



# PART 2

## Signs

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**PART 2. SIGNS**

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## CHAPTER 2A. GENERAL

### Section 2A.01 Function and Purpose of Signs

Support:

This Manual contains Standards, Guidance, and Options for the signing within the right-of-way of all types of highways open to public travel. The functions of signs are to provide regulations, warnings, and guidance information for road users. Both words and symbols are used to convey the messages. Signs are not typically used to confirm rules of the road.

Detailed sign requirements are located in the following Chapters of Part 2:

- Chapter 2B—Regulatory Signs
- Chapter 2C—Warning Signs
- Chapter 2D—Guide Signs (Conventional Roads)
- Chapter 2E—Guide Signs (Freeways and Expressways)
- Chapter 2F—Specific Service (Logo) Signs
- Chapter 2G—Tourist-Oriented Direction Signs
- Chapter 2H—Recreational and Cultural Interest Area Signs
- Chapter 2I—Emergency Management Signs

**Standard:**

**Because the requirements and standards for signs depend on the particular type of highway upon which they are to be used, the following definitions shall apply:**

- A. Freeway—a divided highway with full control of access;**
- B. Expressway—a divided highway with partial control of access;**
- C. Conventional Road—a street or highway other than a low-volume road (as defined in Section 5A.01), a freeway, or an expressway; and**
- D. Special Purpose Road—a low-volume, low-speed road that serves recreational areas or resource development activities, or that provides local access.**

### Section 2A.02 Definitions

Support:

Definitions that are applicable to signs are given in Sections 1A.13 and 2A.01.

### **Section 2A.03 Standardization of Application**

#### Support:

It is recognized that urban traffic conditions differ from those in rural environments, and in many instances signs are applied and located differently. Where pertinent and practical, this Manual sets forth separate recommendations for urban and rural conditions.

#### Guidance:

Signs should be used only where justified by engineering judgment or studies, as noted in Section 1A.09.

Results from traffic engineering studies of physical and traffic factors should indicate the locations where signs are deemed necessary or desirable.

Roadway geometric design and sign application should be coordinated so that signing can be effectively placed to give the road user any necessary regulatory, warning, guidance, and other information.

#### **Standard:**

**Each standard sign shall be displayed only for the specific purpose as prescribed in this Manual. Determination of the particular signs to be applied to a specific condition shall be made in accordance with the criteria set forth in Part 2. Before any new highway, detour, or temporary route is opened to traffic, all necessary signs shall be in place. Signs required by road conditions or restrictions shall be removed when those conditions cease to exist or the restrictions are withdrawn.**

### **Section 2A.04 Excessive Use of Signs**

#### Guidance:

Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. If used, route signs and directional signs should be used frequently because they promote safe and efficient operations by keeping road users informed of their location.

**Section 2A.05 Classification of Signs****Standard:**

**Signs shall be defined by their function as follows:**

- A. Regulatory signs give notice of traffic laws or regulations.**
- B. Warning signs give notice of a situation that might not be readily apparent.**
- C. Guide signs show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information.**

**Section 2A.06 Design of Signs****Support:**

This Manual shows many typical standard signs approved for use on streets, highways, bikeways, and pedestrian crossings.

In the specifications for individual signs, the legend, color, and size are shown in the accompanying tables and illustrations, and are not always detailed in the text.

Detailed drawings of standard signs and alphabets are shown in the "Standard Highway Signs" book, and in the "Standard Alphabets for Highway Signs and Pavement Markings." Section 1A.11 contains information regarding how to obtain these publications.

The basic requirements of a highway sign are that it be legible to those for whom it is intended and that it be understandable in time to permit a proper response. Desirable attributes include:

- A. High visibility by day and night; and**
- B. High legibility (adequately sized letters or symbols, and a short legend for quick comprehension by a road user approaching a sign).**

Standardized colors and shapes are specified so that the several classes of traffic signs can be promptly recognized. Simplicity and uniformity in design, position, and application are important.

**Standard:**

**The term legend shall include all word messages and symbol designs that are intended to convey specific meanings.**

**Uniformity in design shall include shape, color, dimensions, legends, borders, and illumination or retroreflectivity.**

**Where a word message is applicable, the wording shall be as herein provided. Standardization of these designs does not preclude further improvement by minor changes in the proportion or orientation of symbols, width of borders, or layout of word messages, but all shapes and colors shall be as indicated.**

**In situations where word messages are required other than those herein provided, the signs shall be of the same shape and color as standard signs of the same functional type.**

Option:

State and local highway agencies may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information.

### **Section 2A.07 Changeable Message Signs**

**Standard:**

**Changeable message signs, which are traffic control devices designed to display variable messages, shall conform to the principles established in this Manual, and to the extent practical, with the design and applications prescribed in Sections 6F.52 and 6F.55.**

Guidance:

Changeable message signs should not be used to display information other than regulatory, warning, and guidance information related to traffic control.

Support:

Changeable message signs, with more sophisticated technologies, are gaining widespread use to inform road users of variable situations, particularly along congested traffic corridors. Highway and transportation organizations are encouraged to develop and experiment (see Section 1A.10) with changeable message signs and to carefully evaluate such installations so that additional standards may be adopted in the future.

Information regarding the design and application of portable changeable message signs in temporary traffic control zones is contained in Section 6F.02.



### **Section 2A.08 Retroreflectivity and Illumination**

#### **Support:**

There are many materials currently available for retroreflection and various methods currently available for the illumination of signs. New materials and methods continue to emerge. New materials and methods can be used as long as the signs meet the standard requirements for color, both by day and by night.

#### **Standard:**

**Regulatory, warning, and guide signs shall be retroreflective or illuminated to show the same shape and similar color by both day and night, unless specifically stated otherwise in the text discussion in this Manual of a particular sign or group of signs.**

**The requirements for sign illumination shall not be considered to be satisfied by street, highway, or strobe lighting.**

#### **Guidance:**

All overhead sign installations should be illuminated unless an engineering study shows that retroreflection will perform effectively without illumination.

#### **Option:**

Sign elements may be illuminated by the means shown in Table 2A-1.

Retroreflection of sign elements may be accomplished by the means shown in Table 2A-2.

### **Section 2A.09 Minimum Retroreflectivity Levels**

#### **Support:**

(This section is reserved for future text based on FHWA rulemaking.)

### **Section 2A.10 Shapes**

#### **Standard:**

**Particular shapes, as shown in Table 2A-3, shall be used exclusively for specific signs or series of signs, unless specifically stated otherwise in the text discussion in this Manual for a particular sign or class of signs.**

**Table 2A-1. Illumination of Sign Elements**

Means of Illumination	Sign Element To Be Illuminated
Light behind the sign face	<ul style="list-style-type: none"> <li>• Symbol or message</li> <li>• Background</li> <li>• Symbol, message, and background (through a translucent material)</li> </ul>
Attached or independently mounted light source designed to direct essentially uniform illumination onto the sign face	<ul style="list-style-type: none"> <li>• Entire sign face</li> </ul>
Other devices, or treatments that highlight the sign shape, color, or message at night:  Luminous tubing Fiber optics (shaped to the lettering or symbol) Patterns of incandescent light bulbs Luminescent panels	<ul style="list-style-type: none"> <li>• Symbol or message</li> <li>• Entire sign face</li> </ul>

**Table 2A-2. Retroreflection of Sign Elements**

Means of Retroreflection	Sign Element
Reflector "buttons" or similar units	Symbol Word message Border
A material that has a smooth, sealed outer surface over a microstructure that reflects light	Symbol Word message Border Background

**Table 2A-3. Use of Sign Shapes**

Shape	Signs
Octagon	* Stop
Equilateral Triangle (1 point down)	* Yield
Circle	Highway-Rail Grade Crossing (Advance Warning) Emergency Evacuation Route Marker
Pennant Shape / Isosceles Triangle (longer axis horizontal)	* No Passing
Pentagon (pointed up)	* School Crossing Series * County Route Sign
Crossbuck (two rectangles in an "X" configuration)	* Highway-Rail Grade Crossing
Diamond	Warning Series
Rectangle	Regulatory Series ** Guide Series Warning Series
Trapezoid	* Recreational Series

\* Indicates exclusive use

\*\* Guide series includes general service, specific service, and recreation signs

## **Section 2A.11 Sign Colors**

### **Standard:**

**The colors to be used on standard signs and their specific use on these signs shall be as indicated in the specific Sections of Part 2. The color coordinates and values shall be as described in the "Standard Highway Signs" book.**

### **Support:**

As a quick reference, common uses of sign colors are shown in Table 2A-4. Color schemes on specific signs are shown in the illustrations located in each appropriate Section.

Whenever white is specified herein as a color, it is understood to include silver-colored retroreflective coatings or elements that reflect white light.

The colors purple, light blue, and coral are being reserved for uses that will be determined in the future by the Federal Highway Administration.

## **Section 2A.12 Dimensions**

### **Support:**

Sign sizes for use on the different classes of highways are shown in Sections 2B.03 and 2C.04 and in the "Standard Highway Signs" book.

### **Standard:**

**The standard sign dimensions prescribed in this Manual and in the "Standard Highway Signs" book shall be used unless engineering judgment determines that other sizes are appropriate. Where engineering judgment determines that sizes smaller than the standard dimensions are appropriate for use, the sign dimensions shall not be less than the minimum dimensions specified in this Manual and in the "Standard Highway Signs" book. Where engineering judgment determines that sizes larger than the standard dimensions are appropriate for use, standard shapes and colors shall be used and standard proportions shall be retained as much as practical.**

### **Guidance:**

Increases above standard sizes should be used where greater legibility or emphasis is needed. Wherever practical, the overall sign dimensions should be increased in 150 mm (6 in) increments.

**Table 2A-4. Common Uses of Sign Colors**

Type of Sign	Legend					Background								
	Black	Green	Red	White	Yellow	Black	Blue	Brown	Green	Orange	Red	White	Yellow	FYG*
Regulatory	X		X	X		X					X	X		
Prohibitive			X	X							X	X		
Permissive		X										X		
Warning	X												X	
Pedestrian	X												X	X
Bicycle	X												X	X
Guide				X					X					
Interstate Route				X			X				X			
State Route	X											X		
US Route	X											X		
County Route					X		X							
Forest Route				X				X						
Evacuation Route				X			X							
Information				X			X		X					
Milepost Signs				X					X					
Road User Service				X			X							
Recreational				X				X	X					
Street Name				X					X					
Destination				X					X					
Temporary Traffic Control	X									X				
School	X												X	X

\*FYG is fluorescent yellow-green

### **Section 2A.13 Symbols**

#### Support:

Sometimes a change from word messages to symbols requires significant time for public education and transition. Therefore, this Manual includes the practice of using educational plaques to accompany some new symbol signs.

#### **Standard:**

**Symbol designs shall in all cases be unmistakably similar to those shown in this Manual and the "Standard Highway Signs" book. New symbol designs shall be adopted by the Federal Highway Administration based on research evaluations to determine road user comprehension, sign conspicuity, and sign legibility.**

#### Guidance:

New warning or regulatory symbol signs not readily recognizable by the public should be accompanied by an educational plaque.

#### Option:

State and/or local highway agencies may conduct research studies to determine road user comprehension, sign conspicuity, and sign legibility.

Educational plaques may be left in place as long as they are in serviceable condition.

Although most standard symbols are oriented facing left, mirror images of these symbols may be used where the reverse orientation might better convey to road users a direction of movement.

### **Section 2A.14 Word Messages**

#### **Standard:**

**Except as noted in Section 2A.06, all word messages shall use standard wording and letters as shown in this Manual, the "Standard Highway Signs" book, and the "Standard Alphabets for Highway Signs and Pavement Markings."**

#### Guidance:

Word messages should be as brief as possible and the lettering should be large enough to provide the necessary legibility distance. A specific ratio, such as 25 mm (1 in) of letter height per 12 m (40 ft) of legibility distance, should be used.

Abbreviations (see Section 1A.14) should be kept to a minimum, and should include only those that are commonly recognized and understood, such as AVE (for Avenue), BLVD (for Boulevard), N (for North), or JCT (for Junction).

**Standard:**

**All sign lettering shall be in capital letters as provided in the "Standard Alphabets for Highway Signs and Pavement Markings," except as indicated in the Option below.**

Option:

Word messages on street name signs and destinations on guide signs may be composed of a combination of lower-case letters with initial upper-case letters.

**Section 2A.15 Sign Borders**

**Standard:**

**Unless specifically stated otherwise, each sign illustrated herein shall have a border of the same color as the legend, at or just inside the edge.**

**The corners of the sign shall be rounded, except for STOP signs.**

Guidance:

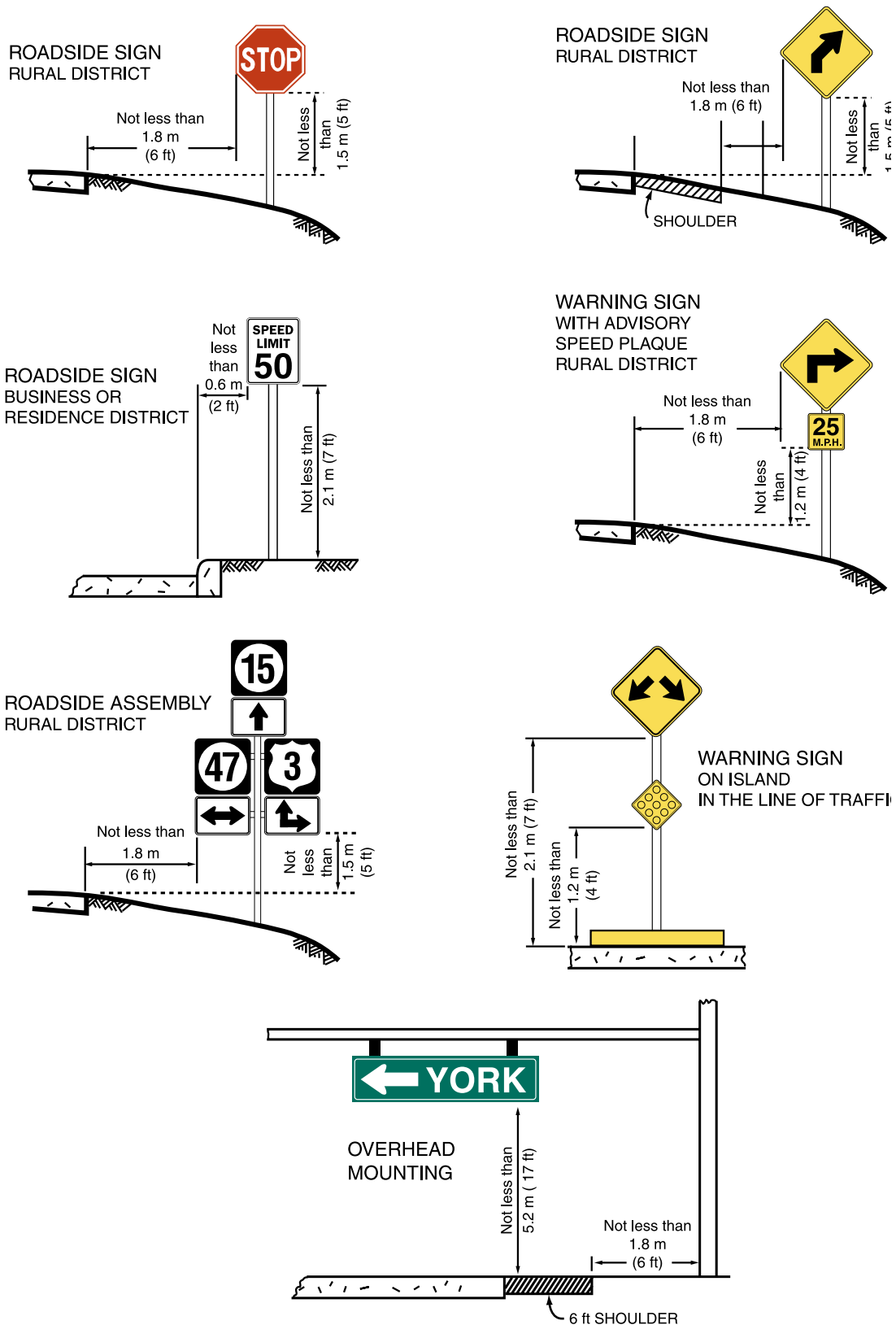
A dark border on a light background should be set in from the edge, while a light border on a dark background should extend to the edge of the panel. A border for 750 mm (30 in) signs with a light background should be from 13 to 19 mm (0.5 to 0.75 in) in width, 13 mm (0.5 in) from the edge. For similar signs with a light border, a width of 25 mm (1 in) should be used. For other sizes, the border width should be of similar proportions, but should not exceed the stroke-width of the major lettering of the sign. On signs exceeding 1800 x 3000 mm (72 x 120 in) in size, the border should be 50 mm (2 in) wide, or on larger signs, 75 mm (3 in) wide. Where practicable, the corners of the sign should be rounded to fit the border, except for STOP signs.

**Section 2A.16 Standardization of Location**

Support:

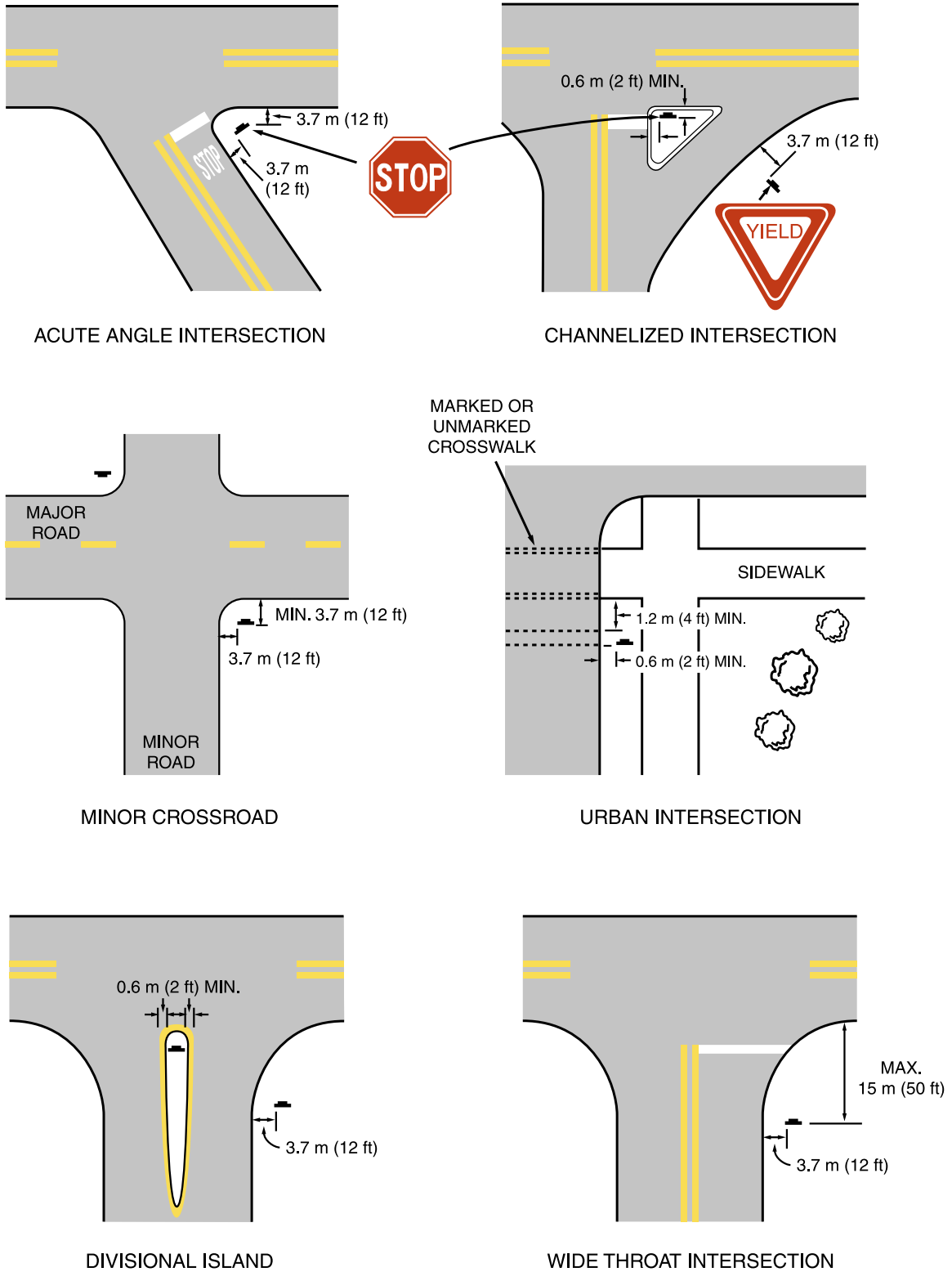
Standardization of position cannot always be attained in practice. Locations for a number of typical signs are illustrated in Figures 2A-1 to 2A-7.

**Figure 2A-1. Heights and Lateral Locations of Signs for Typical Installation**

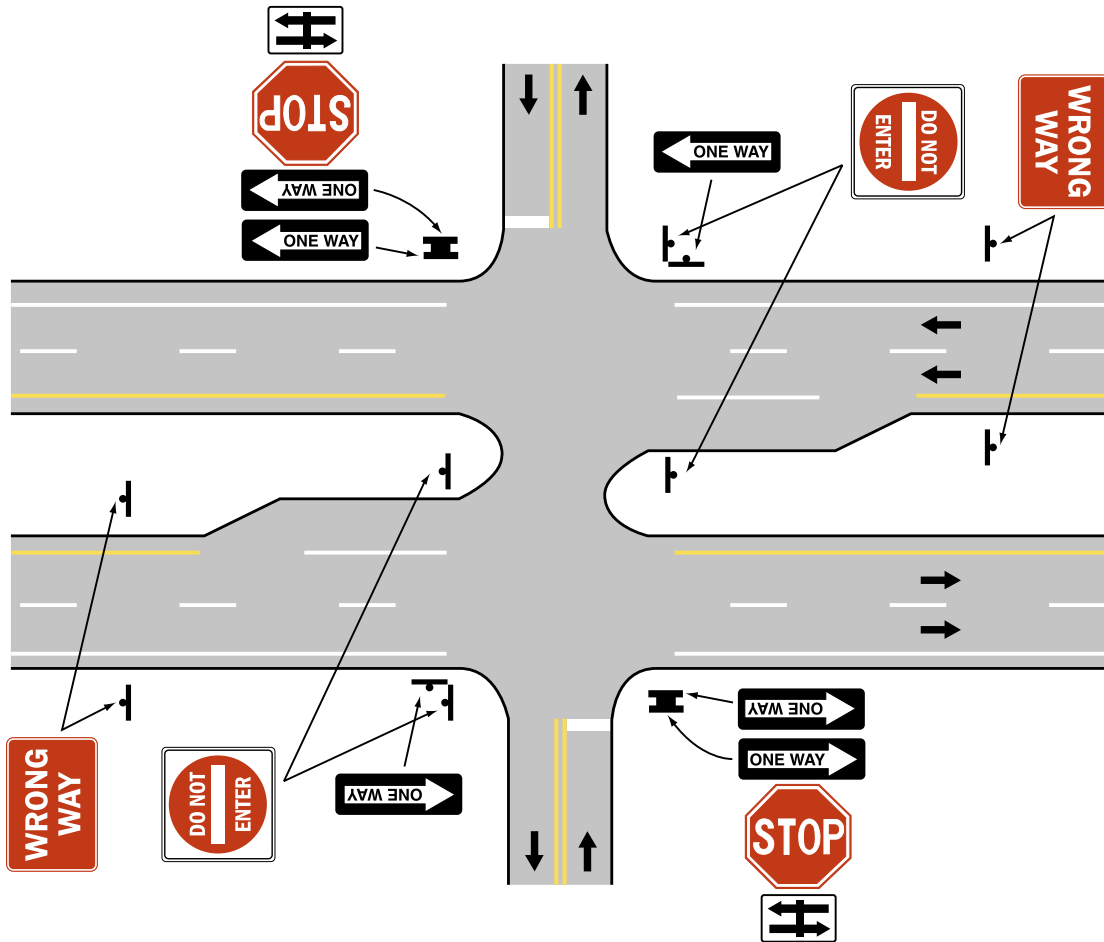




**Figure 2A-2. Typical Locations for Signs at Intersections**



**Figure 2A-3. Typical ONE WAY Signing for Divided Highways with Medians Less Than 9 m (30 ft)**



Note: All signs shown are optional except the STOP signs

Legend

→ Direction of travel



Typical Mounting

**Figure 2A-4. Typical ONE WAY Signing for Divided Highways with Medians Greater Than 9 m (30 ft)**

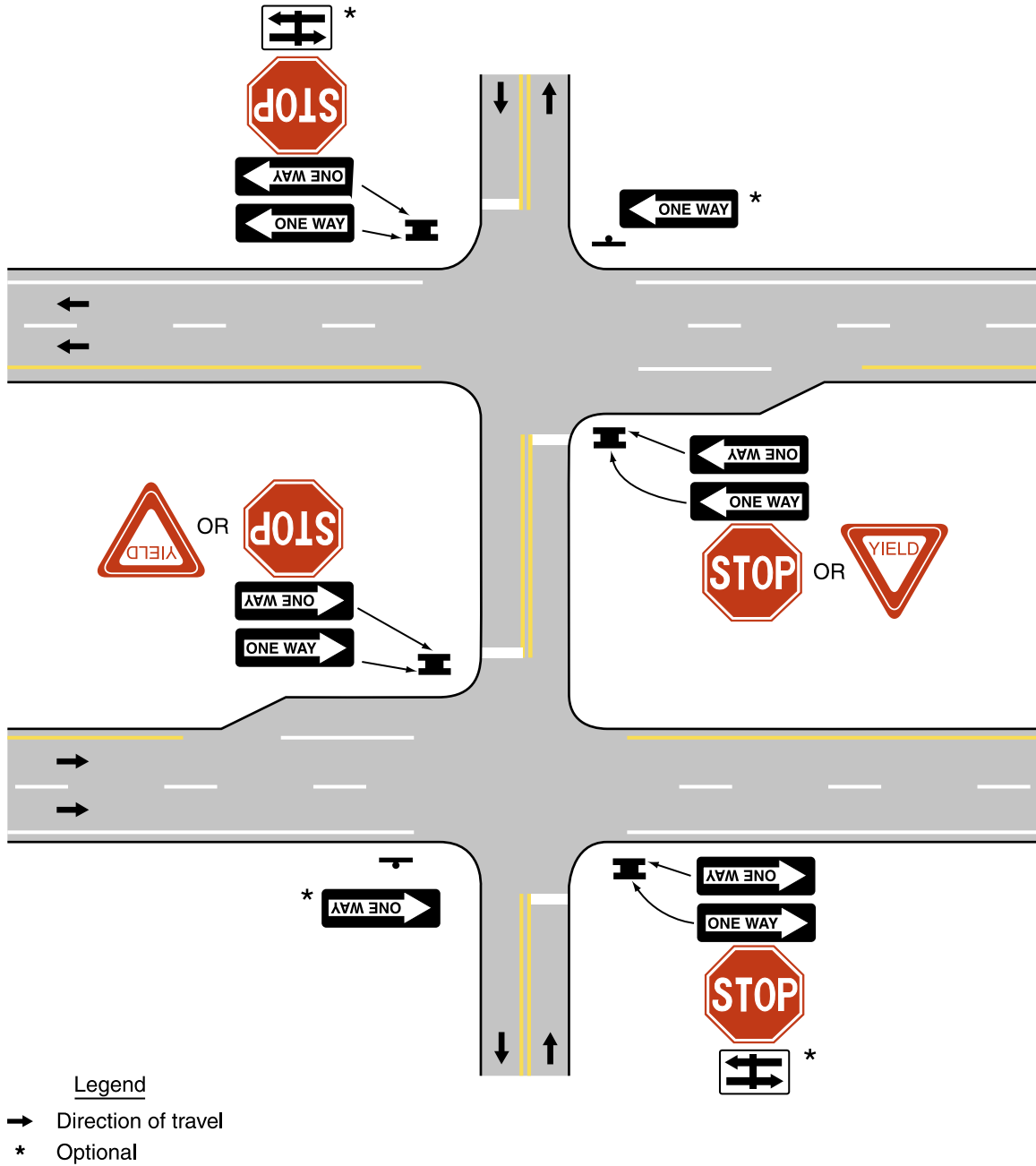
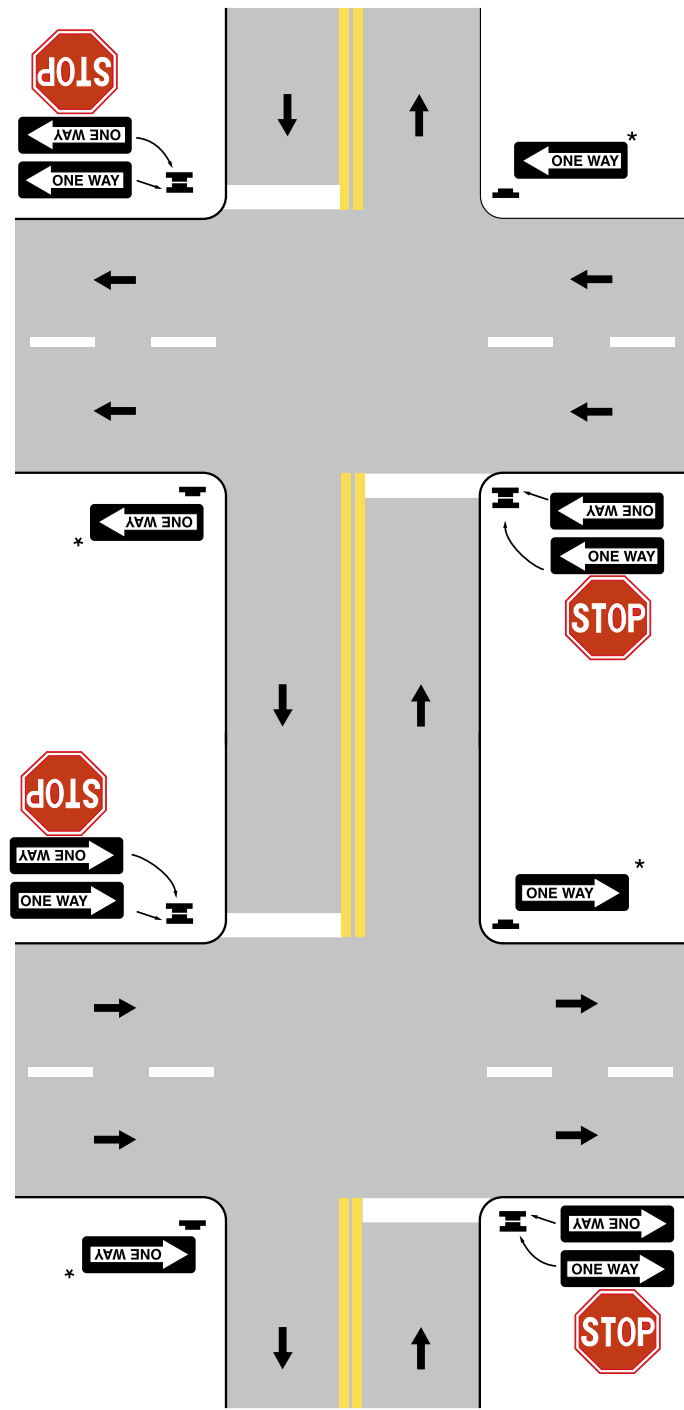
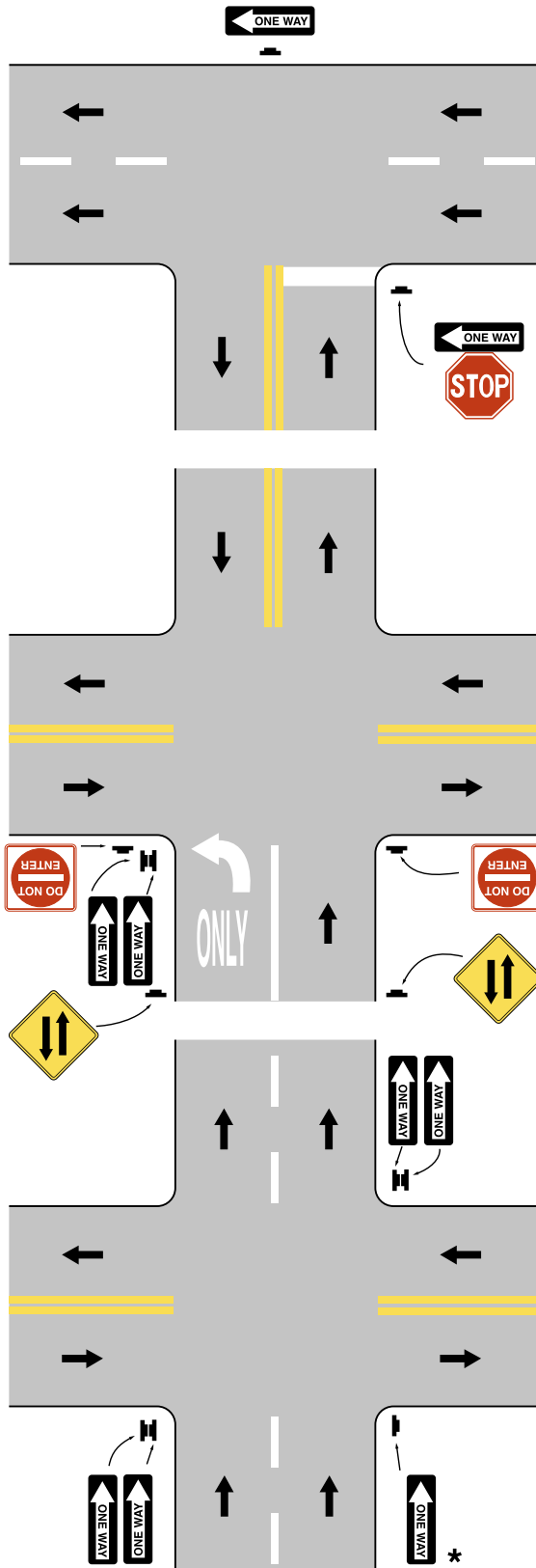


Figure 2A-5. Typical Locations of ONE WAY Signs



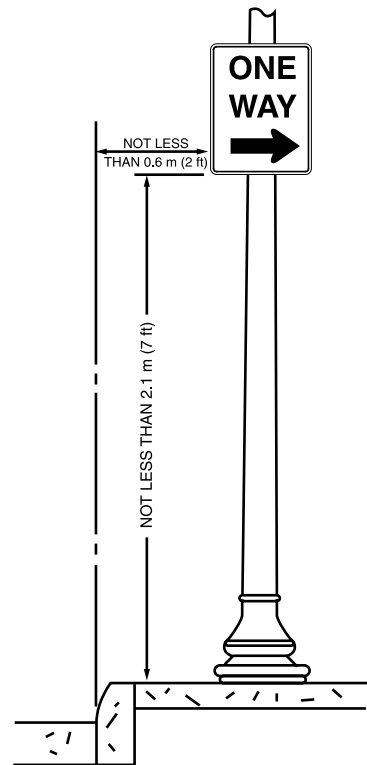
- Legend
- Direction of travel
  - \* Optional

Figure 2A-6. Typical Locations of ONE WAY Signs

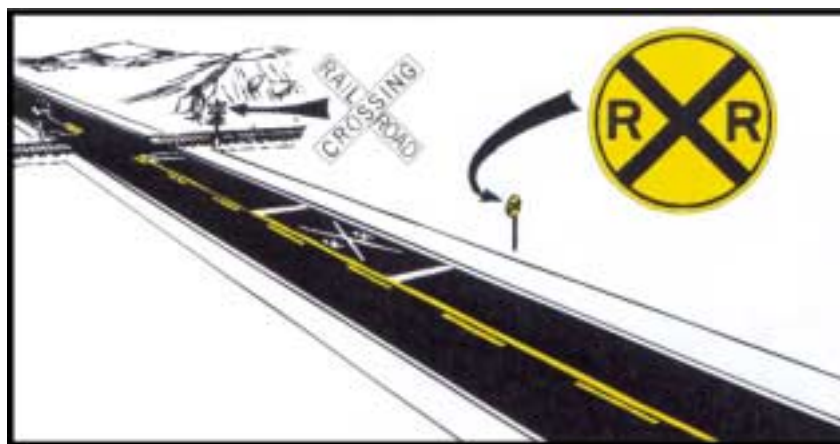
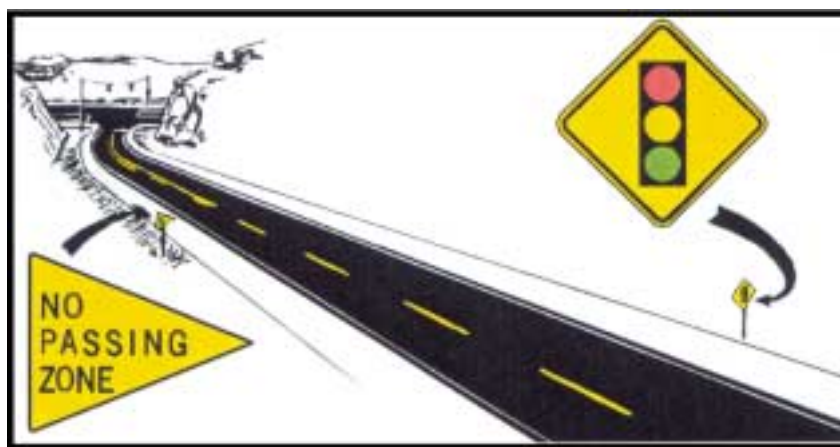
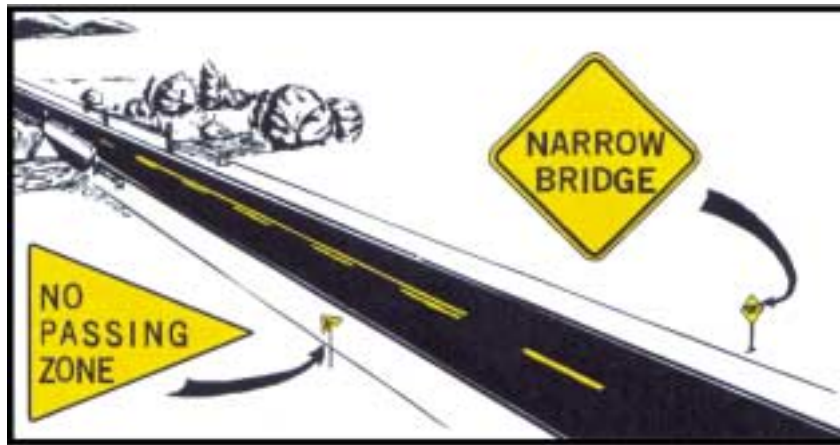


Legend

- Direction of travel
- \* Optional



**Figure 2A-7. Typical Applications of Warning Signs**



**Standard:**

**Signs requiring different decisions by the road user shall be spaced sufficiently far apart for the required decisions to be made safely. One of the factors considered when determining the appropriate spacing shall be the posted or 85th-percentile speed.**

## Guidance:

Signs should be located on the right side of the roadway where they are easily recognized and understood by road users. Signs in other locations should be considered only as supplementary to signs in the normal locations, except as otherwise indicated.

Signs should be individually installed on separate posts or mountings except where one sign supplements another or where route or directional signs must be grouped. Signs should be located so that they:

- A. Are outside the clear zone unless placed on a breakaway or yielding support (see Section 2A.19);
- B. Optimize nighttime visibility;
- C. Minimize the effects of mud splatter and debris;
- D. Do not obscure each other; and
- E. Are not hidden from view.

## Support:

The clear zone is the total roadside border area, starting at the edge of the traveled way, available for use by errant vehicles. The desired width is dependent upon traffic volumes, speeds, and roadside geometry. Additional information can be found in the "AASHTO Roadside Design Guide" (see Page i for AASHTO's address).

## Guidance:

With the increase in traffic volumes and the desire to provide road users regulatory, warning, and guidance information, an order of priority for sign installation should be established.

## Support:

An order of priority is especially critical where space is limited for sign installation and there is a demand for several different types of signs. Overloading road users with too much information is not desirable.

**Guidance:**

Because regulatory and warning information is more critical to the road user than guidance information, regulatory and warning signing whose location is critical should be displayed rather than guide signing in cases where conflicts occur. Information of a less critical nature should be moved to less critical locations or omitted.

**Option:**

Under some circumstances, such as on curves to the right, signs may be placed on median islands or on the left side of the road. A supplementary sign located on the left of the roadway may be used on a multilane road where traffic in the right lane might obstruct the view to the right.

**Guidance:**

In urban areas where crosswalks exist, signs should not be placed within 1.2 m (4 ft) in advance of the crosswalk.

**Section 2A.17 Overhead Sign Installations****Guidance:**

Overhead signs should be used on expressways, where some degree of lane-use control is desirable, or where space is not available at the roadside.

**Support:**

The operational requirements of the present highway system are such that overhead signs have value at many locations. The factors to be considered for the installation of overhead sign displays are not definable in specific numerical terms.

**Option:**

The following conditions (not in priority order) may be considered in an engineering study to determine if overhead signs should be used:

- A. Traffic volume at or near capacity;
- B. Complex interchange design;
- C. Three or more lanes in each direction;
- D. Restricted sight distance;
- E. Closely spaced interchanges;



- F. Multilane exits;
- G. Large percentage of trucks;
- H. Street lighting background;
- I. High-speed traffic;
- J. Consistency of sign message location through a series of interchanges;
- K. Insufficient space for ground-mounted signs;
- L. Junction of two freeways; and
- M. Left exit ramps.

Over-crossing structures may serve for the support of overhead signs, and under some circumstances, may be the only practical solution that will provide adequate viewing distance. Use of such structures as sign supports may eliminate the need for the foundations and sign supports along the roadside.

On freeways and expressways, signs may be placed on bridges, where feasible, to enhance safety and economy.

### **Section 2A.18 Mounting Height**

#### **Standard:**

**Signs installed at the side of the road in rural districts shall be at least 1.5 m (5 ft), measured from the bottom of the sign to the near edge of the pavement. Where parking or pedestrian movements occur, the clearance to the bottom of the sign shall be at least 2.1 m (7 ft).**

**Directional signs on expressways and freeways shall be installed with a minimum height of 2.1 m (7 ft). If a secondary sign is mounted below another sign, the major sign shall be installed at least 2.4 m (8 ft) and the secondary sign at least 1.5 m (5 ft) above the level of the pavement edge. All route signs, warning signs, and regulatory signs on expressways and freeways shall be at least 2.1 m (7 ft) above the level of the pavement edge.**

**Overhead signs shall provide a vertical clearance of not less than 5.1 m (17 ft) to the sign, light fixture, or sign bridge, over the entire width of the pavement and shoulders except where a lesser vertical clearance is used for the design of other structures. The vertical clearance to overhead sign structures or supports shall not be greater than 0.3 m (1 ft) in excess of the minimum clearance of other structures.**

**Option:**

The height to the bottom of a secondary sign mounted below another sign may be 0.3 m (1 ft) less than the height specified above.

Where signs are placed 9 m (30 ft) or more from the edge of the traveled way, the height to the bottom of such signs may be 1.5 m (5 ft) above the level of the pavement edge.

A route sign assembly consisting of a route sign and auxiliary signs (see Section 2D.27) may be treated as a single sign for the purposes of this Section.

The mounting height may be adjusted when supports are located near the edge of the right-of-way on a steep backslope.

**Support:**

Without this flexibility regarding steep backslopes, some agencies might decide to relocate the sign closer to the road, which might be less desirable.

**Option:**

In special cases it may be necessary to reduce the clearance to overhead signs because of substandard dimensions in tunnels and other major structures such as double-deck bridges.

**Support:**

Figure 2A-1 illustrates some of the mounting height requirements contained in this Section.

**Section 2A.19 Lateral Offset****Standard:**

**The minimum lateral offset from the edge of the shoulder (or if no shoulder exists, from the edge of the pavement) to the near edge of a roadside-mounted sign shall be 1.8 m (6 ft). Roadside-mounted sign supports shall be breakaway, yielding, or shielded with a longitudinal barrier or crash cushion if within the clear zone.**

**The minimum lateral offset from the edge of the shoulder (or if no shoulder exists, from the edge of the pavement) to the near edge of overhead sign supports (cantilever or sign bridges) shall be 1.8 m (6 ft). Overhead sign supports shall have a barrier or crash cushion to shield them if they are within the clear zone.**

**Support:**

The minimum lateral offset is intended to keep trucks and cars that use the shoulders from striking the signs or supports. The minimum lateral offset is only a small portion of the clear zone available for the use of errant vehicles.

**Guidance:**

All supports should be located as far as practical from the edge of the shoulder. Advantage should be taken to place signs behind existing roadside barriers, on overcrossing structures, or other locations that minimize the exposure of the traffic to sign supports.

**Option:**

Where permitted, signs may be placed on existing supports used for other purposes, such as traffic signal supports, highway lighting supports, and utility poles.

**Standard:**

**If signs are placed on existing supports, they shall meet other placement criteria contained in this Manual.**

**Option:**

Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 1.8 m (6 ft) from the edge of the traveled way.

In urban areas where lateral offsets are limited, a minimum lateral offset of 0.6 m (2 ft) may be used.

A minimum offset of 0.3 m (1 ft) from the face of the curb may be used in urban areas where sidewalk width is limited or where existing poles are close to the curb.

**Support:**

Figure 2A-1 illustrates some of the lateral offset requirements contained in this Section.

**Section 2A.20 Position of Signs****Support:**

Detailed specifications for sign locations are given in other Sections of this Manual dealing with an individual sign or class of signs.

Figures 2A-2 through 2A-7 show typical placements of signs.

### **Section 2A.21 Orientation**

#### **Guidance:**

Signs should be vertically mounted at right angles to the direction of, and facing, the traffic that they are intended to serve.

Where mirror reflection from the sign face is encountered to such a degree as to reduce legibility, the sign should be turned slightly away from the road. Signs that are placed 9 m (30 ft) or more from the pavement edge should be turned toward the road. On curved alignments, the angle of placement should be determined by the direction of approaching traffic rather than by the roadway edge at the point where the sign is located.

#### **Option:**

On grades, sign faces may be tilted forward or back from the vertical position to improve the viewing angle.

### **Section 2A.22 Posts and Mountings**

#### **Standard:**

**Sign posts, foundations, and mountings shall be so constructed as to hold signs in a proper and permanent position, and to resist swaying in the wind or displacement by vandalism.**

#### **Support:**

The latest edition of AASHTO's "Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" contains additional information regarding posts and mounting (see Page i for AASHTO's address).

### **Section 2A.23 Maintenance**

#### **Guidance:**

All traffic signs should be kept properly positioned, clean, and legible, and should have adequate retroreflectivity. Damaged or deteriorated signs should be replaced.

To assure adequate maintenance, a schedule for inspecting (both day and night), cleaning, and replacing signs should be established. Employees of highway agencies, police, and other public agencies whose duties require that they travel on the roadways

should be encouraged to report any damaged, deteriorated, or obscured signs at the first opportunity.

Steps should be taken to see that weeds, trees, shrubbery, and construction, maintenance, and utility materials and equipment do not obscure the face of any sign.

A regular schedule of replacement of lighting elements for illuminated signs should be maintained.

#### **Section 2A.24 Wrong-Way Traffic Control**

##### **Standard:**

**Where divided highways are separated by median widths of 9 m (30 ft) or more, the intersections with crossroads shall be signed as two separate intersections.**

##### **Guidance:**

Engineering studies should be conducted to identify and suggest practical corrections at intersections on divided highways where wrong-way usage is being experienced or where a wide median, a rural unlighted environment, or other contributing factors indicate the likelihood of wrong-way movements.

If used, DO NOT ENTER signs should be placed on divided highways at locations directly in view of a driver making a wrong-way entry from the crossroad, and WRONG WAY signs should be placed further from the crossroad than the DO NOT ENTER signs (see Figure 2A-3).

