California
Manual on Uniform Traffic Control Devices
for Streets and Highways

(FHWA's MUTCD 2003 Edition,
as amended for use in California)

Traffic Controls for School Areas

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

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California Manual on Uniform Traffic Control Devices

for Streets and Highways

(FHWA's MUTCD 2003 Edition, as amended for use in California)

Issued by:

DIVISION OF TRAFFIC OPERATIONS

September 26, 2006

ARNOLD SCHWARZENEGGER
Governor

SUNNE WRIGHT McPEAK
Secretary, Business, Transportation and Housing Agency

WILL KEMPTON
Director, Department of Transportation

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The Manual on Uniform Traffic Control Devices (MUTCD) is approved by the Federal Highway Administrator as the National Standard in accordance with Title 23 U.S. Code, Sections 109(d), 114(a), 217, 315, and 402(a), 23 CFR 655, and 49 CFR 1.48(b)(8), 1.48(b)(33), and 1.48(c)(2).

The California Manual on Uniform Traffic Control Devices (California MUTCD) is published by the State of California, Department of Transportation and is issued to adopt uniform standards and specifications for all official traffic control devices, in accordance with Section 21400 of the California Vehicle Code.

This manual is current as of the date of publication on the cover. However, it may be necessary from time to time to modify, change or adopt new standards and specifications for traffic control devices and/or issue errata or editorial changes to the manual. To ensure that the traffic control device practitioner is accessing the most current information regarding traffic control device topics for California, the practitioner is advised to always reference the California MUTCD web site.

The California MUTCD, California Sign Specifications and other publications and related current information is available on the Internet at the following web link:
http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/

Addresses for Publications Referenced in the ~~MUTCD~~ California MUTCD

American Association of State Highway and Transportation Officials (AASHTO)
444 North Capitol Street, NW, Suite 249
Washington, DC 20001
www.transportation.org

American Railway Engineering and Maintenance-of-Way Association (AREMA)
8201 Corporate Drive, Suite 1125
Landover, MD 20785-2230
www.arema.org

California Building Standards Code
International Conference of Building Officials
5360 South Workman Mill Road
Whittier, CA 90601
www.icbo.org

California Code Publications &
California Law
http://www.leginfo.ca.gov/calaw.html

California Department of Transportation Publications
Publications Distribution Unit
1900 Royal Oaks Drive
Sacramento, CA 95815-3800
http://caltrans-opac.ca.gov/publicat.htm

California Vehicle Code
Department of Motor Vehicles
Sacramento, California
http://www.dmv.ca.gov/pubs/pubs.htm

Federal Highway Administration Report Center
Facsimile number: 301.577.1421
report.center@fhwa.dot.gov

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

Institute of Makers of Explosives
1120 19th Street, NW, Suite 310
Washington, DC 20036-3605
www.ime.org

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

International Organization for Standards
c/o Mr. Gerard Kuso
Austrian Standards Institute
Heinestrabe 38
Postfach 130
A-1021
Wien, Austria
www.iso.ch

ISEA - The Safety Equipment Association
1901 North Moore Street, Suite 808
Arlington, VA 22209
www.safetyequipment.org

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

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

Transportation Research Board (TRB)
The National Academies
2101 Constitution Avenue, NW
Washington, DC 20418
www.nas.edu/trb

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

Acknowledgments
The Federal Highway Administration gratefully acknowledges the valuable assistance that it received from the National Committee on Uniform Traffic Control Devices and its over 200 voluntary members in the development of this Manual.

The Department of Transportation gratefully acknowledges the Federal Highway Administration's California Division, the California Traffic Control Devices Committee (CTCDC) members, staff from various cities and counties in California and the Department's headquarters and districts staff for providing guidance and direction in the development of this Manual. Information regarding the California portion (blue text and/or blue border line) of this Manual can be obtained by writing to:

State of California
Department of Transportation,
Chief, Division of Traffic Operations, MS-36
1120 N Street, Sacramento, CA 95814.

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DEPARTMENT OF TRANSPORTATION
DIVISION OF TRAFFIC OPERATIONS
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94273-0001
PHONE (916) 654-2352
FAX (916) 653-6080
TTY (916) 653-4086

Flex your power!
Be energy efficient!

September 26, 2006

Mr. Gene Fong, Division Administrator
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Attn: Matthew Schmitz, Safety/Traffic Engineer

Dear Mr. Fong:

Pursuant to the provisions of the California Vehicle Code Section 21400 and the recommendation of the California Traffic Control Devices Committee (CTCDC), the California Department of Transportation (Department) hereby adopts the California Manual on Uniform Traffic Control Devices (FHWA's MUTCD 2003 Revision 1, as amended for use in California), also called the California MUTCD, to prescribe uniform standards and specifications for all official traffic control devices in California.

This combined document, the California MUTCD incorporates FHWA's MUTCD 2003 Revision 1 dated November 20, 2004, and the MUTCD 2003 California Supplement dated May 20, 2004. It also incorporates all policies on traffic control devices issued by the California Department of Transportation that have been issued since May 20, 2004, and other editorial, errata and format changes that were necessary to update the previous documents.

The California MUTCD supersedes and replaces the previously adopted (on May 20, 2004) MUTCD 2003 Edition and the MUTCD 2003 California Supplement as well as Chapters 4, 5, 6, 8, 10, 11, 12, and the traffic signals portion of chapter 9 of the 1996 Caltrans Traffic Manual, as amended, and all previous editions thereof. It does not supersede the Department's Standard Plans, Standard Specifications or the Special Provisions publications.

The California MUTCD's draft versions were made available to the Department's district staff, local agencies and the general public for review and comment through two open public comment periods, which closed on November 14, 2005, and May 30, 2006. These public comment periods were followed by CTCDC workshops on November 16, 2005 and June 1, 2006, respectively. Resolutions and decisions reached, in these and other regular CTCDC meetings, since May 20, 2004 are reflected in the California MUTCD.

The California MUTCD uses the same format as the FHWA's MUTCD. It incorporates FHWA's MUTCD 2003 Edition Revision 1 in its entirety with cross-outs of all text portions that are not applicable in California. All MUTCD figures and tables that are not applicable in California are shown with blue X cross-outs.

The California text additions and enhancements are incorporated at appropriate locations and shown in blue color font with a blue margin line on the right to keep them distinct from MUTCD text.

For California topics where there is no corresponding section, figure or table in the MUTCD, the California MUTCD gives a number that begins with 101 for that section, figure or table and increases in sequence, followed with a "(CA)" to indicate that this is a California assigned section, figure or table number. The blue margin line on the right is also added to all California figures and tables to keep them distinct from the MUTCD figures and tables.

The MUTCD figures and tables that have been modified or added to, in the California MUTCD retain the same MUTCD Figure or Table number but include "(CA)" to indicate that it is the California version of the MUTCD Figure or Table.

This single document, being more comprehensive and easier to use, will lead to greater uniformity in application of traffic control devices in California, consistent with nationwide practices, by encouraging the traffic control device practitioners to use. This increased uniformity will improve transportation safety and mobility for both California residents and visitors, alike.

The Department gratefully acknowledges the FHWA's California Division, the CTCDC members, staff from various cities and counties and the Department's headquarters and districts staff for providing guidance and direction in the development of this document.

The Department hereby requests FHWA's approval of the attached California MUTCD (FHWA's MUTCD 2003 Revision 1, as amended for use in California). This document is also now posted on the Internet at the following web site:

http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/

The Department encourages State and local agencies to start using this document immediately. If you have any questions, please contact Mr. Johnny Bhullar of my staff, at (916) 654-7312 or via e-mail at johnny_bhullar@dot.ca.gov.

Sincerely,

STEVE PRICE
Interim Division Chief
Division of Traffic Operations

Attachment

Sample Page Sketches Showing Format Explanations

Manual title and exact version of FHWA's MUTCD that it incorporates

Page number

CHAPTER 2B. REGULATORY SIGNS

Section 2B.01 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 regulati1ons 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 to show the same shape and similar color by both day and night, unless specifically stated otherwise in the text discussion of a particular sign or group of signs (see Section 2A.08).

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

Standard:

Orders, ordinances and resolutions by local authorities which affect State highways shall be approved by Department of Transportation.

Support:

Signs required for enforcement are normally placed by, and at the expense of, the authority establishing the regulation.

Refer to CVC 21461 for failure to obey a regulatory sign.

Section 2B.02 Design of Regulatory Signs

Support:

Most regulatory signs are rectangular, with the longer dimension vertical. The shapes and colors of regulatory signs are listed in Tables 2A-3, and ~~2A-4~~ 2A-4(CA), 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.

Support:

Sign design details are contained in FHWA's Standard Highway Signs book and Department of Transportation's California Sign Specifications. See Section 1A.11 for information regarding these publications.

Table 2B-101(CA) shows a list of California Regulatory Signs.

Table 2B-102(CA) shows a list of MUTCD Regulatory Signs.

Section 2B.03 Size of Regulatory Signs

Standard:

The sizes for regulatory signs ~~shall~~ should be as shown in Table 2B-1.

Guidance:

The Freeway and Expressway sizes should be used for higher-speed applications to provide larger signs for increased visibility and recognition.

Option:

The Minimum size may be used on low-speed roadways where the reduced legend size would be adequate for the regulation or where physical conditions preclude the use of the other sizes.

The Oversized size may be used for those special applications where speed, volume, or other factors result in conditions where increased emphasis, improved recognition, or increased legibility would be desirable.

Signs larger than those shown in Table 2B-1 may be used (see Section 2A.12).

Unedited MUTCD text shown in "Times New Roman" black color font.

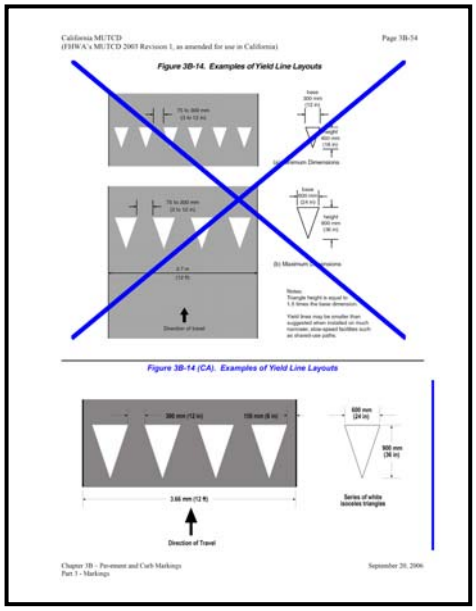
California text shown in "Arial Narrow" blue color font & blue margin line

Edited MUTCD text shown as strikethrough with blue margin line

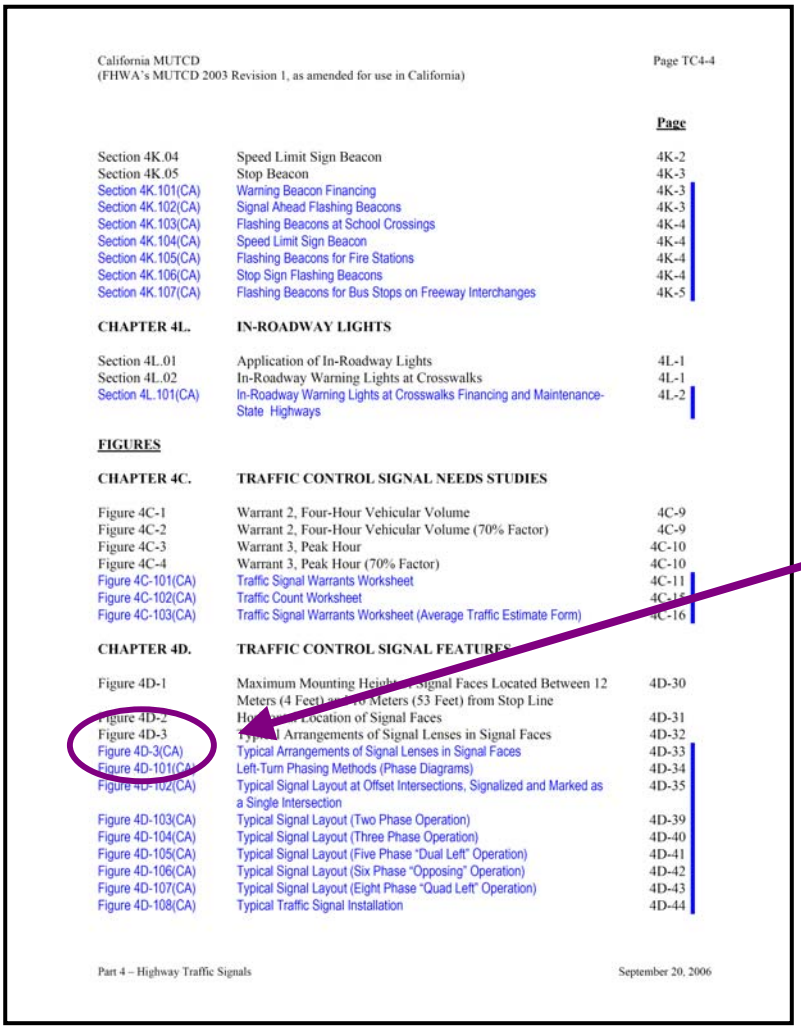
CA MUTCD chapter number and chapter name
CA MUTCD part number and part name

Date of adoption for CA MUTCD

Sample Page Sketches Showing Format Explanations



Entire MUTCD figure not applicable in California shown with blue X cross-out and the replacing California figure retains the same figure number but adds "(CA)" after the number and has a blue margin line.



California MUTCD
(FHWA's MUTCD 2003 Revision 1, as amended for use in California)

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Part 4 – Highway Traffic Signals

September 20, 2006

California sections with no corresponding MUTCD sections begin with 101 and add "(CA)", increasing in sequence. The text is shown in "Arial Narrow" blue color font & blue margin line.

MUTCD Figure 4D-3 is applicable and is unedited. California figure adds to this MUTCD figure and retains the number 4D-3 adding "(CA)" with a blue margin line.

California figures with no corresponding MUTCD figures begin with 101 and add "(CA)", increasing in sequence with a blue margin line.

CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
~~MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES~~

INTRODUCTION

Support:

This California Manual on Uniform Traffic Control Devices (California MUTCD) is published by the State of California, Department of Transportation and is issued to adopt uniform standards and specifications for all official traffic control devices in California, in accordance with Section 21400 of the California Vehicle Code.

This California MUTCD incorporates two documents, Federal Highway Administration's Manual on Uniform Traffic Control Devices (2003 Edition Revision 1) dated November 20, 2004 and the MUTCD 2003 California Supplement dated May 20, 2004. It also incorporates all policies on traffic control devices issued by the California Department of transportation that have been issued since May 20, 2004 and other editorial, errata and format changes that were necessary to update the previous documents.

Standard:

The California MUTCD is hereby adopted as, and shall be the standard for all official traffic control devices, under Section 11340.9(h) of California Government Code and Section 21400 of California Vehicle Code.

Support:

The California MUTCD supersedes and replaces the previously adopted (on May 20, 2004) MUTCD 2003 Edition and the MUTCD 2003 California Supplement as well as Chapters 4, 5, 6, 8, 10, 11, 12, and the traffic signals portion of chapter 9 of the 1996 Caltrans Traffic Manual, as amended, and all previous editions thereof. It does not supersede the Department's Standard Plans, Standard Specifications or the Standard Special Provisions publications.

Department of Transportation publishes Standard Specifications, Standard Special Provisions, Standard Plans and other manuals, which contain specifications and requirements for traffic control devices, including their use and placement, when performing work on State highways. In some cases those specifications and requirements can vary from, and be more stringent than those shown in the California MUTCD.

Standard:

Whenever there is a discrepancy between the specifications and requirements contained in the California MUTCD, and those contained in the publications noted in the previous paragraph for work on State highways, those publications shall govern.

On State highways the California MUTCD shall mean to include the Department of Transportation's Standard Plans, Standard Specifications and Standard Special Provisions publications.

Nothing contained in the California MUTCD shall prevent the Department of Transportation from modifying, changing, or adopting new specifications deemed necessary.

Whenever there is a discrepancy between the specifications and requirements incorporated from FHWA's MUTCD and the California MUTCD amendments, the California MUTCD amendments shall govern.

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 by authority of a public agency having jurisdiction.

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

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 other items owned by FHWA.

Support:

This Manual is not applicable to privately owned and maintained roads or commercial establishments in California, unless the particular city or county enacts an ordinance or resolution to this effect. Refer to CVC Sections 21100, 21100.1, 21107, 21107.5, 21107.6, and 21107.7. However, the use of this Manual is encouraged on all privately owned and maintained roads or commercial establishments, in general, as a good practice. See Section 1A.07 for more information.

The need for uniform standards was recognized long ago. The American Association of State 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 on 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 eight 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.

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.

Support:

23 CFR 655.603 adopts the MUTCD as the national standard for any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). 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. The States are encouraged to 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."

Text Headings

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 and highways. The material in this edition is organized to better differentiate between Standards that must be satisfied for the particular circumstances of a situation, Guidances that should be followed for the particular circumstances of a situation, and Options that may be applicable for the particular circumstances of a situation.

Throughout this Manual the headings Standard, Guidance, Option, and Support are used to classify the nature of the text that follows. Figures, tables, and illustrations 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 illustration.

The figures shown in the California MUTCD are typical or example applications of the traffic control devices to illustrate their use and manner. Criteria for position, location, and use of traffic control devices in the figures is furnished solely for the purpose of guidance, understanding and information, and is not a legal standard unless. Engineering judgment must be used to apply these guidelines to the typical or example applications, or adjust them to fit individual field site conditions. The California MUTCD is not intended to be a substitute for engineering knowledge, experience or judgment.

Standard:

When used in this Manual, the text headings shall be defined as follows:

1. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All standards are labeled, and the text appears in bold type. The verb shall is typically used. Standards are sometimes modified by Options.

2. Guidance—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold type. The verb should is typically used. Guidance statements are sometimes modified by Options.

3. Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Options may contain allowable modifications to a Standard or Guidance. All Option statements are labeled, and the text appears in unbold type. The verb may is typically used.

4. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs shall, should, and may are not used in Support statements.

For all purposes, regardless of the text heading, any sentence containing the verb shall or MUTCD text edited to the verb shall, shall be considered a Standard. Similarly, any sentence containing the verb should or MUTCD text edited to the verb should, shall be considered a Guidance and any sentence containing the verb may or MUTCD text edited to the verb may, shall be considered an Option.

Support:

For example, if under the Guidance text heading, the California edit shows "should" as crossed out and it is replaced with "shall" (e.g. "…~~should~~ shall…"), the edited sentence will be considered a Standard although the text heading is still Guidance and was not changed to Standard for clearer and brief editing purposes. This allows a single sentence in the middle of a long paragraph, in this example from a Guidance text paragraph to be elevated to a Standard without splitting the paragraph into two or three separate Standard and Guidance paragraphs. This allows the original MUTCD paragraph to be kept intact and keeps the flow of the MUTCD text and maintains the sequence. See California MUTCD sample page sketches on the front inside cover pages which show these and other format explanations with call outs.

Metric and U.S. Customary (English) System of Units

Throughout this Manual all dimensions and distances are provided in the International System of Units, a modernized version of the Metric system, and their English equivalent units are shown in parentheses.

In 1993, the Department had adopted the International System of Units as the preferred system of weights and measures to comply with federal law. The law was subsequently changed making the use of the Metric System optional. The Department made the decision in 2004 to readopt the U.S. Customary (English) system of units and measures as the preferred system. Guidance on the use of the Metric and U.S. Customary Systems of Measurement is available from Department of Transportation's Division of Design, Metric Program.

Guidance:

Before laying out distances or determining sign sizes, the public agency should decide whether to use the International System of Units (Metric) or the English equivalent units. The chosen units should be specified on plan drawings. The chosen unit of measurement should be made known to those responsible for designing, installing, or maintaining traffic control devices.

Except when a specific numeral is required by the text of a Section of this Manual, numerals shown on the sign images 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 signs, the numerals should be appropriately altered to fit the specific signing situation.

Format, Reference and Manual Layout

Support:

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

There are ten 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. Sections are identified by the Chapter number and letter followed by a decimal point and a number, such as Section 2B.03-Size of Regulatory Signs.

The California MUTCD uses a format similar to the MUTCD. It incorporates FHWA's MUTCD in its entirety and explicitly shows which portions thereof are applicable or not applicable in California. The unedited MUTCD text is shown in "Times New Roman" font with black color. The California edited MUTCD text is also shown in "Times New Roman" font with black color but with strikethrough of all text portions that are not applicable in California and a blue margin line for easier distinction between the two types of MUTCD texts. The California text additions and enhancements are incorporated into the combined document at appropriate locations and shown in an "Arial Narrow" font with blue color and a blue margin line on the right to keep them distinct from the MUTCD content, whether the pages are viewed on a computer monitor, as hard copies in color or as black photo copies.

All MUTCD figures and tables, or portions thereof, that are not applicable in California are shown with appropriate size blue X cross-outs. The MUTCD figures and tables that have been modified or added to, in the California MUTCD retain the same MUTCD Figure or Table number but include "(CA)" to indicate that it is the California version of the MUTCD Figure or Table. For example:

- Figure 3B-14(CA) Examples of Yield Line Layouts
- Table 9B-1(CA) California Minimum Sign Sizes for Bicycle Facilities

For California topics where there is no corresponding section, figure or table in the MUTCD, the California MUTCD gives a number that begins with 101 for that section, figure or table and increases in sequence, followed with a "(CA)" to indicate that this is a California created section, figure or table number. The blue margin line on the right is also added to all California figures and tables to keep them distinct from the MUTCD figures and tables. For example:

- Section 2B.112(CA) – Daylight Headlight Signs (S30(CA) Series)
- Figure 2C-101(CA) – Determination of Comfortable Speed From Ball Bank Indicator Readings
- Table 6F-102(CA) – Maximum Spacing of Channelizing Devices.

The California MUTCD contents within each chapter (Chapter 2B shown as example below) appear in a consistent order for ease of reference. This sequence is as follows:

1. MUTCD Sections per sequential numbering. For example, Sections 2B.01 through 2B.54.
2. California Sections per sequential numbering. For example, Sections 2B.101(CA) through 2B.113(CA).
3. MUTCD Figures (including edited and deleted) per sequential numbering. For example, Figures 2B-1 through 2B-22.
4. California Figures based upon or modifying MUTCD Figures are placed immediately after the respective MUTCD figure. For example, Figure 2B-14(CA) follows immediately after the deleted MUTCD Figure 2B-14 it replaces. Another example is Figure 2B-18(CA) which immediately follows MUTCD (undeleted) Figure 2B-18 as the California figure supplements the MUTCD Figure, it does not replace it.
5. California Figures that are stand alone and not based upon MUTCD Figures follow in sequence per their numbering. For example, Figures 2B-101(CA) through 2B-106(CA) follow after the end of MUTCD numbered figures.
6. MUTCD and California Tables follow the Figures under similar rules described above for the figures.

See California MUTCD sample page sketches on the front inside cover pages which show these and other format explanations with call outs.

Each Section is comprised of one or more paragraphs. The paragraphs are indented but are not identified by a number or letter. 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 12 m (40 ft) beyond the stop line" that appears on Page 4D-12 of this Manual would be referenced in writing as "Section 4D.15, P7, D1(a)," and would be verbally referenced as "Item D1(a) of Paragraph 7 of Section 4D.15."

Target Compliance Dates and Deleted Traffic Control Devices

Standard:

In accordance with 23 CFR 655.603(b)(1), States or other Federal agencies that have their own MUTCDs or Supplements shall revise these MUTCDs or Supplements to be in substantial conformance with changes to the National MUTCD within 2 years of issuance of the changes. 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 National 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). In cases involving Federal-aid projects for new highway or bikeway construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance with the most recent edition of the National MUTCD before that highway is opened or re-opened to the public for unrestricted travel [23 CFR 655.603(d)(2)]. The FHWA has the authority to establish other target compliance dates for implementation of particular changes to the MUTCD [23 CFR 655.603(d)(4)].

~~**These target compliance dates established by the FHWA shall be as follows:**~~

~~**Section 2A.19 Lateral Offset—crashworthiness of sign supports—January 17, 2013 for roads with posted speed limit of 80 km/h (50 mph) or higher.**~~

~~**Section 2B.03 Size of Regulatory Signs—increased sign sizes and other changes to Table 2B-1—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.04 STOP Sign (R1-1)—4-WAY plaque requirement—January 17, 2004.**~~

~~**Section 2B.06 STOP Sign Placement—signs mounted on back of STOP sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.09 YIELD Sign Applications—changes in YIELD sign application criteria from the 1988 MUTCD—January 17, 2011.**~~

~~**Section 2B.10 YIELD Sign Placement—signs mounted on back of YIELD sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.11 Yield Here to Pedestrians Signs (R1-5, R1-5a)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.13 Speed Limit Sign (R2-1)—color of changeable message legend of YOUR SPEED—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.25 Reversible Lane Control Signs (R3-9d, R3-9f through R3-9i)—removal of R3-9c and R3-9e signs—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.26 Preferential Only Lane Signs (R3-10 through R3-15)—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.27 Preferential Only Lanes for High-Occupancy Vehicles (HOVs)—new section in Millennium Edition—January 17, 2007.**~~

~~**Section 2B.28 Preferential Only Lane Sign Applications and Placement—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.37 ONE WAY Signs (R6-1, R6-2)—placement requirement at intersecting alleys—January 17, 2008.**~~

~~**Section 2B.46 Photo Enforced Signs (R10-18, R10-19)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2B.52 Hazardous Material Signs (R14-2, R14-3)—change in sign legend—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.04 Size of Warning Signs—increased sizes of W4-1, W5-2, W6-3, and W12-1 signs—January 17, 2008.**~~

~~**Section 2C.04 Size of Warning Signs—sizes of W1 Series Arrows signs, W7 Series truck runaway signs, W12-2p low clearance signs, and W10-1 advance grade crossing sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.11 Truck Rollover Warning Signs (W1-13, W1-13a)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.16 NARROW BRIDGE Sign (W5-2) – elimination of symbol sign – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.25 PAVEMENT ENDS Sign (W8-3) – removal of symbol sign – January 17, 2011.**~~

~~**Section 2C.26 Shoulder Signs (W8-4, W8-9, and W8-9a) – removal of symbol signs – January 17, 2011.**~~

~~**Section 2C.30 Speed Reduction Signs (W3-5, W3-5a) – removal of R2-5 Series Reduced Speed Ahead signs and use of W3-5 or W3-5a warning signs instead – 15 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.31 Merge Signs (W4-1, W4-5) – Entering Roadway Merge sign (W4-1a) – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.32 Added Lane Signs (W4-3, W4-6) – Entering Roadway Added Lane sign (W4-3a) – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.33 Lane Ends Signs (W4-2, W9-1, W9-2) – new design of W4-2 sign – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.34 Two-Way Traffic Sign (W6-3) – transition from one-way street – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.37 Intersection Warning Signs (W2-1 through W2-6) – new design of Circular Intersection (W2-6) sign – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.40 Vehicular Traffic Signs (W8-6, W11-1, W11-5, W11-5a, W11-6, W11-8, W11-10, W11-11, W11-12, W11-14) – new symbol signs W11-1, W11-5, W11-5a, W11-6, W11-11, and W11-14 – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2C.41 Nonvehicular Signs (W11-2, W11-3, W11-4, W11-7, W11-9) – elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing – January 17, 2011.**~~

~~**Section 2C.53 PHOTO ENFORCED Plaque (W16-10) – new section – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2D.38 Street Name Sign (D3-1) – symbol sizes, 150 mm (6 in) letter sizes for lettering on ground-mounted Street Name signs on roads that are not multi-lane streets with speed limits greater than 60 km/h (40 mph), other new provisions of Millennium Edition – January 9, 2012.**~~

~~**Section 2D.38 Street Name Sign (D3-1) – letter sizes on ground-mounted signs on multi-lane streets with speed limits greater than 60 km/h (40 mph) and letter sizes on overhead-mounted signs – 15 years from the effective date of the Final Rule of the 2003 MUTCD.**~~

~~**Section 2D.39 Advance Street Name Signs (D3-2) – new section in 2000 MUTCD and revisions in 2003 MUTCD – 15 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2D.45 General Service Signs (D9 Series) – Traveler Info Call 511 (D12-5) sign, Channel 9 Monitored (D12-3) sign – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2D.46 Reference Location Signs (D10-1 through D10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a) – location and spacing of Reference Location signs and design of Intermediate Reference Location signs – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2E.28 Interchange Exit Numbering – size of exit number plaque – January 17, 2008.**~~

~~**Section 2E.28 Interchange Exit Numbering – LEFT on exit number plaques for left exits – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2E.30 Advance Guide Signs – advance placement distance – January 17, 2008.**~~

~~**Section 2E.54 Reference Location Signs and Enhanced Reference Location Signs (D10-4, D10-5) – design of Enhanced Reference Location signs and Intermediate Enhanced Reference Location signs – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2E.59 Preferential Only Lane Signs – new section in 2003 Edition – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 2F.05 Size of Lettering – minimum height of letters and numerals on specific service signs – January 17, 2011.**~~

~~**Section 2I.03 EVACUATION ROUTE Sign (EM-1) – new design and size of EM-1 sign – 15 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 3B.01 Yellow Centerline Pavement Markings and Warrants – new section in Millennium Edition – January 3, 2003.**~~

~~**Section 3B.03 Other Yellow Longitudinal Pavement Markings – spacing requirements for pavement marking arrows in two-way left-turn lanes – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 3B.07 Warrants for Use of Edge Lines – new section in Millennium Edition – January 3, 2003.**~~

~~**Section 3B.17 Crosswalk Markings – gap between transverse lines of a crosswalk – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 3B.19 Pavement Word and Symbol Markings – typical spacing of lane-use arrows in two-way left-turn lanes shown in Figure 3B-7 – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 3C.01 Object Marker Design and Placement Height – width of stripes on Type 3 striped marker – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 4D.01 General – location of signalized midblock crosswalks – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 4D.05 Application of Steady Signal Indications – Item B.4 in STANDARD – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 4D.12 Flashing Operation of Traffic Control Signals – duration of steady red clearance interval in change from red-red flashing mode to steady (stop-and-go) mode – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 4E.06 Accessible Pedestrian Signals – new section in Millennium Edition – January 17, 2005.**~~

~~**Section 4E.07 Countdown Pedestrian Signals – new section – 10 years from the effective date of the Final Rule for the 2003 MUTCD for countdown pedestrian signal hardware; 3 years from the effective date of the Final Rule for the 2003 MUTCD for operational requirements of countdown pedestrian signals.**~~

~~**Section 4E.09 Accessible Pedestrian Signal Detectors – new section in Millennium Edition – January 17, 2005.**~~

~~**Section 4E.10 Pedestrian Intervals and Signal Phases – pedestrian clearance time sufficient to travel to far side of the traveled way – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 5C.05 NARROW BRIDGE Sign (W5-2) – elimination of symbol sign – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 6D.01 Pedestrian Considerations – all new provisions for pedestrian accessibility – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 6D.02 Accessibility Considerations – 5 years from the effective date of the Final Rule for the MUTCD.**~~

~~**Section 6D.03 Worker Safety Considerations – high-visibility apparel requirements – 3 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 6E.02 High Visibility Safety Apparel – high-visibility apparel requirements for flaggers – 3 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 6F.03 Sign Placement – crashworthiness of sign supports – January 17, 2005.**~~

~~**Section 6F.58 Channelizing Devices – crashworthiness – January 17, 2005.**~~

~~**Section 6F.59 Cones – width of retroreflective stripes – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 6F.63 Type I, II, or III Barricades – crashworthiness – January 17, 2005.**~~

~~**Section 6F.66 Longitudinal Channelizing Barricades – crashworthiness – January 17, 2005.**~~

~~**Section 6F.82 Crash Cushions – crashworthiness – January 17, 2005.**~~

~~**Section 7B.08 School Advance Warning Assembly (S1-1 with Supplemental Plaque) – use of AHEAD plaque (W16-9p) or distance plaque (W16-2 or W16-2a) – January 17, 2011.**~~

~~**Section 7B.09 School Crosswalk Warning Assembly (S1-1 with Diagonal Arrow) – elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) – January 17, 2011.**~~

~~**Section 7B.12 Reduced Speed School Zone Ahead Sign (S4-5, S4-5a) – 15 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 7E.04 Uniform of Adult Crossing Guards and Student Patrols – requirement for high-visibility apparel for adult crossing guards – 5 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 8B.03 Highway-Rail Grade Crossing (Crossbuck) Sign (R15-1) and Number of Tracks Sign (R15-2) – retroreflective strip on crossbuck support – January 17, 2011.**~~

~~**Section 8B.04 Highway-Rail Grade Crossing Advance Warning Signs (W10 Series) – removal of existing W10-6 series signs – January 17, 2006.**~~

~~**Section 8D.07 Traffic Control Signals at or Near Highway-Rail Grade Crossings – pre-signals – 10 years from the effective date of the Final Rule for the 2003 MUTCD.**~~

~~**Section 9B.04 Bicycle Lane Signs (R3-17, R3-17a, R3-17b) – deletion of preferential lane symbol (diamond) for bicycle lane signs – January 17, 2006.**~~

~~**Section 9B.17 Bicycle Warning Sign (W11-1) – elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing – January 17, 2011.**~~

~~**Chapter 9C Markings – deletion of preferential lane symbol (diamond) for bicycle pavement markings – January 17, 2007.**~~

~~**Part 10 Traffic Controls for Highway-Light Rail Transit Grade Crossings – automatic gates, flashing-light signals, and blank-out signs – January 17, 2011.**~~

~~**Section 10C.15 Highway-Rail Grade Crossing Advance Warning Signs (W10 Series) – removal of existing W10-6 series signs – January 17, 2006.**~~

All these MUTCD target compliance dates (beginning with Section 2A.19 and ending with Section 10C.15) are deleted and shall not apply in California.

Option:

In order for maintenance personnel to understand what to do when replacing a damaged non-compliant traffic control device, agencies may establish a policy regarding whether to replace the device in kind or to replace it with a compliant device.

Support:

Often it is desirable to upgrade to a compliant device at the time of this maintenance of a damaged device. However, it might be appropriate to replace the damaged non-compliant device in kind at the time of this maintenance activity if engineering judgment indicates that:

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

Standard:

Unless allowed per the Option below, in cases involving new highway or bikeway construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance with the current edition of the California MUTCD before that highway is opened or re-opened to the public for unrestricted travel pursuant to the California Vehicle Code 21401.

Option:

In cases involving new highway or bikeway construction or reconstruction, the traffic control devices installed (temporary or permanent) may be in accordance with previous traffic control device standards of May 20, 2004 per MUTCD 2003 and MUTCD 2003 California Supplement or prior to that of Caltrans Traffic Manual, if in the judgment of the engineer, incorporating the California MUTCD standards would impose a significant delay or a significant increase in costs for the project.

Support:

Reconstruction, as used in the previous Standard and Option topics, for the purpose of a traffic control device would mean if a particular device is modified in any form or shape or is relocated. If a reconstruction project does not modify or relocate a traffic control device, although encouraged, there would be no obligation to upgrade the traffic control device per current edition of the California MUTCD standards.

Standard:

Unless allowed per the option below, non-compliant traffic control devices on existing highways and bikeways shall be brought into compliance with the California MUTCD as part of the systematic upgrading of substandard traffic control devices (and installation of new required traffic control devices) required pursuant to the California Vehicle Code 21401.

Option:

All traffic control devices on existing highways and bikeways that have become non-compliant per California MUTCD adopted standards may remain in service through the end of their useful service life, unless identified specifically with a target compliance date per Table I-101(CA).

To limit financial impact on agencies and for fiscal responsibility reasons, existing inventory of non-compliant traffic control devices, except those identified per Table I-101(CA), may continue to be used until these inventories are depleted.

Support:

The signs listed in Table I-101(CA) are non-compliant per this California MUTCD and further; they have been singled out for specific target compliance dates by the California Traffic Control Devices Committee and California Department of Transportation.

Failure to replace a sign listed in Table I-101(CA) by its target compliance date does not reduce the effectiveness of the sign to impart information to the road user.

For ease of reference, Figure I-101(CA) shows the sign sketches of the deleted signs that have target compliance dates.

Standard:

The signs listed in Table I-101(CA), although used in the past, shall no longer be used in California. Further, any such signs on existing highways and bikeways shall be removed, and replaced if appropriate, by the target compliance dates shown in Table I-101(CA).

Support:

The signs listed in Table I-102(CA) are old California signs that have been deleted for application in the past. These signs are non-compliant per this California MUTCD but do not have any specific target compliance dates. Hence, any such signs on existing highways and bikeways can remain in service through the end of their useful service life.

Standard:

The signs listed in Table I-102(CA), although used in the past, shall no longer be used in California.

Support:

The signs listed in Table I-103(CA) are MUTCD signs that have been deleted throughout this Manual, wherever they were reference by the MUTCD. Refer to the section listed in this table for more details regarding the reason for the deletion and/or what signs they are replaced with.

Standard:

The signs listed in Table I-103(CA) shall not be used in California.

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Figure I-101 (CA). Deleted California Signs with Target Compliance Dates

R16B (CA)
January 1, 2010

R17B (CA)
January 1, 2010

R19 (CA)
January 1, 2010

R34A (CA)
January 1, 2010

SR2-M (CA)
January 1, 2007

SR3-M (CA)
January 1, 2007

SR24-1 (CA)
January 1, 2010

SR31 (CA)
January 1, 2010

SR36 (CA)
January 1, 2010

W54 (CA)
January 1, 2011

W66 (CA)
January 1, 2011

W66A (CA)
January 1, 2011

SW1-1 (CA)
January 1, 2007

SW6-M (CA)
January 1, 2007

SW18-2.1 (CA)
January 1, 2010

SW25 (CA)
January 1, 2011

SW27 (CA)
January 1, 2015

SW27-1 (CA)
January 1, 2015

SW28 (CA)
January 1, 2015

SW72-M (CA)
January 1, 2007

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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	

Table I-1(CA) Evolution of the California MUTCD

Year	Name
1955	Planning Manual of Instructions, Part 8 – Traffic Department of Public Works, Division of Highways
1972	Traffic Manual Department of Public Works, Division of Highways
1996	Traffic Manual (Metric Version) Department of Transportation, Division of Traffic Operations
2004	FHWA's MUTCD 2003 & MUTCD 2003 California Supplement Department of Transportation, Division of Traffic Operations
2006	California MUTCD Department of Transportation, Division of Traffic Operations

Table I-101(CA) Deleted California Signs with Target Compliance Dates

Sign Code	Title/Description	Comment	Target Compliance Date
~~R16B(CA)~~	NO RIGHT TURN word message	Use No Right Turn (R3-1) symbol sign	January 1, 2010
~~R17B(CA)~~	NO LEFT TURN word message	Use No Left Turn (R3-2) symbol sign	January 1, 2010
~~R19(CA)~~	NO LEFT OR U TURN word message	Use No Left or U Turn (R3-18) symbol sign	January 1, 2010
~~R34A(CA)~~	No U TURN word message	Use No U Turn (R3-4) symbol sign	January 1, 2010
~~SR2-M(CA)~~	SPEED LIMIT 35 mph 56 km/h	1976 Metric sign never implemented	January 1, 2007
~~SR3-M(CA)~~	END 35 mph 56 km/h SPEED LIMIT	1976 Metric sign never implemented	January 1, 2007
~~SR24-1(CA)~~	STOP ON RED SIGNAL word message	Use STOP HERE ON RED with arrow (R10-6) sign	January 1, 2010
~~SR31(CA)~~	SCHOOL STOP CROSSING round shape Paddle	Use STOP (C28A(CA)) octagon shape Paddle	January 1, 2010
~~SR36(CA)~~	CLOSED Red on White octagon shape sign	Use ROAD CLOSED (R11-2) sign	January 1, 2010
~~W54(CA)~~	Pedestrian Crossing Symbol with crosswalk lines	Use Pedestrian Crossing symbol (W11-2) without crosswalk lines & diagonal downward pointing arrow (W16-7P) plaque	January 1, 2011
~~W66(CA)~~	School Crossing Symbol with crosswalk lines	Use School Crossing symbol (S1-1) without crosswalk lines & diagonal downward pointing arrow (W16-7P) plaque	January 1, 2011
~~W66A(CA)~~	SCHOOL XING word message	Use School Crossing symbol (S1-1) without crosswalk lines & diagonal downward pointing arrow (W16-7P) plaque	January 1, 2011
~~SW1-1(CA)~~	TRAFFIC FROM RIGHT(LEFT) DOES NOT STOP with arrow	Use CROSS TRAFFIC DOES NOT STOP (W4-4P) plaque, which is without the arrow	January 1, 2007
~~SW6-M(CA)~~	40 mph - 64 km/h	1976 Metric sign never implemented	January 1, 2007
~~SW18-2.1(CA)~~	VERTICAL CLEARANCE ___FT. ___IN.	Use Low Clearance (W12-2) sign or rectangular (W12-2P) plaque	January 1, 2010
~~SW25(CA)~~	School Symbol - SCHOOL XING with crosswalk lines	Use School Crossing symbol (S1-1) without crosswalk lines & diagonal downward pointing arrow (W16-7P) plaque	January 1, 2011
~~SW27(CA)~~	Skewed RR Crossing symbol with Motorcycle symbol	Use Skewed Crossing symbol (W10-12) sign	January 1, 2015
~~SW27-1(CA)~~	Skewed RR Crossing symbol with Motorcycle & Bike symbol	Use Skewed Crossing symbol (W10-12) sign	January 1, 2015
SW28(CA)	STEEL DECK with Motorcycle symbol	Use modified STEEL BRIDGE DECK (SW28 (CA)) word message sign	January 1, 2015
~~SW72-M(CA)~~	EXIT 30 mph 48 km/h	1976 Metric sign never implemented	January 1, 2007

Table I-102(CA) Deleted California Signs - No Target Compliance Dates (Sheet 1 of 5)

California Code	Title/Description	Comment
~~R6-1(CA)~~	AUTOS WITH TRAILERS - TRUCKS 55 MAXIMUM	Replaced by two separate signs: TRUCKS, 3 AXLES OR MORE 55 MAXIMUM (R6-3(CA)) & ALL VEHICLES WHEN TOWING 55 MAXIMUM (R6-4(CA))
~~R6-2(CA)~~	TRUCKS - AUTOS WITH TRAILERS RIGHT 2 LANES ONLY	Replaced by two separate signs: TRUCKS 3 AXLES OR MORE RIGHT 2 LANES ONLY (R6-3A(CA)) & ALL VEHICLES WHEN TOWING RIGHT 2 LANES ONLY (R6-4A(CA))
~~R10(CA)~~	ONE WAY (Pentagon shape)	Use ONE WAY (R6-1) (Rectangular shape)
~~R13(CA)~~	NO TURN ON RED word message	Use symbolic No Turn On Red (R10-11)
~~R20E(CA)~~	SEMI OVER 38 FT KINGPIN TO REAR AXLE	Use No Trucks Variable Message (R20-1(CA)) or TRACTOR-SEMIS OVER (X FEET) KINGPIN TO REAR AXLE NOT ADVISED (SW48(CA))
~~R41(CA)~~	RIGHT TURN ONLY	Use Right Turn Arrow ONLY (R3-5R)
~~R42(CA)~~	LEFT TURN ONLY	Use Left Turn Arrow ONLY (R3-5L)
~~R49(CA)~~	NO PED CROSSING - USE CROSSWALK	Use No Pedestrian Crossing (R9-3a) & USE CROSSWALK (R9-3b)
~~R49A(CA)~~	NO PED CROSSING - CROSS HERE	Use No Pedestrian Crossing (R9-3a) & USE CROSSWALK (R9-3b)
~~R67A(CA)~~	2 WAY TURN LANE	Use Two-Way Left Turn Only (R3-9a or R3-9b) symbol signs
~~R68(CA)~~	PASSING LANE AHEAD	Use PASSING LANE (X MILES) or AHEAD G69(CA)
~~R82(CA)~~	BUS CARPOOL LANE (HOV) AHEAD	Refer Caltrans HOV Guidelines 2003 Edition
~~R83(CA)~~	(HOV) BUS CARPOOL LANE AHEAD	Refer Caltrans HOV Guidelines 2003 Edition
~~R83A(CA)~~	6AM-9AM MON-FRI	Refer Caltrans HOV Guidelines 2003 Edition
~~R84(CA)~~	BUS CARPOOL LANE (HOV) ENDS	Refer Caltrans HOV Guidelines 2003 Edition
~~R84A(CA)~~	___ MILE	Refer Caltrans HOV Guidelines 2003 Edition
~~R85(CA)~~	(HOV) BUS CARPOOL LANE ENDS	Refer Caltrans HOV Guidelines 2003 Edition
~~R86-1(CA)~~	(HOV) CENTER LANE BUSES AND CARPOOLS ONLY 6AM-9AM 3PM-6PM MON-FRI	Refer Caltrans HOV Guidelines 2003 Edition
~~R87(CA)~~	(HOV) BUSES AND CARPOOLS WITH 3 OR MORE 6AM-9AM (Down Arrow) MON-FRI	Refer Caltrans HOV Guidelines 2003 Edition
~~R91A(CA)~~	MOTORCYCLES OK	Refer Caltrans HOV Guidelines 2003 Edition
~~R93(CA)~~	CARPOOL IS 3 OR MORE PERSONS PER VEHICLE	Refer Caltrans HOV Guidelines 2003 Edition
~~R93-1(CA)~~	CARPOOL IS 3 OR MORE PERSONS PER VEHICLE	Refer Caltrans HOV Guidelines 2003 Edition
~~R94A(CA)~~	MOTORCYCLES OK	Refer Caltrans HOV Guidelines 2003 Edition
~~R96A(CA)~~	NO PED XING	Use NO PEDESTRIAN CROSSING (R9-3)
~~R96C(CA)~~	PEDESTRIANS PROHIBITED	Use No Pedestrian Crossing (R9-3a)
~~R100(CA)~~	SPECIAL PLACARD OR LICENSE PLATE REQUIRED	Use TOW-AWAY SPECIAL PLACARD OR LICENSE PLATE REQUIRED (R100A(CA))
~~SR4(CA)~~	SCHOOL SPEED LIMIT 25 WHEN CHILDREN ARE PRESENT	Use School Speed Limit Assembly C – SCHOOL (S4-3), Speed Limit (R2-1) & WHEN CHILDREN ARE PRESENT (S4-2)

Table I-102(CA) Deleted California Signs - No Target Compliance Dates (Sheet 2 of 5)

California Code	Title/Description	Comment
~~SR14(CA)~~	SPEED ENFORCED BY AIRCRAFT (Plane symbol)	Use SPEED ENFORCED BY AIRCRAFT (R48-2(CA)), word message, no symbol
~~SR21-1(CA)~~	CAMPING PROHIBITED	Miscellaneous
~~SR38(CA)~~	CARPOOL PARKING ONLY	Refer Caltrans HOV Guidelines 2003 Edition
~~SR50(CA)~~	CARPOOL VIOLATION $___ MINIMUM FINE	Refer Caltrans HOV Guidelines 2003 Edition
~~SR52A(CA)~~	NO VEHICLES ON TRACKS	Use DO NOT DRIVE ON TRACKS (R15-6a)
~~W16(CA)~~	GROOVED PAVEMENT	Changed to GROOVED PAVEMENT (SW45) on 6/17/87, change wasn't reflected in 1996 TM
~~W53(CA)~~	NOT A THROUGH STREET	Use DEAD END (W14-1) or NO OUTLET (W14-2)
~~W75(CA)~~	LANE ENDS MERGE LEFT (RIGHT)	Use Lane Ends (W4-2)
~~W75A(CA)~~	(HOV) LANE ENDS MERGE RIGHT	Use (HOV) LANE ENDS MERGE LEFT (RIGHT) (W75-1(CA))
~~W80(CA)~~	XING	Use Vehicular/Nonvehicular Traffic (W11 series) symbol signs and/or Diagonal Downward Pointing Arrow (W16-7p) plaque.
~~W82A(CA)~~	TROLLEY XING	Use Light Rail Transit (Trolley) Crossing W82(CA)
~~W84(CA)~~	TURNOUT 1/4 MILE	Never approved
~~SW1-2(CA)~~	OPPOSING TRAFFIC DOES NOT STOP	Use CROSS TRAFFIC DOES NOT STOP (W4-4P) with alternate message per section 2C.50.
~~SW8-1(CA)~~	TRUCKS CROSSING TO SCALES	None
~~SW14-1(CA)~~	FLOODED DURING STORM	Use SUBJECT TO FLOODING (W55B(CA))
~~SW21-1(CA)~~	FIRE STATION WATCH FOR TRUCKS	Use Emergency Vehicle (W11-8) symbol sign
~~SW21A(CA)~~	FIRE STATION	Use Emergency Vehicle (W11-8) symbol sign
~~SW21C(CA)~~	FIRE STATION	Use Emergency Vehicle (W11-8) symbol sign
~~SW24(CA)~~	School Symbol - SCHOOL	Use School Advance Warning (S1-1)
~~SW29(CA)~~	NARROW SUBWAY	Narrow application
~~SW30(CA)~~	ISLANDS	Miscellaneous
~~SW31(CA)~~	DIPS	Use DIP (W8-2) with NEXT X Miles (W7-3a) plaque
~~SW42(CA)~~	Double Head Arrow (Diamond shape)	Use Two-Direction Large Arrow (W1-7)
~~SW43(CA)~~	Single Head Arrow (Diamond shape)	Use One-Direction Large Arrow (W1-6)
~~SW53(CA)~~	___ WAY SIGNAL	Not commonly understood
~~SW56A(CA)~~	GOLF CART XING	Use Golf Cart (W11-11) symbol sign
~~G7-3(CA)~~	Street Name (FAIR OAKS BLVD)	Use Street Name (D3 or G7-1(CA))
~~G18(CA)~~	MT. WHITNEY FISH HATCHERY	Miscellaneous
~~G32-1(CA)~~	3-Head Arrow	Use Directional Arrow Auxiliary (M6 Series)
~~G62(CA)~~	SPEEDOMETER CHECK AHEAD	Miscellaneous
~~G63(CA)~~	MILE 0	Miscellaneous
~~G64(CA)~~	END CHECK	Miscellaneous
~~G66-14A(CA)~~	EMERGENCY MEDICAL CARE	Use EMERGENCY MEDICAL CARE (D9-13c)
~~G66-16(CA)~~	Hospital symbol - HOSPITAL	Use Hospital (D9-2)
~~G66-20(CA)~~	NATURAL GAS	Use Compressed Natural Gas (G66-22A(CA)), Liquefied Natural Gas (G66-22B(CA)) or LP GAS (G81-52(CA))
~~G66-21B(CA)~~	NEXT EXIT	Use NEXT RIGHT/LEFT (G58(CA))
~~G70(CA)~~	PASSING LANE AHEAD	Use PASSING LANE (X MILES) or AHEAD G69(CA)

Table I-102(CA) Deleted California Signs - No Target Compliance Dates (Sheet 3 of 5)

California Code	Title/Description	Comment
~~G70-1(CA)~~	445A	Use Single Line EXIT XXXX (G70-3(CA))
~~G70-2.2(CA)~~	EXIT 444	Use Single Line EXIT XX (G70-2(CA))
~~G70-3.2(CA)~~	EXIT 445A	Use Single Line EXIT XXXX (G70-3(CA))
~~G81-1(CA)~~	HIGHWAY PATROL	Use Highway Patrol (G66-57(CA))
~~G81-4(CA)~~	PHONE WATER	Use Telephone (D9-1) & Drinking Water (RG-050)
~~G81-7(CA)~~	HOSPITAL PHONE with Arrows	Use Telephone (D9-1) & Hospital (D9-2) with Directional Arrow Auxiliary (M6 series)
~~G81-9(CA)~~	HOSPITAL WATER PHONE with Arrows	Use Telephone (D9-1), Hospital (D9-2) & RG-050 with Directional Arrow Auxiliary (M6 series)
~~G81-11(CA)~~	HOSPITAL WATER PHONE with Arrows	Use Telephone (D9-1), Hospital (D9-2) & RG-050 with Directional Arrow Auxiliary (M6 series)
~~G81-13(CA)~~	HOSPITAL WATER PHONE with Arrows	Use Telephone (D9-1), Hospital (D9-2) & RG-050 with Directional Arrow Auxiliary (M6 series)
~~G81-15(CA)~~	HOSPITAL WATER PHONE with Arrows	Use Telephone (D9-1), Hospital (D9-2) & RG-050 with Directional Arrow Auxiliary (M6 series)
~~G81-17(CA)~~	HIGHWAY PATROL NEXT RIGHT	Use Highway Patrol (G66-57(CA)) & BRAKE CHECK AREA (G58(CA))
~~G81-27(CA)~~	CARPOOL VANPOOL INFO CALL …	Use Carpool Information (SG19(CA)) or Park & Ride Facility/Carpool Information (SG20(CA))
~~G81-58(CA)~~	HOSPITAL	Use Hospital (D9-2)
~~G91-1(CA)~~	SKIING	Use Skiing (Bobbing) (RS-030), Skiing (Cross Country) (RS-040) or Skiing (Downhill) (RS-050)
~~G91-4(CA)~~	CAMPING BOATING	Use Camping (Tent) (RM-010), Camping (Trailer) (RM-020), Motorboating (RW-070), Ramp (Launch) (RW-080), Rowboating (RW-090) or Sailboating (RW-100)
~~G91-7(CA)~~	CAMPING SKIING with Arrows	Use Skiing (Bobbing) (RS-030), Skiing (Cross Country) (RS-040), Skiing (Downhill) (RS-050), Camping (Tent) (RM-010) or Camping (Trailer) (RM-020) with Directional Arrow Auxiliary (M6 series)
~~G91-9(CA)~~	CAMPING PICNICKING BOATING with Arrow	Use Camping (Tent) (RM-010), Camping (Trailer) (RM-020), Picnic Area (RM-120), Motorboating (RW-070), Ramp (Launch) (RW-080), Rowboating (RW-090) or Sailboating (RW-100) with Directional Arrow Auxiliary (M6 series)
~~G91-11(CA)~~	SKIING BOATING CAMPING with Arrows	Use Skiing (Water) (RW-110), Camping (Tent) (RM-010), Camping (Trailer) (RM-020), Motorboating (RW-070), Ramp (Launch) (RW-080), Rowboating (RW-090) or Sailboating (RW-100) with Directional Arrow Auxiliary (M6 series)
~~G91-13(CA)~~	PICNICKING BOATING CAMPING with Arrow	Use Camping (Tent) (RM-010), Camping (Trailer) (RM-020), Picnic Area (RM-120), Motorboating (RW-070), Ramp (Launch) (RW-080), Rowboating (RW-090) or Sailboating (RW-100) with Directional Arrow Auxiliary (M6 series)

Table I-102(CA) Deleted California Signs - No Target Compliance Dates (Sheet 4 of 5)

California Code	Title/Description	Comment
~~G91-15(CA)~~	BOATING SKIING PICNICKING with Arrows	Use Skiing (Water) (RW-110), Picnic Area (RM-120), Motorboating (RW-070), Ramp (Launch) (RW-080), Rowboating (RW-090) or Sailboating (RW-100) with Directional Arrow Auxiliary (M6 series)
~~G91-17(CA)~~	PICNICKING NEXT RIGHT	Use Picnic Area (RM-120) with NEXT RIGHT/LEFT (G58(CA))
~~G91-19(CA)~~	CAMPGROUND 1/4 MILE	Use Camping (Tent) (RM-010) with Distance Ahead (W16-2 series and W16-3 series) plaques
~~G94-3(CA)~~	AIRPORT	Use Airport (I-5) or Conventional Airport (G94-1(CA))
~~G97A-2(CA)~~	CALTRAIN	Use AMTRAK (G97A(CA)) with CALTRAIN word message option
~~SG11(CA)~~	STATE FIRE STATION	Use CDF FIRE STATION NEXT RIGHT (SG38(CA))
~~SG12(CA)~~	STATE RANGER HDQTRS	Use Ranger Station (RG-170)
~~SG13(CA)~~	INTERMOUNTAIN CONSERVATION CAMP	Miscellanous
~~SG36(CA)~~	BUCKLE UP with symbol	Use Seat Belt (SR15(CA)) symbol sign
~~SG37(CA)~~	HIGHWAY MAINTENANCE COURTESY OF ---	Use Adopt-A-Highway (S32(CA) series)
~~SG40(CA)~~	CALL BOX ___ MILE SPACING NEXT ___ MILES	Obsolete
~~SG46(CA)~~	MOTORIST AID CALL BOX AHEAD	Obsolete
~~SG49(CA)~~	CALL 511 TRAVEL INFO	Use TRAVEL INFO CALL 511 (D12-5)
~~S4-1.1(CA)~~	THIS FOUNTAIN HAS BEEN CONSTRUCTED...	Miscellaneous
~~S11-1(CA)~~	LITTER REMOVAL NEXT 2 MILES (with Plaque)	Use Adopt-A-Highway (S32(CA) series)
~~S11-2(CA)~~	WILDFLOWERS (with Plaque)	Use Adopt-A-Highway (S32(CA) series)
~~S11-3(CA)~~	TREE PLANTING (with Plaque)	Use Adopt-A-Highway (S32(CA) series)
~~S11A(CA)~~	ADOPT-A-HIGHWAY	Use Adopt-A-Highway (S32(CA) series)
~~S13(CA)~~	CARE FOR CALIFORNIA with Symbol	Campaign is over
~~S14(CA)~~	CARE FOR CALIFORNIA with Symbol	Campaign is over
~~S15(CA)~~	CARE FOR CALIFORNIA with Symbol	Campaign is over
~~S31(CA)~~	HIGHWAY WORKERS - GIVE 'EM A BRAKE	Miscellaneous
~~C10(CA)~~	SLIDE AHEAD	Use ROAD WORK, ROAD CLOSED, DETOUR, ONE LANE ROAD, RIGHT LANE CLOSED (W20 series) or NARROW LANES (C12(CA)), LANE CLOSED (C30(CA)), LANE CLOSED AHEAD (SC10(CA)), etc instead of identifying condition.
~~C13(CA)~~	END CONSTRUCTION	Use END ROAD WORK (G20-2)
~~C18(CA)~~	ROAD CONSTRUCTION AHEAD	Use ROAD (STREET) WORK (W20-1)
~~C21(CA)~~	SINGLE LANE AHEAD	Use RIGHT LANE CLOSED AHEAD (W20-5) or RIGHT TWO LANES CLOSED AHEAD (W20-5a)
~~C23A(CA)~~	ROAD WORK AHEAD (Square shape)	Use ROAD (STREET) WORK (W20-1)
~~C24A(CA)~~	SHOULDER WORK AHEAD (Square shape)	Use RIGHT (LEFT) SHOULDER CLOSED XXX FT (W21-5)

Table I-102(CA) Deleted California Signs - No Target Compliance Dates (Sheet 5 of 5)

California Code	Title/Description	Comment
~~C32(CA)~~	END SURVEY WORK	Use END ROAD WORK (G20-2)
~~C33(CA)~~	BLASTING ZONE 1000 FT	Use BLASTING ZONE AHEAD (W22-1)
~~C36(CA)~~	PREPARE TO STOP	Use BE PREPARED TO STOP (W3-4)
~~C39(CA)~~	ACCIDENT AHEAD	Use ROAD WORK, ROAD CLOSED, DETOUR, ONE LANE ROAD, RIGHT LANE CLOSED (W20 series) or NARROW LANES (C12(CA)), LANE CLOSED (C30(CA)), LANE CLOSED AHEAD (SC10(CA)), etc instead of identifying condition.
~~C41(CA)~~	Uneven Lane symbol	Use UNEVEN LANES (W8-11) word message sign
~~C41A(CA)~~	UNEVEN LANES (Rectangular)	Use UNEVEN LANES (W8-11) (Diamond) word message sign
~~SC2-1(CA)~~	ONE LANE ROAD	Use ONE LANE ROAD (W20-4)
~~SC4(CA)~~	SECOND RAMP CLOSED AHEAD	Use ___ EXIT – RAMP CLOSED (SC8(CA))
~~SC6(CA)~~	NOTICE - THIS RAMP WILL BE CLOSED TEMPORARILY - (Dates & Times)	Use RAMP CLOSED (More than one day) (SC6-4(CA))
~~SC6-1(CA)~~	ON (Day - Date - Time)	Use Day/Month Plaque (SC6A(CA)) or Time Plaque (SC6B(CA))
~~SC6-2(CA)~~	WEEKDAYS (Day - Date - Time)	Use Day/Month Plaque (SC6A(CA)) or Time Plaque (SC6B(CA))
~~SC14(CA)~~	RIGHT LANE	Use DETOUR (M4-9 series) or Directional Arrow Auxiliary (M6 series)
~~SC17(CA)~~	TRAFFIC BREAK DO NOT PASS	Use DO NOT PASS (SC13(CA))

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Table I-103(CA). Deleted MUTCD Signs - No Target Compliance Dates (Sheet 1 of 2)

MUTCD Code	California Code	Title of Sign	California MUTCD Section
~~M1-4~~	None	U.S. Route	2D.11, 2E.25
~~M1-5~~	None	State Route	2D.11
~~R1-6a~~	None	In-Street Pedestrian Crossing	2B.12
~~R2-2~~	None	Truck Speed Limit	2B.14
~~R2-5~~	None	Reduced Speed Ahead	Introduction, Page I-4
~~R3-1a~~	None	No Right Turn Across Tracks	8B.06, 10C.09
~~R3-2a~~	None	No Left Turn Across Tracks	8B.06, 10C.09
~~R3-9c~~	None	Reversible Lane Control	Introduction, Page I-4
~~R3-9e~~	None	Reversible Lane Control	Introduction, Page I-4
~~R3-10~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-10a~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-10b~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-11~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-11a~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-11b~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-11c~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-12~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-12a~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-12b~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-13~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-13a~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-14~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-14a~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-14b~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-15~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-15a~~	None	Preferential Only Lane	2B.26, 2B.28
~~R3-17~~	None	BIKE LANE	9B.04
~~R3-17a~~	None	AHEAD	9B.04
~~R3-17b~~	None	ENDS	9B.04
~~R10-6a~~	None	STOP HERE ON RED	2B.45
~~R10-11a~~	~~R13(CA)~~	NO TURN ON RED	2B.45
~~R10-11b~~	None	NO TURN ON RED	2B.45
~~R10-16~~	None	U-TURN YIELD TO RIGHT TURN	2B.45
~~R10-17a~~	None	RIGHT (LEFT) ON RED ARROW AFTER STOP	2B.45
~~R12-2~~	None	AXLE WEIGHT LIMIT X t (XX TONS)	2B.49
~~R12-3~~	None	NO TRUCKS OVER X t (XX TONS) EMPTY WT	2B.49
~~R12-4~~	None	WEIGHT LIMIT X t (XX TONS) PER AXLE, X t (XX TONS) GROSS	2B.49
~~R12-6~~	None	METRIC	2B.49
~~R14-2~~	None	Hazardous Material Route	2B.52
~~R14-3~~	None	Hazardous Material Prohibition	2B.52
~~R14-4~~	None	National Network	2B.53
~~R14-5~~	None	National Network Prohibition	2B.53
~~R15-3~~	None	EXEMPT	8B.05, 10C.10

Table I-103(CA). Deleted MUTCD Signs - No Target Compliance Dates (Sheet 2 of 2)

MUTCD Code	California Code	Title of Sign	California MUTCD Section
~~W1-4b~~	None	Reverse Curve (2 lanes)	6F.45
~~W1-4c~~	None	Reverse Curve (3 lanes)	6F.45
~~W1-13a~~	None	Truck Rollover Warning	Introduction, Page I-4
~~W3-1a~~	None	STOP AHEAD	2C.29
~~W3-2a~~	None	YIELD AHEAD	2C.29
~~W4-1a~~	None	Entering Roadway Merge	Introduction, Page I-4
~~W5-4~~	None	RAMP NARROWS	6F.26
~~W6-1a~~	None	DIVIDED HIGHWAY	2C.18
~~W6-1b~~	None	DIVIDED ROAD	2C.18
~~W6-2a~~	None	DIVIDED HIGHWAY ENDS	2C.19
~~W6-2b~~	None	DIVIDED ROAD ENDS	2C.19
~~W9-2~~	~~W75(CA)~~	LANE ENDS MERGE LEFT (RIGHT)	2C.33
~~W10-6~~	None	WARNING LOOK BOTH WAYS	Introduction, Page I-6
~~W13-4~~	None	ON RAMP	6F.25
~~W13-5~~	None	Curve Speed	2C.06, 2C.36
~~W16-13p~~	None	WHEN FLASHING	2C.29
~~W20-7a~~	None	Flagger	6F.29
~~W24-1a~~	None	Double Reverse Curve (2 lane)	6F.45
~~W24-1b~~	None	Double Reverse Curve (3 lane)	6F.45
~~W25-1~~	None	ONCOMING TRAFFIC HAS EXTENDED GREEN	2C.39
~~W25-2~~	None	ONCOMING TRAFFIC MAY HAVE EXTENDED GREEN	2C.39

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CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
~~MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES~~

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California
Manual on Uniform Traffic Control Devices
for Streets and Highways
(FHWA's MUTCD 2003 Edition,
as amended for use in California)

PART 1
General

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

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PART 1. GENERAL

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CHAPTER 1A. GENERAL

Section 1A.01 Purpose of Traffic Control Devices

Support:

The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety and efficiency by providing for the orderly movement of all road users on streets and highways throughout the Nation.

Traffic control devices notify road users of regulations and provide warning and guidance needed for the reasonably safe, uniform, and efficient operation of all elements of the traffic stream.

Standard:

Traffic control devices or their supports shall not bear any advertising message or any other message that is not related to traffic control.

Support:

Tourist-oriented directional signs and Specific Service signs are not considered advertising; rather, they are classified as motorist service signs.

Section 1A.02 Principles of Traffic Control Devices

Support:

This Manual contains the basic principles that govern the design and use of traffic control devices for all streets and highways open to public travel regardless of type or class or the public agency having jurisdiction. This Manual's text specifies the restriction on the use of a device if it is intended for limited application or for a specific system. It is important that these principles be given primary consideration in the selection and application of each device.

Guidance:

To be effective, a traffic control device should meet five basic requirements:

A. Fulfill a need;

B. Command attention;

C. Convey a clear, simple meaning;

D. Command respect from road users; and

E. Give adequate time for proper response.

Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered by the engineer in order to maximize the ability of a traffic control device to meet the five requirements listed in the previous paragraph. Vehicle speed and geometrics should be carefully considered as an element that governs the design, operation, placement, and location of various traffic control devices.

Support:

The definition of the word "speed" varies depending on its use. The definitions of specific speed terms are contained in Section 1A.13.

Guidance:

The actions required of road users to obey regulatory devices should be specified by State statute, or in cases not covered by State statute, by local ordinance or resolution consistent with the "Uniform Vehicle Code." The proper use of traffic control devices should provide the reasonable and prudent road user with the information necessary to reasonably safely and lawfully use the streets, highways, pedestrian facilities, and bikeways.

Support:

Uniformity of the meaning of traffic control devices is vital to their effectiveness. The meanings ascribed to devices in this Manual are in general accord with the publications mentioned in Section 1A.11.

Section 1A.03 Design of Traffic Control Devices

Guidance:

Devices should be designed so that features such as size, shape, color, composition, lighting or retroreflection, and contrast are combined to draw attention to the devices; that size, shape, color, and simplicity of message combine to produce a clear meaning; that legibility and size combine with placement

to permit adequate time for response; and that uniformity, size, legibility, and reasonableness of the message combine to command respect.

Standard:

All symbols shall be unmistakably similar to or mirror images of the adopted symbol signs, all of which are shown in the "Standard Highway Signs" book (see Section 1A.11). Symbols and colors shall not be modified unless otherwise stated herein. All symbols and colors for signs not shown in the "Standard Highway Signs" book shall follow the procedures for experimentation and change described in Section 1A.10.

Guidance:

Aspects of a device's design should be modified only if there is a demonstrated need.

Support:

An example of modifying a device's design would be to modify the Side Road (W2-2) sign to show a second offset intersecting road.

Standard:

Except as noted in the Option below, highway agencies shall not develop word message signs. In accordance with CVC Section 21401, only word message signs conforming to Department of Transportation standards and specifications shall be placed on streets and highways.

Option:

~~Highway agencies may develop word message signs to notify road users of special regulations or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, new word message signs may be used without the need for experimentation.~~ Highway agencies may develop place/facility name or day, date, time portion of the word message on signs to notify road users of special events/circumstances or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, these place/facility name or day, date, time modified word message signs may be used without the need for experimentation. With the exception of symbols and colors, minor modifications in the specific design elements of a device may be made provided the essential appearance characteristics are preserved. Although the standard design of symbol signs cannot be modified, it may be appropriate to change the orientation of the symbol to better reflect the direction of travel.

Section 1A.04 <u>Placement and Operation of Traffic Control Devices</u>

Guidance:

Placement of a traffic control device should be within the road user's view so that adequate visibility is provided. To aid in conveying the proper meaning, the traffic control device should be appropriately positioned with respect to the location, object, or situation to which it applies. The location and legibility of the traffic control device should be such that a road user has adequate time to make the proper response in both day and night conditions.

Traffic control devices should be placed and operated in a uniform and consistent manner.

Unnecessary traffic control devices should be removed. The fact that a device is in good physical condition should not be a basis for deferring needed removal or change.

Traffic control devices, which are used on a part-time basis, should be in operation only during the time periods that they are required.

Section 1A.05 <u>Maintenance of Traffic Control Devices</u>

Guidance:

Functional maintenance of traffic control devices should be used to determine if certain devices need to be changed to meet current traffic conditions.

Physical maintenance of traffic control devices should be performed to retain the legibility and visibility of the device, and to retain the proper functioning of the device.

Support:

Clean, legible, properly mounted devices in good working condition command the respect of road users.

Section 1A.06 Uniformity of Traffic Control Devices

Support:

Uniformity of devices simplifies the task of the road user because it aids in recognition and understanding, thereby reducing perception/reaction time. Uniformity assists road users, law enforcement officers, and traffic courts by giving everyone the same interpretation. Uniformity assists public highway officials through efficiency in manufacture, installation, maintenance, and administration. Uniformity means treating similar situations in a similar way. The use of uniform traffic control devices does not, in itself, constitute uniformity. A standard device used where it is not appropriate is as objectionable as a nonstandard device; in fact, this might be worse, because such misuse might result in disrespect at those locations where the device is needed and appropriate.

Standard:

Any given device for the control of traffic shall have the same meaning and require the same action on the part of motorists regardless of where it is encountered.

Section 1A.07 Responsibility for Traffic Control Devices

Standard:

The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency or the official having jurisdiction. 23 CFR 655.603 adopts the Manual on Uniform Traffic Control Devices as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel. When a State or other Federal agency manual or supplement is required, that manual or supplement shall be in substantial conformance with the national Manual on Uniform Traffic Control Devices.

This California MUTCD (including the incorporated FHWA's MUTCD) does not supersede the Department's Standard Plans, Standard Specifications or the Special Provisions publications. Nothing contained in the California MUTCD shall prevent the Department of Transportation from modifying, changing or adopting new specifications as necessary.

23 CFR 655.603 also states that traffic control devices on all streets and highways open to public travel in each State shall be in substantial conformance with standards issued or endorsed by the Federal Highway Administrator.

Support:

The "Uniform Vehicle Code" (see Section 1A.11) has the following provision in Section 15-104 for the adoption of a uniform Manual:

> "(a)The [State Highway Agency] shall adopt a manual and specification for a uniform system of traffic control devices consistent with the provisions of this code for use upon highways within this State. Such uniform system shall correlate with and so far as possible conform to the system set forth in the most recent edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, and other standards issued or endorsed by the Federal Highway Administrator."
>
> "(b) The Manual adopted pursuant to subsection (a) shall have the force and effect of law."

Additionally, States are encouraged to adopt Section 15-116 of the "Uniform Vehicle Code," 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:

Pursuant to the provisions in CVC Section 21400, the Department of Transportation adopts uniform standards and specifications for all traffic control devices after consultation with local agencies and public hearings. The Department of Transportation consults with local agencies and the public through the California Traffic Control Devices Committee (CTCDC). The Department of Transportation publicizes these uniform standards and specifications for traffic control devices through the California MUTCD.

Standard:

In accordance with CVC Section 21401, only traffic control devices conforming to Department of Transportation standards and specifications shall be placed on streets and highways.

Subject to the requirements in CVC Sections 21100, 21100.1, 21107, 21107.5, 21107.6, and 21107.7, no person shall install or maintain in any area of private property used by the public any sign, signal, or marking or other device intended to regulate, warn, or guide traffic unless it conforms with Department of Transportation standards and specifications.

Support:

The delegation of maintenance activities to local authorities is usually exercised under the authority of Streets and Highways Code Section 130.

The Department of Transportation standards and specifications for traffic control devices are not applicable to privately owned and maintained roads or commercial establishments, unless the particular city or county enacts an ordinance or resolution to this effect. Refer to CVC Sections 21100, 21100.1, 21107, 21107.5, 21107.6, and 21107.7. However, the use of Department of Transportation standards and specifications for traffic control devices are encouraged on all privately owned and maintained roads or commercial establishments, in general, as a good practice.

Section 1A.08 <u>Authority for Placement of Traffic Control Devices</u>

Standard:

Traffic control devices, advertisements, announcements, and other signs or messages within the highway right-of-way shall be placed only as authorized by a public authority or the official having jurisdiction, for the purpose of regulating, warning, or guiding traffic.

When the public agency or the official having jurisdiction over a street or highway has granted proper authority, others such as contractors and public utility companies shall be permitted to install temporary traffic control devices in temporary traffic control zones. Such traffic control devices shall conform with the Standards of this Manual.

This California MUTCD (including the incorporated FHWA's MUTCD) does not supersede the Department's Standard Plans, Standard Specifications or the Special Provisions publications. Nothing contained in the California MUTCD shall prevent the Department of Transportation from modifying, changing or adopting new specifications as necessary.

Guidance:

Any unauthorized traffic control device or other sign or message placed on the highway right-of-way by a private organization or individual constitutes a public nuisance and should be removed. All unofficial or nonessential traffic control devices, signs, or messages should be removed.

Standard:

All regulatory traffic control devices shall be supported by laws, ordinances, or regulations.

Support:

Provisions of this Manual are based upon the concept that effective traffic control depends upon both appropriate application of the devices and reasonable enforcement of the regulations.

California Vehicle Code (CVC) references are used throughout this California MUTCD when the subject matter relates to State law.

Standard:

CVC 21400 provides that the Department of Transportation shall, after consultation with local agencies and public hearings, adopt rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to the provisions of the Code.

CVC 21401 provides that only those official traffic control devices that conform to the uniform standards and specifications promulgated by the Department of Transportation shall be placed upon a street or highway.

CVC 21350 and 21351 give basic authority to the Department of Transportation and local authorities, in their respective jurisdictions, to place and maintain such official traffic control devices.

Option:

Local authorities may adopt rules and regulations by ordinance or resolution for regulating traffic by means of official traffic control devices meeting the requirements of CVC Section 21400. Refer to CVC Section 21100 (d).

Standard:

The use of unauthorized traffic control devices is prohibited by CVC 21465. Prohibited traffic control devices constitute a public nuisance and shall be removed per CVC 21467. This does not modify or limit the

authority of the Public Utilities Commission to erect or maintain traffic control devices as authorized by law. Refer to CVC 21468.

Private advertising is prohibited on any highway right-of-way by Section 5403 (a) of the Business and Professions Code. "Highway" in this context includes roads, streets, boulevards, lanes, courts, places, commons, trails, ways or other rights-of-way or easements used for or laid out and intended for the public passage of vehicles or of vehicles and persons per Section 5213 of the Business and Professions Code.

Support:

The California Public Utilities Commission is the state regulatory agency with statutory authority over highway-rail grade crossings and highway-light rail transit grade crossings. Refer to Public Utilities Code Section 1202(a).

Section 1A.09 <u>Engineering Study and Engineering Judgment</u>

Standard:

This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.

Guidance:

The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment. Thus, while this Manual provides Standards, Guidance, and Options for design and application of traffic control devices, this Manual should not be considered a substitute for engineering judgment.

Engineering judgment should be exercised in the selection, ~~and~~ application and replacement of traffic control devices, as well as in the location and design of the roads and streets that the devices complement. Jurisdictions with responsibility for traffic control that do not have engineers on their staffs should seek engineering assistance from others, such as the State transportation agency, their County, a nearby large City, or a traffic engineering consultant.

Support:

Refer to CVC 627 for definition and requirements of "Engineering and Traffic Survey". It is also abbreviated in this manual as E&TS.

Section 1A.10 <u>Interpretations, Experimentations, Changes, and Interim Approvals</u>

Standard:

Design, application, and placement of traffic control devices other than those adopted in this Manual shall be prohibited unless the provisions of this Section are followed.

Support:

Continuing advances in technology will produce changes in the highway, vehicle, and road user proficiency; therefore, portions of the system of traffic control devices in this Manual will require updating. In addition, unique situations often arise for device applications that might require interpretation or clarification of this Manual. It is important to have a procedure for recognizing these developments and for introducing new ideas and modifications into the system.

Standard:

Requests for any interpretation, permission to experiment, interim approval, or change to FHWA's MUTCD **shall be sent to the Federal Highway Administration (FHWA), Office of Transportation Operations, 400 Seventh Street, SW, HOTO, Washington, DC 20590.**

Support:

Requests for experimentation, interpretation, or changes relating to the California edited portion of the California MUTCD are covered later in this section.

An interpretation includes a consideration of the application and operation of standard traffic control devices, official meanings of standard traffic control devices, or the variations from standard device designs.

Guidance:

Requests for an interpretation of this Manual should contain the following information:

A. A concise statement of the interpretation being sought;

B. A description of the condition that provoked the need for an interpretation;

C. Any illustration that would be helpful to understand the request; and

D. Any supporting research data that is pertinent to the item to be interpreted.

Support:

Requests to experiment include consideration of field deployment for the purpose of testing or evaluating a new traffic control device, its application or manner of use, or a provision not specifically described in this Manual.

A request for permission to experiment will be considered only when submitted by the public agency or private toll facility responsible for the operation of the road or street on which the experiment is to take place.

A diagram indicating the process for experimenting with traffic control devices is shown in Figure 1A-1.

Guidance:

The request for permission to experiment should contain the following:

A. A statement indicating the nature of the problem.

B. A description of the proposed change to the traffic control device or application of the traffic control device, how it was developed, the manner in which it deviates from the standard, and how it is expected to be an improvement over existing standards.

C. Any illustration that would be helpful to understand the traffic control device or use of the traffic control device.

D. Any supporting data explaining how the traffic control device was developed, if it has been tried, in what ways it was found to be adequate or inadequate, and how this choice of device or application was derived.

E. A legally binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright. (An example of a traffic control device concept would be countdown pedestrian signals in general. Ordinarily an entire general concept would not be patented or copyrighted, but if it were it would not be acceptable for experimentation unless the patent or copyright owner signs a waiver of rights acceptable to the FHWA. An example of a patented or copyrighted specific device within the general concept of countdown pedestrian signals would be a manufacturer's design for its specific brand of countdown signal, including the design details of the housing or electronics that are unique to that manufacturer's product. As long as the general concept is not patented or copyrighted, it is acceptable for experimentation to incorporate the use of one or more patented devices of one or several manufacturers.)

F. The time period and location(s) of the experiment.

G. A detailed research or evaluation plan that must provide for close monitoring of the experimentation, especially in the early stages of its field implementation. The evaluation plan should include before and after studies as well as quantitative data describing the performance of the experimental device.

H. An agreement to restore the site of the experiment to a condition that complies with the provisions of this Manual within 3 months following the end of the time period of the experiment. This agreement must also provide that the agency sponsoring the experimentation will terminate the experimentation at any time that it determines significant safety concerns are directly or indirectly attributable to the experimentation. The FHWA's Office of Transportation Operations has the right to terminate approval of the experimentation at any time if there is an indication of safety concerns. If, as a result of the experimentation, a request is made that this Manual be changed to include the device or application being experimented with, the device or application will be permitted to remain in place until an official rulemaking action has occurred.

I. An agreement to provide semiannual progress reports for the duration of the experimentation, and an agreement to provide a copy of the final results of the experimentation to the FHWA's Office of Transportation Operations within 3 months following completion of the experimentation. The FHWA's Office of Transportation Operations has the right to terminate approval of the experimentation if reports are not provided in accordance with this schedule.

Support:

A change includes consideration of a new device to replace a present standard device, an additional device to be added to the list of standard devices, or a revision to a traffic control device application or placement criteria.

Guidance:

Requests for a change to this Manual should contain the following information:

A. A statement indicating what change is proposed;

B. Any illustration that would be helpful to understand the request; and

C. Any supporting research data that is pertinent to the item to be reviewed.

Support:

Requests for interim approval include consideration of allowing interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in this Manual. If granted, interim approval will result in the traffic control device or application being placed into the next scheduled rulemaking process for revisions to this Manual. The device or application will be permitted to remain in place, under any conditions established in the interim approval, until an official rulemaking action has occurred.

Interim approval is considered based on the results of successful experimentation, results of analytical or laboratory studies, and/or review of non-U.S. experience with a traffic control device or application. Interim approval considerations include an assessment of relative risks, benefits, and costs. Interim approval includes conditions that jurisdictions agree to comply with in order to use the traffic control device or application until an official rulemaking action has occurred.

Guidance:

The request for permission to place a traffic control device under interim approval should contain the following:

A. A statement indicating the nature of the problem.

B. A description of the proposed change to the traffic control device or application of the traffic control device, how it was developed, the manner in which it deviates from the standard, and how it is expected to be an improvement over existing standards.

C. The location(s) where it will be used and any illustration that would be helpful to understand the traffic control device or use of the traffic control device.

D. A legally-binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright. (An example of a traffic control device concept would be countdown pedestrian signals in general. Ordinarily an entire general concept would not be patented or copyrighted, but if it were it would not be acceptable for interim approval unless the patent or copyright owner signs a waiver of rights acceptable to the FHWA. An example of a patented or copyrighted specific device within the general concept of countdown pedestrian signals would be a manufacturer's design for its specific brand of countdown signal, including the design details of the housing or electronics that are unique to that manufacturer's product. Interim approval of a specific patented or copyrighted product is not acceptable.)

E. A detailed completed research or evaluation on this traffic control device.

F. An agreement to restore the site(s) of the interim approval to a condition that complies with the provisions in this Manual within 3 months following the issuance of a final rule on this traffic control device. This agreement must also provide that the agency sponsoring the interim approval will terminate use of the device or application installed under the interim approval at any time that it determines significant safety concerns are directly or indirectly attributable to the device or application. The FHWA's Office of Transportation Operations has the right to terminate the interim approval at any time if there is an indication of safety concerns.

Option:

A State may submit a request for interim approval for all jurisdictions in that State, as long as the request contains the information listed in the Guidance above.

Standard:

Once an interim approval is granted to any jurisdiction for a particular traffic control device or application, subsequent jurisdictions shall be granted interim approval for that device or application by submitting a letter to the FHWA Office of Transportation Operations indicating they will abide by Item F above and the specific conditions contained in the original interim approval.

A local jurisdiction using a traffic control device or application under an interim approval that was granted either directly to that jurisdiction or on a statewide basis based on the State's request shall inform the State of the locations of such use.

Support:

A diagram indicating the process for incorporating new traffic control devices into this Manual is shown in Figure 1A-2.

Procedures for revising this Manual are set out in the Federal Register of June 30, 1983 (48 FR 30145).

For additional information concerning interpretations, experimentation, changes, or interim approvals, write to the FHWA, 400 Seventh Street, SW, HOTO, Washington, DC 20590, or visit the MUTCD website at http://mutcd.fhwa.dot.gov.

Standard:

Requests shall be made to the FHWA for experimenting with any new traffic control device, its application or manner of use, or a provision not specifically described in the Manual on Uniform Traffic Control Devices.

Support:

In addition to the requirements of the FHWA, experimental traffic control devices are subject to the laws, regulations and policies of the State of California. Informing the Department of Transportation is necessary prior to installation and experimentation on public travelways in California for any FHWA permission to experiment. For information, contact:

Secretary,
California Traffic Control Devices Committee
(916) 654-4715.

The California MUTCD contains the official standards and policies of the State of California for the design, application, and placement of traffic control devices.

Experimentation is defined as research involving the acts of testing, evaluating, analyzing or discovering the effect of a specific device, principle, supposition, etc., usually carried out in an operational context. Experimentation could also be performed in a laboratory. The request for experimentation is a submission specifically requesting approval to use a non-standard device on public roadways for purposes of gathering verification data.

As used herein, the term "device" includes not only signs, signals, and markings, but also their application and manner of use.

Guidance:

Requests for experimentation, interpretation, or changes relating to the California edited portion of the California MUTCD should be sent to:

Secretary,
California Traffic Control Devices Committee – MS36
P.O. Box 942874, Sacramento, CA-94274-0001

The following procedures apply to requests for experimentation:

Submission of Projects

Guidance:

A request for permission to experiment will be considered only when submitted by the public agency or private toll facility responsible for the operation of the road or street on which the experiment is to take place.

Experimentation requests should contain the following information:

1. A statement indicating the nature of the problem.
2. A description of the proposed change, how it was developed, the manner in which it deviates from the standard, and how it is expected to be an improvement over existing standards.
3. Any illustration, photograph, or videos, which would help, explain the experimental device or use of this device.
4. Any supporting data as to how the experimental device was developed, if it has been tried, in what ways it was found to be adequate or inadequate, and how was this choice of device or application arrived at.

Requests for experimentation that are submitted without an explanation of the objective, scope, and duration will be returned to the originator for amplification.

Procedure for Processing Requests

Support:

A. All requests for experimentation will be reviewed by the Secretary of the California Traffic Control Devices Committee to determine whether other related experimentation has been scheduled, in process, or already completed.
B. The Secretary of the California Traffic Control Devices Committee will list the experimentation proposal on the next Committee agenda for review and approval. The Committee's approval would also include the specific guidelines to be followed for the experimentation.
C. Action by the California Traffic Control Devices Committee on any request for experimental use of a non-conforming device could take several forms:
   1. Approval of the device for limited use on an experimental project.
   2. Approval of the device for limited use in a formal research project.
   3. Disapproval until such time as satisfactory research or other justification is submitted.
   4. Disapproval.
D. After action by the California Traffic Control Devices Committee, the Secretary of the California Traffic Control Devices Committee will notify the originating party of it decision. If approved, the originating parties will be requested to submit a status report on the experimental testing at appropriate intervals. When the results of experimentation are completed, a final report will be prepared and forwarded to the Secretary for Committee review.
E. The agency receiving approval for experimentation must agree-to faithfully follow the specific guidelines for the experimentation, must forward reports as indicated, and must agree to terminate the experimentation upon notification.

Specific Guidelines for Experimental Proposal

Guidance:

A specific proposal should be submitted for each request.

Support:

This proposal can be submitted with the initial request or could be a follow-up to specific comments by the California Traffic Control Devices Committee. The proposal, after approval by the Committee, will become an integral part of the approved experimentation.

Guidance:

Each proposal should include:

A. Scope: A detailed description of the experimentation, locations of installation, and number of experimental projects.
B. Work Plan: A description of the proposed plan of study; the variables that are to be measured; the criteria against which the devices is to be evaluated; observations, measures and data which will be collected; whether the experimentation will be carried out in the field or under laboratory conditions; how installations of the experimental device or application will be made; the indication if any adverse effects on safety or traffic operations can be anticipated, together with the means that may be taken to minimize them; and the factors which will be held constant or measured and controlled in order to ensure that the true effects of the device are measured.
C. Time Periods: Time periods for experimentation will normally not be less than six months nor more than two years.
D. Evaluation Procedures: The California Traffic Control Devices Committee will approve criteria, which will be used to evaluate experimental devices or applications. To permit meaningful comparisons with standard installations, advice from specialists such as human factor experts, statisticians, etc., could be included.
E. Reporting: A written status report must be forwarded to the sponsor 45 days prior to each public meeting. A final report must be completed within 90 days of the terminal date of the experimentation and forwarded to the Secretary of the California Traffic Control Devices Committee. Status reports will describe the progress of the work, any particular deviation from the work plan and anticipated time of conclusion. The final report will contain, as a minimum, the basic information on the problem, the preliminary investigations, the proposed solutions, the study procedures, the detailed analysis of the data, the results of the work, a discussion of the

results, and whatever conclusions are drawn. If a change in the California MUTCD is proposed, the recommended text (wording) for the California MUTCD should be included.

F. Administration: All experimentation proposals will include the agency sponsoring the study, the agency conducting the study, and the name and titles of principal researchers. There must be proof of professional traffic engineering capabilities and other related professional expertise to perform the experimentation and related evaluation processes.

Termination of Experimentation

Standard:

The project shall terminate at the end of the approved period unless an extension is granted, and all experimental devices and applications shall be removed unless specific permission is given for continued operation.

Support:

The California Traffic Control Devices Committee could, at any time, terminate approval of experimentation if significant safety hazards are indicated to be directly or indirectly attributable to the experimentation. Approval of any experimentation could also be terminated if no status report is received 45 days prior to each public meeting or no final report is received within 90 days of the terminal date of the experimentation.

Removal of Experimentation Installations

Standard:

All experimentation installations shall be removed upon termination of the experiment-when a decision is made by the California Traffic Control Devices Committee that the device is not warranted.

Support:

Authority and reference cited for removal of experimentation installation is CVC Section 21400.

Section 1A.11 Relation to Other Publications

Standard:

To the extent that they are incorporated by specific reference, the latest editions of the following publications, or those editions specifically noted, shall be a part of this Manual: "Standard Highway Signs" book (FHWA); and "Color Specifications for Retroreflective Sign and Pavement Marking Materials" (appendix to subpart F of Part 655 of Title 23 of the Code of Federal Regulations).

Support:

The "Standard Highway Signs" book includes standard alphabets and symbols for highway signs and pavement markings.

For information about the above publications, visit the Federal Highway Administration's MUTCD website at http://mutcd.fhwa.dot.gov, or write to the FHWA, 400 Seventh Street, SW, HOTO, Washington, DC 20590.

The publication entitled "Federal-Aid Highway Program Guidance on High Occupancy Vehicle (HOV) Lanes" is available at http://www.fhwa.dot.gov/operations/hovguide01.htm, or write to the FHWA, 400 Seventh Street, SW, HOTM, Washington, DC 20590.

Other publications that are useful sources of information with respect to use of this Manual are listed below. See Page i of this Manual for ordering information for the following publications:

1. "A Policy on Geometric Design of Highways and Streets," 2001 Edition (American Association of State Highway and Transportation Officials—AASHTO)
2. "Guide for the Development of Bicycle Facilities," 1999 Edition (AASHTO)
3. "Guide to Metric Conversion," 1993 Edition (AASHTO)
4. "Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways," 2001 Edition (AASHTO)
5. "List of Control Cities for Use in Guide Signs on Interstate Highways," 2001 Edition (AASHTO)
6. "Roadside Design Guide," 2001 Edition (AASHTO)
7. "Standard Specifications for Movable Highway Bridges," 1988 Edition (AASHTO)
8. "Traffic Engineering Metric Conversion Folders— Addendum to the Guide to Metric Conversion," 1993 Edition (AASHTO)

9. "2000 AREMA Communications & Signals Manual," American Railway Engineering & Maintenance-of- Way Association (AREMA)
10. "Designing Sidewalks and Trails for Access—Part 2—Best Practices Design Guide," 2001 Edition (FHWA) [Publication No. FHWA-EP-01-027]
11. "Practice for Roadway Lighting," RP-8, 2001, Illuminating Engineering Society (IES)
12. "Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electric Detonators (Blasting Caps)," Safety Library Publication No. 20, Institute of Makers of Explosives
13. "American National Standard for High-Visibility Safety Apparel," (ANSI/ISEA 107-1999), 1999 Edition, ISEA - The Safety Equipment Association.
14. "Manual of Traffic Signal Design," 1998 Edition (Institute of Transportation Engineers—ITE)
15. "Manual of Transportation Engineering Studies," 1994 Edition (ITE)
16. "Pedestrian Traffic Control Signal Indications," 1985 Edition (ITE)
17. "Preemption of Traffic Signals at or Near Railroad Grade Crossings with Active Warning Devices," (ITE)
18. "Purchase Specification for Flashing and Steady Burn Warning Lights," 1981 Edition (ITE)
19. "School Trip Safety Program Guidelines," 1984 Edition (ITE)
20. "Traffic Detector Handbook," 1991 Edition (ITE)
21. "Traffic Engineering Handbook," 1999 Edition (ITE)
22. "Traffic Signal Lamps," 1980 Edition (ITE)
23. "Traffic Control Devices Handbook," 2001 Edition (ITE)
24. "Vehicle Traffic Control Signal Heads," Part 1—1985 Edition; Part 2—1998 Edition (ITE)
25. "Uniform Vehicle Code (UVC) and Model Traffic Ordinance," 2000 Edition (National Committee on Uniform Traffic Laws and Ordinances)
26. "Occupational Safety and Health Administration Regulations (Standards - 29 CFR), General Safety and Health Provisions - 1926.20," amended June 30, 1993, Occupational Safety and Health Administration (OSHA)
27. "Highway Capacity Manual," 2000 Edition (Transportation Research Board—TRB)
28. "Recommended Procedures for the Safety Performance Evaluation of Highway Features," (NCHRP Report 350), 1993 Edition (Transportation Research Board - TRB)
29. "Accessible Pedestrian Signals," A-37, 1998 Edition, U.S. Architectural and Transportation Barriers Compliance Board (The U.S. Access Board)
30. "Building a True Community—Final Report—Public Rights-of-Way Access Advisory Committee (PRWAAC)," 2001 Edition (The U.S. Access Board)
31. "The Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)," July 1998 Edition (The U.S. Access Board)
32. "Highway-Rail Intersection Architecture," U.S. Department of Transportation, Federal Railroad Administration (USDOT/FRA)

Standard:

The latest edition of Department of Transportation's California Sign Specifications shall be a part of this manual.

Support:

The latest version of other documents that are useful sources of information with respect to the use of this Manual are listed below. See Appendix for a list of web sites that have direct access to some of these publications. See the Introduction Part of this California MUTCD for ordering information for the following publications:

A. "California Building Standards Code" 2001 Edition (California Building Standards Commission)
B. "California Business and Professions Code" (State of California)
C. "California Code of Regulations" (State of California)
D. "California Education Code" (State of California)
E. "California Government Code" (State of California)
F. "California Health and Safety Code" (State of California)
G. "California Streets and Highways Code" (State of California)

H. "California Vehicle Code" (CVC), 2006 Edition (Department of Motor Vehicles)
I. "Construction Manual", 2005 Edition. (Department of Transportation)
J. "Highway Design Handbook For Older Drivers And Pedestrains", 2001 Edition (Federal Highway Administration)
K. "Highway Design Manual", Fifth Edition (Department of Transportation)
L. "High-Occupancy Vehicle Guidelines", 2003 Edition (Department of Transportation)
M. "Historic Highway Bridges of California", (Department of Transportation)
N. "Maintenance Manual", 1999 Edition (Department of Transportation)
O. "Manual for Encroachment Permits on California State Highways", 2005 Edition (Department of Transportation)
P. "Plans, Specifications and Estimates Guide" (PS&E), 2006 Edition (Department of Transportation)
Q. "Project Development Procedures Manual", 2005 Edition (Department of Transportation)
R. "Ramp Meter Design Manual", 2000 Edition (Department of Transportation)
S. "Signal and Lighting Design Guide", 1995 Edition (Department of Transportation)
T. "Standard Plans", 2006 Edition (Department of Transportation)
U. "Standard Specifications", 2006 Edition (Department of Transportation)
V. "Standard Special Provisions", 2006 Edition (Department of Transportation)
W. "Traffic Control Devices Handbook", 2001 Edition (Institute of Transportation Engineers – ITE)
X. "Traffic Engineering Metric Conversion Factors", 1993 Edition (American Association of State Highway and transportation Officials - AASHTO).
Y. "Traffic Manual", 1996 Edition (Department of Transportation)

Section 1A.12 <u>Color Code</u>

Support:

The following color code establishes general meanings for 10 colors of a total of 13 colors that have been identified as being appropriate for use in conveying traffic control information. Central values and tolerance limits for each color are available from the Federal Highway Administration, 400 Seventh Street, SW, HOTO, Washington, DC 20590, and at FHWA's MUTCD website at http://mutcd.fhwa.dot.gov.

The three colors for which general meanings have not yet been assigned are being reserved for future applications that will be determined only by FHWA after consultation with the States, the engineering community, and the general public. The meanings described in this Section are of a general nature. More specific assignments of colors are given in the individual Parts of this Manual relating to each class of devices.

Standard:

The general meaning of the 13 colors shall be as follows:

A. Black—regulation
B. Blue—road user services guidance, tourist information, and evacuation route
C. Brown—recreational and cultural interest area guidance
D. Coral—unassigned
E. Fluorescent Pink—incident management
F. Fluorescent Yellow-Green—pedestrian warning, bicycle warning, playground warning, school bus and school warning
G. Green—indicated movements permitted, direction guidance
H. Light Blue—unassigned
I. Orange—temporary traffic control
J. Purple—unassigned
K. Red—stop or prohibition
L. White—regulation
M. Yellow—warning

Section 1A.13 <u>Definitions of Words and Phrases in This Manual</u>

Standard:

Unless otherwise defined herein, or in the other Parts of this Manual, definitions contained in the most recent edition of the "Uniform Vehicle Code," "AASHTO Transportation Glossary (Highway

Definitions)," "California Vehicle Code" and other publications specified in Section 1A.11 are also incorporated and adopted by reference.

The following words and phrases, when used in this Manual, shall have the following meanings:

1. Active Grade Crossing Warning System—the flashing-light signals, with or without warning gates, together with the necessary control equipment used to inform road users of the approach or presence of trains at highway-rail or highway-light rail transit grade crossings.

2. Approach—all lanes of traffic moving towards an intersection or a midblock location from one direction, including any adjacent parking lane(s).

3. Arterial Highway (Street)—a general term denoting a highway primarily used by through traffic, usually on a continuous route or a highway designated as part of an arterial system.

4. Average Day—a day representing traffic volumes normally and repeatedly found at a location. Where volumes are primarily influenced by employment, the average day is typically a weekday. When volumes are primarily influenced by entertainment or recreation, the average day is typically a weekend day.

5. Beacon—a highway traffic signal with one or more signal sections that operates in a flashing mode.

6. Bicycle—a pedal-powered vehicle upon which the human operator sits.

7. Bicycle Lane—a portion of a roadway that has been designated by signs and pavement markings for preferential or exclusive use by bicyclists.

7A. CVC – California Vehicle Code.

7B. California Sign Specifications – Detailed drawings of signs approved by the Department of Transportation for use in California.

8. Centerline Markings—the yellow pavement marking line(s) that delineates the separation of traffic lanes that have opposite directions of travel on a roadway. These markings need not be at the geometrical center of the pavement.

9. Changeable Message Sign—a sign that is capable of displaying more than one message, changeable manually, by remote control, or by automatic control. These signs are referred to as Dynamic Message Signs in the National Intelligent Transportation Systems (ITS) Architecture.

10. Channelizing Line Marking—a wide or double solid white line used to form islands where traffic in the same direction of travel is permitted on both sides of the island.

11. Circular Intersection—an intersection that has an island, generally circular in design, located in the center of the intersection where traffic passes to the right of the island. Circular intersections include roundabouts, rotaries, and traffic circles.

12. Clear Zone—the total roadside border area, starting at the edge of the traveled way, that is available for an errant driver to stop or regain control of a vehicle. This area might consist of a shoulder, a recoverable slope, and/or a nonrecoverable, traversable slope with a clear run-out area at its toe.

13. Concurrent Flow HOV Lane—an HOV lane that is operated in the same direction as the adjacent mixed flow lanes, separated from the adjacent general purpose freeway lanes by a standard lane stripe, painted buffer, or barrier.

14. Contraflow Lane—a lane operating in a direction opposite to the normal flow of traffic designated for peak direction of travel during at least a portion of the day. Contraflow lanes are usually separated from the off-peak direction lanes by plastic pylons, or by moveable or permanent barrier.

15. Conventional Road—a street or highway other than a low-volume road (as defined in Section 5A.01), expressway, or freeway.

16. Collector Highway—a term denoting a highway that in rural areas connects small towns and local highways to arterial highways, and in urban areas provides land access and traffic circulation within residential, commercial, and business areas and connects local highways to the arterial highways.

17. Crashworthy—a characteristic of a roadside appurtenance that has been successfully crash tested in accordance with a national standard such as the National Cooperative Highway

Research Program Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

18. Crosswalk—(a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the sidewalk at right angles to the centerline; (b) any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by lines on the surface, which may be supplemented by contrasting pavement texture, style, or color.

19. Crosswalk Lines—white pavement marking lines that identify a crosswalk.

20. Delineator—a retroreflective device mounted on the roadway surface or at the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather.

20A. Department of Transportation – California Department of Transportation or Caltrans.

21. Detectable—having a continuous edge within 150 mm (6 in) of the surface so that pedestrians who have visual disabilities can sense its presence and receive usable guidance information.

21A. Divided Highway – A highway with separated roadbeds for traffic in opposing directions.

22. Dynamic Envelope—the clearance required for the train and its cargo overhang due to any combination of loading, lateral motion, or suspension failure.

23. Edge Line Markings—white or yellow pavement marking lines that delineate the right or left edge(s) of a traveled way.

24. End-of-Roadway Marker—a device used to warn and alert road users of the end of a roadway in other than temporary traffic control zones.

25. Engineering Judgment—the evaluation of available pertinent information, and the application of appropriate principles, experience, education, discretion, **Standards, Guidance, and practices as contained in this Manual and other sources, for the purpose of deciding upon the applicability, design, operation, or installation of a traffic control device. Engineering judgment shall be exercised by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. Documentation of engineering judgment is not required.**

26. Engineering Study—the comprehensive analysis and evaluation of available pertinent information, and the application of appropriate principles, engineering judgment, experience, education, discretion, **Standards, Guidance, and practices as contained in this Manual and other sources, for the purpose of deciding upon the applicability, design, operation, or installation of a traffic control device. An engineering study shall be performed by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. An engineering study shall be documented.**

27. Expressway—a divided highway with partial control of access.

28. Flashing—an operation in which a signal indication is turned on and off repetitively.

29. Freeway—a divided highway with full control of access.

30. Guide Sign—a sign that shows route designations, destinations, directions, distances, services, points of interest, or other geographical, recreational, or cultural information.

31. High Occupancy Vehicle (HOV)—a motor vehicle carrying at least two or more persons, including carpools, vanpools, and buses.

32. Highway—a general term for denoting a public way for purposes of travel by vehicular travel, including the entire area within the right-of-way.

33. Highway-Rail Grade Crossing—the general area where a highway and a railroad's right-of-way cross at the same level, within which are included the railroad tracks, highway, and traffic control devices for highway traffic traversing that area.

34. Highway Traffic Signal—a power-operated traffic control device by which traffic is warned or directed to take some specific action. These devices do not include signals at toll plazas, power

operated signs, illuminated pavement markers, warning lights (see Section 6F.78), or steady burning electric lamps.

35. HOV Lane—any preferential lane designated for exclusive use by high-occupancy vehicles for all or part of a day—including a designated lane on a freeway, other highway, street, or independent roadway on a separate right-of-way.

36. Inherently Low Emission Vehicle (ILEV)—any kind of vehicle that is certified by the U.S. Environmental Protection Agency and that because of inherent properties of the fuel system design, will not have significant evaporative emissions, even if its evaporative emission control system has failed.

37. Interchange—a system of interconnecting roadways providing for traffic movement between two or more highways that do not intersect at grade.

38. Intermediate Interchange—an interchange with an urban or rural route that is not a major or minor interchange as defined herein.

39. Intersection—(a) the area embraced within the prolongation or connection of the lateral curb lines, or if none, the lateral boundary lines of the roadways of two highways that join one another at, or approximately at, right angles, or the area within which vehicles traveling on different highways that join at any other angle might come into conflict; (b) the junction of an alley or driveway with a roadway or highway shall not constitute an intersection.

40. Island—a defined area between traffic lanes for control of vehicular movements or for pedestrian refuge. It includes all end protection and approach treatments. Within an intersection area, a median or an outer separation is considered to be an island.

41. Lane Line Markings—white pavement marking lines that delineate the separation of traffic lanes that have the same direction of travel on a roadway.

42. Lane-Use Control Signal—a signal face displaying indications to permit or prohibit the use of specific lanes of a roadway or to indicate the impending prohibition of such use.

43. Legend—see Sign Legend.

44. Logo—a distinctive emblem, symbol, or trademark that identifies a product or service.

45. Longitudinal Markings—pavement markings that are generally placed parallel and adjacent to the flow of traffic such as lane lines, centerlines, edge lines, channelizing lines, and others.

46. Major Interchange—an interchange with another freeway or expressway, or an interchange with a high-volume multi-lane highway, principal urban arterial, or major rural route where the interchanging traffic is heavy or includes many road users unfamiliar with the area.

47. Major Street—the street normally carrying the higher volume of vehicular traffic.

47A. Markings – All lines, words, or symbols, except signs, officially placed within the roadway to regulate, warn or guide traffic.

48. Median—the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges, and at opposite approaches of the same intersection.

49. Minor Interchange—an interchange where traffic is local and very light, such as interchanges with land service access roads. Where the sum of the exit volumes is estimated to be lower than 100 vehicles per day in the design year, the interchange is classified as local.

50. Minor Street—the street normally carrying the lower volume of vehicular traffic.

51. Object Marker—a device used to mark obstructions within or adjacent to the roadway.

52. Occupancy Requirement—any restriction that regulates the use of a facility for any period of the day based on a specified number of persons in a vehicle.

53. Occupant—a person driving or riding in a car, truck, bus, or other vehicle.

54. Paved—a bituminous surface treatment, mixed bituminous concrete, or Portland cement concrete roadway surface that has both a structural (weight bearing) and a sealing purpose for the roadway.

55. Pedestrian—a person afoot, in a wheelchair, on skates, or on a skateboard.

56. Pedestrian Facilities—a general term denoting improvements and provisions made to accommodate or encourage walking.
57. Platoon—a group of vehicles or pedestrians traveling together as a group, either voluntarily or involuntarily, because of traffic signal controls, geometrics, or other factors.
58. Principal Legend—place names, street names, and route numbers placed on guide signs.
59. Public Road—any road or street under the jurisdiction of and maintained by a public agency and open to public travel.
60. Raised Pavement Marker—a device with a height of at least 10 mm (0.4 in) mounted on or in a road surface that is intended to be used as a positioning guide or to supplement or substitute for pavement markings or to mark the position of a fire hydrant.
61. Regulatory Sign—a sign that gives notice to road users of traffic laws or regulations.
62. Retroreflectivity—a property of a surface that allows a large portion of the light coming from a point source to be returned directly back to a point near its origin.
63. Right-of-Way [Assignment]—the permitting of vehicles and/or pedestrians to proceed in a lawful manner in preference to other vehicles or pedestrians by the display of sign or signal indications.
64. Road—see Roadway.
65. Roadway—that portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder even though such sidewalk, berm, or shoulder is used by persons riding bicycles or other human-powered vehicles. In the event a highway includes two or more separate roadways, the term roadway as used herein shall refer to any such roadway separately, but not to all such roadways collectively.
66. Roadway Network—a geographical arrangement of intersecting roadways.
67. Road User—a vehicle operator, bicyclist, or pedestrian within the highway, including persons with disabilities.
68. Roundabout Intersection—a circular intersection with yield control of all entering traffic, channelized approaches, and appropriate geometric curvature, such that travel speeds on the circulatory roadway are typically less than 50 km/h (30 mph).
69. Rumble Strip - a series of intermittent, narrow, transverse areas of rough-textured, slightly raised, or depressed road surface that is installed to alert road users to unusual traffic conditions.
70. Rural Highway—a type of roadway normally characterized by lower volumes, higher speeds, fewer turning conflicts, and less conflict with pedestrians.
70A. Scenic Highway – An officially designated portion of the State Highway System traversing areas of outstanding scenic beauty which together with the adjacent scenic corridors requires special scenic conservation treatment.
71. Shared Roadway—a roadway that is officially designated and marked as a bicycle route, but which is open to motor vehicle travel and upon which no bicycle lane is designated.
72. Shared-Use Path—a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and nonmotorized users.
72A. Shoulder – The portion of the roadway contiguous with the traveled way for accommodations of stopped vehicles, for emergency use, and for lateral support of base and surface courses.
73. Sidewalk—that portion of a street between the curb line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved or improved and intended for use by pedestrians.
74. Sign—any traffic control device that is intended to communicate specific information to road users through a word or symbol legend. Signs do not include traffic control signals, pavement markings, delineators, or channelization devices.
75. Sign Assembly—a group of signs, located on the same support(s), that supplement one another in conveying information to road users.

76. Sign Illumination—either internal or external lighting that shows similar color by day or night. Street or highway lighting shall not be considered as meeting this definition.

77. Sign Legend—all word messages, logos, and symbol designs that are intended to convey specific meanings.

78. Sign Panel—a separate panel or piece of material containing a word or symbol legend that is affixed to the face of a sign.

79. Speed—speed is defined based on the following classifications:

(a) Advisory Speed—a recommended speed for all vehicles operating on a section of highway and based on the highway design, operating characteristics, and conditions.

(b) Average Speed—the summation of the instantaneous or spot-measured speeds at a specific location of vehicles divided by the number of vehicles observed.

(c) Design Speed—a selected speed used to determine the various geometric design features of a roadway.

(d) 85th-Percentile Speed—The speed at or below which 85 percent of the motor vehicles travel.

(e) Operating Speed—a speed at which a typical vehicle or the overall traffic operates. Operating speed might be defined with speed values such as the average, pace, or 85th-percentile speeds.

(f) Pace Speed—the highest speed within a specific range of speeds that represents more vehicles than in any other like range of speed. The range of speeds typically used is 10 km/h or 10 mph.

(g) Posted Speed—the speed limit determined by law and shown on Speed Limit signs.

(h) Statutory Speed—a speed limit established by legislative action that typically is applicable for highways with specified design, functional, jurisdictional and/or location characteristic and is not necessarily shown on Speed Limit signs.

80. Speed Limit—the maximum (or minimum) speed applicable to a section of highway as established by law.

81. Speed Measurement Marking—a white transverse pavement marking placed on the roadway to assist the enforcement of speed regulations.

82. Speed Zone—a section of highway with a speed limit that is established by law but which might be different from a legislatively specified statutory speed limit.

82A. State Highway – Any highway owned and operated by the Department of Transportation.

83. Stop Line—a solid white pavement marking line extending across approach lanes to indicate the point at which a stop is intended or required to be made. For all purposes, limit line(s) as defined per CVC 377 shall mean stop line(s).

84. Street—see Highway.

85. Temporary Traffic Control Zone—an area of a highway where road user conditions are changed because of a work zone or incident by the use of temporary traffic control devices, flaggers, uniformed law enforcement officers, or other authorized personnel.

86. Traffic—pedestrians, bicyclists, ridden or herded animals, vehicles, streetcars, and other conveyances either singularly or together while using any highway for purposes of travel.

87. Traffic Control Device—a sign, signal, marking, or other device used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or shared-use path by authority of a public agency having jurisdiction.

88. Traffic Control Signal (Traffic Signal)—any highway traffic signal by which traffic is alternately directed to stop and permitted to proceed.

89. Train—one or more locomotives coupled, with or without cars, that operates on rails or tracks and to which all other traffic must yield the right-of-way by law at highway-rail grade crossings.

90. Transverse Markings—pavement markings that are generally placed perpendicular and across the flow of traffic such as shoulder markings, word and symbol markings, stop lines, crosswalk lines, speed measurement markings, parking space markings, and others.

91. Traveled Way—the portion of the roadway for the movement of vehicles, exclusive of the shoulders, berms, sidewalks, and parking lanes.

92. Urban Street—a type of street normally characterized by relatively low speeds, wide ranges of traffic volumes, narrower lanes, frequent intersections and driveways, significant pedestrian traffic, and more businesses and houses.

93. Vehicle—every device in, upon, or by which any person or property can be transported or drawn upon a highway, except trains and light rail transit operating in exclusive or semiexclusive alignments. Light rail transit operating in a mixed-use alignment, to which other traffic is not required to yield the right-of-way by law, is a vehicle.

94. Warning Sign—a sign that gives notice to road users of a situation that might not be readily apparent.

95. Warrant—a warrant describes threshold conditions to the engineer in evaluating the potential safety and operational benefits of traffic control devices and is based upon average or normal conditions. Warrants are not a substitute for engineering judgment. The fact that a warrant for a particular traffic control device is met is not conclusive justification for the installation of the device.

96. Wrong-Way Arrow—a slender, elongated, white pavement marking arrow placed upstream from the ramp terminus to indicate the correct direction of traffic flow. Wrong-way arrows are intended primarily to warn wrong-way road users that they are going in the wrong direction.

Support:

The following terms are defined in the California Vehicle Code:

1. Alley - Section 110.
2. Amber - Section 112.
3. Authorized Emergency Vehicle - Section 165.
4. Automated Enforcement System - Section 210.
5. Axle - Section 230.
6. Bicycle - Section 231.
7. Bus - Section 233.
8. Business District - Section 235.
9. Clean Fuel Vehicle - Section 257.
10. Commercial Vehicle - Section 260.
11. Crosswalk - Section 275.
12. Department of Transportation - Section 291.
13. Disabled Person - Section 295.5.
14. Engineering and Traffic Survey - Section 627.
15. Freeway - Section 332.
16. Golf Cart - Section 345.
17. Hazardous Material - Section 353.
18. Highway - Section 360.
19. Intersection - Section 365.
20. Limit Line - Section 377.
21. Local Authorities - Section 385.
22. Motorcycle - Section 400.
23. Motor Vehicle - Section 415.
24. Official Traffic Control Device - Section 440.
25. Official Traffic Control Signal - Section 445.
26. Park or Parking - Section 463.
27. Pedestrian - Section 467.
28. Pickup Truck - Section 471.
29. Private Road or Driveway - Section 490.
30. Private School - Section 492.
31. Road - Section 527.

32. Roadway - Section 530.
33. Schoolbus - Section 545.
34. Sidewalk - Section 555.
35. Snowmobile - Section 557.
36. Stop or Stopping - Section 587.
37. Street - Section 590.
38. Street or Highway - Section 591.
39. Street or Highway – Highway Exclusion - Section 592.
40. Through Highway - Section 600.
41. Traffic - Section 620.
42. Trailer - Section 630.
43. U-Turn - Section 665.5.
44. Vehicle - Section 670.

Section 1A.14 <u>Abbreviations Used on Traffic Control Devices</u>

Standard:

When the word messages shown in Table 1A-1 need to be abbreviated in connection with traffic control devices, the abbreviations shown in Table 1A-1 shall be used.

Guidance:

The abbreviations for the words listed in Table 1A-2 should not be used in connection with traffic control devices unless the prompt word shown in Table 1A-2 either precedes or follows the abbreviation.

Standard:

The abbreviations shown in Table 1A-3 shall not be used in connection with traffic control devices because of their potential to be misinterpreted by road users.

Guidance:

Where multiple abbreviations are permitted in Tables 1A-1 or 1A-2, the same abbreviation should be used throughout a single jurisdiction.

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Figure 1A-1. Example of Process for Requesting and Conducting Experimentations for New Traffic Control Devices

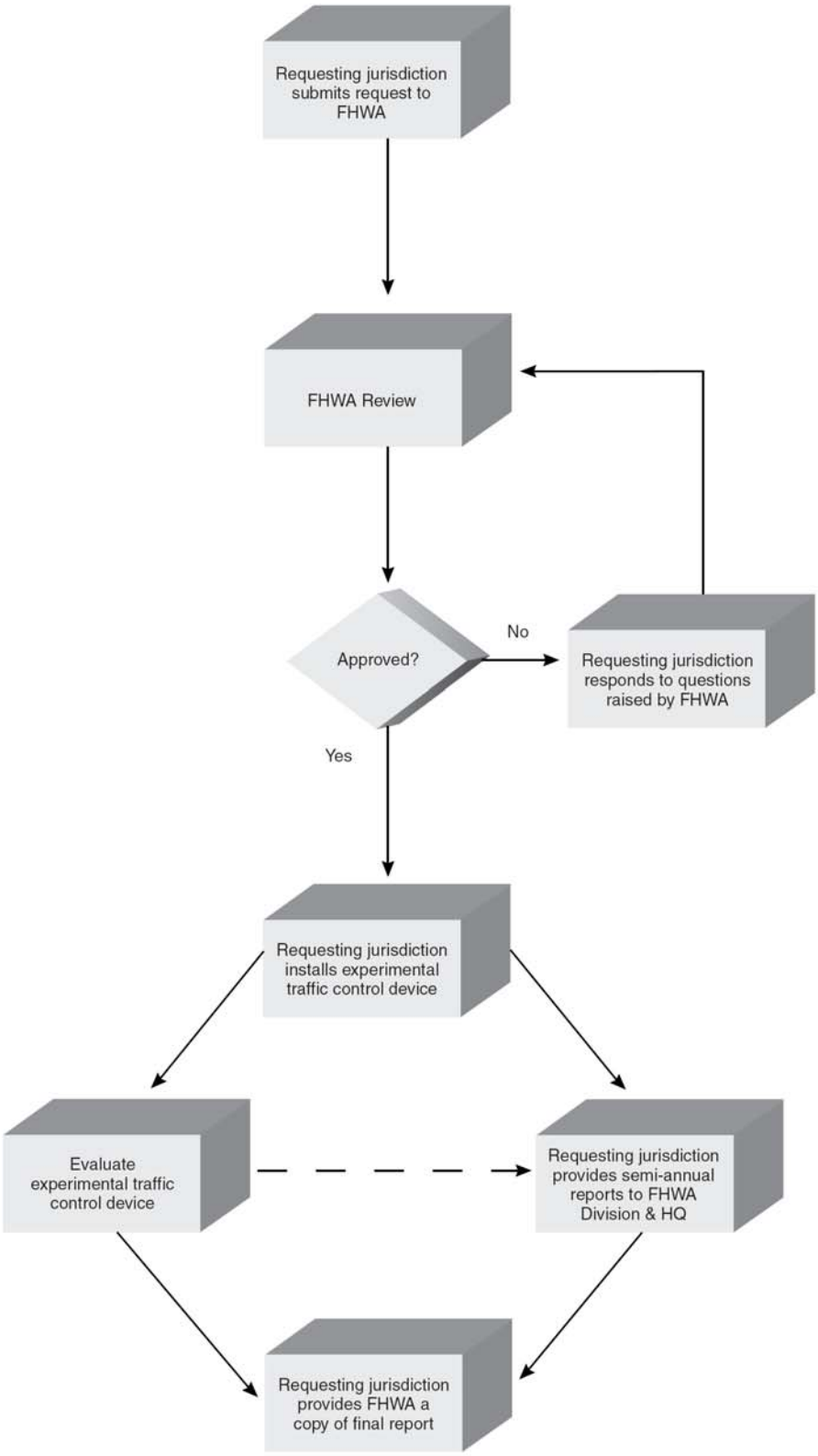

Figure 1A-2. Example of Process for Incorporating New Traffic Control Devices into the MUTCD

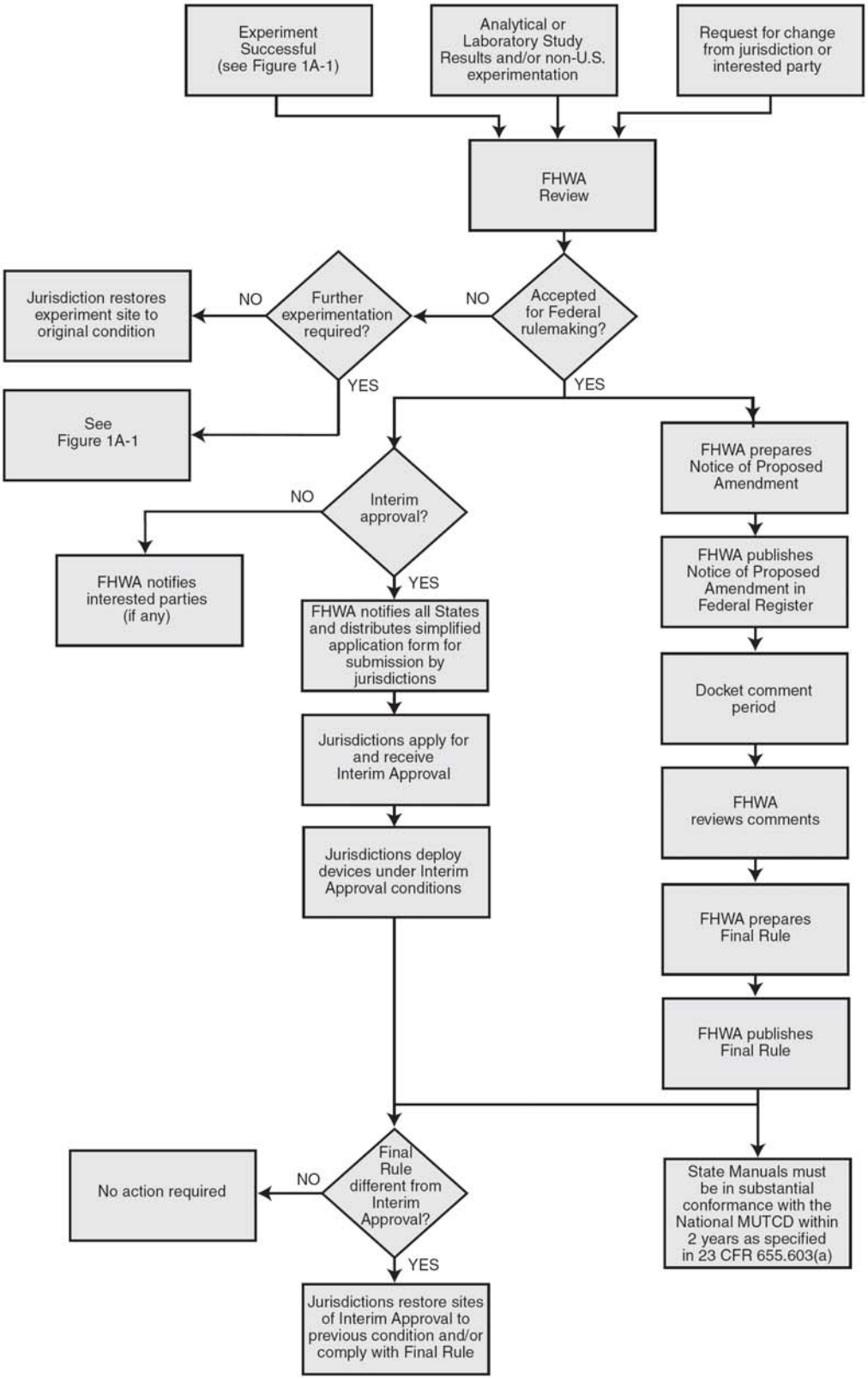

Table 1A-1. Acceptable Abbreviations

Word Message	Standard Abbreviation
Afternoon / Evening	PM
Alternate	ALT
Avenue	AVE, AV
Bicycle	BIKE
Boulevard	BLVD
Cannot	CANT
CB Radio	CB
Center	CNTR
Circle	CIR
Civil Defense	CD
Compressed Natural Gas	CNG
Court	CT
Crossing (other than highway-rail)	XING
Diesel Fuel	D
Do Not	DONT
Drive	DR
East	E
Eastbound	E-BND
Electric Vehicle	EV
Emergency	EMER
Entrance, Enter	ENT
Expressway	EXPWY
Feet	FT
FM Radio	FM
Freeway	FRWY, FWY
Friday	FRI
Hazardous Material	HAZMAT
High Occupancy Vehicle	HOV
Highway	HWY
Highway-Rail Grade Crossing Pavement Marking	RXR
Hospital	H
Hour(s)	HR
Information	INFO
Inherently Low Emission Vehicle	ILEV
It Is	ITS
Junction / Intersection	JCT
Kilogram	kg
Kilometer(s)	km
Kilometers Per Hour	km/h
Lane	LN
Left	LFT
Liquid Propane Gas	LP-GAS

Word Message	Standard Abbreviation
Maintenance	MAINT
Meter(s)	m
Metric Ton	t
Mile(s)	MI
Miles Per Hour	MPH
Minute(s)	MIN
Monday	MON
Morning / Late Night	AM
Normal	NORM
North	N
Northbound	N-BND
Parking	PKING
Parkway	PKWY
Pedestrian	PED
Place	PL
Pounds	LBS
Right	RHT
Road	RD
Saturday	SAT
Service	SERV
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	S-BND
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Terrace	TER
Thursday	THURS
Tires With Lugs	LUGS
Tons of Weight	T
Traffic	TRAF
Trail	TR
Travelers	TRAVLRS
Tuesday	TUES
Two-Way Intersection	2-WAY
Two-Wheeled Vehicles	CYCLES
US Numbered Route	US
Vehicle(s)	VEH
Warning	WARN
Wednesday	WED
West	W
Westbound	W-BND
Will Not	WONT

Table 1A-2. Abbreviations That Are Acceptable Only with a Prompt Word

Word	Abbreviation	Prompt Word
Access	ACCS	Road
Ahead	AHD	Fog*
Blocked	BLKD	Lane*
Bridge	BRDG	[Name]*
Chemical	CHEM	Spill
Condition	COND	Traffic*
Congested	CONG	Traffic*
Construction	CONST	Ahead
Downtown	DWNTN	Traffic
Exit	EX, EXT	Next*
Express	EXP	Lane
Frontage	FRNTG	Road
Hazardous	HAZ	Driving
Interstate	I	[Number]
Local	LOC	Traffic
Lower	LWR	Level
Major	MAJ	Accident
Minor	MNR	Accident
Oversized	OVRSZ	Load
Prepare	PREP	To Stop
Pavement	PVMT	Wet*
Quality	QLTY	Air*
Roadwork	RDWK	Ahead [Distance]
Route	RT, RTE	Best*
Township	TWNSHP	Limits
Turnpike	TRNPK	[Name]*
Upper	UPR	Level

* These prompt words should precede the abbreviation

Table 1A-3. Unacceptable Abbreviations

Abbreviation	Intended Word	Common Misinterpretations
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (Merge)
LT	Light (Traffic)	Left
PARK	Parking	Park
POLL	Pollution (Index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
WRNG	Warning	Wrong

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California
Manual on Uniform Traffic Control Devices
for Streets and Highways
**(FHWA's MUTCD 2003 Edition,
as amended for use in California)**

PART 7
Traffic Controls for School Areas

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

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PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

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CHAPTER 7A. GENERAL

Section 7A.01 Need for Standards

Support:

It is important to stress that regardless of the school location, the best way to achieve reasonably safe and effective traffic control is through the uniform application of realistic policies, practices, and standards developed through engineering judgment.

Pedestrian safety depends upon public understanding of accepted methods for efficient traffic control. This principle is especially important in the control of pedestrians, bicycles, and other vehicles in the vicinity of schools. Neither pedestrians on their way to or from school nor road users can be expected to move safely in school areas unless they understand both the need for traffic controls and how these controls function for their benefit.

Procedures and devices that are not uniform might cause confusion among pedestrians and road users, prompt wrong decisions, and contribute to crashes. To achieve uniformity of traffic control in school areas, comparable traffic situations need to be treated in a consistent manner. Each traffic control device and control method described in Part 7 fulfills a specific function related to specific traffic conditions.

A uniform approach to school area traffic controls assures the use of similar controls for similar situations (which promotes uniform behavior on the part of motorists, pedestrians, and bicyclists).

A school traffic control plan permits the orderly review of school area traffic control needs, and the coordination of school/pedestrian safety education and engineering activities.

Guidance:

A school route plan for each school serving elementary ~~to high school~~ students should be prepared in order to develop uniformity in the use of school area traffic controls and to serve as the basis for a school traffic control plan for each school.

Option:

A school route plan for each school serving middle school or high school students may be prepared.

Guidance:

The school route plan, developed in a systematic manner by the school, law enforcement, and traffic officials responsible for school pedestrian safety, should consist of a map (see Figure 7A-1) showing streets, the school, existing traffic controls, established school walk routes, and established school crossings.

The type(s) of school area traffic control devices used, either warning or regulatory, should be related to the volume and speed of vehicular traffic, street width, and the number and age of the students using the crossing.

School area traffic control devices should be included in a school traffic control plan.

Support:

Reduced speed limit signs for school areas and crossings are included in this Manual solely for the purpose of standardizing signing for these zones and not as an endorsement of mandatory reduced speed zones.

Parents, school administrators, traffic officials, civic leaders, and vehicle drivers share the responsibility of educating school pedestrians on the use of traffic control devices. Programs in the home and school to train the child as a responsible pedestrian are an important factor in improving their understanding of traffic control devices.

The words "School Pedestrians", "Children", and "Students" are used interchangeably and could include student bicyclists for the purpose of determining appropriate cross protection measures.

Section 7A.02 School Routes and Established School Crossings

Support:

The planning criterion for school walk routes might make it necessary for children to walk an indirect route to an established school crossing located where there is existing traffic control and to avoid the use of a direct crossing where there is no existing traffic control.

Guidance:

School walk routes should be planned to take advantage of existing traffic controls.

The following factors should be considered when determining the feasibility of requiring children to walk a longer distance to a crossing with existing traffic control:

A. The availability of adequate sidewalks or off-roadway sidewalk areas to and from the location with existing control;
B. The number of students using the crossing;
C. The age levels of the students using the crossing; and
D. The total extra walking distance.

Support:

There is a need in each school district to establish an organization concerned with students enroute to and from school. Through such an organization, the school district can be responsibly involved in processing requests for traffic safety controls and for safety programs and can coordinate activities within and between the community and public agencies.

In order to provide a responsible administrative structure for the school area, each school district is encouraged to:

1. Assign student pedestrian responsibilities to a competent staff member and/or
2. Organize a school student pedestrian advisory committee to serve the needs of each public and private school.

Guidance:

When the advisory committee structure is used, the committee should include governmental and school district staff who has the responsibility and authority to initiate and provide programs and projects.

Representatives from the city and/or county superintendent of schools office should be the official members. Advisors should include representatives of the local area Safety Council, traffic engineers, police authorities, the Parent-Teachers Association, Automobile Clubs (AAA), plus others as needed.

Staff and Committee Responsibility:

Guidance:

The duties of staff members and/or each committee should be to guide and coordinate all activities connected with the school traffic safety program, such as:

1. Establish traffic safety policies and procedures.
2. Recommend priorities for proposed improvement projects.
3. Notify the responsible agencies of school-pedestrian-traffic related issues.
4. Review and approve the various phases of the school student traffic safety program.
5. Review and process requests and complaints.
6. Promote good public relations.

The County Superintendent of School's office should coordinate all student pedestrian committees' actions in establishing and promoting uniform practices for school pedestrian safety throughout the county.

School Responsibility:

Guidance:

Traffic related issues about school pedestrians on the approaches to the school should be referred to the school district or local school principal for review and transmission to the appropriate staff person or to the school student pedestrian advisory committee.

Support:

Refer to CVC 21373 for school board request for traffic control devices.

Government Traffic Agency Responsibility:

Standard:

Upon request of the local school district, responsible traffic authorities shall investigate all locations along the school route and recommend appropriate traffic control measures. Refer to CVC 21373.

Section 7A.03 School Crossing Control Criteria

Support:

Alternate gaps and blockades are inherent in the traffic stream and are different at each crossing location. For safety, students need to wait for a gap in traffic that is of sufficient duration to permit reasonably safe crossing. When the delay between the occurrence of adequate gaps becomes excessive, students might become impatient and endanger themselves by attempting to cross the street during an inadequate gap.

A recommended method for determining the frequency and adequacy of gaps in the traffic stream is given in the Institute of Transportation Engineers' publication, "School Trip Safety Program Guidelines" (see Section 1A.11).

Support:

Properly conducted engineering and traffic studies will determine the appropriate measures to be developed at school crossings. Types of school pedestrian measures that can be considered can include:

1. Warning signs and markings.
2. Variable speed limits.
3. Intersection stop signs.
4. Flashing yellow beacons.
5. Traffic signals.
6. Remove visibility obstructions.
7. School Safety Patrol.
8. Adult Crossing Guard.
9. Pedestrian separation structures.
10. Pedestrian walkways along the roadway.
11. Pedestrian walkways separated from the roadway.
12. Parking controls and curb-use zones.
13. Bus transportation.

Section 7A.04 <u>Scope</u>

Standard:

Part 7 sets forth basic principles and prescribes standards that shall be followed in the design, application, installation, and maintenance of all traffic control devices (including signs, signals, and markings) and other controls (including adult crossing guards, student patrols, and grade-separated crossings) required for the special pedestrian conditions in school areas.

Option:

In-roadway signs for school traffic control areas may be used consistent with the requirements of Sections 2B.12, 7B.08, and 7B.09.

Support:

Requirements discussed in Chapter 2A and Section 2B.05 are applicable in school areas.

Section 7A.05 <u>Application of Standards</u>

Support:

Sections 1A.02 and 1A.07 contain information regarding the application of standards.

Section 7A.06 <u>Engineering Study Required</u>

Support:

Section 1A.09 contains information regarding engineering studies.

Section 7A.07 <u>Maintenance of Traffic Control Devices</u>

Support:

Section 1A.05 contains information regarding the maintenance of traffic control devices.

Section 7A.08 <u>Placement Authority</u>

Support:

Section 1A.08 contains information regarding placement authority for traffic control devices.

The following references from the California Vehicle Code relate to traffic controls for school areas:

1. Section 377 – Limit Line.
2. Section 627 – Engineering and Traffic Survey.
3. Section 21102 – Local Authority to Close Streets.
4. Section 21368 – Crosswalks Near Schools.

5. Section 21372 – Guidelines for Traffic Control Devices Near Schools.
6. Section 21373 – School Board Request for Traffic Control Devices.
7. Section 21458 – Curb Markings.
8. Section 21949 through 21971 – Pedestrians' Rights and Duties.
9. Section 22350 – Basic Speed Law.
10. Section 22352 – Prima Facie Speed Limits.
11. Section 22358.4 – Decrease of Local Limits Near Schools or Senior Centers.
12. Section 22504 – Unincorporated Area Parking; School Bus Stops.
13. Section 40802 – Speed Traps.
14. Section 42200 – Disposition by Cities and Other Local Entities.
15. Section 42201 – Disposition by County.
16. Section 42011 – Fine Enhancement; Passing a School.

Section 7A.09 Unauthorized Devices and Messages

Support:

Sections 1A.01 and 1A.08 contain information regarding unauthorized devices and messages.

Section 7A.10 Meaning of Standard, Guidance, Option, and Support

Support:

The introduction to this Manual contains information regarding the meaning of the headings Standard, Guidance, Option, and Support, and the use of the words shall, should, and may.

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Figure 7A-1. Example of School Route Plan Map

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CHAPTER 7B. SIGNS

Section 7B.01 Size of School Signs

Standard:

The sizes of signs and plaques to be used on conventional roadways in school areas shall be as shown in Table 7B-1 and 7B-1(CA)**.**

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 Oversized sign size shall be used on expressways.

Option:

The Oversized sign size may be used for applications that require increased emphasis, improved recognition, or increased legibility.

The Minimum sign size may be used on local residential streets, in urban areas, and where there are low traffic volumes and low vehicle speeds, as determined by engineering judgment.

Standard:

The standard sign dimensions prescribed in this California MUTCD, FHWA's Standard Highway Signs book and Department of Transportation's California Sign Specifications shall be used unless engineering judgment determines that other sizes are appropriate. Where engineering judgment determines that sizes smaller than the standard dimensions are appropriate for use, the sign dimensions shall not be less than the minimum dimensions specified in this California MUTCD, Standard Highway Signs book or the Department of Transportation's California Sign Specifications. See Section 1A.11 for information regarding these publications.

Section 7B.02 Illumination and Reflectorization

Standard:

The signs used for school area traffic control shall be retroreflectorized or illuminated.

Section 7B.03 Position of Signs

Guidance:

Signs should be placed in positions where they will convey their messages most effectively without restricting lateral clearance or sight distances. Placement therefore should consider highway design, alignment, vehicle speed, and roadside development.

Signs should have a maximum practical clearance from the edge of the traveled way for the safety of vehicles that might leave the roadway and strike the sign supports. Except as noted in the Option, signs should not be closer than 1.8 m (6 ft) from the edge of a paved shoulder, or if none, 3.7 m (12 ft) from the edge of the traveled way.

Option:

In urban areas, a lesser clearance of not less than 0.6 m (2 ft) from the face of the curb may be used. In urban areas, where sidewalk width is limited or existing poles are close to the curb, a clearance of 0.3 m (1 ft) from the curb face may be used.

Support:

Section 2A.16 contains information regarding standardization of location for signs.

Section 7B.04 Height of Signs

Support:

Section 2A.18 contains information regarding the mounting height of signs.

Section 7B.05 Installation of Signs

Support:

Section 2A.16 contains information regarding the installation of signs.

Examples of school area signing, markings, flashing beacons and overhead school signs are shown in Figures 7B-1(CA) through 7B-3(CA), 7B-4 and Figures 7B-101(CA) and 7B-102(CA).

Section 7B.06 Lettering

Support:

The Federal Highway Administration's "Standard Highway Signs" book (see Section 1A.11) contains information regarding sign lettering.

Section 7B.07 Sign Color for School Warning Signs

Standard:

Except as noted in the Option, school warning signs shall have a yellow background with a black legend and border unless otherwise stated in this Manual for a specific sign.

Option:

All school warning signs in addition to the following signs may have a fluorescent yellow-green background with a black legend and border:

A. School Advance Warning sign (S1-1);
B. SCHOOL BUS STOP AHEAD sign (S3-1);
C. SCHOOL plaque (S4-3);
~~D. The "SCHOOL" portion of the School Speed Limit sign (S5-1);~~
E. XXX FEET plaque (W16-2 series);
F. AHEAD plaque (W16-9p);
G. Diagonal Arrow plaque (W16-7p); and
H. Reduced Speed School Zone Ahead sign (S4-5, S4-5a).

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.

Section 7B.08 School Advance Warning Assembly (S1-1 with Supplemental Plaque)

~~Guidance:~~

~~The School Advance Warning assembly (see Figure 7B-1) should be installed in advance of locations where school buildings or grounds are adjacent to the highway, except where a physical barrier such as fencing separates school children from the highway.~~

~~**Standard:**~~

~~**The School Advance Warning assembly shall be used in advance of any installation of the School Crosswalk Warning assembly (see Figure 7B-2), or in advance of the first installation of the School Speed Limit assembly (see Figure 7B-3).**~~

~~**If used, the School Advance Warning assembly shall be installed not less than 45 m (150 ft) nor more than 210 m (700 ft) in advance of the school grounds or school crossings.**~~

~~**If used, the School Advance Warning assembly shall consist of a School Advance Warning (S1-1) sign supplemented with a plaque with the legend AHEAD (W16-9p) or XXX METERS (XXX FEET) (W16-2 or W16-2a) to provide advance notice to road users of crossing activity.**~~

Standard:

The School Advance Warning Assembly D(CA) shall be used in advance of any School Crosswalk Warning Assembly B(CA), School Crosswalk Warning Assembly E(CA) or the School Speed Limit Assembly C(CA).

The School Warning Assembly A(CA) shall be used on streets with prima facie 40 km/h (25 mph) speed limits that are contiguous to a school building or school grounds.

The SCHOOL (S4-3) plaque shall not be used alone.

Guidance:

If used, the School Warning Assembly A(CA) should be posted at the school boundary. Refer to CVC 22352.

Option:

If used, the School Warning Assembly A(CA) may be posted up to 150 m (500 ft) in advance of the school boundary. Refer to CVC 22352.

Support:

The School Warning Assembly A(CA) does not need to be posted if there are no school pedestrians using the highway and the school grounds are separated from the highway by a fence, gate or other physical barrier. Refer to CVC 22352.

The School Warning Assemblies A(CA) through E(CA) are shown in Figure 7B-1(CA).

Option:

A 300 mm (12 in) reduced size in-street School Advance Warning (S1-1) sign (see Figure 7B-4), installed in compliance with the mounting height and breakaway requirements for In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) signs (see Section 2B.12), may be used in advance of a school crossing to supplement the groundmounted school warning signs. A 300 x 150 mm (12 x 6 in) reduced size AHEAD (W16-9p) plaque may be mounted below the reduced size in-street School Advance Warning (S1-1) sign.

Support:

The In-Street Pedestrian Crossing (R1-6a) sign is deleted as a stop is not required in California per CVC 21950.

Section 7B.09 <u>School Crosswalk Warning Assembly (S1-1 with Diagonal Arrow)</u>

Standard:

If used, the School Crosswalk Warning ~~assembly~~ Assembly B(CA) **(see Figure ~~7B-1~~** 7B-1(CA)**) shall be installed at the marked crosswalk, or as close to it as possible, and shall consist of a School Advance Warning (S1-1) sign supplemented with a diagonal downward pointing arrow (W16-7p) plaque to show the location of the crossing.**

If used, the School Crosswalk Warning Assembly E(CA) (see Figures 7B-1(CA) and 7B-101(CA)) shall be installed in an overhead location at the marked crosswalk, or as close to it as possible, and shall consist of a School Advance Warning (S1-1) sign supplemented with a Double Diagonal Arrows (W66B(CA)) plaque to show the location of the crossing.

The School Crosswalk Warning ~~assembly~~ Assembly B(CA) or E(CA) **shall not be used at marked crosswalks other than those adjacent to schools and those on established school pedestrian routes.**

The School Crosswalk Warning ~~assembly~~ Assembly B(CA) or E(CA) **shall not be installed on approaches controlled by a STOP sign**, a Yield sign or a traffic signal.

~~Guidance:~~

~~The School Crosswalk Warning assembly should be installed at marked crosswalk(s), including those at signalized locations, used by students going to and from school (see Figure 7B-2) as determined by an engineering study.~~

Standard:

The School Crosswalk Warning Assembly B(CA) or E(CA) shall be posted at all yellow school crosswalks that are not controlled by a STOP (R1-1) sign, a YIELD (R1-2) sign or a traffic signal.

Guidance:

The School Crosswalk Warning Assembly B(CA) or E(CA) should be posted at all white school crosswalks that are not controlled by a STOP (R1-1) sign, a YIELD (R1-2) sign or a traffic signal.

Support:

The School Crosswalk Warning Assemblies B(CA) and E(CA) are shown in Figure 7B-1(CA) and 7B-101(CA).

Option:

The In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign (see Section 2B.12) may be used at unsignalized school crossings. When used at a school crossing, a 300 x 100 mm (12 x 4 in) SCHOOL (S4-3) plaque (see Figure 7B-4) may be mounted above the sign.

A 300 mm (12 in) reduced size School Advance Warning (S1-1) sign (see Figure 7B-4) may be used at an unsignalized school crossing instead of the In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign. A 300 x 150 mm (12 x 6 in) reduced size Diagonal Arrow (W16-7p) plaque may be mounted below the reduced size in-street School Advance Warning (S1-1) sign.

Standard:

If an In-Street Pedestrian Crossing sign or a reduced size in-street School Advance Warning (S1-1) sign is placed in the roadway, the sign support shall comply with the mounting height and breakaway requirements for In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign~~s~~ (see Section 2B.12).

The In-Street Pedestrian Crossing sign and the reduced size in-street School Advance Warning (S1-1) sign shall not be used at signalized locations.

Support:

The In-Street Pedestrian Crossing (R1-6a) sign is deleted as a stop is not required in California per CVC 21950.

Section 7B.10 <u>SCHOOL BUS STOP AHEAD Sign (S3-1)</u>

Guidance:

The SCHOOL BUS STOP AHEAD (S3-1) sign (see Figure ~~7B-1~~ 7B-1(CA)) should be installed in advance of locations where a school bus, when stopped to pick up or discharge passengers, is not visible to road users for a distance of 150 m (500 ft) in advance and where there is no opportunity to relocate the bus stop to provide 150 m (500 ft) of visibility.

Standard:

The SCHOOL BUS STOP AHEAD (S3-1) sign shall be installed in advance of an approved school bus stop where there is not a clear view in advance of the stop from a distance of 60 m (200 ft). Refer to CVC 22504(c).

Section 7B.11 <u>School Speed Limit Assembly (S4-1, S4-2, S4-3, S4-4, S4-6, S5-1)</u>

Standard:

A School Speed Limit ~~assembly~~ Assembly C(CA) **(see Figure ~~7B-1~~** 7B-1(CA)**) ~~or a School Speed Limit (S5-1) sign (see Figure 7B-1)~~ shall be used to indicate the speed limit where a reduced speed zone for a school area has been established (in accordance with law based upon an engineering study) or where a speed limit is specified for such areas by statute. The School Speed Limit ~~assembly~~** Assembly C(CA) **or School Speed Limit sign shall be placed at or as near as practical to the point where the reduced speed zone begins.**

~~Guidance:~~

~~The reduced speed zone should begin either at a point 60 m (200 ft) from the crosswalk, or at a point 30 m (100 ft) from the school property line, based on whichever is encountered first as traffic approaches the school~~. Refer Figures 7B-3(CA) and 7B-102(CA).

Standard:

The School Speed Limit ~~assembly~~ Assembly C(CA) **shall be either a fixed-message sign assembly or a changeable message sign.**

The fixed-message School Speed Limit ~~assembly~~ Assembly C(CA) **shall consist of a top plaque (S4-3) with the legend SCHOOL, a Speed Limit (R2-1) sign, and a bottom plaque** WHEN CHILDREN ARE PRESENT **(~~S4-1,~~ S4-2, ~~S4-4, or S4-6~~) ~~indicating the specific periods of the day and/or days of the week that the special school speed limit is in effect~~ (see Figure ~~7B-1~~** 7B-1(CA)**).**

Option:

Changeable message signs (see Sections 2A.07 and 6F.55) may be used to inform drivers of the special 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 the more critical situations, where greater emphasis of the special school speed limit is needed.

Guidance:

Even though it might not always be practical because of special features to make changeable message signs conform in all respects to the accepted standards, during the periods that the school speed limit is in effect, their basic shape, message, legend layout, and colors should conform to the standards for fixed-message signs.

A confirmation beacon or device to indicate that the speed limit message is in operation should be considered for inclusion on the back of the changeable message sign.

Option:

Fluorescent yellow-green pixels may be used when school-related messages are shown on a changeable message sign.

Changeable message signs may use blank-out messages or other methods in order to display the school speed limit only during the periods it applies.

Changeable message signs that display the speed of approaching drivers (see Section 2B.13) may be used in a school speed limit zone.

A Speed Limit Sign Beacon also may be used, with a WHEN FLASHING legend, to identify the periods that the school speed limit is in effect. The lenses of the Speed Limit Sign Beacon may be positioned within the face of the School Speed Limit (S5-1) sign (see Figure ~~7B-1~~ 7B-1(CA)).

A FINES HIGHER (R2-6) sign (see Section 2B.17) may be used to advise road users when increased fines are imposed for traffic violations in school zones.

Standard:

The School Speed Limit Assembly C(CA) shall be used on streets with speed limits greater than 40 km/h (25 mph) that are contiguous to a school building or school grounds.

Support:

The School Speed Limit Assembly C(CA) is shown in Figure 7B-1(CA).

Option:

If used, the School Speed Limit Assembly C(CA) may be posted up to 150 m (500 ft) in advance of the school boundary.

Standard:

The "WHEN FLASHING" and specific time period messages shall not be used in school areas in California as they are not supported by CVC 22352. Hence, the Specific Time Period Plaque (S4-1), WHEN FLASHING (S4-4) and SCHOOL SPEED LIMIT 20 WHEN FLASHING (S5-1) signs shall not be used in California.

Support:

The "WHEN FLASHING" message is misleading because it suggests that the speed limit is in force only when the flashing beacons are in operation. The prima facie speed limit of 40 km/h (25 mph) is in effect based on the presence of children per CVC 22352, not on the operation of the flashing beacons.

The non-use of "WHEN FLASHING" message also addresses the situation when children are present but the flashing beacons are inoperative for any reason.

The non-use of "WHEN FLASHING" message does not alter the warrants or the use of a flashing yellow beacon or its effectiveness as an attention-getting device.

The specific time period message is misleading because it suggests that the speed limit is in force only during the time period specified. The prima facie speed limit of 40 km/h (25 mph) is in effect based on the presence of children per CVC 22352, not on the time period specified.

Section 7B.12 <u>Reduced Speed School Zone Ahead Sign (S4-5, S4-5a)</u>

Option:

The Reduced Speed School Zone Ahead (S4-5, S4-5a) sign (see Figure ~~7B-1~~ 7B-1(CA)) may be used to inform road users of a reduced speed zone when engineering judgment indicates that advance notice would be appropriate for the School Advance Warning Assembly D(CA).

Standard:

If used, the Reduced Speed School Zone Ahead sign shall be followed by a School Speed Limit sign or a School Speed Limit ~~assembly~~ Assembly C(CA).

The speed limit displayed on the Reduced Speed School Zone Ahead sign shall be identical to the speed limit displayed on the subsequent School Speed Limit sign or School Speed Limit ~~assembly~~ Assembly C(CA).

Section 7B.13 <u>END SCHOOL ZONE Sign (S5-2)</u>

Standard:

The end of an authorized and posted school speed zone shall be marked with a standard Speed Limit sign showing the speed limit for the section of highway that follows or with an END SCHOOL ZONE (S5-2) sign (see Figure ~~7B-1~~ 7B-1(CA)).

Section 7B.14 Parking and Stopping Signs (R7 and R8 Series)

Option:

Parking and stopping regulatory signs may be used to prevent parked or waiting vehicles from blocking pedestrians' views, and drivers' views of pedestrians, and to control vehicles as a part of the school traffic plan.

Support:

Parking signs and other signs governing the stopping and standing of vehicles in school areas cover a wide variety of regulations. Typical examples of regulations are as follows:

A. No Parking X:XX AM to X:XX PM School Days Only;

B. No Stopping X:XX AM to X:XX PM School Days Only;

C. X Min Loading X:XX AM to X:XX PM School Days Only; and

D. No Standing X:XX AM to X:XX PM School Days Only.

Sections 2B.39, 2B.40, and 2B.41 contain information regarding the signing of parking regulations in school zone areas.

Street closures are authorized by local ordinance or resolution on streets crossing or dividing school grounds when necessary for the protection of persons attending the school. Refer to CVC 21102.

Section 7B.101(CA) TRAFFIC FINES DOUBLED Sign (SR59(CA))

Standard:

When used, the TRAFFIC FINES DOUBLED (SR59(CA)) sign shall be placed below the School Advance Warning (S1-1) sign. It shall only be used in specially posted school zones in Alameda, Santa Barbara and Ventura Counties or in a city in any of these counties as specified in CVC 42011. The SR59(CA) sign shall remain in effect only until January 1, 2007, unless an enacted statue deletes or extends this date.

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Figure 7B-1. School Area Signs

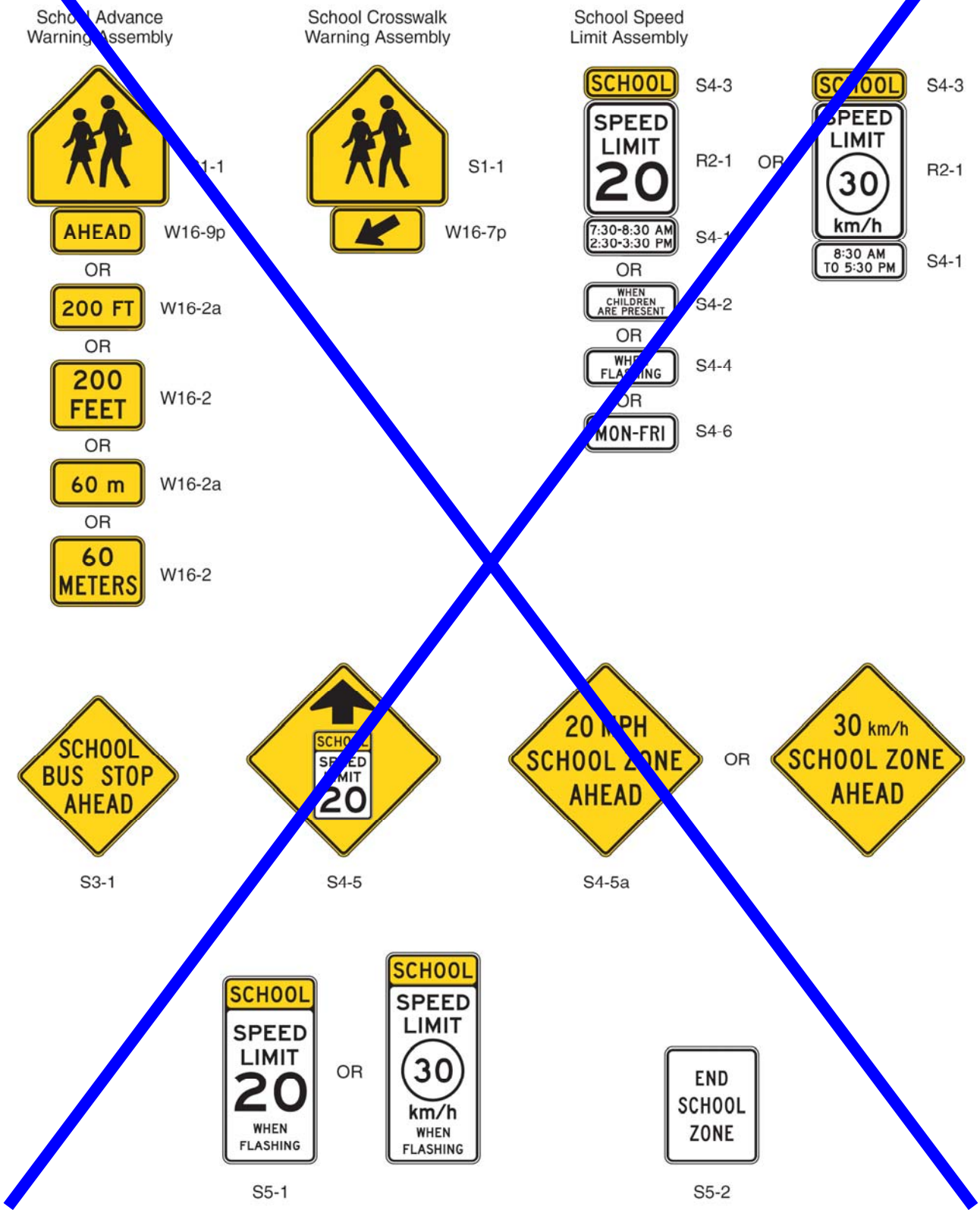


Figure 7B-1(CA). School Area Signs

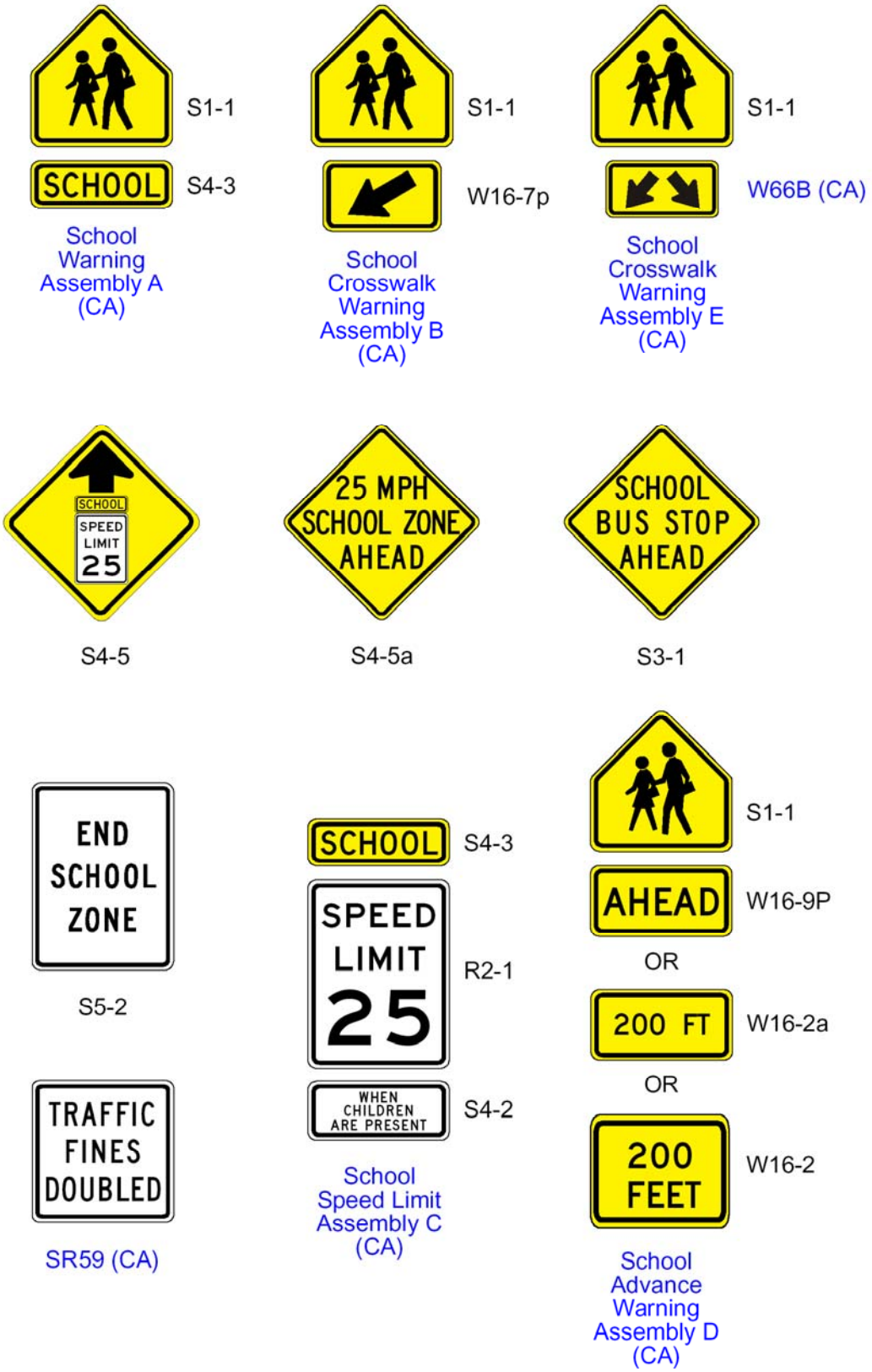


Figure 7B-2. Examples of Signing for School Crosswalk Warning Assembly

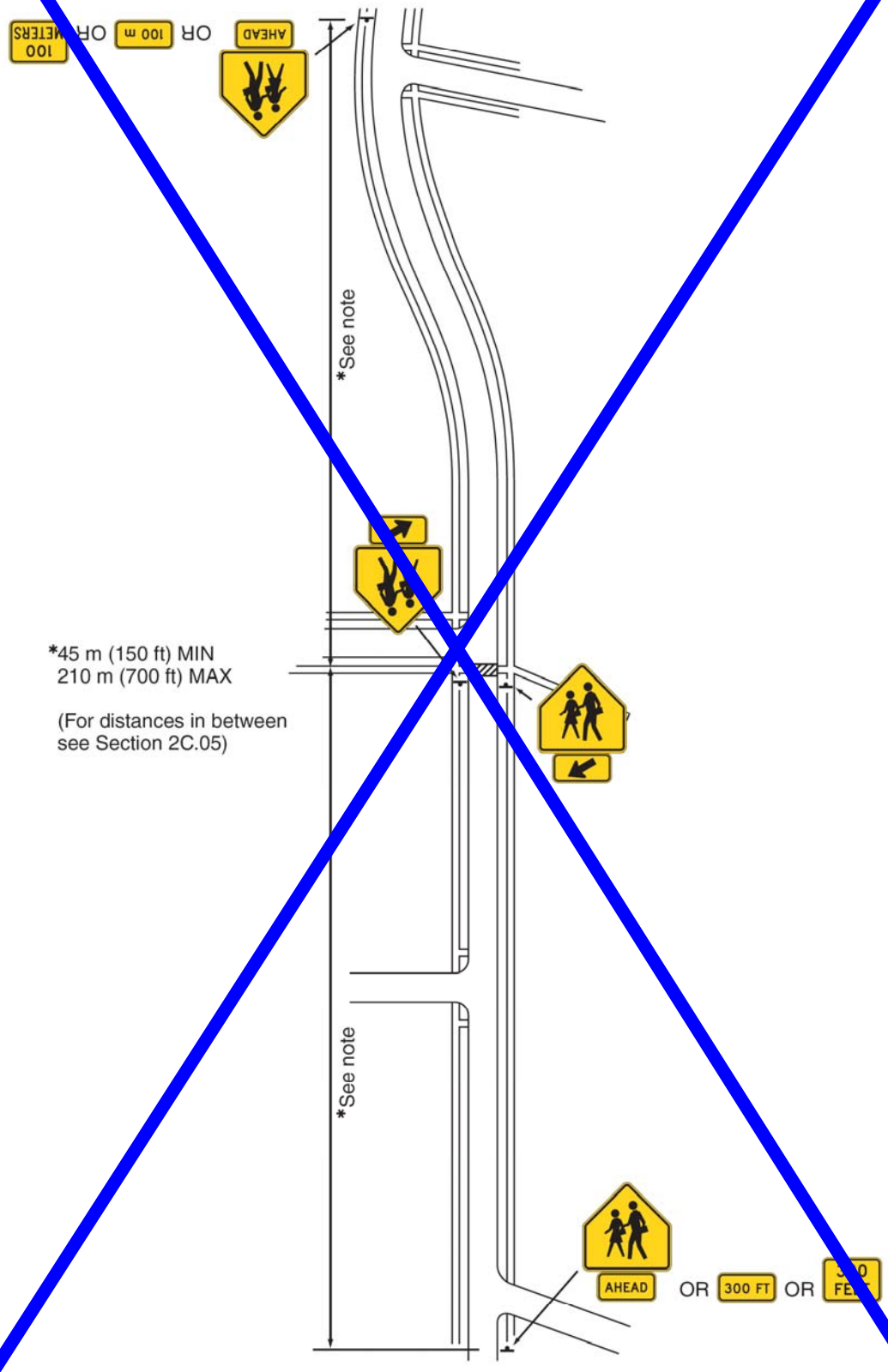


Figure 7B-2(CA). Example of Signing for School Crosswalk Warning Assembly

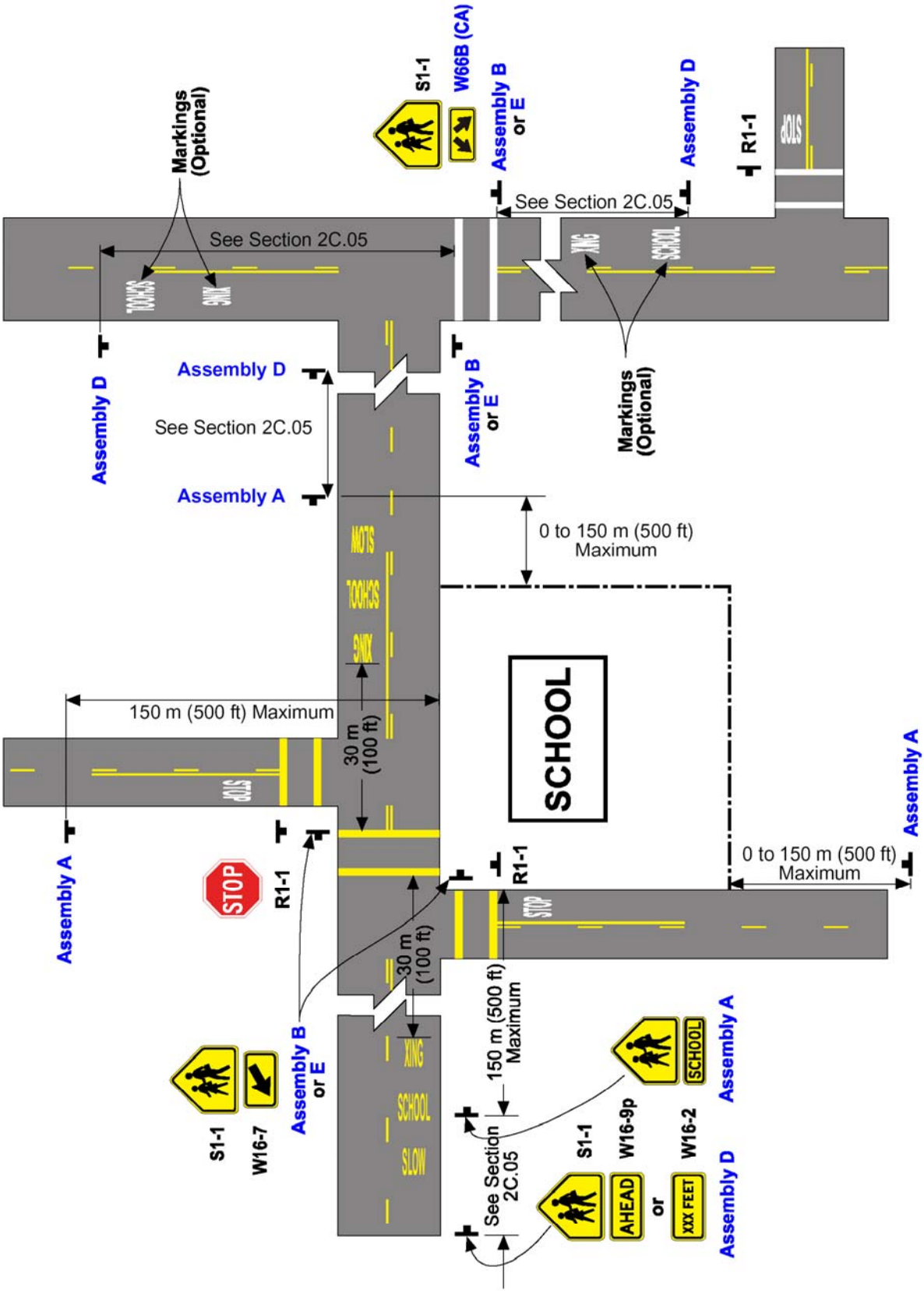


Figure 7B-3. Examples of Signing for School Area Traffic Control with School Speed Limits

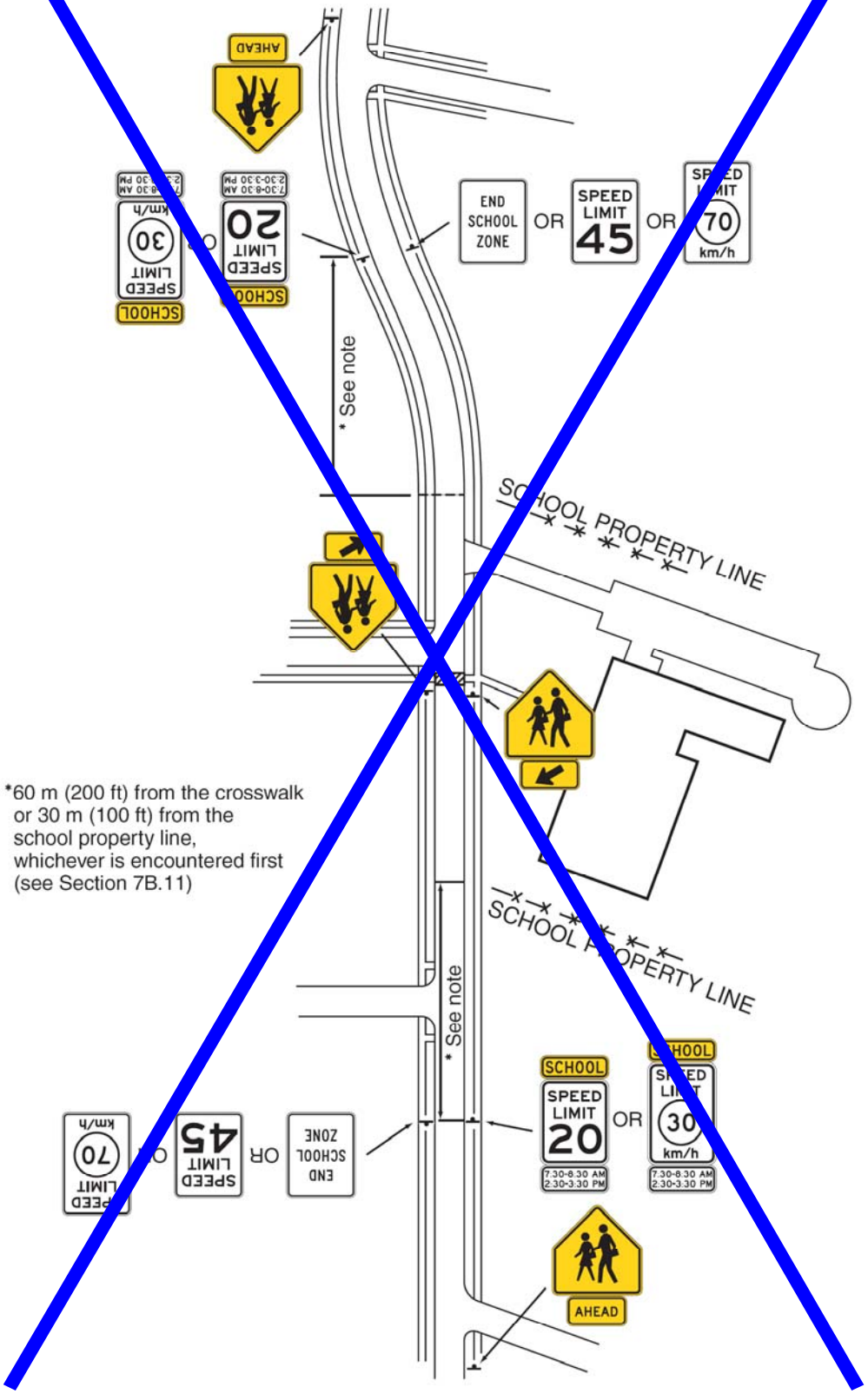


Figure 7B-3(CA). Example of Signing for School Area Traffic Control with School Speed Limits

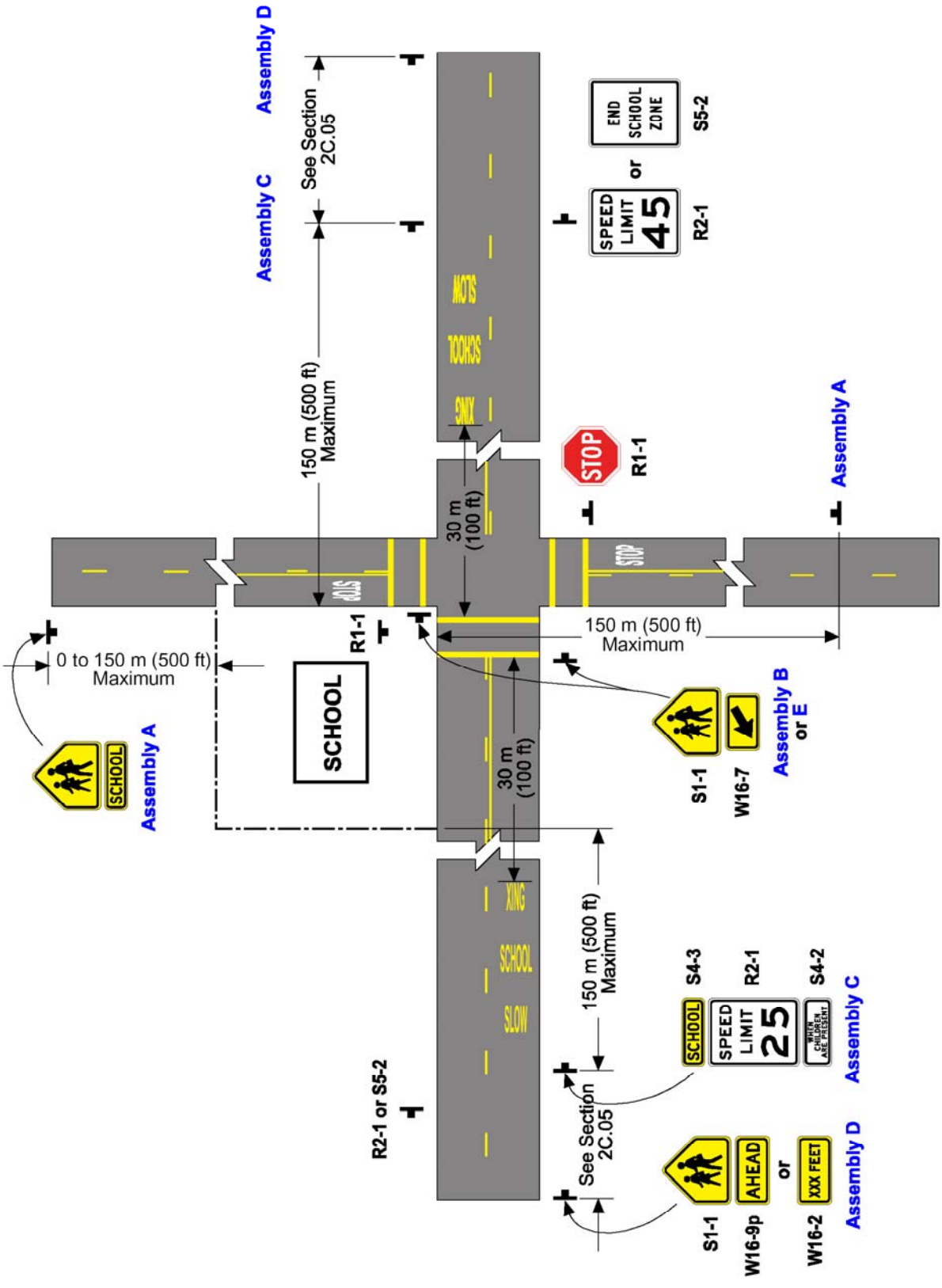


Figure 7B-4. In-Street Signs in School Areas

a - In advance of the school crossing

S1-1*

W16-9p*

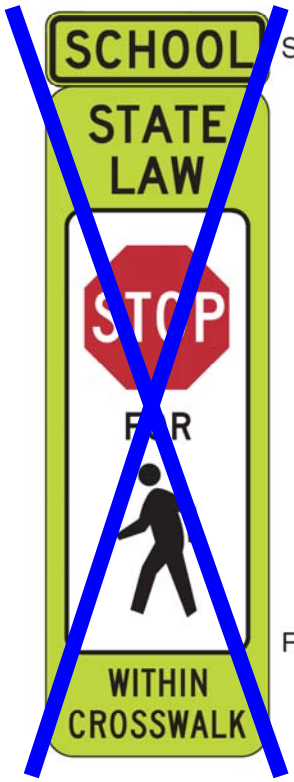
* Reduced size signs:
S1-1 300 x 300 mm (12 x 12 in)
W16-7p 300 x 150 mm (12 x 6 in)
W16-9p 300 x 150 mm (12 x 6 in)
S4-3 300 x 100 mm (12 x 4 in.)

b - At the school crossing

S4-3*

R1-6

OR



S4-3*

R1-6a

OR

S1-1*

W16-7p*

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Figure 7B-101 (CA). Example of School Area Signs with Flashing Yellow Beacons

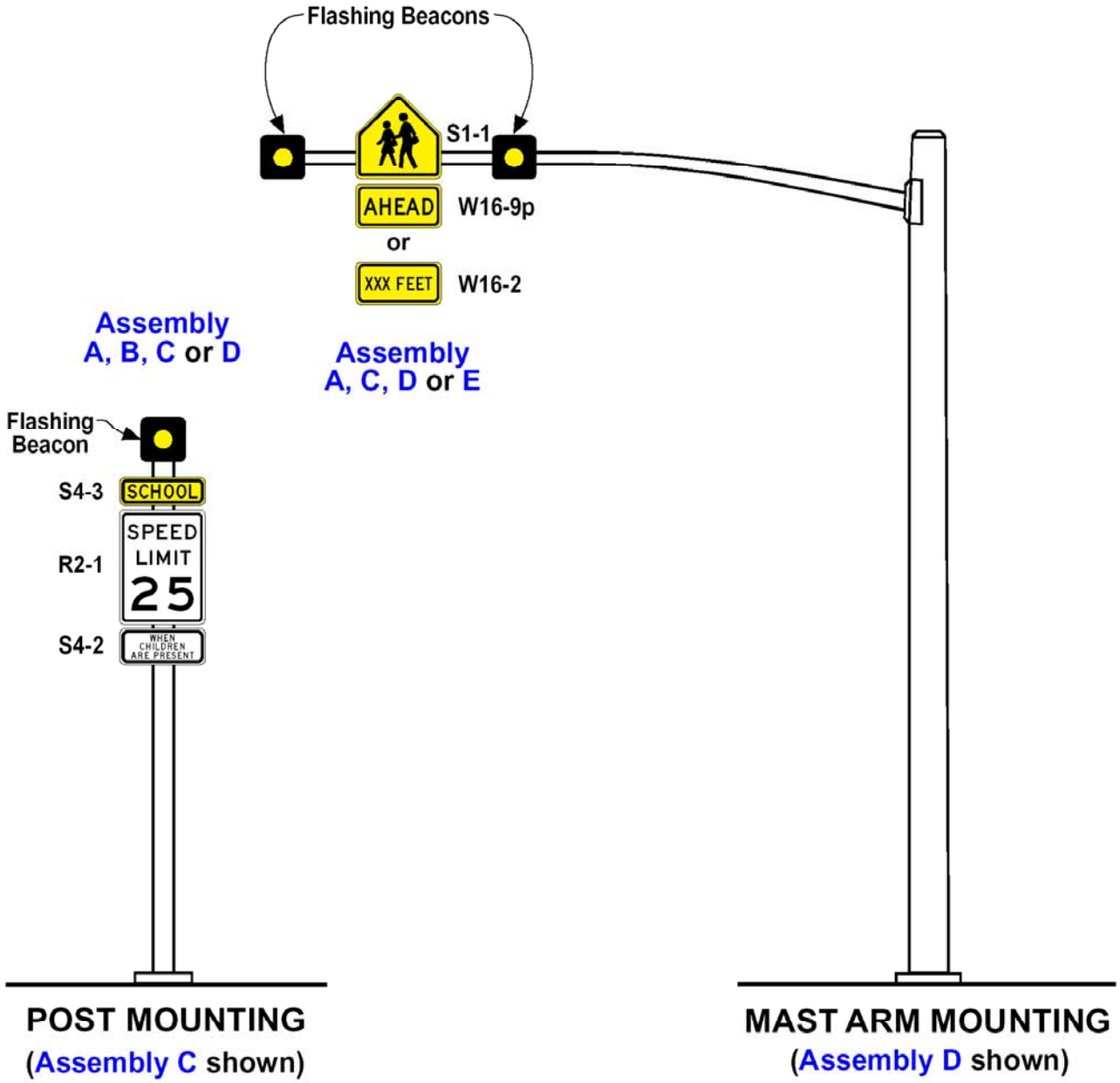

Figure 7B-102 (CA). Example of Signing for Traffic Control in School Areas with Flashing Yellow Beacons

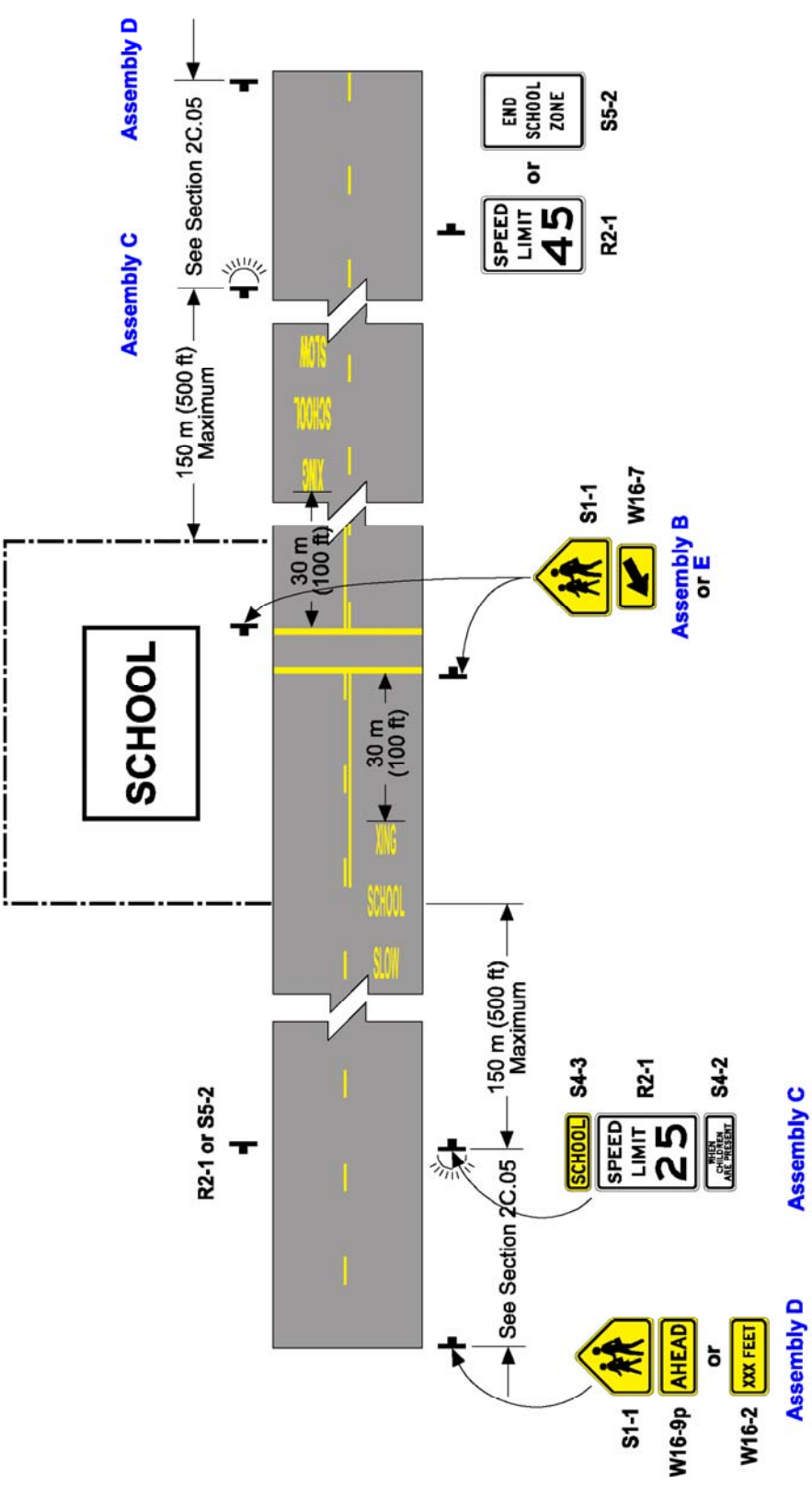

Table 7B-1. Size of School Area Signs and Plaques

Sign	MUTCD Code	Section	Conventional Road	Minimum	Oversized
School Advance Warning	S1-1	7B.08	900 x 900 mm (36 x 36 in)	750 x 750 mm (30 x 30 in)	1200 x 1200 mm (48 x 48 in)
School Bus Stop Ahead	S3-1	7B.10	750 x 750 mm (30 x 30 in)	750 x 750 mm (30 x 30 in)	900 x 900 mm (36 x 36 in)
Reduced Speed School Zone Ahead	S4-5, S4-5a	7B.12	900 x 900 mm (36 x 36 in)	750 x 750 mm (30 x 30 in)	1200 x 1200 mm (48 x 48 in)
School ~~Speed Limit XX When Flashing (English)~~	~~S5-1~~	~~7B.11~~	~~600 x 1200 mm (24 x 48 in)~~	—	~~900 x 1800 mm (36 x 72 in)~~
~~School Speed Limit XX When Flashing (Metric)~~	~~S5-1~~	~~7B.11~~	~~600 x 1350 mm (24 x 54 in)~~	—	~~900 x 2100 mm (36 x 84 in)~~
End School Zone	S5-2	7B.13	600 x 750 mm (24 x 30 in)	600 x 750 mm (24 x 30 in)	900 x 1200 mm (36 x 48 in)
Speed Limit (School Use) (English)	R2-1	7B.11	600 x 750 mm (24 x 30 in)	450 x 600 mm (18 x 24 in)	900 x 1200 mm (36 x 48 in)
~~Speed Limit (School Use) (Metric)~~	~~R2-1~~	~~7B.11~~	~~600 x 900 mm (24 x 36 in)~~	—	~~900 x 1350 mm (36 x 54 in)~~

Plaque	MUTCD Code	Section	Conventional Road	Minimum	Oversized
~~X:XX to X:XX AM X:XX to X:XX PM~~	~~S4-1~~	~~7B.11~~	~~600 x 250 mm (24 x 10 in)~~	—	~~900 x 450 mm (36 x 18 in)~~
When Children Are Present	S4-2	7B.11	600 x 250 mm (24 x 10 in)	600 x 250 mm (24 x 10 in)	900 x 450 mm (36 x 18 in)
School	S4-3	7B.11	600 x 200 mm (24 x 8 in)	300 x 150 mm (12 x 6 in)	900 x 300 mm (36 x 12 in)
~~When Flashing~~	~~S4-4~~	~~7B.11~~	~~600 x 250 mm (24 x 10 in)~~	—	~~900 x 450 mm (36 x 18 in)~~
~~Mon-Fri~~	~~S4-6~~	~~7B.11~~	~~600 x 250 mm (24 x 10 in)~~	—	~~900 x 450 mm (36 x 18 in)~~
XXX Feet ~~or XXX Meters~~	W16-2	7B.08	600 x 450 mm (24 x 18 in)	450 x 300 mm (18 x 12 in)	750 x 600 mm (30 x 24 in)
XXX Ft ~~or XXX m~~	W16-2a	7B.08	600 x 300 mm (24 x 12 in)	600 x 300 mm (24 x 12 in)	750 x 450 mm (30 x 18 in)
Diagonal Arrow	W16-7p	7B.09	600 x 300 mm (24 x 12 in)	600 x 300 mm (24 x 12 in)	750 x 450 mm (30 x 18 in)
Diagonal Arrow (Optional Size)	W16-7p	7B.09	525 x 375 mm (21 x 15 in)	—	—
Ahead	W16-9p	7B.08	600 x 300 mm (24 x 12 in)	600 x 300 mm (24 x 12 in)	750 x 450 mm (30 x 18 in)

Table 7B-1(CA). Size of California School Area Signs and Plaques

Sign	California Code	California MUTCD Section	Conventional Road	Minimum	Oversized
Traffic Fines Doubled	SR59(CA)	7B.101(CA)	762 x 762 mm (30 x 30 in)	762 x 762 mm (30 x 30 in)	914 x 914 mm (36 x 36 in)

Plaque	California Code	Section	Conventional Road	Minimum	Oversized
Double Diagonal Arrows	W66B(CA)	7B.09	610 x 305 mm (24 x 12 in)	610 x 305 mm (24 x 12 in)	762 x 305 mm (30 x 12 in)

CHAPTER 7C. MARKINGS

Section 7C.01 Functions and Limitations

Support:

Markings have definite and important functions in a proper scheme of school area traffic control. In some cases, they are used to supplement the regulations or warnings provided by other devices, such as traffic signs or signals. In other instances, they are used alone and produce results that cannot be obtained by the use of any other device. In such cases they serve as an effective means of conveying certain regulations, guidance, and warnings that could not otherwise be made clearly understandable.

Pavement markings have limitations. They might be obliterated by snow, might not be clearly visible when wet, and might not be durable when subjected to heavy traffic. In spite of these limitations, they have the advantage, under favorable conditions, of conveying warnings or information to the road user without diverting attention from the road.

Section 7C.02 Standardization of Application

Standard:

Each standard marking shall be used only to convey the meaning prescribed for it in this Manual.

Section 7C.03 Crosswalk Markings

Support:

Crosswalk markings provide guidance for pedestrians who are crossing roadways by defining and delineating paths on approaches to and within signalized intersections, and on approaches to other intersections where traffic stops.

Crosswalk markings also serve to alert road users of a pedestrian crossing point across roadways not controlled by highway traffic signals or STOP signs.

At nonintersection locations, crosswalk markings legally establish the crosswalk.

Standard:

When transverse crosswalk lines are used, they shall be solid white or yellow**, marking both edges of the crosswalk, except as noted in the Option.** Refer to CVC 21368. **They shall be not less than ~~150 mm (6 in)~~** 300 mm (12 in) **nor greater than 600 mm (24 in) in width.**

Guidance:

If transverse lines are used to mark a crosswalk, the gap between the lines should not be less than 1.8 m (6 ft). If diagonal or longitudinal lines are used without transverse lines to mark a crosswalk, the crosswalk should be not less than 1.8 m (6 ft) wide.

Crosswalk lines on both sides of the crosswalk should extend across the full width of pavement or to the edge of the intersecting crosswalk to discourage diagonal walking between crosswalks.

Crosswalks should be marked at all intersections on established routes to school where there is substantial conflict between motorists, bicyclists, and pedestrian movements, where students are encouraged to cross between intersections, or where students would not otherwise recognize the proper place to cross (see Figure 7A-1).

Crosswalk lines should not be used indiscriminately. An engineering study should be performed before they are installed at locations away from traffic control signals or STOP signs.

Option:

For added visibility, the area of the crosswalk may be marked with white or yellow diagonal lines at a 45-degree angle to the line of the crosswalk or with white or yellow longitudinal lines parallel to traffic flow. Refer to CVC 21368. When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted.

Guidance:

The diagonal or longitudinal lines should be 300 to 600 mm (12 to 24 in) wide and spaced 300 to 1500 mm (12 to 60 in) apart. The spacing design should avoid the wheel paths.

Support:

Examples of school area signing, markings, flashing beacons and overhead school signs are shown in Figures 7B-1(CA) through 7B-3(CA), 7B-4 and Figures 7B-101(CA) and 7B-102(CA).

Refer to CVC 21368 for crosswalks near schools.

Refer to Section 3B.17 for more details on crosswalk markings.

Standard:

Whenever a marked pedestrian crosswalk has been established in a roadway contiguous to a school building or school grounds, it shall be yellow. If any one of the crosswalks is required to be yellow at an intersection, then all other marked pedestrian crosswalks at that intersection shall also be yellow. Refer to CVC 21368.

Option:

A marked pedestrian crosswalk may be yellow if the nearest point of the crosswalk is not more than 180 m (600 ft) from a school building or school grounds. Refer to CVC 21368.

A marked pedestrian crosswalk may be yellow if the nearest point of the crosswalk is not more than 850 m (2800 ft) from a school building or school grounds and there are no intervening crosswalks other than those contiguous to the school grounds, and it appears that the facts and circumstances require special marking for the protection and safety of persons attending the school. Refer to CVC 21368.

Section 7C.04 <u>Stop and Yield Lines</u>

Standard:

If used, stop lines shall consist of solid white lines extending across approach lanes to indicate the point at which the stop is intended or required to be made.

If used, yield lines (see Figure ~~3B-14~~ 3B-14(CA)) shall consist of a row of solid white isosceles triangles pointing toward approaching vehicles extending across approach lanes to indicate the point at which the yield is intended or required to be made.

Guidance:

Stop lines should be 300 to 600 mm (12 to 24 in) wide.

Stop lines should be used to indicate the point behind which vehicles are required to stop, in compliance with a STOP (R1-1) sign (see Figure 2B-1), traffic control signal, or some other traffic control device.

The individual triangles comprising the yield line should have a base of 300 to 600 mm (12 to 24 in) wide and a height equal to 1.5 times the base. The space between the triangles should be 75 to 300 mm (3 to 12 in).

Option:

Yield lines may be used to indicate the point behind which vehicles are required to yield in compliance with a YIELD (R1-2) sign (see Figure 2B-1) or a Yield Here to Pedestrians (R1-5 or R1-5a) sign (see Figure 2B-2).

Guidance:

If used, stop and yield lines should be placed a minimum of 1.2 m (4 ft) in advance of and parallel to the nearest crosswalk line at controlled intersections, except for yield lines at roundabout intersections as provided for in Section 3B.24 and at midblock crosswalks. In the absence of a marked crosswalk, the stop line or yield line should be placed at the desired stopping or yielding point, but should be placed no more than 9 m (30 ft) nor less than 1.2 m (4 ft) from the nearest edge of the intersecting traveled way. Stop lines should be placed to allow sufficient sight distance to all other approaches to an intersection.

If used at an unsignalized midblock crosswalk, yield lines should be placed adjacent to the Yield Here to Pedestrians sign located 6.1 to 15 m (20 to 50 ft) in advance of the nearest crosswalk line, and parking should be prohibited in the area between the yield line and the crosswalk (see Figure 3B-15).

Stop lines at midblock signalized locations should be placed at least 12 m (40 ft) in advance of the nearest signal indication (see Section 4D.15).

Support:

Drivers who yield too close to crosswalks on multi-lane approaches place pedestrians at risk by blocking other drivers' views of pedestrians, and pedestrians' views of other vehicles.

As defined in CVC 377, a "limit line" is a solid white line not less than 300 mm (12 in) nor more than 600 mm (24 in) wide, extending across a roadway or any portion thereof to indicate the point at which traffic is required to stop in compliance with legal requirements.

Standard:

For all purposes, limit line(s) shall mean stop line(s) as referenced in this California MUTCD.

Support:

If a marked crosswalk were in place, it would normally function as a limit line.

Refer to Section 3B.16 for more details on stop and yield line markings.

Section 7C.05 <u>Curb Markings for Parking Regulations</u>

Standard:

Signs shall be used with curb markings in those areas where curb markings are frequently obliterated by snow and ice accumulation, unless the no parking zone is controlled by statute or local ordinance.

Guidance:

When curb markings are used without signs to convey parking regulations, a legible word marking regarding the regulation (such as "No Parking" or "No Standing") should be placed on the curb.

~~Option:~~

~~Local highway agencies may prescribe special colors for curb markings to supplement standard signs for parking regulation.~~

Standard:

The color of curb markings shall conform to CVC 21458 as quoted below:

(a) Whenever local authorities enact local parking regulations and indicate them by the use of paint upon curbs, the following colors only shall be used, and the colors indicate as follows:

(1) Red indicates no stopping, standing, or parking, whether the vehicle is attended or unattended, except that a bus may stop in a red zone marked or sign posted as a bus loading zone.

(2) Yellow indicates stopping only for the purpose of loading or unloading passengers or freight for the time as may be specified by local ordinance.

(3) White indicates stopping for either of the following purposes:

(A) Loading or unloading of passengers for the time as may be specified by local ordinance.

(B) Depositing mail in an adjacent mailbox.

(4) Green indicates time limit parking specified by local ordinance.

(5) Blue indicates parking limited exclusively to the vehicles of disabled persons and disabled veterans.

(b) Regulations adopted pursuant to subdivision (a) shall be effective on days and during hours or times as prescribed by local ordinances.

Option:

Curb markings may supplement standard signs.

Support:

Since yellow and white curb markings are frequently used for curb delineation and visibility, it is advisable to establish parking regulations through the installation of standard signs (see Sections 2B.39 through 2B.41).

Refer to Section 2B.39 and 3B.21 for Parking Regulations.

Section 7C.06 <u>Pavement Word and Symbol Markings</u>

Support:

Word and symbol markings on the pavement are used for the purpose of guiding, warning, or regulating traffic. Symbol messages are preferable to word messages.

Standard:

Word and symbol markings shall be white or yellow. Refer to CVC 21368. **Word and symbol markings shall not be used for mandatory messages except in support of standard signs.**

Guidance:

Letters and numerals should be ~~1.8 m (6 ft)~~ 2.44 m (8 ft) or more in height. All letters, numerals, and symbols should be in accordance with the Federal Highway Administration's "Standard Highway Signs" book (see Section 1A.11).

Word and symbol markings should not exceed three lines of information.

If a pavement marking word message consists of more than one line of information, it should read in the direction of travel. The first word of the message should be nearest to the road user.

The longitudinal space between word or symbol message markings, including arrow markings, should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters under any conditions.

The number of different word and symbol markings used should be minimized to provide effective guidance and avoid misunderstanding.

Except as noted in the Option below, pavement word and symbol markings should be no more than one lane in width.

~~Option:~~

~~The SCHOOL word marking may extend to the width of two approach lanes (see Figure 7C-1).~~

~~Guidance:~~

~~If the two-lane SCHOOL word marking is used, the letters should be 3 m (10 ft) or more in height.~~

Standard:

If used, the SCHOOL pavement marking shown in Figure 7C-101(CA) shall be used and it shall be restricted to a single lane.

Guidance:

On State highways, all letters, numerals, and symbols should be in accordance with the Department of Transportation's Standard Plans publication. See Section 1A.11 for more information regarding this publication.

Standard:

The SLOW SCHOOL XING marking shall be used in accordance with the provisions of CVC 21368 in advance of all yellow school crosswalks (see Figure 7C-101(CA)). They shall not be used where the crossing is controlled by stop signs, traffic signals, or yield signs. They shall be yellow, with the word XING at least 30 m (100 ft) in advance of the school crosswalk.

Option:

The SCHOOL XING marking and crosswalks may be used at remote locations outside of the school zone.

Support:

Remote crosswalk locations are locations near schools, which are not included in CVC 21368 criteria. Also refer to Section 7C.03.

Standard:

If the SCHOOL XING marking and crosswalks are used at remote locations outside of the school zone, they shall not be yellow (Refer to CVC 21368), but white.

Guidance:

The SCHOOL XING marking should be used in advance of all white school crosswalks.

Option:

The SCHOOL marking may be used with the School Assemblies A(CA) or C(CA), except at locations where SLOW SCHOOL XING markings are required.

Standard:

If the SCHOOL marking is used with the School Assemblies A(CA) or C(CA) (See Section 7B.11), it shall be yellow.

Guidance:

If used, the SCHOOL marking should be located adjacent to the School Assemblies A(CA) or C(CA) (See Section 7B.11).

Support:

Refer to Section 3B.19 for more details on SCHOOL marking.

Figure 7C-1. Two-Lane Pavement Marking of "SCHOOL"

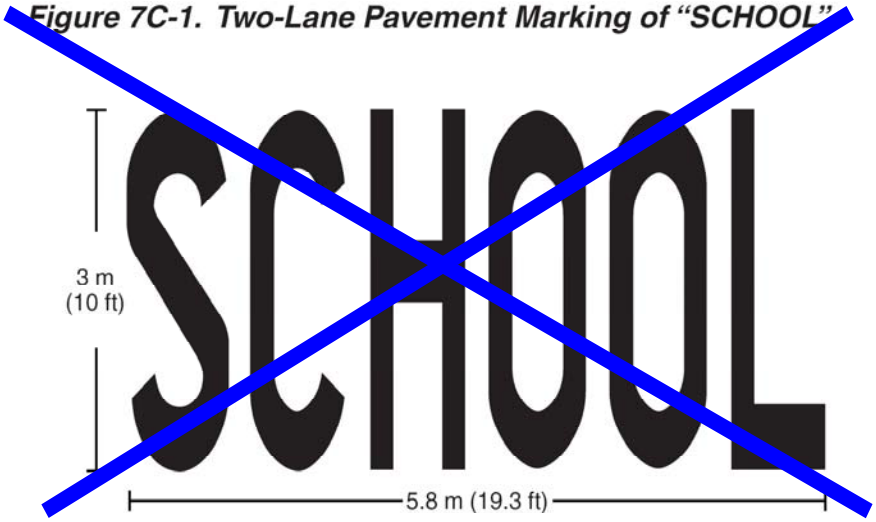

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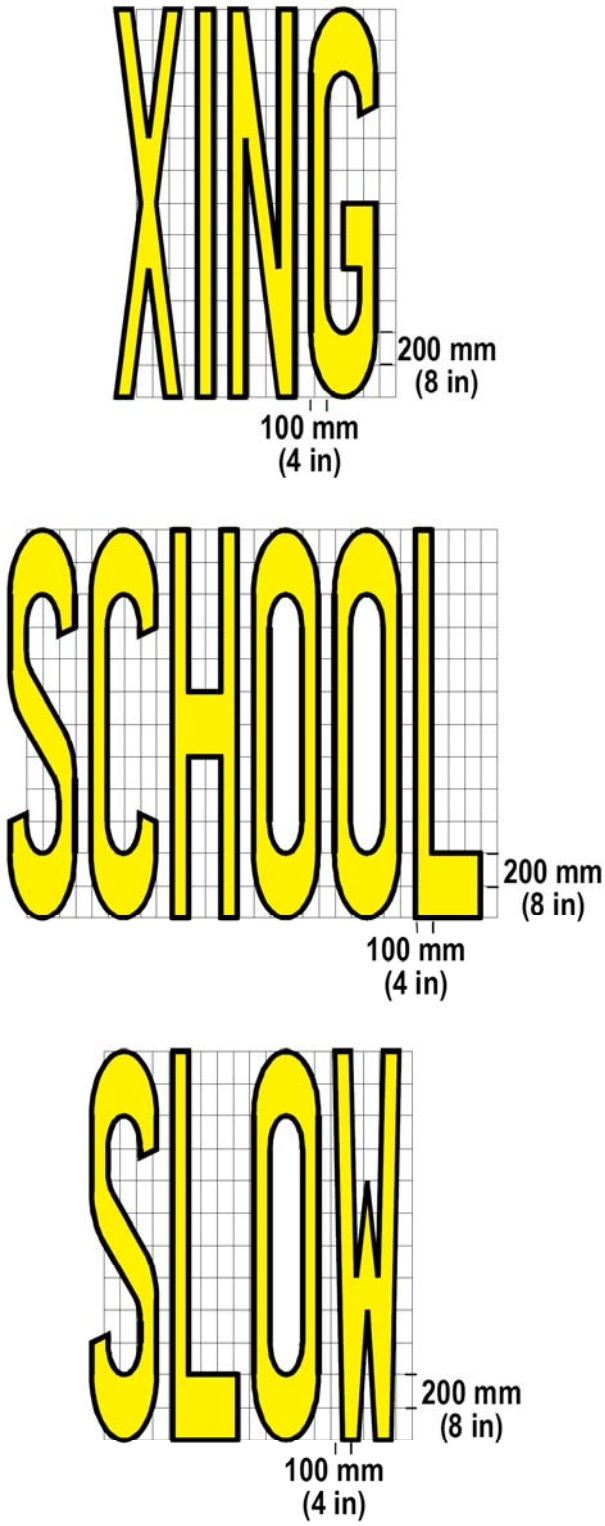
Figure 7C-101 (CA). Pavement Word Markings for School Areas



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CHAPTER 7D. SIGNALS

Section 7D.01 General

Support:

Part 4 contains information regarding highway traffic signals in school areas. The School Crossing signal warrant is described in Section 4C.06.

Information regarding highway traffic signals in school areas is contained in the following:

- Section 4B.106(CA) – Installation costs for school traffic signals and flashing beacons.
- Section 4C.06 – School crossing signal warrant.
- Section 4C.101(CA) – Criterion for school crossing traffic signals.
- Section 4K.103(CA) – Flashing beacons at school crosswalks.
- Section 4E.03 – Application of pedestrian signal heads at an established school crossing at any signalized location.
- Section 4L.01 – Application of In-Roadway Lights at marked school crosswalks.
- Figure 7B-101(CA) - Examples of school area flashing beacons and overhead school signs.
- Figure 7B-102(CA) - Examples of school area flashing beacons and overhead school signs.

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CHAPTER 7E. CROSSING SUPERVISION

Section 7E.01 Types of Crossing Supervision

Support:

There are two types of school crossing supervision:

A. Adult control of pedestrians and vehicles by adult crossing guards or uniformed law enforcement officers; and

B. Student control of only pedestrians with student patrols.

Information for the organization, operation, and administration of an adult crossing guard program are given in "Civilian Guards For School Crossings" (available from the Center for Public Safety of Northwestern University, 405 Church Street, Evanston, IL 60204) and "Adult School Crossing Guards" (available from the American Automobile Association, 1000 AAA Drive, Heathrow, FL 32746).

Information for the organization, administration and operation of a student patrol program are given in "Policies and Practices for School Safety Patrols" (available from the American Automobile Association, 1000 AAA Drive, Heathrow, FL 32746).

Section 7E.02 Adult Crossing Guards

Option:

Adult crossing guards may be used to provide gaps in traffic at school crossings where an engineering study has shown that adequate gaps need to be created (see Section 7A.03), and where authorized by law.

Adult Crossing Guards may be assigned at designated school crossings to assist school pedestrians at specified hours when going to or from school. The following suggested policy for their assignment applies only to crossings.

Guidance:

An Adult Crossing Guard should be considered when:

1. Special situations make it necessary to assist elementary school pedestrians in crossing the street.
2. A change in the school crossing location is being made, but prevailing conditions require school crossing supervision until the change is constructed and it is not reasonable to install another form of traffic control or technique for this period.

Criteria for Adult Crossing Guards:

Support:

Adult Crossing Guards normally are assigned where official supervision of school pedestrians is desirable while they cross a public highway, and at least 40 school pedestrians for each of any two hours (not necessarily consecutive) daily use the crossing while going to or from school.

Option:

Adult crossing guards may be used under the following conditions:

1. At uncontrolled crossings where there is no alternate controlled crossing within 180 m (600 ft); and
   a. In urban areas where the vehicular traffic volume exceeds 350 during each of any two hours (not necessarily consecutive) in which 40 or more school pedestrians cross daily while going to or from school; or
   b. In rural areas where the vehicular traffic volume exceeds 300 during each of any two hours (not necessarily consecutive) in which 30 or more school pedestrians cross daily while going to or from school.

   Whenever the critical (85th percentile) approach speed exceeds 64 km/h (40 mph), the guidelines for rural areas should be applied.
2. At stop sign-controlled crossing:

   Where the vehicular traffic volumes on undivided highways of four or more lanes exceeds 500 per hour during any period when the school pedestrians are going to or from school.
3. At traffic signal-controlled crossings:
   a. Where the number of vehicular turning movements through the school crosswalk exceeds 300 per hour while school pedestrians are going to or from school; or
   b. Where justified through analysis of the operations of the intersection.

Legal Authority and Program Funding for Adult Crossing Guards:

Option:

Cities and counties may designate local law enforcement agencies, the governing board of any school district or a county superintendent of schools to recruit and assign adult crossing guards to intersections that meet approved guidelines for adult supervision.

Support:

There are various methods for funding a school adult crossing guard program. One of these methods is through the use of fines and forfeitures received under the Penal Code. Disposition of these fines and forfeitures is defined in CVC Sections 42200 and 42201.

An example of these dispositions by cities and counties is as follows:

- Disposition by cities (CVC 42200). Fines and forfeitures received by cities and deposited into a "Traffic Safety Fund" may be used to pay the compensation of school crossing guards who are not regular full-time members of the police department of the city.
- Disposition by county (CVC 42201). Fines and forfeitures received by a county and deposited in the road fund of the county may be used to pay the compensation of school crossing guards, and necessary equipment and administrative costs. The board of supervisors may adopt standards for crossing guards and has final authority over the total cost of the crossing guard program.

Section 7E.03 Qualifications of Adult Crossing Guards

Support:

High standards for selection of adult crossing guards are essential.

Guidance:

Adult crossing guards should possess the following qualifications:

A. Average intelligence;
B Good physical condition, including sight, hearing, and mobility;
C. Mental alertness;
D. Neat appearance;
E. Good character;
F. Dependability; and
G. Sense of responsibility for safety of students.

Training Programs for Adult Crossing Guards:

Guidance:

Adequate training should be provided in adult crossing guard responsibilities and authority. This function can usually be performed effectively by a law enforcement agency responsible for traffic control.

Training programs should be designed to acquaint newly employed crossing guards with their specific duties, local traffic regulations, and crossing techniques. Training workshops may be used as a method of advising experienced employees of recent changes in existing traffic laws and program procedures. For example, crossing guards should be familiar with the California law which provides that any person who disregards any traffic signal or direction given by a non-student school crossing guard authorized by a law enforcement agency, any board of supervisors of a county or school district shall be guilty of an infraction and subject to the penalties of Section 42001 of the CVC (Section 2815).

Section 7E.04 Uniform of Adult Crossing Guards and Student Patrols

Guidance:

Adult crossing guards should be uniformed so that road users and pedestrians can recognize them and respond to their signals. The uniforms should be distinctively different from those worn by regular law enforcement officers.

Standard:

Adult crossing guards shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-1999 standard performance for Class 2 as described in Section 6E.02.

Student patrols shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-1999 standard performance for Class 1 as described in Section 6E.02.

Guidance:

Law enforcement officers should wear high-visibility retroreflective material over their uniforms when directing nighttime operations.

Standard:

The use of the School Safety Patrol uniforms and insignia shall adhere to the following regulations (California Code of Regulations 576):

(a) A school safety patrol member (except a member of the R.O.T.C. or California Cadet Corps on traffic duty in his official uniform) shall wear, at all times while on duty, the basic standard uniform specified in this section, except that the rainy day uniform may be worn under appropriate weather conditions. Only the optional additions specified in this section may be added to the uniform.

(b) The basic standard uniform for patrol members is the white or fluorescent orange Sam Browne belt and either an overseas type federal yellow or fluorescent orange cap or a yellow or fluorescent orange helmet.

Optional additions to the basic standard uniform are any or all of the following:

(1) Colored piping on the federal yellow cap.
(2) Colored striping on the yellow helmet.
(3) A red or fluorescent orange upper garment
(4) Insignia or a special badge identifying the organization, to be worn on the left breast, left arm, or cap.

(c) The rainy-day uniform is a federal yellow raincoat and a federal yellow rain hat. The Sam Browne belt may be worn over the raincoat.

(d) The insignia, or special badge and cap shall be worn only during official school safety patrol duty, except that the governing board may authorize members of the school safety patrol to wear the uniform and insignia for special school safety patrol functions.

Section 7E.05 <u>Operating Procedures for Adult Crossing Guards</u>

Guidance:

Adult crossing guards should not direct traffic in the usual law enforcement regulatory sense. In the control of traffic, they should pick opportune times to create a reasonably safe gap. At these times, they should stand in the roadway to indicate that pedestrians are about to use or are using the crosswalk, and that all vehicular traffic must stop.

Adult crossing guards should use a STOP paddle. The STOP paddle ~~should~~ shall be the primary hand-signaling device.

Standard:

The STOP paddle shall be an octagonal shape. The background of the STOP face shall be red with at least 150 mm (6 in) series capital white letters and border. The paddle shall be at least 450 mm (18 in) in size and have the word message STOP on both sides. The paddle shall be retroreflectorized or illuminated when used during hours of darkness.

Option:

The STOP paddle may be modified to improve conspicuity by incorporating red or white flashing lights on both sides of the paddle. The red or white flashing lights may be arranged in any of the following patterns:

A. Two red or white lights centered vertically above and below the STOP legend;
B. Two red or white lights centered horizontally on each side of the STOP legend;
C. One red or white light centered below the STOP legend; or
D. A series of eight or more small red or white lights no larger than 6 mm (0.25 in) in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the STOP paddle. More than eight lights may be used only if the arrangement of the lights is such that it clearly conveys the octagonal shape of the STOP paddle.
E. A series of white lights forming the shapes of the letters in the legend.

Standard:

If flashing lights are used on the STOP paddle, the flash rate shall be at least 50, but not more than 60, flash periods per minute.

Option:

The 600 x 600 mm (24 x 24 in) size of the STOP (C28A(CA) paddle may be used where greater emphasis is needed and speeds are 50 km/h (30 mph) or more.

Support:

Details for the short and long handle of the STOP paddle are shown in Department of Transportation's California Sign Specifications under C28C(CA) code.

Section 7E.06 Uniformed Law Enforcement Officers

Option:

Uniformed law enforcement officers may be used for school crossing supervision.

Section 7E.07 Student Patrols

Option:

Students patrols may be used to direct and control pedestrians at crossings near schools where adequate gaps in traffic occur frequently enough so that gaps do not need to be created.

Student patrols may be used to direct and control pedestrians at signalized intersections where turning movements are not a significant problem, and may be used to assist adult crossing guards in the control of pedestrians at crossing locations used by large numbers of pedestrians.

Guidance:

Student patrols should not be responsible for directing vehicular traffic. They should not function as uniformed law enforcement officers or adult crossing guards.

Legal Authority for School Safety Patrols:

Standard:

For all purposes "School Safety Patrols" shall mean "Student Patrols" as referenced in this California MUTCD.

School Safety Patrols shall be authorized by the local school board. School authorities shall be responsible for organizing, instructing and supervising patrols with the assistance of the local police.

Support:

The California Education Code, Sections 49300 to 49307, and the California Code of Regulations, Sections 570 to 576 and 632, authorize the development of School Safety Patrols and outline rules for implementing these programs within the state.

Section 7E.08 Choice of Student Patrols

Guidance:

Student patrols should be carefully selected. They ~~should~~ shall be students from the fifth grade or higher and shall be at least 10 years of age. Refer to California Code of Regulations Section 571. Leadership and reliability should be determining qualities for patrol membership.

Parental approval ~~should~~ shall be obtained in writing before a student is used as a member of a student patrol. Refer to California Education Code Section 49302.

Section 7E.09 Operating Procedures for Student Patrols

Guidance:

Student patrols should use a flagging device to stop pedestrians behind the curb or edge of the roadway, and should allow them to cross only when there is an adequate gap in traffic.

Standard:

Flagging devices used during periods of twilight or darkness shall be retroreflective or illuminated.

Because they are not authorized to direct vehicular traffic, student patrols shall not use a STOP paddle.

Support:

School Safety Patrols control children, not vehicles.

Standard:

School Safety Patrols shall stop children back of the curb or edge of the roadway and allow them to cross only when there is an adequate gap in traffic (see California Code of Regulations Sections 570 to 576 and 632 for School Safety Patrols operating procedures and requirements).

Criteria for Student Patrols:

Option:

A student patrol may be established at locations where an existing traffic control device, police officer or adult crossing guard is in operation. They may also be used where there are adequate crossing gaps in vehicular flow at an uncontrolled crossing and it is desirable to use student patrols to guide the school pedestrians.

Support:

To determine the frequency and adequacy of gaps in the traffic stream, refer to Section 7A.03.

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CHAPTER 7F. GRADE-SEPARATED CROSSINGS

Section 7F.01 Function

Option:

Grade-separated crossings may be used to physically separate the crossing of school pedestrian traffic and vehicular flow.

Section 7F.02 Types of Grade-Separated Crossings

Option:

Grade-separated crossings may be either overpasses over the highway or underpasses under the highway.

Guidance:

The design should follow the guidelines given in the published policies of the American Association of State Highway and Transportation Officials, such as "A Policy on Geometric Design of Highways and Streets" (see Section 1A.11).

Support:

Experience has shown that overpasses are more satisfactory than underpasses for pedestrian crossings, as overpasses are easier to maintain and supervise.

Section 7F.03 Criteria for Use of Grade-Separated Crossings

Guidance:

If use of the grade separation will be less convenient to pedestrians than an at-grade crossing, barriers or supervision should be considered to assure a satisfactory level of use.

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California
Manual on Uniform Traffic Control Devices
for Streets and Highways
(FHWA's MUTCD 2003 Edition,
as amended for use in California)

APPENDIX

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

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APPENDIX

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CONGRESSIONAL LEGISLATION

PUBLIC LAW 102-240-DEC. 18, 1991 (INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991)

Section 1077. REVISION OF MANUAL — Not later than 90 days after the date of the enactment of this Act, the Secretary shall revise the Manual of Uniform Traffic Control Devices and such other regulations and agreements of the Federal Highway Administration as may be necessary to authorize States and local governments, at their discretion, to install stop or yield signs at any rail-highway grade crossing without automatic traffic control devices with 2 or more trains operating across the rail-highway grade crossing per day.

PUBLIC LAW 102-388-OCT. 6, 1992 (DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS ACT, 1993)

Section 406 — The Secretary of Transportation shall revise the Manual of Uniform Traffic Control Devices to include —

(a) a standard for a minimum level of retroreflectivity that must be maintained for pavement markings and signs, which shall apply to all roads open to public travel; and

(b) a standard to define the roads that must have a centerline or edge lines or both, provided that in setting such standard the Secretary shall consider the functional classification of roads, traffic volumes, and the number and width of lanes.

PUBLIC LAW 104-59-NOV. 28, 1995 (NATIONAL HIGHWAY SYSTEM DESIGNATION ACT OF 1995)

Section 205. RELIEF FROM MANDATES —

(c) METRIC REQUIREMENTS —

(1) PLACEMENT AND MODIFICATION OF SIGNS — The Secretary shall not require the States to expend any Federal or State funds to construct, erect, or otherwise place or to modify any sign relating to a speed limit, distance, or other measurement on a highway for the purpose of having such sign establish such speed limit, distance, or other measurement using the metric system.

(2) OTHER ACTIONS — Before September 30, 2000, the Secretary shall not require that any State use or plan to use the metric system with respect to designing or advertising, or preparing plans, specifications, estimates, or other documents, for a Federal-aid highway project eligible for assistance under title 23, United States Code.

(3) DEFINITIONS — In this subsection, the following definitions apply:

(A) HIGHWAY — The term 'highway' has the meaning such term has under section 101 of title 23, United State Code.

(B) METRIC SYSTEM — the term 'metric system' has the meaning the term 'metric system of measurement' has under section 4 of the Metric Conversion Act of 1975 (15 U.S.C. 205c).

Section 306. MOTORIST CALL BOXES — Section 111 of title 23, United States Code, is amended by adding at the end the following:

(c) MOTORIST CALL BOXES—

(1) IN GENERAL— Notwithstanding subsection (a), a State may permit the placement of motorist call boxes on rights-of-way of the National Highway System. Such motorist call boxes may include the identification and sponsorship logos of such call boxes.

(2) SPONSORSHIP LOGOS—

(A) APPROVAL BY STATE AND LOCAL AGENCIES—All call box installations displaying sponsorship logos under this subsection shall be approved by the highway agencies having jurisdiction of the highway on which they are located.

(B) SIZE ON BOX—A sponsorship logo may be placed on the call box in a dimension not to exceed the size of the call box or a total dimension in excess of 12 inches by 18 inches.

(C) SIZE ON IDENTIFICATION SIGN—Sponsorship logos in a dimension not to exceed 12 inches by 30 inches may be displayed on a call box identification sign affixed to the call box post.

(D) SPACING OF SIGNS—Sponsorship logos affixed to an identification sign on a call box post may be located on the rights-of-way at intervals not more frequently than 1 per every 5 miles.

(E) DISTRIBUTION THROUGHOUT STATE—Within a State, at least 20 percent of the call boxes displaying sponsorship logos shall be located on highways outside of urbanized areas with a population greater than 50,000.

(3) NONSAFETY HAZARDS—The call boxes and their location, posts, foundations, and mountings shall be consistent with requirements of the Manual on Uniform Traffic Control Devices or any requirements deemed necessary by the Secretary to assure that the call boxes shall not be a safety hazard to motorists.

Section 353(a) SIGNS — Traffic control signs referred to in the experimental project conducted in the State of Oregon in December 1991 shall be deemed to comply with the requirements of Section 2B-4 of the Manual on Uniform Traffic Control Devices of the Department of Transportation.

Section 353(b) STRIPES — Notwithstanding any other provision of law, a red, white, and blue center line in the Main Street of Bristol, Rhode Island, shall be deemed to comply with the requirements of Section 3B-1 of the Manual on Uniform Traffic Control Devices of the Department of Transportation.

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APPENDIX A101(CA). CALIFORNIA SIGN CHART (September 2006)

Support:

The most commonly used signs in California are shown in the California Sign Chart (September 2006). This chart is not meant to be used as a comprehensive sign chart but is provided on the following pages for ease of use and as a handy reference. It consists of the following sheets:

- Regulatory Signs (Sheets 1 through 3 of 10).
- Warning Signs (Sheets 4 and 5 of 10).
- Guide Signs (Sheets 6 through 8 of 10).
- Temporary Traffic Control Signs (Sheets 9 and 10 of 10).

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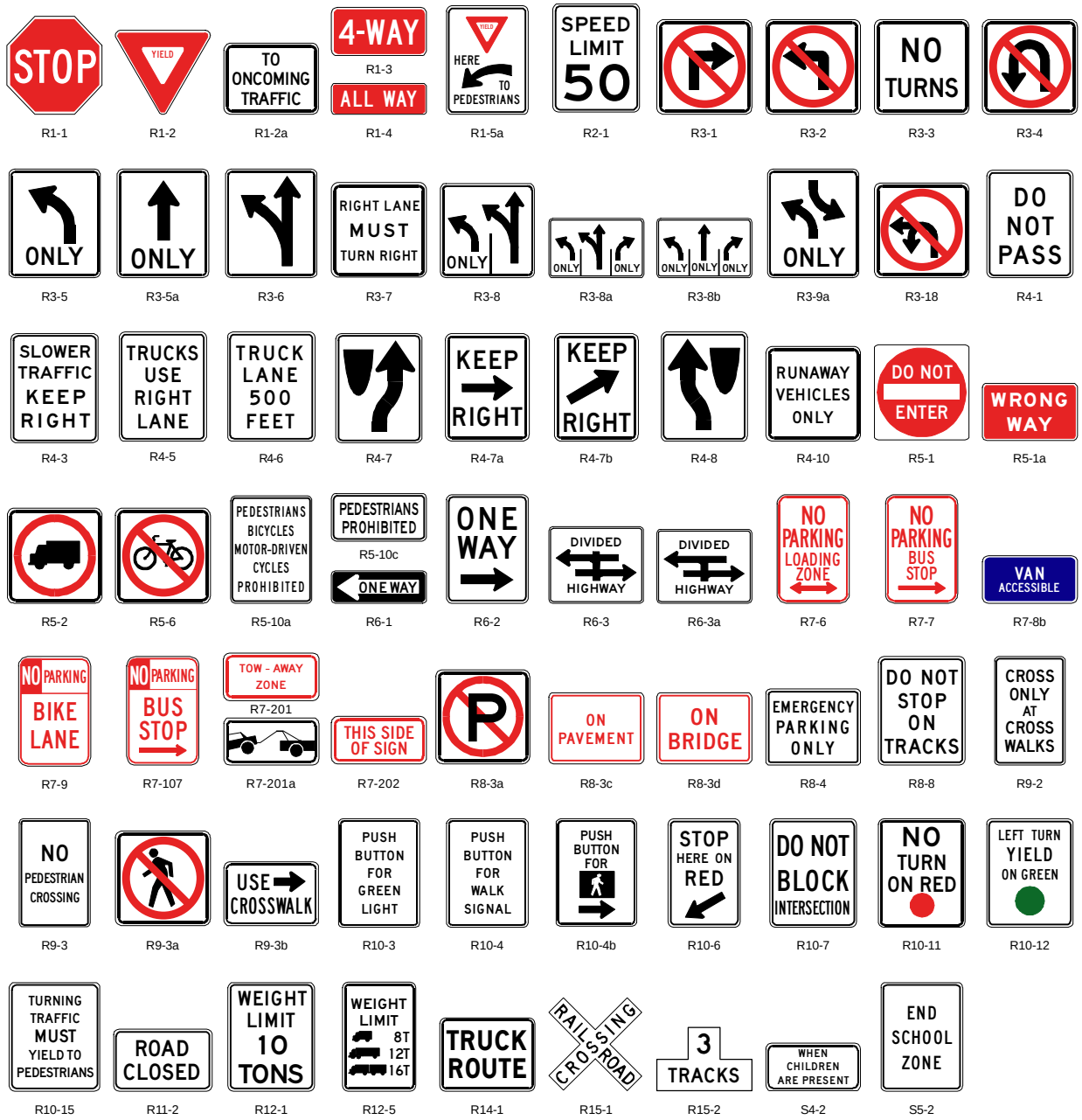
California Sign Chart

Sheet 1 of 10 - Federal Regulatory Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

California Department of Transportation
Signs and Work Zones Branch
September 2006

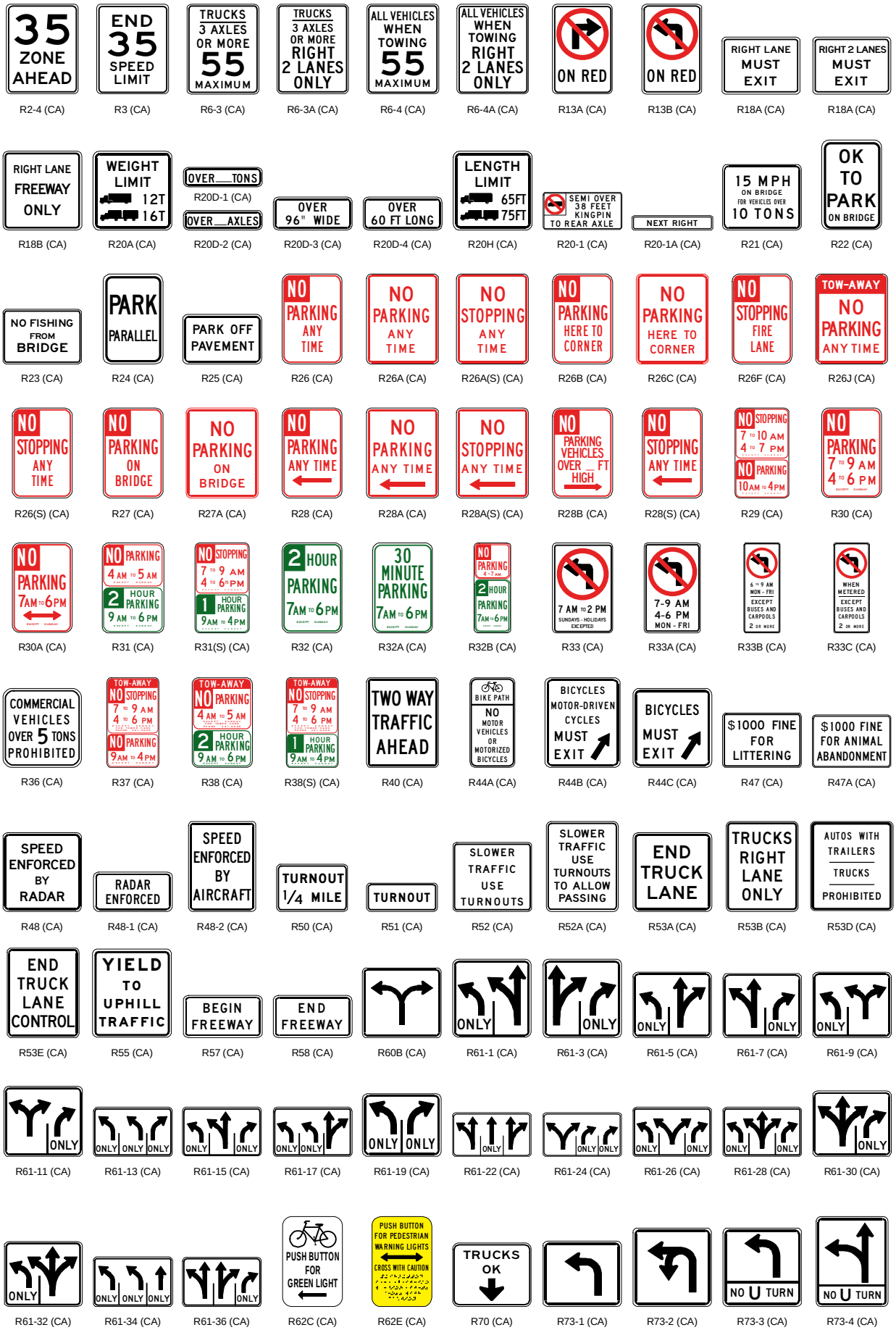


California Sign Chart

Sheet 2 of 10 - California Regulatory Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

California Department of Transportation
Signs and Work Zones Branch
September 2006



California Sign Chart

Sheet 3 of 10 - California Regulatory Signs (Continued)

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

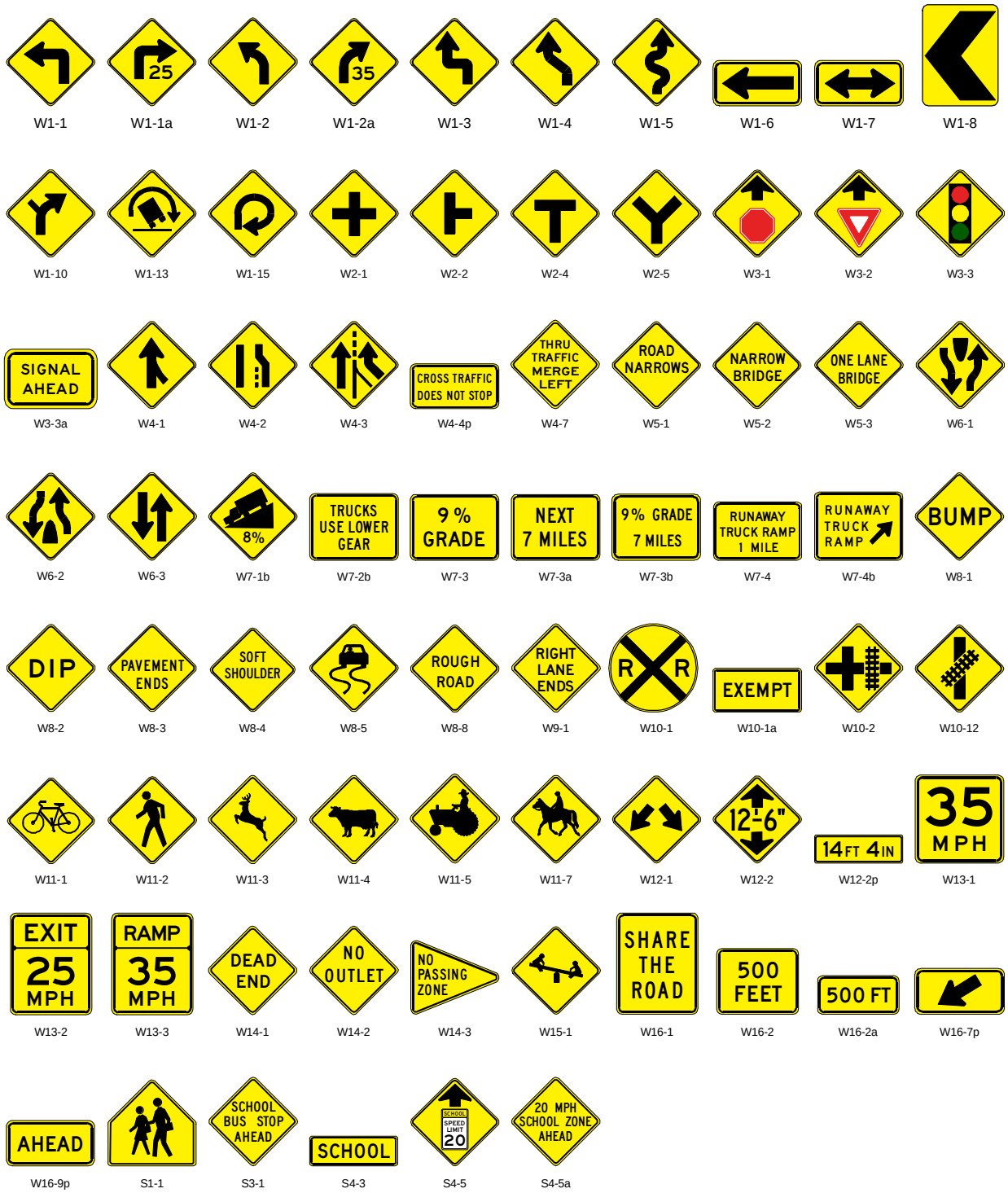
California Department of Transportation
Signs and Work Zones Branch
September 2006

California Sign Chart

Sheet 4 of 10 - Federal Warning Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

California Department of Transportation
Signs and Work Zones Branch
September 2006

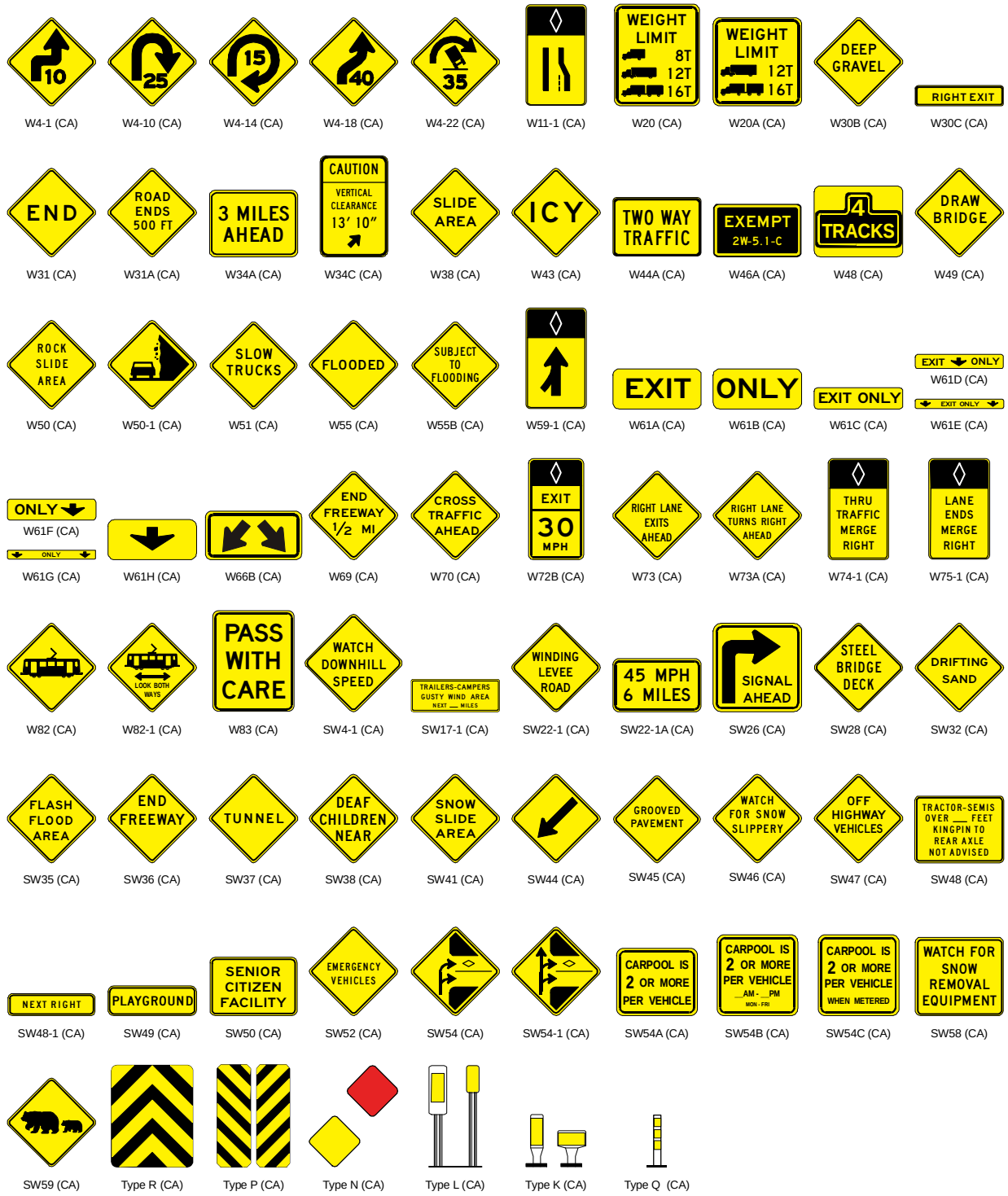


California Sign Chart

Sheet 5 of 10 - California Warning Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

California Department of Transportation
Signs and Work Zones Branch
September 2006

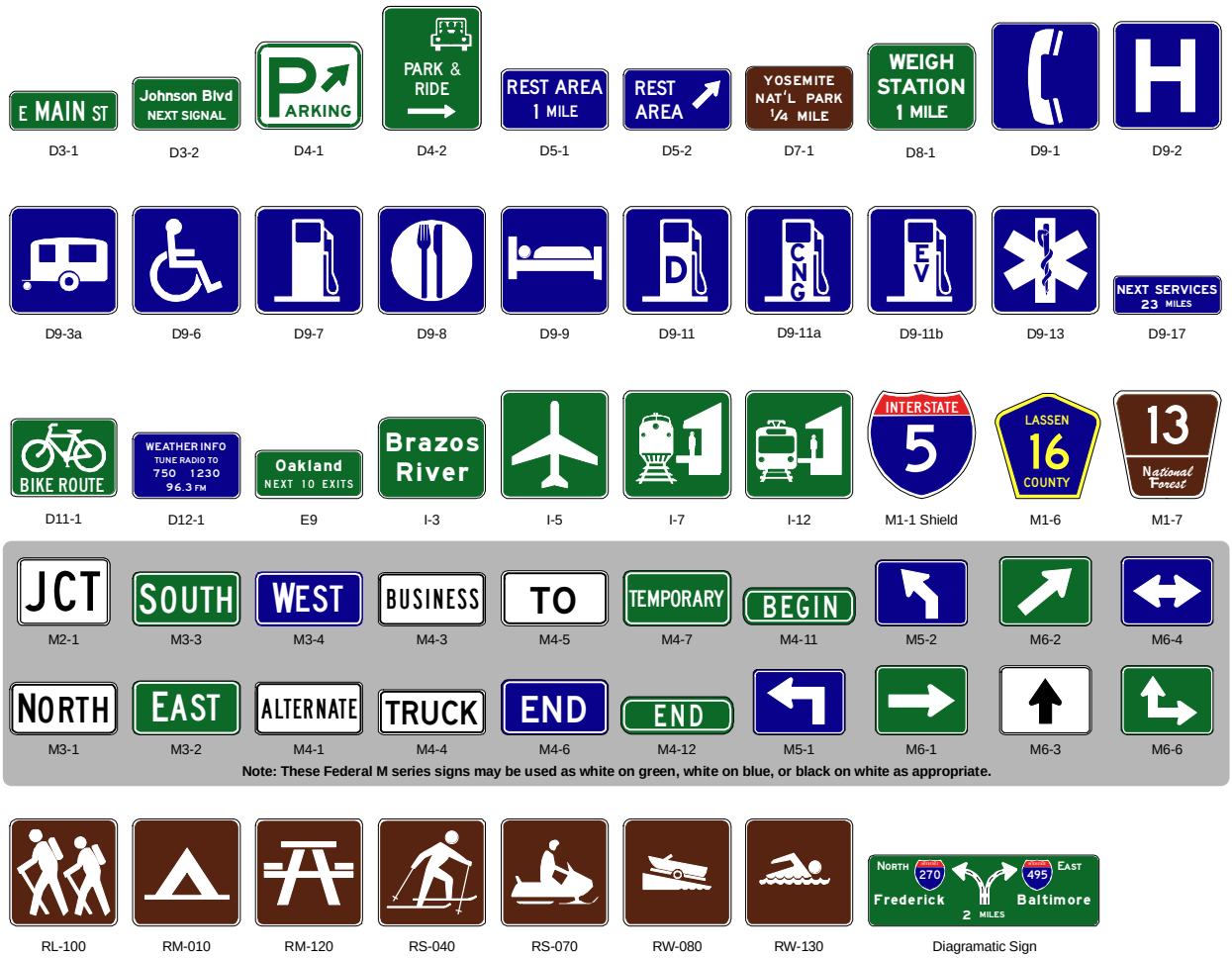


California Sign Chart

Sheet 6 of 10 - Federal Guide Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

California Department of Transportation
Signs and Work Zones Branch
September 2006

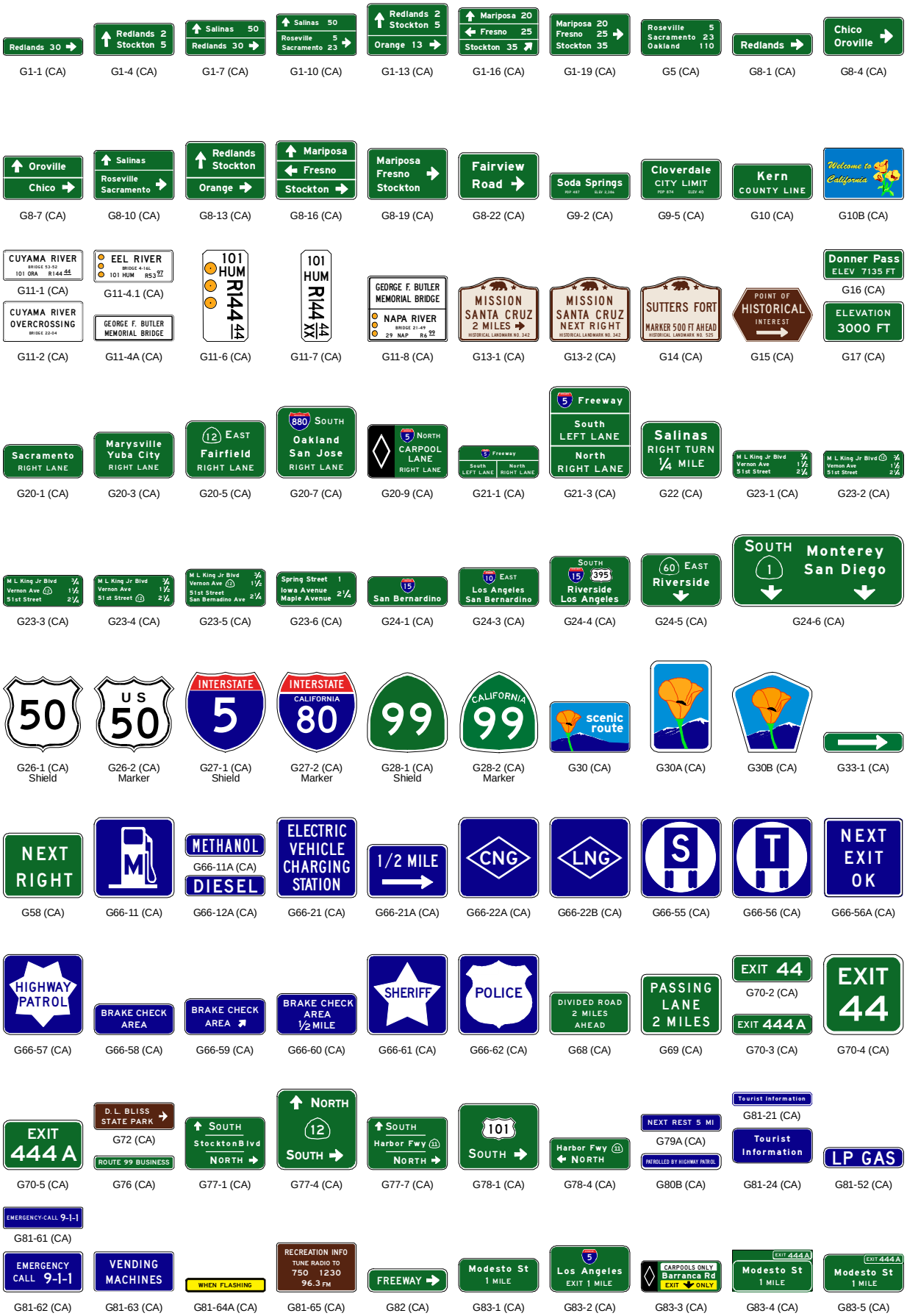


California Sign Chart

Sheet 7 of 10 - California Guide Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

California Department of Transportation
Signs and Work Zones Branch
September 2006



California Sign Chart

Sheet 8 of 10 - California Guide Signs (Continued)

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

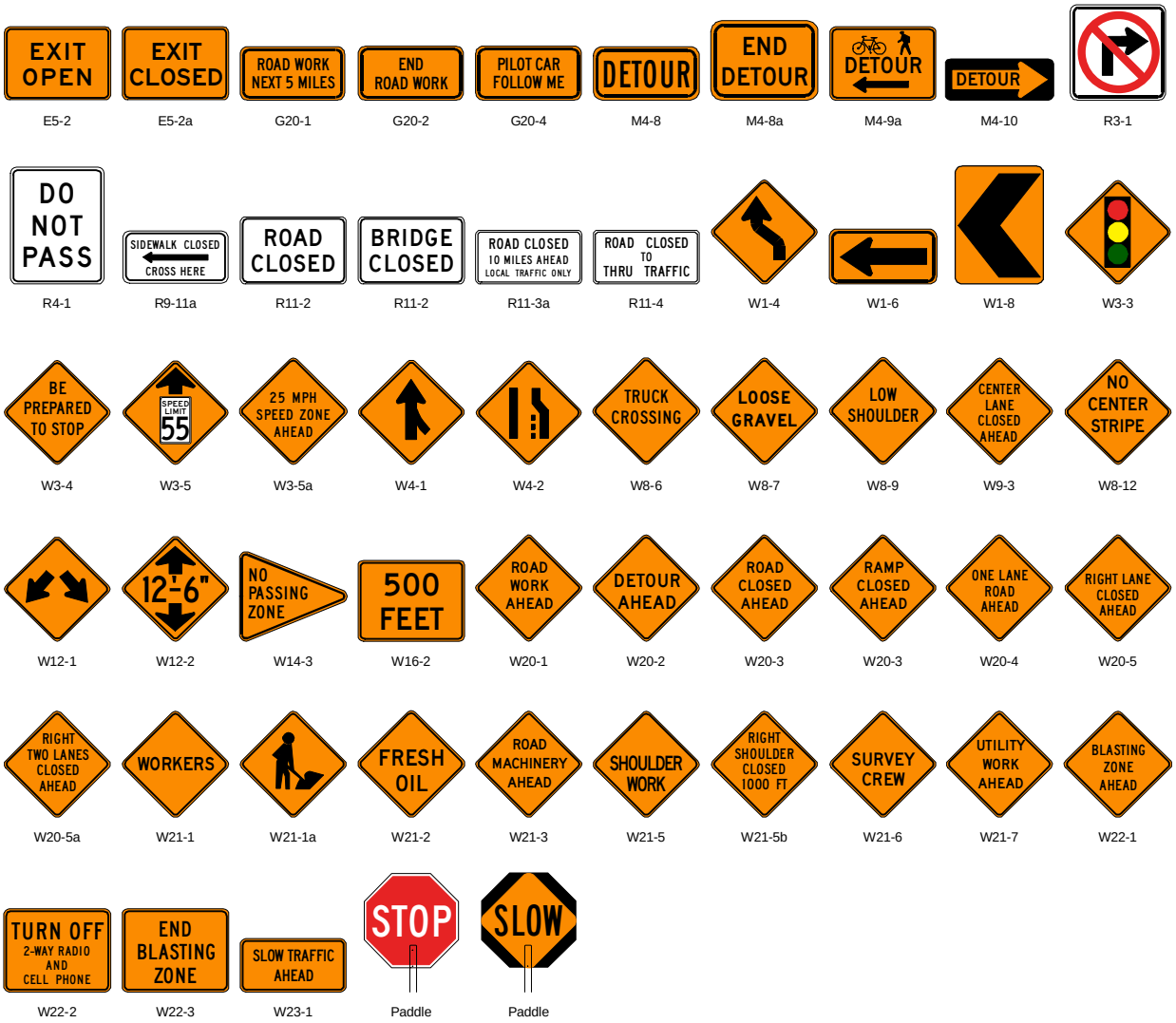
California Department of Transportation
Signs and Work Zones Branch
September 2006

California Sign Chart

California Department of Transportation
Signs and Work Zones Branch
September 2006

Sheet 9 of 10 - Federal Temporary Traffic Control Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.



California Sign Chart

California Department of Transportation
Signs and Work Zones Branch
September 2006

Sheet 10 of 10 - California Temporary Traffic Control Signs

This chart contains commonly used signs in California, and is not meant to be used as a comprehensive sign chart.
California codes are designated by (CA). Otherwise Federal codes are shown. For a complete directory of signs, visit **www.dot.ca.gov/hq/traffops/signtech/signdel/index.htm**.

C9A (CA)

C12 (CA)

Front
C17 (CA)

Back
C17 (CA)

C20 (CA)

C23B (CA)

C24 (CA)

C27 (CA)

C29 (CA)

C30 (CA)

C30A (CA)

C31A (CA)

C37 (CA)

C37 (CA)

C38 (CA)

C40 (CA)

C40A (CA)

SC3 (CA)

SC5 (CA)

SC6-3 (CA)

SC6-4 (CA)

SC7 (CA)

SC8 (CA)

SC9 (CA)

SC10 (CA)

SC11 (CA)

SC13 (CA)

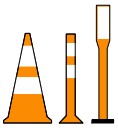
SC15 (CA)

Type R (CA)

Type P (CA)

Type N (CA)

Type II
Barricade


Cone,
Tubular Marker,
Channelizer

Plastic
Drum

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APPENDIX A102(CA). LIST OF ACRONYMS & ABBREVIATIONS

Support:

The following list of acronyms are related to traffic control devices and provided for ease of use and as a handy reference:

A	
@	At
AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AHS	Automated Highway System
Alt	Alternate
AM	Time from midnight to noon
AMBER	Use of CMS signs for child abduction alert messages
AMIS	Automated Management Information System
ANSI	American National Standards Institute
Approx	Approximate
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
ATIS	Advanced Traveler Information Systems
ATMS	Advanced Traffic Management System
ATSSA	American Traffic Safety Services Association
AVCS	Automated Vehicle Control System
Ave or AVE	Avenue
Avg	Average
B	
BART	Bay Area Rapid Transit
Bldg	Building
Blvd or BLVD	Boulevard
Br or BR	Bridge
BT&H	Business, Transportation & Housing Agency
C	
CA	California
CAC	California Administrative Code
Cal/OSHA	California Occupational Safety and Health Administration
CA MUTCD	California Manual on Uniform Traffic Control Devices for Streets and Highways
Caltrans	California Department of Transportation
CBD	Central Business District
CCMP	County Congestion Management Plan
CCO	Contract Change Order
CCR	California Code of Regulations
CDC	California Department of Conservation
CDF	California Department of Forestry
CDFG	California Department of Fish and Game

CEAC	County Engineers Association of California
CELSOC	Consulting Engineering and Land Surveyors of California
CFR	Code of Federal Regulations
CHIN	California Highway Information Network
CHP	California Highway Patrol
cm	Centimeter
CMA	Congestion Management Agency
CMP	Congestion Management Program
CMS	Changeable Message Sign or Congestion Management System
Co or CO	County
COB	Close of Business
COZEEP	Construction Zone Enhanced Enforcement Program
CPC	California Penal Code
CPH	California Permit Handbook
CPM	Critical Path Method
CPUC	California Public Utilities Commission
Cr or CR	Creek
CRHR	California Register of Historical Resources
CT	Caltrans or California Department of Transportation
CTA	California Trucking Association
CTC	California Transportation Commission
CTCDC	California Traffic Control Devices Committee
CTP	California Transportation Plan
CURE	Clean-up Roadside Environment
CVC	California Vehicle Code
D	
Deg	Degree
Del	Delineator
Det	Detour or Detail
DHV	Design Hourly Volume
DI	Delay Index, Drop Inlet or Drainage Inlet
Dia	Diameter
DIB	Design Information Bulletin
Dist	Distance or District
DMV	Department of Motor Vehicles
DOT	Department of Transportation
Dr or DR	Drive
DTO	Division of Traffic Operations
Dwy or DWY	Driveway
DYS	Double Yellow Stripe
E	
e.g.	"For Example"
E	East
EB	Eastbound, Environmental Branch or End of Bridge
Elev	Elevation
ENGR	Engineer or Engineering
EP	Edge of Pavement or Environmental Planning
ES	Edge of Shoulder or End Section

ESA	Environmentally Sensitive Area or Endangered Species Act
ESAL	Equivalent Single-Axle Loads
ETW	Edge of Traveled Way
Exp or EXP	Expressway
F	
F&E System	Freeway and Expressway System
FAI	Federal-aid Interstate
FAP	Federal-aid Primary
FCC	Federal Communication Commission
FEBT	Facing Eastbound Traffic
FHWA	Federal Highway Administration
Fig	Figure
FNBT	Facing Northbound Traffic
FR	Federal Register
Fr Rd	Frontage Road
FS	Far Side
FSBT	Facing Southbound Traffic
FSP	Freeway Service Patrol
Ft or FT	Foot or Feet
FWBT	Facing Westbound Traffic
Fwy or FWY	Freeway
G	
g	Acceleration due to gravity
GPS	Global Positioning System
GR	Guard Railing
H	
H	Height
HAR	Highway Advisory Radio
HAZMAT	Hazardous Material
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HOT	High Occupancy Toll
HOV	High-Occupancy Vehicle
HOVL	High-Occupancy Vehicle Lane
HM	Hazardous Material
HQ	Caltrans Headquarters
Hr or HR	Hour
HW	Hazardous Waste
Hwy or HWY	Highway
I	
i.e.	"In Other Words"
IGR	Intergovernmental Review
ILEV	Inherently Low Emission Vehicle
in	Inch
Inj or INJ	Injury
IRLs	In-Roadway Lights
IRWLs	In-Roadway Warning Lights

ISO	International Standards Organization
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991 (Federal)
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation Systems or Institute of Transportation Studies
ITTE	Institute of Transportation & Traffic Engineering
IVHS	Intelligent Vehicle Highway System
K	
km	Kilometer
KP	Kilometer Post
L	
L	Length
Lat	Latitude
lb or LB	Pound
LED	Light Emitting Diode
LF	Linear Foot
Ln or LN	Lane
Loc or LOC	Location
LOS	Level of service (Traffic Congestion Measure)
LPA	Local Public Agency
LRT	Light Rail Transit
Lt or LT	Left
M	
m	meter
MADT	Monthly Average Daily Traffic
Maint	Maintenance
Max or MAX	Maximum
MAZEEP	Maintenance Zone Enhanced Enforcement Program
MBGR	Metal Beam Guard Rail
Med or MED	Median
MF	Mixed Flow
mi or MI	Mile or Miles
Min or MIN	Minimum
Misc or MISC	Miscellaneous
mm	Millimeter
mph or MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
MT	Mass Transit
MTC	Metropolitan Transportation Commission (for the San Francisco Bay Area)
MUTCD	Manual on Uniform Traffic Control Devices
MVM	Per Million Vehicle Miles
N	
N	North
NB	Northbound
NCEES	National Council of Examiners for Engineering and Surveying
NCHRP	National Cooperative Highway Research Program
NCRP	National Cooperative Research Program

NCUT	National Committee on Urban Transportation
NCUTCD	National Committee on Uniform Traffic Control Devices
NCUTLO	National Committee on Uniform Traffic Laws and Ordinances
NHI	National Highway Institute
NHL	National Historic Landmark
NHS	National Highway System
NHSB	National Highway Safety Bureau
NHTSA	National Highway Traffic Safety Administration
NNIH	National Network of Interstage Highways
No.	Number (must have period)
Nos.	Numbers (must have period)
NPRM	Notice of Proposed Rule Making
NPS	National Park Service (U.S.)
NR	National Register (of Historic Places, abbreviation)
NRHP	National Register of Historic Places
NS	Near Side
NTS	National Transportation System or Not To Scale
NTSB	National Transportation Safety Board
O	
O & D	Origin and Destination
Oc or OC	Overcrossing
OCTA	Orange County Transportation Authority
ODA	Outdoor Advertising (Act)
OES	Office of Emergency Services
OG	Original Ground
OH	Overhead (Structure)
OHP	Office of Historic Preservation
Opp	Opposite
OSA	Office of the State Architect
OSHA	Occupational Safety and Health Administration
P	
P2P	Peer-to-Peer Program
P&P	Policy & Procedure
PCH	Pacific Coast Highway
PCMS	Portable Changeable Message Sign
PDO	Property Damage Only
PE	Professional Engineer or Project Engineer
Ped or PED	Pedestrian
PHF	Peak Hour Factor
PHI	Point of Historic Interest
PM	Post Mile
PMS	Pavement Management System
PMT	Passenger Miles Traveled
PS&E	Plans, Specifications, and Estimate
Pvmt or PVMT	Pavement
PUC	California Public Utilities Commission

Q	
Q&A	Questions and Answers
Qty	Quantity
R	
R&D	Research and Development
RCE	Registered Civil Engineer
Rd	Road
Rdwy	Roadway
RE	Resident Engineer or Right of Entry
ROW	Right of Way
RR	Railroad
Rt or RT	Right
Rte or RTE	Route or Registered Traffic Engineer
RV	Recreational Vehicle
R/W	Right of Way
Rwy	Railway
RXR	Railroad Crossing
S	
S&H Code	Streets & Highways Code
S	South
SACOG	Sacramento Area Council of Governments
SAFE	Service Authority for Freeways & Expressways
SB	Southbound or Senate Bill
SCAG	Southern California Association of Governments
SCRRA	Southern California Regional Rail Authority
SCRTD	Southern California Rapid Transit District
Sec	Second or Section
SHELL	State Highway Extra Legal Loads
SHL	State Historical Landmark
SHOPP	State Highway Operation and Protection Program
SHS	Standard Highway Signs Book (FHWA)
SI	Safety Index or International System of Units (Metric)
SR	State Route or Senate Resolution
SRRA	Safety Roadside Rest Area
SSD	Stopping Sight Distance
SSP's	Standard Special Provisions
St or ST	Street
STA	State Transit Assistance
STIP	State Transportation Improvement Program
Str or STR	Structure
SW	Sidewalk or Soundwall
SWITRS	Statewide Integrated Traffic Records Systems
T	
TASAS	Traffic Accident Surveillance and Analysis System
TC	Traffic Control
TCM	Transportation Control Measure
TCP	Traffic/Transportation Control Plan

TEA21	Transportation Efficiency Act for the 21st Century
Temp or TEMP	Temporary
TI	Traffic Index
TM	Caltrans Traffic Manual
TMC	Traffic Management Center
TMP	Transportation Management Plan
TMT	Traffic Management Team
TODS	Tourist-Oriented Directional Signs
TOPD	Traffic Operations Policy Directives
TOS	Traffic Operations System
TRB	Transportation Research Board
TS	Traffic Signal
TSS	Caltrans Traffic Sign Specifications
TTC	Temporary Traffic Control
U	
UC	Under Crossing
UP	Underpass
UPRR	Union Pacific Railroad
URR	Urban Rail Transit Program (State)
USA	Underground Service Alert
USC	United States Code (Federal)
USCE	United States (Army) Corps of Engineers (Federal)
USDOT	United States Department of Transportation
V	
VMS	Variable Message Sign
VMT	Vehicle Miles Traveled
vph or VPH	Vehicles Per Hour
vphpl or VPHPL	Vehicles Per Hour Per Lane
W	
W	West or Width
WATCH	Work Area Traffic Control Handbook
WB	Westbound
WIM	Weigh-in Motion
WS	White Stripe
Wt	Weight
X	
Xing or XING	Crossing
X	
Yr	Year
YS	Yellow Stripe

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APPENDIX A103(CA). LIST OF USEFUL TCD RELATED WEB SITES

Support:

The following list of web sites are related to traffic control devices and provided for ease of use and as a handy reference:

Description	Internet Web Site Address
American Association of State Highway and Transportation Officials (AASHTO)	http://www.transportation.org/
American Railway Engineering and Maintenance-of-Way Association (AREMA)	http://www.arema.org/
American Traffic Safety Services Association (ATSSA)	http://www.atssa.com
California Building Standards Code	http://www.iccsafe.org/
California Code of Regulations (CCR)	http://ccr.oal.ca.gov/
California Department of Motor Vehicles (DMV)	http://www.dmv.ca.gov/dmv.htm
California Highway Patrol	http://www.chp.ca.gov/
California Law	http://www.leginfo.ca.gov/calaw.html
California MUTCD	http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/
California Public Utilities Commission (CPUC)	http://www.cpuc.ca.gov/
California Sign Chart	http://www.dot.ca.gov/hq/traffops/signtech/signdel/signchart.html
California Traffic Control Devices Committee (CTCDC)	http://www.dot.ca.gov/hq/traffops/signtech/newtech/
California Vehicle Code	http://www.dmv.ca.gov/pubs/vctop/vcpdftoc.htm
Caltrans Approved Safety Devices List	http://www.dot.ca.gov/hq/esc/approved_products_list/HighwaySafe.htm
Caltrans Interchange Exit Numbering	http://www.dot.ca.gov/hq/traffops/signtech/calnexus/index.htm
Caltrans Manuals	http://www.dot.ca.gov/manuals.htm
Caltrans Office of Truck Services (STAA Truck Routes)	http://www.dot.ca.gov/hq/traffops/trucks/
Caltrans Publications	http://caltrans-opac.ca.gov/publicat.htm
Caltrans Rural/Urban Roadway Classification	http://www.dot.ca.gov/hq/tsip/hpms/Page1.php
Caltrans Sign Specifications	http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm
Caltrans Traffic Manual	http://www.dot.ca.gov/hq/traffops/signtech/signdel/trafficmanual.htm

Description	Internet Web Site Address
Federal-Aid Highway Program Guidance on High Occupancy Vehicle (HOV) Lanes	http://www.fhwa.dot.gov/operations/hovguide01.htm
Federal Highway Administration	http://www.fhwa.dot.gov/
Federal Railroad Administration	http://www.fra.dot.gov/
FHWA's Experimentation/Interpretation Letters	http://www.atssa.com/page.ww?section=Resources&name=Interpretation+Letters
FHWA's MUTCD	http://mutcd.fhwa.dot.gov/
FHWA's Office of Safety	http://safety.fhwa.dot.gov/index.htm
FHWA's Standard Highway Signs Book	http://mutcd.fhwa.dot.gov/ser-shs_millennium.htm
Going Going Gone (Free Surplus Transportation Literature from UC Berkeley's ITS Tech Transfer)	http://www.techtransfer.berkeley.edu/freestuff/
Illuminating Engineering Society (IES)	http://www.iesna.org/
Institute of Makers of Explosives	http://www.ime.org/
Institute of Transportation Engineers (ITE)	http://www.ite.org
International Organization for Standards (ISO)	http://www.iso.org/
International Safety Equipment Association (ISEA)	http://www.safetyequipment.org/
National Committee on Uniform Traffic Control Devices (NCUTCD)	http://www.ncutcd.org
National Committee on Uniform Traffic Laws and Ordinances (NCUTLO)	http://www.ncutlo.org
Occupational Safety and Health Administration (OSHA)	http://www.osha.gov/
Tech Transfer Training: UC Berkeley Institute of Transportation Studies	http://www.techtransfer.berkeley.edu/training/index.php
Transportation Research Board (TRB)	http://www.trb.org/
U.S. Architectural and Transportation Barriers Compliance Board (The U.S. Access Board)	http://www.access-board.gov/