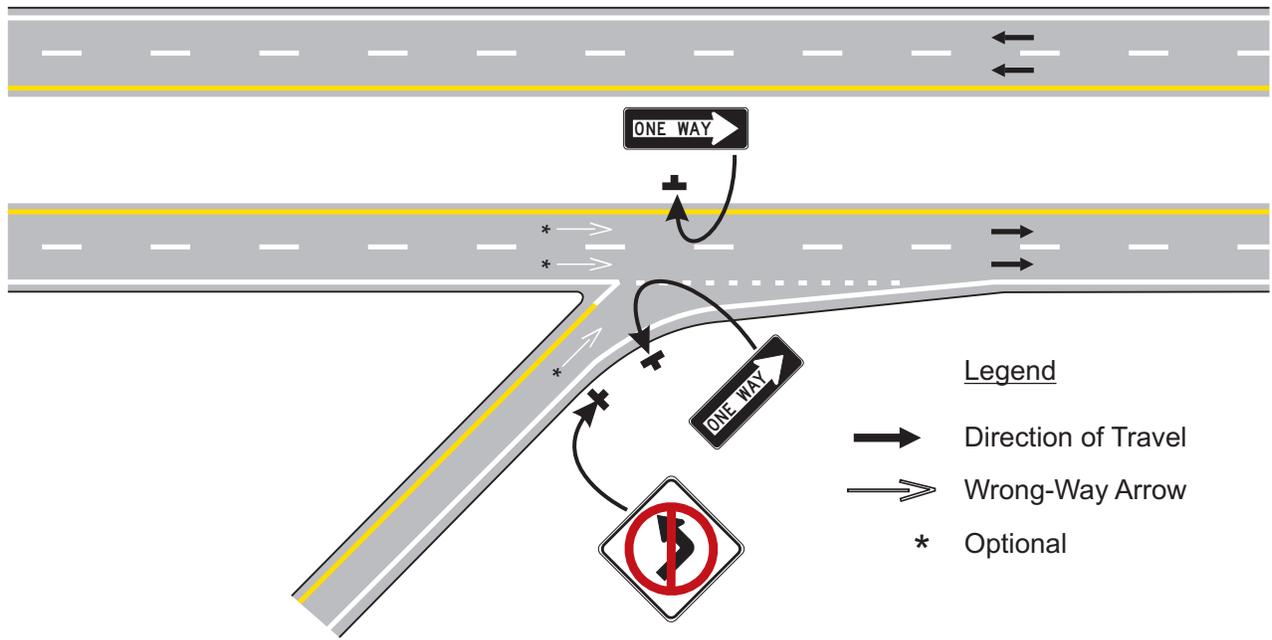


Figure 2B-19. Example of Application of Regulatory Signing and Pavement Markings at an Exit Ramp Termination Where the Design Does Not Clearly Indicate the Direction of Flow



R6-6



R6-7

OPTION:

The BEGIN ONE WAY (R6-6) sign may be used to notify road users of the beginning point of a one direction of travel restriction on the street or roadway. The END ONE WAY (R6-7) sign may be used to notify road users of the ending point of a one direction of travel restriction on the street or roadway.

STANDARD:

The BEGIN ONE WAY and the END ONE WAY sign shall not be installed on a one-way connecting ramp or at a T-intersection where a one-way roadway terminates.

2B.41 Wrong-Way Traffic Control at Interchange Ramps

STANDARD:

At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs shall be used (see Figure 2B-18):

- A. At least one ONE WAY sign for each direction of travel on the crossroad shall be placed where the exit ramp intersects the crossroad.
- B. At least one DO NOT ENTER sign shall be conspicuously placed near the downstream end of the exit ramp in positions appropriate for full view of a road user starting to enter wrongly from the crossroad.
- C. At least one WRONG WAY sign shall be placed on the exit ramp facing a road user traveling in the wrong direction.

GUIDANCE:

In addition, the following pavement markings should be used (see Figure 2B-18):

- A. On two-lane paved crossroads at interchanges, double solid yellow lines should be used as a center line for an adequate distance on both sides approaching the ramp intersections.
- B. Where crossroad channelization or ramp geometrics do not make wrong-way movements difficult, a lane-use arrow should be placed in each lane of an exit ramp near the crossroad terminal where it will be clearly visible to a potential wrong-way road user.

OPTION:

The following traffic control devices may be used to supplement the signs and pavement markings described in Paragraphs 1 and 2:

- A. Additional ONE WAY signs may be placed, especially on two-lane rural crossroads, appropriately in advance of the ramp intersection to supplement the required ONE WAY sign(s).
- B. Additional WRONG WAY signs may be used.
- C. Slender, elongated wrong-way arrow pavement markings (see Figure 3B-24) intended primarily to warn wrong-way road users that they are traveling in the wrong direction may be placed upstream from the ramp terminus (see Figure 2B-18) to indicate the correct direction of traffic flow. Wrong-way arrow pavement markings may also be placed on the exit ramp at appropriate locations near the crossroad junction to indicate wrong-way movement. The wrong-way arrow markings may consist of pavement markings or bidirectional red-and-white raised pavement markers or other units that show red to wrong-way road users and white to other road users (see Figure 3B-24).
- D. Lane-use arrow pavement markings may be placed on the exit ramp and crossroad near their intersection to indicate the permissive direction of flow.
- E. Freeway entrance signs (see Section 2D.46) may be used.

GUIDANCE:

On interchange entrance ramps where the ramp merges with the through roadway and the design of the interchange does not clearly make evident the direction of traffic on the separate roadways or ramps, a ONE WAY sign visible to traffic on the entrance ramp and through roadway should be placed on each side of the through roadway near the entrance ramp merging point as illustrated in Figure 2B-19.

OPTION:

At locations where engineering judgment determines that a special need exists, other standard warning or prohibitive methods and devices may be used as a deterrent to the wrong-way movement.

Where there are no parked cars, pedestrian activity or other obstructions such as snow or vegetation, and if an engineering study indicates that a lower mounting height would address wrong-way movements on freeway or expressway exit ramps, a DO NOT ENTER sign(s) and/or a WRONG WAY sign(s) that is located along the exit ramp facing a road user who is traveling in the wrong direction may be installed at a minimum mounting height of 3 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.

2B.47 Design of Parking, Standing, and Stopping Signs

SUPPORT:

Discussions of parking signs and parking regulations in this Section apply not only to parking, but also to standing and stopping.

STANDARD:

The legend on parking signs shall state applicable regulations. Parking signs shall comply with the standards of shape, color, and location.

Where parking is prohibited at all times or at specific times, the basic design for parking signs shall have a red legend and border on a white background (Parking Prohibition signs), except that the R8-4 and R8-7 signs and the alternate design for the R7-201P plaque shall have a black legend and border on a white background, and the R8-3 sign shall have a black legend and border and a red circle and slash on a white background. Where only limited-time parking or parking in a particular manner are permitted, the signs shall have a green legend and border on a white background (Permissive Parking signs).

GUIDANCE:

Parking signs should display the following information from top to bottom of the sign, in the order listed:

- A. The restriction or prohibition;
- B. The times of the day that it is applicable, if not at all hours; and
- C. The days of the week that it is applicable, if not every day.

If the parking restriction applies to a limited area or zone, the limits of the restriction should be shown by arrows or supplemental plaques. If arrows are used and if the sign is at the end of a parking zone, there should be a single-headed arrow pointing in the direction that the regulation is in effect. If the sign is at an intermediate point in a zone, there should be a double-headed arrow pointing both ways. When a single sign is used at the transition point between two parking zones, it should display a right and left arrow pointing in the direction that the respective restrictions apply.

Where special parking restrictions are imposed during heavy snowfall, Emergency Snow Route (R7-203) signs should be installed. The legend will vary according to the regulations, but the signs should be vertical rectangles, having a white background with the upper part of the plate a red background.

STANDARD:

Where parking spaces that are reserved for persons with disabilities are designated to accommodate wheelchair vans, a VAN ACCESSIBLE (R7-8P) plaque shall be mounted below the R7-8 sign. The R7-8 sign shall have a green legend and border and a white wheelchair symbol on a blue square, all on a white background. The R7-8P plaque shall have a green legend and border on a white background.

OPTION:

To minimize the number of parking signs, blanket regulations that apply to a given district may, if legal, be posted at district boundary lines.

As an alternate to the use of arrows to show designated restriction zones, word messages such as BEGIN, END, HERE TO CORNER, HERE TO ALLEY, THIS SIDE OF SIGN, or BETWEEN SIGNS may be used.

Where parking is prohibited during certain hours and time-limited parking or parking in a particular manner is permitted during certain other time periods, the red Parking Prohibition and green Permissive Parking signs may be designed as follows:

- A. Two 12 x 18 inch parking signs may be used with the red Parking Prohibition sign installed above or to the left of the green Permissive Parking sign; or
- B. The red Parking Prohibition sign and the green Permissive Parking sign may be combined to form an R7-200 sign on a single 24 x 18 inch sign, or on a single 12 x 30 inch sign.

At the transition point between two parking zones, a single sign or two signs mounted side by side may be used.

The words NO PARKING may be used as an alternative to the No Parking symbol. The supplemental educational plaque, NO PARKING, with a red legend and border on a white background, may be used above signs incorporating the No Parking symbol.

Alternate designs for the R7-107 sign may be developed such as the R7-107a sign. Alternate designs may include, on a single panel, a transit logo, an approved bus symbol, a parking prohibition, the words BUS STOP, and an arrow. The preferred bus symbol color is black, but other dark colors may be used. Additionally, the transit logo may be shown on the bus face in the appropriate colors instead of placing the logo separately. The reverse side of the sign may contain bus routing information.

To make the parking regulations more effective and to improve public relations by giving a definite warning, a TOW-AWAY ZONE (R7-201aP) plaque may be appended to, or incorporated in, any parking prohibition sign. The Tow-Away Zone (R7-201P) symbol plaque may be used instead of the R7-201aP word message plaque. The R7-201P plaque may have either a black or red legend and border on a white background.

GUIDANCE:

If a fee is charged for parking and a midblock pay station is used instead of individual parking meters for each parking space, pay parking signs should be used. Pay Parking (R7-22) signs should be used to define the area where the pay station parking applies. Pay Station (R7-20) signs should be used at the pay station or to direct road users to the pay station.

STANDARD:

If the pay parking is subject to a maximum time limit, the appropriate time limit (number of hours or minutes) shall be displayed on the Pay Parking (R7-21 or R7-21a) and Pay Station (R7-20) signs.

OPTION:

In rural areas, the legends NO PARKING ON PAVEMENT (R8-1) or NO STOPPING ON PAVEMENT (R8-5) are generally suitable and may be used. If a roadway has paved shoulders, the NO PARKING EXCEPT ON SHOULDER sign (R8-2) or the NO STOPPING EXCEPT ON SHOULDER sign (R8-6) may be used as these signs would be less likely to cause confusion. The R8-3 symbol sign or the word message NO PARKING (R8-3a) sign may be used to prohibit any parking along a given highway. Word message supplemental plaques may be mounted below the R8-3 or R8-3a sign. These word message supplemental plaques may include legends such as EXCEPT SUNDAYS & HOLIDAYS (R8-3bP), ON PAVEMENT (R8-3cP), ON BRIDGE (R8-3dP), ON TRACKS (R8-3eP), EXCEPT ON SHOULDERS (R8-3fP), LOADING ZONE (with arrow) (R8-3gP), and X:XX AM TO X:XX PM (with arrow) (R8-3hP).

Colors that are in compliance with the provisions of Section 2A.10 may be used for color coding of parking time limits.

GUIDANCE:

If colors are used for color coding of parking time limits, the colors green, red, and black should be the only colors that are used.

2B.48 Placement of Parking, Stopping, and Standing Signs

GUIDANCE:

When signs with arrows are used to indicate the extent of the restricted zones, the signs should be set at an angle of not less than 30 degrees or more than 45 degrees with the line of traffic flow in order to be visible to approaching traffic.

Spacing of signs should be based on legibility and sign orientation.

If the zone is unusually long, signs showing a double arrow should be used at intermediate points within the zone.

STANDARD:

If the signs are mounted at an angle of 90 degrees to the curb line, two signs shall be mounted back to back at the transition point between two parking zones, each with the appended message THIS SIDE OF SIGN (R7-202P) supplemental plaque.

GUIDANCE:

If the signs are mounted at an angle of 90 degrees to the curb line, signs without any arrows or appended plaques should be used at intermediate points within a parking zone, facing in the direction of approaching traffic. Otherwise the standards of placement should be the same as for signs using directional arrows.

2B.48.1 Disabled Parking Signs (R7-8m)



R7-8m



R7-8bP

STANDARD:

Where parking spaces are designated to accommodate disabled drivers, the Disabled Parking sign (R7-8m) shall be installed as required in Minnesota Rules 1341.502 A117.1 Section 502.7 which reads in part as follows:

Where all accessible parking spaces do not provide a minimum vertical clearance of 98 inches, signs identifying van parking spaces shall contain the designation "van accessible." Signs shall be centered at the head end of the parking space a maximum of 96 inches from the head of the parking space, and be mounted 60 inches minimum and 66 inches maximum above the floor of the parking space, measured to the bottom of the sign.

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OPTION:

The following signs may be used as an alternate for the R10-3 and R10-4 signs:

- A. Push Button to Cross Street Wait for Walk Signal (R10-3a); or
- B. Push Button to Cross Street Wait for Green Signal (R10-4a).

The name of the street to be crossed may be substituted for the word STREET in the legends on the R10-3a and R10-4a signs.

GUIDANCE:

The finger in the pushbutton symbol on the R10-3, R10-3a, R10-4, and R10-4a signs should point in the same direction as the arrow on the sign.

OPTION:

Where symbol-type pedestrian signal indications are used, an educational sign (R10-3b) may be used instead of the R10-3 sign to improve pedestrian understanding of pedestrian indications at signalized intersections. Where word-type pedestrian signal indications are being retained for the remainder of their useful service life, the legends WALK/DONT WALK may be substituted for the symbols on the educational sign R10-3b, thus creating educational sign R10-3c. The R10-3d educational sign may be used to inform pedestrians that the pedestrian clearance time is sufficient only for the pedestrian to cross to the median at locations where pedestrians cross in two stages using a median refuge island. The R10-3e educational sign may be used where countdown pedestrian signals have been provided. In order to assist the pedestrian in understanding which pushbutton to push, the R10-3f to R10-3i educational signs that provide the name of the street to be crossed may be used instead of the R10-3b to R10-3e educational signs.

The R10-24 or R10-26 sign (see Section 9B.11) may be used where a pushbutton detector has been installed exclusively to actuate a green phase for bicyclists.

The R10-25 sign may be used where a pushbutton detector has been installed for pedestrians to activate In-Roadway Warning Lights (see Chapter 4N) or flashing beacons that have been added to the pedestrian warning signs.

SUPPORT:

Section 4E.8 contains information regarding the application of the R10-32P plaque.

2B.53 Traffic Signal Signs (R10-5 through R10-30)



R10-5



R10-6



R10-6a



R10-7



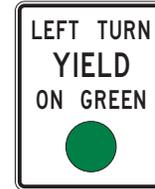
R10-7a



R10-8



R10-10



R10-12



R10-13



R10-14



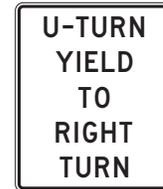
R10-14a



R10-14b



R10-15a



R10-16



R10-20aP

OR



R10-20aP



R10-23

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MN Rev. 2

MN Rev. 1



R10-27



R10-31P

OPTION:

To supplement traffic signal control, Traffic Signal signs R10-5 through R10-30 may be used to regulate road users.

Traffic Signal signs may be installed at certain locations to clarify signal control. Among the legends that may be used for this purpose are LEFT ON GREEN ARROW ONLY (R10-5), STOP HERE ON RED (R10-6 or R10-6a) for observance of stop lines, DO NOT BLOCK INTERSECTION (R10-7) and DO NOT BLOCK CROSSWALK (R10-7a) for avoidance of traffic obstructions, USE LANE(S) WITH GREEN ARROW (R10-8) for obedience to Lane Control signals, LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) and LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27).

GUIDANCE:

If used, the LEFT ON GREEN ARROW ONLY (R10-5) sign, the LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign, or the LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign should be located adjacent to the left-turn signal face.

OPTION:

If needed for additional emphasis, an additional LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign with an AT SIGNAL (R10-31P) supplemental plaque may be installed in advance of the intersection.

In situations where traffic control signals are coordinated for progressive timing, the Traffic Signal Speed (I1-1) sign may be used (see Section 2H.3).

STANDARD:

The CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign shall only be used in conjunction with pedestrian hybrid beacons (see Section 4F.2).

The EMERGENCY SIGNAL (R10-13) sign shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4G.2).

The EMERGENCY SIGNAL-STOP ON FLASHING RED (R10-14 or R10-14a) sign shall be used in conjunction with emergency-vehicle hybrid beacons (see Section 4G.4).

OPTION:

In order to remind drivers who are making turns to stop for pedestrians, a Turning Vehicles Stop for Pedestrians (R10-15a) sign may be used.

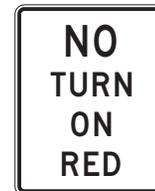
A U-TURN YIELD TO RIGHT TURN (R10-16) sign may be installed near the left-turn signal face if U-turns are allowed on a protected left-turn movement on an approach from which a right-turn GREEN ARROW signal indication is simultaneously being displayed to drivers making a right turn from the conflicting approach to their left.

A STATE LAW plaque (R4-X5) may be installed above these signs to remind road users that the regulation applies at all locations.

2B.54 No Turn on Red Signs (R10-11 Series, and R10-30)



R10-11



R10-11a



R10-11b



R10-11c



R10-11d



R10-30

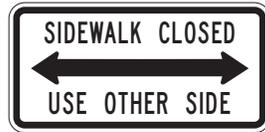
STANDARD:

Where a right turn on red (or a left turn on red from a one-way street to a one-way street) is to be prohibited, a symbolic NO TURN ON RED (symbolic circular red) (R10-11) sign or a NO TURN ON RED (R10-11a, R10-11b) word message sign shall be used.

2B.58.2 Sidewalk Closed Signs (R9-9, R9-10)



R9-9



R9-10

GUIDANCE:

The Sidewalk Closed signs should be used where pedestrian flow is restricted or rerouted due to road work. The SIDEWALK CLOSED sign (R9-9) should be installed at the beginning of the closed sidewalk section and elsewhere along the closed section as needed. The SIDEWALK CLOSED USE OTHER SIDE sign (R9-10) should be installed at the beginning of the restricted sidewalk section when a parallel sidewalk exists on the other side of the roadway.

These signs are typically installed on a barricade device to act as a reminding message to encourage compliance.

2B.59 Weight Limit Signs (R12-1 through R12-5)



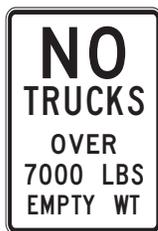
R12-1



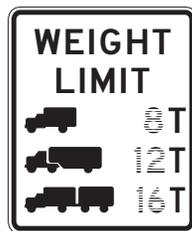
R12-2



R12-4



R12-3



R12-5

OPTION:

The Weight Limit (R12-1) sign carrying the legend WEIGHT LIMIT XX TONS may be used to indicate vehicle weight restrictions including load.

Where the restriction applies to axle weight rather than gross load, the legend may be AXLE WEIGHT LIMIT XX TONS or AXLE WEIGHT LIMIT XXXX LBS (R12-2).

To restrict trucks of certain sizes by reference to empty weight in residential areas, the legend may be NO TRUCKS OVER XX TONS EMPTY WT or NO TRUCKS OVER XX LBS EMPTY WT (R12-3).

In areas where multiple regulations of the type described in the three previous paragraphs are applicable, a sign combining the necessary messages on a single sign may be used, such as WEIGHT LIMIT XX TONS PER AXLE, XX TONS GROSS (R12-4).

Posting of specific load limits may be accomplished by use of the Weight Limit symbol sign (R12-5). A sign containing the legend WEIGHT LIMIT on the top two lines, and showing three different truck symbols and their respective weight limits for which restrictions apply may be used, with the weight limits displayed to the right of each symbol as XX T. A bottom line of legend stating GROSS WT may be included if needed for enforcement purposes.

STANDARD:

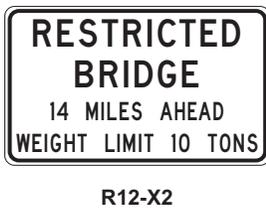
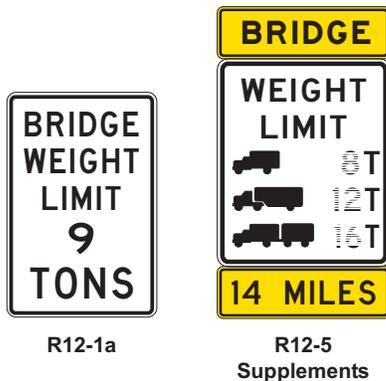
If used, the Weight Limit sign shall be located in advance of the applicable section of highway or structure.

If used, the Bridge Weight Limit sign (R12-5) shall be installed on or immediately in advance of bridges or bridge structures where it is necessary to limit the load permitted on that structure. The proper weights to display on the sign shall be based on an engineering study.

GUIDANCE:

If used, the Weight Limit sign with an advisory distance ahead legend should be placed at approach road intersections or other points where prohibited vehicles can detour or turn around.

**2B.59.1 Bridge and Structure Weight, Width and Height Restriction Signs
(R12-1a, R12-5 Supplement, R12.X2, R12-X4, and R12-X4A)**



STANDARD:

These signs shall be installed in advance of bridges or structures where it is necessary to limit the weight permitted on the bridge or structure and/or to show the clearance available on or below the bridge or structure:

1. BRIDGE WEIGHT LIMIT (x) TONS (R12-1a)
2. BRIDGE - WEIGHT LIMIT (w/symbols) - xx MILES (R12-5 Supplement)
3. RESTRICTED BRIDGE (xx) MILES AHEAD WEIGHT LIMIT (X) TONS (R12-X2)
4. RESTRICTED BRIDGE (xx) MILES AHEAD PERMIT WEIGHT LIMIT (X) TONS (R12-X2a)
5. RESTRICTED BRIDGE (xx) MILES AHEAD WEIGHT LIMIT (X) TONS - CLEARANCE (xx) FT. (XX) IN. (R12-X4)
6. RESTRICTED BRIDGE (xx) MILES AHEAD CLEARANCE (xx) FT. (xx) IN. (R12-X4a)

The weights to display on the sign shall be the same weights displayed on the Bridge Weight Limit sign (see Section 2B.59).

GUIDANCE:

These signs should also be placed at the nearest intersecting roadway where a motorist can detour around the restriction or at wide point in the roadway so that the motorist can turn around to avoid the restriction.

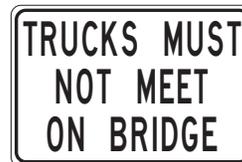
STANDARD:

When a bridge is restricted for specific load limits, the Weight Limit symbol sign (R12-5) shall be installed immediately in advance of the bridge.

The R12-5 Supplement combination sign consists of a BRIDGE plaque installed above and a (xx) MILES plaque installed below the Weight Limit symbol sign to present a message to the motorist that is consistent with the advance warning sign assembly.

Both plaques shall have a black legend on a yellow reflectorized background. The length of the plaques shall match that of the Weight Limit symbol sign.

When a restriction on a bridge applies to the gross load of a vehicle, the BRIDGE WEIGHT LIMIT sign (R12-1a) shall be installed immediately in advance of the bridge. If an advance warning sign is to be used, the (xx) MILES plaque of the R12-5 Supplement sign combination shall be installed below the R12-1a sign. The plaque shall have a black legend on a yellow reflectorized background and shall match the length of the R12-1a sign.



R12-X3

R12-X3a

GUIDANCE:

The TRUCKS MUST NOT MEET ON BRIDGE sign (R12-X3) should be installed on two-way roadways in advance of bridges or structures:

1. Where the clear opening width is greater than 18 feet and less than 20 feet, the approach alignment is poor and the structure type is such that commercial vehicles cannot pass safely on the structure, or
2. Where a restriction on the meeting or passing of commercial vehicles would provide increased load capacity upon the structure.

The VEHICLES MUST NOT MEET ON BRIDGE sign (R12-X3a) should be installed on two-way roadways in advance of one-lane bridges or structures where the clear opening width is less than 16 feet. The WEIGHT RESTRICTION AHEAD sign (W14-X3) should be installed in advance of the bridge weight limit signs.

2B.66.2 State Law Signs (R16-X1, X2, X3, X9, X11, and X12)

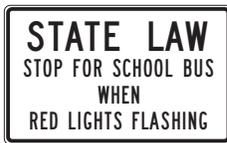
GUIDANCE:

These signs should be installed along State Highways following the State Entrance signs.

Their intent is to inform motorists entering into Minnesota of some of the common motor vehicle laws.

These signs include:

1. STATE LAW STOP FOR SCHOOL BUS WHEN RED LIGHTS FLASHING (R16-X1)
2. STATE LAW TRUCKS AND VEHICLES WITH TRAILERS MUST MAINTAIN 500 FOOT INTERVAL (R16-X2)
3. UP TO \$700 FINE FOR LITTERING HIGHWAY (R16-X3)
4. STATE LAW UNLAWFUL TO PASS ON SHOULDER (R16-X9)
5. STATE LAW SEAT BELT USE REQUIRED (R16-X11)



R16-X1



R16-X2



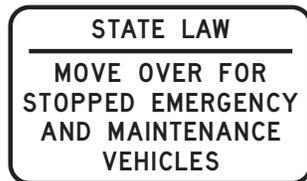
R16-X3



R16-X9



R16-X11



R16-X15



R4-X5

2B.67 Barricades

OPTION:

Barricades may be used to mark any of the following conditions:

- A. A roadway ends,
- B. A ramp or lane closed for operational purposes, or
- C. The permanent or semi-permanent closure or termination of a roadway.

STANDARD:

When used to warn and alert road users of the terminus of a roadway in other than temporary traffic control zones, barricades shall meet the design criteria of Section 6F.68 for a Type 3 Barricade, except that the colors of the stripes shall be retroreflective white and retroreflective red.

OPTION:

An end-of-roadway marker or markers may be used as described in Section 2C.66.

GUIDANCE:

Appropriate advance warning signs (see Chapter 2C) should be used.

2B.68 Gates

SUPPORT:

Gates described in this section used for weather or other emergency conditions are typically permanently installed to enable the gate to be immediately deployed as needed to prohibit the entry of traffic to the highway segment(s).

A gate typically features a gate arm that is moved from a vertical to a horizontal position or is rotated in a horizontal plane from parallel to traffic to perpendicular to traffic. Traffic is obstructed and required to stop when the gate arm is placed in a horizontal position perpendicular to traffic. Another type of gate consists of a segment of fence (usually on rollers) that swings open and closed, or that is retracted to open and then extended to close.

Gates are sometimes used to enforce a required stop. Some examples of such uses are the following:

- A. Parking facility entrances and exits,
- B. Private community entrances and exits,
- C. Military base entrances and exits,
- D. Toll plaza lanes,
- E. Movable bridges (see Chapter 4J),
- F. Automated Flagger Assistance Devices (see Chapter 6E), and
- G. Grade crossings (see Part 8).

Gates are sometimes used to periodically close a roadway or a ramp. Some examples of such uses are the following:

- A. Closing ramps to implement counter-flow operations for evacuations,
- B. Closing ramps that lead to reversible lanes, and
- C. Closing ramps and roadways for weather events such as snow, ice, or flooding, or for other emergencies.

STANDARD:

Except as provided in the following paragraph, gate arms, if used, shall be fully retroreflectorized on both sides, have vertical stripes alternately red and white at 16-inch intervals measured horizontally as shown in Figure 8C-1.

OPTION:

If used on a one-way roadway or ramp, the retroreflectorization may be omitted on the side of the gate facing away from approaching traffic.

Where gate arms are used to block off ramps into reversible lanes or to redirect approaching traffic, the red and white striping may be angled such that the stripes slope downward at an angle of 45 degrees toward the side of the gate arm on which traffic is to pass.

STANDARD:

The gate arm shall extend across the approaching lane or lanes of traffic to effectively block motor vehicle and/or pedestrian travel as appropriate.

When gate arms are in the vertical position or rotated to an open position, the closest part of the gate arm and support shall have a lateral offset of at least 2 feet from the face of the curb or the edge of the traveled way.

When gate arms that are located in the median or on an island are in the horizontal position or rotated to a closed position, the closest part of the counterweight or its supports shall have a lateral offset of at least 2 feet from the face of the curb or the edge of the traveled way of the open roadway on the opposite side of the median or island.

GUIDANCE:

When a gate that is rotated in a horizontal plane is in the position where it is parallel to traffic (indicating that the roadway is open), the outer end of the gate arm should be rotated to the downstream direction (from the perspective of traffic in the lane adjacent to the gate support) to prevent spearing if the gate is struck by an errant vehicle.

If a pedestrian route is present and if it is not intended that pedestrian traffic be controlled by the gate, a minimum of 2 feet of lateral offset from supports, posts, counterweights, and gate mechanisms should be provided when the gate arm is in the open position and when the gate arm is in the closed position such that pedestrian travel is not impeded.

OPTION:

Red lights may be attached to traffic gates.

STANDARD:

If red lights are attached to a traffic gate, the red lights shall be steadily illuminated or flashed only during the period when the gate is in the horizontal or closed position and when the gate is in the process of being opened or closed.

Except as provided in the following paragraph, rolling sections of fence, if used, shall include either a horizontal strip of retroreflectorized sheeting on both sides of the fence with vertical stripes alternately red and white at 16-inch intervals measured horizontally to simulate the appearance of a gate arm in the horizontal position, or one or more Type 4 object markers (see Section 2C.66), or both. If a horizontal strip of retroreflectorized sheeting is used, the bottom of the sheeting shall be located 3.5 to 4.5 feet above the roadway surface.

OPTION:

If used on a one-way roadway or ramp, the retroreflectorization may be omitted on the side of the fence facing away from approaching traffic.

PART 2. SIGNS
Chapter 2C. Warning Signs and Object Markers
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Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Horizontal Alignment	W1-1,2,3,4,5	2C.7	30 x 30	36 x 36	36 x 36	36 x 36	---	48 x 48
Combination Horizontal Alignment/Advisory Speed	W1-1a,2a	2C.10	36 x 36	36 x 36	48 x 48	48 x 48	---	48 x 48
One-Direction Large Arrow	W1-6	2C.12	48 x 24	48 x 24	60 x 30	60 x 30	---	60 x 30
Two-Direction Large Arrow	W1-7	2C.47	48 x 24	48 x 24	---	---	---	60 x 30
Chevron Alignment	W1-8	2C.9	18 x 24	18 x 24	30 X 36	36 x 48	---	24 x 30
Combination Horizontal Alignment/Intersection	W1-10,10a,10b,10c,10d,10e	2C.11	36 x 36	36 x 36	36 x 36	48 x 48	---	---
Hairpin Curve	W1-11	2C.7	30 x 30	30 x 30 *	36 x 36	48 X 48	---	48 x 48
Truck Rollover	W1-13	2C.13	36 x 36	36 x 36	36 x 36	48 X 48	---	36 x 36
270-degree Loop	W1-15	2C.7	30 x 30	30 x 30 *	36 x 36	48 X 48	---	48 x 48
Intersection Warning	W2-1,2,3,4,5,6,7,8,X1,X12	2C.46	30 x 30	30 x 30 *	36 x 36	---	24 x 24	48 x 48
Stop, Yield, and Signal Ahead	W3-1,2,3	2C.36	30 x 30	30 x 30 *	48 x 48	48 x 48	30 x 30	---
Be Prepared To Stop	W3-4	2C.36	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Reduced Speed Limit Ahead	W3-5	2C.38	36 x 36	36 x 36	48 x 48	48 x 48	---	---
XX MPH Speed Zone Ahead	W3-5a	2C.38	36 x 36	36 x 36	48 x 48	48 x 48	---	---
Draw Bridge	W3-6	2C.39	36 x 36	36 x 36	48 x 48	---	---	60 x 60
Ramp Meter Ahead	W3-7	2C.37	36 x 36	36 x 36	---	---	---	---
Ramp Metered When Flashing	W3-8	2C.37	36 x 36	36 x 36	---	---	---	---
Prepare to Stop When Flashing	W3-X4	2C.36	66 x 42	66 x 42	66 x 42	---	66 x 42	66 x 42
Merging Traffic	W4-1	2C.40	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Lane Ends	W4-2	2C.42	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Added Lane	W4-3	2C.41	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Cross Traffic Does Not Stop (plaque)	W4-4P	2C.59	24 x 12	24 x 12	36 x 18	---	---	48 x 24
Traffic from Left (Right) Does Not Stop (plaque)	W4-4aP	2C.59	24 x 12	24 x 12	36 x 18	---	---	48 x 24
Oncoming Traffic Does Not Stop (plaque)	W4-4bP	2C.59	24 x 12	24 x 12	36 x 18	---	---	48 x 24
Entering Roadway Merge	W4-5	2C.40	36 x 36	36 x 36	48 x 48	---	---	---
No Merge Area (plaque)	W4-5P	2C.40	18 x 24	18 x 24	24 x 30	---	---	---
Entering Roadway Added Lane	W4-6	2C.41	36 x 36	36 x 36	48 x 48	---	---	---
Road Narrows	W5-1	2C.19	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Narrow Bridge	W5-2	2C.20	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
One Lane Bridge	W5-3	2C.21	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Shoulder Narrows	W5-X1	2C.31	36 x 36	36 x 36	48 x 48	48 x 48	---	---
Divided Highway	W6-1	2C.22	36 x 36	36 x 36	48 x 48	48 x 48	---	---
Divided Highway Ends	W6-2	2C.23	36 x 36	36 x 36	48 x 48	48 x 48	---	---
Two-Way Traffic	W6-3	2C.44	36 x 36	36 x 36	48 x 48	48 x 48	---	---
Hill	W7-1	2C.16	30 x 30	36 x 36	36 x 36	36 x 36	24 x 24	48 x 48
Hill with Grade	W7-1a	2C.16	30 x 30	36 x 36	36 x 36	36 x 36	24 x 24	48 x 48
Use Low Gear (plaque)	W7-2P	2C.57	24 x 18	24 x 18	---	---	---	---
Trucks Use Lower Gear (plaque)	W7-2bP	2C.57	24 x 18	24 x 18	---	---	---	---
XX% Grade (plaque)	W7-3P	2C.57	24 x 18	24 x 18	---	---	---	---
Next XX Miles (plaque)	W7-3aP	2C.55	24 x 18	24 x 18	---	---	---	---
XX% Grade, XX Miles (plaque)	W7-3bP	2C..57	24 x 18	24 x 18	---	---	---	---

Table 2C-2 Warning Sign and Plaque Sizes (Sheet 1 of 3)

MN Rev. 1

MN Rev. 2

MN Rev. 2

MN Rev. 2

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Runaway Truck Ramp XX Miles	W7-4	2C.17	78 x 48	78 x 48	78 x 48	78 x 48	---	---
Runaway Truck Ramp (w/arrow)	W7-4b	2C.17	78 x 60	78 x 60	78 x 60	78 x 60	---	---
Truck Escape Ramp	W7-4c	2C.17	78 x 60	78 x 60	78 x 60	78 x 60	---	---
Sand, Gravel, Paved (plaque)	W7-4dP,4eP,4fP	2C.17	24 x 12	24 x 12	24 x 12	24 x 12	---	---
Hill Blocks View	W7-6	2C.18	30 x 30	36 x 36	36 x 36	---	---	48 x 48
Bump or Dip	W8-1,1a,1b,2	2C.28	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Pavement Ends	W8-3	2C.30	36 x 36	36 x 36	48 x 48	---	30 x 30	---
Soft Shoulder	W8-4	2C.31	36 x 36	36 x 36	48 x 48	48 x 48	24 x 24	48 x 48
Slippery When Wet	W8-5	2C.32	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Road Condition (plaques)	W-5P,5bP,5cP	2C.32	24 x 18	24 x 18	30 x 24	36 x 30	---	36 x 30
Ice	W8-5aP	2C.32	24 x 12	24 x 12	30 x 18	30 x 18	---	---
Truck Crossing	W8-6	2C.49	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Loose Gravel	W8-7	2C.32	36 x 36	36 x 36	36 x 36	---	24 x 24	48 x 48
Rough Road	W8-8	2C.32	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Low Shoulder	W8-9	2C.31	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Uneven Lanes	W8-11	2C.32	36 x 36	36 x 36	36 x 36	48 x 48	---	48 x 48
No Center Line	W8-12	2C.34	36 x 36	36 x 36	36 x 36	48 x 48	---	---
Bridge Ices Before Road	W8-13	2C.32	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Fallen Rocks	W8-14	2C.32	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Grooved Pavement	W8-15	2C.33	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Motorcycle (plaque)	W8-15P	2C.33	24 x 18	24 x 18	30 x 24	36 x 30	---	36 x 30
Metal Bridge Deck	W8-16	2C.33	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Shoulder Drop-Off (symbol)	W8-17	2C.31	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Shoulder Drop-Off (plaque)	W8-17P	2C.31	24 x 18	24 x 18	30 x 24	36 x 30	---	36 x 30
Road May Flood	W8-18	2C.35	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Flood Gauge	W8-19	2C.35	12 x 72	12 x 72	---	---	---	---
Gusty Winds Area	W8-21	2C.35	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Fog Area	W8-22	2C.35	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
No Shoulder	W8-23	2C.31	36 x 36	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Shoulder Ends	W8-25	2C.31	30 x 30	36 x 36	36 x 36	48 x 48	24 x 24	48 x 48
Left (Right) Lane Ends	W9-1	2C.42	36 x 36	36 x 36	36 x 36	48 x 48	30 x 30	48 x 48
Lane Ends Merge Left (Right)	W9-2	2C.42	36 x 36	36 x 36	36 x 36	48 x 48	30 x 30	48 x 48
Right (Left) Lane Exit Only Ahead	W9-7	2C.43	132 x 72	132 x 72	132 x 72	132 x 72	---	---
Bicycle	W11-1	2C.49	30 x 30	30 x 30 *	36 x 36	---	24 x 24	48 x 48
Pedestrian	W11-2	2C.50	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Large Animals	W11-3,4,16,17,18,19,20,21,22	2C.50	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Farm Vehicle	W11-5,5A	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Snowmobile	W11-6	2C.50	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Equestrian	W11-7	2C.50	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Emergency Vehicle	W11-8	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Disabled	W11-9	2C.50	30 x 30	36 x 36	36 x 36	---	---	48 x 48
Truck	W11-10	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Golf Cart	W11-11	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Emergency Signal Ahead (plaque)	W11-12P	2C.49	36 x 30	36 x 30	36 x 30	---	---	---
Horse-Drawn Vehicle	W11-14	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Bicycle/Pedestrian	W11-15	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Trail Crossing	W11-15a	2C.49	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48

Table 2C-2 Warning Sign and Plaque Sizes (Sheet 2 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Trail Xing (plaque)	W11-15P	2C.49	24 x 18	24 x 18	30 x 24	---	---	36 x 30
Trucks Entering	W11-X3	2C.49	36 x 36	36 x 36	48 x 48	---	24 x 24	48 x 48
Double Arrow	W12-1	2C.25	30 x 30	36 x 36	36 x 36	---	---	---
Low Clearance (with arrow)	W12-2	2C.27	36 x 36	36 x 36	48 x 48	48 x 48	30 x 30	---
Low Clearance	W12-2a	2C.27	78 x 24	78 x 24	--	---	---	---
Low Clearance (with arrows)	W12-X2	2C.27	48 x 24	48 x 24	----	---	---	---
Advisory Speed (plaque)	W13-1P	2C.8	18 x 18	18 x 18	24 x 24	30 x 30	---	30 x 30
Advisory Exit or Ramp Speed	W13-2,3	2C.14	24 x 30	24 x 30	36 x 48	36 x 48	---	48 x 60
Combination Horizontal Alignment/Advisory Exit or Ramp Speed	W13-6,7	2C.15	24 x 42	24 x 42	36 x 60	36 x 60	---	48 x 84
Dead End, No Outlet	W14-1,2	2C.26	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Dead End, No Outlet (w/arrow)	W14-1a, 2a	2C.26	36 x 8	36 x 8	---	---	---	---
No Passing Zone (pennant)	W14-3	2C.45	48 x 48 x 36	48 x 48 x 36	---	---	40 x 40 x 30	64 x 64 x 48
Playground	W15-1	2C.51	30 x 30	36 x 36	36 x 36	---	24 x 24	48 x 48
Share the Road (plaque)	W16-1P	2C.60	18 x 24	18 x 24	24 x 30	---	---	24 x 30
XX Feet	W16-2P	2C.55	24 x 18	24 x 18	---	---	---	30 x 24
XX Ft	W16-2aP	2C.55	24 x 12	24 x 12	---	---	---	30 x 18
XX Miles (2-line plaque)	W16-3P	2C.55	30 x 24	30 x 24	---	---	---	---
XX Miles (1-line plaque)	W16-3aP	2C.55	30 x 12	30 x 12	---	---	---	---
Next XX Feet (plaque)	W16-4P	2C.55	30 x 24	30 x 24	---	---	---	---
Supplemental Arrow (plaque)	W16-5P,6P	2C.56	24 x 18	24 x 18	---	---	---	---
Downward Diagonal Arrow (plaque)	W16-7P	2C.50	24 x 12	24 x 12	---	---	---	30 x 18
Advance Street Name (1-line plaque)	W16-8P	2C.58	Varies x 8	Varies x 8	---	---	---	---
Advance Street Name (2-line plaque)	W16-8aP	2C.58	Varies x 15	Varies x 15	---	---	---	---
Ahead (plaque)	W16-9P	2C.50	24 x 12	24 x 12	30 x 18	---	---	---
Photo Enforced (symbol plaque)	W16-10P	2C.61	24 x 12	24 x 12	36 x 18	---	---	48 x 24
Photo Enforced (plaque)	W16-10aP	2C.61	24 x 18	24 x 18	36 x 30	---	---	48 x 36
HOV (plaque)	W16-11P	2G.9	24 x 12	24 x 12	30 x 18	---	---	30 x 18
Traffic Circle (plaque)	W16-12P	2C.46	24 x 18	24 x 18	---	---	---	---
When Flashing (plaque)	W16-13P	2C.50	24 x 18	24 x 18	---	---	---	---
New (plaque)	W16-15P	2C.62	24 x 12	24 x 12	---	---	---	---
Roundabout (plaque)	W16-17P	2C.46	24 x 12	24 x 12	---	---	---	---
NOTICE (plaque)	W16-18P	2A.15	24 x 12	24 x 12	---	---	---	---
Speed Hump	W17-1	2C.29	30 x 30	36 x 36	---	---	24 x 24	48 x 48
Freeway Ends XX Miles	W19-1	2C.24	---	---	---	144 x 48	---	---
Expressway Ends XX Miles	W19-2	2C.24	---	---	144 x 48	---	---	---
Freeway Ends	W19-3	2C.24	---	---	---	48 x 48	---	---
Expressway Ends	W19-4	2C.24	---	---	48 x 48	---	---	---
All Traffic Must Exit	W19-5	2C.24	---	---	90 x 48	90 x 48	---	---
New Traffic Pattern Ahead	W23-2	2C.52	36 x 36	36 x 36	---	---	---	---
Traffic Signal Extended Green	W25-1,2	2C.48	24 x 30	24 x 30	---	---	---	---

* The minimum size required for diamond-shaped warning signs facing traffic on multi-lane conventional roads shall be 36 x 36 where the posted speed limit is greater than 35 mph (see Section 2C.4).

Notes:

1. Larger signs may be used when appropriate
2. Dimensions in inches are shown as width x height

2C.4 Size of Warning Signs

STANDARD:

Except as provided in Section 2A.11, the sizes for warning signs shall be as shown in Table 2C-2 and in Appendix C at the back of this Manual.

SUPPORT:

Section 2A.11 contains information regarding the applicability of the various columns in Table 2C-2.

STANDARD:

Except as provided in the Option below, the minimum size for all diamond-shaped warning signs facing traffic on a multi-lane conventional road where the posted speed limit is higher than 35 mph shall be 36 x 36 inches.

The minimum size for supplemental warning plaques that are not included in Table 2C-2 shall be as shown in Table 2C-3.

OPTION:

If a diamond-shaped warning sign is placed on the left-hand side of a multi-lane roadway to supplement the installation of the same warning sign on the right-hand side of the roadway, the minimum size identified in the Single Lane column in Table 2C-2 may be used.

Signs and plaques larger than those shown in Appendix C and Tables 2C-2 and 2C-3 may be used (see Section 2A.11).

Size of Warning Sign	Size of Supplemental Plaque			
	Rectangular			Square
	1 Line	2 Lines	Arrow	
24 x 24 30 x 30	24 x 12	24 x 18	24 x 12	18 x 18
36 x 36 48 x 48	30 x 18	30 x 24	30 x 18	24 x 24

Notes: 1. Larger supplemental plaques may be used when appropriate.
2. Dimensions are in inches and are shown as width x height.

Table 2C-3. Minimum Size of Supplemental Warning Plaques

GUIDANCE:

The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps should be the size identified in Table 2C-2 for the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway Column, the Expressway size should be used. If a minimum size is not provided in the Freeway or the Expressway Column, the Oversized size should be used.

2C.5 Placement of Warning Signs

SUPPORT:

For information on placement of warning signs, see Sections 2A.16 to 2A.21.

The time needed for detection, recognition, decision, and reaction is called the Perception-Response Time (PRT). Table 2C-4 is provided as an aid for determining warning sign location. The distances shown in Table 2C-4 can be adjusted for roadway features, other signing, and to improve visibility.

GUIDANCE:

Warning signs should be placed so that they provide adequate PRT. The distances contained in Table 2C-4 are for guidance purposes and should be applied with engineering judgment. Warning signs should not be placed too far in advance of the condition, such that drivers might tend to forget the warning because of other driving distractions, especially in urban areas.

Minimum spacing between warning signs with different messages should be based on the estimated PRT for driver comprehension of and reaction to the second sign.

The effectiveness of the placement of warning signs should be periodically evaluated under both day and night conditions.

OPTION:

Warning signs that advise road users about conditions that are not related to a specific location, such as Deer Crossing or SOFT SHOULDER, may be installed in an appropriate location, based on engineering judgment, since they are not covered in Table 2C-4.

Posted or 85th Percentile Speed (mph)	Advance Placement Distance ¹								
	Condition A: Speed reduction and lane changing in heavy traffic ² feet	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 ³ feet	10 ⁴ feet	20 ⁴ feet	30 ⁴ feet	40 ⁴ feet	50 ⁴ feet	60 ⁴ feet	70 ⁴ feet
20	225	100 ⁶	see Note ⁵	---	---	---	---	---	---
25	325	100 ⁶	see Note ⁵	see Note ⁵	---	---	---	---	---
30	460	100 ⁶	see Note ⁵	see Note ⁵	---	---	---	---	---
35	565	100 ⁶	see Note ⁵	see Note ⁵	see Note ⁵	---	---	---	---
40	670	125	100 ⁶	100 ⁶	see Note ⁵	---	---	---	---
45	775	175	125	100 ⁶	100 ⁶	see Note ⁵	---	---	---
50	885	250	200	175	125	100 ⁶	---	---	---
55	990	325	275	225	200	125	see Note ⁵	---	---
60	1100	400	350	325	275	200	100 ⁶	---	---
65	1200	475	450	400	350	275	200	100 ⁶	---
70	1250	550	525	500	450	375	275	150	---
75	1350	650	625	600	550	475	375	250	100 ⁶

NOTES:

- ¹ The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B have been adjusted for a sign legibility distance of 250 feet, which is the appropriate for an alignment warning symbol sign. For Condition A and B, warning signs with less than 6-inch legend or more than 4 words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.
- ² Typical conditions are locations where the road user might use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PRT of 14.0 to 14.5 seconds for vehicle maneuvers (2004 AASHTO Policy, Exhibit 3-3, Decision Sight Distance, Avoidance Maneuver E) minus the legibility distance of 180 feet for the appropriate sign.
- ³ Typical condition is the warning of a potential stop situation. Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection Warning signs. The distances are based on the 2004 AASHTO Policy, Exhibit 3-1, Stopping Sight Distance, providing a PRT of 2.5 seconds, a deceleration rate of 11.2 feet/second², minus the sign legibility distance of 180 feet.
- ⁴ Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 second PRT, a vehicle deceleration rate of 10 feet/second², minus the sign legibility distance of 250 ft.
- ⁵ No suggested distances are provided for these speeds, as placement location is dependent on site conditions and other signing. An alignment warning sign may be placed anywhere from the point of curvature up to 100 feet in advance of the curve. However, the alignment warning sign should be installed in advance of the curve and at least 100 feet from any other sign.
- ⁶ The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

Table 2C-4. Guidelines for Advance Placement of Warning Signs

2C.6 Horizontal Alignment Warning Signs

SUPPORT:

A variety of horizontal alignment warning signs, pavement markings (see Chapter 3B), and delineation (see Chapter 3F) can be used to advise motorists of a change in the roadway alignment. Uniform application of these traffic control devices with respect to the amount of change in the roadway alignment conveys a consistent message establishing driver expectancy and promoting effective roadway operations. The design and application of horizontal alignment warning signs to meet those requirements are addressed in Sections 2C.6 through 2C.15.

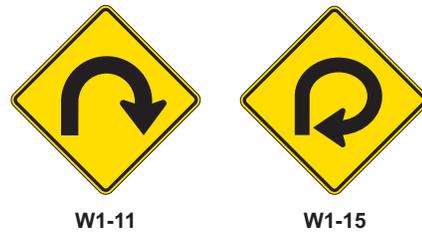
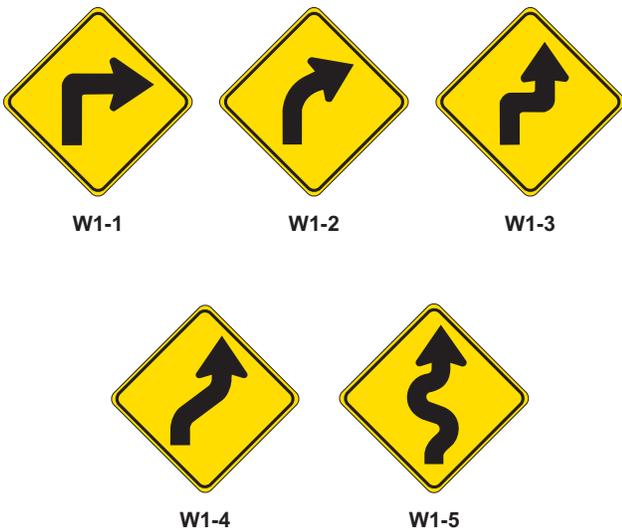
STANDARD:

In advance of horizontal curves on freeways, on expressways, and on roadways with more than 1,000 AADT that are functionally classified as arterials or collectors, horizontal alignment warning signs shall be used in accordance with Table 2C-5 based on the speed differential between the roadway's posted or statutory speed limit or 85th-percentile speed, whichever is higher, or the prevailing speed on the approach to the curve, and the horizontal curve's advisory speed.

OPTION:

Horizontal Alignment Warning signs may also be used on other roadways or on arterial and collector roadways with less than 1,000 AADT based on engineering judgment.

2C.7 Horizontal Alignment Signs (W1-1 through W1-5, W1-11, W1-15)



STANDARD:

If Table 2C-5 indicates that a horizontal alignment sign is required, recommended, or allowed, the sign installed in advance of the curve shall be a Curve (W1-2) sign unless a different sign is recommended or allowed by the provisions of this Section.

A Turn (W1-1) sign shall be used instead of a Curve sign in advance of curves that have advisory speeds of 30 mph or less (see Figure 2C-2).

GUIDANCE:

Where there are two changes in roadway alignment in opposite directions that are separated by a tangent distance of less than 600 feet, the Reverse Turn (W1-3) sign should be used instead of multiple Turn (W1-1) signs and the Reverse Curve (W1-4) sign should be used instead of multiple Curve (W1-2) signs.

OPTION:

A Winding Road (W1-5) sign may be used instead of multiple Turn (W1-1) or Curve (W1-2) signs where there are three or more changes in roadway alignment each separated by a tangent distance of less than 600 feet.

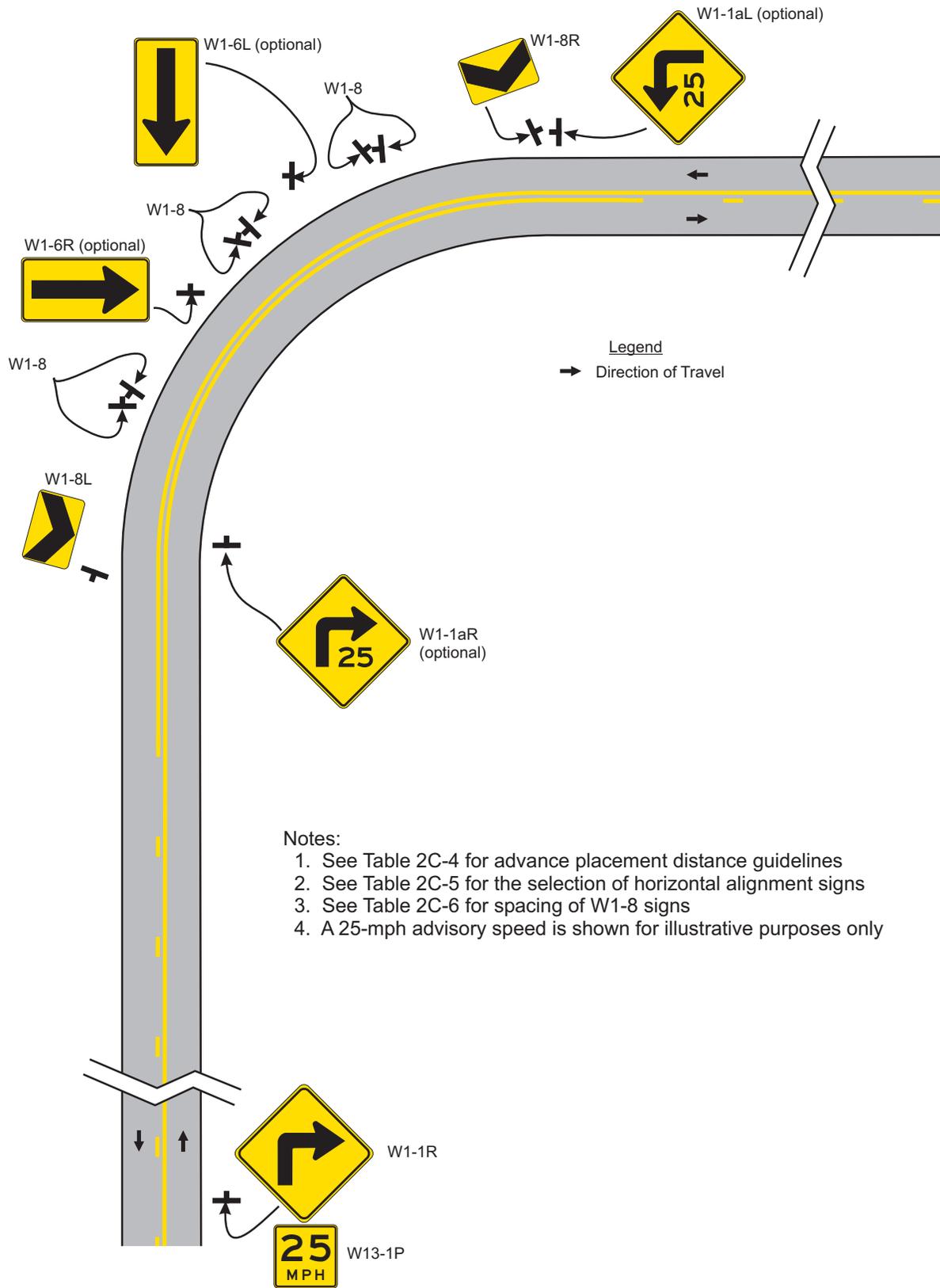
A NEXT XX MILES (W7-3aP) supplemental distance plaque (see Section 2C.55) may be installed below the Winding Road sign where continuous roadway curves exist for a specific distance.

If the curve has a change in horizontal alignment of 135 degrees or more, the Hairpin Curve (W1-11) sign may be used instead of a Curve or Turn sign.

If the curve has a change of direction of approximately 270 degrees, such as on a cloverleaf interchange ramp, the 270-degree Loop (W1-15) sign may be used instead of a Curve or Turn sign.

GUIDANCE:

When the Hairpin Curve sign or the 270-degree Loop sign is installed, either a One-Direction Large Arrow (W1-6) sign or Chevron Alignment (W1-8) signs should be installed on the outside of the turn or curve.



Notes:

1. See Table 2C-4 for advance placement distance guidelines
2. See Table 2C-5 for the selection of horizontal alignment signs
3. See Table 2C-6 for spacing of W1-8 signs
4. A 25-mph advisory speed is shown for illustrative purposes only

Figure 2C-2. Example of Warning Signs for a Turn

Type of Horizontal Alignment Sign	Difference Between Speed Limit and Advisory Speed				
	5 mph	10 mph	15 mph	20 mph	25 mph or more
Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W1-10 Series)) (see Section 2C.7 to determine which sign to use)	Recommended	Required	Required	Required	Required
Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

Note: Required means that the sign and/or plaque shall be used, recommended means that the sign and/or plaque should be used, and optional means that the sign and/or plaque may be used.

See Section 2C.6 for roadways with less than 1,000 ADT.

Table 2C-5. Horizontal Alignment Sign Selection

2C.8 Advisory Speed Plaque (W13-1P)



W13-1P

OPTION:

The Advisory Speed (W13-1P) plaque may be used to supplement any warning sign to indicate the advisory speed for a condition.

STANDARD:

The use of the Advisory Speed plaque for horizontal curves shall be in accordance with the information shown in Table 2C-5. The Advisory Speed plaque shall also be used where an engineering study indicates a need to advise road users of the advisory speed for other roadway conditions.

If used, the Advisory Speed plaque shall carry the message XX MPH. The speed displayed shall be a multiple of 5 mph.

Except in emergencies or when the condition is temporary, an Advisory Speed plaque shall not be installed until the advisory speed has been determined by an

engineering study.

The Advisory Speed plaque shall only be used to supplement a warning sign and shall not be installed as a separate sign installation.

The advisory speed shall be determined by an engineering study that follows established engineering practices.

SUPPORT:

Among the established engineering practices that are appropriate for the determination of the recommended advisory speed for a horizontal curve are the following:

- A. An accelerometer that provides a direct determination of side friction factors
- B. A design speed equation
- C. A traditional ball-bank indicator using the following criteria:
 1. 16 degrees of ball-bank for speeds of 20 mph or less
 2. 14 degrees of ball-bank for speeds of 25 to 30 mph
 3. 12 degrees of ball-bank for speeds of 35 mph and higher

The 16, 14, and 12 degrees of ball-bank criteria are comparable to the current AASHTO horizontal curve design guidance. Research has shown that drivers often exceed existing posted advisory curve speeds by 7 to 10 mph.

2C.41 Added Lane Sign (W4-3, W4-6)



W4-3



W4-6

GUIDANCE:

The Added Lane (W4-3) sign should be installed in advance of a point where two roadways converge and merging movements are not required. When possible, the Added Lane sign should be placed such that it is visible from both roadways; if this is not possible, an Added Lane sign should be placed on the side of each roadway.

When an Added Lane sign is to be installed on a roadway that curves before converging with another roadway that has a tangent alignment at the point of convergence, the Entering Roadway Added Lane (W4-6) sign should be used to better portray the actual geometric conditions to road users on the curving roadway.

2C.42 Lane Ends Signs

(W4-2, W9-1, W9-2)



W4-2



W9-1



W9-2

GUIDANCE:

The LANE ENDS MERGE RIGHT (LEFT) (W9-2) sign or the Lane Ends (W4-2) sign should be used to warn of the reduction in the number of traffic lanes in the direction of travel on a multi-lane highway.

OPTION:

The RIGHT (LEFT) LANE ENDS (W9-1) sign may be used in advance of the Lane Ends (W4-2) sign or the LANE ENDS MERGE LEFT (RIGHT) (W9-2) sign as additional warning or to emphasize that the traffic lane is ending and that a merging maneuver will be required.

GUIDANCE:

If used, the RIGHT (LEFT) LANE ENDS (W9-1) sign should be installed adjacent to the Lane-Reduction Arrow pavement markings.

OPTION:

On one-way streets or on divided highways where the width of the median will permit, two Lane Ends signs may be placed facing approaching traffic, one on the right-hand side and the other on the left-hand side or median.

SUPPORT:

Section 3B.9 contains information regarding the use of pavement markings in conjunction with a lane reduction.

GUIDANCE:

Where an extra lane has been provided for slower moving traffic (see Section 2B.31), a Lane Ends word sign or a Lane Ends (W4-2) symbol sign should be installed in advance of the downstream end of the extra lane.

Lane Ends signs should not be installed in advance of the downstream end of an acceleration lane.

STANDARD:

In dropped lane situations, regulatory signs (see Section 2B.20) shall be used to inform road users that a through lane is becoming a mandatory turn lane. The W4-2, W9-1, and W9-2 signs shall not be used in dropped lane situations.

2C.43 RIGHT (LEFT) LANE EXIT ONLY AHEAD Sign (W9-7)



W9-7

OPTION:

The RIGHT (LEFT) LANE EXIT ONLY AHEAD (W9-7) sign may be used to provide advance warning to road users that traffic in the right-hand (left-hand) lane of a roadway that is approaching a grade-separated interchange will be required to depart the roadway on an exit ramp at the next interchange.

STANDARD:

The W9-7 sign shall be a horizontal rectangle with a black legend and border on a yellow background.

GUIDANCE:

If used, the W9-7 sign should be installed upstream from the first overhead guide sign that contains an EXIT ONLY sign panel or upstream from the first RIGHT (LEFT) LANE MUST EXIT (R3-33) regulatory sign, whichever is farther upstream from the exit.

SUPPORT:

Section 2B.23 contains information regarding a regulatory sign that can also be used for lane drops at grade-separated interchanges.

2C.44 Two-Way Traffic Sign (W6-3)



W6-3

GUIDANCE:

A Two-Way Traffic (W6-3) sign should be used to warn road users of a transition from a multi-lane divided section of roadway to a two-lane, two-way section of roadway.

A Two-Way Traffic (W6-3) sign with an AHEAD (W16-9p) plaque should be used to warn road users of a transition from a one-way street to a two-lane, two-way section of roadway (see Figure 2B-14).

OPTION:

The Two-Way Traffic sign may be used at intervals along a two-lane, two-way roadway.

2C.45 NO PASSING ZONE Sign (W14-3)



W14-3

STANDARD:

The NO PASSING ZONE (W14-3) sign shall be a pennant-shaped isosceles triangle with its longer axis horizontal and pointing to the right. When used, the NO PASSING ZONE sign shall be installed on the left side of the roadway at the beginning of no-passing zones identified by pavement markings or DO NOT PASS signs or both (see Sections 2B.29 and 3B.2).

2C.46 Intersection Warning Signs (W2-1 through W2-8)



W2-1



W2-2



W2-3



W2-4



W2-5



W2-7L



W2-7R



W2-8

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2C.51 Playground Sign (W15-1)



OPTION:

The Playground (W15-1) sign may be used to give advance warning of a designated children's playground that is located adjacent to the road.

The Playground sign may have a fluorescent yellow-green background with a black legend and border.

GUIDANCE:

If the access to the playground area requires a roadway crossing, the application of crosswalk pavement markings (see Section 3B.18) and Non-Vehicular Warning signs (see Section 2C.50) should be considered.

2C.52 NEW TRAFFIC PATTERN AHEAD Sign (W23-2)



OPTION:

A NEW TRAFFIC PATTERN AHEAD (W23-2) sign may be used on the approach to an intersection or along a section of roadway to provide advance warning of a change in traffic patterns, such as revised lane usage, roadway geometry, or signal phasing.

GUIDANCE:

The NEW TRAFFIC PATTERN AHEAD sign should be removed when the traffic pattern returns to normal, when the changed pattern is no longer considered to be new, or within six months.

2C.53 Use of Supplemental Warning Plaques

OPTION:

A supplemental warning plaque may be displayed with a warning or regulatory sign when engineering judgment indicates that road users require additional warning information beyond that contained in the main message of the warning or regulatory sign.

STANDARD:

Supplemental warning plaques shall be used only in combination with warning or regulatory signs. They shall not be mounted alone or displayed alone. If used, a supplemental warning plaque shall be installed on the same post(s) as the warning or regulatory sign that it supplements.

Unless otherwise provided in this Manual for a particular plaque, supplemental warning plaques shall be mounted below the sign they supplement.

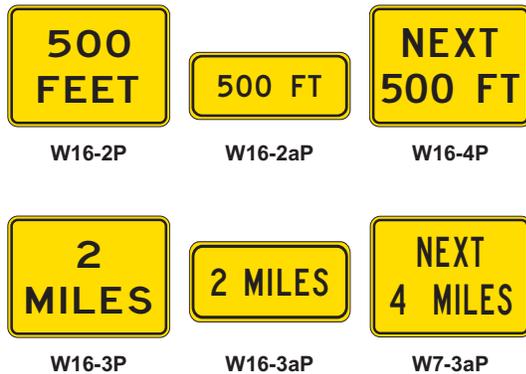
2C.54 Design of Supplemental Warning Plaques

STANDARD:

A supplemental warning plaque used with a warning sign shall have the same legend, border, and background color as the warning sign with which it is displayed. A supplemental warning plaque used with a regulatory sign shall have a black legend and border on a yellow background.

Supplemental warning plaques shall be square or rectangular.

2C.55 Distance Plaques
(W16-2 series, W16-3 series,
W16-4P, W7-3aP)

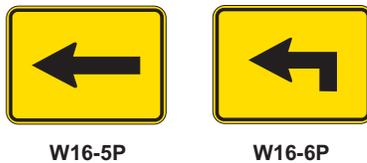


OPTION:

The Distance Ahead (W16-2 series and W16-3 series) plaques may be used to inform the road user of the distance to the condition indicated by the warning sign.

The Next Distance (W7-3aP and W16-4P) plaques may be used to inform road users of the length of roadway over which the condition indicated by the warning sign exists.

2C.56 Supplemental Arrow Plaques
(W16-5P, W16-6P)



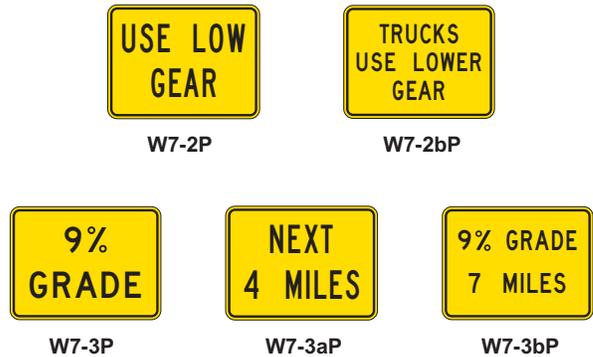
GUIDANCE:

If the condition indicated by a warning sign is located on an intersecting road and the distance between the intersection and condition is not sufficient to provide adequate advance placement of the warning sign, a Supplemental Arrow (W16-5P or W16-6P) plaque should be used below the warning sign.

STANDARD:

Supplemental Arrow plaques shall have the same legend design as the Advance Turn Arrow and Directional Arrow auxiliary signs (see Sections 2D.26 and 2D.28) except that they shall have a black legend and border on a yellow or fluorescent yellow-green background, as appropriate.

2C.57 Hill-Related Plaques
(W7-2 Series and W7-3 Series)



GUIDANCE:

Hill-Related (W7-2 series, W7-3 series) plaques or other appropriate legends and larger signs should be used for emphasis or where special hill characteristics exist.

On longer grades, the use of the distance plaque (W7-3aP or W7-3bP) at periodic intervals of approximately 1-mile spacing should be considered.

2C.58 Advance Street Name Plaque
(W16-8P, W16-8aP)



OPTION:

An Advance Street Name (W16-8P or W16-8aP) plaque may be used with any Intersection sign (W2 series, W10-2, W10-3, or W10-4) or Advance Traffic Control (W3 series) sign to identify the name of the intersecting street. Advance Street Name plaques may be mounted above or below the sign.

STANDARD:

The lettering on Advance Street Name plaques shall be composed of a combination of lower-case letters with initial upper-case letters.

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PART 2. SIGNS

Chapter 2D. Guide Signs - Conventional Roads

2D.1 Scope of Conventional Road Guide Sign Standards

STANDARD:

The provisions of this Chapter shall apply to any road or street other than low-volume roads (as defined in Section 5A.1), expressways, and freeways.

2D.2 Application

SUPPORT:

Guide signs are essential to direct road users along streets and highways, to inform them of intersecting routes, to direct them to cities, towns, villages, or other important destinations, to identify nearby rivers and streams, parks, forests, and historical sites, and generally to give such information as will help them along their way in the most simple, direct manner possible.

Chapter 2A addresses placement, location, and other general criteria for signs.

2D.3 Color, Retroreflection, and Illumination

SUPPORT:

Requirements for illumination, retroreflection, and color are stated under the specific headings for individual guide signs or groups of signs. General provisions are given in Sections 2A.7, 2A.8, and 2A.10.

STANDARD:

Except where otherwise provided in this Manual for individual signs or groups of signs, guide signs on streets and highways shall have a white message and border on a green background. All messages, borders, and legends shall be retroreflective and all backgrounds shall be retroreflective or illuminated.

SUPPORT:

Color coding is sometimes used to help road users distinguish between multiple potentially confusing destinations. Examples of valuable uses of color coding include guide signs for roadways approaching or inside an airport property with multiple terminals serving multiple airlines, and community wayfinding guide signs for various traffic generator destinations within a community or area.

STANDARD:

Except where otherwise provided in this Manual, different color sign backgrounds shall not be used to provide color coding of destinations. The color coding shall be accomplished by the use of different colored square or rectangular sign panels on the face of the guide signs.

OPTION:

The different colored sign panels may include a black or white (whichever provides the better contrast with the panel color) letter, numeral, or other appropriate designation to identify an airport terminal or other destination.

SUPPORT:

Two examples of color-coded sign assemblies are shown in Figure 2D-1. Section 2D.50 contains specific provisions regarding Community Wayfinding guide signs.

2D.4 Size of Signs

STANDARD:

Except as provided in Section 2A.11, the sizes of conventional road guide signs that have standardized designs shall be as shown in Table 2D-1.

SUPPORT:

Section 2A.11 contains information regarding the applicability of the various columns in Table 2D-1.

OPTION:

Signs larger than those shown in Table 2D-1 may be used (see Section 2A.11).

SUPPORT:

For other guide signs, the legends are so variable that a standardized design or size is not appropriate. The sign size is determined primarily by the length of the message, and the size of lettering and spacing necessary for proper legibility.

Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
Interstate Route Sign (1 or 2 digits)	M1-1	2D.11	24 x 24	24 x 24	36 x 36
Interstate Route Sign (3 digits)	M1-1	2D.11	30 x 24	30 x 24	45 x 36
Off-Interstate Route Sign (1 or 2 digits)	M1-2,3	2D.11	24 x 24	24 x 24	36 x 36
Off-Interstate Route Sign (3 digits)	M1-2,3	2D.11	30 x 24	30 x 24	45 x 36
U.S. Route Sign (1 or 2 digits)	M1-4	2D.11	24 x 24	24 x 24	36 x 36
U.S. Route Sign (3 digits)	M1-4	2D.11	30 x 24	30 x 24	45 x 36
State Route Sign (1 or 2 digits)	M1-5	2D.11	24 x 24	24 x 24	36 x 36
State Route Sign (3 digits)	M1-5	2D.11	30 x 24	30 x 24	45 x 36
County Route Sign (1,2, or 3 digits)	M1-6,X4	2D.11	24 x 24	24 x 24	36 x 36
Township Route Sign (1,2, or 3 digits)	M1-X3	2D.11	24 x 24	24 x 24	36 x 36
Forest Route (1, 2, or 3 digits)	M1-7	2D.11	24 x 24	18 x 18	36 x 36
Junction	M2-1	2D.13	21 x 15	21 x 15	30 x 21
Combination Junction (2 route signs)	M2-2	2D.14	60 x 48 *	--	--
Cardinal Directional	M3-1,2,3,4	2D.15	24 x 12	24 x 12	36 x 18
Alternate	M4-1,1a	2D.17	24 x 12	24 x 12	36 x 18
By-Pass	M4-2	2D.18	24 x 12	24 x 12	36 x 18
Business	M4-3	2D.19	24 x 12	24 x 12	36 x 18
Truck	M4-4	2D.20	24 x 12	24 x 12	36 x 18
To	M4-5	2D.21	24 x 12	24 x 12	36 x 18
End	M4-6	2D.22	24 x 12	24 x 12	36 x 18
Temporary	M4-7,7a	2D.24	24 x 12	24 x 12	36 x 18
Begin	M4-14	2D.23	24 x 12	24 x 12	36 x 18
Advance Turn Arrow	M5-1,2,3	2D.26	21 x 15	21 x 15	--
Lane Designation	M5-4,5,6	2D.27	24 x 18	24 x 18	36 x 24
Directional Arrow	M6-1,2,2a,3,4, 5,6,7	2D.28	21 x 15	21 x 15	30 x 21 --
Destination (1 line)	D1-1	2D.37	Varies x 18	Varies x 18	--
Destination and Distance (1 line)	D1-1a	2D.37	Varies x 18	Varies x 18	--
Circular Intersection Destination (1 line)	D1-1d	2D.38	Varies x 18	Varies x 18	--
Circular Intersection Departure Guide	D1-1e	2D.38	Varies x 42 *	--	--
Destination (2 lines)	D1-2	2D.37	Varies x 30	Varies x 30	--
Destination and Distance (2 lines)	D1-2a	2D.37	Varies x 30	Varies x 30	--
Circular Intersection Destination (2 lines)	D1-2d	2D.38	Varies x 30	Varies x 30	--
Destination (3 lines)	D1-3	2D.37	Varies x 42	Varies x 42	--
Destination and Distance (3 lines)	D1-3a	2D.37	Varies x 42	Varies x 42	--
Circular Intersection Destination (3 lines)	D1-3d	2D.38	Varies x 42	Varies x 42	--
Distance (1 line)	D2-1	2D.41	Varies x 18	Varies x 18	--
Distance (2 lines)	D2-2	2D.41	Varies x 30	Varies x 30	--
Distance (3 lines)	D2-3	2D.41	Varies x 42	Varies x 42	--
Street Name (1 line)	D3-1,1a	2D.43	Varies x 12	Varies x 8	Varies x 18
Advance Street Name (2 lines)	D3-2	2D.44	Varies x 30	--	--
Advance Street Name (3 lines)	D3-2	2D.44	Varies x 42	--	--
Advance Street Name (4 lines)	D3-2	2D.44	Varies x 54	--	--
Parking Area	D4-1	2D.47	30 x 24	18 x 15	--
Park - Ride	D4-2	2D.48	30 x 36	24 x 30	36 x 48
National Scenic Byways	D6-4	2D.55	24 x 24	24 x 24	--
National Scenic Byways	D6-4a	2D.55	24 x 12	24 x 12	--
Weigh Station XX Miles	D8-1	2D.49	78 x 60	60 x 48	96 x 72
Weigh Station Next Right	D8-2	2D.49	84 x 72	66 x 54	108 x 90
Weigh Station (with arrow)	D8-3	2D.49	66 x 60	48 x 42	84 x 78
Crossover	D13-1,2	2D.54	60 x 30	60 x 30	78 x 42
Freeway Entrance	D13-3	2D.46	48 x 30	48 x 30	--
Freeway Entrance (with arrow)	D13-3a	2D.46	48 x 42	48 x 42	--
Combination Lane Use/Destination	D15-1	2D.33	Varies x 96	Varies x 96	--
Next Truck Lane XX Miles	D17-1	2D.51	42 x 48	42 x 48	60 x 66
Truck Lane XX Miles	D17-2	2D.51	42 x 42	42 x 42	60 x 54
Slow Traffic Turn-Out XX Miles	D17-7	2D.52	72 x 42	72 x 42	96 x 54

* The size shown is for a typical sign. The size should be approximately based on the amount of legend required for the sign.

- Notes: 1. Larger signs may be used when appropriate
2. Dimensions in inches are shown as width x height

Table 2D-1. Conventional Road Guide Sign Sizes

OPTION:

A route sign and any auxiliary signs used with it may be combined on a single sign as a guide sign.

GUIDANCE:

If a route sign and its auxiliary signs are combined to form a single guide sign, the background color of the sign should be green and the design should comply with the basic principles for the design of guide signs.

STANDARD:

If a route sign and its auxiliary signs are combined on a single sign with a green background, the auxiliary messages shall be white legends placed directly on the green background. Auxiliary signs shall not be mounted directly to a guide sign or other type of sign.

SUPPORT:

Chapter 2F contains information regarding auxiliary signs for toll highways.

2D.13 Junction Auxiliary Sign (M2-1)



M2-1



M2-1a

STANDARD:

The Junction (M2-1) auxiliary sign shall carry the abbreviated legend JCT and shall be mounted at the top of an assembly (see Section 2D.30) directly above the route sign, the sign for an alternative route (see Section 2D.17) that is part of the route designation, or the Cardinal Direction auxiliary sign where access is available only to one direction of the intersected route. The minimum size of the Junction auxiliary sign shall be 21 x 15 inches for compatibility with auxiliary signs carrying arrow symbols.

2D.14 Combination Junction Sign (M2-2)

OPTION:

As an alternative to the standard Junction assembly where more than one route is to be intersected or joined, a rectangular guide sign may be used carrying the word JUNCTION above the route numbers.

STANDARD:

The Combination Junction (M2-2) sign shall have a green background with white border and lettering for the word JUNCTION.



M2-2

GUIDANCE:

The Combination Junction sign should comply with the specific provisions of Section 2D.11 regarding the incorporation of the route signs as components of guide signs.

Although the size of the Combination Junction sign will depend on the number of routes involved, the numerals should be large enough for clear legibility and should be of a size comparable with those in the individual route signs.

2D.15 Cardinal Direction Auxiliary Signs (M3-1 through M3-4)



M3-1



M3-2



M3-3



M3-1a



M3-2a



M3-3a



M3-4



M3-4a

GUIDANCE:

Cardinal Direction auxiliary signs carrying the legend NORTH, EAST, SOUTH, or WEST should be used to indicate the general direction of the entire route.

STANDARD:

To improve the readability and recognition of the cardinal directions, the first letter of the cardinal direction words shall be ten percent larger, rounded up to the nearest whole number size.

If used, the Cardinal Direction auxiliary sign shall be mounted directly above a route sign or, if used, an auxiliary sign for an alternative route.

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2D.16 Auxiliary Signs for Alternative Routes (M4 Series)

OPTION:

Auxiliary signs, carrying legends such as ALTERNATE, BY-PASS, BUSINESS, or TRUCK, may be used to indicate an alternate route of the same number between two points on that route.

STANDARD:

If used, the auxiliary signs for alternative routes shall be mounted directly above a route sign.

2D.17 ALTERNATE Auxiliary Signs (M4-1, M4-1a)



M4-1



M4-1a

OPTION:

The ALTERNATE (M4-1) or the ALT (M4-1a) auxiliary sign may be used to indicate an officially designated alternate routing of a numbered route between two points on that route.

STANDARD:

If used, the ALTERNATE or ALT auxiliary sign shall be mounted directly above a route sign.

GUIDANCE:

The shorter (time or distance) or better-constructed route should retain the regular route number, and the other route should be designated as the alternate route.

2D.18 BY-PASS Auxiliary Sign (M4-2a)



M4-2a

OPTION:

The BY-PASS (M4-2a) auxiliary sign may be used to designate a route that branches from the numbered route through a city, bypasses a part of the city or congested area, and rejoins the numbered route beyond the city.

STANDARD:

If used, the BY-PASS auxiliary sign shall be mounted directly above a route sign.

2D.19 BUSINESS Auxiliary Sign (M4-3)



M4-3

OPTION:

The BUSINESS (M4-3) auxiliary sign may be used to designate an alternate route that branches from a numbered route, passes through the business portion of a city, and rejoins the numbered route beyond that area.

STANDARD:

If used, the BUSINESS auxiliary sign shall be mounted directly above a route sign.

2D.20 TRUCK Auxiliary Sign (M4-4)



M4-4

OPTION:

The TRUCK (M4-4) auxiliary sign may be used to designate an alternate route that branches from a numbered route, when it is desirable to encourage or require commercial vehicles to use the alternate route.

STANDARD:

If used, the TRUCK auxiliary sign shall be mounted directly above a route sign.

2D.21 TO Auxiliary Sign (M4-5, M4-5a)



M4-5



M4-5a

OPTION:

The TO (M4-5) auxiliary sign may be used to provide directional guidance to a particular road facility from other highways in the vicinity (see Section 2D.35).

STANDARD:

If used, the TO auxiliary sign shall be mounted directly above a route sign or an auxiliary sign for an alternative route. If a Cardinal Direction auxiliary sign is also included in the assembly, the TO auxiliary sign shall be mounted directly above the Cardinal Direction auxiliary sign.

2D.22 END Auxiliary Sign (M4-6, M4-6a)



M4-6



M4-6a

GUIDANCE:

The END (M4-6) auxiliary sign should be used where the route being traveled ends, usually at a junction with another route.

STANDARD:

If used, the END auxiliary sign shall be mounted either directly above a route sign or above a sign for an alternative route that is part of the designation of the route being terminated.

2D.23 BEGIN Auxiliary Sign (M4-14, M4-14a)



M4-14



M4-14a

OPTION:

The BEGIN (M4-14) auxiliary sign may be used where a route begins, usually at a junction with another route.

STANDARD:

If used, the BEGIN auxiliary sign shall be mounted at the top of the first Confirming assembly (see Section 2D.34) for the route that is beginning.

GUIDANCE:

If a BEGIN auxiliary sign is included in the first Confirming assembly, a Cardinal Direction auxiliary sign should also be included in the assembly.

STANDARD:

If a Cardinal Direction auxiliary sign is also included in the assembly, the BEGIN auxiliary sign shall be mounted directly above the Cardinal Direction auxiliary sign.

2D.24 TEMPORARY Auxiliary Sign (M4-7, M4-7a)



M4-7



M4-7a

OPTION:

The TEMPORARY (M4-7) or the TEMP (M4-7a) auxiliary sign may be used for an interim period to designate a section of highway that is not planned as a permanent part of a numbered route, but that connects completed portions of that route.

STANDARD:

If used, the TEMPORARY or TEMP auxiliary sign shall be mounted directly above the route sign, above a Cardinal Direction sign, or above a sign for an alternate route that is a part of the route designation.

TEMPORARY or TEMP auxiliary signs shall be promptly removed when the temporary route is abandoned.

2D.25 Temporary Detour and Auxiliary Signs

SUPPORT:

Chapter 6F contains information regarding Temporary Detour and Auxiliary signs.

2D.26 Advance Turn Arrow Auxiliary Signs (M5-1, M5-2, and M5-3)



M5-1



M5-2



M5-3



M5-1a



M5-2a



M5-3a

STANDARD:

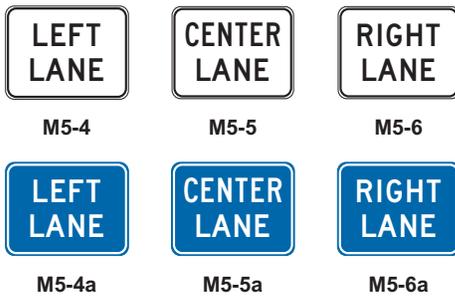
If used, the Advance Turn Arrow auxiliary sign shall be mounted directly below the route sign in Advance Route Turn assemblies, and displays a right or left arrow, the shaft of which is bent at a 90-degree angle (M5-1) or at a 45-degree angle (M5-2).

If used, the curved-stem Advance Turn Arrow auxiliary (M5-3) sign shall be used only on the approach to a circular intersection to depict a movement along the circulatory roadway around the central island and to the left, relative to the approach roadway and entry into the intersection.

GUIDANCE:

If the M5-3 sign is used, then this arrow type should also be used consistently on any regulatory lane-use signs (see Chapter 2B), Destination signs (see Section 2D.37), and pavement markings (see Part 3) for a particular destination or movement.

2D.27 Lane Designation Auxiliary Signs (M5-4, M5-5, and M5-6)



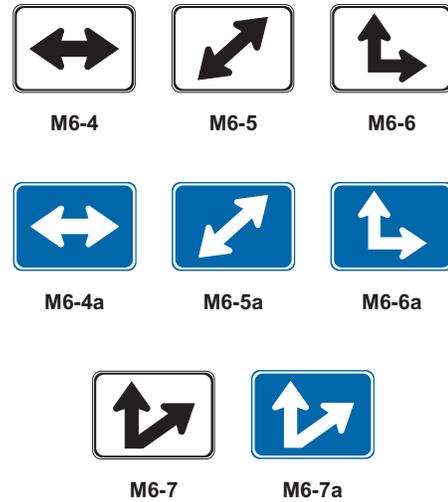
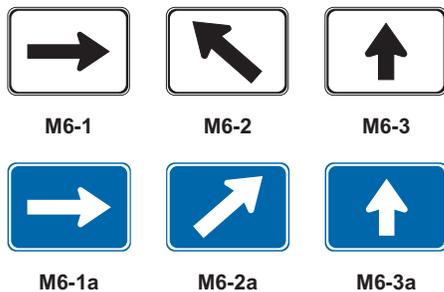
OPTION:

A Lane Designation (M5-4, M5-5, or M5-6) auxiliary sign (see Figure 2D-5) may be mounted directly below the route sign in an Advance Route Turn assembly on multi-lane roadways to allow road users to move into the appropriate lane prior to reaching the intersection or interchange.

STANDARD:

If used, the Lane Designation auxiliary signs shall be used only where the designated lane is a mandatory movement lane and shall be located adjacent to the full-width portion of the mandatory movement lane. The Lane Designation auxiliary signs shall not be installed adjacent to a through lane in advance of a lane that is being added or along the taper for a lane that is being added.

2D.28 Directional Arrow Auxiliary Signs (M6 Series)



STANDARD:

If used, the Directional Arrow auxiliary sign shall be mounted below the route sign and any other auxiliary signs in Directional assemblies (see Section 2D.32), and displays a single- or double-headed arrow pointing in the general direction that the route follows.

A Directional Arrow auxiliary sign that displays a double-headed arrow shall not be mounted in any Directional assembly in advance of or at a circular intersection.

OPTION:

The downward pointing diagonal arrow auxiliary (M6-2a) sign may be used in a Directional assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section 2D.46).

STANDARD:

The M6-2a sign shall not be used on the approach to or on the near side of an intersection, such as to designate an approach lane.

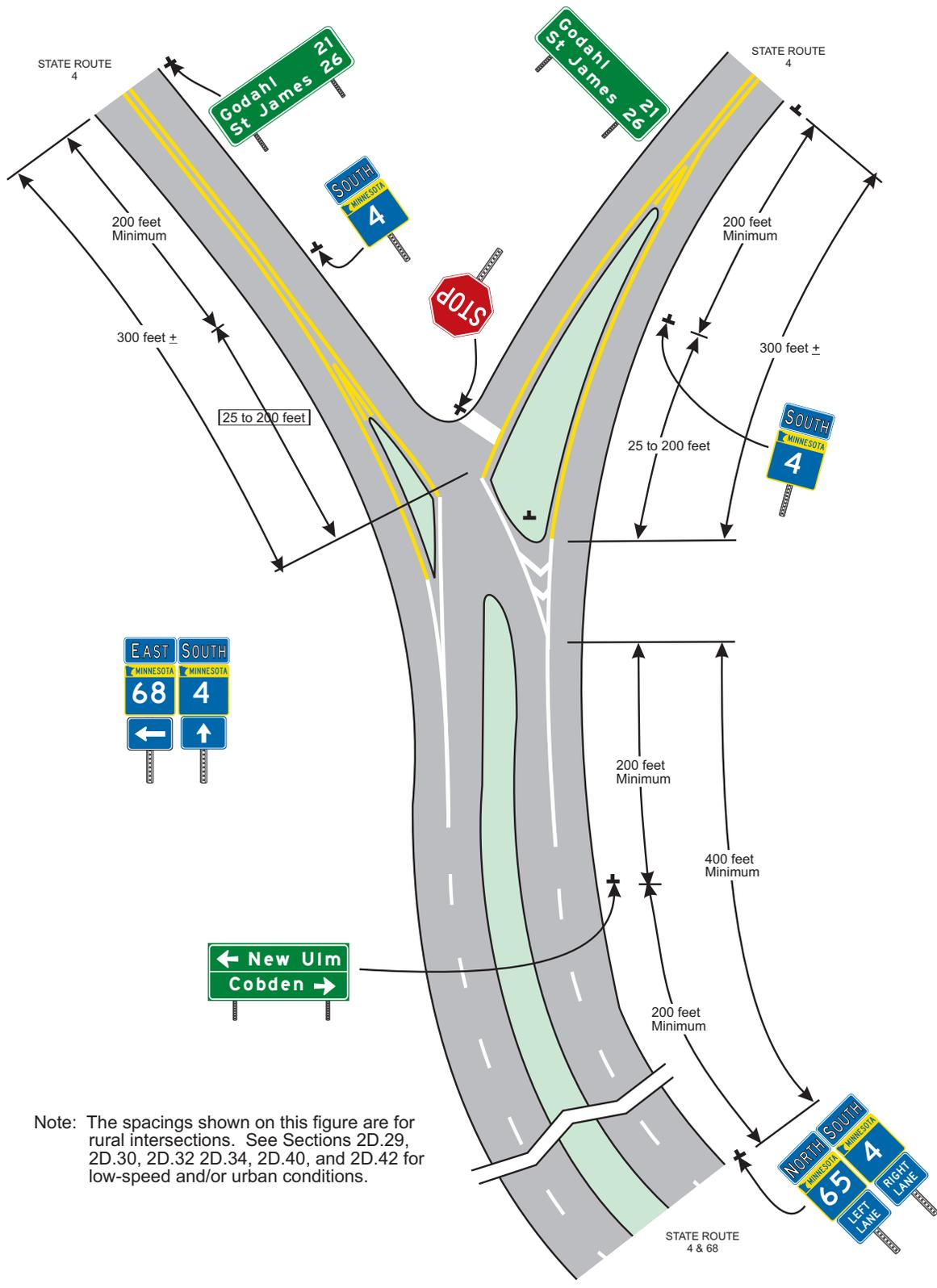
2D.29 Route Sign Assemblies

STANDARD:

A Route Sign assembly shall consist of a route sign and auxiliary signs that further identify the route and indicate the direction. Route Sign assemblies shall be installed on all approaches to signed numbered routes that intersect with other signed numbered routes.

Where two or more routes follow the same section of highway, the route signs for Interstate, U.S., State, and County routes shall be mounted in that order from the left in

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Note: The spacings shown on this figure are for rural intersections. See Sections 2D.29, 2D.30, 2D.32 2D.34, 2D.40, and 2D.42 for low-speed and/or urban conditions.

Figure 2D-6. Illustration of Directional Assemblies and Other Route Signs (For One Direction of Travel Only)
(Sheet 4 of 4)



Examples of Junction Assemblies

GUIDANCE:

In urban areas, the Junction assembly should be installed in the block preceding the intersection. In urban areas where speeds are low, the Junction assembly should not be installed more than 300 feet in advance of the intersection.

In rural areas, the Junction assembly should be installed at least 400 feet in advance of the intersection. In rural areas, the minimum distance between a Junction assembly and either a Destination sign or an Advance Route Turn assembly should be 200 feet.

Where speeds are high, greater spacings should be used.

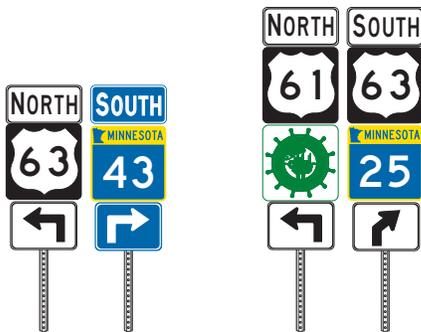
OPTION:

Where two or more routes are to be indicated, a single Junction auxiliary sign may be used for the assembly and all route signs grouped in a single mounting, or a Combination Junction (M2-2) sign (see Section 2D.14) may be used.

2D.31 Advance Route Turn Assembly

STANDARD:

An Advance Route Turn assembly shall consist of a route sign, an Advance Turn Arrow or word message auxiliary sign, and a Cardinal Direction auxiliary sign, if needed. It shall be installed in advance of an intersection where a turn must be made to remain on the indicated route.



Examples of Advance Route Turn Assemblies

OPTION:

The Advance Route Turn assembly may be used to supplement the required Junction assembly in advance of intersecting routes.

GUIDANCE:

Where a multiple-lane highway approaches an interchange or intersection with a numbered route, the Advance Route Turn assembly should be used to pre-position turning vehicles in the correct lanes from which to make their turn.

OPTION:

Lane Designation auxiliary signs (see Section 2D.27) may be used in Advance Route Turn Assemblies in place of the Advance Turn Arrow auxiliary signs where engineering judgment indicates that specific lane information associated with each route is needed and overhead signing is not practical and the designated lane is a mandatory movement lane. An assembly with the Lane Designation auxiliary signs may supplement or substitute for an assembly with Advance Turn Arrow auxiliary signs.

GUIDANCE:

In low-speed areas, the Advance Route Turn assembly should be installed not less than 200 feet in advance of the turn. In high-speed areas, the Advance Route Turn assembly should be installed not less than 300 feet in advance of the turn. In rural areas, the minimum distance between an Advance Route Turn assembly and either a Destination sign or a Junction assembly should be 200 feet.

STANDARD:

An assembly that includes an Advance Turn Arrow auxiliary sign shall not be placed where there is an intersection between it and the designated turn.

GUIDANCE:

Sufficient distance should be allowed between the assembly and any preceding intersection that could be mistaken for the indicated turn.

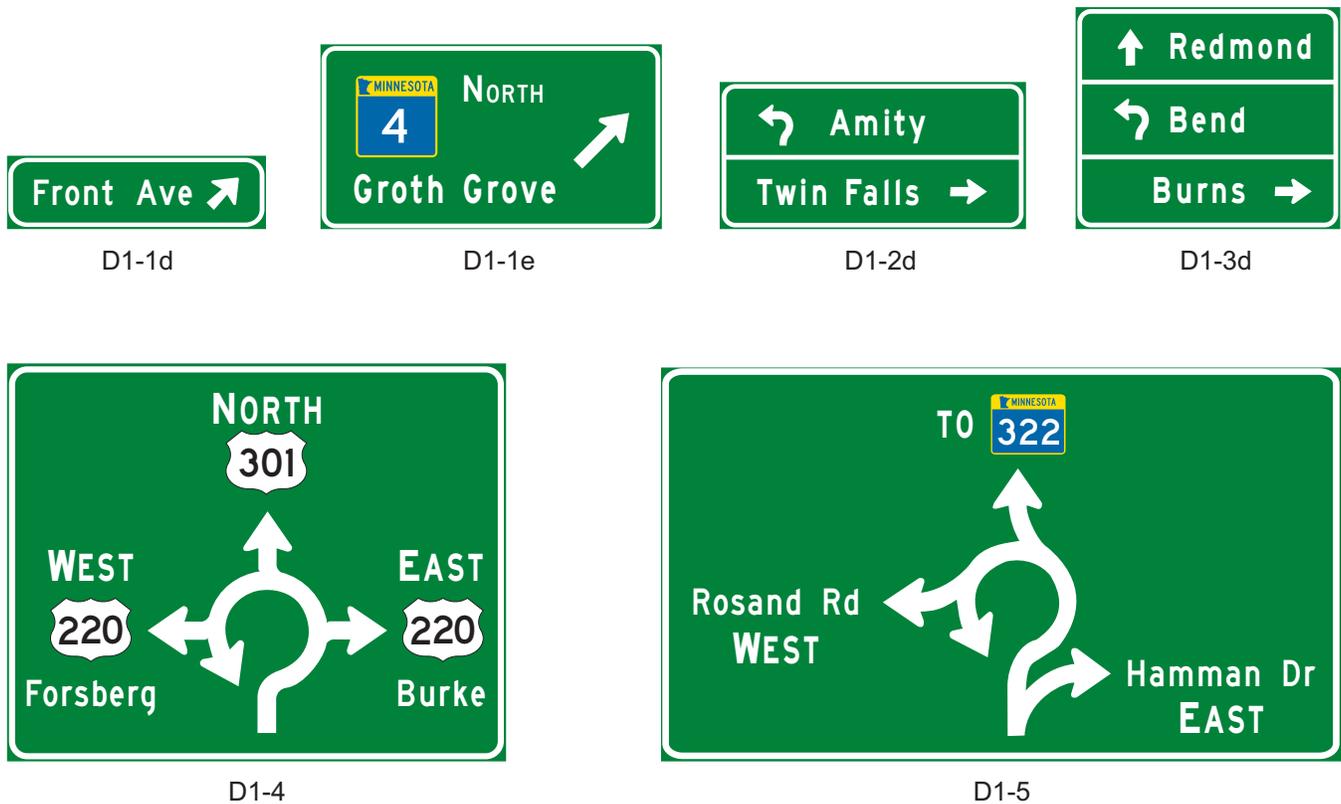


Figure 2D-8. Destination Signs for Roundabouts

intersection is non-typical, such as where more than four legs are present or where the legs are not at approximately 90-degree angles to each other.

STANDARD:

If used, diagrammatic guide signs for circular intersections shall not depict the number of lanes within the intersection circulatory roadway, or on its approaches or exits, through the use of lane lines, multiple arrow shafts for the same movement, or other methods.

SUPPORT:

Chapter 2B contains information regarding regulatory signs at circular intersections, Chapter 2C contains information regarding warning signs at circular intersections, and Chapter 3C contains information regarding pavement markings at circular intersections.

2D.39 Destination Signs at Jughandles

STANDARD:

Destination signs that are used at jughandles shall comply with the provisions of Section 2D.37, except as provided in this Section.

OPTION:

If engineering judgment indicates that standard destination signs alone are insufficient to direct road users to their destinations at a jughandle, a diagrammatic guide sign depicting the appropriate geometry may be used to supplement the normal destination signs.

SUPPORT:

Section 2B.27 contains information regarding regulatory signs for jughandle turns. Figure 2B-9 shows examples of regulatory and destination guide signing for various types of jughandle turns.

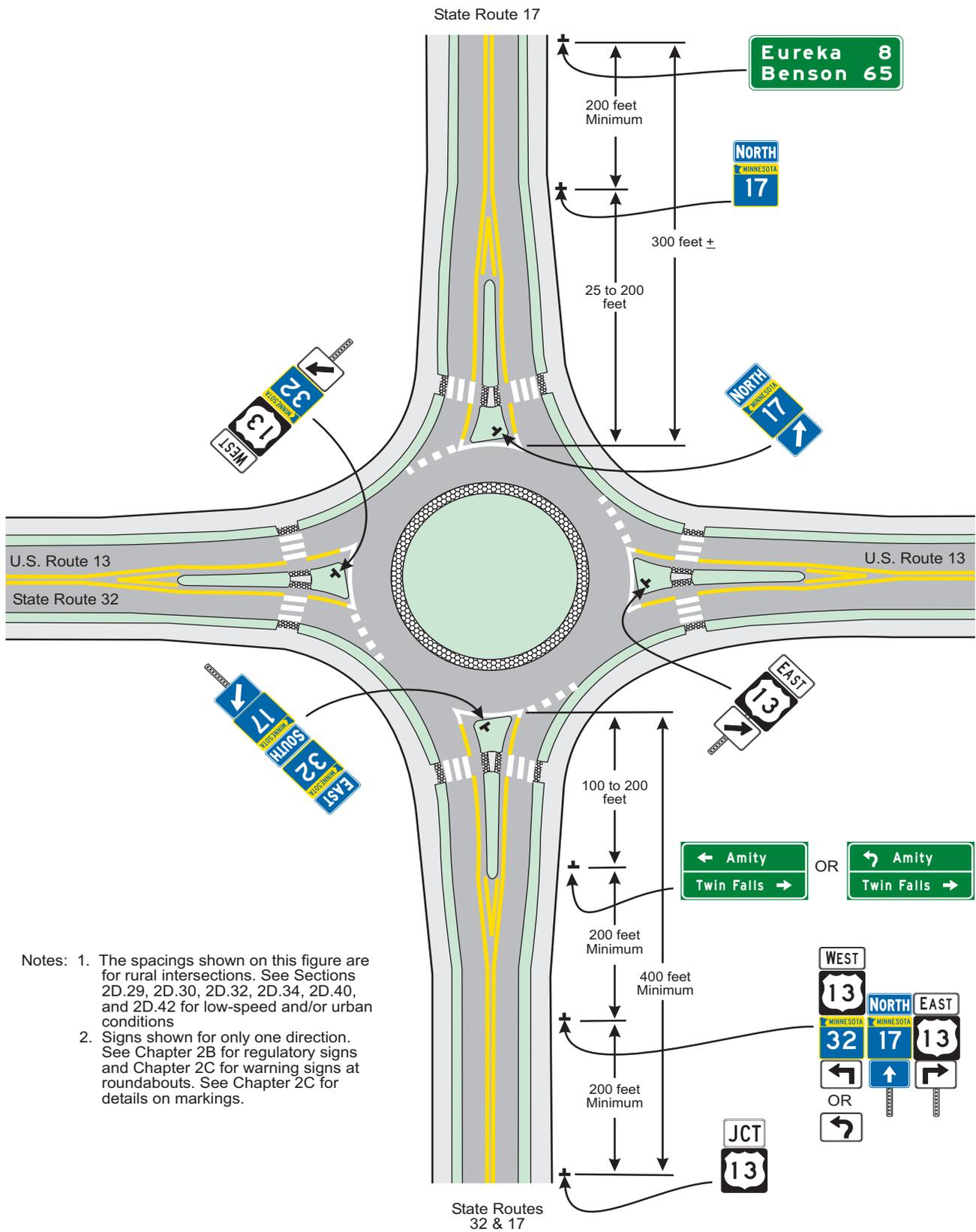


Figure 2D-9. Examples of Guide Signs for Roundabouts (Sheet 1 of 2)

Type of Mounting	Type of Street or Highway	Speed Limit	Recommended Minimum Letter Height	
			Initial Upper-Case	Lower-Case
Overhead	All types	All speed limits	12 inches	9 inches
Post-Mounted	Multi-lane	More than 40 mph	8 inches	6 inches
Post Mounted	Multi-lane	40 mph or less	6 inches	4.5 inches
Post-Mounted	2-lane	All speed limits	6 inches*	4.5 inches*

* On local two-lane streets with speed limits of 25 mph or less, 4-inch initial upper-case letters with 3-inch lower-case letters may be used.

Table 2D-2. Recommended Minimum Letter Heights on Street Name Signs

2D.43 Street Name Sign (D3-1or D3-1a)

GUIDANCE:

Street Name (D3-1 or D3-1a) signs should be installed in urban areas at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.

OPTION:

For streets that are part of a U.S., State, or county numbered route, a D3-1a Street Name sign that incorporates a route shield may be used to assist road users who might not otherwise be able to associate the name of the street with the route number.

STANDARD:

The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see Section 2A.13).

GUIDANCE:

Lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.

On multi-lane streets with speed limits greater than 40 mph, the lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height.



D3-1



D3-1a

OPTION:

For local roads with speed limits of 25 mph or less, the lettering on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in height.

GUIDANCE:

If overhead Street Name signs are used, the lettering should be composed of initial upper-case letters at least 12 inches in height and lower-case letters at least 9 inches in height.

SUPPORT:

The recommended minimum letter heights for Street Name signs are summarized in Table 2D-2.

OPTION:

Supplementary lettering to indicate the type of street (such as Street, Avenue, or Road) or the section of the city (such as NW) on the D3-1 and D3-1a signs may be in smaller lettering, composed of initial upper-case letters at least 3 inches in height and lower-case letters at least 2.25 inches in height. Conventional abbreviations (see Section 1A.15) may be used except for the street name itself.

A pictograph (see definition in Section 1A.13) may be used on a D3-1 sign.

STANDARD:

Pictographs shall not be displayed on D3-1a or Advance Street Name (D3-2) signs (see Section 2D.44).

If a pictograph is used on a D3-1 sign, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign.

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A - Community Wayfinding Guide Signs with Enhancement Markers



B - Destination Guide Signs for Color-Coded Community Wayfinding System



Figure 2D-18 Examples of Community Wayfinding Guide Signs

between the community wayfinding guide sign and other higher priority signs. Community wayfinding guide signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

Community wayfinding guide signs shall not be mounted overhead.

GUIDANCE:

If used, a community wayfinding guide sign system should be established on a local municipal or equivalent jurisdictional level or for an urbanized area of adjoining municipalities or equivalent that form an identifiable geographic entity that is conducive to a cohesive and continuous system of signs. Community wayfinding guide signs should not be used on a regional or statewide basis where infrequent or sparse placement does not contribute to a continuous or coordinated system of signing that is readily identifiable as such to the road user. In such cases, Destination or other guide signs detailed in this Chapter should be used to direct road users to an identifiable area in which the type of eligible destination described in Paragraph one of the first Support is located.

SUPPORT:

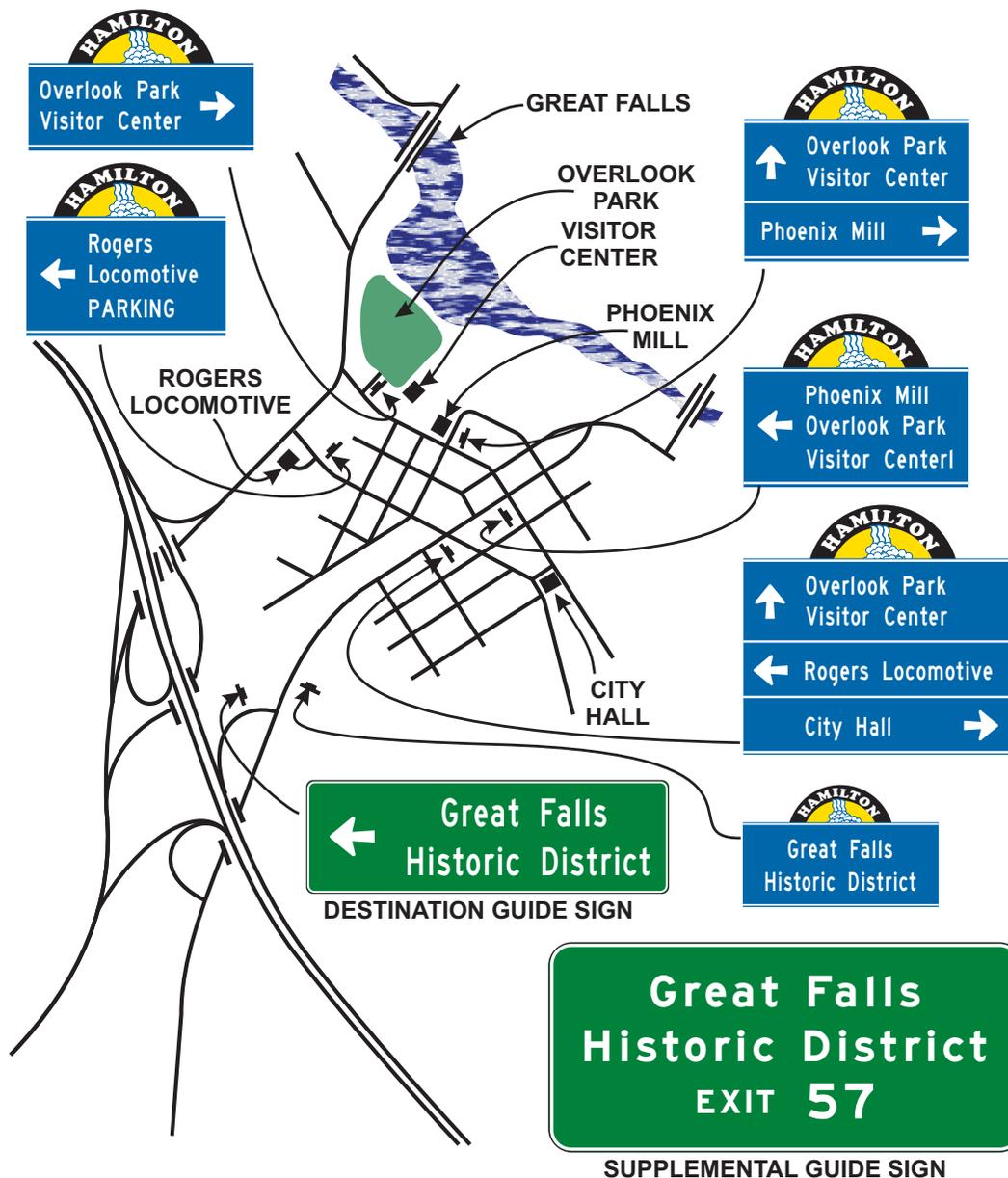
The specific provisions of this Section regarding the design of community wayfinding sign legends apply to vehicular community wayfinding signs and do not apply to those signs that are intended only to provide information or

direction to pedestrians or other users of a sidewalk or roadside area.

GUIDANCE:

Because pedestrian wayfinding signs typically use smaller legends that are inadequately sized for viewing by vehicular traffic and because they can provide direction to pedestrians that might conflict with that appropriate for vehicular traffic, wayfinding signs designed for and intended to provide direction to pedestrians or other users of a sidewalk or other roadside area should be located to minimize their conspicuity to vehicular traffic. Such signs should be located as far as practical from the street, such as at the far edge of the sidewalk. Where locating such signs farther from the roadway is not practical, the pedestrian wayfinding signs should have their conspicuity to vehicular traffic minimized by employing one or a combination of the following methods:

- A. Locating signs away from intersections where high-priority traffic control devices are present.
- B. Facing the pedestrian message toward the sidewalk and away from the street.
- C. Cantilevering the sign over the sidewalk if the pedestrian wayfinding sign is mounted at a height consistent with vehicular traffic signs, removing the pedestrian wayfinding signs from the line of sight in a sequence of vehicular signs.



**Figure 2D-19 Example of a Community Wayfinding Guide Sign System
Showing Direction from a Freeway or Expressway**

To further minimize their conspicuity to vehicular traffic during nighttime conditions, pedestrian wayfinding signs should not be retroreflective.

SUPPORT:

Color coding is sometimes used on community wayfinding guide signs to help road users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area.

OPTION:

At the boundaries of the geographical area within which community wayfinding guide signing is used, an informational guide sign (see Figures 2D-18 and 2D-20) may be posted to inform road users about the presence of wayfinding signing and to identify the meanings of the various color codes or pictographs that are being used.

Figure 2E-26 Examples of Interchange Exit Direction Signs 2E-40

Figure 2E-27 Interchange Exit Direction Sign with an Advisory Speed Panel 2E-41

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According to Interchange Classification 2E-10

Table 2E-5 Minimum Letter and Numeral Sizes for Freeway Guide Signs
According to Sign Type 2E-11

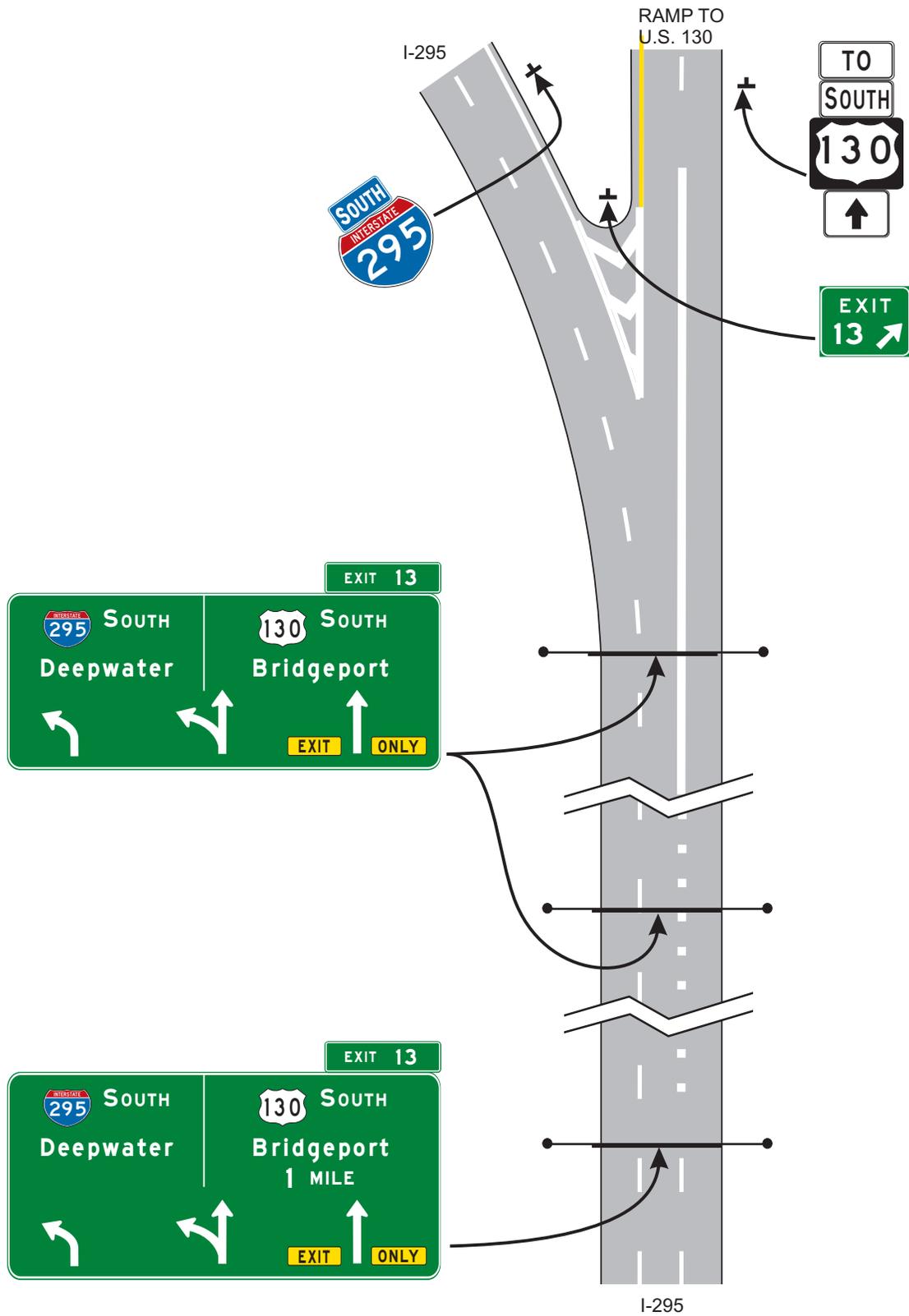


Figure 2E-5 Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane (Through Lanes Curve to the Left)

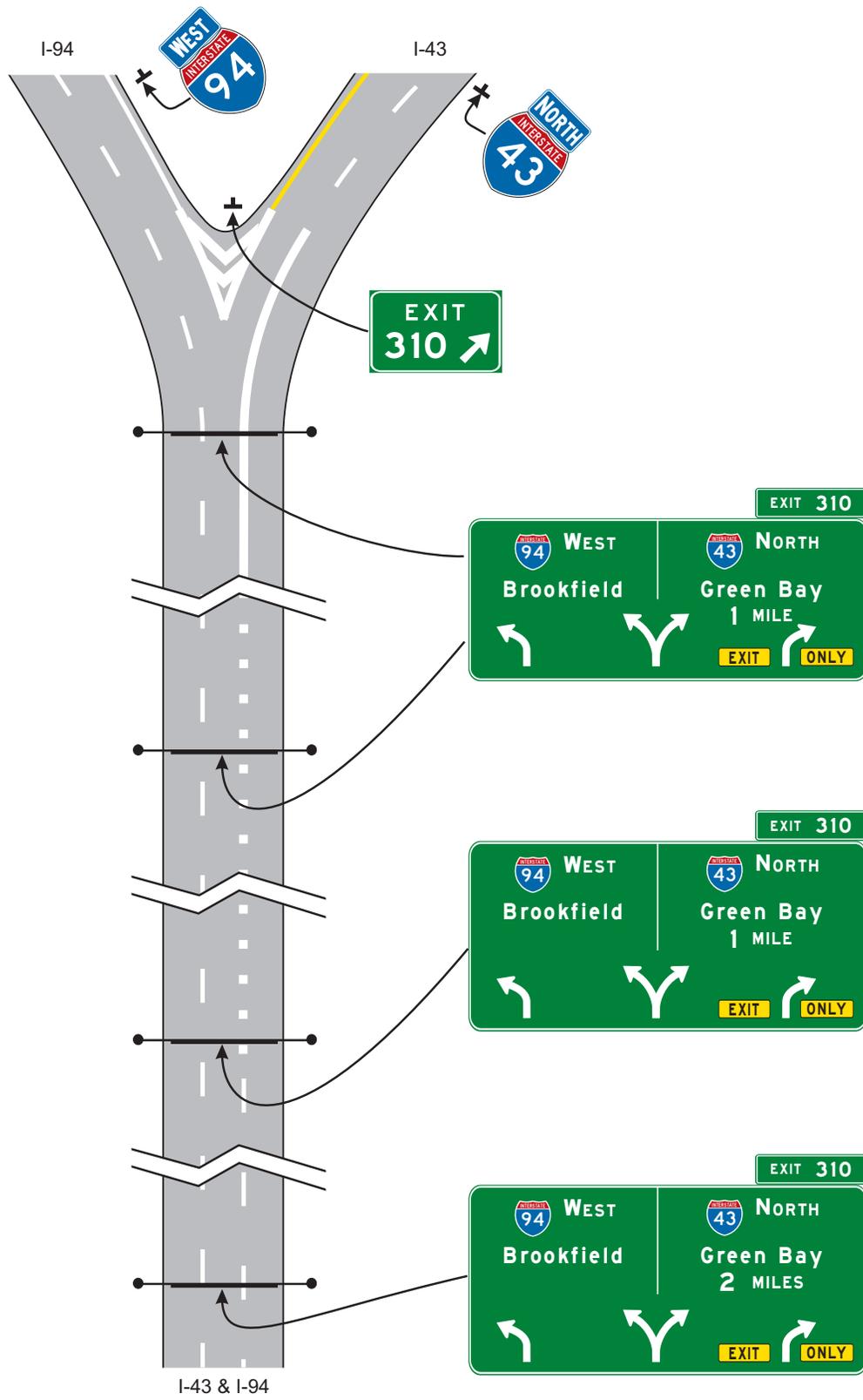
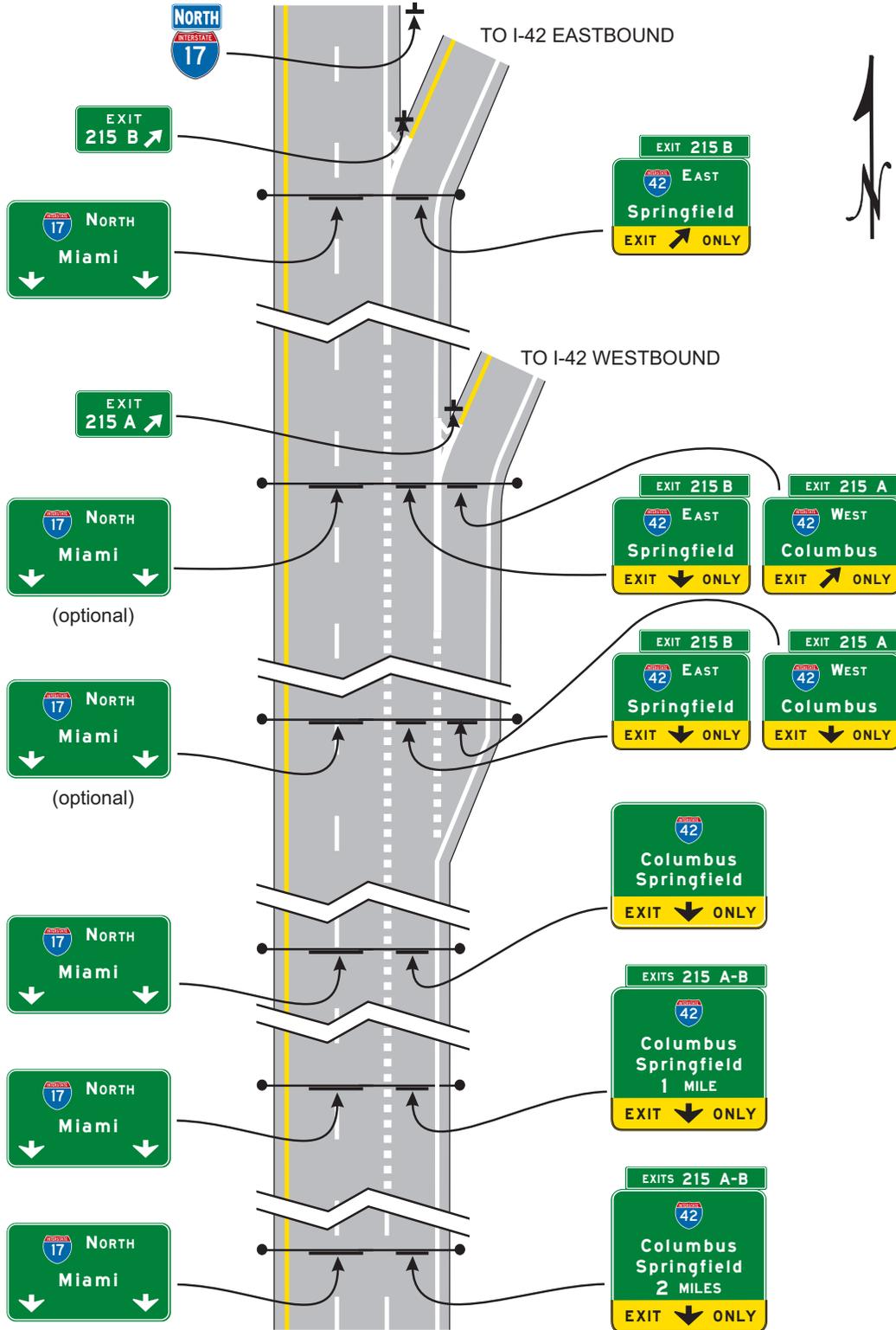


Figure 2E-6 Overhead Arrow-per-Lane Guide Signs for a Split with an Option Lane

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B - Example of Signing for Successive Exit Ramps with a Dropped Lane at the Second Exit



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Figure 2E-34. Examples of Guide Signs for a Freeway-to-Freeway Interchange
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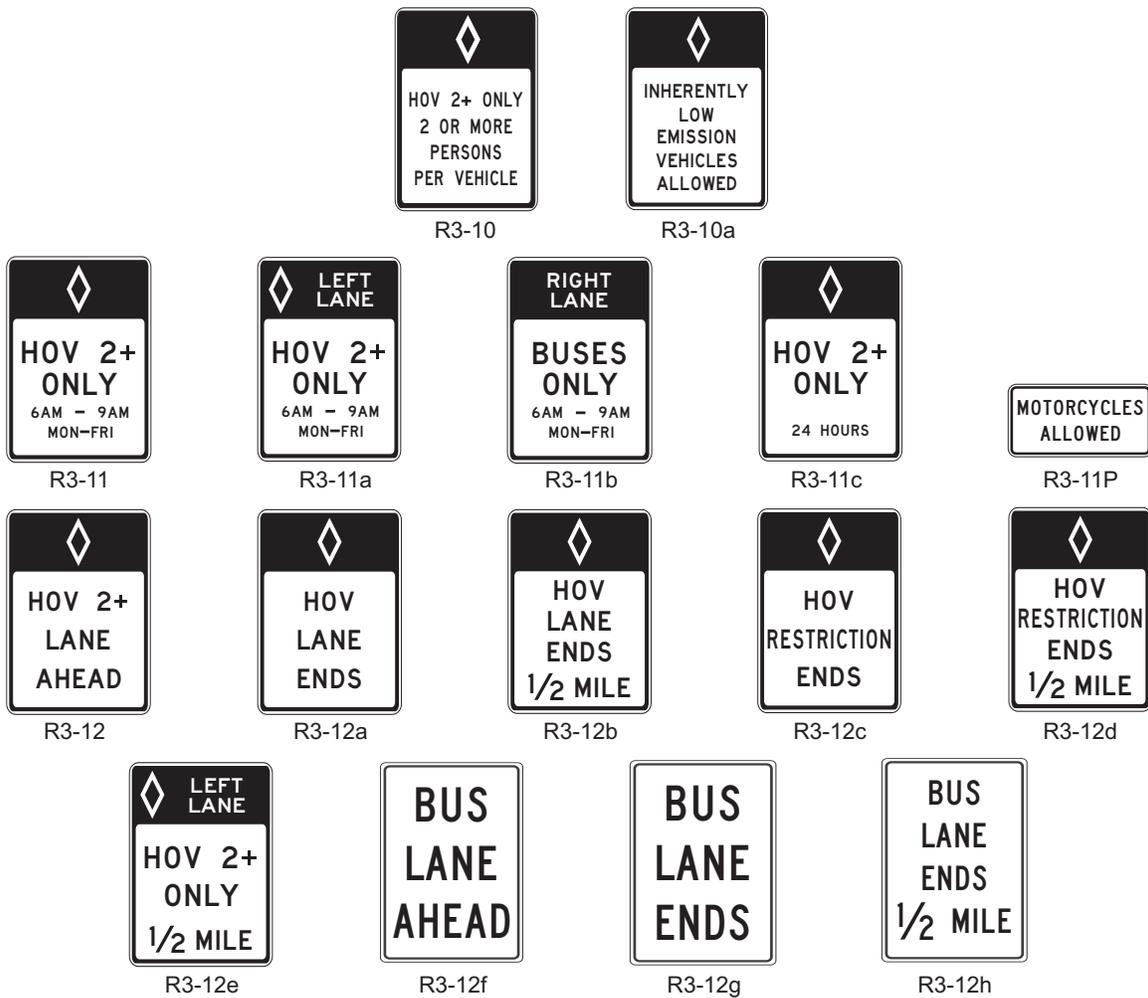
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Notes:

1. The minimum vehicle occupancy requirement may vary for each facility (such as 2+, 3+, 4+).
2. The occupancy requirement may be added to the first line of the R3-12a, R3-12b, R3-12c, and R3-12d signs.
3. Some of the legends shown on these signs are for example purposes only. The specific legend for a particular application should be based upon local conditions, ordinances, and State statutes.

Figure 2G-1. Preferential Lane Regulatory Signs and Plaques (Sheet 1 of 2)

POST-MOUNTED PREFERENTIAL LANE SIGNS

STANDARD:

Regulatory signs applicable only to a preferential lane shall be distinguished from regulatory signs applicable to general-purpose lanes by the inclusion of the applicable symbol(s) and/or word(s) (see Figure 2G-1).

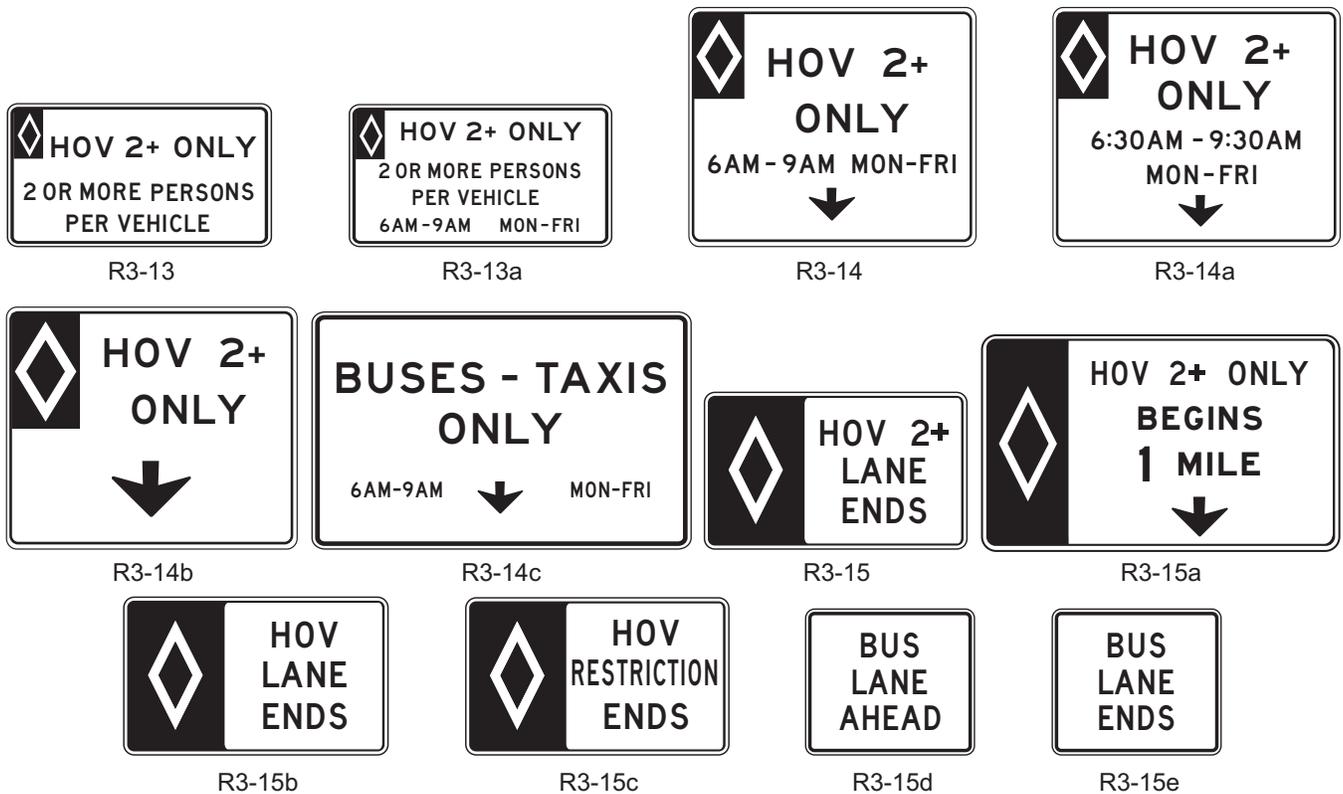
SUPPORT:

The symbol and word message displayed on a particular Preferential Lane regulatory sign will vary based on the specific type of allowed traffic and on other related operational constraints that have been established for a

particular lane, such as an HOV lane, a bus lane, or a taxi lane.

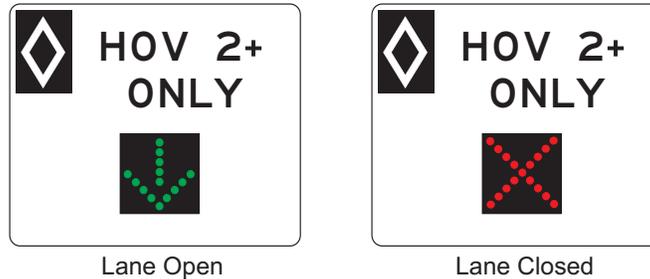
OPTION:

Changeable message signs may supplement, substitute for, or be incorporated into static Preferential Lane regulatory signs where travel conditions change or where multiple types of operational strategies (such as variable occupancy requirements or vehicle types) are used and varied throughout the day or week, or on a real-time basis, to manage the use of, control of, or access to preferential lanes.



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A lane-use control signal may be incorporated into an overhead preferential lane regulatory sign to indicate the status of a reversible operation as shown in the following example:



Notes:

1. The minimum vehicle occupancy requirement may vary for each facility (such as 2+, 3+, 4+).
2. The occupancy requirement may be added to the first line of the R3-15b and R3-15c signs.
3. Some of the legends shown should be based upon local conditions, ordinances, and State statutes.
4. Where sufficient median width is available, the R3-13 series and the R3-15 series signs may be post-mounted.

Figure 2G-1. Preferential Lane Regulatory Signs and Plaques (Sheet 2 of 2)
OVERHEAD-MOUNTED PREFERENTIAL LANE SIGNS

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PART 2. SIGNS

Chapter 2H. General Information Signs

2H.1 Sizes of General Information Signs

STANDARD:

Except as provided in Section 2A.11, the sizes of General Information signs that have a standardized design shall be as shown in Table 2H-1.

SUPPORT:

Section 2A.11 contains information regarding the applicability of the various columns in Table 2H-1.

OPTION:

Signs larger than those shown in Table 2H-1 may be used (see Section 2A.11).

2H.2 General Information Signs (I Series)

SUPPORT:

Of interest to the traveler, though not directly necessary for guidance, are numerous kinds of information that can properly be conveyed by General Information signs or miscellaneous information signs (see Section 2H.4). They include such items as State lines, city limits, other political boundaries, time zones, stream names, elevations, landmarks, and similar items of geographical interest, and safety and transportation-related messages. Chapter 2M contains recreational and cultural interest area symbol signs that are sometimes used in combination with General Information signs.

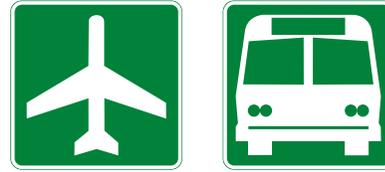
GUIDANCE:

General Information signs should not be installed within a series of guide signs or at other equally critical locations, unless there are specific reasons for orienting the road user or identifying control points for activities that are clearly in the public interest. On all such signs, the designs should be simple and dignified, devoid of any advertising, and in general compliance with other guide signing.

STANDARD:

Except for political boundary signs, General Information signs shall have white legends and borders on green rectangular-shaped backgrounds.

When a sign is used to display a safety or transportation-related message, the display format shall not be of a type that would be considered similar to advertising displays. Messages and symbols that resemble any official traffic control device shall not be used on safety or transportation-related message signs.



I-5

I-6



I-7

I-8

I-9

OPTION:

An information symbol sign (I-5 through I-9) may be used to identify a route leading to a transportation or general information facility, or to provide additional guidance to the facility. The symbol sign may be supplemented by an educational plaque where necessary; also, the name of the facility may be used if needed to distinguish between similar facilities.



M5-1

M5-2



M6-1

M6-2

M6-3

The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary signs with white arrows on green backgrounds may be used with General Information symbol signs to create a General Information Directional Assembly.

Guide signs for commercial service airports and non-carrier airports may be provided from the nearest Interstate, other freeway, expressway or conventional highway intersection directly to the airport, normally not to exceed 15 miles. These airports are normally signed with a legend containing the airport name and the appropriate directional message or arrow.

Sign	Sign Designation	Section	Conventional Road	Freeway or Expressway
Business District w/arrow	D1-X1	2H.7.1	42 x 36	54 x 48
Sanitary Landfill w/arrow	D1-X3	2H.7.1	36 x 24	54 x 36
Airport w/arrow	D1-X4	2H.2	48 x 12	60 x 18
Solid Waste Transfer Station w/arrow	D1-X5	2H.7.1	72 x 36	96 x 48
Recycle Center w/logo and arrow	D1-X6	2H.2.1	78 x 36	108 x 48
Reference Location (1 digit)	D10-1	2H.5	10 x 18	12 x 24
Intermediate Reference Location (2 digits)	D10-1a	2H.5	10 x 27	12 x 36
Reference Location (2 digits)	D10-2	2H.5	10 x 27	12 x 36
Intermediate Reference Location (3 digits)	D10-2a	2H.5	10 x 36	12 x 48
Reference Location (3 digits)	D10-3	2H.5	10 x 36	12 x 48
Intermediate Reference Location (4 digits)	D10-3a	2H.5	10 x 48	12 x 60
Enhanced Reference Location	D10-4	2H.6	18 x 54	18 x 54
Intermediate Enhanced Reference Location	D10-5	2H.6	18 x 60	18 x 60
Signals Set for XX MPH	I1-1	2H.3	24 x 36	---
Adopt-A-Highway	I1-X1	2H.8	60 x 36	60 x 36
City Name Marker (1 line name)	I2-3	2H.2.2	Varies x 24	Varies x 36
City Name Marker (2 line names)	I2-3	2H.2.2	Varies x 36	Varies x 48
County Name Marker	I2-5	2H.2.2	Varies x 24	Varies x 36
Lake and Stream Name (1 line name)	I3-1	2H.2.3	Varies x 18	Varies x 24
Lake and Stream Name (2 line names)	I3-1	2H.2.3	Varies x 24	Varies x 36
Airport	I-5	2H.2	24 x 24	30 x 30
Bus Station	I-6	2H.2	24 x 24	30 x 30
Train Station	I-7	2H.2	24 x 24	30 x 30
Library	I-8	2H.2	24 x 24	30 x 30
Vehicle Ferry Terminal	I-9	2H.2	24 x 24	30 x 30
Recycle Collection Center	I-11	2H.2	30 X 48	---
Light Rail Transit Station	I-12	2H.2	24 x 24	---

* The size shown is the maximum size for the corresponding roadway classification. The size of the sign and acknowledgment logo should be appropriately reduced where shorter legends are used.

** The size shown is for the typical sign illustrated in the figure. The size should be determined based on the amount of legend required for the sign.

Notes: 1. Larger signs may be used when appropriate, except for the D14 series signs
 2. Dimensions in inches are shown as width x height

Table 2H-1. General Information Sign Sizes

To augment an enhanced reference location sign system, Intermediate Enhanced Reference Location (D10-5) signs which show the tenth of a mile with a decimal point, may be installed along any section of a highway route or ramp at one tenth of a mile intervals, or at some other regular spacing.

STANDARD:

If enhanced reference location signs are used, they shall be vertical signs having blue or green backgrounds with white numerals, letters, and borders, except for the route shield, which shall be the standard color and shape. The top line shall consist of the cardinal direction for the roadway. The second line shall consist of the applicable route shield for the roadway. The third line shall identify the mile reference for the location and the bottom line of the Intermediate Enhanced Reference Location sign shall give the tenth of a mile reference for the location. The bottom line of the Intermediate Enhanced Reference Location sign shall contain a decimal point. The height of the legend on enhanced reference location signs shall be a minimum of 6 inches. The height of the route shield on enhanced reference location signs shall be a minimum of 12 inches.

The background color shall be the same for all enhanced reference location signs within a jurisdiction.

SUPPORT:

The provisions in Section 2H.5 regarding mounting height, distance numbering and measurements, sign continuity, and placement with respect to the right-hand shoulder and/or median for reference location signs also apply to enhanced reference location signs.

2H.7 Auto Tour Route Signs



SUPPORT:

Auto Tour Route signs are informational signs, plaques, or shields designed to provide road users with route guidance in following an auto tour route of particular cultural, historical, or educational significance.

Signed auto tour routes are used in some cases to generally follow the historical route of a trail, such as the National Historic Trails administered by the National Park Service. Examples include auto tour routes that parallel the Lewis and Clark National Historic Trail, the Oregon National Historic Trail, and the Santa Fe National Historic Trail.

GUIDANCE:

If shields or other similar signs are used to provide route guidance in following an auto tour route, they should be designed in accordance with the sizes and other design principles for route signs, such as those described in Sections 2D.10 through 2D.12.

OPTION:

Auto Tour Route signs may be installed on a highway if they have been approved by the appropriate transportation agency.

STANDARD:

Auto Tour Route signs shall not be installed on freeways or expressways, except as necessary to provide continuity between discontinuous segments of conventional roadways that are designated as auto tour routes, for which the freeway or expressway provides the only connection between the segments. If installed on freeways or expressways, Auto Tour Route signs shall be installed as independent trailblazer assemblies (see Sections 2D.35 and 2E.27) and shall not be installed with other Route signs or confirmation assemblies or on guide signs. If installed on freeways or expressways, Auto Tour Route trailblazer assemblies shall be installed at less frequent intervals than route confirmation assemblies.

2H.7.1 Other Guide Signs (D Series)



D1-X1



D1-X3



D1-X5

OPTION:

The Business District (D1-X1) sign may be installed to direct motorists to the central business district of a city. If used, it shall not be used to designate any other business areas or shopping areas.

STANDARD:

If used, the Sanitary Landfill (D1-X3) sign shall be installed only for those facilities which meet the following criteria:

- A. The facility shall be approved by the Minnesota Pollution Control Agency and have a current and valid permit from that agency.
- B. Local road authorities shall provide any trailblazing signing from the Mn/DOT maintained roadway to the facility.
- C. Whether the facility is publicly or privately owned, it shall be available for public, commercial, and governmental users alike.

The Transfer Station (D1-X5) sign may be installed for those facilities which have been approved by the Minnesota Pollution Control Agency and have a current and valid permit from that agency.

For more detailed information on the Mn/DOT's policy on guide signing along state maintained roadways to facilities such as airports, schools, and other major and minor traffic generators, see the Mn/DOT Traffic Engineering Manual.

2H.8 Acknowledgement Signs



I-X1

SUPPORT:

Acknowledgment signs are a way of recognizing a company, business, or volunteer group that provides a highway-related service. Acknowledgment signs include sponsorship signs for adopt-a-highway litter removal programs, maintenance of a parkway or interchange, and other highway maintenance or beautification sponsorship programs.

GUIDANCE:

A State or local highway agency that elects to have an acknowledgment sign program should develop an acknowledgment sign policy. The policy should require that eligible sponsoring organizations comply with State laws prohibiting discrimination based on race, religion, color, age, sex, national origin, and other applicable laws. The acknowledgment sign policy should include all of the provisions regarding sign placement and sign design that are described in this Section.

STANDARD:

Because regulatory, warning, and guide signs have a higher priority, acknowledgment signs shall only be installed where adequate spacing is available between the acknowledgment sign and other higher priority signs. Acknowledgment signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

Acknowledgment signs shall not be installed at any of the following locations:

- A. On the front or back of, adjacent to, or around any other traffic control device, including traffic signs, highway traffic signals, and changeable message signs;
- B. On the front or back of, adjacent to, or around the supports or structures of other traffic control devices, or bridge piers; or
- C. At key decision points where a road user's attention is more appropriately focused on other traffic control devices, roadway geometry, or traffic conditions, including exit and entrance ramps, intersections, grade crossings, toll plazas, temporary traffic control zones, and areas of limited sight distance.

GUIDANCE:

The minimum spacing between acknowledgment signs and any other traffic control signs, except parking regulation signs, should be:

- A. 150 feet on roadways with speed limits of less than 30 mph,
- B. 200 feet on roadways with speed limits of 30 to 45 mph, and
- C. 500 feet on roadways with speed limits greater than 45 mph.

If the placement of a newly-installed higher-priority traffic control device, such as a higher-priority sign, a highway traffic signal, or a temporary traffic control device, conflicts with an existing acknowledgment sign, the acknowledgment sign should be relocated, covered, or removed.

OPTION:

State or local highway agencies may develop their own acknowledgment sign designs and may also use their own pictograph (see definition in Section 1A.13) and/or a brief jurisdiction-wide program slogan as part of any portion of the acknowledgment sign, provided that the signs comply with the provisions for shape, color, and lettering style in this Chapter and in Chapter 2A.

GUIDANCE:

Acknowledgment signs should clearly indicate the type of highway services provided by the sponsor.

STANDARD:

In addition to the general provisions for signs described in Chapter 2A and the sign design principles covered in the "Standard Highway Signs and Markings" book (see Section 1A.11), acknowledgment sign designs developed by State or local highway agencies shall comply with the following provisions:

- A. Neither the sign design nor the sponsor acknowledgment logo shall contain any contact information, directions, slogans (other than a brief jurisdiction-wide program slogan, if used), telephone numbers, or Internet addresses, including domain names and uniform resource locators (URL);
- B. Except for the lettering, if any, on the sponsor acknowledgment logo, all of the lettering shall be in upper-case letters as provided in the "Standard Highway Signs and Markings" book (see Section 1A.11);

- C. In order to keep the main focus on the highway-related service and not on the sponsor acknowledgment logo, the area reserved for the sponsor acknowledgment logo shall not exceed 1/3 of the total area of the sign and shall be a maximum of 8 square feet, and shall not be located at the top of the sign;
- D. The entire sign display area shall not exceed 24 square feet;
- E. The sign shall not contain any messages, lights, symbols, or trademarks that resemble any official traffic control devices;
- F. The sign shall not contain any external or internal illumination, light-emitting diodes, luminous tubing, fiber optics, luminescent panels, or other flashing, moving, or animated features; and
- G. The sign shall not distract from official traffic control messages such as regulatory, warning, or guidance messages.

PART 2. SIGNS
Chapter 2I. General Service Signs
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PART 2. SIGNS

Chapter 2I. General Service Signs

2I.1 Sizes of General Service Signs

STANDARD:

Except as provided in Section 2A.11, the sizes of General Service signs that have a standardized design shall be as shown in Table 2I-1.

SUPPORT:

Section 2A.11 contains information regarding the applicability of the various columns in Table 2I-1.

OPTION:

Signs larger than those shown in Table 2I-1 may be used (see Section 2A.11).

Sign	Sign Designation	Section	Conventional Road	Freeway or Expressway
Rest Area XX Miles	D5-1	2I.5	66 x 36*	96 x 54*
Rest Area Next Right	D5-1a	2I.5	78 x 36*	120 x 60* (F) 114 x 48* (E)
Rest Area w/arrow	D5-2	2I.5	66 x 36*	96 x 54*
Rest Area Gore	D5-2a	2I.5	42 x 48*	78 x 78* (F) 66 x 72* (E)
Rest Area w/horizontal arrow	D5-5	2I.5	42 x 48*	---
Next Rest Area XX Miles	D5-6	2I.5	60 x 48*	90 x 72*
Rest Area Tourist Info Center XX Miles	D5-7	2I.8	90 x 72*	114 x 102* (F) 132 x 96* (E)
Rest Area Tourist Info Center w/arrow	D5-8	2I.8	84 x 72*	120 x 102* (F) 120 x 96* (E)
Rest Area Tourist Info Center Next Right	D5-11	2I.8	90 x 72*	144 x 102* (F) 132 x 96* (E)
Interstate Oasis	D5-12	2I.4	---	156 x 78
Interstate Oasis (plaque)	D5-12P	2I.4	---	114 x 48
Brake Check Area XX Miles	D5-13	2I.6	84 x 48	126 x 72
Brake Check Area w/arrow	D5-14	2I.6	78 x 60	96 x 72
Chain-Up Area XX Miles	D5-15	2I.7	66 x 48	96 x 72
Chain-Up Area w/arrow	D5-16	2I.7	72 x 54	96 x 66
Wayside Rest ½ Mile on Right	D5-X1	2I.5	36 x 36	36 x 36 (E)
Wayside Rest plaques	D5-X1a	2I.5	36 x 12	36 x 12 (E)
Historical Marker	D5-X1b	2I.5	36 x 18	36 x 18
Geological Marker	D5-X1c	2I.5	36 x 18	36 x 18
Wayside Rest w/arrow	D5-X2	2I.5	36 x 30	36 x 30 (E)
Public Boat Launch w/arrow and symbol	D7-X7	2I.5.1	Varies x 30	Varies x 30 (E)
Public Canoe Access w/arrow and symbol	D7-X7a	2I.5.1	Varies x 30	Varies x 30 (E)
Public Water Access w/arrow	DNR sign	2I.5.1	18 x 30	18 x 30 (E)
Telephone	D9-1	2I.2	24 x 24	30 x 30
Hospital	D9-2	2I.2	24 x 24	30 x 30
Camping	D9-3	2I.2	24 x 24	30 x 30

Sign	Sign Designation	Section	Conventional Road	Freeway or Expressway
Trailer Camping	D9-3a	2I.2	24 x 24	30 x 30
Litter Container	D9-4	2I.2	24 x 30	36 x 48
Disabled	D9-6	2I.2	24 x 24	30 x 30
Van Accessible (plaque)	D9-6P	2I.2	18 x 9	---
Gas	D9-7	2I.2	24 x 24	30 x 30
Food	D9-8	2I.2	24 x 24	30 x 30
Lodging	D9-9	2I.2	24 x 24	30 x 30
Tourist Information	D9-10	2I.2	24 x 24	30 x 30
Diesel Fuel	D9-11	2I.2	24 x 24	30 x 30
Alternative Fuel - Compressed Natural Gas	D9-11a	2I.2	24 x 24	30 x 30
Electric Vehicle Charging	D9-11b	2I.2	24 x 24	30 x 30
Electric Vehicle Charging (plaque)	D9-11bP	2I.2	24 x 18	30 x 24
Alternative Fuel - Ethanol	D9-11c	2I.2	24 x 24	30 x 30
RV Sanitary Station	D9-12	2I.2	24 x 24	30 x 30
Emergency Vehicle Services	D9-13	2I.2	24 x 24	30 x 30
Hospital (plaque)	D9-13aP	2I.2	24 x 12	30 x 12
Ambulance Station (plaque)	D9-13bP	2I.2	24 x 12	30 x 15
Emergency Medical Care (plaque)	D9-13cP	2I.2	24 x 18	30 x 24
Trauma Center (plaque)	D9-13dP	2I.2	24 x 12	30 x 15
Police	D9-14	2I.2	24 x 24	30 x 30
Propane gas	D9-15	2I.2	24 x 24	30 x 30
Truck Parking	D9-16	2I.2	24 x 24	30 x 30
Next Services XX Miles (plaque)	D9-17P	2I.2	102 x 24	156 x 30
General Services (up to 6 symbols)	D9-18	2I.3	---	96 x 60
General Services	D9-18a	2I.3	---	96 x 60
General Services (up to 6 symbols) with Action or Exit Information	D9-18b	2I.3	108 x 84	132 x 114 (F) 132 x 108 (E)
General Services with Action or Exit Information	D9-18c	2I.3	72 x 60**	132 x 108 ** (F) 108 x 84** (E)
Pharmacy	D9-20	2I.2	24 x 24	30 x 30
24-Hour (plaque)	D9-20aP	2I.2	24 x 12	30 x 12
Telecommunication Device for the Deaf	D9-21	2I.2	24 x 24	30 x 30
Wireless Internet	D9-22	2I.2	24 x 24	30 x 30
Weather Information	D12-1	2I.2	84 x 48	132 x 84
Going to Work? Try Rideshare! w/phone #	D12-2a	2I.11	60 x 30	114 x 48
Share the Ride XXX Ride w/phone & symbol	D12-2b	2I.11	102 x 36	---
Channel 9 Monitored	D12-3	2I-9	84 x 48	132 x 84
Emergency Call 911	D12-4	2I-9	66 x 30	96 x 48
Travel Info call 511 (pictograph)	D12-5	2I.10	48 x 60	66 x 72
Travel Info Call 511	D12-5a	2I.10	48 x 36	66 x 48

* The size shown is for a sign with a REST AREA and/or TOURIST INFO CENTER legend. The size should be appropriately adjusted if an alternate legend is are used.

** The size shown is for a sign with four lines of services. The size should be appropriately adjusted depending on the amount of legend displayed.

- Notes:
1. Larger signs may be used when appropriate
 2. Dimensions in inches are shown as width x height
 3. Where two sizes are shown the larger size is for freeways (F) and the smaller size if for expressways (E)

Table 2I-1. General Service Sign and Plaque Sizes (Sheet 2 of 2)

2I.2 General Service Signs for Conventional Roads (D9 Series)



D9-1
Telephone



D9-2
Hospital



D9-3
Camping



D9-3a
Trailer Camping



D9-4
Litter Container



D9-6
Disabled



D9-6P



D9-7
Gas



D9-8
Food



D9-9
Lodging



D9-10
Tourist Info



D9-11
Diesel Fuel



D9-11a
Alternative Fuel
Compressed
Natural Gas



D9-11b
Electric Vehicle
Charging



D9-11bP
Electric Vehicle
Charging



D9-11c
Alternative Fuel
Ethanol



D9-12
RV Sanitary
Station



D9-13
Emergency
Medical
Services



D9-13aP
Hospital



D9-13bP
Ambulance
Station



D9-13cP
Emergency
Medical Care



D9-14
Police



D9-15
Propane Gas



D9-16
Truck Parking



D9-20
Pharmacy



D9-20aP
24-Hour



D9-21
Telecommunication
Device for the Deaf



D9-22
Wireless
Internet

Advance Turn and Directional Arrow Auxiliary Signs for use with General Service Signs



M5-1a

M5-2a

M6-1a



M6-2a



M6-3a



Example of directional assembly



SUPPORT:

On conventional roads, commercial services such as gas, food, and lodging generally are within sight and are available to the road user at reasonably frequent intervals along the route. Consequently, on this class of road there usually is no need for special signs calling attention to these services. Moreover, General Service signing is usually not required in urban areas except for hospitals, law enforcement assistance, tourist information centers, and camping.

OPTION:

General Service signs may be used where such services are infrequent and are found only on an intersecting highway or crossroad.

STANDARD:

All General Service signs and supplemental sign panels shall have white letters, symbols, arrows, and borders on a blue background.

GUIDANCE:

General Service signs should be installed at a suitable distance in advance of the turn-off point or intersecting highway.

States that elect to provide General Service signing should establish a statewide policy or warrant for its use, and criteria for the availability of services. Local jurisdictions

electing to use such signing should follow State policy for the sake of uniformity.

OPTION:

Individual States may sign for whatever alternative fuels are available at appropriate locations.

STANDARD:

General Service signs, if used at intersections, shall carry a legend for one or more of the following services: Food, Gas, Diesel, LP-Gas, Lodging, Camping, Phone, Hospital, Tourist Information, Police, Electric Vehicle Charging, or Truck Parking along with a directional message.

OPTION:

The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary signs with white arrows on blue backgrounds may be used with General Service symbol signs to create a General Service Directional Assembly.

The General Service sign legends may be either symbols or word messages..

STANDARD:

Symbols and word message General Service legends shall not be intermixed on the same sign.

GUIDANCE:

If used, the word message TRUCK PARKING (D8-16) should be placed on a separate panel below the other general motorist services.

SUPPORT:

Formats for displaying different combinations of these services are described in Section 2I.3.

OPTION:

If the distance to the next point at which services are available is 10 miles or more, a NEXT SERVICES XX MILES (D9-17P) plaque may be installed below the General Service sign.



D9-17P

The International Symbol of Accessibility for the Disabled (D9-6) sign may be used beneath General Service signs where paved ramps and rest room facilities accessible to, and usable by, the physically disabled are provided.

- C. Lodging if all of the following are available:
 1. Licensing or approval, where required;
 2. Adequate sleeping accommodations;
 3. Public telephone; and
 4. Modern sanitary facilities.
- D. Public Telephone if continuous operation, 7 days per week is available.
- E. Hospital if continuous emergency care capability, with a physician on duty 24 hours per day, 7 days per week is available. A physician on duty would include the following criteria and should be signed in accordance with the priority as follows:
 1. Physician on duty within the emergency department;
 2. Registered nurse on duty within the emergency department, with a physician in the hospital on call; or
 3. Registered nurse on duty within the emergency department, with a physician on call from office or home.
- F. 24-Hour Pharmacy if a pharmacy is open, with a State-licensed pharmacist present and on duty, 24 hours per day, 7 days per week and is located within 3 miles of an interchange on the Federal-aid system.
- G. Camping if all of the following are available:
 1. Licensing or approval, where required;
 2. Adequate parking accommodations; and
 3. Modern sanitary facilities and drinking water.

STANDARD:

For any service that is operated on a seasonal basis only, the General Service signs shall be removed or covered during periods when the service is not available.

The General Service signs shall be mounted in an effective location, between the Advance Guide sign and the Exit Direction sign, in advance of the exit leading to the available services.

GUIDANCE:

The General Service sign should contain the interchange number, if any, as shown in Figure 2I-3.

OPTION:

If the distance to the next point where services are available is greater than 10 miles, a NEXT SERVICES XX MILES (D9-17P) plaque may be installed below the Exit Direction sign.

STANDARD:

Signs for services shall comply with the format for General Service signs (see Section 2I.2) and as provided in this Manual. No more than six general road user services shall be displayed on one sign, which includes any appended

supplemental signs or plaques. General Service signs shall carry the legends for one or more of the following services: Food, Gas, Lodging, Camping, Phone, Hospital, 24-Hour Pharmacy, or Tourist Information.

The qualified services available shall be displayed at specific locations on the sign.

To provide flexibility for the future when the service might become available, the sign space normally reserved for a given service symbol or word shall be left blank when that service is not present.

GUIDANCE:

The standard display of word messages should be FOOD and PHONE in that order on the top line, and GAS and LODGING on the second line. If used, HOSPITAL and CAMPING should be on separate lines (see Figure 2I-3).

OPTION:

Signing for DIESEL, LP-Gas, or other alternative fuel services may be substituted for any of the general services or appended to such signs. The International Symbol of Accessibility for the Disabled (D9-6) sign may be used for facilities that qualify.

GUIDANCE:

When symbols are used for the road user services, they should be displayed as follows:

- A. Six services:
 1. Top row-GAS, FOOD, and LODGING
 2. Bottom row-PHONE, HOSPITAL, and CAMPING
- B. Four services:
 1. Top row-GAS and FOOD
 2. Bottom row-LODGING and PHONE
- C. Three services:
 1. Top row-GAS, FOOD, and LODGING

OPTION:

Substitutions of other services for any of the services described in the previous Guidance may be made by placing the substitution in the lower right (four or six services) or extreme right (three services) portion of the sign. An action message or an interchange number may be used for symbol signs in the same manner as they are used for word message signs. The Diesel Fuel (D9-11) symbol or the LP-Gas (D9-15) symbol may be substituted for the symbol representing fuel or appended to such assemblies. The Tourist Information (D9-10) symbol or the 24-Hour Pharmacy (D9-20 and D9-20aP) symbol may be substituted on any of the configurations provided in Paragraph 16 above.

At rural interchange areas where limited road user services are available and where it is unlikely that additional

services will be provided within the near future, a supplemental plaque displaying one to three services (words or symbols) may be appended below a post-mounted interchange guide sign.

STANDARD:

If more than three services become available at rural interchange areas where limited road user services were anticipated, the appended supplemental plaque described in the previous Guidance shall be removed and replaced with an independently mounted General Service sign as described in this Section.

OPTION:

A separate Telephone Service (D9-1) sign may be installed if telephone facilities are located adjacent to the route at places where public telephones would not normally be expected.

The Recreational Vehicle Sanitary Station (D9-12) sign may be used as needed to indicate the availability of facilities designed for dumping wastes from recreational vehicle holding tanks.

In some locations, signs may be used to indicate that services are not available.

A separate Truck Parking (D9-16) sign may be mounted below the other general road user services to direct truck drivers to designated parking areas.

2I.4 Interstate Oasis Signing

SUPPORT:

An Interstate Oasis is a facility near an Interstate highway that provides products and services to the public, 24-hour access to public restrooms, and parking for automobiles and heavy trucks. Interstate Oasis guide signs inform road users on Interstate highways as to the presence of an Interstate Oasis at an interchange and which businesses have been designated by the State within which they are traveling as having met the eligibility criteria of the Federal Highway Administration's Interstate Oasis policy. The FHWA's policy, which is dated October 18, 2006, and which can be viewed on the MUTCD website at <http://mutcd.fhwa.dot.gov/res-policy.htm>, provides a more detailed definition of an Interstate Oasis and specifies the eligibility criteria for an Interstate Oasis designation in compliance with the requirements of laws enacted by Congress.

GUIDANCE:

If a State elects to provide or allow Interstate Oasis signing (see Figure 2I-4), there should be a statewide policy, program, procedures, and criteria for the designation and signing of a facility as an Interstate Oasis that complies with FHWA's policy and with the provisions of this Section.

States electing to provide or allow Interstate Oasis signing should use the following signing practices on the freeway for any given exit to identify the availability of a designated Interstate Oasis:

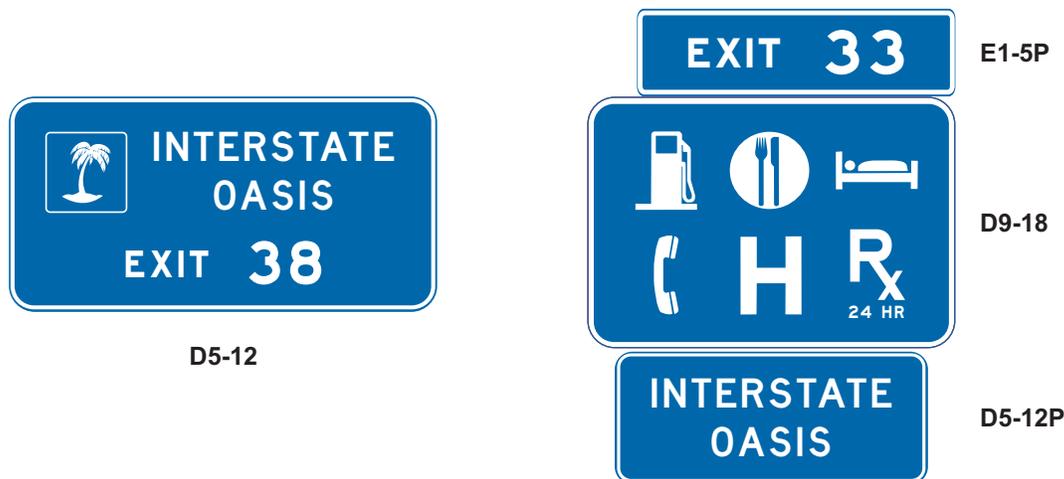


Figure 2I-4. Examples of Interstate Oasis Signs and plaques

A. If adequate sign spacing allows, a separate Interstate Oasis (D5-12) sign should be installed in an effective location with spacing of at least 800 feet from other adjacent guide signs, including any Specific Service signs. This Interstate Oasis sign should be located upstream from the Advance Guide sign or between the Advance Guide sign and the Exit Direction sign for the exit leading to the Interstate Oasis. The Interstate Oasis sign should have a white legend with a letter height of at least 10 inches and a white border on a blue background and should contain the words INTERSTATE OASIS and the exit number or, for an unnumbered interchange, an action message such as NEXT RIGHT. The names or logos of the businesses designated as Interstate Oases should not be included on this sign.

B. If the spacing of the other guide signs precludes the use of a separate sign as described in Item A, an INTERSTATE OASIS (D5-12P) supplemental plaque with a letter height of at least 10 inches and with a white legend and border on a blue background should be appended above or below an existing D9-18 series General Service sign for the interchange.

If a separate Interstate Oasis (D5-12) sign is installed, an Interstate Oasis sign panel should be incorporated into the design of the sign (see Figure 2I-4).

STANDARD:

The Interstate Oasis sign panel shall only be used on the separate Interstate Oasis sign where it is accompanied by the words INTERSTATE OASIS and shall not be used independently without the words.

OPTION:

If Specific Service signing is provided at the interchange, a business designated as an Interstate Oasis and having a business logo sign panel on the Food and/or Gas Specific Service signs may use the bottom portion of the business logo sign panel to display the word OASIS.

STANDARD:

If Specific Services signs containing the OASIS legend as a part of the business logo(s) are not used on the ramp and if the Interstate Oasis is not clearly visible and identifiable from the exit ramp, a sign with a white INTERSTATE OASIS legend with a letter height of at least 6 inches and a white border on a blue background shall be provided on the exit ramp to indicate the direction and distance to the Interstate Oasis.

If needed, additional trailblazer guide signs shall be used along the crossroad to guide road users to an Interstate Oasis.

2I.5 Rest Area and Other Roadside Area Signs



D5-1



D5-1a



D5-1c



D5-2a



D5-6



D5-X1



D5-X2



D5-X1a



D5-X1b



D5-X1c

STANDARD:

Rest Area signs (see Figure 2I-5) shall have a retroreflective white legend and border on a blue background.

Signs that include the legend REST AREA shall be used only where parking and restroom facilities are available.

GUIDANCE:

A roadside area that does not contain restroom facilities should be signed to indicate the major road user service that is provided. For example, the sign legends for an area with only parking should use the words PARKING AREA instead of REST AREA. The sign legends for an area with only picnic tables and parking should use words such as PICNIC AREA, ROADSIDE TABLE, or ROADSIDE PARK instead of REST AREA.

Rest areas that have tourist information and welcome centers should be signed as discussed in Section 2I.8.

Scenic area signing should be consistent with that provided for rest areas, except that the legends should use words such as SCENIC AREA, SCENIC VIEW, or SCENIC OVERLOOK instead of REST AREA.

STANDARD:

When rest areas or other roadside areas located on certain non-freeway highways are closed during the non-tourist season, a CLOSED plaque or other plaque indicating the periods of operation shall be mounted on the face of the sign(s).

GUIDANCE:

If a rest area or other roadside area is provided on a conventional road, a D5-1 and/or D5-1a sign should be installed in advance of the rest area or other roadside area to permit the driver to reduce speed in preparation for leaving the highway. A D5-5 sign (or a D5-2 sign if an exit ramp is provided) should be installed at the turnoff point where the driver needs to leave the highway to access the rest area or other roadside area.

If a rest area or other roadside area is provided on a freeway or expressway, a D5-1 sign should be placed 1 mile and/or 2 miles in advance of the rest area.

STANDARD:

A D5-2a sign shall be placed at the rest area or other roadside area exit gore.

OPTION:

A D5-1a sign may be placed between the D5-1 sign and the exit gore on a freeway or expressway. A second D5-1 sign may be used in place of the D5-1a sign with a distance to the nearest 1/2 or 1/4 mile displayed as a fraction rather than a decimal for distances of less than 1 mile.

To provide the road user with information on the location of succeeding rest areas, a NEXT REST AREA XX MILES (D5-6) sign may be installed independently or as a supplemental sign mounted below one of the REST AREA advance guide signs.

STANDARD:

All signs on freeways and expressways for rest and other roadside areas shall have letter and numeral sizes that comply with the minimum requirements of Tables 2E-2 through 2E-5. The sizes for General Service signs that have standardized designs shall be as shown in Table 2I-1.

OPTION:

If the rest area has facilities for the physically impaired (see Section 2I.2), the International Symbol of Accessibility for the Disabled (D9-6) sign may be placed with or beneath the REST AREA advance guide sign.

If telecommunication devices for the deaf (TDD) are available at the rest area, the TDD (D9-21) symbol sign may be used to supplement the advance guide signs for the rest area.

If wireless Internet services are available at the rest area, the Wi-Fi (D9-22) symbol sign may be used to supplement the advance guide signs for the rest area.

2I.5.1 Public Water Access Signs (D7-X7, D7-X7a, and DNR sign)



D7-X7



D7-X7a



DNR sign

OPTION:

The Public Water Access signs may be used to provide direction to a location on a lake, stream or river where a motorist may launch a licensed water craft.

STANDARD:

Public Water Access signs shall have a retroreflective white legend and border on a brown background.

Public Water Access signs shall not be installed unless the necessary Trailblazing signs are in place to provide guidance along the route to the site.

Trailblazing signing on local roads shall be the responsibility of the facility and the local road authority.

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PART 2. SIGNS

Chapter 2J. Specific Service (Logo) Signs

2J.a Introduction

SUPPORT:

The Minnesota Sign Franchise Program, which allows for the installation and maintenance of Logo Signs was established by Minnesota Statute 160.80 in 1984. This sign franchise program is in general conformance with the Specific Service Signing guidelines in the Federal MUTCD for gas, food, lodging, camping, attractions, and 24-hour pharmacies as contained in Minnesota Statute 160.80 and MnDOT's Sign Franchise Contract.

2J.1 Eligibility

STANDARD:

Logo signs shall be defined as guide signs that provide road users with business identification and directional information for services and for eligible attractions. Eligible service categories shall be limited to gas, food, lodging, camping, attractions, and 24-hour pharmacies.

GUIDANCE:

The use of Logo signs should be limited to areas primarily rural in character or to areas where adequate sign spacing can be maintained.

Logo signs should not be installed at an interchange where the road user cannot conveniently reenter the freeway or expressway and continue in the same direction of travel.

STANDARD:

Eligible service facilities shall comply with laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and laws concerning the licensing and approval of service facilities.

The attraction services shall include only facilities which have the primary purpose of providing amusement, historical, cultural, or leisure activities to the public.

Distances to eligible 24-hour pharmacies shall not exceed 3 miles in any direction of an interchange on the Federal-aid system.

In order to qualify for a logo sign panel in the State of Minnesota, services shall meet the following criteria according to State Statute 160.80, subd1a:

- A. To qualify for a GAS logo sign panel, a business shall:
 1. Provide vehicle services including gas or alternative fuels and oil;
 2. Provide restroom facilities and drinking water;
 3. Provide continuous, staffed operation at least 12 hours per day, 7 days per week; and
 4. Provide public access to a telephone.
- B. To qualify for a FOOD logo sign panel, a business shall:
 1. Serve at least 2 meals a day during normal mealtimes of breakfast, lunch and dinner;
 2. Provide a continuous, staffed food service operation at least 6 days a week except holidays;
 3. Provide seating capacity for at least 20 people;
 4. Possess any required state or local licensing or approval.
- C. To qualify for a LODGING logo sign panel, a business shall:
 1. Include sleeping accommodations
 2. Provide public access to a telephone;
 3. Provide restroom facilities; and
 4. Possess any required state or local licensing or approval.
- D. To qualify for a CAMPING logo sign panel, a business shall:
 1. Include sites for camping;
 2. Include parking accommodations for each campsite;
 3. Provide sanitary facilities and drinking water; and
 4. Possess any required state or local licensing or approval
- D. To qualify for an ATTRACTION logo sign panel, a facility shall have:
 1. Regional significance, which have the primary purpose of providing amusement, historical, cultural, or leisure activities to the public;
 2. Provide restroom facilities and drinking water;
 3. Possess any required state or local licensing approval; and
 4. Provide adequate bus and vehicle accommodations for normal attendance.
- F. To qualify for a PHARMACY logo sign panel, a pharmacy shall be:
 1. Continuously operated 24 hours per day, 7 days per week, and shall have a State-licensed pharmacist present and on duty at all times; and
 2. Located within 3 miles of an interchange on the Federal-aid system.

2J.2 Application

STANDARD:

The number of Logo signs along an approach to an interchange, regardless of the number of service types displayed, shall be limited to a maximum of four. In the direction of traffic, successive Logo signs shall be for 24-hour pharmacy, attraction, camping, lodging, food, and gas services, in that order.

A Logo sign shall display the word message GAS, FOOD, LODGING, CAMPING, ATTRACTION, or 24-HOUR PHARMACY an appropriate directional legend such as the word message EXIT XX, NEXT RIGHT, SECOND RIGHT, or directional arrows, and the related logo sign panels.

No more than three types of services shall be represented on any sign or sign assembly. If three types of services are displayed on one sign, then the logo sign panels shall be limited to two for each service type (for a total of six logo sign panels). If two types of services are displayed on one sign, then the logo sign panels shall be limited to either three for each service type (for a total of six logo sign panels) or four for one service type and two for the other service type (for a total of six logo sign panels). The legend and logo sign panels applicable to a service type shall be displayed such that the road user will not associate them with another service type on the same sign. No service type shall appear on more than two signs.

The signs shall have a blue background, a white border, and white legends of upper-case letters, numbers, and arrows.

GUIDANCE:

Where a service type is displayed on two signs, the signs for that service should follow one another in succession.

The Logo signs should be located to take advantage of natural terrain, to have the least impact on the scenic environment, and to avoid visual conflict with other signs within the highway right-of-way.

OPTION:

General Service signs (see Sections 2I.2 and 2I.3) may be used in conjunction with Logo signs for eligible types of services that are not represented by a Logo sign.

SUPPORT:

Examples of Logo signs are shown in Figure 2J-1. Examples of sign locations are shown in Figure 2J-2.

2J.3 Logos and Logo Sign Panels

STANDARD:

A logo shall be either an identification symbol/trademark or a word message. Each logo shall be placed on a separate logo sign panel which shall be attached to the Logo sign. Symbols or trademarks used alone for a logo shall be reproduced in the colors and general shape consistent with customary use, and any integral legend shall be in proportionate size. A logo that resembles an official traffic control device shall not be used.

GUIDANCE:

A word message logo, not using a symbol or trademark, should have a blue background with white legend and border.

SUPPORT:

Section 2J.5 contains information regarding the minimum letter heights for logo sign panels.

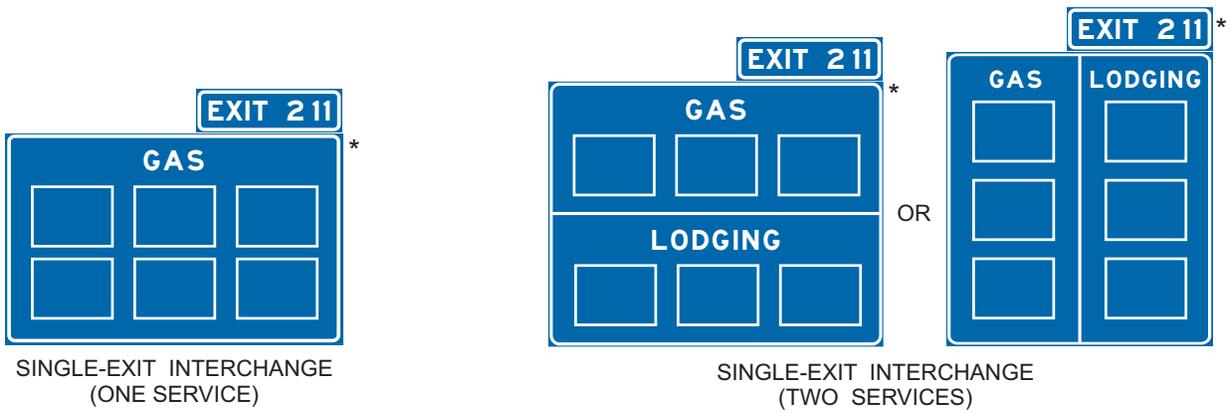
OPTION:

Where business identification symbols or trademarks are used alone for a logo, the border may be omitted from the logo sign panel.

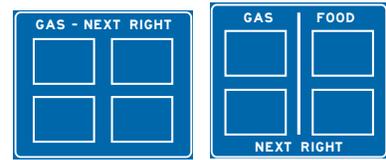
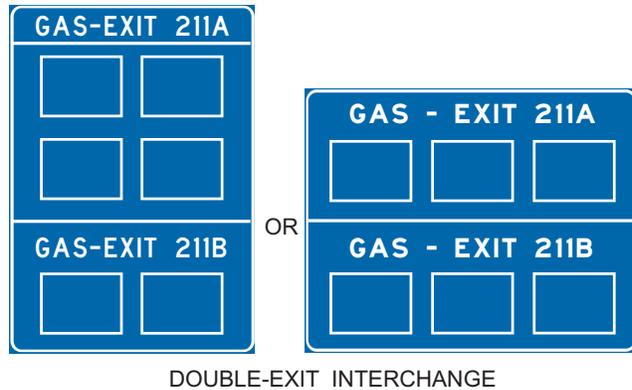
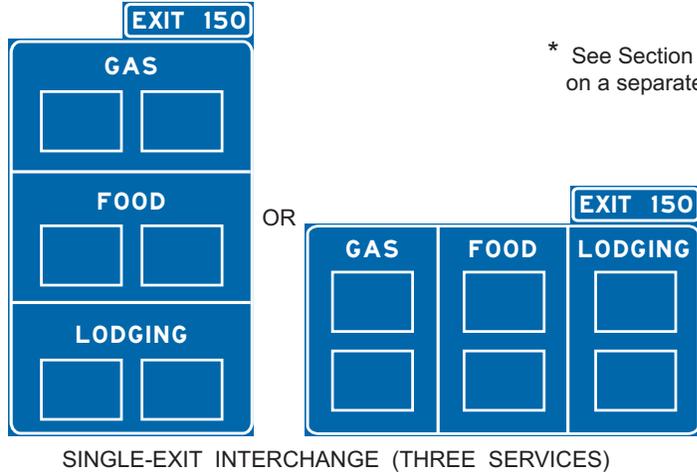
A portion of a logo sign panel may be used to display a supplemental message horizontally along the bottom of the logo sign panel, provided that the message displays essential motorist information (see Figure 2J-3).



Figure 2J-3 Examples of Supplemental Messages on Logo Sign Panels



* See Section 2J.7 for option of displaying exit number on a separate plaque instead of on the sign.



Note: Directional arrows and distance may be used when appropriate

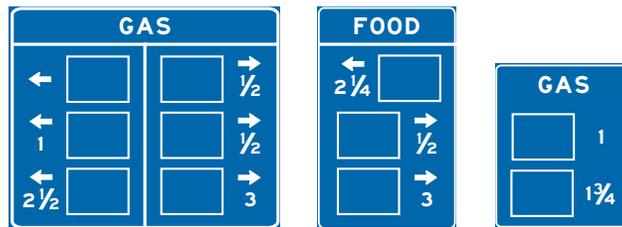


Figure 2J-1 Examples of Logo Signs

Type of Sign	Freeway	Ramp
A. Logo Signs		
Service Categories	10	6
Exit Number Words	10	--
Exit Number Numerals and Letters	10	--
Action Message Words	10	6
Distance Numerals	--	6
Distance Fraction Numerals	--	4
B. Logo Sign Panels		
Logo Sign Panels	60 x 36	30 x 18
Words and Numerals (Non-Trademark/Graphic Logos)	8	4
Trademark/Graphic Logos	Proportional	Proportional
Supplemental Message Words and Numerals	5	2.5

Table 2J-1 Minimum Letter and Numeral Sizes for Logo Signs According to Sign Type

STANDARD:

All supplemental messages shall be displayed within the logo sign panel and shall have letters and numerals that comply with the minimum height requirements shown in Table 2J-1.

GUIDANCE:

A logo sign panel should not display more than one supplemental message.

The supplemental message should be displayed in a color to contrast effectively with the background of the business sign or separated from the other legend or logo by a divider bar.

SUPPORT:

Typical supplemental messages might include DIESEL, 24 HOURS, CLOSED and the day of the week when the facility is closed, ALTERNATIVE FUELS (see Section 2I.3), and RV ACCESS.

OPTION:

The RV ACCESS supplemental message may be circular.

STANDARD:

If the RV ACCESS supplemental message is circular, it shall be the abbreviation RV in black letters inside a yellow circle with a black border and it shall be displayed within the logo sign panel near the lower right-hand corner (see Figure 2J-4).

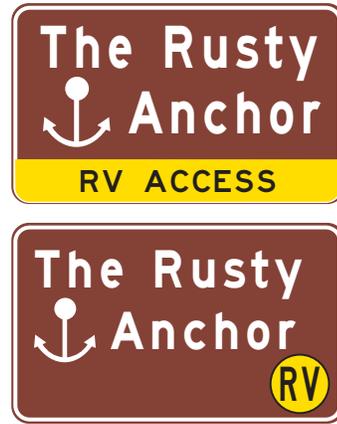


Figure 2J-4 Examples of RV Access Supplemental Messages on Logo Sign Panels

GUIDANCE:

If the circular RV ACCESS supplemental message is used, the circle should have a diameter of 10 inches and the letters should have a height of 6 inches.

If a State or local agency elects to display the designation of businesses as providing on-premise accommodations for recreational vehicles with the RV ACCESS supplemental message or the RV Access circular message, there should be a statewide policy for such designation and criteria for qualifying businesses. The criteria should include such site conditions as access between the public roadway and the site, on-premise geometry, and parking.

STANDARD:

A logo sign panel shall not display the symbol/trademark or name of more than one business.

2J.4 Number and Size of Signs and Logo Sign Panels

GUIDANCE:

Sign sizes should be determined by the amount and height of legend and the number and size of logo sign panels attached to the sign. All logo sign panels on a sign should be the same size.

STANDARD:

Each Logo sign or sign assembly shall be limited to no more than six logo sign panels.

OPTION:

Where more than six businesses of a service type are eligible for logo sign panels at the same interchange, additional logo sign panels of that same service type may also be displayed in accordance with the provisions of the following Standard. The additional logo sign panels may be displayed either by placing more than one service type on the same sign (see Paragraph 3 of the Standard in Section 2J.2) or by using a second Logo sign of that service type if the additional sign can be added without exceeding the limit of four Logo signs at an interchange approach (see Guidance in Section 2J.2).

STANDARD:

Where logo sign panels for more than six businesses of a service type are displayed at the same interchange or intersection approach, the following provisions shall apply:

- No more than 12 logo sign panels of a service type shall be displayed on no more than two Logo signs or sign assemblies;
- No more than six logo sign panels shall be displayed on a single Logo sign; and
- No more than four Logo signs shall be displayed on the approach.

SUPPORT:

Section 2J.8 contains information regarding Logo signs for double-exit interchanges.

STANDARD:

Each logo sign panel attached to a Logo sign shall have a rectangular shape with a width longer than the height. A logo sign panel on signs for freeways and expressways shall not exceed 60 inches in width and 36 inches in height. A logo sign panel on signs for freeway and expressway ramps shall not exceed 30 inches in width and 18 inches in height. The vertical and horizontal spacing between logo sign panels shall not exceed 8 inches and 12 inches, respectively.

SUPPORT:

Sections 2A.14, 2E.15, and 2E.16 contain information regarding borders, interline spacing, and edge spacing.

2J.5 Size of Lettering**STANDARD:**

All Logo signs and logo sign panels shall have letter and numeral sizes that comply with the minimum requirements of Table 2J-1.

GUIDANCE:

Any legend on a symbol/trademark should be proportional to the size of the symbol/trademark.

2J.6 Signs at Interchanges**STANDARD:**

The Logo signs shall be installed between the preceding interchange and at least 800 feet in advance of the Exit Direction sign at the interchange from which the services are available (see Figure 2J-2).

GUIDANCE:

There should be at least an 800 foot spacing between the Logo signs, except for Logo ramp signs. However, excessive spacing is not desirable. Logo ramp signs should be spaced at least 100 feet from the exit gore sign, from each other, and from the ramp terminal.

2J.7 Single-Exit Interchanges**STANDARD:**

At numbered single-exit interchanges, the name of the service type followed by the exit number shall be displayed on one line above the logo sign panels. At unnumbered interchanges, the directional legend NEXT RIGHT (LEFT) shall be used.

At single-exit interchanges, Logo ramp signs shall be installed along the ramp or at the ramp terminal for facilities that have logo sign panels displayed along the main roadway if the facilities are not readily visible from the ramp terminal. Directions to the service facilities shall be indicated by arrows on the ramp signs. Logo sign panels on Logo ramp signs shall be duplicates of those displayed on the Logo signs located in advance of the interchange, but shall be reduced in size (see the third Standard of Section 2J.4).

GUIDANCE:

Logo ramp signs should include distances to the service facilities.

OPTION:

An exit number plaque (see Section 2E.31) may be used instead of the exit number on the signs located in advance of an interchange.

PART 2. SIGNS

Chapter 2K. Tourist-Oriented Directional Signs

2K.a Introduction

SUPPORT:

Tourist-oriented directional signs are established by Minnesota Statute 160.292 through 160.297 (Office of Traffic, Safety, and Technology, see page ii.). In this statute, the Tourist-Oriented Directional Signs are referred to as Specific Service Signs.

The policy for Specific Service Signing on state highways as established in State Statutes 160.292 through 160.296 is contained in the Mn/DOT Traffic Engineering Manual (see Map & Manual Sales Unit, page ii), Chapter 6, Section 6-7.09.13.

2K.1 Purpose and Application



D9-X6

SUPPORT:

Specific Service Signs (D9-X6) are guide signs with one or more panels that display the business identification of and directional information for business, service, and activity facilities.

STANDARD:

A facility shall be eligible for Specific Service Signs only if it derives its major portion of income or visitors during the normal business season from road users not residing in the area of the facility.

OPTION:

Specific Service Signs may include businesses involved with seasonal agricultural products.

STANDARD:

When used, Specific Service Signs shall be used only on rural non-freeway trunk highways or conventional roads and shall not be used on conventional roads in urban areas or at interchanges on expressways or freeways except on highway bypasses of outstate municipalities.

SUPPORT:

Section 2K.7 contains information on the adoption of a State policy for Agencies that elect to use Specific Service Signs.

2K.2 Design

STANDARD:

Specific Service Signs shall have one or more sign panels for the purpose of displaying the business identification of and directional information for eligible facilities. Each sign panel shall be rectangular in shape and shall have a white legend and border on a blue background.

The content of the legend on each sign panel shall be limited to the identification and directional information for no more than one eligible business, service, or activity facility. The legends shall not include promotional advertising.

Each sign panel shall have a maximum of two lines of legend including not more than one symbol, a separate directional arrow, and the distance to the facility displayed beneath the arrow. Arrows pointing to the left or up shall be at the extreme left of the sign panel. Arrows pointing to the right shall be at the extreme right of the sign panel. Symbols, when used, shall be to the left of the word legend or logo sign panel (see the following Option).

The General Service sign symbols (see Section 2I.2) and the symbols for recreational and cultural interest area signs (see Chapter 2M) shall not be used.

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OPTION:

Logo sign panels (see Section 2J.3) for specific businesses, services, and activities may also be used.

STANDARD:

When used, symbols and logos shall be an appropriate size (see Section 2K.4). Logos resembling official traffic control devices shall not be permitted.

SUPPORT:

Examples of Specific Service Signs are shown in Figures 2K-1 and 2K-2.

2K.3 Style and Size of Lettering

GUIDANCE:

All letters and numbers on Specific Service Signs, except on the logo sign panel, should be upper-case and at least 6 inches in height. Any legend on a logo should be proportional to the size of the logo.

STANDARD:

Design standards for letters, numerals shall be as provided in the FHWA "Standard Highway Signs and Markings" book (see Section 1A.11). Spacing between letters shall be as provided in the Mn/DOT "Standard Signs Manual".

2K.4 Arrangement and Size of Signs

STANDARD:

The size of a Specific Service Sign shall be limited to a maximum height of 6 feet.

There shall be no more than four sign panels placed vertically in a single sign assembly. Sign panels for left turns shall be placed above sign panels for right turns when they are arranged in one assembly (see Figure 2K-1).

When there are more than four sign panels to be installed on an approach to an intersection or interchange, the left turn sign panels shall be grouped together and placed on a separate assembly in advance of the assembly containing the right turn sign panels.

GUIDANCE:

The number of intersection or interchange approach signs installed in advance of an intersection should not exceed three.

If it has been determined to be appropriate to combine the left-turn and right-turn destination sign panels on a single sign, the left-turn destination sign panels should be above the right-turn destination sign panels (see Figure 2K-1). When there are multiple destinations in the same direction, they should be in order based on their distance from the intersection. Except as provided in the following option, a straight-through sign panel should not be combined with a sign displaying left- and/or right-turn destinations.

The sign panels should not exceed the size necessary to accommodate two lines of legend without crowding. Symbols and logo sign panels on a directional sign panel should not exceed the height of two lines of a word legend. All directional sign panels and other parts of the sign should be the same width, which should not exceed 6 feet.

OPTION:

At intersection approaches where four or fewer facilities are displayed, the left-turn, right-turn, and straight-through destination sign panels may be combined on the same sign.

2K.5 Advance Signs

GUIDANCE:

Advance signs should be limited to those situations where sight distance, intersection vehicle maneuvers, or other vehicle operating characteristics require advance notification of the destinations and their directions.

The design of the advance sign should be identical to the design of the intersection approach sign. However, the directional arrows and distances to the destinations should be omitted and the action messages NEXT RIGHT, NEXT LEFT, or AHEAD should be placed on the sign below the business identification sign panels. The action messages should have the same letter height as the other word messages on the directional sign panels (see Figures 2K-1 and 2K-2).

STANDARD:

The action message sign panels shall have a white legend in all upper-case letters and a white border on a blue background.

OPTION:

The legend 1/2 MILE ON RIGHT or 1/2 MILE ON LEFT or other appropriate message may be used on advance signs when there are intervening minor roads.

The height required, up to 12 inches, to add the directional word messages recommended for the advance sign may be added to the maximum sign height of 6 feet.

2K.6 Sign Locations

GUIDANCE:

If used, the intersection approach signs should be located at least 200 feet in advance of the intersection. Signs should be spaced at least 200 feet apart and at least 200 feet from other traffic control devices.

If used, advance signs should be located approximately 1/2 mile from the intersection with 500 feet between these signs. In the direction of travel, the order of advance sign placement should be to show the destinations to the left first, then destinations to the right, and last, the destinations straight ahead.

Position, height, and lateral offset of signs should be governed by Chapter 2A except as permitted in this Section.

OPTION:

Specific Service Signs may be placed further from the edge of the road than other traffic control signs.

STANDARD:

The location of other traffic control devices shall take precedence over the location of Specific Service Signs.

2K.7 State Policy

STANDARD:

To be eligible for tourist-oriented directional signing, facilities shall comply with applicable State and Federal laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and with laws concerning the licensing and approval of service facilities. Each Agency that elects to use Specific Service Signs shall adopt a policy that complies with these provisions.

GUIDANCE:

The Agency policy should include:

- A. A definition of tourist-oriented business, service, and activity facilities.
- B. Eligibility criteria for signs for facilities.
- C. Provision for covering signs during off seasons for facilities operated on a seasonal basis.
- D. Provisions for signs to facilities that are not located on the crossroad when such facilities are eligible for signs.
- E. A definition of the immediate area in compliance with the provisions of the first Standard of Section 2K.1.
- F. Maximum distances to eligible facilities. The maximum distance should be 5 miles.
- G. Provision for information centers (plazas) when the number of eligible sign applicants exceeds the maximum permissible number of sign panel installations.
- H. Provision for limiting the number of signs when there are more applicants than the maximum number of signs permitted.
- I. Criteria for use at intersections on expressways.
- J. Provisions for controlling or excluding those businesses which have illegal signs as defined by the Highway Beautification Act of 1965 (23 U.S.C. 131).
- K. Provisions for States to charge fees to cover the cost of signs through a permit system.
- L. A definition of the conditions under which the time of operation is displayed.
- M. Provisions for determining if advance signs will be permitted, and the circumstances under which they will be installed.

minimum letter height should be 12 inches for changeable message signs on roadways with speed limits of less than 45 mph.

SUPPORT:

Using letter heights of more than 18 inches will not result in proportional increases in legibility distance.

GUIDANCE:

The width-to-height ratio of the sign characters should be between 0.7 and 1.0. The stroke width-to-height ratio should be 0.2.

SUPPORT:

The width-to-height ratio is commonly accomplished using a minimum font matrix density of five pixels wide by seven pixels high.

STANDARD:

Changeable message signs shall automatically adjust their brightness under varying light conditions to maintain legibility.

GUIDANCE:

The luminance of changeable message signs should meet industry criteria for daytime and nighttime conditions. Luminance contrast should be between 8 and 12 for all conditions.

Contrast orientation of changeable message signs should always be positive, that is, with luminous characters on a dark or less luminous background.

SUPPORT:

Legibility distances for negative-contrast changeable message signs are likely to be at least 25 percent shorter than those of positive-contrast messages. In addition, the increased light emitted by negative-contrast changeable message signs has not been shown to improve detection distances.

STANDARD:

The colors used for the legends and backgrounds on changeable message signs shall be as provided in Table 2A-5.

GUIDANCE:

If a black background is used, the color used for the legend on a changeable message sign should match the background color that would be used on a standard sign for that type of legend, such as white for regulatory, yellow for

warning, orange for temporary traffic control, red for stop or yield, fluorescent pink for incident management, and fluorescent yellow-green for bicycle, pedestrian, and school warning.

STANDARD:

If a green background is used for a guide message on a CMS or if a blue background is used for a motorist services message on a CMS, the background color shall be provided by green or blue lighted pixels such that the entire CMS would be lighted, not just the white legend.

SUPPORT:

Some CMS that employ newer technologies have the capability to display an exact duplicate of a standard sign or other sign legend using standard symbols, the Standard Alphabets and letter forms, route shields, and other typical sign legend elements with no apparent loss of resolution or recognition to the road user when compared with a static version of the same sign legend. Such signs are of the full-matrix type and can typically display full-color legends. Use of such technologies for new CMS is encouraged for greater legibility of their displays and enhanced recognition of the message as it pertains to regulatory, warning, or guidance information.

GUIDANCE:

If used, the CMS described in the preceding paragraph should not display symbols or route shields unless they can do so in the appropriate color combinations. For a single-phase message where the Standard Alphabets and other legend elements of standard designs are used, the lettering style, size, and line spacing should comply with the applicable provisions for the type of message displayed as provided elsewhere in this Manual. For two-phase messages, larger legend heights should be used as described previously in this Section because of the need for such messages to be legible at a greater distance. Regardless of the number of phases, the CMS should comply with the legibility and visibility provisions of Section 2L.3.

2L.5 Message Length and Units of Information

GUIDANCE:

The maximum length of a message should be dictated by the number of units of information contained in the message, in addition to the size of the CMS. A unit of information, which is a single answer to a single question that a driver can use to make a decision, should not be more than four words.

SUPPORT:

In order to illustrate the concept of units of information, Table 2L-1 shows an example message that is comprised of four units of information.

The maximum allowable number of units of information in a CMS message is based on the principles described in this Section, the current highway operating speed, the legibility characteristics of the CMS, and the lighting conditions.

STANDARD:

Each message shall consist of no more than two phases. A phase shall consist of no more than three lines of text.

Each phase shall be understood by itself regardless of the sequence in which it is read.

Messages shall be centered within each line of legend. Except for signs located on toll plaza structures or other facilities with a similar booth-lane arrangement, if more than one CMS is visible to road users, then only one sign shall display a sequential message at any given time.

Techniques of message display such as fading, rapid flashing, exploding, dissolving, or moving messages shall not be used. The text of the message shall not scroll or travel horizontally or vertically across the face of the sign.

GUIDANCE:

When designing and displaying messages on changeable

message signs, the following principles relative to message design should be used:

- A. The minimum time that an individual phase is displayed should be based on 1 second per word or 2 seconds per unit of information, whichever produces a lesser value. The display time for a phase should never be less than 2 seconds.
- B. The maximum cycle time of a two-phase message should be 8 seconds.
- C. The duration between the display of two phases should not exceed 0.3 seconds.
- D. No more than three units of information should be displayed on a phase of a message.
- E. No more than four units of information should be in a message when the traffic operating speeds are 35 mph or more.
- F. No more than five units of information should be in a message when the traffic operating speeds are less than 35 mph.
- G. Only one unit of information should appear on each line of the CMS.
- H. Compatible units of information should be displayed on the same message phase.

OPTION:

A unit of information consisting of more than one word may be displayed on more than one line. An additional changeable message sign at a downstream location may be used for the purpose of allowing the entire message to be read twice.

Question	Answer	Number of Information Units
What happened ?	MAJOR CRASH	1
Where ?	AT EXIT 12	1
Who is the advisory for ?	Drivers Heading TO NEW YORK	1
What is advised ?	USE ROUTE 46	1

Notes: The following is an example of a two-phase message that could be developed from the four information units shown in this table:

**MAJOR CRASH
AT EXIT 12**

Phase 1

**USE ROUTE 46
TO NEW YORK**

Phase 2

Table 2L-1 Example of Units of Information

PART 2. SIGNS
Chapter 2M. Recreational and Cultural Interest Area Signs
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MN Rev. 2

MN Rev. 2

PART 2. SIGNS

Chapter 2M. Recreational and Cultural Interest Area Signs

2M.1 Scope

SUPPORT:

Recreational or cultural interest areas are attractions or traffic generators that are open to the general public for the purpose of play, amusement, or relaxation. Recreational attractions include such facilities as parks, campgrounds, gaming facilities, and ski areas, while examples of cultural attractions include museums, art galleries, and historical buildings or sites.

The purpose of recreation and cultural interest area signs is to guide road users to a general area and then to specific facilities or activities within the area.

OPTION:

Recreational and cultural interest area guide signs directing road users to significant traffic generators may be used on freeways and expressways where there is direct access to these areas as provided in Section 2M.9.

Recreational and cultural interest area signs may be used off the road network, as appropriate.

2M.2 Application of Recreational and Cultural Interest Area Signs

SUPPORT:

Provisions for signing recreational or cultural interest areas are subdivided into two different types of signs: (1) symbol signs and (2) destination guide signs.

GUIDANCE:

When highway agencies decide to provide recreational and cultural interest area signing, these agencies should have a policy for such signing. The policy should establish signing criteria for the eligibility of the various types of services, accommodations, and facilities. These signs should not be used where they might be confused with other traffic control signs.

OPTION:

Recreational and cultural interest area guide signs may be used on any road to direct persons to facilities, structures, and places, and to identify various services available to the general public. These guide signs may also be used in recreational or cultural interest areas for signing non-vehicular

events and amenities such as trails, structures, and facilities.

SUPPORT:

Section 2A.12 contains information regarding the use of recreational and cultural interest area symbols on other types of signs.

2M.3 Regulatory and Warning Signs

STANDARD:

All regulatory and warning signs installed on public roads and streets within recreational and cultural interest areas shall comply with the requirements of Chapters 2A, 2B, 2C, 7B, 8B, and 9B.

2M.4 General Design Requirements for Recreational and Cultural Interest Area Symbol Signs

STANDARD:

Recreational and cultural interest area symbol guide signs shall be square or rectangular in shape and shall have a white symbol or message and white border on a brown background. The symbols shall be grouped into the following usage and series categories:

- A. General Applications,
- B. Accommodations,
- C. Services,
- D. Land Recreation,
- E. Water Recreation, and
- F. Winter Recreation.

SUPPORT:

Table 2M-1 contains a listing of the symbols within each series category.

OPTION:

Mirror images of symbols may be used where the reverse image will better convey the message.

MN Rev. 1

MN Rev. 2

General	
Bear Viewing Area	RS-012
Bus Stop	RS-031
Campfires *	RS-042
Cans or Bottles *	RS-101
Cultural Interest Area	RS-142
Dam	RS-009
Deer Viewing Area	RS-011
Falling Rocks *	RS-008
Fire Extinguisher *	RS-090
Lighthouse	RS-007
Lookout Tower	RS-006
Nature Study Area	RS-141
Pets on Leash *	RS-017
Pick-Up Trucks	RS-140
Point of Interest	RS-080
Radios *	RS-103
Rattlesnakes *	RS-099
Recycling *	RS-200
Sea Plane	RS-115
Smoking *	RS-002
Snack Bar *	RS-102
Stay on Trail *	RS-123
Strollers *	RS-111
Tunnel	RS-005
Viewing Area	RS-036
Walk on Boardwalk *	RS-122
Wood Gathering *	RS-120

Accommodations	
Baby Changing Station (Men's Room)	RS-137
Baby Changing Station (Women's Room)	RS-138
Men's Restroom	RS-021
Parking	RS-034
Recreational Vehicle Site	RS-104
Restrooms	RS-022
Sleeping Shelter *	RS-037
Trailer Site	RS-040
Walk-In Camp	RS-148
Women's Restroom	RS-023

Services	
Drinking Water	RS-013
Electrical Hook-Up	RS-150
Firewood Cutting *	RS-112
First Aid	RS-024
Grocery Store	RS-020
Kennel	RS-045
Laundromat	RS-085
Litter Receptacle	RS-086
Lockers/Storage *	RS-030
Mechanic	RS-027
Picnic Shelter	RS-039
Picnic Site	RS-044
Post Office	RS-026
Radiator Water	RS-124
Ranger Station	RS-015
Sanitary Station	RS-041
Showers *	RS-035
Stable	RS-073
Theater	RS-109
Trail Shelter *	RS-043
Tramway	RS-071
Trash Dumpster	RS-091

Land Recreation	
All Terrain Trail	RS-095
Amphitheater	RS-070
Archery	RS-116
Baseball *	RS-096
Climbing *	RS-082
Corral	RS-149
Driving Tour	RS-113
Exercise/Fitness	RS-097
Golfing *	RS-128
Hang Gliding	RS-126
Hiking Trail	RS-068
Horse Trail	RS-064
In-Line Skating	RS-125
Interpretive Trail	RS-114
Off-Road Vehicle Trail	RS-067
Rock Collecting *	RS-063
Skateboarding *	RS-098
Spelunking/Caves	RS-084
Technical Rock Climbing	RS-081
Tennis	RS-129
Wildlife Viewing	RS-076

Water Recreation	
Beach	RS-012
Boat Motor	RS-147
Boat Ramp	RS-054
Canoeing	RS-079
Diving	RS-062
Fish Cleaning *	RS-093
Fish Hatchery	RS-010
Fish Ladder *	RS-089
Fishing Area	RS-063
Fishing Pier	RS-119
Hand Launch/Small Boat Launch	RS-117
Jet Ski/Personal Watercraft	RS-121
Kayaking	RS-118
Lifejackets *	RS-094
Marina	RS-053
Motorboating	RS-055
Rafting	RS-146
Rowboating	RS-057
Sailing	RS-056
Scuba Diving	RS-060
Seal Viewing	RS-106
Surfing	RS-059
Swimming	RS-061
Tour Boat	RS-087
Wading	RS-088
Waterskiing	RS-058
Whale Viewing	RS-107
Wind Surfing	RS-108

Winter Recreation	
Chair Lift/Ski Lift	RS-105
Cross Country Skiing	RS-046
Dog Sledding	RS-143
Downhill Skiing	RS-047
Ice Fishing	RS-092
Ice Skating	RS-050
Ski Jumping	RS-048
Sledding	RS-049
Snow Tubing	RS-144
Snowboarding	RS-127
Snowmobiling	RS-052
Snowshoeing	RS-078
Winter Recreational Area	RS-077

* For non-road use only

Table 2M-1 Category Chart for Recreational and Cultural Interest Area Symbols

2M.5 Symbol Sign Sizes

GUIDANCE:

Recreational and cultural interest area symbol signs should be 24 x 24 inches. Where greater visibility or emphasis is needed, larger sizes should be used. Symbol sign enlargements should be in 6-inch increments.

Recreational and cultural interest area symbol signs should be 30 x 30 inches when used on guide signs on freeways or expressways.

OPTION:

A smaller size of 18 x 18 inches may be used on low-speed, low-volume roadways and on non-road applications.

2M.6 Use of Educational Plaques

GUIDANCE:

Educational plaques should accompany all initial installations of recreational and cultural interest area symbol signs. The educational plaque should remain in place for at least 3 years after the initial installation. If used, the educational plaque should be the same width as the symbol sign.

OPTION:

Symbol signs that are readily recognizable by the public may be installed without educational plaques.

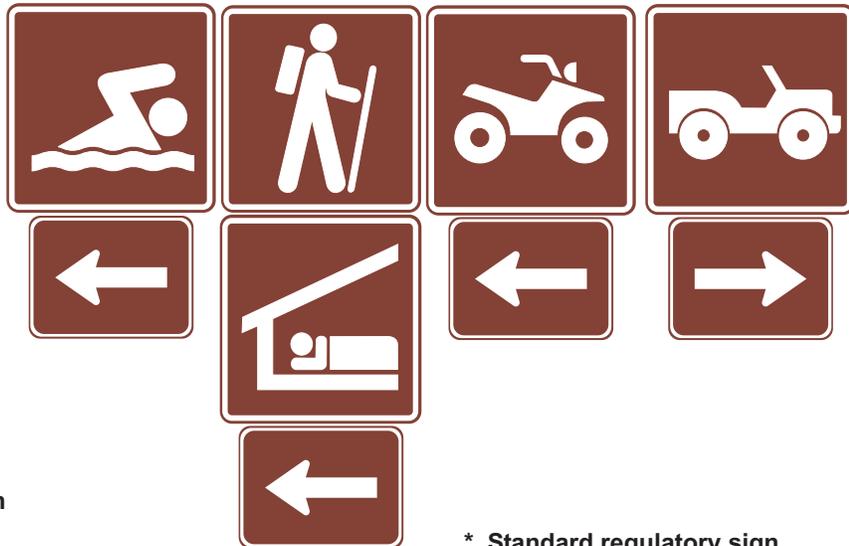
SUPPORT:

Figure 2M-1 illustrates some examples of the uses of educational plaques.

A - Directional Signs



B - Directional Assemblies



C - Directional Assembly with Educational Plaque



D - Prohibited Activities and Educational Plaque for Non-Road Use *



* Standard regulatory sign shall be used where provided elsewhere in this Manual.

2M.7 Use of Prohibitive Circle and Diagonal Slash for Non-Road Applications

STANDARD:

Where it is necessary to indicate a prohibition of an activity or an item within a recreational or cultural interest area for non-road use and a standard regulatory sign for such a prohibition is not provided in Chapter 2B, the appropriate recreational and cultural interest area symbol shall be used in combination with a red prohibitive circle and red diagonal slash. The recreational and cultural interest area symbol and the sign border shall be black and the sign background shall be white. The symbol shall be scaled proportionally to fit completely within the circle and the diagonal slash shall be oriented from the upper left to the lower right portions of the circle as shown in Figure 2M-1.

Requirements for retroreflection of the red circle and red diagonal slash shall be the same as those requirements for backgrounds, legends, symbols, arrows, and borders.

2M.8 Placement of Recreational and Cultural Interest Area Symbol Signs

STANDARD:

If used, recreational and cultural interest area symbol signs shall be placed in accordance with the general requirements contained in Chapter 2A. The symbol(s) shall be placed as sign panels in the uppermost part of the sign and the directional information shall be placed below the symbol(s).

Except as provided in the following Option, if the name of the recreational or cultural interest area facility or activity is displayed on a destination guide sign (see Section 2M.09) and a symbol is used, the symbol shall be placed below the name (see Figure 2M-2).

OPTION:

When the legend Wildlife Viewing Area is displayed with the RS-076 symbol on a destination guide sign, the symbol may be placed to the left or right of the legend and the arrow may be placed below the symbol (see Figure 2M-2).

The symbols displayed with the facility or activity name may be placed below the destination guide sign as illustrated in Figure 2M-2 instead of as sign panels placed with the destination guide sign.

Secondary symbols of a smaller size (18 x 18 inches) may be placed beneath the primary symbols (see Drawing A in Figure 2M-1), where needed.

STANDARD:

Recreational and cultural interest area symbols installed for non-road use shall be placed in accordance with the general sign position requirements of the authority having jurisdiction.

SUPPORT:

Figure 2M-3 illustrates typical height and lateral mounting positions. Figure 2M-4 illustrates some examples of the placement of symbol signs within a recreational or cultural interest area. Figures 2M-5 through 2M-10 illustrate some of the symbols that can be used. Illustrations of all of the recreational and cultural interest area symbols that can be used are found in Appendix C of this Manual.

GUIDANCE:

The number of symbols used in a single sign assembly should not exceed four.

OPTION:

The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary signs with white arrows on brown backgrounds shown in Figure 2D-5 may be used with Recreational and Cultural Area Interest symbol guide signs to create a Recreational and Cultural Interest Area Directional Assembly. The symbols may be used singularly, or in groups of two, three, or four on a single sign assembly (see Figures 2M-1, 2M-3, and 2M-4).

2M.9 Destination Guide Signs

GUIDANCE:

When recreational or cultural interest area destinations are displayed on supplemental guide signs, the sign should be rectangular or trapezoidal in shape. The order of preference for use of shapes and colors should be as follows: (1) rectangular with a white legend and border on a green background; (2) rectangular with a white legend and border on a brown background; or (3) trapezoidal with a white legend and border on a brown background.

STANDARD:

Whenever the trapezoidal shape is used, the color combination shall be a white legend and border on a brown background.

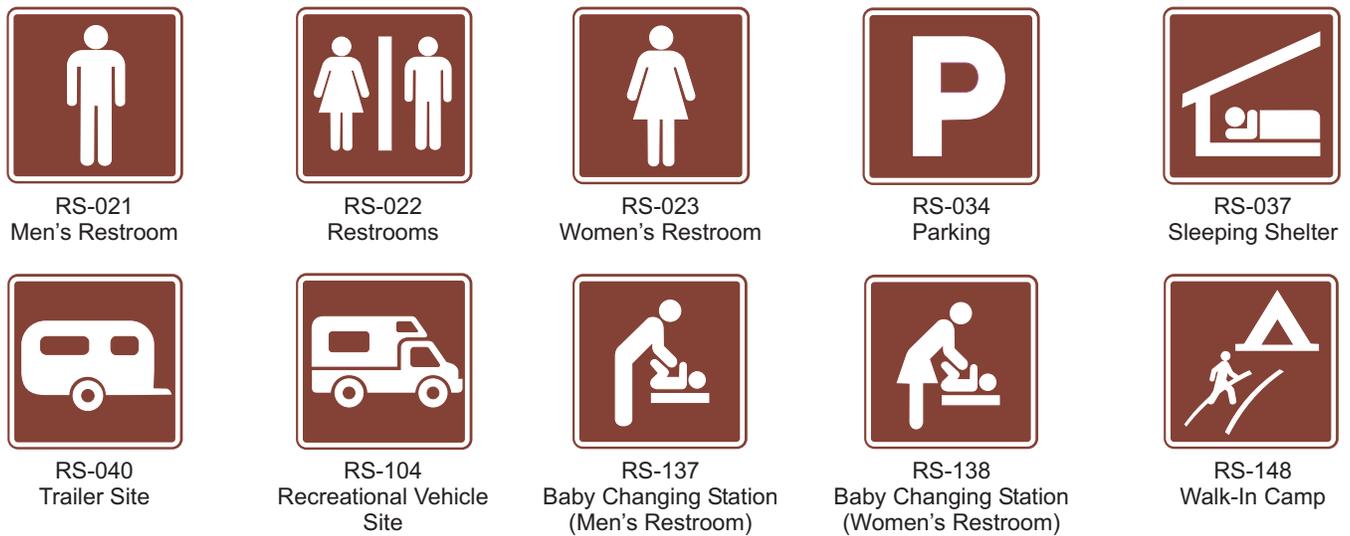


Figure 2M-6. Recreational and Cultural Interest Area Symbol Signs for Accommodation



Figure 2M-7. Recreational and Cultural Interest Area Symbol Signs for Services



Figure 2M-8. Recreational and Cultural Interest Area Symbol Signs for Land Recreation

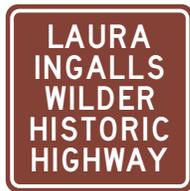


Figure 2M-9. Recreational and Cultural Interest Area Symbol Signs for Water Recreation



Figure 2M-10. Recreational and Cultural Interest Area Symbol Signs for Winter Recreation

2M.10 Memorial or Dedication Signing



M1-X5x



M1-X5r

SUPPORT:

Legislative bodies will occasionally adopt an act or resolution memorializing or dedicating a highway, bridge, or other component of the highway.

GUIDANCE:

Such memorial or dedication names should not appear on or along a highway, or be placed on bridges or other highway components. If a route, bridge, or highway component is officially designated as a memorial or dedication, and if notification of the memorial or dedication is to be made on the highway right-of-way, such notification should consist of installing a memorial or dedication marker in a rest area, scenic overlook, recreational area, or other appropriate location where parking is provided with the signing inconspicuously located relative to vehicle operations along the highway.

OPTION:

If the installation of a memorial or dedication marker off the main roadway is not practical, memorial or dedication signs may be installed on the mainline.

GUIDANCE:

Memorial or dedication signs should have a white legend and border on a brown background.

STANDARD:

Where such memorial or dedication signs are installed on the mainline, (1) memorial or dedication names shall not appear on directional guide signs, (2) memorial or dedication signs shall not interfere with the placement of any other necessary signing, and (3) memorial or dedication signs shall not compromise the safety or efficiency of traffic flow. The memorial or dedication signing shall be limited to one sign at an appropriate location in each route direction, each as an independent sign installation.

Memorial or dedication signs shall be rectangular in shape. The legend displayed on memorial or dedication signs shall be limited to the name of the person or entity being recognized and a simple message preceding or following the name, such as "Dedicated to" or "Memorial Parkway." Additional legend, such as biographical information, shall not be displayed on memorial or dedication signs. Decorative or graphical elements, pictographs, logos, or symbols shall not be displayed on memorial or dedication signs. All letters and numerals displayed on memorial or dedication signs shall be as provided in the Federal "Standard Highway Signs and Markings" book (see Section 1A.11). The route number or officially mapped name of the highway shall not be displayed on the memorial or dedication sign.

Memorial or dedication names shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.

OPTION:

The lettering for the name of the person or entity being recognized may be composed of a combination of lower-case letters with initial upper-case letters.

GUIDANCE:

Freeways and expressways should not be signed as memorial or dedicated highways.

SUPPORT:

Named highways are officially designated and shown on official maps and serve the purpose of providing route guidance, primarily on unnumbered highways. A highway designated as a memorial or dedication is not considered to be a named highway. Section 2D.53 contains provisions for the signing of named highways.

2M.11 Resort Information Signs

2M.11.1 Purpose

SUPPORT:

Resort Information signs (Slat Signs) are addressed in Minnesota Statutes 160.283 through 160.285.

STANDARD:

For the specific purpose of this sign program, and as defined by these statutes, a "resort" shall be as defined in section 157.15 or a golf course, restaurant, or motel as defined in section 157.15 or recreational camping area as defined in section 327.14, subdivision 8.. The purpose of Resort Information signs is to provide identification and directional information to resorts for motorists after they have turned off from a trunk highway onto a local road.

2M.11.2 Application

STANDARD:

Resort Information signs shall be used only on "those county state-aid highways, county highways, and town roads within one-half mile of areas that have restrictions on the erection of advertising devices along or adjacent thereto imposed under the applicable provisions of Chapter 173 (Minnesota Statute 173).

They shall not be installed on any Mn/DOT maintained trunk highway, expressway, freeway, or interstate.

2M.11.3 General Design



STANDARD:

Each Resort Information sign shall be rectangular in shape having a white legend on a green background. The sign has no border. Logos or symbols of any kind shall not be used on the sign.

The legend on each Resort Information sign shall be limited to the name of the resort, golf course, motel, restaurant, or recreational camping area. The legends shall not include promotional advertising.

The legend shall be reflectorized, whereas the background may be reflectorized or nonreflectorized. However, reflectorized and nonreflectorized sign panels shall not be intermixed on an assembly.

2M.11.4 Style and Size of Lettering

STANDARD:

The standard lettering and letter spacing for the Resort Information signs shall be 4 inch upper case letters following the spacing dimensions specified in the "Minnesota Standard Signs Manual." (available from Map & Manual Sales Unit, page ii). The legend shall be centered on the sign.

2M.11.5 Size and Arrangement

STANDARD:

Each Slat Sign shall be 48" x 6".

The topmost sign or trailblazer sign of the Resort Information sign assembly shall be 48" x 12" and contain the word "RESORTS" along with one arrow to show which direction the motorist must travel to reach the resorts on the signs below. There shall be only one trailblazer sign on each assembly.

Each sign structure shall be capable of supporting one trailblazer sign and not more than five Resort Information signs placed beneath each other. (see Figure 2M-11)

The Resort Information signs shall be arranged alphabetically reading from top to bottom.

2M.11.6 Sign Locations

STANDARD:

The Resort Information sign assembly shall be located at least 500 feet from the nearest interstate highway ramp and at least 300 feet from any intersection. The assembly shall not obstruct the driver's view of other traffic control devices. They shall be placed at least 200 feet apart and at least 300 feet from other traffic control devices.

OPTION:

The sign assemblies may be located laterally outside the normal longitudinal alignment of other traffic control signs, but within the right-of-way.

STANDARD:

The location of other traffic control devices shall at all times take precedence over the location of Resort Information signs.

GUIDANCE:

Position, height, and lateral clearance of Resort Information sign assemblies should be governed by Sections 2A and 2D of the MN MUTCD except as required above.

2M.11.7 Administration

OPTION:

Counties may use county road and bridge funds for the purchase, fabrication, installation and maintenance of Resort Information signs along or adjacent to roads under their jurisdiction or town roads within the county at the expense of the requester.

STANDARD:

The requester shall reimburse the county for 100 per cent of the cost of the signs as per MN SDtatute 160.285, subd. 1.



Figure 2M-11 Example of a Resort Information Sign Assembly

FIGURES

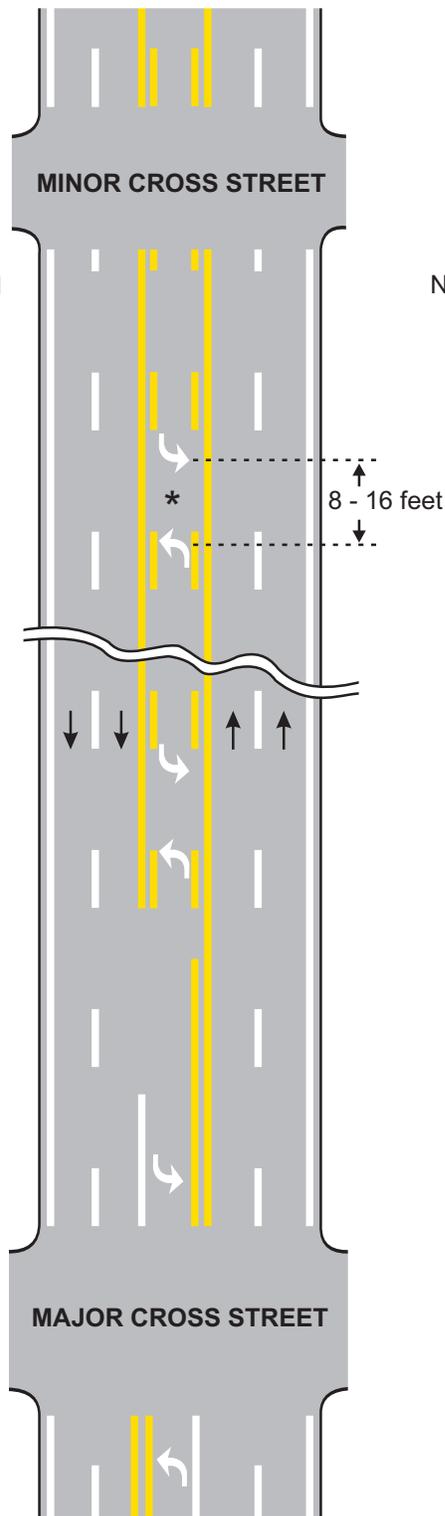
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* See Section 3B.20 for use of additional arrows beyond the beginning of the two-way left-turn lane.



Legend
→ Direction of travel

Note:
Single-direction left-turn arrows shall not be used in lanes bordered on both sides by two-way left-turn lane markings

Figure 3B-7 Example of Two-Way Left-Turn Lane Marking Applications

Legend
 → Direction of travel

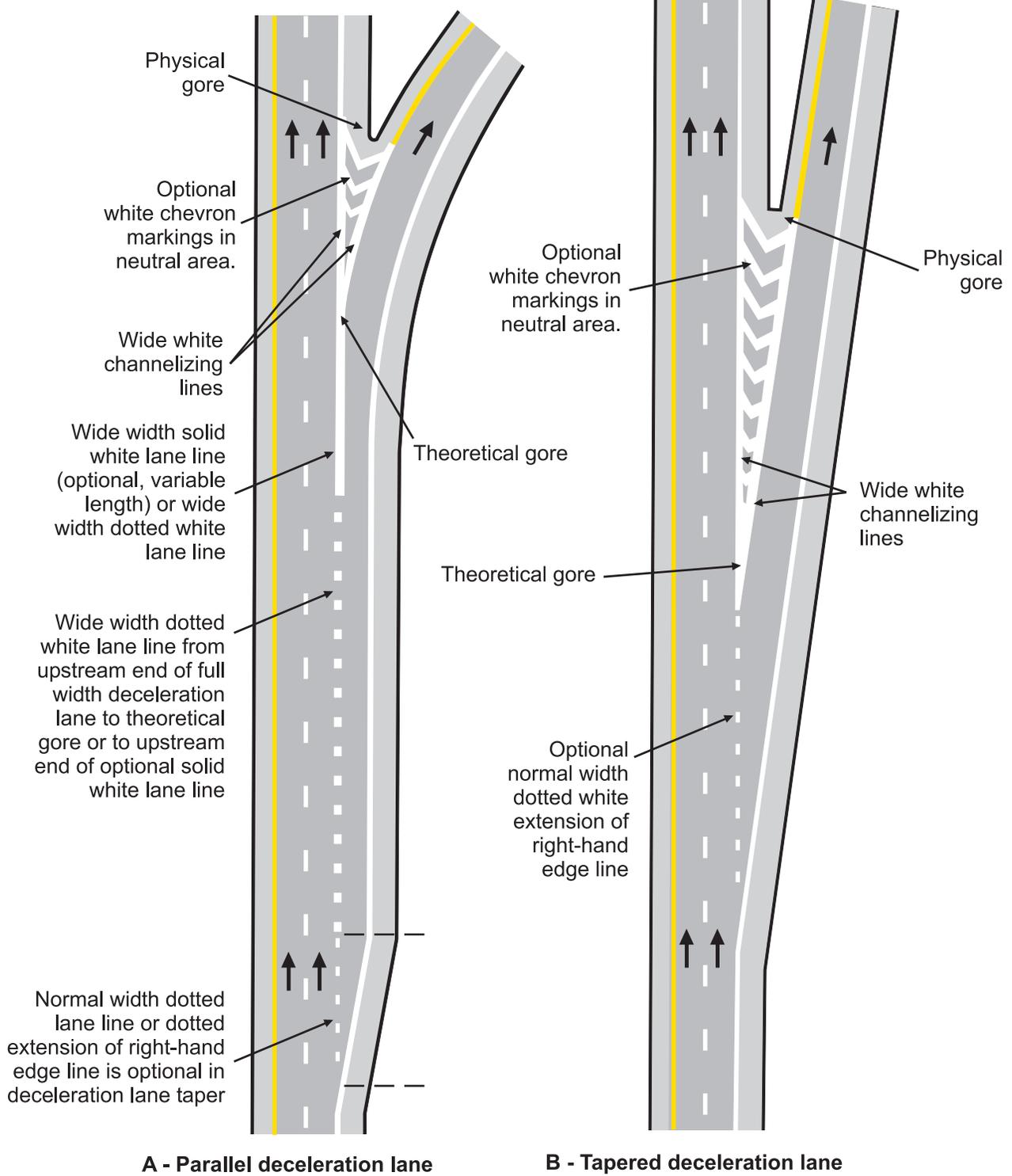


Figure 3B-8 Examples of Dotted Line and Channelizing Line Applications for Exit Ramp Markings
 (Sheet 1 of 2)

PART 4. HIGHWAY TRAFFIC SIGNALS

Chapter 4D. Traffic Control Signal Features

4D.1 General

SUPPORT:

The features of traffic control signals of interest to road users are the location, design, and meaning of the signal indications. Uniformity in the design features that affect the traffic to be controlled, as set forth in this Manual, is especially important for the safety and efficiency of operations.

Traffic control signals can be operated in pretimed, semi-actuated, or full-actuated modes. For isolated (non-interconnected) signalized locations on rural high-speed highways, full-actuated mode with advance vehicle detection on the high-speed approaches is typically used. These features are designed to reduce the frequency with which the onset of the yellow change interval is displayed when high-speed approaching vehicles are in the "dilemma zone" such that the drivers of these high-speed vehicles find it difficult to decide whether to stop or proceed.

STANDARD:

When a traffic control signal is not in operation, such as before it is placed in service, during seasonal shutdowns, or when it is not desirable to operate the traffic control signal, the signal faces shall be covered, turned, or taken down to clearly indicate that the traffic control signal is not in operation.

SUPPORT:

Seasonal shutdown is a condition in which a permanent traffic signal is turned off or otherwise made non-operational during a particular season when its operation is not justified. This might be applied in a community where tourist traffic during most of the year justifies the permanent signalization, but a seasonal shutdown of the signal during an annual period of lower tourist traffic would reduce delays; or where a major traffic generator, such as a large factory, justifies the permanent signalization, but the large factory is shut down for an annual factory vacation for a few weeks in the summer.

STANDARD:

A traffic control signal shall control traffic only at the intersection or mid-block location where the signal faces are placed.

Mid-block crosswalks shall not be signalized if they are located within 300 feet from the nearest traffic control signal, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

GUIDANCE:

A mid-block crosswalks should not be signalized if they are located within 100 feet from side streets or driveways that are controlled by STOP signs or YIELD signs.

Engineering judgment should be used to determine the proper phasing and timing for a traffic control signal. Since traffic flows and patterns change, phasing and timing should be reevaluated regularly and updated if needed.

Traffic control signals within 1/2 mile of one another along a major route or in a network of intersecting major routes should be coordinated, preferably with interconnected controller units. Where traffic control signals that are within 1/2 mile of one another along a major route have a jurisdictional boundary or a boundary between different signal systems between them, coordination across the boundary should be considered.

SUPPORT:

Signal coordination need not be maintained between control sections that operate on different cycle lengths.

For coordination with grade crossing signals and movable bridge signals, see Sections 4D.27, 4J.3, 8C.9, and 8C.10.

4D.2 Responsibility for Operation and Maintenance

GUIDANCE:

Prior to installing any traffic control signal, the responsibility for the maintenance of the signal and all of the appurtenances, hardware, software, and the timing plan(s) should be clearly established. The responsible agency should provide for the maintenance of the traffic control signal and all of its appurtenances in a competent manner.

To this end the agency should:

- A. Keep every controller assembly in effective operation in accordance with its predetermined timing schedule; check the operation of the controller assembly frequently enough to verify that it is operating in accordance with the predetermined timing schedule; and establish a policy to maintain a record of all timing changes and that only authorized persons are permitted to make timing changes;
- B. Clean the optical system of the signal sections and replace the light sources as frequently as experience proves necessary;

- C. Clean and service equipment and other appurtenances as frequently as experience proves necessary;
- D. Provide for alternate operation of the traffic control signal during a period of failure, using flashing mode or manual control, or manual traffic direction by proper authorities as might be required by traffic volumes or congestion, or by erecting other traffic control devices;
- E. Have properly skilled maintenance personnel available without undue delay for all signal malfunctions and signal indication failures;
- F. Provide spare equipment to minimize the interruption of traffic control signal operation as a result of equipment failure;
- G. Provide for the availability of properly skilled maintenance personnel for the repair of all components; and
- H. Maintain the appearance of the signal displays and equipment.

4D.3 Provisions for Pedestrians

SUPPORT:

Chapter 4E contains additional information regarding pedestrian signals and Chapter 4F contains additional information regarding pedestrian hybrid beacons.

STANDARD:

The design and operation of traffic control signals shall take into consideration the needs of pedestrian as well as vehicular traffic.

If engineering judgment indicates the need for provisions for a given pedestrian movement, signal faces conveniently visible to pedestrians shall be provided by pedestrian signal heads (see Chapter 4E) or a vehicular signal face(s) for a concurrent vehicular movement.

GUIDANCE:

Accessible pedestrian signals (see Sections 4E.9 through 4E.13) that provide information in non-visual format (such as audible tones, speech messages, and/or vibrating surfaces) should be provided where determined appropriate by engineering judgment.

Where pedestrian movements regularly occur, pedestrians should be provided with sufficient time to cross the roadway by adjusting the traffic control signal operation and timing to provide sufficient crossing time every cycle or by providing pedestrian detectors.

If it is necessary or desirable to prohibit certain pedestrian movements at a traffic control signal location, No Pedestrian Crossing (R9-3) signs (see Section 2B.51) should be used. A barrier or other physical feature to physically prevent the

pedestrian movements should be considered in lieu of, or in addition to, signs.

4D.4 Meaning of Vehicular Signal Indications

SUPPORT:

The "Uniform Vehicle Code" (see Section 1A.11) is the primary source for the standards for the meaning of vehicular signal indications to both vehicle operators and pedestrians as provided in this Section, and the standards for the meaning of separate pedestrian signal head indications as provided in Section 4E.2.

The physical area that is defined as being "within the intersection" is dependent upon the conditions that are described in the definition of intersection in Section 1A.13.

STANDARD:

Unless otherwise determined by law, the following meanings shall be given to highway traffic signal indications for vehicles and pedestrians:

A. Steady green signal indications shall have the following meanings:

1. Vehicular traffic facing a CIRCULAR GREEN signal indication is permitted to proceed straight through or turn right or left or make a U-turn movement except as such movement is modified by lane-use signs, turn prohibition signs, lane markings, roadway design, separate turn signal indications, or other traffic control devices.

Such vehicular traffic, including vehicles turning right or left or making a U-turn movement, shall yield the right-of-way to:

- (a) Pedestrians lawfully within an associated crosswalk, and
- (b) Other vehicles lawfully within the intersection.

In addition, vehicular traffic turning left or making a U-turn movement to the left shall yield the right-of-way to other vehicles approaching from the opposite direction so closely as to constitute an immediate hazard during the time when such turning vehicle is moving across or within the intersection.

2. Vehicular traffic facing a GREEN ARROW signal indication, displayed alone or in combination with another signal indication, is permitted to cautiously enter the intersection only to make the movement indicated by such arrow, or such other movement as is permitted by other signal indications displayed at the same time.

mode used for the approach, the signal face shall be the same shared signal face that is used for the protected/permissive mode (see Section 4D.24).

OPTION:

A straight-through GREEN ARROW signal indication may be used instead of the CIRCULAR GREEN signal indication in Items A and B in the previous Standard on an approach where left turns are prohibited and a straight-through

GREEN ARROW signal indication is also used instead of a CIRCULAR GREEN signal indication in the other signal face(s) for through traffic.

STANDARD:

If a separate right-turn signal face is provided for a protected only mode right turn, it shall meet the following requirements (see Figure 4D-17):

- A. It shall be capable of displaying one of the following sets of signal indications:
 1. Steady right-turn RED ARROW, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the three indications shall be displayed at any given time. A signal instruction sign shall not be required with this set of signal indications. If used, it shall be a RIGHT ON GREEN ARROW ONLY sign (R10-5a) (See Figure 2B-27) (See Section 2B.45).
 2. Steady CIRCULAR RED, steady right-turn YELLOW ARROW, and right-turn GREEN. Only one of three indications shall be displayed at any

given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lanes(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (See Figure 2B-27) shall be used unless the CIRCULAR RED signal indication is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).

- B. During the protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed.
- C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication.
- D. When the separate signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed if it is intended that right turns on red not be permitted or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted.
- E. If the protected only mode is not the only right-turn mode used for the approach, the signal face shall be the same separate right-turn signal face that is used for the protected/permissive mode (see Section 4D.24 and Figure 4D-19) except that a flashing right-turn YELLOW ARROW or flashing right-turn RED ARROW signal indication shall not be displayed when operating in the protected only mode.

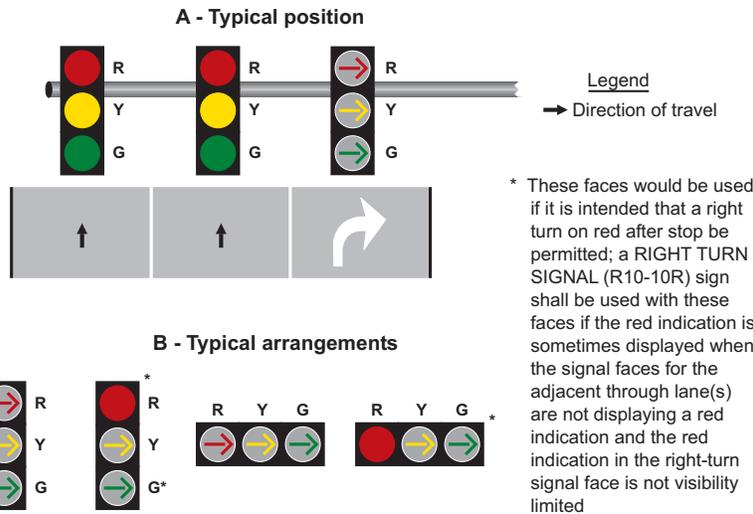


Figure 4D-17. Typical Position and Arrangements of Separate Signal Faces for Protected Only Mode Right Turns

4D.24 Signal Indications for Protected/Permissive Mode Right-Turn Movements

STANDARD:

If a shared signal face provided for a protected/permissive mode right turn, it shall meet the following requirements (see Figure 4D-18):

A. It shall be capable of displaying the following signal indications: steady CIRCULAR RED, steady CIRCULAR YELLOW, CIRCULAR green, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the three circular indications shall be displayed at any given time. Only one of the two arrow indications shall be displayed at any given time. If the right-turn GREEN ARROW signal indication and the CIRCULAR GREEN signal indication(s) for the adjacent through movement are always terminated together, the steady right-turn YELLOW ARROW signal indication shall not be required.

B. During the protected right-turn movement, the shared signal face shall simultaneously display a right-turn GREEN ARROW signal indication and a circular signal indication that is the same color as the signal indication for the adjacent through lane on the same approach as the protected right turn.

C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication, unless the right-turn GREEN ARROW signal indication and the CIRCULAR GREEN signal indication(s) for the adjacent through movement are being terminated together. When the right-turn GREEN ARROW and CIRCULAR GREEN signal indications are being terminated together, the required display following the right-turn GREEN ARROW signal indication shall be either the display of a CIRCULAR YELLOW signal indication alone or the simultaneous display of the CIRCULAR YELLOW and right-turn YELLOW ARROW signal indications.

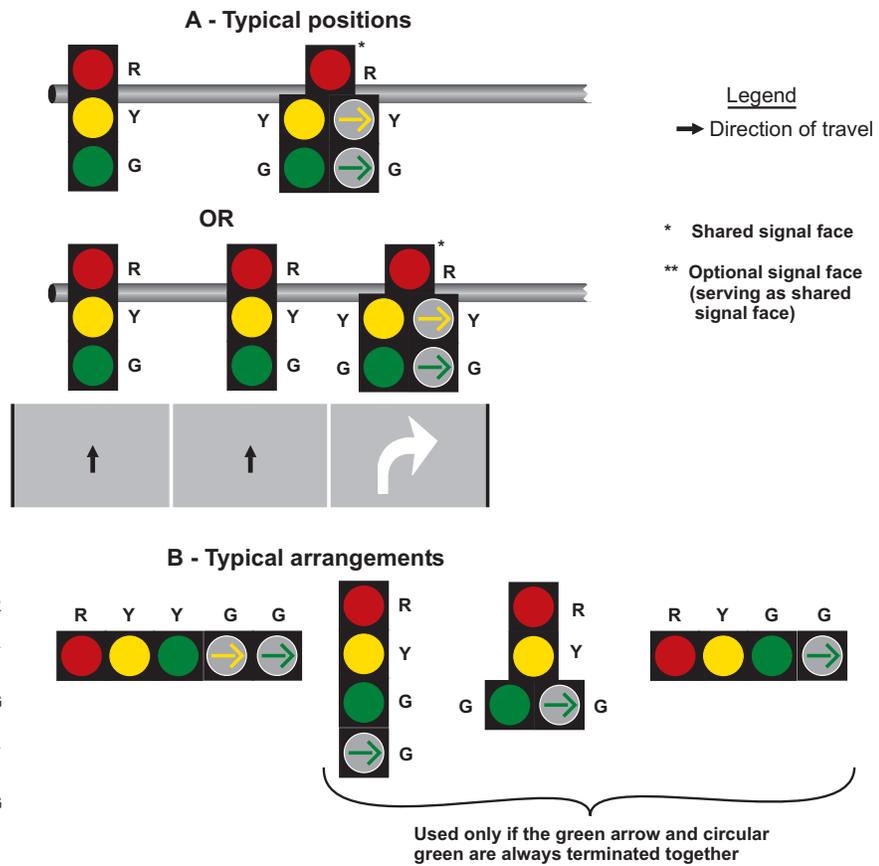


Figure 4D-18. Typical Positions and Arrangements of Shared Signal Faces for Protected/Permissive Mode Right Turns

- D. During the permissive right-turn movement, the shared signal face shall display only a CIRCULAR GREEN signal indication.
- E. A protected/permissive shared signal face, regardless of where it is positioned and regardless of how many adjacent through signal faces are provided, shall always simultaneously display the same color of circular signal that the adjacent through signal face or faces display.

If a separate right-turn signal face is being operated in a protected/permissive right-turn mode, a CIRCULAR GREEN signal indication shall not be used in that face.

If a separate right-turn signal face is being operated in a protected/permissive right-turn mode and a flashing right-turn yellow arrow signal indication is provided, it shall meet the following requirements (see Figure 4D-19):

- A. It shall be capable of displaying one of the following sets of signal indications:
 1. Steady right-turn RED ARROW, steady right-turn YELLOW ARROW, flashing right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the four indications shall be displayed at any given time.
 2. Steady CIRCULAR RED, steady right-turn

YELLOW ARROW, flashing right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the four indications shall be displayed at any given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Figure 2B-27) shall be used unless the CIRCULAR RED signal indication in the separate right-turn signal face is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).

- B. During the protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed.
- C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication.
- D. During the permissive right-turn movement, a flashing right-turn YELLOW ARROW signal indication shall be displayed.
- E. A steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn YELLOW ARROW signal indication if the

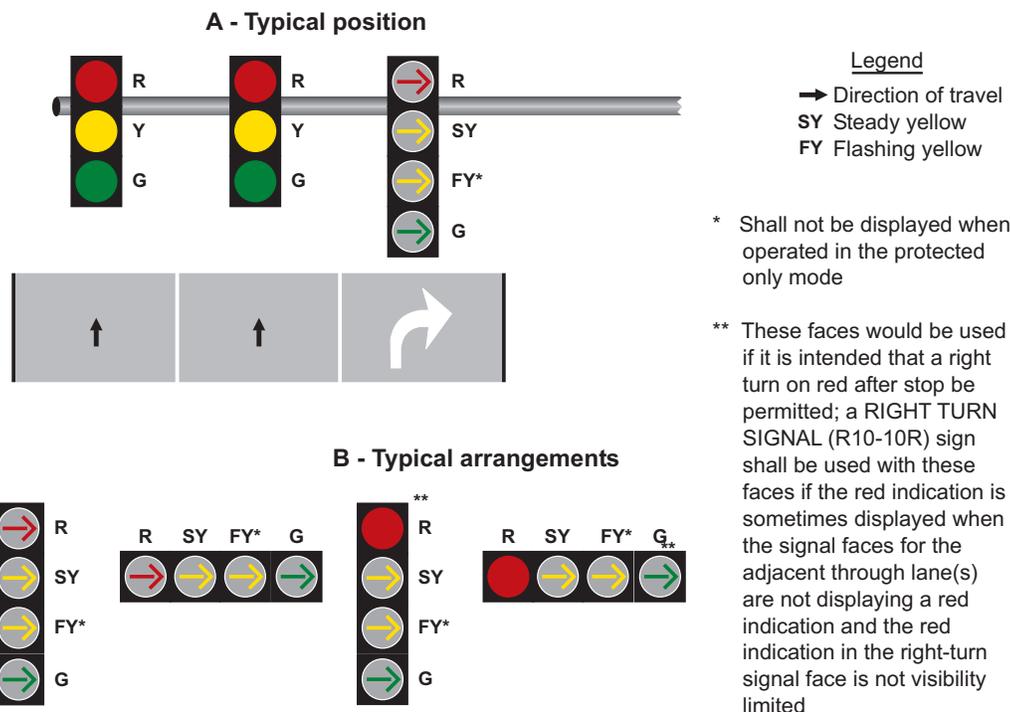


Figure 4D-19. Typical Position and Arrangements of Separate Signal Faces with Flashing Yellow Arrow for Protected/Permissive Mode and Protected Only Mode Right Turns

permissive right-turn movement is being terminated and the separate right-turn signal face will subsequently display a steady red indication.

- F. When a permissive right-turn movement is changing to a protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed immediately upon the termination of the flashing right-turn YELLOW ARROW signal indication. A steady right-turn YELLOW ARROW signal indication shall not be displayed between the display of the flashing right-turn YELLOW ARROW signal indication and the display of the steady right-turn GREEN ARROW signal indication.
- G. When the separate right-turn signal face is providing a message to stop and remain stopped, a steady right-turn RED ARROW signal indication shall be displayed if it is intended that right turns on red not be permitted or a steady CIRCULAR RED signal indication shall be displayed if it is intended that right turns on red be permitted.
- H. It shall be permitted to display a flashing right-turn YELLOW ARROW signal indication for a permissive right-turn movement while the signal faces for the adjacent through movement display steady CIRCULAR RED signal indications.
- I. A signal face containing a dual-arrow signal section in place of separate flashing right-turn YELLOW ARROW and right-turn GREEN ARROW signal sections shall be permitted where signal head height limitations (or lateral positioning limitations for a horizontally-mounted signal face) are a concern. The dual-arrow signal section, where used, shall display a GREEN ARROW for the protected right-turn movement and a flashing YELLOW ARROW for the permissive right-turn movement.
- J. During steady mode (stop-and-go) operation, the signal section that displays the steady right-turn YELLOW ARROW signal indication during change intervals shall not be used to display the flashing right-turn YELLOW ARROW signal indication for permissive right turns.
- K. During flashing mode operation (see Section 4D.30), the display of a flashing right-turn YELLOW ARROW signal indication shall be only from the signal section that displays a steady right-turn YELLOW ARROW signal indication during steady mode (stop-and-go) operation.

OPTION:

When an engineering study determines that each and every vehicle must successively come to a full stop before making a permissive right turn, a separate signal face that has a flashing right-turn RED ARROW signal indication during the permissive right-turn movement may be used.

STANDARD:

If a separate right-turn signal face is being operated in a protected/permissive right-turn mode and a flashing right-turn RED arrow signal indication is provided, it shall meet the following requirements (see Figure 4D-15):

- A. It shall be capable of displaying one of the following sets of signal indications:
 - 1. Steady right-turn RED ARROW, or flashing right-turn RED ARROW, steady right-turn YELLOW ARROW, and right-turn GREEN ARROW. Only one of the four indications shall be displayed at any given time.
 - 2. Steady CIRCULAR RED, or steady RED ARROW on the left and flashing right-turn RED ARROW on the right of the top position, steady right-turn YELLOW ARROW in the middle position, and right-turn GREEN ARROW in the bottom position. Only one of the four indications shall be displayed at any given time. If the CIRCULAR RED signal indication is sometimes displayed when the signal faces for the adjacent through lane(s) are not displaying a CIRCULAR RED signal indication, a RIGHT TURN SIGNAL (R10-10R) sign (see Figure 2B-27) shall be used unless the CIRCULAR RED signal indication in the separate right-turn signal face is shielded, hooded, louvered, positioned, or designed such that it is not readily visible to drivers in the through lane(s).
- B. During the protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed.
- C. A steady right-turn YELLOW ARROW signal indication shall be displayed following the right-turn GREEN ARROW signal indication.
- D. During the permissive right-turn movement, the separate right-turn signal face shall display a flashing right-turn RED ARROW signal indication.
- E. A steady right-turn YELLOW ARROW signal indication shall be displayed following the flashing right-turn RED ARROW signal indication if the permissive right-turn movement is being terminated and the separate right-turn signal face will subsequently display a steady red indication.
- F. When a permissive right-turn movement is changing to a protected right-turn movement, a right-turn GREEN ARROW signal indication shall be displayed immediately upon the termination of the flashing right-turn RED ARROW signal indication. A steady right-turn YELLOW ARROW signal indication shall not be displayed between the display of the flashing right-turn RED ARROW signal indication and the display of the steady right-turn GREEN ARROW signal indication.

PART 6. TEMPORARY TRAFFIC CONTROL

Chapter 6D. Pedestrian and Worker Safety

6D.1 Pedestrian Considerations

SUPPORT:

A wide range of pedestrians can be expected at work sites, including the young, elderly, and people with disabilities such as hearing, visual, or mobility. These pedestrians need a clearly delineated and usable travel path. Considerations for pedestrians with disabilities are addressed in Section 6D.2.

STANDARD:

The various temporary traffic control provisions for pedestrian and worker safety contained in Part 6 shall be applied, by knowledgeable (for example, trained and/or certified) persons after appropriate evaluation and engineering judgment.

Advance notification of sidewalk closures shall be provided by the maintaining agency.

If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided. If the TTC zone affects an accessible and detectable pedestrian facility, the accessibility and detectability shall be maintained along the alternate pedestrian route.

OPTION:

If establishing or maintaining an alternate pedestrian route is not feasible during the project, an alternate means of providing for pedestrians may be used, such as adding free bus service around the project or assigning someone the responsibility to assist pedestrians with disabilities through the project limits.

If an existing pedestrian route is impacted by a short-term or short-duration work zone that is attended with project personnel, establishing an alternate pedestrian route may not be necessary if the work can be stopped and pedestrians can navigate the work zone safely. Pedestrians may be delayed for a short period of time for project personnel to move equipment and material to facilitate passage. Work zone personnel may also provide assistance to the pedestrian as necessary.

SUPPORT:

It must be recognized that pedestrians are reluctant to retrace their steps to a prior intersection for a crossing or to add distance or out-of-the-way travel to a destination.

GUIDANCE:

The following three items should be considered when planning for pedestrians in TTC zones:

A. Pedestrians should not be led into conflicts with vehicles, equipment, and operations.

B. Pedestrians should not be led into conflicts with vehicles moving through or around the work site.

C. Pedestrians should be provided with a convenient and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s) or a footpath(s).

A pedestrian route should not be severed and/or moved for nonconstruction activities such as parking for vehicles and equipment.

Consideration should be made to separate pedestrian movements from both work site activity and motor vehicle traffic. Unless an acceptable route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high motor vehicle traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

SUPPORT:

Layouts 6J-24 and 6J-25 as well as Layouts 84 and 85 in Chapter 6K show typical TTC device usage and techniques for pedestrian movement through work zones.

GUIDANCE:

To accommodate the needs of pedestrians, including those with disabilities, the following considerations should be addressed when temporary pedestrian pathways in TTC zones are designed or modified:

A. Provisions for continuity of accessible paths for pedestrians should be incorporated into the TTC plan.

B. Access to transit stops should be maintained.

C. A smooth, continuous hard surface should be provided throughout the entire length of the temporary pedestrian facility. There should be no curbs or abrupt changes in grade or terrain that could cause tripping or be a barrier to wheelchair use. The geometry and alignment of the facility should meet the applicable requirements of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" (see Section 1A.11).

D. The width of the existing pedestrian facility should be provided for the temporary facility if practical. Traffic control devices and other construction materials and features should not intrude into the usable width of the sidewalk, temporary pathway, or other pedestrian facility. When it is not possible to maintain a minimum width of 60 inches throughout the entire length of the pedestrian pathway, a 60 x 60-inch

passing space should be provided at least every 200 feet to allow individuals in wheelchairs to pass.

- E. Blocked routes, alternate crossings, and sign and signal information should be communicated to pedestrians with visual disabilities by providing devices such as audible information devices, accessible pedestrian signals, or barriers and channelizing devices that are detectable to the pedestrians traveling with the aid of a long cane or who have low vision. Where pedestrian traffic is detoured to a TTC signal, engineering judgment should be used to determine if pedestrian signals or accessible pedestrian signals should be considered for crossings along an alternate route.
- F. When channelization is used to delineate a pedestrian pathway, a continuous detectable edging should be provided throughout the length of the facility such that pedestrians using a long cane can follow it. These detectable edgings should comply with the provisions of Section 6F.74.
- G. Signs and other devices mounted lower than 7 feet above the temporary pedestrian pathway should not project more than 4 inches into accessible pedestrian facilities.

OPTION:

Whenever it is feasible, closing off the worksite from pedestrian intrusion may be preferable to channelizing pedestrian traffic along the site with TTC devices.

GUIDANCE:

Fencing should not create sight distance restrictions for road users. Fences should not be constructed of materials that would be hazardous if impacted by vehicles. Wooden railing, fencing, and similar systems placed immediately adjacent to motor vehicle traffic should not be used as substitutes for crashworthy temporary traffic barriers.

Ballast for TTC devices should be kept to the minimum amount needed and should be mounted low to prevent penetration of the vehicle windshield.

Movement by work vehicles and equipment across designated pedestrian paths should be minimized and, when necessary, should be controlled by flaggers or TTC. Staging or stopping of work vehicles or equipment along the side of pedestrian paths should be avoided, since it encourages movement of workers, equipment, and materials across the pedestrian path.

Access to the work space by workers and equipment across pedestrian walkways should be minimized because the access often creates unacceptable changes in grade, and rough or muddy terrain, and pedestrians will tend to avoid these areas by attempting non-intersection crossings where no curb ramps are available.

OPTION:

A canopied walkway may be used to protect pedestrians from falling debris, and to provide a covered passage for pedestrians.

GUIDANCE:

Covered walkways should be sturdily constructed and adequately lighted for nighttime use.

When pedestrian and vehicle paths are rerouted to a closer proximity to each other, consideration should be given to separating them by a temporary traffic barrier.

If a temporary traffic barrier is used to shield pedestrians, it should be designed to accommodate site conditions.

SUPPORT:

Depending on the possible vehicular speed and angle of impact, temporary traffic barriers might deflect upon impact by an errant vehicle. Guidance for locating and designing temporary traffic barriers can be found in Chapter 9 of AASHTO's "Roadside Design Guide" (see Section 1A.11).

STANDARD:

Short intermittent segments of temporary traffic barrier shall not be used because they nullify the containment and redirective capabilities of the temporary traffic barrier, increase the potential for serious injury both to vehicle occupants and pedestrians, and encourage the presence of blunt, leading ends. All upstream leading ends that are present shall be appropriately flared or protected with properly installed and maintained crashworthy cushions. Adjacent temporary traffic barrier segments shall be properly connected in order to provide the overall strength required for the temporary traffic barrier to perform properly.

Normal vertical curbing shall not be used as a substitute for temporary traffic barriers when temporary traffic barriers are needed.

OPTION:

Temporary traffic barriers or longitudinal channelizing devices may be used to discourage pedestrians from unauthorized movements into the work space. They may also be used to inhibit conflicts with vehicular traffic by minimizing the possibility of midblock crossings.

SUPPORT:

A major concern for pedestrians is urban and suburban building construction encroaching onto the contiguous sidewalks, which forces pedestrians off the curb into direct conflict with moving vehicles.

GUIDANCE:

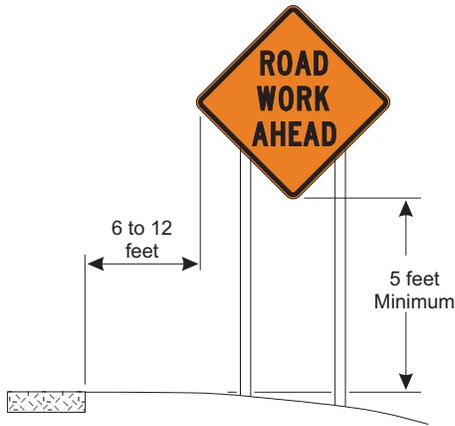
If a significant potential exists for vehicle incursions into the pedestrian path, pedestrians should be rerouted or temporary traffic barriers should be installed.

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway	Minimum
Detour Ahead	W20-2	6F.19	36 x 36	48 x 48	30 x 30
Road (Street) Closed Ahead	W20-3	6F.20	36 x 36	48 x 48	30 x 30
Trail Closed Ahead	W20-3a	6F.20.1	18 x 18	---	---
One Lane Road Ahead	W20-4	6F.21	36 x 36	48 x 48	30 x 30
Flagger (symbol)	W20-7	6F.31	36 x 36	48 x 48	30 x 30
Slow (on Stop/Slow Paddle)	W20-8	6F.3	18 x 18	---	---
Merge	W20-X3	6F.24.1	36 x 36	48 x 48	30 x 30
Bypass Ahead	W20-X6	6F.16	36 x 36	48 x 48	30 x 30
Narrow Lane (width shown)	W20-X11	6F.16	36 x 36	48 x 48	30 x 30
Right Two Lanes Closed	W20-X13	6F.22	36 x 36	48 x 48	30 x 30
Lanes Narrow	W20-X17	6F.16	36 x 36	48 x 48	30 x 30
Workers	W21-1	6F.33	36 x 36	48 x 48	30 x 30
Fresh Oil (Tar)	W21-2	6F.34	36 x 36	48 x 48	30 x 30
Road Machinery Ahead	W21-3	6F.35	36 x 36	48 x 48	30 x 30
Slow Moving Vehicle	W21-4	6G.6	36 x 18	---	---
Shoulder Work	W21-5	6F.37	36 x 36	48 x 48	30 x 30
Shoulder Closed	W21-5a	6F.37	36 x 36	48 x 48	30 x 30
Survey Crew	W21-6,6a	6F.38	36 x 36	48 x 48	30 x 30
Utility Work Ahead	W21-7	6F.39	36 x 36	48 x 48	30 x 30
Mowing Ahead	W21-8	6G.6	36 x 36	48 x 48	30 x 30
No Shoulder	W21-X1	6F.44.3	36 x 36	48 x 48	30 x 30
Right (Left Lane Closed	W21-X5	6F.22	36 x 36	48 x 48	30 x 30
Center Lane Closed	W21-X5c	6F.23	36 x 36	48 x 48	30 x 30
Right (Left) Two Lanes Closed	W21-X6	6F.38.1	36 x 36	48 x 48	30 x 30
High Shoulder	W21-X9	6F.44.2	36 x 36	48 x 48	30 x 30
Blasting Zone Ahead	W22-1	6F.41	36 x 36	48 x 48	30 x 30
Turn Off 2-Way Radio and Cell Phone	W22-2	6F.42	42 x 36	42 x 36	---
End Blasting Zone	W22-3	6F.43	42 x 36	42 x 36	36 x 30
Slow Traffic Ahead	W23-1	6F.27	48 x 24	48 x 24	---
New Traffic Pattern Ahead	W23-2	6F.30	36 x 36	48 x 48	30 x 30
All Lanes (plaque)	W24-1cP	6F.49	24 x 18	30 x 24	---
Road Work Next XX Miles	G20-1	6F.56	36 x 18	48 x 24	---
End Road Work	G20-2	6F.57	36 x 18	48 x 24	---
Pilot Car Follow Me	G20-4	6F.58	36 x 18	---	---
Work Zone (plaque)	G20-5aP	6F.12	24 x 18	36 x 24	---
Road Closed Beginning XXXX XX	G20-X1	6F.56.1	72 x 60	90 x 78	---
Exit Open	E5-2	6F.28	48 x 36	48 x 36	---
Exit Closed	E5-2a	6F.28	48 x 36	48 x 36	---
Exit Only	E5-3	6F.29	48 x 36	48 x 36	---
Detour	M4-8	6F.59	24 x 12	30 x 15	---
End Detour	M4-8a	6F.59	24 x 18	24 x 18	---
End	M4-8b	6F.59	24 x 12	24 x 12	---
Detour	M4-9	6F.59	30 x 24	48 x 36	---
Bike/Pedestrian	M4-9a	6F.59	30 x 24	---	---
Pedestrian Detour	M4-9b	6F.59	30 x 24	---	---
Bike Detour	M4-9c	6F.59	30 x 24	---	---
Detour	M4-10	6F.59	48 x 18	---	---

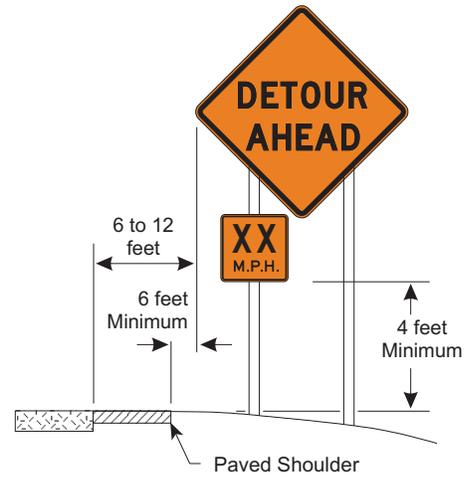
* See Table 2B-1 for minimum size required for signs facing traffic on multi-lane conventional roads

- Notes: 1. Larger signs may be used wherever necessary for greater legibility or emphasis.
2. Dimensions are shown in inches and are shown as width x height.

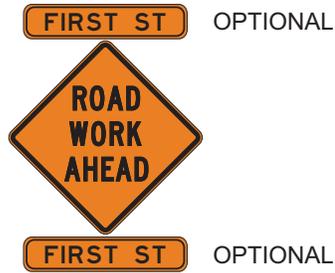
Table 6F-1 Temporary Traffic Control Zone Sign and Plaque Sizes (Sheet 3 of 3)



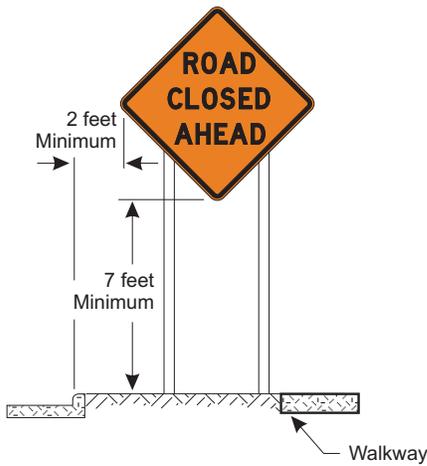
A. RURAL AREA



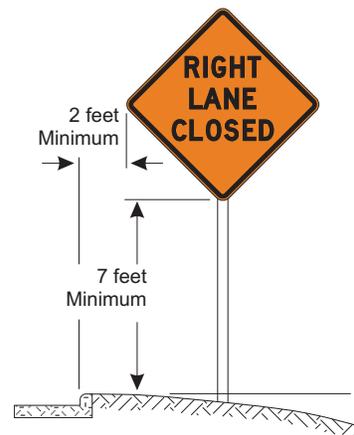
B. RURAL AREA WITH ADVISORY SPEED PLATE



Advance street name plaques or route markers may be installed above or below warning signs

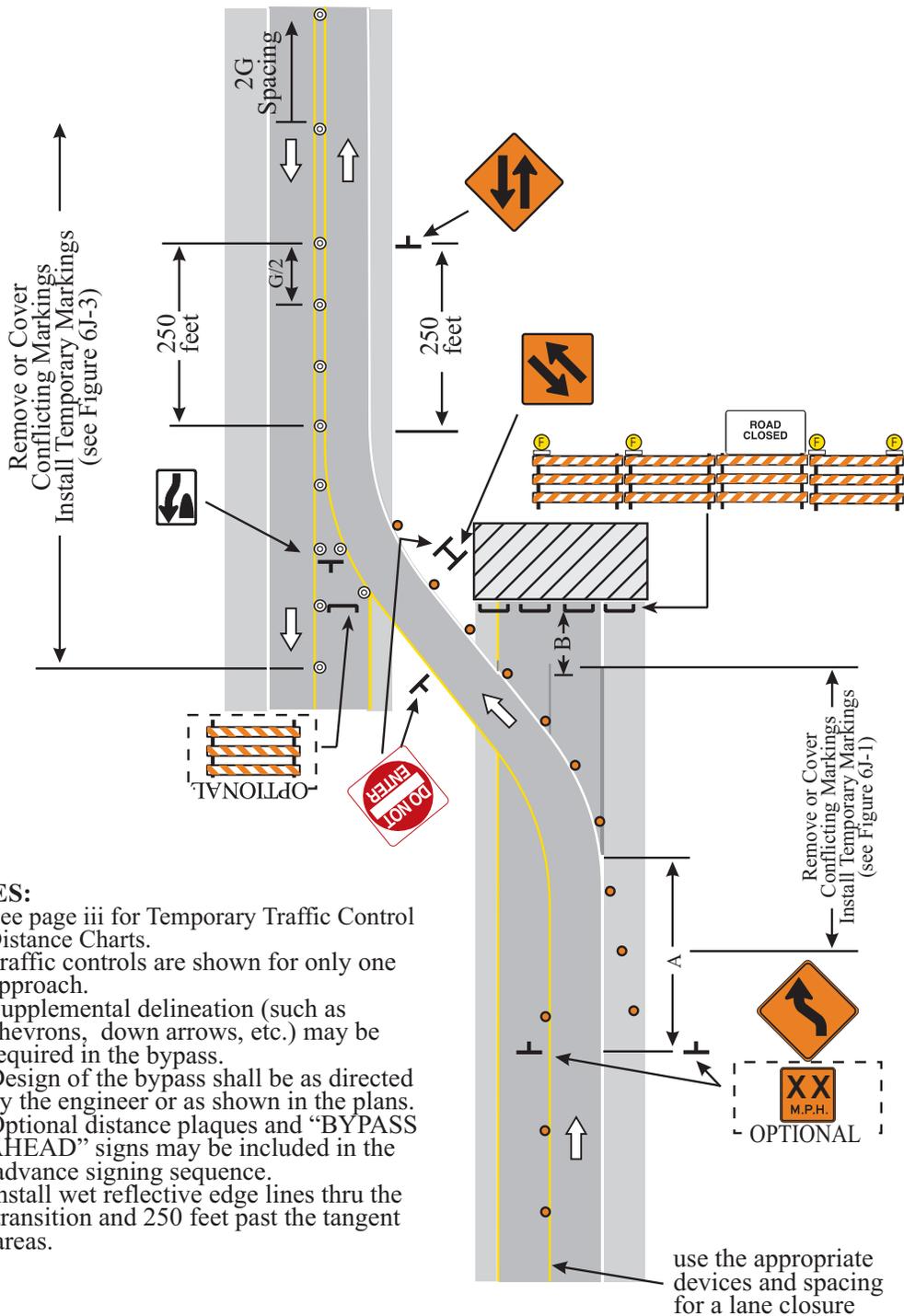


C. BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA



D. BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA (WITHOUT CURB)

Figure 6F-1 Height and Lateral Location of Signs - Typical Installations



NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. Traffic controls are shown for only one approach.
3. Supplemental delineation (such as chevrons, down arrows, etc.) may be required in the bypass.
4. Design of the bypass shall be as directed by the engineer or as shown in the plans.
5. Optional distance plaques and "BYPASS AHEAD" signs may be included in the advance signing sequence.
6. Install wet reflective edge lines thru the transition and 250 feet past the tangent areas.

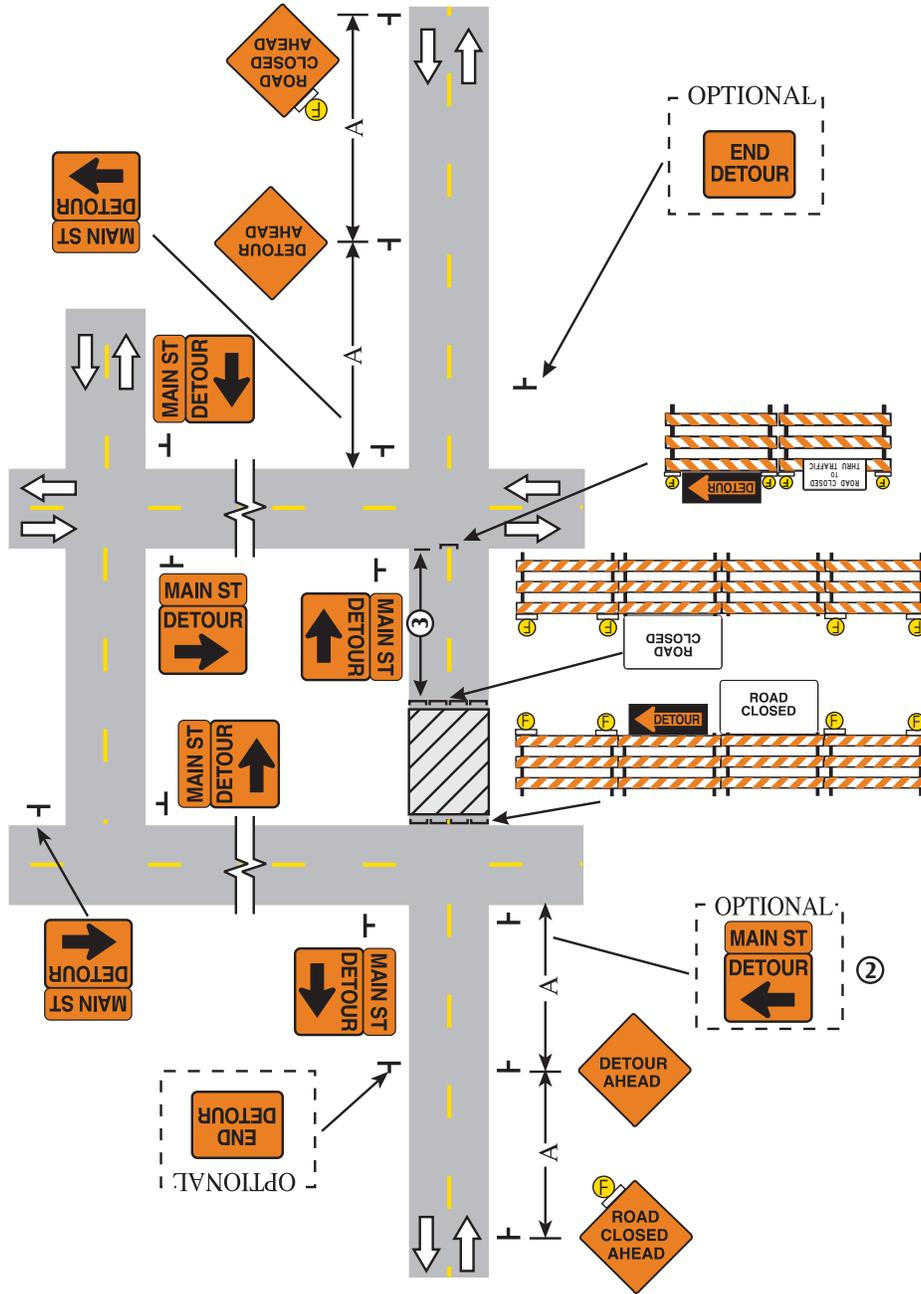
**TYPICAL CROSSOVER TO
TWO-LANE, TWO-WAY OPERATIONS
MULTILANE DIVIDED ROAD**

LONG TERM

LAYOUT 6J-4

NOTES:

1. See page iii for Temporary Traffic Control Distance Charts.
2. A M4-9 Detour Sign with an advance turn arrow may be used in advance of a turn. On multi-lane streets, such signs should be used.
3. See Long Term Layout 6J-20 for devices and spacing.



DETOUR FOR CLOSED STREET

LONG TERM

LAYOUT 6J-18

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Part 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

7B. Signs

7B.1 Size of School Signs

STANDARD:

Detailed drawings of the standard signs illustrated in this Manual can be found in the Minnesota Standard Signs Manual (see Map & Manual Sales Unit, page ii). Other questions regarding signs and their usage can be referred to the Office of Traffic, Safety and Technology (see page ii). The size of signs to be used in school areas shall be as shown in Table 7B-1 and Appendix C of this Manual.

The Conventional Road sign size shall be used on public roads, streets, and highways unless engineering judgment determines that a Minimum or Oversized sign size would be more appropriate.

The Minimum sign size shall be used only where traffic volumes are low and speeds are 30 mph or lower, as determined by engineering judgment.

The Oversized sign size shall be used on expressways.

GUIDANCE:

The Oversized sign sizes should be used on roadways that have four or more lanes with posted speed limits of 40 mph or higher.

OPTION:

The sizes in the Oversized column may also be used at other locations that require increased emphasis, improved recognition, or increased legibility.

Signs and plaques larger than those shown in Table 7B-1 and Appendix C of this Manual may be used (see Section 2A.11).

7B.2 Illumination and Reflectorization

STANDARD:

The signs used for school area traffic control shall be retroreflectorized or illuminated.

7B.3 Position of Signs

SUPPORT:

Sections 2A.16 and 2A.17 contain provisions regarding the placements and locations of signs.

Section 2A.19 contains provisions regarding the lateral offsets of signs.

OPTION:

In-roadway signs for school traffic control areas may be used consistent with the requirements of Sections 2B.12, 7B.11, and 7B.12.

7B.4 Height of Signs

SUPPORT:

Section 2A.18 contains provisions regarding the mounting height of signs.

7B.5 Installation of Signs

SUPPORT:

Section 2A.16 contains provisions regarding the installation of signs.

7B.6 Lettering

SUPPORT:

The Federal Highway Administration's "Standard Highway Signs and Markings" book contains information regarding sign lettering.

7B.7 Sign Color for School Warning Signs

STANDARD:

School warning signs, including the "SCHOOL" portion of the School Speed Limit (S5-1) sign and including any supplemental plaques used in association with these warning signs, shall have a fluorescent yellow-green background with a black legend and border unless otherwise provided in this Manual for a specific sign.

When the fluorescent yellow-green background color is used, a systematic approach featuring one background color within a zone or area shall be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a zone or area is not allowed.

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Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
School	S1-1	7B.8	36 x 36	30 x 30	48 x 48
School Bus Stop Ahead	S3-1	7B.13	36 x 36	30 x 30	48 x 48
School Bus Stop Ahead	S3-2	7B.14	36 x 36	30 x 30	48 x 48
Reduced School Speed Limit Ahead	S4-5, S4-5a	7B.16	36 x 36	30 x 30	48 x 48
School Speed Limit XX When Flashing	S5-1	7B.15	24 x 48	---	36 x 72
End School Zone	S5-2	7B.9	24 x 30	---	36 x 48
End School Speed Limit	S5-3	7B.15	24 x 30	---	36 x 48
In-Street Ped Crossing	R1-6a, R1-6c	7B.11, 7B.12	12 x 36	---	---
Speed Limit (School Use)	R2-1	7B.15	24 x 30	---	36 x 48
Begin Higher Fines Zone	R2-10	7B.10	24 x 30	---	36 x 48
End Higher Fines Zone	R2-11	7B.10	24 x 30	---	36 x 48

Plaque	Sign Designation	Section	Conventional Road	Minimum	Oversized
XXX to XXX AM	S4-1P	7B.15	24 x 10	---	36 x 18
XXX to XXX PM	S4-2P			---	36 x 18
When Children Are Present	S4-3P	7B.15	24 x 10	---	36 x 12
School	S4-4P	7B.9, 7B.15	24 x 8	---	36 x 18
When Flashing	S4-6P	7B.15	24 x 10	---	36 x 18
Mon-Fri	S4-7P	7B.15	24 x 10	---	36 x 18
All Year	S4-8P	7B.9	24 x 12	---	30 x 18
Fines Higher	R-2-6P	7B.10	24 x 18	---	36 x 24
XX Feet	W16-2P	7B.8	24 x 18	---	30 x 24
XX FT	W16-2aP	7B.8	24 x 12	---	30 x 18
Turn Arrow	W16-5P	7B.8, 7B.9, 7B.11	24 x 12	---	30 x 18
Advance Turn Arrow	W16-6P	7B.8, 7B.9, 7B.11	24 x 12	---	30 x 18
Diagonal Arrow	W16-7P	7B.12	24 x 12	---	30 x 18
Diagonal Arrow (optional size)	W16-7P	7B.12	21 x 15	---	---
Ahead	W16-9P	7B.11	24 x 12	---	30 x 18

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- Notes: 1. Larger signs may be used when appropriate.
2. Dimensions are shown in inches and are shown as width x height.
3. Minimum sizes for multi-lane conventional roads shall be as shown in the Conventional Roads column that face shared-use paths and pedestrian facilities.

Table 7B-1. School Area Sign and Plaque Sizes

7B.13 School Bus Stop Ahead Sign (S3-1)



S3-1

STANDARD:

The School Bus Stop Ahead (S3-1) sign shall be installed in advance of locations where a school bus, when stopped to pick up or discharge passengers, is not visible for an adequate distance and where there is no opportunity to relocate the school bus stop to provide adequate sight distance. See Table 2C-4 for adequate sight distances.

7B.13.1 SCHOOL BUS LOADING AREA

Sign (S3-X1)



S3-X1

STANDARD:

The School Bus Loading Area sign shall be used to clearly identify an area to both motorists and bus drivers. It shall be used when there is sufficient turnout width or turnout space available to accommodate such a loading area, and the local school authorities have requested the loading area. This loading area shall not be located within a designated and marked left or right turn lane nor in such a position as obstruct the view of other motorists or to create a hazard on the roadway. The sign shall be installed at the beginning of the loading area.

The following are criteria for the establishment of a school bus loading area:

1. Roadway shoulders must be wide enough to accommodate the full width of the bus.
2. There must be sufficient space beside the bus for passengers to stand safely during loading and unloading.

3. No loading area shall be established adjacent to an obstruction such as guardrail, culvert, mailboxes, etc.
4. No loading area shall be permitted in a designated and marked turn lane.
5. No loading area shall be located such that passengers are required to cross the roadway on the way to or from the bus.
6. The local school districts shall keep the appropriate road authority informed about plans to add or delete loading areas.

SUPPORT:

Refer to Minnesota Statute 169.443 and 169.444 for requirements associated with the use of this sign.

7B.14 SCHOOL BUS TURN AROUND Sign (S3-2a)

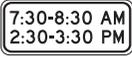
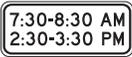


S3-2a

OPTION:

The SCHOOL BUS TURN AROUND (S3-2a) sign may be installed in advance of locations where a school bus turns around on a roadway at a location not visible to approaching road users for a distance as determined by the "0" column under Condition B of Table 2C-4, and where there is no opportunity to relocate the school bus turn around to provide the distance provided in Table 2C-4.

7B.15 School Speed Limit Assembly (S4-1, S4-2, S4-3P, S4-4, S4-6, S5-1) and END SCHOOL SPEED LIMIT Sign (S5-3)

	S4-3P
	R2-1
	S4-1P
OR	
	S4-2P
OR	
	S4-4P
OR	
	S4-1P
	S4-6P

STANDARD:

A School Speed Limit assembly or a School Speed Limit (S5-1) sign shall be used to indicate the speed limit where a reduced school speed limit zone has been established based upon an engineering study or where a reduced school speed limit is specified for such areas by statute. The School Speed Limit assembly or School Speed Limit sign shall be placed at or as near as practical to the point where the reduced school speed limit zone begins (see Figures 7B-3 and 7B-5). It shall be used in conjunction with the School Advance Warning sign (see Section 7B.8).

If a reduced school speed limit zone has been established, a School (S1-1) sign shall be installed in advance (see Table 2C-4 for advance placement guidelines) of the first School Speed Limit sign assembly or S5-1 sign that is encountered in each direction as traffic approaches the reduced school speed limit zone (see Figures 7B-3 and 7B-5).

GUIDANCE:

Where increased fines are imposed for traffic violations within a reduced school speed limit zone, a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or \$XX FINE (R2-6bP) plaque (see Figure 2B-3) should be installed as a supplement to the reduced school speed limit sign to notify road users.

STANDARD:

Except as provided in paragraph one of the following Option, the downstream end of an authorized and posted reduced school speed limit zone shall be identified with an END SCHOOL SPEED LIMIT (S5-3) sign (see Figure 7B-5).

OPTION:

If a reduced school speed limit zone ends at the same point as a higher fines zone, an END SCHOOL ZONE (S5-2) sign may be used instead of a combination of an END HIGHER FINES ZONE (R2-11) sign and an END SCHOOL SPEED LIMIT (S5-3) sign.

A standard Speed Limit sign showing the speed limit for the section of highway that is downstream from the authorized and posted reduced school speed limit zone may be mounted on the same post above the END SCHOOL SPEED LIMIT (S5-3) sign or the END SCHOOL ZONE (S5-2) sign.

GUIDANCE:

The beginning point of a reduced school speed limit zone should be at least 200 feet in advance of a school crossing, or other school related activities; however, this 200-foot distance should be increased if the reduced school speed limit is 30 mph or higher.

STANDARD:

The School Speed Limit Assembly shall be either a fixed-message sign assembly or a changeable message sign.

The fixed-message School Speed Limit assembly shall consist of a top plaque (S4-3P) with the legend SCHOOL, a Speed Limit (R2-1) sign, and a bottom plaque (S4-1P, S4-2P, S4-4P, or S4-6P) indicating the specific periods of the day and/or days of the week that the special school speed limit is in effect.

OPTION:

Changeable message signs (see Chapter 2L and Section 6F.60) may be used to inform drivers of the school speed limit. If the sign is internally illuminated, it may have a white legend on a black background. Changeable message signs with flashing beacons may be used for situations, where greater emphasis of the special school speed limit is needed.

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AND LIGHT RAIL TRANSIT GRADE CROSSINGS
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9B.17 Bicycle Surface Condition Warning Sign (W8-10)

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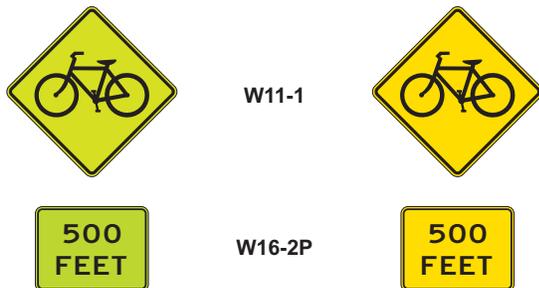
OPTION:

The Bicycle Surface Condition Warning (W8-10) sign may be installed where roadway or shared-use path conditions could cause a bicyclist to lose control of the bicycle.

Signs warning of other surface conditions that might be of concern to bicyclists including BUMP (W8-1), DIP (W8-2), PAVEMENT ENDS (W8-3), and any other word message that describes conditions that are of concern to bicyclists, may also be used.

A supplemental plaque may be used to clarify the specific type of surface condition.

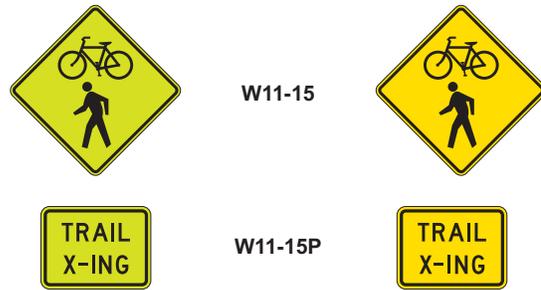
9B.18 Bicycle Warning and Combined Bicycle/Pedestrian Signs (W11-1 and W11-15)



SUPPORT:

The Bicycle Warning (W11-1) sign alerts the road user to unexpected entries into the roadway by bicyclists, and other crossing activities that might cause conflicts. These conflicts might be relatively confined, or might occur randomly over a segment of roadway.

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OPTION:

The combined Bicycle/Pedestrian (W11-15) sign may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque may be mounted below the W11-15 sign.

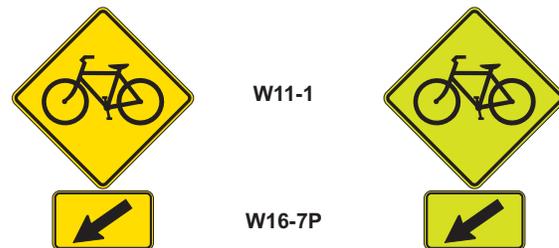
A supplemental plaque with the legend AHEAD or XXX FEET may be used with the Bicycle Warning or combined Bicycle/Pedestrian sign.

GUIDANCE:

If used in advance of a specific crossing point, the Bicycle Warning or combined Bicycle/Pedestrian sign should be placed at a distance in advance of the crossing location that conforms with the guidance given in Table 2C-4.

STANDARD:

Bicycle Warning signs, when used at the location of the crossing, shall be supplemented with a diagonal downward pointing arrow (W16-7P) plaque to show the location of the crossing.



OPTION:

A fluorescent yellow-green background color with a black legend and border may be used for Bicycle Warning and combined Bicycle/Pedestrian signs and supplemental plaques.

GUIDANCE:

When the fluorescent yellow-green background color is used, a systematic approach featuring one background color within a zone or area should be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a zone or area should be avoided.

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9B.19 Other Bicycle Warning Signs



W3-1



W3-2



W3-3



W5-2



W5-4a



W7-5



W8-1



W8-2



W10-1



W11-2



W12-2



W15-1

OPTION:

Other bicycle warning signs such as PATH NARROWS (W5-4a) and Hill (W7-5) may be installed on shared-use paths to warn bicyclists of conditions not readily apparent.

In situations where there is a need to warn motorists to watch for bicyclists traveling along the highway, the SHARE THE ROAD (W16-1P) plaque may be used in conjunction with the W11-1 sign.



W11-1



W16-1P



GUIDANCE:

If used, other advance bicycle warning signs should be installed at least 50 feet in advance of the beginning of the condition.

Where temporary traffic control zones are present on bikeways, appropriate signs from Part 6 should be used.

OPTION:

Other warning signs described in Chapter 2C may be installed on bicycle facilities as appropriate.

9B.20 Bicycle Guide Signs

(D1-1b, D1-1c, D1-2b, D1-2c, D1-3b, D1-3c, D11-1, D11-1c)



D11-1

OPTION:

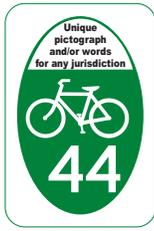
Bike Route Guide (D11-1) signs may be provided along designated bicycle routes to inform bicyclists of bicycle route direction changes and to confirm route direction, distance, and destination.

If used, Bike Route Guide signs may be repeated at regular intervals so that bicyclists entering from side streets will have an opportunity to know that they are on a bicycle route. Similar guide signing may be used for shared roadways with intermediate signs placed for bicyclist guidance.

9B.21 Bicycle Route Signs (M1-8, M1-8a, M1-9)



M1-8



M1-8a



M1-9

OPTION:

To establish a unique identification (route designation) for a State or local bicycle route, the Bicycle Route (M1-8) sign may be used.

STANDARD:

The Bicycle Route (M1-8) sign shall contain a route designation and shall have a green background with a retroreflectorized white legend and border. The Bicycle Route (M1-8a) sign shall contain the same information as the M1-8 sign and in addition shall include a pictograph or words that are associated with the route or with the agency that has jurisdiction over the route.

GUIDANCE:

Bicycle routes, which might be a combination of various types of bikeways, should establish a continuous routing.

Where a designated bicycle route extends through two or more States, a coordinated submittal by the affected States for an assignment of a U.S. Bicycle Route number designation should be sent to the American Association of State Highway and Transportation Officials (see Page i for the address).

STANDARD:

The U.S. Bicycle Route (M1-9) sign shall contain the route designation as assigned by AASHTO and shall have a black legend and border with a retroreflectorized white background.

GUIDANCE:

If used, the Bicycle Route or U.S. Bicycle Route signs should be placed at intervals frequent enough to keep bicyclists informed of changes in route direction and to remind motorists of the presence of bicyclists.

OPTION:

Bicycle Route or U.S. Bicycle Route signs may be installed on shared roadways or on shared use paths to provide guidance for bicyclists.

The Bicycle Route Guide (D11-1) sign may be installed where no unique designation of routes is desired.

9B.22 Bicycle Route Auxiliary Plaques

OPTION:

Auxiliary plaques may be used in conjunction with Bike Route Guide signs, Bicycle Route signs, or U.S. Bicycle Route signs as needed.



M2-1



M3-1



M3-2



M3-3



M3-4



M4-1



M4-1a



M4-2



M4-3



M4-5



M4-6



M4-7



M4-7a



M4-8



M4-14

GUIDANCE:

If used, Junction (M2-1), Cardinal Direction (M3 series), and Alternative Route (M4 series) auxiliary plaques should be mounted above the appropriate Bike Route Guide signs, Bicycle Route signs, or U.S. Bicycle Route signs.



M5-1



M5-2



M6-1



M6-2



M6-3



M6-4



M6-5



M6-6



M6-7

If used Advance Turn Arrow (M5 series) and Directional Arrow (M6 series) auxiliary plaques should be mounted below the appropriate Bike Route Guide sign, Bicycle Route sign, or U.S. Bicycle Route sign.

STANDARD:

Except for the M4-8 plaque, all route sign auxiliary plaques shall match the color combination of the route sign that they supplement.

GUIDANCE:

Route sign auxiliary plaques carrying word legends that are used on bicycle routes should have a minimum size of 12 x 6 inches. Route sign auxiliary plaques carrying arrow symbols that are used on bicycle routes should have a minimum size of 12 x 9 inches.

OPTION:

With route signs of larger sizes, auxiliary plaques may be suitably enlarged, but not such that they exceed the width of the route sign.

A route sign and any auxiliary plaques used with it may be combined on a single sign.

Destination (D1-1b and D1-1c) signs (see Section 9B.20) may be mounted below Bike Route Guide signs, Bicycle Route signs, or U.S. Bicycle Route signs to furnish additional information, such as directional changes in the route, or intermittent distance and destination information.

9B.23 Bicycle Parking Area Sign (D4-3)



D4-3
12" x 18"

OPTION:

The Bicycle Parking Area (D4-3) sign may be installed where it is desirable to show the direction to a designated bicycle parking area. The arrow may be reversed as appropriate.

STANDARD:

The legend and border of the Bicycle Parking Area sign shall be green on a retroreflectorized white background.

9B.24 Reference Location Signs (D10-1 through D10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a)

SUPPORT:

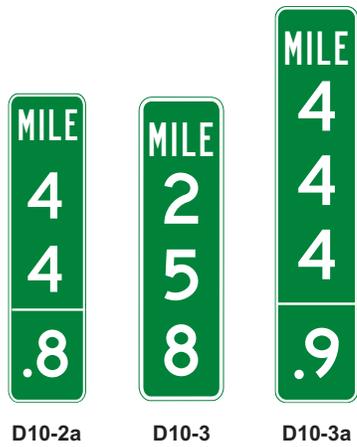
There are two types of reference location signs:

- A. Reference Location (D10-1, 2, and 3) signs show an integer distance point along a shared-use path; and
- B. Intermediate Reference Location (D10-1a, 2a, and 3a) signs also show a decimal between integer distance points along a shared-use path.

OPTION:

Reference Location (D10-1 to D10-3) signs may be installed along any section of a shared-use path to assist users in estimating their progress, to provide a means for identifying the location of emergency incidents and crashes, and to aid in maintenance and servicing.

To augment the reference location sign system, Intermediate Reference Location (D10-1a to D10-3a) signs, which show the tenth of a mile with a decimal point, may be installed at one tenth of a mile intervals, or at some other regular spacing.



OPTION:

Reference Location (D10-1 to D10-3) signs may be installed along any section of a shared-use path to assist users in estimating their progress, to provide a means for identifying the location of emergency incidents and crashes, and to aid in maintenance and servicing.

To augment the reference location sign system, Intermediate Reference Location (D10-1a to D10-3a) signs, which show the tenth of a mile with a decimal point, may be installed at one tenth of a mile intervals, or at some other regular spacing.

STANDARD:

If Intermediate Reference Location (D10-1a to D10-3a) signs are used to augment the reference location sign system, the reference location sign at the integer mile point shall display a decimal point and a zero numeral.

If placed on shared-use paths, reference location signs shall contain 4.5-inch white numerals on a green background that is at least 6 inches wide with a white border. The signs shall contain the word MILE in 2.25-inch white letters.

Reference location signs shall have a minimum mounting height of 2 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the shared-use path, and shall not be governed by the mounting height requirements prescribed in Section 9B.1.

OPTION:

Reference location signs may be installed on one side of the shared-use path only and may be installed back-to-back.

If a reference location sign cannot be installed in the correct location, it may be moved in either direction as much as 50 feet.

GUIDANCE:

If a reference location sign cannot be placed within 50 feet of the correct location, it should be omitted. Zero distance should begin at the south and west terminus points of shared-use paths.

SUPPORT:

Section 2H.5 contains additional information regarding reference location signs.

9B.25 Mode-Specific Guide Signs for Shared-Use Paths (D11-1a, D11-2, D11-3, D11-4)



OPTION:

Where separate pathways are provided for different types of users, Mode-Specific Guide (D11-1a, D11-2, D11-3, D11-4) signs may be used to guide different types of users to the traveled way that is intended for their respective modes.

Mode-Specific Guide signs may be installed at the entrance to shared-use paths where the signed mode(s) are permitted or encouraged, and periodically along these facilities as needed.

The Bicycles Permitted (D11-1a) sign, when combined with the BIKE ROUTE supplemental plaque (D11-1bP), may be substituted for the D11-1 Bicycle Route Guide sign on paths and shared roadways.

When some, but not all, non-motorized user types are encouraged or permitted on a shared-use path, Mode-Specific Guide signs may be placed in combination with each other, and in combination with signs (see Section 9B.9) that prohibit travel by particular modes.

SUPPORT:

Figure 9B-8 shows an example of signing where separate pathways are provided for different non-motorized user types.

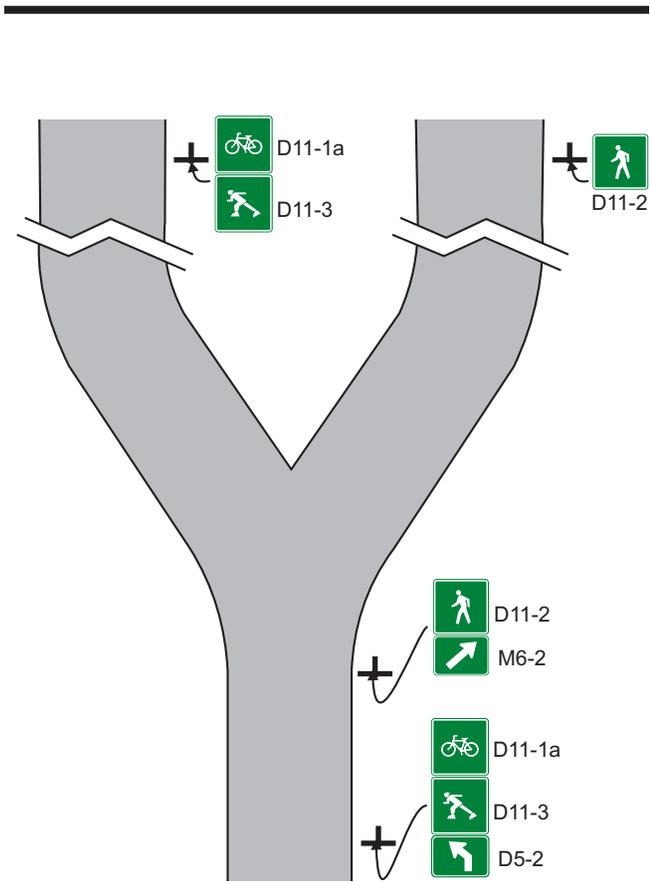
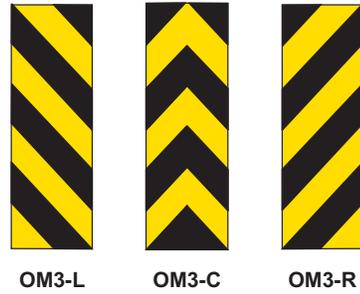


Figure 9B-8 Examples of Mode-Specific Guide Signing on a Shared-Use Path

9B.26 Object Markers



OPTION:

Fixed objects adjacent to shared-use paths may be marked with Type 1, Type 2, or Type 3 object markers such as those described in Section 2C.63. If the object marker is not intended to also be seen by motorists, a smaller version of the Type 3 object marker may be used (see Table 9B-1).

STANDARD:

Obstructions in the traveled way of a shared-use path shall be marked with retroreflectorized material or appropriate object markers.

All object markers shall be retroreflective.

On Type 3 object markers, the alternating black and retroreflective yellow stripes shall be sloped down at an angle of 45 degrees toward the side on which traffic is to pass the obstruction.

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R1-1		White on Red	18 x 18 30 x 30 36 x 36 48 x 48	B-Path B/Rt, CR-SL, M, LV CR-ML, E O	9B.3 2B.5,5B.2,6F.6, 8B.4,8B.5,9B.3 2B.5,5B.2,8B.4 2B.5,5B.2,8B.4
R1-2		White on Red	18 30 36 48 60	B-Path B/RT, M, LV CR-SL, CR-ML, E F	9B.3 2B.8,5B.2,6E.6, 8B.4,8B.5,9B.3, 2B.8,5B.2,6E.3, 8B.4 2B.8,8B.1, 2B.810C.
R1-2aP		Black on White	24 x 18 36 x 30 48 x 36	CR-SL, CR-ML, M E F	2B.10,6E.6 2B.10,6E.6 2B.10,6E.6
R1-3P		White on Red	18 x 6 30 x 12	CR-SL, CR-ML O	2B.5 2B.5
R1-5b		Black and Red on White	36 x 36	CR-ML, O	2B.11
R1-5c		Black and Red on White	36 x 48	CR-ML, O	2B.11
R1-6a		Black on White and Fluorescent Yellow-Green	12 x 36 (post mounted) 12 x 44 (w/mounting flange)	CR-SL, CR-ML	2B.12, 7B.11,7B.12 2B.12, 7B.11,7B.12
R1-6b		Black on White and Fluorescent Yellow-Green	12 x 36 (post mounted) 12 x 44 (w/mounting flange)	CR-SL, CR-ML	2B.12, 7B.11,7B.12 2B.12, 7B.11,7B.12

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

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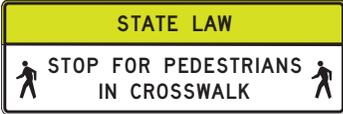
MN Rev. 2

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R1-6c		Black on White and Fluorescent Yellow-Green	12 x 36 (post mounted) 12 x 44 (w/mounting flange)	CR-SL, CR-ML	7B.12
R1-9a		Black on White and Fluorescent Yellow-Green	90 x 24	CR-SL, CR-ML	2B.12
R1-9b		Black on White and Fluorescent Yellow-Green	90 x 30	CR-SL, CR-ML	2B.12
R1-10P		Black on White	24 x 18	CR-SL, CR-ML	2B.5
R2-1		Black on White	18 x 24 24 x 30 30 x 36 36 x 48 48 x 60	M LV, CR-SL CR-ML E F	2B.13,6H.4 2B.13,5B.3, 6F.12,6H.4,7B.15 2B.13,6H.4 2B.13,5B.3, 6F.12,6H.4,7B.15 2B.13,6H.4
R2-2P		Black on White	24 x 24 36 x 36 48 x 48	CR-SL,CR-ML E, O F	2B.14 2B.14 2B.14
R2-3P		Black on White	24 x 24 36 x 36 48 x 48	CR-SL,CR-ML E, O F	2B.15 2B.15 2B.15

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R3-5a		Black on White	30 x 36	CR-SL, CR-ML	2B.20
R3-5bP		Black on White	30 x 12	CR-SL, CR-ML	2B.20
R3-5cP		Black on White	24 x 12	CR-SL, CR-ML	2B.20
R3-5dP		Black on White	30 x 12	CR-SL, CR-ML	2B.20
R3-5eP		Black on White	30 x 12	CR-SL, CR-ML	2B.20
R3-5fP		Black on White	30 x 12	CR-SL, CR-ML	2B.20
R3-5gP		Black on White	30 x 12	CR-SL, CR-ML	2B.20
R3-6 (R or L)		Black on White	30 x 36	CR-SL, CR-ML	2B.21,6F.6
R3-7 (R, L, ALL TRAFFIC)		Black on White	30 x 30 36 x 36	CR-SL CR-ML	2B.20,6F.6 2B.20
R3-9a		Black on White	30 x 36	CR-SL, CR-ML	2B.24
R3-9b		Black on White	24 x 36 36 x 48	CR-SL, CR-ML O	2B.24 2B.24
R3-9cP		Black on White	30 x 12	CR-SL, CR-ML	2B.25
R3-9dP		Black on White	30 x 12	CR-SL, CR-ML	2B.25

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R3-9e		Black and Red on White	108 x 48	CR-SL, CR-ML	2B.26
R3-9f		White of Black and Black on White	30 x 42 36 x 54	CR-SL CR-ML	2B.20 2B.26
R3-9g		Black on White	108 x 36	CR-SL, CR-ML	2B.26
R3-9h		Black on White	108 x 36	CR-SL, CR-ML	2B.26
R3-9i		Black on White	108 x 48	CR-SL, CR-ML	2B.26
R3-10		Black on White	30 x 42 36 x 60 78 x 96	CR-SL, CR-ML E F, O	2G.4 2G.4 2G.4
R3-10a		Black on White	30 x 42 36 x 60 78 x 96	CR-SL, CR-ML E F, O	2G.4 2G.4 2G.4

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

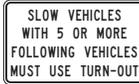
Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R3-44		Black on White	90 x 84	E, F	2G.17
R3-44a		Black on White	132 x 84	E, F	2G.17
R3-45		Black on White	90 x 66	E, F	2G.17
R3-45a		Black on White	114 x 66	E, F	2G.17
R3-48		Black on White	Varies	E, F	2G.17
R3-48a		Black on White	Varies	E, F	2G.17
R4-1		Black on White	12 x 18 18 x 24 24 x 30 36 x 48 48 x 60	B-Path B/RT, M LV, CR-SL, CR-ML E, O F	9B.14 2B.28,9B.14 2B.28,5B.4,6F.6 2B.28,5B.4,6F.6 2B.28
R4-2		Black on White	12 x 18 18 x 24 24 x 30 36 x 48 48 x 60	B-Path B/RT, M LV, CR-SL, CR-ML E, O F	9B.14 2B.29,9B.14 2B.29,5B.4,6F.6 2B.29,5B.4,6F.6 2B.29

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R4-3		Black on White	12 x 18 18 x 24 24 x 30 36 x 48 48 x 60	B-Path B/RT, M CR-SL, CR-ML E, O F	9B.14 2B.30,9B.14 2B.30,5B.4 2B.30,5B.4 2B.30
R4-4		Black on White	36 x 30	B/RT	9B.5
R4-5		Black on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.31 2B.31 2B.31
R4-7		Black on White	12 x 18 18 x 24 24 x 30 36 x 48 48 x 60	B-Path B/RT, M LV, CR-SL, CR-ML E, O F	9B.14 2B.32,5B.4,9B.14 2B.32,5B.4,6F.6 2B.32,5B.4,6F.6 2B.32
R4-7a		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.32 2B.32 2B.32 2B.32
R4-7b		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.32 2B.32 2B.32 2B.32
R4-7c		Black on White	18 x 30	CR-SL, CR-ML	2B.32,6F.6
R4-8		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.32 2B.32 2B.32 2B.32
R4-8a		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.32 2B.32 2B.32 2B.32

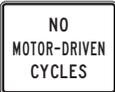
Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R4-8b		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.32 2B.32 2B.32 2B.32
R4-8c		Black on White	18 x 30	CR-SL, CR-ML	2B.32
R4-9		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.33 2B.33,6F.11 2B.33,6F.11 2B.33
R4-10		Black on White	48 x 48	CR-SL, CR-ML	2B.34
R4-11		Black on White	30 x 30	B/Rt	9B.6
R4-12		Black on White	42 x 24	CR-SL, CR-ML	2B.35
R4-13		Black on White	42 x 24	CR-SL, CR-ML	2B.35
R4-14		Black on White	30 x 42	CR-SL, CR-ML	2B.35
R4-16		Black on White	18 x 24 24 x 30 36 x 48 48 x 60	M CR-SL, CR-ML E, O F	2B.30,9B.14 2B.30,9B.14 2B.30 2B.30
R4-17a		Black on White	30 x 36 48 x 54	CR-SL, CR-ML E, F	2B.36 2B.36

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R4-18a		Black on White	30 x 36 48 x 54	CR-SL, CR-ML E, F	2B.36 2B.36
R4-X5		Black on White	30 x 24 36 x 24 48 x 36	CR-SL CR-ML E, F	2B.66.2 2B.66.2 2B.66.2
R5-1		Red on White	30 x 30 36 x 36 48 x 48	LV, CR-SL CR-ML, E, O F	2B.37,5B.4,6F.6 2B.37,5B.4,6F.6 2B.37
R5-1a		White on Red	30 x 18 36 x 24 42 x 30	M CR-SL, E CR-ML, F, O	2B.38,6F.6 2B.38,6F.6 2B.38
R5-1b		White on Red	12 x 18	B-Path, B/Rt	9B.7
R5-2		Black and Red on White	24 x 24 30 x 30 36 x 36	LV, CR-SL, CR-ML E F, O	2B.39,5B.4 2B.39,5B.4 2B.39
R5-2a		Black and Red on White	24 x 24 30 x 30 36 x 36	CR-SL, CR-ML E F, O	2B.39,5B.4 2B.39,5B.4 2B.39
R5-3		Black on White	24 x 24	B-Path, B/Rt, CR-SL, CR-ML, M	2B.39, 9B.8,9B.14
R5-4		Black on White	24 x 30 36 x 48	CR-SL, CR-ML E, F	2B.39 2B.39
R5-5		Black on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E F	2B.39 2B.39 2B.39

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R5-6		Black and Red on White	18 x 18	B-Path	9B.9
			24 x 24	B/Rt, CR-SL, CR-ML, M	2B.39,9B.9
			30 x 30	E	2B.39
			36 x 36	F	2B.39
R5-7		Black on White	30 x 24	CR-SL, CR-ML	2B.39
			42 x 24	E	2B.39
			48 x 30	F	2B.39
			42 x 24	O	2B.39
R5-8		Black on White	30 x 24	CR-SL, CR-ML	2B.39
			42 x 24	E	2B.39
			48 x 30	F	2B.39
			42 x 24	O	2B.39
R5-10a		Black on White	30 x 36	CR-SL, CR-ML	2B.39
R5-10b		Black on White	30 x 18	CR-SL, CR-ML	2B.39
R5-10c		Black on White	24 x 12	CR-SL, CR-ML	2B.39
R5-10d		Black on White	18 x 24	CR-SL, CR-ML	2B.39
R5-11		Black on White	30 x 24	CR-SL, CR-ML	2B.39
R5-X1		Black on White	18 x 18	CR-SL, CR-ML, M	2B.39.1
R6-1 (R or L)		Black on White	36 x 12 54 x 18	CR-SL CR-ML, E, F, O	2B.40,6F.6 2B.40,6F.6
R6-2 (R or L)		Black on White	18 x 24 24 x 30 30 x 36 36 x 48 48 x 60	M, LV CR-SL CR-ML E, O F	2B.40,5B.4,6F.6 2B.40,6F.6 2B.40 2B.40,6F.6 2B.40
R6-3		Black on White	30 x 24 36 x 30	CR-SL, CR-ML E, O	2B.42 2B.42

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R6-3a		Black on White	30 x 24 36 x 30	CR-SL, CR-ML E, O	2B.42 2B.42
R6-4		Black on White	30 x 24	CR-SL, CR-ML	2B.43
R6-4a		Black on White	48 x 24	CR-SL, CR-ML	2B.43
R6-4b		Black on White	60 x 24	CR-SL, CR-ML	2B.43
R6-5P		Black on White	30 x 30 30 x 30	CR-SL, CR-ML	2B.44
R6-6		Black on White	24 x 30 30 x 36	CR-SL CR-ML	2B.40 2B.40
R6-7		Black on White	24 x 30 30 x 36	CR-SL CR-ML	2B.40 2B.40
R7-1		Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-2		Black and Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-2a		Red on White	12 x 18	CR-SL, CR-ML	2B.46

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R7-3		Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-4		Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-5		Green on White	12 x 18	CR-SL, CR-ML	2B.46
R7-6		Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-7		Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-8m		White on Blue	12 x 18	CR-SL, CR-ML	2B.46,2B.48.1
R7-8bP		White on Blue	18 x 9	CR-SL, CR-ML	2B.46,2B.48.1
R7-9		Red on White	12 x 18	B/Rt	9B.10
R7-9a		Black and Red on White	12 x 18	B/Rt	9B.10
R7-20		Green on White	24 x 18	CR-SL, CR-ML	2B.46
R7-21		Green and Black on White	12 x 18	CR-SL, CR-ML	2B.46

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R7-21a		Green and Black on White	12 x 18	CR-SL, CR-ML	2B.46
R7-22		Green and Black on White	12 x 18	CR-SL, CR-ML	2B.46
R7-23		Black and Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-23a		Green and Black on White	12 x 18	CR-SL, CR-ML	2B.46
R7-107		Red on White	12 x 18	CR-SL, CR-ML	2B.46
R7-107b		Red and Black on White	12 x 30	CR-SL, CR-ML	2B.46
R7-108		Green on White	12 x 18	CR-SL, CR-ML	2B.46
R7-200		Red and Green on White	24 x 18	CR-SL, CR-ML	2B.46
R7-200a		Red and Green on White	12 x 30	CR-SL, CR-ML	2B.46

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R7-201P	 or 	Black or Red on White	12 x 6	CR-SL, CR-ML	2B.46
R7-201aP		Red on White	12 x 6	CR-SL, CR-ML	2B.46
R7-202P		Red on White	12 x 6	CR-SL, CR-ML	2B.46
R7-203		Red on White	18 x 24 24 x 30	CR-SL, CR-ML O	2B.46 2B.46
R8-1		Red on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.46 2B.46 2B.46
R8-2		Red on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.46 2B.46 2B.46
R8-3		Black and Red on White	12 x 12 18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	M M LV, CR-SL CR-ML E, O F	2B.46 5B.5 2B.46,5B.5,6F.13 2B.46,5B.5 2B.46, 6F.13 2B.46
R8-3a		Red on White	18 x 24 24 x 30 36 x 36 48 x 48	LV, M CR-SL, CR-ML E, O F	2B.46 2B.46 2B.46 2B.46
R8-3bP		Red on White	12 x 9 24 x 18 30 x 24	M CR-SL, CR-ML O	2B.46 2B.46 2B.46
R8-3cP		Red on White	12 x 9 24 x 18 30 x 24	M LV, CR-SL, CR-ML O	2B.46 2B.46,5B.5 2B.46,5B.5
R8-3dP		Red on White	12 x 9 24 x 18 30 x 24	M LV, CR-SL, CR-ML O	2B.46 2B.46,5B.5 2B.46,5B.5
R8-3eP		Red on White	12 x 9 30 x 24	M, CR-SL, CR-ML O	2B.46 2B.46

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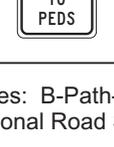
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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R8-3fP		Red on White	12 x 9 24 x 18 30 x 24	M CR-SL, CR-ML O	2B.46 2B.46 2B.46
R8-3gP		Red on White	12 x 9 24 x 18 30 x 24	M CR-SL, CR-ML O	2B.46 2B.46 2B.46
R8-3hP		Red on White	12 x 9 24 x 18 30 x 24	M CR-SL, CR-ML O	2B.46 2B.46 2B.46
R8-3mP		Red on White	12 x 9 24 x 18 30 x 24	M CR-SL, CR-ML O	2B.46 2B.46 2B.46
R8-4		Black on White	30 x 24 48 x 36	CR-SL, CR-ML, E F, O	2B.49 2B.49
R8-5		Red on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.46 2B.46
R8-6		Red on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.46 2B.46
R8-7		Black on White	30 x 24 48 x 36	CR-SL, CR-ML E, F, O	2B.46, 2B.49 2B.46, 2B.49
R8-8		Black on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E O	2B.49, 8B.8 2B.49, 8B.8 2B.49, 8B.8
R8-9		Black on White	24 x 24 36 x 36 48 x 48	CR-SL, CR-ML E O	8B.10 8B.10 8B.10
R8-10		Black on White	24 x 36 36 x 48	CR-SL, CR-ML O	8B.11 8B.11

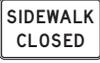
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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R8-10a		Black on White	24 x 30 36 x 42	CR-SL, CR-ML O	8B.11 8B.11
R9-1		Black on White	18 x 24	CR-SL, CR-ML	2B.50
R9-2		Black on White	12 x 18	CR-SL, CR-ML	2B.51
R9-3		Black and Red on White	18 x 18 24 x 24 30 x 30	B-Path, B/Rt, CR-SL, CR-ML E F, O	2B.39,2B.51, 9B.9 2B.51 2B.51
R9-3a		Black on White	12 x 18	CR-SL, CR-ML	2B.51
R9-3bP		Black on White	18 x 12	CR-SL, CR-ML	2B.51
R9-3cP		Black on White	12 x 12	B-Path, B/Rt	9B.7
R9-4		Black and Red on White	18 x 18 24 x 24	CR-SL, CR-ML O	2B.50 2B.50
R9-4a		Black on White	12 x 18 18 x 24	M CR-SL, CR-ML	2B.50 2B.50
R9-5		Black on White	12 x 18	B-Path, B/Rt	9B.11
R9-6		Black on White	12 x 18	B-Path, B/Rt	9B.11

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R9-7		Black on White	12 x 18	B-Path, B/Rt	9B.11
R9-8		Black on White	36 x 18	CR-SL, CR-ML	6F.13
R9-9		Black on White	24 x 12 30 x 18	M CR-SL, CR-ML	2B.58.2,6F14 2B.58.2,6F14
R9-10 (R or L)		Black on White	24 x 12 48 x 24	M CR-SL, CR-ML	2B.58.2,6F14 2B.58.2,6F14
R9-11 (R or L)		Black on White	24 x 18	CR-SL, CR-ML	6F14
R9-11a (R or L)		Black on White	24 x 12	CR-SL, CR-ML	6F14
R9-13		Black and Red on White	18 x 18 24 x 24 30 x 30	B-Path, B/Rt, CR-SL, CR-ML E F, O	2B.39,9B.9 2B.39 2B.39
R9-14		Black and Red on White	18 x 18 24 x 24 30 x 30	B-Path, B/Rt, CR-SL, CR-ML E F, O	2B.39,9B.9 2B.39 2B.39
R9-X1		Black on White	12 x 18	B-Path, B/Rt	9B.11
R9-X2		Black on White	12 x 18	B-Path, B/Rt	9B.11
R10-1		Black and green on White	12 x 18	B-Path, B/Rt	2B.52,9B.11
R10-2		Black on White	12 x 18	CR-SL, CR-ML	2B.52
R10-3		Black on White	9 x 12	CR-SL, CR-ML	2B.52

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R10-3a		Black on White	9 x 15	CR-SL, CR-ML	2B.52
R10-3b		Black and Orange on White	9 x 12	CR-SL, CR-ML	2B.52
R10-3c		Black and Orange on White	9 x 12	CR-SL, CR-ML	2B.52
R10-3d		Black and Orange on White	9 x 12	CR-SL, CR-ML	2B.52
R10-3e		Black and Orange on White	9 x 15	CR-SL, CR-ML	2B.52
R10-3f		Black and Orange on White	9 x 15	CR-SL, CR-ML	2B.52
R10-3g		Black and Orange on White	9 x 15	CR-SL, CR-ML	2B.52
R10-3h		Black and Orange on White	9 x 15	CR-SL, CR-ML	2B.52
R10-3i		Black and Orange on White	9 x 15	CR-SL, CR-ML	2B.52

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R10-4		Black and Green on White	9 x 15	B-Path, B/Rt, CR-SL, CR-ML	2B.52,9B.11
R10-4a		Black and Green on White	9 x 15	CR-SL, CR-ML	2B.52
R10-5		Black on White	24 x 30 30 x 36 48 x 60	M CR-SL, CR-ML E, O	2B.53
R10-6 (L or R)		Black on White	24 x 36 36 x 48	CR-SL, CR-ML O	2B.53,8B.12 2B.53,8B.12
R10-6a (L or R)		Black on White	24 x 30 36 x 42	CR-SL, CR-ML O	2B.53, 8B.12 2B.53, 8B.12
R10-7		Black on White	30 x 30	CR-SL, CR-ML	2B.53
R10-7a		Black on White	30 x 30	CR-SL, CR-ML	2B.53
R10-8		Black on White	36 x 42 60 x 72	CR-SL, CR-ML, E O	2B.53 2B.53
R10-10 (R or L)		Black on White	30 x 36	CR-SL, CR-ML	2B.53

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R10-11		Black and Red on White	24 x 30 36 x 48	CR-SL CR-ML, O	2B.54 2B.54
R10-11a		Black on White	30 x 36 36 x 48	CR-SL CR-ML	2B.54 2B.54
R10-11b		Black on White	36 x 36	CR-SL, CR-ML	2B.54
R10-11c		Black on White	30 x 42	CR-SL, CR-ML	2B.54
R10-11d		Black on White	30 x 42	CR-SL, CR-ML	2B.54
R10-12		Black on White	30 x 36 36 x 48	CR-SL, CR-ML E	2B.53 2B.53
R10-13		Black on White	42 x 30	CR-SL, CR-ML	2B.53
R10-14		Black on White	36 x 42	CR-SL, CR-ML	2B.53
R10-14a		Black on White	60 x 24	CR-SL, CR-ML	2B.53

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

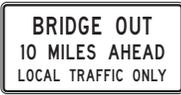
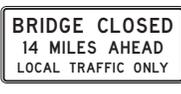
Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R10-14b		Black on White	24 x 36 36 x 48	CR-SL, CR-ML O	2B.53
R10-15a		Black, Red and Green on White and Fluorescent Green	30 x 30	CR-SL, CR-ML	2B.53
R10-16		Black on White	30 x 36	CR-SL, CR-ML	2B.53
R10-17a		Black on White	36 x 48	CR-SL, CR-ML	2B.54
R10-18		Black on White	36 x 24 48 x 30 54 x 36	CR-SL, CR-ML E F, O	2B.55 2B.55 2B.55
R10-19P		Black on White	24 x 12 36 x 18 48 x 24	CR-SL, CR-ML E F, O	2B.55 2B.55 2B.55
R10-19aP		Black on White	24 x 18 36 x 30 48 x 36	CR-SL, CR-ML E F, O	2B.55 2B.55 2B.55
R10-20aP		Black on White	24 x 24	CR-SL, CR-ML	2B.53
R10-20aP		Black on White	24 x 18 30 x 24 48 x 36	CR-SL, CR-ML E O	2B.53 2B.53 2B.53
R10-22		Black on White	12 x 18	B-Path, B/Rt	9B.13

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R10-23		Black and Red on White	24 x 30	CR-SL, CR-ML	2B.53
R10-24		Black on White	9 x 15	B-Path, B/Rt	9B.11
R10-25		Black on White	9 x 12	B-Path, B/Rt, CR-SL, CR-ML	2B.52, 9B.11
R10-26		Black on White	9 x 15	B-Path, B/Rt	9B.11
R10-27		Black on White	30 x 36	CR-SL, CR-ML	2B.53
R10-28a		Black on White	24 x 30	CR-SL, CR-ML	2B.56
R10-29a		Black on White	36 x 24	CR-SL, CR-ML	2B.56
R10-30		Black on White	30 x 36	CR-SL, CR-ML	2B.54
R10-31P		Black on White	24 x 9	CR-SL, CR-ML	2B.54
R10-32P		Black on White	9 x 12	CR-SL, CR-ML	2B.52

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R10-X1		Black on White	24 x 30	CR-SL, CR-ML	6E.5
R11-1		Black on White	24 x 30	CR-SL, CR-ML	2B.57
R11-2		Black on White	48 x 30	LV, CR-SL, CR-ML	2B.58, 5B.4, 6F.8
R11-2a		Black on White	48 x 30	CR-SL, CR-ML	2B.58.1
R11-3a		Black on White	60 x 30	LV, CR-SL, CR-ML	2B.58, 5B.4, 6F.9
R11-3b		Black on White	60 x 30	LV, CR-SL, CR-ML	2B.58, 5B.4, 6F.9
R11-3c		Black on White	60 x 30	CR-SL, CR-ML	2B.58.1
R11-4		Black on White	60 x 30	LV, CR-SL, CR-ML	2B.58, 5B.4, 6F.9
R12-1		Black on White	24 x 30	LV, CR-SL, CR-ML	2B.59
R12-1a		Black on White	24 x 30	CR-SL, CR-ML E, F	2B.59.1, 5B.4,6F.10
R12-2		Black on White	24 x 30 36 x 48	CR-SL, CR-ML E, F, O	2B.59,5B.4,6F.10 2B.59,5B.4,6F.10

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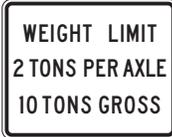
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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R12-3		Black on White	24 x 36	CR-SL, CR-ML	2B.59
R12-4		Black on White	36 x 24	CR-SL, CR-ML	2B.59
R12-5		Black on White	24 x 36 36 x 48 48 x 60	CR-SL, CR-ML E F	2B.59.1,6F.10 2B.59.1,6F.10 2B.59.1,6F.10
R12-X2		Black on White	60 x 36	CR-SL, CR-ML	2B.59.1
R12-X2a		Black on White	78 x 36	CR-SL, CR-ML	2B.59.1
R12-X3		Black on White	36 x 24	CR-SL, CR-ML	2B.59.1
R12-X3a		Black on White	42 x 24	CR-SL, CR-ML	2B.59.1
R12-X4		Black on White	60 x 42	CR-SL, CR-ML	2B.59.1
R12-X4a		Black on White	60 x 36	CR-SL, CR-ML	2B.59.1
R13-1		Black on White	72 x 54 96 x 72 120 x 90	CR-SL, CR-ML E F	2B.60 2B.60 2B.60
R14-1		Black on White	24 x 18	CR-SL, CR-ML	2B.61

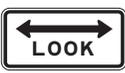
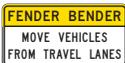
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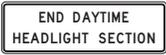
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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R14-2		Black and Green on White	24 x 24 30 x 30 36 x 36	CR-SL, CR-ML E F	2B.62 2B.62 2B.62
R14-3		Black and Red on White	24 x 24 30 x 30 36 x 36	CR-SL, CR-ML E F	2B.62 2B.62 2B.62
R14-4		Black and Green on White	30 x 30 36 x 36	CR-SL, CR-ML E, F	2B.63 2B.63
R14-5		Black and Red on White	30 x 30 36 x 36	CR-SL, CR-ML E, F	2B.63 2B.63
R15-1		Black on White	24 x 4.5 48 x 9	B-Path B-Rt, LV, CR-SL, CR-ML	9B.14 5F.2, 8B.3
R15-2P		Black on White	13.5 x 9 27 x 18	B-Path B-Rt, LV, CR-SL, CR-ML	9B.14 5F.2, 8B.3
R15-3P		Black on White	24 x 12	CR-SL, CR-ML	8B.7
R15-4a		Black on White	24 x 30	CR-SL, CR-ML	8B.13
R15-4b		Black on White	24 x 30	CR-SL, CR-ML	8B.13
R15-4c		Black on White	24 x 30	CR-SL, CR-ML	8B.13
R15-5		Black on White	24 x 30	CR-SL, CR-ML	8B.14

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
 CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R15-5a		Black on White	24 x 30	CR-SL, CR-ML	8B.14
R15-6		Black on White	24 x 24	CR-SL, CR-ML	8B.15
R15-6a		Black on White	24 x 30	CR-SL, CR-ML	8B.15
R15-7		Black on White	24 x 24	CR-SL, CR-ML	8B.16
R15-7a		Black on White	24 x 24	CR-SL, CR-ML	8B.16
R15-8		Black on White	18 x 9 36 x 18	B-Path B/Rt, CR-SL, CR-ML	9B.14 8B.17,9B.14
R16-4		Black on White and Yellow	36 x 24 48 x 36 60 x 48	CR-SL, CR-ML E, O F	2B.65 2B.65 2B.65
R16-5		Black on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64
R16-6		Black on White	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64
R16-7		Black on White	48 x 15 72 x 24 96 x 30	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64
R16-8		Black on White	30 x 15 48 x 24 60 x 30	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64
R16-9		Black on White	30 x 15 48 x 24 60 x 30	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64
R16-10		Black on White	48 x 15 72 x 24 96 x 30	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R16-11		Black on White	48 x 15 72 x 24 96 x 30	CR-SL, CR-ML E, O F	2B.64 2B.64 2B.64
R16-X1		Black on White	72 x 48	CR-SL, CR-ML, E	2B.66.2
R16-X2		Black on White	78 x 48	CR-SL, CR-ML, E, F	2B.66.2
R16-X3		Black on White	48 x 30	CR-SL, CR-ML, E	2B.66.2
R16-X4		Black on White	36 x 36	E, F	2B.49
R16-X6		Black on White	30 x 30 48 x 48	CR-SL, CR-ML O	2B.66.1 2B.66.1
R16-X7		Black on White	48 x 60	CR-ML, E, F	2B.20
R16-X8		Black on White	30 x 18 36 x 24	CR-SL, CR-ML O	2B.66.1 2B.66.1
R16-X9		Black on White	60 x 48	CR-SL, CR-ML	2B.66.2
R16-X10		Black on White	18 x 24	CR-SL, CR-ML	2B.66.1

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
R16-X11		Black on White	72 x 36	CR-SL, CR-ML, E, F	2B.66.2
R16-X12		Black on White	18 x 18 36 x 36	CR-SL, CR-ML O	2B.66.1 2B.66.1
R16-X13		Black on White	24 x 24 36 x 42	CR-SL, CR-ML E	2B.66.1 2B.66.1
R16-X16		Black on White	30 x 48 48 x 66	CR-SL, CR-ML, M E, F	2B.33.1 2B.33.1
R16-X33		Black on White	24 x 30	CR-SL, CR-ML	2B.66.1

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W1-1 (R or L)		Black on Yellow	18 x 18	B-Path	9B.15
			24 x 24	B/Rt	9B.15
			30 x 30	LV, CR-SL	2C.7,2C.10,5C.2, 5C.5,6F.50
			36 x 36	CR-ML, E, F	2C.7,2C.10,6F.50
48 x 48	O	2C.7,6F.50			
	W1-1a (R or L)		36 x 36	CR-SL, CR-ML	2C.10
48 x 48			E, F, O	2C.10	
W1-2 (R or L)		Black on Yellow	18 x 18	B-Path	9B.15
			24 x 24	B/Rt	9B.15
			30 x 30	LV, CR-SL	2C.7,2C.10,5C.2, 5C.5,6F.50
			36 x 36	CR-ML, E, F	2C.7,2C.10,6F.50
48 x 48	O	2C.7,6F.50			
	W1-2a (R or L)		36 x 36	CR-SL, CR-ML	2C.10
48 x 48			E, F, O	2C.10	
W1-3 (R or L)		Black on Yellow	18 x 18	B-Path	9B.15
			24 x 24	B/Rt	9B.15
			30 x 30	LV, CR-SL	2C.7,5C.2,6F.50
			36 x 36	CR-ML, E, F	2C.7,6F.50
			48 x 48	O	2C.7,6F.50
W1-4 (R or L)		Black on Yellow	18 x 18	B-Path	9B.15
			24 x 24	B/Rt	9B.15
			30 x 30	LV, CR-SL	2C.7,5C.2,6F.48
			36 x 36	CR-ML, E, F	2C.7,6F.48
48 x 48	O	2C.7,6F.48			
W1-4b (R or L)		Black on Orange	30 x 30	M	6F.48
			36 x 36	CR-SL, CR-ML	6F.48
			48 x 48	E, F	6F.48
W1-4c (R or L)		Black on Orange	30 x 30	M	6F.48
			36 x 36	CR-SL, CR-ML	6F.48
			48 x 48	E, F	6F.48
W1-5 (R or L)		Black on Yellow	18 x 18	B-Path	9B.15
			24 x 24	B/Rt	9B.15
			30 x 30	LV, CR-SL	2C.7,5C.2
			36 x 36	CR-ML, E, F	2C.7
48 x 48	O	2C.7			
W1-6 (R or L)		Black on Yellow	24 x 12	B-Path	9B.15
			36 x 18	B/Rt, LV	5C.2,9B.15
			48 x 24	CR-SL, CR-ML	2C.12,5C.2,6F.50
			60 x 30	E, F, O	2C.12,6F.50

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W1-7		Black on Yellow	24 x 12 36 x 18 48 x 24 60 x 30	B-Path B/Rt, LV CR-SL, CR-ML O	9B.15 5C.2,9B.15 2C.47,5C.2,6F.50 2C.47,6F.50
W1-8 (R or L)		Black on Yellow	12 x 18 18 x 24 24 x 30 30 x 36 36 x 48	LV CR-SL, CR-ML O E F	5C.2 2C.9,5C.2,6F.50 2C.9 2C.9,6F.50 2C.9,6F.50
W1-10 (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.11 2C.11
W1-10a (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.11 2C.11
W1-10b (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.11 2C.11
W1-10c (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.11 2C.11
W1-10d (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.11 2C.11
W1-10e (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.11 2C.11
W1-11 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	CR-SL, CR-ML E F, O	2C.7 2C.7 2C.7
W1-13 (R or L)		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E, O F	2C.13 2C.13

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
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W1-15 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	CR-SL, CR-ML E F, O	2C.7 2C.7 2C.7
W1-X1 (R or L)		Black on Orange	36 x 36 48 x 48	CR-SL, CR-ML E, F	6F.49 6F.49
W1-X1b (R or L)		Black on Orange	48 x 48 60 x 60	E, F O	6F.49 6F.49
W2-1		Black on Yellow	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL, CR-ML E O	9B.16 9B.16 2C.46,5C.3 2C.46,5C.3 2C.46
W2-2 (R or L)		Black on Yellow	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL, CR-ML E O	9B.16 9B.16 2C.46,5C.3 2C.46,5C.3 2C.46
W2-3 (R or L)		Black on Yellow	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL, CR-ML E O	9B.16 9B.16 2C.46,5C.3 2C.46,5C.3 2C.46
W2-4		Black on Yellow	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL, CR-ML E O	9B.16 9B.16 2C.46,5C.3 2C.46,5C.3 2C.46
W2-5		Black on Yellow	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL, CR-ML E O	9B.16 9B.16 2C.46,5C.3 2C.46,5C.3 2C.46
W2-6		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E O	2C.46,5C.3 2C.46,5C.3 2C.46 2C.46

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W2-7 (R or L)		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E O	2C.46 2C.46 2C.46 2C.46
W2-8 (R or L)		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E O	2C.46 2C.46 2C.46 2C.46
W2-X1		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML O	2C.46 2C.46
W2-X12		Black on Yellow	30 x 30 36 x 36	CR-SL, CR-ML O	2C.46 2C.46
W3-1		Black on Yellow	18 x 18 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M, LV CR-SL, CR-ML CR-SL, CR-ML E, F	9B.19 2C.36,5C.4,6F.16, 8B.6,9B.19 5C.4,6F.50,8B.6 2C.36,6F.50,8B.6
W3-2		Black on Yellow	18 x 18 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M, LV CR-SL, CR-ML CR-SL, CR-ML E, F	9B.19 2C.36,5C.4,6F.16, 8B.6,9B.19 5C.4,6F.50,8B.6 2C.36,6F.50,8B.6
W3-3		Black on Yellow	18 x 18 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M, CR-SL, CR-ML CR-SL, CR-ML E, F	9B.19 2C.36, 6F.50,9B.19 6F.50 2C.36,6F.50
W3-4		Black on Yellow	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F	2C.36,6F.50.2 2C.36,5C.4, 6F.50.2,6I.1 2C.36,5C.4, 6F.50.2,6I.1
W3-5		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F, O	6F.50 2C.38,5G.4,6F.50 2C.36,5G.4,6F.50

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W3-5a		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	2C.38,6F.50 2C.38,6F.50 2C.38,6F.50
W3-6		Black on Yellow	36 x 36 48 x 48 60 x 60	CR-SL, CR-ML E O	2C.39 2C.39 2C.39
W3-7		Black on Yellow	36 x 36	CR-SL, CR-ML	2C.37
W3-8		Black on Yellow	36 x 36	CR-SL, CR-ML	2C.37
W3-X4		Black on Yellow	66 x 42	CR-SL, CR-ML, M, E, O	2C.36
W3-X5		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.30 6F.30 6F.30
W4-1 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	2C.40 2C.40,6F.50 2C.40,6F.50
W4-1a (R or L)		Black on Orange	36 x 36 48 x 48	CR-SL, CR-ML, M E, F	6F.23.1 6F.23.1
W4-2 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	2C.42,6F.24 2C.42,6F.24 2C.42,6F.24
W4-3 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	2C.41,6F.50 2C.41,6F.50 2C.41,6F.50

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W4-4P		Black on Yellow	24 x 12 36 x 18 48 x 24	CR-SL, CR-ML E O	2C.59 2C.59 2C.59
W4-4aP		Black on Yellow	24 x 12 36 x 18 48 x 24	CR-SL, CR-ML E O	2C.59 2C.59 2C.59
W4-4bP		Black on Yellow	24 x 12 36 x 18 48 x 24	CR-SL, CR-ML E O	2C.59 2C.59 2C.59
W4-5		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, M E	2C.40,6F.50 2C.40,6F.50
W4-5P		Black on Yellow	18 x 24 24 x 30	CR-SL, CR-ML E	2C.40,6F.50 2C.40,6F.50
W4-6		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E	6F.16 2C.41,6F.50 2C.41,6F.50
W5-1		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	2C.19,6F.50 2C.19,6F.50 2C.19,6F.50
W5-2		Black on Yellow	18 x 18 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M, LV CR-SL, CR-ML E, F	9B.19 2C.20,5C.5, 6F.16,9B.19 2C.20,5C.5, 6F.50 2C.20,6F.50
W5-3		Black on Yellow	30 x 30 36 x 36 48 x 48	M, LV CR-SL, CR-ML E, F	2C.21,5C.6, 6F.50 2C.21,5C.6, 6F.16 2C.21,6F.16
W5-4		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.26 6F.26 6F.26
W5-4a		Black on Yellow	18 x 18	B-Path	9B.19

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W5-X1		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML E, F	2C.31
W6-1		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.50 2C.22,6F.50 2C.22,6F.50
W6-2		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.50 2C.23,6F.50 2C.23,6F.50
W6-3		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.32 2C.44,6F.32 2C.44,6F.32
W6-4		Black on Orange	12 x 18	CR-SL, CR-ML, E, F	6F.76
W7-1		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, F O	2C.16 2C.16,5C.7,6F.50 2C.16,5C.6,6F.50 2C.16,6F.50
W7-1a		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML, E, F O	2C.16 2C.16 2C.16 2C.16
W7-2P		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.57
W7-2bP		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.57
W7-3P		Black on Yellow	24 x 18 30 x 24	LV, CR-SL, CR-ML O	2C.57,5C.7 5C.7
W7-3aP		Black on Yellow	24 x 18 30 x 24 36 x 30	LV, CR-SL, CR-ML O E, F	2C.55,2C.57,5C.9, 6F.50.1,6F.53 2C.55,5C.9, 6F.50.1,6F.53 6F.50.1,6F.53
W7-3bP		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.57

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 CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W7-4		Black on Yellow	78 x 48	CR-SL-CR-ML, E, F	2C.17
W7-4b		Black on Yellow	78 x 60	CR-SL, CR-ML, E, F	2C.17
W7-4c		Black on Yellow	78 x 60	CR-SL, CR-ML, E, F	2C.17
W7-4dP		Black on Yellow	24 x 12	CR-SL, CR-ML, E, F	2C.17
W7-4eP		Black on Yellow	24 x 12	CR-SL, CR-ML, E, F	2C.17
W7-4fP		Black on Yellow	24 x 12	CR-SL, CR-ML, E, F	2C.17
W7-5		Black on Yellow	18 x 18 30 x 30	B-Path B/Rt	9B.19 9B.19
W7-6		Black on Yellow	30 x 30 36 x 36 48 x 48	CR-SL CR-ML, E O	2C.18 2C.18 2C.18
W8-1		Black on Yellow	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M CR-SL CR-ML, E F, O	9B.17,9B.19 2C.28,9B.17, 9B.19 2C.28,6F.50.1 2C.28,6F.50.1 2C.28,6F.50.1
W8-1a		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML, E F, O	2C.28 2C.28,6F.50.1 2C.28,6F.50.1 2C.28,6F.50.1
W8-1b		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML, E F, O	2C.28 2C.28 2C.28 2C.28

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W8-2		Black on Yellow	18 x 18	B-Path	9B.17,9B.19
			24 x 24	B/Rt, M	2C.28,9B.17, 9B.19
			30 x 30	CR-SL	2C.28,6F.50.1
			36 x 36	CR-ML, E	2C.28,6F.50.1
W8-3		Black on Yellow	18 x 18	B-Path	9B.17
			30 x 30	B/Rt, M, LV	2C.30,9B.17
			36 x 36	CR-SL, CR-ML	2C.30,5C.8,6F.50
			48 x 48	E	2C.30,5C.8,6F.50
W8-4		Black on Yellow	24 x 24	M	2C.31
			30 x 30	M	6F.44
			36 x 36	CR-SL, CR-ML	2C.31,6F.44
			48 x 48	E, F, O	2C.31,6F.44
W8-5		Black on Yellow	24 x 24	M	2C.32
			30 x 30	CR-SL	2C.32,6F.50
			36 x 36	CR-ML, E	2C.32,6F.50
			48 x 48	F, O	2C.32,6F.50
W8-5P		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.32
			30 x 24	E	2C.32
			36 x 30	F, O	2C.32
W8-5aP		Black on Yellow	24 x 12	CR-SL, CR-ML	2C.32
			30 x 18	E, F	2C.32
					2C.32
W8-5bP		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.32
			30 x 24	E	2C.32
			36 x 30	F, O	2C.32
W8-5cP		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.32
			30 x 24	E	2C.32
			36 x 30	F, O	2C.32
W8-6		Black on Yellow	24 x 24	M	2C.49
			30 x 30	LV, M	5C.9,6F.36
			36 x 36	CR-SL, CR-ML, E	2C.49,5C.9,6F.36
			48 x 48	F, O	2C.49,6F.36
W8-7		Black on Yellow	24 x 24	M	2C.32
			30 x 30	LV, M	5G.5,6F.50
			36 x 36	CR-SL, CR-ML, E	2C.32,5G.5,6F.50
			48 x 48	O	2C.32,6F.50
W8-8		Black on Yellow	24 x 24	M	2C.32
			30 x 30	LV, M	5G.5,6F.50.1
			36 x 36	CR-SL, CR-ML, E	2C.32,5G.5, 6F.50.1
			48 x 48	F, O	2C.32,6F.50.1

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
 CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W8-9		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M M CR-SL, CR-ML, E F, O	2C.31 6F.44.2 2C.31,6F.44.2 2C.31,6F.44.2
W8-9a		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.44.1 6F.44.1 6F.44.1
W8-10		Black on Yellow	18 x 18 30 x 30	B-Path B/Rt	9B.17 9B.17
W8-10P		Black on Yellow	12 x 9	B-Path, B/Rt	9B.17
W8-11		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.45 2C.32, 6F.45 2C.32,6F.45
W8-12		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E F	2C.34 2C.34
W8-12a		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.47 6F.47 6F.47
W8-13		Black on Yellow	24 x 24 36 x 36 48 x 48	M CR-SL, CR-ML, E F, O	2C.32 2C.32 2C.32
W8-14		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL, M CR-ML, E F, O	2C.32 2C.32,6F.47 2C.32,6F.47 2C.32,6F.47
W8-15		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL, M CR-ML, E F, O	2C.33 2C.33,6F.50 2C.33,6F.50 2C.33,6F.50
W8-15P		Black on Yellow	24 x 18 30 x 24 36 x 30	CR-SL, CR-ML E F, O	2C.33 2C.33,6F.54 2C.33, 6F.54

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W8-16		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML, E F, O	2C.33 2C.33 2C.33 2C.33
W8-17		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML, E F, O	2C.31 2C.31 2C.31 2C.31
W8-17P		Black on Yellow	24 x 18 30 x 24 36 x 30	CR-SL, CR-ML E F, O	2C.31 2C.31
W8-18		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-SL, CR-ML, E F, O	2C.35 5G.5, 6F.50 2C.35, 5G.5 6F.50 2C.35, 6F.50
W8-19		Black on Yellow	12 x 72	CR-SL, CR-ML	2C.35
W8-21		Black on Yellow	24 x 24 36 x 36 48 x 48	M CR-SL, CR-ML, E F, O	2C.35 2C.35 2C.35
W8-22		Black on Yellow	24 x 24 36 x 36 48 x 48	M CR-SL, CR-ML, E F, O	2C.35 2C.35 2C.35
W8-23		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M M CR-SL, CR-ML, E F, O	2C.31 6F.44 2C.31, 6F.44 2C.31, 6F.44
W8-24		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.46 6F.46 6F.46
W8-25		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML, E F, O	2C.31 2C.31, 6F.50 2C.31, 6F.50 2C.31, 6F.50

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W9-1 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML, E F, O	2C.42,6F.50 2C.42,6F.50 2C.42,6F.50
W9-2 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML, E F, O	2C.42,6F.50 2C.42,6F.50 2C.42,6F.50
W9-6		Black on Yellow	96 x 66	CR-SL, CR-ML, E, F	2F.6 2F.6
W9-6P		Black on Yellow	288 x 36	CR-SL, CR-ML, E, F	2F.7 2F.7
W9-6a		Black on Yellow	114 x 66	CR-SL, CR-ML, E, F	2F.8 2F.8
W9-6aP		Black on Yellow	252 x 36	CR-SL, CR-ML, E, F	2F.9 2F.9
W9-7 (R or L)		Black on Yellow	132 x 72	CR-SL, CR-ML, E, F	2C.43 2C.43
W10-1		Black on Yellow	24 in. Diameter 30 in. Diameter 36 in. Diameter 48 in. Diameter	B-Path LV B/Rt, CR-SL, CR-ML E, O	9B.19, 5F.3 5F.3,6F.16,8B.6, 9B.19 8B.6
W10-1aP		Black on Yellow	24 x 12	CR-SL, CR-ML	8B.7
W10-2 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	LV CR-SL, CR-ML E, O	5F.3 5F.3,8B.6 8B.6
W10-3 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	LV CR-SL, CR-ML E, O	5F.3 5F.3,8B.6 8B.6
W10-4 (R or L)		Black on Yellow	30 x 30 36 x 36 48 x 48	LV, CR-SL CR-SL, CR-ML, O E, O	5F.3 5F.3,8B.6 8B.6

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W10-5		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML E, O	8B.23 8B.23
W10-5P		Black on Yellow	30 x 24	CR-SL, CR-ML	8B.23
W10-7		Black and white on Yellow	24 x 24	CR-SL, CR-ML	8B.19
W10-8		Black on Yellow	30 x 30 36 x 36 48 x 48	LV CR-SL, CR-ML E, O	5F.6 5F.6,8B.20 8B.20
W10-9		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML E, O	8B.21 8B.21
W10-9P		Black on Yellow	18 x 12 30 x 24	B-Path B/Rt, CR-SL, CR-ML	9B.19 8B.21,9B.19
W10-11		Black on Yellow	30 x 30 36 x 36 48 x 48	LV CR-SL, CR-ML E, O	5F.6 5F.36,8B.24 8B.24
W10-11a		Black on Yellow	30 x 36	CR-SL, CR-ML	8B.24
W10-11b		Black on Yellow	30 x 36	CR-SL, CR-ML	8B.24
W10-12		Black on Yellow	18 x 18 30 x 30 36 x 36 48 x 48	B-Path LV, B/Rt, CR-SL, CR-ML E, O	9B.19 5F.6 5F.36,8B.25 9B.19 8B.25
W10-13P		Black on Yellow	30 x 24	CR-SL, CR-ML	8B.22
W10-14P		Black on Yellow	30 x 24	CR-SL, CR-ML	8B.23

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W10-14aP		Black on Yellow	30 x 24	CR-SL, CR-ML	8B.23
W10-15P		Black on Yellow	30 x 24	CR-SL, CR-ML	8B.23
W10-X2		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E, O	8B.6.1 8B.6.1
W10-X3		Black on Yellow	36 x 36 48 x 48	CR-SL, CR-ML, E, O	8B.6.1 8B.6.1
W11-1		Black on Yellow or Fluorescent Yellow-Green	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL CR-ML, E, O O	9B.18 2C.49,9B.18 2C.49,5C.9 2C.49,5C.9 2C.49
W11-2		Black on Yellow or Fluorescent Yellow-Green	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M LV, CR-SL CR-ML, E, O O	9B.19 2C.50,9B.19 2C.50,5C.9 2C.50,5C.9 2C.50
W11-3		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-4		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-5		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9 2C.49,5C.9 2C.49
W11-5a		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9 2C.49,5C.9 2C.49
W11-6		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9 2C.49,5C.9 2C.49

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W11-7		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-8		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9 2C.49,5C.9 2C.49
W11-9		Black on Yellow or Fluorescent Yellow-Green	30 x 30 36 x 36 48 x 48	LV, CR-SL CR-ML, E, O O	2C.50,5C.9 2C.50,5C.9 2C.50
W11-10		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9,6F.36 2C.49,5C.9,6F.36 2C.49,6F.36
W11-11		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9 2C.49,5C.9 2C.49
W11-12P		Black on Yellow	36 x 30	CR-SL, CR-ML, E	2C.49 2C.49
W11-14		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.49 2C.49,5C.9 2C.49,5C.9 2C.49
W11-15		Black on Yellow or Fluorescent Yellow-Green	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path M B/Rt, LV, CR-SL CR-ML, E, O O	9B.18 2C.49 2C.49,5C.9,9B.18 2C.49,5C.9 2C.49
W11-15a		Black on Yellow or Fluorescent Yellow-Green	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path M B/Rt, LV, CR-SL CR-ML, E, O O	9B.18 2C.49 2C.49,5C.9,9B.18 2C.49,5C.9 2C.49
W11-15P		Black on Yellow or Fluorescent Yellow-Green	18 x 12 24 x 18 30 x 24 36 x 30	B-Path B/Rt, CR-SL CR-ML, E O	9B.18 2C.49,5C.9,9B.18 2C.49,5C.9 2C.49

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W11-16		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-17		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-18		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-19		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-20		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-21		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-22		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E, O O	2C.50 2C.50,5C.9 2C.50,5C.9 2C.50
W11-X3		Black on Yellow	36 x 36 48 x 48	LV, CR-SL, CR-ML E	2C.49,5C.9 2C.49

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W12-1		Black on Yellow	30 x 30 36 x 36	CR-SL CR-ML, E	2C.25,6F.50 2C.25
W12-2		Black on Yellow	18 x 18 30 x 30 36 x 36 48 x 48	B-Path B/Rt M CR-SL, CR-ML E, F	9B.19 9B.19 2C.27,6F.50 2C.27,6F.50 2C.27,6F.50
W12-2a		Black on Yellow	78 x 24	CR-SL, CR-ML	2C.27
W12-X2		Black on Yellow	48 x 24	CR-SL, CR-ML	2C.27
W13-1P		Black on Yellow	18 x 18 24 x 24 30 x 30	LV, CR-SL, CR-ML E F, O	2C.8,5C.10,6F.52 2C.8,5C.10,6F.52 2C.8,6F.52
W13-2		Black on Yellow	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, F O	2C.14 2C.14 2C.14
W13-3		Black on Yellow	24 x 30 36 x 48 48 x 60	CR-SL, CR-ML E, F O	2C.14 2C.14 2C.14
W13-4P		Black on Orange	36 x 36	CR-SL, CR-ML E, F	6F.25
W13-6		Black on Yellow	24 x 42 36 x 60 48 x 84	CR-SL, CR-ML E, F O	2C.15 2C.15 2C.15
W13-7		Black on Yellow	24 x 42 36 x 60 48 x 84	CR-SL, CR-ML E, F O	2C.15 2C.15 2C.15
W14-1		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E O	2C.26 2C.26,5C.11 2C.26,5C.11 2C.26

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W14-1a (R or L)		Black on Yellow	24 x 6 36 x 8	M LV, CR-SL, CR-ML	5C.11 2C.26,5C.11
W14-2		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M LV, CR-SL CR-ML, E O	2C.26 2C.26,5C.11 2C.26,5C.11 2C.26
W14-2a (R or L)		Black on Yellow	24 x 6 36 x 8	M LV, CR-SL, CR-ML	5C.11 2C.26,5C.11
W14-3		Black on Yellow	40 x 40 x 30 48 x 48 x 36 64 x 64 x 48	M, LV CR-SL, CR-ML O	2C.45,5G.5,6F.50 2C.45,5G.5,6F.50 2C.45,6F.50
W14-X15		Black on Fluorescent Pink	36 x 36 48 x 48	CR-SL, CR-ML E, F	6I.1 6I.1
W15-1		Black on Yellow or Fluorescent Yellow-Green	18 x 18 24 x 24 30 x 30 36 x 36 48 x 48	B-Path B/Rt, M CR-SL CR-ML, E O	9B.19 2C.51,9B.19 2C.51 2C.51 2C.51
W16-1P		Black on Yellow or Fluorescent Yellow-Green	18 x 24 24 x 30	B/Rt, CR-SL, CR-ML E, O	2C.60,9B19 2C.60
W16-2P		Black on Yellow or Fluorescent Yellow-Green	18 x 12 24 x 18 30 x 24	B-Path B/Rt, LV CR-SL, CR-ML O	5C.9,9B.18 2C.55,5C.9, 6F.16,7B.8, 9B.18 2C.55,5C.9 6F.16,7B.8
W16-2aP		Black on Yellow or Fluorescent Yellow-Green	18 x 9 24 x 12 30 x 18	B-Path B/Rt, CR-SL, CR-ML O	9B.18 2C.55,7B.8, 9B.18 2C.55,7B.8
W16-3P		Black on Yellow	30 x 24	CR-SL, CR-ML	2C.55
W16-3aP		Black on Yellow	30 x 12	CR-SL, CR-ML	2C.55
W16-4P		Black on Yellow	30 x 24	CR-SL, CR-ML	2C.55

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W16-5P (R or L)		Black on Yellow or Fluorescent Yellow Green	24 x 12 30 x 18	CR-SL, CR-ML O	2C.56,7B.8, 7B.9,7B.11 7B.8,7B.9,7B.11
W16-6P (R or L)		Black on Yellow or Fluorescent Yellow Green	24 x 12 30 x 18	CR-SL, CR-ML O	2C.56,7B.8, 7B.9,7B.11 7B.8,7B.9,7B.11
W16-7P (R or L)		Black on Yellow or Fluorescent Yellow Green	24 x 12 30 x 18	LV, CR-SL, CR-ML O	2C.50,5C.9, 7B.12,9B.18 2C.50,5C.9, 7B.12
W16-8P		Black on Yellow	varies x 8	CR-SL, CR-ML	2C.58
W16-8aP		Black on Yellow	varies x 15	CR-SL, CR-ML	2C.58
W16-9P		Black on Yellow or Fluorescent Yellow-Green	24 x 12 30 x 18	B/Rt, LV, CR-SL, CR-ML E	2C.50,5C.9, 7B.11,9B.18 2C.50,5C.9, 7B.11,9B.18
W16-10P		Black on Yellow	24 x 12 36 x 18 48 x 24	CR-SL, CR-ML E O	2C.61 2C.61 2C.61
W16-10aP		Black on Yellow	24 x 18 36 x 30 48 x 36	CR-SL, CR-ML E O	2C.61 2C.61 2C.61
W16-11P		Black on Yellow	24 x 12 30 x 18	CR-SL, CR-ML E, F, O	2G.9 2G.9
W16-12P		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.46
W16-13P		Black on Yellow	24 x 18	CR-SL, CR-ML	2C.36,2C.49,50
W16-15P		Black on Yellow	24 x 12	CR-SL, CR-ML	2C.62
W16-16P		Black on Yellow	252 x 36	E, F	2F.10
W16-17P		Black on Yellow	24 x 12	CR-SL, CR-ML	2C.46
W16-18P		Black on Yellow	24 x 12	CR-SL, CR-ML	2A.15

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W17-1		Black on Yellow	24 x 24 30 x 30 36 x 36 48 x 48	M CR-SL CR-ML O	2C.29 2C.29 2C.29 2C.29
W19-1		Black on Yellow	144 x 48	F	2C.24
W19-2		Black on Yellow	144 x 48	E	2C.24
W19-3		Black on Yellow	48 x 48	F	2C.24
W19-4		Black on Yellow	48 x 48	E	2C.24
W19-5		Black on Yellow	90 x 48	E, F	2C.24
W20-1		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.18 5G.5,6F.18 5G.5,6F.18
W20-2		Black on Orange or Fluorescent Pink	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F, O	6F.19,6I.1 6F.19,6I.1 6F.19,6I.1
W20-3		Black on Orange or Fluorescent Pink	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.20,6I.1 5G.5,6F.20,6I.1 5G.5,6F.20,6I.1
W20-3a		Black on Orange	18 x 18	B-Path	6F.20.1
W20-4		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.21 5G.5,6F.21 5G.5,6F.21
W20-7		Black on Orange or Fluorescent Pink	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.31,6I.1 5G.5,6F.31,6I.1 5G.5,6F.31,6I.1

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W20-8		Black on Orange	18 x 18	CR-SL, CR-ML	6E.3
W20-X3		Black on Orange or Fluorescent Pink	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.24.1,6I.1 6F.24.1,6I.1 6F.24.1,6I.1
W20-X6		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.50 6F.50 6F.50
W20-X11		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.50 6F.50 6F.50
W20-X13 (R or L)		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.22 6F.22 6F.22
W20-X17		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.50 6F.50 6F.50
W21-1		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.33 5G.5,6F.33 5G.5,6F.33
W21-2		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.34 5G.5,6F.34 5G.5,6F.34
W21-3		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	5G.5,6F.35 6F.35 5G.5,6F.35
W21-4		Black on Orange	36 x 18	CR-SL, CR-ML	6G.6
W21-5		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.37 5G.5,6F.37 5G.5,6F.37
W21-5a (R or L)		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F, O	6F.37 6F.37 6F.37

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
 CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W21-6		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.38 5G.5,6F.38 5G.5,6F.38
W21-6a		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F, O	6F.38 6F.38 6F.38
W21-7		Black on Orange	30 x 30 36 x 36 48 x 48	M LV, CR-SL, CR-ML E, F, O	6F.39 5G.5,6F.39 5G.5,6F.39
W21-8		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F, O	6G.6 6G.6 6G.6
W21-X1		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.44.3 6F.44.3 6F.44.3
W21-X5 (R or L)		Black on Orange or Fluorescent Pink	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.22,6I.1 6F.22,6I.1 6F.22,6I.1
W21-X5c		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.23 6F.23 6F.23
W21-X6		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.38.1 6F.38.1 6F.38.1
W21-X8		Black on Yellow	36 x 30	LV	5C.11.1
W21-X9		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.44.2 6F.44.2 6F.44.2
W22-1		Black on Orange	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML E, F	6F.41 6F.41 6F.41

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, LV--Low Volume
CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
W22-2		Black on Orange	42 x 36	CR-SL, CR-ML, E, F	6F.42
W22-3		Black on Orange	36 x 30 42 x 36	M CR-SL, CR-ML, E, F	6F.43 6F.43 6F.43
W23-1		Black on Orange	48 x 24	CR-SL, CR-ML, E, F	6F.27
W23-2		Black on Yellow	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML, E, F	6F.30 2C.52, 6F.30 6F.30
W24-1cP		Black on Orange	24 x 24 30 x 30	CR-SL, CR-ML, E, F	6F.49 6F.49
W25-1		Black on Yellow	24 x 30	CR-SL, CR-ML	2C.48
W25-2		Black on Yellow	24 x 30	CR-SL, CR-ML	2C.48

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
M1-1 (1 or 2 digits)		White on Red and Blue	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11,2E.27
M1-1 (3 digit)		White on Red and Blue	30 x 24 45 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11,2E.27
M1-2 (1 or 2 digits)		White on Green	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11,2E.27
M1-3 (1 or 2 digits)		White on Green	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11,2E.27
M1-4 (1, 2, or 3 digits)		White on Black	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11,2E.27
M1-4a (1, 2, or 3 digits)		Black on White	22 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11,2E.27
M1-5a Independent (1, 2, or 3 digits)		White on Gold and Blue	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11
M1-5b Overlay (1 or 2 digits)		White on Gold and Blue	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11
M1-5b Overlay (3 digit)		White on Gold and Blue	30 x 24 45 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11
M1-6 (1, 2, or 3 digits)		White and Yellow on Blue	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11 2D.11
M1-7		White on Brown	18 x 18 24 x 24 36 x 36	M CR-SL, CR-ML O	2D.11 2D.11 2D.11
M1-8		Green on White	12 x 18 18 x 24	B-Path B/Rt	9B.21 9B.21

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
M1-8a		Green on White	12 x 18 18 x 24	B-Path B/Rt	9B.21 9B.21
M1-9		Black on White	12 x 18 18 x 24	B-Path B/Rt	9B.21 9B.21
M1-10		White on Blue	36 x 36	F	2E.28
M1-10a		White on Blue	36 x 36	F	2E.28
M1-X1		Green on White	24 x 24 36 x 36	CR-SL, CR-ML E, F	2H.7
M1-X1P		Green on White	24 x 12 36 x 18	CR-SL, CR-ML E, F	2H.7
M1-X3		Black on White	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11
M1-X4 Independent		Black on White	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11
M1-X4a Overlay		Black on White	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2D.11
M1-X5R		White on Brown	24 x 24	CR-SL, CR-ML, E	2M.10
M1-X5X		White on Brown	24 x 24	CR-SL, CR-ML, E	2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
M2-1		Black on White	12 x 6 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.13 2D.13
M2-1a		White on Blue	12 x 6 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.13 2D.13
M2-2		White on Green	60 x 48	CR-SL, CR-ML	2D.14
M3-1		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-1a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-2		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-2a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-3		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-3a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-4		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M3-4a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.15 2D.15
M4-1		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.17 2D.17
M4-1a		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.17 2D.17
M4-2		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.18 2D.18

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
M4-3		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.19 2D.10
M4-4		Black on White	24 x 12 36 x 18	M, CR-SL, CR-ML E, F, O	2B.61,2D.20 2B.61,2D.20
M4-5		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.21 2D.21
M4-5a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.21 2D.21
M4-6		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.22 2D.22
M4-6a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.22 2D.22
M4-7		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.24 2D.24
M4-7a		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML E, F, O	9B.22 2D.24 2D.24
M4-8		Black on Orange	12 x 6 24 x 12 30 x 15	B-Path, B/Rt CR-SL, CR-ML E, F, O	9B.22 6F.59
M4-8a		Black on Orange	24 x 18	CR-SL, CR-ML, E, F	6F.59
M4-8b		Black on Orange	24 x 12	CR-SL, CR-ML, E, F, O	6F.59
M4-9 (R or L)		Black on Orange	30 x 24 48 x 36	CR-SL, CR-ML E, F, O	6F.59
M4-9a (R or L)		Black on Orange	30 x 24	CR-SL, CR-ML	6F.59
M4-9b (R or L)		Black on Orange	30 x 24	CR-SL, CR-ML	6F.59

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
M4-9c (R or L)		Black on Orange	30 x 24	CR-SL, CR-ML	6F.59
M4-10 (R or L)		Black on Orange	48 x 18	CR-SL, CR-ML	6F.59
M4-14		Black on White	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML O	9B.22 2D.23 2D.23
M4-14a		White on Blue	12 x 6 24 x 12 36 x 18	B-Path, B/Rt M, CR-SL, CR-ML O	9B.22 2D.23 2D.23
M4-15		Black on Yellow	24 x 12 36 x 18	M, CR-SL, CR-ML E, F, O	2F.11 2F.11
M4-16		Black on White	24 x 12 36 x 18	M, CR-SL, CR-ML E, F, O	2F.12 2F.12
M4-17		Black on White	48 x 48	E, F	2F.13 2F.13
M4-18		Black on White	48 x 48	E, F	2F.13 2F.13
M4-20		Black, Green and White on Purple	24 x 24 36 x 36	M, CR-SL, CR-ML E, F, O	2F.12 2F.12
M5-1 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.26 2D.26
M5-1a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.26 2D.26
M5-2 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.26 2D.26
M5-2a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.26 2D.26
M5-3 (R or L)		Black on White	21 x 15 30 x 24	M, CR-SL, CR-ML E, F	2D.26 2D.26
M5-3a (R or L)		White on Blue	21 x 15 30 x 24	M, CR-SL, CR-ML E, F	2D.26 2D.26

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
M5-4		Black on White	24 x 18 36 x 24	M, CR-SL, CR-ML E, F	2D.27 2D.27
M5-5		Black on White	24 x 18 36 x 24	M, CR-SL, CR-ML E, F	2D.27 2D.27
M5-6		Black on White	24 x 18 36 x 24	M, CR-SL, CR-ML E, F	2D.27 2D.27
M6-1 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-1a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-2 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-2a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-3		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-3a		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-4		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-4a		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-5 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-5a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-6 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-6a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

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M6-7 (R or L)		Black on White	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
M6-7a (R or L)		White on Blue	12 x 9 21 x 15 30 x 24	B-Path, B/Rt M, CR-SL, CR-ML E, F	9B.22 2D.28 2D.28
D1-1		White on Green	varies x 6 varies x 24 varies x 30	B-Path B/Rt, M, CR-SL, CR-ML E, F	9B.20 2D.37,9B.20 2D.37 2D.37
D1-1a		White on Green	varies x 6 varies x 24 varies x 30	B-Path B/Rt, M, CR-SL, CR-ML E, F	9B.20 2D.37,9B.20 2D.37 2D.37
D1-1b		White on Green	varies x 6	B-Path, B/Rt	9B.20
D1-1c		White on Green	varies x 6	B-Path, B/Rt	9B.20
D1-1d		White on Green	varies x 18	M, CR-SL, CR-ML	2D.38
D1-1e		White on Green	varies x 42	CR-SL, CR-ML	2D.38
D1-2		White on Green	varies x 12 varies x 30 varies x 54	B-Path B/Rt, M, CR-SL, CR-ML E, F	9B.20 2D.37,9B.20 2D.37 2D.37
D1-2a		White on Green	varies x 12 varies x 30 varies x 54	B-Path B/Rt, M, CR-SL, CR-ML E, F	9B.20 2D.37,9B.20 2D.37 2D.37
D1-2b		White on Green	varies x 6	B-Path, B/Rt	9B.20
D1-2c		White on Green	varies x 6	B-Path, B/Rt	9B.20
D1-2d		White on Green	varies x 42	M, CR-SL, CR-ML	2D.38

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
D1-3		White on Green	varies x 18 varies x 42 varies x 72	B-Path B/Rt, M, CR-SL, CR-ML E, F	9B.20 2D.37,9B.20 2D.37 2D.37
D1-3a		White on Green	varies x 18 varies x 42 varies x 72	B-Path B/Rt, M, CR-SL, CR-ML E, F	9B.20 2D.37,9B.20 2D.37 2D.37
D1-3b		White on Green	varies x 18	B-Path, B/Rt	9B.20
D1-3c		White on Green	varies x 18	B-Path, B/Rt	9B.20
D1-3d		White on Green	varies x 42	M, CR-SL, CR-ML	2D.38
D1-X1 (R or L)		White on Green	30 x 24 42 x 36 54 x 48	M CR-SL, CR-ML E	2H.7.1
D1-X3 (R or L)		White on Green	36 x 24 54 x 36	CR-SL, CR-ML E	2H.7.1
D1-X4 (R or L)		White on Green	48 x 12 60 x 18	CR-SL, CR-ML E	2H.2
D1-X5 (R or L)		White on Green	72 x 36 96 x 48	CR-SL, CR-ML E	2H.7.1
D1-X6 (R or L)		White on Green	78 x 36 108 x 48	CR-SL, CR-ML E	2H.2.1
D2-1		White on Green	varies x 18 varies x 30	M, CR-SL, CR-ML E, F	2D.41
D2-2		White on Green	varies x 30 varies x 54	M, CR-SL, CR-ML E, F	2D.41
D2-3		White on Green	varies x 42 varies x 72	M, CR-SL, CR-ML E, F	2D.41

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D9-6		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-6P		White on Blue	18 x 9	CR-SL, CR-ML	21.2
D9-7		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-8		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-9		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-10		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-11		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-11a		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-11b		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-11bP		White on Blue	24 x 18 30 x 24	CR-SL, CR-ML E, F	21.2 21.2
D9-11c		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-12		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-13		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
D9-13aP		White on Blue	24 x 12 30 x 12	CR-SL, CR-ML E, F	21.2 21.2
D9-13bP		White on Blue	24 x 12 30 x 15	CR-SL, CR-ML E, F	21.2 21.2
D9-13cP		White on Blue	24 x 18 30 x 24	CR-SL, CR-ML E, F	21.2 21.2
D9-13dP		White on Blue	24 x 12 30 x 15	CR-SL, CR-ML E, F	21.2 21.2
D9-14		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-15		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-16		White on Blue	24 x 24 30 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-17P		White on Blue	102 x 24 156 x 30	CR-SL, CR-ML E, F	21.2 21.2
D9-18		White on Blue	96 x 60	E, F	21.3
D9-18a		White on Blue	96 x 60	E, F	21.3
D9-18b		White on Blue	108 x 84 132 x 108 132 x 114	CR-SL, CR-ML E F	21.3 21.3 21.3
D9-18c		White on Blue	72 x 60 108 x 84 132 x 108	CR-SL, CR-ML E F	21.3 21.3 21.3

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
D12-1		White on Blue	84 x 48 132 x 84	CR-SL, CR-ML E, F	21.9 21.9
D12-2a		White on Blue	60 x 30 114 x 48	CR-SL, CR-ML E, F	21.11 21.11
D12-2b		White on Blue	102 x 36	CR-SL, CR-ML	21.11
D12-3		White on Blue	84 x 48 132 x 84	CR-SL, CR-ML E, F	21.9 21.9
D12-4		White on Blue	66 x 30 96 x 48	CR-SL, CR-ML E, F	21.9 21.9
D12-5		White on Blue	42 x 60 66 x 78	CR-SL, CR-ML E, F	21.10 21.10
D12-5a		White on Blue	42 x 36 66 x 48	CR-SL, CR-ML E, F	21.10 21.10
D13-1 (R or L)		White on Green	78 x 42	M	2D.54
D13-2		White on Green	78 x 42	M	2D.54
D13-3		White on Green	48 x 30	M	2D.46
D13-3a (R or L)		White on Green	48 x 42	M	2D.46

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
D15-1		White on Green	varies x 96	M	2D.33
D17-1		White on Green	60 x 66	M	2D.51
D17-2		White on Green	42 x 42 60 x 54	CR-SL, CR-ML O	2D.51
D17-7		White on Green	96 x 54	M	2D.52
E1-5P		White on Green	Varies x 30	E, F	2E.21
E1-5aP		Black on Yellow	72 x 30	E, F	2E.33
E1-5bP		White on Green	Varies x 54	E, F	2E.31
E5-1		White on Green	72 x 60	E, F	2E.37
E5-1b		White on Green	72 x 60	E, F	2E.37
E5-1b		White on Green	Varies x 84	E, F	2E.37
E5-1bP		White on Green	Varies x 30	E, F	2E.37
E5-2		Black on Orange	48 x 36	CR-SL, CR-ML, E, F	6F.28
E5-2a		Black on Orange	48 x 36	CR-SL, CR-ML, E, F	6F.28
E5-3		Black on Orange	48 x 36	CR-SL, CR-ML, E, F	6F.29

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

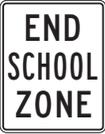
Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
I2-12		Various on Yellow	66 x 42	CR-SL, CR-ML	2H.2
I3-1		White on Green	varies x 18 varies x 24	CR-SL, CR-ML, E, F	2H.2.3 2H.2.3
I3-1		White on Green	varies x 24 varies x 36	CR-SL, CR-ML, E, F	2H.2.3 2H.2.3
I-5		White on Green	24 x 24 30 x 30	CR-SL, CR-ML, E, F	2H.2 2H.2
I-6		White on Green	24 x 24 30 x 30	CR-SL, CR-ML, E, F	2H.2 2H.2
I-7		White on Green	24 x 24 30 x 30	CR-SL, CR-ML, E, F	2H.2 2H.2
I-8		White on Green	24 x 24 30 x 30	CR-SL, CR-ML, E, F	2H.2 2H.2
I-9		White on Green	24 x 24 30 x 30	CR-SL, CR-ML, E, F	2H.2 2H.2
I-11		White on Green	30 x 48	CR-SL, CR-ML, E, F	2H.2.1 2H.2.1
I-12		White on Green	24 x 24 30 x 30	CR-SL, CR-ML, E, F	2H.2,8B.26 2H.2,8B.26
I-13		White on Green	15 x 9	CR-SL, CR-ML, E	8B.18

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

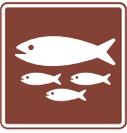
Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
S1-1		Black on Yellow or Fluorescent Yellow-Green	30 x 30	M	7B.8,7B.9, 7B.11,7B.12
			36 x 36	CR-SL, CR-ML	7B.8,7B.9 7B.11,7B.12
			48 x 48	O	7B.8,7B.9, 7B.11,7B.12
S3-1		Black on Yellow or Fluorescent Yellow-Green	30 x 30	M	7B.13
			36 x 36	CR-SL, CR-ML,	7B.13
			48 x 48	O	7B.13
S3-2a		Black on Yellow or Fluorescent Yellow-Green	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML, O	7B.14 7B.14 7B.14
S3-X1		Black on White	24 x 30	CR-SL, CR-ML	7B.13.1
S4-1P		Black on White	24 x 10 36 x 18	CR-SL, CR-ML, O	7B.15 7B.15
S4-2P		Black on White	24 x 10 36 x 18	CR-SL, CR-ML, O	7B.9,7B.15 7B.9,7B.15
S4-3P		Black on Yellow or Fluorescent Yellow-Green	24 x 8 36 x 12	CR-SL, CR-ML, O	7B.9,7B.15 7B.9,7B.15
S4-4P		Black on White	24 x 10 36 x 18	CR-SL, CR-ML, O	7B.15 7B.15
S4-5		Black on Yellow or Fluorescent Yellow-Green	30 x 30	M	7B.16
			36 x 36	CR-SL, CR-ML,	7B.16
			48 x 48	O	7B.16
S4-5a		Black on Yellow or Fluorescent Yellow-Green	30 x 30 36 x 36 48 x 48	M CR-SL, CR-ML, O	7B.16 7B.16 7B.16
S4-6P		Black on White	24 x 10 36 x 18	CR-SL, CR-ML, O	7B.15 7B.15
S4-7P		Black on Yellow or Fluorescent Yellow-Green	24 x 10 30 x 18	CR-SL, CR-ML, O	7B.9 7B.9

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
S5-1		Black on Yellow or Fluorescent Yellow-Green for top and Black on White for bottom	24 x 48 36 x 72	CR-SL, CR-ML, O	7B.15 7B.15
S5-2		Black on White	24 x 30 36 x 48	CR-SL, CR-ML, O	7B.9 7B.9
S5-3		Black on White	24 x 30 36 x 48	CR-SL, CR-ML, O	7B.15 7B.15

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-002		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-005		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-006		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-007		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-008		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-009		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-010		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-011		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-012		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-013		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-015		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-017		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-020		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-021		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-022		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-023		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-024		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-026		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-027		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-030		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-031		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-034		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-035		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-036		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-037		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-039		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-040		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-041		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-042		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-043		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-044		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-045		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-046		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-047		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-048		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-049		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-050		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-052		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-053		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-054		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-055		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-056		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-057		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-058		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-059		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-060		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-061		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-062		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-063		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-064		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-067		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-068		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-070		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-071		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-073		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-076		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-077		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-078		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-079		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-080		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-081		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-082		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-083		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-084		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-085		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-086		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-087		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-088		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-089		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-090		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

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Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-091		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-092		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-093		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-094		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-095		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-096		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-097		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-098		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-099		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-101		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-102		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-103		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-104		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-105		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-106		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-107		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-108		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-109		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-111		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-112		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

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Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-113		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-114		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-115		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-116		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-117		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-118		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-119		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-120		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-121		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-122		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-123		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-124		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-125		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-126		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-127		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-128		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-129		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-137		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-138		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-140		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

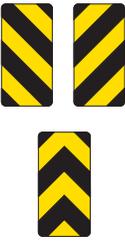
MIN Rev. 2

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-141		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-142		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-143		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-144		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-145		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-146		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-147		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-148		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-149		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-150		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

MN Rev. 2

Sign Number	Sign Picture	Sign Colors	Sign Size (Inches)	Use	Manual Section(s)
RS-200		White on Green	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-X01		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-X02		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-X03		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
RS-X04		White on Brown	24 x 24 30 x 30	CR-SL, CR-ML E, F	2M.1 thru 2M.10
X4-2		Yellow on Yellow or Black	18 x 18	CR-SL, CR-ML, E	2C.63
X4-4		Black on Yellow	6 x 18 12 x 36 18 x 36	B-Path CR-SL, CR-ML E, F	9B.26 2C.63 2C.63
X4-11		Red on Red or Black	18 x 18	CR-SL, CR-ML, E	2C.63
X4-13		White or Yellow on Black	6 to 8 wide 9 to 12 tall	CR-SL, CR-ML, E	3F.4.1

MIN Rev. 2

Guide to Sign Sizes: B-Path--Shared Use Bike Path, B/Rt--Bike Route on Roadway, M--Minimum, CR-SL--Conventional Road Single Lane, CR-ML--Conventional Road Multi-Lane, E--Expressway, F--Freeway, O--Oversize

Appendix A2 METRIC CONVERSION

Throughout this Manual all dimensions and distances are provided in English units. Tables A2-1 through A2-4 show the equivalent Metric (International System of Units) value for each of the English unit numerical values that are used in this Manual.

Table A2-1. Conversion of Inches to Millimeters

Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
0.25	6	3.5	87	12	300	36	900
0.4	10	4	100	15	375	42	1050
0.5	13	4.5	113	16	400	48	1200
0.75	19	5	125	18	450	54	1350
1	25	6	150	21	525	60	1500
1.25	31	8	200	24	600	72	1800
2	50	9	225	27	675	84	2100
2.25	56	10	250	28	700	120	3000
2.5	62	10.4	260	30	750		
3	75	10.5	265	32	800		

Note: 1 inch = 25.4 millimeters; 1 millimeter = 0.039 inches

Table A2-2. Conversion of Feet to Meters

Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
1	0.3	11	3.4	40	12	200	60
2	0.6	12	3.7	50	15	250	75
2.5	0.75	12.75	3.9	53	16	300	90
3	0.9	14	4.3	60	18	330-	100
3.25	1	15	4.6	70	21	400	120
3.5	1.1	16	4.9	72	22	500	150
4	1.1	17	5.2	75	23	530	160
4.5	1.4	18	5.	80	24	600	180
4.75	1.45	19	5.8	90	27	650	200
5	1.5	20	6.1	95	29	700	210
5.67	1.7	22	6.7	100	30	750	230
6	1.8	23.5	7.2	110	34	800	245
7	2.1	26	7.6	120	37	1,000	300
8	2.4	25.6	7.8	125	38	1,500	450
9	2.7	30	9	130	40	2,000	600
9.25	2.8	32	9.8	140	43	2,300	700
9.5	2.9	33	10	150	45	3,000	900
10	3	36	11	180	55		

Note: 1 foot = 0.3048 meters; 1 meter = 3.28 feet

Table A2-3. Conversion of Miles to Kilometers

Miles	Kilometers	Miles	Kilometers	Miles	Kilometers	Miles	Kilometers
0.25	0.4	1	1.6	5	8	70	110
0.5	0.8	2	3.2	10	16		
0.6	1	3	4.8	15	25		

Note: 1 mile = 1.609 kilometers; 1 kilometer = 0.621 miles

Table A2-4. Conversion of Miles per Hour to Kilometers/Hour

mph	km/h	mph	km/h	mph	km/h	mph	km/h
3	5	20	30	40	60	60	100
7	11	25	40	45	70	65	105
10	16	30	50	50	80	70	110
15	20	35	60	55	90	80	130

Note: 1 mile per hour = 1.609 kilometers/hour; 1 kilometer/hour = 0.621 miles per hour

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D2 Series. see Distance signs

D3 signs. see Street Name signs

D3-1 sign. see Street Name signs

D3-2 sign. see Advance Street Name signs

D4-1 sign. see Parking Area signs

D4-2 sign. see Park & Ride signs

D4-3 sign. see Bicycle Parking Area signs

D5 Series. see Rest Area signs

D6 Series. see Scenic Area signs

D6-4, 4a signs. see National Scenic Byways signs

D8 Series. see Weigh Station signs

D9 Series. see General Service signs

D9-6 sign. see International Symbol of Accessibility for the Disabled signs

D9-12 sign. see Recreational Vehicle Sanitary Station signs

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