

HB

317

<TARGET><BILL>HB 317</BILL><SUBJECT>HB
317</SUBJECT><COMM>HTRA28</COMM></TARGET>



Representative Chris Tuck

House Minority Leader

Alaska State Legislature

District 22 - Representing Dimond Estates, Foxridge, Taku,
Campbell, Northwood and Windemere

Sponsor Statement House Bill 317 Increasing Safety At All Schools

Every student should be able to get to and from school safely, no matter what type of school they attend.

“The safety and well-being of all Alaska's children should be our top priority. School zones are essential regardless of the type of school or the funding it receives. Charter schools are public schools and it is shocking that Alaska doesn't already require mandatory school zones to be in place around charter school buildings,” said Joey Eski, chair of the Academic Policy Committee for Aquarian Charter School.

In response to public and parent concern, this legislation brings increased safety precautions to all our schools to ensure the well-being of every child. House Bill 317 will require the installation of school zones for all public, private and religious schools, while still allowing the discretion for the municipality on the location to place signs, speed zones, lights or other measures where appropriate.

Drivers should be alerted wherever children are present in large numbers and at risk. By requiring school zone markings at all school locations, we will slow traffic, improve students' safety in the vicinity of a school, and hopefully prevent tragic accidents.

This bill would also require a sign indicating these school zones are drug free school zones.

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Fiscal Note

State of Alaska
2014 Legislative Session

Bill Version: HB 317
Fiscal Note Number: _____
() Publish Date: _____

Identifier: HB317CS(CRA)-DOT-CRHA-3-31-14
Title: TRAFFIC CONTROL DEVICES NEAR SCHOOLS
Sponsor: TUCK
Requester: House Community and Regional Affairs

Department: Department of Transportation and Public Facilities
Appropriation: Highways, Aviation and Facilities
Allocation: Central Region Highways and Aviation
OMB Component Number: 564

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2015 Appropriation Requested	Included in Governor's FY2015 Request	Out-Year Cost Estimates					
			FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
OPERATING EXPENDITURES								
Personal Services								
Travel								
Services								
Commodities	190.0		1.2	1.2	1.2	1.2	1.2	1.2
Capital Outlay								
Grants & Benefits								
Miscellaneous								
Total Operating	190.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2

Fund Source (Operating Only)

1004 Gen Fund	190.0		1.2	1.2	1.2	1.2	1.2	1.2
Total	190.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2

Positions

Full-time								
Part-time								
Temporary								

Change in Revenues								

Estimated SUPPLEMENTAL (FY2014) cost: 0.0 (separate supplemental appropriation required)
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2015) cost: 0.0 (separate capital appropriation required)
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 07/01/15

Why this fiscal note differs from previous version:

Updated for Committee Substitute 28-LS1442U.

Prepared By: Connie McKenzie, Legislative Liaison Phone: (907)465-4772
Division: Office of the Commissioner Date: 03/28/2014 06:00 PM
Approved By: Mary P. Siroky, Director, Administrative Services Date: 03/31/2014
Agency: Department of Transportation and Public Facilities

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HB317

Analysis

This bill adds to the number of schools that require appropriate school zone signs.

The department estimates there are 5 schools in Central Region on state roads that will require some type of traffic control devices at an estimated cost of \$190.0. The costs include design, any necessary environmental permitting, acquisition of right-of-way, and cost of construction.

Additionally, the department will have ongoing maintenance and operation costs of \$1.2 annually to include electricity, routine painting of crosswalks, replacement of signs and parts for flashing lights.

Central Region (State responsibility)

Schools needing school zone signs	3
Schools needing crosswalks/signs	1
Schools needing speed zones/flashers	1
Total	5 - \$ 190.0

Fiscal Note

State of Alaska
2014 Legislative Session

Bill Version: HB 317
Fiscal Note Number: _____
() Publish Date: _____

Identifier: HB317CS(CRA)-DOT-NRHA-3-31-14
Title: TRAFFIC CONTROL DEVICES NEAR SCHOOLS
Sponsor: TUCK
Requester: House Community and Regional Affairs

Department: Department of Transportation and Public Facilities
Appropriation: Highways, Aviation and Facilities
Allocation: Northern Region Highways and Aviation
OMB Component Number: 2068

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2015 Appropriation Requested	Included in Governor's FY2015 Request	Out-Year Cost Estimates					
			FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
OPERATING EXPENDITURES								
Personal Services								
Travel								
Services								
Commodities	217.0		1.6	1.6	1.6	1.6	1.6	1.6
Capital Outlay								
Grants & Benefits								
Miscellaneous								
Total Operating	217.0	0.0	1.6	1.6	1.6	1.6	1.6	1.6

Fund Source (Operating Only)

1004 Gen Fund	217.0		1.6	1.6	1.6	1.6	1.6	1.6
Total	217.0	0.0	1.6	1.6	1.6	1.6	1.6	1.6

Positions

Full-time								
Part-time								
Temporary								

Change in Revenues								

Estimated SUPPLEMENTAL (FY2014) cost: 0.0 (separate supplemental appropriation required)
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2015) cost: 0.0 (separate capital appropriation required)
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 07/01/15

Why this fiscal note differs from previous version:

Updated version for Committee Substitute 28-LS11442U.

Prepared By: Connie McKenzie, Legislative Liaison Phone: (907)465-4772
Division: Office of the Commissioner Date: 03/28/2014 06:00 PM
Approved By: Mary P. Siroky, Director, Administrative Services Date: 03/31/14
Agency: Department of Transportation and Public Services

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HB317

Analysis

This bill adds to the number of schools that require appropriate school zone signs.

The department estimates there are 7 schools in Northern Region on state roads that will require some type of traffic control devices at an estimated cost of \$217.0. The costs include design, any necessary environmental permitting, acquisition of right-of-way, and cost of construction.

Additionally, the department will have ongoing maintenance and operation costs of \$1.6 annually to include electricity, routine painting of crosswalks, replacement of signs and parts for flashing lights.

Northern Region (State responsibility)

Schools needing school zone signs	4
Schools needing crosswalks/signs	2
Schools needing speed zones/flashers	1
Total	7 - \$ 217.0

Fiscal Note

State of Alaska
2014 Legislative Session

Bill Version: HB 317
Fiscal Note Number: _____
() Publish Date: _____

Identifier: HB317CS(CRA)-DOT-SDES-3-31-14
Title: TRAFFIC CONTROL DEVICES NEAR SCHOOLS
Sponsor: TUCK
Requester: House Community and Regional Affairs

Department: Department of Transportation and Public Facilities
Appropriation: Highways, Aviation and Facilities
Allocation: Southeast Region Highways and Aviation
OMB Component Number: 603

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2015 Appropriation Requested	Included in Governor's FY2015 Request	Out-Year Cost Estimates					
			FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
OPERATING EXPENDITURES								
Personal Services								
Travel								
Services								
Commodities	217.0		1.6	1.6	1.6	1.6	1.6	1.6
Capital Outlay								
Grants & Benefits								
Miscellaneous								
Total Operating	217.0	0.0	1.6	1.6	1.6	1.6	1.6	1.6

Fund Source (Operating Only)

1004 Gen Fund	217.0		1.6	1.6	1.6	1.6	1.6
Total	217.0	0.0	1.6	1.6	1.6	1.6	1.6

Positions

Full-time							
Part-time							
Temporary							

Change in Revenues							
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Estimated SUPPLEMENTAL (FY2014) cost: 0.0 (separate supplemental appropriation required)
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2015) cost: 0.0 (separate capital appropriation required)
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 07/01/15

Why this fiscal note differs from previous version:

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Division: Office of the Commissioner Date: 03/28/2014 06:00 PM
Approved By: Mary P. Siroky, Director, Administrative Services Date: 03/31/2014
Agency: Department of Transportation and Public Facilities

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HB317

Analysis

This bill adds to the number of schools that require appropriate school zone signs.

The department estimates there are 7 schools in Southeast Region on state roads that will require some type of traffic control devices at an estimated cost of \$217.0. The costs include design, any necessary environmental permitting, acquisition of right-of-way, and cost of construction.

Additionally, the department will have ongoing maintenance and operation costs of \$1.6 annually to include electricity, routine painting of crosswalks, replacement of signs and parts for flashing lights.

Southeast Region (State responsibility)

Schools needing school zone signs	4
Schools needing crosswalks/signs	2
Schools needing speed zones/flashers	1
Total	7 - \$ 217.0

Kendra Kloster

From: Joanna Nardini <jnardini@gci.net>
Sent: Wednesday, March 12, 2014 8:12 PM
To: Rep. Chris Tuck
Cc: Sen. Berta Gardner; 'MaryLu LaVine'
Subject: RE: Bryn Mawr Court...Winterberry School Signage

Dear Rep. Tuck:

My name is Joanna (Joanie) Nardini and also a resident of Castles of Bryn Mawr Condominiums at 4829 Bryn Mawr Ct. #3. I also support HB 317 and SB 179 and agree with Ms. LaVine about the need to establish school zones around all charter schools. In addition to the traffic on the east side down Bryn Mawr to Wesleyan, I have also noted children playing on the west side of the school outside the fenced area. I always thought that the school children should be on school property at all times during the school hours. Bryn Mawr has cars parked on both sides and the children have to walk on the icy snow piles on the south side of the street. I have contacted the school about getting the traffic slowed down, but it continues to be a problem. I appreciate your assistance in this matter.

Sincerely,

Joanna Nardini

From: MaryLu LaVine [<mailto:dmlslavine@yahoo.com>]
Sent: Wednesday, March 12, 2014 5:22 PM
To: rep.chris.tuck@akleg.gov
Cc: sen.bertha.gardner@akleg.gov
Subject: Bryn Mawr Court...Winterberry School Signage

Dear Rep Tuck:

My name is MaryLu LaVine, and I am a resident at 4839 Bryn Mawr Ct. #4. I am writing this letter in full support of the legislation which you and Senator Gardner introduced.

First of all, I want to thank both of you for introducing House Bill 317 and SB 179 which directs the Municipality to establish school zones around all charter schools.

Last summer, I met with the Municipality regarding a school zone at Winterberry school. There is no signage or any other traffic control devices in the vicinity of Winterberry Charter School. Winterberry is at the west end of Bryn Mawr Court, west of Wesleyan Drive and a block south of East Northern Lights Boulevard. At peak hours in the mornings, some of our neighbors as well as Bryn Mawr condo residents have had problems pulling out of their driveways onto Bryn Mawr Court due to traffic moving too fast and not slowing down in order for residents to pull out onto Bryn Mawr Court. This is definitely a safety concern for the residents of this area and for the young children who are coming to school.

Conversations with Muni folks about traffic calming were unsuccessful. According to them, the following was what they came up with:

1. "Signage for charter schools is treated differently than signage for regular districted schools and is determined on a case-by-case basis.

2. Because charter schools are not zoned like the other district schools, they do not provide bussing or have a defined school walking route, which means they do not have a specified "school zone" to be marked.

3. Winterberry is an even more specialized case because there are no roads directly adjacent to the school since it is located on a private property at the end of a cul-de-sac.

4. The only signage that may apply is a S1-1 sign with a W19-9P (AHEAD plaque) posted at the entrance of Bryn Mawr Court".

This is totally unacceptable as we fear that residents and young children's lives may be placed in jeopardy.

For this reason, I truly thank you for your efforts regarding this matter.

Sincerely,

MaryLu LaVine

AIRPORT HEIGHTS COMMUNITY COUNCIL

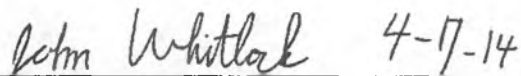
To Whom It May Concern:

At the April 17, 2014 meeting of the Airport Heights Community Council, our membership voted unanimously to instruct its president to write a letter to lawmakers in support of H.B. 317 entitled, "An Act relating to official traffic-control devices at school and in school zones."

The Airport Heights Community Council area is home to several schools; one of which is the Alaska Native Cultural Charter School (ANCCS) on 550 Bragaw Street. Currently, Alaska does not require school zone designation for charter schools. The Bragaw location of ANCCS is located on a road that has a 35 MPH speed limit, is located near a hill that obstructs views of merging traffic, and is considered to be a hazardous road by the Anchorage School District. Despite these concerns being raised, municipal traffic engineers chose not incorporate traffic-control devices near ANCCS.

H.B. 317 would ensure that the well being of every child by requiring installation of traffic control devices near every school (this includes private schools, religious schools, and charter schools) in addition to neighborhood schools. Passage of this legislation will ensure that all schools are treated equally and will give parents and children peace of mind in knowing that steps have been taken to ensure pedestrian safety.

Cordially,

 4-17-14

John Grover Whitlock
President
Airport Heights Community Council

Memo

To: Representative Tuck and others
From: Robert Boyle, Superintendent
CC: file
Date: March 5, 2014
Re: HB 317

House Bill 317 Increasing Safety At All Schools

The safety of students is paramount in providing a quality school environment. It is essential that passage to and from school is conducted in a safe manner. Well-marked and established school zones are a long-standing tradition in providing safe schools.

Traffic offenses for failure to obey traffic control devices in a school zone are a 6-point violation.

The State of Alaska has determined the establishment of Public Charter Schools. Charter Schools are of the same standing as other public schools in Alaska. The State of Alaska has established the importance of well-marked school zone through traffic violations of significant point values. Traffic violations should be extended to all public schools in Alaska.

The students attending private schools are also deserving of a safe passage to and from school.

It is difficult for some agencies to respond in an appropriate manner without supportive legislation. To provide the understanding of the legal status of public charter schools and the need for private school children to have equal protection to and from school we support and encourage passage of HB 317.

HB 317 provides the Department of Transportation and various municipalities with the ability to recognize and provide safe passage on the streets surrounding public charter schools and private schools.



SCHOOL ZONE POLICY MANUAL



Photo from AAA Foundation for Traffic Safety "Children in Traffic" video cover

Prepared by the Municipality of Anchorage Traffic Department



SCHOOL ZONE POLICY MANUAL



Prepared by: MOA Traffic Department
4700 S. Bragaw Street
P.O. Box 196650
Anchorage, Alaska 99519-6650

(907) 343-8406

Municipal Traffic Engineer:
Robert E. Kniefel, P.E.

February, 2006

SCHOOL ZONE TRAFFIC CONTROL DETERMINATION

Public Schools

School zones shall be determined for each school based on walking routes and the school boundaries. In general, school zones should be limited to roadways immediately adjacent to the school grounds or at designated crossings. Once it is determined a school zone is warranted along a roadway, the type of treatment shall follow the requirements outlined in Table 1 which is found in the Alaska Traffic Manual Supplement. Placement of the required signs shall conform to the Manual on Uniform Traffic Control Devices, MUTCD, 2003 and the current addition of the Alaska Traffic Manual Supplement. Discussion of sign placement is outlined in the **Sign and Marking Requirements** section, following, and shown in Figures 1 – 3.

Private Schools

School zones for private schools shall follow the same requirements as for public schools. In general, however, school zones will only be considered for private schools which have registered with the State Department of Education.

Table 1 Notes: (From ATM Section 7A.101. Items in ***red italic*** are Municipal Standards.)

- (1) "Completely fenced" means fencing that restricts all access from the street-side of the school to the street.
- (2) See Section 7A.03 of the MUTCD for gap sufficiency determination – when gaps are insufficient for crossing, student re-routing, busing, or mid-street pedestrian islands should be the first options considered. Guards or pedestrian signals should be viewed as last resorts.
- (3) Traffic signals may be installed (but are not mandated) for pedestrians when the Minimum Pedestrian Volume or School Crossing warrants defined in Sections 4C.05 and 4C.06 of the MUTCD are met. Although these signals may be installed mid-block, every effort should be made to install them at intersections and run them as conventional signals.
- (4) The "Overhead Signs with Flashers" referenced in the legend are standard S1-1 school crossing signs with flashing lights hung over the road at or near the crosswalk. The flashing lights may be either inside of an internally illuminated sign or external. If the site has advance school flashers, the overhead flashers shall flash when the school flashers flash. ***One S1-1 sign shall face each direction of traffic. The flashers shall consist of four signal heads with 12 inch diameter yellow lenses. The bea-***

cons, one placed on each side of the S1-1, shall illuminated alternately allowing two flashers to face oncoming vehicular traffic approaching in each direction.

- (5) Crossing guards are only a solution on streets with inadequate gaps when policy allows guards to create, rather than just extend, gaps in traffic.
- (6) Crossing guards should not be used when streets have more than three lanes.
- (7) Mid-street pedestrian refuges increase the number of gaps of sufficient duration for crossing by splitting the crossing into two parts, which:
 - (a) Reduces gap duration necessary for crossing by reducing crossing distance, and
 - (b) Increase gap frequency by reducing the conflicting traffic volume.

Pedestrian refuges should be at least 6 feet wide.



Table 1 – School Zone Traffic Control

Urban School Zone Traffic Control														
(Applies Only to Roads Abutting School Property and Non-Abutting Roads at Designated School Crossings)														
Grade Level (Lowest Grade Taught at School)	Students Required to Cross Road at Grade											Students Not Required to Cross Road At-Grade (Could be grade separated or just no crossing) Completely Fenced? (1)		
	Traffic Signal at Crossing		STOP Controlled Crossing	No Traffic Signal at Crossing						Grade Separation	Ped. Signal (If warranted) (3)		Mid-Street Refuge Island (7)	
				Crossing Not Stop Controlled				Insufficient Gaps (2)						
	Speed Limit <= 20	Speed Limit > 20	Sufficient Gaps (2)		Address by re-routing students, busing students, or one of the following									
			Speed Limit <= 20	Speed Limit >20	Speed Limit <= 20	Speed Limit >20	Crossing Guard (5) (6)							
Yes	No													
9-12	C	C	C - major streets only	C	C	n/a	n/a	See Students Not Required to Cross Road At-Grade	See Students Required to Cross Road At-Grade/ Traffic Signal at Crossing	If refuge provides sufficient gaps, see Cross At-Grade/No Signal/No Stop/ Sufficient Gaps, If not, choose another solution.				
5-8	C	CG?	C - major streets only, G?	C	CG?	CG	CG							
K-4	CG?	CG?	C - major streets only, G?	CG?	CG?	CG	CG							

LEGEND	
n/a	Does not apply - Crossing Guards should not be used for high school students
	No School Signs
	Advance School Sign (S1-1 with W16-9p) Only
	Advance (S1-1 with W16-9p) and Crossing (S1-1 with W16-7p and W16-10p) School Signs - Overhead illuminated S1-1 sign optional. ⁽⁴⁾ <i>Install SCHOOL XING pavement markings for both directions in front of crossing. (see figure 2)</i>
	Advance and Crossing School Signs + 20 MPH When Flashing (S5-1) Sign and Flasher - Overhead illuminated S1-1 sign optional. ⁽⁴⁾ <i>Install SCHOOL ZONE pavement markings at (S5-1). (see figure 3)</i>
C	Marked Crosswalk - install at nearest intersection, if within 400 feet. If there is already a crosswalk within 400 feet, use it as the school crosswalk. Use school crosswalk signs at mid-block crosswalks if within a school zone.
G	Crossing Guard - <i>Within the MOA the Hazardous Route Committee determines all crossing guards</i>
G?	School districts should consider crossing guards at major street crossings

Changes in red italic are MOA standards.

SIGN AND MARKING REQUIREMENTS

SIZE OF SCHOOL SIGNS

MUTCD 7B.01¹

Standard:

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

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

The Oversized sign size shall be used on expressways.

Option:

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

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

Alaska Traffic Manual Supplement²

"Delete the first paragraphs of the Standard subsection and insert the following:

The size of signs and plaques to be used shall be as shown in the ASDS.

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

MOA Traffic Department Policies

The Municipality of Anchorage will adhere to the Alaska Traffic Manual Supplement.

SIGN COLOR FOR SCHOOL WARNING SIGNS

MUTCD 7B.07¹

Standard:

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

Option:

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

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

Guidance:

When the fluorescent yellow-green background color is used, a systematic approach featuring one background color within a zone or area should be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a zone or area should be avoided."

Alaska Traffic Manual Supplement²

"Delete the text of the Standard subsection and insert the following:

The following signs shall be black on a fluorescent yellow-green background:

- A. School Crossing sign (S1-1)**
- B. SCHOOL plaque (S4-3)**
- C. SCHOOL SPEED LIMIT sign (S5-1) (not including the part of the sign with white background)**
- D. XXX FEET plaque (W16-2 series) when used with an S1-1 sign**

- E. AHEAD plaque (W16-9P) when used with an S1-1 sign**
- F. Diagonal Arrow plaque (W16-7P) when used with an S1-1 sign**

Option:

SCHOOL BUS STOP AHEAD sign (S3-1) may have either a yellow or fluorescent yellow-green background.

Delete the Option subsection in its entirety."

MOA Traffic Department Policies

The Municipality of Anchorage will adhere to the MUTCD 2003 and the Alaska Traffic Manual Supplement.. All new school zone signs, as outlined in the ATM, within the Municipality of Anchorage shall be black on a fluorescent yellow-green background.

SCHOOL ADVANCE WARNING Assembly (S1-1 with Supplemental Plaque)

MUTCD 7B.08¹

Guidance:

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

Standard:

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

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

If used, the School Advance Warning assembly shall consist of a School Advance Warning (S1-1) sign supplemented with a plaque with the legend AHEAD (W16-9P) or XXX METERS (XXX FEET)



(W16-2 or W16-2a) to provide advance notice to road users of crossing activity."

Option:

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

Alaska Traffic Manual Supplement²

"Delete the first and second paragraphs of the Standard subsection and insert the following:

The School Advance Warning assembly shall be used in advance of any installation of the School Crosswalk Warning assembly (see Figure 7B-100 b. of this ATMS), or in advance of the first installation of the School Speed Limit assembly (see Figure 7B-100 c. of this ATMS).

If used, the School Advance Warning sign shall be installed not less than 150 ft nor more than 700 ft in advance of the school grounds or school crossings; see figure 7B-100 School Traffic Control in this ATMS.

Insert the following after the Standard subsection:

Support:

"School grounds" typically refer to school property. However, when school property frontage is lengthy, school grounds may be interpreted as the area where students frequently cross the road."

MOA Traffic Department Policies

The Municipality of Anchorage will adhere to the MUTCD 2003 and the Alaska Traffic Manual Supplement. No reduced size in-street School Advance Warning (S1-1) signs will be allowed. Typical school zone sign locations are shown in Figures 1 - 3.

SCHOOL CROSSWALK WARNING Assembly (S1-1 with Diagonal Arrow – W16-9P)



MUTCD 7B.09¹

Standard:

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

The School Crosswalk Warning assembly shall not be used at marked crosswalks other than those adjacent to schools and those on established school pedestrian routes.

The School Crosswalk Warning assembly shall not be installed on approaches controlled by a STOP sign.

Guidance:

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

Option:

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

A 300 mm (12 in) reduced size School Advance Warning (S1-1) sign (see Figure 7B-4) may be used at an unsignalized school crossing instead of the In-street Pedestrian Crossing (R-16 or R1-6a) sign. A 300 x 150 mm (12 x 6 in) reduced size Diagonal Arrow (W16-7p) plaque may be mounted below the reduced size in-street School Advance Warning (S1-1) sign.

Standard:

If an In-street Pedestrian Crossing sign or a reduced size in-street School Advance Warning (S1-1) sign is placed in the roadway, the sign support shall comply with the mounting height and break-away requirements for In-street Pedestrian Crossing (R-16 or R1-6a) signs (see Section 2B.12).

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

Alaska Traffic Manual Supplement²

"Delete Figure 7B-2 Example of Signing for School Crosswalk Warning Assembly and Figure 7B-3 Examples of Signing for School Area Traffic Control with School Speed Limits.

Delete the first paragraph under the Guidance subsection and insert the following:

The School Crosswalk Warning assembly should be installed at marked crosswalk(s), including those at signalized locations, used by students going to and from school (see Figure 7B-100 School Traffic Control in this ATMS)."

MOA Traffic Department Policies

The Municipality of Anchorage will adhere to the MUTCD 2003 and the Alaska Traffic Manual Supplement. In addition to the School Advance Warning (S1-1) sign supplemented with a diagonal downward pointing arrow (W16-7P) plaque, a SCHOOL XING (W16-10p) plaque shall be used. The SCHOOL XING plaque shall be black on a fluorescent yellow-green background and mounted directly beneath the School Advance Warning (S1-1) sign and above the diagonal downward pointing arrow (W16-7P) plaque. Typical sign placement is shown in Figures 2 and 3.

The In-street Pedestrian Crossing (type and style shall be as shown in photo below and is similar to the R1-6) sign may be placed in accordance with the following criteria:

1. may not be located on streets of arterial or higher classification,



R1-6

2. placement must be in the center of the roadway adjacent to marked pedestrian crossing locations, and
3. must be placed only during active school crossing times not to exceed:
 - a. 30 minutes before to 10 minutes after school begins and
 - b. 10 minutes before to 30 minutes after school ends.

The devices may be purchased and placed, in accordance with the above criteria, by the Anchorage School District. (A sample of the allowed type and style is shown below.) The School District must use the same style device District wide in order to provide consistency throughout the Municipality. The Traffic Department will work with the School District to ensure the appropriate device is used and will advise on number and placement within the school zone. No reduced size in-street School Advance Warning (S1-1) sign will be allowed.



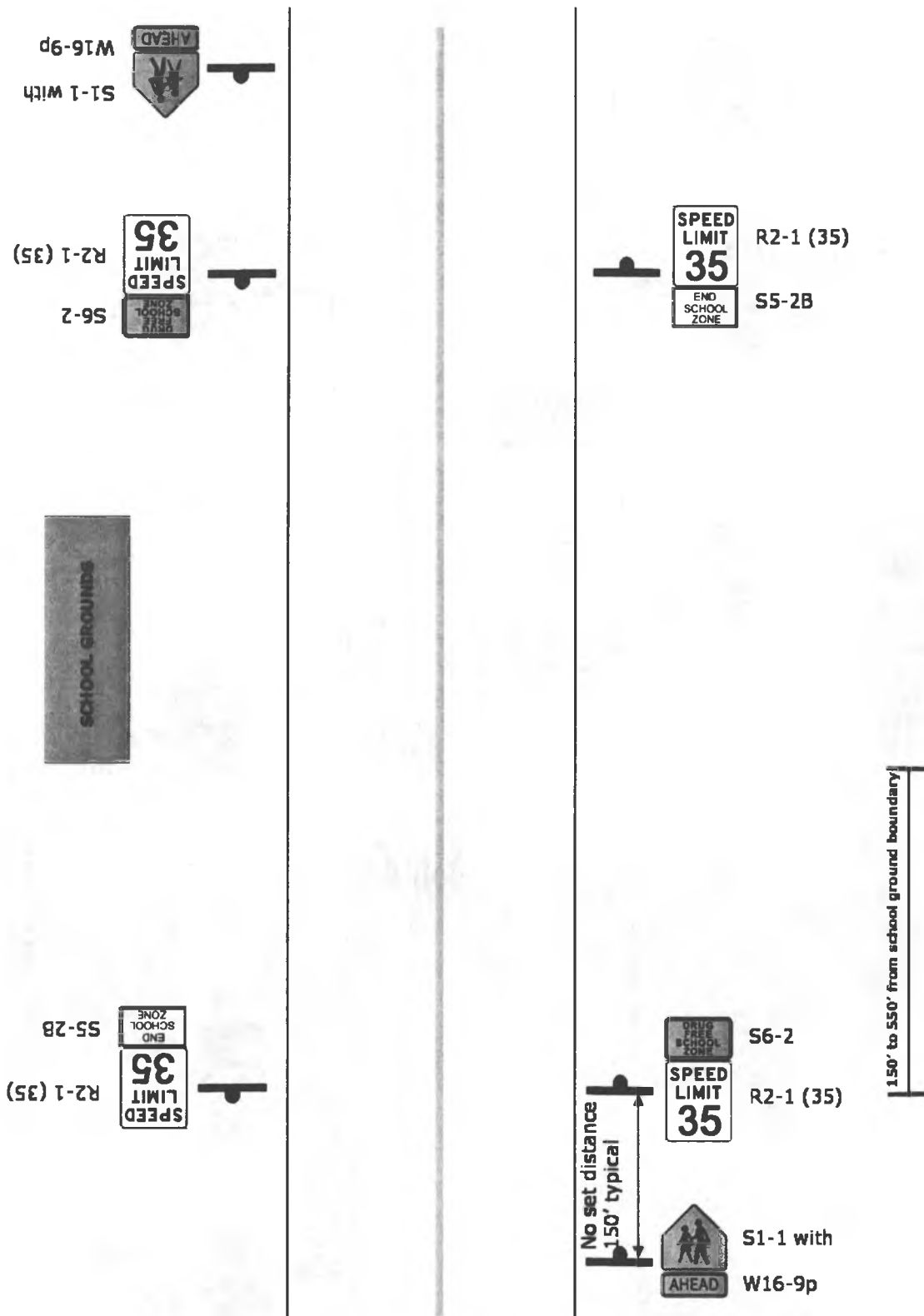


Figure 1—Advance School Sign Locations

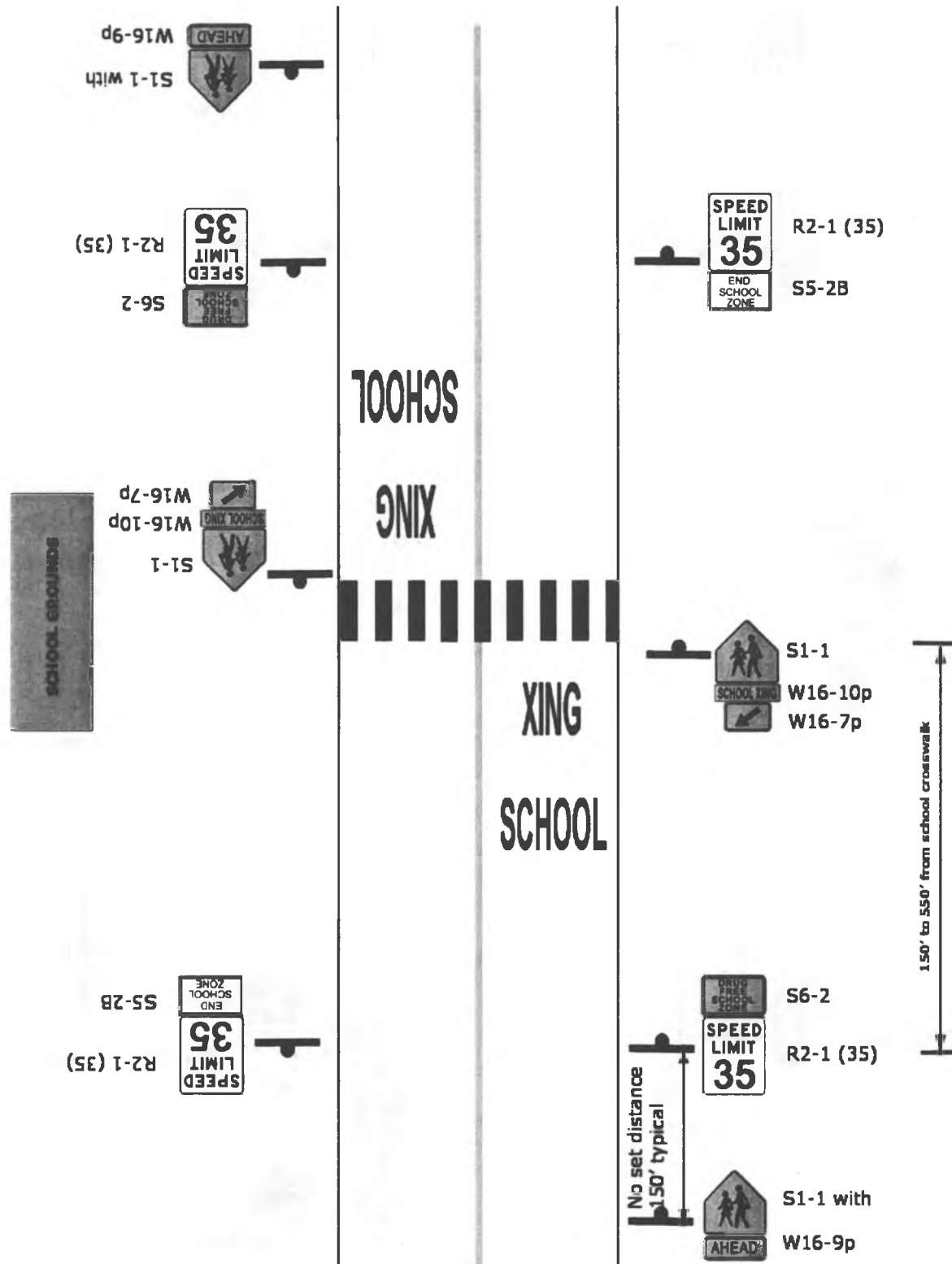


Figure 2—Advance with Crossing Sign Locations

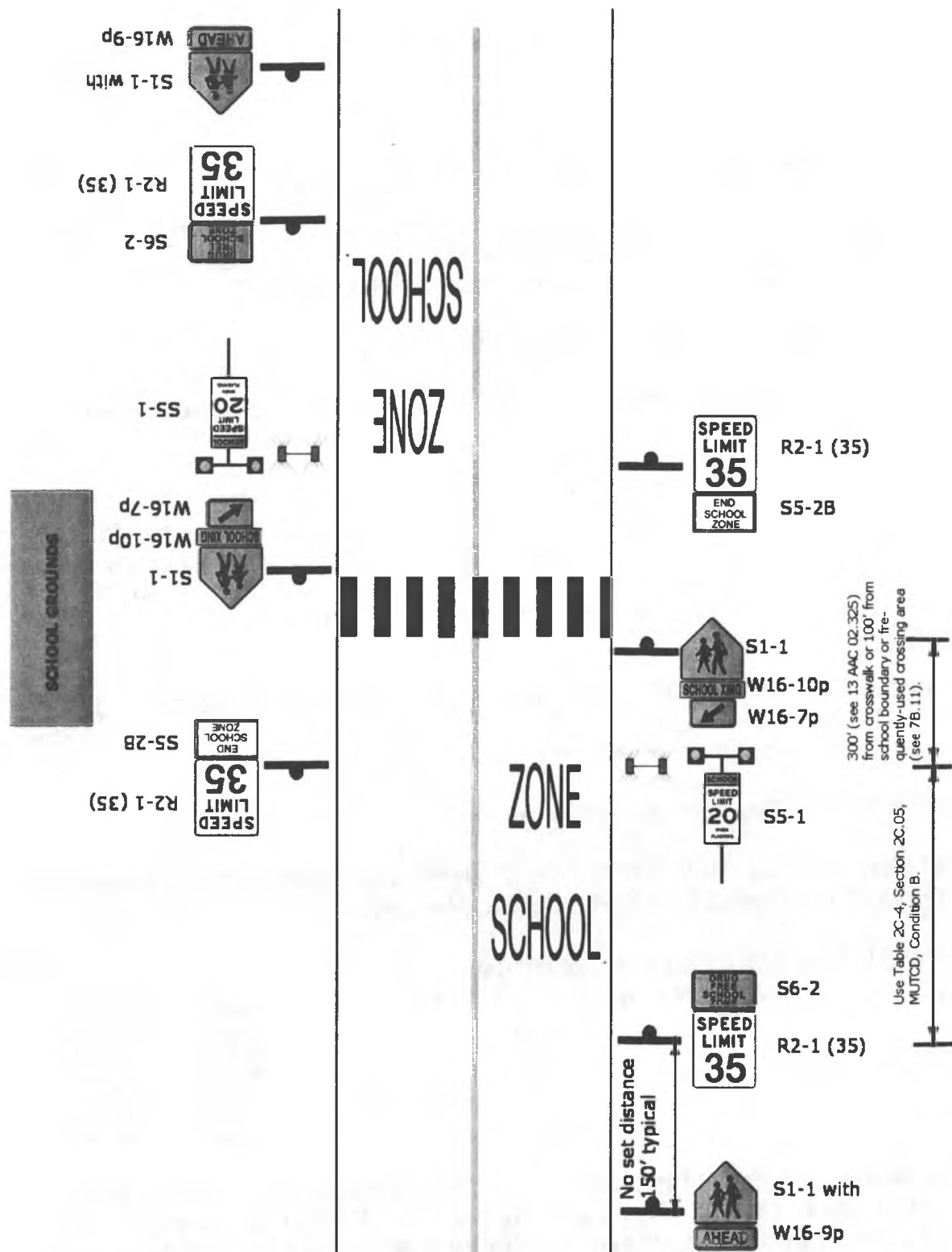


Figure 3—20 MPH When Flashing Sign Locations

SCHOOL BUS STOP AHEAD SIGNS (S3-1)

MUTCD 7B.10¹



Guidance:

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

Alaska Traffic Manual Supplement²

"Delete the first paragraph under the Guidance subsection and insert the following:

The SCHOOL BUS STOP AHEAD (S3-1) sign (see Figure 7B-1 of the MUTCD) should be installed in advance of locations where the top flashing lights of a school bus, when stopped to pick up or discharge passengers, are not visible to road users for a distance of 700 ft in advance, and where there is no opportunity to relocate the bus stop to provide 700 ft of visibility.

The SCHOOL BUS STOP AHEAD (S3-1) sign should be located using Section 2C.05, Table 2C-4, Condition B of the MUTCD, and 0 mph as the speed at the condition of concern."

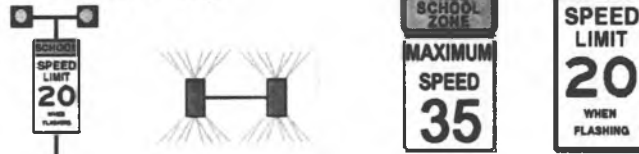
MOA Traffic Department Policies

All new SCHOOL BUS STOP AHEAD signs shall conform to the requirements of the Alaska Traffic Manual Supplement.

SCHOOL SPEED LIMIT Assembly (S4-1, S4-2, S4-3, S4-4, S4-6, S5-1)

MUTCD 7B.11¹

Standard:



"A School Speed Limit assembly (see Figure 7B-1) or a School Speed Limit (S5-1) sign (see Figure 7B-1) shall be used to indicate the speed limit where a reduced speed zone for a school area has been established (in accordance with law based upon an en-

gineering study) or where a speed limit is specified for such areas by statute. The School Speed Limit assembly or School Speed Limit sign shall be placed at or as near as practical to the point where the reduced speed begins.

Guidance:

The reduced speed zone should begin at a point either 60 m (200 ft) from the crosswalk, or at a point 30 m (100 ft) from the school property line, based on whichever is encountered first as traffic approaches the school.

Standard:

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

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

Option:

Changeable message signs (see Section 2A.07 and 6F.55) may be used to inform drivers of the special school speed limit. If the sign is internally illuminated, it may have a white legend on a black background. Changeable message signs with flashing beacons for more critical situations, where greater emphasis of the special school speed limit is needed.

Guidance:

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

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

Option:

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

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

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

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

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

Alaska Traffic Manual Supplement²

"Insert the following at the end of the first Standard subsection:

The reduced school zone shall begin at a point 300 or more feet from the school crosswalk, if there is one.

Delete the first Guidance subsection and insert the following:

Guidance:

The reduced school zone should begin at a point 100 or more feet from the school property boundary, or if the school property frontage is lengthy, 100 or more feet from the frequently-used student crossing areas.

Support:

Ideally, school speed zones should be kept short to enhance driver compliance. When school property frontage along the roadway is lengthy and/or fenced, consider focusing the school speed zone on frequently used crossing areas rather than the entire frontage.

Insert the following after the second Standard subsection:

Guidance:

The SCHOOL SPEED LIMIT 20 WHEN FLASHING (S5-1) sign should consist of three (3) signal heads with 8-inch diameter yellow lenses. They should be mounted vertically directly above the S5-1 sign. The bottom two beacons should be illuminated alternately and face the oncoming traffic. The top flashing beacon should face the opposite direction to indicate when the signals are in operation."

MOA Traffic Department Policies

Within the Municipality of Anchorage, the S5-1 School Speed Limit sign shall be used. The size of the sign shall conform to the ASDS. The top portion of the sign, SCHOOL, shall be black lettering on a fluorescent yellow-green background. The remainder of the sign, SPEED LIMIT 20 WHEN FLASHING, shall be black lettering on a white background. The S4-1, S4-2, S4-4, and S4-6 signs shall not be used within the Municipality. The SPEED LIMIT (R2-1) sign, located at the beginning and end of school zones, shall indicate the speed for the area when the school zone speed reductions, if any, are not in effect. See Figures 1 - 3 for typical sign locations.

The SCHOOL SPEED LIMIT 20 WHEN FLASHING sign (S5-1) shall be installed with four (4) signal heads with 8 or 12 inch diameter, as determined by the Municipal Traffic Engineer, yellow lenses. They shall be mounted directly above the S5-1 sign. Two beacons shall be illuminated alternately with two facing oncoming vehicular traffic and two facing opposing vehicular traffic to indicate when the speed reductions are in effect.

REDUCED SPEED SCHOOL ZONE AHEAD SIGN (S4-5, S4-5a)



Option:

The Reduced Speed School Zone Ahead (S4-5, S4-5a) sign (See Figure 7B-1) may be used to inform road users of a reduced speed zone when engineering judgment indicates that advance notice would be appropriate.

Standard:

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

The speed limit displayed on the Reduced Speed School Zone Ahead sign shall be identical to the speed limit displayed on the subsequent School Speed Limit sign or School Speed Limit assembly.

Alaska Traffic Manual Supplement²

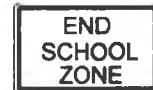
Insert the following at the end of the section:

Guidance:

The Reduced School Speed Zone Ahead (S4-5, S4-5a) sign should only be used when the school speed zone limit is 20 MILES PER HOUR or more below the speed limit on the approaching road.

MOA Traffic Department Policies

The Municipality of Anchorage will adhere to the MUTCD 2003 and the Alaska Traffic Manual Supplement. The Reduced School Speed Zone Ahead sign shall be used on street approaches which enter a roadway within a school zone containing a 20 When Flashing zone. The Reduced School Speed Zone Ahead sign will have arrows indicating the direction the 20 When Flashing zone extends.

END SCHOOL ZONE SIGN (S5-2)**MUTCD 7B.13¹****Standard:**

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

Alaska Traffic Manual Supplement²

No changes.

MOA Traffic Department Policies

All school zones shall end with a standard SPEED LIMIT (R2-1) sign showing the speed for the section of roadway which follows the school zone. An END SCHOOL ZONE (S5-2B) sign shall be mounted below the R2-1. See Figures 1 - 3 for typical sign locations.

DRUG FREE SCHOOL ZONE

Alaska Traffic Manual Supplement² 7B.100



This is a new section. There is no corresponding section in the MUTCD.

Standard:

"Alaska Statute 28.01.010(d) states "The municipality shall post a sign indicating that the school is a drug-free school zone at each location in which it has installed a sign identifying the location of a school." Accordingly, signs conveying this message shall be placed below, or near, all School Advance Warning (S1-1) signs.

Guidance:

The posting of this sign is a municipal, not a state, responsibility.

Option:

The sign may be the S6-1 shown in the ASDS or another sign which conveys the required message. Sign colors may be either black on white background or black legend on fluorescent yellow-green background."

MOA Traffic Department Policies

All school zones (Figures 1 - 3) shall include the installation of the DRUG FREE SCHOOL ZONE (S6-2) plate, the plate shall be black lettering on a fluorescent yellow-green background, mounted above a standard SPEED LIMIT sign (R2-1).

WORD AND SYMBOL MARKINGS

The word "SCHOOL" is written in a large, bold, black, sans-serif font, oriented vertically.

MUTCD 7C.06¹

Support:

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

Standard:

Word and symbol markings shall be white. Word and symbol markings shall not be used for mandatory messages except in support of standard signs.

Guidance:

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

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

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

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

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

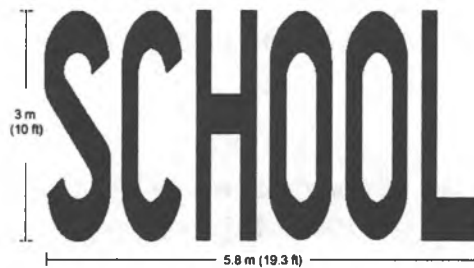
Except as noted in the Option below, pavement word and symbol markings should be no more than one lane in width.

Option:

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

Guidance:

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



Two-lane pavement marking
MUTCD 2000 Figure 7C-1

MOA Traffic Department Policies

All school zones which include a school crossing shall include the SCHOOL XING pavement markings placed in front of the crossing for both directions of travel. See Figure 2 for typical layout.

All flashing school zones shall include the SCHOOL ZONE pavement marking located at the S5-1. See Figure 3 for typical layout.

OPERATING PROCEDURES for ADULT GUARDS**TYPES OF CROSSING SUPERVISION****MUTCD 7E.01¹****Support:**

"There are two types of school crossing supervision:

- A. Adult control of pedestrians and vehicles by adult guards or police officers; and
- B. Student control of only pedestrians with student patrols.

Information for the organization, operation, and administration of an adult crossing guard program are given in the "Civilian Guards For School Crossings" (available from the Center for Public Safety of Northwestern University, 405 Church Street, Evanston, IL 60204) and "Adult School

Crossing Guards" (available from the American Automobile Association, 1000 AAA Drive, Heathrow, FL 32746)."

Alaska Traffic Manual Supplement²

"Insert the following subsection at the end of the section:

Standard:

School districts shall be responsible for deciding where to provide crossing guards and for compensating them."

ADULT GUARDS

MUTCD 7E.02¹

Option:

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

QUALIFICATIONS OF ADULT GUARDS

MUTCD 7E.03¹

Support:

"High standards for selection of adult guards is essential.

Guidance:

Adult guards should possess the following qualifications:

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

UNIFORM OF ADULT GUARDS AND STUDENT PATROLS

MUTCD 7E.04¹

Guidance:

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

Standard:

Adult guards shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-1999 standard performance for Class 2 as described in Section 6E.02. (see Appendix A of this Manual.)

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

Guidance:

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

OPERATION PROCEDURES FOR ADULT GUARDS

MUTCD 7E.05¹

Guidance:

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

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

Standard:

The STOP paddle shall be an octagonal shape. The background of the STOP face shall be red with at least 150 mm (6 in) series capitol white letters and border. The paddle shall be at least 450 mm

(18 in) in size and have the word message STOP on both sides. The paddle shall be retroreflectorized or illuminated when used during hours of darkness."

Option:

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

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

Standard:

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

MOA Traffic Department Policies

Public Schools

Whenever a crossing guard is deemed necessary, as determined by the Hazardous Transportation Committee, it shall follow the rules as set forth by the MUTCD 2003, by MOA Traffic Department and by the Anchorage School District.

Crossing guards shall be provided by the Anchorage School District if the Hazardous Transportation Committee deems the crossing as hazardous. This is determined by an in depth evaluation of the vehicle gaps, traffic volumes, traffic type, speed limit, pedestrian age level, roadway width, traffic control devices, and pedestrian obstacles. If the roadway is

deemed hazardous, busing should be considered as a first option. If busing is not an option, crossing guards shall be provided.

Private Schools

Private schools shall submit a request for a crossing guard in writing to the Traffic Department. The request should include the following information:

- name and location of school,
- location where the crossing guard is requested,
- approximate number of students using the crossing, and
- times of crossing guard operation.

If the roadway on which the crossing is located is currently considered a hazardous route by the Anchorage School District Hazardous Route Committee, the Traffic Department will determine if the requested location is a safe and reasonable location for a crossing guard. If the location is not currently considered a hazardous route, the request will be reviewed by the Traffic Department to determine if the location meets the warrants as described above for public schools.

If the investigation determines a crossing guard is justified, the Traffic Department will issue a permit. The permit will include the location of the crossing guard and the requirements the crossing guard shall follow.

Crossing Guard Guidelines

In general, crossing guards should be located at signalized or stop controlled intersections whenever possible. Crossing guards shall follow guidelines detailed in the MUTCD 2003 sections 6E and 7E which includes the following:

- shall not direct traffic in the usual law enforcement regulatory sense,
- shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-1999 standard performance for Class 2 as described in Section 6E.02,
- the paddle shall be at least 18 inch in size and have the word STOP on both sides,
- the STOP paddle shall be retroreflective,
- the background of the STOP paddle shall be red and shall be at least 6 inch series capitol white letters and border, and

- the STOP paddle may incorporate flashing lights in the manner described in the MUTCD 2003 Section 7E.05 shown above.

If the crossing guard is located at a signalized intersection, the crossing guard shall cross with the pedestrian phase of the signal. Appendix A includes a copy of the MUTCD 2003 section 6E.

Required Training

For all public and private schools, the crossing guard shall be required to take a course provided by the Traffic Department which instructs the crossing guard on the guidelines which are to be followed.

If the crossing guard is located on a collector or greater roadway and is not located at a signalized crossing or within a flashing 20 miles per hour school zone, the crossing guard is required to be a certified flagger.

REFERENCES

¹Manual on Uniform Traffic Control Devices
millennium edition
U.S. Department of Transportation
Federal Highway Administration
November 2003

²Alaska Traffic Manual Supplement
Alaska Department of Transportation and Public Facilities
January, 2003

APPENDIX A

"CHAPTER 6E. FLAGGER CONTROL¹

Section 6E.01 Qualifications for Flaggers

Support:

Whenever the acronym "TTC" is used in this Chapter, it refers to "temporary traffic control."

Standard:

A flagger is a person who provides TTC.

Guidance:

Because flaggers are responsible for public safety and make the greatest number of contacts with the public of all highway workers, they should be trained in safe traffic control practices and public contact techniques. Flaggers should be able to satisfactorily demonstrate the following abilities:

- A. Ability to receive and communicate specific instructions clearly, firmly, and courteously;
- B. Ability to move and maneuver quickly in order to avoid danger from errant vehicles;
- C. Ability to control signaling devices (such as paddles and flags) in order to provide clear and positive guidance to drivers approaching a TTC zone in frequently changing situations;
- D. Ability to understand and apply safe traffic control practices, sometimes in stressful or emergency situations; and
- E. Ability to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury.

Section 6E.02 High visibility Clothing

Standard:

For daytime and nighttime activity, flaggers shall wear safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 2 risk exposure.

The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined in the standard. The retroreflective material shall be either orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.

Guidance:

For nighttime activity, safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 3 risk exposure should be considered for flagger wear (instead of the Class 2 safety apparel in the Standard above).

When uniformed law enforcement officers are used, high-visibility safety apparel as described in this Section should be worn by the law enforcement officer.

Section 6E.03 Hand-Signaling Devices

Support:

Hand-signaling devices, such as STOP/SLOW paddles, lights, and red flags, are used to control road users through TTC Zones.

Guidance:

The STOP/SLOW paddle should be the primary and preferred hand-signaling device because the STOP/SLOW paddle gives road users more positive guidance than red flags. Use of flags should be limited to emergency situations.

Standard:

The STOP/SLOW paddle shall have an octagonal shape on a ridged handle. STOP/SLOW paddles shall be at least 450 mm (18 in) wide with letters at least 150 mm (6 in) high and should be fabricated from light semi-rigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night, the STOP/SLOW paddle shall be retroreflectorized.

Option:

The STOP/SLOW paddle may be modified to improve conspicuity by incorporating either white or red flashing lights on the STOP face, and either white or

yellow flashing lights on the SLOW face. The flashing lights may be arranged in any of the following patterns:

- A. Two white or red lights, one centered vertically above and one centered vertically below the STOP legend; and/or two white or yellow lights, one centered vertically above and one centered vertically below the SLOW legend; or
- B. Two white or red lights, one centered horizontally on each side of the STOP legend; and/or two white or yellow lights, one centered horizontally on each side of the SLOW legend; or
- C. One white or red light centered below the STOP legend; and/or one white or yellow light centered below the SLOW legend; or
- D. A series of eight or more white or red lights no larger than 6 mm (0.25 in) in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the STOP face; and/or a series of eight or more white or yellow lights no larger than 6 mm (0.25 in) in diameter along the outer edge of the paddle, arranged in a diamond pattern along the border of the SLOW face.
- E. A series of white lights forming the shapes of the letters in the legend.

Standard:

If flashing lights are used on the STOP face of the paddle, their colors shall be all white or all red. If flashing lights are used on the SLOW face of the paddle, their colors shall be all white or all yellow.

If more than eight flashing lights are used, the lights shall be arranged such that they clearly convey the octagonal shape of the STOP face of the paddle and/or the diamond shape of the SLOW face of the paddle.

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

Flags, when used, shall be a minimum of 600 mm (24 in) square, made of a good grade of red material, and securely fastened to a staff that is approximately 900 mm (36 in) in length.

Guidance:

The free edge of a flag should be weighted so the flag will hang vertically, even in heavy winds.

Standard:

When used at nighttime, flags shall be retroreflectorized red.

Section 6E.04 Flagger procedures**Support:**

The use of paddles by flaggers are illustrated in Figure 6E-1.

Standard:

The following methods of signaling with paddles shall be used:

- A. To stop road users, the flagger shall face road users and aim the STOP paddle face toward road users in a stationary position with the arm extended horizontally away from the body. The free arm shall be held with the palm of the hand above shoulder level toward approaching traffic.**
- B. To direct stopped road users to proceed, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body. The flagger shall motion with the free hand for road users to proceed.**
- C. To alert or slow traffic, the flagger shall face the road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body.**

Option:

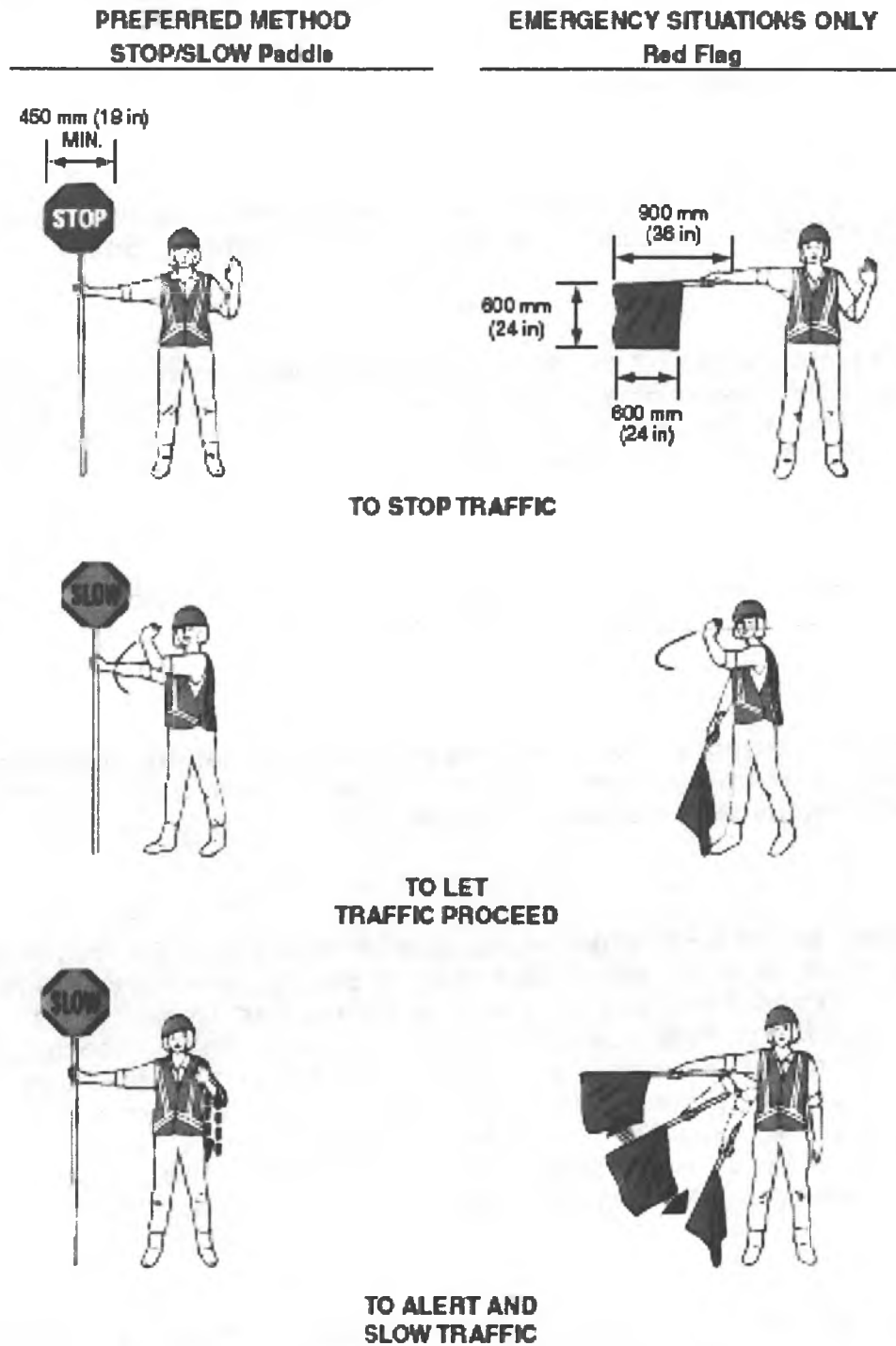
To further alert or slow traffic, the flagger holding the SLOW paddle face toward road users may motion up and down with the free hand, palm down.

Standard:

The following methods of signaling with a flag shall be used:

- A. To stop road users, the flagger shall face road users and extend the flag staff horizontally across the road users lane in a stationary position so that the full area of the flag is visibly hanging below the staff. The free arm shall be held with the palm of the hand above shoulder level toward approaching traffic.**
- B. To direct stopped road users to proceed, the flagger shall stand parallel to the road user movement and with flag and arm lowered from the view of the road users, and shall motion with the free hand for road users to proceed. Flags shall not be used to signal road users to proceed.**

Figure 6E-1. Use of Hand-Signaling Devices by Flaggers



- C. To alert or slow traffic, the flagger shall face road users and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down without raising the arm above a horizontal position. The flagger shall keep the free hand down.**

Section 6E.05 Flagger Stations

Standard:

Flagger stations shall be located such that approaching road users will have sufficient distance to stop at an intended stopping point.

Option:

The distances shown in Table 6E-1, which provides information regarding the stopping sight distance as a function of speed, may be used for the location of a flagger station. These distances may be increased for downgrades and other conditions that affect stopping distance.

Guidance:

Flagger stations should be located such that an errant vehicle has additional space to stop without entering the work space.

Standard:

Except in emergency situations, flagger stations shall be preceded by an advance warning sign or signs. Except in emergency situations, flagger stations shall be illuminated at night.

Guidance:

The flagger should stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users. A flagger should only stand in the lane being used by moving road users after road users have stopped. The flagger should be clearly visible to first approaching road users at all times. The flagger also should be visible to other road users. The flagger should be stationed sufficiently in advance of the workers to warn them (for example, with audible warning devices such as horns or whistles) of approaching danger by out-of-control vehicles. The flagger should stand alone, never permitting a group of workers to congregate around the flagger station.

Option:

At a spot constriction, the flagger may have to take a position on the shoulder opposite the closed section in order to operate effectively.

At spot lane closures where adequate sight distance is available for the reasonably safe handling of traffic, the use of one flagger may be sufficient.

Table 6E-1 Stopping Sight Distance as a Function of Speed

Speed* (km/h)	Distance (m)	Speed* (mph)	Distance (ft)
30	35	20	115
40	50	25	155
50	60	30	200
60	85	35	250
70	105	40	305
80	130	45	360
90	160	50	425
100	185	55	495
110	220	60	570
120	250	65	645
		70	730
		75	820

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed