

TRAFFIC CONTROLS FOR SCHOOL ZONES

PART 7 OF THE UTAH
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES



STATE OF UTAH

DEPARTMENT OF TRANSPORTATION

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In Cooperation with:

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TRAFFIC CONTROLS FOR SCHOOL ZONES
PART 7 OF THE UTAH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

PURPOSE

Support:

- 01 To assure uniform design and application of all types of traffic control devices, Utah Code Annotated (UCA) Section 41-6a-301, requires the Utah Department of Transportation to create a rule establishing a manual and specifications for a uniform system of traffic control devices. The State of Utah adopts its manual by administrative rule (Utah Administrative Code R920-1-1), which is the Utah Manual on Uniform Traffic Control Devices (MUTCD). In addition, UCA Section 41-6a-301(1), requires the Utah Department of Transportation to create a rule establishing a manual and specifications for a uniform system of traffic control devices, school crossing guards, and child access routing plans (referred to herein as a “Student Neighborhood Access Program” or SNAP plans) for School Zones. This Manual satisfies that requirement.
- 02 The intent of this Manual is to standardize, as much as possible, applications of traffic control devices and crossing guards in School Zones on all public highways in the State of Utah. As specified in UCA 41-6a-302, the requirements of this Manual apply to all jurisdictions in Utah.
- 03r This Manual is divided into sections that correspond to the applicable sections in the National MUTCD.
- 04r The FHWA final rule established an effective date of June 13, 2012 for Revisions 1 and 2 of the 2009 Edition of the National MUTCD. This Manual replaces Chapter 7 of the National MUTCD.
- 05 For more information concerning the use and intent of this Manual please contact the Safe Routes to School Coordinator at the Utah Department of Transportation (See Appendix F for contact information).

Standard:

- 06r **Where differences occur between the National MUTCD and this Manual, in language or intent, this Manual shall take precedence.**
- 07 **When used in this Manual, the text headings shall be defined as follows:**
- A. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All standard statements are labeled, and the text appears in bold type. The verb “shall” is typically used. The verbs “should” and “may” are not used in Standard statements. Standard statements are sometimes modified by Options.**
- B. Guidance—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbolded type. The verb “should” is typically used. The verbs**

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“shall” and “may” are not used in Guidance statements. Guidance statements are sometimes modified by Options.

- C. Option**—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometime contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in unbolded type. The verb “may” is typically used. The verbs “shall” and “should” are not used in Option statements.
- D. Support**—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbolded type. The verbs “shall,” “should,” and “may” are not used in Support statements.

08 Except as provided in Paragraph 09, when a non-compliant traffic control device is being replaced or refurbished because it is damaged, missing, or no longer serviceable for any reason, it shall be replaced with a compliant device.

Option:

- 09 A** damaged, missing, or otherwise non-serviceable device that is non-compliant may be replaced in kind if engineering judgment indicates that:
 - A.** One compliant device in the midst of a series of adjacent non-compliant devices would be confusing to road users; and/or
 - B.** The schedule for replacement of the whole series of non-compliant devices will result in achieving timely compliance with the MUTCD.

Standard:

10r Any proposed deviation from the intent of this Part 7 of the MUTCD, or use of any alternative device, shall be reviewed by the UDOT Engineer for Traffic and Safety (see Appendix F for contact information) and approved prior to implementation/installation.

CHAPTER 7A. GENERAL

Section 7A.01 Need for Standards

Standard:

- 01r **For the purposes of this Manual, a school shall be considered an elementary school if it includes any grade from kindergarten to fifth grade.**
- 02 **In accordance with UCA 53A-1a-108(2), each public school, in consultation with its local school board, shall establish a School Community Council at the school building level. Details concerning the makeup of the School Community Council are outlined in UCA 53A-1a-108.**
- 03 **Among other responsibilities outlined in UCA 53A-1a-108(3)(a), School Community Councils shall advise and make recommendations to the school and district administrators regarding their school's SNAP plan for each elementary, middle, and junior high school within the district. The school administrator shall submit the SNAP plans to the District School Traffic Safety Committee. The SNAP plan shall be prepared in accordance with UCA 53A-3-402. The School Community Council shall meet annually as a minimum.**
- 04 **Concerns or recommendations from the public regarding school traffic safety shall be submitted to the School Community Council for consideration and recommendation to the school administrator.**

Option:

- 05 **The School Community Council may establish subcommittees as needed to aid school administrators in preparation of the SNAP plans for each district or school.**

Standard:

- 06 **UCA Section 53A-3-402(17), requires that each school board shall establish a School Traffic Safety Committee at the district level, composed of members from schools, PTAs, the city or county, state or local law enforcement, and UDOT or local traffic engineering organizations.**

Option:

- 07 **A high school administrator may also prepare a SNAP plan if recommended by the School Community Council.**

Standard:

- 08r **Each SNAP plan shall be reviewed annually by the district's School Traffic Safety Committee. After review by the Committee, the plan shall be sent to the appropriate UDOT Region office and local jurisdiction(s) before July 1 of each year (See Appendix F for UDOT Region contact information). The SNAP plan shall be sent by the elementary principal to parents or guardians whose children attend an elementary school at the beginning of each school year or after a child begins to attend an elementary school during a school year.**
- 09 **Each elementary school shall, as a minimum, present a traffic safety program to its students annually. The program shall include instruction on safe pedestrian and bicycle behavior and the limitations of drivers and traffic control devices.**

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10 **If a school provides hazardous busing for students within a geographical area, an alternative walking route shall not be shown on the SNAP plan in that area.**

Section 7A.02 School Routes and Established School Crossings

Standard:

01r **The school administrator for each elementary school shall prepare and update a SNAP plan annually. The plan shall include the following information:**

A. A map identifying:

- 1. **The school location; and,**
- 2. **Existing traffic controls (STOP and YIELD signs, signals); and,**
- 3. **Location of school crosswalks; and,**
- 4. **Crossing guard locations; and,**
- 5. **Rail line crossings; and,**
- 6. **Established School Zones; and,**
- 7. **The School Routes on the street system within the walking school boundaries.**
- 8. **Boundaries shall include all students that live within 1.5 miles from the school.**

B. A text description that:

- 1. **Describes the map; and,**
- 2. **Addresses the destination loading and unloading areas for students riding the school bus, public transit, or private vehicles; and,**
- 3. **Instructs parents to walk the route with their children; and,**
- 4. **Outlines areas of concern (i.e. missing or damaged sidewalk locations, areas under construction, hazard locations, busy intersections, etc.)**

02 **The map shall be readable in black and white print.**

03r **The school administrator for each middle and junior high school shall prepare and update annually a SNAP plan. The plan shall include, as a minimum, the following:**

A. School crossings on major highways.

B. Boundaries shall include all students who live within 2 miles from school.

Support:

03a **UCA Section 53A-17a-127(1) outlines the qualifications of state funded transportation programs. These qualifications help school administrators determine the geographical extent of their school’s SNAP.**

Option:

04 **Middle and junior high school SNAP plans may include any elementary school’s SNAP plans within the middle/junior high school boundaries.**

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05 A high school administrator may also prepare a SNAP plan. High school SNAP plans may include any elementary, middle, or junior high’s SNAP plans within the high school boundaries.

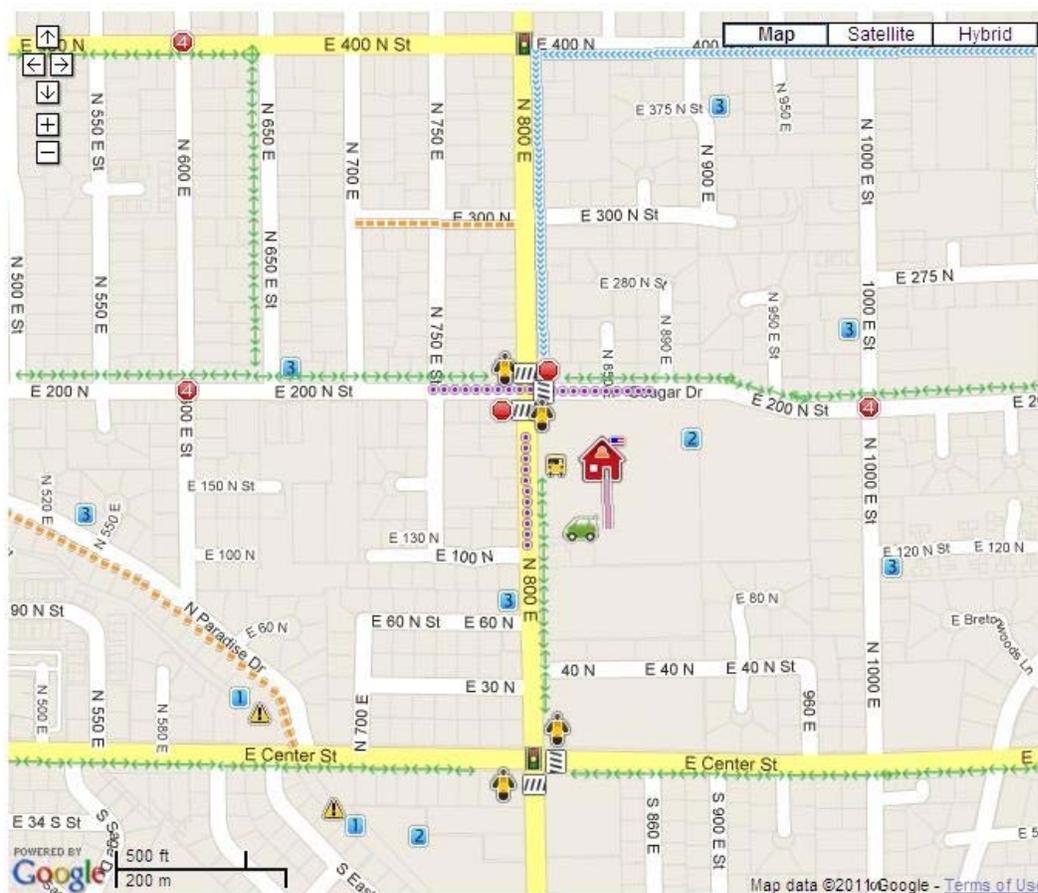
Standard:

06 **If School Zones are to be used by high schools, the schools shall prepare a SNAP plan detailing each School Zone and shall submit the SNAP plan through the district’s School Traffic Safety Committee to the appropriate UDOT Region office and local jurisdiction(s) before July 1 of each year it will be used.**

Support:

07 In formulating the SNAP plan, consideration is needed for students with disabilities and special needs. This includes both the walking route to and from school as well as the loading/unloading areas around the school. An example of a SNAP plan map is shown in Figure 7A-1.

Figure 7A-1. Example SNAP Plan Map



08 It is important to teach children to cross traffic routes where existing traffic control devices are available. Indirect routes that utilize existing traffic control devices are preferred over more direct routes that do not use the existing traffic control devices.

Guidance:

09 *School Routes should be planned to take advantage of existing traffic control devices.*

- 10 *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.*

Standard:

- 11 **School districts shall notify the UDOT Chief Railroad Engineer (see Appendix F for contact information) in writing by July 1, of the locations where School Routes cross rail lines.**
- 12 **Re-notification shall not be required if the route on a SNAP plan crossing the rail line hasn't changed since the original notification.**
- 13 **The UDOT Chief Railroad Engineer shall evaluate the crossing and provide recommendations to the school district and highway agency.**

Section 7A.03 School Crossing Control Criteria

Support:

- 01 *The frequency of adequate gaps in the traffic stream differs 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.*

Standard:

- 02 **A School Zone shall be defined as a School Crosswalk Zone, a Reduced Speed School Zone, a Narrow School Route, Abutting School Zone, or a School Bus Loading Zone. School Zones shall only be located along walking routes as indicated on the SNAP plan for elementary, middle, junior high, and high schools.**
- 03 **A School Zone shall not be installed unless warranted per this section.**
- 04 **A School Crosswalk Zone shall be defined as the area of the roadway associated with a school crosswalk, including the approach to the crosswalk and associated signing. All School Crosswalk Zones shall be designated on the SNAP plan.**

Guidance:

- R1 05r *A School Crosswalk Zone should be used if warranted per this section unless identified by an engineering study that the installation would cause safety concerns (i.e. limited sight distance, no pedestrian refuge areas at the proposed crossing, etc. See Appendix B for School Zone Protection Flowcharts in determining the applicability of School Crosswalk Zones).*

Standard:

- 06r **A School Crosswalk Zone shall be warranted when it is determined through a count that the volume of schoolchildren exceeds 10 students during a period extending from not earlier than 45 minutes before school starts until 15 minutes after school starts, or a period**

from 15 minutes before the end of school to 45 minutes after school ends, and either of the following two conditions exist:

- A. The street average daily traffic (ADT) exceeds 500 vehicles; or,
- B. The hourly traffic volume during either of the time periods above exceeds 50 vehicles.

Option:

- 07 The volume of schoolchildren in Paragraph 06 may be determined by using either existing or projected counts.

Standard:

- 08 **If projections are used to determine the volume of schoolchildren at a proposed School Crosswalk Zone, an engineering study shall be performed to verify the projections. Supporting data for the study shall include, as a minimum, enrollment information from the school district and a survey of affected parents to define anticipated usage of the proposed School Crosswalk Zone.**

- 09 **Except as provided in Paragraph 10, a school crosswalk shall not be installed within 600 feet of another school crosswalk, or a marked pedestrian crosswalk, on the same roadway. The 600 foot spacing requirement shall not apply to another crosswalk at the same intersection, or to crosswalks on legs of intersecting roadways.**

Option:

- 10 The 600 foot spacing may be reduced to a minimum of 300 feet when all of the following are met:

- A. School pedestrian volume and pedestrian flow patterns support crosswalk spacing less than 600 feet, as determined by an engineering study; and,
- B. Based upon the posted or 85th percentile speed, the required signing for each school crosswalk is able to be placed according to Appendix A with a minimum 100 foot spacing between the signs of each zone; and,
- C. Only one of the crosswalks can be a Reduced Speed School Zone crosswalk.

Guidance:

- 11 *Two school crosswalks crossing the same roadway at an intersection should be located on the minor roadway. Only one school crosswalk should cross the major roadway.*
- 12 *A school crosswalk should not be installed at any location that has inadequate stopping sight distance as indicated in the most recent edition of "A Policy on Geometric Design of Highways and Streets," American Association of State Highway and Transportation Officials (AASHTO), which edition is incorporated by reference.*

Standard:

- 13r **The signing for a School Crosswalk Zone shall include the School Advance Crossing assembly (see Section 7B.11) and the School Crossing assembly (see Section 7B.12). Signing and pavement markings for a School Crosswalk Zone shall be as shown in Appendix A, Typical Applications, Figures A3 through A8.**

- 14 **A Reduced Speed School Zone shall be defined as the area of the roadway associated with a school crosswalk where the speed limit is reduced to 20 mph, including the approach to the crosswalk and associated signing. All Reduced Speed School Zones shall be**

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designated on the SNAP plan. The reduced speed limit shall be in-force while the School Speed Limit assembly is operating.

Guidance:

15 *A Reduced Speed School Zone should be used if warranted per this section.*

Standard:

R1 16r **A Reduced Speed School Zone shall be warranted when all of the following requirements are met:**

- A. **The warrants for a School Crosswalk Zone are met (see Paragraphs 06 through 12); and,**
- B. **The posted speed limit is 50 mph or less; and,**
- C. **The Process for Warranting a Reduced Speed School Zone (Appendix B2) is met.**

Option:

16a A warranted School Crosswalk Zone (see Paragraphs 06 through 12) for use by an elementary school may be warranted as Reduced Speed School Zone if the vehicle traffic is not controlled by a traffic signal, stop sign, or roundabout, and the posted speed is greater than or equal to 30 mph without completing the warrant in Appendix C (See Process for Warranting a Reduced Speed School Zone, Appendix B2).

Standard:

R1 17r **Moved to 22b.**

18r **Except as provided in Paragraph 19 and 19a, a Reduced Speed School Zone shall not be installed or maintained on an approach to a roundabout or to an intersection controlled by a traffic signal or STOP (R1-1) sign.**

Option:

19r A Reduced Speed School Zone may be installed, or may be allowed to remain at a roundabout, signalized or stop-controlled intersections, as a mitigation measure for concerns relating to sight distance, grade, or other critical issues, as determined by an engineering study.

19a A local highway authority may create other criteria allowing a Reduced Speed School Zone at a signalized intersection under its jurisdiction.

Support:

20 The operational speed through a roundabout is usually less than 25 mph; therefore, a Reduced Speed School Zone through a roundabout usually has little effect on speed.

21 Similarly, a Reduced Speed School Zone at a signal controlled intersection is unnecessary because crossing pedestrians only enter the crosswalk when the traffic has stopped for the signal and the signal is the primary traffic control device commanding the driver's attention.

Option:

22 An Overhead School Speed Limit assembly may be used in a Reduced Speed School Zone if warranted per the requirements in this Section, Section 7B.15, and in "Requirements for Consideration of Overhead School Speed Limit Assembly in a Reduced Speed School Zone" (see Appendix B3).

- 22a An Overhead School-Pedestrian assembly may be used in a Reduced Speed School Zone if warranted per the Process for Warranting of an Overhead School-Pedestrian Assembly (See Appendix B6) and the requirements of this Section, Section 7B.15 and Section 7B.26.

Standard:

- 22b The signing for a Reduced Speed School Zone shall include the School Advance Crossing assembly (see Section 7B.11), the School Speed Limit assembly (see Section 7B.15), the School Crossing assembly (see Section 7B.12), and the END SCHOOL SPEED LIMIT (S5-3) sign (see Section 7B.18). Signing and pavement markings for a Reduced Speed School Zone shall be as shown in Appendix A, Typical Applications, Figures A9 through A15.

- 23 A Narrow School Route shall be defined as a school route on the SNAP plan where there are no continuous sidewalks and the paved shoulders of the existing highway are less than three feet wide.

- 24 A Narrow School Route shall be warranted when the School Traffic Safety Committee has determined that boundary changes, alternate access routes, or supplemental methods of transportation are not feasible. Narrow School Routes shall be reviewed by the School Traffic Safety Committee on an annual basis. The maximum length of a Narrow School Route shall be one mile in urban areas and two miles in rural areas (see Process for Evaluating the Use of a Narrow School Route, Appendix B5).

- 25r If used, the signing for a Narrow School Route (see Section 7B.21) shall include the School (S1-1) sign with the NEXT X MILE(S) (W7-3aP) plaque. Signing and marking of a Narrow School Route shall be as shown in Appendix A, Typical Applications, Figure A16.

Option:

- 26 A Narrow School Route may be used if warranted per this section (also see Appendix B5).

Guidance:

- 27 A Narrow School Route should not be installed as a permanent substitute for sidewalks or pavement widening in urban areas.

Standard:

- 28 An Abutting School Zone shall be defined as an area of the roadway adjacent to school buildings or grounds, including the approach to such areas, with no associated school crosswalk.

- 29r If used, signing for an Abutting School Zone (see Section 7B.22) shall include the School (S1-1) sign, and shall not be supplemented with the AHEAD (W16-9P) plaque (see Appendix A, Typical Applications, Figure A17).

Option:

- 30 An Abutting School Zone may be used based upon engineering judgment, and if used may be shown on the SNAP plan.

Standard:

- 31 A School Bus Loading Zone shall be defined as an area on-premise or off-premise of school property designated for the bulk loading/unloading of students from school buses, and includes all associated signing and curb markings. All School Bus Loading Zones shall be designated on the SNAP plan.

R1 | 32r **The signing for a School Bus Loading Zone (see Section 7B.23) shall include either the School Buses Only (SS1-2) symbol sign or the SCHOOL BUSES ONLY (SS1-3) sign. When a School Bus Loading Zone is used, the curb markings shall be as described in Section 7C.05.**

- 33 **Except as provided in Paragraphs 35 and 36, School Bus Loading Zones shall:**
- A. **Be used for on-premise school bus loading zones; and,**
 - B. **Be separate from private vehicle loading and unloading areas; and,**
 - C. **Be located so that students are not required to cross roadways or parking lot areas to access the school; and,**
 - D. **Be located such that buses are not required to back up; and,**
 - E. **Be at least 12 feet wide.**

34 **All newly constructed schools shall meet Paragraph 33 for on-premise School Bus Loading Zones.**

Option:

35 Existing School Bus Loading Zones may be allowed exceptions to standards B through E of Paragraph 33 if those zones are demonstrated by the School Community Council to the School Traffic Safety Committee to have unusual conditions.

36 Off-premise School Bus Loading Zones may be used if signage and markings have been coordinated with the local highway authority.

Support:

R1 | 37r Because a School Bus Loading Zone is a designated area where the bus will completely load or unload all students as opposed to a standard bus stop which is used to load/unload a relatively small number of students, it important to provide a well laid out School Bus Loading Zone. Section 7B.13 contains provisions regarding the use of the School Bus Stop Ahead (S3-1) sign and the SCHOOL BUS STOPS NEXT XX MILES (SS3-1a) sign.

Section 7A.04 Scope

Standard:

- 01 **MUTCD 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.**
- 02 **Pedestrian flags shall not be used at school crosswalks within School Zones on state routes.**

Option:

03 A local highway authority may create criteria allowing pedestrian flags in a School Zone under its jurisdiction.

Support:

04 MUTCD Sections 1A.01 and 1A.08 contain information regarding unauthorized devices and messages. MUTCD Sections 1A.02 and 1A.07 contain information regarding the application of standards. MUTCD Section 1A.05 contains information regarding the maintenance of traffic control devices. Section 1A.08 contains information regarding placement authority for traffic

control devices. MUTCD 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.

- 05r Provisions contained in MUTCD Chapter 2A and MUTCD Section 2B.06 are applicable in school areas. MUTCD Part 3 contains provisions regarding pavement markings that are applicable in school areas. MUTCD Part 4 contains provisions regarding highway traffic signals that are applicable in school areas. The School Crossing signal warrant is described in MUTCD Section 4C.06.

Standard:

- 06 **With the exception of required traffic control devices, the highway jurisdiction shall have the authority to immediately remove any signs, devices, messages, or vegetation from within its right-of-way in or near a School Zone which it deems to be confusing, distracting, or obstructing to the function of that School Zone.**
- 07 **To coordinate experimentation in School Zones statewide, local jurisdictions wishing to experiment shall submit a proposal to the UDOT Engineer for Traffic and Safety (see Appendix F for contact information). The UDOT Engineer for Traffic and Safety shall submit appropriate proposals to the Federal Highway Administration following the procedure described in MUTCD Section 1A.10.**
- 08r **The use of any FHWA Interim Approval device or pedestrian hybrid beacon in a School Zone shall be approved by the UDOT Engineer for Traffic and Safety prior to implementation.**
- 09n **A pedestrian hybrid beacon shall not be used within a Reduced Speed School Zone.**

Section 7A.05 Private Schools and Places of Higher Learning

Standard:

- 01 **Private schools and places of higher learning shall be required to meet the requirements and specifications of this Manual when requesting any feature described herein to be installed on a public right-of-way using the same age group classifications that public schools use.**
- 02 **Crosswalks for places of higher learning pedestrians shall not be signed or marked as School Zones. Any such existing facilities shall be removed and treated as pedestrian facilities as described in Parts 2 and 3 of the MUTCD.**

Option:

- 03 **Added emphasis to warning signs associated with pedestrian crosswalks may be achieved using a fluorescent yellow background, flashing beacons, or larger sign sizes (see MUTCD, Table 2C-2).**

Support:

- 04 **Charter schools are public schools.**

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CHAPTER 7B. SIGNS

Section 7B.01 Size of School Signs

Standard:

- 01 The sizes of the signs and plaques to be used on conventional roads in School Zones shall be as shown in Table 7B-1.
- 02 The Conventional Road sign size shall be used on public roads, streets, and highways unless engineering judgment determines that an oversized sign size would be more appropriate.
- 03 The Oversized sign size shall be used on expressways.

Option:

- 04r The Oversized sign size in Table 7B-1 may be used for applications that require increased emphasis, improved recognition, or increased legibility.

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Section 7B.02 Illumination and Reflectorization

Standard:

- 01 The signs used for School Zone traffic control shall be retroreflectorized or illuminated.

Section 7B.03 Position of Signs and Cones

Standard:

- 01r Position of signs and cones shall be as prescribed in Appendix A, Typical Applications, Figures A2 through A15.

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Guidance:

- 02 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.
- 03 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.
- 04 For post-mounted signs, the minimum lateral offset should be 12 feet from the edge of the traveled way. If a shoulder wider than 6 feet exists, the minimum lateral offset for post-mounted signs should be 6 feet from the edge of the shoulder.

Option:

- 05 On conventional roads in areas where it is impractical to locate a sign with the lateral offset prescribed by this Section, a lateral offset of at least 2 feet may be used.
- 06 A lateral offset of at least 1 foot from the face of the curb may be used in business commercial or residential areas where sidewalk width is limited or where existing poles are close to the curb.

Standard:

- 07 Either cones or the In-Street Schoolchildren Crossing assembly (see Section 7B.24) shall be used at school crosswalks where adult crossing guards are present, except at signalized intersections where cones shall be used.

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

Sign	Sign Designation	Section	Conventional Road	Oversized
School	S1-1	7B.11, 7B.12	36 x 36 in	48 x 48 in
School Bus Stop Ahead	S3-1	7B.13	36 x 36 in	48 x 48 in
SCHOOL BUS STOPS NEXT XX MILES	SS3-1a	7B.13	60x 36 in	78 x 48 in
SCHOOL BUS TURN AHEAD	S3-2	7B.14	36 x 36 in	48 x 48 in
Reduced School Speed Limit Ahead	S4-5, S4-5a	7B.16	36 x 36 in	48 x 48 in
SCHOOL SPEED LIMIT 20 WHEN FLASHING	S5-1	7B.15	24 x 48 in	36 x 72 in
SCHOOL 20 MPH WHEN FLASHING Sign Overhead	SS5-1a	7B.15	60 x 36 in	-
END SCHOOL SPEED LIMIT	S5-3	7B.18	24 x 30 in	36 x 48 in
School Buses Only Symbol	SS1-2	7B.23	12 x 24 in	-
SCHOOL BUSES ONLY	SS1-3	7B.23	12 x 18 in	-
Yield Here to Peds	R1-5	7B.20	36 x 36 in	36 x 36 in
Yield Here To Pedestrians	R1-5a	7B.20	36 x 48 in	36 x 48 in
In-Street Schoolchildren Crossing	RS1-6b	7B.24	12 x 36 in	-
Yield to Pedestrians Blank-out	RS1-9b	7B.26	108 x 30 in	-
Push Button to Turn On Sign	RS10-25a	7B.26	9 x 12 in	-

Plaque	Sign Designation	Section	Conventional Road	Oversized
School Time Restriction	SS1-4P	7B.15, 7B.23	12 x 6 in	-
School Days Time Restriction	SS1-5P	7B.15, 7B.23	12 x 12 in	-
ALL YEAR	S4-7P	7B.19	24 x 12 in	30 x 18 in
NEXT X MILE(S)	W7-3aP	7B.21	24 x 18 in	30 x 24 in
Turn Arrow	W16-5P	7B.25	24 x 18 in	30 x 24 in
Advanced Turn Arrow	W16-6P	7B.25	24 x 18 in	30 x 24 in
Diagonal Arrow	W16-7P	7B.12	24 x 12 in	30 x 18 in
AHEAD	W16-9P	7B.11, 7B.19, 7B.22	24 x 12 in	30 x 18 in

Figure 7B-1.r Regulatory School Zone Signs

S5-1
School Speed Limit Assembly
 (Shown with flashing beacons)

RS1-6b
In-Street Schoolchildren Crossing Sign
 (Optional)

S5-3
END SCHOOL SPEED LIMIT

SS1-2
School Buses Only Symbol Sign

R1-5 OR
Yield Here to Pedestrian Signs
 (Optional)

R1-5a
Yield Here to Pedestrians

SS1-3
SCHOOL BUSES ONLY Sign

SS5-1a
SCHOOL 20 MPH WHEN FLASHING Sign Overhead

SS1-4P
School Time Restriction Plaques
 8:00-9:00 AM
 2:40-3:40 PM

SS1-5P
SCHOOL DAYS
 8:00-9:00 AM
 2:40-3:40 PM

R8-3 or R8-3a
(NO PARKING (R8-3 or R8-3a) signs shown for reference only)

RS1-9b
Yield To Pedestrians Blank-out Sign

RS10-25a
Push Button To Turn On Sign

Figure 7B-2.r Warning School Zone Signs



S1-1

ALL YEAR

S4-7P

AHEAD

W16-9P

**School Advance
Crossing Assembly**
(Shown for year-round school)



S1-1



W16-7P

**School
Crossing Assembly**
(Shown for year-round school)



S1-1

ALL YEAR

S4-7P

Abutting School Zone Assembly
(Shown for year-round school)



S1-1

ALL YEAR

S4-7P

NEXT
1/2 MILE

W7-3aP

**Narrow School
Route Assembly**
(Shown for year-round school)



S1-1

ALL YEAR

S4-7P



W16-5P

OR



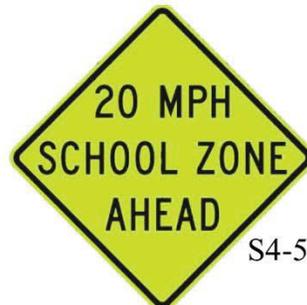
W16-6P

**School
Turn Assemblies**
(Shown for year-round school)



S4-5

OR



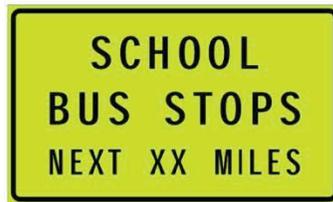
S4-5a

**Reduced School Speed Limit
Ahead Sign**



S3-1

**School Bus Stop
Ahead Sign**



SS3-1a

**SCHOOL BUS STOPS
NEXT XX MILES Sign**



S3-2

**SCHOOL BUS TURN
AHEAD Sign**

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Standard:

- 08 **Cones shall be a minimum 28 inches high, orange in color, and retroreflectorized.**
- 09 **Retroreflectorization of cones that are 28 to 36 inches in height shall be provided with a 6 inch wide white band located 3 to 4 inches from the top of the cone and an additional 4 inch wide white band located approximately 2 inches below the 6 inch band.**

Support:

- 10 **MUTCD Section 6F.64 contains provisions regarding retroreflectorization of cones that are greater than 36 inches high.**

Standard:

- 11r **When cones or the In-Street Schoolchildren Crossing assembly, are used, they shall:**
- A. **Be placed on the centerline of the roadway between opposing traffic lanes on each side of the school crosswalk (see Appendix A, Typical Applications, Figures A2-A5 and A7-A14); and,**
 - B. **Be placed on and adjacent to the edge of an island and next to the upstream side of the crosswalk for each direction of traffic (see Appendix A, Typical Applications, Figures A2, A6 and A15); and,**
 - C. **Not be placed on lane lines separating traffic in the same direction; and,**
 - D. **Not be placed in travel lanes; and,**
 - E. **Not be supplemented with auxiliary flags, signs, or lights.**
- 12 **The In-Street Schoolchildren Crossing assembly shall be the only in-street sign used in School Zones.**

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Section 7B.04 Height of Signs**Standard:**

- 01 **The minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement, of signs installed at the side of the road in rural areas shall be 5 feet (see MUTCD Figure 2A-2).**
- 02 **The minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of signs installed at the side of the road in business, commercial, or residential areas where parking or pedestrian movements are likely to occur, or where the view of the sign might be obstructed, shall be 7 feet (see MUTCD Figure 2A-2).**

Option:

- 03 **The height to the bottom of a secondary sign mounted below another sign may be 1 foot less than the height specified in Paragraphs 01 and 02.**

Standard:

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

06 **When the Yield Here To Pedestrians (R1-5, R1-5a) sign is used (see Section 7B.20), the height of the bottom of the School Crossing assembly (see Section 7B.12) shall be no less than the top of the Yield Here To Pedestrians (R1-5, 1-5a) sign. See Appendix A, Typical Applications, Figures A8 and A9.**

07 **If a Yield Here To Pedestrians (R1-5, R1-5a) sign is used on the approach, the Yield Here To Pedestrians (R1-5, R1-5a) sign shall not be placed on the same post as the School Crossing assembly (see Section 7B.12).**

Support:

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

Section 7B.05 Installation of Signs

Support:

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

Section 7B.06 Lettering

Support:

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

Section 7B.07 Fluorescent Yellow-green Color for School Signs

Standard:

01 **Except as approved by the UDOT Engineer for Traffic and Safety (see Appendix F for contact information), the fluorescent yellow-green background shall not be used for any signs (in School Zones or otherwise) other than those listed in Paragraph 02.**

02r **The following signs or portion of signs shall have a fluorescent yellow-green background with black legend and border (see Figures 7B-1 and 7B-2):**

- A. **School (S1-1) sign; and,**
- B. **School Bus Stop Ahead (S3-1) sign; and,**
- C. **SCHOOL BUS STOPS NEXT XX MILES (SS3-1a) sign; and,**
- D. **SCHOOL BUS TURN AHEAD (S3-2) sign; and,**
- E. **Reduced School Speed Limit Ahead (S4-5, S4-5a) sign; and,**
- F. **The SCHOOL portion of the SCHOOL SPEED LIMIT 20 WHEN FLASHING (S5-1) sign; and,**
- G. **The SCHOOL portion of the SCHOOL 20 MPH WHEN FLASHING Sign Overhead (SS5-1a); and,**
- H. **The outer background of the In-Street Schoolchildren Crossing (RS1-6b) sign; and,**
- I. **ALL YEAR (S4-7P) plaque; and,**
- J. **NEXT X MILE(S) (W7-3aP) plaques; and,**
- K. **Turn Arrow (W16-5P) plaque; and,**
- L. **Advanced Turn Arrow (W16-6P) plaque; and,**
- M. **Diagonal Arrow (W16-7P) plaque; and,**
- N. **AHEAD (W16-9P) plaque.**

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03 All new installations of the signs in Paragraph 02, including replacements, shall meet the fluorescent yellow-green requirements.

Option:

04 Added emphasis to warning signs other than those listed in Paragraph 02 may be achieved using a fluorescent yellow background.

Section 7B.08r Not Used

Section 7B.09r Not Used

Section 7B.10r Not Used

Section 7B.11 School Advance Crossing Assembly

Standard:

01r A School Advance Crossing assembly (See Figure 7B-2) shall be used in advance of the first School Crossing assembly (see Section 7B.12) that is encountered in each direction as traffic approaches a school crosswalk (see Appendix A, Typical Applications, Figures A3 through A15).

02 The School Advance Crossing assembly shall consist of the School (S1-1) sign with a supplementary AHEAD (W16-9P) plaque.

03 A supplementary ALL YEAR (S4-7P) plaque (see Section 7B.19) shall be installed between the School (S1-1) sign and the AHEAD (W16-9P) plaque for year-round schools.

04r If a school crosswalk is installed at a roundabout, the School Advance Crossing assembly shall be installed on all approaches to the roundabout (See Appendix A, Typical Applications, Figures A6 and A15).

05r A reduced size in-street School Advance Crossing assembly (see National MUTCD Section 7B.11) shall not be used in the roadway in advance of school crosswalks.

Section 7B.12r School Crossing Assembly (S1-1 with W16-7P)

Standard:

01 The School Crossing assembly (see Figure 7B-2) shall be installed at the school crosswalk, or as close to it as possible. The School Crossing assembly shall not be installed on approaches controlled by a STOP (R1-1) or YIELD (R1-2) sign.

02 The School Crossing assembly shall consist of a School (S1-1) sign, supplemented directly below by a downward pointing Diagonal Arrow (W16-7P) plaque to show the location of the crossing.

03r A reduced size in-street School sign or assembly (see National MUTCD Section 7B.12) shall not be used in the roadway at school crosswalks.

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R1 **Section 7B.13r School Bus Stop Signs (S3-1, SS3-1a)**

Guidance:

- 01 *The School Bus Stop Ahead (S3-1) sign (see Figure 7B-2) 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.*

Option:

- 02 The School Bus Stop Ahead (S3-1) sign may be installed in advance of school bus stops along high speed roadways with limited refuge area for waiting students.

- R1 03n In rural areas where there is a need to warn drivers to watch for three or more school bus stops in the next highway section, the SCHOOL BUS STOPS NEXT XX MILES (SS3-1a) sign may be installed in place of the School Bus Stop Ahead sign (S3-1).

Guidance:

- 04n *The distance legend for the SCHOOL BUS STOPS NEXT XX MILES (SS3-1a) sign should not exceed 15 miles.*
- 05n *The SCHOOL BUS STOPS NEXT XX MILES (SS3-1a) sign should be repeated in decreasing increments of approximately 5 miles.*

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

Option:

- 01 The SCHOOL BUS TURN AHEAD (S3-2) sign (see Figure 7B-2) 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 (S5-1 with Speed Limit Sign Beacons) and Overhead School Speed Limit Assembly (SS5-1a with Speed Limit Sign Beacons)

Standard:

- R1 01r **A School Speed Limit assembly (SCHOOL SPEED LIMIT 20 MPH WHEN FLASHING (S5-1) sign with Speed Limit Sign Beacons, (see Figure 7B-1)) shall be used to indicate the speed limit where a Reduced Speed School Zone has been established. The School Speed Limit assembly shall establish the point where the reduced speed zone begins (See Appendix A, Typical Applications, Figures A9 through A15).**
- 02r **A School Speed Limit assembly (SCHOOL SPEED LIMIT 20 MPH WHEN FLASHING (S5-1) sign with Speed Limit Sign Beacons, (see Figure 7B-1)) shall be in substantial conformance with the specifications of UDOT Standard Drawings SN2 series (see the UDOT website www.udot.utah.gov). The Speed Limit Sign Beacons of the School Speed Limit assembly shall be vertically aligned and flash yellow alternately.**
- 03r **If used, the Overhead School Speed Limit assembly (SCHOOL 20 MPH WHEN FLASHING Sign Overhead (SS5-1a) (see Appendix D for sign design) with Speed Limit**

Sign Beacons (see Figure 7B-1)) shall be used over the travel lanes with a post-mounted School Speed Limit assembly and shall be in substantial conformance with the specifications of UDOT Standard Drawing SN 3. The Speed Limit Sign Beacons of the Overhead School Speed Limit assembly shall be horizontally aligned and flash yellow alternately.

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04r **The school speed limit displayed on the S5-1 and SS5-1a signs shall be 20 mph. Power for the flashing beacons shall be the responsibility of the local jurisdiction.**

Option:

05 An Overhead School Speed Limit assembly may be used in a Reduced Speed School Zone if warranted per the requirements in Section 7A.03, this Section, and in “Requirements for Consideration of Overhead School Speed Limit assembly in a Reduced Speed School Zone” (see Appendix B3).

06r Not used.

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Standard:

07 **Local jurisdictions shall be responsible for applying the warrant process, funding, and maintenance of an Overhead School Speed Limit assembly on non-state routes.**

08 **On state routes, requests from school districts or local jurisdictions for an Overhead School Speed Limit assembly shall be submitted to the appropriate UDOT Region office (see Appendix F for contact information). After screening each request using the Requirements for Consideration of Overhead School Speed Limit assembly in a Reduced Speed School Zone process (see Appendix B3), the Region office shall forward requests that meet the criteria to the UDOT Engineer for Traffic and Safety for final determination. If it is determined that the Overhead School Speed Limit assembly will be installed, the Traffic and Safety Division shall:**

- A. **Establish priorities for funding the Overhead School Speed Limit assembly request; and,**
- B. **Program Overhead School Speed Limit assembly projects according to priorities and available funding; and,**
- C. **Initiate agreements for each location with the following responsibilities:**
 - 1. **UDOT for design and installation; and,**
 - 2. **UDOT for maintenance; and,**
 - 3. **Local jurisdiction for power; and,**
 - 4. **Local jurisdiction and/or school district for funding of Overhead School Speed Limit assemblies for new schools.**

09 **Overhead School Speed Limit assemblies shall not be installed in a Reduced Speed School Zone on an approach to a signalized intersection.**

Option:

10 An existing Overhead School Speed Limit assembly on an approach to an intersection upgraded to signalized control may be allowed to remain in place based on sight distance, grade, or other critical issues as determined by an engineering study.

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Standard:

- 11 **If an existing Overhead School Speed Limit assembly is allowed to remain at an intersection upgraded to signalized control, it shall be located such that the required stopping and decision sight distances are provided at the signal per the AASHTO publication, *A Policy on Geometric Design of Highways and Streets*, current edition. If these sight distances are not provided with the Overhead School Speed Limit assembly in the existing location, and it is still desirable to retain the Overhead School Speed Limit assembly, it shall be relocated to a position that provides the proper sight distance.**
- 12 **The in-force period for a school reduced speed limit shall be:**
- A. **A time extending from not earlier than 45 minutes before school starts until warranted demand ceases (no later than 15 minutes after school begins); and,**
 - B. **A time extending from the beginning of the warranted demand (no earlier 15 minutes prior to the end of school), to not later than 45 minutes after school ends; and,**
 - C. **Time frames similar to A and B for other school programs throughout the day when the minimum conditions for a Reduced Speed School Zone exist (see Section 7A.03).**
- 13 **The School Speed Limit Sign Beacons shall not flash continuously throughout the school day.**
- 13a **The School Speed Limit Sign Beacons shall be interlocked with any other flashing beacons within a Reduced Speed School Zone such that the other flashing beacons shall not operate when the School Speed Limit beacons are active.**
- 14 **At installations requiring an adult crossing guard (See Section 7D.02), the School Speed Limit Sign Beacons shall be operated manually and only while the crossing guard is present. Installations which do not require adult crossing guards shall be operated by an automatic timer with a programmable yearly cycle or other reliable method to ensure required operation as outlined in Paragraph 12 above. At such installations, the local jurisdiction shall be responsible to program and operate the automatic timer or alternate method.**
- 15r **The following plaques shall not be used with the School Speed Limit Assembly:**
- A. **X:XX TO X:XX AM X:XX TO X:XX PM (S4-1P) plaque; and,**
 - B. **WHEN CHILDREN ARE PRESENT (S4-2P) plaque; and ,**
 - C. **School Time Restrictions (SS1-4P) plaque; and,**
 - D. **School Days Time Restriction (SS1-5P) plaque.**

Option:

- 16 **Changeable message signs that display the speed of approaching vehicles (see MUTCD Section 2B.13) may be used in conjunction with a School Zone.**

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

Guidance:

- 01 *Except as provided in Paragraph 2, a Reduced School Speed Limit Ahead (S4-5, S4-5a) sign (see Figure 7B-2) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 20 mph.*

Option:

- 02 Where Overhead School Speed Limit assemblies (see Section 7B.15) are used, Reduced School Speed Limit Ahead signs may be omitted.
- 03r A Reduced School Speed Limit Ahead (S4-5, S4-5a) sign may be used to inform road users of a reduced speed zone where the speed limit is being reduced by 15 mph, 20 mph or where engineering judgment indicates that advance notice would be appropriate.

Standard:

- 04r **If used, the Reduced School Speed Limit Ahead (S4-5, S4-5a) sign shall be installed in advance of a Reduced Speed School Zone (See Appendix A, Typical Applications, Figures A9 through A15).**
- 05 **The speed limit displayed on the Reduced School Speed Limit Ahead (S4-5, S4-5a) sign shall be 20 mph.**

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

Standard:

- 01r **No parking signs shall be used to restrict parking in the approach to, and beyond, school crosswalks in School Zones during school hours including loading and unloading periods (see Appendix A, Typical Applications, Figures A3 through A15).**
- 02r **No parking signs shall be used to restrict parking upon the side(s) of the highway designated as a Narrow School Route for a minimum of 45 minutes before school starts to 45 minutes after school ends.**

Option:

- 02a The School Time Restriction (SS1-4P) plaque or the School Days Time Restriction (SS1-5P) plaque (see Appendix D for sign designs) may be used to supplement the no parking signs except at the approach to, or beyond, the school crosswalk.
- 03r No parking signs may be used to restrict parking along approaches to the School Advance Crossing assembly (see Section 7B.11), and the School Speed Limit assembly (see Section 7B.15). No parking signs may also be restrict parking upon all streets immediately abutting the school grounds during school hours including loading and unloading periods.

Support:

- 04 Refer to MUTCD Sections 2B.46, 2B.47, and 2B.48 for details of signing and parking regulations.

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Section 7B.18 END SCHOOL SPEED LIMIT Sign (S5-3)**Standard:**

- R1 | 01r The end of a Reduced Speed School Zone shall be marked with an END SCHOOL SPEED LIMIT (S5-3) sign (see Figure 7B-1). The END SCHOOL SPEED LIMIT (S5-3) sign shall be located 50 feet on the downstream side of the school crosswalk, on the downstream side of the intersection (as practical), or 50 feet beyond the YIELD (R1-2) sign in a roundabout as part of a Reduced Speed School Zone (see Appendix A, Typical Applications, Figures A9 through A15).
- 02 The END SCHOOL SPEED LIMIT (S5-3) sign shall be mounted individually on a separate post.

Section 7B.19 ALL YEAR Plaque (S4-7P)**Standard:**

- R1 | 01r A supplementary ALL YEAR (S4-7P) plaque (see Figure 7B-2) shall be used in conjunction with a year-round school as part of the School Advanced Crossing assembly (see Section 7B.11), the Narrow School Route assembly (see Section 7B.21), the Abutting School Zone (see Section 7B.22), and the School Supplemental Turn assembly (see Section 7B.25).
- 02 When the ALL YEAR (S4-7P) plaque is used as part of the:
- A. School Advance Crossing assembly, it shall be placed between the School (S1-1) sign and the AHEAD (W16-9P) plaque.
 - B. Narrow School Route assembly, it shall be placed between the School (S1-1) sign and the NEXT X MILE(S) (W7-3aP) plaque.
 - C. Abutting School Zone assembly, it shall be placed below the School (S1-1) sign.
 - D. School Turn assemblies, it shall be placed between the School (S1-1) sign and the corresponding Turn Arrow (W16-5P) or the Advance Turn Arrow (W16-6P) plaque.

Section 7B.20 Yield Here To Pedestrian Sign (R1-5, R1-5a)**Option:**

- R1 | 01r The Yield Here To Pedestrian (R1-5, R1-5a) sign may be used in advance of an uncontrolled midblock multi-lane school crosswalk.

Standard:

- 02r If used, the Yield Here To Pedestrian (R1-5, R1-5a) sign shall be placed 20 to 50 feet in advance of an uncontrolled midblock multi-lane school crosswalk and shall be accompanied by yield lines (see Section 7C.04 and Appendix A, Typical Applications, Figures A8 and A10).
- 03 If used, the Yield Here To Pedestrian (R1-5, R1-5a) sign shall not be placed on the same post as the School Crossing assembly sign (see Section 7B.12).

Support:

- 04 The mounting height of the School Advance Crossing assembly (see Section 7B.11) is higher when this sign is used (see Section 7B.04).

Section 7B.21 Narrow School Route Assembly (S1-1 and W7-3aP)

Option:

01 A Narrow School Route may be used if warranted per Section 7A.03.

Standard:

02r **If used, the Narrow School Route assembly (see Figure 7B-2) shall consist of a School (S1-1) sign with a supplementary NEXT X MILE(S) (W7-3aP) plaque (see Appendix A, Typical Applications, Figure A16).**

03 **The distance displayed on the NEXT X MILE(S) (W7-3aP) plaque shall be in 1/4-mile increments up to a maximum of one mile in urban areas or in 1/2-mile increments up to a maximum of two miles in rural areas (See Appendix D for sign designs).**

04 **A supplementary ALL YEAR (S4-7P) plaque (see Section 7B.19) shall be installed between the School (S1-1) sign and the NEXT X MILE(S) (W7-3aP) plaque for year-round schools.**

Support:

05 See Sections 7B.17 and 7C.06 for sign and pavement markings options (respectively) in Narrow School Routes.

Section 7B.22r Abutting School Zone Sign (S1-1)

Option:

01 An Abutting School Zone may be used based upon engineering judgment, and if used may be shown on the SNAP plan. See Section 7B.17 for parking restrictions in Abutting School Zones.

Standard:

02r **If used, the signing for an Abutting School Zone shall include the School (S1-1) sign, and shall not be supplemented with the AHEAD (W16-9P) plaque. The School (S1-1) sign with supplementary ALL YEAR (S4-7P) plaque shall be used for year-round schools (see Section 7B.19 and Appendix A, Typical Applications, Figure A17).**

Support:

03 See to Section 7C.03 for use of the SCHOOL word marking in an Abutting School Zone.

Section 7B.23r School Bus Loading Zone Signs (SS1-2, SS1-3, SS1-4P, SS1-5P)

Standard:

01 **When used in a School Bus Loading Zone, a School Buses Only (SS1-2) symbol sign or SCHOOL BUSES ONLY (SS1-3) sign shall mark the beginning and ending of each School Bus Loading Zone. Intermediate signs shall be installed at approximate 50 foot spacing within the Zone.**

02 **The School Buses Only (SS1-2) symbol sign and the SCHOOL BUSES ONLY (SS1-3) sign shall have a white background with red legend and border (See Appendix D for sign designs). The bus symbol on the SS1-2 sign shall be black.**

02a **The arrows on the SS1-2 or SS1-3 signs shall be a single-headed arrow pointing in the direction that the regulation is in effect when used that the end of a School Bus Loading**

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R1 **Zone.** For any intermediate point signs, a double-headed arrow pointing both ways shall be used.

03r **If a School Bus Loading Zone is used off-premise, and parking is allowed during non-school bus loading times, a the School Time Restriction (SS1-4P) plaque or the School Days Time Restriction (SS1-5P) plaque shall be used below the School Buses Only signs to designate bus only times.**

Section 7B.24 In-Street Schoolchildren Crossing Assembly (Two RS1-6b signs back-to-back)

Standard:

01 **If used, the In-Street Schoolchildren Crossing assembly shall consist of two In-Street Schoolchildren Crossing (RS1-6b) signs (see Figure 7B-1) mounted back-to-back. The In-Street Schoolchildren Crossing (RS1-6b) sign shall have a black legend (except for the red YIELD sign symbol) and border on a white inner background and a fluorescent yellow-green outer background (see Appendix D for sign design). The In-Street Pedestrian Crossing (R1-6 and R1-6a) signs shall not be used.**

02 **The In-Street Schoolchildren Crossing assembly shall not be used at signalized locations.**

03 **If used the In-Street Schoolchildren Crossing sign shall be designed to bend over and then bounce back to its normal vertical position when struck by a vehicle.**

04 **The In-Street Schoolchildren Crossing assembly shall only be used at crossings where an adult crossing guard is present (see Section 7D.02). Placement and removal of the assembly shall be the responsibility of the adult crossing guard.**

Support:

05 **The provisions of MUTCD Section 2A.18 concerning mounting height are not applicable for the In-Street Schoolchildren Crossing assembly.**

Standard:

06 **The top of an In-Street Schoolchildren Crossing assembly shall be a maximum of 4 feet above the pavement surface.**

Section 7B.25r School Supplemental Turn Assembly (S1-1 with W16-5P, or W16-6P)

Support:

01r **School Supplemental Turn assemblies are used on an approach street that does not have a school crosswalk on the approach street at the intersection to warn road users making a turn onto the intersecting street that they will encounter a school crosswalk at or in close proximity to the intersection. (See Appendix A, Typical Applications, Figures A3, A4, A7 and A11 - A14).**

Standard:

02r **School Supplemental Turn assemblies shall not be used on an approach to an intersection where there is a school crosswalk on the approach street at the intersection or at roundabouts with a school crosswalk.**

- 03r **A School Supplemental Turn assembly shall consist of a School (S1-1) sign with an Advance Turn Arrow (W16-6P) plaque installed in advance of the intersection. A School Turn assembly consisting of a School (S1-1) sign with a Turn Arrow (W16-5P) plaque shall not be installed at a controlled intersection.**
- 04r **The arrows of the Supplementary Arrow (W16-5P and W16-6P) plaques shall point toward the school crosswalk.**
- 05r **A supplementary ALL YEAR (S4-7P) plaque (see Section 7B.19) shall be installed between the School (S1-1) sign and the Turn Arrow (W16-5P) or Advanced Turn Arrow (W16-6P) plaque for year-round schools.**

Option:

- 06r **If used, a School Supplemental Turn assembly may be installed in advance of a non-roundabout controlled intersection (See Appendix A, Typical Applications, Figures A3, A4, A11 - A14) or an uncontrolled intersection (See Appendix A, Typical Applications, Figure A7) that does not have a school crosswalk on the approach street at the intersection.**
- 07r **If used, a School Supplemental Turn assembly may be installed at an uncontrolled intersection where there are no school crosswalks on the approach street at the intersection, (See Appendix A, Typical Applications, Figure A7).**

Section 7B.26n Overhead School-Pedestrian Assembly (RS1-9b, RS10-25a)

Standard:

- 01n **An Overhead School-Pedestrian assembly shall only be used in a Reduced Speed School Zone as an enhancement to the school crosswalk when the School Speed Limit Assembly is not active. The Overhead School-Pedestrian assembly shall not be used in any other School Zone.**
- 02n **An Overhead School-Pedestrian assembly shall not be installed at a Reduced Speed School Zone school crosswalk at a roundabout, or at a crosswalk controlled by a traffic signal, stop control, or a YIELD (R1-2) sign.**
- 03n **If used, the Overhead School-Pedestrian assembly shall consist of a Yield to Pedestrians Blank-out (RS1-9b) sign centered over the through lanes in each direction on a mast arm signal pole; and the following for each side of the street:**
- A. A push button pedestrian controlled actuator, and;**
 - B. A Push Button to Turn On Sign (RS10-25a) sign, and;**
 - C. A yellow flashing beacon to notify pedestrians of the black-out sign operation (See Appendix A, Figures A10, A12 and Appendix D for sign designs).**
- 04n **The Overhead School-Pedestrian assembly shall be interlocked with the School Speed Limit assemblies for all approaches to the crosswalk such that the Overhead School-Pedestrian assembly shall not operate when the School Speed Limit assemblies are active.**
- 05n **An Overhead School-Pedestrian assembly shall be warranted when the Process for Warranting of an Overhead School-Pedestrian Assembly (Appendix B6) is met.**
- 06n **Local jurisdictions shall be responsible for applying the warrant process, funding, and maintenance of an Overhead School-Pedestrian assembly on non-state routes.**

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07n On state routes, requests from school districts or local jurisdictions for an Overhead School-Pedestrian assembly shall be submitted to the appropriate UDOT Region office (see Appendix F for contact information). After screening each request using the requirements of this Section and the Requirements for Warranting of an Overhead School-Pedestrian Assembly (see Appendix B6), the Region office shall forward requests that meet the criteria to the UDOT Engineer for Traffic and Safety for final determination. If it is determined that the Overhead School-Pedestrian assembly will be installed, the Traffic and Safety Division shall:

- A. Establish priorities for funding the Overhead School-Pedestrian assembly request; and,**
- B. Program Overhead School-Pedestrian assembly projects according to priorities and available funding; and,**
- C. Initiate agreements for each location with the following responsibilities:**
 - 1. UDOT for design and installation; and,**
 - 2. UDOT for maintenance; and,**
 - 3. Local jurisdiction for power; and,**
 - 4. Local jurisdiction and/or school district for funding of Overhead School-Pedestrian Crossing assemblies for new schools.**

08n Overhead School-Pedestrian Crossing assemblies shall only be installed in conjunction with an Overhead School Speed Limit assembly after an engineering study that considers stopping and decision sight distances, and grade.

Option:

09n Overhead School-Pedestrian assembly may only be used at a Reduced Speed School Zone school crosswalk that is not at a roundabout or is controlled by a traffic signal, stop control, or a YIELD (R1-2) sign (see Appendix A, figures A10 and A12), and only used if warranted per the Process for Warranting of an Overhead School-Pedestrian Assembly (See Appendix B6) and the requirements of this Section, Section 7A.03, and Section 7B.15.

CHAPTER 7C. MARKINGS

Section 7C.01 Functions and Limitations

Support:

- 01 Markings have definite and important functions in a proper scheme of School Zone 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.

Standard:

- 03 **Markings associated with a School Zone shall not be required on unpaved roads.**

Section 7C.02 Crosswalk Markings

Standard:

- 01 **Crosswalk markings shall be white in color.**

Support:

- 02 At non-intersection locations, crosswalk markings legally establish the crosswalk.
- 03 See UDOT's Standard Drawing ST 8 on the UDOT website at www.udot.utah.gov for additional pavement marking information.

Standard:

- 04 **Longitudinal crosswalk markings shall be used for all school crosswalks within School Crosswalk Zones and Reduced Speed School Zones. The longitudinal lines shall be 24 inches wide and spaced 24 inches to 36 inches apart. The length of the longitudinal lines shall be 9 foot minimum.**
- 05 **Longitudinal crosswalk markings shall be reserved for school crosswalks. Transverse and Diagonal (special emphasis) line crosswalk markings shall not be used for school crosswalks within School Crosswalk Zones or Reduced Speed School Zones.**

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

Standard:

- 01 **Word, symbol, and arrow markings shall be white, except as otherwise provided in this Section. Pavement marking letters, numerals, symbols, and arrows shall be installed in accordance with the design details in the UDOT's Standard Drawing ST 8 (see UDOT website at www.udot.utah.gov).**

Guidance:

- 02 *Letters and numerals should be 6 feet or more in height.*
- 03 *The longitudinal space between word or symbol message markings, including arrow markings, should be at least four (4) times the height of the characters for low speed roads, but not more than ten (10) times the height of the characters under any conditions.*

Standard:

- R1 | 04r **The SCHOOL word marking shall be installed in the traffic lane(s) adjacent to the School Advance Warning assembly (see Section 7B.11 and Appendix A, Typical Applications, Figures A3 through A15).**
- 05 **The SCHOOL word marking shall be wholly contained within the traffic lane, and shall not encroach on lane striping or other pavement markings.**
- 06 **Except as provided in Paragraph 07, pavement word and symbol markings shall be no more than one lane in width.**

Option:

- 07 The SCHOOL word marking may extend the width of two approach lanes.

Standard:

- 08 **If the two-lane SCHOOL marking is used, the letters shall be 10 feet or more in height.**
- 09 **The two-lane SCHOOL marking shall only be used on highways with an even number of approach lanes. Highways with an odd number of approach lanes shall use a SCHOOL marking in each lane.**

Option:

- R1 | 10r The SCHOOL word marking may be used in an Abutting School Zone (see Section 7B.22 and Appendix A, Typical Applications, Figure A17) adjacent to the School (S1-1) sign.

Support:

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

Section 7C.04 Stop and Yield Lines**Standard:**

- 01 **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. Stop lines shall be 24 inches wide on state routes and 12 to 24 inches wide on non-state routes.**
- 02 **Stop lines shall be placed, and only placed, in advance of school crosswalks at locations controlled by traffic signals and by STOP (R1-1) signs.**
- 03 **Yield lines shall consist of a row of 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. The individual triangles comprising the yield line shall have a minimum base width of 24 inches and a height equal to 1.5 times the base width. The space between the triangles shall be 6 to 12 inches.**

04 **Yield lines shall be placed in advance of school crosswalks at locations controlled by a YIELD (R1-2) sign.**

05 **If Yield lines are used in advance of an uncontrolled multi-lane mid-block school crosswalk, the Yield Here To Pedestrian (R1-5, R1-5a) sign shall be used (see Section 7B.20).**

Guidance:

06 *Stop lines at mid-block signalized locations should be placed at least 40 feet in advance of the nearest signal indication (see MUTCD Section 4D.14).*

07r *If used, stop and yield lines should be placed a minimum of 4 feet in advance of and parallel to the nearest crosswalk line at controlled intersections, except for yield lines at roundabout intersections as provided for in MUTCD Section 3C.04 and at midblock crosswalks (See MUTCD Section 3B.16 and Appendix A, Typical Applications, Figures A8 through A10).*

Support:

08r See UDOT Standard Drawing ST 8 on the UDOT website at www.udot.utah.gov for stop and yield lines at school crosswalks.

Section 7C.05 Curb markings for Parking Regulations

Standard:

01 **Where curbs are marked to convey parking regulations in areas where curb markings are frequently obscured by snow and ice accumulation, signs shall be used with the curb markings except as provided in Paragraph 03.**

Guidance:

02 *Except as provided in Paragraph 03, 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:

03 Curb markings without word markings or signs may be used to convey a general prohibition by statute of parking within a specified distance of a STOP (R1-1) sign, YIELD (R1-2) sign, driveway, fire hydrant, or crosswalk.

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

Standard:

05 **Curbs within on-premise School Bus Loading Zones shall be painted yellow-green.**

Option:

06 Curbs within off-premise School Bus Loading Zones may be painted either red or yellow-green.

Section 7C.06 Center, Lane and Edge Lines

Standard:

01r **On paved roads, a School Crosswalk Zone or Reduced Speed School Zone shall be marked as follows (see Appendix A, Typical Applications, Figures A3 through A15:**

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- A. **With no two-way left-turn lane, the center line shall be a solid double yellow line between any two travel lanes moving in opposing directions for the entire length of a School Crosswalk Zone or a Reduced Speed School Zone (between the School Advance Warning assemblies in both cases); or,**
- B. **With a two-way-left-turn lane, striping shall be as per MUTCD Part 3 Markings and Appendix A, Typical Applications, Figures A8 through A10; and,**
- C. **Lane line(s) shall be solid white between any two travel lanes moving in the same direction approaching the crosswalk. The length of the solid white lines shall be based on either the posted speed limit or the 85th percentile speed (see Appendix A, Typical Applications, Figures A1 through A15).**

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Guidance:

02 On non-paved roads, the standard signing for a School Crosswalk Zone or a Reduced Speed School Zone should be supplemented with the DO NOT PASS (R4-1) sign and the PASS WITH CARE (R4-2) sign (See MUTCD Sections 2B.28 and 2B.29).

Option:

03r An 8 inch solid white edge line may be installed for the length of the Narrow School Route (see Appendix A, Typical Applications, Figure A16).

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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 MUTCD Section 1A.11).**

Section 7D.02 Adult Crossing Guards

Standard:

- 01 **Adult crossing guards shall be used at school crosswalks for elementary schools in (see Appendix B4):**
- A. **All Reduced Speed School Zones; and,**
 - B. **School Crosswalk Zones at signalized intersections where the posted speed limit is 30 mph or greater; and,**
 - C. **All roundabouts.**

Option:

- 02 Adult crossing guards may be used to provide gaps in traffic at school crosswalks where an engineering study has shown that adequate gaps need to be created (see Section 7A.03), and where authorized by law.
- 03 Adult crossing guards may be used at any school crosswalk (see Appendix B4).

Standard:

- 04 **For elementary schools, if no adult crossing guard is provided per Paragraph 01, then that School Crosswalk Zone or Reduced Speed School Zone shall be removed, and the SNAP plan shall be revised by the School Community Council.**

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 and 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(R1-1) paddle effectively to provide approaching road users with a clear, fully direct view of the paddle's STOP(R1-1) 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.*

Standard:

- 03 **A background check shall be conducted on adult crossing guards by local law enforcement before they are accepted as crossing guards.**

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 the ANSI/ISEA 107–2004 publication entitled “American National Standard for High-Visibility Apparel and Headwear” (see Section MUTCD 1A.11) or equivalent revisions, and labeled as meeting the ANSI 107-2004 or equivalent year standard performance for Class 2.**
- 02 **The apparel background (outer) material color for all retroreflective apparel shall be fluorescent orange-red, fluorescent yellow-green, or a combination of the two as defined in the ANSI standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.**

Option:

- 03 **In lieu of ANSI/ISEA 107-2004 apparel or equivalent revisions, law enforcement personnel may wear high-visibility safety apparel that meets the performance requirements of ANSI/ISEA 207-2006 publication entitled “American National Standard for High-Visibility Public Safety Vests” (See Section 1A.11) or equivalent revisions and labeled as ANSI 207-2006 or equivalent year.**

Section 7D.05 Operating Procedures for Adult Crossing Guards

Standard:

- 01 **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 (R1-1) paddle. The STOP (R1-1) 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 (ASTM Type III, “High Intensity” or higher) or illuminated when used during hours of darkness.**
- 04 **At Reduced Speed School Zones requiring an adult crossing guard, the School Speed Limit Sign Beacons shall be operated manually by the crossing guard and only while the crossing guard is present.**
- 05 **The use and placement of cones or the In-Street Schoolchildren Crossing assemblies in a School Zone shall be the responsibility of the adult crossing guard and shall only be used while the crossing guard is performing their duties.**

Option:

- 06 The STOP (R1-1) 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.
- 07 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 (R1-1) 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 (R1-1) paddle),
or
 - E. A series of white lights forming the shapes of the letters in the legend.

Standard:

- 08 **If flashing lights are used on the STOP (R1-1) paddle, the flash rate shall be at least 50, but no more than 60, flash periods per minute.**
- 09 **Adult crossing guards shall not park their vehicle at the crosswalk or in any other manner which limits the visibility of signs, markings, students, or other vehicles within a school zone. The vehicle also shall not block any pedestrian access route.**

Section 7D.06 Training for Adult Crossing Guards

Standard:

- 01 **Adult crossing guards shall be trained by the local jurisdiction, as a minimum, in the following:**
- A. Uniform and equipment;**
 - B. Operation procedures;**
 - C. Traffic safety, rules and regulations; and,**
 - D. Emergency procedures, including first aid and CPR.**
- 02 **Adult crossing guards shall attend a refresher course every year.**

Support:

- 03 For more training information concerning Adult Crossing Guards please contact UDOT's Safe Routes to School Coordinator (See Appendix F for contact information).

Section 7D.07 Legal Authority for Adult Crossing Guards

Standard:

- 01 **Adult crossing guards shall be provided and regulated by the local jurisdiction.**
- 02 **In instances where a crossing guard is required but the crossing guard is not provided by the local jurisdiction, the associated School Crossing and/or Reduced Speed School Zone shall be removed and the SNAP plan revised.**

Section 7D.08 Student Patrols

Standard:

- 01 **Student patrols shall not direct vehicular traffic. Student patrols shall not function as uniformed law enforcement officers or as adult crossing guards.**
- 02 **Student patrols shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-2004 standard performance for Class 1 as described in the ANSI/ISEA 107-2004 publication entitled "American National Standard for High-Visibility Apparel and Headwear" (see Section MUTCD 1A.11) or equivalent revisions, and labeled as meeting the ANSI 107-2004 or equivalent year standard performance for Class 1.**

Option:

- 03 Student 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.
- 04 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.

Section 7D.09 Choice of Student Patrols

Guidance:

- 01 *Student patrols should be carefully selected. They should be students from the fifth grade or higher. Leadership and reliability should be determining qualities for student patrols.*
- 02 *Parental approval should be obtained in writing before a student is used as a student patrol.*

Section 7D.10 Operating Procedures for Student Patrols

Guidance:

- 01 *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:

- 02 **Flagging devices used during periods of twilight or darkness shall be retroreflective or illuminated.**
- 03 **Because they are not authorized to direct vehicular traffic, student patrols shall not use a STOP (R1-1) paddle.**

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APPENDIX A. Typical Applications

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**FIGURE A1r
SCHOOL ZONE:
LEGEND AND NOTES**

SYMBOL LEGEND

- 28" HIGH (MIN) CONE OR IN-STREET SCHOOL CROSSING ASSEMBLY
- 28" HIGH (MIN) CONES ONLY
- OPTIONAL NO PARKING ZONE (IF USED, IT SHALL BE SIGNED)
- REQUIRED NO PARKING ZONE. SHALL BE SIGNED
- SIGN OR ASSEMBLY
- TRAFFIC SIGNAL
- STANDARD CROSSWALK
- SCHOOL ZONE CROSSWALK
- MAST ARM MOUNTED SIGN

SIGNING, STRIPING, AND NO PARKING PLACEMENT TABLE

POSTED OR SCHOOL SPEED LIMIT (MPH)	SCHOOL ADVANCE CROSSING AND TURN ASSEMBLY (d)	SCHOOL SPEED ASSEMBLY (d1)	SCHOOL ADVANCE SPEEDING ASSEMBLY (d2)	REDUCED SCHOOL SPEED LIMIT (S4-3) (d3)	AT X WALK AND AT SIGNAL ASSEMBLY (A3-A15,A17)	NO PARKING ZONE LENGTH		MINIMUM SOLID WHITE LINE LENGTH
						W ≤ 50'	W ≥ 70'	
25	250'	150'	100'	NA	60'	40'	25'	150'
30	325'	150'	100'	130'	85'	50'	35'	150'
35	400'	200'	175'	215'	115'	70'	50'	200'
40	475'	250'	250'	340'	150'	90'	65'	250'
45	550'	250'	300'	500'	190'	110'	80'	250'
50	625'	250'	400'	640'	230'	140'	100'	250'

FIGURE INDEX

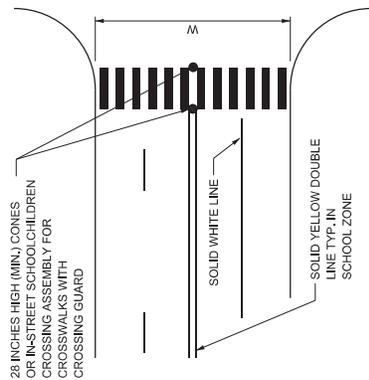
- A1 LEGEND AND NOTES
- A2 IN-STREET CROSSING LAYOUTS
- A3 TYPICAL INTERSECTION SCHOOL CROSSWALK ZONE: TWO WAY STOP CONTROLLED
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- A16 TYPICAL NARROW ROUTE ZONE
- A17 TYPICAL ABUTTING SCHOOL ZONE

NOTES:

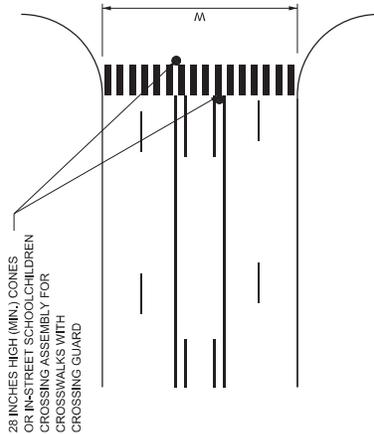
- REFERENCE DISTANCE (d) FROM THE APPROACH SIDE OF THE SCHOOL CROSSWALK. (d) MAY VARY FROM (0.85) X (d1) TO (1.20) X (d1).
- THE "ALL YEAR" (S4-7P) PLAQUE SHALL BE USED AND ONLY USED FOR YEAR ROUND SCHOOLS.
- "SCHOOL" PAVEMENT MESSAGE MAY EXTEND ACROSS TWO LANES IF THERE ARE AN EVEN NUMBER OF APPROACH LANES.
- REFERENCE DISTANCE (d1) FROM THE APPROACH SIDE OF THE SCHOOL CROSSWALK. (d1) MAY VARY FROM (0.85) X (d1) TO (1.20) X (d1).
- REFERENCE DISTANCE (d2) FROM THE SCHOOL SPEED LIMIT ASSEMBLY. (d2) MAY VARY FROM (0.85) X (d2) TO (1.20) X (d2).
- DECISION SIGHT DISTANCE FOR THE TRAFFIC SIGNAL (SEE SECTION 7B.15) SHALL BE PROVIDED TO ALLOW AN OVERHEAD SCHOOL SPEED LIMIT ASSEMBLY TO REMAIN AT A TRAFFIC SIGNAL PER SECTION 7A.03.
- IF USED, THE ARROW OF THE SUPPLEMENTAL ARROW (W16-5P, W16-5P1) PLAQUES SHALL POINT TOWARDS THE SCHOOL CROSSWALK ON THE INTERSECTING ROAD.
- A REDUCED SCHOOL SPEED LIMIT AHEAD SIGN MAY BE USED TO INFORM ROAD USERS OF A REDUCED SPEED ZONE WHERE THE SPEED LIMIT IS BEING REDUCED BY 15 MPH, 20MPH OR WHERE ENGINEERING JUDGEMENT INDICATES THAT ADVANCED NOTICE WOULD BE APPROPRIATE.
- FIGURES PRESENTED HEREIN ONLY REPRESENT SCHOOL ZONE TRAFFIC CONTROL. SEE MUTCD FOR ALL OTHER TRAFFIC CONTROL DEVICES.

FIGURE A2r
IN-STREET CROSSING LAYOUTS

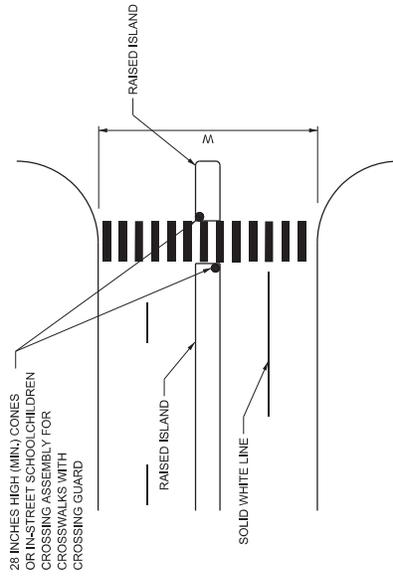
NON-SIGNALIZED INTERSECTION



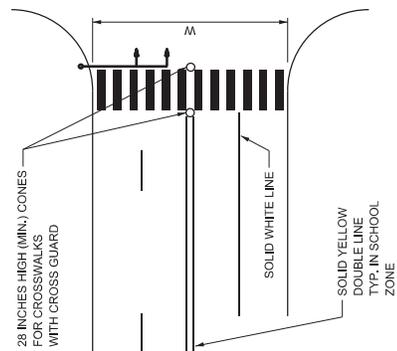
NON-SIGNALIZED TWO WAY LEFT TURN LANE



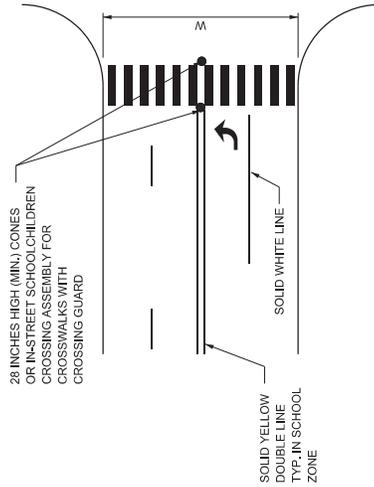
NON-SIGNALIZED INTERSECTION WITH ISLAND



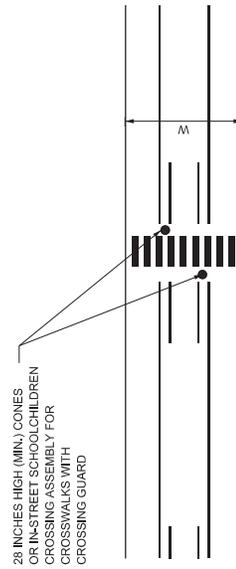
SIGNALIZED INTERSECTION



NON-SIGNALIZED LEFT-HAND TURN LANE



NON-SIGNALIZED MID-BLOCK

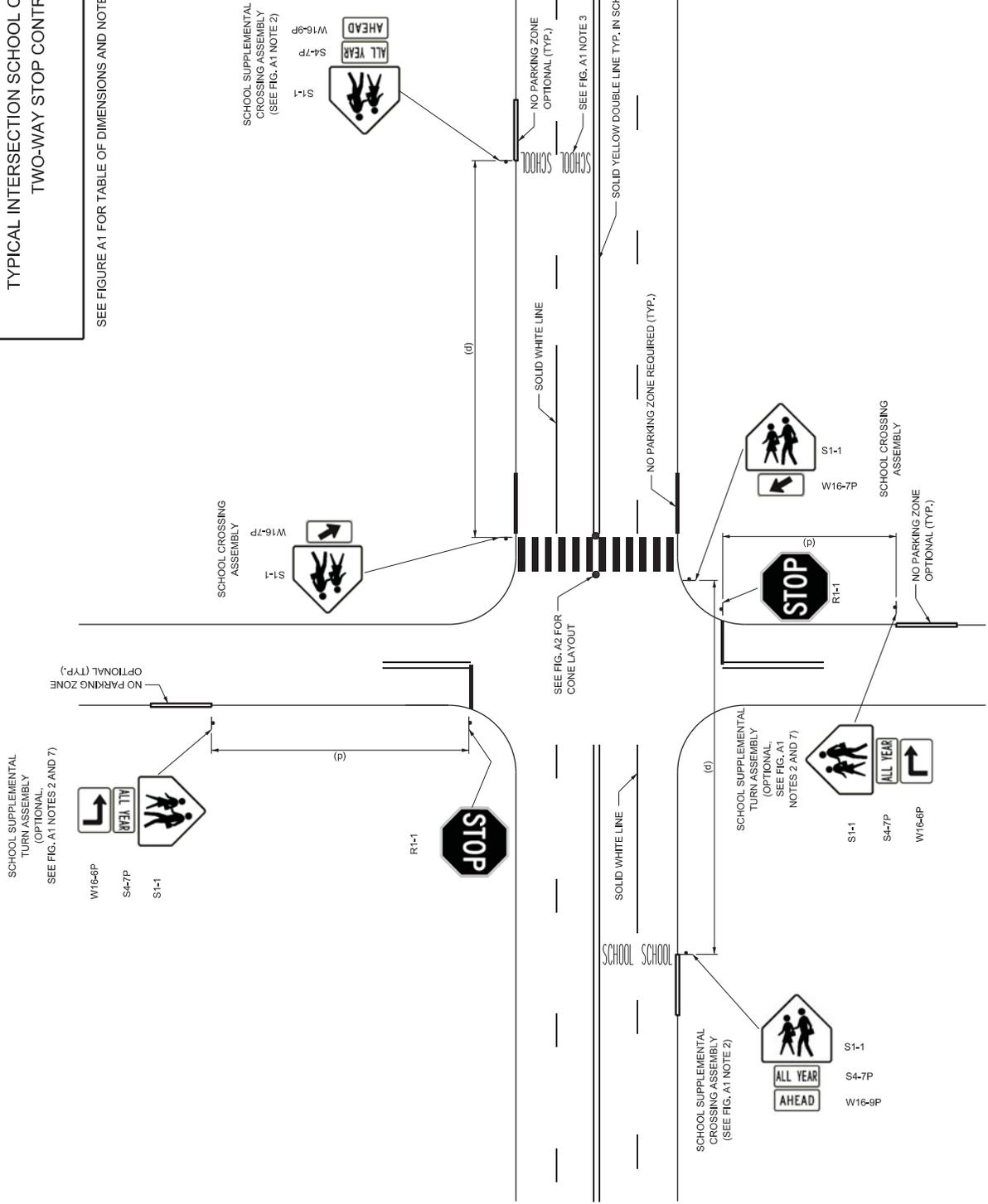


NOTES

1. SEE FIGURE A4 FOR STRIPING DISTANCES AND THE USE OF "W" IN DETERMINING THE LENGTH OF NO PARKING ZONES.
2. SEE FIGURES A3-A17 FOR SIGNS AND OTHER MARKINGS.

FIGURE A3r
TYPICAL INTERSECTION SCHOOL CROSSWALK ZONE:
TWO-WAY STOP CONTROLLED

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES



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FIGURE A4f
TYPICAL INTERSECTION SCHOOL CROSSWALK ZONE:
FOUR-WAY STOP CONTROLLED

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES

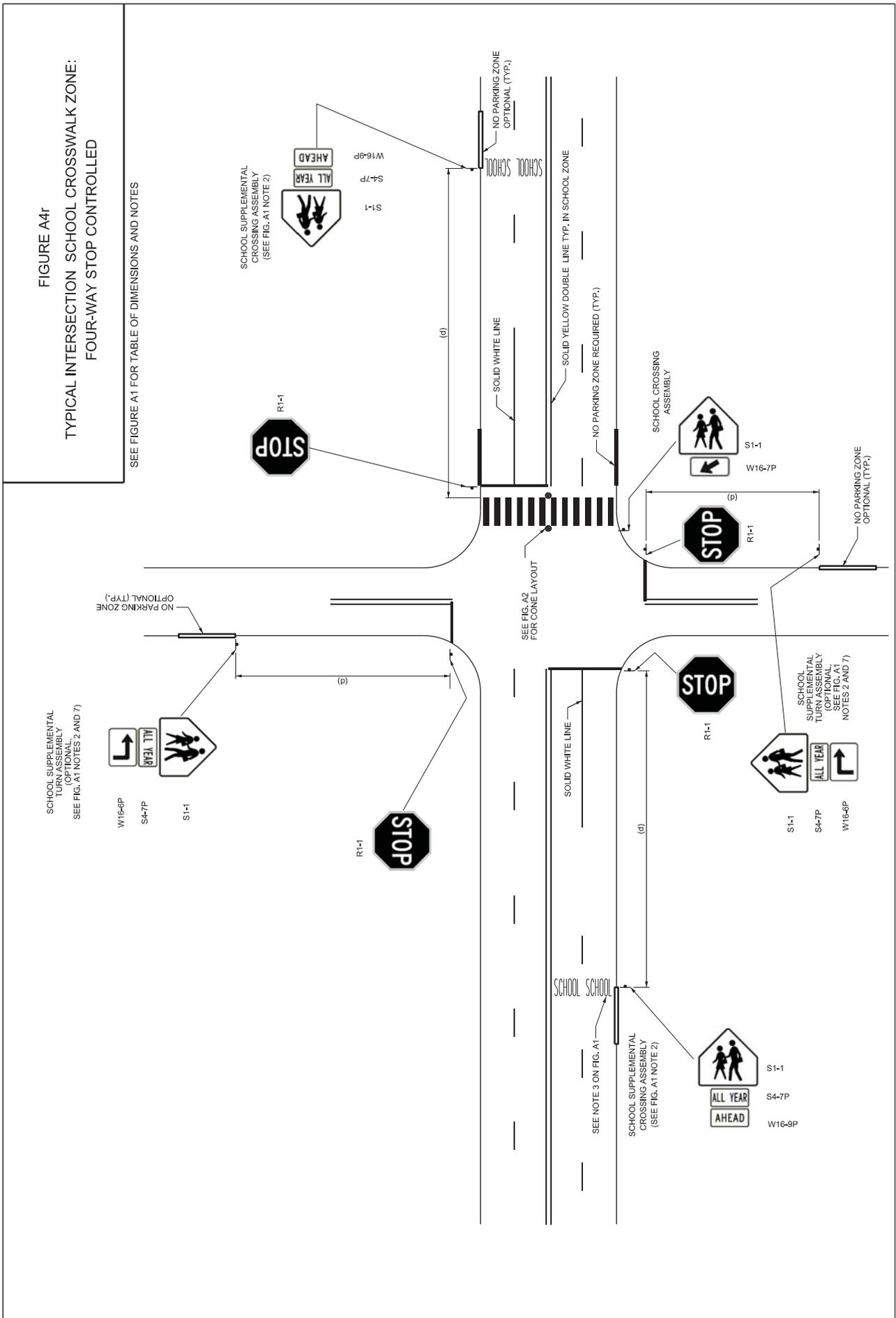
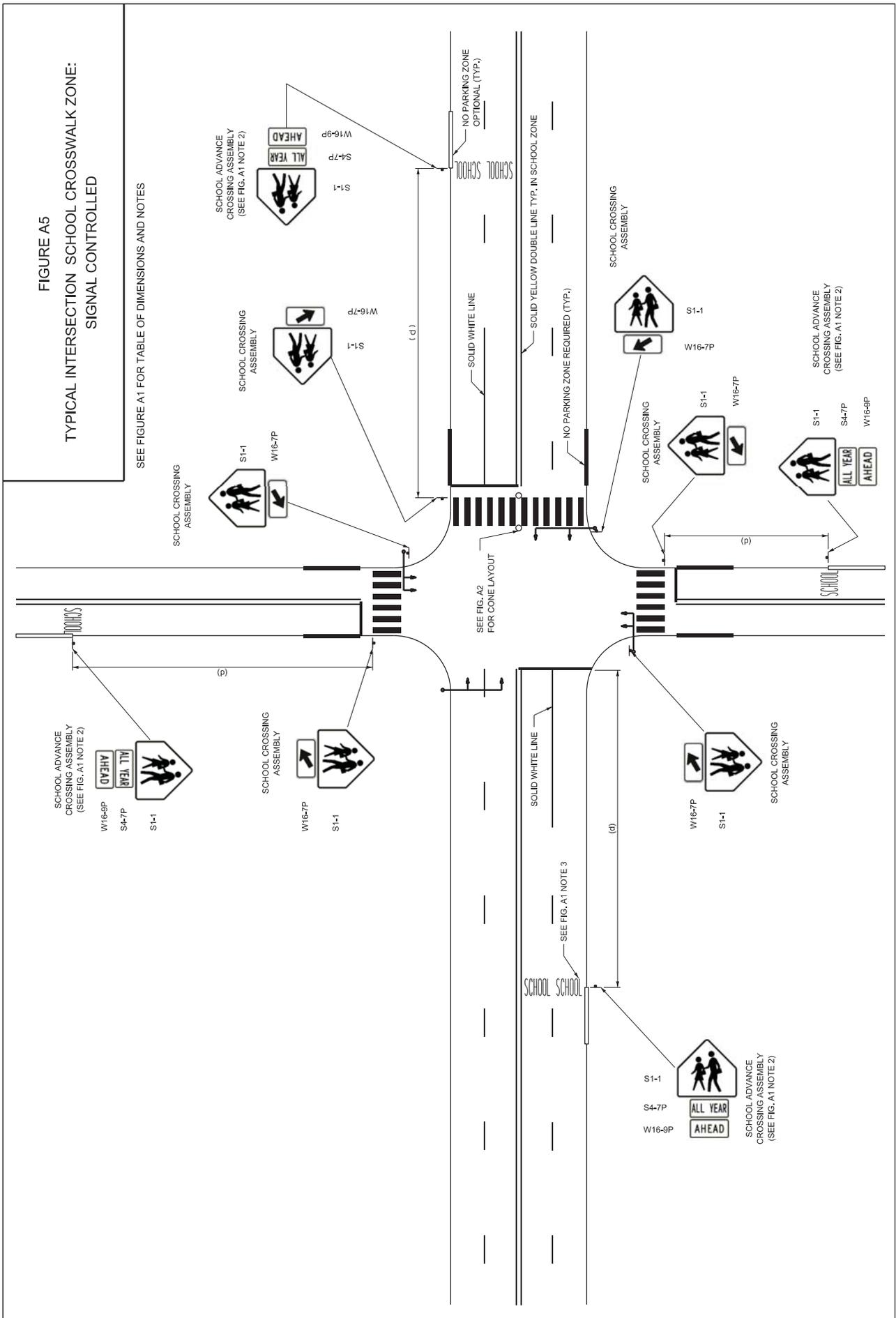


FIGURE A5
TYPICAL INTERSECTION SCHOOL CROSSWALK ZONE:
SIGNAL CONTROLLED

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES



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FIGURE A6

TYPICAL INTERSECTION SCHOOL CROSSWALK ZONE: ROUNDABOUT CONTROLLED

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES

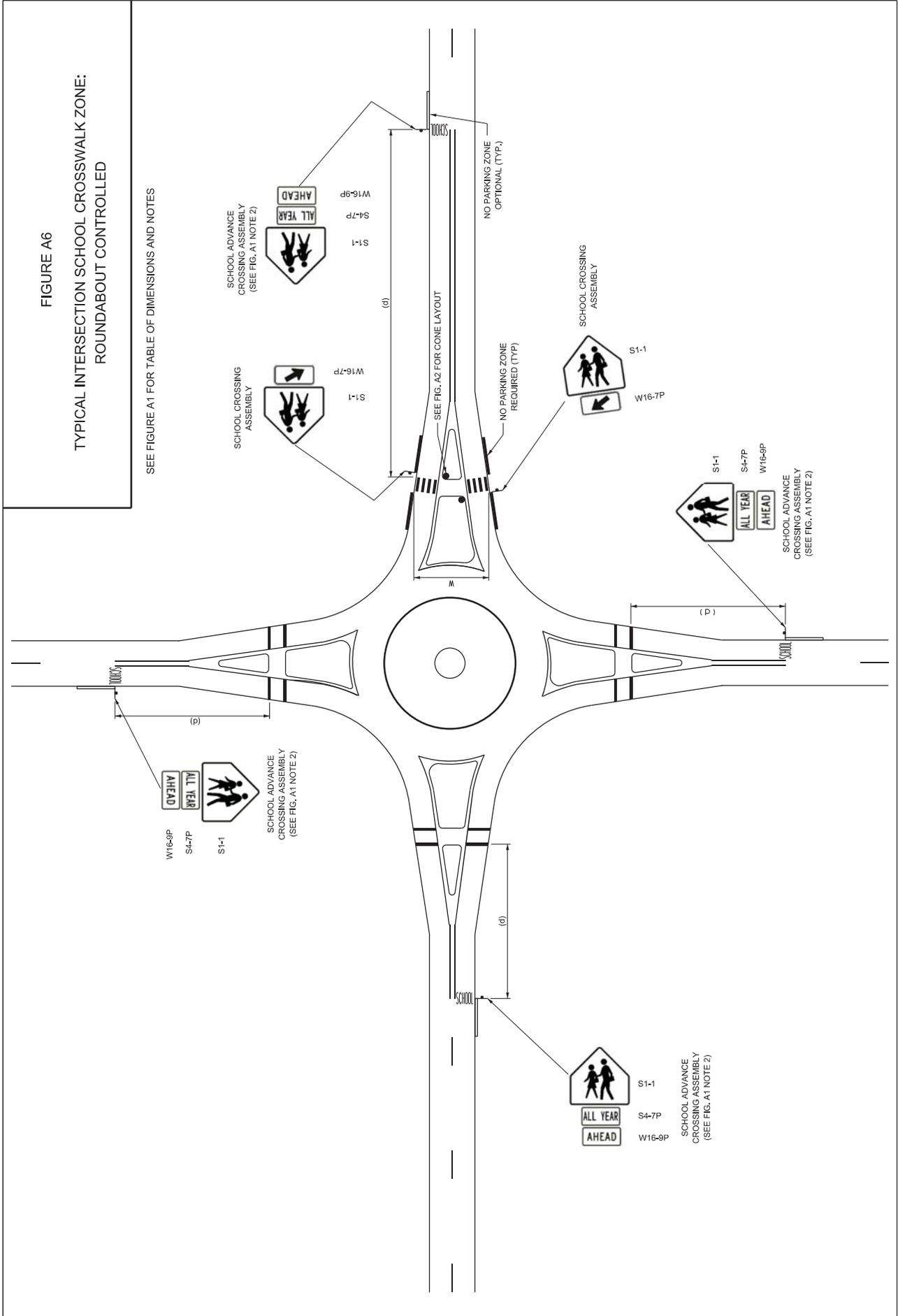


FIGURE A7r
TYPICAL INTERSECTION SCHOOL CROSSWALK ZONE:
UNCONTROLLED INTERSECTION

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES

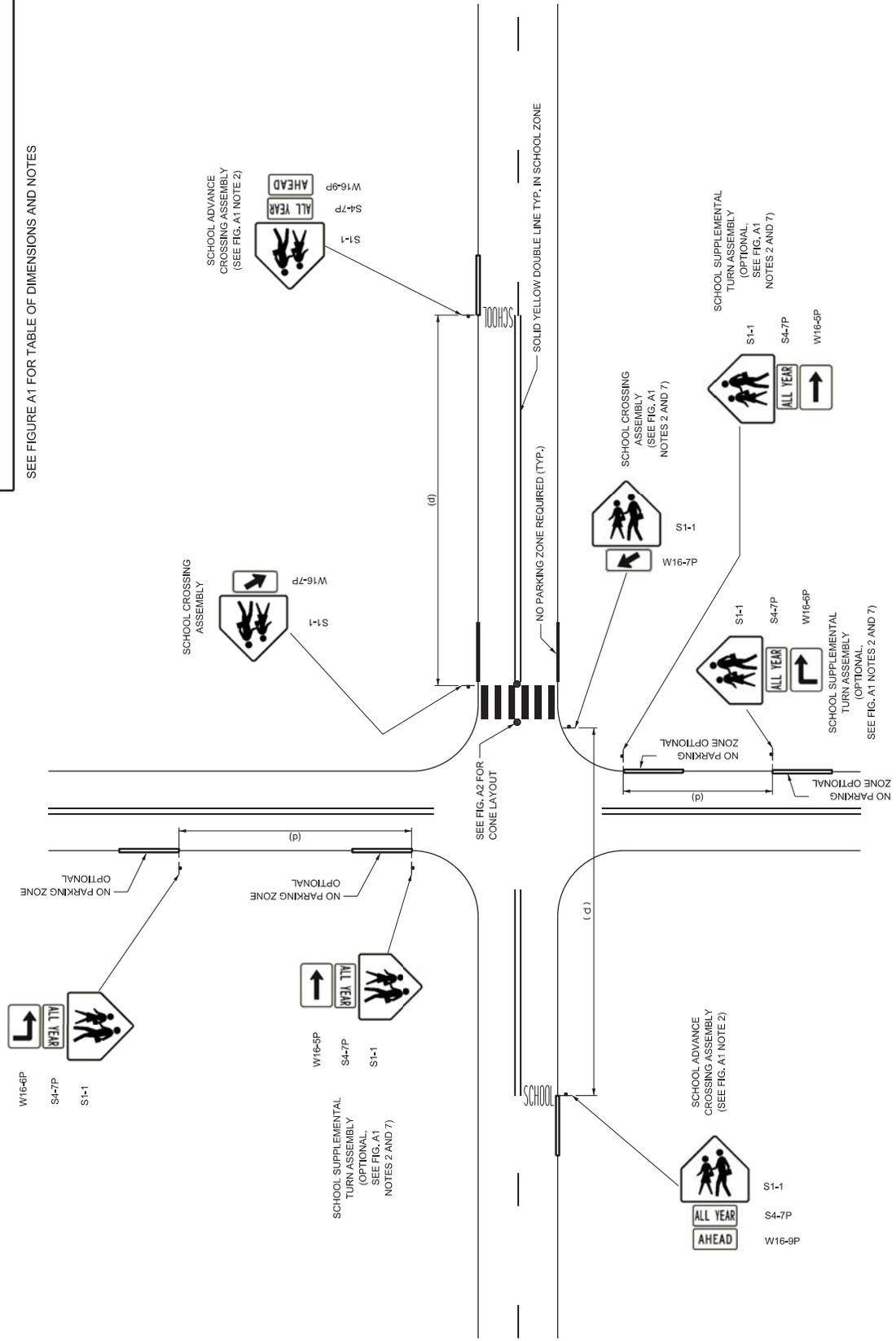
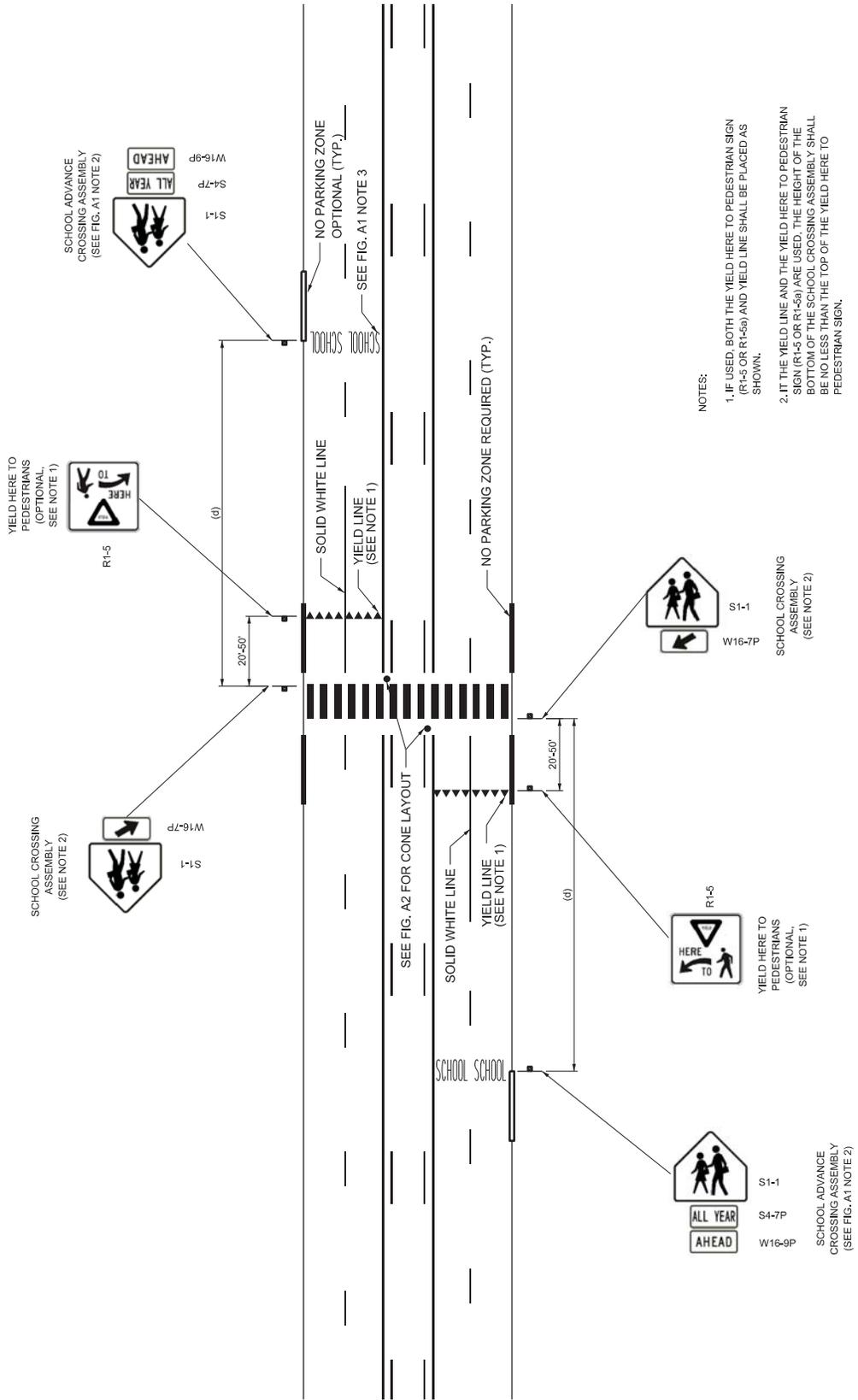


FIGURE A8
TYPICAL MID-BLOCK SCHOOL CROSSWALK ZONE

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES



- NOTES:
1. IF USED, BOTH THE YIELD HERE TO PEDESTRIAN SIGN (R1-5) OR (R1-5b) AND YIELD LINE SHALL BE PLACED AS SHOWN.
 2. IF THE YIELD LINE AND THE YIELD HERE TO PEDESTRIAN SIGN (R1-5 OR R1-5b) ARE USED, THE HEIGHT OF THE BOTTOM OF THE SCHOOL CROSSING ASSEMBLY SHALL BE NO LESS THAN THE TOP OF THE YIELD HERE TO PEDESTRIAN SIGN.

FIGURE A9r
TYPICAL MID-BLOCK REDUCED SPEED SCHOOL ZONE

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES

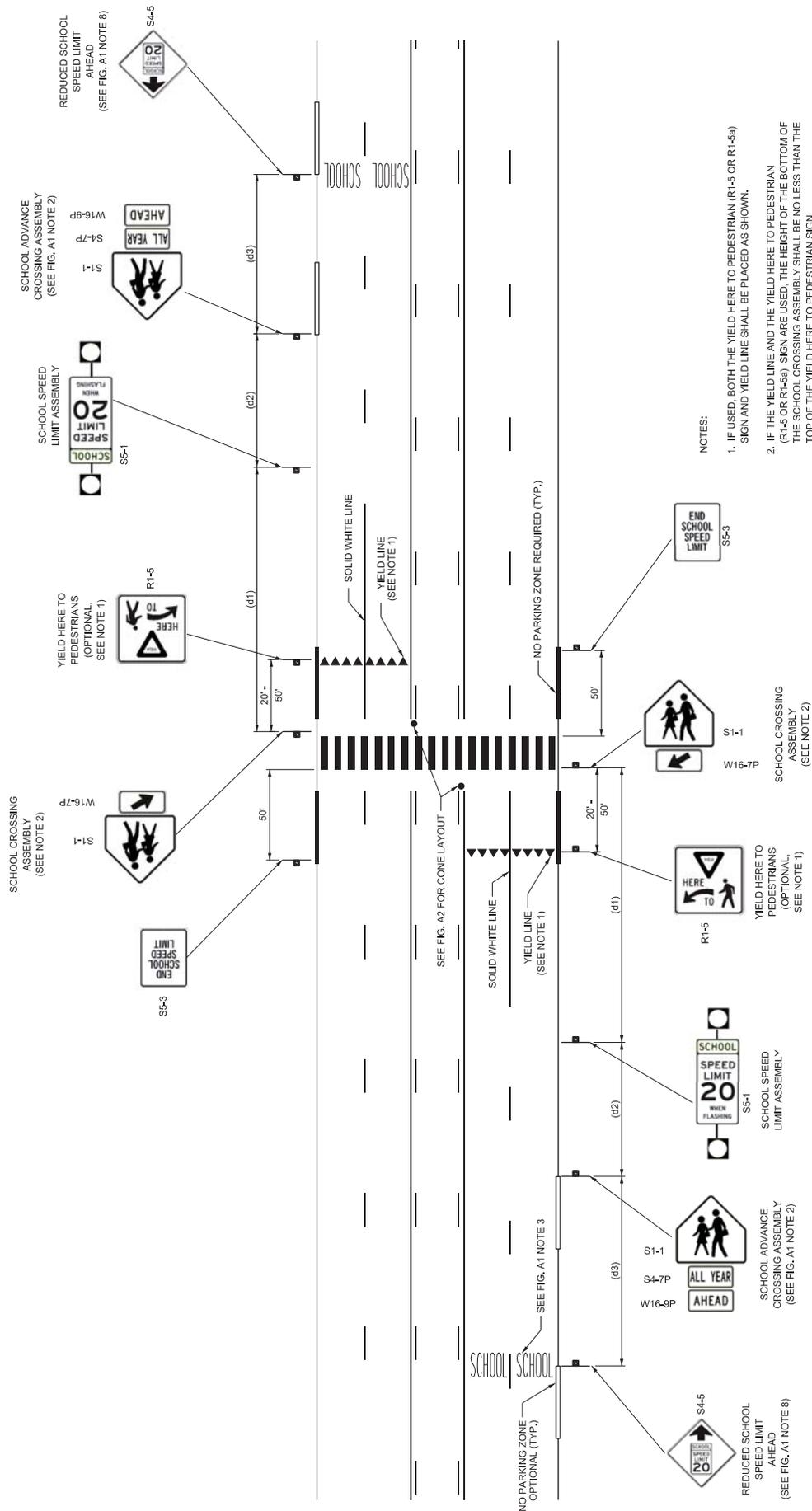
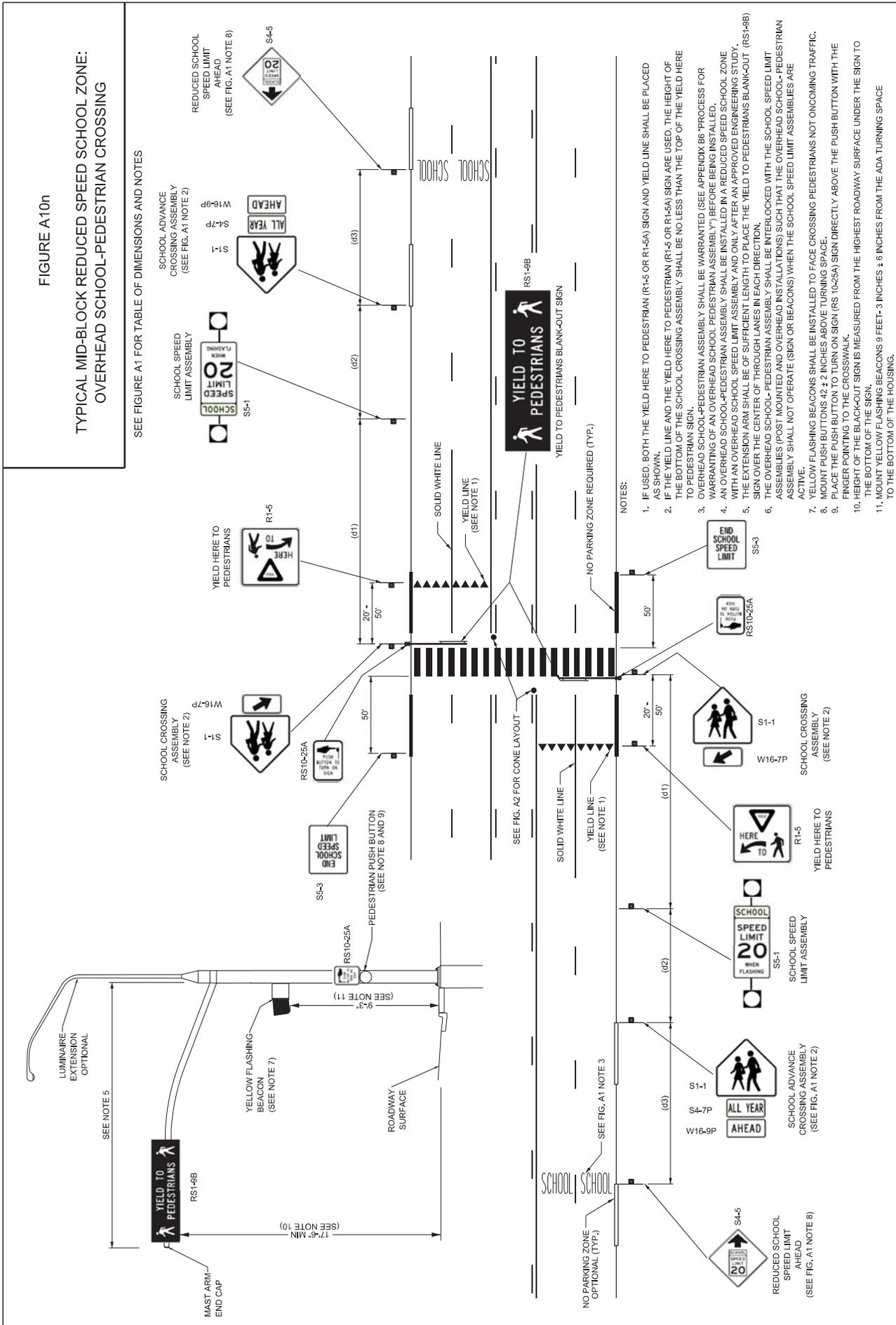


FIGURE A10n

TYPICAL MID-BLOCK REDUCED SPEED SCHOOL ZONE: OVERHEAD SCHOOL-PEDESTRIAN CROSSING

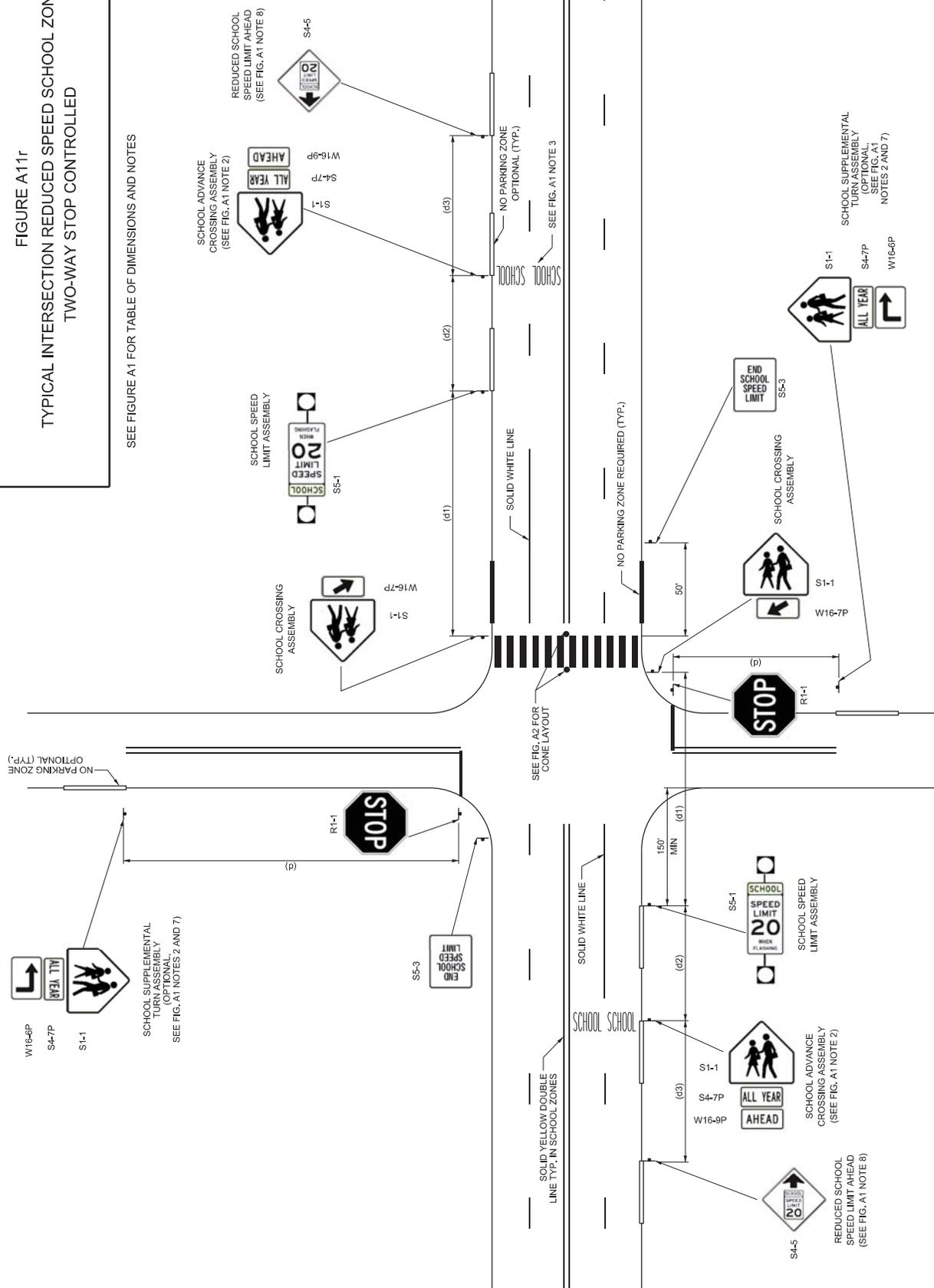
SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES



NOTES:

1. IF USED, BOTH THE YIELD HERE TO PEDESTRIAN (R1-5 OR R1-5A) SIGN AND YIELD LINE SHALL BE PLACED AS SHOWN.
2. IF THE YIELD LINE AND THE YIELD HERE TO PEDESTRIAN (R1-5 OR R1-5A) SIGN ARE USED, THE HEIGHT OF THE BOTTOM OF THE SCHOOL CROSSING ASSEMBLY SHALL BE NO LESS THAN THE TOP OF THE YIELD HERE TO PEDESTRIAN SIGN.
3. OVERHEAD SCHOOL-PEDESTRIAN ASSEMBLY SHALL BE WARRANTED (SEE APPENDIX B6 "PROCESS FOR WARRANTING OF AN OVERHEAD SCHOOL-PEDESTRIAN ASSEMBLY") BEFORE BEING INSTALLED.
4. AN OVERHEAD SCHOOL-PEDESTRIAN ASSEMBLY SHALL BE INSTALLED IN A REDUCED SPEED SCHOOL ZONE WITH AN OVERHEAD SCHOOL SPEED LIMIT ASSEMBLY AND ONLY AFTER AN APPROVED ENGINEERING STUDY.
5. THE EXTENSION ARM SHALL BE OF SUFFICIENT LENGTH TO PLACE THE YIELD TO PEDESTRIANS BLANK-OUT SIGN OVER THE CENTER OF THROUGH LANES IN EACH DIRECTION.
6. THE OVERHEAD SCHOOL-PEDESTRIAN ASSEMBLY SHALL BE INTERLOCKED WITH THE SCHOOL SPEED LIMIT ASSEMBLY (POST MOUNTED AND OVERHEAD INSTALLATIONS) SUCH THAT THE OVERHEAD SCHOOL-PEDESTRIAN ASSEMBLY SHALL NOT OPERATE (SIGN OR BEACONS) WHEN THE SCHOOL SPEED LIMIT ASSEMBLY ARE ACTIVE.
7. YELLOW FLASHING BEACONS SHALL BE INSTALLED TO FACE CROSSING PEDESTRIANS NOT ONCOMING TRAFFIC.
8. MOUNT PUSH BUTTONS 42 ± 2 INCHES ABOVE TURNING SPACE.
9. PLACE THE PUSH BUTTON TO TURN ON SIGN (RS 10-25A) SIGN DIRECTLY ABOVE THE PUSH BUTTON WITH THE FINGER POINTING TO THE CROSSWALK.
10. HEIGHT OF THE BLANK-OUT SIGN IS MEASURED FROM THE HIGHEST ROADWAY SURFACE UNDER THE SIGN TO THE BOTTOM OF THE SIGN.
11. MOUNT YELLOW FLASHING BEACONS 9 FEET- 3 INCHES ± 6 INCHES FROM THE ADA TURNING SPACE TO THE BOTTOM OF THE HOUSING.

FIGURE A11r
TYPICAL INTERSECTION REDUCED SPEED SCHOOL ZONE:
TWO-WAY STOP CONTROLLED



SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES

SEE FIG. A2 FOR CONE LAYOUT

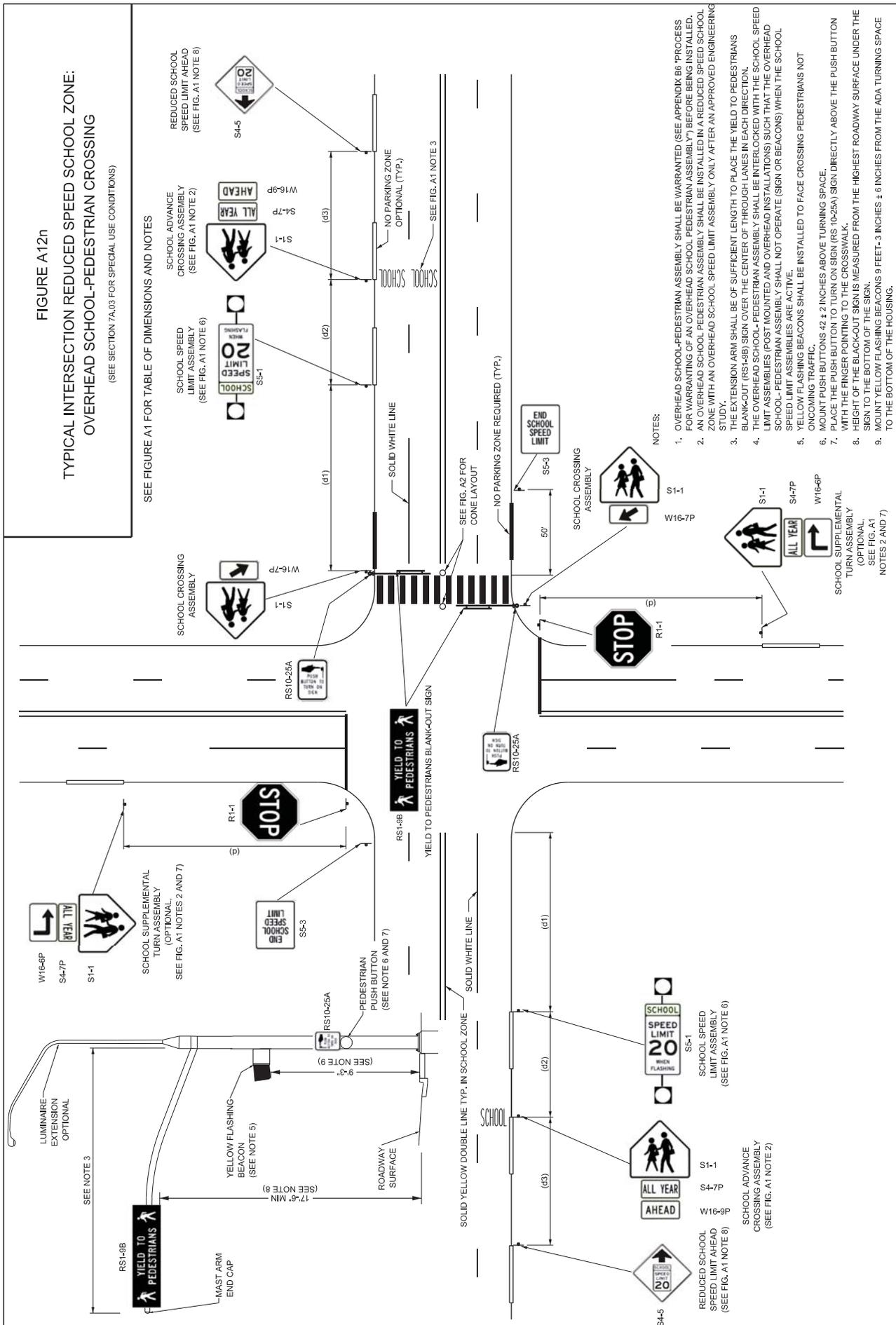
SEE FIG. A1 NOTE 3

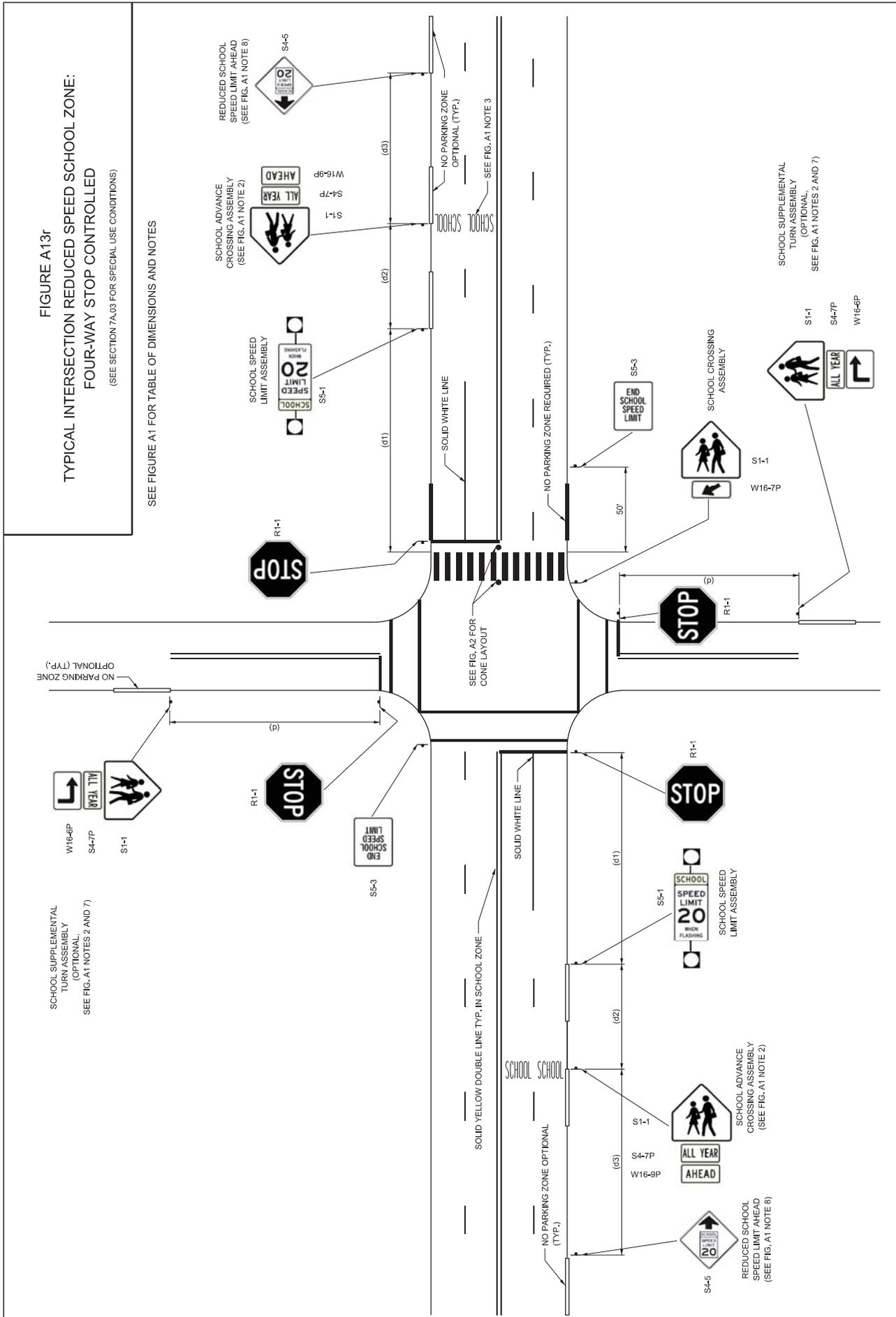
NO PARKING ZONE
 OPTIONAL (TYP.)

NO PARKING ZONE REQUIRED (TYP.)

W16-6P
 S4-7P
 S1-1
 SCHOOL SUPPLEMENTAL
 TURN ASSEMBLY
 (OPTIONAL)
 SEE FIG. A1 NOTES 2 AND 7

SCHOOL SUPPLEMENTAL
 TURN ASSEMBLY
 (OPTIONAL)
 SEE FIG. A1
 NOTES 2 AND 7

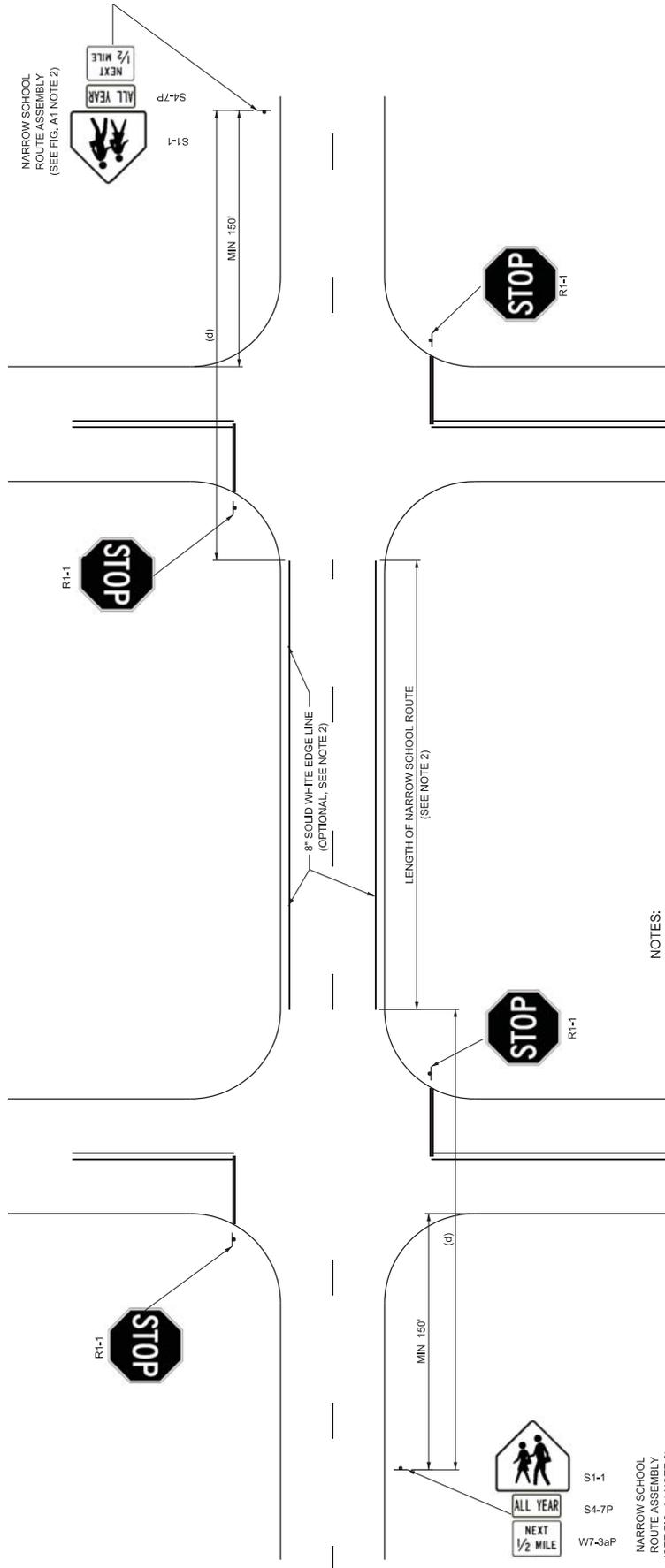




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FIGURE A16r
TYPICAL NARROW SCHOOL ROUTE ZONE

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES

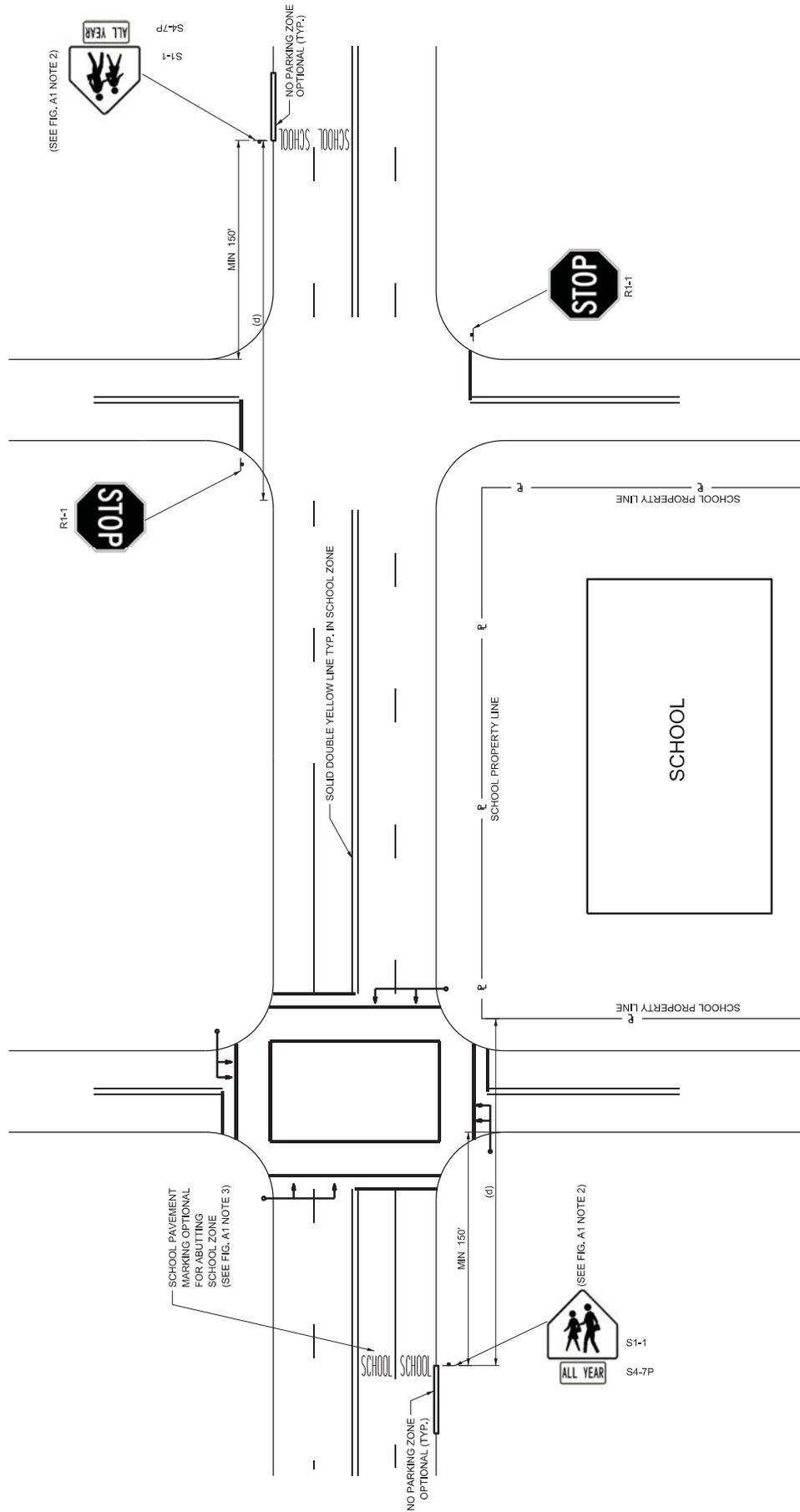


NOTES:

1. THE NARROW SCHOOL ROUTE SHALL NOT BE LONGER THAN 1 MILE IN URBAN AREAS AND 2 MILES IN RURAL AREAS.
2. ONLY THE SIDE(S) OF THE ROADWAY WHICH ARE IDENTIFIED IN A SNAP PLAN MAY BE SIGNED AND HAVE THE 8 INCH SOLID WHITE STRIPE.
3. DISTANCES SHOWN ON THE W7-3aP PLAQUE SHALL BE IN 1/4 MILE INCREMENTS IN URBAN AREAS AND 1/2 MILE INCREMENTS IN RURAL AREAS.

FIGURE A17r
TYPICAL ABUTTING SCHOOL ZONE

SEE FIGURE A1 FOR TABLE OF DIMENSIONS AND NOTES



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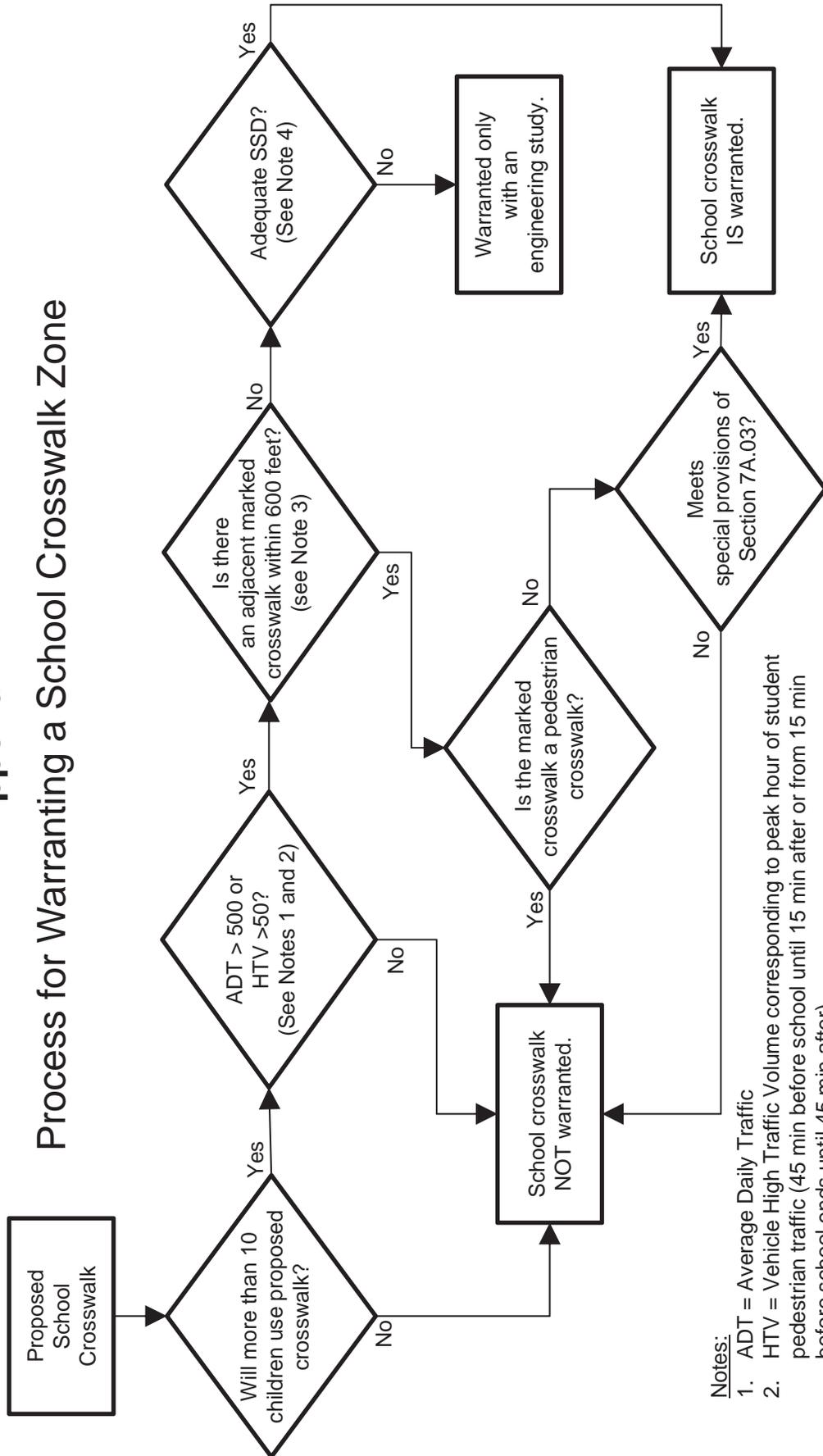
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APPENDIX B. School Zone Process Flowcharts

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Appendix B1r Process for Warranting a School Crosswalk Zone

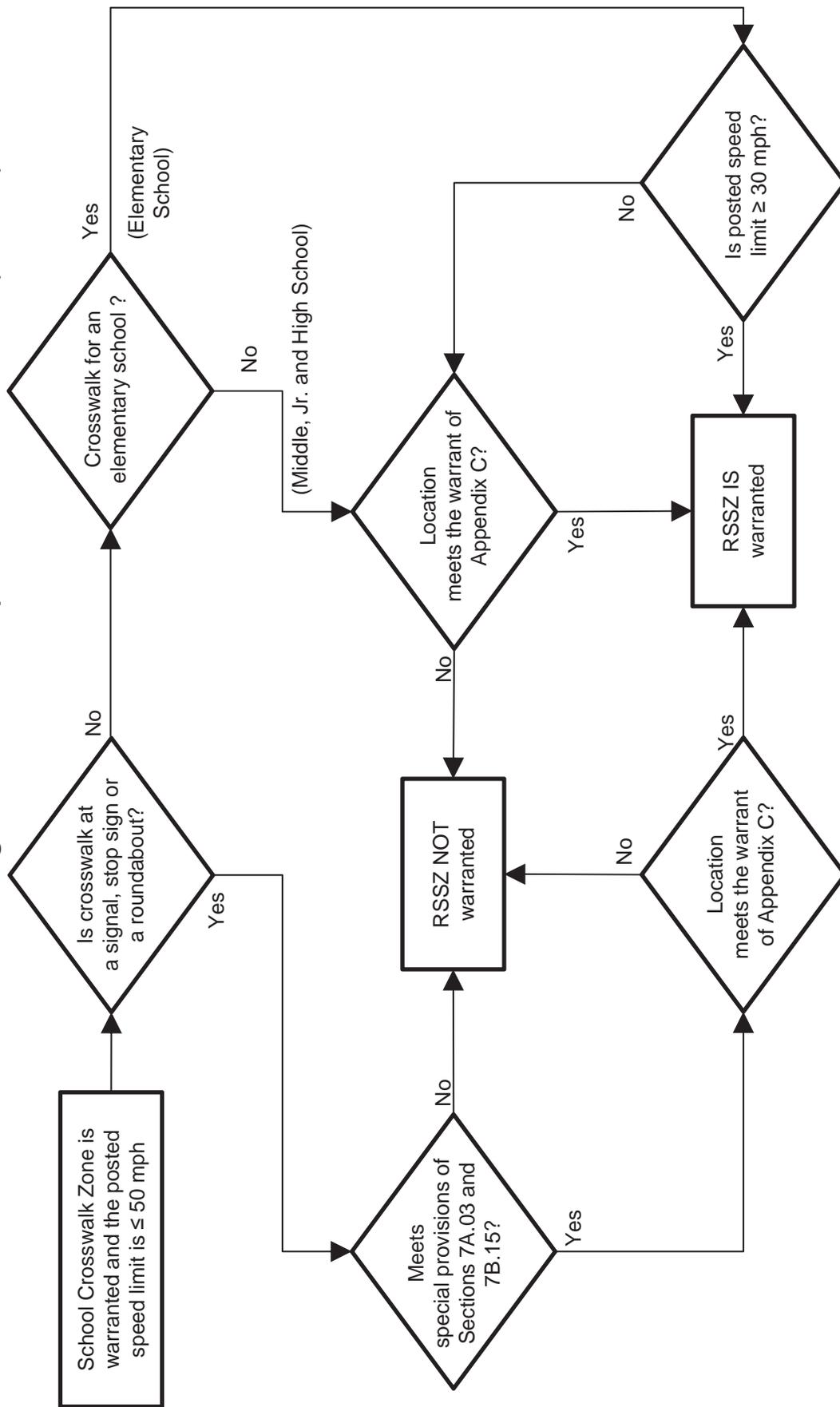


Notes:

1. ADT = Average Daily Traffic
2. HTV = Vehicle High Traffic Volume corresponding to peak hour of student pedestrian traffic (45 min before school until 15 min after or from 15 min before school ends until 45 min after).
3. Excluding the intersection under investigation. See Section 7A.03 for special provisions of secondary school crosswalk.
4. SSD = Stopping Site Distance
5. Only one school crosswalk should cross the major roadway.

R1

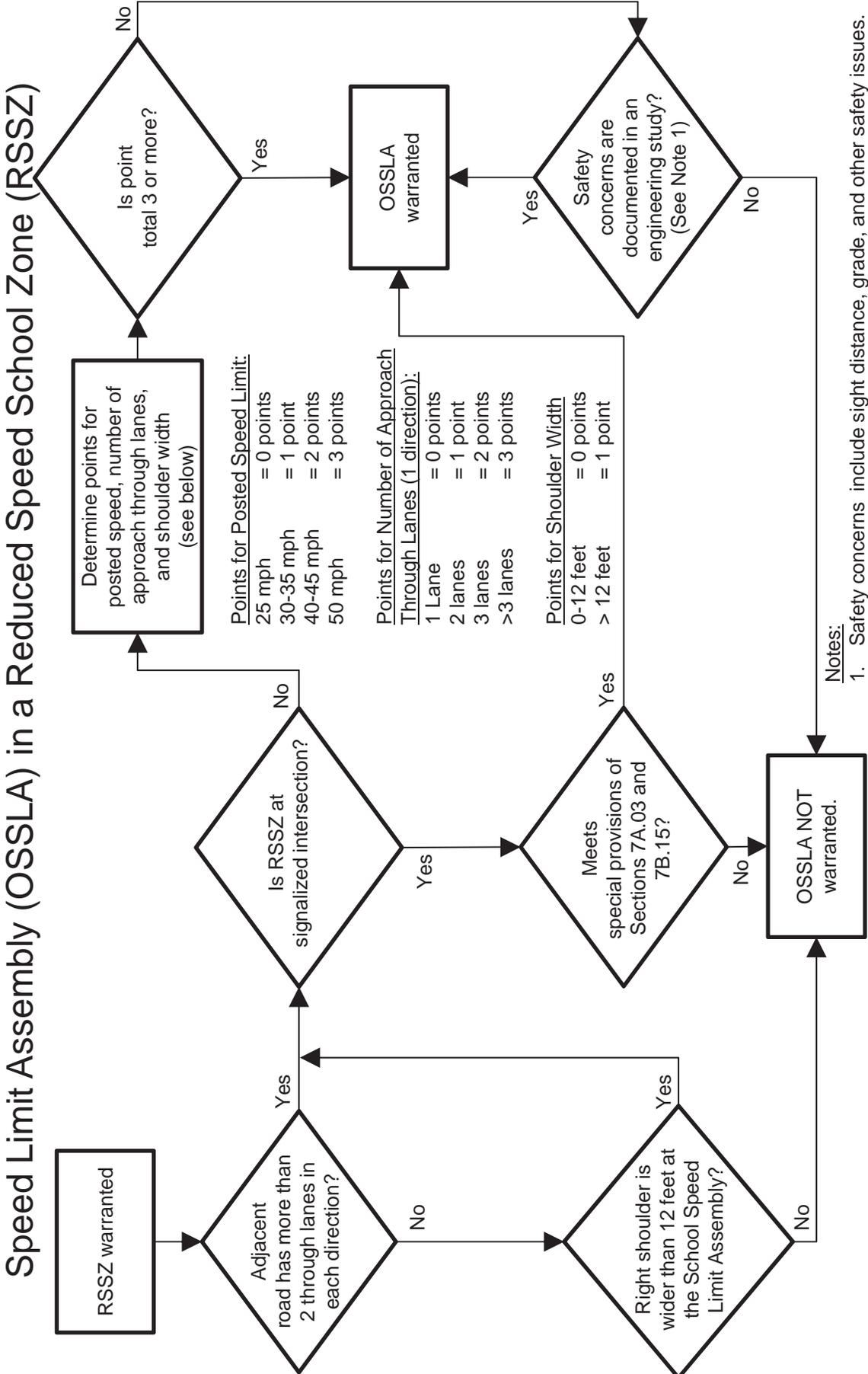
Appendix B2r Process for Warranting a Reduced Speed School Zone (RSSZ)



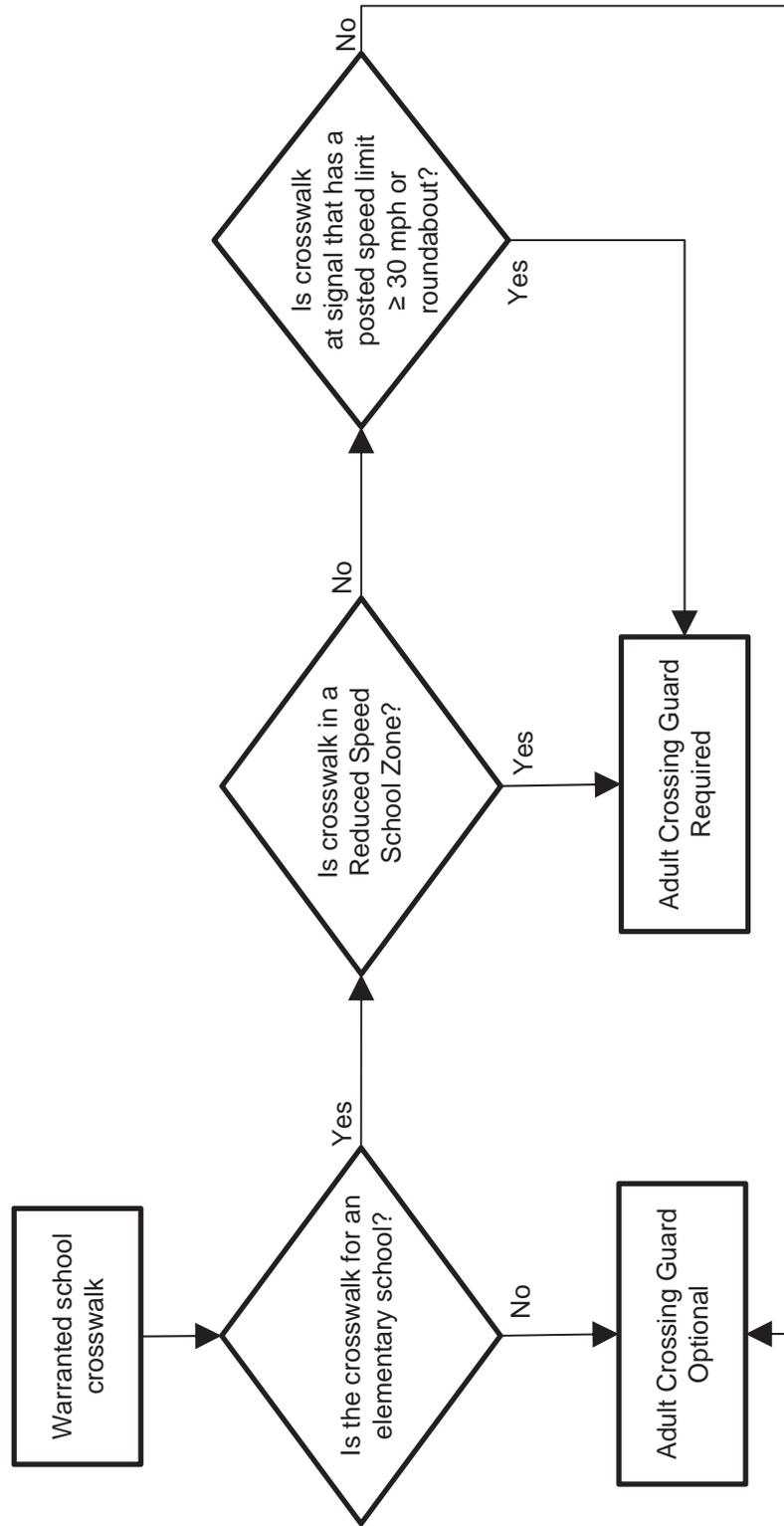
Notes:
 1. See Appendix B4 for crossing guard requirements.

Appendix B3r

Requirements for Consideration of Overhead School Speed Limit Assembly (OSSLA) in a Reduced Speed School Zone (RSSZ)

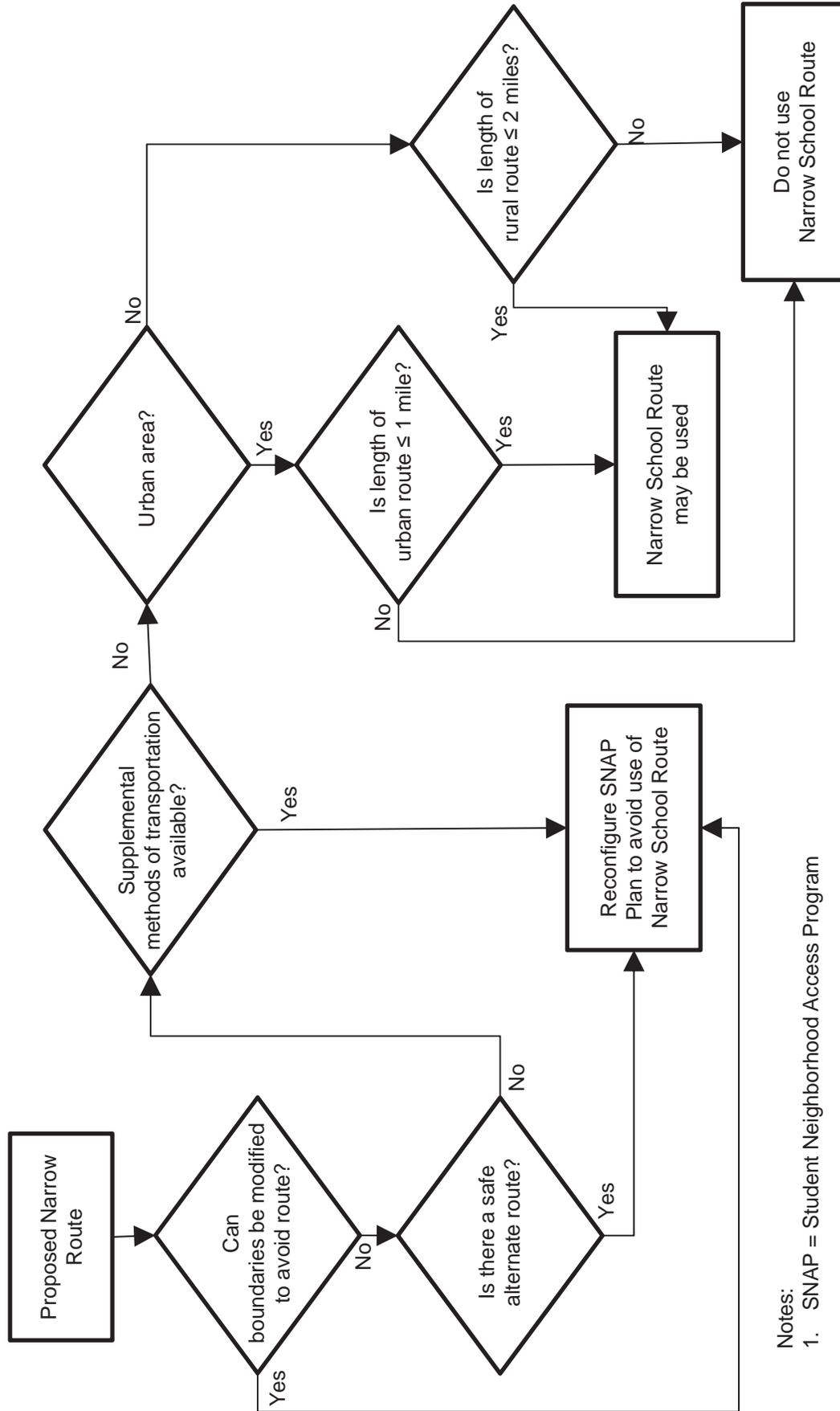


Appendix B4r Requirements for Adult Crossing Guards at School Crosswalks



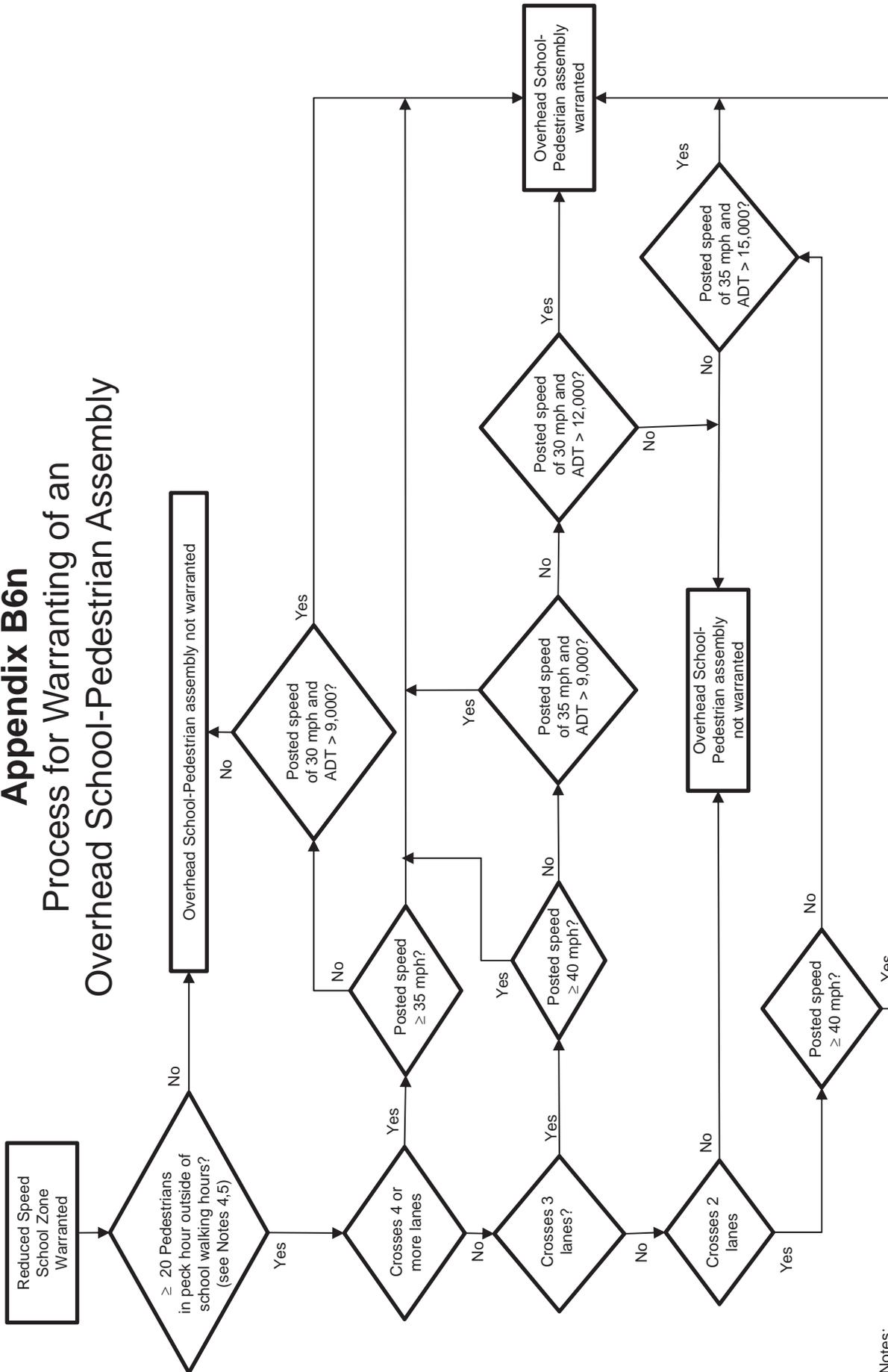
Appendix B5r

Process for Evaluating the Use of a Narrow School Route



Notes:
 1. SNAP = Student Neighborhood Access Program

Appendix B6n Process for Warranting of an Overhead School-Pedestrian Assembly



- Notes:**
1. ADT = Average Daily Traffic
 2. Overhead School-Pedestrian assembly is only warranted between the posted speeds of 30 and 45 mph.
 3. Verify warrant for Reduced Speed School Zone based on Section 7A.03, Appendix B2.
 4. If crosswalk is used primarily by elderly and children outside of school walking hours, a pedestrian count as low as 15 persons per hour may be sufficient to continue with analysis.
 5. School walking hours corresponding to peak hour of student pedestrian traffic (45 min before school starts or from 15 min after school ends until 45 min after school ends).
 6. Forms in Appendix C may be used to total pedestrian counts OUTSIDE of regular school walking hours (see note 5).

APPENDIX C. Warrant: Reduced Speed School Zone

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**APPENDIX C. WARRANT:
REDUCED SPEED SCHOOL ZONE**

A Reduced Speed School Zone **shall not** be installed under the following conditions:

1. The school pedestrian volume is 10 or less; or,
- 2.r The ADT on the roadway is less than 500, or the HTV during the evaluation period is less than 50 vehicles; or,
3. The posted approach speed exceeds 50 mph; or,
4. The school crosswalk is at a roundabout, traffic signal, or STOP (R1-1) sign (except as allowed in Sections 7A.03 and 7B.15).

R1
|

A Reduced Speed School Zone **should not** be installed when the Stopping Sight Distance for the school crosswalk is less than the minimum defined in AASHTO’s most recent edition of *A Policy on Geometric Design of Highways and Streets*.

Minimum points required to warrant a Reduced Speed School Zone is 16 in an urban area, or 12 for an isolated rural community of under 10,000 population.

CATEGORIES

Average Time Between Useable Gaps	Maximum	10	Points
School Pedestrian Volume	Maximum	10	Points
85th Percentile Approach Speed	Maximum	5	Points
Average Demand Per Gap	Maximum	8	Points

DEFINITIONS:

1. **School Pedestrian Volume** - Includes all children between ages 5 and 18 that use the school crossing.

2. **Evaluation Period (EP)** - From forty-five (45) minutes before school starts in the morning until fifteen (15) minutes after school starts or from fifteen (15) minutes before school ends until forty-five (45) minutes after school ends.

3. **Minimum Usable Gap Time (MUGT)** - The minimum gap in traffic required for a single or group of school pedestrians to safely cross a given street width, determined as follows:

$$MUGT = \frac{W}{3.0} + 5.0 = \text{crossing time in seconds}$$

where:

W = Crosswalk width in feet

3.0 = juvenile pedestrian walking speed in feet/second

5.0 = perception, reaction, and clearance time in seconds

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4. **Total Usable Gap (G)** - The summation of Usable Gaps during the Evaluation Period, measured in seconds. A Usable Gap is any gap in traffic equal to or greater than the Minimum Usable Gap Time (MUGT).

5. **Maximum Number of Usable Gaps (MNUG)** - Ratio of Total Usable Gap Time to Minimum Usable Gap Time during the Evaluation Period.

$$MNUG = \frac{G}{MUGT} = \frac{\text{Total Usable Gap Time during EP (Seconds)}}{\text{Minimum Usable Gap Time (Seconds)}}$$

6. A **“Demand”** - The arrival of one or more school pedestrians at the school crossing. The arrival of a single child is considered one demand. The arrival of a group of children is also considered one demand.

WARRANT

1. Average Time Between Usable Gaps (M)

Determine Average Time between Usable Gaps (M) by dividing Evaluation Period (EP, minutes) by the Maximum Number of Usable Gaps (MNUG).

$$M = \frac{EP}{MNUG} = \frac{\text{Evaluation Period (Minutes)}}{\text{Maximum Number of Usable Gaps}}$$

POINT ASSIGNMENT

Average Time Between Usable Gaps (minutes)	Points
Less than 1	0
1.00 - 1.25	2
1.26 - 1.67	4
1.68 - 2.50	6
2.51 - 5.00	8
Over 5	10

Maximum Points = 10

2. School Pedestrian volume

Determine total number of school pedestrians (age 5 to 18) crossing at the study location during the EVALUATION PERIOD.

POINT ASSIGNMENT		
Urban	Rural	Points
10 or less	10 or less	0
11 - 30	11 - 20	2
31 - 50	21 - 35	4
51 - 70	36 - 50	6
71 - 90	51 - 65	8
Over 90	Over 65	10

Maximum Points = 10

3. 85th percentile approach Speed

POINT ASSIGNMENT	
85th Percentile Approach Speed	Points
20 and under	0
21 – 25	1
26 – 30	2
31 – 35	3
36 – 40	4
41 – 45	5
46 – 50	0

Maximum Points = 5

4. Average Demand Per Gap (D)

Determine average demand per gap (D) by dividing total demands (TD) by the maximum number of usable gaps (MNUG). The arrival of a single child is considered one demand. The arrival of a group of children is also considered one demand.

$$D = \frac{TD}{MNUG} = \frac{\text{Total Demands}}{\text{Maximum Number of Usable Gaps}}$$

POINT ASSIGNMENT

Average Demand per Gap	Points
1 or less	0
1.01 - 1.67	2
1.68 - 2.33	4
2.34 - 3.00	6
Over 3.00	8

Maximum Points = 8

After point values are determined for steps 1 through 4, the sum of steps 1 through 4 are compared to the following standard to determine if a reduced speed school zone is warranted:

1. Minimum 16 points in an urban area; or,
2. Minimum 12 points in an isolated, rural community with population under 10,000.

SURVEY METHODS

1. Personnel Requirements: One person
2. Equipment: Stop Watch and Field Data Form
3. Type of Survey:
 - a. Count school-age pedestrians within the Crosswalk area during the Evaluation Period (EP) to determine the School Pedestrian Volume. The Evaluation Period may be either in the morning or in the afternoon.
 - b. Obtain the 85th percentile approach speed. If the 85th percentile approach speed is unknown, the posted speed limit may be used.
 - c. Record (in seconds), on the field data form, each gap greater than or equal to the Minimum Usable Gap Time (MUGT) during the Evaluation Period.
 - d. Record, on the field data form, the Average Time between Usable Gaps (M), the school age pedestrian volume, the approach speed, and the Average Demand per Gap (D).
 - e. Evaluate the individual warrants, assign points, and tabulate points to determine if a reduced school speed zone is justified.

UTAH DEPARTMENT OF TRANSPORTATION DIVISION OF TRAFFIC AND SAFETY REDUCED SPEED SCHOOL ZONE WARRANT EVALUATION WORK SHEET			
ROUTE: _____	MP: _____	STUDY NUMBER: _____	COMMUNITY: _____
DATE: _____	BEGIN TIME: _____	WEATHER: _____	
REGION: _____	END TIME: _____	INVESTIGATOR: _____	
1. MINIMUM USABLE GAP TIME $\frac{\text{WIDTH OF STREET (W)}}{3.0 \text{ FT/SEC}} + 5.0$ <div style="text-align: center;"> <input type="text"/> FT $\frac{\text{3.0 FT/SEC}}{\text{3.0 FT/SEC}} + 5.0 =$ <input type="text"/> SEC </div>		2. MAXIMUM NO. OF USABLE GAPS (MNUG) $\frac{\text{TOTAL USABLE GAP TIME DURING EP (SEC)}}{\text{MINIMUM USABLE GAP TIME (SEC)}} =$ <div style="text-align: center;"> <input type="text"/> / <input type="text"/> = <input type="text"/> </div>	
3. AVERAGE DEMANDS PER GAP (D) $\frac{\text{TOTAL DEMANDS DURING EP (TD)}}{\text{MAXIMUM NO. OF USABLE GAP (MNUG)}} =$ <div style="text-align: center;"> <input type="text"/> / <input type="text"/> = <input type="text"/> </div>		4. AVERAGE TIME BETWEEN USABLE GAPS (MIN) $\frac{\text{EVALUATION PERIOD (MIN)}}{\text{MAXIMUM NO. OF USABLE GAP (MNUG)}} =$ <div style="text-align: center;"> <input type="text"/> / <input type="text"/> = <input type="text"/> </div>	

WARRANT	ACTUAL VALUE	ASSIGNED POINTS	MAXIMUM POINTS
1. AVERAGE TIME BETWEEN GAPS (MIN):			10
2. SCHOOL PEDESTRIAN VOLUME (NUMBER):			10
3. 85TH PERCENTILE APPROACH SPEED (MPH):			5
4. AVERAGE DEMAND PER GAP (D):			8
TOTAL			33

STANDARD (URBAN) = 16
 STANDARD (Rural, isolated, population < 10,000) = 12
 WARRANTED? YES or NO

Sketch:

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USABLE GAP TIMES FOR SCHOOL PEDESTRIAN VOLUME									
TIME	USABLE GAP TIME (SEC)	TIME	USABLE GAP TIME (SEC)	TIME	USABLE GAP TIME (SEC)	TIME	USABLE GAP TIME (SEC)	TIME	USABLE GAP TIME (SEC)
Subtotal:		Subtotal:		Subtotal:		Subtotal:		Subtotal:	

Total Usable Gap Time during EP = _____ Seconds (summation of the subtotals)

SCHOOL PEDESTRIAN VOLUME AND DEMAND TALLY (Five Minute Intervals for 60 Minutes)									
	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5	Interval 6	Interval 7	Interval 8	Interval 9
PEDS									
DEMANDS									
	Interval 10	Interval 11	Interval 12	Remarks:					
PEDS									
DEMANDS									

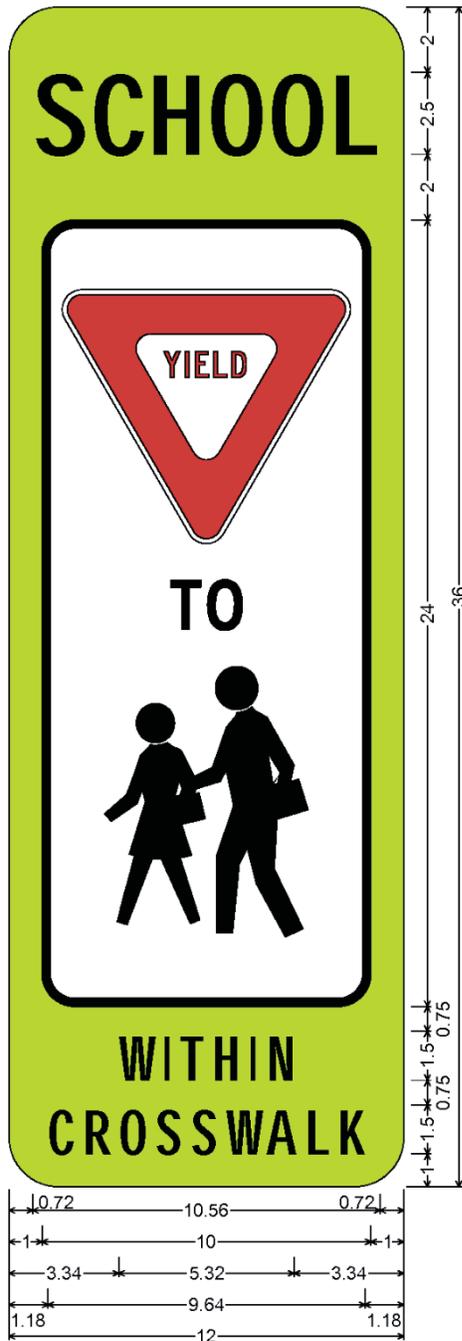
APPENDIX D. Utah Special School Zone Sign Layouts

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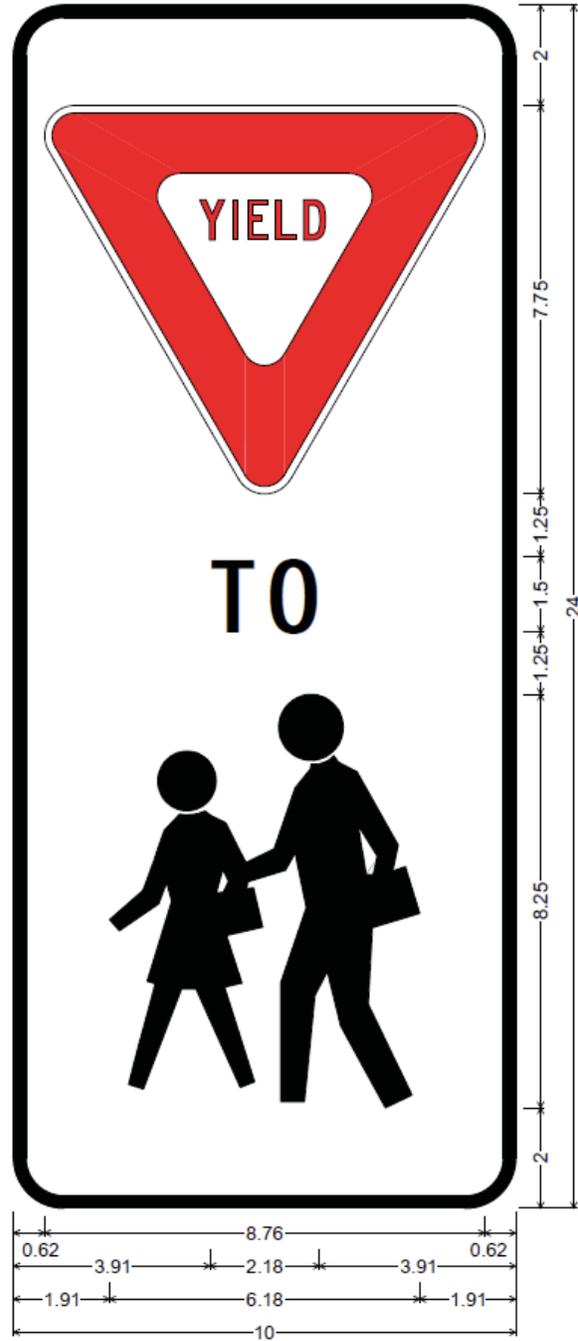
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Figure D-1r. In-Street Schoolchildren Crossing Sign (RS1-6b)

R1



1.50" Radius, 0.00" Border, White on Fluorescent yellow green; "SCHOOL" Black D specified length; RS1-6bPA Schoolchildren Yield Panel; "WITHIN" Black C; "CROSSWALK" Black C;



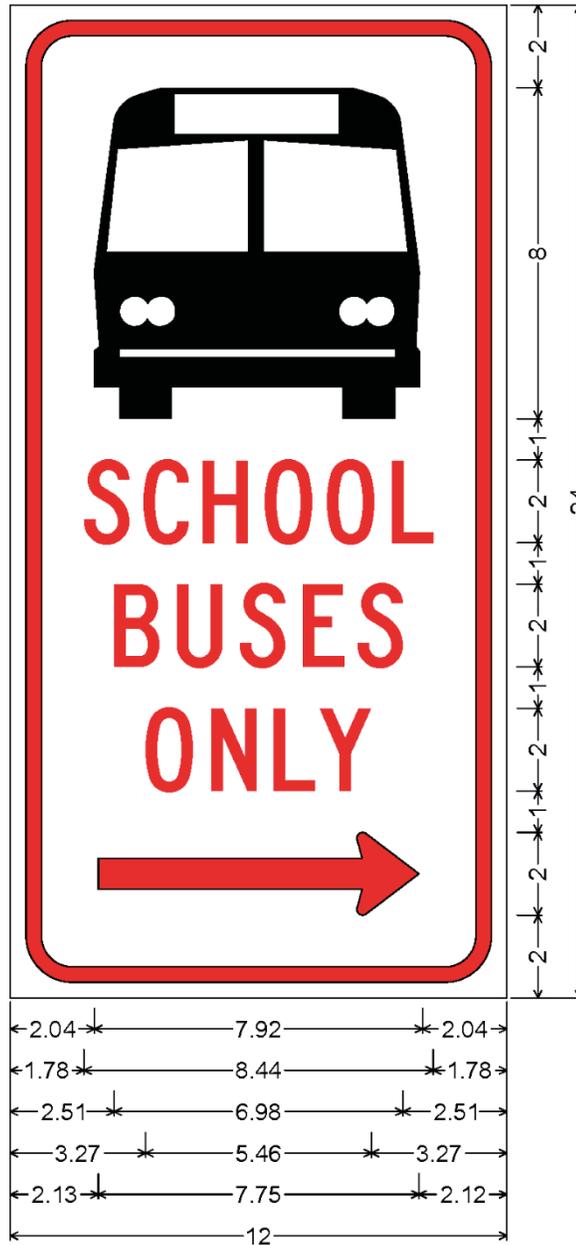
RS1-6bPA Schoolchildren Yield Panel; 1.00" Radius, 0.25" Border, Black on White; R1-2 YIELD Sign; "TO" D specified length;

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R1

Figure D-2r. School Buses Only Symbol Sign (SS1-2)

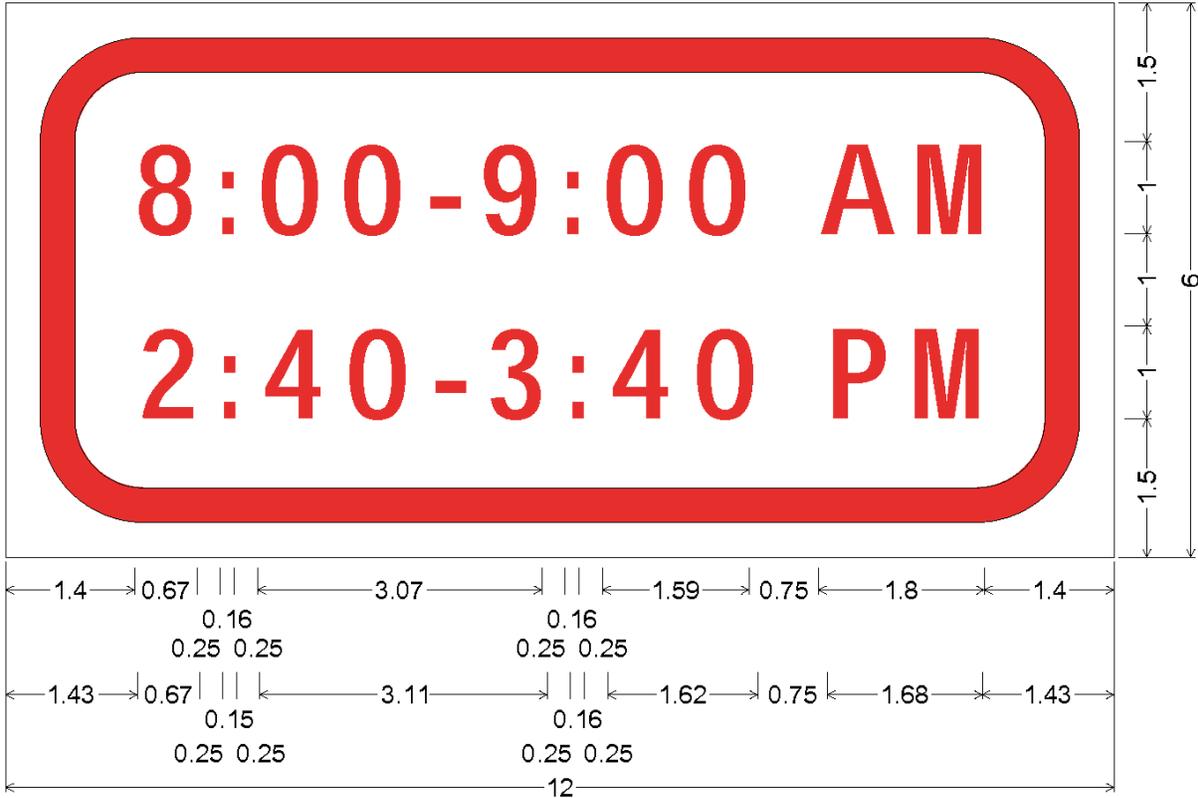
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0.38" Border, 0.38" Indent, Red on White;
 Symbol RA020 Black;
 "SCHOOL" Red C; "BUSES" Red C; "ONLY" Red C;
 Standard Arrow Custom 7.75" X 2.00" 0°;

R1

Figure D-4a. School Time Restriction Plaque (SS1-4P)

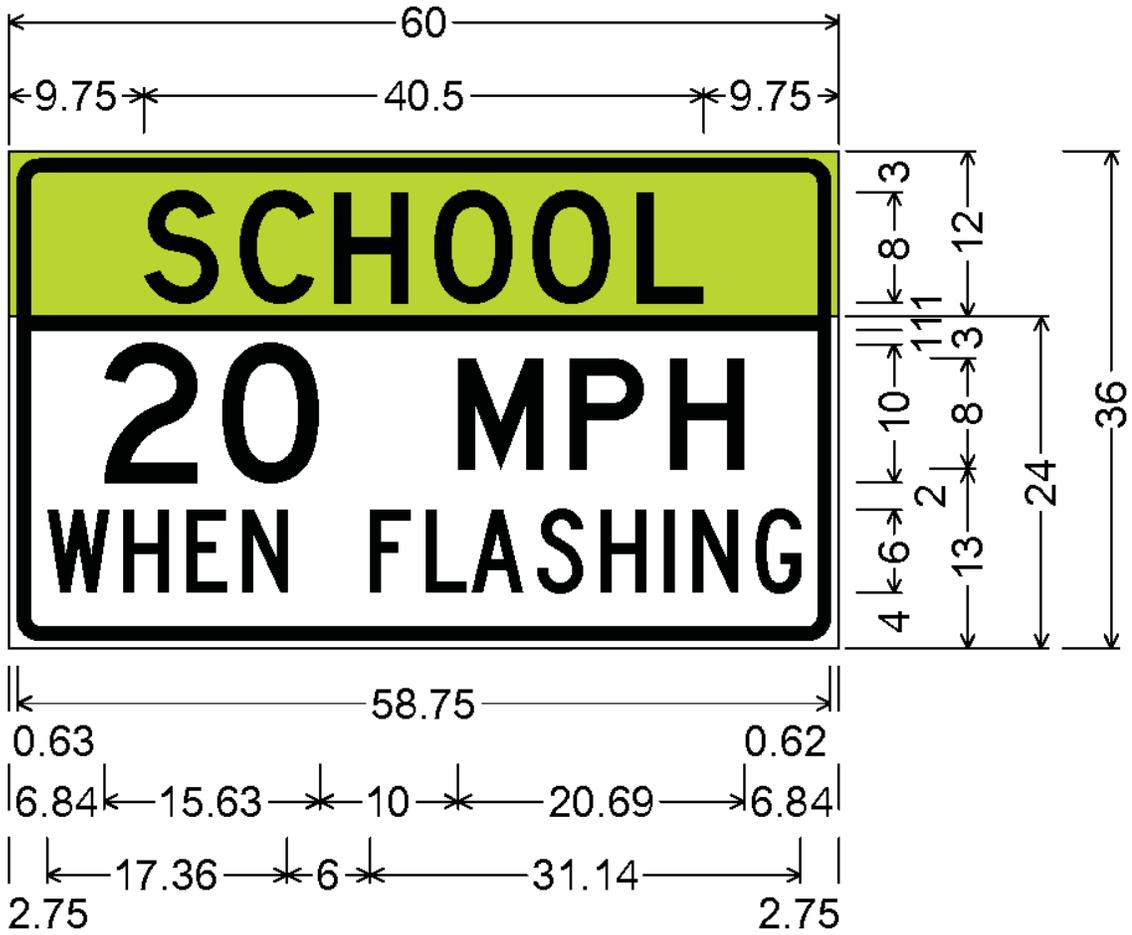


1.5" Radius, 0.38" Border, 0.38" Indent, Red on White;
 "8:00-9:00 AM" D; "2:40-3:40 PM" D;

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R1

Figure D-6a. SCHOOL 20 MPH WHEN FLASHING Sign Overhead (SS5-1a)

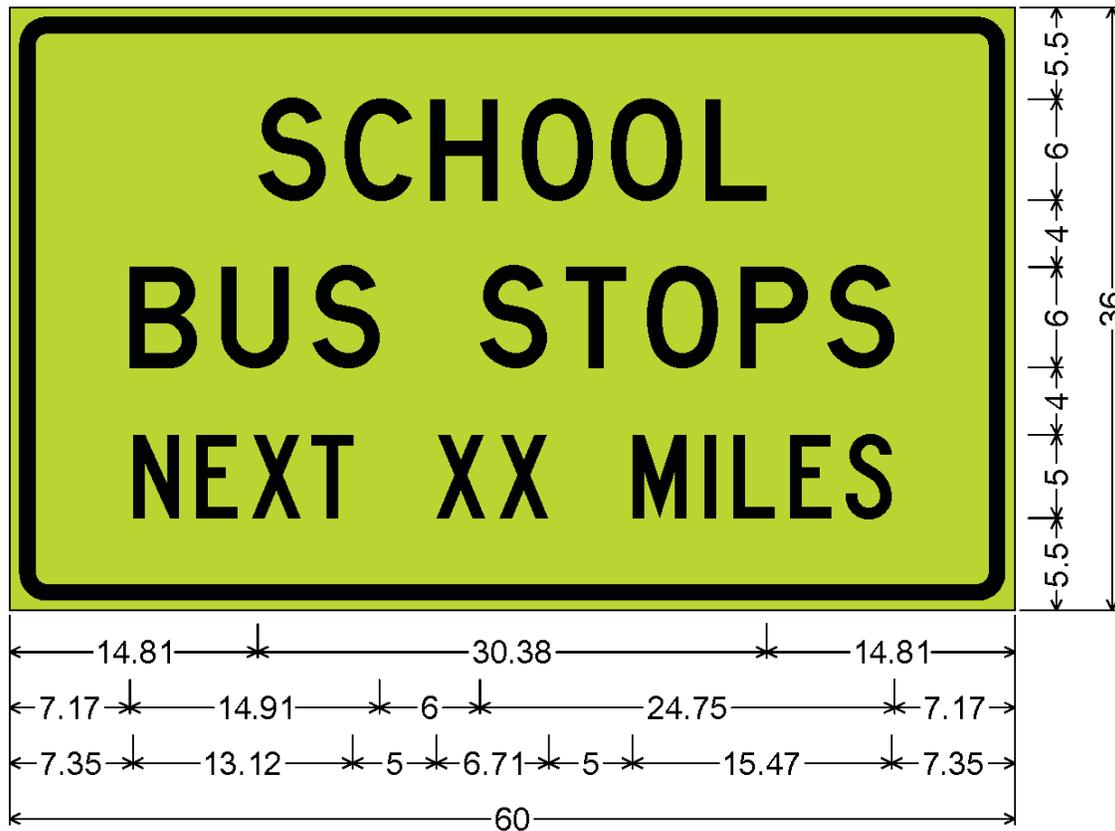


2.25" Radius, 0.88" Border, 0.63" Indent, Black on Fluorescent yellow green;
 "SCHOOL" D;
 2.25" Radius, 0.88" Border, 0.63" Indent, Black on White;
 "20 MPH" D; "WHEN FLASHING" C;

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Figure D-7a. SCHOOL BUS STOPS NEXT XX MILES (SS3-1a)

R1

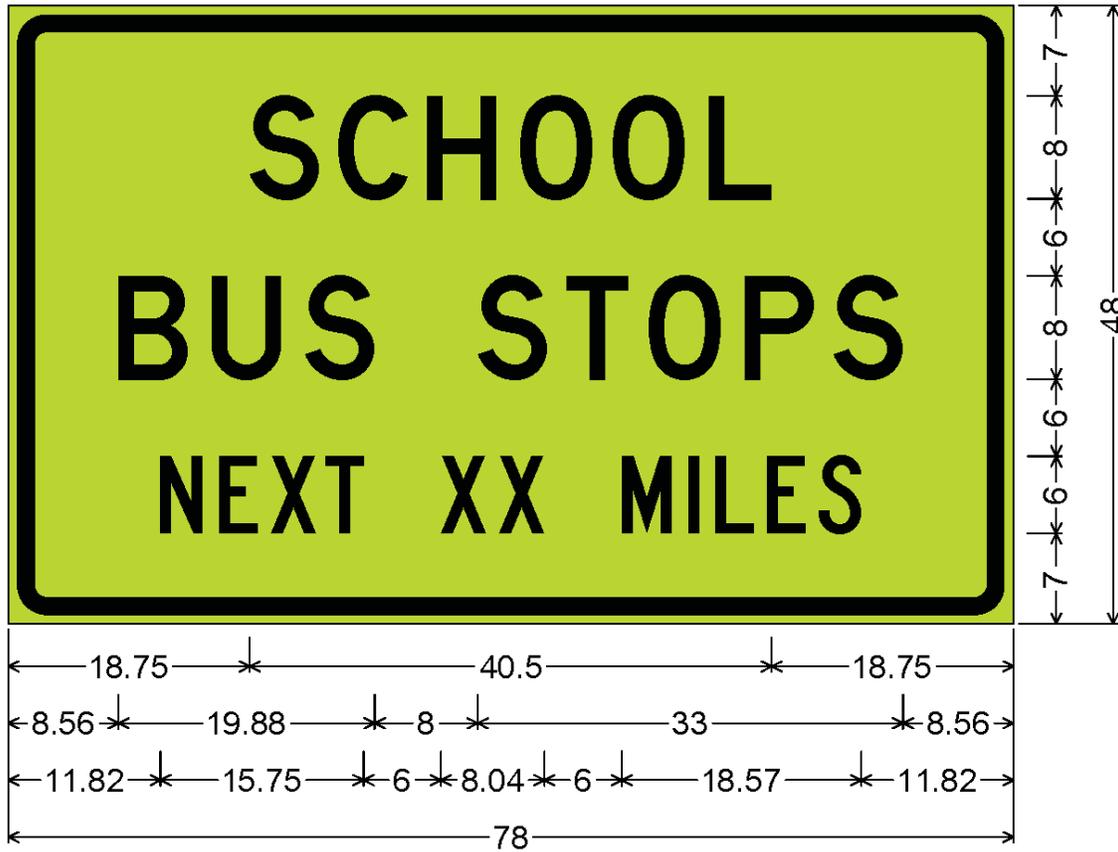


2.25" Radius, 0.88" Border, 0.63" Indent, Black on Fluorescent yellow-green;
 "SCHOOL" D; "BUS STOPS" D; "NEXT XX MILES" C;

UTAH MUTCD

R1

**Figure D-8a. SCHOOL BUS STOPS NEXT XX MILES Sign
Oversized (SS3-1a1)**

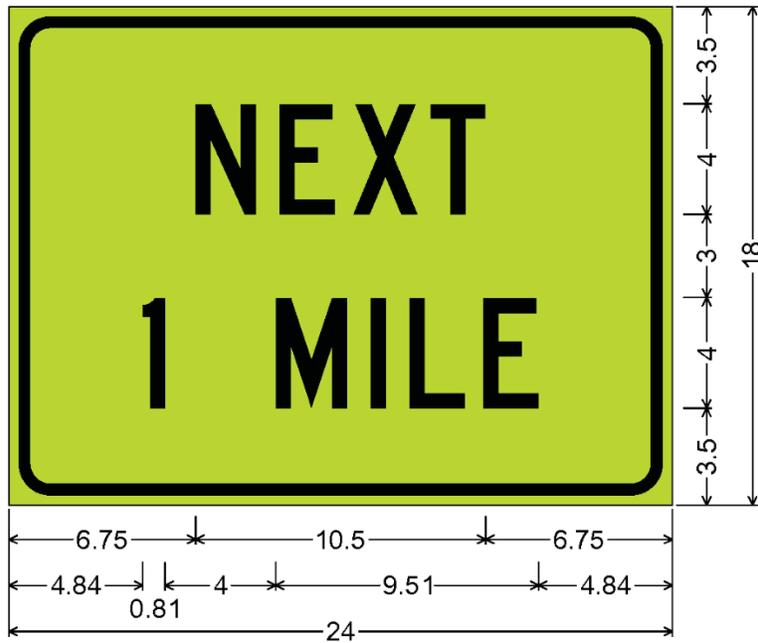


3.00" Radius, 1.25" Border, 0.75" Indent, Black on Fluorescent yellow-green;
 "SCHOOL" D; "BUS STOPS" D; "NEXT XX MILES" C;

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Figure D-9a. NEXT X MILE(S) Plaque (W7-3a Full Mile Increments)

R1



WS16-4b2P NEXT 1 MILE Plaque School Zone;
 1.50" Radius, 0.38" Border, 0.38" Indent, Black on Bright yellow green;
 "NEXT" C; "1 MILE" C;

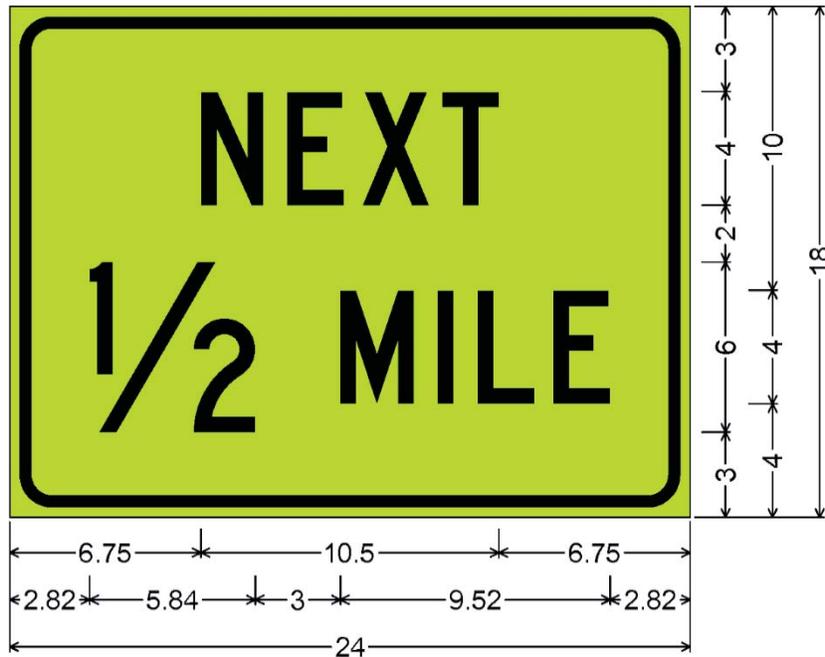


WS16-4b2aP NEXT 2 MILES Plaque School Zone;
 1.50" Radius, 0.38" Border, 0.38" Indent, Black on Bright yellow green;
 "NEXT" C; "2 MILES" C;

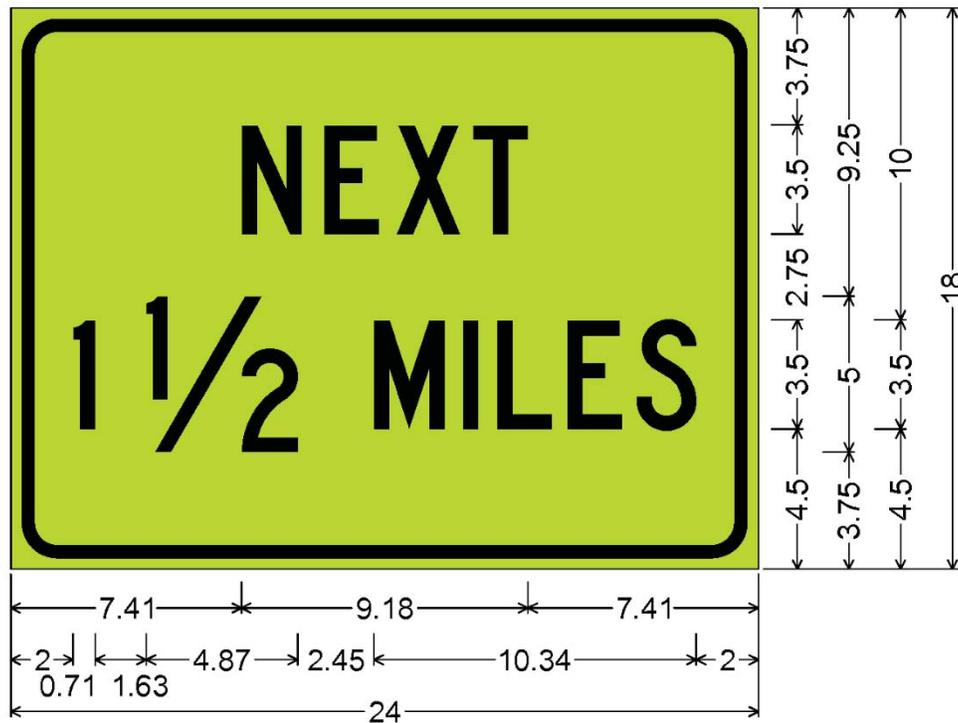
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Figure D-10a. NEXT X MILE(S) Plaque (W7-3a Fractional Mile Increments)



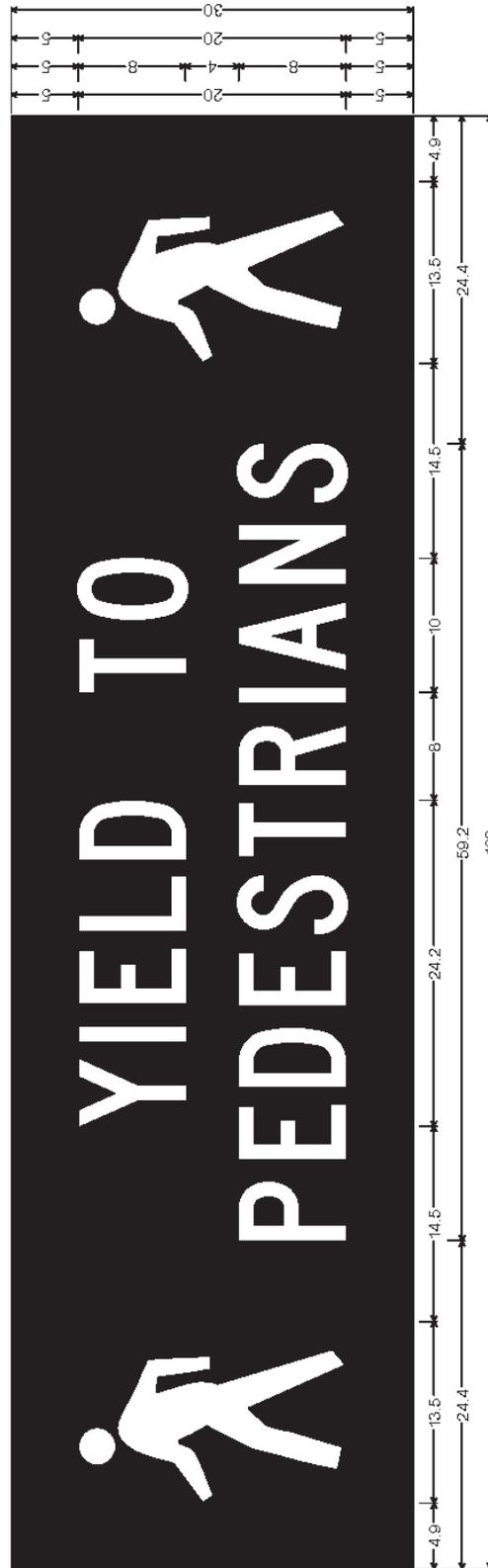
WS16-4c2P NEXT 1/2 MILE Plaque School Zone;
 1.50" Radius, 0.38" Border, 0.38" Indent, Black on Bright yellow green;
 "NEXT" C; "1/2 MILE" C;



WS16-4c2Ap NEXT 1 1/2 MILES Plaque School Zone;
 1.50" Radius, 0.38" Border, 0.38" Indent, Black on Bright yellow green;
 "NEXT" C; "1 1/2 MILES" C specified length;

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Figure D-11a. Yield To Pedestrians Blank-out Sign (RS1-9b)



RS1-9b Yield to Pedestrians Blank-out;
 PED X-ING 6"; No border, Black on Black;
 "YIELD TO" White C; "PEDESTRIANS" White C;
 See most current FHWA publication *Standard Highway Signs Including Pavement Markings and Standard Alphabets* for symbol layout

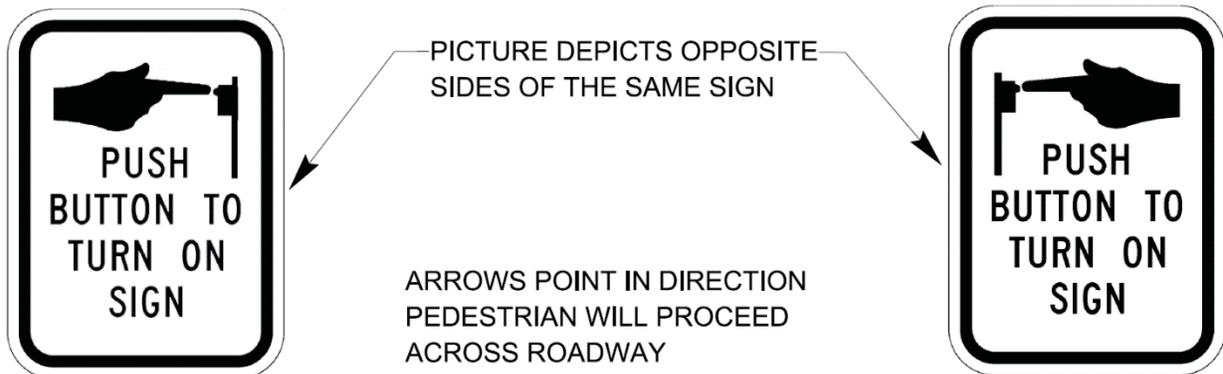
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Figure D-12a. Push Button to Turn On Sign (RS10-25a, Double Sided)



RS10-25a, Press Button to Turn On Sign;
 1.5" Radius, 0.4" Border, 0.4" Indent, Black on White;
 "BUTTON" C 2K specified length; "TO" C 2K specified length;
 "TURN" C 2K specified length; "ON" C 2K specified length;
 "SIGN" C 2K specified length;

See most current FHWA publication *Standard Highway Signs Including Pavement Markings and Standard Alphabets* for symbol layout



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APPENDIX E. School Zone Installation Checklist

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Table E-1r. School Zone Installation Checklist

Issue	Yes	No	NA
Is this School Zone included in an approved SNAP plan?			
SIGNING			
General Sign Items			
Signs meet standards for design, color and retroreflectivity?			
Sign/Assembly is placed at a minimum height? (to bottom of lowest sign or plaque) 1. Rural: 5 feet for a sign or 4 feet for an assembly, from edge of pavement; 2. Urban, not over a pedestrian route: 7 feet for a sign or 6 feet for an assembly, from top of curb or absence of curb, the near edge of traveled way; 3. Rural/Urban, over pedestrian route: 7 feet from the walking surface.			
Sign/Assembly is placed at the proper lateral offset? (spacing to edge of sign) 1. Rural: minimum 6 feet from a paved shoulder or 12 feet from the traveled way whichever is greater; 2. Urban: minimum 6 feet from a paved shoulder or 12 feet from the traveled way whichever is greater; or, a. Where lateral offset cannot be met, a minimum offset of 2 feet from the traveled way or edge of paved shoulder, whichever is greater is allowed; or, b. In constrained conditions a lateral offset of at least 1 foot from the face of the curb. 3. No more than 4 inches into the pedestrian route if any sign is installed lower than 7 feet above a pedestrian route.			
A. School Advance Crossing Assembly			
Assembly includes the S1-1 sign with AHEAD (W16-9P) plaque?			
ALL YEAR (S4-7P) plaque is between the S1-1 and W16-9P for a year-round school?			
Assembly is located at the proper spacing according to Appendix A?			
Sign is placed at the proper height? (see General Sign Items)			
Assembly is placed at the proper lateral offset? (see General Sign Items)			
B. School Speed Limit Assembly (Only used in Reduced Speed School Zones)			
Assembly includes only the S5-1 sign with Speed Limit Sign Beacons and is in conformance with UDOT Standard Drawings SN 2 Series?			
Assembly is located at the proper spacing according to Appendix A?			
Assembly is placed at the proper height? (see General Sign Items)			
Assembly is placed at the proper lateral offset? (see General Sign Items)			
Speed Limit Sign displays 20 MPH?			
Speed Limit Sign Beacons: 1. Flashes yellow top-bottom (alternate); and, 2. Has an on/off switch where an Adult Crossing Guard is required; or, 3. Has a timer where an Adult Crossing Guard is not required? 4. Are interlocked with any other flashing beacons within a Reduced Speed School Zone such that the other flashing beacons will not operate when the School Speed Limit Beacons are active?			

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Issue	Yes	No	NA
C. Overhead School Speed Limit Assembly (SS5-1a with Speed Limit Sign Beacons) Only used in Reduced Speed School Zones			
Structure includes only the SS5-1a sign with Speed Limit Sign Beacons and is in conformance with UDOT Standard Drawings SN3?			
Structure is located at the proper spacing according to Appendix A?			
Speed Limit (SS5-1a) Sign displays 20 MPH?			
Speed Limit Sign Beacons: 1. Flashes yellow left-right (alternate); and, 2. Flashes with the School Speed Limit Assembly			
D. School Crossing Assembly			
Assembly includes only the S1-1 sign with Diagonal Arrow (W16-7P) plaque?			
Assembly is located at the crosswalk, or as close as possible?			
Assembly is placed at the proper height? 1. See General Sign Items; or, 2. The height of the bottom of the assembly is no less than the top of the Yield Here To Pedestrians sign if the latter is used			
Assembly is placed at the proper lateral offset? (see General Sign Item)			
Is the approach controlled by a STOP or YIELD sign? (If so, assembly shall not be used)			
E. END SCHOOL SPEED LIMIT Sign (Only used in Reduced Speed School Zones)			
Sign is located at the proper spacing according to Appendix A?			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
Sign is individually mounted on a separate post (on other signs attached)?			
F. Narrow School Route Assembly			
Assembly includes only the S1-1 sign with NEXT X MILE(S) (W7-3aP) plaque?			
NEXT X MILE(S) plaque(s) display distance of: 1. Rural: ½-mile increments (2 mile maximum length); or, 2. Urban: ¼-mile increments (1 mile maximum length)?			
ALL YEAR (S4-7P) plaque is between the S1-1 and W7-3aP for a year-round school?			
Assembly is located at the proper spacing according to Appendix A?			
Assembly is placed at the proper height? (see General Sign Items)			
Assembly is placed at the proper lateral offset? (see General Sign Items)			
Is the appropriate “No Parking” sign/signs used per Section I below?			
G. Abutting School Zone (optional)			
Includes only the S1-1 sign?			
ALL YEAR (S4-7P) plaque is below the S1-1 for a year-round school?			
Sign is located at the proper spacing according to Appendix A?			
Sign is placed at the proper height? (see General Sign Item)			
Sign is placed at the proper lateral offset? (see General Sign Items)			

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Issue	Yes	No	NA
H. School Supplemental Turn Assembly (optional)			
Is the School Supplemental Turn assembly (S1-1 and W16-5P) used only on a street without a school crosswalk across the street at the intersection?			
Is the School Supplemental Turn assembly (S1-1 and W16-5P) used only at an uncontrolled intersection?			
Is the School Supplemental Turn assembly (S1-1 and W16-6P) located at the proper spacing according to Appendix A?			
Arrow (W15-5P, W15-6P) plaque is pointing toward the school crosswalk?			
ALL YEAR (S4-7P) plaque is between the S1-1 and Turn Arrow (W16-5P) or Advance Turn Arrow (W16-6P) for a year-round school?			
Assembly is placed at the proper height? (see General Sign Items)			
Assembly is placed at the proper lateral offset? (see General Sign Items)			
I. Parking and Stopping Signs (R7 and R8 Series)			
Required parking signs are located at the proper locations according to Appendix A?			
If used, are optional parking signs are located at the proper locations according to Appendix A?			
Parking signs are angled 30-45 degrees toward on-coming traffic measured from the curbline?			
Parking signs with the appended message THIS SIDE OF SIGN are placed facing on-coming traffic?			
Signs are placed at the proper height? (see General Sign Items)			
Signs are placed at the proper lateral offset? (see General Sign Items)			
Where 24 hour limitation does not apply, is the appropriate time restriction plaque added (SS1-4P, SS1-5P)?			
J. Reduced Speed School Zone Ahead Sign (Recommended For More Than 20 MPH Reduction, Optional use Otherwise in Reduced Speed School Zones)			
Sign is located at the proper spacing according to Appendix A?			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
Reduced Speed School Zone Ahead Sign displays 20 mph?			
K. Yield Here To Pedestrian Sign (Optional use at uncontrolled multi-lane mid-block school crosswalks)			
Sign is used only at uncontrolled multi-lane mid-block school crosswalk?			
Sign is located 20 to 50 feet in advance of the school crosswalk?			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
Has the associated School Crossing assembly been raised to be no less than the top of the Yield Here To Pedestrians Sign?			
Are required Yield lines in place if the sign is used?			
L. School Bus Loading Zone Signs			
Includes the SS1-2 or SS1-3 signs marking the beginning and ending of school bus loading zone with the appropriate arrow direction?			

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Issue	Yes	No	NA
Signs are angled 30-45 degrees toward on-coming traffic measured from the curbline?			
Intermediate sign(s) at approximately 50 foot spacing?			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
If parking is allowed during non-school bus loading times, is the associated time plaques (SS1-4P or SS1-5P) placed below the SS1-2 or SS1-3 sign?			
M. School Bus Stop Ahead (optional)			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
N. SCHOOL BUS STOPS NEXT XX MILES sign (optional)			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
Distance specified is less than 15 miles?			
Is the SS3-1a sign repeated in decreasing increments of approximately 5 miles?			
O. SCHOOL BUS TURN AHEAD (optional)			
Sign is placed at the proper height? (see General Sign Items)			
Sign is placed at the proper lateral offset? (see General Sign Items)			
P. Overhead School-Pedestrian Assembly			
Signs and buttons are placed at the proper height? (see Appendix A, Figure A10 or A12) <ol style="list-style-type: none"> 1. Is the pedestrian flashing beacon 9'-3" ± 6", measured from the ADA turning space to the bottom of the beacon housing? 2. Is the bottom of the Yield to Pedestrians Blank-out (RS1-9b) sign 17'-6" minimum from the highest elevation of the pavement under the sign? 3. Is the push button actuator mounted 42" ± 2" above the ADA turning space? 4. Is the Push Button to Turn On Sign (RS10-25a) sign mounted directly over the push button and finger is pointing to the crosswalk? 			
Signs and buttons are placed at the proper lateral offset? (see Appendix A, Figure A10 or A12)? <ol style="list-style-type: none"> 1. Is the Yield to Pedestrians Blank-out (RS1-9b) sign centered over the through lanes? 2. Is the push button actuator located within 10 feet of the roadway side edge of the detectable warning surface, measured from the center of the curb cut? 5. Is the push button actuator 10 inches or less from edge of the ADA turning space? 			
<ol style="list-style-type: none"> 3. Is the operation interlocked with the School Speed Limit Assemblies such that when the School Speed Limit Assemblies are operating, the blank-out signs and beacons do not operate? 			

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Issue	Yes	No	NA
If installed with an Overhead School Speed Limit Assembly is there adequate sight distance to the Yield to Pedestrians blank-out sign?			
PAVEMENT MARKINGS			
Q. SCHOOL Pavement Marking			
SCHOOL marking is placed in lane(s) adjacent to School Advanced Crossing assembly?			
SCHOOL marking is placed in each approach lane for odd number of lanes (6 feet minimum height). Two-lane SCHOOL marking may be placed for even number of approach lanes (10 feet minimum height)?			
SCHOOL marking is contained within the lane(s) and does not obscure any portion of center or lane line?			
R. School Crosswalk			
Longitudinal crosswalk markings are used (9 feet minimum length for non-state routes)?			
Spacing on the Longitudinal markings are uniform and 24 to 36 inches apart?			
Longitudinal crosswalk markings are 24 inches wide?			
S. Stop and Yield Lines			
Stop Line used 4 feet in advance of a school crosswalk at intersections controlled by a traffic signal or STOP (R1-1) sign (width of 12 to 24 inches for non-state routes)?			
Yield Line consists of a row of isosceles triangles pointing toward approaching traffic. Minimum base width of triangles is 24 inches. Height of triangles is 1.5 times the base. Spacing of triangles is 6 to 12 inches?			
Yield Line used 4 feet in advance of a school crosswalk at intersections controlled by a YIELD sign?			
Yield Lines (Optional use at uncontrolled multi-lane mid-block school crosswalks) 1. Yield Lines placed 20 to 50 feet in advance of school crosswalk; and, 2. If Yield Lines are used, are the required Yield Here To Pedestrian signs adjacent to Yield Lines?			
T. Center, Lane and Edge Lines			
Centerline: 1. With no two-way left-turn lane, the center line is a solid double yellow line between any two travel lanes moving in opposing directions for the entire length between the School Advance Warning signs; or 2. With a two-way left-turn lane, striping is as per MUTCD Part 3 Markings?			
Lane line(s) are solid white between any two travel lanes moving in the same direction approaching the crosswalk and proper length per Appendix A?			
If used, an 8 inch solid white edge line for the length of a Narrow School Route (optional)?			
U. Curb Markings			
Curb within on-premise School Bus Loading Zone painted yellow-green?			
Curb within off-premise School Bus Loading Zone painted either red or yellow-green (optional)?			

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APPENDIX F. UDOT Contacts and Region Map

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Table F-1r. Utah Department of Transportation Contact Information

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UDOT Region 1

169 North Wall Avenue
 PO Box 12580
 Ogden, UT 84412-2580
 801.620.1600

Safe Routes to School Coordinator

Traffic and Safety Division
 4501 South 2700 West
 Box 143200
 Salt Lake City, UT 84114-3200
 801.965.4486

UDOT Region 2

2010 South 2760 West
 Salt Lake City, UT 84104-4592
 801.975.4900

Chief Railroad Engineer

Traffic and Safety Division
 4501 South 2700 West
 Box 143200
 Salt Lake City, UT 84114-3200
 801.965.4284

UDOT Region 3

658 North 1500 West
 Orem, UT 84057-2824
 801.227.8000

Engineer for Traffic and Safety

Traffic and Safety Division
 4501 South 2700 West
 Box 143200
 Salt Lake City, UT 84114-3200
 801.965.4273

UDOT Region 4

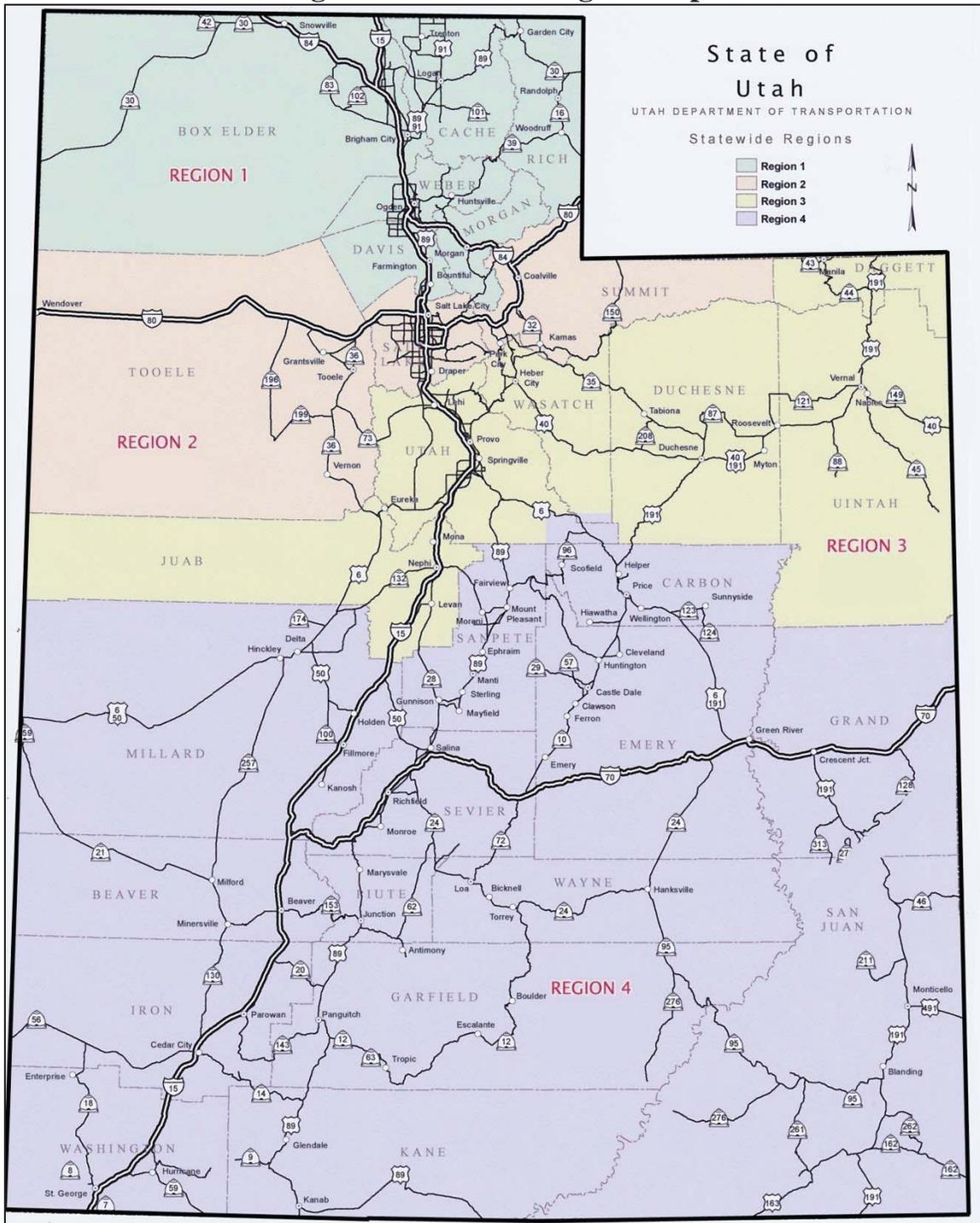
210 W 800 S
 Richfield, UT 84701-2839
 435.893.4799

Note:

UDOT Region Map on next page or [Click Here](#)

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Figure F-1. UDOT Region Map



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APPENDIX G. Handouts: Crossing Guard Equipment and Sign Quick Reference

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Table G-1r Crossing Guard Equipment Checklist:

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Requirements based on the Part 7D of the *Utah State Traffic Controls for School Zones Part 7 of the Utah Manual on Uniform Traffic Control Devices*.

Adult Crossing Guards:

- High visibility vest or coat (always worn on outer layer) - Labeled as meeting ANSI 107, Class 2 or better.
- Cones or In-Street Schoolchildren Crossing sign assembly.
 - Cone height 28 to 36 inches.
 - Cones include retroreflective bands.
 - Two cones or two In-Street Schoolchildren Crossing sign assemblies are required for each school crosswalk.
 - The In-Street Schoolchildren crossing assembly is double sided.
 - The In-Street Schoolchildren crossing assembly is designed to bend over and bounce back if hit by a vehicle.
- STOP (R1-1) paddle (shape and colors similar to a standard STOP (R1-1) sign)
 - Minimum size is 18 inches.
 - STOP letters (all upper case) must be at least 6 inches high printed on BOTH Sides.
 - Paddle must be retroreflectorized (ASTM Type III, “High Intensity”, or better) or self-illuminated.
- Weather related equipment (i.e. proper attire for season, sunscreen, sunglasses, rain coat, shoes that cover the toe, etc.).

Student Patrols:

- High visibility apparel - Labeled as meeting ANSI 107, Class 1 or better.
- Flagging devices for pedestrian control - Retroreflective or self-illuminated.
- Weather related equipment (i.e. proper attire for season, sunscreen, sunglasses, rain coat, shoes that cover the toe, etc.).

Notes:

1. Student patrols direct SCHOOLCHILDREN, not vehicles. STOP (R1-1) paddles are reserved for adult crossing guards only.
2. Cones taller than 36 inches require additional retroreflective bands (See Sign Quick Reference or MUTCD 6F.64).
3. For questions contact UDOT’s Safe Routes to School Coordinator at 801.965.4486.

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Table G-2r. Sign Quick Reference (Sheet 1 of 2)

R1

Sign/Plaque/Assembly	Sign ID	Section (Utah School Zone Manual)	Conventional Road (W x H in inches)	Oversized (W x H in inches)	Sample
In-Street Schoolchildren Crossing	RS1-6b	7B.24	12 x 36	-	 *
School	S1-1	7B.11, 7B.12	36 x 36	48 x 48	 *
School Bus Stop Ahead	S3-1	7B.13	36 x 36	48 x 48	 *
SCHOOL BUS TURN AHEAD	S3-2	7B.14	36 x 36	48 x 48	 *
ALL YEAR	S4-7P	7B.19	24 x 12	30 x 18	 *
SCHOOL SPEED LIMIT 20 WHEN FLASHING	S5-1	7B.15	24 x 48	36 x 72	 *
END SCHOOL SPEED LIMIT	S5-3	7B.18	24 x 30	24 x 30	 *
SCHOOL BUSES ONLY	SS1-3	7B.23	12 x 18	-	 *
SCHOOL BUS STOPS NEXT XX MILES	SS3-1a	7B.13	60 x 36	78 x 48	 *
SCHOOL 20 MPH WHEN FLASHING Sign Overhead	SS5-1a	7B.15	60 x 36	-	 *
NEXT X MILE(S)	W7-3aP	7B.21	24 x 18	30 x 24	 *
Diagonal Arrow	W16-7P	7B.12	24 x 12	30 x 18	 *
AHEAD	W16-9P	7B.11, 7B.19, 7B.22	24 x 12	30 x 18	 *

Notes:

1. See the *Utah State Traffic Controls for School Zones Manual Part 7 of the Utah Manual on Uniform Traffic Control Devices Appendix D* for layout of the RS1-6b, RS1-9b, RS10-25a, SS1-2, SS1-3, SS1-4P, SS1-5P, SS3-1a, SS5-1a, W7-3aP signs.
2. Signs marked with "*" are the only authorized yellow-green signs in Utah
3. For questions or comments please contact the Safe Routes to School Coordinator at 801.965.4486

Table G-2r. Sign Quick Reference (Sheet 2 of 2)

R1

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Sign/Plaque/Assembly	Sign ID	Section (Utah School Zone Manual)	Conventional Road (W x H in inches)	Oversized (W x H in inches)	Sample
Yield Here to Peds	R1-5	7B.20	36 x 36	-	
Yield Here to Pedestrians	R1-5a	7B.20	36 x 48	-	
Yield to Pedestrians Blank-out	RS1-9b	7B.26	108 x 30	-	
Push Button to Turn On Sign	RS10-25a	7B.26	9 x 12	-	
Reduced School Speed Limit Ahead	S4-5, S4-5a	7B.16	36 x 36	48 x 48	
School Buses Only Symbol	SS1-2	7B.23	12 x 24	-	
School Time Restriction	SS1-4P	7B.15, 7B.23	12 x 6	-	
SCHOOL DAYS Time Restriction	SS1-5P	7B.15, 7B.23	12 x 12	-	
Turn Arrow	W16-5P	7B.25	24 x 18	30 x 24	
Advanced Turn Arrow	W16-6P	7B.25	24 x 18	30 x 24	
<p>28" - 36"</p> <p>3" - 4"</p> <p>6"</p> <p>2"</p> <p>4"</p> <p>WHITE RETROREFLECTIVE TAPE</p> <p>CONES UP TO 36 INCHES IN HEIGHT</p>		<p>3" MAX.</p> <p>4"- 6"</p> <p>3" MAX.</p> <p>4"- 6"</p> <p>3" MAX.</p> <p>ORANGE RETROREFLECTIVE TAPE</p> <p>WHITE RETROREFLECTIVE TAPE</p> <p>REPEAT SPACING OF TAPE FOR FULL LENGTH OF CONE</p> <p>> 36"</p> <p>CONES TALLER THAN 36 INCHES</p>			

Notes:

1. See the *Utah State Traffic Controls for School Zones Manual Part 7 of the Utah Manual on Uniform Traffic Control Devices Appendix D* for layout of the RS1-6b, RS1-9b, RS10-25a, SS1-2, SS1-3, SS1-4P, SS1-5P, SS3-1a, SS5-1a, W7-3aP signs.
2. Signs marked with "*" are the only authorized yellow-green signs in Utah
3. For questions or comments please contact the Safe Routes to School Coordinator at 801.965.4486