

PART 7. TRAFFIC CONTROL FOR SCHOOL AREAS

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PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

Chapter 7A. GENERAL

7A.1 Need for Standards

Support

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 and/or studies.

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.

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.

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.

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

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.

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 showing streets, the school, existing traffic controls, established school walk routes, and established school crossings. A typical school route plan map is shown in Figure 7A-1.

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.

“School” and “school zone” are defined in Section 1A.13.

7A.2 School Routes and Established School Crossings

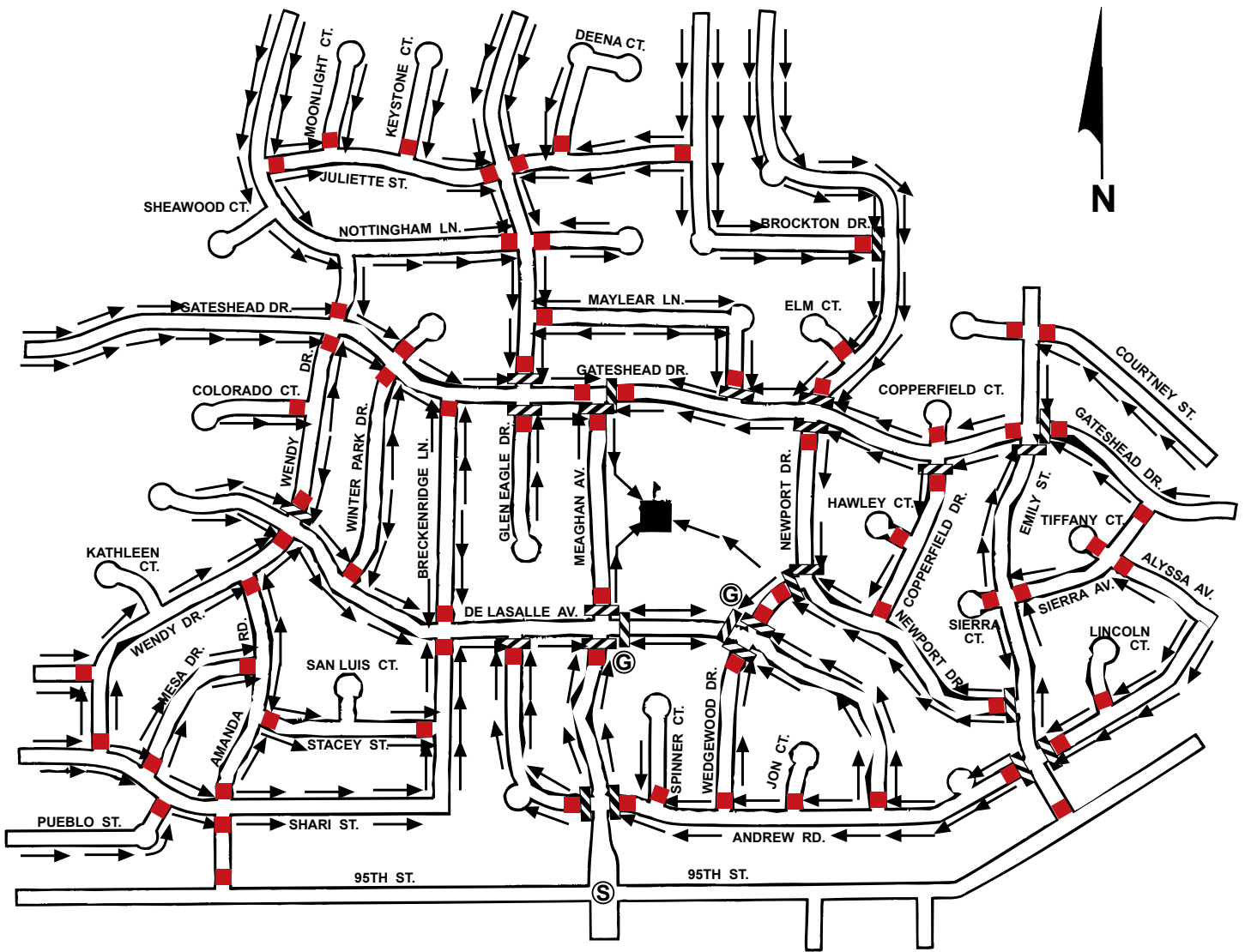
Support

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

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 other pedestrian walkways 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.



Legend







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

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

7A.3 School Crossing Control Criteria

Support

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.

A recommended method for determining the frequency and adequacy of gaps in the traffic stream is given in “Traffic Control Devices Handbook” (see Section 1A.11).

7A.4 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) required for the special pedestrian conditions in school areas.

Support

Sections 1A.1 and 1A.8 contain information regarding unauthorized devices and messages. Sections 1A.2 and 1A.7 contain information regarding the application of standards. Section 1A.5 contains information regarding the maintenance of traffic control devices. Section 1A.8 contains information regarding placement authority for traffic control devices. Section 1A.9 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.

Provisions contained in Chapter 2A and Section 2B.6 are applicable in school areas.

Part 3 contains provisions regarding pavement markings that are applicable in school areas.

Part 4 contains provisions regarding highway traffic signals that are applicable in school areas. The School Crossing signal warrant is described in Section 4C.6.

PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

Chapter 7B. SIGNS

7B.1 Size of School Signs

Standard

Detailed drawings of the standard signs illustrated in this Manual can be found in the Minnesota Standard Signs and Markings Manual (see Map & Manual Sales Unit, page ii). Other questions regarding signs and their usage can be referred to the Office of Traffic Engineering (OTE) (see page ii). The size of signs to be used in school areas shall be as shown in Table 7B-1.

The Conventional Road sign size shall be used on public roads, streets, and highways unless engineering judgment determines that a Minimum or Oversized sign size would be more appropriate.

The Minimum sign size shall be used only where traffic volumes are low and speeds are 30 mph or lower, as determined by engineering judgment.

The Oversized sign size shall be used on expressways.

Guidance

The Oversized sign sizes should be used on roadways that have four or more lanes with posted speed limits of 40 mph or higher.

Option

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

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

7B.2 Illumination and Reflectorization

Standard

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

7B.3 Position of Signs

Support

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

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

Option

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

7B.4 Height of Signs

Support

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

7B.5 Installation of Signs

Support

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

7B.6 Lettering

Support

The Federal Highway Administration's "Standard Highway Signs and Markings" book contains information regarding sign lettering.

7B.7 Sign Color for School Warning Signs

Standard

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

When the fluorescent yellow-green background color is used, a systematic approach featuring one background color within a zone or area shall be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a zone or area is not allowed.

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Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
School	S1-1	7B.8	36 x 36	30 x 30	48 x 48
School Bus Stop Ahead	S3-1	7B.13	36 x 36	30 x 30	48 x 48
School Bus Turn Around	D3-2M (old S3-2a)	7B.14	36 x 36	30 x 30	48 x 48
Reduced School Speed Limit Ahead	S4-5, S4-5a	7B.16	36 x 36	30 x 30	48 x 48
School Speed Limit XX When Flashing	S5-1	7B.15	24 x 48	---	36 x 72
End School Zone	S5-2	7B.9	24 x 30	---	36 x 48
End School Speed Limit	S5-3	7B.15	24 x 30	---	36 x 48
In-Street Ped Crossing	R1-6a, R1-6c	7B.11, 7B.12	12 x 36	---	---
Speed Limit (School Use)	R2-1	7B.15	24 x 30	---	36 x 48
Begin Higher Fines Zone	R2-10	7B.10	24 x 30	---	36 x 48
End Higher Fines Zone	R2-11	7B.10	24 x 30	---	36 x 48

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

Notes:

1. Larger signs may be used when appropriate.
2. Dimensions are shown in inches and are shown as width x height.
3. Minimum sizes for multi-lane conventional roads shall be as shown in the Conventional Roads column that face shared-use paths and pedestrian facilities.

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

7B.8 School Signs (S1-1) and Plaques



S1-1

Support

Many state and local jurisdictions advise road users that they are approaching a school that is adjacent to a highway 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 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.

The School (S1-1) sign has the following four applications:

- 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.
- School Zone - the S1-1 sign can be used to identify the location of the beginning of a designated school zone (see Section 7B.9).
- School Advance Crossing - if combined with an AHEAD (W16-9P) plaque or an XX FEET (W16-2P (old W20-100P) 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).
- School Crossing - if combined with a diagonal downward pointing arrow (W16-7P (old W16-7mP)) 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).

Option

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 (old W16-5mP) or W16-6P (old W16-6mP)) 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.

7B.9 School Zone Sign (S1-1) and Plaques (S4-3P, S4-7P) and END SCHOOL ZONE Sign (S5-2)



S1-1



S4-7P



S4-3P

OR



W16-5P (Optional)
(old W16-5mP)

OR



W16-6P (Optional)
(old W16-6mP)

Standard

If a school zone has been designated under State or local statute, a School (S1-1) sign shall be installed to identify the beginning point(s) of the designated school zone (see Figure 7B-3).

Option

A School Zone (S1-1) sign may be supplemented with a SCHOOL (S4-3P) plaque.

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

The downstream end of a designated school zone may be identified with an END SCHOOL ZONE (S5-2) sign (see Figure 7B-3).

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 (old W16-5mP) or W16-6P (old W16-6mP)) 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.

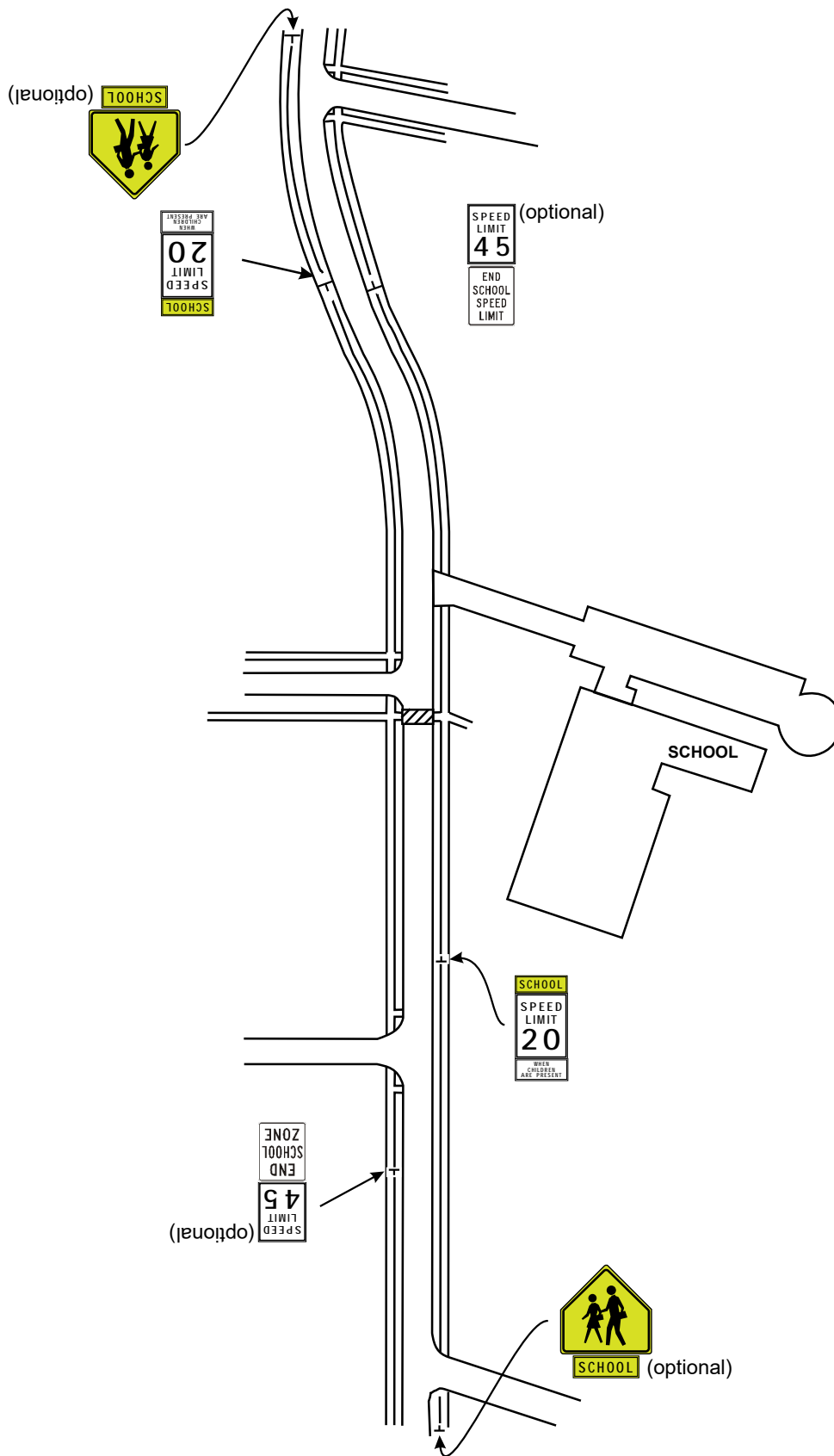
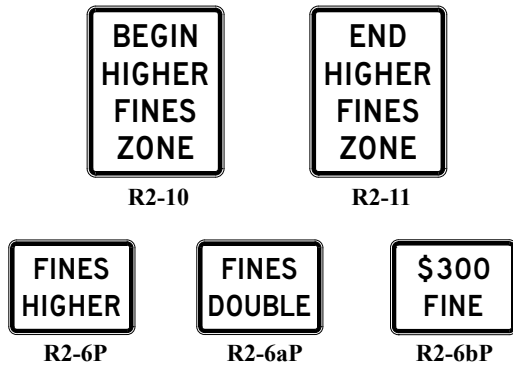


Figure 7B-3. Example of Signing for a Higher Fines School Zone with a School Speed Limit

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



Guidance

Where increased fines are imposed for traffic violations within a designated school zone, a BEGIN HIGHER FINES ZONE (R2-10) sign or a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or \$XX FINE (R2-6bP) plaque (see Figure 2B-3) should be installed as a supplement to the School Zone (S1-1) sign to identify the beginning point of the higher fines zone (see Figures 7B-2 and 7B-3).

Option

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 Section 7B-15) specifying the times that the higher fines are in effect,
- B. A WHEN CHILDREN ARE PRESENT (S4-2P) plaque (see Section 7B-15), or
- C. A WHEN FLASHING (S4-4P) plaque (see Section 7B-15) if used in conjunction with a yellow flashing beacon.

Standard

Where a BEGIN HIGHER FINES ZONE (R2-10) sign or a FINES HIGHER (R2-6P) plaque supplementing a School Zone (S1-1) sign is posted to notify road users of increased fines for traffic violations, an END HIGHER FINES ZONE (R2-11) sign 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).

Support

The FINES HIGHER plaque may be used when both the beginning and the ending of a school speed zone are signed.

Minnesota Statute 169.14, subd. 5a (d) states:

“ ... a person who violates a speed limit established under this subdivision is assessed an additional surcharge equal to the amount of the fine imposed for the violation, but not less than \$25.”

7B.11 School Advance Crossing Assembly



Standard

The School Advance Crossing assembly shall consist of a School (S1-1) sign supplemented with an AHEAD (W16-9P) plaque or an XX FEET (W16-2P or W16-2aP) plaque.

Except as provided in paragraph one of the following Option, 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).

Option

The School Advance Crossing assembly may be omitted (see Figure 7B-5) where a School Zone (S1-1) sign (see Section 7B.9) is installed to identify the beginning of a school zone in advance of the School Crossing assembly.

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.

7B.12 School Crossing Assembly



S1-1



W16-7p
(old W16-7mP)

Standard

If used, the School Crossing assembly 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 (old W16-7mP)) plaque to show the location of the crossing.

The School Crossing assembly shall not be used at crossings other than those adjacent to schools and those on established school pedestrian routes.

The School Crossing assembly shall not be installed on approaches controlled by a STOP or YIELD sign or a traffic signal.



S4-3P



R1-6a

OR



R1-6c

Option

The In-Street Pedestrian Crossing (R1-6a or R6-c) sign (see Section 2B.12) or the In-Street Schoolchildren Crossing (R1-6b or R1-6c) sign may be used at unsignalized school crossings. If used at a school crossing, a 12 x 4-inch SCHOOL (S4-3P) plaque may be mounted above the sign. The STATE LAW legend on the R1-6 series signs may be omitted.

The Overhead Pedestrian Crossing (R1-9 or R1-9a) sign (see Section 2B.12) 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.

Standard

If an In-Street Pedestrian Crossing sign or an In-Street Schoolchildren Crossing sign is placed in the roadway, the sign support shall comply with the mounting height and breakaway special mounting support requirements for In-Street Pedestrian Crossing (R1-6 or R1-6a) signs (see Section 2B.12).

The In-Street Pedestrian Crossing sign, the In-Street Schoolchildren Crossing sign, and the Overhead Pedestrian Crossing sign shall not be used at signalized locations.

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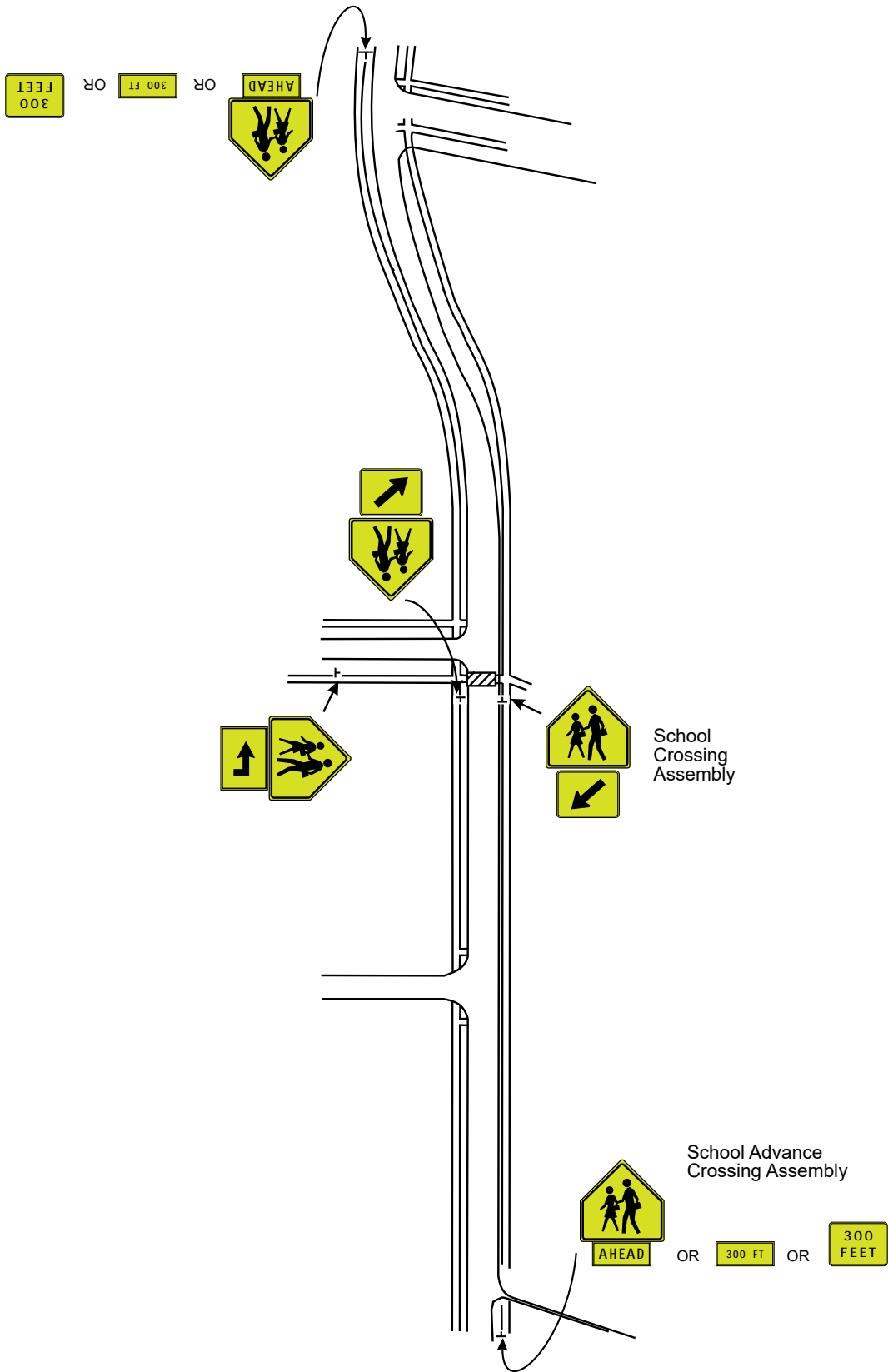


Figure 7B-4. Example of Signing for a School Crossing outside of a School Zone

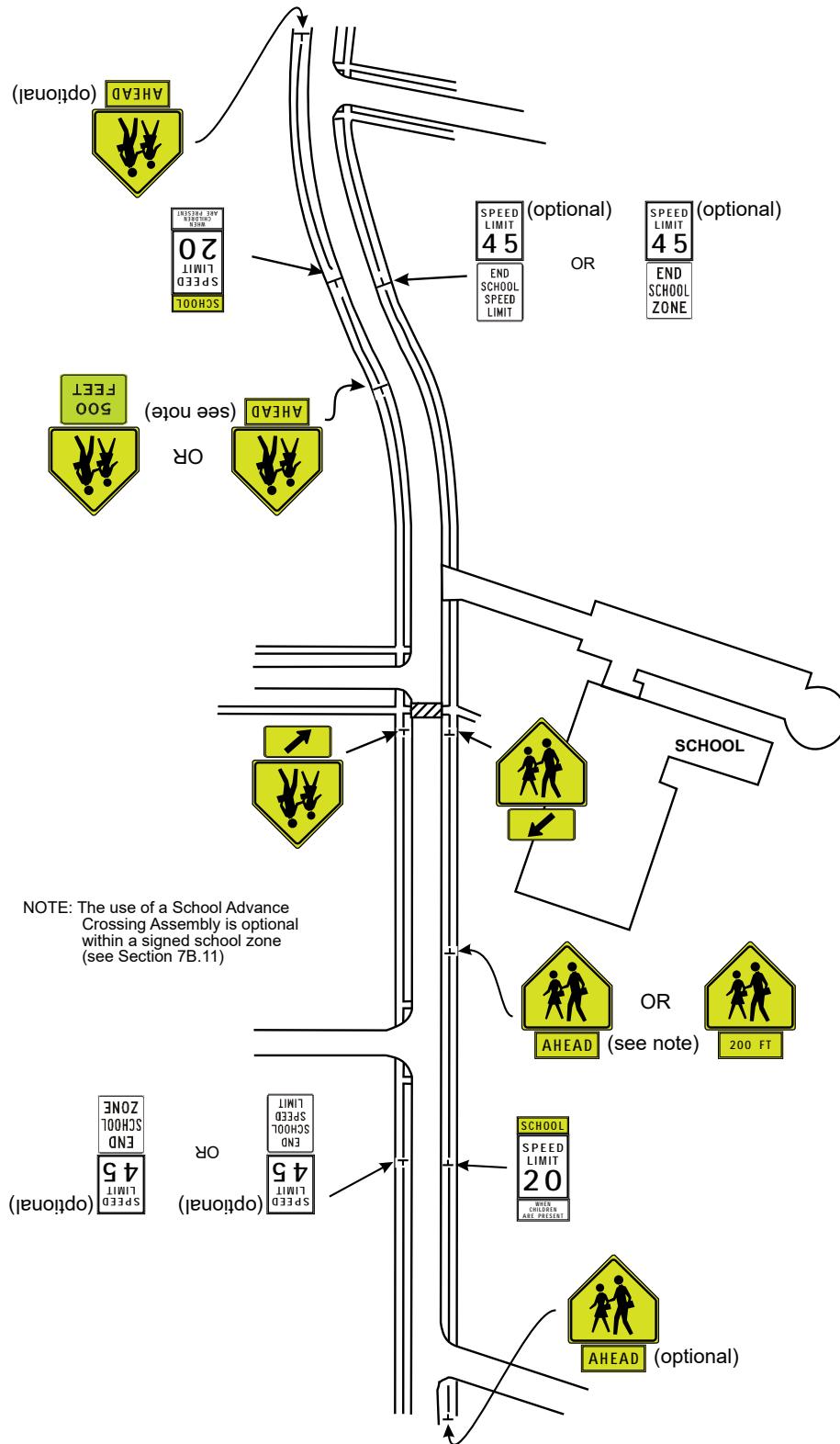


Figure 7B-5. Example of Signing for a School Zone with a School Speed Limit and a School Crossing

7B.13 School Bus Stop Ahead Sign (S3-1)

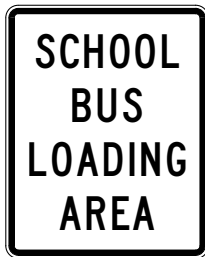


S3-1

Standard

The School Bus Stop Ahead (S3-1) sign shall be installed in advance of locations where a school bus, when stopped to pick up or discharge passengers, is not visible for an adequate distance and where there is no opportunity to relocate the school bus stop to provide adequate sight distance. See Table 2C-4 for adequate sight distances.

7B.13.1 SCHOOL BUS LOADING AREA Sign (S3-X1)



S3-X1

Standard

The School Bus Loading Area sign shall be used to clearly identify an area to both motorists and bus drivers. It shall be used when there is sufficient turnout width or turnout space available to accommodate such a loading area, and the local school authorities have requested the loading area. This loading area shall not be located within a designated and marked left or right turn lane nor in such a position as obstruct the view of other motorists or to create a hazard on the roadway. The sign shall be installed at the beginning of the loading area.

The following are criteria for the establishment of a school bus loading area:

1. Roadway shoulders must be wide enough to accommodate the full width of the bus.
2. There must be sufficient space beside the bus for passengers to stand safely during loading and unloading.

3. No loading area shall be established adjacent to an obstruction such as guardrail, culvert, mailboxes, etc.
4. No loading area shall be permitted in a designated and marked turn lane.
5. No loading area shall be located such that passengers are required to cross the roadway on the way to or from the bus.
6. The local school districts shall keep the appropriate road authority informed about plans to add or delete loading areas.

Option

Refer to Minnesota Statute 169.443 and 169.444 for requirements associated with the use of this sign.

7B.14 SCHOOL BUS TURN AROUND Sign (S3-2M old S3-2a)

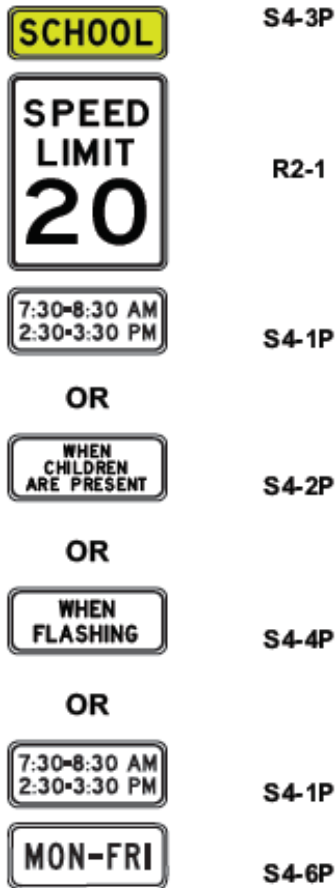


S3-2M (old S3-2a)

Option

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

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



Standard

A School Speed Limit assembly or a School Speed Limit (S5-1) sign shall be used to indicate the speed limit where a reduced school speed limit zone has been established based upon an engineering study or where a reduced school speed limit is specified for such areas by statute. The School Speed Limit assembly or School Speed Limit sign shall be placed at or as near as practical to the point where the reduced school speed limit zone begins (see Figures 7B-3 and 7B-5). It shall be used in conjunction with the School Advance Warning sign (see Section 7B.8).

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

Guidance

Where increased fines are imposed for traffic violations within a reduced school speed limit zone, a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or \$XX FINE (R2-6bP) plaque (see Figure 2B-3) should be installed as a supplement to the reduced school speed limit sign to notify road users.

Standard

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

Option

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

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

Guidance

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

Standard

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

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

Option

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

Guidance

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.

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.

If supplemental plaques S4-1P or S4-2P are used to indicate the periods during which the school speed limit is in effect, considerations should be given to increasing the sign sizes to provide improved legibility. Section 2A.13, Table 7B-1 provides guidance regarding larger signs.

Standard

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

Option

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.

A Speed Limit Sign Beacon (see Section 4L.4) also may be used, with a WHEN FLASHING legend, to identify the periods that the school speed limit is in effect.

Support

Under the provisions of Minnesota Statutes, Section 169.14, Subd. 5a, the Minnesota Department of Transportation has developed the publication “A Guide to Establishing Speed Limits in School Zones” describing the procedures for establishing school speed limits in Minnesota (see Chapter 7E).

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



S4-5



S4-5a

Guidance

A Reduced School Speed Limit Ahead (S4-5, S4-5a) sign 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.

Standard

If used, the Reduced School Speed Limit Ahead sign shall be followed by a School Speed Limit sign or a School Speed Limit assembly.

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.

7B.17 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 8:00 AM to 5:00 PM School Days Only;
- B. No Stopping 8:00 AM to 5:00 PM School Days Only;
- C. 5 Min Loading 8:00 AM to 5:00 PM School Days Only; and
- D. No Standing 8:00 AM to 5:00 PM School Days Only.

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

PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

Chapter 7C. MARKINGS

7C.1 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 a very effective means of conveying certain regulations, guidance, and warnings that could not otherwise be made clearly understandable.

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.

7C.2 Crosswalk Lines

Guidance

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; or 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).

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 or YIELD sign.

The engineering study should consider the number of lanes, the presence of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic (ADT), the posted or statutory speed limit or 85th percentile speed, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors.

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

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.

7C.3 Pavement Word, Symbol, and Arrow Markings

Option

If used, 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 10 feet or more in height.

Support

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

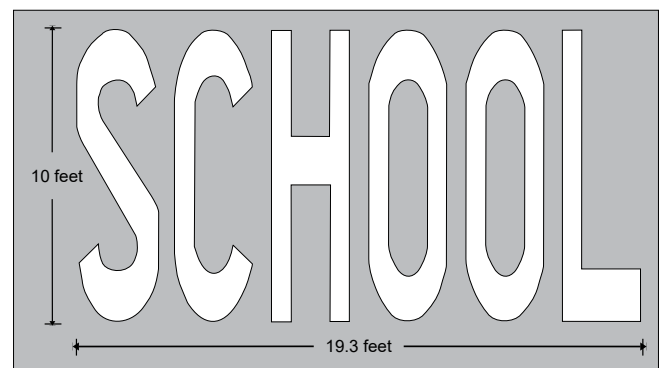


Figure 7C-1. Two-Lane Pavement Marking of "School"

PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

Chapter 7D. Crossing Supervision

7D.1 Types of Crossing Supervision

Support

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.

Information regarding the organization, administration and operation of a school safety patrol program is contained in “AAA School Safety Patrol Operations Manual” (see Section 1A.11).

7D.2 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 must be created (See Section 7A-3) and where authorized by law.

Adult crossing guards may act as a school bus flagger (see Section 7F).

7D.3 Qualifications of Adult Crossing Guards

Support

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

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;
- J. An overall sense of responsibility for the safety of students; and
- K. Completion of an official training program.

7D.4 Uniform of Adult Crossing Guards

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.2.

Compliance Date: December 31, 2011

7D.5 Operating Procedures for Adult Crossing Guards

Standard

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.

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

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

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.

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

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.

PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS
Chapter 7E. Speed Limits in School Zones

7E.1 Establishing Speed Limits in School Zones

Support

Minnesota Statute 169.14 Subd. 5a discusses speed zoning in school zones. “A Guide to Establishing Speed Limits in School Zones (MnDOT 2012 Edition)” <https://www.dot.state.mn.us/speed/> provides procedures for establishing school zone speed limits.

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PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS
Chapter 7F. School Bus Flagger

**7F.1 Operating Procedures for Adult
School Bus Flaggers**

Option

Adult school bus flaggers may be utilized to control buses and vehicular traffic at school entrances and exits to allow buses to enter or exit a street or highway having a speed limit of 35 miles per hour or less as per MN Statute 169.06 Subd. 4.

Standard

Adult school bus flaggers shall follow the same procedures and equipment standards as in Section 7D.

Guidance

A Multi-lane roadway should utilize additional school bus flaggers.

Mn Rev. 6