California
Manual on Uniform Traffic Control Devices
for Streets and Highways

**(FHWA's MUTCD 2003 Edition
including Revisions 1 and 2,
as amended for use in California)**

PART 7
Traffic Controls for School Areas

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

(This page left intentionally blank)

PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

TABLE OF CONTENTS

		Page
CHAPTER 7A.	**GENERAL**	
Section 7A.01	Need for Standards	7A-1
Section 7A.02	School Routes and Established School Crossings	7A-1
Section 7A.03	School Crossing Control Criteria	7A-2
Section 7A.04	Scope	7A-3
Section 7A.05	Application of Standards	7A-3
Section 7A.06	Engineering Study Required	7A-3
Section 7A.07	Maintenance of Traffic Control Devices	7A-3
Section 7A.08	Placement Authority	7A-3
Section 7A.09	Unauthorized Devices and Messages	7A-4
Section 7A.10	Meaning of Standard, Guidance, Option, and Support	7A-4
CHAPTER 7B.	**SIGNS**	
Section 7B.01	Size of School Signs	7B-1
Section 7B.02	Illumination and Reflectorization	7B-1
Section 7B.03	Position of Signs	7B-1
Section 7B.04	Height of Signs	7B-1
Section 7B.05	Installation of Signs	7B-1
Section 7B.06	Lettering	7B-2
Section 7B.07	Sign Color for School Warning Signs	7B-2
Section 7B.08	School Advance Warning Assembly (S1-1 with Supplemental Plaque)	7B-2
Section 7B.09	School Crosswalk Warning Assembly (S1-1 with Diagonal Arrow)	7B-3
Section 7B.10	SCHOOL BUS STOP AHEAD Sign (S3-1)	7B-4
Section 7B.11	School Speed Limit Assembly (S4-1, S4-2, S4-3, S4-4, S4-6, S5-1)	7B-4
Section 7B.12	Reduced Speed School Zone Ahead Sign (S4-5, S4-5a)	7B-6
Section 7B.13	END SCHOOL ZONE Sign (S5-2)	7B-7
Section 7B.14	Parking and Stopping Signs (R7 and R8 Series)	7B-7
CHAPTER 7C.	**MARKINGS**	
Section 7C.01	Functions and Limitations	7C-1
Section 7C.02	Standardization of Application	7C-1
Section 7C.03	Crosswalk Markings	7C-1
Section 7C.04	Stop and Yield Lines	7C-2
Section 7C.05	Curb Markings for Parking Regulations	7C-3
Section 7C.06	Pavement Word and Symbol Markings	7C-3
CHAPTER 7D.	**SIGNALS**	
Section 7D.01	General	7D-1

		Page
CHAPTER 7E.	**CROSSING SUPERVISION**	
Section 7E.01	Types of Crossing Supervision	7E-1
Section 7E.02	Adult Crossing Guards	7E-1
Section 7E.03	Qualifications of Adult Crossing Guards	7E-2
Section 7E.04	Uniform of Adult Crossing Guards and Student Patrols	7E-2
Section 7E.05	Operating Procedures for Adult Crossing Guards	7E-3
Section 7E.06	Uniformed Law Enforcement Officers	7E-4
Section 7E.07	Student Patrols	7E-4
Section 7E.08	Choice of Student Patrols	7E-4
Section 7E.09	Operating Procedures for Student Patrols	7E-4
CHAPTER 7F.	**GRADE-SEPARATED CROSSINGS**	
Section 7F.01	Function	7F-1
Section 7F.02	Types of Grade-Separated Crossings	7F-1
Section 7F.03	Criteria for Use of Grade-Separated Crossings	7F-1

FIGURES

CHAPTER 7A.	**GENERAL**	
Figure 7A-1	Example of School Route Plan Map	7A-5
CHAPTER 7B.	**SIGNS**	
~~Figure 7B-1~~	~~School Area Signs~~	7B-8
Figure 7B-1(CA)	School Area Signs	7B-9
~~Figure 7B-2~~	~~Examples of Signing for School Crosswalk Warning Assembly~~	7B-11
Figure 7B-2(CA)	Examples of Signing for School Crosswalk Warning Assembly	7B-12
~~Figure 7B-3~~	~~Examples of Signing for School Area Traffic Control with School Speed Limits~~	7B-13
Figure 7B-3(CA)	Examples of Signing for School Area Traffic Control with School Speed Limits	7B-14
Figure 7B-4	In-Street Signs in School Areas	7B-15
Figure 7B-101(CA)	Example of School Area Signs with Flashing Yellow Beacons	7B-16
Figure 7B-102(CA)	Example of Signing for Traffic Control in School Areas with Flashing Yellow Beacons	7B-17
Figure 7B-103(CA)	Example of Signing for School Area Traffic Control with Extended and/or Reduced School Zone Speed Limits	7B-17
CHAPTER 7C.	**MARKINGS**	
~~Figure 7C-1~~	~~Two-Lane Pavement Marking of "SCHOOL"~~	7C-5
Figure 7C-101(CA)	Pavement Word Markings for School Areas	7C-6

Page

TABLES

CHAPTER 7B. SIGNS

Table 7B-1 Size of School Area Signs and Plaques 7B-19
Table 7B-1(CA) Size of California School Area Signs and Plaques 7B-19

(This page left intentionally blank)

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 Scope

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 Application of Standards

Support:

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

Section 7A.06 Engineering Study Required

Support:

Section 1A.09 contains information regarding engineering studies.

Section 7A.07 Maintenance of Traffic Control Devices

Support:

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

Section 7A.08 Placement Authority

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.

(This space left intentionally blank)

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

(This page left intentionally blank)

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. Examples of location of school area signs for typical installations are shown in Figure 7B-1(CA).

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 School Crosswalk Warning Assembly (S1-1 with Diagonal Arrow)

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 SCHOOL BUS STOP AHEAD Sign (S3-1)

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 School Speed Limit Assembly (S4-1, S4-2, S4-3, S4-4, S4-6, S5-1)

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).~~

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.

EXTENDED 40 KM/H (25 MPH) AND/OR REDUCED SPEEDS IN SCHOOL ZONES

Option:

A local authority may, by ordinance or resolution, determine and declare prima facie speed limits in a residence district as follows:

- A 20 km/h (15 mph) prima facie limit on a highway with a posted speed limit of 50 km/h (30 mph) or slower, when approaching at a distance of less than 150 m (500 ft) from, or passing, a school building, the grounds of a school building, and/or other school grounds that are not separated from the highway by a fence, gate or other physical barrier, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 20 km/h (15 mph), while children are present (School Speed Limit Assembly C (CA) see Figure-103(CA)), and/or
- A 40 km/h (25 mph) prima facie limit on a highway with a posted speed limit of 50 km/h (30 mph) or slower, when approaching at a distance of 150 to 300 m (500 to 1,000 ft) from a school building, the grounds of a school building, and/or other school grounds that are not separated from the highway by a fence, gate, or other physical barrier, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 40 km/h (25 mph), while children are present (School Speed Limit Assembly C (CA) see Figure 7B-103 (CA)).

When a 20 km /h (15 mph) speed limit is authorized at a distance of less than 150 m (500 ft) from a school, as described above, on a street with a posted speed limit of 50 km/h (30 mph), an intervening speed limit of 40 km/h (25 mph) may be authorized by ordinance or resolution at a distance of 150 to 300 m (500 to 1,000 ft) from a school, in order to provide progressive speed reduction.

Standard:

If authorized by ordinance or resolution in a residence district, the prima facie speed limits described above shall apply when approaching, at distances of:

- **Less than 150 m (500 ft), for a reduced school zone speed limit of 20 km/h (15 mph), and/or,**
- **150 to 300 m (500 to 1,000 ft), for an extended school zone speed limit of 40 km/h (25 mph)**

from, or passing, a school building, the grounds of a school building, and/or other school grounds that are not separated from the highway by a fence, gate or other physical barrier, contiguous to the highway and posted with a school warning sign that indicates the reduced and/or extended school zone speed limit(s) while children are present (see Figure 7B-103 (CA)).

Prima facie limits established by any criterion above shall apply only to highways that have a maximum of two traffic lanes and a maximum posted 50 km/h (30 mph) prima facie speed limit immediately prior to and after the school zone. These prima facie limit(s) shall apply to all lanes of an affected highway, in both directions of travel.

When used, a local ordinance or resolution adopted to establish a 20 km/h (15 mph) reduced school zone speed limit and/or a local ordinance or resolution adopted to establish an extended 40 km/h (25 mph) school zone speed limit shall not be effective until appropriate signs giving notice of the speed limit(s) are erected upon the highway.

On a State highway, the ordinance or resolution shall not be effective until the ordinance or resolution has been approved by the Department of Transportation and appropriate school zone speed signs are erected upon the State highway.

For purposes of a 20 km/h (15 mph) reduced prima facie speed limit, school warning signs indicating a speed limit of 20 km/h (15 mph) shall be placed at a distance up to 150 m (500 ft) away from school grounds. For purposes of an extended 40 km/h (25 mph) prima facie speed limit, school warning signs indicating a speed limit of 40 km/h (25 mph) shall be placed at any distance between 150 to 300 m (500 to 1,000 ft) away from school grounds. Refer to Figure 7B-103(CA) for maximum distances to post reduced school zone speed limits from a school building, the grounds of a school building, and/or other school grounds that are not separated from the highway by a fence, gate, or other physical barrier.

The need to reduce a prima facie speed limit to 20 km/h (15 mph) and/or extend a 40 km/h (25 mph) school zone speed limit, as described above, shall be documented in writing, in an engineering study. The engineering study shall identify the provisions of Section 627 of the Vehicle Code that support the reduced and/or extended school zone speed limit(s).

Guidance:

When preparing an engineering study pursuant to the Standard above, the local authority should cite all elements of an Engineering and Traffic Survey, as discussed in Section 627 of the Vehicle Code, that support the need for a reduced speed limit of 20 km/h (15 mph) and/or an extended 40 km/hr (25 mph) school zone speed limit. Generally, a minimum of two conditions should be present before a reduced speed limit should be considered (i.e., collision history, residential density, pedestrian and bicyclist safety). However, prevailing speeds (85th-percentile speed) should not be required as the basis for a reduced speed limit.

Standard:

The local authority shall reimburse the Department of Transportation for all costs incurred by the Department under this section.

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).

EXTENDED 40 KM/H (25 MPH) AND/OR REDUCED SPEEDS IN SCHOOL ZONES

Option:

For school area traffic control with a reduced school zone speed limit of 20 km/h (15 mph) and/or an extended school zone speed limit of 40 km/h (25 mph) in a residential district, the Reduced Speed School Zone Ahead (S4-5, S4-5a) sign may be used to give advance notice of a reduced 20 km/h (15 mph) school zone speed limit and/or an extended school zone speed limit of 40 km/h (25 mph).

Section 7B.13 END SCHOOL ZONE Sign (S5-2)

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.

(This space left intentionally blank)

Figure 7B-1. School Area Signs

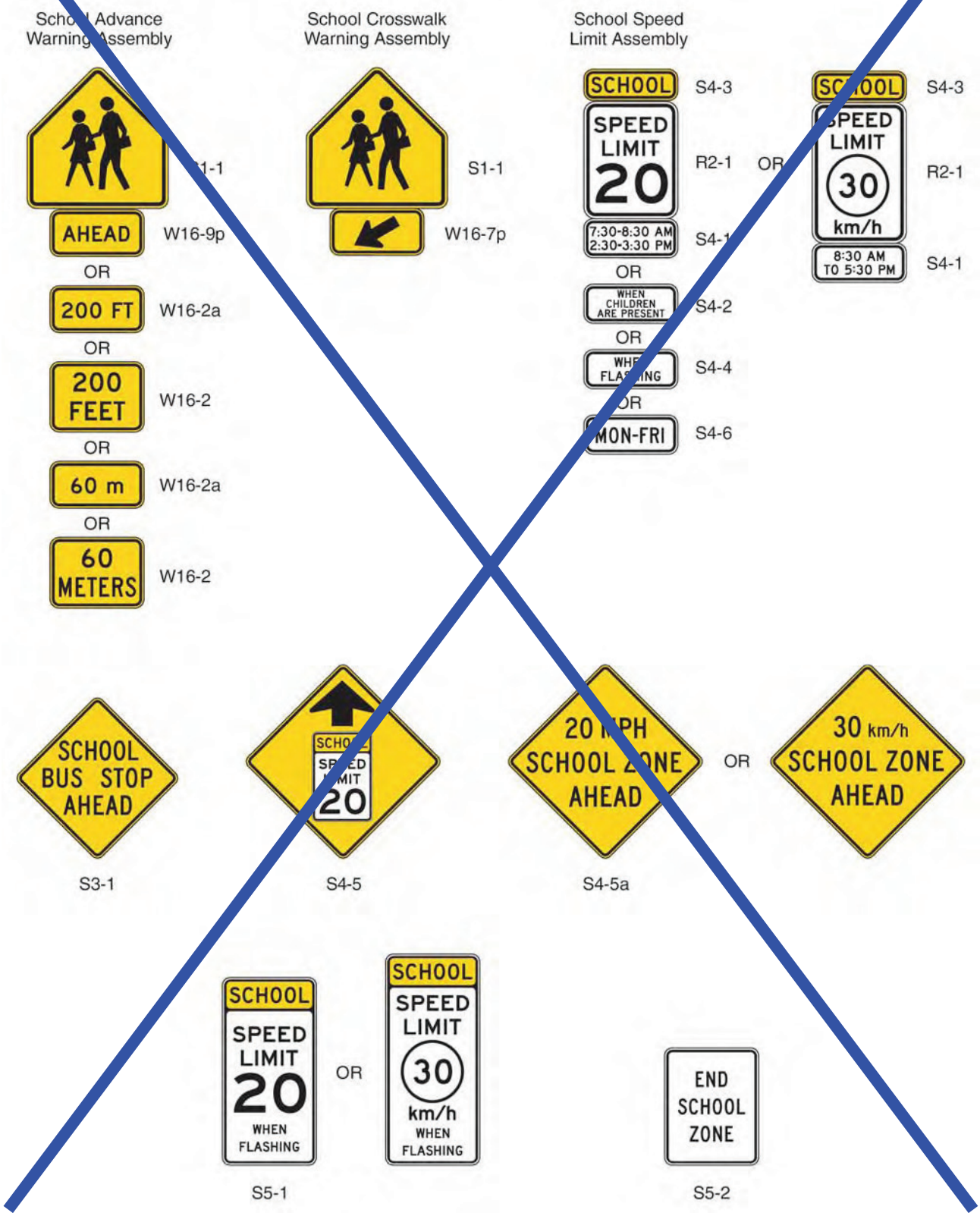


Figure 7B-1(CA). School Area Signs (Sheet 1 of 2)

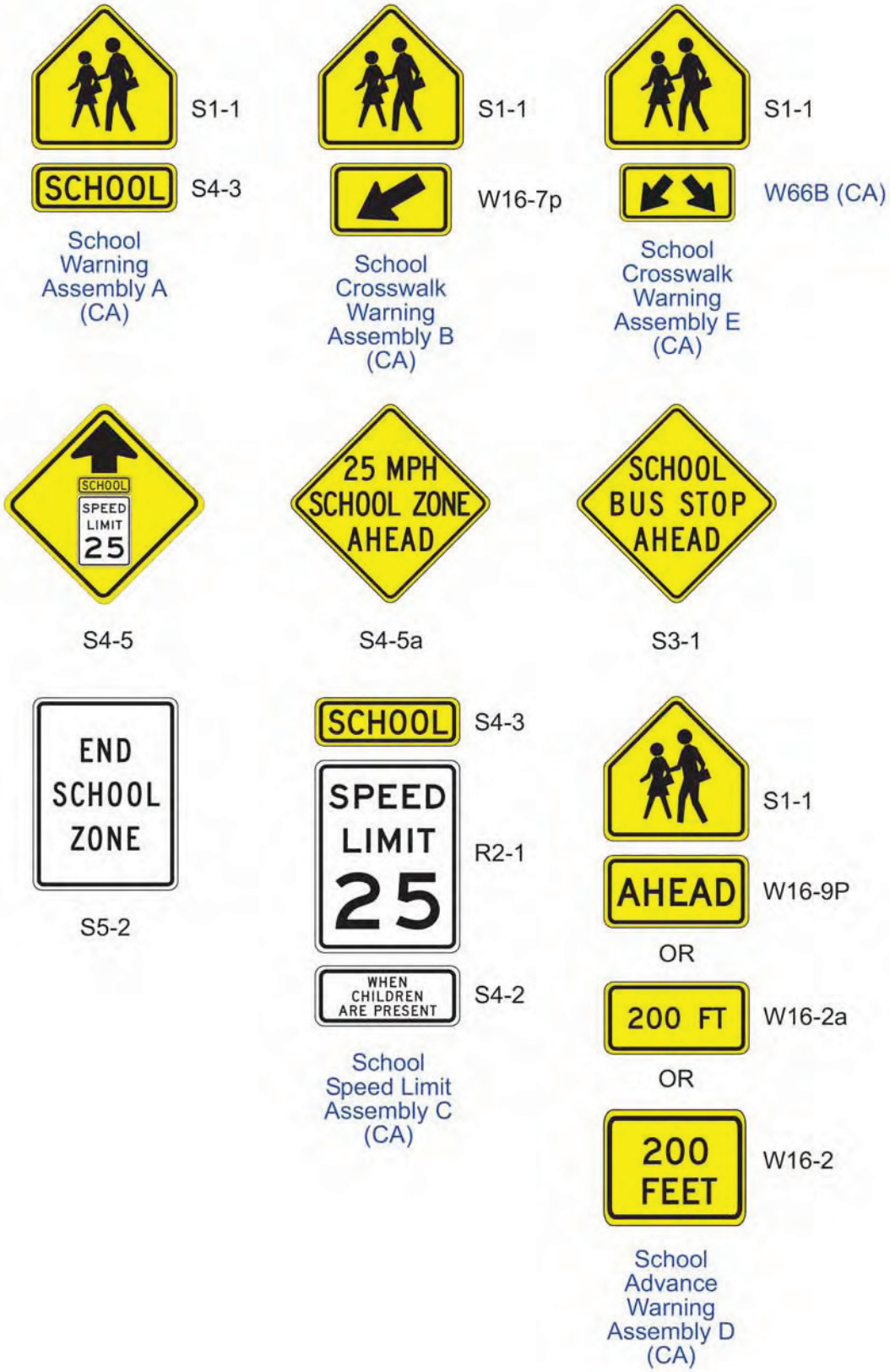
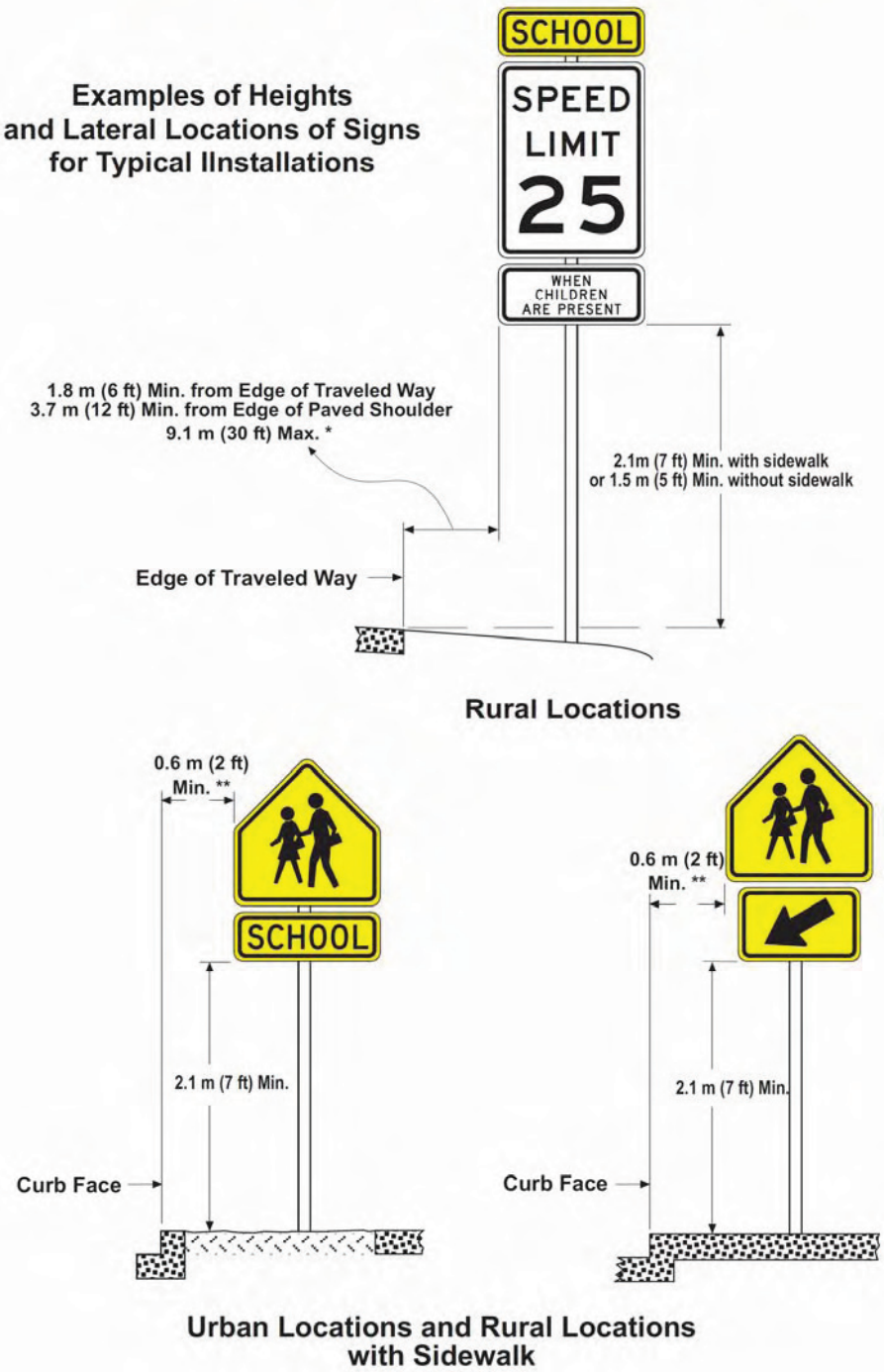


Figure 7B-1(CA). School Area Signs (Sheet 2 of 2)



NOTES:

(*) When clear roadside recovery areas are provided, signs shall be placed as far from the edge of traveled way as possible, up to a maximum of 9.1 m (30 ft). When possible they shall be placed in locations less likely to be hit by a vehicle leaving the traveled way. 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.

(**) 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 is permissible.

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

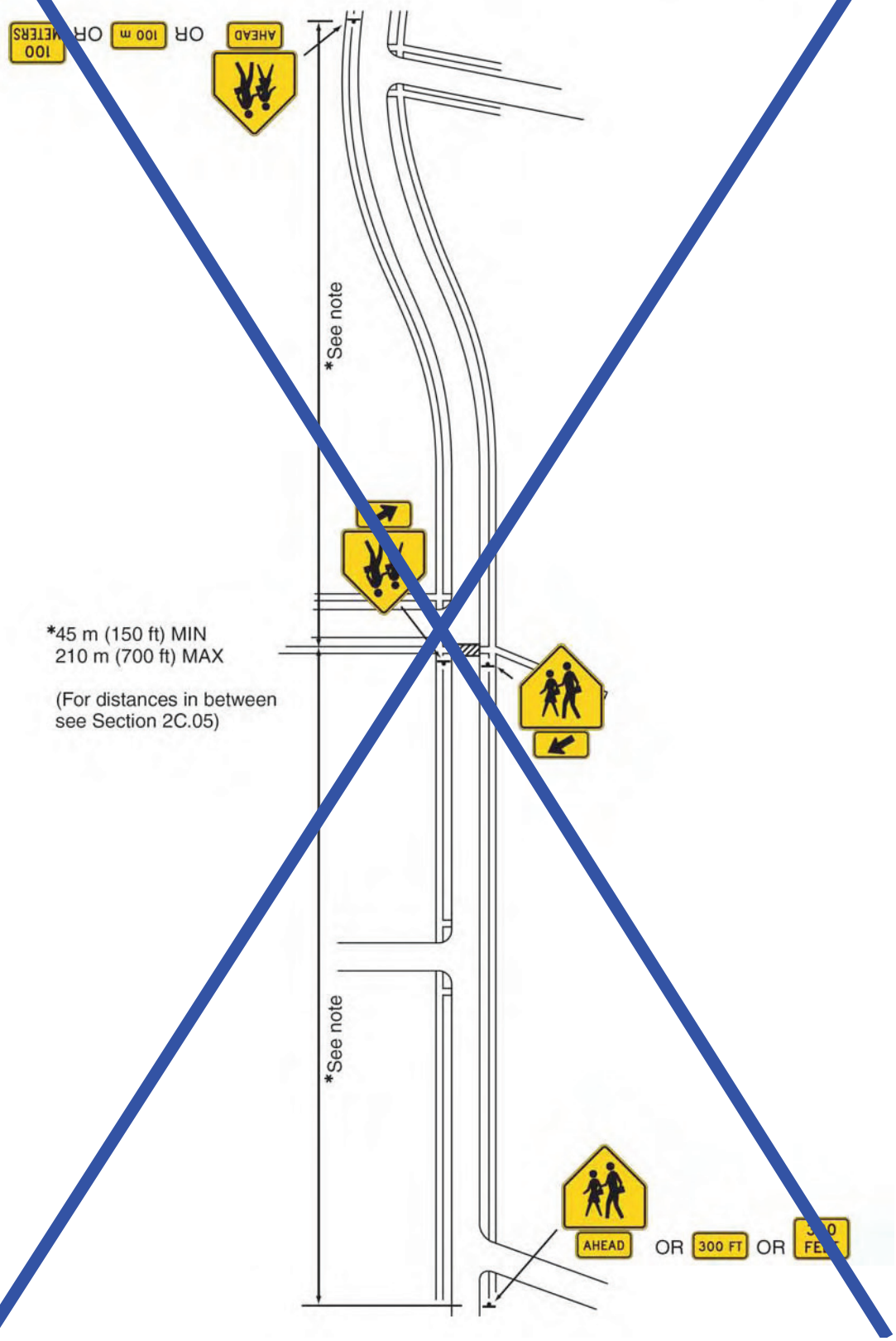


Figure 7B-2(CA). Example of Signing for School Crosswalk Warning Assembly

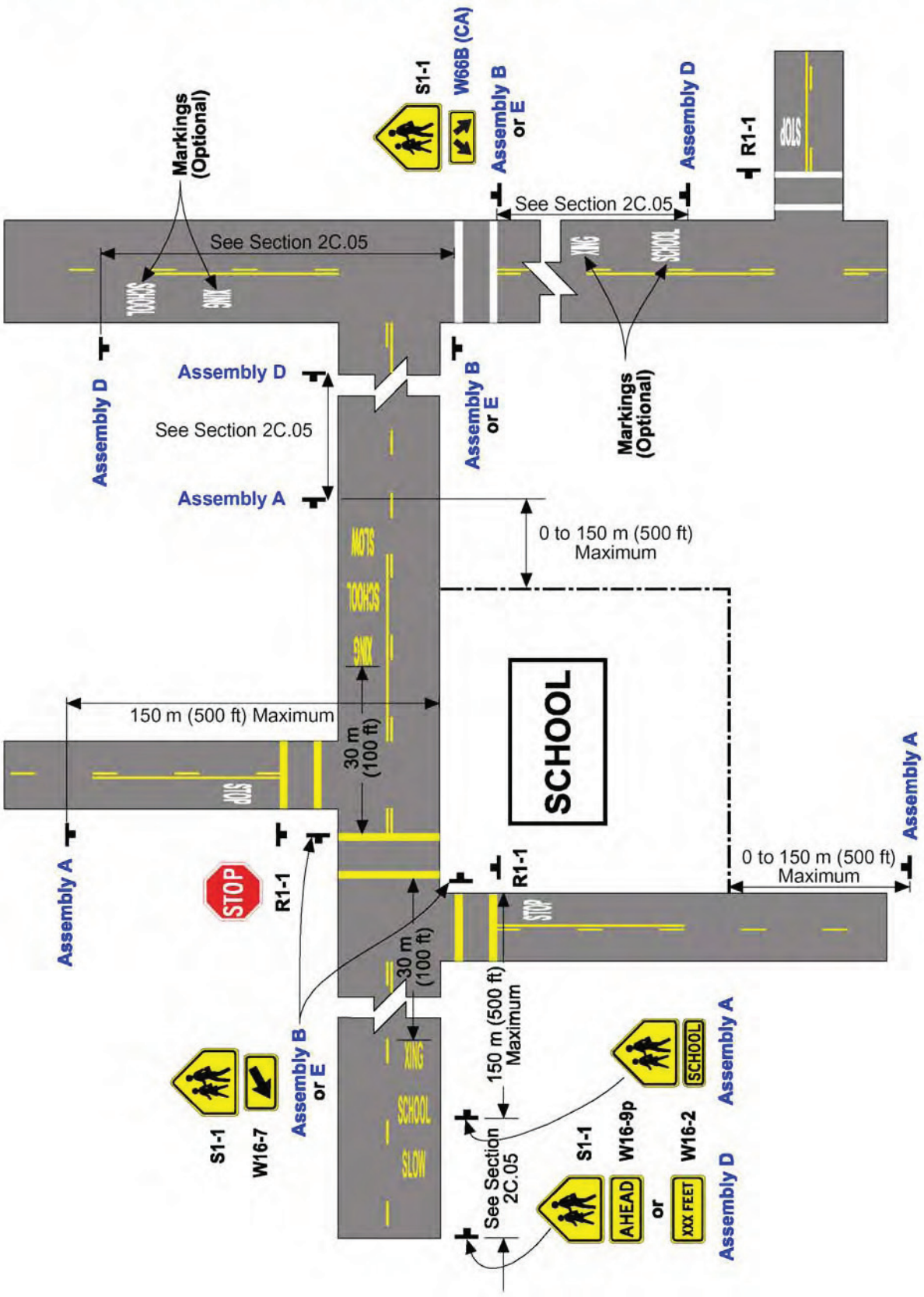


Figure 7B-3. Examples of Signing for School Area Traffic Control with School Speed Limits

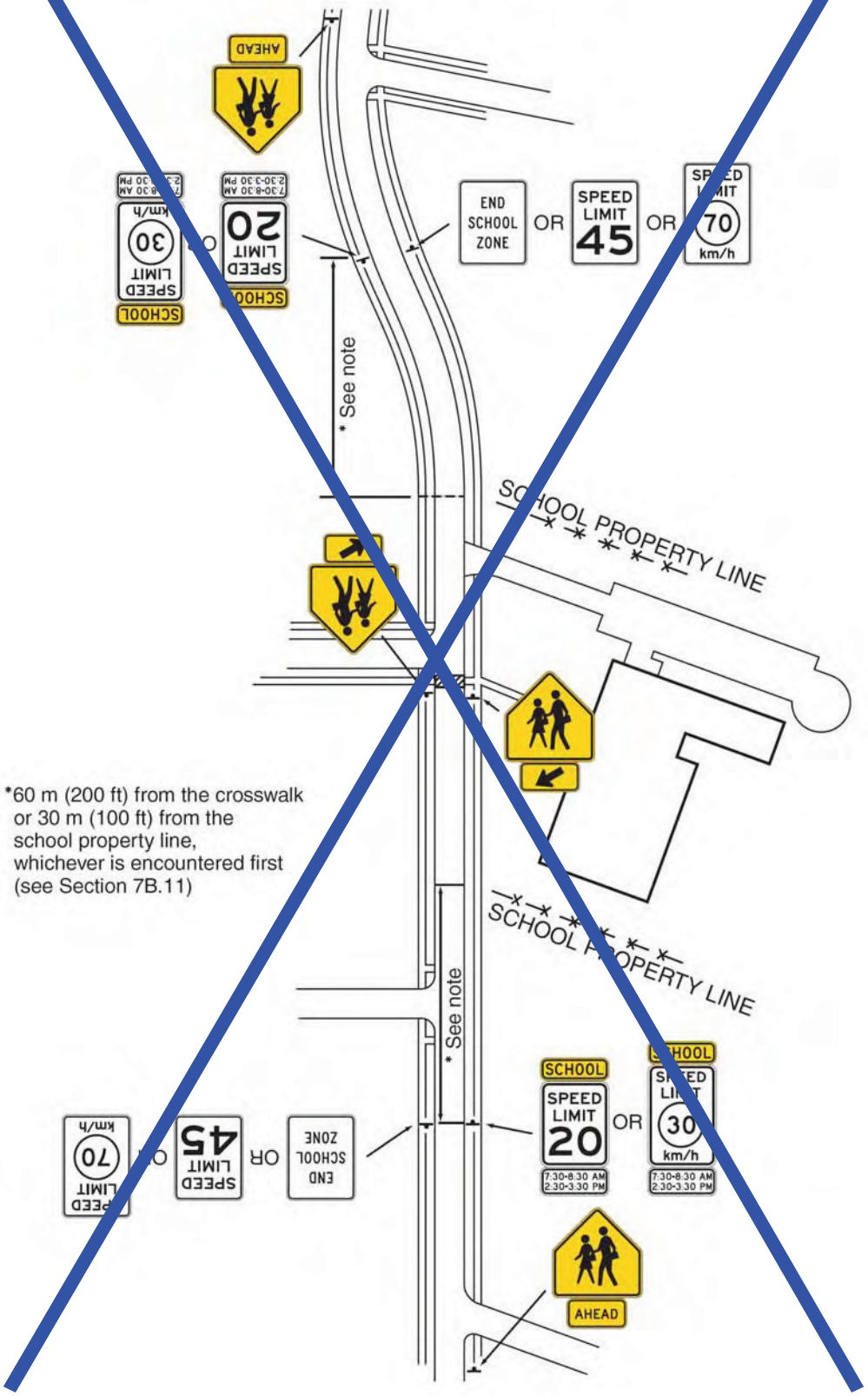


Figure 7B-3(CA). Example of Signing for School Area Traffic Control with School Speed Limits

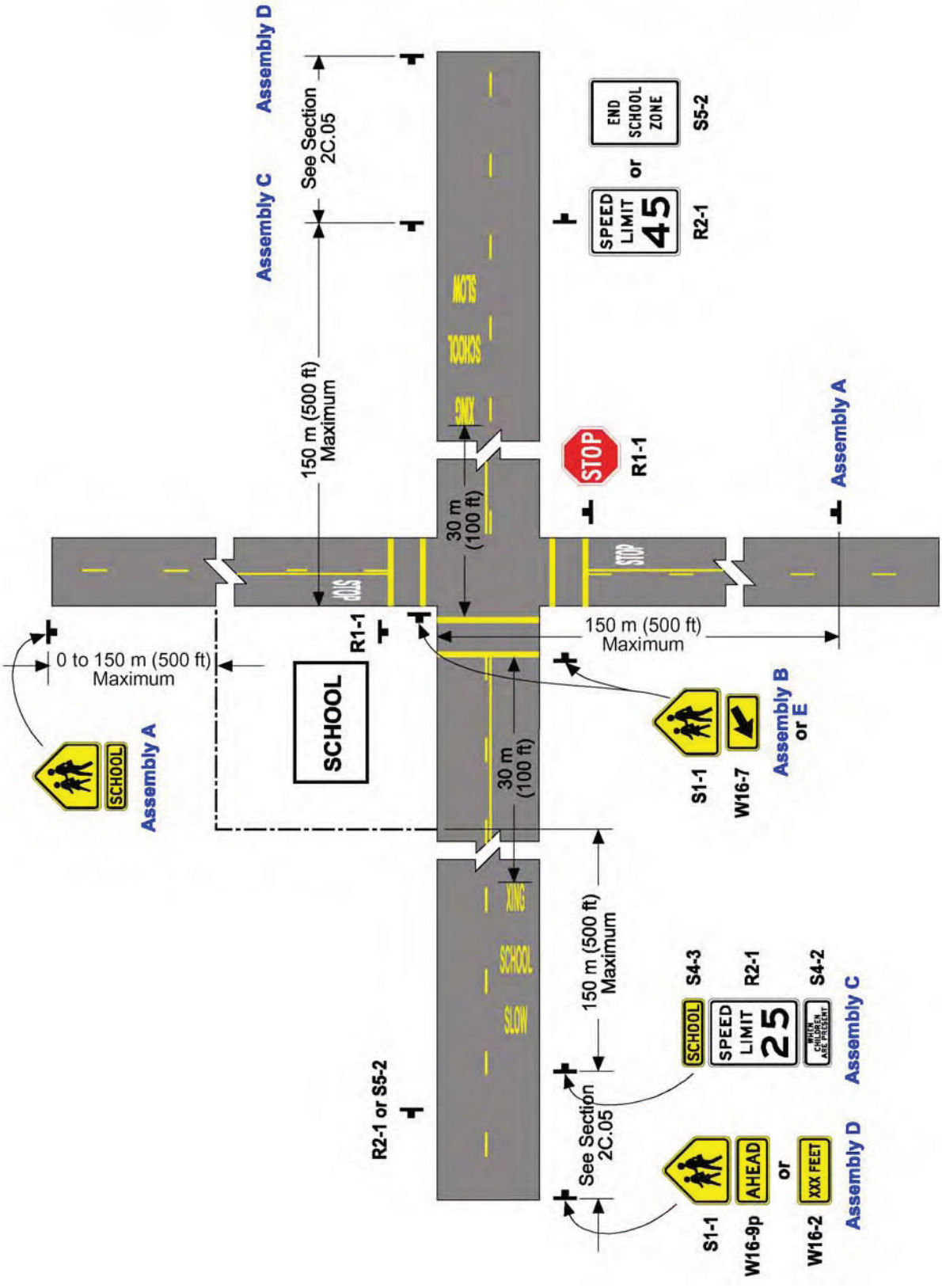


Figure 7B-4. In-Street Signs in School Areas

a - In advance of the school crossing

S1-1*

W16-9p*

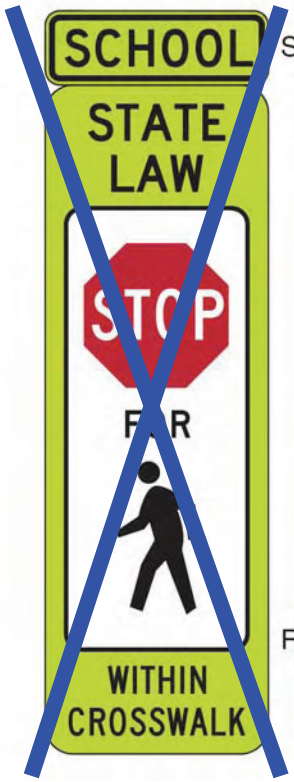
* Reduced size signs:
S1-1 300 x 300 mm (12 x 12 in)
W16-7p 300 x 150 mm (12 x 6 in)
W16-9p 300 x 150 mm (12 x 6 in)
S4-3 300 x 100 mm (12 x 4 in.)

b - At the school crossing

S4-3*

R1-6

OR



S4-3*

R1-6a

OR

S1-1*

W16-7p*

(This space left intentionally blank)

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

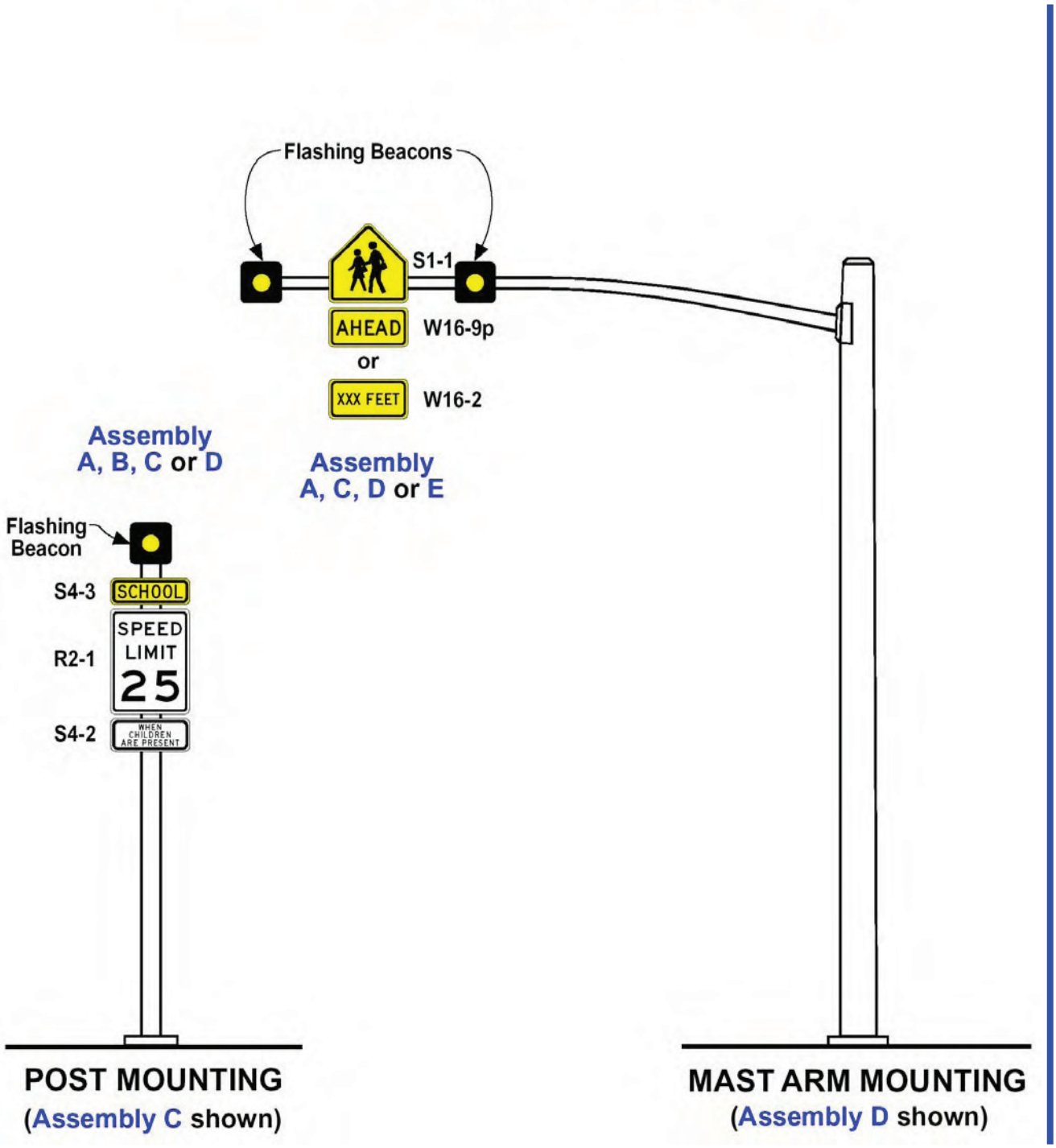


Figure 7B-102 (CA). Example of Signing for Traffic Control in School Areas with Flashing Yellow Beacons

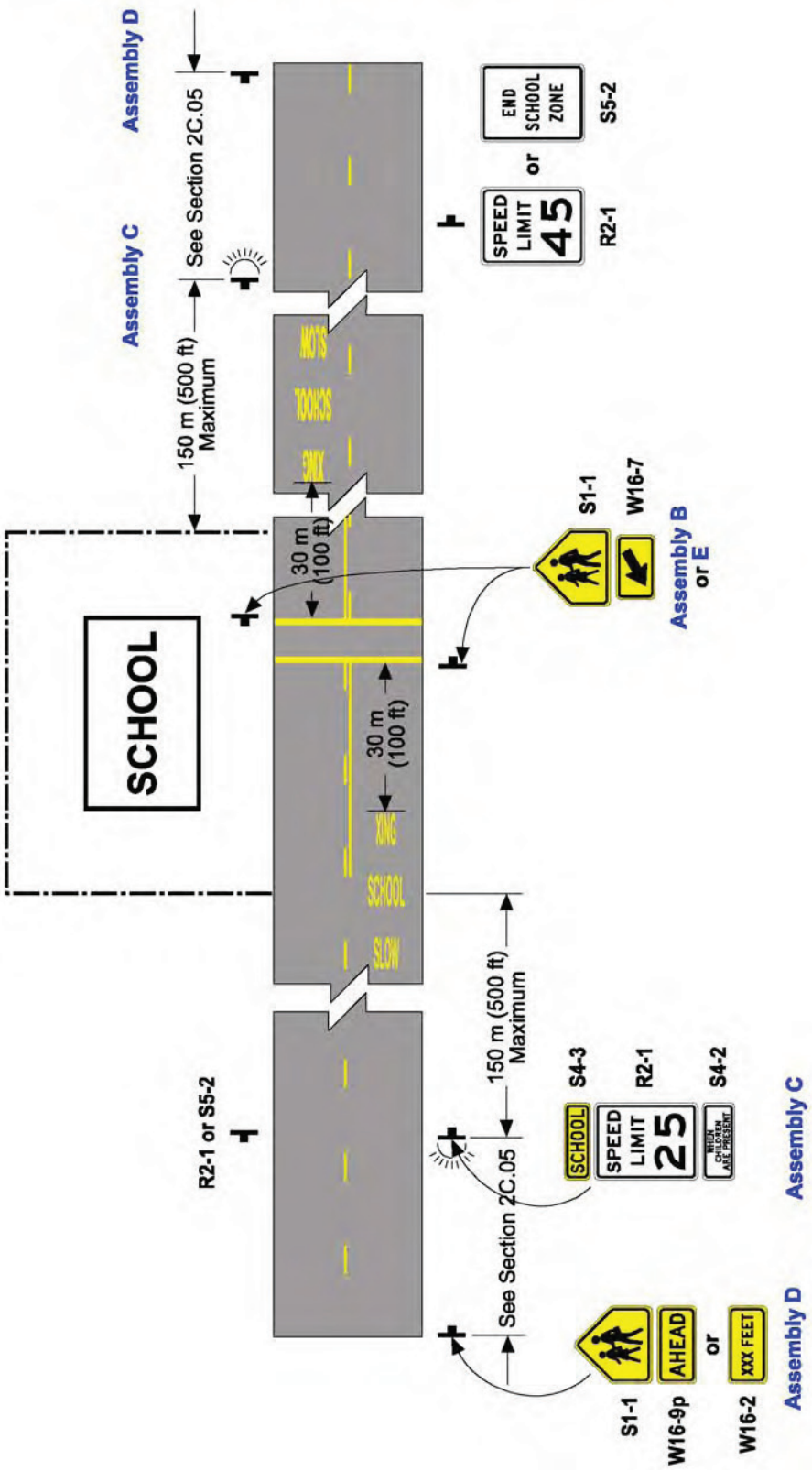


Figure 7B-103(CA). Example of Signing for School Area Traffic Control with Extended and/or Reduced School Zone Speed Limits

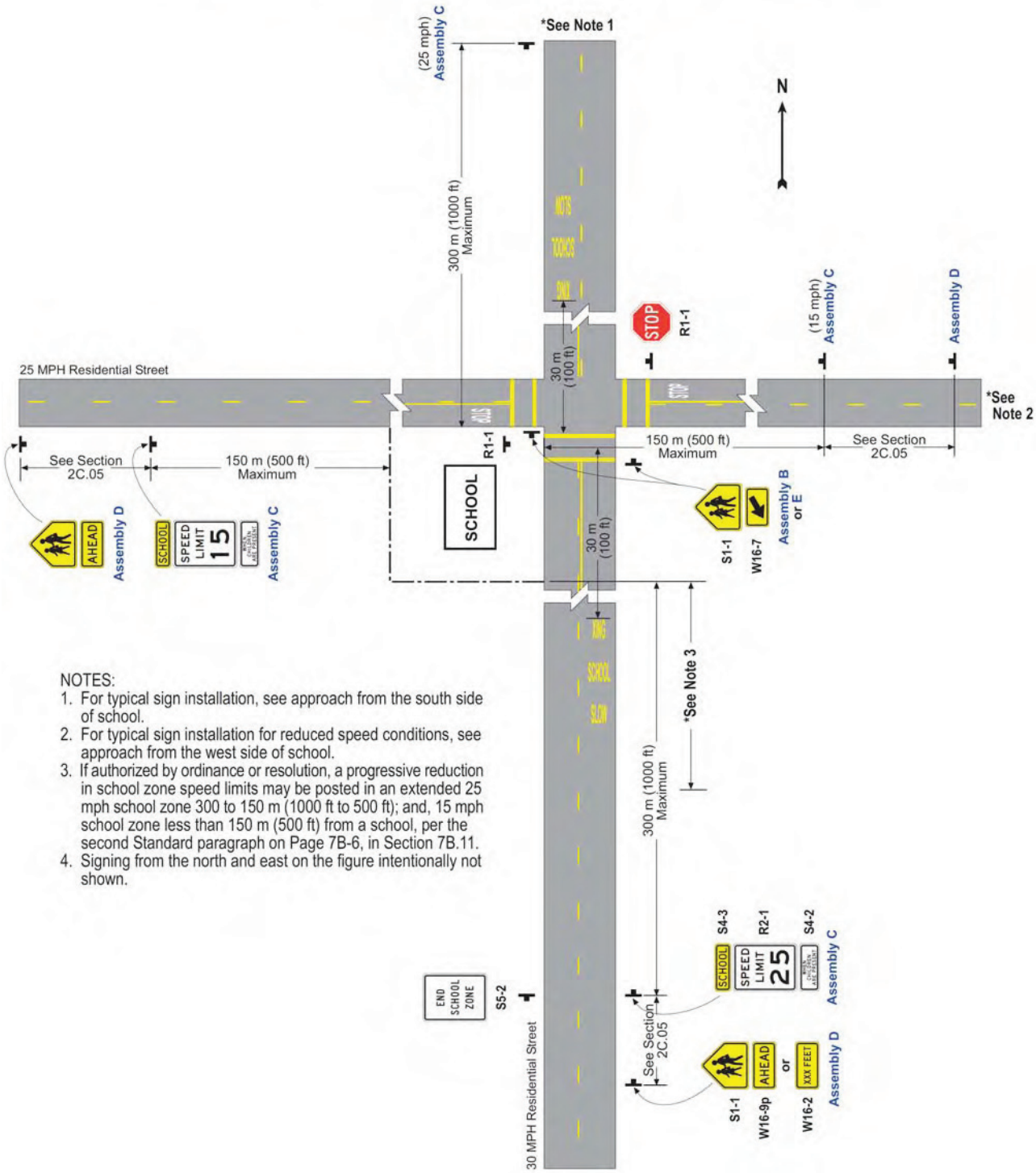


Table 7B-1. Size of School Area Signs and Plaques

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

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)

(This page left intentionally blank)

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 Stop and Yield Lines

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 Curb Markings for Parking Regulations

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 Pavement Word and Symbol Markings

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.

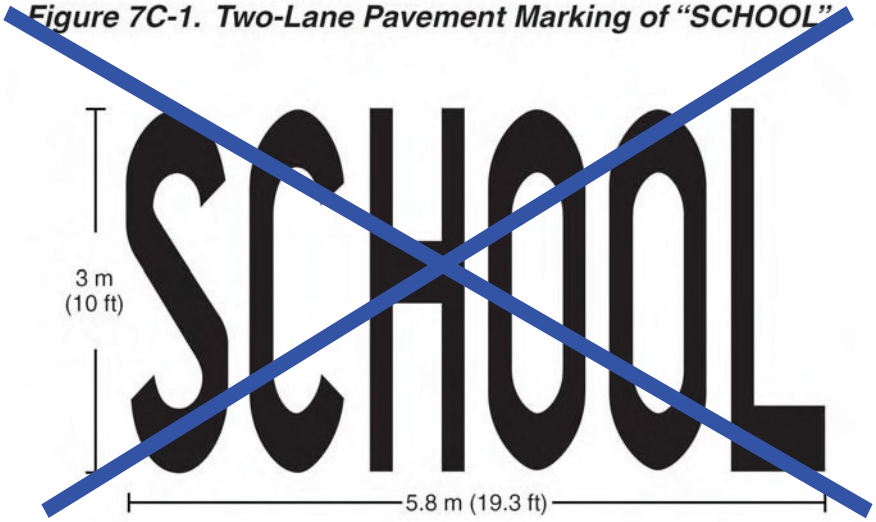
Guidance:

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

Support:

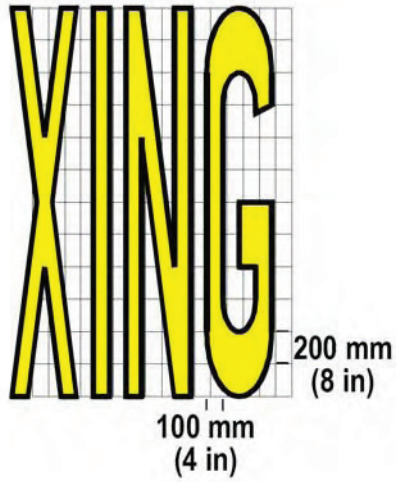
Refer to Section 3B.19 for more details on SCHOOL marking.

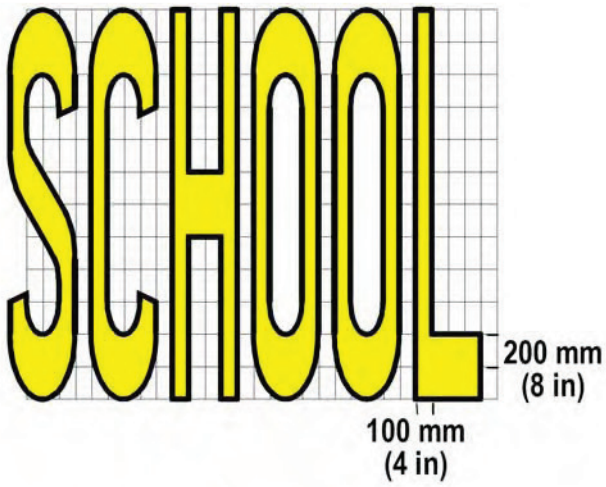
Figure 7C-1. Two-Lane Pavement Marking of "SCHOOL"

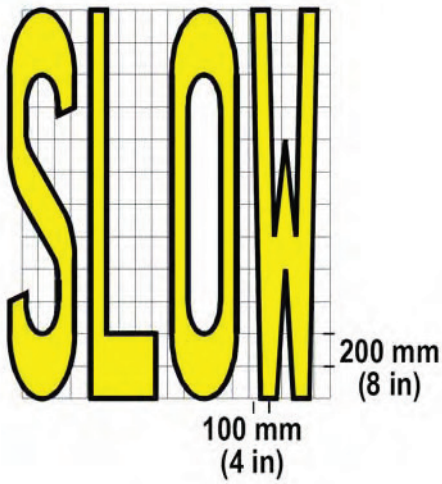


(This space left intentionally blank)

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







NOT TO SCALE

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.

(This space left intentionally blank)

(This page left intentionally blank)

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~~ regarding the organization, administration and operation of a ~~student~~ school safety patrol program ~~are given~~ is contained in the "~~Policies and Practices for~~ AAA School Safety Patrol~~s~~ Operations Manual" (~~available from the American Automobile Association, 1000 AAA Drive, Heathrow, FL 32746~~ see Section 1A.11).

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

Standard:

Law enforcement officers performing school crossing supervision and adult crossing guards shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-2004 standard performance for Class 2 as described in Section 6E.02.

Student patrols shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-2004 standard performance for Class 1 as described in Section 6E.02.

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 Operating Procedures for Adult Crossing Guards

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.

Standard:

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:~~

Standard:

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.

Guidance:

Leadership and reliability should be determining qualities for patrol membership.

Standard:

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.

(This space left intentionally blank)

(This page left intentionally blank)

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.

(This space left intentionally blank)

(This page left intentionally blank)