

PART 7

TRAFFIC CONTROL FOR SCHOOL AREAS

CHAPTER 7A. GENERAL

Section 7A.01 Need for Standards

Support:

- 01 Regardless of the school location, the best way to achieve effective traffic control is through the uniform application of realistic policies, practices, and standards developed through engineering judgment or studies.
- 02 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 other 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.
- 03 Procedures and devices that are not uniform might cause confusion among pedestrians and other 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.
- 04 A uniform approach to school area traffic controls assures the use of similar controls for similar situations, which promotes appropriate and uniform behavior on the part of motorists, pedestrians, and bicyclists.
- 05 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 measures. Engineering measures alone do not always result in the intended change in student and road user behavior.

Guidance:

- 06 *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.*
- 07 *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.*
- 08 *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.*
- 09 *School area traffic control devices should be included in a school traffic control plan.*

Support:

- 10 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.
- 11 “School” and “school zone” are defined in Section 1A.13.
- 11a The “Guidelines and Typical for School Zones and Areas along State Highways” contains further information reflecting the provisions/requirements of TR Section 21-803.1 and other applicable sections of Maryland law. This document can be obtained from the Maryland State Highway Administration’s Office of Traffic & Safety, Traffic Development & Support Division (TSDS) at the address shown on Page i.
- 11b Additional information regarding the “Safe Routes to School” Program can be obtained from the Maryland State Highway Administration’s Office of Traffic & Safety, Maryland Highway Safety Office (MHSO) at the address shown on Page i.

Section 7A.02 School Routes and Established School Crossings

Support:

- 01 To establish a safer route to and from school for schoolchildren, the application of 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:

- 02 *School walk routes should be planned to take advantage of existing traffic controls.*
- 03 *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 other pedestrian walkways to and from the location with existing control,*

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



Legend

- School
- Marked Crosswalk
- Crossing Guard
- Signalized Intersection
- STOP or YIELD Sign Approach
- Pedestrian Route

- B. The number of students using the crossing,
- C. The age levels of the students using the crossing,
- D. The total extra walking distance,
- E. The presence of a school crossing guard,
- F. The adequacy of gaps at the uncontrolled crossing, and
- G. The feasibility of installing traffic control at the uncontrolled crossing.

Support:

03a Not all schools need to have school crossings. Not all crosswalks along a school route need to be designated as school crossings. This does not prevent the use of crosswalk markings and W11-2 signs at other crosswalks in the same area in accordance with Section 2C.50.

Standard:

03b School Crossings shall be maintained as marked crosswalks and shall have signs as required by Chapter 7B.

Section 7A.03 School Crossing Control Criteria**Support:**

- 01 The frequency of gaps in the traffic stream that are sufficient for student crossing is different at each crossing location. When the delay between the occurrences of adequate gaps becomes excessive, students might become impatient and endanger themselves by attempting to cross the street during an inadequate gap. In these instances, the creation of sufficient gaps needs to be considered to accommodate the crossing demand.
- 02 A recommended method for determining the frequency and adequacy of gaps in the traffic stream is given in the “Traffic Control Devices Handbook” (see Section 1A.11).

Section 7A.04 Scope**Standard:**

- 01 **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) required for the special pedestrian conditions in school areas.**

Support:

- 02 Sections 1A.01 and 1A.08 contain information regarding unauthorized devices and messages. Sections 1A.02 and 1A.07 contain information regarding the application of standards. Section 1A.05 contains information regarding the maintenance of traffic control devices. Section 1A.08 contains information regarding placement authority for traffic control devices. Section 1A.09 contains information regarding engineering studies and the assistance that is available to jurisdictions that do not have engineers on their staffs who are trained and/or experienced in traffic control devices.
- 03 Provisions contained in Chapter 2A and Section 2B.06 are applicable in school areas.
- 04 Part 3 contains provisions regarding pavement markings that are applicable in school areas.
- 05 Part 4 contains provisions regarding highway traffic signals that are applicable in school areas. The School Crossing signal warrant is described in Section 4C.06.

CHAPTER 7B. SIGNS

Section 7B.01 Size of School Signs

Standard:

- 01 Except as provided in Section 2A.11, the sizes of signs and plaques to be used on conventional roadways in school areas shall be as shown in Table 7B-1.
- 02 The sizes in the Conventional Road column shall be used unless engineering judgment determines that a minimum or oversized sign size would be more appropriate.
- 03 The sizes in the Minimum column shall be used only where traffic volumes are low and speeds are 30 mph or lower, as determined by engineering judgment.
- 04 The sizes in the Oversized column shall be used on expressways.

Table 7B-1. School Area Sign and Plaque Sizes

Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
School	S1-1	7B.08	36 x 36	30 x 30	48 x 48
School Bus Stop Ahead	S3-1	7B.13	36 x 36	30 x 30	48 x 48
School Bus Turn Ahead	S3-2	7B.14	36 x 36	30 x 30	48 x 48
Reduced School Speed Limit Ahead	S4-5, S4-5a	7B.16	36 x 36	30 x 30	48 x 48
School Speed Limit XX When Flashing	S5-1	7B.15	24 x 48 30 x 60	— 24 x 48	36 x 72
End School Zone	S5-2	7B.09	24 x 30	—	36 x 48
End School Speed Limit	S5-3	7B.15	24 x 30	—	36 x 48
In-Street Ped Crossing	R1-6, R1-6a, R1-6b, R1-6c	7B.11, 7B.12	12 x 36	—	—
Speed Limit (School Use)	R2-1	7B.15	24 x 30	—	36 x 48
Begin Higher Fines Zone	R2-10	7B.10	24 x 30	—	36 x 48
End Higher Fines Zone	R2-11	7B.10	24 x 30	—	36 x 48
Overhead School Crossing	S1-1(1)	7B.12	96 x 36	—	—
Photo Enforced School Speed	S5-1(1)	7B.18	36 x 36	30 x 30	—
Stop for School Bus	S6-1(2)	—	72 x 72	48 x 48	—

Plaque	Sign Designation	Section	Conventional Road	Minimum	Oversized
X:XX to X:XX AM X:XX to X:XX PM	S4-1P	7B.15	24 x 10	—	36 x 18 36 x 15 48 x 20
When Children Are Present	S4-2P	7B.15	24 x 10	—	36 x 18
School	S4-3P	7B.09, 7B.15	24 x 8 36 x 12	— 24 x 8	36 x 12 48 x 16
When Flashing	S4-4P	7B.15	24 x 10 30 x 15	— 24 x 12	36 x 18
Mon-Fri	S4-6P	7B.15	24 x 10	—	36 x 18
All Year	S4-7P	7B.09	24 x 12	—	30 x 18
Fines Higher	R2-6P	7B.10	24 x 18	—	36 x 24
Fines Double	S4-4(1)	7B.09 7B.10	30 x 15	24 x 12	36 x 18
XX Feet	W16-2P	7B.08	24 x 18	—	30 x 24
XX Ft XX FT	W16-2aP S4-4(3)	7B.08	24 x 12 30 x 12	—	30 x 18 36 x 15
Turn Arrow	W16-5P	7B.08, 7B.09, 7B.11	24 x 12	—	30 x 18
Advance Turn Arrow	W16-6P	7B.08, 7B.09, 7B.11	24 x 12	—	30 x 18
Diagonal Arrow	W16-7P	7B.12	24 x 12	—	30 x 18
Diagonal Arrow (optional size)	W16-7P	7B.12	21 x 15	—	—
Ahead	W16-9P	7B.11	24 x 12	—	30 x 18

- Note: 1. Larger sizes may be used when appropriate
 2. Dimensions are shown in inches and are shown as width x height
 3. Minimum sign sizes for multi-lane conventional roads shall be as shown in the Conventional Road column

Guidance:

05 *The sizes in the Oversized column should be used on roadways that have four or more lanes with posted speed limits **greater than** 40 mph.*

Option:

06 The sizes in the Oversized column may also be used at other locations that require increased emphasis, improved recognition, or increased legibility.

07 Signs and plaques larger than those shown in Table 7B-1 may be used (see Section 2A.11).

Section 7B.02 Illumination and Reflectorization**Standard:**

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

Section 7B.03 Position of Signs

Support:

01 Sections 2A.16 and 2A.17 contain provisions regarding the placements and locations of signs.

02 Section 2A.19 contains provisions regarding the lateral offsets of signs.

Option:

03 In-roadway signs for school traffic control areas may be used consistent with the requirements of Sections 2B.12, 7B.11, and 7B.12.

Section 7B.04 Height of Signs

Support:

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

Section 7B.05 Installation of Signs

Support:

01 Section 2A.16 contains provisions regarding the installation of signs.

Section 7B.06 Lettering

Support:

01 The “Standard Highway Signs and Markings” book (see Section 1A.11) contains information regarding sign lettering.

Section 7B.07 Sign Color for School Warning Signs**Standard:**

01 **School warning signs, including the “SCHOOL” portion of the School Speed Limit (S5-1) sign and including any supplemental plaques used in association with these warning signs, shall have a fluorescent yellow-green background with a black legend and border unless otherwise provided in this Manual for a specific sign.**

Section 7B.08 School Sign (S1-1) and Plaques

Support:

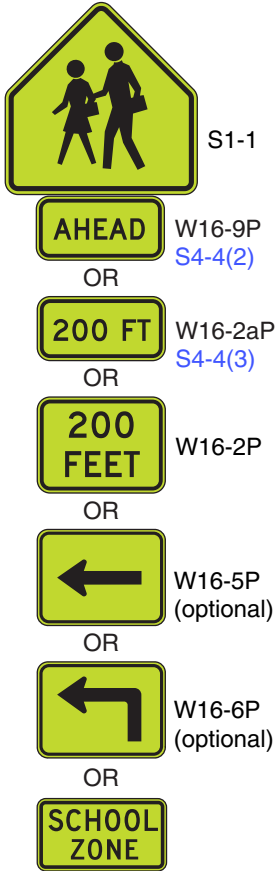
01 Many state and local jurisdictions find it beneficial to advise road users that they are approaching a school that is adjacent to a highway, where additional care is needed, even though no school crossing is involved and the speed limit remains unchanged. Additionally, some jurisdictions designate school zones that have a unique legal standing in that fines for speeding or other traffic violations within designated school zones are increased or special enforcement techniques such as photo radar systems are used. It is important and sometimes legally necessary to mark the beginning and end points of these designated school zones so that the road user is given proper notice.

02 The School (S1-1) sign (see Figure 7B-1) has the following four applications:

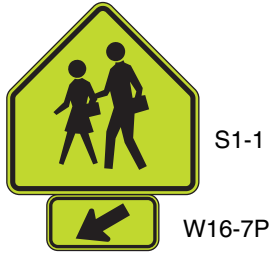
- A. School Area – the S1-1 sign can be used to warn road users that they are approaching a school area that might include school buildings or grounds, a school crossing, or school related activity adjacent to the highway.
- B. School Zone – the S1-1 sign can be used to identify the location of the beginning of a designated school zone (see Section 7B.09).
- C. School Advance Crossing – if combined with an AHEAD (W16-9P) plaque or an XX FEET (W16-2P or W16-2aP) plaque to comprise the School Advance Crossing assembly, the S1-1 sign can be used to warn road users that they are approaching a crossing where schoolchildren cross the roadway (see Section 7B.11).

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

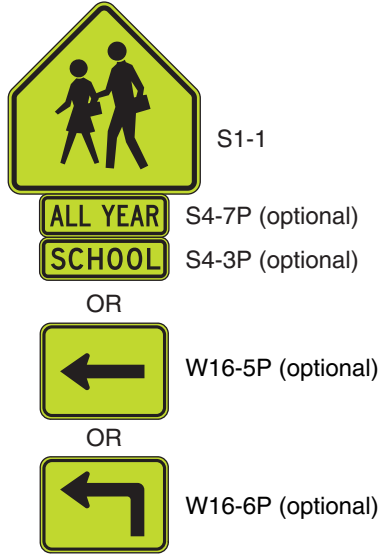
School Advance Crossing Assembly



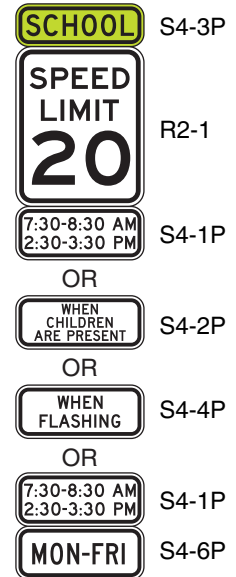
School Crossing Assembly



School Zone Sign



School Speed Limit Assembly



S3-1



S4-5



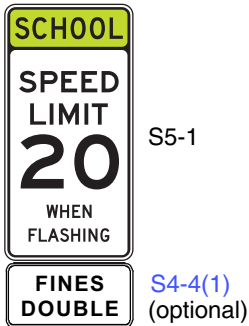
S3-2



S4-5a

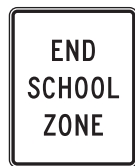


S5-1(1)

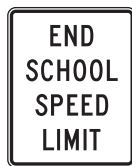


S5-1

S4-4(1) (optional)



S5-2



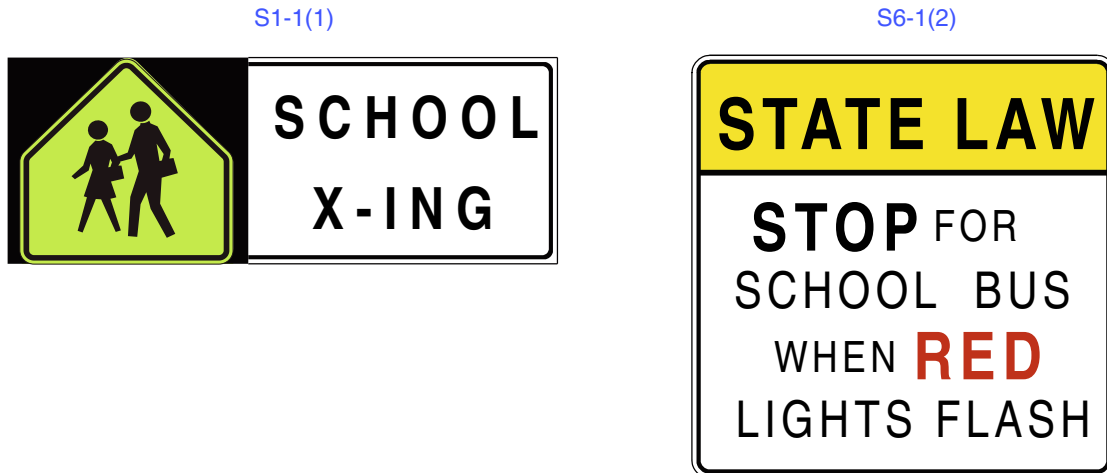
S5-3



R2-10



R2-11

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

- D. School Crossing – if combined with a diagonal downward pointing arrow (W16-7P) plaque to comprise the School Crossing assembly, the S1-1 sign can be used to warn approaching road users of the location of a crossing where schoolchildren cross the roadway (see Section 7B.12).

Standard:

- 02a **School (S1-1) signs with SCHOOL (S4-3P) plaques (see Figure 7B-1a) shall be installed along highways within school areas that are not designated as School Zones but are deemed to require warning signs.**

Option:

- 03 If a school area is located on a cross street in close proximity to the intersection, a School (S1-1) sign with a supplemental arrow (W16-5P or W16-6P) plaque may be installed on each approach of the street or highway to warn road users making a turn onto the cross street that they will encounter a school area soon after making the turn.

Section 7B.09 School Sign (S1-1) and Plaques (S4-3P) and END SCHOOL ZONE Sign (S5-2)

Standard:

- 01 **If a school zone has been designated under State or local statute, a School (S1-1) sign (see Figure 7B-1) shall be installed to identify the beginning point(s) of the designated school zone (see Figure 7B-2).**

Standard:

- 02 **A School (S1-1) sign, when used to designate a school zone, shall be supplemented with a SCHOOL (S4-3P) plaque (see Figure 7B-1).**

- 03 **The downstream end of a designated school zone shall be identified with an END SCHOOL ZONE (S5-2) sign (see Figures 7B-1 and 7B-2).**

Option:

- 04 A School Zone (S1-1) sign may be supplemented with an ALL YEAR (S4-7P) plaque (see Figure 7B-1) if the school operates on a 12-month schedule.

- 05 If a school zone is located on a cross street in close proximity to the intersection, a School Zone (S1-1) sign with a supplemental arrow (W16-5P or W16-6P) plaque may be installed on each approach of the street or highway to warn road users making a turn onto the cross street that they will encounter a school zone soon after making the turn.

Support:

- 05a Section 21.803.1 of the Motor Vehicle Law provides for designating School Zones and establishing speed limits along segments of a highway within a 0.5 mile radius of any school by the State Highway Administration or local authorities, and for speed violation penalties within a designated School Zone to be doubled.

- 05b School Zones do not automatically exist around schools nor are they created simply by the installation of school signs. School Zones are established by definitive, official action by the authority having jurisdiction over the highway.

Guidance:

- 05c *School Zones have been established at elementary and middle school that are contiguous to state highways. School Zones should not be designated indiscriminately at all schools. Engineering judgment should be the basis for any designating School Zone. Factors used in the determination of a School Zone should be, but are not limited to, the following: speeds, ADTs, roadway classification, roadway geometrics, zoning/development of area, as well as those found in Section 7A.02.*

Section 7B.10 Higher Fines Zone Signs (R2-10, R2-11) and Plaques**Standard:**

- 00a Except as provided in this Section, where increased fines are imposed for speeding violations within a designated school zone and a Speed Limit sign or a School Speed Limit assembly is installed within the School Zone, a FINES DOUBLE (S4-4(1)) plaque shall be installed with the Speed Limit (R2-1) sign or the School Speed Limit assembly to identify the beginning point of the higher fines zone (Figure 7B-2 and 7B-3).
- 01 Except as provided in this Section, where increased fines are imposed for traffic violations within a designated school zone, but no Speed Limit sign or a School Speed Limit assembly is installed within the School Zone, a FINES DOUBLE (S4-4(1)) plaque shall be installed as a supplement to the School (S1-1) sign to identify the beginning point of the higher fines zone (see Figures 7B-2 and 7B-3).
- 01a Except as provided in this Section, where the speed limit within the School Zone is reduced only on certain days or during certain times of the day and the double fines are in effect at times other than when the reduced speed limit is in effect, a FINES DOUBLE (S4-4(1)) plaque shall be installed as a supplement to the School (S1-1) sign to identify the beginning point of the higher fines zone and not installed with the Speed Limit (R2-1) sign or the School Speed Limit assembly.
- 01b Where the fines double zone begins at a point other than where a Speed Limit sign, School Speed Limit assembly, or School sign is installed within a School Zone, a BEGIN HIGHER FINES ZONE (R2-10) sign shall be installed at the point where the higher fines zone begins instead of installing a FINES DOUBLE plaque with the Speed Limit sign, School Speed Limit assembly, or School sign.

Option:

- 02 Where appropriate, one of the following plaques may be mounted below the sign that identifies the beginning point of the higher fines zone:
- A. An S4-1P plaque (see Figure 7B-1) specifying the times that the higher fines are in effect,
 - B. A WHEN CHILDREN ARE PRESENT (S4-2P) plaque (see Figure 7B-1), or
 - C. A WHEN FLASHING (S4-4P) plaque (see Figure 7B-1) if used in conjunction with a yellow flashing beacon.

Standard:

- 03 Where a BEGIN HIGHER FINES ZONE (R2-10) sign or a FINES DOUBLE (S4-4(1)) plaque is posted to notify road users of increased fines for traffic violations, an END HIGHER FINES ZONE (R2-11) sign (see Figure 7B-1) or an END SCHOOL ZONE (S5-2) sign shall be installed at the downstream end of the zone to notify road users of the termination of the increased fines zone (see Figures 7B-2 and 7B-3).

Section 7B.11 School Advance Crossing Assembly**Standard:**

- 01 The School Advance Crossing assembly (see Figure 7B-1) shall consist of a School (S1-1) sign supplemented with an AHEAD (W16-9P, S4-4(2)) plaque or an XX FEET (W16-2P or W16-2aP, S4-4(3)) plaque.
- 02 Except as provided in Paragraph 3, a School Advance Crossing assembly shall be used in advance (see Table 2C-4 for advance placement guidelines) of the first School Crossing assembly (see Section 7B.12) that is encountered in each direction as traffic approaches a school crosswalk (see Figure 7B-4).
- 02a If a School Advance Crosswalk assembly is installed in the median, it shall be installed to the right of all other signs and shall not be installed on the same post or pole as a Keep Right (R4-7) sign, No Left Turn (R3-2) sign, or No Left (and/or) U-Turn (R3-3(2)) sign.

Option:

- 03 The School Advance Crossing assembly may be omitted (see Figure 7B-5) where a School Zone (S1-1) sign (see Section 7B.09) is installed to identify the beginning of a school zone in advance of the School Crossing assembly.

Figure 7B-1a. Examples of School Advance Sign - Non-School Zone

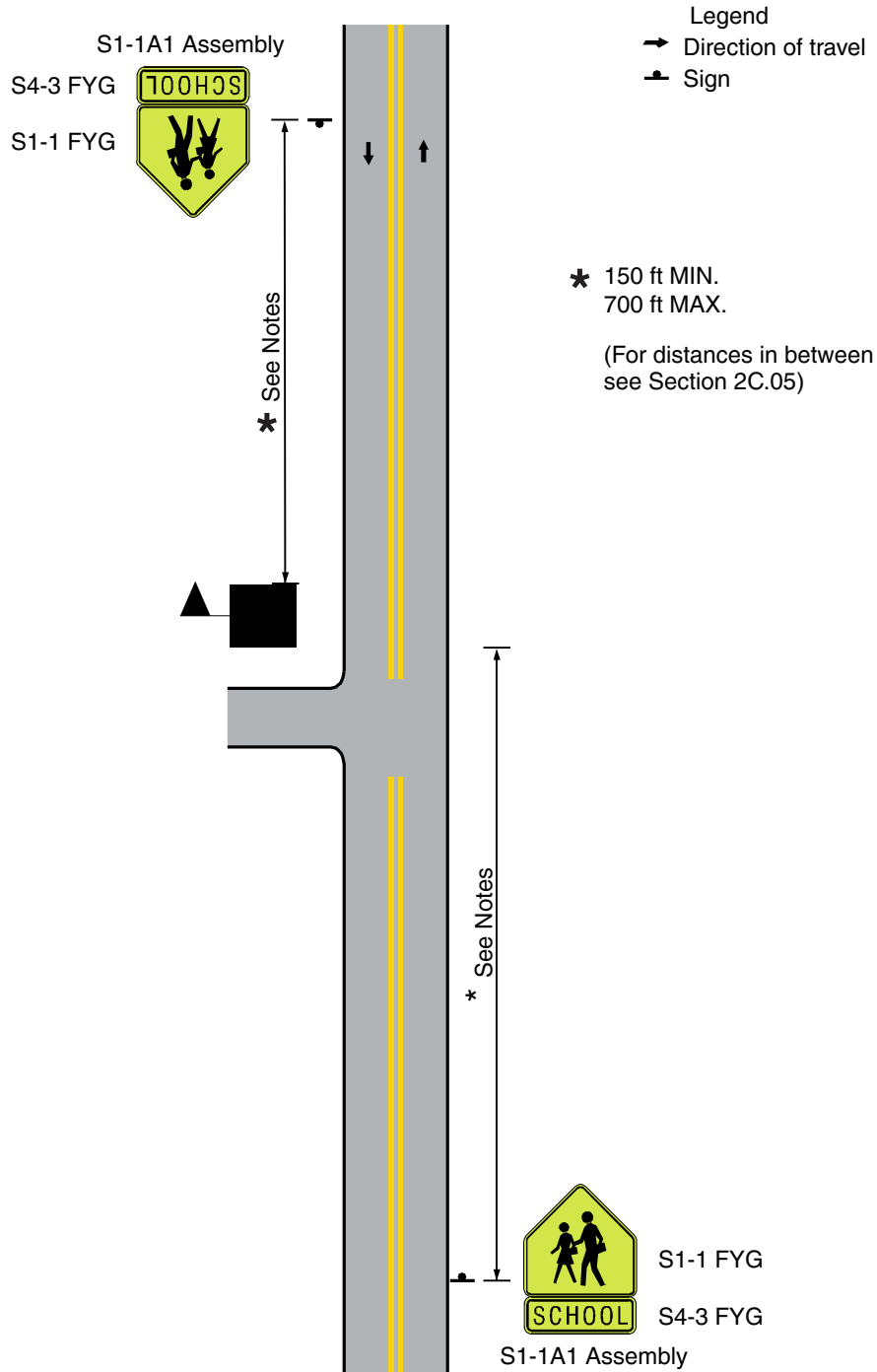


Figure 7B-2. Example of Signing for a Higher Fines School Zone without a School Crossing

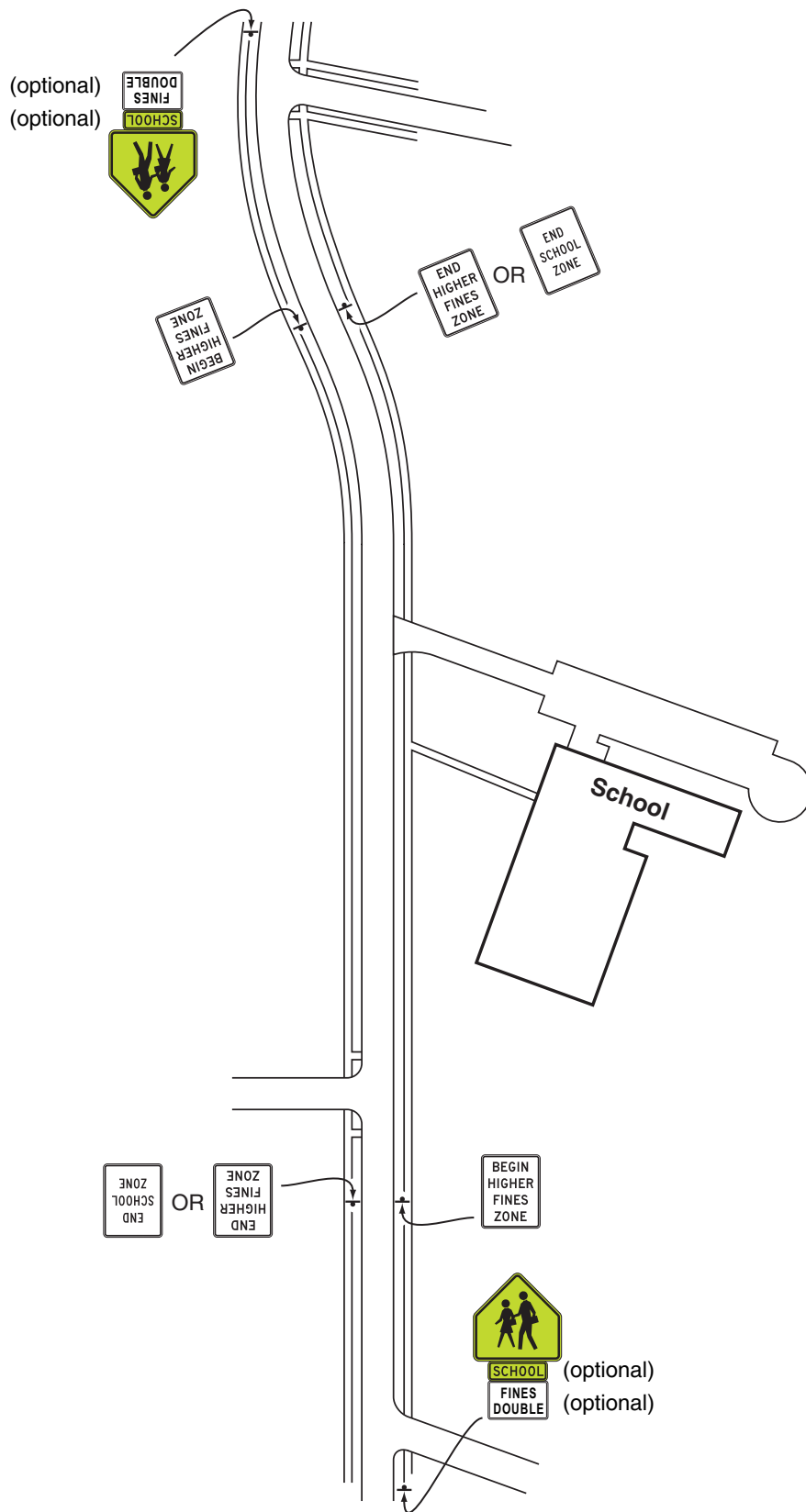
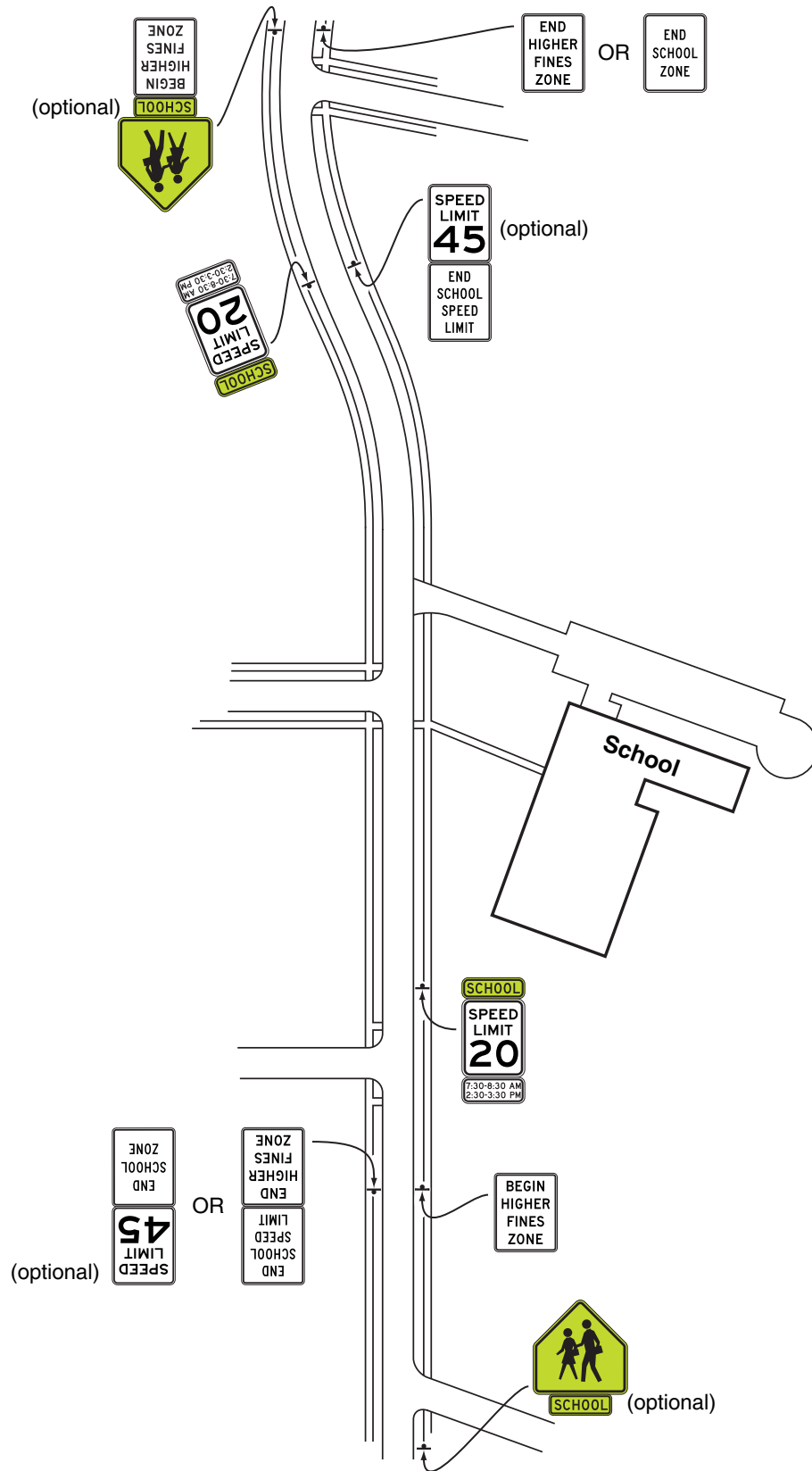
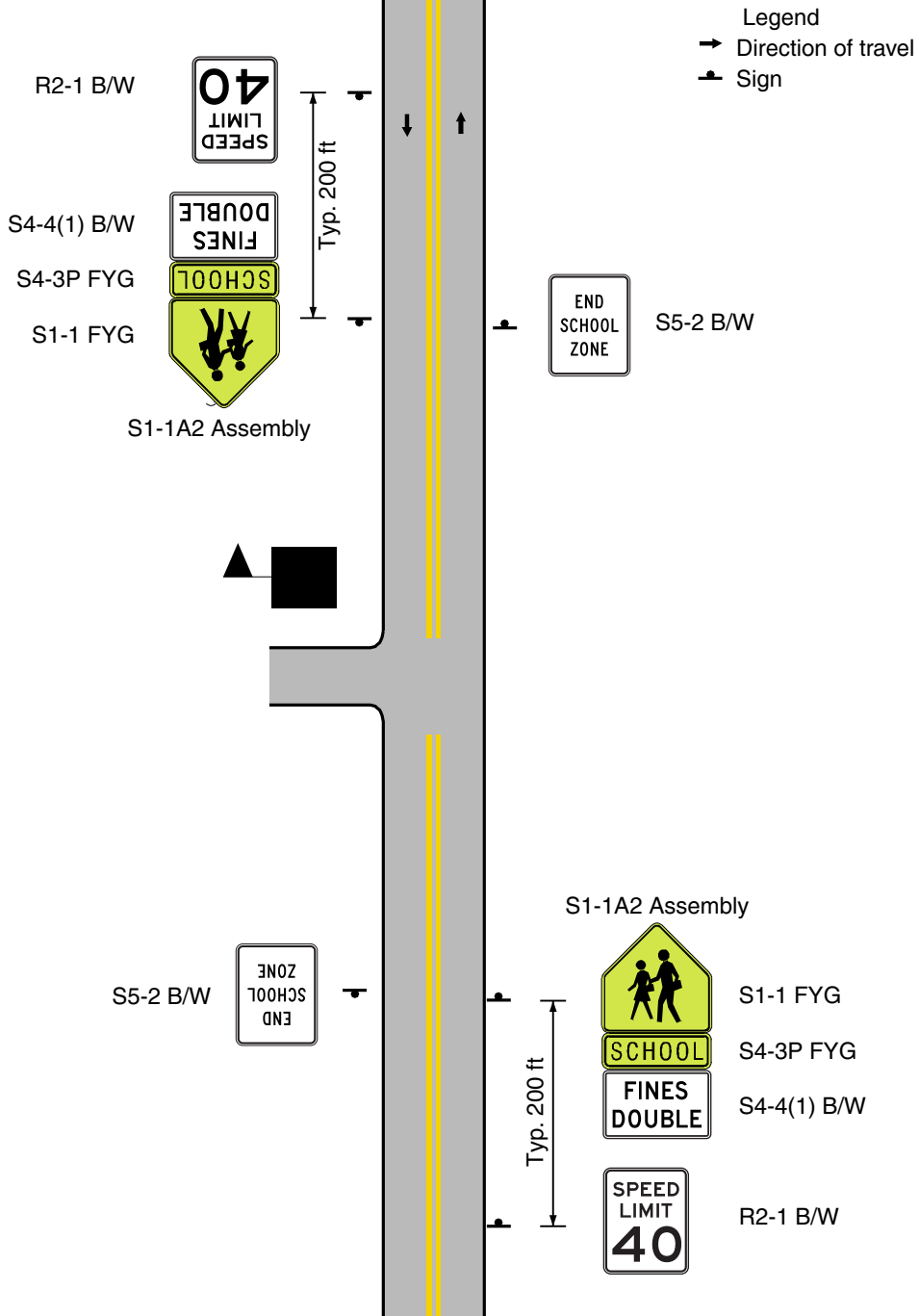


Figure 7B-3. Example of Signing for a Higher Fines School Zone with a School Speed Limit



**Figure 7B-3a. Examples of School Advance Sign
- School Zone without Speed Reduction (Sheet 1 of 2)**

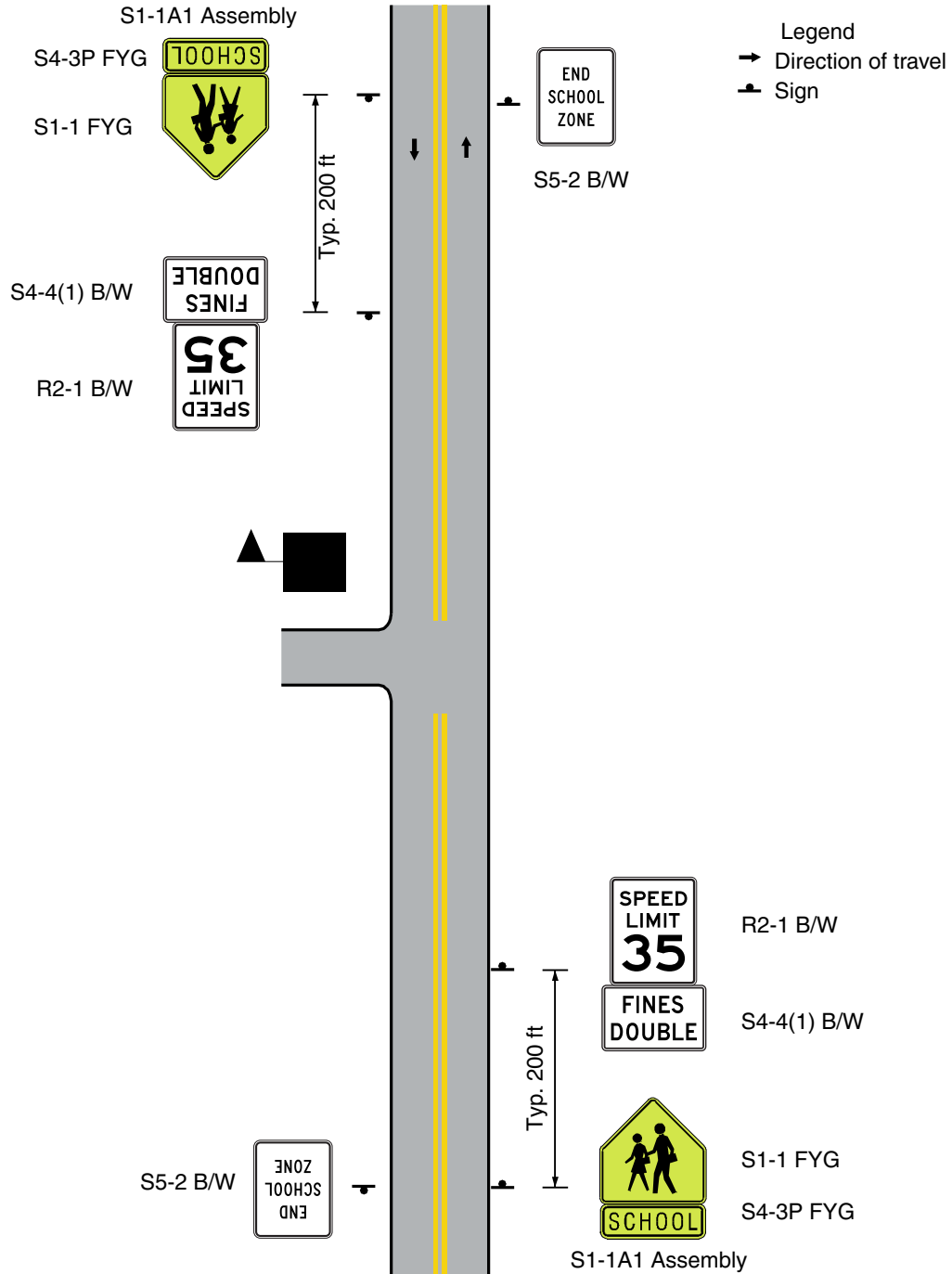
a. For Speed > 35 mph



Note:
For roadways with speed limits above 35 mph, the Speed Limit sign should be installed 200 ft. in advance of the School Advance sign.

**Figure 7B-3a. Examples of School Advance Sign
- School Zone without Speed Reduction (Sheet 2 of 2)**

b. For Speed ≤ 35 mph



Note:
 For roadways with speed limits of 35 mph or less, the Speed Limit sign should be installed within 200 ft. after the School Advance sign.

Figure 7B-4. Example of Signing for a School Crossing Outside of a School Zone

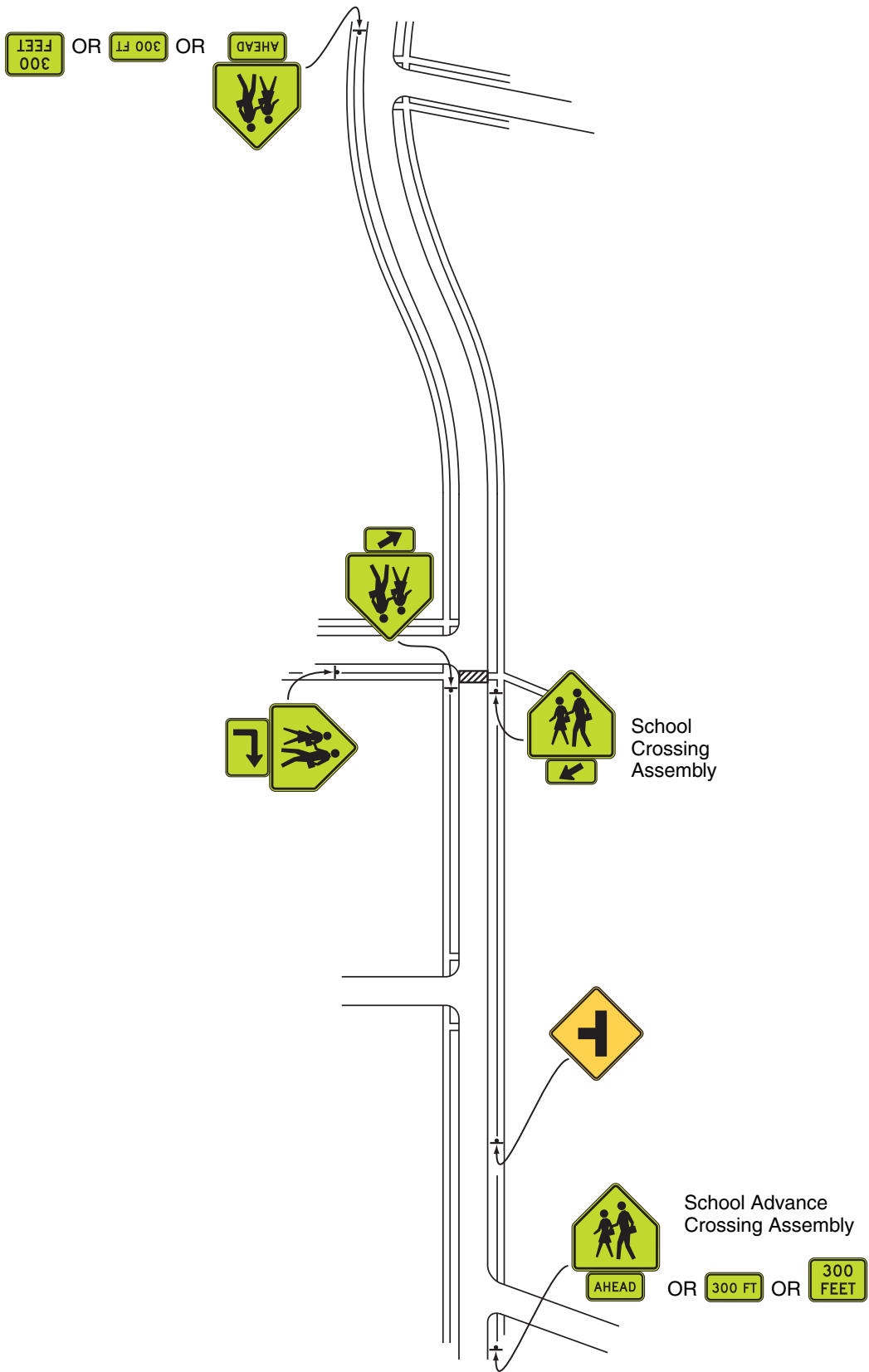


Figure 7B-4a. Examples of School Crossing Sign -Non-School Zone

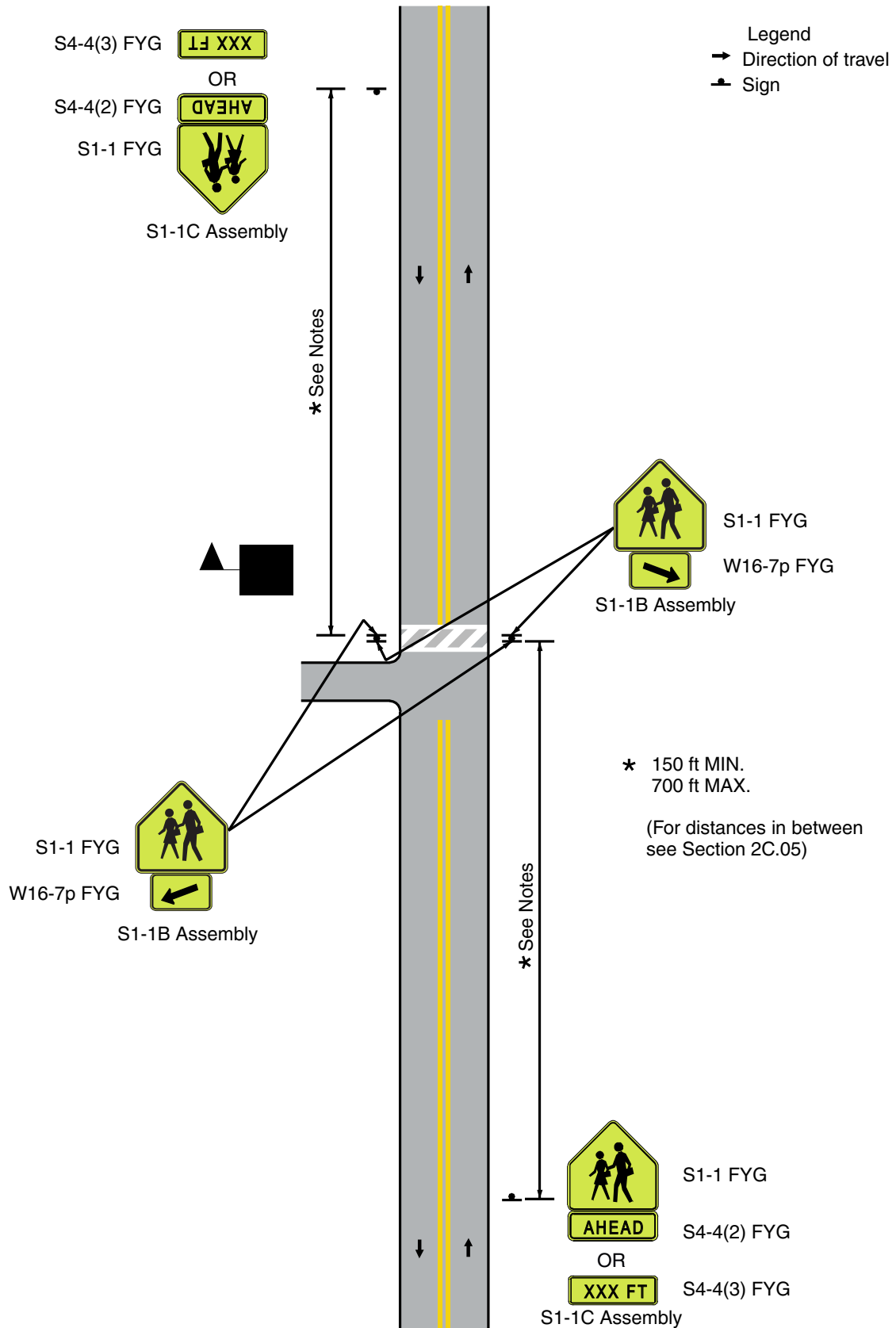


Figure 7B-5. Example of Signing for a School Zone with a School Speed Limit and a School Crossing

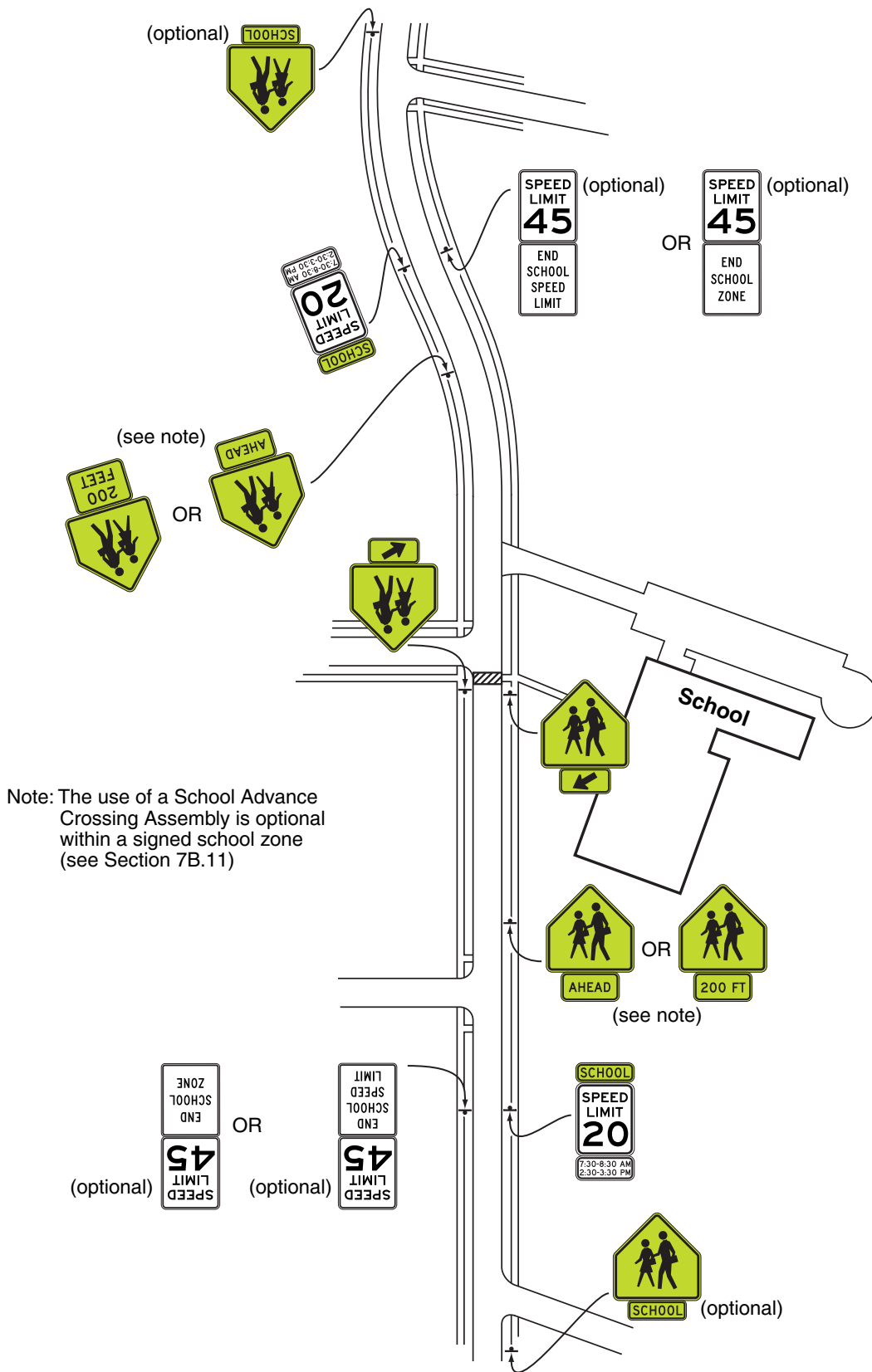


Figure 7B-5a. Examples of School Advance Sign with School Crossing - School Zone without Speed Reduction (Sheet 1 of 2)

a. For Speed > 35 mph

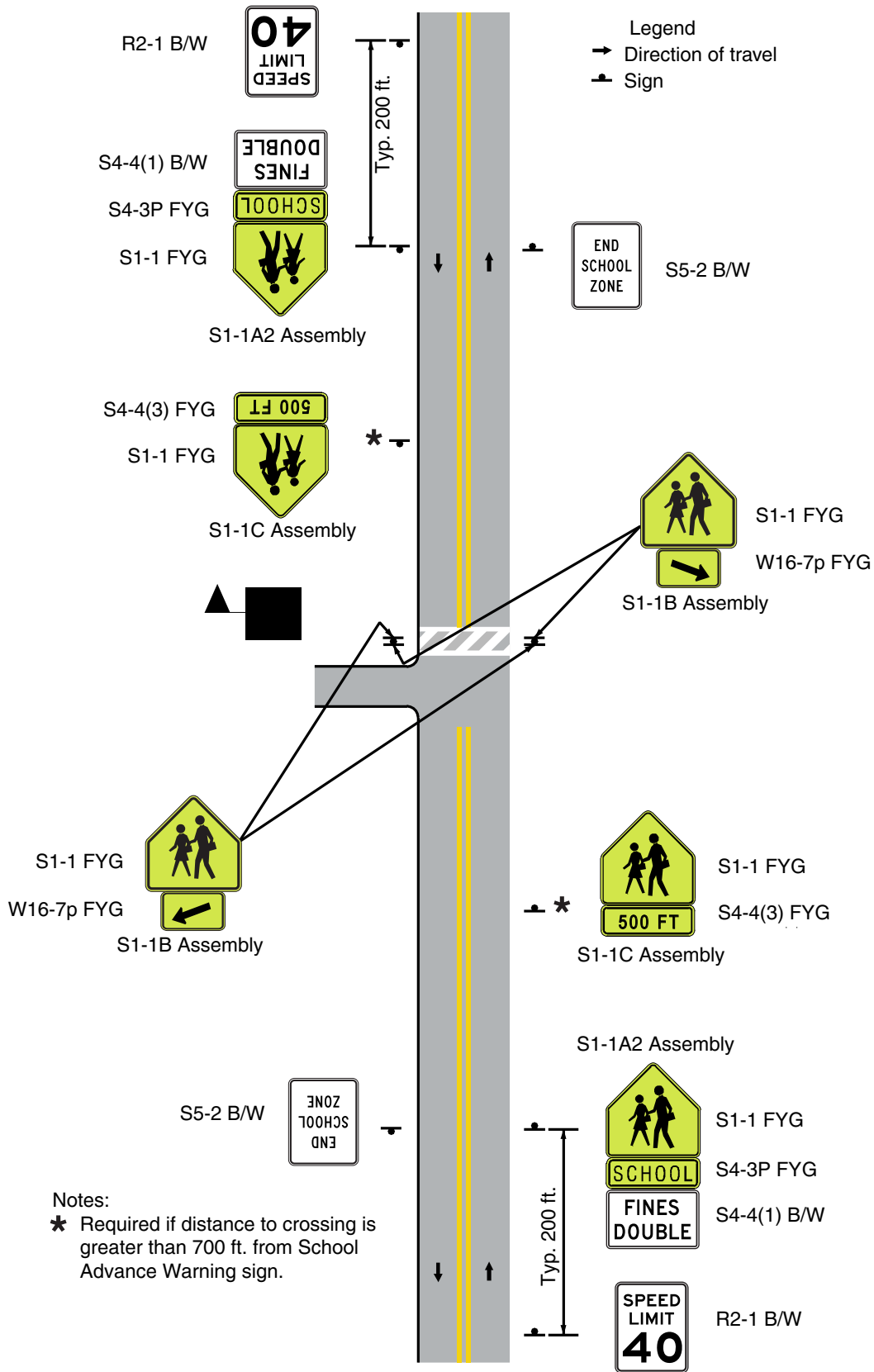


Figure 7B-5a. Examples of School Advance Sign with School Crossing
- School Zone without Speed Reduction (Sheet 2 of 2)

b. For Speed ≤ 35 mph

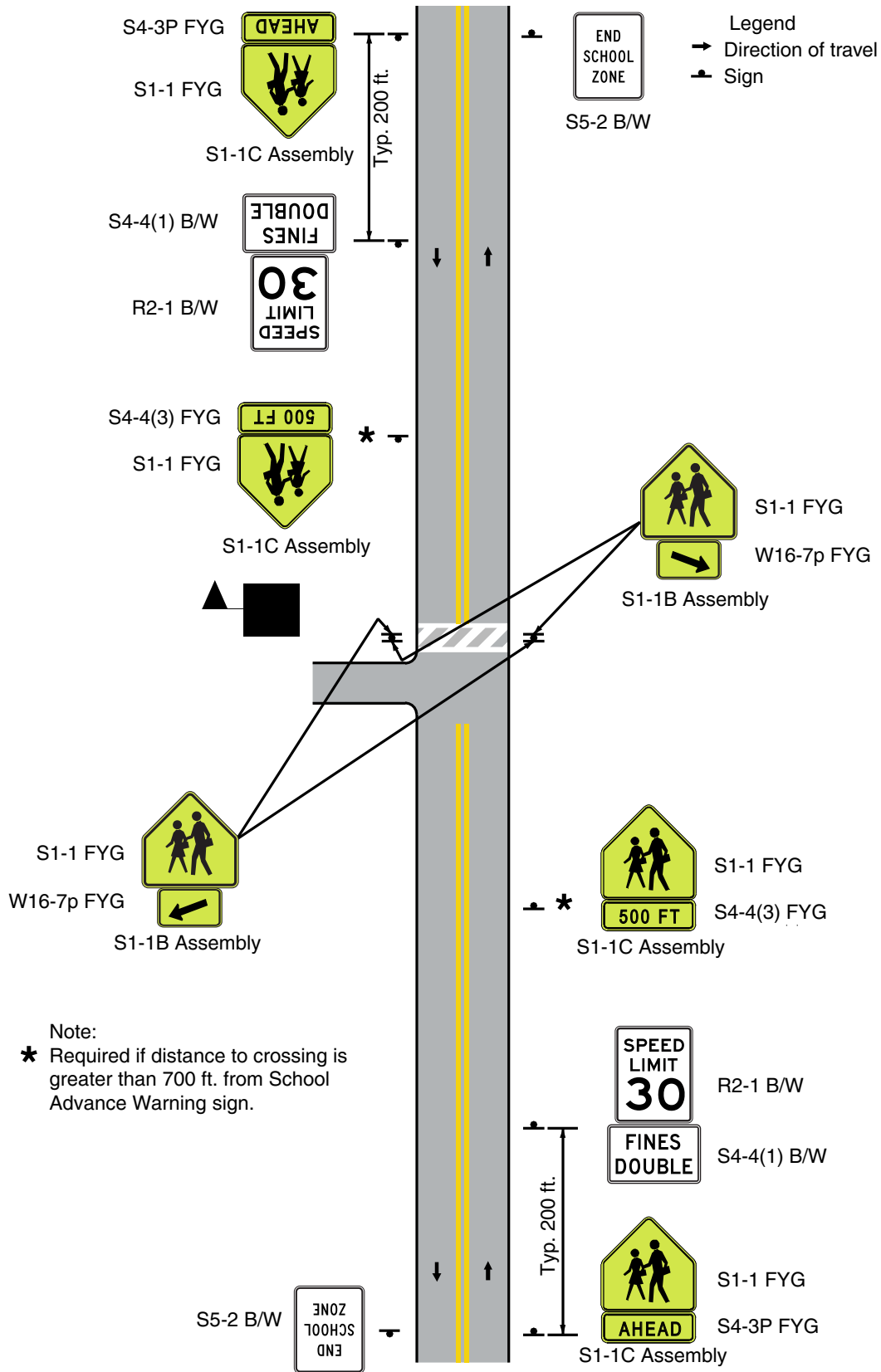


Figure 7B-5b. Examples of School Advance Sign with School Crossing - School Zone with Speed Reduction

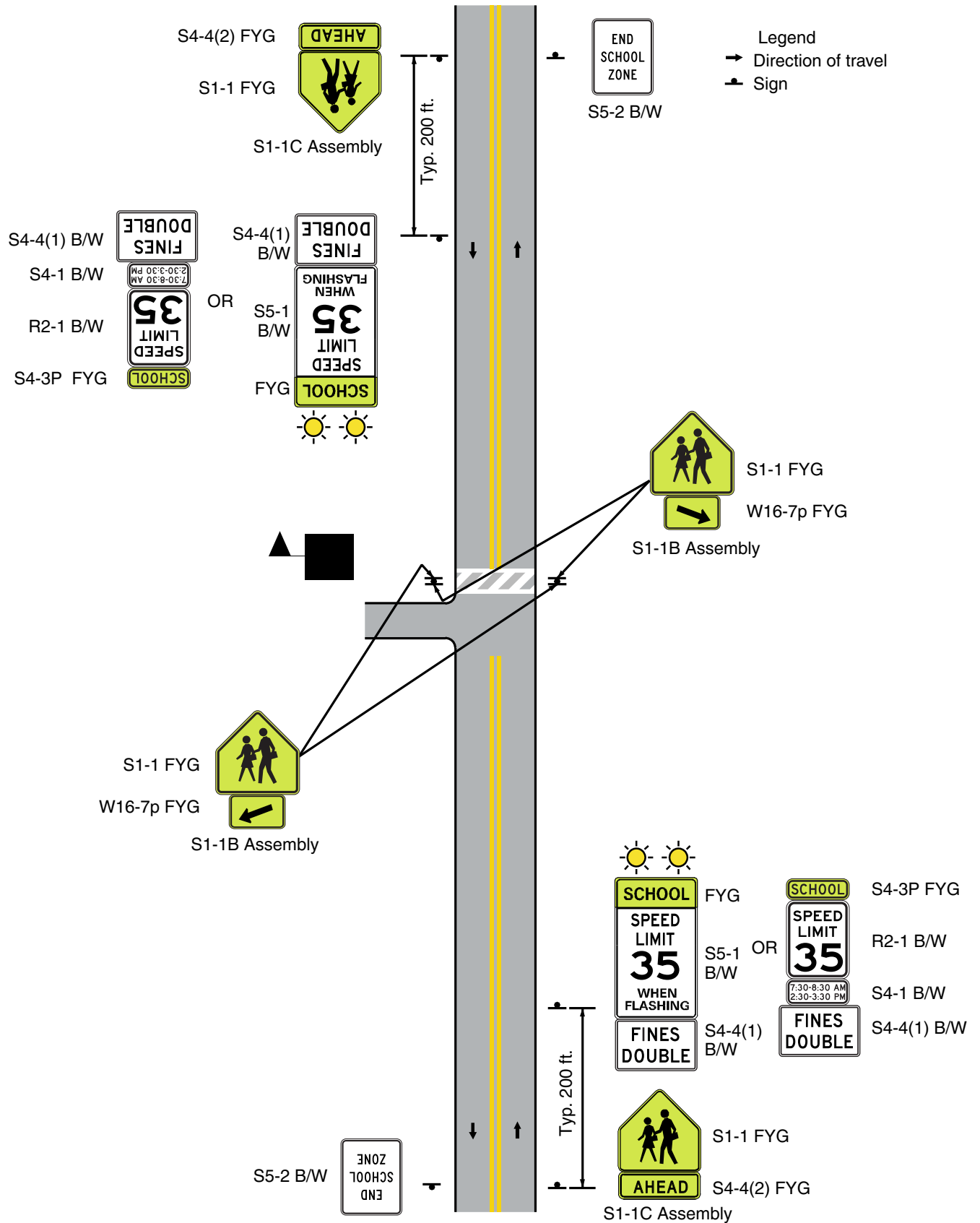


Figure 7B-5c. Examples of School Crossing Signs at School Grounds - School Zone with Speed Reduction

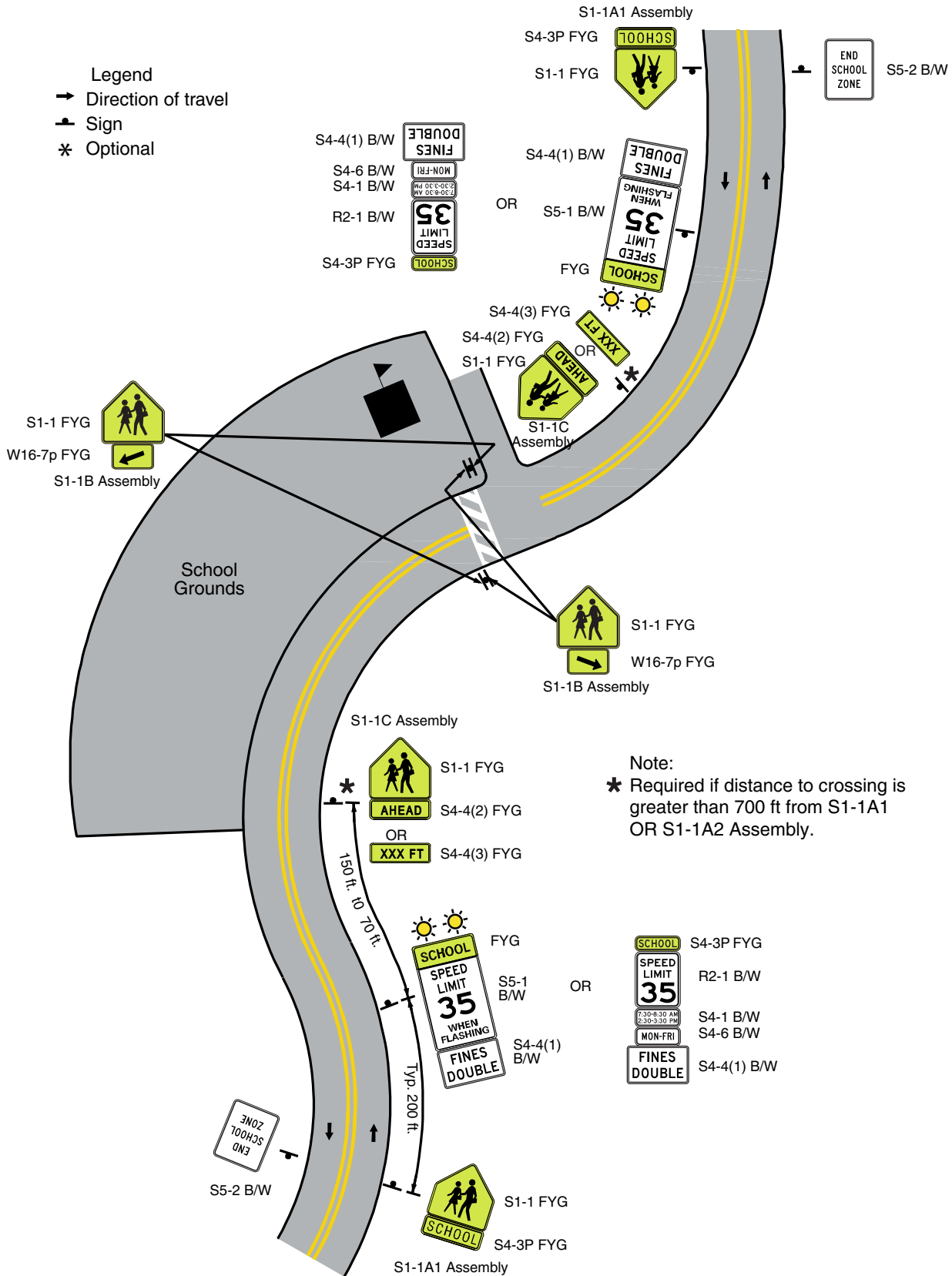


Figure 7B-5e. Examples of School Crossing Signs on Divided Highway

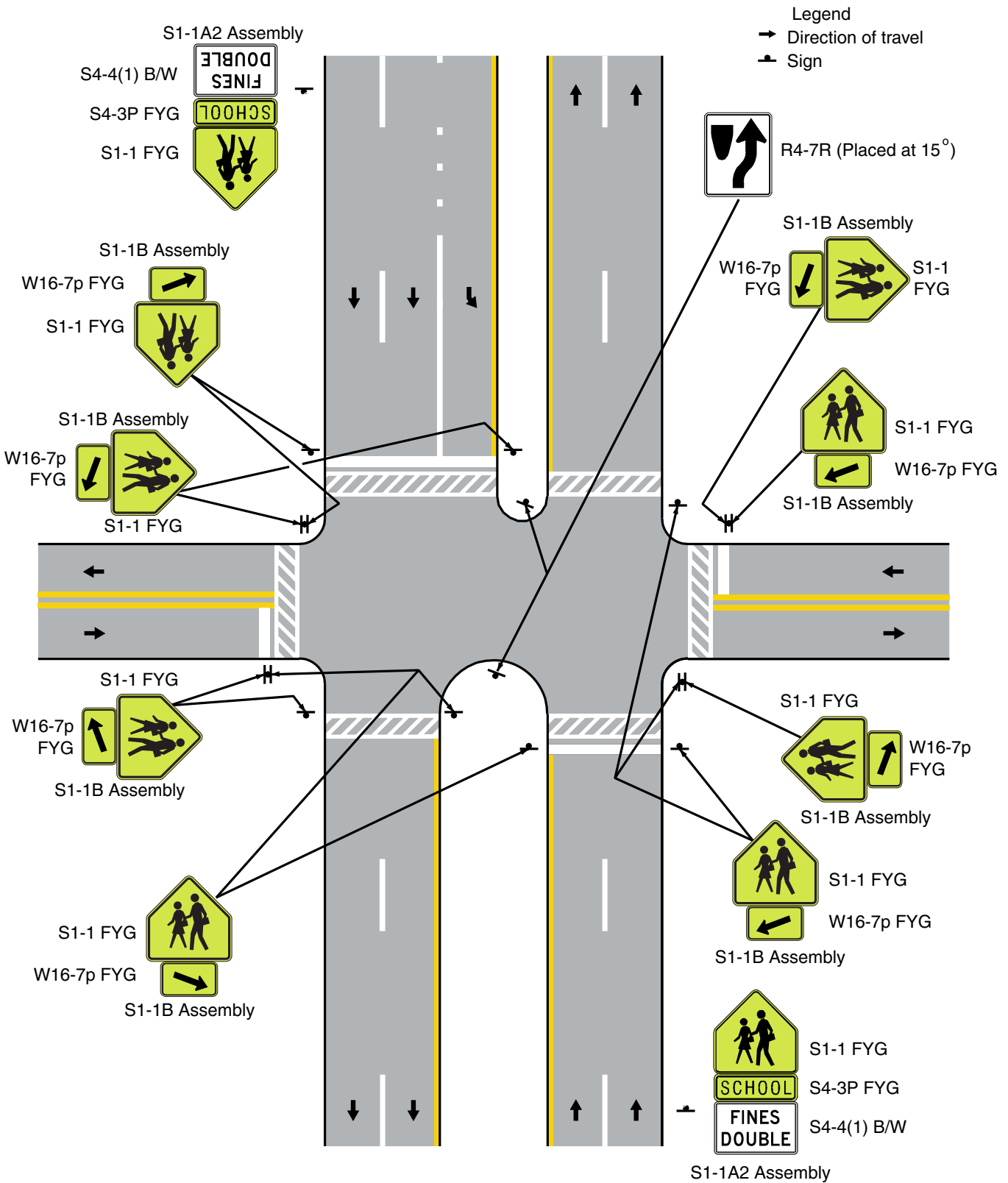


Figure 7B-5f. Examples of FITA Flag in the Air

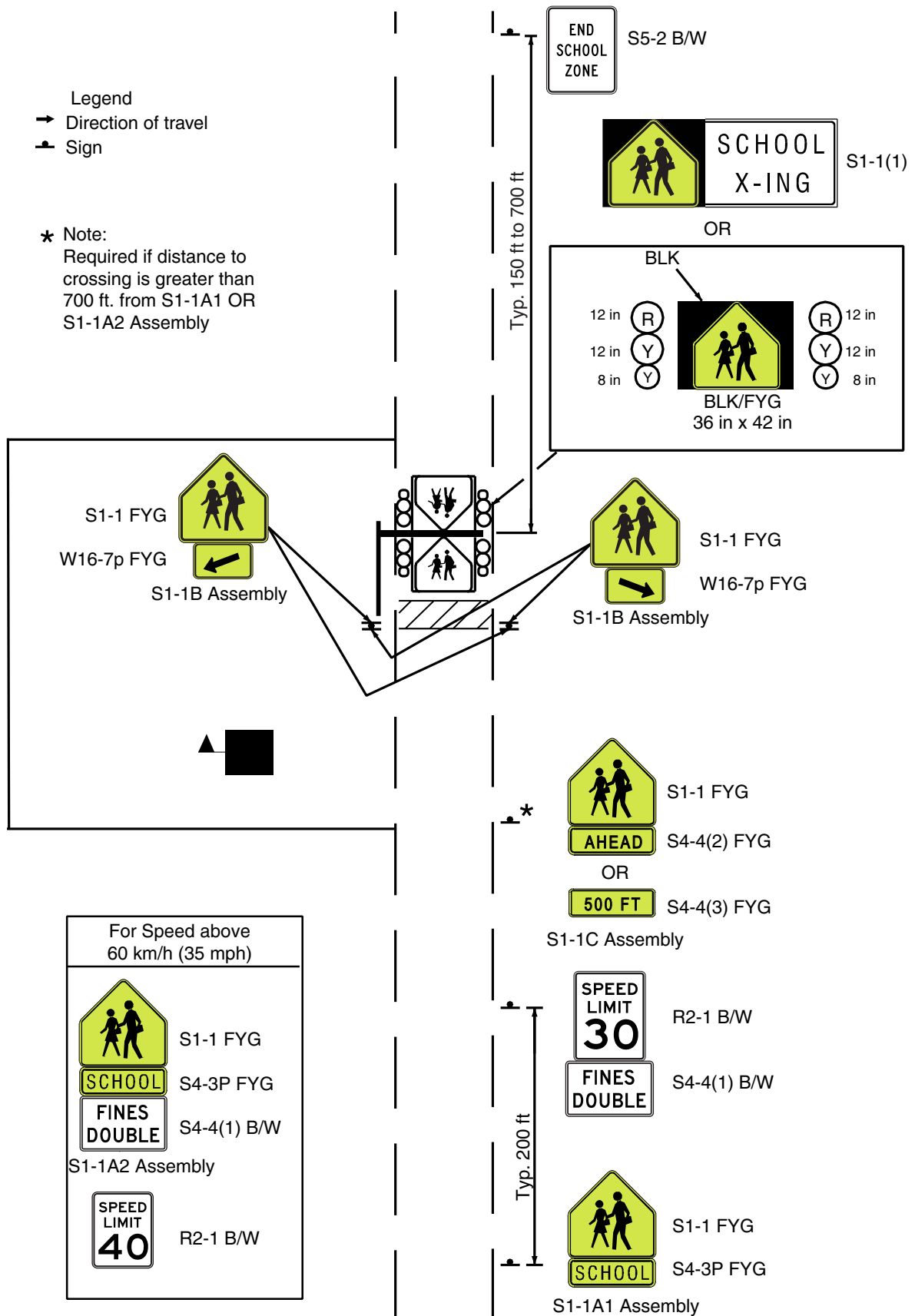
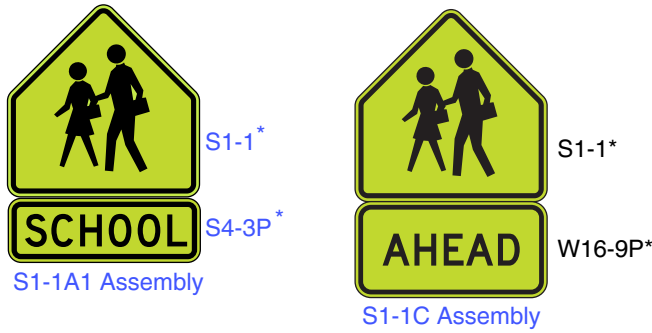


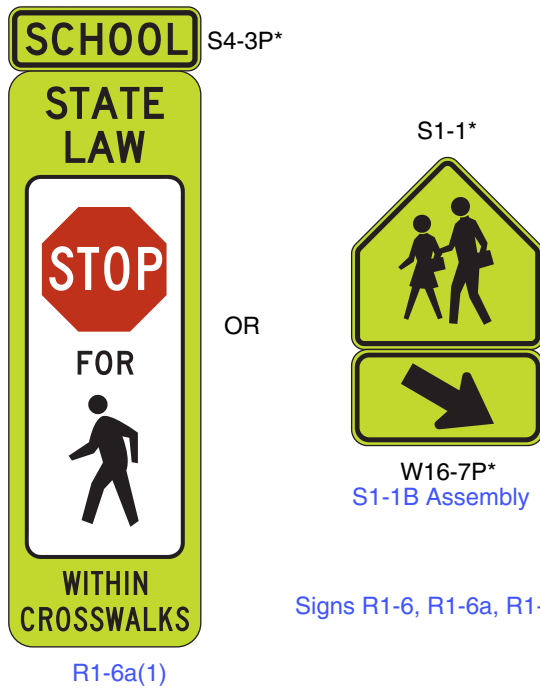
Figure 7B-6. In-Street Signs in School Areas

A - In advance of the school crossing



* Reduced size signs:
 S1-1 12 x 12 inches
 S4-3P 12 x 4 inches
 W16-7P 12 x 6 inches
 W16-9P 12 x 6 inches

B - At the school crossing



Signs R1-6, R1-6a, R1-6b, R1-6c shall not be used in Maryland.

Notes:

1. The use of the STATE LAW legend is optional on the R1-6a(1) sign (see Section 7B.12).
2. The use of the SCHOOL plaque above the R1-6a(1) sign is optional.

04 If a school crosswalk is located on a cross street in close proximity to an intersection, a School Advance Crossing assembly with a supplemental arrow (W16-5P or W16-6P) plaque may be installed on each approach of the street or highway to warn road users making a turn onto the cross street that they will encounter a school crosswalk soon after making the turn.

05 A 12-inch reduced size in-street School (S1-1) sign (see Figure 7B-6), installed in compliance with the mounting height and special mounting support requirements for In-Street Pedestrian Crossing (R1-6a(1)) signs (see Section 2B.12), may be used in advance of a school crossing to supplement the post-mounted school warning signs. A 12 x 6-inch reduced size AHEAD (W16-9P) plaque may be mounted below the reduced size in-street School (S1-1) sign.

05a An Overhead School Crossing (S1-1(1)) sign (See Figure 7B-1 Sheet 2 of 2) may be installed at or near the crosswalk to supplement the ground mounted School Advance Warning (S1-1) sign. The overhead signs may be installed where additional emphasis is required either due to obstructions adjacent to the roadway, mid-block crosswalks, heavy truck traffic or other hazards which necessitate its use. This sign may be supplemented with a hazard identification beacon.

05b On a narrow median the School Crosswalk Warning Advance Crossing assembly may be omitted.

Guidance:

- 05c *In a wide median, the School Crosswalk Warning Advance Crossing assembly (See Figure 7B-1) should be installed to the right of the other signs. Only one school crossing marked crosswalk should be established across a major street at any one intersection, but two school crossings marked crosswalk are frequently established parallel to a major street, one on each side of the intersection. Where there is only one school crossing marked crosswalk across a highway, School Crossing assemblies (See Figure 7B-1) should be installed at the school crossing, either back-to-back, or separately but facing both directions.*

Section 7B.12 School Crossing Assembly**Standard:**

- 01 **If used, the School Crossing assembly (see Figure 7B-1) shall be installed at the school crossing (see Figures 7B-4 and 7B-5), or as close to it as possible, and shall consist of a School (S1-1) sign supplemented with a diagonal downward pointing arrow (W16-7P) plaque to show the location of the crossing.**
- 02 **The School Crossing assembly shall not be used at crossings other than those adjacent to schools and those on established school pedestrian routes.**
- 03 **The School Crossing assembly shall not be installed on approaches controlled by a STOP or YIELD sign.**

Guidance:

- 03a *If used, a School Crossing assembly should be installed on each side of the highway and, where there is only one marked crosswalk across the highway, School Crossing assemblies should be installed on each side of the highway either back-to-back or separately but facing both directions.*

Standard:

- 03b **If a School Crossing assembly is installed in the median, it shall be installed to the right of all other signs and shall not be installed on the same post or pole as any other sign.**

Option:

- 04 The In-Street Pedestrian Crossing (R1-6a(1)) sign (see Section 2B.12 and Figure 7B-6) may be used at unsignalized school crossings. If used at a school crossing, a 12 x 4-inch SCHOOL (S4-3P) plaque (see Figure 7B-6) may be mounted above the sign. The STATE LAW legend on the R1-6 series signs may be omitted.
- 05 The Overhead Pedestrian Crossing (R1-9a) sign (see Section 2B.12 and Figure 2B-2) may be modified to replace the standard pedestrian symbol with the standard schoolchildren symbol and may be used at unsignalized school crossings. The STATE LAW legend on the R1-9 series signs may be omitted.
- 05a The Overhead School Crossing (S1-1(1)) sign (see Figure 7B-1 Sheet 2 of 2) may be installed at or near the crosswalk to supplement the ground mounted School Crossing assembly where additional emphasis is required due to obstructions adjacent to the roadway, mid-block crosswalks, heavy truck traffic, or other hazards which necessitate its use.
- 05b The Overhead School Crossing (S1-1(1)) sign may be supplemented with a hazard identification beacon.
- 06 A 12-inch reduced size in-street School (S1-1) sign (see Figure 7B-6) may be used at an unsignalized school crossing instead of the In-Street Pedestrian Crossing (R1-6a(1)). A 12 x 6-inch reduced size diagonal downward pointing arrow (W16-7P) plaque may be mounted below the reduced size in-street School (S1-1) sign.

Standard:

- 07 **If an In-Street Pedestrian Crossing sign, or a reduced size in-street School (S1-1) sign is placed in the roadway, the sign support shall comply with the mounting height and special mounting support requirements for In-Street Pedestrian Crossing (R1-6a(1)) signs (see Section 2B.12).**
- 08 **The In-Street Pedestrian Crossing sign, the Overhead Pedestrian Crossing sign, and the reduced size in-street School (S1-1) sign shall not be used at signalized locations.**

Section 7B.13 School Bus Stop Ahead Sign (S3-1)*Guidance:*

- 01 *The School Bus Stop Ahead (S3-1) sign (see Figure 7B-1) 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 an adequate distance and where there is no opportunity to relocate the school bus stop to provide adequate sight distance.*

Section 7B.14 SCHOOL BUS TURN AHEAD Sign (S3-2)**Option:**

- 01 The SCHOOL BUS TURN AHEAD (S3-2) sign (see Figure 7B-1) may be installed in advance of locations where a school bus turns around on a roadway at a location not visible to approaching road users for a distance as determined by the "0" column under Condition B of Table 2C-4, and where there is no opportunity to relocate the school bus turn around to provide the distance provided in Table 2C-4.

Section 7B.15 School Speed Limit Assembly (S4-1P, S4-2P, S4-3P, S4-4P, S4-6P, S5-1) and END SCHOOL SPEED LIMIT Sign (S5-3)

Standard:

01 A School Speed Limit assembly (see Figure 7B-1) or a School Speed Limit (S5-1) sign (see Figure 7B-1) shall be used to indicate the speed limit where a reduced school speed limit zone has been established based upon an engineering study or where a reduced school speed limit is specified for such areas by statute. The School Speed Limit assembly or School Speed Limit sign shall be placed at or as near as practical to the point where the reduced school speed limit zone begins (see Figures 7B-3 and 7B-5).

02 If a reduced school speed limit zone has been established, a School (S1-1) sign shall be installed in advance (see Table 2C-4 for advance placement guidelines) of the first School Speed Limit sign assembly or S5-1 sign that is encountered in each direction as traffic approaches the reduced school speed limit zone (see Figures 7B-3 and 7B-5).

03 Where increased fines are imposed for traffic violations within a reduced school speed limit zone, a FINES DOUBLE (S4-4(1)) plaque or a BEGIN HIGHER FINES ZONE (R2-18) sign (see Figure 2B-3) shall be installed in accordance with Section 7B.10.

Guidance:

03a *The speed limit in a reduced school speed zone should not be more than 15 mph lower than the 85th percentile speed or, where the speed limit on the approach has been established based on an engineering study, the posted speed limit on the approach to the school zone, but should not be exceed 35 mph.*

Support:

03b Where a school crossing guard is stationed to assist pedestrians in crossing a highway, the highest maximum speed limit allowed by statute is 35 mph.

Standard:

04 Except as provided in Paragraph 5, the downstream end of an authorized and posted reduced school speed limit zone shall be identified with an END SCHOOL SPEED LIMIT (S5-3) sign (see Figures 7B-1 and 7B-5).

Option:

05 If a reduced school speed limit zone ends at the same point as a higher fines zone, an END SCHOOL ZONE (S5-2) sign may be used instead of a combination of an END HIGHER FINES ZONE (R2-11) sign and an END SCHOOL SPEED LIMIT (S5-3) sign.

06 A standard Speed Limit sign showing the speed limit for the section of highway that is downstream from the authorized and posted reduced school speed limit zone may be mounted on the same post above the END SCHOOL SPEED LIMIT (S5-3) sign or the END SCHOOL ZONE (S5-2) sign.

Guidance:

07 *The beginning point of a reduced school speed limit zone should be at least 200 feet in advance of the school grounds, a school crossing, or other school related activities; however, this 200-foot distance should be increased to 300 feet if the reduced school speed limit is 30 mph and to 400 feet, if the speed limit is 35mph or higher.*

Standard:

08 The School Speed Limit assembly shall be either a fixed-message sign assembly or a changeable message sign.

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

Option:

10 Changeable message signs (see Chapter 2L and Section 6F.60) may be used to inform drivers of the school speed limit. If the sign is internally illuminated, it may have a white legend on a black background. Changeable message signs with flashing beacons may be used for situations where greater emphasis of the special school speed limit is needed.

Guidance:

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

- 12 *A confirmation light 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.*

Standard:

- 13 **Fluorescent yellow-green pixels shall be used when the “SCHOOL” message is displayed on a changeable message sign for a school speed limit.**

Option:

- 14 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.
- 15 Changeable message signs that display the speed of approaching drivers (see Section 2B.13) may be used in a school speed limit zone.
- 16 A Speed Limit Sign Beacon (see Section 4L.04) also may be used, with a WHEN FLASHING legend, to identify the periods that the school speed limit is in effect.

Section 7B.16 Reduced School Speed Limit Ahead Sign (S4-5, S4-5a)

Guidance:

- 01 *A Reduced School Speed Limit Ahead (S4-5, S4-5a) sign (see Figure 7B-1) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates that advance notice would be appropriate.*

Standard:

- 02 **If used, the Reduced School Speed Limit Ahead sign shall be followed by a School Speed Limit sign or a School Speed Limit assembly.**
- 03 **The speed limit displayed on the Reduced School Speed Limit Ahead sign shall be identical to the speed limit displayed on the subsequent School Speed Limit sign or School Speed Limit assembly.**

Section 7B.17 Parking and Stopping Signs (R7 and R8 Series)

Option:

- 01 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:

- 02 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. XX 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.

- 03 Sections 2B.46, 2B.47, and 2B.48 contain information regarding the signing of parking regulations in school zone areas.

Section 7B.18 School Photo Enforced Signs and Plaques (S5-1(1))

Support:

- 01a Maryland law authorizes the use of a speed monitoring system (SMS) within a designated school zone on Monday through Friday between 6:00 AM and 8:00 PM. Before using an unmanned stationary SMS, the jurisdiction must ensure that each sign that designates a school zone indicates that SMSs are used in school zones. SHA's Office of Counsel suggests that the most reasonable interpretation of this provision is that signing is required only at locations where unmanned stationary speed cameras are deployed. General use of photo enforced signs and plaques are covered in Section 2B.55.
- 01b The stationing of non-self propelled SMS equipment on a SHA highway requires a written permit from the SHA District Office in which the equipment is stationed.

Standard:

- 01c **Where a speed monitoring system is used at a School Zone, the system equipment shall be located within the designated School Zone and shall measure the speed of a vehicle for enforcement purposes only while the vehicles is traveling within the designated School Zone and approaching the school crossing, school building, or school related activity.**
- 01d **On a state highway, in addition to other signs required in this Chapter, where a stationary or mobile speed monitoring system is deployed in a School Zone, a SCHOOL PHOTO ENFORCE SPEED (S5-1(1))**

sign shall be installed along the approach to the School Zone on which vehicle speeds are being measured.

Guidance:

01e *On a non-state highway, in addition to other signs required in this Chapter, where a stationary or mobile speed monitoring system is deployed in a school Zone, a SCHOOL SPEED PHOTO ENFORCED (S5-1(1)) sign should be installed along the approach to the School Zone on which vehicle speeds are being measured.*

01f *When used, a SCHOOL SPEED PHOTO ENFORCED (S5-1(1)) sign should be installed an appropriated distance, not to exceed 500 feet, in advance of the point at which vehicle speeds are being measured in order for a vehicle that is traveling at approximately the 85th percentile speed on the approach to the School Zone to slow at a comfortable rate to the speed limit in effect at the point where vehicle speeds are being measured by the speed monitoring system.*

Option:

01g *The SCHOOL SPEED PHOTO ENFORCED (S5-1(1)) may be mounted below a school (S1-1) sign, a Speed Limit (R2-1) sign, or a School Speed Limit assembly.*

CHAPTER 7C. MARKINGS

Section 7C.01 Functions and Limitations

Support:

- 01 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.
- 02 Pavement markings have some potential limitations. They might be obscured by snow, might not be clearly visible when wet, and might not be durable when subjected to heavy traffic. In spite of these potential 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 Crosswalk Markings

Guidance:

- 01 *Subject to the Guidance of Paragraph 04a, crosswalks should be marked at all intersections on established routes to a school where there is substantial conflict between motorists, bicyclists, and student movements; where students are encouraged to cross between intersections; where students would not otherwise recognize the proper place to cross; or where motorists or bicyclists might not expect students to cross (see Figure 7A-1).*
- 02 *Crosswalk lines should not be used indiscriminately. An engineering study considering the factors described in Section 3B.18 should be performed before a marked crosswalk is installed at a location away from a traffic control signal or an approach controlled by a STOP sign.*
- 03 *Because non-intersection school crossings are generally unexpected by the road user, warning signs (see Sections 7B.11 and 7B.12) should be installed for all marked school crosswalks at non-intersection locations. Adequate visibility of students by approaching motorists and of approaching motorists by students should be provided by parking prohibitions or other appropriate measures.*

Support:

- 04 Section 3B.18 contains provisions regarding the placement and design of crosswalks, and Section 3B.16 contains provisions regarding the placement and design of the stop lines and yield lines that are associated with them. Provisions regarding the curb markings that can be used to establish parking regulations on the approaches to crosswalks are contained in Section 3B.23.

Guidance:

- 04a *At an intersection on routes to school where crosswalks are marked, only one crosswalk across the major street should be marked.*

Support:

- 04b *At an intersection where only one crosswalk across the major street is marked, crosswalks frequently are marked across each side street, parallel to the major street.*

Section 7C.03 Pavement Word, Symbol, and Arrow Markings

Option:

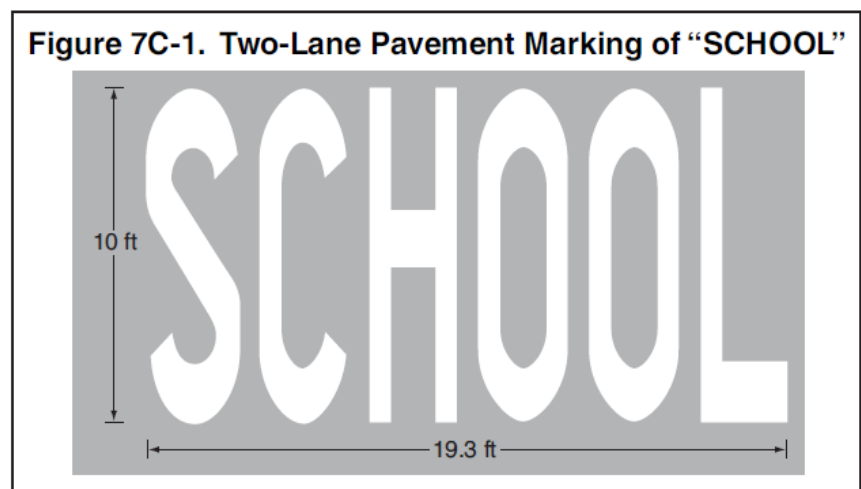
- 01 If used, the SCHOOL word marking may extend to the width of two approach lanes (see Figure 7C-1).

Guidance:

- 02 *If the two-lane SCHOOL word marking is used, the letters should be 10 feet or more in height.*

Support:

- 03 Section 3B.20 contains provisions regarding other word, symbol, and arrow pavement markings that can be used to guide, warn, or regulate traffic.



CHAPTER 7D. CROSSING SUPERVISION

Section 7D.01 Types of Crossing Supervision

Support:

- 01 There are three types of school crossing supervision:
- A. Adult control of pedestrians and vehicles by adult crossing guards,
 - B. Adult control of pedestrians and vehicles by uniformed law enforcement officers, and
 - C. Student and/or parent control of only pedestrians with student and/or parent patrols.
- 02 Information regarding the organization, administration, and operation of a school safety patrol program is contained in the “AAA School Safety Patrol Operations Manual” (see Section 1A.11).

Section 7D.02 Adult Crossing Guards

Option:

- 01 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.

Section 7D.03 Qualifications of Adult Crossing Guards

Support:

- 01 High standards for selection of adult crossing guards are essential because they are responsible for the safety of and the efficient crossing of the street by schoolchildren within and in the immediate vicinity of school crosswalks.

Guidance:

- 02 *Adult crossing guards should possess the following minimum qualifications:*
- A. *Average intelligence;*
 - B. *Good physical condition, including sight, hearing, and ability to move and maneuver quickly in order to avoid danger from errant vehicles;*
 - C. *Ability to control a STOP paddle effectively to provide approaching road users with a clear, fully direct view of the paddle’s STOP message during the entire crossing movement;*
 - D. *Ability to communicate specific instructions clearly, firmly, and courteously;*
 - E. *Ability to recognize potentially dangerous traffic situations and warn and manage students in sufficient time to avoid injury.*
 - F. *Mental alertness;*
 - G. *Neat appearance;*
 - H. *Good character;*
 - I. *Dependability; and*
 - J. *An overall sense of responsibility for the safety of students.*

Section 7D.04 Uniform of Adult Crossing Guards

Standard:

- 01 **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.**

Section 7D.05 Operating Procedures for Adult Crossing Guards

Support:

- 00a Maryland law authorized school crossing guards, who meet the qualifications prescribed in MVL TR §21-107, to stop and otherwise direct vehicles and pedestrians on a highway or school grounds to assist pedestrians at a school crossing and school vehicles in entering and leaving school grounds.

Standard:

- 01 **Except as noted in Support above, adult crossing guards shall not direct traffic in the usual law enforcement regulatory sense. In the control of traffic, they shall pick opportune times to create a sufficient gap in the traffic flow. At these times, they shall stand in the roadway to indicate that pedestrians are about to use or are using the crosswalk, and that all vehicular traffic must stop.**
- 02 **Adult crossing guards shall use a STOP paddle. The STOP paddle shall be the primary hand-signaling device.**

- 03 **The STOP (R1-1) paddle shall be an octagonal shape. The background of the STOP face shall be red with at least 6-inch series upper-case white letters and border. The paddle shall be at least 18 inches 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:

- 04 The STOP paddle may be modified to improve conspicuity by incorporating white or red flashing lights on both sides of the paddle. Among the types of flashing lights that may be used are individual LEDs or groups of LEDs.
- 05 The white or red flashing lights or LEDs may be arranged in any of the following patterns:
- A. Two white or red lights centered vertically above and below the STOP legend,
 - B. Two white or red lights centered horizontally on each side of the STOP legend,
 - C. One white or red light centered below the STOP legend,
 - D. A series of eight or more small white or red lights having a diameter of 1/4 inch or less 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), or
 - E. A series of white lights forming the shapes of the letters in the legend.

Standard:

- 06 **If flashing lights are used on the STOP paddle, the flash rate shall be at least 50, but no more than 60, flash periods per minute.**

Section 7D.06 Flag-In-The-Air (FITA)

Support:

- 01a Where adult school crossing guards are stationed at a school crossing, the conditions may be such so as to restrict the conspicuity of the school crossing guard when the guard is assisting students crossing the roadway.

Guidance:

- 01b *For supervised school crossings at roadways having high traffic speed, more than two traffic lanes, poor alignment with restricted sight distance, or other conditions that may hinder the visibility of the school crossing guard and STOP paddle, consideration should be given to the use of an overhead Warning Beacon (FITA) for providing the desired warning of the guard's presence.*

Support:

- 01c Guidelines for FITA use may be obtained from the Maryland State Highway Administration's Office of Traffic & Safety, Traffic Development & Support Division (TDSD) at the address shown on Page i.

Standard:

- 01d **FITA use shall comply with the provision for Warning Beacon described in Section 4L.03.**

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