PART 2
SIGNS
CHAPTER 2A. GENERAL

Section 2A.01 Function and Purpose of Signs

Support:

01 This Manual contains Standards, Guidance, and Options for the signing of all types of highways, and site roadways open to public travel. The functions of signs are to provide regulations, warnings, and guidance information for road users. Words, symbols, and arrows are used to convey the messages. Signs are not typically used to confirm rules of the road (see Paragraph 4 of this Section).

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

Chapter 2B—Regulatory Signs, Barricades, and Gates
Chapter 2C—Warning Signs and Object Markers
Chapter 2D—Guide Signs for Conventional Roads
Chapter 2E—Guide Signs for Freeways and Expressways
Chapter 2F—Toll Road Signs
Chapter 2G—Preferential and Managed Lane Signs
Chapter 2H—General Information Signs
Chapter 2I—General Service Signs
Chapter 2J—Specific Service Signs
Chapter 2K—Tourist-Oriented Directional Signs
Chapter 2L—Changeable Message Signs
Chapter 2M—Recreational and Cultural Interest Area Signs
Chapter 2N—Emergency Management Signs

03 Definitions and acronyms that are applicable to signs are provided in Chapter 1C.

Guidance:

04 Permanent signs should not be used on a frequent basis to confirm rules of the road or statutes. Instead, when determined necessary to advise of new regulations as part of an educational campaign, temporary signs or messages should be used instead of permanent signs. These temporary signs or messages should be used sparingly and only at strategic locations, and should be considered only as a supporting element of a larger educational campaign rather than as the primary source of notification. If engineering judgment determines a need for a permanent sign to distinguish between differing requirements of similar statutes in different jurisdictions, then a sign should be located in the vicinity of the jurisdictional boundary, and should be located away from warning, directional, and higher-priority regulatory signs, so as not to contribute to sign clutter (see Section 2A.20).

Section 2A.02 Standardization of Application

Support:

01 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.

02 Low-volume rural roads typically include access to rural residences, agricultural, recreational, resource management and development (such as mining, logging, and grazing), and local roads in rural areas. On low-volume rural roads, the use of traffic control devices is limited to essential information regarding regulation, warning, and guidance. On low-volume rural roads, it is important to consider the needs of unfamiliar road users for occasional, recreational, and commercial transportation purposes.

Guidance:

03 Signs should be used only where justified by engineering judgment or studies, as provided in Section 1D.03.

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

05 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:

06 Each standard sign (see Paragraph 1 of Section 2A.04) shall be displayed only for the specific purpose as prescribed in this Manual. Before any new highway, site roadway open to public travel (see definition in Section 1C.02), detour, or temporary route is opened to public travel, 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.03 Classification of Signs

Standard:

01 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.

Support:

02 Barricades are described in Sections 2B.75 and 6K.07.

03 Gates are described in Section 2B.76.

04 Object markers are described in Section 2C.70.

Section 2A.04 Design of Signs

Support:

01 This Manual shows many standard signs and object markers approved for use on streets, highways, bikeways, and pedestrian crossings. Standard signs and object markers have a standardized design, shape, background, and legend as shown in this Manual.

02 In the provisions for individual standard signs and object markers, the general appearance of the legend, color, and size are shown in the accompanying tables and illustrations, and are not always detailed in the text.

03 Detailed drawings of standard signs, object markers, alphabets, symbols, and arrows (see Figure 2D-3) are contained in the "Standard Highway Signs" publication. Section 1A.05 contains information regarding this publication.

03a In addition, detailed drawings of standard signs used in Virginia are shown in the "Virginia Standard Highway Signs Book". Appendix A contains a link to this Virginia publication.

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

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

05 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 essential for a sign to be effective.

Standard:

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

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

08 Standardization of these designs does not preclude further improvement by minor modifications to the orientation of symbols (see Section 2A.09), width of borders, or layout of word messages, but all shapes and colors shall be as indicated.

09 All symbols (see Section 2A.09) shall be unmistakably similar to, or mirror images of, the adopted symbol signs, all of which are shown in the "Standard Highway Signs" publication (see Section 1A.05) and the "Virginia Standard Highway Signs" book (see Appendix A). Symbols and colors shall not be modified unless otherwise provided in this Manual. All symbols, colors, or other design features for signs not shown in the "Standard Highway Signs" publication (see Section 1A.05) and the "Virginia Standard Highway Signs" book shall follow the procedures for experimentation and change described in Chapter 1B.

10 Where a standard word message is applicable, the wording shall be as provided in this Manual.

11 In situations where word messages are necessary other than those provided in this Manual (see Paragraph 15 of this Section), the signs shall be of the same shape and color as standard signs of the same functional type.

12 Where the legend of a standard sign is a symbol or a combination of a symbol and words, an alternative word legend shall not be allowed in place of the symbol, except as otherwise provided in this Manual.

13 Where a standard sign provided in this Manual or the "Standard Highway Signs" publication (see Section 1A.05) is applicable, an alternative legend sign or alternative sign design shall not be allowed in place of the standardized legend or design except as provided in this Manual.

14 Where a standard sign provided in this Manual or the "Standard Highway Signs" publication (see Section 1A.05) is applicable, but the legend is variable, such as for destination names, an alternative sign design or dimensions shall not be allowed in place of the standardized design for the non-variable elements except as provided in this Manual.

14a As indicated in Section 1B.05, Paragraph 16a, any proposed or modified permanent Regulatory or Warning signs not in this Manual shall be submitted for review and approval by VDOT's Office of the State Traffic Operations Engineer. Signs shall not be fabricated or installed prior to approval. This requirement shall apply whether or not submission to FHWA is required.

Option:

15 State and local highway agencies and owners of site roadways open to public travel may develop special word legend signs in situations where engineering judgment determines roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information, such as when road users need to be notified of special regulations or warned about a situation that might not be readily apparent. Unlike colors that have not been assigned or symbols that have not been approved for signs, new word legend signs may be used without the need for experimentation.

Support:

16 The message conveyed by some special word legend signs might be unclear to the road user. Although experimentation is not required for such word legends, they might still warrant an evaluation to determine comprehension or possible misinterpretation of the intended message by the road user.

17 Scanning graphics are graphics designed for scanning by machine, and include bar codes, quick-response (QR) codes or other matrix bar-code formats, or similar graphics.

Standard:

18 Unless otherwise provided in this Manual for a specific sign or as provided in Paragraph 19 of this Section, telephone numbers, Internet addresses, e-mail addresses, domain names, uniform resource locators (URL), metadata tags ("hash-tags"), and scanning graphics (see Paragraph 17 of this Section) for the purpose of obtaining information (other than those for maintenance or inventory purposes per the provisions of Paragraphs 21 through 23 of this Section) shall not be displayed on any sign, plaque, sign panel, or changeable message sign.

Option:

19 Internet addresses, e-mail addresses, telephone numbers, scanning graphics, or other graphics for the purpose of conveying information may be displayed on the face of signs, plaques, sign panels, and changeable message signs that are oriented away from or otherwise not readily visible to operators of motor vehicles but

rather are intended for viewing only by pedestrians, occupants of parked vehicles, and driving automation systems.

Standard:

20 Pictographs (see definition in Section 1C.02) shall not be displayed on signs except as specifically provided in this Manual for a particular type of sign. Pictographs shall be simple, dignified, and devoid of any advertising and shall not contain any scanning graphics (see Paragraph 17 of this Section) for the purpose of conveying information. When used to represent a political jurisdiction (a State, county, or municipal corporation) the pictograph shall be the official designation adopted by the jurisdiction, except as provided otherwise in this Manual. When used to represent any other type of jurisdiction, the pictograph shall be the official designation adopted by the jurisdiction. When used to represent a college or university, the pictograph shall be the official seal adopted by the institution. College or university pictographs shall not include pictorial representations of university or college programs, or athletic mascots.

21 No items other than official traffic control signs, inventory stickers or decals, sign installation dates, manufacturer name, sign sizes, sign designations, anti-vandalism stickers, inventory or maintenance codes, and maintenance-related scanning graphics shall be mounted on the back of a sign.

~~Option:~~

~~22 The date of fabrication, sign designation, sign size, and/or manufacturer name may be displayed on the front of a sign face in accordance with the provisions of Paragraph 23 of this Section.~~

~~**Standard:**~~

23 If displayed on the sign face, the date of fabrication, sign designation, sign size, manufacturer name, or similar maintenance and inventory information shall be completely within the border or inset along the bottom edge of the sign. The letter height or scanning graphic shall not exceed ¾ of the width of the border or inset or, if no border is used, shall not exceed 1.75 inches and shall be within 2 inches of the edge of the sign. The color of the lettering within the border shall be the same as the color of the sign background. The color of the lettering or scanning graphic within the inset shall be the same as the color of the sign border. For changeable message signs or blank-out signs, such information, if displayed, shall be embossed in a non-contrasting color in the housing of the sign.

Section 2A.05 Shapes

Standard:

01 Particular shapes, as shown in Table 2A-1, shall be used exclusively for specific signs or a series of signs, unless otherwise provided in this Manual for a particular sign or class of signs.

02 The Crossbuck is a shape exclusive to the Grade Crossing (R15-1) sign and shall not be obscured by mounting a different shape sign on the back of the Crossbuck (see Section 8B.03).

Guidance:

03 Shapes that are exclusive to a particular sign (such as an octagon for STOP, a pennant for NO PASSING ZONE, or a circle for Railroad Advance) should not be obscured by another sign mounted on the back of the same assembly protruding or extending beyond the edge of the sign with the exclusive shape. The following methods should be considered in lieu of mounting a sign on the back of another sign that would obscure the exclusive shape of the sign:

A. Install the signs on separate mountings to maintain the exclusive shape.

B. Increase the size of the sign with the exclusive shape so the sign installed on the back does not obscure its shape.

C. Increase the mounting height of the sign with the exclusive shape to allow the installation of a back-mounted sign below the bottom edge while still ensuring the minimum required mounting height for the lower sign.

04 Where the lateral space available in which to install a standard sign is constrained, such as mounting on a narrow median barrier or adjacent to a retaining wall, the following methods should be considered to maintain the shape of the sign:

A. Angle the sign up to 45 degrees toward the roadway while still maintaining adequate legibility.

B. Install the sign at a different location that still provides adequate advance warning, supplementing the sign with a Distance plaque (see Section 2C.61), if appropriate.

C. Reduce the size of the sign, but supplement it with a duplicate sign on the opposite side of the roadway (see Section 2A.11).

D. In addition to either angling or reducing the size of the sign, supplement it with a duplicate warning sign and Distance plaque at an upstream location.

E. Mount the sign asymmetrically on the sign support, such as when the support is mounted on a bridge parapet or railing, such that the edge of the sign does not overhang the roadway, shoulder, or other areas used by bicyclists or pedestrians.

Option:

05 Where the shape of the sign cannot be maintained due to lateral constraints, the following methods may be considered:

A. For warning signs or other types of signs displayed in a horizontally-oriented rectangle, the legend may be displayed in a vertically-oriented rectangle.
B. When mounted overhead, the word legend for a standard warning sign may be displayed in a horizontally-oriented rectangle.

Support:

06 Provisions for mounting height of signs that overhang any portion of the traveled way are contained in Section 2A.15.

07 Provisions for lateral offset are contained in Section 2A.16.

Standard:

08 Modifications to sign shapes, such as cutting off the left and right points of a diamond, shall not be allowed.

Option:

09 Where the methods described in Paragraph 3 of this Section are impracticable, the legend of the warning sign may be displayed in a vertically-oriented rectangle.

Section 2A.06 Colors

Standard:

01 The colors to be used on signs and their specific uses on signs shall be as provided in the applicable Sections of this Manual. The color coordinates and values shall be as described in 23 CFR, Part 655, Subpart F, Appendix.

02 **Colors (see Section 1D.05) shall be consistent across the face of a sign or a sign panel. Color gradients (smooth or defined gradual transitions either within a color or transition to another color) shall not be allowed, except as specifically provided in Section 2J.03 for business identification sign panels.**

Support:

03 Common uses of sign colors are shown in Table 2A-2. Color schemes on specific signs are shown in the illustrations located in each applicable Chapter.

04 Whenever white is specified in this Manual or in the "Standard Highway Signs" publication (see Section 1A.05) as a color, it is understood to include silver-colored retroreflective coatings or elements that reflect white light.

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

06 Information regarding color coding of destinations on guide signs, including community wayfinding signs, is contained in Chapter 2D.

Option:

07 The approved fluorescent version of the standard red, yellow, green, or orange color may be used as an alternative to the corresponding standard color.

Section 2A.07 Dimensions

Support:

01 The "Standard Highway Signs" publication and "Virginia Standard Highway Signs" book (see Section 1A.05 and Appendix A) prescribe design details for different sizes of each sign or plaque depending on the type of traffic facility, including bikeways. Smaller sizes are designed to be used on bikeways and some other off-road applications. Larger sizes are designed for use on freeways and expressways, and can also be used in oversized applications to enhance road user safety and convenience on other facilities, especially on multi-lane divided highways and on undivided highways having five or more lanes of traffic and/or high speeds. The intermediate sizes are designed to be used on other highway types. Minimum sizes of signs and plaques for specific applications are prescribed in the various sign size tables in each Chapter of this Manual.

Standard:

02 The sign dimensions prescribed in the sign size tables in the various Parts and Chapters in this Manual, the "Standard Highway Signs" publication, and the "Virginia Standard Highway Signs" book (see Section 1A.05) shall be used unless engineering judgment determines that other sizes are appropriate in accordance with the following. Except as provided in Paragraph 3 of this Section, where engineering judgment determines that sizes smaller than the prescribed dimensions are appropriate for use, the sign dimensions shall not be less than the minimum dimensions specified in this Manual. The sizes shown in the Minimum columns that are smaller than the sizes shown in the Conventional Road columns in the various sign size tables in this Manual shall only be used on low-speed roadways, alleys, site roadways open to public travel, and on low-volume rural roads with operating speeds of 30 mph or less; and only where the reduced legend size would be adequate for the regulation or warning or where physical conditions preclude the use of larger sizes.

Option:

03 For alleys with restrictive physical conditions and vehicle use that limits installation of the Minimum size sign (or the Conventional Road size sign if no Minimum size is shown), both the sign height and the sign width may be decreased by up to 6 inches.

Guidance:

04 The sizes shown in the Freeway and Expressway columns in the various sign size tables in this Manual should also be used for other higher-speed applications on conventional roads, based upon engineering judgment, to provide larger signs for increased visibility and recognition.

05 The sizes shown in the Oversized columns in the various sign size tables in this Manual should be used for those special applications where speed, volume, or other factors result in conditions where increased emphasis, improved recognition, or increased legibility is needed, as determined by engineering judgment or study.

06 Except as provided in Paragraph 7 of this Section, and where specifically prohibited in this Manual, increases above the minimum prescribed sizes should be used where greater legibility or emphasis is needed. If signs larger than the prescribed sizes are used, the overall sign dimensions should be increased in 6-inch increments.

Standard:

07 Where a maximum allowable sign size is prescribed, increases in sign size above the maximum size shall not be allowed.

08 Where engineering judgment determines that sizes that are different from the minimum prescribed dimensions are appropriate for use, standard shapes and colors shall be used. Standard proportions shall be retained as much as practicable.

Guidance:

09 Except where specifically prohibited in this Manual, when supplemental plaques are installed with larger-sized signs, a corresponding increase in the size of the plaque and its legend should also be made. The resulting plaque size should be approximately in the same relative proportion to the larger-sized sign as the conventional-sized plaque is to the conventional-sized sign.

Section 2A.08 Word Messages

Standard:

01 Except as otherwise provided in this Manual, all word messages shall be aligned horizontally across a sign, reading left to right.

02 Except as provided in Section 2A.04, all word messages shall use standard wording as shown in this Manual, the "Standard Highway Signs" publication, and the "Virginia Standard Highway Signs" book (see Section 1A.05 and Appendix A).

03 All sign lettering, numerals, and other characters shall be of the Standard Alphabets as provided in the "Standard Highway Signs" publication and the "Virginia Standard Highway Signs" book (see Section 1A.05 and Appendix A), unless otherwise provided in this Manual.

04 The sign lettering for names of places, streets, and highways shall be composed of a combination of lower-case letters with initial upper-case letters. The sign lettering for other legends shall be composed of upper-case letters, unless otherwise provided in this Manual for a particular sign or type of message.

05 Except as provided in Chapter 2E of this Manual, ~~when a mixed-case legend is used~~ in a mixed-case sign legend composed of letters from the Standard Highway Sign Alphabets, the nominal loop height of the lower-case letters shall be ¾ of the height of the initial upper-case letter.

06 The unique letter forms for each of the Standard Alphabet series shall not be stretched, compressed, warped, or otherwise manipulated.

Support:

07 Section 2D.03 contains information regarding the acceptable methods of modifying the length of a word for a given letter height and series.

Option:

07a In accordance with Section 2D.55, a lettering style other than the Standard Highway Sign Alphabets may be used on community wayfinding signs if an engineering study determines that the legibility and recognition values for the chosen lettering style meet or exceed the values for the Standard Highway Sign Alphabets for the same legend height and stroke width.

Guidance:

08 Word messages should be as brief as practical to convey a clear, simple meaning, and the lettering should be large enough to provide the necessary legibility distance. A minimum specific ratio of 1 inch of letter height per 30 feet of legibility distance should be used.

09 Abbreviations (see Section 1D.08) should be kept to a minimum, except as otherwise prescribed in this Manual.

10 Word messages should not contain periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens unless necessary to avoid confusion.

Support:

11 Diacritical marks on words or names that are adapted to English are not normally needed on signs for comprehension or navigational purposes.

Option:

12 A legend in a secondary language, in addition to English, may be displayed on the face of signs, plaques, sign panels, and changeable message signs that are oriented away from or otherwise not readily visible to operators of motor vehicles, but rather are intended for viewing only by pedestrians and occupants of parked vehicles.

Guidance:

13 The solidus (slanted line or forward slash) is intended to be used for fractions only and should not be used to separate words on the same line of legend. Instead, a hyphen should be used for this purpose, such as "TRUCKS - BUSES."

Standard:

14 Fractions shall be displayed with the numerator and denominator diagonally arranged about the solidus. The overall height of the fraction is measured from the top of the numerator to the bottom of the denominator, each of which is vertically aligned with the upper and lower ends of the solidus. The overall height of the fraction shall be determined by the height of the numerals within the fraction, and shall be 1.5 times the height of an individual numeral within the fraction.

15 Except as otherwise provided in this Manual, distances shall be displayed on signs using fractions of a mile rather than decimals.

Support:

16 The "Standard Highway Signs" publication (see Section 1A.05) contains details regarding the layouts of fractions on signs.

Guidance:

17 When initials are used to represent an abbreviation for separate words (such as "U S" for a United States route), the initials should be separated by a space of between ½ and ¾ of the letter height of the initials.

18 When an Interstate route is displayed in text form instead of using the route shield, a hyphen should be used for clarity, such as "I-50."

Support:

19 Letter height is expressed in terms of the height of an upper-case letter. For mixed-case legends (those composed of an initial upper-case letter followed by lower-case letters), the height of the lower-case letters is derived from the specified height of the initial upper-case letter based on a prescribed ratio. Letter heights for mixed-case legends might be expressed in terms of both the upper- and lower-case letters, or in terms of the initial upper-case letter alone. When the height of a lower-case letter is specified or determined from the prescribed ratio, the reference is to the nominal loop height of the letter. The term loop height refers to the portion of a lower-case letter that excludes any ascending or descending stems or tails of the letter, such as with the letters "d" or "q." The nominal loop height is equal to the actual height of a non-rounded lower-case letter whose form does not include ascending or descending stems or tails, such as the letter "x." The rounded portions of a lower-case letter extend slightly above and below the baselines projected from the top and bottom of such a non-rounded letter so that the appearance of a uniform letter height within a word is achieved. The actual loop height of a rounded lower-case letter is slightly greater than the nominal loop height and this additional height is excluded from the expression of the lower-case letter height.

Section 2A.09 Symbols

Standard:

01 Symbol designs shall in all cases be unmistakably similar to those shown in this Manual and in the "Standard Highway Signs" publication (see Section 1A.05).

Option:

02 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.

Support:

03 New symbol designs are adopted by the Federal Highway Administration based on research evaluations to determine road user comprehension, sign conspicuity, and sign legibility.

Option:

04 State and/or local highway agencies may conduct research studies to determine road user comprehension, sign conspicuity, and sign legibility in compliance with the provisions for official experimentation (see Section 1B.05) when a new symbol design is under consideration.

Support:

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

Guidance:

06 New standard warning or regulatory symbol signs should be accompanied by an educational plaque where engineering judgment determines that the plaque will improve road user comprehension during the transition from word message to symbol signs.

Option:

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

Standard:

08 A symbol used for a given category of signs (regulatory, warning, or guide) shall not be used for a different category of signs, except as specifically authorized in this Manual.

09 A recreational and cultural interest area symbol (see Chapter 2M) shall not be used on streets or highways outside of recreational and cultural interest areas.

10 A recreational and cultural interest area symbol (see Chapter 2M) shall not be used on any regulatory or warning sign on any street, road, or highway.

Support:

11 Section 2M.07 contains provisions for the use of recreational and cultural interest area symbols to indicate prohibited activities or items in non-road applications.

Section 2A.10 Sign Borders

Standard:

01 Unless otherwise provided, signs shall have a border of the same color as the legend in order to outline their distinctive shape and thereby give them easy recognition and a finished appearance.

02 The corners of all sign borders shall be rounded, except for STOP signs.

Guidance:

03 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 sign. A border for 30-inch signs with a light background should be from ½ to ¾ inch in width, ½ inch from the edge. For similar signs with a light border, a width of 1 inch 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 72 x 120 inches in size, the border should be 2 inches wide. On unusually large signs with oversized letter heights, route shields, or other legend elements, the border should be 2.5 inches wide and should not exceed 3 inches in width. Except for STOP signs and as otherwise provided in Section 2E.14, the corners of the sign should be rounded to a radius that is concentric with that of the border.

Support:

04 Section 2A.12 contains information regarding the use of light-emitting diode (LED) units within the border of a sign.

Section 2A.11 Enhanced Conspicuity for Standard Signs

Option:

01 Based upon engineering judgment, where the improvement of the conspicuity of a standard regulatory, warning, or guide sign is desired, any of the following methods may be used, as appropriate, to enhance the sign's conspicuity (see Figure 2A-1):

A. Increasing the size of a standard regulatory, warning, or guide sign.
B. Dual signing of a standard regulatory, warning, or guide sign by adding a second identical sign on the left-hand side of the roadway at the same location.

C. Adding a solid yellow or fluorescent yellow rectangular header panel above a standard regulatory sign, with the width of the panel corresponding to the width of the standard regulatory sign. A legend of "NOTICE," "STATE LAW," or other appropriate text may be added in black letters within the header panel for a period of time determined by engineering judgment.
D. Adding a NEW plaque (see Section 2C.60) above a new standard regulatory or warning sign, for a period of time in accordance with Paragraph 3 of this Section, to call attention to the new sign.
E. Adding one or more red or orange flags (cloth or retroreflective sheeting) above a standard regulatory or warning sign, with the flags oriented at 45 degrees to the vertical.
F. Adding a solid yellow, a solid fluorescent yellow, or a diagonally-striped black and yellow (or black and fluorescent yellow) strip of retroreflective sheeting at least 3 inches wide around the perimeter of a standard warning sign. This may be accomplished by affixing the standard warning sign on a background that is 6 inches larger than the size of the standard warning sign.
G. Adding a Warning Beacon (see Section 4S.03) to a standard regulatory (other than a STOP, DO NOT ENTER, WRONG WAY, or a Speed Limit sign), warning, or guide sign.
H. Adding a Speed Limit Sign Beacon (see Section 4S.04) to a standard Speed Limit sign.

I. Adding a Stop Beacon (see Section 4S.05) to a STOP, DO NOT ENTER, or WRONG WAY sign.
J. Adding a rectangular rapid-flashing beacon (see Chapter 4L) to a Pedestrian, School, or Trail warning sign at an uncontrolled marked crosswalk.
K. Adding light-emitting diode (LED) units within the symbol, legend, or border of a standard regulatory, warning, or guide sign, as provided in Section 2A.12.
L. Adding a strip of retroreflective material to the sign support in accordance with the provisions of Paragraph 5 of this Section.
M. Using other methods that are specifically allowed for certain signs as described elsewhere in this Manual.

Support:

02 Sign conspicuity improvements can also be achieved by removing non-essential and illegal signs from the right-of-way (see Section 1D.02), and by relocating signs to provide better spacing. Section 2A.20 contains information on excessive use of signs.

Guidance:

03 If a NEW plaque is used, it should remain in place for a period of time determined by engineering judgment, but not more than 12 months.

Standard:

04 Strobe lights shall not be used to enhance the conspicuity of highway signs.

05 If a strip of retroreflective material is used on the sign support, it shall be at least 2 inches in width, it shall be placed for the full length of the support from the sign to within 2 feet above the near edge of the roadway, and its color shall match the background color of the sign, except that the color of the strip for the YIELD and DO NOT ENTER signs shall be red. The retroreflective strip shall not display any legend or other information.

06 For a post-mounted sign installation, placing a duplicate sign in the same assembly facing the same direction of traffic shall not be permitted as a method of enhancing conspicuity.

Section 2A.12 LEDs Used for Conspicuity Enhancement on Standard Signs

Support:

01 This Section regarding light-emitting diode (LED) units applies to the use of illuminated elements that supplement a sign legend to enhance the conspicuity of the sign.

02 LED units that are used to illuminate the full sign display, background, or legend are changeable message signs (CMS), which are covered in Chapters 2B, 2C, and 2L, and Part 7.

03 The application of LED units in compliance with Paragraph 8 of this Section does not create a changeable message sign because the legend of the sign is always displayed when the LED units are not

illuminated. Changeable message or blank-out signs whose legends change or extinguish by means of illuminated elements are addressed elsewhere in this Manual.

Option:

04 Light-emitting diode (LED) units may be used individually within the symbol, legend, or border of a sign to enhance the sign conspicuity and legibility (see Section 2A.11).

05 Except as provided in Paragraph 11 of this Section, LED units may either operate continuously or be actuated.

Standard:

06 Where LED units are used to enhance the conspicuity of a sign, the sign shall otherwise comply with the requirements for retroreflection and illumination for nighttime viewing (see Section 2A.21).

07 Except as provided in Paragraphs 16 and 17 of this Section, and for changeable message signs, neither individual LEDs nor groups of LEDs shall be placed within the background area of a sign.

08 The application of LEDs to display sign legends or symbols shall use a maximum pitch of 20 millimeters to cover the stroke width of the letter or symbol.

09 The LEDs shall not protrude outside the sign border or legend when used in such applications, shall have a maximum diameter of ¼ inch, and shall be the following colors based on the type of sign:

- **A. White or red, with STOP, YIELD, DO NOT ENTER, or WRONG WAY signs.**
- **B. White, with other regulatory signs.**
- **C. White or yellow, with warning signs.**
- **D. White or green, with guide signs.**
- **E. White, yellow, or orange, with temporary traffic control signs.**
- **F. White, yellow, or fluorescent yellow-green, with school area or pedestrian or bicycle warning signs.**

10 If flashed, all LED units shall flash simultaneously at a steady rate between 50 and 60 times per minute. All the LED units in a sign legend or border shall be illuminated simultaneously with no sequential (chasing) or variable flash rates (dancing), except as otherwise allowed in this Manual. A cluster of LEDs shall not be used within the border of a sign.

11 Where used in STOP or YIELD signs, flashing LED units shall operate continuously. Actuation of the LED units shall not be allowed.

12 Flashing LED units shall not be used within the legend or border of a Speed Limit sign to indicate that the displayed speed limit is in effect.

13 LED units shall not be used within the legend or border of a sign in conjunction with the phrase WHEN FLASHING in its legend or on a supplemental WHEN FLASHING plaque (see Item E in Paragraph 1 of Section 4S.03 for the use of Warning Beacons to indicate when a regulatory or warning message is in effect).

14 Where LED units are used along the edge of a sign, at least one LED unit shall be placed along each edge of the sign, in addition to one LED unit at each corner of the sign, so that the distinct outline of the sign shape is recognized under nighttime viewing conditions. The LED units along each side of the sign shall be spaced approximately equidistantly. For a circular sign shape, the number of LED units shall clearly form the appearance of a circle and not be perceived as some other shape.

15 The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions. The LED units shall have the capability to be dimmed automatically by a timing mechanism or a device sensitive to ambient light (photoelectric cell) such that the LEDs do not reduce the visibility of the sign legend.

Option:

16 For STOP, YIELD, DO NOT ENTER, and WRONG WAY signs, LEDs may be placed within the border or within one border width within the background of the sign.

Support:

17 Section 6D.02 contains information about STOP/SLOW paddles used by flaggers. Section 7D.02 contains information about STOP paddles used by adult crossing guards.

18 Other methods of enhancing the conspicuity of standard signs are described in Section 2A.11.

Section 2A.13 Standardization of Location

Support:

01 Standardization of position cannot always be attained in practice. Examples of heights and lateral locations of signs for typical installations are illustrated in Figure 2A-2(VA), and examples of locations for some typical signs at intersections are illustrated in Figure 2A-3 and all four sheets in Figure 2A-4.

02 Examples of advance signing on intersection approaches are illustrated in all four sheets in Figure 2A-4. Chapters 2B, 2C, and 2D contain provisions regarding the application of regulatory, warning, and guide signs, respectively.

Standard:

03 Signs requiring separate decisions by the road user shall be spaced sufficiently far apart for the appropriate decisions to be made.

Guidance:

04 One of the factors considered when determining the appropriate spacing of signs should be the posted or 85th-percentile speed.

05 Except as provided in Paragraph 8 of this Section, signs should be located on the right-hand 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 provided in this Manual.

06 Signs should be individually installed on separate posts or mountings except where:

- *A. One sign supplements another;*
- *B. Route or directional signs are grouped to clarify information to motorists;*
- *C. Regulatory signs that do not conflict with each other are grouped, such as Turn Prohibition signs posted with ONE WAY signs or a parking regulation sign posted with a Speed Limit sign; or*
- *D. Street Name signs are posted with a STOP or YIELD sign.*

07 Signs should be located so that they:

- *A. Are outside the clear zone unless placed on a crashworthy (see definition in Section 1C.02) support,*
- *B. Optimize nighttime visibility,*
- *C. Minimize the effects of mud splatter and debris,*
- *D. Do not obscure each other,*
- *E. Do not obscure the sight distance to approaching vehicles on the major street for drivers who are stopped on minor-street approaches, and*
- *F. Are not hidden from view.*

08 Except for STOP, YIELD, DO NOT ENTER, and WRONG WAY signs, or as otherwise provided in this Manual, where a sign on a one-way roadway indicates an action intended exclusively or primarily for a road user in the left-hand lane or at the left-hand side of that roadway, such as LEFT LANE MUST TURN LEFT (R3-7) or LEFT LANE ENDS (W9-1), the sign should be located on the left-hand side of the roadway. In the case of a divided road, the sign should be located in the median.

Option:

09 Signs located on the left-hand side of a one-way roadway or in the median of a divided road, in accordance with Paragraph 8 of this Section, may be supplemented by an identical sign located on the right-hand side of the roadway.

Support:

10 The clear zone (see definition in Section 1C.02) is the total roadside border area, starting at the edge of the traveled way, available for an errant driver to stop or regain control of a vehicle. The width of the clear zone is dependent upon traffic volumes, speeds, and roadside geometry. Additional information can be found in the "Roadside Design Guide," 4th Edition, 2011, AASHTO.

Guidance:

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

Support:

12 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. Priority according to type of sign will depend on the specific situation and conditions of the site at which the signs are to be installed. For example, in the vicinity of an exit ramp, guide signs and warning signs for the exit ramp might take precedence over regulatory signs that confirm rules of the road, such as a STATE LAW-NO HANDHELD PHONE USE BY DRIVER sign, or a mainline Speed Limit sign where there is no change in the speed zone.

Guidance:

13 Because regulatory and warning information is typically more critical to the road user than guidance information, regulatory and warning signing whose locations are critical should be displayed rather than guide signing in cases where conflicts occur. In such cases, the guide sign should be relocated to another appropriate location where it will still be effective. In other cases, such as at a decision point, the guide sign should take precedence over other signs whose locations are not as critical to an immediate decision or action necessary by the road user. In all cases, careful attention should be given to minimizing sign clutter (see Section 2A.20). Community wayfinding and acknowledgment guide signs should have a lower priority as to placement than other guide signs. Signs conveying information of a less-critical nature should be moved to less-critical locations or omitted.

Option:

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

Guidance:

15 In urban areas where crosswalks exist, signs should not be placed within 4 feet in advance of the crosswalk (see Drawing D in Figure 2A-3).

Section 2A.14 Overhead Sign Installations

Guidance:

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

Support:

02 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. In some cases, overhead mounting of a sign might be required by other provisions of this Manual.

Option:

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

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. Multi-lane 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 post-mounted signs,

L. Junction of two freeways, and
M. Left-side exit ramps.

04 Over-crossing structures may be used to support overhead signs.

Support:

05 Under some circumstances, the use of over-crossing structures as sign supports might be the only practical solution that will provide adequate viewing distance. The use of such structures as sign supports might eliminate the need for the foundations and sign supports along the roadside.

Section 2A.15 Mounting Height

Standard:

01 The provisions of this Section shall apply unless specifically stated otherwise for a particular sign or object marker elsewhere in this Manual.

Support:

02 It might be necessary to use larger minimum mounting heights than those prescribed in this Manual to ensure appropriate crash performance of sign installations that are required to be crashworthy (see Section 1D.11).

03 In addition to the provisions of this Section, information affecting the minimum mounting height of signs as a function of crash performance can be found in the "Roadside Design Guide," 4th Edition, 2011, AASHTO.

Standard:

04 In rural areas, the minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement, of signs installed at the side of the road shall be 5 feet (see Figure 2A-2 (VA)).

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

Option:

06 The height to the bottom of a secondary sign mounted below another sign may be 1 foot less than the height specified in Paragraphs 4 and 5 of this Section.

Standard:

07 The minimum height of signs, measured vertically from the bottom of the sign to the sidewalk shall be 7 feet.

08 If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway, the secondary sign shall not project more than 4 inches into the pedestrian facility.

Support:

09 Section 9A.02 contains provisions for the minimum mounting height of signs on shared-use paths.

Option:

10 Signs that are placed 30 feet or more from the edge of the traveled way may be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.

Standard:

11 Directional signs on freeways and expressways shall be installed with a minimum height of 7 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. All route signs, warning signs, and regulatory signs on freeways and expressways shall be installed with a minimum height of 7 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. If a secondary sign is mounted below another sign on a freeway or expressway,

the major sign shall be installed with a minimum height of 8 feet and the secondary sign shall be installed with a minimum height of 5 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement.

12 Where large signs having an area exceeding 50 square feet are installed on multiple breakaway posts, the clearance from the ground to the bottom of the sign shall be at least 7 feet.

Option:

13 A route sign assembly (see Section 2D.29) consisting of a route sign and auxiliary signs may be treated as a single sign for the purposes of this Section.

14 The mounting height may be adjusted when supports are located near the edge of the right-of-way on a steep backslope in order to avoid the sometimes less desirable alternative of placing the sign closer to the roadway.

Guidance:

14a *Vertical clearance for overhead sign structures should be no less than 19 feet and no more than 21 feet from the bottom of the lowest mounted sign panel to the crown of the roadway. Luminaire assemblies or other hardware mounted below the sign panel should have a vertical clearance of no less than 17 feet 6 inches from the bottom of the hardware to the crown of the roadway.*

Standard:

15 Signs that are post-mounted on a median barrier that overhang any portion of the traveled way shall be mounted with a vertical clearance that complies with that of overhead signs.

16 Overhead signs shall provide a vertical clearance of not less than 17 feet 6 inches to the sign, light fixture, or sign bridge over the entire width of the pavement and shoulders, except where the structure on which the overhead signs are to be mounted or other structures along the roadway near the sign structure have a lesser vertical clearance.

Option:

17 If the vertical clearance of other structures along the roadway near the sign structure is less than 16 feet, the vertical clearance to an overhead sign structure or support may be as low as 1 foot higher than the vertical clearance of the other structures in order to improve the visibility of the overhead signs.

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

Guidance:

19 While a maximum mounting height for overhead signs is generally not prescribed in this Manual, agencies should ensure that signs are not mounted at such a height as to be out of the road user's normal field of vision (see Paragraph 3 of Section 1D.09), especially in urban settings where signs are mounted on traffic signal or light poles.

Standard:

19a Ground-mounted signs shall be placed in accordance with the VDOT Road and Bridge Standards.

Support:

20 Figure 2A-2(VA) illustrates some examples of the mounting height requirements contained in this Section.

Section 2A.16 Lateral Offset

Standard:

01 For overhead sign supports, 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 6 feet. Overhead sign supports shall have a barrier or crash cushion to shield them if they are within the clear zone.

02 Post-mounted sign and object marker supports shall be crashworthy (see Section 1D.11) if within the clear zone.

Guidance:

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

04 Supports for signs mounted laterally behind a longitudinal barrier should be placed so that the near edge of the support is located beyond the deflection distance of the longitudinal barrier.

Support:

05 The minimum lateral offset requirements for object markers are provided in Chapter 2C.

06 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 requirements do not supersede the requirement for crashworthiness (see Paragraph 2 of this Section) if the sign is located within the clear zone.

Guidance:

07 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 over-crossing structures, or other locations that minimize the exposure of the traffic to sign supports.

Option:

08 Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 6 feet from the edge of the traveled way.

09 On conventional, low-volume rural, and special-purpose roads in areas where it is impractical to locate a sign with the lateral offset prescribed by this Section because of roadside features such as terrain or vegetation, a lateral offset of at least 2 feet may be used.

10 A lateral offset of at least 1 foot from the face of the curb may be used in business, commercial, or residential areas where sidewalk width is limited or where existing poles are close to the curb. *Guidance:*

11 Overhead sign supports and post-mounted sign and object marker supports should not intrude into the usable width of a sidewalk or other pedestrian facility.

Support:

12 Guidance for maintaining sign shape in laterally-constrained conditions is described in Section 2A.05.13 Figures 2A-2(VA) and 2A-3 illustrate some examples of the lateral offset requirements contained in this Section.

Section 2A.17 Orientation

Guidance:

01 Unless otherwise provided in this Manual, signs should be vertically mounted at right angles to the direction of, and facing, the traffic that they are intended to serve.

02 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 30 feet 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:

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

Section 2A.18 Posts and Mountings

Standard:

01 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:

02 The latest edition of AASHTO's "Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" contains additional information regarding posts and mounting.

Option:

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

Support:

04 Section 2A.11 contains criteria for enhanced conspicuity of standard signs.

05 Sections 2A.15 and 2A.16 contain lateral and height placement criteria for signs placed on existing supports.

Standard:

06 If mounted to the sign support, equipment for powering electronic components of a sign, including solar panels, shall be mounted so as not to compromise the crashworthy performance of the sign installation (see Section 1D.11). Such equipment shall be mounted so as not to obscure the shape of the sign.

Section 2A.19 Maintenance

Guidance:

01 Maintenance activities should consider proper position, cleanliness, legibility, and daytime and nighttime visibility (see Sections 2A.21 and 2A.22). Damaged or deteriorated signs, gates, or object markers should be replaced.

02 To assure adequate maintenance, a schedule for inspecting (both day and night), cleaning, and replacing signs, gates, and object markers should be established. Employees of highway, law enforcement, and other public agencies whose duties require that they travel on the roadways should be encouraged to report any damaged, deteriorated, or obscured signs, gates, or object markers at the first opportunity.

03 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 or object marker.

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

Section 2A.20 Excessive Use of Signs

Guidance:

01 Signs should be used and located judiciously, minimizing their proliferation in order to maintain their effectiveness. Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. Route signs and directional guide signs for primary routes and destinations should be used frequently at strategic locations because their use promotes efficient operations by keeping road users informed of their location. In all cases, however, sign clutter (see Paragraph 2 of this Section) should be avoided and minimized as much as practicable.

Support:

02 Sign clutter is the proliferation of sign installations or assemblies along the roadway or roadside, either separately or grouped, to such an extent that adequate spacing between installations necessary for orderly processing of the sign messages by the driver cannot be achieved. Sign clutter can reduce the effectiveness of one or more signs in a sequence of signs.

03 The basic role of traffic control devices is to provide only as much information to the road user as necessary to promote the safe and efficient operation of streets and highways. Sign clutter can result from the overuse of MUTCD-compliant signs and or signs that display information unrelated to traffic operation, navigation, or transportation information. Examples of such signs would include, but are not limited to, those displaying the birthplace or home of a noted person, local sports team accomplishments, population information, and self-described qualities of a community such as "friendly" or "open for business."

Guidance:

04 Signs and other traffic control devices should be installed and maintained from a systematic standpoint rather than individually. When a new sign is installed, the existing signs in the vicinity should be considered for replacement, relocation, or removal as a result of the new sign that is installed. Existing systems of signs should be reviewed periodically for evidence of sign clutter and adjustments should be made accordingly.

Support:

05 Section 2A.13 contains information regarding an order of priority for signs where available spacing along the roadway is limited.

Section 2A.21 Retroreflection and Illumination

Support:

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

02 This Section applies to visibility of signs at night or in low-light or adverse weather conditions, whose legends are otherwise visible under typical daytime viewing conditions.

Standard:

03 Regulatory, warning, and guide signs (see Section 2A.03), and object markers, shall be retroreflective or illuminated to show the same shape and similar color by both day and night, unless otherwise provided in this Manual for a particular sign or group of signs.

04 Where the color black is specified for the legend or background of a sign, an opaque and non-retroreflective material shall be used.

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

Option:

06 Sign elements may be illuminated by the means shown in Table 2A-3.

07 Retroreflection of sign elements may be accomplished by the means shown in Table 2A-4.

Support:

08 Information regarding the use of retroreflective material on the sign support is contained in Section 2A.11.

Section 2A.22 Maintaining Minimum Retroreflectivity

Support:

01 Retroreflectivity is one of several factors associated with maintaining nighttime sign visibility (see Section 2A.21).

Standard:

02 Public agencies or officials having jurisdiction shall use an assessment or management method that is designed to maintain sign retroreflectivity at or above the minimum levels in Table 2A-5.

Support:

03 Compliance with the Standard in Paragraph 2 of this Section is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-5. Provided that an assessment or management method is being used, an agency or official having jurisdiction would be in compliance with the Standard in Paragraph 2 of this Section even if there are some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time.

Guidance:

04 Except for those signs specifically identified in Paragraph 5 of this Section, one or more of the methods described in "Maintaining Traffic Sign Retroreflectivity," (FHWA-SA-07-020, Revised 2013), FHWA, or a method developed based on an engineering study, should be used to maintain sign retroreflectivity at or above the minimum levels in Table 2A-5. Signs that are identified through the agency's method as being below the minimum levels should be replaced.

Option:

05 Highway agencies may exclude the following signs from the retroreflectivity maintenance guidelines described in this Section:

A. Parking, Standing, and Stopping (R7 and R8 series) signs;
B. Walking/Hitchhiking/Crossing (R9 series, R10-1 through R10-4b) signs;
C. Acknowledgment signs; and
D. Bikeway signs that are intended for exclusive use by bicyclists or pedestrians.

Section 2A.23 Median Opening Treatments for Divided Highways

Guidance:

01 A divided highway crossing should be signed and marked as separate intersections when both of the following conditions are present:

A. The paths of opposing left turns from the divided highway cross each other (see Figure 2A-5), and
B. There is adequate storage in the interior approaches for the design vehicles expected to cross the divided highway.

02 If either one or both of the conditions in Paragraph 1 of this Section do not exist, the divided highway crossing should be signed and marked as a single intersection.

03 At the crossing of two divided highways, engineering judgment should be used to determine the number of separate intersections.

Support:

04 Divided highway crossings with median widths between 30 feet and 85 feet might function as either one or two intersections depending upon the interaction of the opposing left-turn vehicle paths and the available interior storage in the median for a crossing vehicle. Other factors that could determine whether a divided highway crossing is operating as one or two intersections include:

A. The geometric design of the divided highway crossing,
B. The use of positive offset mainline left-turn lanes,
C. The length of the median opening (as measured parallel to the center line of the divided highway),
D. The geometric design of the median noses,
E. Other roadway geometric considerations such as a skewed side street approach or a variable median width,
F. Intersection sight distance,
G. The physical characteristics of the design vehicle, and
H. The observed prevailing driver behavior with regard to opposing left-turn path interaction.

Section 2A.V1 Integrated Directional Signing Program (IDSP)

Support:

01 The Integrated Directional Signing Program (IDSP) provides Virginia motorist service businesses, attractions, tourist destinations, and other specific points of interest with a single contact for the purpose of having their logo/business identified on a road sign along VDOT-maintained roadways to provide motorists with directional guidance and information about their location. IDSP signs are installed, maintained, modified,

and removed by the IDSP contractor. Additional information, such as the current contractor for the IDSP, can be found on VDOT's IDSP website.

02 There are four main types of traffic control device signs that are included within the IDSP:

A. Specific Service Signing – Specific Service Signs (Logo) provide the motorist directional guidance to the providers of Gas, Food, Lodging, Camping, and Attractions destinations near interchanges of limited access roadways. Additional information on Specific Service Signs can be found in Chapter 2J.

B. Tourist-Oriented Directional Signing – Tourist-Oriented Directional Signs (TODS) guide motorists to tourist-oriented businesses, services, and activity facilities along rural primary and secondary highways that do not have limited access. Additional information on TODS can be found in Chapter 2K.

C. Supplemental Guide Signing – Supplemental Guide Signs guide motorists to specific cultural, recreational, historical, governmental, educational, military, and other sites of similar interest from limited access, primary, and secondary roadways. This program excludes Supplemental Guide Signs for cities, towns, villages, counties, regions, communities, named roads/streets, transportation facilities, and other governmental entities, which are installed and maintained by VDOT (i.e. Charlottesville EXIT 221). Additional information on Supplemental Guide Signs covered under the IDSP can be found in Sections 2E.51 and 2M.09.

D. General Motorist Service Signing – General Motorist Service Signs (GMSS) use symbols to inform the motorists of the availability of motorist services. Additional information on General Motorist Service Signs can be found in Chapter 2I.

CHAPTER 2B. REGULATORY SIGNS, BARRICADES, AND GATES

Chapter 2B Subchapter and Section Organization

GENERAL

Section 2B.01 Application of Regulatory Signs

Standard:

01 Regulatory signs shall be used to inform road users of selected traffic laws or regulations and to indicate the applicability of the legal requirements.

02 Regulatory signs shall be installed at or near where the regulations apply. The signs shall clearly indicate the requirements imposed by the regulations and shall be designed and installed to provide adequate visibility and legibility in order to obtain compliance.

03 Regulatory signs shall be retroreflective or illuminated (see Section 2A.21).

Section 2B.02 Design of Regulatory Signs

Standard:

01 Regulatory signs shall be rectangular unless specifically designated otherwise in this Manual. Regulatory signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the "Standard Highway Signs" publication (see Section 1A.05).

Support:

02 The use of educational plaques to supplement symbol signs is described in Section 2A.09.

03 The use of LEDs in the border or legend of regulatory signs is described in Section 2A.12.

Standard:

04 LED signs displaying a part-time prohibitory message incorporating a red circle and diagonal of a static sign shall display a red symbol that approximates the same red circle and diagonal as closely as possible. The symbol of the action to be prohibited shall be displayed in white LEDs on a black background.

05 A regulatory sign displayed entirely with LEDs and incorporated within the border of a larger full-matrix changeable message sign shall display the regulatory sign legend in the size, shape, color, and legend of the standard regulatory sign.

Section 2B.03 Size of Regulatory Signs

Standard:

01 Except as provided in Section 2A.07, the minimum sizes for regulatory signs shall be as shown in Table 2B-1.

01a Where side roads intersect a multi-lane street or highway that has a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2B-1.

Standard:

03 Except as provided in Paragraphs 5 and 6 of this Section, the minimum sizes for regulatory signs facing traffic on multi-lane conventional roads shall be as shown in the Multi-Lane column of Table 2B-1.

04 The minimum size of regulatory signs applied on low-volume rural roads with operating speeds of 30 mph or less shall be as shown in the Minimum column of Table 2B-1.

Option:

05 Where the posted speed limit is 35 mph or less on a multi-lane highway or street, other than for a STOP sign, the minimum size shown in the Single Lane column in Table 2B-1 may be used.

06 Where a regulatory sign, other than a STOP sign, is placed on the left-hand side of a multi-lane roadway in addition to the installation of the same regulatory sign on the right-hand side or the roadway, the

minimum size shown in the Single Lane column in Table 2B-1 may be used for both the sign on the right-hand side and the sign on the left-hand side of the roadway.

Guidance:

07 The minimum sizes for regulatory signs facing traffic on exit and entrance ramps at major interchanges connecting an Expressway or Freeway with an Expressway or Freeway (see Section 2E.11) should be as shown in the column of Table 2B-1 that corresponds to the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversized column should be used.

08 The minimum sizes for all regulatory signs facing traffic on exit and entrance ramps at all other classifications of interchanges (see Section 2E.11) should be the sizes shown in Table 2B-1 in the Conventional Road Single Lane column for single-lane ramps and in the Multi-Lane column for multi-lane ramps.

Section 2B.04 STOP Sign (R1-1) and ALL-WAY Plaque (R1-3P)

Standard:

01 When it is determined that a full stop is always required on an approach to an intersection, a STOP (R1-1) sign (see Figure 2B-1) shall be used.

02 Secondary legends shall not be used on STOP sign faces.

03 The STOP sign shall not be displayed using a changeable message sign.

04 At intersections where all approaches are controlled by STOP signs (see Section 2B.12), an ALL-WAY (R1-3P) supplemental plaque (see Figure 2B-1) shall be mounted below each STOP sign. The ALL-WAY plaque shall have a white legend and border on a red background.

05 Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.

Support:

06 The use of the CROSS TRAFFIC DOES NOT STOP (W4-4P Series) and other plaques with variations of this legend is described in Section 2C.66.

Guidance:

07 The TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) plaque or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) plaque should be used at intersections where STOP signs control all but one approach to the intersection, unless the only non-stopped approach is from a one-way street.

Option:

08 The EXCEPT RIGHT TURN (R1-10P) plaque (see Figure 2B-1) may be mounted below the STOP sign if an engineering study determines that a special combination of geometry and traffic volumes is present that makes it possible for right-turning traffic on the approach to be allowed to enter the intersection without stopping.

Support:

09 The design and application of Stop Beacons are described in Section 4S.05.

Section 2B.05 YIELD Sign (R1-2)

Support:

01 The YIELD sign requires road users to yield the right-of-way to other traffic on certain approaches to an intersection or on a two way approach to a one way section of roadway, such as a narrow bridge or underpass. Vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.

Standard:

02 The YIELD (R1-2) sign (see Figure 2B-1) shall not be displayed using a changeable message sign.

SIGNING FOR RIGHT-OF-WAY AT INTERSECTIONS

Section 2B.06 General Considerations

Support:

01 Unsignalized intersections represent the most common form of intersection right-of-way control. Selection of control type might be impacted by specific requirements of State law or local ordinances.

02 Roundabouts and traffic circles are circular intersection designs and are not traffic control devices. The decision to convert an intersection from a conventional intersection to a circular intersection is an engineering design decision and not a traffic control device decision. As such, criteria for conversion from a conventional intersection to a circular intersection are not included in the MUTCD.

Guidance:

03 The type of traffic control used at an unsignalized intersection should be the least restrictive that provides appropriate levels of safety and efficiency for all road users.

Support:

04 Some types of right-of-way control that can exist at an unsignalized intersection in order from the least restrictive to the most restrictive are the following:

A. No intersection control (see Section 2B.09): There are no right-of-way traffic control devices on any of the approaches to the intersection.
B. Yield control (see Section 2B.10): YIELD signs are placed on all approaches (for a circular intersection), on opposing approaches for a four-leg intersection, on a single approach for a three-leg intersection, or in the median of a divided highway. The YIELD signs are placed on the minor road.
C. Minor road stop control (see Section 2B.11): STOP signs are typically placed on opposing approaches (for a four-leg intersection) or on a single approach (for a three-leg intersection). The STOP signs are normally placed on the minor road. Section 2B.07 contains guidance on selecting the minor road.
D. All-way stop control (see Section 2B.12): STOP signs are placed on all approaches to the intersection.

Guidance:

05 When selecting a form of intersection control, the following factors should be considered:

*A. Motor vehicle, bicycle, and pedestrian traffic volumes on all approaches**;** where the term units/day or units/hour is indicated, it should be the total of motor vehicle, bicycle, and pedestrian volume;*
B. Driver yielding behavior with regard to all modes of conflicting traffic, including bicyclists and pedestrians;
C. Number and angle of approaches;
E. Approach speeds;
E. Sight distance available on each approach;
F. Reported crash experience; and
G. The presence of a grade crossing near the intersection.

Standard:

06 YIELD or STOP signs shall not be used for speed control.

Support:

07 Appropriate traffic calming or other speed control measures are available to control vehicle speeds, such as those that do not have the potential to diminish the effectiveness of traffic control devices when used for their specified purpose.

Standard:

08 Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:

A. If the signal indication for an approach is a flashing red at all times;

B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or

C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.

09 STOP signs and YIELD signs shall not be installed on different approaches to the same unsignalized intersection if those approaches conflict with or oppose each other, except as provided for in Items A and B in Paragraph 3 of Section 2B.10.

10 Portable or part-time STOP or YIELD signs shall not be used except for emergency and temporary traffic control zone purposes.

11 A portable or part-time (folding) STOP sign that is manually placed into view and manually removed from view shall not be used during a power outage to control a signalized approach unless the maintaining agency establishes that the signal indication that will first be displayed to that approach upon restoration of power is a flashing red signal indication and that the portable STOP sign will be manually removed from view prior to resuming stop-and-go operation of the traffic control signal.

Option:

12 A portable or part-time (folding) STOP sign that is electrically or mechanically operated such that it only displays the stop message during a power outage and ceases to display the stop message upon restoration of power may be used during a power outage to control a signalized approach.

Support:

13 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

14 Section 9B.01 contains provisions regarding the assignment of priority where a shared-use path crosses a roadway.

Section 2B.07 Determining the Minor Road for Unsignalized Intersections

Guidance:

01 The selection of the minor road to be controlled by YIELD or STOP signs should be based on one or more of the following criteria:

A. A roadway intersecting a designated through or numbered highway,
B. A roadway with the lower functional classification,
C. A roadway with the lower traffic volume,
D. A roadway with the lower speed limit, ~~and/or~~
E. A roadway that intersects with a roadway that has a higher priority for one or more modes of travel, and/or
F. A freeway or expressway off-ramp that terminates at an intersection.

02 When two roadways that have relatively equal volumes, speeds, and/or other characteristics intersect, the following factors should be considered in selecting the minor road for installation of YIELD or STOP signs:

A. Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;
B. Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; and
C. Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic.

Section 2B.08 Right-of-Way Intersection Control Considerations

Guidance:

01 Before converting to a more restrictive form of right-of-way control at an unsignalized intersection, the following alternative treatments to address safety, operational, or other concerns should be among those to be considered:

A. Where yield or stop controlled, installing Yield Ahead or Stop Ahead signs on the appropriate approaches to the intersection;
B. Removing parking on one or more approaches;
C. Removing sight distance obstructions;
D. Installing signs along the major street to warn road users approaching the intersection;
E. Relocating the stop line(s) and making other changes to improve the sight distance at the intersection;
F. Installing measures designed to reduce speeds on the approaches;
G. Installing an Intersection Control Beacon (see Section 4S.02) or Stop Beacon (see Section 4S.05) at the intersection to supplement STOP sign control;
H. Installing a Warning Beacon (see Section 4S.03) on warning signs in advance of a stop-controlled intersection on major-street and/or minor-street approaches;
I. Adding one or more lanes on a minor-street approach to reduce the number of vehicles per lane on the approach;
J. Revising the geometrics at the intersection to channelize vehicular movements and reduce the time required for a vehicle to complete a movement, which could also assist pedestrians;
K. Revising the geometrics at the intersection to add pedestrian median refuge islands and/or curb extensions;
L. Installing roadway lighting if a disproportionate number of crashes occur at night;
M. Restricting one or more turning movements on a full-time or part-time basis if alternate routes are available;
N. Installing on the major street a pedestrian-actuated device: Warning Beacon (see Section 4S.03), rectangular rapid-flashing beacon (see Section 4L.01), or In-Roadway Warning Lights (see Chapter 4U), if pedestrian safety is the major concern;
O. If the warrant is satisfied, installing all-way stop control;
P. Installing a pedestrian hybrid beacon (see Chapter 4J) on the major street to address pedestrian safety;
Q. Installing a circular intersection; and
R. Employing other alternatives, depending on conditions at the intersection.

Section 2B.09 No Intersection Control

Guidance:

01 All intersections should utilize intersection control. The decision not to use intersection control should be based on engineering judgment.

Option:

02 The following factors may be considered:

A. Intersection sight distance is adequate on all approaches.
B. All approaches to the intersection are a single lane and there are no separate turn lanes.
C. The combined motor vehicle, bicycle, and pedestrian volume (existing or projected) entering the intersection from all approaches averages less than 1,000 units per day or 80 units in the peak hour.
D. There are no marked crosswalks or bicycle lanes on any approach.
E. None of the approaches to the intersection are for a through highway, main road, or higher functional classification.
F. The angle of intersection is between 90 and 75 degrees.
G. The functional classification of the intersecting streets is either the intersection of two local streets or the intersection of a local street with a collector street.

Section 2B.10 Yield Control

Guidance:

01 At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs.

02 Yield control should be considered when engineering judgment indicates that all of the following conditions exist:

A. Intersection sight distance is adequate on the approaches to be controlled by YIELD signs.
B. All approaches to the intersection are a single lane and there are no separate turn lanes.

C. One of the following crash-related criteria applies:
   1. For changing from no intersection control to yield control, there have been two or more reported crashes in the previous 12 months that are susceptible to correction by the installation of a YIELD sign.
   2. For changing from minor road stop control to yield control, there have been two or fewer reported crashes in the previous 12 months.
D. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection averages less than 1,800 units per day or 140 units in the peak hour.
E. The angle of intersection is between 90 and 75 degrees.
F. The functional classification of the intersecting streets is either the intersection of two local streets or the intersection of a local street with a collector street.

Option:

03 YIELD signs may be installed at an intersection when any of the following conditions apply:

A. At the second intersection of a divided highway crossing or median break functioning as two separate intersections (see Figure 2B-19). In this case, a YIELD sign may be installed at the entrance to the second intersection.
B. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.
C. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.
D. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.
E. On low-volume rural roads if engineering judgment indicates that a YIELD sign would provide adequate control.
F. On an approach to an intersection where the only permissible movement is a right-turn movement with an intersection geometry similar to a channelized right-turn lane or an approach to a roundabout.

Guidance:

04 The YIELD signs should be installed on opposing minor-street approaches (for a four-leg intersection) or on the minor-street approach (for a three-leg intersection). When two intersecting roadways have relatively equal volumes, speeds, and other characteristics, yield control should be installed on the approach that conflicts the most with established pedestrian crossing activity, school walking routes, or bicycle crossing activity.

04a In cases in which an acceleration lane exists, YIELD signs should only be used for the entering roadway for a merge-type movement when engineering judgment indicates that control is needed.

Option:

04b Engineering judgment may consider factors such as: limited sight distance on the entering roadway, inadequate acceleration lane length, or crash history.

Standard:

05 A YIELD sign shall be used to require road users to yield the right-of-way to other traffic at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.

06 YIELD signs shall not be placed on all of the approaches to an intersection, except at roundabouts.

Section 2B.11 Minor Road Stop Control

Standard:

00 All controlled intersections shall have minor road stop control unless another form of intersection control (yield, all-way stop, or signal) is selected.

Guidance:

01 Stop control on the minor-road approach or approaches to an intersection should be considered when engineering judgment indicates that one or more of the following conditions exist:

- *A. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway.*
- *B. Crash records indicate that:*
  - *1. For a four-leg intersection, there are three or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*
  - *2. For a three-leg intersection, there are three or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*
- *C. The intersection is of a lower functional classification road with a higher functional classification road.*
- *D. Conditions that previously supported the installation of all-way stop control no longer exist.*

02 On low-volume rural roads, a STOP sign should be considered at an intersection where engineering judgment indicates that Item C in Paragraph 1 of this Section is applicable or where the intersection has inadequate sight distance for the operating vehicle speeds.

Section 2B.12 All-Way Stop Control

Support:

01 The provisions in the following sections describe warrants for the recommended engineering study to determine all-way stop control. Warrants are not a substitute for engineering judgment. The fact that a warrant for a particular traffic control device is met is not conclusive justification to install or not install all-way stop control. Because each intersection will have unique characteristics that affect its operational performance or safety, it is the engineering study for a given intersection that is ultimately the basis for a decision to install or not install all-way stop control.

02 All-way stop controls at intersections with substantially differing approach volumes can reduce the effectiveness of these devices for all roadway users.

Guidance:

03 The decision to establish all-way stop control at an unsignalized intersection should be based on an engineering study. The engineering study for all-way stop control should include an analysis of factors related to the existing operation and safety at the intersection, the potential to improve these conditions, and the applicable factors contained in the following all-way stop control warrants:

- *A. All-Way Stop Control Warrant A: Crash Experience (see Section 2B.13)*
- *B. All-Way Stop Control Warrant B: Sight Distance (see Section 2B.14)*
- *C. All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection (see Section 2B.15)*
- *D. All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles) (see Section 2B.16)*
- *E. All-Way Stop Control Warrant E: Other Factors (see Section 2B.17)*

Option:

04 The decision to install all-way stop control on site roadways open to public travel may be based on engineering judgment.

Standard:

05 The satisfaction of an all-way stop control warrant or warrants shall not in itself require the installation of all-way stop control at an unsignalized intersection.

Section 2B.13 All-Way Stop Control Warrant A: Crash Experience

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that:

A. For a four-leg intersection, there are five or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.
B. For a three-leg intersection, there are four or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.

Section 2B.14 All-Way Stop Control Warrant B: Sight Distance

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.

Support:

02 At such a location, a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop.

Section 2B.15 All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection

Option:

01 All-way stop control may be installed at locations where all-way stop control is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal (see Chapter 4C) at the intersection or for the installation of yield control at a circular intersection.

Section 2B.16 All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates:

A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and
B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.

01a At intersections of equal importance roadways, the 8 hours of at least 300 units per hour may come from approaches on either roadway, as may the 200 units per hour during each of the same 8 hours on the opposing approaches.

Support:

01b At intersections of roadways of equal importance, heavier volume usage can occur on the approaches of one roadway for part of the day and on the approaches of the other roadway for another part of the day.

Option:

02 If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in Items A and B in Paragraph 1 of this Section.

Section 2B.17 All-Way Stop Control Warrant E: Other Factors

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that all-way stop control is needed due to other factors not addressed in the other all-way stop control warrants. Such other factors may include, but are not limited to, the following:

A. The need to control left-turn conflicts,
B. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection, or
C. Where pedestrian and/or bicyclist movements support the installation of all-way stop control.

Section 2B.18 STOP Sign or YIELD Sign Placement

Standard:

01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.35) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.35) shall be installed in advance of the YIELD sign.

02 The STOP or YIELD sign shall be located as close as practicable to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

03 STOP signs and YIELD signs shall not be mounted on the same post.

Support:

04 Section 2A.05 contains information about mounting signs back-to-back with a STOP or YIELD sign.

Guidance:

05 STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).

06 Supplemental plaques used in conjunction with a STOP or YIELD sign should be limited to those specified for such use in this Manual.

Option:

07 Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque (see Figure 2B-1) may be mounted below the YIELD sign.

08 Where drivers must yield to traffic in a multi-lane roundabout, a TO TRAFFIC IN CIRCLE (R1-2bP) or TO ALL LANES (R1-2cP) plaque (see Figure 2B-1) may be mounted below the YIELD sign.

Support:

09 Figure 2A-3 shows examples of some typical placements of STOP signs and YIELD signs.

10 Section 2A.13 contains additional information about separate and combined mounting of other signs with STOP or YIELD signs.

Guidance:

11 Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.19. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.19.

12 Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the edge of the crosswalk that is nearest to the approaching traffic.

13 Except at roundabouts and channelized right-turn lanes, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the edge of the crosswalk that is nearest to the approaching traffic.

14 Where two roads intersect at an acute angle, the STOP or YIELD sign should be positioned at an angle, or shielded, so that the legend is out of view of traffic to which it does not apply.

15 If a raised splitter island is available on the left-hand side of a multi-lane roundabout approach, an additional YIELD sign should be placed on the left-hand side of the approach.

Option:

16 If a raised splitter island is available on the left-hand side of a single-lane roundabout approach, an additional YIELD sign may be placed on the left-hand side of the approach.

17 At wide-throat intersections or where two or more approach lanes of traffic exist on the signed approach, an additional STOP or YIELD sign may be installed on the left-hand side of the road and/or a stop or yield line may be used to improve observance of the right-of-way control. At channelized intersections or at divided roadways separated by a median or divisional island, the additional STOP or YIELD sign may be placed on a channelizing island, or in the median or on the divisional island. An additional STOP or YIELD sign may also be placed overhead facing the approach at the intersection to improve observance of the right-of-way control.

Standard:

18 More than one STOP sign or more than one YIELD sign shall not be placed on the same support facing in the same direction.

Option:

19 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5aP) supplemental plaque (see Section 2C.45) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

Section 2B.19 ~~Yield Here To Pedestrians Signs and~~ Stop Here For Pedestrians Signs (R1-5 Series)

Support:

01 The R1-5 series signs are intended to mitigate the scenario that can place pedestrians at risk by blocking other drivers' view of pedestrians and by blocking the pedestrians' view of the vehicles approaching in the adjacent lanes.

01a The Code of Virginia § 46.2-924 requires that drivers at crosswalks stop for pedestrians crossing the highway except at intersections and crosswalks where the movement of traffic is being regulated by law-enforcement officers or traffic control devices – the driver shall yield according to the law-enforcement officer or traffic control device at such locations. Refer to Section 2B.59 for signs used at traffic signals, including the TURNING VEHICLES YIELD TO PEDESTRIANS (R10-15) sign. The Standard statement Par. 02 below permits the use of the Stop Here for Pedestrians (R1-5b and R1-5c) signs only if state law specifically requires the driver to stop for a pedestrian in a crosswalk. As The Code of Virginia requires a driver to stop, the R1-5 and R1-5a signs are not used in Virginia.

Standard:

02 ~~Yield Here to~~ Stop Here for Pedestrians (~~R1-5, R1-5a,~~ R1-5b, R1-5c, ~~R1-5d,~~ and R1-5e) signs (see Figure 2B-2 (VA)) shall be used if ~~yield~~ stop lines are used in advance of a marked crosswalk only where it crosses an uncontrolled multi-lane approach. The Stop Here for Pedestrians signs shall only be used where the law specifically requires that a driver must stop for a pedestrian in a crosswalk. The Yield Here To Pedestrians (R1-5 and R1-5a) shall not be used in Virginia. The legend STATE LAW shall not be displayed on the R1-5 series signs.

Guidance:

03 If ~~yield~~ stop lines and ~~Yield Here to~~ Stop Here for Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, the signs should be placed 20 to 50 feet in advance of the nearest edge of the crosswalk (see Section 3B.19 and Figure 3B-16(VA)).

Standard:

04 When used with a School Crossing assembly within school zones (see Part 7), the ~~R1-5a and~~ R1-5c sign~~s~~ shall be used in place of the ~~R1-5 and~~ R1-5b sign~~s~~ in accordance with Paragraph 2 of this Section.

05 When used with a Trail Crossing assembly (see Section 2C.54), the ~~R1-5d and~~ R1-5e sign~~s~~ shall be used in place of the ~~R1-5 and~~ R1-5b sign~~s~~ in accordance with Paragraph 2 of this Section.

Guidance:

06 When ~~Yield Here to~~ Stop Here for Pedestrians signs are provided in advance of a crosswalk across an multi-lane approach, parking should be prohibited in the area between the ~~yield~~ stop line and the crosswalk.

07 ~~Yield~~ Stop lines and ~~Yield Here to~~ Stop Here for Pedestrians signs should not be used in advance of crosswalks that cross an approach to or departure from a roundabout.

Option:

08 ~~Yield Here to~~ Stop Here for Pedestrians signs may be used in accordance with Paragraphs 2 through 4 of this Section even if ~~yield~~ stop lines are not used.

09 A Pedestrian Crossing (W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location where ~~Yield Here to~~ Stop Here for Pedestrians signs have been installed in advance of the crosswalk.

Standard:

10 If a W11-2 sign is post-mounted at the crosswalk location where a ~~Yield Here to~~ Stop Here for Pedestrians sign is used on the approach, the ~~Yield Here to~~ Stop Here for Pedestrians sign shall not be placed on the same post as the W11-2 sign.

Option:

11 An advance Pedestrian Crossing (W11-2) warning sign with an AHEAD or a distance supplemental plaque may be used in conjunction with a ~~Yield Here to~~ Stop Here for Pedestrians sign on the approach to the same crosswalk.

12 In-Street Pedestrian Crossing signs and ~~Yield Here to~~ Stop Here for Pedestrians signs may be used together at the same crosswalk.

12a A State Law Stop for Pedestrians (R1-V2) sign may be placed in advance of the crosswalk.

12b Where a crosswalk is located in close proximity to a downstream YIELD (R1-2) sign, such that use of an R1-5b sign, which shows a stop symbol, may create confusion for a driver seeing both YIELD and stop symbol messages simultaneously, a State Law Stop For Pedestrians (R1- V2) sign may be utilized upstream of the crosswalk.

Section 2B.20 In-Street and Overhead Pedestrian and Trail Crossing Signs (R1-6 and R1-9 Series)

Option:

01 The In-Street Pedestrian Crossing (~~R1-6 or~~ R1-6a) sign (see Figure 2B-2(VA)), In-Street Trail Crossing (~~R1-6d or~~ R1-6e) sign (see Figure 2B-2(VA)), the Overhead Pedestrian Crossing (~~R1-9 or~~ R1-9a) sign (see Figure 2B-2(VA)), or the Overhead Trail Crossing (~~R1-9d or~~ R1-9e) sign (see Figure 2B-2(VA)) may be used to remind road users of laws regarding right-of-way at an unsignalized crosswalk. The legend STATE LAW may be displayed at the top of the R1-6 series and R1-9 series signs if applicable. On the R1-6 series signs, the legend STOP ~~or YIELD~~ may be used instead of the appropriate STOP sign ~~or YIELD sign~~ symbol.

02 Highway agencies may develop and apply criteria for determining the applicability of In-Street Pedestrian Crossing signs.

Support:

02a The Code of Virginia § 46.2-924 requires that drivers at crosswalks stop for pedestrians crossing the highway except at intersections and crosswalks where the movement of traffic is being regulated by law-enforcement officers or traffic control devices – the driver shall yield according to the law-enforcement officer or traffic control device at such locations. Refer to Section 2B.59 for signs used at traffic signals, including the TURNING VEHICLES YIELD TO PEDESTRIANS (R10-15) sign. The Standard statement Par. 02 in Section 2B.19 permits the use of the Stop for Pedestrians (R1-6a and R1-9a) signs only if state law specifically requires the driver to stop for a pedestrian in a crosswalk. As The Code of Virginia requires a driver to stop, the R1-6 and R1-9 signs are not used in Virginia.

Standard:

03 The STOP FOR legend shall only be used in States where the State law specifically requires that a driver must stop for a pedestrian or a bicyclist in a crosswalk.

04 If used, In-Street Pedestrian or Trail Crossing signs shall only be placed in the roadway at the crosswalk location on the center line, on a median island, on a lane line, or on an edge line.

05 The In-Street Pedestrian or Trail Crossing sign shall not be post-mounted on the left-hand or right-hand side of the roadway.

Support:

06 Section 3I.02 contains information about the use of tubular markers to provide additional emphasis for a pedestrian crossing.

Standard:

07 If used, the Overhead Pedestrian or Trail Crossing sign shall be placed over the roadway at the crosswalk location.

08 When used at an uncontrolled crossing, the In-Street or Overhead Pedestrian Crossing sign shall be used only as a supplement to a Pedestrian Crossing (W11-2) warning sign with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.

09 When used at an uncontrolled crossing, the In-Street or Overhead Trail Crossing sign shall be used only as a supplement to a Trail Crossing (W11-15) warning sign with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.

10 An In-Street or Overhead Pedestrian or Trail Crossing sign shall not be placed in advance of the crosswalk to educate road users about the State law prior to reaching the crosswalk, nor shall it be installed as an educational display that is not near any crosswalk.

Guidance:

11 If an island (see Chapter 3J) is available, the In-Street Pedestrian or Trail Crossing sign, if used, should be placed on the island.

Option:

12 In-Street Pedestrian or Trail Crossing signs may be mounted back-to-back in the median or on the center line of an undivided roadway.

Standard:

13 The In-Street Pedestrian or Trail Crossing sign and the Overhead Pedestrian Crossing or Trail sign shall not be used at crosswalks on approaches controlled by a traffic control signal, pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon.

14 Except where the In-Street Crossing sign is placed on a physical island, the sign support shall be designed to bend over and then bounce back to its normal vertical position when struck by a vehicle.

Option:

15 The In-Street and Overhead Pedestrian and Trail Crossing sign may be used at intersections or midblock pedestrian crossings with flashing beacons.

Support:

16 The provisions of Section 2A.15 concerning mounting height are not applicable for the In-Street Pedestrian Crossing sign. Section 2A.18 contains information about sign mounting methods.

Standard:

17 The top of an In-Street Pedestrian or Trail Crossing sign shall be a maximum of 4 feet above the pavement surface. The top of an In-Street Pedestrian or Trail Crossing sign placed in an island shall be a maximum of 4 feet above the island surface.

Option:

18 The In-Street Pedestrian Crossing or Trail Crossing signs may be used seasonally to prevent damage in winter because of plowing operations, and may be removed at night if the pedestrian activity at night is minimal.

19 Both sign mounting types, In-Street Crossing (R1-6 series) signs and Overhead Crossing (R1-9 series) signs, may be used together at the same crosswalk.

SPEED LIMIT SIGNS AND PLAQUES

Section 2B.21 Speed Limit and End XX Mile Speed Sign (R2-1, R2-V2)

Support:

01 In general, the maximum speed limits applicable to rural and urban roads are established:

A. Statutorily – a maximum speed limit applicable to a particular class of road, such as freeways or city streets, that is established by State law; or

B. As speed zones – based on engineering studies.

02 State statutory limits might restrict the maximum speed limit that can be established on a particular road, notwithstanding what an engineering study might indicate.

03 Agencies with designated authorities to set speed limits, which include States, and sometimes local jurisdictions, can establish non-statutory speed limits or designate reduced speed zones using an engineering study. Setting appropriate speed limits is especially important to ensure safety for all road users in varying types of contexts, particularly on roadways where adjacent land use suggests that trips could be served by varied modes. These situations include urban and suburban non-freeway arterials or rural arterials that serve as main streets in smaller communities, consistent with the context classifications of urban core, urban, suburban, and rural towns found in "A Policy on Geometric Design of Highways and Streets," 2018 Edition, AASHTO. When setting a speed limit, a range of factors such as land-use context, pedestrian and bicyclist activity, crash history, intersection spacing, driveway density, roadway geometry, roadside conditions, roadway functional classification, traffic volume, and observed speeds can influence the speed limit determined in the engineering study. The engineering study will determine which of the recommended factors will prevail in setting the speed limit.

04 Jurisdictions can use speed limit setting tools and methods such as expert systems and those consistent with the safe system approach as part of the required engineering study for a non-statutory speed limit. As speed limit setting tools vary, jurisdictions need to be aware of their limitations and advantages, possible variation between the tools and the need to explore gaps or weaknesses of tools, and weigh the output accordingly in consideration of setting speed limits.

05 To achieve desired operating speeds, agencies often implement other speed management strategies concurrently with setting speed limits, such as traffic calming measures, geometric design features, speed safety cameras, and increased enforcement.

Standard:

06 Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall consider the roadway context.

Guidance:

07 Among the factors that should be considered when conducting an engineering study for establishing or reevaluating speed limits within speed zones are the following:

A. *Roadway environment (such as roadside development, number and frequency of driveways and access points, and land use), functional classification, public transit volume and location or frequency of stops, parking practices, and pedestrian and bicycle facilities and activity;*

B. *Roadway characteristics (such as lane widths, shoulder condition, grade, alignment, median type, and sight distance);*

C. *Geographic context (such as an urban district, rural town center, non-urbanized rural area, or suburban area), and multi-modal trip generation;*

D. *Reported crash experience for at least a 12-month period;*

E. *Speed distribution of free-flowing vehicles including the pace, median (50th-percentile), and 85th-precentile speeds; and*

F. *A review of past speed studies to identify any trends in operating speeds.*

08 When the 85th-percentile speed is appreciably greater than the posted speed limit, and the roadway context does not support setting a higher speed limit, the engineering study should consider whether changes to geometric features, enforcement, and/or other speed-reduction countermeasures might improve compliance

with the posted speed limit. A similar approach should be used if the results of past speed studies indicate that the 85th-percentile speed has consistently increased.

09 On urban and suburban arterials, and on rural arterials that serve as main streets through developed areas of communities, the 85th-percentile speed should not be used to set speed limits without consideration of all factors described in Paragraph 7 of this Section.

10 On a freeway, expressway, or rural highway (outside urbanized locations or conditions), the speed limit that is posted within a speed zone should be within 5 mph of the 85th-percentile speed of free-flowing motor-vehicle traffic under the following conditions:

A. All factors described in Paragraph 7 of this Section have been considered and determined to be non-mitigating, and

B. The measures described in Paragraph 8 of this Section have been considered to the extent practicable.

11 State and local agencies should conduct engineering studies to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review (such as changes to roadway context, the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes to road geometrics, changes in traffic control signal coordination, or significant changes in traffic volumes).

12 Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately ½ mile, to avoid obtaining skewed results for the speed distribution. If the signal spacing is less than 1 mile, the speed study should be at approximately the middle of the segment.

Standard:

12a Speed limit studies shall be conducted in accordance with the most recent edition of IIM-TE-365.

13 The Speed Limit (R2-1) sign (see Figure 2B-3(VA)) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency based on an engineering study. The speed limits displayed shall be in multiples of 5 mph.

14 Speed Limit (R2-1) signs, indicating speed limits for which posting is required by law, shall be located at the points of change from one speed limit to another.

15 At the downstream end of the section to which a particular speed limit applies, a Speed Limit sign showing the next speed limit shall be installed.

16 Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State ~~and, where appropriate, at jurisdictional boundaries in urban areas~~ on Interstate and Primary Highways which connect the Virginia Commonwealth to other jurisdictions at such locations as the Commissioner of Highways, in their discretion, may select.

Guidance:

17 Additional Speed Limit signs should be installed beyond interchanges and major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.

Option:

17a At the downstream end of a section to which a speed limit applies where the next section is governed by a statutorily established speed limit, the END XX MILE SPEED (R2- V2) sign (see Figure 2B-3(VA)) showing the previous speed limit may be installed.

Support:

18 The “Traffic Control Devices Handbook” contains suggested criteria on the spacing of speed limit signs.

Option:

19 If a jurisdiction has a policy of installing Speed Limit signs in accordance with statutory requirements only on the streets that enter a city, neighborhood, or residential area to indicate the speed limit that is applicable to the entire city, neighborhood, or residential area unless otherwise posted, a CITYWIDE (R2-5aP), NEIGHBORHOOD (R2-5bP), or RESIDENTIAL (R2-5cP) plaque may be mounted above the Speed

Limit sign and an UNLESS OTHERWISE POSTED (R2-5P) plaque may be mounted below the Speed Limit sign (see Figure 2B-3(VA)).

Support:

20 Section 2C.40 contains information about the use of speed zone signs to inform road users of a reduced or variable speed zone to provide advance notice to comply with the posted speed limit ahead.

~~Option:~~

Standard:

21 If a W3-5b sign is posted to provide notice of a variable speed zone, an END VARIABLE SPEED LIMIT (R2-13) sign (see Figure 2B-3(VA)) ~~may~~ shall be installed at the downstream end of the zone to provide notice to road users of the termination of the speed zone.

22 If a W3-5c sign is posted to provide notice of a truck speed zone, an END TRUCK SPEED LIMIT (R2-14) sign (see Figure 2B-3(VA)) shall be installed at the downstream end of the zone to provide notice to road users of the termination of the speed zone.

Option:

22a The END TRUCK SPEED LIMIT (R2-14) sign may be omitted if the end of the truck speed zone coincides with a change in the regular speed zone.

Guidance:

23 An advisory speed plaque (see Section 2C.59) mounted below a warning sign should be used to warn road users of an advisory speed for a roadway condition. A Speed Limit sign should not be used for this purpose.

24 Advance traffic control warning signs (see Section 2C.35), intersection warning signs (see Section 2C.41), and/or other traffic control devices are appropriate warning prior to a signalized intersection. A Speed Limit sign should not be used for this purpose.

Option:

25 Two types of Speed Limit signs may be used: one to designate passenger car speeds, including any nighttime information or maximum or minimum speed limit that might apply; and the other to show any special speed limits for trucks and other vehicles.

Guidance:

26 No more than three speed limits should be displayed on any one Speed Limit sign or assembly.

Option:

27 A variable speed limit sign that changes the speed limit for traffic and ambient conditions may be installed provided that the appropriate speed limit is displayed at the proper times and locations in accordance with Paragraphs 9 and 10 of this Section.

Standard:

28 The variable speed limit sign legend "SPEED LIMIT" shall be a black legend on a white retroreflective background. The variable speed limit legend shall be displayed in white LEDs on an opaque black background.

28a A yellow-background "Speed Limit May Vary Next XX Miles" sign shall be placed prior to entering any permanent VSL corridor controlled by a dynamic algorithm. This sign shall be erected with flashing beacons, and shall incorporate a changeable message sign element that can display the reason for the reduced speed limit if the speed limit ahead is reduced (e.g. fog or congestion).

Support:

29 Section 2C.13 contains information about the use of a Vehicle Speed Feedback plaque (Pole Mounted Speed Display) mounted below a Speed Limit sign that displays to approaching drivers the speed at which they are traveling.

30 Advisory speed signs and plaques are discussed in Sections 2C.12 and 2C.59. Temporary traffic control zone speed signs are discussed in ~~Part 6~~ "Virginia Work Area Protection Manual". The WORK ZONE (G20-5aP) plaque intended for installation above a Speed Limit sign is discussed in Section 6G.08. School Speed Limit signs are discussed in Section 7B.05. Photo enforcement signs and plaques are discussed in Section 2B.69.

Section 2B.22 Vehicle Speed Limit Plaques (R2-2P Series)

Standard:

01 Where a special speed limit applies to certain classes of vehicles, the Truck Speed Limit (R2-2P) plaque, Bus Speed Limit (R2-2aP) plaque, Truck-Bus Speed Limit (R2-2bP) plaque, or Vehicles over X Tons Speed Limit (R2-2cP) plaque (see Figure 2B-3(VA)) shall be displayed below the Speed Limit (R2-1) sign, except as provided in Paragraph 2 of this Section.

Option:

02 The legend of a Vehicle Speed Limit (R2-2P series) plaque may be combined in a single sign and displayed below the SPEED LIMIT XX legend, similar to the Combined Maximum and Minimum Speed Limits (R2-4a) sign (see Section 2B.24).

03 A different vehicle class legend may be substituted on the R2-2P series plaque for other classes of vehicles not included in Paragraph 1 of this Section.

Section 2B.23 Night Speed Limit Plaque (R2-3P)

Standard:

01 Where different speed limits are prescribed for day and night, both limits shall be posted.

Guidance:

02 A Night Speed Limit (R2-3P) plaque (see Figure 2B-3(VA)) should be reversed using a white retroreflective legend and border on a black background.

Option:

03 A Night Speed Limit plaque may be combined with or installed below the standard Speed Limit (R2-1) sign.

Section 2B.24 Minimum Speed Limit Plaque (R2-4P) and Combined Maximum and Minimum Speed Limits Sign (R2-4a)

Standard:

01 A Minimum Speed Limit (R2-4P) plaque (see Figure 2B-3(VA)) shall be displayed only in combination with a Speed Limit sign. Where used, the R2-4P plaque shall be mounted below a Speed Limit (R2-1) sign.

Option:

02 Where engineering judgment determines that slow speeds on a highway might impede the normal and reasonable movement of traffic, the Minimum Speed Limit (R2-4P) plaque may be installed below a Speed Limit (R2-1) sign to indicate the minimum legal speed. In lieu of a sign assembly with the R2-1 sign and R2-4P plaque, the Combined Maximum and Minimum Speed Limits (R2-4a) sign may be used.

Section 2B.25 Higher Fines Signs and Plaque (R2-6P, R2-10, and R2-11)

Standard:

01 Except as provided in Paragraph 3 of this Section, if increased fines are imposed for traffic violations within a designated zone of a roadway, a BEGIN HIGHER FINES ZONE (R2-10) sign (see Figure 2B-3(VA)) or a FINES HIGHER (R2-6P) plaque (see Figure 2B-3(VA)) shall be used to provide notice to road users.

02 If an R2-10 sign, an R2-6P plaque, or an R2-V2P plaque is posted to provide notice of increased fines for traffic violations, an END HIGHER FINES ZONE (R2-11) sign (see Figure 2B-3(VA)) shall be installed at the downstream end of the zone to provide notice to road users of the termination of the increased fines zone.

Option:

03 The BEGIN HIGHER FINES ZONE (R2-10) sign or FINES HIGHER (R2-6P) plaque may be omitted where the higher fines zone is established by statute.

*Guidance***:**

04 The BEGIN HIGHER FINES ZONE sign or FINES HIGHER plaque should be located at the beginning of the temporary traffic control zone, school zone, or other applicable designated zone and just beyond any interchanges, major intersections, or other major traffic generators.

05 Agencies should limit the use of the Higher Fines signs and plaque to locations where work is actually underway, or to locations where the roadway, shoulder, or other conditions, including the presence of a school zone and/or a reduced school speed limit zone, require a speed reduction or extra caution on the part of the road user.

Standard:

06 The Higher Fines signs and plaque shall have a black legend and border on a white rectangular background. All supplemental plaques mounted below the Higher Fines signs and plaque shall have a black legend and border on a white rectangular background.

07 The FINES HIGHER plaque shall be mounted below an applicable regulatory or warning sign in a temporary traffic control zone (see Section 6G.08), a school zone (see Section 7B.06), or other applicable designated zone.

Option:

08 Alternate legends such as BEGIN (or END) DOUBLE FINES ZONE may also be used for the R2-10 and R2-11 signs.

09 The legend FINES HIGHER on the R2-6P plaque may be replaced by FINES DOUBLE (R2-6aP), $XX FINE (R2-6bP), or another legend appropriate to the specific regulation (see Figure 2B-3(VA)).

10 The following may be mounted below an R2-10 sign or R2-6P plaque:

A. A supplemental plaque specifying the times that the higher fines are in effect (similar to the S4-1P plaque shown in Figure 7B-1(VA)),
B. A supplemental plaque WHEN CHILDREN (WORKERS) ARE PRESENT, or
C. A supplemental plaque WHEN FLASHING (similar to the S4-4P plaque shown in Figure 7B-1(VA)) if used in conjunction with a Speed Limit Sign Beacon (see Section 4S.04).

Standard:

10a An ADDITIONAL $200 FINE plaque (R2-VP2) (see Figure 2B-3(VA)) shall be installed below the regulatory speed limit sign (R2-1) in each travel direction at the beginning of the zone where the additional $200 fine is designated on local residential streets that comply with § 46.2-878.2 of the Code of Virginia and which have been approved by the Virginia Department of Transportation.

Guidance:

10b Sign and plaque assemblies should be posted on both sides of multi-lane divided roadways to maximize the effectiveness in conveying the posted speed limit and higher fine zone.

MOVEMENT AND LANE CONTROL SIGNS AND PLAQUES

Section 2B.26 Movement Prohibition Signs (R3-1 through R3-4, R3-18, and R3-27)

Standard:

01 Movement Prohibition signs (see Figure 2B-4(VA)) shall be installed where specific movements are prohibited at an intersection approach except as provided in Paragraphs 13 and 17 of this Section.

~~*Guidance:*~~

02 Movement Prohibition signs ~~should~~ shall only be used to prohibit a turn or through movement from an entire approach and ~~should~~ shall not be used to designate movements that are required or permitted from a specific lane or lanes on a multi-lane approach.

Guidance:

03 Movement Prohibition signs should be placed where they will be most easily seen by road users who might be intending to make the movement.

04 If a No Right Turn (R3-1) sign (see Figure 2B-4(VA)) is used, at least one should be placed either over the roadway or at a right-hand corner of the intersection.

05 If a No Left Turn (R3-2) sign (see Figure 2B-4(VA)) is used, at least one should be placed over the roadway, at the far left corner of the intersection, on a median, or in conjunction with the STOP sign or YIELD sign located on the near right corner.

06 Except as provided in Item C in Paragraph 11 of this Section for signalized locations, if a NO TURNS (R3-3) sign (see Figure 2B-4(VA)) is used, two signs should be used, one at a location specified for a No Right Turn sign and one at a location specified for a No Left Turn sign.

07 If a No U-Turn (R3-4) sign (see Figure 2B-4(VA)) or a combination No U or Left Turn (R3-18) sign (see Figure 2B-4(VA)) is used, at least one should be used at a location specified for a No Left Turn sign.

08 If both left turns and U-turns are prohibited, the combination No U or Left Turn (R3-18) sign should be used instead of separate R3-2 and R3-4 signs.

Support:

09 Sections 2B.27 through 2B.30 contain information regarding lane control signs that indicate the required or permitted movements from individual lanes.

Guidance:

10 If a No Straight Through (R3-27) sign (see Figure 2B-4(VA)) is used, at least one should be placed either over the roadway or at a location where it can be seen by road users who might be intending to travel straight through the intersection.

11 If turn prohibition signs are installed in conjunction with traffic control signals:

- *A. The No Right Turn sign should be installed adjacent to a signal face viewed by road users in the right-hand lane.*
- *B. The No Left Turn (or No U-Turn or combination No U or Left Turn) sign should be installed adjacent to a signal face viewed by road users in the left-hand lane.*
- *C. A NO TURNS sign should be placed adjacent to a signal face viewed by all road users on that approach, or two signs should be used.*

Option:

12 If turn prohibition signs are installed in conjunction with traffic control signals, an additional turn prohibition sign may be post-mounted to supplement the sign mounted overhead.

13 Where ONE WAY signs are used (see Section 2B.49), No Left Turn and No Right Turn signs may be omitted.

14 Where the movement restriction applies to certain vehicle classes, signs incorporating a supplementary legend, modified as appropriate, may be used to indicate the specific vehicle class restriction (R3-1b through R3-1d) or exception (R3-1e and R3-1f) (see Figure 2B-4(VA)). When the movement restriction applies during certain time periods only, the following Movement Prohibition signing alternatives may be used and are listed in order of preference:

A. A blank-out or changeable message sign (see Chapter 2L) that displays the prohibited movement only during the time that the movement prohibition is applicable, especially at signalized intersections.
B. Permanently-mounted signs incorporating a supplementary legend showing the hours and days during which the prohibition is applicable (R3-1g and R3-1h) (see Figure 2B-4(VA)).
C. Portable signs, installed by proper authority, located off the roadway at each corner of the intersection. The portable signs are only to be used during the time that the movement prohibition is applicable.

Standard:

15 The blank-out part-time electronic-display Movement Prohibition sign shall consist of a red circle and diagonal with a white prohibited movement on an opaque black background.

Option:

16 Movement Prohibition signs may be omitted at a ramp entrance to an expressway or a channelized intersection where the design is such as to indicate clearly the one-way traffic movement on the ramp or turning lane.

Standard:

17 The No Left Turn (R3-2) sign, the No U-Turn (R3-4) sign, and the combination No U or Left Turn (R3-18) sign shall not be used at approaches to roundabouts to prohibit drivers from turning left onto the circulatory roadway of a roundabout.

Support:

18 At roundabouts, the use of R3-2, R3-4, or R3-18 signs to prohibit left turns onto the circulatory roadway might confuse drivers about the possible legal turning movements around the roundabout. Roundabout Circulation (R6-5P) plaques (see Section 2B.51) and/or ONE WAY (R6-1 or R6-2) signs are appropriate to indicate the travel direction within a roundabout.

Section 2B.27 Intersection Lane Control Signs (R3-5 through R3-8)

Standard:

01 Intersection Lane Control signs (see Figure 2B-4(VA)), if used, shall require road users in certain lanes to turn, shall permit turns from a lane where such turns would otherwise not be permitted, shall require a road user to stay in the same lane and proceed straight through an intersection, or shall indicate permitted movements from a lane.

Support:

02 Intersection Lane Control signs have three applications:

A. Mandatory Movement Lane Control (R3-5 series and R3-7 series) signs,
B. Optional Movement Lane Control (R3-6 series) signs, and
C. Advance Intersection Lane Control (R3-8 series) signs.

Guidance:

03 When Intersection Lane Control signs are mounted overhead, each sign used should be placed over the lane or a projection of the lane to which it applies.

04 On signalized approaches where through lanes that become mandatory turn lanes, that include multiple-lane turns, or include shared lanes for through and turning movements, or other lane-use regulations are present that would be unexpected by unfamiliar road users, overhead Intersection Lane Control signs should be installed at the signalized location over the appropriate lanes or projections thereof ~~and in advance of the intersection over the appropriate lanes~~.

05 Where overhead mounting on the approach is impracticable for the Advance and/or Intersection lane Control signs, one of the following alternatives should be employed:

A. At locations where through lanes become mandatory turn lanes, a Mandatory Movement Lane Control (R3-7) sign should be post-mounted on the left-hand side of the roadway where a through lane is becoming a mandatory left-turn lane on a one-way street or where a median of sufficient width for the signs is available, or on the right-hand side of the roadway where a through lane is becoming a mandatory right-turn lane.

B. At locations where a through lane is becoming a mandatory left-turn lane on a two-way street where a median of sufficient width for the signs is not available, and at locations where multiple-lane turns that include shared lanes for through and turning movements are present, an Advance Intersection Lane Control (R3-8 series) sign should be post-mounted in a prominent location in advance of the intersection, and consideration should be given to the use of an oversized version in accordance with Table 2B-1.

06 *Use of an overhead sign for one approach lane should not require installation of overhead signs for the other lanes of that approach.*

Option:

07 Intersection Lane Control signs may be omitted where:

A. A turn bay has been provided by physical construction or pavement markings, and
B. Only the road users using such turn bays are permitted to make a turn in that direction.

08 At roundabouts, Intersection Lane Control (R3-5, R3-6, and R3-8 series) signs may display any of the arrow symbol options shown in Figure 2B-5.

Section 2B.28 Mandatory Movement Lane Control Signs (R3-5, R3-5a, R3-5V, R3-7, R3-19 Series, and R3-20) and Plaques

Standard:

01 Mandatory Movement Lane Control (R3-5, R3-5a, R3-5V, and R3-7) signs (see Figure 2B-4), if used, shall indicate only the single vehicle movement that is required from the lane.

02 The Mandatory Movement Lane Control (R3-5, R3-5a, and R3-5V) symbol signs shall include the legend ONLY and shall be mounted overhead over the specific lanes to which they apply (see Section 2B.27). The R3-7 sign shall be for post-mounting only. The R3-7 sign shall not be mounted at the far side of the intersection.

03 When the mandatory movement applies to lanes exclusively designated for HOV traffic, the HOV 2+ (R3-5cP) supplemental plaque shall be used. When the mandatory movement applies to lanes that are not HOV facilities, but are lanes exclusively designated for buses and/or taxis, the TAXI LANE (R3-5dP) and/or BUS LANE (R3-5gP) supplemental plaques shall be used.

04 If used, the Mandatory Movement Lane Control (R3-7) sign shall be located in advance of the intersection, such as near the upstream end of the mandatory movement lane, and/or at the near side of the intersection where the regulation applies.

Guidance:

05 The use of the Mandatory Movement Lane Control (R3-7) word message sign should be limited to only locations that are adjacent to the full-width portion of a mandatory turn lane. The R3-7 sign should not be installed adjacent to a through lane in advance of a turn bay taper or adjacent to a turn bay taper.

06 Mandatory Movement Lane Control signs should be accompanied by lane-use arrow markings, especially where traffic volumes are high, where there is a high percentage of commercial vehicles, or where other distractions exist.

07 Where the restriction does not apply to buses or bicycles an EXCEPT BUSES (R3-7aP) or EXCEPT BICYCLES (R3-7bP) plaque should be used.

Option:

08 The Through Only (R3-5a) sign may be used to require a road user in a particular lane to proceed straight through an intersection.

09 The diamond symbol may be used instead of the word message HOV on the R3-5cP supplemental plaque.

10 Where a mandatory left or U-turn lane is added at a median location, a LANE FOR LEFT TURN ONLY (R3-19) or LANE FOR U TURN ONLY (R3-19a) sign may be post-mounted on the median at the beginning of the taper. Where a U turn and a left turn are both allowed, a LANE FOR U AND LEFT TURNS

ONLY (R3-19b) sign may be used. Where a R3-19 series sign is used, Mandatory Movement Lane Control signs along the turn lane in the median may be omitted.

11 The R3-19 series signs may be used where the added median turn lane is separated from the through lanes by a channelizing or divisional island.

12 On an approach to a mandatory turn lane where traffic regularly enters the shoulder to access the turn lane inappropriately, creating safety or operational issues, a DO NOT DRIVE ON SHOULDER (R4-17) sign (see Section 2B.43) may be used to supplement the standard Mandatory Movement Lane Control (R3-5 and/or R3-7 series) signs.

Section 2B.29 Optional Movement Lane Control Signs (R3-6 Series)

Standard:

01 Optional Movement Lane Control (R3-6, R3-6a and R3-6b) signs (see Figure 2B-4(VA)), if used, shall be used for two or more movements from a specific lane or to emphasize permitted movements. The Optional Movement Lane Control sign shall be mounted overhead over the specific lane to which it applies.

02 If used, the Optional Movement Lane Control signs shall indicate all permissible movements from specific lanes.

03 Because more than one movement is permitted from the lane, the word message ONLY shall not be used on an Optional Movement Lane Control sign.

04 Optional Movement Lane Control signs shall be used for two or more movements from a specific lane where a movement, not allowed by State statute or local ordinance, is permitted.

05 The Optional Movement Lane Control signs shall not be used alone to effect a turn prohibition.

Guidance:

06 If used, the Optional Movement Lane Control sign should be located overhead in advance of the intersection, such as near the upstream end of an adjacent mandatory movement lane, and/or overhead at the intersection where the regulation applies.

Option:

06a The Optional U-Turn/Left Turn (R3-6a) sign (see Figure 2B-4(VA)) may be used at signalized intersections where U-turns are allowed from an approach with multiple left-turn lanes.

Guidance:

06b R3-6a signs should be used only at intersections where there are known problems associated with motorists making U-turns from the right-most left turn lane(s).

Section 2B.30 Advance Intersection Lane Control Signs (R3-8 Series)

Option:

01 Advance Intersection Lane Control (R3-8, R3-8a, and R3-8b) signs (see Figure 2B-4(VA)) may be used to indicate the configuration of all lanes ahead.

02 The word messages ONLY, THRU, HOV 2+, TAXI, BUS, or BIKE, or the bicycle symbol, may be used within the border in combination with the arrow symbols of the R3-8 sign series. The R3-5cP, R3-5dP, and R3-5gP supplemental plaques may be installed at the top outside border of the R3-8 sign over the applicable lane designation on the sign. The diamond symbol may be used instead of the word message HOV. The minimum allowable vehicle occupancy requirement may vary based on the level established for a particular facility.

03 Where a bicycle lane is between two general-purpose lanes the R3-8 series signs may be modified to show the bicycle lane with a white legend on a black background in accordance with designs of the R3-8x series signs (see Figure 2B-4(VA)).

Guidance:

04 When used, an Advance Intersection Lane Control sign should be placed at an adequate distance in advance of the intersection, either along the lane tapers or at the beginning of the turn lane so that road users can select the appropriate lane (see Figure 2A-4).

Option:

05 An Advance Intersection Lane Control sign may be repeated closer to the intersection along the approach for additional emphasis.

Standard:

06 An Advance Intersection Lane Control (R3-8 series) sign shall not be mounted at the far side of an intersection to which it applies.

07 Where three or more approach lanes are available to traffic, Advance Intersection Lane Control (R3-8 series) signs, if used, shall be post-mounted in advance of the intersection and shall not be mounted overhead.

08 When only the two outermost lanes of the roadway are shown on a R3-8 sign, the R3-5bP or R3-5fP plaque shall be mounted above the R3-8 sign.

Option:

08a R3-8 series signs may be modified to depict the intersection conditions at a specific location.

Section 2B.31 RIGHT (LEFT) LANE MUST EXIT Signs (R3-33, R3-33a)

Option:

01 A RIGHT (LEFT) LANE MUST EXIT (R3-33) sign (see Figure 2B-4(VA)) may be used to supplement an overhead EXIT ONLY guide sign to inform road users that traffic in the right-hand (left-hand) lane of a roadway that is approaching a grade-separated interchange is required to depart the roadway on the exit ramp at the next interchange.

02 The R3-33a sign (see Figure 2B-4(VA)) may be used in place of the R3-33 sign where the roadside width is limited and will not accommodate the R3-33 sign.

Support:

03 Section 2C.50 contains information regarding a warning sign that can be used in advance of lane drops at grade-separated interchanges.

Section 2B.32 Two-Way Left-Turn-Only Signs (R3-9a and R3-9b) and Plaques

Guidance:

01 A Two-Way Left-Turn-Only (R3-9a or R3-9b) sign (see Figure 2B-6) should be used in conjunction with the required pavement markings where a non-reversible lane is reserved for the exclusive use of left-turning vehicles in either direction and is not used for passing, overtaking, or through travel.

Option:

02 The post-mounted R3-9b sign may be used as an alternate to or a supplement to the overhead R3-9a sign. The legend BEGIN or END may be used within the border of the main sign itself, or on an R3-9cP or R3-9dP plaque (see Figure 2B-6) mounted immediately above it.

Support:

03 Signing is especially helpful to drivers in areas where the two-way left-turn-only maneuver is new, in areas subject to environmental conditions that frequently obscure the pavement markings, and on peripheral streets with two-way left-turn-only lanes leading to an extensive system of routes with two-way left-turn-only lanes.

Section 2B.33 BEGIN and END Plaques (R3-9cP and R3-9dP)

Option:

01 The BEGIN (R3-9cP) or END (R3-9dP) plaque (see Figure 2B-6), mounted directly above a regulatory sign, may be used to inform road users of the location where a regulatory condition begins or ends.

Section 2B.34 Reversible Lane Control Signs (R3-9e through R3-9i)

Option:

01 A reversible lane may be used for through traffic (with left turns either permitted or prohibited) in alternating directions during different periods of the day, and the lane may be used for exclusive left turns in one or both directions during other periods of the day as well. Reversible Lane Control (R3-9e through R3-9i) signs (see Figure 2B-6) may be either static type or changeable message type. These signs may be either post-mounted or overhead. Lane-use control signals (see Chapter 4T) may also be used for reversible lanes.

Standard:

02 Where it is determined by an engineering study that lane-use control signals or physical barriers are not necessary, the lane shall be controlled by overhead Reversible Lane Control signs (see Figure 2B-7).

03 Post-mounted Reversible Lane Control signs shall be used only as a supplement to overhead signs or signals. Post-mounted signs shall be identical in design to the overhead signs and an additional legend such as CENTER LANE shall be added to the top of the sign (R3-9f) to indicate which lane is controlled.

Option:

04 Reversing traffic flow may be controlled with pavement markings and Reversible Lane Control signs (without the use of lane-use control signals), when all of the following conditions are met:

A. Only one lane is being reversed,
B. An engineering study indicates that the use of Reversible Lane Control signs alone would result in an acceptable level of safety and efficiency, and
C. There are no unusual or complex operations in the reversible lane pattern.

Standard:

05 Reversible Lane Control signs shall contain the legend or symbols designating the allowable uses of the lane and the time periods such uses are allowed. Where symbols and legends are used, their meanings shall be as shown in Table 2B-2.

06 Reversible Lane Control signs shall consist of a white background with a black legend and border, except for the R3-9e sign, where the color red is used for the X symbol.

07 Symbol signs, such as the R3-9e sign, shall consist of the appropriate symbol in the upper portion of the sign with the appropriate times of the day and days of the week below it. All times of the day and days of the week shall be accounted for on the sign to eliminate confusion to the road user.

08 In situations where more than one message is conveyed to the road user, such as on the R3-9e sign, the sign legend shall be arranged as follows:

A. The prohibition or restriction message is the primary legend and shall be on the top for word message signs and to the far left for symbol signs,
B. The permissive use message shall be displayed as the second legend, and
C. The OTHER TIMES message shall be displayed at the bottom for word message signs and to the far right for symbol signs.

Option:

09 The symbol signs may also include a downward-pointing arrow with the legend THIS LANE. The term OTHER TIMES may be used for either the symbol or word message sign.

Standard:

10 A Reversible Lane Control sign shall be mounted over the approximate center of the lane that is being reversed.

11 If the vertical or horizontal alignment is curved to the degree that a driver would be unable to see at least one sign, and preferably two signs, then additional overhead signs shall be installed. The placement of the signs shall be such that the driver will have a definite indication of the lanes specifically reserved for use at any given time. Special consideration shall be given to major generators introducing traffic between the normal sign placement.

12 Transitions at the entry to and exit from a section of roadway with reversible lanes shall include advance signs to notify or warn drivers of the boundaries of the reversible lane controls. The R3-9g or R3-9h signs (see Figure 2B-6) shall be used for this purpose.

Option:

13 More than one End Reverse Lane (R3-9i) sign (see Figure 2B-6) may be used at the termination of the reversible lane to emphasize the importance of the message.

14 Where longitudinal barriers separate opposing directions of traffic, the R3-9g or R3-9h signs may be omitted.

Standard:

15 Flashing beacons, if used to supplement the overhead Reversible Lane Control signs, shall comply with the applicable requirements for flashing beacons in Chapter4S.

16 When used in conjunction with Reversible Lane Control signs, the Turn Prohibition (R3-1 through R3-4, and R3-18) signs shall be mounted overhead and separate from the Reversible Lane Control signs. The Turn Prohibition signs shall be designed and installed in accordance with Section 2B.26.

Guidance:

17 For additional emphasis, a supplemental plaque stating the distance of the prohibition, such as NEXT 1 MILE, should be added to the Turn Prohibition signs that are used in conjunction with Reversible Lane Control signs.

18 If used, overhead signs should be located at intervals not greater than ¼ mile. The bottom of the overhead Reversible Lane Control signs should not be more than 19 feet above the pavement grade.

19 Where more than one sign is used at the termination of a reversible lane, they should be at least 250 feet apart. Longer distances between signs are appropriate for streets with speeds over 35 mph, but the separation should not exceed 1,000 feet.

20 Because left-turning vehicles have a significant impact on the safety and efficiency of a reversible lane operation, if a mandatory left-turn lane or two-way left-turn lane cannot be incorporated into the lane-use pattern for a particular peak or off-peak period, consideration should be given to prohibiting left turns and U-turns during that time period.

21 Reversible Lane Control signs and parking signs should be consistent in message during the same operational periods.

Section 2B.35 Jughandle Signs (R3-23, R3-24, R3-25, and R3-26 Series)

Support:

01 A jughandle turn is a left turn or U-turn that because of special geometry is made by initially making a right turn. This type of turn can increase the operational efficiency of a roadway by eliminating the need for mandatory left-turn lanes and can increase the operational efficiency of a traffic control signal by eliminating the need for protected left-turn phases. A jughandle turn can also provide an opportunity for trucks and commercial vehicles to make a U-turn where the median and roadway are not of sufficient width to accommodate a traditional U-turn by these vehicles.

02 Figure 2B-8 shows the various signs that can be used for signing jughandle turns. Figure 2B-9 shows examples of regulatory and destination guide signing for various types of jughandle turns.

Standard:

03 On multi-lane roadways, since road users generally anticipate that they need to be in the left-hand lane when approaching a location where they desire to turn left or make a U-turn, an ALL TURNS FROM RIGHT LANE (R3-23) or a U TURN FROM RIGHT LANE (R3-23a) sign (see Figure 2B-8) shall be installed in advance of the location to inform drivers that left turns and/or U-turns will be made from the right-hand lane.

Option:

04 Where a median of sufficient width is available, supplemental regulatory or guide signs may also be placed on the left-hand side of the roadway.

Standard:

05 The R3-24 series sign with an upward diagonal arrow pointing to the right if the jughandle entrance is designed as an exit ramp (see Drawings A and B in Figure 2B-9), or the R3-25 series sign with a horizontal arrow pointing to the right if the jughandle entrance is designed as an intersection, shall be installed on the right-hand side of the roadway at the entrance to the jughandle. The legend on the sign shall be ALL TURNS, U TURN, or U AND LEFT TURNS, as appropriate.

06 If the jughandle is designed such that the jughandle entrance is downstream of the location where the turn would normally have been made (see Drawing C in Figure 2B-9), the R3-26 series sign with an arrow pointing straight upward shall be installed on the right-hand side of the roadway at the intersection to inform road users that they need to proceed straight through the intersection in order to make a left turn or U-turn. The legend on the sign shall be U TURN or U AND LEFT TURNS, as appropriate.

Support:

07 The R3-24, R3-25, and R3-26 series of signs are designed to be mounted below conventional guide signs.

08 Section 2C.12 contains information regarding the use of advisory exit and ramp speed signs for exit ramps.

09 Section 2D.40 contains information regarding the use of guide signs for jughandles.

PASSING, KEEP RIGHT, AND SLOW TRAFFIC SIGNS

Section 2B.36 DO NOT PASS Sign (R4-1)

Option:

01 The DO NOT PASS (R4-1) sign (see Figure 2B-10) may be used in addition to pavement markings (see Section 3B.03) to emphasize the restriction on passing. The DO NOT PASS sign may be used at the beginning of, and at intervals within, a zone through which sight distance is restricted or where other conditions make overtaking and passing inappropriate.

02 If signing is needed on the left-hand side of the roadway for additional emphasis, NO PASSING ZONE (W14-3) signs may be used (see Section 2C.53).

Support:

03 Standards for determining the location and extent of no-passing zone pavement markings are set forth in Section 3B.03.

Section 2B.37 PASS WITH CARE Sign (R4-2)

Guidance:

01 The PASS WITH CARE (R4-2) sign (see Figure 2B-10) should be installed at the downstream end of a no-passing zone if a DO NOT PASS sign has been installed at the upstream end of the zone.

Section 2B.38 KEEP RIGHT EXCEPT TO PASS Sign (R4-16), SLOWER TRAFFIC KEEP RIGHT Sign (R4-3), and TRUCKS USE RIGHT LANE Sign (R4-5)

Option:

01 The KEEP RIGHT EXCEPT TO PASS (R4-16) sign (see Figure 2B-10) may be used on roadways where there are two lanes in one direction of travel to direct drivers to stay in the right-hand lane except when they are passing another vehicle.

Guidance:

02 If used, the KEEP RIGHT EXCEPT TO PASS sign should be installed at or just beyond the beginning of a two-lane section of roadway and at selected locations along two-lane roadways where additional emphasis is needed.

Option:

03 The SLOWER TRAFFIC KEEP RIGHT (R4-3) or the TRUCKS USE RIGHT LANE (R4-5) sign (see Figure 2B-10) may be used on multi-lane through roadways to improve capacity or reduce unnecessary lane changing due to the presence of slower vehicles that impede the normal flow of traffic.

Guidance:

04 If used, the SLOWER TRAFFIC KEEP RIGHT sign or the TRUCKS USE RIGHT LANE sign should be installed at or just beyond the beginning of a multi-lane roadway section or at the beginning of an extra lane provided for trucks and/or other slow-moving traffic, and at selected locations where there is a tendency on the part of some road users to drive in the left-hand lane(or lanes) below the normal speed of traffic. These signs should not be used on the approach to an interchange or through an interchange area where traffic is entering or exiting, or along deceleration or acceleration lanes.

Option:

05 The TRUCKS USE RIGHT LANE sign may be used as a supplement to the SLOWER TRAFFIC KEEP RIGHT sign.

Guidance:

06 If an extra lane has been provided for trucks and other slow-moving traffic, a Lane Ends sign (see Section 2C.47) should be installed in advance of the point where the extra lane ends. Appropriate pavement markings should be installed at both the upstream and downstream ends of the extra lane (see Section 3B.12 and Figure 3B-14(VA)).

Section 2B.39 Keep Right and Keep Left Signs (R4-7 Series and R4-8 Series)

Option:

01 The Keep Right (R4-7) sign (see Figure 2B-10) may be used at locations where it is necessary for traffic to pass only to the right-hand side of a roadway feature or obstruction. The Keep Left (R4-8) sign (see Figure 2B-10) may be used at locations where it is necessary for traffic to pass only to the left-hand side of a roadway feature or obstruction.

Guidance:

02 At locations where it is not readily apparent that traffic is required to keep to the right, a Keep Right sign should be used.

Standard:

03 If Keep Right signs are installed at the start of a median or at a median opening, they shall be placed as close as practicable to the approach ends of the medians, and shall be visible to traffic on the divided highway and angled toward the applicable crossroad approach as shown in Figure 2B-20.

Guidance:

04 If used, the Keep Right sign should be mounted on the face of or just in front of a pier or other obstruction separating opposite directions of traffic in the center of the highway such that traffic will have to pass to the right-hand side of the sign.

05 Where the approach end of the island channelizes traffic away from the approach direction, the word legend (R4-7a, R4-7b, R4-8a, or R4-8b) signs (see Figure 2B-10) should be used instead of the symbol (R4-7 or R4-8) signs to emphasize the degree of curvature away from the approach direction (see Figure 2B-11).

06 Where a regulatory sign is used within the central island of a neighborhood traffic circle to direct traffic counter-clockwise around the central island, the Keep Right with diagonal arrow (R4-7b) sign should be used (see Figure 2B-24). The mounting height of the sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

Standard:

07 The Keep Right (Left) sign shall not be installed on the right-hand (left-hand) side of the roadway in a position where traffic must pass to the left-hand (right-hand) side of the sign.

Option:

08 The Keep Right sign may be omitted at intermediate ends of divisional islands and medians.

09 Word message KEEP RIGHT (LEFT) with an arrow (R4-7a or R4-7b) signs (see Figure 2B-10) may be used instead of the R4-7 or R4-8 symbol signs.

10 A narrow Keep Right (R4-7c) sign (see Figure 2B-10) may be installed on the approach end of a median island that is less than 4 feet wide at the point where the sign is to be located.

Standard:

11 A narrow Keep Right (R4-7c) sign shall not be installed on a median island that has a width of 4 feet or more at the point where the sign is to be located.

Option:

12 The Keep Right sign may be installed in the median of a divided highway crossing that functions as a single intersection such that it is visible to traffic on the divided highway and angled as needed toward the applicable crossroad approach as shown in Figure 2B-20.

Support:

13 Section 2B.49 provides more information about the use of the Keep Right sign in combination with or in lieu of ONE-WAY signs at divided highway crossings.

Section 2B.40 STAY IN LANE Sign (R4-9)

Option:

01 A STAY IN LANE (R4-9) sign (see Figure 2B-10) may be used on multi-lane highways to direct road users to stay in their lane until conditions permit shifting to another lane.

Guidance:

02 If a STAY IN LANE sign is used, it should be accompanied by a solid double white lane line(s) to prohibit lane changing.

Section 2B.41 RUNAWAY VEHICLES ONLY Sign (R4-10)

Guidance:

01 A RUNAWAY VEHICLES ONLY (R4-10) sign (see Figure 2B-10) should be installed near a truck escape (or runaway truck) ramp entrance to discourage other road users from entering the ramp.

Section 2B.42 Slow Vehicle Turn-Out Signs (R4-12, R4-13, and R4-14)

Support:

01 On two-lane highways in areas where traffic volumes and/or vertical or horizontal curvature make passing difficult, turn-out areas are sometimes provided for the purpose of giving a group of faster vehicles an opportunity to pass a slow-moving vehicle.

Option:

02 A SLOW VEHICLES WITH XX OR MORE FOLLOWING VEHICLES MUST USE TURN-OUT (R4-12) sign (see Figure 2B-10) may be installed in advance of a turn-out area to inform drivers who are driving so slow that they have accumulated a specific number of vehicles behind them that they are required by the traffic laws of that State to use the turn-out to allow the vehicles following them to pass.

Support:

03 The specific number of vehicles displayed on the R4-12 sign provides law enforcement personnel with the information they need to enforce this regulation.

Option:

04 If an R4-12 sign has been installed in advance of a turn-out area, a SLOW VEHICLES MUST USE TURN-OUT AHEAD (R4-13) sign (see Figure 2B-10) may also be installed downstream from the R4-12 sign, but upstream from the turn-out area, to remind slow drivers that they are required to use a turn-out that is a short distance ahead.

Standard:

05 If an R4-12 sign has been installed in advance of a turn-out area, a SLOW VEHICLES MUST TURN OUT (with arrow) (R4-14) sign (see Figure 2B-10) shall be installed at the entry point of the turn-out area.

Support:

06 Section 2D.54 contains information regarding advance information signs for slow vehicle turn-out areas.

Section 2B.43 DO NOT DRIVE ON SHOULDER Sign (R4-17) and DO NOT PASS ON SHOULDER Sign (R4-18)

Option:

01 The DO NOT DRIVE ON SHOULDER (R4-17) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway as a travel lane is prohibited.

02 The DO NOT PASS ON SHOULDER (R4-18) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway to pass other vehicles is prohibited.

Section 2B.44 ALL TRAFFIC Sign (R4-20) and RIGHT (LEFT) TURN ONLY Sign (R4-21)

Option:

01 The ALL TRAFFIC (R4-20) sign may be used at an intersection where all traffic on the approach to the intersection must turn in the direction indicated and the Movement Prohibition (see Section 2B.26) and/or ONE WAY (see Section 2B.49) signs do not adequately convey the allowable direction of travel.

02 The RIGHT (LEFT) TURN ONLY (R4-21) sign may be used at or on an approach to an intersection where all traffic on that approach must turn in the direction indicated.

Guidance:

03 The RIGHT (LEFT) TURN ONLY sign should not be used for a channelized turn lane separated from the adjacent travel lanes by an island.

Standard:

04 The ALL TRAFFIC sign shall not be used to substitute for the Keep Right (R4-7 series) or Keep Left (R4-8 series) signs.

05 The RIGHT (LEFT) TURN ONLY sign shall not be used to substitute for the Mandatory Movement Lane Control signs (see Sections 2B.27 and 2B.28).

SELECTIVE EXCLUSION SIGNS AND PLAQUES

Section 2B.45 Selective Exclusion Signs and Plaques

Option:

01 Selective Exclusion signs (see Figure 2B-12(VA)) may be used to provide notice to road users that State or local statutes or ordinances exclude designated types of traffic from using particular roadways or facilities.

Standard:

02 Selective Exclusion signs shall clearly indicate the type of traffic that is excluded.

Support:

03 Typical exclusion messages include:

A. No Trucks (R5-2),
B. NO MOTOR VEHICLES (R5-3),
C. NO COMMERCIAL VEHICLES (R5-4),
D. NO VEHICLES WITH LUGS (R5-5),
E. No Bicycles (R5-6),
F. NO NON-MOTORIZED TRAFFIC (R5-7),
G. NO MOTOR-DRIVEN CYCLES (R5-8),
H. No Pedestrian Crossing (R9-3),
I. No Skaters (R9-13),
J. No Equestrians (R9-14),
K. No Snowmobiles (R9-15),
L. No All-Terrain Vehicles (R9-16),
M. Hazardous Material (R14-3) (see Section 2B.67),
N. NO THRU TRAFFIC (R5-12),
O. NO THRU TRUCKS (R5-2b),
P. EXCEPT ON SHOULDER (R9-19P) plaque, and
Q. EXCEPT LOCAL DELIVERY (R5-2aP) plaque.

Option:

04 Appropriate combinations or groupings of these legends into a single sign, such as NO PEDESTRIANS BICYCLES MOTOR-DRIVEN CYCLES (R5-10 and R5-10a) or NO PEDESTRIANS OR BICYCLES (R5-10b), may be used.

Guidance:

05 If an exclusion is governed by vehicle weight, a Weight Limit sign (see Section 2B.64) should be used instead of a Selective Exclusion sign.

06 If used on a ramp to a freeway or expressway where pedestrian and bicyclist travel are prohibited by law or regulation, the NO PEDESTRIANS OR BICYCLES (R5-10b) sign should be installed in a location where it is clearly visible to any pedestrian or bicyclist attempting to enter the limited access facility from a street intersecting the ramp. In locations where a freeway or expressway is accessed from a ramp from a roadway parallel to the freeway or expressway, the sign should be placed in a location that clearly indicates the prohibition applies only to the freeway or expressway or to the ramp.

07 The Selective Exclusion sign should be placed on the right-hand side of the roadway at an appropriate distance from the intersection so as to be clearly visible to all road users turning into the roadway that has the exclusion. The NO PEDESTRIANS (R5-10c) or No Pedestrian Crossing (R9-3) sign (see Section 2B.57) should be installed so as to be clearly visible to pedestrians who are at a location where an alternative route is available.

Option:

08 The NO PEDESTRIANS (R5-10c) or No Pedestrian Crossing (R9-3) sign may also be used at underpasses or elsewhere where pedestrian facilities are not provided.

09 The NO THRU TRAFFIC (R5-12) or NO THRU TRUCKS (R5-2b) signs may be used at locations to prohibit through traffic from using a particular roadway or facility.

10 The EXCEPT LOCAL DELIVERY (R5-2aP) plaque may be mounted below the R5-2 or R5-2b sign.

11 The EXCEPT ON SHOULDER (R9-19P) plaque may be used where such modes are allowed on a shoulder but not on the traveled way and placed at intersections with other roads and established paths or trails, where such vehicles or modes are expected to enter the highway.

Standard:

12 The AUTHORIZED VEHICLES ONLY (R5-11) sign shall be installed on limited access highways at all non-chained crossovers not intended for public use ~~may be used at median openings and other locations~~ to prohibit vehicles from using the median opening or facility unless they have special permission (such as law enforcement vehicles or emergency vehicles) or are performing official business authorized by VDOT ~~(such as highway agency vehicles)~~.

Guidance:

12a The AUTHORIZED VEHICLES ONLY (R5-11) sign should be installed at non-chained crossovers not intended for public use when it has been determined that motorists frequently attempt to use the crossover.

Support:

12b The AUTHORIZED VEHICLES ONLY (R5-11) sign for non-chained crossovers is used in accordance with The Code of Virginia §46.2-808.1.

Option:

12c The AUTHORIZED VEHICLES ONLY (R5-11) sign may also be installed at maintenance driveways along limited access highways.

Standard:

12d The NO PEDESTRIANS, BICYCLES, MOPEDS, ANIMALS, SELF-PROPELLED MACHINERY, OR EQUIPMENT (R5-V2) sign shall be used to mark the entrances to- any section of limited access highway on which the Commonwealth Transportation Board has imposed such restriction.

Support:

12e An entrance to a section of limited access highway can include locations where a non-limited access facility turns into a limited access facility.

12f The NO PEDESTRIANS, BICYCLES, MOPEDS, ANIMALS, SELF-PROPELLED MACHINERY, OR EQUIPMENT (R5-V2) sign is required in accordance with the Code of Virginia §46.2-808.8.

Option:

12g As part of VDOT's Through Truck Restriction Program, the NO THRU TRUCKS (R5-2b) sign may be considered at a location where there is a formal request for such signs by the local governing body.

12h Previously designed and installed THROUGH TRUCKS PROHIBITED signs may remain until the end of their useful service life.

Standard:

12i NO THRU TRUCKS (R5-2b) signs shall only be installed following VDOT's established process in the "Guidelines for Considering Requests to Restrict Through Trucks on Primary and Secondary Highways" under § 46.2-809 of the Code of Virgina and where they meet the requirements in the guidelines document.

Support:

12j Restrictions of through truck traffic are generally implemented where they would promote the health, safety, and welfare of the citizens of the Commonwealth without creating an undue hardship on any users of the transportation system.

12k Refer to the "Guidelines for Considering Requests to Restrict Through Trucks on Primary and Secondary Highways" (see Appendix A for link) for additional information on VDOT's Through Truck Restriction Program.

DO NOT ENTER, WRONG WAY, ONE WAY, AND RELATED SIGNS AND PLAQUES

Section 2B.46 DO NOT ENTER Sign (R5-1)

Standard:

01 The DO NOT ENTER (R5-1) sign (see Figure 2B-13) shall be used at the following locations:

- **A. Where a two-way roadway becomes a one-way roadway (see Figure 2B-18);**
- **B. The intersection of an interchange exit ramp with a crossroad as specified in Section 2B.48 (see Figure 2B-15(VA));**
- **C. The intersection of a channelized or turning roadway with a two-way undivided crossroad; and**
- **D. Except as provided in Paragraph 4 of this Section, an intersection with a divided highway where the crossing functions as two separate intersections (see Figure 2B-14).**

Guidance:

02 A DO NOT ENTER sign should be installed at other locations where additional emphasis is needed where wrong-way movements are prominent or where the intersecting angle of roadways is such that the visibility of ONE WAY signs alone does not sufficiently convey the restriction.

Option:

03 A DO NOT ENTER sign may be installed at an intersection with a divided highway where the crossing functions as a single intersection as shown in Figure 2B-20.

04 A DO NOT ENTER sign may be omitted on a low-speed urban street that is a divided highway at a crossing that functions as two separate intersections.

05 An EXCEPT BICYCLES (R3-7bP) plaque (see Figure 2B-4(VA)) may be used with a DO NOT ENTER sign when counter-flow bicycle traffic is allowed.

Guidance:

06 The DO NOT ENTER sign, if used, should be placed directly in view of a road user at the point where a road user could wrongly enter a divided highway, one-way roadway, or ramp. The sign should be mounted facing traffic that might enter the roadway or ramp in the wrong direction.

07 At a crossing with a divided highway that functions as a single intersection; the sign, if used, should be placed on the outside edge side of the roadway facing traffic that might enter the roadway in the wrong direction.

08 If the DO NOT ENTER sign would be visible to traffic to which it does not apply, the sign should be turned away from, or shielded from, the view of that traffic.

Option:

09 A second DO NOT ENTER sign may be used, particularly where traffic approaches from an intersecting roadway (see Figure 2B-14).

Support:

10 Section 2B.48 contains information regarding an optional lower mounting height for DO NOT ENTER signs that are located along an exit ramp facing a road user who is traveling in the wrong direction.

11 Section 2A.12 contains the provisions for the use of continuously-operated or actuated LEDs to enhance the conspicuity of signs.

Section 2B.47 WRONG WAY Sign (R5-1a)

Option:

01 The WRONG WAY (R5-1a) sign (see Figure 2B-13) may be used as a supplement to the DO NOT ENTER sign where a crossroad intersects a one-way roadway in a manner that does not physically discourage or prevent wrong-way entry (see Figures 2B-14 and 2B-20).

Guidance:

02 If used, the WRONG WAY sign should be placed at a location along the one-way roadway farther from the crossroad than the DO NOT ENTER sign (see Section 2B.46).

03 The WRONG WAY sign should be placed on the same side of the road as the DO NOT ENTER sign.

Support:

04 Section 2B.48 contains information regarding an optional lower mounting height for WRONG WAY signs that are located along an exit ramp facing a road user who is traveling in the wrong direction.

05 Section 2A.12 contains the provisions for the use of continuously-operated or actuated LEDs to enhance the conspicuity of signs.

Section 2B.48 Wrong-Way Traffic Control at Interchange Ramps

Standard:

01 At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs shall be used (see Figure 2B-15(VA)):

- **A. ~~At least one~~ Two ONE WAY signs for each direction of travel on the crossroad shall be placed where the exit ramp intersects the crossroad.**
- **B. If an island exists on the ramp between the channelized right turn lane and the stop controlled lane(s), two ONE WAY signs for each direction of travel on the crossroad shall be placed in the island.**
- **C. At least ~~one~~ two DO NOT ENTER signs shall be conspicuously placed near the downstream end of the exit ramp in positions appropriate for full view of a road user starting to enter wrongly from the crossroad.**
- **D. One DO NOT ENTER sign shall be conspicuously placed on the back of the STOP or YIELD sign controlling movements on the channelized right turn lane. See Section 2B.18 for guidance related to signs mounted on the back of STOP or YIELD signs.**
- **E. ~~At least one~~ Two WRONG WAY signs shall be placed on the exit ramp at least 250 feet from the crossroad facing a road user traveling in the wrong direction.**
- **F. A NO LEFT TURN and/or a NO RIGHT TURN sign shall be placed on the crossroad at the intersection with the ramp.**

01a At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following pavement markings shall be used (see Figure 2B-15(VA)):

- **A. A lane-use arrow shall be placed in each lane of an exit ramp near the crossroad terminal where it will be clearly visible to a potential wrong-way road user and to indicate the permissive direction of flow.**
- **B. Slender, elongated wrong-way arrow pavement markings (see Figure 3B-21) intended primarily to warn wrong-way road users that they are traveling in the wrong direction shall be placed upstream from the ramp terminus (see Figure 2B-15(VA)) to indicate the correct direction of traffic flow.**
- **C. When channelized turn roadways exist, a wrong-way arrow shall be placed near the channelized turn roadway terminal.**

Guidance:

02 On two-lane paved crossroads at interchanges, solid double yellow lines should be used as a center line for an adequate distance on both sides approaching the ramp intersections (see Figure 2B-15(VA)).
~~Where crossroad channelization or ramp geometrics do not make wrong-way movements difficult, a lane-use arrow should be placed in each lane of an exit ramp near the crossroad terminal where it will be clearly visible to a potential wrong-way road user.~~

Option:

03 The following traffic control devices may be used to supplement the signs and pavement markings described in Paragraphs 1 and 2 of this Section:

A. Additional ONE WAY signs may be placed, especially on two-lane rural crossroads, appropriately in advance of the ramp intersection to supplement the required ONE WAY sign(s).

B. Additional WRONG WAY signs may be used.
C. ~~Slender, elongated wrong-way arrow pavement markings (see Figure 3B-21) intended primarily to warn wrong-way road users that they are traveling in the wrong direction may be placed upstream from the ramp terminus (see Figure 2B-15) to indicate the correct direction of traffic flow. Wrong-way arrow pavement markings may also be placed on the exit ramp at appropriate locations near the crossroad junction to indicate wrong-way movement.~~
D. Additional wrong-way arrow pavement markings may also be placed on the exit ramp at appropriate locations to indicate wrong-way movement. The wrong-way arrow markings may consist of pavement markings or bidirectional red-and-white raised pavement markers or other units that show red to wrong-way road users and white to other road users (see Figure 3B-24).
E. Lane-use arrow pavement markings may be placed on the exit ramp and crossroad near their intersection to indicate the permissive direction of flow.
F. Freeway entrance signs (see Section 2D.50) may be used.
G. Lane control signs or movement prohibition signs may be used on the approaches to the exit ramp.
H. A Keep Right (R4-7 or R4-7c) may be used on a ramp median nose for wrong-way traffic control.

Standard:

03a If bidirectional red-and-white raised pavement markers are used according to the option in Item D of Paragraph 3 an engineering study shall be conducted to justify the use of the markers.

Guidance:

04 On interchange entrance ramps where the ramp merges with the through roadway and the design of the interchange does not clearly make evident the direction of traffic on the separate roadways or ramps, a ONE WAY sign visible to traffic on the entrance ramp and through roadway should be placed on each side of the through roadway near the entrance ramp merging point as illustrated in Figure 2B-16.

Option:

05 On interchange entrance ramps where the ramp merges with the through roadway and the design of the interchange does not clearly make evident the direction of traffic on the separate roadways or ramps a No Left Turn (R3-2) sign may be located on the left-hand side of the entrance ramp at the gore (see Figure 2B-16). If a No Left Turn (R3-2) sign is located on the left-hand side, a supplemental R3-2 sign may be installed on the right-hand side of the entrance ramp.

06 On interchange entrance ramps where the ramp merges with the through roadway and the design clearly indicates the direction of flow, a ONE WAY sign may be placed visible to traffic on the entrance ramp and/or a NO TURNS (R3-3) sign may be placed visible to traffic on the entrance ramp and through roadway at the gore area as illustrated in Figure 2B-16.

Guidance:

~~07 Where there are no parked cars, pedestrian activity, or other obstructions such as snow or vegetation, and if an engineering study indicates that a lower mounting height would address wrong-way movements on freeway or expressway exit ramps, a DO NOT ENTER sign(s) and/or a WRONG WAY sign(s) that is located along the exit ramp at a location downstream from the intersection with the crossroad facing a road user who is traveling in the wrong direction may be installed at a minimum mounting height of 3 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pavement. At the intersection with the crossroad, a WRONG WAY sign may be mounted at a minimum height of 3 feet on the same support on which a DO NOT ENTER sign is mounted at a height that complies with the provisions of Section 2A.15 (see Figure 2B-17).~~

07a Except for where DO NOT ENTER signs are attached to the back of a STOP or YIELD sign, ONE WAY signs should be mounted below the DO NOT ENTER signs. See Section 2A.05 for guidance related to signs mounted on the back of STOP or YIELD signs.

07b DO NOT ENTER & ONE WAY sign assemblies (see Figure 2B-15(VA)) that are located along the exit ramp facing a road user who is traveling in the wrong direction should be installed at a minimum mounting height of 3 feet, measured vertically from the bottom of the ONE WAY sign to the elevation of the near edge of the pavement.

Support:

08 Sections 2B.46, 2B.47, and 2B.49 contain further information on signing to avoid wrong-way movements at at-grade intersections on expressways.

Section 2B.49 ONE WAY Signs (R6-1 and R6-2)

Standard:

01 Except as provided in Paragraph 6 of this Section, the ONE WAY (R6-1 or R6-2) sign (see Figure 2B-13) shall be used to indicate streets or roadways upon which vehicular traffic is allowed to travel in one direction only.

02 ONE WAY signs shall be placed parallel to the one-way street at all alleys and roadways that intersect one-way roadways as shown in Figure 2B-18.

03 At the crossing of a roadway with a divided highway that functions as two separate intersections, ONE WAY signs shall be placed, visible to each crossroad approach, on the near right and far left corners of each intersection with the directional roadways (see Figure 2B-19).

04 At the crossing of a roadway with a divided highway that functions as a single intersection Keep Right (R4-7) signs (see Section 2B.39) and/or ONE WAY signs shall be installed (see Figure 2B-20). If Keep Right signs are installed, they shall be placed as close as practicable to the approach ends of the medians and shall be visible to traffic on the divided highway and angled (as needed) toward the applicable crossroad approach as shown in Figure 2B-20. If ONE WAY signs are installed, they shall be placed on the near right and far left corners of the intersection and shall be visible to each crossroad approach.

Option:

05 At the crossing of a roadway with a divided highway, regardless of function as a single or separate intersections, ONE WAY signs may also be placed on the far right corner of the intersection as shown in Figures 2B-19 and 2B-20.

06 ONE WAY signs may be omitted on the one-way roadways of divided highways, where the design of interchanges indicates the direction of traffic on the separate roadways.

07 An EXCEPT BICYCLES (R3-7bP) plaque (see Figure 2B-4(VA)) may be used with a ONE WAY sign when counter-flow bicycle traffic is allowed.

Support:

08 Section 2B.48 contains information for the placement of ONE WAY signs at a crossroad with an interchange.

Standard:

09 If used at unsignalized intersections with one-way streets, ONE WAY signs shall be placed on the near right and the far left corners of the intersection facing traffic entering or crossing the one-way street (see Figure 2B-18).

10 If used at signalized intersections with one-way streets, ONE WAY signs shall be placed near the appropriate signal faces, on the poles holding the traffic signals, on the mast arm or span wire holding the signals, or at the locations specified for unsignalized intersections.

11 At unsignalized T-intersections where the roadway at the top of the T-intersection is a one-way roadway, ONE WAY signs shall be placed on the near-right and the far side of the intersection facing traffic on the stem approach (see Figure 2B-18).

Option:

12 Where the central island of a roundabout allows for the installation of signs, ONE WAY signs may be used to direct traffic counter-clockwise around the central island (see Figures 2B-22 and 2B-23).

Guidance:

13 Where used on the central island of a roundabout, the mounting height of a ONE WAY sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

Option:

14 The BEGIN ONE WAY (R6-6) sign (see Figure 2B-13) may be used to notify road users of the beginning point of a one direction of travel restriction on the street or roadway. The END ONE WAY (R6-7) sign (see Figure 2B-13) may be used to notify road users of the ending point of a one direction of travel restriction on the street or roadway.

Section 2B.50 Divided Highway Crossing Signs (R6-3 and R6-3a)

Standard:

01 On unsignalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway at a crossing that functions as two separate intersections (see Section 2A.23), except as provided in Paragraph 2 of this Section, a Divided Highway Crossing (R6-3 or R6-3a) sign (see Figure 2B-13) shall be used to advise road users that they are approaching an intersection with a divided highway (see Figure 2B-19).

Option:

02 If the divided highway has a traffic volume of less than 400 AADT and a speed limit of 25 mph or less, at a crossing that functions as two separate intersections, the Divided Highway Crossing signs facing the unsignalized minor-street approaches may be omitted.

03 A Divided Highway Crossing sign may be used on signalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway to advise road users that they are approaching an intersection with a divided highway.

Standard:

04 If a Divided Highway Crossing sign is used at a four-leg intersection, the R6-3 sign shall be used. If used at a T-intersection, the R6-3a sign shall be used.

05 The Divided Highway Crossing sign shall be located on the near right corner of the intersection, mounted beneath a STOP or YIELD sign or on a separate support.

Option:

06 An additional Divided Highway Crossing sign may be installed on the left-hand side of the approach to supplement the Divided Highway Crossing sign on the near right corner of the intersection.

Section 2B.51 Roundabout Circulation Plaque (R6-5P)

Guidance:

01 Where the central island of a roundabout or neighborhood traffic circle does not provide a reasonable place to install a sign as provided elsewhere in this Chapter, Roundabout Circulation (R6-5P) plaques (see Figure 2B-13) should be placed below the YIELD signs on each approach.

Support:

02 Paragraph 6 of Section 2B.39 contains information about the use of a Keep Right (R4-7b) sign in the central island of a neighborhood traffic circle.

03 Paragraph 12 of Section 2B.49 contains information about the use of a One Way (R6-1 or R6-2) sign in the central island of a roundabout.

Option:

04 At roundabouts where ONE WAY signs have been installed in the central island, Roundabout Circulation plaques may be placed below the YIELD signs on approaches to roundabouts to supplement the central island signs.

05 The Roundabout Circulation plaque may be used at any type of circular intersection.

Support:

06 Examples of regulatory and warning signs for roundabouts and neighborhood traffic circles are shown in Figures 2B-21 through 2B-24.

PARKING, STANDING, STOPPING, AND EMERGENCY RESTRICTION SIGNS

Section 2B.52 Parking, Standing, and Stopping Signs (R7 and R8 Series)

Support:

01 Parking signs pertain to the parking, standing, and stopping of vehicles along the roadway and in designated parking areas. They cover a wide variety of regulations, and only general guidance can be provided here. The word "standing" when used on the R7 and R8 series of signs refers to the practice of a driver keeping the vehicle in a stationary position while continuing to occupy the vehicle. The word "stopping" when used on the R7 and R8 series signs refers to any vehicle, occupied by a driver or not, that stops other than to avoid conflict with other traffic or to comply with official direction. Other types of activities such as active loading, active passenger loading, and/or waiting might be established in State or local codes for use on R7 and R8 series signs.

02 Parking signs are categorized as either (1) prohibiting parking or (2) permitting parking with restrictions on how parking is allowed.

03 The types of parking, standing, or stopping prohibitions that might be encountered include, but are not limited to:

A. Prohibited at all times;
B. Prohibited only at certain times of the day and/or days of the week;
C. Prohibited with exceptions, such as for bus stops, loading/unloading zones, persons with disabilities, or electric vehicle charging stations; or
D. Prohibited under certain conditions, such as Snow Emergency Routes.

04 Permissive parking signs allowing parking with restrictions include, but are not limited to:

A. Parking only allowed for limited time duration (such as 30 minutes or for 1 hour);
B. Metered parking requiring payment at an individual or a multi-space parking meter, or through electronic means such as by telephone or mobile application.;
C. Parking only for specific persons (such as those with disabilities or patrons or employees of a business) or specific vehicle types (such as electric vehicles, police/government vehicles, motorcycles, bicycles, or taxis);
D. Angled or back-in angled parking when it is not commonly used in the area;
E. Parking programs such as neighborhood/residential permits, school areas, or special events; and
F. Emergency parking or stopping only.

Section 2B.53 Design of Parking, Standing, and Stopping Signs

Standard:

01 Parking, standing, or stopping signs (see Figure 2B-25(VA)) shall be rectangular or square.

02 Public agencies shall follow established law (State law, local ordinance, or regulation) as adopted by the authorized agency regarding what messages are allowed on parking signs.

03 The legend on parking signs shall state applicable regulations. Parking signs shall comply with the standards of shape, color, and location.

04 Prohibitive parking signs (see Drawing A in Figure 2B-25(VA) for some commonly used examples) shall be used where parking is prohibited at all times or at specific times. Except as otherwise provided in this Section, parking signs shall have a red legend and border on a white background and, when the parking prohibition symbol is used, the symbol "P" shall be black.

05 Permissive parking signs (see Drawing B in Figure 2B-25(VA)) shall be used where only time-limited parking or parking in a particular manner is allowed. Permissive parking signs shall have a green legend and border on a white background.

Guidance:

06 Parking information, should be displayed from top to bottom of the sign, as applicable, in the following order:

A. The restriction or prohibition;

B. The times of the day that it is applicable, if not all hours;

C. The days of the week that it is applicable, if not every day;

D. Qualifying or supplementary information;

E. Exemptions to the restriction of prohibition; and

F. Any tow-away message or symbol.

07 If the parking regulation applies to a limited area or zone, the limits of the regulation should be shown by arrows or supplemental plaques. If arrows are used and if the sign is at the end of a parking zone, there should be a single-headed arrow pointing in the direction that the regulation is in effect. If the sign is at an intermediate point in a zone, there should be a double-headed arrow pointing both ways. When a single sign is used at the transition point between two parking zones, it should display a right arrow and a left arrow pointing in the direction that the respective regulations apply.

Standard:

08 The times and days for which the parking regulations are in effect shall be posted if they are not in effect at all times of day or all days of the week.

Option:

09 As an alternate to the use of arrows to show designated restriction zones, the following word messages may be used: BEGIN, END, HERE TO CORNER, HERE TO ALLEY, and THIS SIDE OF SIGN.

10 The R8 series signs (see Drawing A in Figure 2B-25(VA)) may be used where sufficient notice of a parking prohibition is satisfied by the use of single signs and are not needed to designate the beginning and end of a zone in which parking is prohibited or restricted. In rural and certain other areas the legends NO PARKING ON PAVEMENT (R8-1) or NO STOPPING ON PAVEMENT (R8-5) are generally suitable and may be used where parking or stopping is allowed on an unpaved shoulder or border adjacent to the paved portion of the road. If a roadway has an adjacent paved shoulder on which parking or stopping is allowed, the legend NO PARKING EXCEPT ON SHOULDER (R8-2) or NO STOPPING EXCEPT ON SHOULDER (R8-6) may be used. The R8-3 symbol sign or the word message NO PARKING may be used to prohibit any parking along a roadway. Word legend supplemental plaques may be mounted below the NO PARKING signs or the word legend may be incorporated within signs whose sizes are increased accordingly. The R8-3 series signs may include word legends such as ON PAVEMENT (R8-3c), ON BRIDGE (R8-3d), ON TRACKS (R8-3e), and EXCEPT ON SHOULDERS (R8-3f).

Guidance:

11 Where special parking restrictions are imposed during heavy snowfall or a declared snow emergency, a Snow Emergency Route (R7-203) sign (see Drawing A in Figure 2B-25(VA)) should be installed. The legend should be modified to display the specific regulations. The upper section of the sign should display the designation as a snow emergency route in a white legend and border on a red background.

12 If a fee is charged for on-street parking and payments are made at a multi-space parking meter, instead of individual parking meters for each parking space, Metered Parking (R7-21 and R7-22) signs (see Drawing B in Figure 2B-25(VA)) should be used to define the area where the multi-space parking meter applies. The Multi-Space Parking Meter (R7-20) sign (see Drawing B in Figure 2B-25(VA)) should be used at the meter location to direct road users to the meter.

Option:

13 Where payments can be made electronically, such as by telephone or mobile application, the Mobile Parking Payment (R7-21aP) plaque (see Drawing B in Figure 2B-25(VA)) may be installed below or as part of the legend of a Metered Parking sign.

Standard:

14 If the metered parking is subject to a maximum time limit, the appropriate time limit (number of hours or minutes) shall be displayed on the Metered Parking (R7-21 and R7-22) signs and, except as provided in Paragraph 15 of this Section, on the Multi-space Parking Meter (R7-20) signs.

Option:

15 Where the maximum time limit varies by the time of the day or by the day of the week, the display of the time limits may be omitted from the R7-20 sign and, instead, be displayed on the multi-space parking meter so that they are visible to pedestrians as they make payments.

Standard:

16 Where parking spaces are reserved for persons with disabilities, the Accessible Parking (R7-8) sign (see Drawing D in Figure 2B-25(VA)) shall be used to designate the space and shall display the official International Symbol of Accessibility.

17 Where parking spaces that are reserved for persons with disabilities are designed to accommodate wheelchair vans, a VAN ACCESSIBLE (R7-8aP) plaque (see Drawing D in Figure 2B-25(VA)) shall be mounted below the R7-8 sign.

17a Per the Code of Virginia § 36-99.11, all parking spaces reserved for the use of persons with disabilities shall be signed with an assembly meeting all of the following requirements:

A. Identified by above grade signs, regardless of whether identification of such spaces by above grade signs was required when any particular space was first reserved for the use of persons with disabilities;

B. Installed with RESERVED PARKING for Persons with Disabilities (R7-8) sign and TOW-AWAY ZONE PENALTY $100-$500 FINE (R7-VP1) plaque, and additional VAN ACCESSIBLE (R7-8aP) plaque if the space is van-accessible; and

C. All above grade disabled parking space signs have the bottom edge of the sign no lower than 4 feet nor higher than 7 feet above the parking surface.

17b One sign assembly is required for each parking spot for persons with disabilities.

Guidance:

18 Where parking spaces are designated for parking of electric vehicles, an Electric Vehicle Parking (R7-111 series, R7-112 series, and R7-113) sign (see Drawing E of Figure 2B-25(VA)) should be installed adjacent to the designated spaces. Where there is no time limit, the R7-111 series sign should be used. Where parking is subject to a time limit, the R7-112 series sign should be used.

19 Where parking spaces are only designated for charging of electric vehicles, an R7-113 sign or R7-114 series sign (see Drawing E in Figure 2B-25(VA)) should be installed adjacent to the designated spaces.

20 Where additional restrictions apply while a vehicle occupies the designated space, the R7-113P series plaques should be installed below the R7-113 sign or the R7-114 series signs.

Option:

21 Where parking is prohibited during certain hours and time-limited parking or parking in a particular manner is allowed during certain other time periods, the red Parking Prohibition and green Permissive Parking signs may be designed as follows (see Drawing C in Figure 2B-25(VA)):

A. Two 12 x 18-inch parking signs may be used with the red Parking Prohibition (R7-1) sign installed above or to the left of the green Permissive Parking (R7-108) sign; or
B. A single sign (R7-200 or R7-200a) may be used.

22 At the transition point between two parking zones, a single sign (R7-200 or R7-200a) or two signs mounted side-by-side may be used.

23 The words NO PARKING may be used as an alternative to the No Parking symbol (see the R7-2a sign in Drawing A in Figure 2B-25(VA)).

24 Alternate designs for the R7-107 sign may be developed such as the R7-107a sign (see Drawing A in Figure 2B-25(VA)). Alternate designs may include, on a single sign, a transit logo, an approved bus symbol, a parking prohibition, the words BUS STOP, and an arrow. The reverse side of the R7-107 series signs may display bus routing information for pedestrians.

25 A Tow-Away Zone (R7-201P or R7-201aP) plaque (see Drawing A in Figure 2B-25(VA)) may be mounted below any parking prohibition sign. The word legend TOW-AWAY ZONE may be incorporated into the parking prohibition sign in lieu of using a separate plaque.

26 The R7-201P plaque may have a black or red symbol and border on a white background.

Guidance:

27 When a legend other than that on the standard parking signs is necessary, letter height, symbol size, and basic sign layout should be consistent with the those shown on the standard parking signs as detailed in the "Standard Highway Signs" publication (see Section 1A.05.)

28 In general, the letter height of the principal legend on parking signs sized for urbanized applications should be at least 2 inches.

Section 2B.54 Placement of Parking, Standing, and Stopping Signs

Support:

01 The efficacy of parking, standing, and stopping signs, when used on conventional roads in urbanized or developed environments, depends on their visibility and consistent placement along a street or within a particular block. It is often impracticable for the entire legend to be legible from similar distances as for other types of signs. Therefore, it is important that their conventional form be recognizable from an adequate distance such that the road user can obtain the information upon closer inspection.

Guidance:

02 When signs with arrows are used to indicate the extent of the restricted zones, the signs should be set at an angle of not less than 30 degrees nor more than 45 degrees with the line of traffic flow in order to be visible to approaching traffic.

03 When signs are placed at the head of perpendicular parking stalls, the signs should be parallel to the roadway facing the parking stall.

04 Spacing of signs should be based on legibility, conspicuity, and sign orientation.

05 If the zone is long, signs should be used at intermediate points within the zone.

06 If the signs are mounted at an angle of 90 degrees to the curb line, two signs should be mounted back to back at the transition point between two parking zones, each with an appended THIS SIDE OF SIGN (R7-202P) supplemental plaque (see Drawing A in Figure 2B-25(VA)).

07 If the signs are mounted at an angle of 90 degrees to the curb line, signs without any arrows or appended plaques should be used at intermediate points within a parking zone, facing in the direction of approaching traffic. Otherwise, the standards of placement should be the same as for signs using directional arrows.

Option:

08 Blanket parking regulations that apply to an entire jurisdiction may, if legal, be posted in the vicinity of the jurisdictional boundary lines. Blanket parking regulations that apply to a posted zone or district may, if legal, be posted at the entry points to the zone or district.

Section 2B.55 Emergency Restriction Signs (R8-4 and R8-7)

Standard:

01 Emergency Restriction signs (see Figure 2B-26) shall be rectangular and shall have a black legend and border on a white background.

Option:

02 The EMERGENCY PARKING ONLY (R8-4) sign or the EMERGENCY STOPPING ONLY (R8-7) sign may be used to discourage or prohibit shoulder parking, particularly where scenic or other attractions create a tendency for road users to desire to stop temporarily.

Support:

03 Section 8B.07 contains information for the use of the DO NOT STOP ON TRACKS (R8-8) sign (see Figure 8B-1) to discourage or prohibit parking or stopping on railroad or light rail transit tracks.

Option:

03a At the request of the Virginia State Police, an UNATTENDED VEHICLES SUBJECT TO TOWING AT OWNERS EXPENSE (R8-VP1) plaque may be added to the EMERGENCY STOPPING ONLY (R8-7) sign (See Figure 2B-25(VA)).

PEDESTRIAN SIGNS

Section 2B.56 WALK ON LEFT FACING TRAFFIC ~~and No Hitchhiking~~ Sign (R9-1~~, R9-4, and R9-4a~~)

Option:

01 The WALK ON LEFT FACING TRAFFIC (R9-1) sign (see Figure 2B-27) may be used on highways where no sidewalks are provided.

Guidance:

02 If used, the WALK ON LEFT FACING TRAFFIC sign should be installed on the right-hand side of the road where pedestrians walk on the pavement or shoulder in the absence of pedestrian pathways or sidewalks.

~~Option:~~

~~03 The No Hitchhiking (R9-4) sign (see Figure 2B-27) may be used to prohibit standing in or adjacent to the roadway for the purpose of soliciting a ride. The R9-4a word message sign (see Figure 2B-27) may be used as an alternate to the R9-4 symbol sign.~~

Section 2B.57 Pedestrian Crossing Signs (R9-2 and R9-3)

Option:

01 Pedestrian Crossing signs (see Figure 2B-27) may be used to limit pedestrian crossing to specific locations.

Standard:

02 If used, Pedestrian Crossing signs shall be installed to face pedestrian approaches.

Option:

03 Where crosswalks are clearly defined, the CROSS ONLY AT CROSSWALKS (R9-2) sign may be used to prohibit pedestrians from crossing at locations away from crosswalks.

04 The No Pedestrian Crossing (R9-3) sign may be used to prohibit pedestrians from crossing a roadway at an undesirable location or in front of a school or other public building where a crossing is not designated.

05 The NO PEDESTRIAN CROSSING (R9-3a) word message sign may be used as an alternate to the R9-3 symbol sign. The USE CROSSWALK (R9-3bP) supplemental plaque, along with an arrow, may be installed below either sign to designate the direction of the crossing.

Support:

06 Pedestrians with vision disabilities might need features other than traffic control devices to provide effective communication of the prohibition of pedestrian crossing.

Guidance:

07 The R9-3bP plaque should not be installed in combination with educational plaques.

Section 2B.58 Traffic Signal Pedestrian and Bicyclist Actuation Signs (R10-1 through R10-4 and R10-24 through R10-26)

Standard:

01 Where manual actuation of a traffic signal is required for pedestrians or bicyclists to call a signal phase to cross the roadway, traffic signal signs applicable to pedestrian actuation (see Figure 2B-27) or bicyclist actuation (see Figure 9B-1) shall be mounted immediately above or incorporated into the push button detector units (see Section 4I.05).

Support:

02 Traffic signal signs applicable to pedestrians include:

A. CROSS ONLY ON GREEN (symbolic circular green) (R10-1),
B. CROSS ONLY ON (symbolic walk indication) SIGNAL (R10-2),
C. Push Button for Walk Signal (R10-3 series), and
D. Push Button for Green Signal (R10-4 series).

Option:

03 The following signs may be used as an alternate for the R10-3 and R10-4 signs:

A. Push Button to Cross Street Wait for Walk Signal (R10-3a); or
B. Push Button to Cross Street Wait for Green Signal (R10-4a).

04 The name of the street to be crossed may be substituted for the word STREET in the legends on the R10-3a and R10-4a signs.

Guidance:

05 The finger in the push button symbol on the R10-3, R10-3a, R10-4, and R10-4a signs should point in the same direction as the arrow on the sign.

Option:

06 Where symbolic pedestrian signal indications are used, an educational sign (R10-3b) may be used instead of the R10-3 sign to improve pedestrian understanding of pedestrian indications at signalized intersections. Where word-legend pedestrian signal indications are being retained for the remainder of their useful service life, the legends WALK/DONT WALK may be substituted for the symbols on the educational sign R10-3b, thus creating educational sign R10-3c. The R10-3d educational sign may be used to inform pedestrians that the pedestrian clearance time is sufficient only for the pedestrian to cross to the median at locations where pedestrians cross in two stages using a median refuge island. The R10-3e educational sign may be used where countdown pedestrian signals have been provided. In order to assist the pedestrian in understanding which push button to push, the R10-3f through R10-3i educational signs that provide the name of the street to be crossed may be used instead of the R10-3b through R10-3e educational signs.

07 The R10-24 or R10-26 sign (see Section 9B.20) may be used where a push button detector has been installed exclusively to actuate a green phase for bicyclists.

08 The R10-25 sign (see Figure 2B-27) may be used where a push button detector has been installed for pedestrians to activate In-Roadway Warning Lights (see Chapter 4U) or flashing beacons that have been added to the pedestrian warning signs.

Support:

09 Section 4I.05 contains information regarding the application of the R10-32P plaque.

TRAFFIC SIGNAL SIGNS AND PLAQUES

Section 2B.59 Traffic Signal Signs and Plaques (R10-5 through R10-30)

Option:

01 To supplement traffic signal control, traffic signal (R10-5 through R10-30) signs (see Figure 2B-28(VA)) may be used to regulate road users.

02 Traffic signal signs may be installed at certain locations to clarify signal control. Among the legends that may be used for this purpose are:

A. LEFT (RIGHT) ON GREEN ARROW ONLY (R10-5),
B. STOP HERE ON RED (R10-6 or R10-6a) for observance of stop lines,
C. DO NOT BLOCK INTERSECTION (R10-7) for avoidance of traffic obstructions,
D. USE LANE(S) WITH GREEN ARROW (R10-8) for obedience to lane-use control signals (see Chapter 4T),
E. LEFT (RIGHT) TURN SIGNAL (R10-10),
F. U TURN SIGNAL (R10-10a) for exclusive control of a U-turn movement,
G. U TURN YIELD TO RIGHT TURN (R10-16),
H. LEFT (RIGHT) TURN YIELD ON GREEN (symbolic circular green) (R10-12),
I. ~~LEFT (RIGHT) TURN YIELD ON FLASHING YELLOW ARROW (R10-12a),~~ and
J. LEFT (RIGHT) TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27).

Guidance:

02a If a flashing left-turn YELLOW ARROW signal indication is used to control a left-turn movement operated in permissive only mode or protected/permissive mode, the LEFT TURN YIELD ON FLASHING Yellow Arrow (R10-V1) sign should be used to clarify the signal control.

Support:

02b If a flashing left-turn YELLOW ARROW signal indication is being implemented concurrent with changes to the signal phasing (e.g. converting from protected only to protected/permissive), the LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-V1) sign is especially important as it will draw attention to the new phasing.

Guidance:

03 If used, the LEFT ON GREEN ARROW ONLY sign, the LEFT TURN SIGNAL sign, the LEFT TURN YIELD ON GREEN (symbolic circular green)) sign, the LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-V1) sign, or the LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP) sign should be located adjacent to the left-turn signal face.

04 If used, the RIGHT ON GREEN ARROW ONLY sign, the RIGHT TURN SIGNAL sign, the RIGHT TURN YIELD ON FLASHING YELLOW ARROW sign, or the RIGHT TURN YIELD ON FLASHING RED ARROW AFTER STOP sign should be located adjacent to the right-turn signal face.

05 A U TURN YIELD TO RIGHT TURN (R10-16) sign should be installed near the left-turn signal face if U-turns are allowed on a protected left-turn movement on an approach from which a right-turn GREEN ARROW signal indication is simultaneously being displayed to drivers making a right turn from the conflicting approach to their left.

Option:

06 If used, a U TURN SIGNAL (R10-10a) sign may be installed adjacent to the signal face that exclusively controls a U-turn movement.

07 If needed for additional emphasis, an additional LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign or LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-V1) with an AT SIGNAL (R10-31P) supplemental plaque (see Figure 2B-28(VA)) may be installed in advance of the intersection.

08 In situations where traffic control signals are coordinated for progressive timing, the Traffic Signal Speed (I1-1) sign may be used (see Section 2H.04).

Standard:

09 The CROSSWALK—STOP ON RED (symbolic circular red) (R10-23) and STOP ON STEADY RED- YIELD ON FLASHING RED AFTER STOP (R10-23a) signs (see Figure 2B-28(VA)) shall only be used in conjunction with pedestrian hybrid beacons (see Section 4J.02).

10 The EMERGENCY SIGNAL (R10-13) sign (see Figure 2B-28(VA)) shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4M.02).

11 The EMERGENCY SIGNAL—STOP ON FLASHING RED (R10-14 or R10-14a) sign (see Figure 2B-28(VA)) shall be used in conjunction with emergency-vehicle hybrid beacons (see Section 4N.02).

Option:

12 If needed for extra emphasis, a STOP HERE ON FLASHING RED (R10-14b) sign may be installed with an emergency-vehicle hybrid beacon.

Standard:

13 **The Left Turn Yield to Bicycles (R10-12b) sign shall be limited to applications where the conflicting bicyclist movement would be unexpected in direction, location, or similar condition that would tend to violate the expectation of a turning motorist.**

Guidance:

14 The Left Turn Yield to Bicycles sign should be located adjacent to the left-turn signal face.

Option:

15 If needed for additional emphasis, an additional Left Turn Yield to Bicycles sign with an AT SIGNAL (R10-31P) supplemental plaque (see Figure 2B-28(VA)) may be installed in advance of the intersection for motor vehicles.

16 Where conditions might warrant additional emphasis to drivers turning at a signalized intersection where potential pedestrian conflicts might not be readily apparent, a Turning Vehicles Yield to ~~(Stop for)~~ Pedestrians (R10-15~~, R10-15a~~) sign (see Figure 2B-28(VA)) may be used.

Standard:

17 The Turning Vehicles Stop for Pedestrians (R10-15a) sign shall only be used in jurisdictions where laws, ordinances or resolutions specifically require that a driver must stop for a pedestrian.

17a When used, the Turning Vehicles Yield to Pedestrians (R10-15) sign shall utilize a fluorescent yellow-green background (see Figure 2B-28(VA)).

Guidance:

18 The R10-15 series signs, where used, should be placed as follows:

A. On the near right corner of the signalized intersection for right-turning vehicles.
B. On the far left corner of the signalized intersection for the left-turning vehicles onto a two-way street.
C. On the near left corner of the signalized intersection for left-turning vehicles from a one-way street onto a one-way street.

Section 2B.60 No Turn on Red Signs (R10-11 Series, R10-17a, and R10-30)

Standard:

01 Where a right turn on a circular red signal indication (or a left turn on a circular red signal indication from a one-way street to a one-way street) is to be prohibited, a NO TURN ON RED (R10-11, R10-11b) word message sign (see Figure 2B-28(VA)) shall be used. A NO TURN ON RED (symbolic circular red) (R10-11a) sign (see Figure 2B-28(VA)) shall be used when the approach is controlled by both circular red and red arrow indications.

Guidance:

02 If used, the No Turn on Red sign should be installed near the appropriate signal head.

03 A No Turn on Red sign should be considered when an engineering study finds that one or more of the following conditions exists:

A. Inadequate sight distance to vehicles approaching from the left (or right, if applicable);
B. Geometrics or operational characteristics of the intersection that might result in unexpected conflicts;
C. An exclusive pedestrian or bicycle phase;
D. An unacceptable number of conflicting pedestrian movements with right-turn-on-red maneuvers, especially involving children, older pedestrians, or persons with disabilities;
E. More than three right-turn-on-red crashes reported in a 12-month period for the particular approach; or
F. The skew angle of the intersecting roadways creates difficulty for drivers to see traffic approaching from their left (or right, if applicable).

Standard:

04 If an R10-11, R10-11a, R10-11b, or R10-17a sign with conventional road size as shown in Table 2B-1 is used on an approach on the far side of the intersection and the distance between the stop line and the sign is greater than 120 feet, then a duplicate sign shall be located on the near side of the intersection to supplement the sign on the far side of the intersection.

Option:

05 When a no-turn-on-red restriction applies during certain time periods only, the following alternatives may be used:

A. Movement Prohibition (R3-1, R3-2, R3-4, R3-18, and R3-27) signs or NO TURN ON RED signs displayed by using a blank-out sign for the time period or one or more portion(s) of a particular cycle of the traffic control signal during which the prohibition is applicable; or
B. Static signs incorporating a supplemental legend or with a supplemental R10-20aP plaque (see Figure 2B-28(VA)) showing the hours and days during which the prohibition is applicable.

06 White LEDs may be used in the border and activated during periods of turn prohibition to enhance the sign conspicuity.

07 On signalized approaches with more than one right-turn lane, a NO TURN ON RED EXCEPT FROM RIGHT LANE (R10-11c) sign (see Figure 2B-28(VA)) may be post-mounted at the intersection or a NO TURN ON RED FROM THIS LANE (with down arrow) (R10-11d) sign (see Figure 2B-28(VA)) may be mounted over the approximate center of the lane from which turns on red are prohibited.

~~*Guidance:*~~

~~*08 Where turns on red are permitted and the signal indication is a steady RED ARROW, the RIGHT (LEFT) ON RED ARROW AFTER STOP (R10-17a) sign (see Figure 2B-28) should be installed adjacent to the RED ARROW signal indication.*~~

Support:

08a Turns on a steady RED ARROW indication are not permitted according to § 46.2-835 of the Code of Virginia.

Option:

09 A RIGHT TURN ON RED MUST YIELD TO U-TURN (R10-30) sign (see Figure 2B-28(VA)) may be installed to remind road users that they must yield to conflicting U-turn traffic on the street or highway onto which they are turning right on a red signal after stopping.

Section 2B.61 Ramp Metering Signs (R10-28 and R10-29)

Option:

01 When ramp control signals (see Chapter 4P) are used to meter traffic on a freeway or expressway entrance ramp, regulatory signs with legends appropriate to the control may be installed adjacent to the ramp control signal faces.

02 For entrance ramps with only one controlled lane, an XX VEHICLE(S) PER GREEN (R10-28) sign (see Figure 2B-29) may be used to inform road users of the number of vehicles that are permitted to proceed during each short display of the green signal indication. For entrance ramps with more than one controlled lane, an XX VEHICLE(S) PER GREEN EACH LANE (R10-29) (see Figure 2B-29) sign may be used to

inform road users of the number of vehicles that are permitted to proceed from each lane during each short display of the green signal indication.

Support:

03 Chapter 2L contains provisions for the use of blank-out or changeable message signs when the metering is limited by time, day, or condition.

ROAD CLOSED AND WEIGHT LIMIT SIGNS

Section 2B.62 KEEP OFF MEDIAN Sign (R11-1)

Option:

01 The KEEP OFF MEDIAN (R11-1) sign (see Figure 2B-30(VA)) may be used to prohibit driving into or parking on the median.

Guidance:

02 The KEEP OFF MEDIAN sign should be installed on the left-hand side of the roadway within the median at random intervals as needed wherever there is a tendency for encroachment.

Section 2B.63 ROAD CLOSED Sign (R11-2) and LOCAL TRAFFIC ONLY Signs (R11-3 Series, R11-4)

Guidance:

01 The ROAD CLOSED (R11-2) sign should be installed where roads have been closed to all traffic (except authorized vehicles).

02 ROAD CLOSED—LOCAL TRAFFIC ONLY (R11-3) or ROAD CLOSED TO THRU TRAFFIC (R11-4) signs should be used where through traffic is not permitted, or for a closure some distance beyond the sign, but where the highway is open for local traffic up to the point of closure.

Standard:

03 The Road Closed (R11-2, R11-3 series, and R11-4) signs (see Figure 2B-30(VA)) shall be designed as horizontal rectangles. These signs shall be preceded by the applicable Advance Road Closed warning sign with the secondary legend AHEAD and, if applicable, an Advance Detour warning sign (see Section 6H.04).

Option:

04 An intersecting street name or a well-known destination may be substituted for the XX MILES AHEAD legend in urban areas.

05 The word message BRIDGE OUT may be substituted for the ROAD CLOSED legend where applicable.

06 Where conditions allow for bicycle travel on the road beyond the point of closure to motor vehicles, an EXCEPT BICYCLES (R3-7bP) plaque (see Figure 2B-4(VA)) may be used with the ROAD CLOSED sign.

Section 2B.64 Weight Limit Signs (R12-1 through R12-4, R12-7, R12-V1 through R12-V8, R12-VP1)

Standard:

01 Weight limit signs (see Figure 2B-30(VA)) shall be used to indicate a section of highway or structure that has a vehicle weight restriction.

Guidance:

02 The units shown on any weight limit sign should be consistent within a State or region with respect to pounds or tons.

Option:

03 Where the restriction applies to axle weight rather than gross load, the legend AXLE WEIGHT LIMIT XX TONS or AXLE WEIGHT LIMIT XX LBS (R12-2) may be used.

04 In areas where multiple regulations are applicable, such as limiting both axle weight and gross vehicle weight, a WEIGHT LIMIT XX TONS PER AXLE, XX TONS GROSS (R12-4) sign combining the necessary messages on a single sign may be used.

~~05 Posting of specific load limits may be accomplished by use of the Weight Limit (R12-5) symbol sign. A sign containing the legend WEIGHT LIMIT on the top two lines, and showing up to three different truck symbols and their respective weight limits for which restrictions apply may be used, with the weight limits displayed to the right of each symbol as XX T. A bottom line of legend stating GROSS WT may be included if needed for enforcement purposes.~~

05a The Code of Virginia § 46.2-1130 prohibits vehicles from crossing any bridge or culvert if the gross weight of such vehicle is greater than the amount posted for the bridge or culvert as its carrying capacity.

Standard:

05b In accordance with the Code of Virginia, Weight Limit symbol (R12-V1 through R12-V8) signs and R12-VP2 and R12-VP3 plaques (see Figure 2B-30(VA)) shall be installed near each end of bridges and culverts as described in Paragraph 05a. Additionally, Weight Limit symbol signs shall be installed in advance of the last alternate route approaching the bridge. At the nearest junction upstream of the bridge, Virginia Weight Limit signs shall also be installed in both directions of the cross streets so as to prevent turning traffic from approaching the bridge. Figure 2B-V2 shows an example of such signing.

05c The R12-5, R12-6, R12-7, and R12-7aP Weight Limit signs shall not be used.

~~Support:~~

~~06 A specialized hauling vehicle is a single unit truck with multiple closely-spaced axles. Examples include dump trucks, construction vehicles, solid waste trucks and other hauling trucks. Specialized hauling vehicles typically have 4 to 7 axles.~~

~~Option:~~

~~07 The Weight Limit (R12-6) sign may be used to indicate vehicle weight restrictions for specialized hauling vehicles.~~

Guidance:

07a If the weight restriction for a single unit truck is over 20 tons, the truck symbol should show tandem axles on the rear. If the weight restriction for a tractor-trailer combination is over 30 tons, the trailer symbol should show tandem axles.

07b Table 2C-3 should be used to determine the placement distance of the signs in advance of the last alternate route. One additional Weight Limit symbol (R12-V1) sign should be installed a maximum of 150 feet beyond the last intersection on the approach road in advance of the bridge or culvert.

Option:

07c An advisory distance ahead plaque (see Section 2C.61) may be placed in advance of the last alternate route intersection.

Standard:

08 The symbols shown on ~~the R12-5 and R12-6~~ R12-V1 Weight Limit sign shall apply to all trucks of that configuration (single-unit, single-trailer or multi-trailer) regardless of the shape of the vehicle. Symbolic representations of other vehicle shapes or modifications of standard symbols shall not be used.

08a Where a Weight Limit symbol (R12-V1) sign is installed because of a weight restriction on a bridge, the BRIDGE (R12-VP1) plaque shall be mounted above.

08b When the advance signs are installed on the approach roads, a third sign consisting of the appropriate Directional Arrow Auxiliary (M6 Series) sign (see Section 2D.28) shall be included below the Weight Limit symbol sign to indicate the direction of the structure.

Option:

~~09 The facility type (such as "BRIDGE") may be added to the legend of the sign to clarify the specific applicability of the weight limit.~~

09a Restricted structures on secondary routes may be signed using the R12-1 sign if engineering judgment determines that significant volumes of trucks carrying semi-trailers are not present.

Guidance:

09b When using the Option described in Paragraph 09a above, advance signing should consist of the same signing as required in Paragraphs 05b through 08b above, with the R12-1 sign substituting for the R12-V1 sign.

Standard:

10 If the ~~R12-5~~ R12-V1 sign depicts only one single-unit vehicle symbol, the weight limit associated with that single-unit vehicle symbol shall apply to all single-unit vehicles, regardless of number of axles.

11 The weight limit associated with the single-trailer vehicle symbol shall apply to all single-trailer vehicles, regardless of number of axles or vehicle shape.

12 The weight limit associated with the multi-trailer vehicle symbol shall apply to all multi-trailer vehicles with two or more trailers, regardless of number of axles or vehicle shape.

13 A weight limit sign (see Figure 2B-30(VA)) shall be located at the applicable section of highway or structure.

14 An additional weight limit sign, with an advisory distance or directional legend, shall be located in advance of the applicable section of highway or structure so that prohibited vehicles can detour or turn around prior to the limit zone.

Support:

14a The R12-V1 sign design is variable based on the weight restrictions determined for the truck classifications. Refer to the "Virginia Standard Highway Signs" book for design details.

15 An emergency vehicle is designed to be used under emergency conditions to transport personnel and equipment to support the suppression of fires and mitigation of other hazardous situations. Emergency vehicles are typically operated by fire departments and are primarily equipped for firefighting, but are also used to respond to and mitigate other hazardous situations in an emergency. They can create higher load effects compared to non-emergency vehicles of similar weight.

Option:

16 The Emergency Vehicle Weight Limit (~~R12-7~~ R12-V7 or R12-V8) sign carrying the legend EMERGENCY VEHICLE WEIGHT LIMIT ~~SINGLE AXLE~~ XX TONS, ~~TANDEM XX TONS, and GROSS XX TONS~~ or EMERGENCY VEHICLE WEIGHT LIMIT 2 AXLES XX T 3 AXLES XX T may be used to indicate vehicle weight restrictions for emergency vehicles.

Standard:

17 When the emergency-vehicle weight limit is displayed in the same assembly as the primary weight limit sign, the Emergency Vehicle Weight Limit (~~R12-7aP~~ R12-VP2 or R12-VP3) plaque shall be mounted below.

Section 2B.65 Weigh Station Sign (R13-1)

Guidance:

01 An R13-1 sign with the legend TRUCKS OVER XX TONS MUST ENTER WEIGH STATION NEXT RIGHT (see Figure 2B-31) should be used to direct appropriate traffic into an inspection station.

02 The R13-1 sign should be supplemented by the D8 series of guide signs (see Section 2D.51).

Section 2B.66 TRUCK ROUTE Sign (R14-1)

Guidance:

01 The TRUCK ROUTE (R14-1) sign (see Figure 2B-31) should be used to mark a route that has been designated to allow truck traffic.

Support:

02 Section 2D.20 contains information regarding the use of the TRUCK (M4-4P) auxiliary plaque (see Figure 2D-5) on a designated numbered alternative route.

Section 2B.67 Hazardous Material Signs (R14-2 and R14-3)

Option:

01 The Hazardous Material Route (R14-2) sign (see Figure 2B-31) may be used to identify routes that have been designated by proper authority for vehicles transporting hazardous material.

02 On routes where the transporting of hazardous material is prohibited, the Hazardous Material Prohibition (R14-3) sign (see Figure 2B-31) may be used.

Guidance:

03 If used, the Hazardous Material Prohibition sign should be installed on a street or roadway at a point where vehicles transporting hazardous material have the opportunity to take an alternate route.

Section 2B.68 National Network Signs (R14-4 and R14-5)

Support:

01 The signing of the National Network routes for trucking is optional.

Standard:

02 When a National Network route is signed, the National Network (R14-4) sign (see Figure 2B-31) shall be used.

Option:

03 The National Network Prohibition (R14-5) sign (see Figure 2B-31) may be used to identify routes, portions of routes, and ramps where trucks are prohibited. The R14-5 sign may also be used to mark the ends of designated routes.

OTHER REGULATORY SIGNS AND PLAQUES

Section 2B.69 Photo Enforced Signs and Plaques (R10-18, R10-18a, R10-19P, R10-19aP)

Option:

01 A Traffic Laws Photo Enforced (R10-18) sign (see Figure 2B-32) may be installed at a jurisdictional boundary to advise road users that some of the traffic regulations within that jurisdiction are being enforced by photographic equipment.

02 A Traffic Signal Photo Enforced (R10-18a) sign (see Figure 2B-32) may be installed in advance of or at a traffic signal to advise road users that compliance with the signal is enforced by photographic equipment. A Signal Ahead (W3-3) sign and a Traffic Signal Photo Enforced (R10-18a) sign may be used on the same approach provided that they are on separate supports.

03 A Photo Enforced (R10-19P) plaque or a PHOTO ENFORCED (R10-19aP) word message plaque (see Figure 2B-32) may be mounted below a regulatory sign to advise road users that the regulation is being enforced by photographic equipment.

Standard:

04 The Traffic Signal Photo Enforced (R10-18a) sign shall not be installed on approaches to signalized locations where red-light cameras are not present on any of the approaches to the signalized location.

05 If used, the Traffic Signal- PHOTO ENFORCED (R10-18a) sign shall be individually installed on a separate post or mounting. A Traffic Signal Photo Enforced (R10-18a) sign shall not be installed on the same support in combination with a Signal Ahead (W3-3) sign. A Signal Ahead (W3-3) sign and a Traffic Signal – PHOTO ENFORCED (R10-18a) sign are permitted on the same approach, however they shall be installed on separate sign structures.

06 If used below a regulatory sign, the Photo Enforced (R10-19P or R10-19aP) plaque shall be a rectangle with a black legend and border on a white background.

Guidance:

06a If used, the Traffic Signal – PHOTO ENFORCED (R10-18a) sign should be located on the right-hand side of the roadway far enough in advance of the stop line to provide adequate notice to approaching road users.

Option:

06b On one-way streets, or where a median of sufficient width is present, an additional Traffic Signal – PHOTO ENFORCED (R10-18a) sign may be placed on the left-hand side of the roadway in accordance with Paragraph 14 of Section 2A.13.

Section 2B.70 Move Vehicles from Travel Lanes Sign (R16-4V)

Option:

01 A CRASH – NO INJURIES – MOVE VEHICLES FROM TRAVEL LANES (R16-4V) ~~STATE LAW MINOR CRASHES MOVE VEHICLES FROM TRAVEL LANES (R16-4)~~ sign (see Figure 2B-33(VA)) may be installed in accordance with the provisions of Section 2A.01 to require motorists to move their vehicle out of the travel lanes if they have been involved in a crash.

~~02 If the specific requirements of a State law vary, the word legend of the R16-4 sign may be modified to reflect the appropriate law.~~

Guidance:

02a The R16-4V sign should be placed at locations with major highway construction, and at locations where traffic congestion is known to occur.

Support:

02b For more information on the use of the R16-4V sign for temporary traffic control applications, see Section 6F.17 of the "Virginia Work Area Protection Manual."

02c The sign placement guidelines described in Paragraph 02a are in accordance with Virginia 1999 House Joint Resolution 570.

Guidance:

02d A CALL CELLULAR #77 FOR STATE POLICE (D12-V1) sign should be installed below a CRASH – NO INJURIES – MOVE VEHICLES OFF TRAVEL LANES (R16-4V) sign (see Section 2I.09). If used, the two signs should be the same width.

Section 2B.71 Move Over or Reduce Speed Sign (R16-3)

Option:

01 A ~~STATE LAW MOVE OVER OR REDUCE SPEED FOR VEHICLES STOPPED ON SHOULDER (R16-3)~~ STATE LAW MOVE OVER OR REDUCE SPEED FOR STOPPED VEHICLES WITH FLASHING LIGHTS (R16-3V) sign (see Figure 2B-33(VA)) may be installed in accordance with the provisions of Section 2A.01 to require motorists to change lanes and/or reduce speed when passing stopped ~~emergency~~ vehicles on the shoulder.

~~02 If the specific requirements of a State law vary, the word legend of the R16-3 sign may be modified to reflect the appropriate law.~~

Support:

02a The Code of Virginia §46.2-861.1 requires drivers to make a lane change or reduce speed when passing any stationary vehicles that have activated the hazard warning signals or displays caution signs on certain highways when safe and reasonable to do so.

Section 2B.72 No Hand-Held Phone Use by Driver Signs (R16-15 and R16-15a)

Option:

01 A STATE LAW NO HAND-HELD PHONE USE BY DRIVER (R16-15 or R16-15a) sign (see Figure 2B-33(VA)) may be installed in accordance with the provisions of Section 2A.01 to notify drivers that they are prohibited from using hand-held telephones while driving.

02 If the specific requirements of a State law vary, the word legend of the R16-15 series signs may be modified to reflect the appropriate law.

Section 2B.73 Headlight Use Signs (R16-5 through R16-11)

Support:

01 ~~Some States~~ Virginia requires road users to turn on their vehicle headlights under certain weather conditions, as a safety improvement measure on roadways experiencing high crash rates, or in special situations such as when driving through a tunnel.

02 Figure 2B-34 shows the various signs that can be used for informing motorists of these requirements.

Standard:

03 A LIGHTS ON WHEN USING WIPERS (R16-5) sign ~~or a LIGHTS ON WHEN RAINING (R16-6) sign may~~ shall be installed ~~in accordance with the provisions of Section 2A.01 to inform road users of State laws regarding headlight use. Although these signs are typically installed facing traffic entering the State just inside the State border, they also may be installed at other locations within the State~~ on interstates and other major routes at or near the State boundary facing traffic entering Virginia.

03a The LIGHTS ON WHEN RAINING (R16-6) sign shall not be used in Virginia.

Support:

03b In accordance with the Code of Virginia § 46.2-1030, drivers are required to turn on vehicle headlights when using wipers. The Code of Virginia does not require drivers to turn on vehicle headlights when raining if wipers are not being used; therefore the R16-5 sign is not used in Virginia.

Option:

03c These signs may also be installed at other locations within the State where engineering judgment determines they are necessary.

Guidance:

04 If a particular section of roadway has been designated as a safety improvement zone within which headlight use is required, a TURN ON HEADLIGHTS NEXT XX MILES (R16-7) sign or a BEGIN DAYTIME HEADLIGHT SECTION (R16-10) sign should be installed at the upstream end of the section, and an END DAYTIME HEADLIGHT SECTION (R16-11) sign should be installed at the downstream end of the section.

Option:

05 A TURN ON HEADLIGHTS (R16-8) sign may be installed to require road users to turn on their headlights in special situations such as when driving through a tunnel. A CHECK HEADLIGHTS (R16-9) sign may be installed downstream from the special situation to inform drivers that using their headlights is no longer required.

Section 2B.74 Seat Belt Symbol

Guidance:

01 The seat belt symbol should not be used alone. If used, the seat belt symbol should be incorporated into regulatory sign messages for mandatory seat belt use.

Support:

02 The seat belt symbol is illustrated in the "Standard Highway Signs" publication (see Section 1A.05).

Section 2B.V1 Anti-Littering Signs (R0-V1, R0-V2)

Option:

01 The following signs may be utilized where there is evidence of trash along the roadway or littering activity (see Figure 2B-V3):

1. NO DUMPING (R0-V1) signs;
2. LITTERING IS ILLEGAL (R0-V2) signs.

Section 2B.V2 Radar and Speed Limit Enforcement Signs (R0-V3, R0-V4, R0-V7)

Support:

01 The following messages are used to convey Virginia-specific laws pertaining to speed limit enforcement and the use of radar detectors (see Figure 2B-V4):

1. SPEED CHECKED BY RADAR AND OTHER ELECTRICAL DEVICES (R0-V3)
2. RADAR DETECTORS ILLEGAL (R0-V4)

Standard:

02 In cooperation with the Virginia State Police (VSP), signs used to communicate speed limit enforcement and the use of radar detectors shall be installed on Interstate, U.S., and Primary routes at or near the State boundary facing traffic entering Virginia and at other locations determined by the VSP and engineering judgment.

03 Such signs shall have a white legend and border on a black background.

Section 2B.V3 Highway Safety Corridor Signs (R0-V5, R0-V6, R0-9cP (V))

Support:

01 In accordance with the Code of Virginia §§ 33.1-223.2:8 and 46.2-947, Highway Safety Corridors are officially designated primary route segments with unusually high crash rates. Drivers committing traffic violations in these corridors are subject to higher fines than usual. Moving violation fines are no more than $500, and criminal traffic offenses are no less than $200.

02 HIGHWAY SAFETY CORRIDOR FINES (R0-V5) signs (see Figure 2B-V5 in this Manual) are used to communicate the presence of an officially designated Highway Safety Corridor and the fines for violating one of Virginia's driving laws while driving within such an area.

Standard:

03 In accordance with the Code of Virginia, Highway Safety Corridors shall only be established on Virginia Primary and Interstate highways. Highway Safety Corridor signs shall only be installed on Virginia Primary and Interstate highways.

04 HIGHWAY SAFETY CORRIDOR FINES (R0-V5) signs shall be placed at the beginning of each officially designated Highway Safety Corridor and at other points throughout the corridor based on engineering judgment.

Guidance:

05 Engineering judgment used in determining the location of HIGHWAY SAFETY CORRIDOR FINES (R0-V5) signs should take into consideration placement of these signs after entrance ramps to inform drivers that they are entering a Highway Safety Corridor.

Standard:

06 A BEGIN (R3-9cP) auxiliary plaque (see Section 2B.25 of this Manual and Figure 2B-V5 in this Manual) shall be placed above the R0-V5 sign denoting the beginning of the officially designated Highway Safety Corridor.

07 An END HIGHWAY SAFETY CORRIDOR (R0-V6) sign (see Figure 2B-V5 in this Manual) shall be used to denote the end of the officially designated Highway Safety Corridor.

Support:

08 Additional information about the Highway Safety Corridor Program can be found on VDOT's web site (link provided in Appendix A).

Section 2B.V4 Rest Area Directional Sign (R0-V8)

Standard:

01 Rest Area Directional Signs (R0-V8) (see Figure 2B-V6) shall be installed at the entrances to Rest Areas to direct traffic to the appropriate parking area.

Support:

02 The Rest Area Directional Sign is designed for the specific layout of the individual Rest Area. The exact location and layout of the sign will vary depending on the specific Rest Area to which it applies. Typical lines of text used on Rest Area Directional Signs include:

A. CARS ONLY
B. TRUCKS-BUSES
C. ALL TOWED VEHICLES

Guidance:

03 The placement and orientation of the arrows and the order of the lines of text should follow the guidelines in Section 2D.36.

Section 2B.V5 TOWED VEHICLES Plaque (R2-VP1)

Support:

01 The Code of Virginia § 46.2-870 establishes a speed limit of 45 miles per hour for vehicles being used to tow a vehicle designed for self-propulsion, or a house trailer.

Guidance:

02 TOWED VEHICLES (R2-VP1) plaques (see Figure 2B-3(VA)) should be installed below SPEED LIMIT (R2-1) signs on roadways with a speed limit greater than 45 mph where there is a significant volume of towed vehicles.

Section 2B.V6 NO FISHING FROM BRIDGE Signs (R9-V1)

Option:

01 The NO FISHING FROM BRIDGE (R9-V1) sign (see Figure 2B-V7) may be used at bridges from which fishing is prohibited.

Guidance:

02 If used, R9-V1 signs should be installed at both ends of the bridge to communicate this prohibition to bridge users approaching from either direction.

Section 2B.V7 Commercial Vehicle Lane Restriction Signs (R4-V Series)

Support:

01 In accordance with the Code of Virginia §§ 46.2-803.1 and 46.2-804, signs for communicating lane restrictions for commercial vehicles are listed below (see Figure 2BV8):

1. STEEP GRADE AHEAD (W7-VP1) plaque (see Section 2C.V2);
2. NO COMMERCIAL VEHICLES IN LEFT LANE – BUSES ALLOWED (R4-V2);
4. TRUCKS & COMBINATION VEHICLES BELOW 65 MPH – USE RIGHT LANE (R4-V4); and
5. END COMMERCIAL VEHICLE RESTRICTION (R4-V3).

A commercial vehicle is defined in the Code of Virginia § 46.2-341.4.

Standard:

02 R4-V1 or R4-V2 signs shall be installed at the beginning of each roadway segment where a commercial vehicle lane restriction exists and at other points within the roadway segment where engineering judgment determines these signs are necessary.

03 R4-V4 signs shall be installed at the beginning of each roadway segment where an engineering study justifies their use, taking into account factors such as grade and heavy vehicle volumes. The signs shall also be installed at other points within the roadway segment where engineering judgment determines these signs are necessary.

Option:

04 A STEEP GRADE AHEAD (W7-VP1) plaque (see Figure 2B-V8) may be placed above an R4-V1 or R4-V4 sign (see Section 2C.V2).

Standard:

05 The END COMMERCIAL VEHICLE RESTRICTION (R4-V3) sign (see Figure 2B-V8) shall be used at the end of the lane restrictions communicated by the R4- V1, R4-V2, and R4-V2a signs.

Section 2B.V8 Pedestrian Swing Bridge Sign (R9-V2)

Standard:

01 The Pedestrian Swing Bridge (R9-V2) sign (see Figure 2B-V9) shall be installed at or within ten feet of each entry to pedestrian swing bridges.

Support:

02 For additional information pertaining to signing for pedestrian swing bridges, refer to the Maintenance Division's "Maintenance Division Best Practices Manual," the location of which is shown in Appendix A.

Section 2B.V9 ATV Signs

Standard:

01 The ATV ROUTE (R9-V1) sign (see Figure 2B-V10) shall be installed at the beginning of any section of highway where off-road recreational vehicles are authorized to operate per an ordinance enacted per § 46.2-800.2 of the Code of Virginia.

02 The End ATV Route (R9-V1) sign (see Figure 2B-V10) shall be installed at the end of the any section of highway where off-road recreational vehicles are authorized to operate per an ordinance enacted per § 46.2-800.2 of the Code of Virginia.

Support:

03 The Code of Virginia § 46.2-800.2 authorizes localities embraced by the Southwest Regional Recreation Authority to pass an ordinance allowing the use of off-road recreational vehicles (ATVs) to operate on certain highways within its boundaries. The Code of Virginia requires the installation of the ATV regulatory signs described in Paragraphs 1 and 2 and the warning sign described in Section 2C.54.

Section 2B.V10 Truck Length Limit Sign (R0-V9)

Standard:

01 The TRUCKERS TRACTOR TRAILERS OVER 65 FEET TOTAL LENGTH PROHIBITED (R0-V9) sign shall be installed at the beginning of and following major intersections along any section of highway where the Commissioner of Highways has imposed a restriction on trucks longer than 65 feet in total length per § 46.2-1112 of the Code of Virginia.

Support:

02 The Code of Virginia § 46.2-1112 authorizes the Commissioner of Highways to impose restrictions on the operation of vehicles exceeding 65 feet in total length on certain highways.

BARRICADES AND GATES

Section 2B.75 Barricades

Option:

01 Barricades may be used to mark any of the following conditions:

A. The end of a roadway,
B. A ramp or lane that is closed for operational purposes, or
C. The permanent or semi-permanent closure or termination of a roadway.

Standard:

02 When used to warn and alert road users of the terminus of a roadway, other than in temporary traffic control zones, barricades shall meet the design criteria of Section 6K.07 for a Type 3 Barricade, except that the colors of the stripes shall be retroreflective white and retroreflective red.

Option:

03 An end-of-roadway marker or markers may be used as described in Section 2C.73.

Guidance:

04 Appropriate advance warning signs (see Chapter 2C) should be used.

Section 2B.76 Gates

Support:

01 Gates described in this section used for weather or other emergency conditions are typically permanently installed to enable the gate to be immediately deployed as needed to prohibit the entry of traffic to the highway segment(s).

02 A gate typically features a gate arm that is moved from a vertical to a horizontal position or is rotated in a horizontal plane from parallel to traffic to perpendicular to traffic. Traffic is obstructed and required to stop when the gate arm is placed in a horizontal position perpendicular to traffic. Another type of gate consists of a segment of fence (usually on rollers) that swings open and closed, or that is retracted to open and then extended to close.

03 Gates are sometimes used to enforce a required stop. Some examples of such uses are the following:

A. Parking facility entrances and exits,
B. Private community entrances and exits,
C. Military base entrances and exits,
D. Toll plaza lanes,
E. Movable bridges (see Chapter 4Q),
F. Automated Flagger Assistance Devices (see Chapter 6L), and
G. Grade crossings (see Part 8).

04 Gates are sometimes used to periodically close a roadway or a ramp. Some examples of such uses are the following:

A. Closing ramps to implement counter-flow operations for evacuations,
B. Closing ramps that lead to reversible lanes, and
C. Closing roadways for weather events such as snow, ice, or flooding, or for other emergencies.

Standard:

05 Except as provided in Paragraph 6 of this Section, gate arms, if used, shall be fully retroreflective on both sides, have vertical stripes alternately red and white at 16-inch intervals measured horizontally as shown in Figure 8D-1. The width (which becomes the height of the retroreflective sheeting when the gate is in the down position) of the retroreflective sheeting on the front of the gate arm shall be at least 4 inches.

Option:

06 If used on a one-way roadway or ramp, the retroreflective sheeting may be omitted on the side of the gate (or rolling fence) facing away from approaching traffic.

07 Where gate arms are used to block off ramps into reversible lanes or to redirect approaching traffic, the red and white striping may be angled such that the stripes slope downward at an angle of 45 degrees toward the side of the gate arm on which traffic is to pass.

Standard:

08 The gate arm shall extend across the approaching lane or lanes of traffic to effectively block motor vehicle, bicycle, and/or pedestrian travel as appropriate.

Guidance:

09 When a gate that is rotated in a horizontal plane is in the position where it is parallel to traffic (indicating that the roadway is open), the outer end of the gate arm should be rotated to the downstream direction (from the perspective of traffic in the lane adjacent to the gate support) to prevent spearing if the gate is struck by an errant vehicle.

Standard:

10 If red lights are attached to a traffic gate, the red lights shall be steadily illuminated or flashed only during the period when the gate is in the horizontal or closed position and when the gate is in the process of being opened or closed.

11 Except as provided in Paragraph 6 of this Section, rolling sections of fence, if used, shall include either a horizontal strip of retroreflective sheeting on both sides of the fence with vertical stripes alternately red and white at 16-inch intervals measured horizontally to simulate the appearance of a gate arm in the horizontal position, or one or more Type 4 object markers (see Section 2C.73), or both. If a horizontal strip of retroreflective sheeting is used, the bottom of the sheeting shall be located 3.5 to 4.5 feet above the roadway surface.

CHAPTER 2C. WARNING SIGNS AND OBJECT MARKERS

Chapter 2C Subchapter and Section Organization

GENERAL

Section 2C.01 Application of Warning Signs

Standard:

01 The use of warning signs shall be based on an engineering study or on engineering judgment.

02 Warning signs shall be retroreflective or illuminated (see Section 2A.21).

Guidance:

03 The use of warning signs should be kept to a minimum as the unnecessary use of warning signs tends to breed disrespect for all signs. In situations where the condition or activity is seasonal or temporary, the warning sign should be removed or covered when the condition or activity does not exist.

Section 2C.02 Design of Warning Signs

Standard:

01 Except as provided in Paragraph 2 of this Section or unless specifically designated otherwise, all warning signs shall be diamond-shaped (square with one diagonal vertical) with a black legend and border on a yellow background. Warning signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the "Standard Highway Signs" publication (see Section 1A.05).

01a Warning signs regarding conditions associated with pedestrians, bicyclists, and playgrounds and their related plaques shall have a black legend and border on a fluorescent yellow-green background.

Option:

02 A warning sign that is larger than the size shown in the Oversized column in Table 2C-1 for that particular sign may be diamond-shaped or may be rectangular or square in shape.

Support:

03 The use of a shape other than diamond-shaped is typical for overhead installations.

04 Section 2A.05 contains information on allowable methods to accommodate a diamond-shaped warning sign where the lateral space available in which to install a diamond-shaped warning sign is constrained, such as in urban locations, when mounting on a narrow median barrier or adjacent to a retaining wall, including the display of the standard legend in a vertically oriented rectangle.

05 The use of LEDs in the border and legend of warning signs is described in Section 2A.12.

Option:

06 Except for symbols on warning signs, minor modifications may be made to the design provided that the essential appearance characteristics are met. Modifications may be made to the symbols shown on combined horizontal alignment/intersection signs (see Section 2C.09) and intersection warning signs (see Section 2C.41) in order to approximate the geometric configuration of the intersecting roadway(s).

07 Word message warning signs other than those provided in this Manual may be developed and installed by State and local highway agencies for conditions otherwise not addressed by standard signs (see Section 2A.04).

~~08 Warning signs regarding conditions associated with pedestrians, bicyclists, and playgrounds and their related plaques may have a black legend and border on a yellow or fluorescent yellow-green background.~~

Standard:

09 Warning signs regarding conditions associated with school buses and schools and their related supplemental plaques shall have a black legend and border on a fluorescent yellow-green background (see Section 7B.01).

Option:

10 Consistent with the provisions of Section 4S.03, a Warning Beacon may be used in combination with a standard warning sign.

Section 2C.03 Size of Warning Signs and Plaques

Standard:

01 Except as provided in Section 2A.07, the sizes for warning signs shall be as shown in Table 2C-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2C-1.

Standard:

03 Except as provided in Paragraph 5 of this Section, the minimum size for all diamond-shaped warning signs facing traffic on a multi-lane conventional road where the posted speed limit is higher than 35 mph shall be 36 x 36 inches.

04 The minimum size for supplemental warning plaques that are not included in Table 2C-1 shall be as shown in Table 2C-2.

Option:

05 If a diamond-shaped warning sign is placed on the left-hand side of a multi-lane roadway to supplement the installation of the same warning sign on the right-hand side of the roadway, the minimum size identified in the Single Lane column in Table 2C-1 may be used.

06 Signs and plaques larger than those shown in Tables 2C-1 and 2C-2 may be used (see Section 2A.11).

Guidance:

07 The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps at major interchanges connecting an Expressway or Freeway with an Expressway or Freeway (see Section 2E.11) should be the size identified in Table 2C-1 for the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway Column, the Expressway size should be used. If a minimum size is not provided in the Freeway or the Expressway Column, the Oversized size should be used.

08 The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps at all other interchanges (see Section 2E.11) should be 36 x 36 inches.

09 The typical size of warning signs used on low-volume rural roads with operating speeds of 30 mph or less should be in accordance with the minimum column of Table 2C-1.

Section 2C.04 Placement of Warning Signs

Support:

01 Information on the placement of warning signs is contained in Sections 2A.13 through 2A.18.

02 The time needed for detection, recognition, decision, and reaction is called the Perception-Response Time (PRT). Table 2C-3 is provided as an aid for determining warning sign location. The distances shown in Table 2C-3 can be adjusted for roadway features, other signing, and to improve visibility.

Guidance:

03 Warning signs should be placed so that they provide an adequate PRT. The distances contained in Table 2C-3 should be applied with engineering judgment.

04 Minimum spacing between warning signs with different messages should be based on the estimated PRT for driver comprehension of and reaction to the second sign.

05 The effectiveness of the placement of warning signs should be periodically evaluated under both day and night conditions.

HORIZONTAL ALIGNMENT WARNING SIGNS AND PLAQUES

Section 2C.05 Horizontal Alignment Warning Signs – General

Support:

01 A variety of horizontal alignment warning signs (see Figure 2C-1), pavement markings (see Chapter 3B), and delineation (see Chapter 3G) can be used to advise motorists of a change in the roadway alignment. Uniform application of these traffic control devices with respect to the amount of change in the roadway alignment conveys a consistent message establishing driver expectancy and promoting effective roadway operations. The design and application of horizontal alignment warning signs to meet those requirements are addressed in Sections 2C.05 through 2C.12.

02 The following list identifies treatments that might be used in advance of or within a change in horizontal alignment:

A. Horizontal alignment (Turn (W1-1), Curve (W1-2, W1-10 series, W1-11, W1-13, W1-15), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), Exit Speed (W13-2), Ramp Speed (W13-3), and Combination Horizontal Alignment (Advisory Exit or Ramp Speed W13-6 through W13-11)) signs (see Sections 2C.07, 2C.09, and 2C.12)
B. Advisory Speed (W13-1P) plaque (see Section 2C.59)
C. Chevron Alignment (W1-8) signs (see Section 2C.08)
D. Delineators (see Chapter 3G)
E. One Direction Large Arrow (W1-6) sign (see Section 2C.10)
F. Raised Retroreflective Pavement Markers (see Sections 3B.15 through 3B.17)
G. Sign or marking conspicuity enhancements (see Section 2A.11)
H. Wide edge lines (see Section 3A.04)
I. Pavement word, symbol and arrow markings (symbol or words) (see Sections 3B.20 through 3B.22)
J. Rumble strips (see Chapter 3K)
K. Vehicle Speed Feedback Sign (see Section 2C.13)
L. Speed reduction markings (see Section 3B.28)

03 In addition, considerations other than traffic control devices, such as improved surface friction (high friction surface treatments), pavement edge treatments, lighting improvements, increased superelevation, and rumble strips, might be used in advance of or within a change in horizontal alignment.

Guidance:

04 Except as provided in Section 2C.06, the selection of traffic control devices used to warn road users of a change in horizontal alignment or to provide guidance in navigating the change in horizontal alignment should be based on consideration of one or more of the following factors:

A. The speed of traffic on the approach to the change in horizontal alignment
B. The recommended advisory speed for the change in horizontal alignment
C. The difference between the speed limit and the advisory speed, or the speed differential for the change in horizontal alignment
D. Daily traffic volumes on the roadway
E. The typical mix of vehicle types on the roadway
F. Sight distance throughout the change in horizontal alignment
G. Other types of traffic control devices that are used in advance of and within the change in horizontal alignment on the same roadway segment
H. The crash history of the change in horizontal alignment
I. The presence of driveways or intersections within the curve radius

Section 2C.06 Device Selection for Changes in Horizontal Alignment

Standard:

01 The criteria shown in Chart A of Table 2C-4 shall be used to determine the need for devices for changes in horizontal alignment. If the use of a device or devices is indicated by Chart A of Table 2C-4, then Chart B of Table 2C-4 shall be used to specify the type(s) of devices to be used in advance of, and/or along, a horizontal curve, except as provided in Paragraphs 3, 5, and 6 of this Section. The speed differential in Chart B of Table 2C-4 shall be the difference between the horizontal curve's advisory

speed and the roadway's posted speed limit, statutory speed limit, or the 85th percentile speed on the approach to the curve.

Support:

02 Chart A of Table 2C-4 represents existing AADT, type of roadway, and whether or not there are existing markings.

Option:

03 A One Direction Large Arrow (W1-6) sign may be used in place of or to supplement delineators (see Chapter 3G) or Chevron Alignment (W1-8) signs when:

A. Site conditions limit the number of delineators or Chevron Alignment signs that are visible; or
B. The number of delineators or Chevron Alignment signs that can be installed within the change in horizontal alignment is less than the number determined by the spacing specified in Sections 2C.08 or 3G.04.

04 Additional or supplemental devices may be used for a change in horizontal alignment on the basis of engineering judgment.

05 Devices for changes in horizontal alignment may be omitted when the speed limit on the approach to an alignment change is 20 mph or less.

06 Devices for changes in horizontal alignment may be omitted on urban streets with an AADT of 1,000 vehicles per day or less.

Support:

07 For purposes of selecting traffic control devices for changes in horizontal alignment, an arterial or collector is considered to have pavement markings when either a center line, edge lines, or both are present. Warrants for center lines and edge lines are provided in Sections 3B.02 and 3B.10, respectively.

Section 2C.07 Horizontal Alignment Signs (W1-1 through W1-5, W1-11, and W1-15)

Standard:

01 If Table 2C-4 indicates that a horizontal alignment sign (see Figure 2C-1) is required, recommended, or allowed, the sign installed in advance of the curve shall be a Curve (W1-2) sign unless a different sign is recommended or allowed by the provisions of this Section.

Guidance:

02 A Turn (W1-1) sign should be used instead of a Curve (W1-2) sign in advance of a horizontal curve that has an advisory speed of 30 mph or less.

03 Where there are two changes in roadway alignment in opposite directions that are separated by a tangent distance of less than 600 feet, the Reverse Turn (W1-3) sign should be used instead of multiple Turn (W1-1) signs or the Reverse Curve (W1-4) sign should be used instead of multiple Curve (W1-2) signs.

Support:

04 Figure 2C-2 provides examples of warning signs used for turns and curves.

Option:

05 A Winding Road (W1-5) sign may be used instead of multiple Turn (W1-1) or Curve (W1-2) signs where there are three or more changes in roadway alignment each separated by a tangent distance of less than 600 feet.

06 A NEXT XX MILES (W7-3aP) supplemental distance plaque (see Section 2C.61) may be installed below the Winding Road sign where continuous roadway curves exist for a specific distance.

07 If the curve has a change in horizontal alignment of 135 degrees or more, the Hairpin Curve (W1-11) sign may be used instead of a Turn or Curve sign.

08 If the curve has a change of direction of approximately 270 degrees, such as on a cloverleaf interchange ramp, the 270-degree Loop (W1-15) sign may be used instead of a Turn or Curve sign.

Guidance:

09 When the Hairpin Curve sign or the 270-degree Loop sign is installed, either a One-Direction Large Arrow (W1-6) sign or Chevron Alignment (W1-8) signs should be installed on the outside of the turn or curve.

Section 2C.08 Chevron Alignment Sign (W1-8)

Standard:

01 The use of the Chevron Alignment (W1-8) sign (see Figures 2C-1 and 2C-2) to provide additional emphasis and guidance for a change in horizontal alignment shall be in accordance with the information shown in Table 2C-4.

Option:

02 Chevron Alignment signs may be used instead of or in addition to standard delineators.

Standard:

03 The Chevron Alignment sign shall be a vertical rectangle. No border shall be used on the Chevron Alignment sign.

04 If used, Chevron Alignment signs shall be installed on the outside of a turn or curve, in line with and at approximately a right angle to approaching traffic. Chevron Alignment signs shall be installed at a minimum height of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

Guidance:

05 The approximate spacing of Chevron Alignment signs on the turn or curve measured from the point of curvature (PC) should be as shown in Table 2C-5.

06 The Chevron Alignment signs should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.

Option:

07 LEDs may be used to enhance the conspicuity of Chevron Alignment signs (see Section 2A.12).

Standard:

08 The LEDs used in the Chevron Alignment sign shall consist of yellow LEDs outlining the chevron symbol.

09 Chevron Alignment signs shall not be placed on the far side of a T-intersection facing traffic on the stem approach to warn drivers that a through movement is not physically possible, as this is the function of a Two-Direction (or One-Direction) Large Arrow sign.

10 Chevron Alignment signs shall not be used to mark obstructions within or adjacent to the roadway, including the beginning of guardrails or barriers, as this is the function of an object marker (see Section 2C.70).

11 Chevron Alignment signs directing traffic to the right shall not be used in the central island of a roundabout or a neighborhood traffic circle.

Guidance:

11a Regulatory Speed Limit signs (see Section 2B.21) should not be located in the vicinity of advisory signs that use a supplemental speed plaque, particularly where they will conflict with the advisory speed displayed.

Section 2C.09 Combination Horizontal Alignment/Intersection Signs (W1-10 Series)

Option:

01 The Turn (W1-1) sign, the Curve (W1-2) sign, and the Reverse Curve (W1-4) sign may be combined with the Cross Road (W2-1) sign or the Side Road (W2-2 or W2-3) sign to create a combination Horizontal Alignment/Intersection (W1-10 series) sign (see Figure 2C-1) that depicts the condition where an intersection occurs within or immediately adjacent to a turn or curve.

Support:

02 Section 2C.65 contains information about the use of an advance street name plaque to identify an intersecting road.

Guidance:

03 Elements of the combination Horizontal Alignment/Intersection sign related to horizontal alignment should comply with the provisions of Section 2C.07, and elements related to intersection configuration should

comply with the provisions of Section 2C.41. The symbol design should approximate the configuration of the intersecting roadway(s). No more than one Cross Road or two Side Road symbols should be displayed on any one combination Horizontal Alignment/Intersection sign.

Standard:

04 The use of the combination Horizontal Alignment/Intersection sign shall be in accordance with the provisions of Section 2C.07 for the appropriate Turn or Curve sign .

Section 2C.10 One-Direction Large Arrow Sign (W1-6)

Option:

01 A One-Direction Large Arrow (W1-6) sign (see Figure 2C-1) may be used either as a supplement or alternative to Chevron Alignment signs or delineators in order to delineate a change in horizontal alignment (see Figure 2C-2(VA)).

02 A One-Direction Large Arrow (W1-6) sign may be used to supplement a Turn (W1-1) or Reverse Turn (W1-3) sign (see Figure 2C-2) to emphasize the abrupt curvature.

Standard:

03 The One-Direction Large Arrow sign shall be a horizontal rectangle with an arrow pointing to the left or right.

04 If used, the One-Direction Large Arrow sign shall be installed on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.

05 The One-Direction Large Arrow sign shall not be used where there is no alignment change in the direction of travel, such as at the beginnings and ends of medians or at center piers.

06 The One-Direction Large Arrow sign directing traffic to the right shall not be used in the central island of a roundabout or a neighborhood traffic circle.

Guidance:

07 The One-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.

Section 2C.11 Truck Rollover Sign (W1-13)

Option:

01 A Truck Rollover (W1-13) sign (see Figure 2C-1) may be used as a supplement to a horizontal alignment warning sign to warn drivers of vehicles with a high center of gravity, such as trucks, tankers, and recreational vehicles, of a curve or turn where there are:

A. Past incidents of truck rollovers at the specific location,
B. High volumes of trucks, or
C. A speed differential (see Section 2C.06) that might pose a greater risk for vehicles with high centers of gravity.

Guidance:

02 Where engineering judgment determines the need for the installation of a Truck Rollover (W1-13) sign, it should be located downstream of the horizontal alignment warning sign in advance of the curve.

Standard:

03 If a Truck Rollover (W1-13) sign is used, it shall be accompanied by an Advisory Speed (W13-1P) plaque indicating the recommended speed for vehicles with a higher center of gravity.

Option:

04 The Truck Rollover sign may include conspicuity enhancements, or may be a blank-out sign, activated by the detection of an approaching vehicle with a high center of gravity that is traveling in excess of the recommended speed for the condition.

Support:

05 The curved arrow on the Truck Rollover sign shows the direction of roadway curvature. The truck tips in the opposite direction.

Standard:

05a W1-13 signs shall be 48" x 48" in size at all locations except where engineering judgment determines that the oversized (60" x 60") sign panel is necessary. 36" x 36" W1-13 signs shall not be used.

05b Advisory Speed (W13-1P) plaques shall be 30" x 30" when used with all W1-13 signs.

Section 2C.12 Advisory Exit and Ramp Speed Signs (W13-2 and W13-3) and Combination Horizontal Alignment/Advisory Exit and Ramp Speed Signs (W13-6 through W13-13)

Standard:

01 Where an advisory speed is posted in advance of a freeway or expressway exit, the Advisory Exit Speed (W13-2) sign (see Figure 2C-1) shall be used.

02 Where an advisory speed is posted in advance of a conventional road ramp or to another roadway or roadside facility, the Advisory Ramp Speed (W13-3) sign (see Figure 2C-1) shall be used.

03 An Advisory Exit Speed or Advisory Ramp Speed sign shall be used when the difference between the mainline roadway speed limit and the exit or ramp advisory speed in the vicinity of the departure is 20 mph or greater.

Guidance:

04 An Advisory Exit Speed or Advisory Ramp Speed sign should be used when the difference between the mainline roadway speed limit and the exit or ramp advisory speed in the vicinity of the departure is 15 mph.

Option:

05 An Advisory Exit Speed or Advisory Ramp Speed sign may be used based on engineering judgment when the difference between the mainline roadway speed limit and the exit or ramp advisory speed in the vicinity of the departure is 10 mph or less.

06 The Combination Horizontal Alignment/Advisory Exit Speed (W13-6, W13-8, and W13-10) signs (see Figure 2C-1) may be used in lieu of the Advisory Exit Speed (W13-2) sign, and the combination Horizontal Alignment/Advisory Ramp Speed (W13-7, W13-9, and W13-11) signs (see Figure 2C-1) may be used in lieu of the Advisory Ramp Speed (W13-3) sign.

07 The Combination Truck Rollover/Advisory Exit Speed and Truck Rollover/Advisory Ramp Speed (W13-12 and W13-13) signs (see Figure 2C-1) may be used in lieu of the W13-2 and W13-3 signs respectively if the tip over condition is in the vicinity of the gore.

Standard:

08 Roadway geometrics represented on the Combination Horizontal Alignment/Advisory Exit and Combination Horizontal Alignment/Advisory Ramp Speed signs (see Figure 2C-1) shall be limited to the standard signs shown in this Manual.

Guidance:

09 If used, the Advisory Exit Speed sign or the Combination Horizontal Alignment/Advisory Exit Speed sign should be installed along the deceleration lane. The Advisory Exit Speed or the Combination Horizontal Alignment/Advisory Exit signs should be visible in time for the road user to decelerate and make an exiting maneuver.

10 Regulatory Speed Limit signs (see Section 2B.21) should not be located in the vicinity of exit ramps or deceleration lanes, particularly where they will conflict with the advisory speed displayed on the Advisory Exit or Ramp Speed signs.

Support:

11 Section 2C.06 contains provisions for the determination of the displayed advisory speed.

12 Table 2C-3 lists recommended advance sign placement distances for deceleration to various advisory speeds.

Option:

13 Where there is a need to remind road users of the recommended advisory speed, a horizontal alignment warning sign with an advisory speed plaque displaying the same advisory speed may be installed at a downstream location along the ramp.

Guidance:

14 If the ramp curvature changes to the extent that it warrants a lower advisory speed, a horizontal alignment warning sign with the new advisory speed should be displayed in advance of the change in curvature.

Option:

15 The One-Direction Large Arrow (W1-6) sign may be installed beyond the exit gore on the outside of the curve to provide additional warning of an immediate change in curvature. When used in conjunction with the exit speed, the One-Direction Large Arrow (W1-6) sign may be supplemented with a Confirmation Advisory Speed (W13-1aP) plaque (see Figure 2C-1) when the plaque is not used with the Exit Gore (E5-1 series) sign.

Guidance:

16 The horizontal alignment symbol displayed on the Combination Horizontal Alignment/Advisory Exit and Ramp Speed signs should be consistent with the horizontal geometry of the ramp.

Support:

17 Examples of advisory speed signing for exit ramps are shown in Figure 2C-3(VA).

Section 2C.13 Vehicle Speed Feedback Sign (Pole Mounted Speed Display) and Plaque (W13-20 and W13-20aP)

Option:

01 A Pole Mounted Speed Display (PMSD), otherwise known as a Vehicle Speed Feedback (W13-20) sign or (W13-20aP) plaque (see Figure 2C-4) that displays the speed of an approaching vehicle to the vehicle operator may be used to provide warning to drivers of their speed in relation to either a speed limit (R2-1) sign or a horizontal alignment warning sign assembly with a posted advisory speed.

Standard:

02 When used to display the speed of an approaching vehicle in relation to the posted speed limit, the Vehicle Speed Feedback (W13-20aP) plaque shall be mounted below a Speed Limit (R2-1) sign (see Section 2B.21).

03 When used to supplement a horizontal alignment warning sign advisory speed, the Vehicle Speed Feedback (W13-20) sign shall be an independent installation near the point of curvature of a horizontal curve (see Section 2C.06).

04 The legend YOUR SPEED shall be a black legend on a yellow retroreflective background or the reverse of those colors, except as provided in the VWAPM and 7B.01. The changeable legend displaying the speed of the approaching vehicle shall be a yellow luminous legend on a black opaque background. The vehicle speed displayed on the changeable portion of the sign shall be displayed as an integer. The Vehicle Speed Feedback sign and plaque shall not flash, strobe, change color, or use other animated elements integrated into the changeable legend display. When no vehicles are approaching, the changeable display shall not display a legend.

Guidance:

04a The Vehicle Speed Feedback sign should not be installed on multi-lane (more than 1 travel lane in each direction) roads except where otherwise required (e.g. with safety speed cameras).

~~*Guidance:*~~

05 The changeable portion of the Vehicle Speed Feedback legend should be approximately the same height, width, and stroke of those on the Speed Limit sign it supplements or is mounted below.

06 When a W13-20aP plaque is used with a Speed Limit sign it should be approximately the same width as the Speed Limit sign it is mounted below.

Option:

06a A PMSD may be installed on state-maintained roadways having a speed limit or advisory speed established and posted for the roadway conditions in accordance with the VDOT practice and if either of the following applies:

A. The roadway is residential and/or pedestrian oriented with no more than two lanes (one lane per travel direction) with a posted speed limit of 40 mph or less where the 85th percentile speed exceeds the posted speed limit by at least 10 mph for the travel direction(s) and time period of concern; or

B. Other non-residential locations deemed appropriate by the District Traffic Engineer such as to encourage compliance for advisory speed conditions or to address locations with identified, speed-related safety concern.

Guidance:

06b A single PMSD sign should be placed at the location and in the travel direction(s) approaching the area where there is a speeding issue.

06c The PMSD sign should be used at locations where a longer-term need is identified, as speed trailers are typically used for short-term applications.

Standard:

06d The District Traffic Engineer or designee shall approve the PMSD signs to be used as well as the intended installation and placement.

Guidance:

06e The PMSD sign should be mounted on the same pole and directly below the Speed Limit (R2-1) sign or a warning sign indicating an advisory speed.

Standard:

06f When PMSD is installed to reinforce a speed limit reduction that is active for a certain time of day, the PMSD sign shall operate only when the reduced speed limit is in effect, and at other times shall display two dashes indicating the system not in operation.

06g The changeable display shall be programmed to go blank/no display when the vehicle exceeds the posted speed limit by 20 mph or more.

06h Other than the speed display, the PMSD shall not incorporate animation, flashing, or any dynamic elements.

06i Localities shall install, operate, and maintain PMSDs under a permit with VDOT. Permits issued to authorize this application can be revoked at any time due to safety, maintenance, or operational concerns; if the road is compromised; or if it is in the public interest to do so as solely determined by VDOT.

06j Identification and contact information for the locality shall be displayed on the PMSD, but not on the side that faces approaching traffic.

06k A residential roadway that qualifies for traffic calming and where VDOT is participating in funding shall be referred to VDOT's traffic calming process, which provides that a PMSD sign can be considered as part of an overall traffic calming plan that likewise considers the use of other measures and devices, using the process outlined in VDOT's "Traffic Calming Guide for Residential Streets."

VERTICAL GRADE WARNING SIGNS AND PLAQUES

Section 2C.14 Hill Signs (W7-1 and W7-1a)

Guidance:

01 The Hill (W7-1) sign (see Figure 2C-5(VA)) should be used in advance of a downgrade where the length, percent of grade, horizontal curvature, and/or other physical features require special precautions on the part of road users.

02 The Hill sign and supplemental grade (W7-3P) plaque (see Figure 2C-5(VA) and Section 2C.64) used in combination, or the W7-1a sign used alone, should be installed in advance of downgrades for the following conditions:

A. 5% grade that is more than 3,000 feet in length,
B. 6% grade that is more than 2,000 feet in length,
C. 7% grade that is more than 1,000 feet in length,
D. 8% grade that is more than 750 feet in length, or
E. 9% grade that is more than 500 feet in length.

03 These signs should also be installed for steeper grades or where crash experience and field observations indicate a need.

04 Supplemental plaques (see Sections 2C.57 and 2C.64) and larger signs should be used for emphasis or where special hill characteristics exist. On longer grades, the use of the Hill sign with a distance (W7-3aP) plaque or the combination distance/grade (W7-3bP) plaque (see Figure 2C-5(VA)) at periodic intervals of approximately 1-mile spacing should be considered.

Option:

05 A USE LOW GEAR (W7-2P) or TRUCKS USE LOWER GEAR (W7-2bP) supplemental plaque (see Figure 2C-5(VA)) may be used to indicate a situation where downshifting as well as braking might be advisable.

Section 2C.15 Truck Escape Ramp Signs (W7-4 Series)

Guidance:

01 Where applicable, truck escape (or runaway truck) ramp advance warning signs (see Figure 2C-5(VA)) should be located approximately 1 mile and approximately ½ mile in advance of the grade, and of the escape ramp. An additional W7-4b ~~or W7-4c~~ sign should be placed at the gore.

02 A RUNAWAY VEHICLES ONLY (R4-10) sign (see Section 2B.41) should be installed near the escape ramp entrance to discourage other road users from entering the ramp. No Parking (R8-3) signs should be placed near the ramp entrance.

Standard:

03 When truck escape ramps are installed, at least one of the W7-4 series signs shall be used.

Option:

04 A SAND (W7-4dP), GRAVEL (W7-4eP), or PAVED (W7-4fP) supplemental plaque (see Figure 2C-5(VA)) may be used to describe the ramp surface. State and local highway agencies may develop appropriate word message signs for the specific situation.

Section 2C.16 HILL BLOCKS VIEW Sign (W7-6)

Option:

01 A HILL BLOCKS VIEW (W7-6) sign (see Figure 2C-5(VA)) may be used on the approach to a crest vertical curve where the vertical curvature provides inadequate stopping sight distance at the posted speed limit.

Guidance:

02 *When a vertical curve results in a sight distance obstruction to a specific condition beyond the crest of the vertical curve, the warning sign for the specific condition beyond the vertical crest should be used rather than the HILL BLOCKS VIEW sign.*

03 When a HILL BLOCKS VIEW sign is used, it should be supplemented by an Advisory Speed (W13-1P) plaque (see Figure 2C-1) indicating the recommended speed for traveling over the hillcrest based on available stopping sight distance.

ROADWAY GEOMETRY WARNING SIGNS

Section 2C.17 ROAD NARROWS Sign (W5-1)

Guidance:

01 Except as provided in Paragraph 2 of this Section, a ROAD NARROWS (W5-1) sign (see Figure 2C-6) should be used in advance of a transition on two-lane roads where the pavement width is reduced abruptly to a width such that vehicles traveling in opposite directions cannot simultaneously travel through the narrow portion of the roadway without reducing speed.

Support:

01a Pavement width transitions to less than 18 feet can create the need to warn drivers to slow down in order to maintain adequate lateral placement within the narrow section.

Option:

02 The ROAD NARROWS (W5-1) sign may be omitted on low-volume local streets that have speed limits of 30 mph or less.

03 Additional emphasis may be provided by the use of object markers and delineators (see Sections 2C.70 through 2C.73 and Chapter 3G). The Advisory Speed (W13-1P) plaque (see Figure 2C-1 and Section 2C.59) may be used to indicate the recommended speed.

Section 2C.18 NARROW BRIDGE and NARROW UNDERPASS Signs (W5-2 and W5-2a)

Guidance:

01 A NARROW BRIDGE (W5-2) sign (see Figure 2C-6) should be used in advance of any bridge or culvert having a two-way roadway horizontal clearance of 16 to 18 feet, or any bridge or culvert having a roadway horizontal clearance less than the width of the approach travel lanes. Where these conditions exist for an underpass, a NARROW UNDERPASS (W5-2a) sign (see Figure 2C-6) should be used.

02 Additional emphasis should be provided by the use of object markers, delineators, and/or pavement markings.

Option:

03 A NARROW BRIDGE sign may be used in advance of a bridge or culvert on which the approach shoulders are narrowed or eliminated. Where these conditions exist for an underpass, a NARROW UNDERPASS sign may be used.

04 The NARROW BRIDGE or NARROW UNDERPASS sign may be omitted on low-volume rural roads where there is adequate sight distance to the bridge, culvert, or underpass on both approaches.

Section 2C.19 ONE LANE BRIDGE and ONE LANE UNDERPASS Signs (W5-3 and W5-3a)

Guidance:

01 A ONE LANE BRIDGE (W5-3) sign (see Figure 2C-6) should be used on two-way roadways in advance of any bridge or culvert:

- *A. Having a roadway horizontal clearance of less than 16 feet, or*
- *B. Having a roadway horizontal clearance of less than 18 feet when commercial vehicles constitute a high proportion of the traffic, or*
- *C. Having a roadway horizontal clearance of 18 feet or less where the sight distance is limited on the approach ~~is less than that shown in Condition A of Table 2C-3~~ to the structure.*

~~*02 Where these conditions exist for an underpass, a ONE LANE UNDERPASS (W5-3a) sign (see Figure 2C-6) should be used.*~~

03 Additional emphasis should be provided by the use of object markers, delineators, and/or pavement markings.

03a If used, the distance between the ONE LANE BRIDGE (W5-3) sign and the bridge should be based on the distances in Table 2C-3. If multiple warning signs are used on the approaches to a one lane bridge, the minimum spacing between the warning signs should be based on the estimated PRT for driver comprehension of, and reaction to, the second sign (see Section 2C.04).

Option:

03b Typical signs and pavement markings that may be used on the approaches to a one lane bridge are shown in Figure 2C-V1.

04 The ONE LANE BRIDGE or ONE LANE UNDERPASS sign may be omitted on low-volume rural roads where there is adequate sight distance to the bridge, culvert, or underpass on both approaches.

~~05 STOP (R1-1) or YIELD (R1-2) signs (see Sections 2B.04 and 2B.05) and related pavement markings (see Sections 3B.21 and 3B.22) may be used when conditions A, B, or C in Paragraph 1 of this Section apply.~~

Section 2C.20 Divided Highway Sign (W6-1)

Guidance:

01 A Divided Highway (W6-1) sign (see Figure 2C-6) should be used on the approaches to a section of highway (not an intersection or junction) where the opposing flows of traffic are separated by a median or other physical barrier.

Standard:

02 The Divided Highway (W6-1) sign shall not be used instead of a Keep Right (R4-7 series) sign on the approach end of a median island.

Section 2C.21 Divided Highway Ends Sign (W6-2)

Guidance:

01 A Divided Highway Ends (W6-2) sign (see Figure 2C-6) should be used in advance of the end of a section of physically divided highway (not an intersection or junction) as a warning of two-way traffic ahead.

02 The Two-Way Traffic (W6-3) sign (see Section 2C.51) should be used to give warning and notice of the transition to a two-lane, two-way section.

Section 2C.22 Freeway or Expressway Ends Signs (W19 Series)

Option:

01 A FREEWAY ENDS XX MILES (W19-1) sign or a FREEWAY ENDS (W19-3) sign (see Figure 2C-6) may be used in advance of the end of a freeway.

02 An EXPRESSWAY ENDS XX MILES (W19-2) sign or an EXPRESSWAY ENDS (W19-4) sign (see Figure 2C-6) may be used in advance of the end of an expressway.

03 The rectangular W19-1 and W19-2 signs may be post-mounted or may be mounted overhead for increased emphasis.

Guidance:

04 If the reason that the freeway is ending is that the next portion of the freeway is not yet constructed and as a result all traffic must use an exit ramp to leave the freeway, an ALL TRAFFIC MUST EXIT (W19-5) sign (see Figure 2C-6) should be used in addition to the Freeway Ends signs in advance of the downstream end of the freeway.

Section 2C.23 Double Arrow Sign (W12-1)

Option:

01 The Double Arrow (W12-1) sign (see Figure 2C-6) may be used to advise road users that traffic is permitted to pass on either side of an island, obstruction, or gore in the roadway. Traffic separated by this sign may either rejoin or change directions.

Guidance:

02 If used on an island, the Double Arrow sign should be mounted near the approach end.

03 If used in front of a pier or obstruction, the Double Arrow sign should be mounted on the face of, or just in front of, the pier or obstruction. Where stripe markings are used on the pier or obstruction, they should be discontinued to leave a 3-inch space around the outside of the Double Arrow sign.

Section 2C.24 DEAD END, NO OUTLET, and ROAD ENDS Signs (W14-1, W14-1a, W14-2, W14-2a, W8-26, and W8-26a)

Option:

01 The DEAD END (W14-1) sign (see Figure 2C-6) may be used at the entrance to a single road or street that terminates without intersecting another street. The NO OUTLET (W14-2) sign (see Figure 2C-6) may be used at the entrance to a road or road network from which there is no other exit.

02 DEAD END (W14-1a) or NO OUTLET (W14-2a) signs (see Figure 2C-6) may be used in combination with Street Name (D3-1) signs (see Section 2D.45) to warn turning traffic that the cross street ends in the direction indicated by the arrow.

03 At locations where the cross street does not have a name, a W14-1a or W14-2a sign may be used alone in place of a street name sign.

Guidance:

04 When the W14-1 or W14-2 sign is used, the sign should be posted as near as practicable to the entry point or at a sufficient advance distance to permit the road user to avoid the dead end or no outlet condition by turning at the nearest intersecting street.

Standard:

05 The DEAD END (W14-1a) or NO OUTLET (W14-2a) sign shall not be used instead of the W14-1 or W14-2 signs where traffic can proceed straight through the intersection into the dead end street or no outlet area.

Option:

06 The ROAD ENDS XX FT (W8-26) or STREET ENDS XX FT (W8-26a) sign (see Figure 2C-11(VA)) may be used on the approach to the end of a conventional road or street where the terminus is not apparent.

Support:

07 Information about the use of Type 4 object markers to mark the end of the road or street is contained in Section 2C.73.

Standard:

08 The W8-26 and W8-26a signs shall not be used in place of a W14-1 or W14-2 sign at the entrance to such a road or street.

Support:

09 Section 2C.22 contains information on signs for use on the approach to the end of a freeway or expressway.

Section 2C.25 Low Clearance Signs (W12-2, W12-2a, and W12-2b)

Standard:

01 The Low Clearance Advance (W12-2) sign (see Figure 2C-6) shall be used to warn road users of vertical clearances less than 14 feet 6 inches, or vertical clearances less than 12 inches above the statutory maximum vehicle height, whichever is greater.

Support:

01a The Low Clearance signs are required in accordance with The Code of Virginia § 46.2- 1110.

Guidance:

02 The actual clearance should be displayed on the Low Clearance (W12-2, W12-2a, and W12-2b) sign to the nearest 1 inch not exceeding the actual clearance. However, in areas that experience changes in temperature causing frost action, a reduction, not exceeding 3 inches, should be used for this condition.

03 Clearances should be evaluated periodically to determine if additional low clearance signing is necessary, particularly when resurfacing operations have occurred, on routes onto which over-height vehicles are normally directed under the permit process, and structures that are susceptible to catastrophic failure when struck by over-height vehicles.

04 The W12-2 sign with a supplemental distance plaque should also be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.

05 Where there is a need to warn of a low clearance on an intersecting road or off a freeway or expressway exit, a rectangular warning sign with an appropriate word legend should be used rather than a W12-2 sign.

Option:

06 The Low Clearance Overhead (W12-2a or W12-2b) sign (see Figure 2C-6) may be installed on the structure to supplement the advance warning sign.

07 In cases where physical conditions on a structure limit the width such that the W12-2a or W12-2b signs are physically unable to fit, a W12-2 sign may be installed overhead on the structure or post-mounted in front of the structure, in addition to the required W12-2 sign at the advance location.

Standard:

07a Low Clearance signs shall be installed in accordance with Table 2C-V1. The vertical clearance posted on the signs shall be 3 inches less than the actual vertical clearance. Advance signs located on the alternate routes shall include the appropriate Supplemental Arrow (W16-6P) plaque (see Figure 2C-16) mounted below the W12-2 sign to indicate the direction of the structure. Figure 2C-V2 in this Manual shows an example of such signing.

Guidance:

08 In the case of an arch, or other structure under which the clearance varies greatly, two or more Low Clearance Overhead (W12-2a or 12-2b) signs should be installed on the structure itself to give information as to the clearances over the low clearance portions of the roadway.

Standard:

09 If used, the Low Clearance Overhead (W12-2b) sign shall be placed over a lane or shoulder to indicate the portion of the structure with low clearance if the posted clearance does not apply to the entire structure.

Guidance:

10 The clearance shown on the Low Clearance Advance sign should match the clearance on the W12-2a or W12-2b sign or, if there are multiple W12-2b signs, should match the lowest clearance.

ROADWAY AND WEATHER-CONDITION WARNING SIGNS AND PLAQUES

Section 2C.26 BUMP and DIP Signs (W8-1 and W8-2)

Guidance:

01 BUMP (W8-1) and DIP (W8-2) signs (see Figure 2C-7(VA)) should be used in advance of a sharp rise or depression in the profile of the road.

Option:

02 These signs may be supplemented with an Advisory Speed plaque (see Figure 2C-1 and Section 2C.59).

Guidance:

03 The DIP sign should not be used in advance of a short stretch of depressed alignment that might momentarily hide a vehicle.

04 A short stretch of depressed alignment that might momentarily hide a vehicle should be treated as a no-passing zone when center line striping is provided on a two-lane or three-lane road (see Section 3B.03).

Section 2C.27 SPEED HUMP Sign (W17-1)

Guidance:

01 The SPEED HUMP (W17-1) sign (see Figure 2C-7(VA)) should be used in advance of a vertical deflection in the roadway that is designed to limit the speed of traffic.

02 If used, the SPEED HUMP sign should be supplemented by an Advisory Speed plaque (see Figure 2C-1 and Section 2C.59).

Option:

03 If a series of speed humps exists in close proximity, an Advisory Speed plaque may be eliminated on all but the first SPEED HUMP sign in the series.

04 The legend SPEED BUMP may be used instead of the legend SPEED HUMP on the W17-1 sign.

Support:

05 Speed humps generally provide more gradual vertical deflection than speed bumps. Speed bumps limit the speed of traffic more severely than speed humps. Other forms of speed humps include speed tables and raised crosswalks or intersections. However, these differences in engineering terminology are not well known by the public, so for signing purposes these terms are interchangeable.

06 Sections 3B.29 and 3B.30 contain information about the use of markings at and in advance of speed humps.

Section 2C.28 PAVEMENT ENDS Sign (W8-3)

Guidance:

01 A PAVEMENT ENDS (W8-3) sign (see Figure 2C-7(VA)) should be used where a paved surface changes to either a gravel treated surface or an earth road surface.

Option:

02 An Advisory Speed plaque (see Figure 2C-1 and Section 2C.59) may be used when the change in roadway condition requires a reduced speed.

Section 2C.29 Shoulder Signs (W8-4, W8-9, W8-17, W8-23, and W8-25)

Option:

01 The SOFT SHOULDER (W8-4) sign (see Figure 2C-7(VA)) may be used to warn of a soft shoulder condition.

02 The LOW SHOULDER (W8-9) sign (see Figure 2C-7(VA)) may be used to warn of a shoulder condition where there is an elevation difference of 3 inches or less between the shoulder and the travel lane.

Guidance:

03 The Shoulder Drop Off (W8-17) sign (see Figure 2C-7(VA)) should be used where an unprotected shoulder drop-off, adjacent to the travel lane, exceeds 3 inches in depth for a significant continuous length along the roadway, based on engineering judgment.

Option:

04 A SHOULDER DROP-OFF (W8-17P) supplemental plaque (see Figure 2C-7(VA)) may be mounted below the W8-17 sign.

05 The NO SHOULDER (W8-23) sign (see Figure 2C-7(VA)) may be used to warn road users that a shoulder does not exist along a portion of the roadway.

06 The SHOULDER ENDS (W8-25) sign (see Figure 2C-7(VA)) may be used to warn road users that a shoulder is ending.

Guidance:

07 Additional shoulder signs should be placed at appropriate intervals along the road where the condition continually exists.

Section 2C.30 Surface Condition Signs (W8-5, W8-7, W8-8, W8-11, W8-13, and W8-14)

Option:

01 The Slippery When Wet (W8-5) sign (see Figure 2C-7(VA)) may be used to warn of unexpected slippery conditions. Supplemental plaques (see Figure 2C-7(VA)) with legends such as ICE, WHEN WET, STEEL DECK, or EXCESS OIL may be used with the W8-5 sign to indicate the reason that the slippery conditions might be present.

02 The LOOSE GRAVEL (W8-7) sign (see Figure 2C-7(VA)) may be used to warn of loose gravel on the roadway surface.

03 The ROUGH ROAD (W8-8) sign (see Figure 2C-7(VA)) may be used to warn of a rough roadway surface.

04 An UNEVEN LANES (W8-11) sign (see Figure 2C-7(VA)) may be used to warn of a difference in elevation between travel lanes.

05 The BRIDGE ICES BEFORE ROAD (W8-13) sign (see Figure 2C-7(VA)) may be used in advance of bridges to advise bridge users of winter weather conditions. The BRIDGE ICES BEFORE ROAD sign may be removed or covered during seasons of the year when its message is not relevant.

06 The FALLEN ROCKS (W8-14) sign (see Figure 2C-7(VA)) may be used in advance of an area that is adjacent to a hillside, mountain, or cliff where rocks frequently fall onto the roadway.

Guidance:

07 When used, Surface Condition signs should be placed in advance of the beginning of the affected section (see Table 2C-3), and additional signs should be placed at appropriate intervals along the road where the condition exists.

Section 2C.31 Warning Signs and Plaque for Motorcyclists (W8-15, W8-15aP, ~~W8-16,~~ W8-V1, W8-V2, and W8-V3)

Support:

01 The signs and plaques described in this Section are intended to give motorcyclists advance notice of surface conditions that might adversely affect their ability to maintain control of their motorcycle under wet or dry conditions. The use of some of the advance surface condition warning signs described in Section 2C.30, such as Slippery When Wet, LOOSE GRAVEL, or ROUGH ROAD, can also be helpful to motorcyclists if those conditions exist.

Option:

02 If a portion of a street or highway features a roadway pavement surface that is grooved or textured instead of smooth, such as a grooved skid resistance treatment for a horizontal curve or a brick pavement surface, a GROOVED PAVEMENT (W8-15) sign (see Figure 2C-7(VA)) may be used to provide advance warning of this condition to motorcyclists, bicyclists, and other road users. Alternate legends such as TEXTURED PAVEMENT or BRICK PAVEMENT may also be used on the W8-15 sign.

Standard:

03a When used, Warning Signs and Plaques for Motorcyclists shall be placed in advance of the condition (see Table 2C-3).
03b If a portion of a bridge includes a grated surface or metal deck, a STEEL GRID DECK (W8-V1) sign (see Figure 2C-7(VA)) shall be installed in advance to provide warning of this condition to motorcyclists, bicyclists, and other road users.
03c An OPEN JOINTS ON BRIDGE (W8-V3) sign (see Figure 2C-7(VA)) shall be installed on all bridges where open longitudinal joints are in the travel lanes. These signs shall be installed for longitudinal joints that meet both of the following criteria:

1. **The longitudinal joint is parallel or no more than 30 degrees from parallel to the travel lane.**
2. **The longitudinal joint width is equal to or greater than 1.5 inches.**

Option:
03d The OPEN JOINTS ON BRIDGE (W8-V3) sign may be used at locations only meeting Criterion 1 in Paragraph 03c above.
Guidance:
03e An OPEN JOINTS ON BRIDGE (W8-V3) sign should be installed if longitudinal joints create an unlevel riding surface during cold weather contraction.
03f An EXPANSION JOINTS (W8-V2) sign (see Figure 2C-7(VA)) should be installed in advance of a bridge to warn motorists of transverse expansion joints. A field review should be performed to evaluate the location, condition and size of the joints on the bridge to determine if there are adverse surface conditions.
Standard:
04 A Motorcycle (W8-15aP) plaque (see Figure 2C-7(VA)) ~~may~~ shall be mounted below ~~or above~~ a W8-15, ~~W8-16,~~ W8-V1, W8-V2, or W8-V3 sign ~~if the warning is intended to be directed primarily~~ to emphasize the warning to motorcyclists.

Section 2C.32 NO CENTER LINE Sign (W8-12)

Option:
01 The NO CENTER LINE (W8-12) sign (see Figure 2C-7(VA)) may be used to warn of a roadway without center line pavement markings.

Section 2C.33 NO TRAFFIC SIGNS Sign (W18-1)

Option:
01 The NO TRAFFIC SIGNS (W18-1) sign (see Figure 2C-6) may be used only on low-volume rural roads to advise road users that no signs are installed along the distance of the road. The sign may be installed at the point where road users would enter the low volume road or where, based on engineering judgment, the road user might need this information.
02 A W7-3aP (see Figure 2C-5(VA)), W16-2P (see Figure 2C-16), or W16-9P (see Figure 2C-16) supplemental plaque with the legend NEXT XX MILES, XX FEET, or AHEAD may be installed below the W18-1 sign when appropriate.

Section 2C.34 Weather Condition Signs (W8-18, W8-19, W8-21, and W8-22)

Option:
01 The ROAD MAY FLOOD (W8-18) sign (see Figure 2C-7(VA)) may be used to warn road users that a section of roadway is subject to frequent flooding**.** A Depth Gauge (W8-19) sign (see Figure 2C-7(VA)) may also be installed within a roadway section that frequently floods.
Guidance:
*02 If used, the Depth Gauge sign should be in addition to the ROAD MAY FLOOD sign and should be mounted at the appropriate height to indicate the depth of the water at the deepest point on the roadway***.**
Option:
03 The GUSTY WINDS AREA (W8-21) sign (see Figure 2C-7(VA)) may be used to warn road users that wind gusts frequently occur along a section of highway that are strong enough to impact the stability of trucks, recreational vehicles, and other vehicles with high centers of gravity**.** A NEXT XX MILES (W7-3aP)

supplemental plaque (see Figure 2C-5(VA)) may be mounted below the W8-21 sign to inform road users of the length of roadway that frequently experiences strong wind gusts.

04 The FOG AREA (W8-22) sign (see Figure 2C-7(VA)) may be used to warn road users that foggy conditions frequently reduce visibility along a section of highway**.** A NEXT XX MILES (W7-3aP) supplemental plaque (see Figure 2C-5(VA)) may be mounted below the W8-22 sign to inform road users of the length of roadway that frequently experiences foggy conditions.

Support:

05 Chapter 2L contains provisions for the use of blank-out or changeable message signs that can be activated by detection of the applicable condition.

TRAFFIC CONTROL AND INTERSECTION WARNING SIGNS AND PLAQUES

Section 2C.35 Advance Traffic Control Signs (W3-1, W3-2, W3-3, and W3-4)

Standard:

01 The Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) Advance Traffic Control signs (see Figure 2C-8) shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-3). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.

Guidance:

02 Where intermittent obstructions occur, engineering judgment should determine the treatment to be implemented.

Support:

03 Figure 2A-4 shows examples of the typical placement of an Advance Traffic Control sign.

04 Permanent obstructions causing the limited visibility might include roadway alignment or structures. Intermittent obstructions might include foliage or parked vehicles.

Option:

05 An Advance Traffic Control sign may be used for additional emphasis of the primary traffic control device, even when the visibility distance to the device is satisfactory.

Support:

06 Section 2C.65 contains information about the use of an advance street name plaque to identify an intersecting road.

Option:

07 A BE PREPARED TO STOP (W3-4) sign (see Figure 2C-8) may be used to warn of stopped traffic caused by a traffic control signal.

08 A Warning Beacon (see Section 4S.03) or yellow LEDs within the border of the sign may be used with an Advance Traffic Control or BE PREPARED TO STOP sign.

Standard:

09 When a BE PREPARED TO STOP sign is used in advance of a traffic control signal, it shall be used in addition to a Signal Ahead sign and shall be placed downstream from the Signal Ahead sign.

Guidance:

10 When a Warning Beacon is interconnected with a traffic control signal or queue detection system, the BE PREPARED TO STOP sign should be supplemented with a WHEN FLASHING (W16-13P) plaque (see Figure 2C-16).

Support:

11 Section 2C.45 contains information regarding the use of a NO MERGE AREA (W4-5aP) supplemental plaque in conjunction with a Yield Ahead sign.

Section 2C.36 DRAW BRIDGE Sign (W3-6)

Standard:

01 A DRAW BRIDGE (W3-6) sign (see Figure 2C-8) shall be used in advance of movable bridge signals and gates (see Section 4Q.02) to give warning to road users.

Section 2C.37 Advance Ramp Control Signal Signs (W3-7 and W3-8)

Option:

01 A RAMP METER AHEAD (W3-7) sign (see Figure 2C-8) may be used to warn road users that a freeway entrance ramp is metered and that they will encounter a ramp control signal (see Chapter 4P).

Guidance:

02 When the ramp control signals are operated only during certain periods of the day, a RAMP METERED WHEN FLASHING (W3-8) sign (see Figure 2C-8) should be installed in advance of the ramp control signal near the entrance to the ramp, or on the arterial on the approach to the ramp, to alert road users to the presence and operation of ramp meters.

Standard:

03 The RAMP METERED WHEN FLASHING sign shall be supplemented with a Warning Beacon (see Section 4S.03) that flashes when the ramp control signal is in operation.

Section 2C.38 NEW TRAFFIC PATTERN and NEW SIGNAL OPERATION AHEAD Signs (W23-2 and W23-2a)

Option:

01 A NEW TRAFFIC PATTERN AHEAD (W23-2) sign (see Figure 2C-8) may be used on the approach to an intersection or along a section of roadway to provide advance warning of a change in traffic patterns, such as revised lane usage or roadway geometry.

02 A NEW SIGNAL OPERATION AHEAD (W23-2a) sign (see Figure 2C-8) may be used on the approach to a signalized intersection to provide advance warning of a change in signal phasing.

Guidance:

03 The NEW TRAFFIC PATTERN or NEW SIGNAL OPERATION AHEAD sign should be removed when the traffic pattern returns to normal, when the changed pattern is no longer considered to be new, or within 12 months.

Section 2C.39 WATCH FOR STOPPED TRAFFIC Sign (W26-1)

Option:

01 The WATCH FOR STOPPED TRAFFIC (W26-1) sign (see Figure 2C-8) may be used to warn road users of the possibility of vehicles stopping abruptly in the travel lane due to recurring congested conditions.

Section 2C.40 Reduced Speed Limit Ahead and Speed Zone Signs (W3-5, W3-5a, W3-5b, and W3-5c)

Guidance:

01 A Reduced Speed Limit Ahead (W3-5 ~~or W3-5a~~) or Truck Speed Zone Ahead (W3-5c) sign (see Figure 2C-9(VA)) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.

Standard:

01a If used, the symbolic Reduced Speed Limit Ahead (W3-5) sign shall be used and the text Reduced Speed Limit Ahead (W3-5a) sign shall not be used.

Guidance:

02 *A VARIABLE SPEED ZONE AHEAD (W3-5b) sign (see Figure 2C-9(VA)) should be used to inform road users of a zone where the speed limit is varied by time of day or as conditions change.*

Standard:

03 If used, Reduced Speed Limit, Variable Speed Zone, or Truck Speed Zone Ahead signs shall be followed by a Speed Limit (R2-1) sign (see Figure 2B-3(VA)), with the Trucks (R2-2P) plaque (see Figure 2B-3(VA)) if applicable, installed at the beginning of the zone where the speed limit applies.

04 The speed limit displayed on the W3-5, W3-5a, and W3-5c signs shall be identical to the speed limit displayed on the subsequent Speed Limit sign.

Section 2C.41 Intersection Warning Signs (W2-1 through W2-8)

Option:

01 A Cross Road (W2-1), Side Road (W2-2, W2-3, or W2-3a), T-Intersection (W2-4), or Y-Intersection (W2-5) sign (see Figure 2C-10) may be used in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic.

02 The Circular Intersection (W2-6) sign (see Figure 2C-10) may be installed in advance of a circular intersection (see Figures 2B-21 through 2B-23).

Guidance:

03 If an approach to a circular intersection has a statutory or posted speed limit of 40 mph or higher, the Circular Intersection (W2-6) sign should be installed in advance of the circular intersection.

Option:

04 An educational plaque (see Figure 2C-10) with a legend such as TRAFFIC CIRCLE (W16-12P) or ROUNDABOUT (W16-12aP) may be mounted below a Circular Intersection sign.

Support:

05 Section 2C.65 contains information about the use of an advance street name plaque to identify an intersecting road.

Guidance:

06 The Intersection Warning sign should illustrate and depict the general configuration of the intersecting roadway, such as a cross road, side road, T-intersection, or Y-intersection.

07 Intersection Warning signs, other than the Circular Intersection (W2-6) sign, the T-intersection (W2-4) sign, and the Grade Crossing and Intersection Advance Warning (W10-2, W10-3, W10-4, W10-11, and W10-12) signs (see Figure 8B-4) should not be used on approaches controlled by STOP signs, YIELD signs, or signals.

08 If an Intersection Warning sign is used where the side roads are not opposite of each other, the Offset Side Roads (W2-7) sign (see Figure 2C-10) should be used instead of the Cross Road sign.

09 If an Intersection Warning sign is used where two closely-spaced side roads are on the same side of the highway, the Double Side Roads (W2-8) sign (see Figure 2C-10) should be used instead of the Side Road sign.

10 No more than two side roads should be depicted on the same side of the highway on a W2-7 or W2-8 sign, and no more than three side roads should be depicted on a W2-7 or W2-8 sign.

Option:

11 When at least one side road is shown, the stem of an additional side road representing a significantly lower relative volume may be depicted using a line that is two-thirds the width of the through road based on engineering judgment.

Support:

12 Figure 2A-4 shows examples of the typical placement of an Intersection Warning sign.

Section 2C.42 Actuated Advance Intersection Signs (W2-10 and W2-11)

Support:

01 Actuated Advance Intersection signs are typically associated with restricted sight distance and gap selection at stop controlled intersections.

Option:

02 The TRAFFIC ENTERING WHEN FLASHING (W2-10) sign (see Figure 2C-10) may be used on the uncontrolled through roadway approach to a side or cross road stop controlled intersection to warn of entering traffic from the side or cross road.

03 The TRAFFIC APPROACHING WHEN FLASHING (W2-11) sign (see Figure 2C-10) may be used on the side road stop controlled approach to warn of traffic approaching on the uncontrolled through road.

Standard:

04 **When used, the TRAFFIC ENTERING WHEN FLASHING sign, and the TRAFFIC APPROACHING WHEN FLASHING sign shall be supplemented with a Warning Beacon (see Section 4S.03) that activates when a vehicle on a conflicting approach is detected.**

Section 2C.43 Two-Direction Large Arrow Sign (W1-7)

Standard:

01 The Two-Direction Large Arrow (W1-7) sign (see Figure 2C-10) shall be a horizontal rectangle.

02 If used, the Two-Direction Large arrow sign shall be installed on the far side of a T-intersection in line with, and at approximately a right angle to, traffic approaching from the stem of the T-intersection.

03 The Two-Direction Large Arrow sign shall not be used where there is no change in the direction of travel such as at the beginnings and ends of medians or at center piers.

Guidance:

04 The Two-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration.

Section 2C.44 Traffic Signal Oncoming Extended Green Signs (W25-1 and W25-2)

Standard:

01 At locations where either a W25-1 or a W25-2 sign is required based on the provisions in Section 4F.01, the W25-1 or W25-2 sign (see Figure 2C-10) shall be installed near the left-most signal face for the approach.

MERGING, TWO-WAY TRAFFIC, AND NO PASSING WARNING SIGNS AND PLAQUES

Section 2C.45 Merge Signs and Plaque (W4-1, W4-5, and W4-5aP)

Option:

01 A Merge (W4-1) sign (see Figure 2C-11(VA)) may be used to warn road users on the major roadway that merging movements might be encountered in advance of a point where lanes from two separate roadways converge as a single traffic lane and no turning conflict occurs.

02 A Merge sign may also be installed on the side of the entering roadway to warn road users on the entering roadway of the merge condition.

Guidance:

03 The Merge sign should be installed on the side of the major roadway where merging traffic will be encountered and in such a position as to not obstruct the road user's view of entering traffic.

04 When a Merge sign is installed on a major roadway, the symbol should be oriented right or left as appropriate to depict the side from which the merge occurs, with the arrow representing the major roadway and the curved stem representing the entering roadway (see Figure 2C-11(VA))

05 When a Merge sign is to be installed on an entering roadway that curves before merging with the major roadway, such as a ramp with a curving horizontal alignment as it approaches the major roadway, the Entering Roadway Merge (W4-5) sign (see Figure 2C-11(VA)) should be used to better portray the actual geometric conditions to road users on the entering roadway.

06 Where two roadways of approximately equal importance converge and merging movements are required, a Merge sign should be placed on each roadway.

07 The Merge sign should not be used where two roadways converge and merging movements are not required.

Standard:

08 The Merge sign shall not be used in place of a Lane Ends (W4-2) sign (see Section 2C.47) where lanes of traffic moving on a single roadway must merge because of a reduction in the actual or usable pavement width.

Option:

09 An Entering Roadway Merge (W4-5) sign with a NO MERGE AREA (W4-5aP) supplemental plaque (see Figure 2C-11(VA)) mounted below it may be used to warn road users on an entering roadway that they will encounter an abrupt merging situation without an acceleration lane at the downstream end of the ramp.

10 A Merge (W4-1) sign with a NO MERGE AREA (W4-5aP) supplemental plaque mounted below it may be used to warn road users on the major roadway that traffic on an entering roadway will encounter an abrupt merging situation without an acceleration lane at the downstream end of the ramp.

11 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane, a NO MERGE AREA (W4-5aP) supplemental plaque may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

Support:

12 Examples of the use of Merge (W4-1) signs are shown in Drawing A in Figure 2C-12.

Section 2C.46 Added Lane Signs (W4-3 and W4-6)

Guidance:

01 The Added Lane (W4-3) sign (see Figure 2C-11(VA)) should be installed in advance of a point where two roadways converge and merging movements are not required. When possible, the Added Lane sign should

be placed such that it is visible from both roadways; if this is not possible, an Added Lane sign should be placed on the side of each roadway.

02 When an Added Lane (W4-3) sign is installed on a major roadway, the symbol should be oriented right or left as appropriate to depict the side from which the entering roadway converges, with the straight arrow representing the major roadway and the curved arrow representing the entering roadway. The sign should be located on the side of the major roadway from which the entering roadway converges.

03 When an Added Lane sign is to be installed on a roadway that curves before converging with another roadway that has a tangent alignment at the point of convergence, the Entering Roadway Added Lane (W4-6) sign (see Figure 2C-11(VA)) should be used to better portray the actual geometric conditions to road users on the curving roadway.

Support:

04 Examples of the use of Added Lane (W4-3) and Entering Roadway Added Lane (W4-6) signs are shown in Drawing B in Figure 2C-12.

Section 2C.47 Lane Ends Signs (W4-2 and W9-1)

Support:

01 The Lane Ends (W4-2) and RIGHT (LEFT) LANE ENDS (W9-1) signs (see Figure 2C-11(VA)) are used to warn of the reduction in the number of traffic lanes in the direction of travel.

02 The sequence of the W4-2 and W9-1 signs is illustrated in Figure 2C-13(VA).

Guidance:

03 The Lane Ends (W4-2) sign should be installed at the advance placement distance in accordance with Table 2C-3.

~~Option:~~

04 A RIGHT (LEFT) LANE ENDS (W9-1) sign should ~~may~~ be installed in advance of the Lane Ends sign to provide redundancy or additional warning that a lane is ending and that a merging maneuver will be required.

~~*Guidance:*~~

05 If a W9-1 sign is installed, a Distance (W16-2P series or W16-3P series) plaque (see Figure 2C-16) should be installed below the W9-1 sign.

06 On one-way streets or on divided highways where the left-hand lane is ending and the width of the median will permit, the W9-1 and W4-2 signs should be placed facing approaching traffic on the left-hand side or median.

Option:

07 Where a lane ends a distance beyond the intersection that is less than the advance placement distance indicated in Table 2C-3, the W4-2 sign may be located at the far side of the intersection (see Sheet 4 of Figure 2C-13(VA)).

Guidance:

08 When the W4-2 sign is located at the far side of the intersection in accordance with Paragraph 7 of this Section, the W9-1 sign should be placed upstream of the intersection with the appropriate distance plaque.

Support:

09 Section 3B.12 contains information regarding the use of pavement markings in conjunction with a lane reduction.

Guidance:

10 Lane Ends signs should not be installed in advance of the downstream end of an acceleration lane.

Standard:

11 The W4-2 and W9-1 signs shall not be used in dropped lane situations. In dropped lane situations on conventional roads at intersections, regulatory signs (see Section 2B.28) shall be used to inform road users that a through lane becomes a mandatory turn lane.

Section 2C.48 Lanes Merge Signs (W9-4 and W4-8)

Support:

01 The LANES MERGE (W9-4) and Single-Lane Transition (W4-8) signs (see Figure 2C-11(VA)) are used to warn of a merge of two lanes to one in the same direction of travel with a merging maneuver required for each lane (see Sheet 5 of Figure 2C-13(VA)). This type of merge is for a geometric condition where both approach lanes merge into a single lane, not where one lane merges into the other. Section 6H.08 contains information about the use of the late merge sign.

Guidance:

02 The Single-Lane Transition (W4-8) sign should be located at the advance placement distance in accordance with Table 2C-3.

Option:

03 The Lanes Merge (W9-4) sign may be used in advance of the W4-8 sign to provide additional warning that both lanes form a single lane and that a merging maneuver is needed for the traffic in each lane.

Section 2C.49 HEAVY MERGE FROM LEFT (RIGHT) Sign (W4-7)

Option:

01 The HEAVY MERGE FROM LEFT (RIGHT) (W4-7) sign (see Figure 2C-11(VA)) may be used to supplement a W4-1 sign at multilane approaches to congested areas to inform road users that it is desirable for through traffic to move out of a lane that will be occupied by a high volume of entering traffic. If used, the W4-7 sign may be supplemented with a W16-2P series or W16-3P series plaque (see Section 2C.61).

Standard:

02 If used, the W4-7 sign shall be installed at a location upstream from the location of the W4-1 sign.

Section 2C.50 RIGHT (LEFT) LANE FOR EXIT ONLY Sign (W9-7)

Option:

01 The RIGHT (LEFT) LANE FOR EXIT ONLY (W9-7) sign (see Figure 2C-11(VA)) may be used to provide advance warning to road users that traffic in the right-hand (left-hand) lane of a roadway will be required to depart the roadway at the next exit.

Guidance:

02 If used, the W9-7 sign should be installed upstream from the first overhead guide sign that contains an EXIT ONLY sign panel or upstream from the first RIGHT (LEFT) LANE MUST EXIT (R3-33) regulatory sign, if used, whichever is farther upstream from the exit.

Option:

03 A legend or plaque displaying the distance may be added to the W9-7 sign where the distance along the dropped lane between the sign and the exit ramp is greater than 1 mile.

Support:

04 Section 2B.31 contains information regarding a regulatory sign that can be used for lane drops at grade-separated interchanges.

Section 2C.51 Two-Way Traffic Sign (W6-3)

Guidance:

01 A Two-Way Traffic (W6-3) sign (see Figure 2C-11(VA)) should be used to warn road users of a transition from a multi-lane divided section of roadway to a two-lane, two-way section of roadway.

02 A Two-Way Traffic (W6-3) sign with an AHEAD (W16-9P) plaque (see Figure 2C-16) should be used to warn road users of a transition from a one-way street to a two-lane, two-way section of roadway (see Figure 2B-18).

Option:

03 The Two-Way Traffic sign may be used at intervals along a two-lane, two-way roadway and may be used to supplement the Divided Highway (Road) Ends (W6-2) sign discussed in Section 2C.21.

Support:

04 Section 6H.17 contains information on a Narrow Two-Way Traffic (W6-4) sign for use in temporary traffic control situations.

Section 2C.52 Two-Way Traffic on a Three-Lane Roadway Signs (W6-5 and W6-5a)

Option:

01 The Two-Way Traffic on a Three-Lane Roadway (W6-5 and W6-5a) signs (see Figure 2C-11(VA)) may be installed along three-lane roadways with two lanes in one direction and one in the opposing direction.

Section 2C.53 NO PASSING ZONE Sign (W14-3)

Standard:

01 The NO PASSING ZONE (W14-3) sign (see Figure 2C-11(VA)) shall be a pennant-shaped isosceles triangle with its longer axis horizontal and pointing to the right. When used, the NO PASSING ZONE sign shall be installed on the left-hand side of the roadway at the beginning of no-passing zones identified by pavement markings or DO NOT PASS signs or both (see Sections 2B.36 and 3B.03).

MISCELLANEOUS WARNING SIGNS AND PLAQUES

Section 2C.54 Vehicular Traffic Warning Signs (W8-6, W11-1, W11-5, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, W11-15a, and W11-V3)

Option:

01 Vehicular Traffic Warning (W8-6, W11-1, W11-5, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, W11-15a, and W11-V3) signs (see Figure 2C-14(VA)) may be used to alert road users to locations where unexpected entries into the roadway by trucks, bicycles, farm vehicles, emergency vehicles, golf carts, horse-drawn vehicles, or other vehicles might occur. The TRUCK CROSSING (W8-6) word message sign may be used as an alternate to the Truck (W11-10) symbol sign.

01a The WATCH FOR TURNING VEHICLES (W11-V3) sign (see Figure 2C-14(VA)) may be used in advance of intersections or driveways with high daily turning volumes or conditions which justify advance warning.

Standard:

01b The WATCH FOR TURNING VEHICLES (W11-V3) sign shall not be used on a controlled approach.

Support:

02 These locations might be relatively confined or might occur randomly over a segment of roadway.

Guidance:

03 Vehicular Traffic Warning signs should be used only at locations where the road user's sight distance is restricted, or the condition, activity, or entering/turning traffic would be unexpected.

04 If the condition or activity is seasonal or temporary, the Vehicular Traffic Warning sign should be removed or covered when the condition or activity does not exist.

04a Vehicular traffic warning signs should not be used in place of intersection warning signs. At lower volume driveways or intersections, the appropriate intersection warning sign (W2-1 through W2-8) should be used, if necessary (see Section 2C.41).

Option:

05 The Trail Crossing (W11-15) sign may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque (see Figure 2C-14(VA)) may be mounted below the W11-15 sign. The TRAIL CROSSING (W11-15a) sign may be used to warn of shared-use path crossings where pedestrians, bicyclists, and other user groups might be crossing the roadway.

~~06 The W11-1, W11-15, and W11-15a signs and their related supplemental plaques may have a fluorescent yellow-green background with a black legend and border.~~

07 Supplemental plaques (see Figure 2C-16 and Section 2C.57) with legends such as AHEAD, XX FEET, NEXT XX MILES, IN STREET, or IN ROAD may be mounted below Vehicular Traffic Warning signs to provide advance notice to road users of unexpected entries.

Guidance:

08 If used in advance of a trail crossing, a W11-15 or W11-15a sign should be supplemented with an AHEAD or XX FEET plaque to inform road users that they are approaching a point where crossing activity might occur.

Standard:

08a The W11-1, W11-15, and W11-15a signs and their related supplemental plaques shall have a fluorescent yellow-green background with a black legend and border.

09 If a post-mounted W11-1, W11-11, W11-15, or W11-15a sign is placed at the location of the crossing point where golf carts, pedestrians, bicyclists, or other shared-use path users might be crossing the roadway, a diagonal downward-pointing arrow (W16-7P) plaque (see Figure 2C-16(VA) and Section 2C.63) shall be mounted below the sign. If the W11-1, W11-11, W11-15, or W11-15a sign is mounted overhead, the W16-7P supplemental plaque shall not be used.

10 A Vehicular Traffic Warning sign assembly shall not be installed on an approach controlled by a STOP or a YIELD sign, except as provided in Paragraphs 11 and 12 of this Section.

10a The WATCH FOR TURNING VEHICLES (W11-V3) sign shall not be used instead of, or in addition to, an intersection warning sign or combined horizonal alignment/intersection sign.

Support:

10b This sign is for use where entering an area of turning activity after a long stretch of little turning activity (i.e., isolated commercial activity on a rural arterial).

Option:

11 The Vehicular Traffic Warning sign assembly may be installed on an approach to a circular intersection controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point at the entrance to the circulatory roadway.

12 At a signalized or stop-controlled intersection the Vehicular Traffic Warning sign assembly may be installed on an approach to a channelized right-turn lane controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point.

13 The crossing location identified by a W11-1, W11-11, W11-15, or W11-15a sign may be defined with crosswalk markings (see Chapter 3C).

Standard:

14 The Emergency Vehicle (W11-8) sign (see Figure 2C-14(VA)) with the EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque (see Figure 2C-14(VA)) shall be placed in advance of all emergency-vehicle traffic control signals (see Chapter 4M).

Option:

15 The Emergency Vehicle (W11-8) sign~~, or a word message sign indicating the type of emergency-vehicle (such as rescue squad),~~ may be used in advance of the emergency-vehicle station when no emergency-vehicle traffic control signal is present.

16 A Warning Beacon (see Section 4S.03) may be used with any Vehicular Traffic Warning sign to indicate specific periods when the condition or activity is present or is likely to be present, or to provide enhanced sign conspicuity.

17 A supplemental WHEN FLASHING (W16-13P) plaque (see Figure 2C-16) may be used with any Vehicular Traffic Warning sign that is supplemented with a Warning Beacon to indicate specific periods when the condition or activity is present or is likely to be present.

Standard:

17a The ATV Warning (W11-23) sign (see Figure 2C-14(VA)) shall be installed at the beginning of, and following any major intersections along any section of highway where off-road recreational vehicles are authorized to operate per an ordinance enacted per § 46.2-800.2 of the Code of Virginia.

Support:

17b The Code of Virginia § 46.2-800.2 authorizes localities embraced by the Southwest Regional Recreation Authority to pass an ordinance allowing the use of off-road recreational vehicles (ATVs) to operate on certain highways within its boundaries. The Code of Virginia requires the installation of the ATV regulatory signs described in Section 2B.V9 and the warning sign described in Paragraph 17a.

Section 2C.55 Non-Vehicular Warning Signs (W11-2, W11-3, W11-4, W11-6, W11-7, W11-9, and W11-16 through W11-22)

Option:

01 Non-Vehicular Warning (W11-2, W11-3, W11-4, W11-6, W11-7, W11-9, and W11-16 through W11-22) signs (see Figure 2C-15(VA)) may be used to alert road users in advance of locations where unexpected entries into the roadway might occur or where shared use of the roadway by pedestrians, animals, or equestrians might occur.

Support:

02 These conflicts might be relatively confined, or might occur randomly over a segment of roadway.

02a Large animals cross roadways infrequently and at random, or they can cross roadways more frequently within an area that is a favored habitat, on a migratory route, or on a feeding route.

Standard:

02b Large animal crossing warning signs, such as the Deer Crossing Warning sign (W11-3) shall only be used in recognition of the habitat, migratory, or feeding occurrences described in Paragraph 2a and shall not be installed due to a random crossing or a limited number of vehicle-large animal collisions.

Guidance:

02c Deer Crossing Warning signs (W11-3) or other large animal crossing warning signs should be installed when the following combination of conditions are satisfied:

A. For any period of two years, there were at least five reported large animal-vehicle crashes per mile per year, and
B. Posted speed limit is 45 mph or greater.

Option:

02d When land use or traffic pattern changes occur or when deer or other large animal crossing incidences indicate that there has been a change in the habits of the animals; but less than a two-year crash history is available, an engineering study may be conducted. Based on the study results, the District Traffic Engineer may determine that the installation of Deer Crossing Warning signs (W11-3) or other large animal crossing warning signs is an appropriate action. If so, the sign may be installed.

Guidance:

02e New installations and replacements of existing Deer Crossing Warning signs (W11-3) or other large animal crossing warning signs should include a NEXT XX MILES plaque (W7-3aP) posted in increments of one, two, or three miles. If a continuous crossing area extends beyond three miles, additional sign assemblies should be installed approximately every three miles.

02f Even though the concentrated areas of crossing activity can indicate that the mileage plaque posting could be less than one mile, 1 MILE should be used as the minimum based on motorist expectations and that large animals may traverse the roadway beyond the point of concentrated crossings.

02g Where the large animal crossing has been eliminated through wildlife fencing or other access modifications; or where changes in the habitat or routing have substantially lessened the crossing activity, the existing warning signs should be removed or relocated as appropriate.

03 If used in advance of a pedestrian, snowmobile, or equestrian crossing, the W11-2, W11-6, W11-7, and W11-9 signs should be supplemented with plaques (see Figure 2C-16 and Section 2C.61) with the legend AHEAD or XX FEET to inform road users that they are approaching a point where crossing activity might occur.

Standard:

04 If a post-mounted W11-2, W11-6, W11-7, or W11-9 sign is placed at the location of the crossing point where pedestrians, snowmobilers, or equestrians might be crossing the roadway, a diagonal downward-pointing arrow (W16-7P) plaque (see Figure 2C-16 and Section 2C.63) shall be mounted below the sign. If the W11-2, W11-6, W11-7, or W11-9 sign is mounted overhead, the W16-7P plaque shall not be used.

05 A Non-Vehicular Warning sign assembly shall not be installed on an approach controlled by a STOP or a YIELD sign, except as provided in Paragraphs 6 and 7 of this Section.

Option:

06 The Non-Vehicular Warning sign assembly may be installed on an approach to a circular intersection controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point at the entrance to a circulatory roadway.

07 At a signalized or stop-controlled intersection the Non-Vehicular Warning sign assembly may be installed on an approach to a channelized right-turn lane controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point.

08 A Pedestrian Crossing (W11-2) sign may be placed overhead or may be post-mounted with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location where ~~Yield Here To~~ Stop Here For Pedestrians signs (see Section 2B.19) have been installed in advance of the crosswalk.

Standard:

09 If a W11-2 sign has been post-mounted at the crosswalk location where a ~~Yield Here To~~ Stop Here For Pedestrians sign is used on the approach, the ~~Yield Here To~~ Stop Here For Pedestrians sign shall not be placed on the same post as the W11-2 sign.

Option:

10 An advance Pedestrian Crossing (W11-2) sign with an AHEAD or a distance supplemental plaque may be used in conjunction with a ~~Yield Here To~~ Stop Here For Pedestrians sign on the approach to the same crosswalk.

11 The crossing location identified by a W11-2, W11-6, W11-7, or W11-9 sign may be defined with crosswalk markings (see Chapter 3C).

Standard:

12 The W11-2 and W11-9 signs and their related supplemental plaques ~~may~~ shall have a fluorescent yellow-green background with a black legend and border.

~~*Guidance:*~~

~~*13 When a fluorescent yellow-green background 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 selected site area should be avoided.*~~

Option:

14 A Warning Beacon (see Section 4S.03) may be used with any Non-Vehicular Warning sign to indicate specific periods when the condition or activity is present or is likely to be present, or to provide enhanced sign conspicuity.

15 A supplemental WHEN FLASHING (W16-13P) plaque (see Figure 2C-16) may be used with any Non-Vehicular Warning sign that is supplemented with a Warning Beacon to indicate specific periods when the condition or activity is present or is likely to be present.

Section 2C.56 Playground Sign (W15-1)

Option:

01 The Playground (W15-1) sign (see Figure 2C-15(VA)) may be used to give advance warning of a designated children's playground that is located adjacent to the road.

Standard:

02 The Playground sign ~~may~~ shall have a fluorescent yellow-green background with a black legend and border.

Guidance:

03 If the access to the playground area requires a roadway crossing, the application of crosswalk pavement markings (see Chapter 3C) and Non-Vehicular Warning signs (see Section 2C.55) should be considered.

Section 2C.V1 Watch for Children Sign (W15-V1)

Support:

01 The Watch for Children sign (W15-V1) (see Figure 2C-15(VA)) can be used in residential areas on VDOT-maintained secondary routes to alert motorists that children may be at play in the vicinity.

Option:

02 In accordance with the Code of Virginia § 33.2-251, a county or town may enter into an agreement with the Commissioner of Highways allowing the county or town to install and maintain the Watch for Children sign (W15-V1), at locations specified in such agreement.

Standard:

03 The WATCH FOR CHILDREN sign (W15-V1) shall have a fluorescent yellow-green background with a black legend and border.

04 The WATCH FOR CHILDREN sign (W15-V1) shall only be installed through the established agreement process described below.

Support:

05 The agreement for the installation and maintenance of the Watch for Children sign (W15-V1) and engineering requirements are defined in Traffic Engineering Division Memorandum, "Guidance on Installation of Watch for Children Signs" on the VDOT website.

Section 2C.V2 Person with Disability Area Signs (W15-V2, W15-VP1)

Support:

01 In accordance with the Code of Virginia § 46.2-830.2 and Virginia Administrative Code 24VAC30-630-10, any person who is deaf, blind, or deaf-blind, any person with autism or an intellectual or developmental disability as defined in § 37.2-100, or the agent of any such person, may request that VDOT install and maintain the PERSON WITH DISABILITY AREA sign (W15-V2) or DISABILITY plaque (W15-VP1) (see Figure 2C-15(VA)). The sign can be used on VDOT-maintained primary or secondary highways that are not limited access.

Standard:

02 The PERSON WITH DISABILITY AREA sign (W15-V2) shall have a fluorescent yellow-green background with a black legend and border.

03 The PERSON WITH DISABILITY AREA sign (W15-V2) shall only be installed through the established request process described below in Paragraph 8.

04 A single PERSON WITH DISABILITY AREA sign (W15-V2) shall be posted in each travel direction to warn approaching motorists of the area of concern, except in the specific situations described in Paragraphs 5 through 7.

05 In school areas where a S1-1 sign is normally used to warn motorists of school children, a DISABILITY (W15-VP1) plaque shall be attached to the S1-1 sign to warn approaching motorists of school children with a disability.

06 For pedestrian areas other than at a school where a W11-2 sign is normally used to warn motorists of pedestrians, a DISABILITY (W15-VP1) plaque shall be attached to the W11-2 sign to warn motorists of pedestrians with a disability.

07 For pedestrian areas other than at a school where the W11-9 sign is normally used to warn motorists of pedestrians confined to a wheelchair and where the request is for a person with a disability confined to a wheelchair, the W11-9 (international symbol of accessibility) sign shall be used without the DISABILITY plaque.

Support:

08 Procedures for requesting the PERSON WITH DISABILITY AREA sign (W15-V2), funding guidelines, and engineering requirements are defined in "Guidelines for 'Person with Disability Area' Signs" on the VDOT website.

09 VDOT encourages the use of alternative measures to a PERSON WITH DISABILITY AREA (W15-V2) sign or DISABILITY (W15-VP1) plaque. There is no evidence that such signs provide any safety benefits, and such signs can even increase the risk to the person with a disability.

SUPPLEMENTAL WARNING PLAQUES

Section 2C.57 Use of Supplemental Warning Plaques

Option:

01 A supplemental warning plaque (see Figure 2C-16) may be displayed with a warning or regulatory sign when engineering judgment indicates that road users require additional warning information beyond that contained in the main message of the warning or regulatory sign.

Standard:

02 Supplemental warning plaques shall be used only in combination with and installed on the same post(s) as warning or regulatory signs. They shall not be mounted alone or displayed alone.

03 Unless otherwise provided in this Manual for a particular plaque, supplemental warning plaques shall be mounted below the sign they supplement.

Section 2C.V3 STEEP GRADE AHEAD Plaque (W7-VP1)

Option:

01 A STEEP GRADE AHEAD (W7-VP1) plaque may be utilized in conjunction with the COMMERCIAL VEHICLES EXCEPT BUSSES USE RIGHT LANE WHEN OPERATED AT XX MPH OR BELOW (R4-V1) sign or the TRUCKS AND COMBINATION VEHICLES USE RIGHT LANE WHEN OPERATED BELOW XX MPH (R4-V4) sign (see Figure 2B-V8) to warn drivers that an uphill grade may affect heavy vehicle speeds.

Standard:

02 When used, the STEEP GRADE AHEAD (W7-VP1) plaque shall be placed above an R4-V1 or R4-V4 sign.

Section 2C.58 Design of Supplemental Warning Plaques

Standard:

01 A supplemental warning plaque used with a warning sign shall have the same legend, border, and background color as the warning sign with which it is displayed. A supplemental warning plaque used with a regulatory sign shall have a black legend and border on a yellow background.

02 Supplemental warning plaques shall be square or rectangular.

Section 2C.59 Advisory Speed Plaque (W13-1P) and Confirmation Advisory Speed Plaque (W13-1aP)

Option:

01 The Advisory Speed (W13-1P) plaque (see Figure 2C-1) may be used to supplement an advance warning sign to indicate the advisory speed for a condition.

02 The Confirmation Advisory Speed (W13-1aP) plaque (see Figure 2C-1) may be used to supplement a One-Direction Large Arrow (W1-6) sign on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.

Standard:

03 The use of the Advisory Speed and Confirmation Advisory Speed plaques for horizontal curves shall be in accordance with Section 2C.06 and Table 2C-6. The speed differential in Table 2C-6 shall be the difference between the advisory speed for the horizontal curve and the posted speed limit, statutory speed limit, or the 85th percentile speed on the approach to the curve. The Advisory Speed plaque shall also be used where an engineering study indicates a need to advise road users of the advisory speed for other roadway conditions.

04 The speed displayed on the Advisory Speed and Confirmation Advisory Speed plaques shall be a multiple of 5 mph.

05 Except in emergencies or when the condition is temporary, an Advisory Speed or Confirmation Advisory Speed plaque shall not be installed until the advisory speed has been determined by an engineering study.

06 The Advisory Speed plaque shall only be used to supplement an advance warning sign. The Advisory Speed plaque or the Confirmation Advisory Speed plaque shall not be installed as a separate sign installation.

Guidance:

07 The Advisory Speed plaque, if used with a sign that is also supplemented with another plaque, such as an Advance Street Name plaque (see Section 2C.65), should be mounted immediately below the primary warning sign with any other plaque mounted below the Advisory Speed plaque.

Standard:

08 The Confirmation Advisory Speed plaque shall only be used to supplement a One-Direction Large Arrow (W1-6) sign (see Section 2C.10) or an Exit Gore (E5-1 series) sign (see Section 2E.26) and shall not be installed as a separate sign installation.

09 The advisory speed shall be determined by an engineering study that follows established engineering practices.

Guidance:

10 The advisory speed should be determined based on free-flowing traffic conditions.

11 Because changes in conditions, such as roadway geometrics, surface characteristics, or sight distance, might affect the advisory speed, each location should be evaluated periodically or when conditions change.

Standard:

11a A traditional ball-bank indicator or other equivalent device shall be used for determining the recommended advisory speed for a horizontal curve on an existing roadway (see sections 2C.07 and 2C.59 for application of Horizontal Alignment Warning Signs and Advisory Speed Plaques).

11b When an equivalent device is used instead of a traditional ball-bank indicator, the device shall be of equivalent accuracy to a traditional ball-bank indicator.

Option:

11c A traditional ball-bank indicator or other equivalent device may be used for determining the recommended advisory speed to be displayed with an Advisory Exit Speed (W13-2) sign or an Advisory Ramp Speed (W13-3) sign (see Section 2C.12 for application of Advisory Exit Speed and Advisory Ramp Speed signs).

Standard:

11d The following criteria shall apply for ball-bank indicator readings:

- **A. 16 degrees of ball-bank for posted speeds of 20 mph or less**
- **B. 14 degrees of ball-bank for posted speeds of 25 or 30 mph**
- **C. 12 degrees of ball-bank for posted speeds of 35 to 45 mph**
- **D. 10 degrees of ball-bank for posted speeds of 50 mph or more**

Support:

11e The 16, 14, and 12 degrees of ball-bank criteria are comparable to the current AASHTO horizontal curve design guidance.

~~12 Among the established engineering practices that are appropriate for the determination of the recommended advisory speed for a horizontal curve are the following:~~

- ~~A. Compass method~~
- ~~B. Safety-based method~~
- ~~C. Accelerometer method~~
- ~~D. Design equation method~~
- ~~E. Ball-bank method using the following criteria:~~
  - ~~1. 16 degrees of ball-bank for speeds of 20 mph or less~~
  - ~~2. 14 degrees of ball-bank for speeds of 25 to 30 mph~~
  - ~~3. 12 degrees of ball-bank for speeds of 35 mph and higher~~

~~13 The 16, 14, and 12 degrees of ball-bank criteria are comparable to the current AASHTO horizontal curve design guidance. Research has shown that drivers often exceed existing posted advisory curve speeds by 7 to 10 mph.~~

Section 2C.60 NEW Plaque (W16-15P)

Option:

01 A NEW (W16-15P) plaque (see Figure 2C-16) may be mounted above a regulatory sign when a new regulation takes effect in order to alert road users to the new traffic regulation. A NEW plaque may also be mounted above an advance warning sign (such as a Signal Ahead sign for a newly-installed traffic control signal) for a warning of a new traffic condition.

Guidance:

02 The NEW plaque should be removed no later than 6 months after it was installed.

Section 2C.61 Distance Plaques (W16-2 Series, W16-3 Series, W16-4P, and W7-3aP)

Option:

01 The Distance Ahead (W16-2 series and W16-3 series) plaques (see Figure 2C-16) may be used to inform the road user of the distance to the condition indicated by the warning sign.

02 The Next Distance (W7-3aP and W16-4P) plaques (see Figures 2C-5(VA) and 2C-16) may be used to inform road users of the length of roadway over which the condition indicated by the warning sign exists.

Section 2C.62 Supplemental Arrow Plaques (W16-5P and W16-6P)

Guidance:

01 If the condition indicated by a warning sign is located on an intersecting road and the distance between the intersection and condition is not sufficient to provide adequate advance placement of the warning sign, a Supplemental Arrow (W16-5P or W16-6P) plaque (see Figure 2C-16) should be used below the warning sign.

Standard:

02 Supplemental Arrow plaques shall have the same legend design as the Advance Turn Arrow and Directional Arrow auxiliary signs (see Sections 2D.26 and 2D.28) except that they shall have a black legend and border on a yellow or fluorescent yellow-green background, as appropriate.

Section 2C.63 Diagonal Downward-Pointing Arrow Plaques (W16-7P and W16-7aP)

Support:

01 Diagonal downward-pointing arrow (W16-7P and W16-7aP) plaques (see Figure 2C-16) are used with certain Vehicular Traffic Warning signs (see Section 2C.54) and certain Non-Vehicular Warning signs (see Section 2C.55), and School Crossing signs (see Section 7B.03) to indicate the specific location of a crossing point.

02 The W16-7P plaque contains a single arrow pointing diagonally down to the right or left, toward the roadway, depending on which side of the roadway it is located.

Option:

03 A W16-7aP plaque may be used with a single crossing sign located on a narrow median separating two roadways with traffic in the same direction where the crossing traverses both roadways.

Section 2C.64 Hill-Related Plaques (W7-2 Series and W7-3 Series)

Guidance:

01 Hill-Related (W7-2 series and W7-3 series) plaques (see Figure 2C-5(VA)) or other appropriate legends and larger signs should be used for emphasis or where special hill characteristics exist.

02 On longer grades, the use of a distance (W7-3aP or W7-3bP) plaque (see Figure 2C-5(VA)) at periodic intervals of approximately 1-mile spacing should be considered.

Section 2C.65 Advance Street Name Plaques (W16-8P and W16-8aP)

Option:

01 An Advance Street Name (W16-8P or W16-8aP) plaque (see Figure 2C-16) may be used with any Intersection (W1-10 series, W2 series, W10-2, W10-3, or W10-4) or Advance Traffic Control (W3 series) sign to identify the name of the intersecting street.

Standard:

02 The lettering on Advance Street Name plaques shall be composed of a combination of lower-case letters with initial upper-case letters.

03 If two street names are used on the Advance Street Name plaque, a directional arrow pointing in the direction of the street shall be placed next to each street name. Arrows pointing to the left shall be placed to the left of the street name, and arrows pointing to the right shall be placed to the right of the street name.

Guidance:

04 If two street names are used on the Advance Street Name plaque, the street names and associated arrows should be displayed in the following order:

- *A. For a single intersection, the name of the street to the left should be displayed above the name of the street to the right; or*
- *B. For two sequential intersections, such as where the plaque is used with an Offset Side Roads (W2-7) or a Double Side Road (W2-8) sign, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see Figure 2C-16).*

Section 2C.66 Traffic Does Not Stop Plaques (W4-4P Series)

Option:

01 The CROSS TRAFFIC DOES NOT STOP (W4-4P) plaque (see Figure 2C-10) may be used in combination with a STOP sign when engineering judgment indicates that conditions are present that are causing or could cause road users to misinterpret the intersection as an all-way stop.

02 The TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) plaque may be used when such messages more accurately describe the traffic controls established at the intersection.

Guidance:

03 The W4-4aP and W4-4bP plaques should be used at intersections where STOP signs control all but one approach to the intersection, unless the only non-stopped approach is from a one-way street.

Standard:

04 If a W4-4P series plaque is used, it shall be mounted below the STOP sign.

Support:

05 Section 9C.06 contains information for Bicycle Cross Traffic warning plaques that can be used below STOP signs on crossroads or driveways that intersect with bicycle facilities.

Section 2C.67 IN ROAD and IN STREET Plaques (W16-1P and W16-1aP)

Option:

01 In situations where there is a need to warn drivers to watch for other slower forms of transportation traveling along the highway, such as bicycles, pedestrians, golf carts, horse-drawn vehicles, or farm machinery, an IN ROAD (W16-1P) plaque or IN STREET (W16-1aP) plaque (see Figure 2C-16) may be used.

Standard:

02 The background color of the W16-1P or W16-1aP plaque shall match the background color of the warning sign with which it is displayed. If a W16-1P or W16-1aP plaque is used, it shall be mounted below either a Vehicular Traffic Warning sign (see Section 2C.54) or a Non-Vehicular Warning sign (see Section 2C.55), and shall not be mounted alone.

Support:

03 Section 9B.14 contains information about the use of a Bicycles Allowed Use of Full Lane (R9-20) sign to inform drivers of the presence of bicycles in the roadway or where bicyclists are expected or preferred to use the full lane.

Section 2C.68 EXCEPT BICYCLES Plaque (W16-20P)

Option:

01 Where it is desired to notify bicyclists that the conditions depicted by a warning sign are not applicable to bicycles, the EXCEPT BICYCLES (W16-20P) supplemental warning plaque (see Figure 2C-16) may be mounted below the warning sign.

Support:

02 Examples of warning signs with which an EXCEPT BICYCLES (W16-20P) plaque can be mounted include DEAD END (W14-1) or NO OUTLET (W14-2) signs.

Section 2C.69 Photo Enforced Plaques (W16-10P and W16-10aP)

Option:

01 A Photo Enforced (W16-10P) plaque or a PHOTO ENFORCED (W16-10aP) word message plaque (see Figure 2C-16) may be mounted below a warning sign to advise road users that the regulations associated with the condition being warned about (such as a traffic control signal or a toll plaza) are being enforced by photographic equipment.

OBJECT MARKERS

Section 2C.70 Object Marker Design and Placement Height

Support:

01 Types 1, 2, and 3 object markers are used to mark obstructions within or adjacent to the roadway. Type 4 object markers are used to mark the end of a roadway.

Standard:

02 When used, object markers (see Figure 2C-17(VA)) shall not have a border and shall consist of an arrangement of one or more of the following types:

Type 1—a diamond-shaped sign, at least 18 inches on a side, consisting of ~~either a yellow (OM1-1) or black (OM1-2) sign with nine yellow retroreflective devices, each with a minimum diameter of 3 inches, mounted symmetrically on the sign, or~~ an all-yellow retroreflective sign (OM1-3).

Type 2—~~either~~ a marker ~~(OM2-1V or OM2-1H)~~ consisting of ~~three yellow retroreflective devices, each with a minimum diameter of 3 inches, arranged either horizontally or vertically on a white sign measuring at least 6 x 12 inches; or~~ an all-yellow horizontal or vertical retroreflective sign (OM2-2V or OM2-2H), measuring at least 6 x 12 inches.

Type 3—a striped marker, 12 x 36 inches, consisting of a vertical rectangle with alternating black and retroreflective yellow stripes sloping downward at an angle of 45 degrees toward the side of the obstruction on which traffic is to pass. The minimum width of the yellow and black stripes shall be 3 inches.

Type 4—a diamond-shaped sign, at least 18 inches on a side, consisting of ~~either a red (OM4-1) or black (OM4-2) sign with nine red retroreflective devices, each with a minimum diameter of 3 inches, mounted symmetrically on the sign, or~~ an all-red retroreflective sign (OM4-3).

Support:

03 Type 3 object markers with stripes that begin at the upper right side and slope downward to the lower left side are designated as right object markers (OM3-R). Object markers with stripes that begin at the upper left side and slope downward to the lower right side are designated as left object markers (OM3-L). Object markers with chevron stripes that slope downward to both the lower left and lower right sides are designated as center object markers (OM3-C).

Guidance:

04 When used for marking obstructions within the roadway or obstructions that are 8 feet or less from the shoulder or curb, the minimum mounting height, measured from the bottom of the object marker to the elevation of the near edge of the traveled way, should be 4 feet.

05 When used to mark obstructions more than 8 feet from the shoulder or curb, the clearance from the ground to the bottom of the object marker should be at least 4 feet.

Option:

05a Larger and/or wider Type 3 Object Markers (OM3) may be utilized when engineering judgment determines a need for enhanced marking of an obstruction.

05b The larger OM3 Object Markers may be up to 30 inches wide and 30 inches tall.

Guidance:

06 Object markers should not present a vertical or horizontal clearance obstacle for pedestrians.

Option:

07 When object markers or markings are applied to an obstruction that by its nature requires a lower or higher mounting, the vertical mounting height may vary according to need.

Support:

08 Section 9C.09 contains information regarding the use of object markers on shared-use paths.

Section 2C.71 Object Markers for Obstructions Within the Roadway

Standard:

01 Obstructions within the roadway shall be marked with a Type 1 or Type 3 object marker. In addition to markers on the face of the obstruction, warning of approach to the obstruction shall be given by appropriate pavement markings (see Section 3B.13).

Option:

02 To provide additional emphasis, a Type 1 or Type 3 object marker may be installed at or near the approach end of a median island.

03 To provide additional emphasis, large surfaces such as bridge piers may be painted with diagonal stripes, 12 inches or greater in width, similar in design to the Type 3 object marker.

Standard:

04 The alternating black and retroreflective yellow stripes (OM3-L, OM3-R) shall be sloped down at an angle of 45 degrees toward the side on which traffic is to pass the obstruction. If traffic can pass to either side of the obstruction, the alternating black and retroreflective yellow stripes (OM3-C) shall form chevrons that point upwards.

Option:

05 Appropriate signs (see Sections 2B.40 and 2C.23) directing traffic to one or both sides of the obstruction may be used instead of the object marker.

Section 2C.72 Object Markers for Obstructions Adjacent to the Roadway

Support:

01 Obstructions not actually within the roadway are sometimes so close to the edge of the road that they need a marker. These include underpass piers, bridge abutments, handrails, ends of traffic barriers, utility poles, and culvert headwalls. In other cases there might not be a physical object involved, but other roadside conditions exist, such as narrow shoulders, drop-offs, gores, small islands, and abrupt changes in the roadway alignment, that might make it undesirable for a road user to leave the roadway, and therefore would create a need for a marker.

Option:

01a Type 2 object markers may be used to mark breakaway fixtures (light poles, etc.) and traversable raised objects and depressions adjacent to the roadway. The vertical orientation of the object marker is used for point hazards and the horizontal orientation is used for linear hazards.

02 ~~Type 2 or~~ Type 3 object markers may be used to mark an obstruction adjacent to the roadway.

Guidance:

03 If a Type 2 ~~or Type 3~~ object marker is used to mark ~~an obstruction adjacent to the roadway~~ breakaway fixtures (light poles, etc.) and traversable raised objects and depressions adjacent to the roadway, the edge of the object marker that is closest to the road user should be installed in line with the closest edge of the breakaway fixture, raised object, or depression.

03a If a Type 3 object marker is used to mark an obstruction adjacent to the roadway, the edge of the object marker that is closest to the road user should be installed in line with the closest edge of the obstruction.

04 When a marker is applied to the approach ends of guardrail or crash cushion terminals it should have the appearance of a Type 3 object marker and should be directly affixed, without a substrate, to the approach end of the guardrail or crash cushion and generally conform to the size and shape of the approach end of the guardrail or crash cushion.

Standard:

05 Type 1 and Type 4 object markers shall not be used to mark obstructions adjacent to the roadway.

Guidance:

06 Standard warning signs in this Chapter should also be used where applicable.

Section 2C.73 Object Markers for Ends of Roadways

Support:

01 The Type 4 object marker is used to warn and alert road users of the end of a roadway in other than construction or maintenance areas.

Standard:

02 If an object marker is used to mark the end of a roadway, a Type 4 object marker shall be used.

Option:

03 The Type 4 object marker may be used in instances where there are no alternate vehicular paths.

04 Where conditions warrant, more than one marker, or a larger marker with or without a Type 3 Barricade (see Section 2B.75), may be used at the end of the roadway.

Standard:

05 The minimum mounting height, measured vertically from the bottom of a Type 4 object marker to the elevation of the near edge of the traveled way, shall be 4 feet.

Guidance:

06 Appropriate advance warning signs in this Chapter should be used.

CHAPTER 2D. GUIDE SIGNS—CONVENTIONAL ROADS

Chapter 2D Subchapter and Section Organization

STREET NAME AND PARKING SIGNS

FREEWAY INTERCHANGE APPROACH SIGNS

WEIGH STATION, CROSSOVER, TRUCK AND PASSING LANE, AND EMERGENCY AND SLOW VEHICLE TURN-OUT SIGNS

OTHER GUIDE SIGNS

SIGNING AT AIRPORTS

GENERAL DESIGN

Section 2D.01 Scope of Conventional Road Guide Sign Standards and Application

Standard:

01 The provisions of this Chapter shall apply to any road or street other than expressways and freeways, except as otherwise provided in this Manual.

Support:

02 Guide signs direct road users along streets and highways; inform them of intersecting routes; direct them to cities, towns, villages, or other important destinations; identify nearby rivers and streams, parks, forests, and historical sites; and provide information that will help them along their way in the most simple and direct manner possible.

Guidance:

03 The selection of primary or control destinations (those displayed consistently over longer distances along a route) displayed on guide signs should be meaningful to road users in navigation and orientation. The destinations selected should be identifiable on official maps.

04 The familiarity of the road users with the road should be considered in determining the need for guide signs on low-volume roads.

Support:

05 Low-volume roads generally do not require guide signs to the extent that they are needed on higher classes of roads. Because guide signs are typically only beneficial as a navigational aid for road users who are unfamiliar with a low-volume road, guide signs might not be needed on low-volume roads that serve only local traffic.

06 Guide signs, other than Street Name signs, generally are not used on low-volume rural roads except as needed to guide road users back to the major roadways.

Guidance:

07 If used on low-volume roads, destination names should be as specific and descriptive as possible. Destinations such as campgrounds, ranger stations, recreational areas, and the like should be clearly indicated so that they are not interpreted to be communities or locations with road user services.

Option:

08 Guide signs may be used on low-volume roads at intersections to provide information for road users returning to a higher class of roads.

Support:

09 Chapter 2A addresses placement, location, and other general criteria for signs.

Section 2D.02 Color, Retroreflection, and Illumination

Support:

01 Requirements for illumination, retroreflection, and color are stated under the specific headings for individual guide signs or groups of signs. General provisions are given in Sections 2A.06, 2A.21, and 2A.22.

Standard:

02 Except as otherwise provided in this Manual for individual signs or groups of signs, guide signs on streets and highways shall have a white message and border on a green background. All messages, borders, and legends shall be retroreflective and all backgrounds shall be retroreflective or illuminated.

Support:

03 Color coding is sometimes used to help road users distinguish between multiple potentially confusing destinations. Examples of valuable uses of color coding include guide signs for roadways approaching or inside an airport property with multiple terminals serving multiple airlines, and community wayfinding guide signs for various traffic generator destinations within a community or area.

Standard:

04 Except as otherwise provided in this Manual, different color sign backgrounds shall not be used to provide color coding of destinations. The color coding shall be accomplished by the use of different colored square or rectangular sign panels on the face of the guide signs (see Figure 2D-1).

Option:

05 The different colored sign panels on the face of a sign may include a black or white (whichever provides the better contrast with the panel color) letter, numeral, or other appropriate designation to identify an airport terminal or other destination.

Support:

06 Section 2D.55 contains specific provisions regarding Community Wayfinding guide signs.

Section 2D.03 Size of Signs

Standard:

01 Except as provided in Section 2A.07, the minimum sizes of conventional road guide signs that have standardized designs shall be as shown in Table 2D-1(VA).

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2D-1(VA).

Option:

03 Signs larger than those shown in Table 2D-1(VA) may be used (see Section 2A.07).

Support:

04 For other guide signs, the legends are so variable that a standardized design or size is not appropriate. The sign size is determined primarily by the length of the message, and the size of lettering and spacing necessary for proper legibility.

Option:

05 Reduced letter height, reduced interline spacing, and reduced edge spacing may be used on guide signs if sign size must be limited by factors such as lane width or vertical or lateral clearance.

Guidance:

06 Reduced spacing between the letters or words on a line of legend should not be used as a means of reducing the overall size of a guide sign, except where determined necessary by engineering judgment to meet unusual lateral-space constraints. In such cases, the legibility distance of the sign legend should be the primary consideration in determining whether to reduce the spacing between the letters or the words or between the words and the sign border, or to reduce the letter height.

07 When a reduction in the prescribed size is necessary, the design used should be as similar as possible to the design for the standard size.

Section 2D.04 Lettering Style

Standard:

01 The design of upper-case letters, lower-case letters, numerals, route shields, and spacing shall be as provided in the "Standard Highway Signs" publication (see Section 1A.05) and the "Virginia Standard Highway Signs" book (see Appendix A of this Manual for link).

02 The lettering for names of places, streets, and highways on conventional road guide signs shall be a combination of lower-case letters with initial upper-case letters (see Section 2A.08). The nominal loop height of the lower-case letters shall be ¾ the height of the initial upper-case letter. When a mixed-case legend letter height is specified referring only to the initial upper-case letter, the height of the lower-case letters that follow shall be determined by this proportion. When the height of a lower-case letter is referenced, the reference is made to the nominal loop height. The height of the initial upper-case letter shall also be determined by this proportion.

03 All other word legends on conventional road guide signs shall be in upper-case letters.

04 The unique letter forms for each of the Standard Alphabet series shall not be stretched, compressed, warped, or otherwise manipulated. Modifications to the length of a word for a given letter height and series shall be accomplished only by the methods described in Section 2D.03.

Section 2D.05 Size of Lettering

Support:

01 Sign legibility is a direct function of letter size and spacing. Legibility distance has to be sufficient to give road users enough time to read and comprehend the sign. Under optimum conditions, a guide sign message can be read and understood in a brief glance. The legibility distance takes into account factors such as inattention, blocking of view by other vehicles, unfavorable weather, inferior eyesight, or other causes for delayed or slow reading. Where conditions permit, repetition of guide information on successive signs gives the road user more than one opportunity to obtain the information needed.

Standard:

02 Design layouts for conventional road guide signs showing interline spacing, edge spacing, and other specification details shall be as shown in the "Standard Highway Signs" publication (see Section 1A.05) and the "Virginia Standard Highway Signs" book (see Appendix A of this Manual for link).

03 Except as otherwise provided in this Manual, the principal legend on post-mounted guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, or a combination of 6 inches in height for upper-case letters and 4.5 inches in nominal loop height (see Section 2D.04) for lower-case letters. On low-volume roads with speeds of 25 mph or less, and on urban streets with speeds of 25 mph or less, the principal legend on post-mounted guide signs shall be in letters at least 4 inches in height for all upper-case letters, or a combination of 4 inches in height for upper-case letters and 3 inches in nominal loop height for lower-case letters.

04 Except as otherwise provided in this Manual, the principal legend on overhead guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, or a combination of 6 inches in height for upper-case letters and 4.5 inches in nominal loop height (see Section 2D.04) for lower-case letters.

Guidance:

05 Lettering sizes should be consistent on any particular class of highway.

06 The minimum lettering and numeral sizes provided in this Manual (see Table 2D-2) should be exceeded where conditions indicate a need for greater legibility.

Section 2D.06 Amount of Legend

Support:

01 The longer the legend on a guide sign, the longer it will take road users to recognize and comprehend it, regardless of letter size.

Guidance:

02 Except where otherwise provided in this Manual, guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions. Where two or more signs are included in the same overhead display, the amount of legend should be further minimized. Where appropriate, a distance message or action information, such as an exit number, NEXT RIGHT, or directional arrows, should be provided on guide signs in addition to the destinations.

Section 2D.07 Abbreviations

Support:

01 The use of commonly recognized abbreviations for certain words can be useful in reducing the reading time and improve quicker comprehension of a sign message. Descriptors and directional or quadrant orientations for street names and destinations, such as Boulevard (Blvd), North (N), and Southwest (SW), are some examples of commonly recognized abbreviations. Examples of the use of some guide sign abbreviations are shown in Figure 2D-2.

Standard:

02 The words NORTH, SOUTH, EAST, and WEST shall not be abbreviated when used to indicate cardinal directions of numbered or named highways on guide signs.

Guidance:

03 Abbreviations should be kept to a minimum; however, they are useful when complete destination messages produce excessively long signs. If used, abbreviations should be unmistakably recognized by road users (see Section 1D.08). Longer commonly used words that are not part of a proper name and are readily recognizable, such as street name descriptors (such as Street, Boulevard, or Avenue), should be abbreviated as provided in Table 2D-3 to expedite recognition of the sign legend by reducing the amount and complexity of the legend. Shorter street name descriptors, such as those shown in Table 2D-4, should not be abbreviated.

04 Periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens should not be used in abbreviations, unless necessary to avoid confusion.

05 The solidus is intended to be used for fractions only and should not be used to separate words on the same line of legend. Instead, a hyphen should be used for this purpose, such as "TRUCKS – BUSES."

Section 2D.08 Arrows

Support:

01 Arrows are used for lane assignment and to indicate the direction toward designated routes or destinations. Figure 2D-3 shows the various standard arrow designs that have been approved for use on guide signs. Detailed drawings are shown for these arrows in the "Standard Highway Signs" publication (see Section 1A.05).

Standard:

02 Except for Overhead Arrow-per-Lane signs (see Section 2D.37), on overhead signs where it is desirable to indicate a lane to be followed, a down arrow shall be positioned over the approximate center of the lane and shall point vertically downward toward the approximate center of that lane. Down arrows shall be used only on overhead guide signs that restrict the use of specific lanes to traffic bound for the destination(s) and/or route(s) indicated by these arrows. Down arrows shall not be used unless an arrow can be located over and pointed to the approximate center of each lane that can be used to reach the destination displayed on the sign.

03 If down arrows are used, having more than one down arrow pointing to the same lane on a single overhead sign (or on multiple signs on the same overhead sign structure) shall not be permitted.

04 Where a roadway is leaving the through lanes, a directional arrow shall point upward at an angle that approximates the alignment of the exit roadway in the vicinity of the point of departure.

05 The Type E directional arrow for circular intersections shall not be used on any sign that is not associated with a circular intersection.

Guidance:

06 The Type A directional arrow should be used on guide signs on freeways, expressways, and conventional roads to indicate the direction to a specific destination or group of destinations, except as otherwise provided in this Section and in Section 2E.18.

07 When a directional arrow in a vertical, upward-pointing orientation is placed to the side of a group of destinations to indicate a through movement, the Type A directional arrow should be used. When a directional arrow in a vertical, upward-pointing orientation is placed to the side of a single destination or under a destination or group of destinations, the Type B directional arrow should be used.

08 The Type B directional arrow should be used on guide signs on conventional roads when placed at any angle to the side of a single destination or when placed in a horizontal orientation to the side of a group of destinations.

09 The Type C advance turn directional arrow should be used on conventional road guide signs placed in advance of an intersection where a turn must be made to reach a posted destination or group of destinations.

10 The Type D directional arrow should be used primarily for sign applications other than guide signs, except as provided in Paragraph 15 of this Section.

11 If the Type E directional arrow is used, the principles set forth in Sections 2D.26 through 2D.29 should be followed.

Option:

12 The Type A-Extended directional arrow may be used on guide signs where additional emphasis regarding the direction is needed relative to the amount of legend on the sign.

13 The Type C directional arrow may be used to the side of the legend of an overhead guide sign to accentuate a sharp turn exit maneuver from a mainline roadway (see Section 2E.25 for additional information regarding Exit Direction signs for low advisory ramp speeds).

14 On conventional roads on the approach to an intersection where the Combination Lane-Use/Destination overhead guide sign (see Section 2D.38) is not used, the Type C advance turn directional arrow may be used beneath the legend of an overhead guide sign to indicate the fact that a turn must be made from a mandatory movement lane over which the sign is placed to reach the destination or destinations displayed on the sign.

15 The Type D directional arrow may be used on post-mounted guide signs on conventional roads with lower operating speeds if the height of the text on the sign is 8 inches or less. Type D arrows may be used on a Street Name (D3-1 only) sign displaying two street names to indicate the different direction of travel for each street.

16 The Type E directional arrow may be used on guide signs on approaches to circular intersections to represent the intended driver paths to destinations involving left-turn movements around the circulatory island.

17 The directional and down arrows shown in Figure 2D-3 may be used on signs other than guide signs for the purposes of providing directional guidance and lane assignment.

Guidance:

18 Arrows used on guide signs to indicate the directions toward designated routes or destinations should be pointed at the appropriate angle to clearly convey the direction to be taken. A horizontally-oriented directional arrow design should be used at right-angle intersections.

19 On a post-mounted guide sign, a directional arrow for a straight-through movement should point upward. Except as provided in Section 2D.50, for a turn, the arrow on a guide sign should point horizontally or at an upward angle that approximates the sharpness of the turn.

20 At an exit, an arrow should be placed at the side of the sign that will reinforce the movement of exiting traffic. The directional arrow design should be used.

Standard:

21 If used, the Type C advance turn directional arrow shall display a right or left arrow, the shaft of which is bent at a 90-degree or oblique angle.

Option:

22 Arrows may be placed below the principal sign legend or on the appropriate side of the legend that is consistent with the direction of the movement.

23 On a post-mounted sign at an exit where placement of the arrow to the side of the legend farthest from the roadway would create an unusually wide sign that limits the road user's view of the arrow, the directional arrow may be placed at the bottom portion of the sign, centered under the legend.

Guidance:

24 The width across the arrowhead for the Types A, B, and C directional arrows should be between 1.5 and 1.75 times the height of the upper-case letters of the principal legend on the sign. The width across the arrowhead for the Type D directional arrow should be at least equal to the height of the upper-case letters of the principal legend on the sign. For down arrows used on overhead signs, the width across the arrowhead should be approximately 2 times the height of the upper-case letters of the principal legend on the sign.

Support:

25 Section 2D.37 contains the provisions for arrows used in Overhead Arrow-per-Lane signs on approaches to conventional road intersections. Section 2D.41 contains the provisions for arrows used in Diagrammatic Advance guide signing on approaches to conventional road intersections other than circular

intersections. Section 2D.39 contains the provisions for diagrammatic arrows used in Destination signs on the approaches to circular intersections (see Figure 2D-11).

26 The "Standard Highway Signs" publication (see Section 1A.05) contains design details and standardized sizes of the various arrows based on ranges of letter heights of principal legends.

ROUTE SIGNS AND AUXILIARY PLAQUES

Section 2D.09 Numbered Highway Systems

Support:

01 The purpose of numbering and signing highway systems is to identify routes and facilitate travel.

02 The Interstate and United States (U.S.) highway systems are numbered by the American Association of State Highway and Transportation Officials (AASHTO) upon recommendations of the State highway organizations because the respective States own these systems. State and county road systems are numbered by the appropriate authorities.

03 The basic policy for numbering the Interstate and U.S. highway systems is contained in the following Purpose and Policy statements published by AASHTO:

A. "Establishment and Development of United States Numbered Highways," and
B. "Establishment of a Marking System of the Routes Comprising the National System of Interstate and Defense Highways."

Guidance:

04 The principles of these policies should be followed in establishing the highway systems described in Paragraph 3 of this Section and any other systems, with effective coordination between adjacent jurisdictions. Care should be taken to avoid the use of numbers or other designations that have been assigned to Interstate, U.S., or State routes in the same geographic area. Overlapping numbered routes should be kept to a minimum.

Standard:

05 Route systems shall be given preference in this order: Interstate, United States, Primary State, and Secondary State~~, State, and county~~. The preference shall be given by installing the highest-priority route number on the top or the left of the sign, except as provided in Paragraph 7 of this Section.

06 **Interstate route numbering shall be approved by the FHWA.**

Option:

07 The prioritization of route systems may be modified when a different prioritization would better accommodate the expectancy of the road user and provide more effective direction, such as for separate decision points for routes that are encountered in a particular order.

Support:

08 Section 2D.56 contains information regarding the signing of unnumbered highways to enhance route guidance and facilitate travel.

Section 2D.10 Route Signs and Auxiliary Plaques

Standard:

01 Except as provided in Paragraph 9 of Section 2D.29, all numbered highway routes shall be identified by route signs and auxiliary plaques.

02 The signs for each system of numbered highways, which are distinctive in shape and color, shall be used only on that system and the approaches thereto.

Option:

03 Route signs and auxiliary plaques may be proportionally enlarged where greater conspicuity or legibility is needed.

Support:

04 Route signs are typically mounted in assemblies with auxiliary plaques.

05 Section 2D.57 contains information regarding the signing for National Scenic Byways.

06 Section 2D.58 contains information regarding the signing for State-designated scenic byways, historic trails, and auto tour routes.

Section 2D.11 Design of Route Signs

Standard:

01 The design of standard Interstate and U.S. route signs shall conform to the designs provided in the "Standard Highway Signs" publication (see Section 1A.05) and the design of standard

State Primary and State Secondary route signs shall conform to the designs provided in the "Virginia Standard Highway Signs" book (see Appendix A of this Manual for link). The design of other route signs shall be established by the authority having jurisdiction and shall be in general conformance with the designs provided in the "Standard Highway Signs" publication.

02 Interstate Route (M1-1 ~~and M1-1a~~) signs (see Figure 2D-4(VA)) shall be used on all Interstate routes and in connection with Route Sign assemblies on intersecting highways.

03 Except as otherwise provided in this Manual, a 24 x 24-inch minimum sign size shall be used for Interstate route numbers with one or two digits, and a 30 x 24-inch minimum sign size shall be used for Interstate route numbers having three digits.

~~Option:~~

~~04 When the Interstate Route sign is used in a route sign assembly (see Section 2D.29), the M1-1a sign, containing the State name in white upper-case letters on a blue background as detailed in the "Standard Highway Signs" publication (see Section 1A.05), may be used in place of the M1-1 sign.~~

Standard:

~~**05 Use of the M1-1a sign shall be limited to route sign assemblies.**~~

06 Off-Interstate Business Route (M1-2 and M1-3) signs (see Figure 2D-4(VA)) shall consist of a cutout shield displaying the number of the connecting Interstate route and the words BUSINESS and either LOOP (when the route rejoins the same Interstate route) or SPUR (when the route leaves the corresponding Interstate route and does not rejoin) in upper-case letters. The legend and border shall be white on a green background, and the shield shall be the same shape and dimensions as the Interstate Route sign. In no instance shall the word INTERSTATE appear on the Off-Interstate Business Route sign.

Option:

07 The Off-Interstate Business Route sign may be used on a major highway that is not a part of the Interstate system, but one that serves the business area of a city from an interchange on the system.

Standard:

08 U.S. Route signs (see Figure 2D-4(VA)) shall consist of black numerals on a white shield surrounded by a rectangular black background without a border. This sign shall be used on all U.S. routes and in connection with Route Sign assemblies on intersecting highways.

09 A 24 x 24-inch minimum sign size shall be used for U.S. route numbers with one or two digits, and a 30 x 24-inch minimum sign size shall be used for U.S. route numbers having three digits.

10 State Route signs shall be designed by the individual State highway agencies.

11 The legend on State Route signs shall conform to the Standard Alphabets contained in the "Standard Highway Signs" publication (see Section 1A.05).

~~*Guidance:*~~

12 ~~State~~ Virginia Primary and Virginia Circular Secondary Route signs (see Figure 2D-4(VA)) ~~should~~ shall be rectangular and ~~should~~ shall be approximately the same size as the U.S. Route sign. State Route signs ~~should~~ shall also be similar to the U.S. Route sign by containing approximately the same size black numerals on a white area surrounded by a rectangular black background without a border~~, and should be devoid of complex graphics. The shape of the white area should be circular in the absence of any determination to the contrary by the individual State concerned~~.

13 Where U.S. or State Route signs are used as components of guide signs, only the distinctive shape of the shield itself and the route numerals within ~~should~~ shall be used. The rectangular background upon which the distinctive shape of the shield is mounted, such as the black area around the outside of the shields on the M1-4 and standard M1-5 signs, ~~should~~ shall not be included on the guide sign. Where U.S. ~~or State~~ Route, Virginia Primary Route, or Virginia Circular Secondary Route signs are used as components of other signs of non-contrasting background colors, the rectangular background ~~should~~ shall be used so that recognition of the distinctive shape of the shield can be maintained.

~~14 If county road authorities elect to establish and identify a special system of important county roads, a statewide policy for such signing shall be established that includes a uniform numbering system to uniquely identify each route. The County Route (M1-6) sign (see Figure 2D-4) shall consist of a pentagon shape with a yellow county name and route number and border on a blue background. County Route signs shall be a minimum size of 24 x 24 inches.~~

~~15 If a jurisdiction uses letters instead of numbers to identify routes, all references to numbered routes in this Chapter shall be interpreted to also include lettered routes.~~

Guidance:

16 If used with other route signs in common assemblies, the County Route sign should be of a size compatible with that of the other route signs.

Standard:

17 The design of the National Forest Route (M1-7) sign (see Figure 2D-4(VA)) shall be as detailed in the "Standard Highway Signs" publication (see Section 1A.05). Route signs for other park and forest roads shall be designed with an appropriate level of distinctiveness and adequate legibility, but in general compliance with the design principles for route signs and of a size compatible with other route signs used in common assemblies.

Section 2D.12 Design of Route Sign Auxiliary Plaques

Standard:

01 Route sign auxiliary plaques displaying word legends, except the Junction (M2-1P) auxiliary plaque, shall have a minimum standard size of 24 x 12 inches. The Junction auxiliary plaque and those auxiliary plaques displaying arrows shall have a minimum standard size of 21 x 15 inches. All route sign auxiliary plaques shall match the color combination of the route sign that they supplement.

Guidance:

02 The background, legend, and border of a route sign auxiliary plaque should have the same colors as those of the route sign with which the auxiliary plaque is mounted in a route sign assembly (see Section 2D.29). For a route sign design that uses multiple background colors, such as the Interstate Route sign, the background color of the corresponding auxiliary plaque should be that of the background area on which the route number is placed on the route sign.

Option:

03 A route sign and any auxiliary plaques used with it may be combined on a single sign as a guide sign.

Standard:

04 If a route sign and its auxiliary plaques are combined to form a single guide sign, the background color of the sign shall be green and the design shall comply with the basic principles for the design of guide signs. The auxiliary messages shall be white legends placed directly on the green background. Auxiliary plaques shall not be mounted directly to a guide sign or other type of sign.

Support:

05 Chapter 2F contains information regarding auxiliary plaques for toll highways.

Section 2D.13 Junction Auxiliary Plaque (M2-1P)

Standard:

01 The Junction (M2-1P) auxiliary plaque (see Figure 2D-5) shall display the abbreviated legend JCT and shall be mounted at the top of an assembly (see Section 2D.30) directly above the route sign, the sign for an alternative route (see Section 2D.17) that is part of the route designation, or the Cardinal Direction auxiliary plaque where access is available only to one direction of the intersected route. The minimum size of the Junction auxiliary plaque shall be 21 x 15 inches for compatibility with auxiliary plaques displaying arrow symbols.

Section 2D.14 Combination Junction Sign (M2-2)

Option:

01 As an alternative to the standard Junction assembly where more than one route is to be intersected or joined, a rectangular guide sign may be used displaying the word JUNCTION above the route numbers.

Standard:

02 The Combination Junction (M2-2) sign (see Figure 2D-5) shall have a green background with white border and lettering for the word JUNCTION.

Guidance:

03 The Combination Junction sign should comply with the specific provisions of Section 2D.11 regarding the incorporation of the route signs as components of guide signs.

04 Although the size of the Combination Junction sign will depend on the number of routes involved, the numerals should be large enough for clear legibility and should be of a size comparable with those in the individual route signs.

Section 2D.15 Cardinal Direction Auxiliary Plaques (M3-1P through M3-4P)

Guidance:

01 Cardinal Direction auxiliary plaques (see Figure 2D-5) displaying the legend NORTH, EAST, SOUTH, or WEST should be used to indicate the general direction of the entire route.

Standard:

02 To improve the readability and recognition of the cardinal directions, the first letter of the cardinal direction words shall be ten percent larger, rounded up to the nearest whole number size.

03 If used, the Cardinal Direction auxiliary plaque shall be mounted directly above a route sign or, if used, an auxiliary plaque for an alternative route.

Section 2D.16 Alternative Route Auxiliary Plaques (M4-1P through M4-4P)

Option:

01 Alternative Route auxiliary plaques (see Figure 2D-5) displaying legends such as ALTERNATE, BY-PASS, BUSINESS, or TRUCK, may be used to indicate an alternate route of the same number between two points on that route.

Standard:

02 If used, the Alternative Route auxiliary plaques shall be mounted directly above a route sign.

Section 2D.17 ALTERNATE Auxiliary Plaques (M4-1P and M4-1aP)

Option:

01 The ALTERNATE (M4-1P) or the ALT (M4-1aP) auxiliary plaque (see Figure 2D-5) may be used to indicate an officially designated alternate routing of a numbered route between two points on that route.

Standard:

02 If used, the ALTERNATE or ALT auxiliary plaque shall be mounted directly above a route sign.

03 The M4-1P series plaques shall not be used to sign an alternative routing that is not officially designated and incorporated into the numbered highway system, such as alternative routings for incident management or emergency detours.

Guidance:

04 The shorter (time or distance) or better-constructed route should retain the regular route number, and the longer or worse-constructed route should be designated as the alternate route.

Section 2D.18 BY-PASS Auxiliary Plaque (M4-2P)

Option:

01 The BY-PASS (M4-2P) auxiliary plaque (see Figure 2D-5) may be used to designate a route that branches from the numbered route through a city, bypasses a part of the city or congested area, and rejoins the numbered route beyond the city.

Standard:

02 If used, the BY-PASS auxiliary plaque shall be mounted directly above a route sign.

Section 2D.19 BUSINESS Auxiliary Plaque (M4-3P)

Option:

01 The BUSINESS (M4-3P) auxiliary plaque (see Figure 2D-5) may be used to designate an alternate route that branches from a numbered route, passes through the business portion of a city, and rejoins the numbered route beyond that area.

Standard:

02 If used, the BUSINESS auxiliary plaque shall be mounted directly above a route sign.

Section 2D.20 TRUCK Auxiliary Plaque (M4-4P)

Option:

01 The TRUCK (M4-4P) auxiliary plaque (see Figure 2D-5) may be used to designate an alternate route that branches from a numbered route, when it is desirable to encourage or require commercial vehicles to use the alternate route.

Standard:

02 If used, the TRUCK auxiliary plaque shall be mounted directly above a route sign.

Section 2D.21 TO Auxiliary Plaque (M4-5P)

Option:

01 The TO (M4-5P) auxiliary plaque (see Figure 2D-5) may be used to provide directional guidance to a particular road facility from other highways in the vicinity (see Section 2D.34).

Standard:

02 If used, the TO auxiliary plaque shall be mounted directly above a route sign or an auxiliary plaque for an alternative route. If a Cardinal Direction auxiliary plaque is also included in the assembly, the TO auxiliary plaque shall be mounted directly above the Cardinal Direction auxiliary plaque.

Section 2D.22 END Auxiliary Plaque (M4-6P)

Guidance:

01 The END (M4-6P) auxiliary plaque (see Figure 2D-5) should be used where the route being traveled ends, usually at a junction with another route.

Standard:

02 If used, the END auxiliary plaque shall be mounted either directly above a route sign or above a sign for an alternative route that is part of the designation of the route being terminated.

Section 2D.23 BEGIN Auxiliary Plaque (M4-14P)

Option:

01 The BEGIN (M4-14P) auxiliary plaque (see Figure 2D-5) may be used where a route begins, usually at a junction with another route.

Standard:

02 If used, the BEGIN auxiliary plaque shall be mounted at the top of the first Confirming assembly (see Section 2D.33) for the route that is beginning.

Guidance:

03 If a BEGIN auxiliary plaque is included in the first Confirming assembly, a Cardinal Direction auxiliary plaque should also be included in the assembly.

Standard:

04 If a Cardinal Direction auxiliary plaque is also included in the assembly, the BEGIN auxiliary plaque shall be mounted directly above the Cardinal Direction auxiliary plaque.

Section 2D.24 TEMPORARY Auxiliary Plaques (M4-7P and M4-7aP)

Option:

01 The TEMPORARY (M4-7P) or the TEMP (M4-7aP) auxiliary plaque (see Figure 2D-5) may be used for an interim period to designate a section of highway that is not planned as a permanent part of a numbered route, but that connects completed portions of that route.

Standard:

02 If used, the TEMPORARY or TEMP auxiliary plaque shall be mounted directly above the route sign, above a Cardinal Direction auxiliary plaque, or above an auxiliary plaque for an alternate route that is a part of the route designation.

03 TEMPORARY or TEMP auxiliary plaques shall be promptly removed when the temporary route is abandoned.

Section 2D.25 Temporary Detour Signs and Auxiliary Plaques

Support:

01 Chapter 6F contains information regarding Temporary Detour signs and auxiliary plaques.

Section 2D.26 Advance Turn Arrow Auxiliary Plaques (M5-1P, M5-2P, and M5-3P)

Standard:

01 If used, the Advance Turn Arrow auxiliary plaque (see Figure 2D-6) shall be mounted directly below the route sign in Advance Route Turn assemblies, and shall display a right or left arrow, the shaft of which is bent at a 90-degree angle (M5-1P) or at an oblique angle (M5-2P).

02 If used, the Circular Intersection Advance Turn Arrow (M5-3P) auxiliary plaque (see Figure 2D-6) shall be used only on the approach to a circular intersection to depict a movement along the circulatory roadway around the central island and to the left, relative to the approach roadway and entry into the intersection.

Guidance:

03 If the M5-3P plaque is used, then this arrow type should also be used consistently on any regulatory lane-use signs (see Chapter 2B), Destination signs (see Section 2D.36), and pavement markings (see Part 3) for a particular destination or movement.

Section 2D.27 Lane Designation Auxiliary Plaques (M5-4P, M5-5P, and M5-6P)

Option:

01 A Lane Designation (M5-4P, M5-5P, or M5-6P) auxiliary plaque (see Figure 2D-6) may be mounted directly below the route sign in an Advance Route Turn assembly on multi-lane roadways to allow road users to move into the appropriate lane prior to reaching the intersection or interchange.

Standard:

02 If used, the Lane Designation auxiliary plaques shall be used only where the designated lane is a mandatory movement lane and shall be located adjacent to the full-width portion of the mandatory movement lane. The Lane Designation auxiliary plaques shall not be installed adjacent to a through lane in advance of a lane that is being added or along the taper for a lane that is being added.

Section 2D.28 Directional Arrow Auxiliary Plaques (M6 Series)

Standard:

01 If used, the Directional Arrow auxiliary plaque (see Figure 2D-6) shall be mounted below the route sign and any other auxiliary plaques in Directional assemblies (see Section 2D.32), and

shall display a single-headed or double-headed arrow pointing in the general direction that the route follows.

02 A Directional Arrow auxiliary plaque that displays a double-headed arrow shall not be mounted in any Directional assembly in advance of or at a circular intersection.

Option:

03 The diagonal downward-pointing arrow auxiliary (M6-2aP) plaque may be used in a Directional assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section 2D.50).

Standard:

04 The M6-2aP plaque shall not be used on the approach to or on the near side of an intersection, such as to designate an approach lane.

SIGN ASSEMBLIES

Section 2D.29 Route Sign Assemblies

Standard:

01 A Route Sign assembly shall consist of a route sign and auxiliary plaques that further identify the route and indicate the direction. Except as provided in Paragraph 9 of this Section, Route Sign assemblies shall be installed on all approaches to numbered routes that intersect with other numbered routes.

02 Where two or more routes follow the same section of highway, the route signs for Interstate, U.S., State, and county routes shall be mounted in that order from the left in horizontal arrangements and from the top in vertical arrangements. Subject to this order of precedence, route signs for lower-numbered routes shall be placed at the left or top.

03 Within groups of assemblies, information for routes intersecting from the left shall be mounted at the left in horizontal arrangements and at the top or center of vertical arrangements. Similarly, information for routes intersecting from the right shall be at the right or bottom, and for straight-through routes at the center in horizontal arrangements or top in vertical arrangements.

04 Route Sign assemblies shall be mounted in accordance with the general specifications for signs (Chapter 2A), with the lowest sign in the assembly at the height prescribed for single signs.

Guidance:

05 Assemblies for two or more routes, or for different directions on the same route, should be mounted in groups on a common support.

06 Where more than four route signs would be needed in a single Advance Route Turn or Directional assembly, the route signs should instead be mounted in a guide sign to minimize the need for repetition of the same information on multiple Cardinal Direction and Directional Arrow auxiliary plaques (see Figure 2D-7 (VA)).

Option:

07 Route Sign assemblies may be installed on the approaches to numbered routes on unnumbered roads and streets that carry an appreciable amount of traffic destined for the numbered route.

08 If engineering judgment indicates that groups of assemblies that include overlapping routes or multiple turns might be confusing, route signs or auxiliary signs may be omitted or combined, provided that clear directions are given to road users.

09 Route Sign assemblies may be omitted for routes that are part of an agency's internal numbering system, such as for maintenance or other purposes, and are not publicly mapped or intended to be used for navigational purposes by the general public. Similarly, numbered routes that are not maintained during certain times of year, such as not being plowed during winter months, may be omitted from Route Sign assemblies.

Support:

10 Figure 2D-8(VA) shows typical placements of route signs.

Guidance:

10a Virginia Circular Secondary Route (M1-V2a, M1-V2c, and M1-V2e) signs (see Figure 2D-4(VA) in this Manual) should be installed on the more heavily traveled Secondary routes and on those of importance to through traffic. This sign should also be installed on Primary routes in advance of intersections with heavily traveled Secondary routes.

Option:

10b On Secondary routes which are Frontage roads with a four digit route number, the letter "F" may appear above the route number within the M1-V2e sign (see Figure 2D-4(VA) in this Manual).

Standard:

10c Rectangular Secondary Route (M1-V3) signs (see Figure 2D-4(VA) in this Manual) shall be installed at intersections between Secondary Routes or at intersections between a Primary Route and a Secondary Route where the M1-V2 sign is not needed.

Option:

10d Rectangular Secondary Route signs may be installed below a STOP (R1-1) or YIELD (R1-2) sign at a Secondary route intersection.

Guidance:

10e Rectangular Secondary Route signs should not be used to substitute for U.S. and Primary Route shields.

Section 2D.30 Junction Assembly

Standard:

01 A Junction assembly shall consist of a Junction auxiliary plaque (see Section 2D.13) and a route sign. The route sign shall display the number of the intersected or joined route.

02 The Junction assembly shall be installed in advance of every intersection where a numbered route is intersected or joined by another numbered route.

Guidance:

03 In urban areas, the Junction assembly should be installed in the block preceding the intersection. In urban areas where speeds are low, the Junction assembly should not be installed more than 300 feet in advance of the intersection.

04 In rural areas, the Junction assembly should be installed at least 400 feet in advance of the intersection. In rural areas, the minimum distance between a Junction assembly and either a Destination sign or an Advance Route Turn assembly should be 200 feet.

05 Where speeds are high, greater spacings should be used.

Option:

06 Where two or more routes are to be indicated, a single Junction auxiliary plaque may be used for the assembly and all route signs grouped in a single mounting, or a Combination Junction (M2-2) sign (see Section 2D.14) may be used.

Section 2D.31 Advance Route Turn Assembly

Standard:

01 An Advance Route Turn assembly shall consist of a route sign, an Advance Turn Arrow or word message auxiliary plaque, and a Cardinal Direction auxiliary plaque, if needed. It shall be installed in advance of an intersection where a turn must be made to remain on the indicated route.

Option:

02 The Advance Route Turn assembly may be used to supplement the required Junction assembly in advance of intersecting routes.

Guidance:

03 Where a multi-lane highway approaches an interchange or intersection with a numbered route, the Advance Route Turn assembly should be used to provide advance notice so that road users know the correct lane(s) from which to make their turn.

Option:

04 Lane Designation auxiliary plaques (see Section 2D.27) may be used in Advance Route Turn Assemblies in place of the Advance Turn Arrow auxiliary plaques where engineering judgment indicates that specific lane information associated with each route is needed and overhead signing is impracticable and the

designated lane is a mandatory movement lane. An assembly with the Lane Designation auxiliary plaques may supplement or substitute for an assembly with Advance Turn Arrow auxiliary plaques.

Guidance:

05 In low-speed areas, the Advance Route Turn assembly should be installed not less than 200 feet in advance of the turn. In high-speed areas, the Advance Route Turn assembly should be installed not less than 300 feet in advance of the turn. In rural areas, the minimum distance between an Advance Route Turn assembly and either a Destination sign or a Junction assembly should be 200 feet.

Standard:

06 An assembly that includes an Advance Turn Arrow auxiliary plaque shall not be placed where there is an intersection between it and the designated turn.

Guidance:

07 Sufficient distance should be allowed between the assembly and any preceding intersection that could be mistaken for the indicated turn.

Section 2D.32 Directional Assembly

Standard:

01 A Directional assembly shall consist of a Cardinal Direction auxiliary plaque, if needed; a route sign; and a Directional Arrow auxiliary plaque. The uses of Directional assemblies shall comply with the following:

- **A. Turn movements (indicated in advance by an Advance Route Turn assembly) shall be marked by a Directional assembly with a route sign displaying the number of the turning route and a single-headed arrow pointing in the direction of the turn.**
- **B. The beginning of a route (indicated in advance by a Junction assembly) shall be marked by a Directional assembly with a route sign displaying the number of that route and a single-headed arrow pointing in the direction of the route.**
- **C. An intersected route (indicated in advance by a Junction assembly) on a crossroad where the route is designated on both legs shall be designated by:**
  - **1. Two Directional assemblies, each with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary plaque, and a single-headed arrow pointing in the direction of movement on that route; or**
  - **2. A Directional assembly with a route sign displaying the number of the intersected route and a double-headed arrow, pointing at appropriate angles to the left, right, or ahead.**
- **D. An intersected route (indicated in advance by a Junction assembly) on a side road or on a crossroad where the route is designated only on one of the legs shall be designated by a Directional assembly with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary plaque, and a single-headed arrow pointing in the direction of movement on that route.**

Guidance:

02 Straight-through movements should be indicated by a Directional assembly with a route sign displaying the number of the continuing route and a vertical arrow. A Directional assembly should not be used for a straight-through movement in the absence of other assemblies indicating right or left turns, as the Confirming assembly sign beyond the intersection normally provides adequate guidance.

03 Directional assemblies should be located on the near right corner of the intersection. At major intersections and at Y or offset intersections, additional Directional assemblies should be installed on the far right or left corner to confirm the near-side assemblies. When the near-corner position is impractical for Directional assemblies, the far right corner should be the preferred alternative, with oversized signs, if necessary, for legibility. Where unusual conditions exist, the location of a Directional assembly should be determined by engineering judgment with the goal being to provide the best possible combination of view and safety.

Support:

04 It is more important that guide signs be readable, and that the information and direction displayed thereon be readily understood, at the appropriate time and place than to be located with absolute uniformity.

05 Figure 2D-8(VA) shows typical placements of Directional assemblies.

Section 2D.33 Confirming or Reassurance Assemblies

Standard:

01 If used, Confirming or Reassurance assemblies shall consist of a Cardinal Direction auxiliary plaque and a route sign. Where the Confirming or Reassurance assembly is for an alternative route, the appropriate auxiliary plaque for an alternative route (see Section 2D.16) shall also be included in the assembly.

Guidance:

02 A Confirming assembly should be installed just beyond intersections of numbered routes. It should be placed 25 to 200 feet beyond the far shoulder or curb line of the intersected highway.

03 If used, Reassurance assemblies should be installed between intersections in urban areas as needed, and beyond the built-up area of any incorporated city or town.

04 Route signs for either confirming or reassurance purposes should be spaced at such intervals as necessary to keep road users informed of their routes.

Section 2D.34 Trailblazer Assembly

Support:

01 Trailblazer assemblies provide directional guidance to a particular road facility from other highways in the vicinity. This guidance is accomplished by installing Trailblazer assemblies at strategic locations to indicate the direction to the nearest or most convenient point of access. The use of the word TO indicates that the road or street where the sign is posted is not a part of the indicated route, and that a road user is merely being directed progressively to the route.

Standard:

02 A Trailblazer assembly shall consist of a TO auxiliary plaque (see Section 2D.21), a route sign for a numbered or named highway (see Section 2D.56) or an identification sign for a byway, historic trail, or auto tour route sign (see Sections 2D.57 and 2D.58), and a single-headed Directional Arrow auxiliary plaque pointing in the direction leading to the route. Where the Trailblazer assembly is for an alternative route, the appropriate auxiliary plaque for an alternative route (see Section 2D.16) shall also be included in the assembly.

Option:

03 A Cardinal Direction auxiliary plaque (see Section 2D.15) may be used in a Trailblazer assembly where the direction leading to the route provides access only to one direction of travel for that route.

Guidance:

04 The TO auxiliary plaque, Cardinal Direction auxiliary plaque, and Directional Arrow auxiliary plaque should be of the standard size provided for auxiliary plaques of their respective type. The route sign should be the size provided in Section 2D.11.

Option:

05 Trailblazer assemblies may be installed with other Route Sign assemblies, or alone, in the immediate vicinity of the designated facilities.

DESTINATION AND DISTANCE SIGNS

Section 2D.35 Destination and Distance Signs

Support:

01 In addition to guidance by route numbers, it is desirable to supply the road user information concerning the destinations that can be reached by way of numbered or unnumbered routes. This is done by means of Destination signs and Distance signs.

Option:

02 Route shields and cardinal directions may be included on the Destination sign with the destinations and arrows.

Guidance:

03 If Route shields and cardinal directions are included on a Destination sign, the height of the Route shields should be at least two times the height of the upper-case letters of the principal legend and not less than 18 inches, and the letter height of cardinal directions should be at least the minimum letter height specified for these signs.

04 If used, destination names on low-volume rural roads should be as specific and descriptive as possible. Destinations such as campgrounds, ranger stations, and recreational areas should be clearly indicated so that they are not interpreted to be communities or locations with road user services.

Section 2D.36 Destination Signs (D1 Series)

Standard:

01 Except on approaches to interchanges (see Section 2D.49), the Destination (D1-1 through D1-3) signs (see Figure 2D-9), if used, shall be a horizontal rectangle displaying the name of a city, town, village, or other traffic generator, and a directional arrow.

Option:

02 The distance (see Section 2D.43) to the place named may also be displayed on the Destination (D1-1a through D1-3a) signs (see Figure 2D-9). If several destinations are to be displayed at a single point, the several names may be placed on a single sign with an arrow (and the distance, if desired) for each name. If more than one destination lies in the same direction, a single arrow may be used for such a group of destinations.

Guidance:

03 Adequate separation should be made between any destinations or group of destinations in one direction and those in other directions by suitable design of the arrow, spacing of lines of legend, heavy lines entirely across the sign, or separate signs.

Support:

04 Separation of destinations by direction by the use of a horizontal separator line can enhance the readability of a Destination sign by relating an arrow and its corresponding destination(s) and by eliminating the need for multiple arrows that point in the same direction and excessive space between lines of legend.

Standard:

05 Except as otherwise provided in this Manual, an arrow pointing to the right shall be at the extreme right of the sign, and an arrow pointing left or up shall be at the extreme left. The distance numerals, if used, shall be placed to the right of the destination names.

Option:

06 An arrow pointing up may be placed at the extreme right of the sign when the sign is mounted to the left of the traffic to which it applies.

Guidance:

07 Unless a sloping arrow will convey a clearer indication of the direction to be followed, the directional arrows should be horizontal or vertical.

08 If several individual name signs are assembled into a group, all signs in the assembly should be of the same horizontal width.

09 Destination signs should be used:

A. At the intersections of U.S. or State numbered routes with Interstate, U.S., or State numbered routes; and

B. At points where they serve to direct traffic from U.S. or State numbered routes to the business section of towns, or to other destinations reached by unnumbered routes.

Standard:

10 Where a total of three or fewer destinations are displayed on the Advance guide (see Section 2E.23) and Supplemental guide (see Section 2E.51) signs, no more than three destination names shall be displayed on a Destination sign. Where four destinations are displayed on the Advance guide and Supplemental guide signs, no more than four destination names shall be displayed on a Destination sign.

Guidance:

11 If space permits, four destinations should be displayed on two separate signs at two separate locations.

Option:

12 Where space does not permit, or where all four destinations are in one direction, a single sign may be used. Where a single sign is used and all destinations are in the same direction, the arrow may be placed below the destinations for the purpose of enhancing the conspicuity of the arrow.

Standard:

13 Where a single four-name sign assembly is used, a heavy line approximating the width of the sign border entirely across the sign or separate signs shall be used to separate destinations by direction.

Guidance:

14 The closest destination lying straight ahead should be at the top of the sign or assembly, and below it the closest destinations to the left and to the right, in that order. The destination displayed for each direction should ordinarily be the next county seat or the next principal city, rather than a more distant destination. In the case of overlapping routes, only one destination should be displayed in each direction for each route.

Standard:

15 If more than one destination is displayed in the same direction, the name of a nearer destination shall be displayed above the name of a destination that is farther away.

Support:

16 Overhead destination guide signs are sometimes helpful on multi-lane conventional roadways with complex or unusual roadway alignments or geometrics at intersecting highways to provide positive direction to destinations and to assign lanes to be used for destinations.

Option:

17 Overhead Destination signs may be used to provide lane assignment and destination information for some or all of the lanes on the approach to a multi-lane intersection. Destination information may include cardinal directions, route numbers, street names, and/or place names.

18 Overhead signs using the Arrow-per-Lane sign design configuration (see Figure 2D-10) may be used to provide lane assignments for some or all lane destinations at the approach to a multi-lane intersection (see Section 2D.37).

Section 2D.37 Overhead Arrow-per-Lane Destination Guide Signs

Support:

01 Overhead Arrow-per-Lane destination guide signs are sometimes used on multi-lane conventional roadways to provide positive direction to destinations and to indicate lanes to be used for those destinations. These locations typically include complex or unusual roadway alignments or geometrics. Overhead Arrow-per-Lane signs on conventional roads do not always have arrows for every lane. Sheet 2 of Figure 2A-4 and

Sheet 1 of Figure 2D-10 show examples of the use of an Overhead Arrow-per-Lane Guide sign on a conventional road. Unlike the Combined Lane-Use/Destination (D15-1) sign (see Section 2D.38), Overhead Arrow-per-Lane signs can be used to provide lane assignments where the designated lane is not a mandatory movement lane.

Option:

02 At complex intersection approaches involving multiple lanes and destinations, an Overhead Arrow-per-Lane destination guide sign may be used to provide destination information for some or all lanes. Destination information may include cardinal direction, route numbers, street names, and/or place names.

Standard:

03 Overhead Arrow-per-Lane signs for conventional roads shall only be used for multi-lane approaches to intersections that have an option lane.

04 Overhead Arrow-per-Lane guide signs used on conventional roads shall include as a minimum one arrow above each mandatory turn lane and a bifurcated arrow for the option lane from which both the through and turning movements are allowed.

Guidance:

05 Displaying an arrow over each through movement lane that does not allow turning should be considered for providing additional positive guidance.

Standard:

06 Overhead Arrow-per-Lane signs for conventional roads shall be designed in accordance with the following criteria:

- **A. The shaft of each arrow shall be located over the approximate center of the lane to which it applies.**
- **B. Arrows for continuing through lanes shall be vertically upward-pointing (see Figure 2D-10).**
- **C. The arrow for a lane that must turn shall be curved in the direction of the turn and shall be accompanied by a black-on-yellow ONLY (E11-1b) sign panel (see Figure 2E-17) adjacent to the lower end of the arrow shaft.**
- **D. The arrow for an optional exit lane that also carries the through route shall have a single shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow corresponding to the configuration of the through and turn lanes.**
- **E. A vertical white line shall be used to separate the route shields and destinations for the two diverging movements from each other.**
- **F. The number of lanes displayed on a sign shall correspond to the number of lanes being signed for at the location of that sign. An advance sign shall not depict lanes that are added downstream of a sign location.**

Guidance:

07 Overhead Arrow-per-Lane guide signs used on conventional roads should be designed in accordance with the following additional criteria:

- *A. No more than one destination should be displayed for each movement, and no more than three destinations should be displayed per sign.*
- *B. The arrowhead(s) for the diverging movement should be positioned lower on the sign than the arrowhead(s) for the movement that continues straight ahead.*
- *C. Route shields, cardinal directions, and destinations should be positioned on the sign such that they are clearly related to the arrowhead(s) for the movement to which they apply.*
- *E. The vertical white line that is used to separate the route shields and destinations for the two diverging movements from each other should not descend below the top of the arrowheads for the through lanes, and should be positioned approximately halfway between the diverging arrowheads for the optional movement lane.*

08 Destination information should be kept to a minimum necessary to provide positive guidance without overloading the road user.

Standard:

09 The minimum height of arrows on an Overhead Arrow-per-Lane sign used on a conventional road shall be as shown in Table 2D-5.

Guidance:

10 When letter heights and other sign legend elements are enlarged there should be an corresponding increase in the arrow size used.

Option:

11 Curved-stem arrows may be substituted on Overhead Arrow-per-Lane Signs on multi-lane approaches to a circular intersection with an option lane (see Section 2D.39).

Section 2D.38 Combination Lane-Use/Destination Overhead Guide Sign (D15-1)

Option:

01 At intersection approaches involving multiple turn lanes and destinations, a Combination Lane-Use/Destination (D15-1) overhead guide sign (see Figure 2D-9) that combines a lane-use regulatory sign with destination information such as a cardinal direction, a route number, a street name, and/or a place name may be used.

Support:

02 At such locations, the combined information on the D15-1 signs can be even more effective than separate lane-use and guide signs for conveying to unfamiliar drivers which lane or lanes to use for a particular destination.

03 Figure 2D-9 shows an example of a D15-1 sign that combines lane-use and street name information and an example of a D15-1 sign that combines lane-use, cardinal direction, and route number information.

Standard:

04 The Combination Lane-Use/Destination (D15-1) overhead guide sign shall be used only where the designated lane is a mandatory movement lane. The D15-1 sign shall not be used for lanes with optional movements.

05 The D15-1 sign shall have a green background with a white border. As shown in Figure 2D-9, the lane-use sign (see Chapter 2B) shall be placed near the bottom of the sign and the destination information shall be placed near the top of the sign. The D15-1 sign shall be located over the approximate center of the lane to which it applies.

Section 2D.39 Destination Signs at Circular Intersections

Standard:

01 Destination signs that are used at circular intersections shall comply with the provisions of Section 2D.36, except as provided in this Section.

Option:

02 Exit Destination (D1-1d and D1-1e) signs (see Figure 2D-11) with diagonal upward-pointing arrows or Directional assemblies (see Section 2D.32) may be used to designate a particular exit from a circular intersection.

03 Destination (D1-2d and D1-3d) signs (see Figure 2D-11) with curved-stem arrows may be used on approaches to circular intersections to represent the left-turn movements.

04 Curved-stem arrows on circular intersection destination signs may point in diagonal directions to depict the location of an exit relative to the approach roadway and entry into the intersection.

05 An Overhead Arrow-per-Lane Destination sign (see Section 2D.37) with curved-stem arrows may be used on multi-lane approaches to circular intersections that have an option lane.

06 A Destination (D1-5 or D1-5a) sign (see Figure 2D-11) with a diagram of the circular intersection may be used on approaches to circular intersections.

Guidance:

07 If curved-stem arrows are used on destination signs, then this arrow type should also be used consistently on any regulatory lane-use signs (see Chapter 2B), Directional assemblies (see Section 2D.32), and pavement markings (see Part 3) for a particular destination or movement.

Support:

08 Figure 2D-12 shows examples of guide signing for circular intersections.

09 Circular Intersection Diagrammatic (D1-5 or D1-5a) signs might be preferable where space is available and where the geometry of the circular intersection is non-typical, such as where more than four legs are present or where the legs are not at approximately 90-degree angles to each other. In such cases, minimizing the amount of legend for each destination and designing the sign so that the arrows for each destination clearly align with the roadway geometry will aid road user understanding of the sign and navigation through the area.

Standard:

10 If used, the Circular Intersection Diagrammatic signs shall not depict the number of lanes within the circulatory roadway of the intersection, or on its approaches or exits, through the use of lane lines, multiple arrow shafts for the same movement, or other methods.

Support:

11 Chapter 2B contains information regarding regulatory signs at circular intersections, Chapter 2C contains information regarding warning signs at circular intersections, and Chapter 3D contains information regarding pavement markings at circular intersections.

Section 2D.40 Destination Signs at Jughandles

Standard:

01 Destination signs that are used at jughandles shall comply with the provisions of Section 2D.36.

Support:

02 Section 2B.35 contains information regarding regulatory signs for jughandle turns. Figure 2B-9 shows examples of regulatory and destination guide signing for various types of jughandle turns.

Section 2D.41 Destination Signs at Intersections with Indirect Turning Movements

Guidance:

01 A system of guide signs along with associated lane markings should be used to direct traffic through intersections with indirect turning movements.

Support:

02 Figure 2D-13 shows examples of destination guide signing for intersections with indirect turning movements.

Section 2D.42 Location of Destination Signs

Guidance:

01 When used in high-speed areas, Destination signs should be located 200 feet or more in advance of the intersection, and following any Junction or Advance Route Turn assemblies that might be required. In rural areas, the minimum distance between a Destination sign and either an Advance Route Turn assembly or a Junction assembly should be 200 feet.

Option:

02 In urban areas, advance distances shorter than those specified in Paragraph 1 of this Section may be used.

03 Because the Destination sign is of lesser importance than the Junction, Advance Route Turn, or Directional assemblies, the Destination sign may be eliminated where the distance in which to provide adequate sign spacing is limited.

Support:

04 Figure 2D-8(VA) shows typical placements of Destination signs.

Section 2D.43 Distance Signs (D2 Series)

Standard:

01 If used, the Distance (D2-1 through D2-3) signs (see Figure 2D-9) shall be a horizontal rectangle of a size appropriate for the required legend, displaying the names of no more than three cities, towns, junctions, or other traffic generators, and the distance (to the nearest mile) to those places.

02 The distance numerals shall be placed to the right of the destination names as shown in Figure 2D-9.

Guidance:

03 The distance displayed should be selected on a case-by-case basis by the jurisdiction that owns the road or by statewide policy. A well-defined central area or central business district should be used where one exists. In other cases, the layout of the community should be considered in relation to the highway being signed and the decision based on where it appears that most drivers would feel that they are in the center of the community in question.

04 The top name on the Distance sign should be that of the next place on the route having a post office or a railroad station, a route number or name of an intersected highway, or any other significant geographical identity. The bottom name on the sign should be that of the next major destination or control city. If three destinations are displayed, the middle line should be used to indicate communities of general interest along the route or important route junctions.

Option:

05 The choice of names for the middle line may be varied on successive Distance signs to give road users additional information concerning communities served by the route.

Guidance:

06 The control city should remain the same on all successive Distance signs throughout the length of the route until that city is reached.

Option:

07 If more than one distant point may properly be designated, such as where the route divides at some distance ahead to serve two destinations of similar importance, and if these two destinations cannot appear on the same sign, the two names may be alternated on successive signs.

08 On a route continuing into another State, destinations in the adjacent State may be displayed.

Section 2D.44 Location of Distance Signs

Standard:

00a Distance signs shall be installed on Primary routes at locations meeting one of three criteria:

A. Leaving municipalities

B. Just beyond interchanges and intersections with Interstates and other Primary routes in rural areas

C. In rural areas where Criteria A and B do not apply at intervals of not less than 10 miles.

Guidance:

01 If used, Distance signs should be installed on important routes leaving municipalities and just beyond intersections of numbered routes in rural areas. If used, they should be placed just outside the municipal limits or at the edge of the built-up area if it extends beyond the limits.

02 Where overlapping routes separate a short distance from the municipal limits, the Distance sign at the municipal limits should be omitted. The Distance sign should be installed approximately 300 feet beyond the separation of the two routes.

03 Where, just outside of an incorporated municipality, two routes are concurrent and continue concurrently to the next incorporated municipality, the top name on the Distance sign should be that of the place where the routes separate; the bottom name should be that of the city to which the greater part of the through traffic is destined.

Support:

04 Figures 2D-7(VA) and 2D-8(VA) show typical placements of Distance signs.

STREET NAME AND PARKING SIGNS

Section 2D.45 Street Name Signs (D3-1, D3-1a, D3-V1, D3-V1a, D3-V1b, or D3-V3)

Support:

01 Street Name signs at intersections and along roadways provide road users with important navigation information. Section 2H.10 contains information about signs used to identify the names of grade-separated streets, railways, bikeways, or other transportation facilities.

Guidance:

02 Street Name (D3-1, D3-1a, D3-V1, D3-V1a, D3-V1b, or D3-V3) signs (see Figure 2D-14(VA)) should be installed in urban areas at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.

03 To minimize wrong-way movements onto freeway or expressway exit ramps, Street Name signs should not be used at the intersection of a freeway or expressway exit ramp with the crossroad to display the name of the freeway or expressway to traffic on the crossroad.

Option:

04 For streets that are part of a U.S., Primary State, or Secondary State~~, or county~~ numbered route, a D3-1a Street Name sign (see Figure 2D-14(VA)) that incorporates a route shield may be used to assist road users who might not otherwise be able to associate the name of the street with the route number.

Standard:

05 The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see Section 2A.08).

05a Except as provided in Paragraph 8 below, lettering on post-mounted Street Name (D3- 1 or D3-1a) signs shall be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.

05b On multi-lane streets with speed limits greater than 40 mph, the lettering on postmounted Street Name (D3-1 or D3-1a) signs shall be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height.

05c The recommended and minimum text heights for the overhead Street Name signs (D3-V1, D3-V1a, D3-V1b) shall be in accordance with Table 2D-V1. The text height shall only be reduced below the recommended text height when one or more of the overhead Street Name sign conditions in this section cannot be accommodated. The text height shall not be reduced below the minimum value.

06 The determination of letter heights to be used on Street Name signs should be based on, but not limited to, the following considerations:

- *A. Use of Advance Street Name signs (see Section 2D.46);*
- *B. Number of lanes on the intersection approach;*
- *C. Length of turn lanes;*
- *D. Distance the Street Name sign is located across the intersection (if a sign is not provided on the near side of the intersection).*

07 Letter heights on street name signs should be as shown in Table 2D-6.

Option:

08 For two-lane local roadways with speed limits of 25 mph or less, the lettering on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in nominal loop height.

08a At local road locations where engineering judgment determines constrained conditions exist, such as where a replacement Street Name (D3-1 or D3-1a) sign panel is being retrofitted onto an existing sign support with structural, space or height limitations, the Street Name (D3-1 or D3-1a) sign panel height may be reduced to 6 inches.

Support:

09 The ~~recommended~~ minimum letter heights for Street Name signs are summarized in Table 2D-6. The speed limits specified and the recommended minimum letter heights provided in this Section apply to the roadway that each Street Name sign faces rather than to the street that has its name displayed on the Street Name sign. The letter heights specified in Table 2D-6 are the initial upper-case letter of a mixed-case legend.

10 ~~A minimum upper-case letter height of 12 inches with a lower-case nominal loop height of 9 inches is recommended for all overhead Street Name signs regardless of posted speed limit as Street Name signs generally require greater legibility distances for road users to properly react.~~

Option:

11 Each Street Name sign in a sign assembly may use different letter heights determined by the speed limit of the street that each sign faces.

12 The letter height of the street name descriptor (such as St, Ave, or Rd), the directional legend (such as NW), or any other supplemental legend (such as block or house numbers) on the D3-1 and D3-1a signs may be smaller than that of the street name itself.

Guidance:

13 The letter height of the street name descriptor, the directional legend, or any other supplemental legend on the D3-1 and D3-1a signs should be at least two-thirds of the letter height of the street name itself, but not less than 3 inches for the initial upper-case letters and not less than 2.25 inches for the nominal loop height of the lower-case letters.

14 Conventional abbreviations (see Section 1D.08) should be used except for the street name itself. Acceptable abbreviations for street name descriptors such as "Ave" for Avenue and "Blvd" for Boulevard should be as provided in Table 2D-3 (see Section 2D.07). The street name descriptors that are provided in Table 2D-4 should not be abbreviated (see Section 2D.07).

Option:

15 Block or house numbers may be displayed as a supplemental legend on a Street Name sign to aid emergency responders and road users in locating addresses.

Standard:

15a If used on overhead Street Name signs (D3-V1, D3-V1a, or D3-V1b), block numbers and arrows shall appear on a line below the street name.

Option:

15b Through Route Block Number (D3-V3) signs (see Figure 2D-14(VA) in this Manual) may be used at signalized intersections displaying the block number of the through route immediately beyond the signalized intersection.

Guidance:

16 If block or house numbers are displayed on a Street Name sign where only a single Street Name sign is provided for the crossroad, the block or house numbers for the left and right blocks should be positioned at the left and right sides of the sign, respectively.

17 If block or house numbers are displayed on a Street Name sign where two Street Name signs are provided for the crossroad, such as on diagonally opposite corners of an intersection, each Street Name sign should display only the block or house numbers associated with that block of the crossroad.

Option:

18 A pictograph (see definition in Section 1C.02) representing the municipality, in accordance with the provisions of Section 2A.04 may be used on a D3-1 sign. For street networks under the primary jurisdiction of another governmental-approved entity, such as within a college or university campus, within a military base, or within a transportation facility (such as an airport or port), a pictograph representing that entity, in accordance with the provisions of Section 2A.04, may be used on a D3-1 sign within the jurisdictional boundaries of that entity.

Standard:

19 Pictographs shall not be displayed on D3-1a or Advance Street Name (D3-2) signs (see Section 2D.46).

20 If a pictograph is used on a D3-1 sign, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign.

Guidance:

21 The pictograph should be positioned to the left of the street name.

22 Pictographs should not be used on a D3-1 sign that contains directional arrows.

Standard:

23 The Street Name sign shall be retroreflective or illuminated in accordance with the provisions of Section 2A.21.

Option:

24 The border may be omitted from a post-mounted Street Name sign.

Guidance:

25 The decision to omit the border from a post-mounted Street Name sign should be based on such factors as the visual complexity of the environment and the degree of conspicuity needed to provide for adequate recognition of the sign by the road user.

Option:

26 An alternative background color (see Paragraph 28 of this Section) other than the standard guide sign color of green may be used for post-mounted and overhead Street Name (D3-1, D3-1a, D3-V1, D3-V1a, or D3-V1b) signs where the highway agency determines this is necessary to assist road users in determining jurisdictional authority for roads.

Standard:

27 Alternative background colors shall not be used for Advance Street Name (D3-2) signs (see Section 2D.46).

28 The only acceptable alternative background colors for post-mounted or overhead Street Name (D3-1, D3-1a, D3-V1, D3-V1a, or D3-V1b) signs shall be blue, brown, or white. Regardless of whether green, blue, or brown is used as the background color for post-mounted or overhead Street Name (D3-1, D3-1a, D3-V1, D3-V1a, or D3-V1b) signs, the legend (and border, if used) shall be white. For post-mounted or overhead Street Name signs that use a white background, the legend (and border, if used) shall be black.

Guidance:

29 An alternative background color for post-mounted or overhead Street Name signs, if used, should be applied to the post-mounted or overhead Street Name (D3-1, D3-1a, D3-V1, D3-V1a, or D3-V1b) signs on all roadways under the jurisdiction of a particular highway agency.

30 In business or commercial areas and on principal arterials, Street Name signs should be placed at least on diagonally opposite corners. In residential areas, at least one Street Name sign should be mounted at each intersection. Signs naming both streets should be installed at each intersection. They should be mounted with their faces parallel to the streets they name.

31 Where used, Street Name signs should display their legends on both the front and back sides of the sign to facilitate navigation for pedestrians.

Option:

32 To optimize visibility, Street Name signs may be mounted overhead. Street Name signs may also be placed above a regulatory or STOP or YIELD sign with no required vertical separation.

Guidance:

33 In urban or suburban areas, especially where Advance Street Name signs for signalized and other major intersections are not used, the use of overhead Street Name signs should be strongly considered.

Option:

34 At intersection crossroads where the same road has two different street names for each direction of travel, both street names may be displayed on the same Street Name (D3-1) sign along with Type D directional arrows, except where one arrow would point in a direction opposing the flow of traffic on a one-way street or where a turn in the direction of the arrow is not allowed.

35 On lower-speed roadways, historic street name signs within locally identified historic districts that are consistent with the criteria contained in 36 CFR 60.4 for such structures and districts may remain in service without complying with the provisions of Paragraphs 3, 4, 6, 9, 12 through 14, and 18 through 20 of this Section.

Guidance:

36 Streets or segments of a street that have been memorialized or dedicated should not use a second Street Name sign to display the memorial or dedication name (see Section 2D.56). When signed, the Memorial or Dedication sign should be located to minimize its conspicuity to and potential for confusion.

Support:

37 Information regarding the use of street names on supplemental plaques for use with intersection-related warning signs is contained in Section 2C.65.

38 Information regarding the identification of overcrossing and undercrossing roadways at grade separations is contained in Section 2H.10.

Standard:

38a Overhead (D3-V1, D3-V1a, or D3-V1b) or post-mounted Street Name (D3-1, or D3-1a) signs shall be used at all signalized intersections.

38b Except as provided in Paragraphs 38c and 38d below, overhead Street Name (D3-V1, D3- V1a, or D3-V1b) signs shall be installed at all signalized intersections with mast arms.

38c The length of overhead Street Name signs (D3-V1, D3-V1a, or D3-V1b) shall not exceed 18 feet.

38c If physical restrictions prohibit the use of overhead Street Name (D3-V1, D3-V1a, or D3-V1b) signs, then overhead Street Name (D3-1 or D3-1a, D3-V1, D3-V1a, D3-V1b) signs shall be installed on the signal pole. In such instances, the size of the sign shall not exceed 7 feet in length.

38d The overhead street name signs (D3-V1, D3-V1a, D3-V1b) shall not obstruct the connection point between the arm and the pole to allow proper structural inspections.

Guidance:

38e Mast arm lengths or signal head placement should not be adjusted from their original design solely for the purposes of accommodating an overhead Street Name sign.

Standard:

38f If the crossing street is the entrance to a shopping center that has no official street name, it should be signed with a generic message such as "Shopping Center Entrance."

38g If the overhead Street Name sign (D3-V1, D3-V1a, or D3-V1b) is eliminated, then advance Street Name signs)D3-2 or D3-V2) should be placed approaching the intersection wherever feasible.

Option:

38h Ground-mounted advance Street Name signs (D3-2 or D3-V2) signs may be placed in advance of any signalized intersection.

38i If reduced text height below the recommended text height is used on an overhead Street Name sign (D3-V1, D3-V1a, or D3-V1b), then the designer may choose to apply that reduced text height on other overhead Street Name signs at the subject intersection. However, it is recommended that each sign be evaluated individually.

Guidance:

38j The Route number shield should be used on overhead Street Name signs (D3-V1) should be used when the sign is displaying the street name for a roadway on the Arterial Preservation Network (APN) in Virginia. At signalized intersections at the terminus of Interstate or other APN Route off-ramps, the D3-V1 should be used with a single-line message showing the APN freeway number, cardinal direction, and arrow (e.g. "<- [95] North").

38k Route shields should not be used on overhead Street Name sign with multiple street names (D3-V1a).

Option:

38l Overhead Street Name signs (D3-V1) with a route shield may be used at any traffic signal where the route is more typically referred to by its route number than the local street name, and/or for routes that are often used by non-local drivers.

38m Additional route shields may be omitted from the overhead Street Name sign (D3-V1) if there are multiple overlapping route numbers.

Section 2D.46 Advance Street Name Signs (D3-2 Series)

Support:

01 Advance Street Name (D3-2) signs (see Figure 2D-14(VA)) identify a downstream intersection. Although this is often the next intersection, it could also be several intersections away in cases where the next signalized intersection is referenced.

Standard:

02 Advance Street Name (D3-2) signs, if used, shall supplement rather than be used instead of the Street Name (D3-1 or D3-1a) signs at the intersection.

Option:

03 Advance Street Name (D3-2) signs may be installed in advance of signalized or unsignalized intersections to provide road users with advance information to identify the name(s) of the next intersecting street to prepare for crossing traffic and to facilitate timely deceleration and/or lane changing in preparation for a turn.

Guidance:

04 On arterial highways in rural areas, Advance Street Name signs should be used in advance of all signalized intersections and in advance of all intersections with mandatory turn lanes.

05 In urban and suburban areas, Advance Street Name signs should be used in advance of all signalized intersections on major arterial streets, except where signalized intersections are so closely spaced that advance placement of the signs is impracticable. At a minimum, Advance Street Name signs should be used on streets with three or more approach lanes and posted speed limit of 45 mph or greater.

Option:

05a Advance Street Name Signs may be omitted where signalized intersections are so closely spaced that advance placement of the signs is impractical.

Guidance:

06 The heights of the letters on Advance Street Name signs should comply with the provisions of Section 2D.05.

Standard:

07 If used, Advance Street Name signs shall have a white legend and border on a green background. Alternative background colors shall not be used on Advance Street Name signs.

08 If used, Advance Street Name signs shall provide the name(s) of the intersecting street(s) on the top line(s) of the legend and the distance to the intersecting streets or messages such as NEXT SIGNAL, NEXT INTERSECTION, NEXT CIRCLE, or directional arrow(s) on the bottom line of the legend.

09 Pictographs shall not be displayed on Advance Street Name signs.

Option:

10 Directional arrow(s) may be placed to the right or left of the street name or message such as NEXT SIGNAL, as appropriate, rather than on the bottom line of the legend. Curved-stem arrows may be used on Advance Street Name signs on approaches to circular intersections.

11 For intersecting crossroads where the same road has a different street name for each direction of travel, the different street names may be displayed on the same Advance Street Name sign along with directional arrows.

12 In advance of two closely-spaced intersections where it is impracticable to install separate Advance Street Name signs, the Advance Street Name sign may include the street names for both intersections along with appropriate supplemental legends for both street names, such as NEXT INTERSECTION, 2ND INTERSECTION, or NEXT LEFT and NEXT RIGHT, or directional arrows.

Guidance:

13 If two street names are used on the Advance Street Name sign, the street names should be displayed in the following order:

A. For a single intersection where the same road has a different street name for each direction of travel, the name of the street to the left should be displayed above the name of the street to the right; or

B. For two closely-spaced intersections, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see Figure 2C-16).

Option:

14 An Advance Street Name (W16-8P or W16-8aP) plaque (see Section 2C.65) with black legend on a yellow background, installed to supplement an Intersection (W2 series) or Advance Traffic Control (W3 series) warning sign may be used instead of an Advance Street Name guide sign.

Section 2D.47 Parking Area Guide Sign (D4-1)

Option:

01 The Parking Area (D4-1) guide sign (see Figure 2D-14(VA)) may be used to show the direction to a nearby public parking area or parking facility.

Standard:

02 The smaller size of 18 x 15 inches for the Parking Area guide sign shall be limited to minor, low-speed streets.

Guidance:

03 If used, the Parking Area guide sign should be installed on major thoroughfares at the nearest point of access to the parking facility and where it can advise drivers of a place to park. The sign should not be used more than four blocks from the parking area.

Section 2D.48 PARK - RIDE Sign (D4-2)

Option:

01 A PARK - RIDE (D4-2) sign (see Figure 2D-14(VA)) may be used to direct road users to park-and-ride facilities.

Standard:

02 The signs shall display the word message PARK - RIDE and direction information (arrow or word message).

Option:

03 PARK - RIDE signs may display the local transit pictograph and/or carpool symbol.

Standard:

04 If used, the local transit pictograph and/or carpool symbol shall be located in the top part of the sign above the message PARK - RIDE. In no case shall the vertical dimension of the local transit pictograph and/or carpool symbol exceed 18 inches.

Guidance:

05 If the function of the parking facility is to provide parking for persons using public transportation, the local transit pictograph should be used on the guide sign. If the function of the parking facility is to serve

carpool riders, the carpool symbol should be used on the guide sign. If the parking facility serves both functions, both the pictograph and carpool symbol should be used.

Standard:

06 These signs shall have a white legend and border on a rectangular green background. The carpool symbol shall be as shown for the D4-2 sign. The color of the local transit pictograph shall be selected by the local transit authority.

Option:

07 To increase the target value and contrast of the local transit pictograph, and to allow the local transit pictograph to retain its distinctive color and shape, the pictograph may be included within a white border or placed on a white background.

FREEWAY INTERCHANGE APPROACH SIGNS

Section 2D.49 Signing on Conventional Roads on Approaches to Interchanges

Support:

01 Because there are a number of different ramp configurations that are commonly used at interchanges with conventional roads, drivers on the conventional road cannot reliably predict whether they will be required to turn left or right in order to enter the correct ramp to access the freeway or expressway in the desired direction of travel. Consistently applied signing for conventional road approaches to freeway or expressway interchanges is highly desirable.

Standard:

02 On multi-lane conventional roads approaching an interchange, guide signs shall be provided to identify which direction of turn is to be made and/or which specific lane to use for ramp access to each direction of the freeway or expressway.

Guidance:

03 The signing of conventional roads with one lane of traffic approaching an interchange should consist of a sequence containing the following signs (see Figure 2D-15):

A. Junction Assembly
B. Destination sign
C. Directional Assembly or Entrance Direction sign for the first ramp
D. Advance Route Turn Assembly or Advance Entrance Direction sign with an advance turn arrow
E. Directional Assembly or Entrance Direction sign for the second ramp

Standard:

04 If used, the Entrance Direction sign shall consist of a white legend and border on a green background. It shall contain the freeway or expressway route shield(s), cardinal direction, and directional arrow(s).

Option:

05 The Entrance Direction sign may contain a destination(s) and/or an action message such as NEXT RIGHT.

06 At minor interchanges (see Section 2E.30), the following sequence of signs may be used (see Figure 2D-16):

A. Junction Assembly
B. Directional Assembly for the first ramp
C. Directional Assembly for the second ramp

Guidance:

07 On multi-lane conventional roads approaching an interchange, the sign sequence should contain the following signs (see Figures 2D-17 through 2D-19):

A. Junction Assembly
B. Advance Entrance Direction sign(s) for both directions (if applicable) of travel on the freeway or expressway
C. Entrance Direction sign for first ramp
D. Advance Turn Assembly
E. Entrance Direction sign for the second ramp

Support:

08 Advance Entrance Direction signs are used to direct road users to the appropriate lane(s).

Standard:

09 The Advance Entrance Direction sign shall consist of a white legend and border on a green background. It shall contain the freeway or expressway route shield(s) and cardinal direction(s).

Option:

10 The Advance Entrance Direction sign may have destinations, directional arrows, and/or an action message such as KEEP LEFT, NEXT LEFT, or SECOND RIGHT. Signs in this sequence may be mounted overhead to improve visibility as shown in Figures 2D-17 through 2D-19.

Support:

11 A post-mounted Advance Entrance Direction diagrammatic sign (see Figure 2D-20), within the sequence of approach guide signing described in Paragraphs 3, 6, and 7 of this Section, might be helpful in depicting the location of a freeway or expressway entrance ramp that is in close proximity to an intervening intersection on the same side of the approach roadway and where signing for only the ramp might cause confusion to road users.

Standard:

12 If used, the post-mounted Advance Entrance Direction diagrammatic sign shall display only the two successive turns from the same side of the roadway, one of which shall be the entrance ramp. The post-mounted Advance Entrance Direction sign shall depict only the successive turns and shall not depict lane use with lane lines, multiple arrow shafts for the approach roadway, action messages, or other representations.

Support:

13 Example guide signing for a transposed-alignment crossroad at a diamond interchange is shown in Figure 2D-21. Example guide signing for a single-point urban intersection at a diamond interchange is shown in Figure 2D-22.

14 Section 2D.50 contains information regarding the use of a Directional assembly or a FREEWAY ENTRANCE sign to mark the entrance to a freeway or expressway at the far corner of an intersection.

Section 2D.50 Freeway Entrance Signs (D13-3 and D13-3a)

Option:

01 FREEWAY ENTRANCE (D13-3) signs or FREEWAY ENTRANCE with diagonal downward-pointing arrow (D13-3a) signs (see Figure 2D-18) may be used on entrance ramps near the crossroad to inform road users of the freeway or expressway entrance, as appropriate.

02 The D13-3 and D13-3a signs may display an alternate legend in place of FREEWAY, such as EXPRESSWAY or PARKWAY, as appropriate, or may display the name of an unnumbered highway.

03 A Directional assembly (see Section 2D.32) with a diagonal downward-pointing arrow (M6-2aP) auxiliary plaque (see Section 2D.28) may be used at the far left-hand corner of an intersection with a freeway or expressway entrance ramp as an alternative to the D13-3a sign, facing left-turning traffic on the conventional road approach to indicate the immediate point of entry to the freeway or expressway and distinguish the entrance ramp from an adjoining exit ramp terminal at the same intersection with the conventional road (see Figure 2D-18). A similar Directional assembly may be used at the far right-hand corner of an intersection with a freeway or expressway entrance ramp where the entrance ramp and a crossroad or side road follow one another in close succession on the conventional road approach and the point of entry to the freeway or expressway might be difficult for the road user to distinguish from the crossroad or side road on the conventional road approach (see Figure 2D-20).

Support:

04 Section 2B.48 contains information regarding the use of regulatory signs to deter wrong-way movements at intersections of freeway or expressway ramps with conventional roads, and in the area where entrance ramps intersect with the mainline lanes.

WEIGH STATION, CROSSOVER, TRUCK AND PASSING LANE, AND EMERGENCY AND SLOW VEHICLE TURN-OUT SIGNS

Section 2D.51 WEIGH STATION Signing (D8 Series)

Support:

01 Independent facilities or areas have been added along many highways where certain commercial vehicles are directed to stop to be weighed and/or inspected. These areas are sometimes permanent, such as in a roadside area, or temporary mobile facilities deployed along the roadway.

02 The general concept for signing permanent Weigh Stations is similar to signing Rest Areas (see Section 2I.05) because in both cases traffic using either area remains within the right-of-way.

Standard:

03 The standard sequence of signs for a Weigh Station on a conventional highway shall include three basic signs (see Figure 2D-23):

A. Weigh Station Advance (D8-1) sign,
B. Weigh Station Advance Direction (D8-2) sign, and
C. Weigh Station Entrance Direction (D8-3) sign.

Guidance:

04 A Gore sign with the same basic legend as the Weigh Station Entrance Direction (D8-3) sign should also be used to emphasize the entrance to the weigh station.

Option:

05 Where State law requires trucks of a certain weight to enter the Weigh Station, a Weigh Station (R13-1) regulatory sign (see Section 2B.65) may be located following the Advance Weigh Station Ahead sign (see Figure 2D-23).

06 Where only commercial vehicle inspections are conducted in the inspection area, the WEIGH STATION legend of the D8 series signs may be replaced with the alternate legend, COMMERCIAL VEHICLE INSPECTION.

Guidance:

07 The Weigh Station Advance Direction (D8-2) Sign or the Weigh Station Advance (D8-1) sign should display, either on the sign or on a supplemental plaque or sign panel, the changeable legend OPEN or CLOSED.

Standard:

08 When the WEIGH STATION legend of the D8 series signs is replaced with the COMMERCIAL VEHICLE INSPECTION legend, as provided in Paragraph 6 of this Section, the WEIGH STATION legend of the R13-1 sign shall likewise be replaced with the alternate legend.

Section 2D.52 Crossover Signs (D13-1 and D13-2)

Option:

01 Crossover signs may be installed on divided highways to identify median openings not otherwise identified by warning or other guide signs.

Standard:

02 A Crossover (D13-1) sign (see Figure 2D-24) shall not be used to identify a median opening that is permitted to be used only by official or authorized vehicles.

Guidance:

03 If used, the Crossover sign should be installed immediately beyond the median opening, either on the right-hand side of the roadway or in the median.

Option:

04 The Advance Crossover (D13-2) sign (see Figure 2D-24) may be installed in advance of the Crossover sign to provide advance notice of the crossover.

Guidance:

05 The distance displayed on the Advance Crossover sign should be 1 MILE, ½ MILE, or ¼ MILE, unless unusual conditions require some other distance. If used, the sign should be installed either on the right-hand side of the roadway or in the median at approximately the distance displayed on the sign.

Section 2D.53 Truck and Passing Lane Signs (D17-1 through D17-4)

Guidance:

01 If an extra lane has been provided to the right-hand side of the travel lane for use by trucks and other slow-moving traffic, an Advance Truck Lane (D17-2) sign (see Figure 2D-25) should be installed in advance of the lane.

02 If a series of truck lanes is provided along a highway, a Next Truck Lane (D17-1) sign (see Figure 2D-25) should be installed after each truck lane segment.

03 If an extra lane has been provided to the left-hand side of the travel lane for passing slower moving vehicles in the travel lane, an Advance Passing Lane Advance (D17-4) sign (see Figure 2D-25) should be installed in advance of the lane.

04 If a series of passing lanes are provided along a highway, a Next Passing Lane (D17-3) sign (see Figure 2D-25) should be installed after each passing lane segment.

Support:

05 An example of signing for a truck lane is shown in Figure 2D-26. An example of signing for an intermittent passing lane is shown in Figure 2D-27.

06 Section 2B.38 contains information regarding regulatory signs for these types of lanes.

Section 2D.54 Emergency and Slow Vehicle Turn-Out Signs (D17-5 through D17-7)

Guidance:

01 If an emergency turn-out area has been provided where a shoulder is not available for emergency stopping or where there is part-time shoulder use by traffic (see Section 2G.23), Emergency Turn-Out signs should be installed. The Advance Emergency Turn-Out Advance (D17-5) sign (see Figure 2D-28) should be installed between ¼ mile and 500 feet in advance of the turn-out area. The Emergency Turn-Out Directional (D17-6) sign (see Figure 2D-28) should be installed near the beginning of the turn-out area.

02 If a slow vehicle turn-out area has been provided for slow-moving traffic, an Advance Slow Vehicle Turn-Out (D17-7) sign (see Figure 2D-28) should be installed in advance of the turn-out area.

Support:

03 An example of signing for an emergency turn-out is shown in Figure 2D-29.

04 Section 2B.42 contains information regarding regulatory signs for slow vehicle turn-out areas.

OTHER GUIDE SIGNS

Section 2D.55 Community Wayfinding Signs

Support:

01 Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to key civic, cultural, visitor, and recreational attractions and other similar secondary destinations within a city or a local urbanized or downtown area.

02 Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification marker for destinations within an overall wayfinding guide sign plan for an area.

03 Figures 2D-30 through 2D-32 illustrate various examples of the design and application of community wayfinding guide signs.

Standard:

04 The use of community wayfinding guide signs shall be limited to conventional roads. Community wayfinding guide signs shall not be installed on freeway or expressway mainlines or ramps. Direction to community wayfinding destinations from a freeway or expressway shall be limited to the use of a Supplemental guide sign (see Section 2E.51) on the mainline and a Destination sign (see Section 2D.36) on the ramp to direct road users to the area or areas within which community wayfinding guide signs are used. The individual wayfinding destinations shall not be displayed on the Supplemental guide and Destination signs except where the destinations are in accordance with the State or agency policy on Supplemental guide signs.

05 Community wayfinding guide signs shall not be used to provide direction to primary destinations or highway routes or streets. Destination or other guide signs shall be used for this purpose as described elsewhere in this Chapter and shall have priority over any community wayfinding sign in placement, prominence, and conspicuity.

06 Because regulatory, warning, and other guide signs have a higher priority, community wayfinding guide signs shall not be installed where adequate spacing cannot be provided between the community wayfinding guide sign and other higher-priority signs. Community wayfinding guide signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

07 Community wayfinding guide signs shall not be mounted overhead.

Guidance:

08 If used, a community wayfinding guide sign system should be established on a local municipal or equivalent jurisdictional level or for an urbanized area of adjoining municipalities or equivalent that form an identifiable geographic entity that is conducive to a cohesive and continuous system of signs. Community wayfinding guide signs should not be used on a regional or statewide basis where infrequent or sparse placement does not contribute to a continuous or coordinated system of signing that is readily identifiable as such to the road user. In such cases, Destination or other guide signs detailed in this Chapter should be used to direct road users to an identifiable area in which the type of eligible destination described in Paragraph 1 of this Section is located.

09 When a system of community wayfinding guide signs is being considered, the system of existing guide signs should be evaluated for applicability and general compliance with the provisions of this Manual to ensure road user directional guidance is adequately being addressed.

Support:

10 The specific provisions of this Section regarding the design of community wayfinding sign legends apply to vehicular community wayfinding signs and do not apply to those signs that are intended only to provide information or direction to pedestrians or other users of a sidewalk or roadside area.

Guidance:

11 Because pedestrian wayfinding signs typically use smaller legends that are inadequately sized for viewing by vehicular traffic and because they can provide direction to pedestrians that might conflict with that appropriate for vehicular traffic, wayfinding signs designed for and intended to provide direction to pedestrians or other users of a sidewalk or other roadside area should be located to minimize their conspicuity to vehicular traffic. Such signs should be located as far as practicable from the street, such as at the far edge of the sidewalk. Where locating such signs farther from the roadway is impracticable, the pedestrian wayfinding signs should have their conspicuity to vehicular traffic minimized by employing one or a combination of the following methods:

A. Locating signs away from intersections where high-priority traffic control devices are present.

B. Facing the pedestrian message toward the sidewalk and away from the street.

C. Cantilevering the sign over the sidewalk if the pedestrian wayfinding sign is mounted at a height consistent with vehicular traffic signs, removing the pedestrian wayfinding signs from the line of sight in a sequence of vehicular signs.

12 To further minimize their conspicuity to vehicular traffic during nighttime conditions, pedestrian wayfinding signs should not be retroreflective.

Support:

13 Color coding is sometimes used on community wayfinding guide signs to help road users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area.

Option:

14 At the boundaries of the geographical area within which community wayfinding guide signing is used, an informational guide sign may be posted to inform road users about the presence of wayfinding signing and to identify the meanings of the various color codes or pictographs that are being used.

Standard:

15 These informational guide signs shall have a white legend and border on a green background and shall have a design similar to that illustrated in Figure 2D-1 and shall be consistent with the basic design principles for guide signs. These informational guide signs shall not be installed on freeway or expressway mainlines or ramps.

16 The color coding or a pictograph of the identification markers of the community wayfinding guide signing system shall be included on the informational guide sign posted at the boundary of the community wayfinding guide signing area. The color coding or pictographs shall apply to a specific, identifiable neighborhood or geographical subarea within the overall area covered by the community wayfinding guide signing. Color coding or pictographs shall not be used to distinguish between different types of destinations that are within the same designated neighborhood or subarea. The color coding shall be accomplished by the use of different colored square or rectangular panels on the face of the informational guide sign, each positioned to the left of the neighborhood or named geographic area to which the color-coding panel applies. The height of the colored square or rectangular panels shall not exceed 2 times the height of the upper-case letters of the principal legend on the sign.

Option:

17 The different colored square or rectangular panels may include either a black or a white (whichever provides the better contrast with the color of the panel) letter, numeral, or other appropriate designation to identify the destination.

18 Except for the informational guide sign posted at the boundary of the wayfinding guide sign area, community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system. Color-coded community wayfinding guide signs may be used with or without the boundary informational guide sign displaying corresponding color-coding panels described in Paragraphs 13 through 16 of this Section. Except as provided in Paragraph 19 of this Section, in addition to the colors that are approved in this Manual for use on official traffic control signs (see Section 2A.06), other background colors may also be used for the color coding of community wayfinding guide signs.

Standard:

19 The standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink shall not be used as background colors for community wayfinding guide signs, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users.

20 The minimum contrast value of legend color to background color for community wayfinding guide signs shall be at least 0.70 (or 70%).

21 All messages, borders, legends, and backgrounds of community wayfinding guide signs and any identification markers shall be retroreflective (see Sections 2A.21 and 2A.22).

22 Community wayfinding guide signs, exclusive of any identification marker used, shall be rectangular in shape.

Guidance:

23 Simplicity and uniformity in design, position, and application as described in Section 2A.04 are important and should be incorporated into the community wayfinding guide sign design and location plans for the area.

24 Community wayfinding guide signs should be limited to three destinations per sign (see Section 2D.06).

25 Abbreviations (see Section 1D.08) should be kept to a minimum, and should include only those that are commonly recognized and understood.

26 Horizontal lines of a color that contrasts with the sign background color should be used to separate groups of destinations by direction from each other.

Support:

27 The basic requirement for all highway signs, including community wayfinding signs, is that they be legible to those for whom they are intended and that they be understandable in time to permit a proper response. Section 2A.04 contains additional information on the design of signs, including desirable attributes of effective designs.

Guidance:

28 Word messages should be as brief as practical and the lettering should be large enough to provide the necessary legibility distance.

Standard:

29 The minimum specific ratio of letter height to legibility distance shall comply with the provisions of Section 2A.08. The size of lettering used for destination and directional legends on community wayfinding signs shall comply with the provisions of minimum letter heights as provided in Section 2D.05.

30 Interline and edge spacing shall comply with the provisions of Section 2D.05.

31 Except as provided in Paragraph 34 of this Section, the lettering style used for destination and directional legends on community wayfinding guide signs shall comply with the provisions of Section 2D.04.

32 The lettering for destinations on community wayfinding guide signs shall be a combination of lower-case letters with initial upper-case letters (see Section 2D.04). All other word messages on community wayfinding guide signs shall be in all upper-case letters.

Guidance:

33 Except as provided in Paragraphs 34 and 35 of this Section, letters, numerals, and other characters should be composed of the Standard Alphabets as detailed in the "Standard Highway Signs" publication (see Section 1C.05).

Option:

34 A lettering style other than the Standard Alphabets provided in the "Standard Highway Signs" publication (see Section 1C.05) may be used on community wayfinding guide signs if an engineering study determines that the legibility and recognition values for the chosen lettering style meet or exceed the values for the Standard Alphabets for the same legend height and stroke width.

Standard:

35 If a lettering style other than the Standard Alphabets is used, the alternative lettering style shall be conventional in form. The letters, numerals, and other characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

36 In accordance with Section 2A.04, except for signs that are designed and located with the intent to be viewed only by pedestrians, bicyclists stopped out of the flow of traffic, or occupants of parked vehicles, Internet and e-mail addresses, including domain names and uniform resource locators (URL), and scanning graphics for the purpose of obtaining information (see Section 2A.04), shall not be displayed on any community wayfinding guide sign or sign assembly.

37 The arrow location and priority order of destinations shall follow the provisions described in Sections 2D.08 and 2D.36. Arrows shall be of the designs provided in Section 2D.08.

Option:

38 Pictographs (see definition in Section 1C.02) may be used on community wayfinding guide signs.

Standard:

39 If a pictograph is used, its height shall not exceed 2 times the height of the upper-case letters of the principal legend on the sign.

40 Except for pictographs, symbols that are not approved in this Manual for use on guide signs shall not be used on community wayfinding guide signs.

41 Business logos, commercial graphics, or other forms of advertising (see Section 1D.07) shall not be used on community wayfinding guide signs or sign assemblies.

Option:

42 Other graphics that specifically identify the wayfinding system, including identification markers, may be used on the overall sign assembly and sign supports.

Support:

43 An identification marker consists of a shape, color, and/or pictograph that is used as a visual identifier for the community wayfinding guide signing system for an area. Figure 2D-30 shows examples of identification marker designs that can be used with community wayfinding guide signs.

Option:

44 An identification marker may be used in a community wayfinding guide sign assembly, or may be incorporated into the overall design of a community wayfinding guide sign, as a means of visually identifying the sign as part of an overall system of community wayfinding signs and destinations.

Standard:

45 The sizes and shapes of identification markers shall be smaller than the community wayfinding guide signs themselves. Identification markers shall not be designed to have an appearance that could be mistaken by road users as being a traffic control device.

Guidance:

46 The area of the identification marker should not exceed ⅕ of the area of the community wayfinding guide sign with which it is mounted in the same sign assembly.

Section 2D.56 Signing of Named Highways for Mapping and Address Purposes

Support:

01 A highway name is the officially designated name of a freeway, expressway, or conventional road for navigational, official mapping, and address purposes. Some highways are named in addition to or in lieu of

being assigned a highway route number. Memorial, honorary, ceremonial, or other secondary names, such as touring route and byway names, are not considered to be highway names.

Option:

02 Guide signs may contain street or highway names if the purpose is to enhance driver communication and guidance; however, they are to be considered as supplemental information to route numbers.

Standard:

03 Highway names shall not replace official numeral designations.

04 Memorial, honorary, or other secondary names (see Section 2M.10) shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.

05 The use of route signs shall be restricted to signs officially used for guidance of traffic in accordance with this Manual and the "Purpose and Policy" statement of the American Association of State Highway and Transportation Officials that applies to Interstate and U.S. numbered routes.

Option:

06 Unnumbered routes having major importance to proper guidance of traffic may be signed if carried out in accordance with the aforementioned policies. For unnumbered highways, a name to enhance route guidance may be used where the name is applied consistently throughout its length.

Guidance:

07 Only one name should be used to identify any highway, whether numbered or unnumbered.

Standard:

07a Signs for named highways shall be consistent in design with signs for memorial highways and facilities (see Section 2M.10).

Section 2D.57 National Scenic Byways Sign and Plaque (M10-1 and M10-1aP)

Support:

01 Certain roads have been designated by the U.S. Secretary of Transportation as National Scenic Byways or All-American Roads based on their archeological, cultural, historic, natural, recreational, or scenic qualities.

Option:

02 State and local highway agencies may install the National Scenic Byways (M10-1) sign or (M10-1aP) plaque (see Figure 2D-33) at entrance points to a route that has been recognized by the U.S. Secretary of Transportation as a National Scenic Byway or an All-American Road. The M10-1 sign may be installed as independent Directional (see Section 2D.32) or Confirming (see Section 2D.33) assemblies at periodic intervals along the designated route and near intersections where the designated route turns or follows a different numbered highway. The M10-1aP plaque may be installed below a route sign in a Confirming assembly. At locations where roadside features have been developed to enhance the traveler's experience such as rest areas, historic sites, interpretive facilities, or scenic overlooks, the National Scenic Byways sign or plaque may be placed on the associated sign assembly to inform travelers that the site contributes to the byway travel experience.

Guidance:

03 Where the byway is identified only by the National Scenic Byways sign, the Directional assembly should consist of the M10-1 sign and an M5 series or M6 series auxiliary plaque when indication of a turn is necessary to remain on the byway route.

04 Where the name of the byway is to be displayed on identification signs or plaques along the byway route, the name should be displayed in a Directional or Confirming assembly as follows (see Figure 2D-34):

A. On a Byway Identification (M10-2aP) plaque (see Section 2D.58) mounted below the M10-1 sign; or

B. On a Byway Identification (M10-2) sign (see Section 2D.58) with the M10-1aP plaque mounted below the sign.

05 In either case, the size of the National Scenic Byways (M10-1) sign, (M10-1aP) plaque, Byway Identification (M10-2) sign, and Byway Identification (M10-2aP) plaque should be consistent with that specified for route signs (see Section 2D.10) for the roadway classification .

06 Where the name of the byway is to be displayed along the byway route as provided in Paragraph 4 of this Section, the byway Directional or Confirming assemblies should be located separately from any route Sign assemblies or Destination guide signs.

Standard:

07 When a National Scenic Byways sign is installed on a National Scenic Byway or an All-American Road, the design shown for the M10-1 sign or M10-1aP plaque in Figure 2D-33 shall be used. Use of this design shall be limited to routes that have been designated as a National Scenic Byway or All-American Road by the U.S. Secretary of Transportation.

08 If used, the M10-1 sign or M10-1aP plaque shall be placed such that the highway route signs have primary visibility for the road user.

09 The M10-1 sign or the M10-1aP plaque shall not be installed as sign panels on a guide sign or as part of a guide sign assembly.

Section 2D.58 State-Designated Scenic Byway, Historic Trail, and Auto Tour Route Signs

Support:

01 Signing for State-designated scenic byways, historic trails, and auto tour routes is similar in concept to that for National Scenic Byways as provided in Section 2D.57.

02 Named highways are officially designated and shown on official maps and serve the purpose of providing route guidance, primarily on unnumbered highways, and property addresses. A highway designated as a trail, auto tour route, or byway is not considered to be a highway name for the purposes of highway signing or road user navigation and orientation. Section 2D.56 contains provisions for the signing of named highways.

03 Section 1D.09 provides information on the authority for placement of traffic control devices within the highway right-of-way.

Guidance:

04 Route Sign assemblies and Destination guide signs should have priority in visibility and location over signing related to historic trails, auto tour routes, and byways.

Option:

05 Identification signs for a State scenic byway may be installed along conventional roads that have been designated as part of a State scenic byway system. A Byway Identification (M10-2) sign (see Figure 2D-34) with the name of the byway displayed may be installed in a Directional or Confirming assembly with the SCENIC BYWAY (M10-3bP) plaque (see Figure 2D-34) mounted below the M10-2 sign.

06 Where a National Scenic Byway is part of a State scenic byway system, the National Scenic Byways (M10-1aP) plaque (see Section 2D.57) may be installed in a Directional or Confirming assembly below the Byway Identification (M10-2) sign or State Scenic Byway (M10-3 or M10-3a) sign (see Figure 2D-34) for the State scenic byway.

07 A State Scenic Byway System (M10-3) sign may be installed in a Directional or Confirming assembly with the name of the byway displayed on a Byway Identification (M10-2aP) plaque below the sign (see Figure 2D-34).

08 A State Scenic Byway (M10-3a) sign with a simple graphic and the name of the byway displayed may be installed in a Directional or Confirming assembly with the SCENIC BYWAY (M10-3bP) plaque mounted below the M10-3a sign.

09 Identification signs for a historic trail, such as the National Historic Trails administered by the National Park Service, may be installed along segments of conventional roads that coincide with the original route of the trail. National Historic Trail Identification (M11-1) signs (see Figure 2D-34) may be installed in a Directional or Confirming assembly with a HISTORIC ROUTE (M11-1aP), CROSSING (M11-1bP), or AUTO TOUR ROUTE (M11-1cP) auxiliary plaque (see Figure 2D-34) mounted below the M11-1 sign. The beginning and end of a historic trail route or auto tour route may be indicated with a BEGIN (M4-14P) or

END (M4-6P) auxiliary plaque (see Figure 2D-5) with a white legend and border on a brown background mounted above the historic trail identification sign. The length of the route may be identified by a NEXT XX MILES (M11-1dP) auxiliary plaque mounted below the M11-1aP or M11-1cP auxiliary plaque.

Guidance:

10 The design and size of historic trail and State scenic byway identification or system signs should comply with the general provisions and principles for route signs (see Section 2D.10). Designs should be simple, dignified, and devoid of complex graphics. The size of the signs should not exceed the size of the route signs used along a particular route.

Standard:

11 Scenic byway, historic trail, and auto tour route sign designs shall not have a similar design to or resemble a highway route sign.

Guidance:

12 Where used, historic trail and State scenic byway identification signs should be installed as Directional (see Section 2D.32) or Confirming (see Section 2D.33) assemblies at independent locations, separate from other Route Sign assemblies and Destination guide signs. Where used, Confirming assemblies for the trail or byway should be installed at less frequent intervals than Confirming assemblies for the numbered route.

Support:

13 Where all or part of the original route of a historic trail does not follow a roadway, an auto tour route is sometimes established along a conventional road in the general vicinity of the historical route of the trail. Examples include auto tour routes following other routes that parallel the original routes of the Lewis and Clark National Historic Trail, the Oregon National Historic Trail, and the Santa Fe National Historic Trail. The auto tour route is shown on touring maps along State or other highways and provides access to sites on the trail from those highways.

14 A system of signing providing direction along conventional roads for a historic trail with an auto tour route is shown in Figure 2D-35. Examples of Destination and Supplemental guide signs providing direction to historic trail sites from a freeway or expressway interchange are shown in Figure 2D-36.

Guidance:

15 Signing for historic trails should be limited to Destination signs for the sites related to the trail and to Directional and Confirming assemblies for the original portions of the trail itself. If an auto tour route has been designated along other highways to provide access to sites along the original trail as described in Paragraph 13 of this Section, then the signing should be limited to Destination signs for those sites and directional signing to access the original route of the trail. Identification signs for the auto tour route should not be installed. Instead, direction along the auto tour route should rely on the touring map and other directional signs for the highways that the auto tour route follows.

Standard:

16 Identification signs for historic trails, auto tour routes, and scenic byways shall not be installed on freeways or expressways, except as necessary to provide continuity between discontinuous segments of conventional roadways that are designated as a trail, auto tour route, or byway, for which the freeway or expressway provides the only connection between the segments. If installed on freeways or expressways, the identification signs shall be installed as independent trailblazer assemblies (see Sections 2D.34 and 2E.55) and shall not be installed with other route signs or Confirming assemblies or on guide signs. If installed on freeways or expressways, the trailblazer assemblies for the trail, auto tour route, or byway shall be installed at less frequent intervals than Confirming assemblies for the highway route.

17 Identification signs for historic trails, auto tour routes, and scenic byways shall not be installed as sign panels on a guide sign or as part of a guide sign assembly.

Section 2D.59 Emergency Routing Signs and Plaques (M4-11 and M4-12 Series)

Support:

01 As part of an agency's transportation incident management plan it is sometimes desirable to permanently sign routes that provide rerouting of traffic around highway segments susceptible to traffic incidents. Permanently-installed Emergency Routing signs and plaques (see Figure 2D-37) provide direction on conventional roads from an exit located upstream of an area that can be susceptible to traffic incidents back to the original route at a point downstream of the incident-susceptible area.

Option:

02 EMERGENCY ROUTE (M4-11 and M4-11a) signs and EMERGENCY ROUTE TO (M4-11bP and M4-11cP) plaques mounted on a directional assembly may be permanently installed on conventional roadways to provide trailblazing along a designated diversionary route to bypass a traffic incident.

Support:

03 The purpose of Emergency Routing signs and plaques is for corridor management along routes that have recurring incidents and have reasonable rerouting paths available. These signs are intended to be permanently installed to provide instant rerouting guidance to road users when traffic congestion or backups first begin even before emergency responders could provide temporary traffic control for rerouting traffic. These signs can be used as a stand-alone system or be a part of a larger system which might also incorporate other devices such as changeable message signs. These signs provide road users assurance that a diversionary route will lead them back to their original route of travel.

Standard:

04 Emergency Routing signs and plaques shall only be installed at departure points and along diversion routes for directing road users around highway segments in areas that are more susceptible to traffic incidents (see Figure 2D-38). EMERGENCY ROUTE and EMERGENCY ROUTE TO signs shall be placed at each turning decision point along the designated route until it rejoins the original route or until other directional signs leading back to the original route are provided.

05 Emergency Routing signs shall have a white legend and border on a green background.

Option:

06 For additional emphasis the legend EMERGENCY ROUTE or EMERGENCY ROUTE TO may be displayed in a yellow panel with black letters near the top of the sign (see Figure 2D-37).

Standard:

07 Orange or pink shall not be used as alternate colors on permanently-installed signs or plaques for rerouting traffic during an incident or other event. If a route shield is displayed as part of the message, the wording of the sign or plaque shall be EMERGENCY ROUTE TO as shown in Figure 2D-37.

Option:

08 An EMERGENCY ROUTE TO plaque with either a white legend and border on a green background (M4-11bP) or black legend and border on a yellow background (M4-11cP) may be added to the top of a conventional Route assembly on a diversion route to provide direction back to the original route downstream of the incident (see Figures 2D-37 and 2D-38).

09 A combination warning and regulatory message sign with flashing beacons mounted above and the legend, WHEN FLASHING [ROUTE] CLOSED AHEAD/ USE EMERGENCY ROUTE [NEXT RIGHT or EXIT XX] may be used in advance of the emergency route entrance to inform road users of the closure and require exiting the primary route and use of the emergency route (see Figures 2D-37 and 2D-38).

Standard:

10 The End Emergency Route (M4-12) sign may be used at a point along the emergency route just prior to the junction where traffic is to reenter the primary route past the closed section of roadway (see Figures 2D-37 and 2D-38).

SIGNING AT AIRPORTS

Section 2D.60 Signing at Airports

Support:

01 Many roadways within airport facilities (including terminal curbside roadways) are considered to be conventional roads because they typically have frequent driveways and at-grade intersections and might have pedestrian activity along and/or across them.

02 Some airport roadways have full or partial control of access and operating speeds higher than 45 mph and thus would be classified as freeways or expressways for signing purposes (see Chapter 2E). Freeway or expressway conditions typically exist on the approaches to the airport from other highways; on the approaches to access points to terminals, parking, and other patron facilities; and on roadways that provide exits from the airport facility to connect with the local or regional highway network.

03 Roadways within airports and other similarly contained roadway networks with multiple closely-spaced access points to multiple destinations (such as terminals, parking facilities, rental car facilities, and other airport services) often present challenges for the application of guide signing. Closely-spaced signs, excessive sign messaging either co-located or in succession, and the resulting excessive informational load imposed on the road user are of particular concern for such roadways. The Transportation Research Board's Airport Cooperative Research Program Report 52, "Wayfinding and Signing Guidelines for Airport Terminal and Landside," contains additional information on the application of traffic control devices to the unique geometrics and roadway environment that are typical of airports.

04 An example of major guide signing on the approaches to and within an airport facility roadway network is shown in Figure 2D-39.

Guidance:

05 If adequate sign spacing cannot be provided due to the site and roadway characteristics of an airport or similar facility, then measures should be taken to reduce the speeds of vehicles on the roadway to provide road users with adequate time to comprehend and respond to the sign messages. Consideration should also be given to increasing the sign letter heights to provide greater viewing distances and decision times. Where a single terminal serves a large number of airlines, the airline information should be displayed on separate signs that appear in sequence to limit the number of airlines displayed on a single sign or at a single location. Changeable message signs (see Chapter 2L) should not be used to rotate the display of airlines to an approaching road user.

Support:

06 There are various methods that can be used to help reduce vehicle speeds, including roadway geometric changes, implementing traffic calming measures, and increased enforcement. Provisions on setting speed limits are found in Section 2B.21.

Section 2D.V1 OLD (M4-V7) Auxiliary Signs

Option:

01 The OLD (M4-V7) auxiliary sign (see Figure 2D-4(VA) in this Manual) may be used where a route has been transferred from its original number and/or system.

Standard:

02 If used, the OLD auxiliary sign shall be used in combination with the old and new route numbers for a period of one year.

Section 2D.V2 VIRGINIA BYWAY (D6-V1) Signs

Support:

01 The Virginia Byway program identifies road corridors containing aesthetic or cultural value near areas of historical, natural or recreational significance. The Commonwealth Transportation Board (CTB) designates select roadway corridors as Virginia Byways, and signs are installed at various points along these corridors (see Figure 2D-V1 in this Manual).

02 Additional information about the Virginia Byway program can be accessed at VDOT's web site, see the Appendix of this Manual for the web address.

Standard:

03 VIRGINIA BYWAY (D6-V1) signs (see Figure 2D-V1) shall be installed at the termini of a route or sections thereof which have been designated as Virginia Byways by the CTB. Additionally, Virginia Byway signs shall be installed between the termini at intervals of approximately 5 miles.

04 ENTERING (D6-VP1) and LEAVING (D6-VP2) plaques shall be placed above the VIRGINIA BYWAY signs at the beginning and end, respectively, of the designated Virginia Byway route or segment.

CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS

Chapter 2E Subchapter and Section Organization

GENERAL

Section 2E.01 Scope of Freeway and Expressway Guide Sign Standards

Support:

01 The provisions of this Chapter provide a uniform and effective system of signing for high-volume, high-speed motor vehicle traffic on freeways and expressways. The requirements and specifications for expressway signing exceed those for conventional roads (see Chapter 2D), but are less than those for freeway signing. Since there are many geometric design variables to be found in existing roads, a signing concept commensurate with prevailing conditions is the primary consideration. Section 1C.02 includes definitions of freeway and expressway.

02 Guide signs for freeways and expressways are primarily identified by the name of the sign rather than by an assigned sign designation. Guidelines for the design of guide signs for freeways and expressways are provided in the "Standard Highway Signs" publication (see Section 1A.05).

Standard:

03 The provisions of this Chapter shall apply to any highway that meets the definition of freeway or expressway facilities.

Section 2E.02 Freeway and Expressway Signing Principles

Support:

01 The development of a signing system for freeways and expressways is approached on the premise that the signing is primarily for the benefit and direction of road users who are unfamiliar with the route or area. The signing furnishes road users with clear instructions for orderly progress to their destinations. Sign installations are an integral part of the facility and, as such, are best planned concurrently with the development of highway location and geometric design. For optimal results, plans for signing are analyzed during the earliest stages of preliminary design, and details are correlated as final design is developed. The excessive signing found on many major highways usually is the result of using a multitude of signs that are too small and that are poorly designed and placed to accomplish the intended purpose.

02 Freeway and expressway signing is to be considered and developed as a planned system of installations. An engineering study is sometimes necessary for proper solution of the problems of many individual locations, but, in addition, consideration of an entire route is necessary.

Guidance:

03 Road users should be guided with consistent signing on the approaches to interchanges, when they drive from one State to another, and when driving through rural or urban areas. Because geographical, geometric, and operating factors regularly create significant differences between urban and rural conditions, the signing should take these conditions into account.

04 Guide signs on freeways and expressways should serve distinct functions as follows:

A. Give directions to destinations, or to streets or highway routes, at intersections or interchanges;
B. Furnish advance notice of the approach to intersections or interchanges;
C. Direct road users into appropriate lanes in advance of diverging or merging movements;
D. Identify routes and directions on those routes;
E. Show distances to destinations;
F. Indicate access to general motorist services, rest, scenic, and recreational areas; and
G. Provide other information of navigational value to the road user.

Section 2E.03 Guide Sign Classification

Support:

01 Freeway and expressway guide signs are classified and addressed as follows:

A. Interchange signs (see Sections 2E.21 through 2E.23 and 2E.25 through 2E.44);
B. Interchange Sequence signs (see Section 2E.24);

C. Post-Interchange signs (see Sections 2E.47 through 2E.49);
D. Community Interchanges Identification signs (see Section 2E.52);
E. Next Exits signs (see Section 2E.53);
F. Weigh Station signs (see Section 2E.54);
G. Route signs and Trailblazer Assemblies (see Section 2E.55);
H. At-Grade Intersection signs (see Section 2E.58);
I. General Information signs (see Chapter 2H);
J. Reference Location signs (see Sections 2H.11 and 2H.12);
K. General Service signs (see Chapter 2I);
L. Rest and Scenic Area signs (see Section 2I.05);
M. Tourist Information and Welcome Center signs (see Section 2I.08);
N. Radio Information, Travel Information, and Roadside Assistance signs (see Sections 2I.09 through 2I.13);
O. Carpool and Ridesharing signs (see Section 2I.14);
P. Specific Service signs (see Chapter 2J); and
Q. Recreational and Cultural Interest Area signs (see Chapter 2M).

Section 2E.04 Characteristics of Urban Signing

Support:

01 Urban conditions are characterized not so much by city limits or other arbitrary boundaries as by the following features:

A. Mainline roadways with more than two lanes in each direction;
B. High traffic volumes on the through roadways;
C. High volumes of traffic entering and leaving interchanges;
D. Interchanges that are closely spaced;
E. Roadway and interchange lighting;
F. Three or more interchanges serving the major city;
G. A loop, circumferential, or spur route serving a sizable portion of the urban population; and
H. Visual clutter from roadside development.

02 Operating conditions and road geometrics on urban freeways and expressways usually make special sign treatments desirable, including:

A. Use of Interchange Sequence signs (see Section 2E.24);
B. Use of sign spreading to the maximum extent possible (see Section 2E.43);
C. Elimination of General Service or Specific Service signing (see Chapters 2I and 2J);
D. Reduction to a minimum of post-interchange signs (see Section 2E.47);
E. Display of advance signs at distances closer to the interchange, with appropriate adjustments in the legend (see Section 2E.23);
F. Use of overhead signs on roadway structures and independent sign supports (see Section 2E.19);
G. Use of Overhead Arrow-per-Lane guide signs in advance of interchanges with option lanes (see Section 2E.40), or Diagrammatic Advance guide signs in advance of interchanges with complex geometric configurations of ramp departures (see Section 2E.41); and
H. Frequent use of street names as the principal message in guide signs.

03 Lower speeds, which are often characteristic of urban operations, do not justify lower signing standards. Typical traffic patterns are more complex for the road user to negotiate, and large, easy-to-read legends are, therefore, just as necessary as on rural highways.

Section 2E.05 Characteristics of Rural Signing

Support:

01 Rural areas ordinarily have greater distances between interchanges, which permits adequate spacing for the sequences of signs on the approach to and departure from each interchange. However, the absence of traffic in adjoining lanes and on entering or exiting ramps often adds monotony or inattention to rural driving. This increases the importance of signs that call for decisions or actions.

Guidance:

02 Where there are long distances between interchanges and the alignment is relatively unchanging, signs should be positioned for their best effect on road users. The tendency to group all signing in the immediate vicinity of rural interchanges should be avoided by considering the entire route in the development of signing plans. Extra effort should be given to the placement of signs at natural target locations to command the attention of the road user, particularly when the message requires an action by the road user.

Section 2E.06 Signing of Named Highways

Guidance:

01 Signing of named highways on freeways and expressways should comply with the provisions of Section 2D.56.

Support:

02 Section 2M.10 contains information regarding memorial or dedication signing of routes, bridges, or highway components.

Section 2E.07 Designation of Destinations

Standard:

01 The direction of a freeway and the major destinations or control cities along it shall be clearly identified through the use of appropriate destination legends (see Section 2D.35). Successive freeway guide signs shall provide continuity in destination names and consistency with available map information. At any decision point, a given destination shall be indicated by way of only one route (see Figure 2E-1).

Guidance:

02 Control city legends should be used in the following situations along a freeway:

A. At interchanges between freeways;
B. At separation points of overlapping freeway routes;
C. On directional signs on intersecting routes, to guide traffic entering the freeway;
D. On Pull-Through signs; and
E. On the bottom line of post-interchange distance signs.

Support:

03 Continuity of destination names is also useful on expressways serving long-distance or intrastate travel.

04 The determination of major destinations or control cities is important to the quality of service provided by the freeway. Control cities on freeway guide signs are selected by the States and are contained in the "Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways, 4th Edition/Guide Signs, Part II: Guidelines for Airport Guide Signing/Guide Signs, Part III: List of Control Cities for Use in Guide Signs on Interstate Highways," published by and available from the American Association of State and Highway Transportation Officials.

SIGN DESIGN

Section 2E.08 General

Support:

01 Effective signs are legible to road users approaching them, and are readable and comprehensible in the viewing time provided to permit proper responses. Desired design characteristics include: (a) long visibility distances; (b) large lettering, symbols, and arrows; and (c) short legends.

Section 2E.09 Color of Guide Signs

Standard:

01 Guide signs on freeways and expressways, except as otherwise provided in this Manual, shall have white letters, symbols, arrows, and borders on a green background.

Support:

02 Color requirements for route signs and trailblazers; for signs with blank-out or changeable messages; for signs for services, rest areas, park and recreational areas; and for certain miscellaneous signs are provided in the individual Sections dealing with the particular sign or sign group.

Section 2E.10 Retroreflection or Illumination

Standard:

01 Letters, numerals, symbols, arrows, and borders of all guide signs shall be retroreflective. The background of all guide signs that are not independently illuminated shall be retroreflective.

Support:

02 Where there is no serious interference from extraneous light sources, retroreflective post-mounted signs usually provide adequate nighttime visibility.

03 On freeways and expressways where much driving at night is done with low-beam headlights, the amount of headlight illumination incident to an overhead sign display is relatively small.

Guidance:

04 Overhead sign installations should be illuminated (see Section 2A.21) unless an engineering study shows that retroreflection alone will perform effectively. The type of illumination chosen should provide effective and reasonably uniform illumination of the sign face and message.

Section 2E.11 Interchange Classification

Support:

01 For signing purposes, interchanges are classified as major, intermediate, and minor. Minimum letter and numeral sizes based on interchange classification are contained in Tables 2E-2 and 2E-4. Descriptions of these classifications are as follows:

A. Major interchanges are subdivided into two categories: (a) interchanges with other expressways or freeways, or (b) interchanges with high-volume multi-lane highways, principal urban arterials, or major rural routes where the volume of interchanging traffic is heavy or includes many road users unfamiliar with the area.
B. Intermediate interchanges are those with urban and rural routes not in the category of major or minor interchanges.
C. Minor interchanges include those where traffic is local and very light, such as interchanges with land service access roads. Where the sum of exit volumes is estimated to be lower than 100 vehicles per day in the design year, the interchange is classified as minor.

Section 2E.12 Size of Signs and Letters

Standard:

01 Except as provided in Section 2A.07, the sizes of freeway and expressway guide signs that have standardized designs shall be as shown in Table 2E-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2E-1(VA).

Option:

03 Signs larger than those shown in Table 2E-1(VA) may be used (see Section 2A.07).

Standard:

04 When the FHWA Standard Alphabets are used, the nominal loop height of the lower-case letters shall be ¾ of the height of the initial upper-case letter (see Paragraph 3 of Section 2D.05 for additional information on the specification of letter heights). Other word legends such as cardinal directions, action messages, and special characters shall be composed of all upper-case letters with a minimum letter height of 8 inches. Interline and edge spacing shall be as provided in Section 2E.13.

05 For all freeway and expressway signs that do not have a standardized design, the message dimensions shall be determined first, and the outside sign dimensions secondarily. Minimum numeral and letter sizes for expressway guide signs according to interchange classification, type of sign, and component of sign legend shall be as shown in Tables 2E-2 and 2E-3. Minimum numeral and letter sizes for freeway guide signs according to interchange classification, type of sign, and component of sign legend shall be as shown in Tables 2E-4 and 2E-5. The minimum numeral and letter sizes for overhead-mounted expressway and freeway guide signs shall be those shown in the "Overhead" columns of Tables 2E-2 and 2E-4, respectively, except where a larger minimum numeral or letter height is provided in the columns for the applicable type of interchange (major, intermediate, or minor).

06 All names of places, streets, and highways on freeway and expressway guide signs shall be composed of lower-case letters with initial upper-case letters. The letters and the numerals used shall be FHWA Standard Alphabet Series E (modified) as provided in the "Standard Highway Signs" publication (see Section 1A.05).

07 Lettering size on freeway and expressway signs shall be the same for both rural and urban conditions.

Guidance:

07a Clearview should be used in place of Series E(modified) for the names of places, streets, and highways on freeway and expressway guide signs.

Standard:

07b The use of Clearview shall be limited to the display of names of places, streets, and highways on freeway and expressway guide signs. Words shall be composed of lower-case letters with initial upper-case letters. The design and spacing of the letters shall be as provided in the "Standard Highway Signs" publication (see Section 1A.05 of this Manual). The nominal loop height of the lower-case letters shall be 84 percent of the height of the initial upper-case letter. Interline spacing, measured from the baseline of the upper line of legend to the upper limit of the initial upper-case letter of the lower line of legend, shall be at least 96 percent of the initial upper-case letters (equivalent to 84 percent of the initial upper-case letter when measured from the baseline of the upper line of legend to the upper limit of the rising stems of the lower-case letters of the lower line of legend). Edge spacing shall be as provided in Section 2E.13 of this Manual. The size of the sign shall be suitably enlarged to accommodate the larger lower-case letters and interline spacing. When the name of a place, street, or highway contains numerals, the numerals shall be composed of the FHWA Standard Alphabet Series E(modified). Other lettering on the sign, such as for cardinal directions and distance or action messages, and all numerals or special characters, shall be composed of Series B, C, D, E, E(modified), or F of the FHWA Standard Alphabets as provided in this Manual. Clearview shall not be used for any application other than as provided in this section.

07c Clearview lettering shall not be used for all upper-case sign legends.

Support:

08 Sign size is determined primarily in terms of the length of the message and the size of the lettering necessary for proper legibility. Letter style and height, and arrow design have been standardized for freeway and expressway signs to assure uniform and effective application.

09 Designs for upper-case and lower-case FHWA Standard Alphabets, together with tables of recommended letter spacing, are shown in the "Standard Highway Signs" publication (see Section 1A.05) and the "Virginia Standard Highway Signs" book (see Appendix A for link).

09a Guidance on when to use Clearview 5-W can be found in the "Virginia Standard Highway Signs" book (see Appendix A for link).

Guidance:

10 Freeway lettering sizes (see Tables 2E-4 and 2E-5) should be used when expressway geometric design is comparable to freeway standards.

11 Other sign letter size requirements not specifically identified elsewhere in this Manual should be guided by these specifications. Abbreviations should be kept to a minimum, except as provided in Section 2E.16.

Support:

12 A sign mounted over a particular roadway lane to which it applies might have to be limited in horizontal dimension to the width of the lane, so that another sign can be placed over an adjacent lane. The necessity to maintain proper vertical clearance might also place a further limitation on the size of the overhead sign and the legend that can be accommodated.

Option:

12a In accordance with Section 2D.55 of the MUTCD, a lettering style other than the Standard Highway Sign Alphabets may be used on community wayfinding signs if an engineering study determines that the legibility and recognition values for the chosen lettering style meet or exceed the values for the Standard Highway Sign Alphabets for the same legend height and stroke width.

Section 2E.13 Interline and Edge Spacing

Guidance:

01 Interline spacing of upper-case letters should be approximately ¾ of the average of upper-case letter heights in adjacent lines of letters.

02 The spacings to the top and bottom borders should be equal to the average of the letter height of the adjacent line of letters. The lateral spacing to the vertical borders should be essentially the same as the height of the largest letter.

Section 2E.14 Sign Borders

Guidance:

01 For guide signs larger than 120 x 72 inches, the border should have a width of 2 inches. For smaller guide signs, a border width of 1.25 inches should be used. On unusually large signs with oversized letter heights, route shields, or other legend elements, the border should be 2.5 inches wide and should not exceed 3 inches in width. In all cases, the width of the border should not exceed the stroke width of the lettering of the principal legend on the sign.

02 Corner radii of sign borders should be approximately ⅛ of the minimum sign dimension on guide signs, except that the radii should not exceed 12 inches on any sign.

Support:

03 The "Standard Highway Signs" publication (see Section 1A.05) contains detailed information on border widths and corner radii for ranges of sign sizes.

Option:

04 The sign material in the area outside of the corner radius may be trimmed.

Section 2E.15 Amount of Legend on Guide Signs

Guidance:

01 No more than two destination names or street names should be displayed on any Interchange Advance Guide sign or Exit Direction sign. A city name and street name on the same sign should be avoided. Where two or three signs are placed on the same supports, destinations or street names should be limited to one per

sign, or to a total of three in the display. Sign legends should not exceed three lines of copy, exclusive of the exit number and action or distance information.

Support:

02 Where only one interchange serves a community, the intersecting street name is generally superfluous to the city name on the Interchange Advance guide and Exit Direction signs. Where a community is served by multiple interchanges, the city name is typically displayed on either a Community Interchanges Identification sign (see Section 2E.52) or a Next Exits sign (see Section 2E.53). Each interchange is then identified by its intersecting roadway name on the Interchange Advance guide and Exit Direction signs rather than by the city name.

Section 2E.16 Abbreviations

Standard:

01 The use of abbreviations on freeway and expressway guide signs shall comply with the provisions of Section 2D.07 of this Manual.

Section 2E.17 Symbols

Support:

01 Symbols are not normally displayed on freeway and expressway guide signs. One exception is the PARK - RIDE Supplemental guide sign (see Section 2E.51), which displays the Carpool symbol. In some cases, General Information symbols (see Chapter 2H) might be included in the legend of a guide sign to shorten an unusually lengthy legend on the sign.

Guidance:

02 When a General Information symbol is incorporated into the legend of a guide sign, all components of the legend should be balanced in size and arrangement for maximum legibility. The General Information (I series) sign, rather than the symbol alone, should be placed as a sign panel within the guide sign so that adequate recognition of the symbol is provided by the border. The General Information sign panel should be positioned to the left of the legend to which it applies. The size of the General Information sign panel should be similar in size to that specified for a route shield for the type of guide sign on which it is displayed.

Section 2E.18 Arrows for Interchange Guide Signs

Standard:

01 Arrows used on interchange guide signs shall be of the types shown in Figure 2D-3 and shall comply with the provisions of this Section and Section 2D.08.

02 Except on Overhead Arrow-per-Lane guide signs (see Section 2E.40) and on Exit Direction signs for lane drops (see Section 2E.28), and except as provided in Paragraph 5 of this Section, directional arrows on all overhead and post-mounted Exit Direction signs shall point diagonally upward. Directional arrows on overhead Exit Direction signs shall be located on the side of the sign consistent with the direction of the exiting movement. Directional arrows on post-mounted Exit Direction signs shall be located at the bottom portion of the sign and centered under the legend.

Option:

03 On overhead Exit Direction signs that are located fully over the tapered portion of the exit ramp at the theoretical gore, and where a directional arrow to the side of the legend farthest from the roadway might create an unusually wide sign that limits the road user's view of the arrow, the directional arrow may be placed at the bottom portion of the sign, centered under the legend.

Standard:

04 Directional arrows on guide signs for multi-lane exits shall be positioned below the legend over the approximate center of each lane to which the arrow applies (see Figure 2E-38).

05 Down arrows shall only be used on overhead signs to indicate a lane to be followed and shall be positioned over the approximate center of each lane pointing vertically downward toward the approximate center of that lane. Down arrows shall be used only on overhead guide signs that restrict the use of specific lanes to traffic bound for the destination(s) and/or route(s) indicated by these arrows. Down arrows shall not be used unless an arrow can be located over and pointed to the approximate center of each lane that can be used to reach the destination displayed on the sign.

06 If down arrows are used, having more than one down arrow pointing to the same lane on a single overhead sign (or on multiple signs on the same overhead sign structure) shall not be permitted.

Support:

07 Directional and down arrows for use on guide signs are shown in Figure 2D-3. Detailed drawings and standardized sizes based on ranges of letter heights for these arrows are provided in the "Standard Highway Signs" publication (see Section 1A.05). Information on the dimensions for arrows used in Overhead Arrow-per-Lane and Diagrammatic Advance guide signing is also provided in the "Standard Highway Signs" publication (see Section 1A.05).

INSTALLATION

Section 2E.19 Overhead Sign Installations

Support:

01 Specifications for the design and construction of structural supports for signs have been standardized by the American Association of State Highway and Transportation Officials (AASHTO). Overcrossing structures can often serve for the support of overhead signs, and might in some cases be the only practical location that will provide adequate viewing distance. Use of these structures as sign supports will eliminate the need for additional sign supports along the roadside. Conditions that might warrant the installation of overhead signs are given in Section 2A.14 and throughout this Chapter. Vertical clearance of overhead signs is discussed in Section 2A.15.

Section 2E.20 Lateral Offset

Standard:

01 Except where shielded by a rigid traffic barrier, the minimum lateral offset outside the usable roadway shoulder for post-mounted freeway and expressway signs or for overhead sign supports, either to the right-hand or left-hand side of the roadway, shall be 6 feet. This minimum clearance shall also apply outside of a curb. If located within the clear zone, the signs shall be mounted on crashworthy (see definition in Section 1C.02) supports or shielded by appropriate crashworthy barriers.

Guidance:

02 Where practicable, a sign should not be less than 10 feet from the edge of the nearest traffic lane. Large guide signs especially should be farther removed, preferably 30 feet or more from the nearest traffic lane.

03 Where an expressway median is 12 feet or less in width, consideration should be given to spanning both roadways without a center support.

04 Where an overhead sign support cannot be placed sufficiently far away from the line of traffic, it should either be designed to minimize the impact forces, or be adequately shielded by a traffic barrier of suitable design.

Standard:

05 Butterfly-type sign supports and other overhead non-crashworthy sign supports shall not be installed in gores or other unshielded locations within the clear zone.

Option:

06 Lesser clearances, but not generally less than 6 feet, may be used on connecting roadways or ramps at interchanges.

GUIDE SIGNING FOR INTERCHANGES

Section 2E.21 Interchange Guide Signs

Support:

01 For some applications, guide signing for interchanges depends upon the interchange classifications that are described in Section 2E.11. Provisions on guide signing for interchanges that are based on interchange classifications are found in Sections 2E.23 through 2E.26, 2E.46 through 2E.48, and 2E.51 through 2E.53.

Standard:

02 The signs at interchanges and on their approaches shall include Advance Interchange guide signs and Exit Direction signs. Consistent destination messages shall be displayed on these signs.

Guidance:

03 New destination information should not be introduced into the major sign sequence for one interchange, nor should destination information be dropped.

04 Guide signs placed in advance of an interchange deceleration lane should be spaced at least 800 feet apart.

05 Use of Supplemental guide signing should be minimized as provided in Section 2E.51.

Support:

06 Figure 2E-2 shows a typical sequence of interchange guide signs.

07 In some instances the interchange that provides the most direct or preferred access to a destination might be different in opposing directions of travel due to circumstances such as the configuration of the crossroads, or the fact that an interchange is a partial interchange.

Guidance:

08 For each direction of travel, guide signing to a destination should be via the exit with the most direct or preferred access, even when this results in a destination being served by different interchanges for opposing directions of travel (see Figure 2E-1).

Section 2E.22 Interchange Exit Numbering

Standard:

01 Interchange exit numbering shall use the reference location sign exit numbering method. The consecutive exit numbering method shall not be used. The exit numbers shall correspond to the posted Reference Location or Enhanced Reference Location signs.

Support:

02 Reference location sign exit numbering assists road users in determining their destination distances and travel mileage, assists road users in reporting their location in the event of an incident or breakdown, assists responders in responding to incidents, and assists highway agencies because the exit numbering sequence does not have to be changed if new interchanges are added to a route.

03 Interchange exit numbering provides valuable orientation for the road user on a freeway or expressway. The feasibility of numbering interchanges or exits on an expressway will depend largely on the extent to which grade separations are provided. Where there is appreciable continuity of interchange facilities, interrupted only by an occasional intersection at grade, the numbering will be helpful to the expressway user.

Standard:

04 Interchange exit numbering shall be used in signing each freeway interchange exit. Interchange exit numbers shall be displayed with each Interchange Advance Guide sign, Exit Direction sign, and Exit Gore sign. The exit number shall be displayed on a separate plaque on top of the Interchange Advance Guide or Exit Direction sign. The Exit Number (E1-5P series) plaque (see Figure 2E-9) shall include the word EXIT(S) and the appropriate exit number(s) in a single-line format.

05 Suffix letters shall only be used to supplement exit numbers where there is more than one exit associated with the reference mile points of the freeway. Suffix letters shall not be used for an exit ramp for the purpose of identifying a downstream ramp split providing access to multiple highways or different directions on the same highway. The suffix letter shall also be included on the Exit Number

plaque and shall be separated from the exit number by a space having a width of between ½ and ¾ of the height of the suffix letter. The suffix letters assigned shall be in ascending alphabetical order starting with the letter A for ramps in the direction of travel with increasing exit numbers, and in descending alphabetical order ending in the letter A in the opposite direction of travel. Exit numbers shall not include the cardinal direction initials corresponding to the directions of the cross route. The minimum numeral and letter sizes shall be as given in Tables 2E-2 through 2E-5. If used, the exit numbering system for expressways shall comply with the provisions prescribed for freeways.

06 Where suffix letters are used for exit numbering, an exit of the same number without a suffix letter shall not be used on the same route in the same direction. For example, if an exit is designated as EXIT 256 A, then there shall not be an exit designated as EXIT 256 on the same route in the same direction.

Guidance:

07 *To the extent practical, exit numbering should be determined based upon the location of the crossroad with respect to reference location signs as given in the following examples:*

A. If a crossroad intersects the mainline approximately at or after Mile 15 and before Mile 16, the interchange should be designated as EXIT 15 (see Drawings A and B in Figure 2E-3).

B. If the interchange crossroad is split into two roadways by direction where one direction of the crossroad is downstream of Mile 18 and the other direction is upstream of Mile 18, the interchange exit number should be EXIT 18 (see Drawings A and B in Figure 2E-3).

C. If there are three closely-spaced interchanges, such as less than 1 mile apart, starting before Mile 16 and ending near or at Mile 17, the interchanges should be designated as EXIT 15, EXIT 16, and EXIT 17.

D. If there are multiple interchanges so closely spaced together that it is impracticable to designate the exit numbers by the freeway mainline reference mile numbers, suffix letters should be used as provided in this Section (see Drawings C and D in Figure 2E-3).

Option:

08 Exit numbers may also be used with Supplemental guide signs in compliance with the provisions of Section 2E.51, and Motorist Service signs in compliance with the provisions of Chapters 2I and 2J.

Standard:

09 Where exit suffix letters are used and the number of exits is not equal in both directions of travel, the exit suffix lettering for each direction shall be based on the number of exits in that direction. For example, if in the northbound direction of a freeway there are three exits for Mile 25 and two exits in the southbound direction, the exit numbers northbound shall be EXIT 25 A, EXIT 25 B, and EXIT 25 C; and the exit numbers southbound shall be EXIT 25 B followed by EXIT 25 A (see Drawing D in Figure 2E-3).

10 Except as provided in Section 2E.36 for Collector-Distributor Roadways or as otherwise provided for in this Chapter, exit numbers and suffix letters shall only be used to designate individual exit departure points directly from the freeway mainline. Exit numbers and suffix letters shall not be used for designating ramp splits into two ramps after leaving the mainline.

11 The Exit Number (E1-5P) plaque shall be positioned above the top right-hand edge of the sign for an exit to the right (see Figure 2E-9).

12 Because road users might not expect an exit to the left and might have difficulty in maneuvering to the left, a Left Exit Number (E1-5bP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign for all numbered left-hand exits (see Figures 2E-18 and 2E-34). The word LEFT on the Left Exit Number plaque shall be a black legend on a yellow rectangular sign panel and shall be centered above the word EXIT.

Support:

13 Example Exit Number plaque designs are shown in Figure 2E-9. The incorporation of Exit Number plaques on guide signs is illustrated in Figures 2E-9, 2E-12, 2E-14, 2E-35, and 2E-41.

14 Figure 2E-4 provides an example of Interstate route loops and spurs around major metropolitan areas. The general plan for numbering interchange exits is shown in Figures 2E-5 through 2E-8. Figure 2E-5 shows a circumferential route, which is a route that makes a complete circle around a city or town and usually has

two interchanges (one on each side of the city or town) with each of the mainline routes that travel through the city or town. Figure 2E-6 shows a loop route, which is a route that departs from a mainline route and then rejoins the same mainline route at a subsequent point downstream. For the purpose of Interstate route numbering, a three-digit Interstate route that provides connectivity between two different Interstate routes is also defined as a loop (see Figure 2E-4). Figure 2E-7 shows a spur route, which is a route that departs from a mainline route and never rejoins the same mainline route. Figure 2E-8 shows two mainline routes that overlap each other.

Standard:

15 Regardless of whether a mainline route originates within a State or crosses into the State from an adjacent State, the southernmost or westernmost terminus within that State shall be the beginning point for interchange exit numbering.

16 For circumferential routes, interchange exit numbering shall be in a clockwise direction. The numbering shall begin with the first interchange west of the south end of an imaginary north-south line bisecting the circumferential route, at a radial freeway or other Interstate route, or some other conspicuous landmark in the circumferential route near a south polar location (see Figure 2E-5).

17 The interchange exit numbers on loop routes shall begin at the loop interchange nearest the south or west junction and increase in magnitude toward the north or east junction (see Figure 2E-6).

18 Spur route interchanges shall be numbered in ascending order starting at the interchange where the spur leaves the mainline route (see Figure 2E-7).

19 If a circumferential, loop, or spur route crosses State boundaries, the numbering sequence shall be coordinated by the States to provide continuous interchange exit numbering.

20 Where numbered routes overlap, continuity of interchange exit numbering shall be established for only one of the routes (see Figure 2E-8). If one of the routes is an Interstate and the other route is not an Interstate, the Interstate route shall maintain continuity of exit interchange numbering.

Guidance:

21 The route chosen for continuity of interchange exit numbering should also have reference location sign continuity (see Figure 2E-8).

Section 2E.23 Interchange Advance Guide Signs (E1-1 through E1-3)

Support:

01 An Interchange Advance guide sign (see Figure 2E-9) gives notice well in advance of the exit point of the principal destinations served by the next interchange and the distance to that interchange.

Standard:

02 Except as provided in Paragraph 16 of this Section, and in Paragraph 18 of Section 2E.25, at least one Interchange Advance guide sign shall be used for all interchange classifications.

Guidance:

03 At major and intermediate interchanges (see Section 2E.11), at least two Interchange Advance guide signs should be used, placed at ½ mile and at 1 mile in advance of the exit. A third Interchange Advance guide sign should be placed at 2 miles in advance of the exit if spacing permits.

04 At minor interchanges, the Interchange Advance guide sign should be located ½ to 1 mile from the exit gore.

Support:

05 Sections 2E.29 through 2E.44 contain additional provisions regarding the number, location, and mounting of Interchange Advance guide signs for certain interchange configurations.

Standard:

06 Except as provided in Section 2E.28, the legend on Interchange Advance guide signs shall contain the distance message. For each direction of travel, the legend on the Interchange Advance guide signs shall be the same as the legend on the Exit Direction sign, except that the last line shall be the distance message. The distance message shall read XX MILE(S) where exit numbers are used. Where

exit numbers are not used, the distance message shall read EXIT XX MILE(S) for an interchange with one exit ramp, and EXITS XX MILE(S) for an interchange with two or more exit ramps.

Guidance:

07 Where an Interchange Advance guide sign is located more than 1,000 feet to ½ mile but not more than 1 mile from the exit, the distance displayed should be to the nearest ¼ mile. Where the distance to be displayed on an Interchange Advance guide sign is 1,000 feet or less, the distance should be displayed in feet, rather than miles, to the nearest 100 feet.

Standard:

08 When a distance is displayed in miles, fractions of a mile, rather than decimals, shall be displayed in all cases.

09 For numbered exits, the exit number used with the Interchange Advance guides signs shall be displayed using an Exit Number plaque above and abutting the Interchange Advance guide sign.

10 For numbered exits to the right, an Exit Number (E1-5P through E1-5eP) plaque (see Figure 2E-9) shall be added to the top right-hand edge of the sign.

11 For numbered exits to the left, a Left Exit Number (E1-5fP through E1-5kP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign (see Figures 2E-18 and 2E-34).

12 For unnumbered exits to the left, a LEFT (E1-5mP) plaque (see Figure 2E-9) shall be added to the top left-hand edge of the sign, abutting the sign.

Support:

13 Section 2E.22 contains additional information regarding exit numbering.

Standard:

14 Interchange Advance guide signs for multi-lane exits having an optional exit lane that also carries the through route at major interchanges (see Figures 2E-36, 2E-37, and 2E-42) and for splits with an option lane (see Figures 2E-38, and 2E-39) shall be Overhead Arrow-per-Lane signs designed in accordance with Sections 2E.39 and 2E.40.

Option:

15 Where the distance between interchanges is more than 1 mile, but less than 2 miles, the first Interchange Advance guide sign may be closer than 2 miles, but not placed so as to overlap the signing for the preceding exit. Duplicate Interchange Advance guide signs or Interchange Sequence Series signs may be placed in the median on the opposite side of the roadway and are not included in the minimum requirements of interchange signing.

Guidance:

16 Where there is less than 800 feet between the theoretical gores of successive interchange entrance or exit ramps, Interchange Sequence Series signs (see Section 2E.24) should be used instead of Interchange Advance guide signs for the affected interchanges.

17 The Interchange Advance guide signs for the last exit from a highway before it becomes a facility on which toll payments are required should include the LAST EXIT BEFORE TOLL (W16-16P) plaque (see Section 2F.10 and Figure 2F-4). The plaque should be installed above the Interchange Advance guide signs, but below the Exit Number or LEFT plaque, if used.

Section 2E.24 Interchange Sequence Signs (E9-1 and E9-2)

Support:

01 Interchanges are sometimes closely spaced, particularly through large urban areas, so that typical guide signs cannot be adequately spaced. In such cases, Interchange Sequence signs identifying the next two (E9-1) or three (E9-2) interchanges (see Figure 2E-10) can provide the necessary exit destination guidance.

Guidance:

02 Where there is less than 800 feet between the theoretical gores of successive interchange entrance or exit ramps, Interchange Sequence signs should be used instead of Interchange Advance guide signs for the affected interchanges.

03 If used, Interchange Sequence (E9-1 or E9-2) signs should be used over the entire length of a route in an urban area.

Support:

04 Interchange Sequence signs generally supplement Interchange Advance guide signs. Signing of this type is illustrated in Figure 2E-11, and is compatible with the sign spreading concept described in Paragraph 3 of Section 2E.43.

Standard:

05 Interchange Sequence signs shall be installed in a series. Interchange Sequence signs shall display the next two or three interchanges by name or route number with distances to the nearest ¼ mile.

06 The first Interchange Sequence sign in the series shall be located in advance of the first Interchange Advance guide sign for the first interchange.

07 Where the exit direction is to the left, a LEFT (E11-2) sign panel (see Figure 2E-17) shall be displayed on the same line immediately to the right of the interchange name or route number.

08 Interchange Sequence signs shall not be substituted for Exit Direction signs.

Guidance:

09 Interchange Sequence signs should be located in the median. After the first sign of the series, subsequent Interchange Sequence signs should be placed approximately midway between interchanges.

Standard:

10 Interchange Sequence signs located in the median shall be installed at overhead sign height (see Section 2A.14).

Option:

11 Interchange numbers may be displayed to the left of the interchange name or route number.

Section 2E.25 Exit Direction Signs (E4 Series)

Support:

01 The Exit Direction sign (see Figure 2E-12) repeats the route and destination information that was displayed on the Interchange Advance guide sign(s) for the next exit, and thereby assures road users of the destination served and indicates whether they exit to the right or left for that destination.

Standard:

02 Exit Direction signs shall be used at major and intermediate interchanges. Populations or other similar information shall not be displayed on Exit Direction signs.

Guidance:

03 Exit Direction signs should be used at minor interchanges (see Section 2E.30).

Support:

04 Sections 2E.28, 2E.30, 2E.31, 2E.33 through 2E.35, 2E.38, and 2E.40 through 2E.42 illustrate the use, location, and mounting of Exit Direction signs for certain interchange configurations. The placement location of the Exit Direction sign at the interchange depends on the type of mounting, post-mounted or overhead, and whether there is a deceleration lane (see Figure 2E-13).

Guidance:

05 When post-mounted, the Exit Direction sign should be installed at the beginning of the deceleration lane taper. When mounted overhead, the Exit Direction sign should be installed over the exiting lane in the vicinity of the theoretical gore. If there is less than 300 feet from the beginning of the taper to the theoretical gore, the Exit Direction sign should be installed overhead (see Figure 2E-13).

Standard:

06 Except where Overhead Arrow-per-Lane guide signs are used (see Sections 2E.40 and 2E.42, and Paragraph 7 of this Section), where a through lane is being terminated (dropped) at an exit, the

Exit Direction sign shall be placed overhead at the theoretical gore (see Figures 2E-18, 2E-19, 2E-33, 2E-42, and 2E-46).

07 Except as provided in Paragraph 4 of Section 2E.40, where Overhead Arrow-per-Lane guide signs are used for the Interchange Advance guide sign(s) for a multi-lane exit having an optional exit lane that also carries the through route or for a split with an option lane (see Section 2E.40), an Overhead Arrow-per-Lane guide sign shall also be used instead of the Exit Direction sign and located near, but not downstream from, the point where the outside edge of the dropped lane begins to diverge from the main roadway (see Figures 2E-36 through 2E-38). The Overhead Arrow-per-Lane guide sign shall be designed in accordance with the provisions of Section 2E.40.

08 The following provisions shall govern the design and application of overhead Exit Direction signs:

- **A. The sign shall display the Exit Number plaque (if exit numbering is used), the route number, cardinal direction, and destination, as applicable, with a diagonally upward-pointing directional arrow (see Figure 2E-12).**
- **B. The message EXIT ONLY in black on a yellow sign panel (E11-1d or E11-1e) shall be used on the overhead Exit Direction sign to advise road users of a lane drop situation (see Figures 2E-18, 2E-19, 2E-42, and 2E-44). The sign shall comply with the provisions of Section 2E.28.**

09 For numbered exits to the right, an Exit Number (E1-5P through E1-5eP) plaque (see Figure 2E-9) shall be added above the top right-hand edge of the sign.

10 For numbered exits to the left, a Left Exit Number (E1-5fP through E1-5kP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign.

11 For unnumbered exits to the left, a LEFT (E1-5mP) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign.

Support:

12 Section 2E.22 contains additional information regarding exit numbering.

Guidance:

13 At multi-exit interchanges, the Exit Direction sign should be located directly over the exiting lane for the first exit, in accordance with this Section. An Interchange Advance guide sign for the second exit should be installed at the same location, normally over the right-hand through lane. Only for those conditions where the through movement is not evident should a confirmatory message (a Pull-Through sign as shown in Figure 2E-16) be used over the left-hand lane(s) to guide road users traveling through an interchange (see Section 2E.43 for additional information on sign spreading).

14 Where the freeway or expressway is on an overpass, the Exit Direction sign for the second exit should be installed on an overhead support over the exit lane in advance of the gore point, as near as practicable to the theoretical gore. Where the freeway or expressway passes under the crossroad and the exit ramp is located beyond the overcrossing structure, the overhead Exit Direction sign for the second exit should be placed either on the overcrossing structure (see Figures 2E-29 through 2E-31) or on a separate structure located immediately in front of the overcrossing structure.

Option:

15 Where extra emphasis of an especially low advisory ramp speed is needed, an Exit Direction Advisory Speed (E13-2) sign panel (see Figure 2E-14) may be placed at the bottom of the Exit Direction sign to supplement, but not to replace, the exit or ramp advisory speed warning signs.

16 Warning Beacons in compliance with Paragraph 17 of this Section may be used with the E13-2 sign panel.

Standard:

17 Where Warning Beacons are used in conjunction with the E13-2 sign panel within a guide sign (see Figure 2E-14), the nearest edges of the beacons shall be placed at least 12 inches from the edges of the E13-2 sign panel, from the edges of the guide sign, and from any other legend within the guide sign. The design and operation of Warning Beacons shall otherwise comply with the provisions of Chapter 4S of this Manual.

Option:

18 In cases, where sight distance is restricted because of structures or unusual alignment, principally in urban areas, making it impossible to locate the Exit Direction sign without violating the required minimum spacing between major guide signs (see Section 2E.23), Interchange Sequence signs (see Section 2E.24) may be substituted for an Interchange Advance guide sign.

Guidance:

19 At the last exit from a highway before it becomes a facility on which toll payments are required, the LAST EXIT BEFORE TOLL (W16-16P) plaque (see Section 2F.10 and Figure 2F-4) should be installed above the Exit Direction sign, but below the Exit Number or LEFT plaque, if used.

Section 2E.26 Exit Gore Signs and Plaque (E5-1 Series)

Support:

01 The Exit Gore sign (see Figure 2E-15) in the gore indicates the exiting point or the place of departure from the main roadway. Consistent application of this sign at each exit is important to provide adequate visibility of the departure of the exit roadway from the main roadway.

Standard:

02 The gore shall be defined as the area located between the main roadway and the ramp just beyond where the ramp branches from the main roadway. An Exit Gore sign shall be located in the gore for each ramp that departs from the main roadway of a freeway or expressway, or departs from a collector-distributor roadway, and shall display the word EXIT (E5-1) if interchange exit numbering is not used or EXIT XX (E5-1a or E5-1c) if interchange exit numbering is used, and an appropriate diagonally upward-pointing arrow. If suffix letters are used for exit numbering at a multi-exit interchange, the suffix letter shall also be included on the Exit Gore (E5-1a or E5-1c) sign or Exit Gore Number (E5-1bP) plaque and shall be separated from the exit number by a space having a width of between ½ and ¾ of the height of the suffix letter. Breakaway or yielding supports shall be used.

Guidance:

03 The arrow should be aligned to approximate the angle of departure. Each gore should be treated similarly, whether the interchange has one exit roadway or multiple exits.

Option:

04 The Narrow Exit Gore (E5-1c) sign (see Figure 2E-15) may be used in gore areas of limited width where the width of the Exit Gore (E5-1a) sign would not permit sufficient lateral offset (see Section 2A.16), such as for ramp departures that are nearly parallel to the main roadway where the Exit Gore sign would be mounted on a narrow island or barrier. Where the E5-1c sign is mounted at a height of 14 feet or more from the roadway, the directional arrow may point diagonally downward.

Guidance:

05 The E5-1c sign should not be used in gore areas where an E5-1a sign could be installed with sufficient lateral offset.

Option:

06 Where extra emphasis of an especially low advisory ramp speed is needed, the Confirmation Advisory Speed (W13-1aP) plaque (see Section 2C.59) indicating the advisory speed may be mounted below the Exit Gore sign (see Figure 2E-15) to supplement, but not to replace, the exit or ramp advisory speed warning signs.

07 To improve the visibility of the gore for exiting drivers, a Type 1 object marker (see Chapter 2C) may be installed 4 feet above the ground line on each sign support below the Exit Gore sign.

08 An Exit Gore Number (E5-1bP) plaque (see Figure 2E-15) may be installed above an existing Exit Gore (E5-1) sign when an unnumbered exit is converted to a numbered exit until such time as an E5-1 sign is being replaced for other reasons (see Paragraph 9 of this Section).

Standard:

09 An Exit Gore (E5-1a) sign shall be used when the replacement of an existing assembly of an E5-1 sign and E5-1bP plaque becomes necessary.

Section 2E.27 Pull-Through Signs (E6-1 Series and E6-2 Series)

Support:

01 Pull-Through (E6-1 series and E6-2 series) signs (see Figure 2E-16) are overhead guide signs intended for through traffic.

Guidance:

02 Pull-Through signs should be used where the geometrics of a given interchange are such that it is not clear to the road user as to which is the through roadway, or where additional route guidance is desired. Pull-Through signs with down arrows should be used where the alignment of the through lanes is curved and the exit direction is straight ahead, where the number of through lanes is not readily evident, and at multi-lane exits where there is a reduction in the number of through lanes. Pull-Through signs should not be used at exits with option lanes where full-width Overhead Arrow-per-Lane signs are being used.

Standard:

03 When used, Pull-Through signs shall display the route shield and the cardinal direction for the through route.

Option:

04 Pull-Through signs may display the control city and down arrows (see Figure 2E-16 and Section 2E.18).

Support:

05 Sections 2E.28, 2E.39, and 2E.40 contain information regarding the use of Overhead Arrow-per-Lane guide signs at multi-lane exits where there is a reduction in the number of through lanes and a through lane becomes an interior option lane for through or exiting traffic.

Section 2E.28 Signing for Interchange Lane Drops Without an Optional Exit Lane

Standard:

01 The provisions of this Section shall only apply to lane drops at exits that do not have an optional exit lane. At exits that have an optional exit lane in addition to the dropped lane, the provisions of Sections 2E.39 through 2E.42 shall apply.

02 Except as provided in Paragraph 15 of this Section, major guide signs for all lane drops at interchanges shall be mounted overhead. An EXIT ONLY sign panel shall be used for all interchange lane drops at which the through route is carried on the main roadway.

03 Except on Overhead Arrow-per-Lane and Diagrammatic Advance guide signs (see Sections 2E.39 through 2E.41), the EXIT ONLY (down arrow) (E11-1 or E11-1f) sign panel (see Figure 2E-17) shall be used on all overhead Advance guide signs of lane drops (see Figures 2E-18, 2E-19, and 2E-34). The number of arrows on each sign shall correspond to the number of dropped lanes at the location of each sign. Placement of the down arrow shall comply with the provisions of Section 2E.18.

04 For lane drops, the bottom portion of the overhead Exit Direction sign shall be yellow with a black border and shall include a diagonally upward-pointing black directional arrow (left or right, as appropriate) for each lane dropped at the exit (see Figures 2E-18 and 2E-19). The sign shall be designed and placed so that each arrow is located over the approximate center of each lane being dropped. Except as provided in Paragraph 5 of this Section, the words EXIT and ONLY shall be positioned to the left and right, respectively, of the arrow on the E11-1d sign panel (see Figure 2E-17) for a single-lane drop. For a two-lane drop, the words EXIT ONLY shall be located between the two arrows on the E11-1e sign panel (see Figure 2E-17). The number of arrows on the sign shall correspond to the number of dropped lanes at the location of the sign.

Option:

05 Where an existing sign structure length or adjacent signs constrain the width or placement of the Interchange Advance guide sign on that structure, the down arrow may be positioned to the right or left of the words EXIT ONLY, instead of between the words, to allow for the positioning of the arrow over the approximate center of the lane. Where the width of the Exit Direction sign extends over the adjacent lane, the directional arrow may be placed to the right of the words EXIT ONLY for an exit to the right, or to the left of the words EXIT ONLY for an exit to the left, to allow for the positioning of the arrow over the dropped lane.

06 EXIT ONLY messages of either the combination of E11-1a and E11-1b, or the E11-1c sign panels (see Figure 2E-17) may be used to retrofit existing signing to warn of a lane drop situation ahead.

Standard:

07 If used to retrofit an existing guide sign, the E11-1a and E11-1b sign panels (see Figure 2E-17) shall be placed on either side of a white down arrow on an Interchange Advance guide sign and on either side of a white directional arrow on an Exit Direction sign. The E11-1c sign panel (see Figure 2E-17), if used to retrofit an existing Interchange Advance guide sign, shall be placed between the lower destination message and the white down arrow.

Guidance:

08 Except as provided in Paragraph 9 of this Section for an auxiliary lane, Interchange Advance guide signs for lane drops within 1 mile of the interchange should not display the distance message.

09 Where the dropped lane is an auxiliary lane that is provided between successive entrance and exit ramps of two separate interchanges and the distance between the two ramps is less than 1 mile, the first Interchange Advance guide sign in the sequence downstream from the entrance ramp should display the distance message (see Figures 2E-20 and 2E-21).

10 Where the dropped lane carries the through route, signs should be used without the EXIT ONLY sign panel.

Support:

11 Figures 2E-20 and 2E-21 show examples of guide sign for a dropped auxiliary lane between separate interchanges using post-mounted and overhead guide signs, respectively. Figure 2E-22 shows guides signs used for an auxiliary lane that is ½ mile or longer.

12 Sections 2E.39 through 2E.42 contain information on the signing of lane drops at exits that also have an option lane.

13 Section 2B.31 contains information regarding regulatory signs that can also be used for freeway lane drop situations and Section 2C.50 contains information regarding warning signs that can also be used for freeway lane drop situations.

Guidance:

14 In limited cases in which conditions are so constrained that it is impossible to locate an Interchange Advance guide sign either overhead or partly over the dropped lane, precluding positioning of the down arrow as provided in Paragraph 3 of this Section, a sign panel displaying the legend RIGHT (LEFT) LANE ONLY in a black legend on a yellow background should be substituted for the EXIT ONLY panel on that sign. In such cases, the Interchange Advance guide signs should be alternated with RIGHT (LEFT) LANE FOR EXIT ONLY (W9-7) signs (see Section 2C.50).

15 Where a mainline lane is terminated immediately after an exit ramp, overhead and/or post mounted warning signs should be used to warn traffic as shown in Figure 2E-23.

Section 2E.29 Signing by Type of Interchange

Support:

01 Road users need signs to help identify the location of the exit, as well as to obtain route, direction, and destination information for specific exit ramps. Figures 2E-26 through 2E-33 show examples of guide signs for common types of interchanges. The interchange layouts shown in most of the figures illustrate only the major guide signs for one direction of traffic on the freeway and on the exit ramps. Section 2D.49 contains information regarding the signing of the crossroad approaches and connecting roadways to freeways and expressways.

Guidance:

02 The signing layout for all interchanges of the same type should be similar. For the purpose of uniform application, the significant features of the signing layout for each of the more frequent types of interchanges (illustrated in Figures 2E-26 through 2E-33) should be followed as closely as possible. Even when unusual geometric features exist, variations in signing layout should be held to a minimum.

03 Where a single interchange combines a different type of ramp configuration for each direction of travel, the main roadway major guide signing should be determined by the specific interchange type for that direction of travel.

Support:

04 Figure 2E-24 shows an example of signing for a complex interchange that combines intermediate interchange ramps within a major interchange.

05 Figure 2E-25 shows an example of signing for an interchange exit ramp with a downstream split.

Section 2E.30 Minor Interchange

Option:

01 Less signing may be used for minor interchanges because such interchanges customarily serve low volumes of mostly local traffic.

Support:

02 An example of guide signs for a minor interchanges is shown in Figure 2E-26.

Standard:

03 In accordance with the provisions of Sections 2E.23 and 2E.26, at least one Interchange Advance guide sign and an Exit Gore sign shall be used at a minor interchange.

Guidance:

04 An Exit Direction sign in compliance with Section 2E.25 should also be used.

Section 2E.31 Diamond Interchange

Support:

01 An example of guide signs for a diamond interchange is shown in Figure 2E-27.

02 The typical diamond interchange ramp departs from the main roadway such that a speed reduction generally is not necessary in order for a driver to negotiate an exit maneuver from the main roadway onto the ramp roadway. Section 2C.12 contains provisions for the use of an Advisory Exit Speed (W13-2) sign for situations where a speed reduction is necessary.

Guidance:

03 When a speed reduction is not necessary, an Advisory Exit Speed sign should not be used.

04 The Advisory Exit Speed sign, if used, should be located along the deceleration lane or along the ramp such that it is visible to the driver far enough in advance to allow the driver to decelerate before reaching the curve associated with the exiting maneuver. Use and placement of the Advisory Exit Speed sign should otherwise comply with Section 2C.12 of this Manual.

Option:

05 A Stop Ahead (W3-1) or Signal Ahead (W3-3) warning sign (see Section 2C.35) may be placed, where engineering judgment indicates a need, along the ramp in advance of the crossroad, to give notice to the driver.

Guidance:

06 When used on two-lane ramps, Stop Ahead or Signal Ahead signs should be used in pairs with one sign on each side of the ramp.

07 Where the exit ramp allows traffic to turn in either direction onto the crossroad, a Destination (D1 series) sign (see Section 2D.36) that includes each destination displayed on the Advance, Exit Direction, and Supplemental guide signs along the main roadway for that exit should be placed along the ramp.

Section 2E.32 Diamond Interchange in Urban Area

Support:

01 An example of guide signs for a diamond interchange in an urban area is shown in Figure 2E-28. This example includes the use of the Community Interchanges Identification sign (see Section 2E.52), which might be useful if two or more interchanges serve the same community.

02 In urban areas, street names are often displayed as the principal message in destination signs.

Option:

03 If interchanges are too closely spaced to locate the Interchange Advance guide signs at the distances specified in Section 2E.23, they may be placed closer to the exit with the distances displayed adjusted accordingly.

Section 2E.33 Cloverleaf Interchange

Support:

01 A cloverleaf interchange has two exits for each direction of travel. The exits are closely spaced and have common Advance guide signs. An example of guide signs for a cloverleaf interchange is shown in Figure 2E-29.

Guidance:

02 The Advance guide signs should include two place names, one corresponding to each exit ramp, with the name of the place served by the first exit on the upper line.

Standard:

03 An overhead guide sign assembly shall be placed at the theoretical gore of the first exit ramp, with an Exit Direction sign for the first exit and an Interchange Advance guide sign for the second exit, as shown in Figure 2E-29. The second exit shall be indicated by an overhead Exit Direction sign over the auxiliary lane.

04 Interchanges with more than one exit from the main roadway shall be numbered as described in Section 2E.22 with an appropriate suffix.

05 Diagrammatic Advance signs shall not be used for cloverleaf interchanges except as otherwise provided in Section 2E.41.

Guidance:

06 Where the main roadway passes under the crossroad and the exit roadway is located beyond the overcrossing structure, the placement of the overhead Exit Direction sign for the second exit should comply with Section 2E.25 (see Figure 2E-29).

Section 2E.34 Cloverleaf Interchange with Collector-Distributor Roadways

Support:

01 An example of guide signs for a full cloverleaf interchange with collector-distributor roadways is shown in Figure 2E-30.

Guidance:

02 Destination names and route numbers shown on the collector-distributor roadway signing should be the same as those used on the upstream Interchange Advance guide signs on the main roadway.

Standard:

03 Exit Direction signs at exits from the collector-distributor roadways shall be overhead and located at the theoretical gore of the collector-distributor roadway and the exit ramp.

Guidance:

04 Exits from the collector-distributor roadways should be numbered with an appropriate suffix. If the exits from a collector-distributor roadway are numbered, the Interchange Advance guide and Exit Direction signs on the main roadway should include, in addition to two place names, their corresponding exit number and suffixes with the plural EXITS in the Exit Number (E1-5P series) plaque. If only the exit from the main roadway is numbered, the Interchange Advance guide and Exit Direction signs on the main roadway should use the singular EXIT in the Exit Number plaque. If interchange exit numbering is not used, the Interchange Advance guide signs on the main roadway should use the singular EXIT in the distance messages.

Section 2E.35 Partial Cloverleaf Interchange

Support:

01 An example of guide signs for a partial cloverleaf interchange is shown in Figure 2E-31.

Guidance:

02 For a partial cloverleaf with only one exit roadway in a direction of travel, where the main roadway passes under the crossroad and the exit roadway is located beyond the overcrossing structure, the overhead Exit Direction sign should be placed either on the overcrossing structure (see Figure 2E-31) or on a separate structure located immediately in front of the overcrossing structure.

Support:

03 Partial cloverleaf interchanges with successive exit ramps from the same direction of travel are signed the same as cloverleaf interchanges for that direction of travel (see Section 2E.33).

Section 2E.36 Collector-Distributor Roadways for Successive Interchanges

Support:

01 Examples of guide signs for a collector-distributor roadway that provides access to multiple interchanges are shown in Figure 2E-32. Section 2J.09 contains provisions for General Service and Specific Service signs.

Guidance:

02 Where access to successive interchanges is provided from a single collector-distributor roadway, the number of lines of destination information displayed on the major guide signs on the main roadway approach to the collector-distributor roadway should comply with the provisions of Section 2E.15. Where additional destinations are displayed on the main roadway, those destinations should be displayed on Supplemental guide signs (see Section 2E.51) on the approach to the collector-distributor roadway.

03 Where exit numbering is used, the exit numbers for exits accessed from the collector-distributor roadway should be displayed on the main roadway guide signs.

04 An Exit Gore sign (see Section 2E.26) should be placed in the gore where the collector-distributor roadway departs from the main roadway.

05 Interchange guide signing along the collector-distributor roadway should comply with the provisions for interchange signing in this Chapter.

Section 2E.37 Freeway-to-Freeway Interchanges

Support:

01 Freeway-to-freeway interchanges are major decision points where the effect of taking a wrong ramp cannot be easily corrected. Reversing direction on the connecting freeway or reentering to continue on the intended course is usually not possible. Examples of guide signs for freeway-to-freeway interchanges are shown in Figure 2E-33.

Guidance:

02 The sign messages should contain only the route shield, cardinal direction, and the name of the next control city on the route. Arrows should point as indicated in Section 2D.08, except where Overhead Arrow-per-Lane or Diagrammatic Advance signs are used in accordance with the provisions of Sections 2E.39 through 2E.41.

Support:

03 An off-route movement is the movement that does not follow the through route. Drivers might not expect the off-route movement to be to the left or an optional lane at a split (see Figures 2E-38 and 2E-39). Section 2E.22 contains information about the use of the Left Exit Number (E1-5fP through E1-5kP) plaque at splits where the off-route movement is to the left. Sections 2E.39 and 2E.40 contain information about the use of Overhead Arrow-per-Lane guide signs for freeway splits with an option lane and for multi-lane freeway-to-freeway exits having an option lane. Section 2E.41 contains information about the use of a Diagrammatic Advance guide sign for complex geometric configurations at ramp departures.

Standard:

04 The roadway for the off-route shall be signed as an exit. If exit numbering is used, the signs shall comply with the provisions of Section 2E.22. Distance messages on the Advance guide signs shall comply with the provisions of Section 2E.23.

05 Overhead signs shall be used at a distance of 1 mile and at the theoretical gore of each connecting ramp. When Overhead Arrow-per-Lane or Diagrammatic Advance guide signs are used, they shall be located in accordance with the provisions of Sections 2E.40 and 2E.41, respectively.

Option:

06 The Advance guide signs at the ½-mile and 2-mile locations may also be mounted overhead.

Guidance:

07 An Advisory Exit Speed (W13-2) sign should be used where an engineering study shows that it is necessary to display a speed reduction message for ramp signing (see Section 2C.12).

Section 2E.38 Freeway Split with Dedicated Lanes

Standard:

01 Signing for freeway splits with dedicated lanes shall use the sign designs shown in Figure 2E-34.

02 The arrows on each Interchange Advance guide sign shall match the number of lanes present at the location of the Advance guide sign.

03 The signs for this application shall be mounted overhead. When arrows are used, each arrow shall be located over the approximate center of the lane to which it applies.

04 Where one roadway of the split carries the through route, the other roadway of the split shall be signed as an exit. If exit numbering is used, the signs shall comply with the provisions of Section 2E.22. Distance messages on the Advance guide signs shall comply with the provisions of Section 2E.23.

05 The number and location of Advance guide signs shall comply with the provisions of Section 2E.23.

Guidance:

06 The Exit Direction and Pull-Through signs should be located at the theoretical gore.

07 The Exit Direction and Pull Through signs should display down arrows if the alignment is straight or diagonal upward-pointing directional arrows if the alignment is curved (see Section 2D.08).

Standard:

08 The Exit Direction sign shall contain the EXIT ONLY (E11-1 series) sign panel (see Section 2E.28).

Section 2E.39 Signing for Option Lanes at Splits and Multi-Lane Exits

Support:

01 Some freeway and expressway splits or multi-lane exit interchanges contain an interior option lane serving both movements in which traffic can either leave the route or remain on the route, or choose either destination at a split, from the same lane.

Standard:

02 On freeways and expressways, either the Overhead Arrow-per-Lane guide sign designs as provided in Sections 2E.40 and 2E.41 shall be used for all multi-lane exits at major interchanges (see Section 2E.11) that have an optional exit lane that also carries the through route (see Figures 2E-36, 2E-37, and 2E-42) and for all splits that include an option lane (see Figure 2E-38). Overhead Arrow-per-Lane guide signs shall not be used on freeways and expressways for any other types of exits or splits, including single-lane exits and splits that do not have an option lane.

Guidance:

03 The Overhead Arrow-per-Lane guide sign design (see Section 2E.40) should also be considered for multi-lane exits with an option lane at intermediate interchanges (see Section 2E.11) based on such factors as the extent of the need to optimize the mainline operation by maximizing the usage of the option lane, the extent

of the period(s) of the day during which the exiting volumes warrant the multi-lane exit arrangement, and the nature of the traffic that primarily uses the option lane during the high-volume periods.

04 Signing at intermediate interchanges (see Section 2E.11) that have an optional exit lane at which it has been determined that the Overhead Arrow-per-Lane guide sign design is not warranted or at multi-lane exits at minor interchanges (see Section 2E.11) that have an optional exit lane should use signing in accordance with the provisions of Section 2E.42.

Section 2E.40 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes

Support:

01 Overhead Arrow-per-Lane guide signs (see Figure 2E-35) are used where an option lane is present at freeway and expressway multi-lane exit interchanges and splits. They display an upward-pointing arrow above each lane that conveys the direction(s) of travel that the lane serves at the point of departure. At locations where an option lane is present at a multi-lane exit or split, Overhead Arrow-per-Lane guide signs have been shown to be superior to other guide sign designs because they convey positive direction about which destination and direction each approach lane serves, particularly for the option lane, which is otherwise difficult to clearly sign.

Standard:

02 Overhead Arrow-per-Lane guide signs as provided in Section 2E.39 shall be used at all new or reconstructed freeway and expressway locations and at freeway and expressway locations where replacement of existing sign support structures is necessitated by reconstruction. The Overhead Arrow-per-Lane guide sign at the exit or split shall be located at or in the immediate vicinity of the point where the exiting lanes begin to diverge from the through lanes or, for a split, at the point where the approach lanes begin to diverge from one another, preserving the relation of the arrows displayed on the sign to their respective lanes. The Overhead Arrow-per-Lane guide sign at the exit shall not be located at or near the theoretical gore.

Option:

03 At existing or non-reconstructed locations where an overhead Exit Direction sign exists at the theoretical gore, and the existing sign support structure is retained, an overhead Exit Direction sign may continue to be used on the existing sign support structure in conjunction with a replacement of the advance signs using the Overhead Arrow-per-Lane guide sign design.

Standard:

04 If an existing Exit Direction sign is being retained at an interchange as provided in Paragraph 3 of this Section, an Overhead Arrow-per-Lane guide sign shall not be used at the location of the Exit Direction sign at or in the vicinity of the theoretical gore. New installations of Exit Direction and Pull-Through signs shall not be permitted in conjunction with Overhead Arrow-per-Lane guide signs on new or reconstructed facilities.

Guidance:

05 Overhead Arrow-per-Lane guide signs should be located at approximately ½ mile and 1 mile in advance of the exit or split, and at approximately 2 miles in advance of the exit or split where space is available and conditions allow.

Standard:

06 Overhead Arrow-per-Lane guide signs used on freeways and expressways shall be designed in accordance with the following criteria:

- **A. Except as provided in Section 2E.42 for partial width Overhead Arrow-per-Lane signs, the sign shall include an upward-pointing (vertical, curved, or bifurcated) arrow for each lane of the approach to the split or exit.**
- **B. The shaft of each arrow shall be located over the approximate center of the lane to which it applies.**
- **C. Arrows for continuing through lanes shall be vertically upward-pointing (see Figure 2E-36) unless the continuing through lanes are on a significantly curved alignment beyond the theoretical gore (see Figure 2E-37).**

D. The arrow for a lane that must exit shall be curved in the direction of the exit and shall be accompanied by black-on-yellow EXIT (E11-1a) and ONLY (E11-1b) sign panels adjacent to the lower end of the arrow shaft. The E11-1a and E11-1b sign panels shall not be used for a split of two overlapping routes where neither of the diverging routes is designated as an exit. Where the through lanes curve and the exit continues on a straight alignment, upward-pointing vertical arrows shall be used for the exiting movement and curved arrows for the through movement (see Figure 2E-37).

E. The arrow for an optional exit lane that also carries the through route shall have a single shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow corresponding to the configuration of the through and exit lanes.

F. For splits with an option lane, the arrow for the lane from which either direction of the split can be accessed shall have a single shaft that bifurcates into two upward-pointing curving arrows (see Figure 2E-38).

G. A vertical white line shall be used to separate the route shields and destinations for the two diverging movements from each other.

H. The distance to the exit or split shall be displayed below the off-movement destination on the advance signs at the 1-mile and 2-mile locations.

I. The number of lanes displayed on a sign shall correspond to the number of lanes at the location of that sign. An advance sign shall not depict lanes that are added downstream of the sign location.

J. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be used at the top of the sign in accordance with Section 2E.23. For unnumbered exits to the left, a LEFT (E1-5mP) plaque shall be added on the top left-hand edge of and adjacent to the sign.

Guidance:

07 Overhead Arrow-per-Lane guide signs used on freeways and expressways should be designed in accordance with the following additional criteria:

A. No more than one destination should be displayed for each movement, and no more than two destinations should be displayed per sign.

B. The arrowhead(s) for the diverging movement should be positioned lower on the sign than the arrowhead(s) for the movement that continues straight ahead, independent of which movement carries the through route. Where the movements are freeway or expressway splits rather than exits, the arrowheads should be positioned at approximately the same height on the sign.

C. Route shields, cardinal directions, and destinations should be positioned on the sign such that they are clearly related to the arrowhead(s) for the movement to which they apply.

D. The cardinal direction should be placed adjacent to the route shield for exits or splits leading in a single cardinal direction.

E. The vertical white line that is used to separate the route shields and destinations for the two diverging movements from each other should not descend below the top of the arrowheads for the through lanes, and should be positioned approximately halfway between the diverging arrowheads for the optional movement lane (see Figure 2E-35).

Standard:

08 Overhead Arrow-per-Lane guide signs shall not be used to depict a downstream split of an exit ramp on a sign located on the mainline.

Support:

09 Specific guidelines for more detailed design of Overhead Arrow-per-Lane guide signs are contained in the "Standard Highway Signs" publication (see Section 1A.05).

Standard:

10 The arrow heights for Overhead Arrow-per-Lane guide signs on freeways and expressways shall be as shown in Table 2E-6.

Option:

11 Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.

12 Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2 sign panel.

Support:

13 An example of guide signing for a narrow gore at a split with an option lane is shown in Figure 2E-39, and an example of guide signing for a narrow gore at a two-lane exit with an option lane is shown in Figure 2E-40.

Option:

14 Where there is 800 feet or more between the beginning of the lane diverge and the theoretical gore, signs indicating the destinations allowed by each lane may be added in the vicinity of the theoretical gore to reinforce positive guidance (see Figures 2E-39 and 2E-40).

Section 2E.41 Design of Freeway and Expressway Diagrammatic Advance Guide Signs

Support:

01 The Diagrammatic Advance guide sign (see Figure 2E-41) is a guide sign that shows a simplified graphic view of the exit departure arrangement in relationship to the main highway at an interchange. Its purpose is to provide advance notice of complex or unexpected road geometry or ramp departures at an interchange and/or depict successive decision points where additional context might be helpful to interpreting the subsequent primary Interchange Advance guide signs. Unlike Diagrammatic signs that were included in previous editions of this Manual, the Diagrammatic Advance guide sign does not depict which or the number of specific lanes that serve a particular destination or depict lanes added or reduced.

Option:

02 A Diagrammatic Advance guide sign may be used in advance of the interchange guide sign sequence, or in lieu of an Interchange Advance guide sign located 2 miles in advance of the exit, to supplement conventional or Overhead Arrow-per-Lane guide signs used for a downstream interchange.

Standard:

03 Diagrammatic Advance guide signs shall be designed in accordance with the following criteria:

- **A. The graphic legend shall be of a plan view showing a simplified schematic graphic of the relative through and off-ramp movements.**
- **B. No symbols or route shields shall be used as a substitute for arrowheads.**
- **C. They shall not be installed at the Exit Direction sign location (see Section 2E.25).**
- **D. The EXIT ONLY sign panel shall not be used on Diagrammatic Advance guide signs in advance of the interchange.**
- **E. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be used at the top of the sign in accordance with Section 2E.22. For unnumbered left exits, the LEFT (E1-5aP) plaque shall be used at the top left edge of the sign.**
- **F. The graphic shall not depict deceleration or auxiliary lanes.**
- **G. Arrow shafts shall not contain lane lines.**
- **H. Destination legends for off-movements shall be positioned to the side of the arrow from which the ramp departs.**

Guidance:

04 Diagrammatic Advance guide signs used on freeways and expressways should be designed in accordance with the following additional criteria:

- *A. No more than one destination should be displayed for each movement.*
- *B. The arrowhead for the diverging movement should be positioned lower on the sign than the arrowhead for the movement that continues straight ahead, independent of which movement carries the through route (see Figure 2E-42). Where the movements are freeway or expressway splits rather than exits, the arrowheads should be positioned at approximately the same height on the sign.*
- *C. Arrow shaft widths should not vary for different movements.*

D. Route shields, cardinal directions, and destinations should be positioned on the sign such that they are clearly related to the arrowhead(s), and the arrowhead for the off movement should point toward the route shield or, for unnumbered routes, the upper line of destination legend for the off movement.

E. For exits or splits leading in a single direction, the cardinal direction should be placed adjacent to the route shield, and the destination should be placed below the route shield and cardinal direction.

F. Where two exits are displayed on a Diagrammatic Advance guide sign, the control destination for the through route should be omitted from the sign.

G. The distance legend should be placed below the exit destination legend. For splits where neither direction carries a through route, the distance legend should be centered below the diagrammatic arrow. Where successive exits from the same side of the roadway are displayed, the distance legend should be placed below the destination legend for the first exit, with the distance to the second exit omitted. Where successive exits from opposite sides of the roadway are displayed, the distance to the first exit should be centered below the diagrammatic arrow, with the distance to the second exit omitted.

Standard:

05 Diagrammatic Advance guide signs shall not be used at cloverleaf interchanges for the purpose of depicting separate downstream departures from a collector-distributor roadway.

06 Diagrammatic Advance guide signs located on the main roadway shall not be used to depict a downstream split of an exit ramp.

Support:

07 Specific guidelines for more detailed design of Diagrammatic Advance guide signs are contained in the "Standard Highway Signs" publication (see Section 1A.05).

Option:

08 Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.

09 Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2 sign panel.

10 Diagrammatic Advance guide signs may be used on any class of roadway and may be modified to depict relative movements for intersections on conventional roads.

Section 2E.42 Signing for Intermediate and Minor Interchange Multi-Lane Exits with an Option Lane

Support:

01 Intermediate and minor multi-lane exits might have an operational need for the presence of an option lane for only the peak period during which excessive queues might otherwise develop if the option lane were not available. In such cases, the Overhead Arrow-per-Lane guide signing described for option lanes in Sections 2E.39 and 2E.40 might not be practical, depending on the level of use of the option lane and the spacing of nearby interchanges, particularly in non-rural areas.

Guidance:

02 When full-width Overhead Arrow-per-Lane guide signing is not practical, as described in Paragraph 1 of this Section, signing for an intermediate or minor interchange that has a multi-lane exit with an option lane that also carries the through route should use a partial-width form of the Overhead Arrow-per-Lane guide sign (see Figures 2E-43 through 2E-45). The partial-width Overhead Arrow-per-Lane sign should display arrows only for the option lane and the mandatory exit lane(s) using the same bifurcated arrow type for the option lane and curved arrow type for the exit only lane(s) as are used for the full-width Overhead Arrow-per-Lane sign. The legend displayed for the exit movement should be clearly aligned with the arrows pointing in the direction of the exit and not with the vertical arrow head of the bifurcated arrow depicting the through movement.

Standard:

03 The through route and/or destination shall not be displayed on the partial-width Overhead Arrow-per-Lane guide sign.

04 Partial-width Overhead Arrow-per-Lane signs shall be located in compliance with the provisions of Section 2E.40 for full-width Overhead Arrow-per-Lane signs (see Figures 2E-44 and 2E-45).

Option:

05 At an intermediate or minor interchange that has a multi-lane exit with an option lane that also carries the through route, where full-width Overhead Arrow-per-Lane guide signing is not practical, conventional signing as provided in Paragraphs 7 through 9 of this Section may be used (see Figures 2E-46 and 2E-47).

06 When either full-width or partial-width Overhead Arrow-per-Lane signing is used at existing or non-reconstructed locations where an overhead Exit Direction sign exists at the theoretical gore, and the existing sign support structure is retained, an overhead Exit Direction sign may continue to be used on the existing sign support structure in conjunction with a replacement of the advance signs using the partial-width Overhead Arrow-per-Lane guide sign design (see Figure 2E-44).

Guidance:

07 When conventional signing is used, the option lane should not be signed on the Interchange Advance guide signs. For such exits that involve the addition of an auxiliary lane that is not present at the Interchange Advance guide sign locations, but do not involve a lane drop (see Figure 2E-47), a sequence of post-mounted or overhead-mounted Interchange Advance guide signs should be used, located in accordance with the interchange classification (see Section 2E.11). The Exit Direction sign should be located at the theoretical gore and should display a diagonally upward-pointing directional arrow above each lane that departs from the mainline alignment. The Exit Direction sign should not contain the EXIT ONLY legend.

08 For such interchanges that also have a lane drop (see Figure 2E-46), the Interchange Advance guide and Exit Direction signs should follow the provisions of Section 2E.28. The Exit Direction sign should be located at the theoretical gore and should contain the EXIT ONLY (E11-1e) sign panel.

09 Where the modified Overhead Arrow-per-Lane guide signs are not used, the presence of the option lane should be conveyed by the use of post-mounted lane-use (R3-8 series) signs (see Section 2B.30). When used, the R3-8 signs should be of an appropriate size for their application to optimize their conspicuity. The signs should be located in succession with the Interchange Advance guide signs, where the option and exit lanes have developed (see Figure 2E-46). In cases where the exiting lane or lanes have not developed and the option lane is created by the addition of an auxiliary lane that exits, the R3-8 signs should be located only adjacent to where the lanes have been fully developed and not in advance of the lane or along its transition (see Figure 2E-47).

Support:

10 The use of a down arrow on overhead freeway or expressway guide signs has been shown to be misinterpreted by road users as an indication of a dedicated lane.

Standard:

11 Interchange Advance guide signs that are mounted overhead shall not display a down arrow over an option lane.

Section 2E.43 Number of Signs at an Overhead Installation and Sign Spreading

Guidance:

01 If overhead signs are warranted, as set forth in Section 2A.13, the number of signs at these locations should be limited to only those essential in communicating pertinent destination information to the road user. Exit Direction signs for a single exit and the Interchange Advance Guide signs should have only one sign with one or two destinations. Regulatory signs, such as speed limits, should not be used in conjunction with overhead guide sign installations. Because road users have limited time to read and comprehend sign

messages, there should not be more than three guide signs displayed at any one location either on the overhead structure or its support.

Option:

02 At overhead locations, more than one sign may be installed to advise of a multiple exit condition at an interchange. If the roadway ramp or crossroad has complex or unusual geometrics, additional signs with confirming messages may be provided to properly guide the road user.

Support:

03 Sign spreading is a concept where major overhead signs are spaced so that road users are not overloaded with a group of signs at a single location. Figure 2E-48 illustrates an example of sign spreading.

Guidance:

04 Where overhead signing is used, sign spreading should be used at all single-exit interchanges and to the extent possible at multi-exit interchanges. Sign spreading should be accomplished by use of the following:

A. The Exit Direction sign should be the only guide sign used in the vicinity of the gore (other than the Exit Gore sign). It should be located overhead near the theoretical gore and generally on an overhead sign support structure.

B. The Interchange Advance guide sign to indicate the next interchange exit should be placed near the crossroad location. If the crossroad goes over the mainline, the Interchange Advance guide sign should be placed on the overcrossing structure or on a separate structure immediately in front of the overcrossing structure.

Section 2E.44 Closely-Spaced Interchanges

Support:

01 Section 2E.43 contains information regarding sign spreading where the Exit Direction sign and the Interchange Advance guide sign for the next interchange are mounted overhead. Sign spreading is particularly beneficial where interchanges are closely spaced and overhead signing is used in conjunction with Interchange Sequence signs as provided in Paragraph 2 of this Section.

Guidance:

02 Interchange Sequence signs (see Section 2E.24) should be used at closely-spaced interchanges. When used, they should identify and show street names and distances for the next two or three exits as shown in Figure 2E-11.

Standard:

03 Interchange Advance guide signs for closely-spaced interchanges shall show information for only one interchange.

Section 2E.45 Guide Signing in Tunnels and Similar Structures

Support:

01 The application of the provisions for freeway and expressway guide signs in tunnels and other similar structures can present unique challenges not encountered elsewhere due to the extended and continuous distances of constrained vertical and horizontal clearances in which to place signs. The effect of these constraints is particularly evident when there are interchange exit ramps inside the tunnel that require guide signing. As a result, it might not always be possible to use the typical layouts for guide signs inside a tunnel. In addition, interchange guide signs might need to be limited to one destination only, with other destinations displayed separately on Supplemental guide signs (see Section 2E.51). Acceptable methods to modify the layout of a sign to fit the space available in a tunnel are provided in Paragraph 2 of this Section.

Option:

02 Overhead-mounted guide signs in tunnels, or in other similar structures with extended constrained vertical and horizontal clearances, may be modified in accordance with the following when needed to accommodate limited vertical clearance available for signs:

A. Some sign legend elements may be arranged side by side, such as by placing route shields to the left of the destination instead of above.
B. The Exit Number plaque (see Section 2E.22) may be placed at the right-hand edge of the sign for right exits or at the left-hand edge of the sign for left exits instead of at the top edge of the sign. The legend of the Exit Number plaque may use a reduced letter height of not less than 6 inches for the word EXIT(S) and not less than 12 inches for numerals and suffixes.
C. Destination and roadway names may be displayed in reduced letter heights of not less than 10.67 inches, when determined acceptable based on consideration of reduced speed and other relevant factors, while maintaining adequate space between the legend and edges of the sign to ensure legibility and quick recognition.
D. Unusually long destination and roadway names that cannot be adequately shortened or otherwise acceptably abbreviated may be displayed using Series D letters in lieu of Series E(modified).

Standard:

03 Applicability of the provisions of Paragraph 2 of this Section shall be limited to those signs within the limits of the tunnel or other similar structure and shall not be extended to the approaches to or departures from the tunnel.

Support:

04 Unlike typical guide signs that are exposed to rain, guide signs in tunnels accumulate grime and residue quickly. This accumulation can reduce visual contrast between legend and background and reduce the retroreflectivity of the sign sheeting. Therefore, guide signs in tunnels generally need more maintenance.

Guidance:

05 Overhead signs in tunnels should have external or internal sign illumination to ensure adequate visibility between scheduled maintenance and cleanings.

06 One or more Interchange Sequence signs (see Section 2E.24) should be used on the approach to the tunnel entrance to display the distances to the next interchanges that have exit ramps inside the tunnel or immediately following the end of the tunnel.

07 Supplementary pavement markings, such as word, arrow, and/or route shield markings, should be considered inside the tunnel in addition to the basic lane and edge line markings.

OTHER GUIDE SIGNS

Section 2E.46 Next Exit Plaques (E2-1P and E2-1aP)

Option:

01 Where the distance to the next interchange is unusually long, a Next Exit (E2-1P or E2-1aP) plaque (see Figure 2E-49) may be installed to inform road users of the distance to the next interchange.

Guidance:

02 The Next Exit plaque should not be used unless the distance between successive interchanges is more than 5 miles.

03 Where the Next Exit plaque is used, the E2-1P plaque should be used where the width of the Interchange Advance guide sign is equal to or greater than the width of the E2-1P plaque. The E2-1aP plaque should be used where the width of the E2-1P plaque exceeds the width of the Interchange Advance guide sign.

Standard:

04 The Next Exit plaque shall display the legend NEXT EXIT XX MILES. If the Next Exit plaque is used, it shall be placed below the Interchange Advance guide sign nearest the interchange. It shall be mounted so as to not adversely affect the breakaway feature of the sign support structure.

Section 2E.47 Post-Interchange Signs

Guidance:

01 If space between interchanges permits, as in rural areas, and where undue repetition of messages will not occur, a fixed sequence of signs should be displayed beginning 500 feet beyond the downstream end of the acceleration lane. At this point a Route Sign assembly should be installed followed by a Speed Limit sign and a Distance sign, each at a spacing of 1,000 feet (see Figure 2E-2).

02 If space between interchanges does not permit placement of these three post-interchange signs without encroaching on or overlapping the Advance guide signs necessary for the next interchange, or in rural areas where the interchanging traffic is primarily local, one or more of the post-interchange signs should be omitted.

Option:

03 Usually the Distance sign will be of less importance than the other two signs and may be omitted, especially if Interchange Sequence signs are used. If the sign for through traffic on an overhead assembly already contains the route sign, the post-interchange route sign assembly may also be omitted.

Section 2E.48 Post-Interchange Distance Signs (E7-1 through E7-3)

Standard:

01 If used, the Post-Interchange Distance sign (see Figure 2E-50) shall consist of a one-line, two-line, or three-line sign displaying the names of significant destination points and the distances to those points. The top line of the sign shall identify the next meaningful interchange with the name of the community near or through which the route passes, or if there is no community, the route number or name of the intersected highway.

Support:

02 The minimum sizes of the route shields identifying a significant destination point are prescribed in Tables 2E-3 and 2E-5.

Option:

03 The text identification of a route may be displayed instead of a route shield, such as "U S XX," "[State abbreviation] XX" (such as "Del XX"), or "County XX."

Guidance:

04 If a second line is used, it should be reserved for communities of general interest that are located on or immediately adjacent to the route or for major traffic generators along the route.

Option:

05 The choice of names for the second line, if it is used, may be varied on successive Distance signs to give road users maximum information concerning communities served by the route.

Standard:

06 The third, or bottom line, shall contain the name and distance to a control city (if any) that has national significance for travelers using the route.

Guidance:

07 Distances to the same destinations should not be shown more frequently than at 5-mile intervals. The distances displayed on these signs should be the actual distance to the destination points and not to the exit from the freeway or expressway. The distance displayed for each community should comply with the provisions of Section 2D.43.

Section 2E.49 Post-Interchange Travel Time Sign (E7-4)

Support:

01 At certain locations, it might be more meaningful to recurrent road users to display the travel time rather than the distance to a destination. Such instances might be areas of adverse roadway conditions due to weather, such as in mountain passes or high elevations, congestion that occurs during peak travel seasons, or recurring congestion.

02 Section 2E.50 contains information on Distance and Travel Time and Comparative Travel Time signs.

Standard:

03 If used, the Post-Interchange Travel Time (E7-4) sign (see Figure 2E-51) shall replace of the Post-Interchange Distance sign in the series of post-interchange signs (see Section 2E.47).

04 The Post-Interchange Travel Time sign shall comply with the provisions of Paragraph 1 of Section 2E.47 with the following exceptions:

- **A. The distance shall be replaced with a changeable message element to display the current travel time to the applicable destination; and**
- **B. The abbreviation MINS shall follow the changeable message element.**

05 Travel times shall not be used on Interchange guide signs (see Section 2E.21).

Section 2E.50 Distance and Travel Time Sign (E7-5) and Comparative Travel Time Sign (E7-6)

Support:

01 Some locations might benefit from a travel time message displayed with the distance, or comparative travel times displayed for alternative routes to a common destination. These locations are often in advance of an urbanized area where interchanges become more closely spaced and/or in advance of a circumferential or other alternative route(s) where the road user can decide to divert depending on the destination. Nonetheless, these signs are typically located in advance of a decision point where the road user can divert to an alternate route to avoid recurring congestion.

02 Section 2E.49 contains information on Post-Interchange Travel Time signs.

03 Section 2G.19 contains information on Comparative Travel Time signs for parallel lanes within the same highway route, such as for general-purpose lanes and managed lanes.

Standard:

04 The Distance and Travel Time (E7-5) sign (see Figure 2E-52) shall display a major destination, landmark, or junction; a distance message; and a travel time message, each on a separate line. The distance units shall be displayed in the distance message. The travel time shall be displayed in a changeable message element and the abbreviation MINS shall follow the changeable message element. The Distance and Travel Time sign shall not display distance and time to more than one destination or junction.

05 The Comparative Travel Time (E7-6) sign (see Figure 2E-52) shall display a major destination, landmark, or junction, and two alternative routes with travel time messages. Each alternative route and

associated travel time message shall be on a separate line. The travel time shall be displayed in a changeable message element and the abbreviation MINS shall follow the changeable message element.

06 Comparative travel times shall not be used to promote different modes of travel, such as personal vehicle highway travel compared with transit, or different forms of transit.

Guidance:

07 Where used, the Distance and Travel Time sign should be located between interchanges and away from the sequence of interchange guide signs or other major signs.

08 Where used, the Comparative Travel Time sign should be located in advance of the sequence of interchange guide signs to provide adequate time for the road user to decide whether to reroute.

Section 2E.51 Supplemental Guide Signs (E3 Series)

Support:

01 Supplemental guide signs (see Figure 2E-53) can be used to provide information regarding destinations accessible from an interchange, other than places displayed on the standard interchange signing. However, such Supplemental guide signing can reduce the effectiveness of other more important guide signing because of the possibility of overloading the road user's capacity to receive visual messages and make appropriate decisions. "The AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways" is incorporated by reference in this Section.

Guidance:

02 Use of Supplemental guide signs should be limited to situations where there is a demonstrated need to sign for more destinations from an interchange than those that are displayed on the Interchange Advance guide and Exit Direction signs.

03 A Supplemental guide sign should not be installed unless a destination meets the criteria established by the State or agency policy. States and other agencies should adopt an appropriate policy for installing Supplemental guide signs using the "AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways." In developing policies for such signing, such items as population, amount of traffic generated, distance from the route, and the significance of the destination, should be taken into account.

04 No more than one Supplemental guide sign should be used on each interchange approach.

05 A Supplemental guide sign should display no more than two destinations and no more than three lines of destination names. Destination names should be followed by the interchange number (and suffix), or if interchanges are not numbered, by the legend NEXT RIGHT or SECOND RIGHT or both, as appropriate. The Supplemental guide sign should be installed as an independent guide sign assembly.

06 Where two or more Interchange Advance guide signs are used, the Supplemental guide sign should be installed approximately midway between two of the Interchange Advance guide signs. If only one Interchange Advance guide sign is used, the Supplemental guide sign should follow it by at least 800 feet. If the interchanges are numbered, the interchange number should be used for the action message.

07 A Supplemental guide sign should not be installed in the same location with or where it will detract from guide signs for a different interchange.

Standard:

08 No more than two supplemental traffic generator destinations shall be signed from a single interchange approach and four from a single interchange along the main roadway (see Paragraphs 4 and 5 of this Section regarding the number of Supplemental guide signs at an interchange and the number of destinations displayed on a Supplemental guide sign).

09 Supplemental guide signs shall not be placed at the same location as Interchange Advance guide, Exit Direction, or other signs related to an exit or interchange.

10 Guide signs for park-and-ride facilities shall be considered as Supplemental guide signs (see Figure 2E-54).

11 Guide signs for recreational or cultural interest destinations (see Chapter 2M) shall be considered as Supplemental guide signs, except where the interchange provides direct access to such a

destination and the destination is instead displayed on the Interchange Advance guide and Exit Direction signs.

Option:

12 The pictograph of a transit provider (see definition in Section 1C.02) may be displayed on the Park – Ride Supplemental guide sign or on a Supplemental guide sign for a transit facility.

Guidance:

13 The use of a transit pictograph and/or the carpool symbol on the PARK – RIDE Supplemental guide sign should comply with the provisions of Paragraph 5 of Section 2D.48.

Standard:

14 When a transit pictograph is displayed on the PARK – RIDE Supplemental guide sign, it shall be located on the same line as the carpool symbol, if used, above the word legend.

15 The maximum dimension (height or width) of a pictograph on a sign shall not exceed two times the upper-case letter height of the destination or PARK – RIDE legend.

Support:

15a Supplemental Guide signs directing motorists to specific cultural, recreational, historical, governmental, educational, military, and other sites of similar interest are part of VDOT's Integrated Directional Signing Program (IDSP) and are installed, maintained, modified, and removed by the IDSP contractor. For further information about the IDSP and the attractions that can be listed on a Supplemental Guide sign, refer to Section 2A.V1 and to the VDOT IDSP website.

15b Supplemental Guide signs directing motorists to cities, towns, villages, counties, regions, communities, named roads/streets, transportation facilities, and other governmental entities are not part of the IDSP, and are installed and maintained by VDOT.

Section 2E.52 Community Interchanges Identification Signs (E9-4 and E9-5)

Support:

01 For suburban or rural communities served by two or three interchanges, Community Interchanges Identification (E9-4 and E9-5) signs (see Figure 2E-55) reduce the amount of information displayed on the Interchange Advance guide and Exit Direction signs by eliminating repetition of the same destinations for separate interchanges.

Guidance:

02 In these cases, the name of the community followed by the word EXITS should be displayed on the top line; the lines below should display the destination, road name or route number, and the corresponding distances to the nearest ¼ mile.

03 The sign should be located in advance of the first Interchange Advance guide sign for the first interchange within the community (see Figure 2E-56).

04 The legend displayed on the Interchange Advance guide and Exit Direction signs for each interchange should be consistent with the interchange names displayed on the Community Interchanges Identification sign. The name of the community displayed on the Community Interchanges Identification signs should be omitted from the legends of the Interchange Advance guide and Exit Direction signs.

Option:

05 If interchanges are not conveniently identifiable or if there are more than three interchanges to be identified, the Next Exits sign (see Section 2E.53) may be used.

Section 2E.53 Next Exits Signs (E9-3 and E9-3a)

Support:

01 Many freeways or expressways pass through historical or recreational regions, or urban areas served by a succession of several interchanges.

Option:

02 Such regions or areas may be indicated by a Next Exits (E9-3 or E9-3a) sign (see Figure 2E-57) located in advance of the Advance guide sign or signs for the first interchange.

Guidance:

03 The sign legend should identify the region or area followed by the words NEXT XX EXITS.

04 The legend displayed on the Interchange Advance guide and Exit Direction signs for each interchange should not display the region or area name that is displayed on the Next Exits sign (see Figure 2E-58).

Section 2E.54 Weigh Station Signing

Support:

01 Independent facilities or areas have been added along many highways where certain commercial vehicles are directed to stop to be weighed or inspected. These areas are sometimes permanent, such as in a roadside area, or temporary mobile facilities deployed along the roadway.

02 The general concept for signing permanent Weigh Stations is similar to Rest Area signing (see Section 2I.05) because in both cases traffic using either area remains within the highway right-of-way.

Standard:

03 The standard sequence of signs for a Weigh Station on an expressway or freeway shall include four basic signs (see Figure 2E-59):

- **A. An Advance Weigh Station Distance (D8-1) sign with the distance 1 MILE displayed,**
- **B. An Advance Weigh Station Distance (D8-1) sign with the distance ½ MILE displayed, or a Weigh Station Advance Direction (D8-2) sign,**
- **C. A Weigh Station Entrance Direction (D8-3) sign, and**
- **D. A Weigh Station Gore sign (with the same legend as the Entrance Direction (D8-3) sign).**

Option:

04 When spacing of 1 mile and ½ mile are not practical for the D8-1 signs, the 1 MILE and ½ MILE distances on the D8-1 signs may be adjusted to match the spacing determined by engineering judgment.

05 Where State law requires trucks of a certain weight to enter the weigh station, a Weigh Station (R13-1) regulatory sign (see Section 2B.65) may be added to the sign sequence as shown in Figure 2E-59.

06 Where only commercial vehicle inspections are conducted in the inspection area and vehicles are not weighed, the WEIGH STATION legend of the D8 series signs may be replaced with the alternate legend, COMMERCIAL VEHICLE INSPECTION AREA.

Standard:

07 When the WEIGH STATION legend of the D8 series signs is replaced with COMMERCIAL VEHICLE INSPECTION AREA legend as provided for in Paragraph 6 of this Section, the WEIGH STATION legend of the R13-1 sign shall be replaced with the alternate legend INSPECTION AREA.

08 A changeable legend display that displays either OPEN or CLOSED shall be included in the signing sequence to indicate when trucks are required to enter the weigh station.

Guidance:

09 The required changeable legend display OPEN or CLOSED describe in Paragraph 8 of this Section should be displayed within and at the bottom of the Weigh Station Advance Direction (D8-2) sign or the Advance Weigh Station Distance (D8-1) sign, or on a supplemental plaque or sign panel.

Option:

10 A plaque with the legend OPEN WHEN FLASHING may be added to one of the Advance Weigh Station Distance signs along with associated flashing beacons, in place of the changeable legend OPEN or CLOSED sign, to indicate when commercial vehicles are required to enter the weigh station.

Support:

11 Weigh Station Area sign layouts for freeway and expressway applications are shown in the "Standard Highway Signs" publication (see Section 1A.05). An example of weigh station signing for use on freeways and expressways is shown in Figure 2E-59.

Section 2E.55 Route Signs and Trailblazer Assemblies

Guidance:

01 Route signs (see Figure 2E-60(VA)) should be incorporated as cut-out shields or other distinctive shapes on large directional guide signs. Where the Interstate shield is displayed in an assembly or on the face of a guide sign with U.S. ~~or State~~ Route, Virginia Primary Route, or Virginia Circular Secondary Route signs, the Interstate numeral should be at least equal in size to the numerals on the other Route signs. The use of independent Route signs should be limited primarily to route confirmation assemblies.

02 Route signs and auxiliary plaques showing junctions and turns should be used for guidance on approach roads, for route confirmation just beyond entrances and exits, and for reassurance along the freeway or expressway. When used along the freeway or expressway, the Route signs should be enlarged to a 36 x 36-inch minimum size for route numbers with one or two digits and to a 45 x 36-inch minimum size for route numbers with three digits as shown in the "Standard Highway Signs" publication (see Section 1A.05). Virginia Circular Secondary Route signs should be 36 x 36-inch minimum size for route numbers of any number of digits. When independently-mounted Route signs are used in place of Pull-Through signs (see Section 2E.27), they should be located just beyond the exit.

Option:

03 The standard Trailblazer Assembly (see Section 2D.34) may be used on roads leading to the freeway or expressway. Component messages of the Trailblazer Assembly may be incorporated into a single sign in accordance with the provisions of Section 2D.12. Independently-mounted Route signs may be used instead of Pull-Through signs as confirmation information.

Support:

04 Section 2D.58 contains information regarding the design of signs for Auto Tour Routes.

Option:

05 The commonly-used name or trailblazer route sign for a toll highway (see Chapter 2F) may be displayed on non-toll sections of the Interstate Highway System at:

A. The last exit before entering a toll section of the Interstate Highway System;
B. The interchange or connection with a toll highway, whether or not the toll highway is a part of the Interstate Highway System; and
C. Other locations within a reasonable approach distance of toll highways when the name or trailblazer symbol for the toll highway would provide better guidance to road users unfamiliar with the area than would place names and route numbers.

06 The toll highway name or route sign may be included as a part of the guide sign installations on intersecting highways and approach roads to indicate the interchange with a toll section of an Interstate route. Where needed for the proper direction of traffic, a trailblazer for a toll highway that is part of the Interstate Highway System may be displayed with the Interstate Trailblazer Assembly.

Support:

07 Chapter 2F contains additional information regarding signing for toll highways.

Section 2E.56 Eisenhower Interstate System Signs (M1-10 and M1-10a)

Option:

01 The Eisenhower Interstate System (M1-10 ~~and M1-10a~~) sign (see Figure 2E-61) may be used, in accordance with Paragraph~~s 2 and~~ 3 of this Section, on Interstate highways at periodic intervals and in rest areas, scenic overlooks, or other similar roadside facilities on the Interstate Highway System.

Standard:

~~**02 If used, the M1-10a sign shall be used only in rest areas or other similar facilities where the sign can be viewed by occupants of parked vehicles or by pedestrians. The M1-10a sign shall not be installed on Interstate highway mainlines, ramps, or other roadways where it can be viewed by vehicular traffic.**~~

03 The M1-10 ~~and M1-10a~~ sign shall not be used as part of a Junction, Advance Route Turn, Directional, or Trailblazer Assembly, or as part of a guide sign or similar assembly providing direction to a route or destination.

SIGNS FOR ROUTE DIVERSION BY VEHICLE CLASS

Section 2E.57 Signs for Route Diversion by Vehicle Class

Support:

01 On some highways, a physical condition or highway feature might limit certain types or classes of vehicles from proceeding along that route through the site of that condition beyond which those vehicles are otherwise allowed. Examples include, but are not limited to, a restriction on taller legal-height vehicles through a tunnel with a low clearance; a restriction of hazardous materials through a tunnel or over a bridge; and a restriction on wider vehicles, such as large trucks, over a viaduct with narrow lanes. In such cases, the restricted vehicles might be diverted along another route to reach a destination beyond the location of the limiting condition.

Guidance:

02 Where certain vehicles are prohibited at a downstream location along a route and those vehicles must divert to reach a through destination beyond that location, regulatory, warning, and/or guide signs advising those vehicle operators of the diversion should be installed in advance of the decision point to leave the through route for the diversion route.

Option:

03 The interchange and pull-through guide signs for the last point at which restricted vehicles must exit may be modified to incorporate regulatory and/or warning panels with word legends to display the regulations and/or warning messages relative to the vehicle class restriction.

04 Standard post-mounted regulatory and warning signs, such as the No Hazardous Materials (R14-3) or Advance Low Clearance (W12-2) signs, may be used as provided elsewhere in this Manual at independent locations to supplement the regulatory and warning signs and panels referenced in Paragraphs 2 and 3 of this Section.

Support:

05 An example of signing for a route diversion by vehicle class is shown in Figure 2E-62.

INTERFACE WITH CONVENTIONAL ROADWAYS

Section 2E.58 Signing on Conventional Road Approaches and Connecting Roadways

Support:

01 Section 2D.49 contains information regarding the signing on conventional roads on the approaches to interchanges and the signing on connecting roadways.

Section 2E.59 Wrong-Way Traffic Control at Interchange Ramps

Support:

01 Section 2B.48 contains information regarding the use of regulatory signs to deter wrong-way movements at intersections of freeway or expressway ramps with conventional roads, and in the area where entrance ramps intersect with the mainline lanes.

02 Section 2D.50 contains information regarding the use of a Directional assembly or a guide sign to mark the entrance to a freeway or expressway from a conventional road.

CHAPTER 2F. TOLL ROAD SIGNS

Chapter 2F Subchapter and Section Organization

GENERAL

Section 2F.01 Scope

Support:

01 Toll highways are typically limited-access freeway or expressway facilities. A portion of or an entire route might be a toll highway, or a bridge, tunnel, or other crossing point might be the only toll portion of a highway at which a toll is collected. A toll highway might be a conventional road. The general signing requirements for toll roads will depend on the type of facility and access (freeway, expressway, or conventional road). The provisions of Chapters 2D and 2E will generally apply for guide signs along the toll facility that direct road users within and off the facility where exit points and geometric configurations are not dependent specifically on the collection of tolls. The aspect of tolling and the presence of toll plazas or collection points necessitate additional considerations in the typical signing needs. The notification of the collection of tolls in advance of and at entry points to the toll highway also necessitates additional modifications to the typical signing.

02 The scope of this Section applies to a route or facility on which all lanes are tolled. Chapter 2G contains provisions for the signing of managed lanes within an otherwise non-toll facility that employ tolling or pricing as an operational strategy to manage congestion levels.

Standard:

03 Except where specifically provided in this Chapter, the provisions of other Chapters in Part 2 shall apply to toll roads.

Section 2F.02 Sizes of Toll Road Signs and Electronic Toll Collection (ETC) System Pictographs

Standard:

01 Except as provided in Section 2A.07, the minimum sizes of toll road signs that have standardized designs shall be as shown in Table 2F-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2F-1.

Option:

03 Signs larger than those shown in Table 2F-1 may be used (see Section 2A.07).

Standard:

04 The ETC system pictograph (see Section 2A.04) shall be of a size that makes it a prominent feature of the sign legend as necessary for conspicuity for those road users with registered ETC accounts seeking such direction, as well as for those road users who do not have ETC accounts so that it is clear to them to avoid such direction when applicable.

Guidance:

05 Except as provided in Paragraph 6 of this Section, an ETC pictograph that is in the shape of a horizontally-oriented rectangle should have a minimum height of 1.5 times the upper-case letter height of the principal legend on the sign. The width of an ETC pictograph in the shape of a horizontal rectangle should be between approximately 2 and 3 times the height of the pictograph.

06 When the pictograph is the principal legend on the sign, such as for advance guide signs for open-road tolling lanes (see Section 2F.15), the minimum height of a horizontally-oriented rectangular ETC pictograph should be consistent with that of a route shield prescribed for the particular application and type of sign.

07 For ETC pictographs whose shape is square, circular, or otherwise similar in height and width, or is a vertically-oriented rectangle, the same basic principles for conspicuity and placement should be followed. ETC pictographs whose shape is not in that of a horizontally-oriented rectangle should be suitably sized to facilitate conspicuity as described in Paragraph 4 of this Section and should be of a similar approximate area as the horizontally-oriented rectangular pictographs designed in accordance with the height and width as provided in Paragraph 5 of this Section.

Section 2F.03 Use of Color on Toll Signs

Standard:

01 Use of the color purple on any sign shall comply with the provisions of Sections 1D.05 and 2A.06. Except as provided in Sections 2F.05 and 2F.16, purple as a background color shall be used only when the information associated with the appropriate ETC account is displayed on that portion of the sign. The background color of the remaining portion of such signs shall comply with the provisions of Sections 1D.05 and 2A.06 as appropriate for a regulatory, warning, or guide sign. Purple shall not be used as a background color to display a destination, action message, or other legend that is not a display of the requirement for all vehicles to have a registered ETC account.

02 If only vehicles with registered ETC accounts are allowed to use a highway lane, a toll plaza lane, an open-road tolling lane, or all lanes of a toll highway or connection, the guide signs for such lanes or highways shall incorporate the pictograph (see Section 2A.04) adopted by the toll facility's ETC payment system and the regulatory message ONLY. Except for ETC pictographs whose predominant background color is purple, if incorporated within the green background of a guide sign, the ETC pictograph shall be on a white rectangular or square panel set on a purple underlay panel with a white border. For rectangular ETC pictographs whose predominant background color is purple, a white border shall be used at the outer edges of the purple rectangle to provide contrast between the pictograph and the sign background color.

03 If an ETC pictograph is used on a separate plaque in a route sign assembly (see Section 2F.05) or on a header panel within a guide sign, the plaque or the header panel shall have a purple background with a white border and the ETC pictograph shall have a white border to provide contrast between the pictograph and the background of the plaque or header panel.

04 Purple underlay panels for ETC pictographs or purple backgrounds for plaques and header panels shall only be used in the manner described in Paragraphs 1 through 3 of this Section to convey the requirement of a registered ETC account on signs for lanes reserved exclusively for vehicles with such an account and on directional signs to an ETC account-only facility from a non-toll facility or from a toll facility that accepts multiple payment forms.

Support:

05 Figure 2F-1(VA) shows examples of ETC account pictographs, their use with various background colors, and modifications involving underlay panels.

06 Section 2F.02 contains provisions regarding the size of pictographs for ETC accounts.

REGULATORY SIGNS

Section 2F.04 Regulatory Signs for Toll Plazas

Support:

01 Toll plaza operations often include lane-specific restrictions on vehicle type, forms of payment accepted, and speed limits or required stops. Vehicles are typically required to come to a stop to pay the toll or receive a toll ticket in the attended and exact change or automatic lanes. Electronic toll collection (ETC) lanes with favorable geometrics typically allow vehicles to move through the toll plaza without stopping, but usually within a set regulatory speed limit or advisory speed. In some ETC lanes and in most lanes that accommodate non-ETC vehicles, a stop might be required while the ETC payment is processed because of geometric or other conditions.

Guidance:

02 Regulatory signs applicable only to a particular lane or lanes should be located in a position that makes their lane applicability clear to road users approaching the toll plaza.

03 Regulatory signs, or regulatory panels within guide signs, indicating restrictions on vehicle type and forms of toll payment accepted at a specific toll plaza lane should be installed over the applicable lane either on the toll plaza canopy or on a separate structure immediately in advance of the canopy located in a manner such that each sign is clearly related to an individual toll lane.

Support:

04 Section 2F.12 contains information regarding the incorporation of regulatory messages into guide signs for toll plazas.

05 Section 2F.16 contains information regarding the design and use of toll plaza canopy signs.

Guidance:

06 One or more Speed Limit (R2-1) signs (see Section 2B.21) should be installed in the locations provided in Paragraph 8 of this Section for an ETC-Only lane at a toll plaza in which an enforceable regulatory speed limit is established for a lane in which it is intended that vehicles move through the toll plaza without stopping while toll payments requiring stops occur in other lanes at the toll plaza. The speed limit displayed on the signs should be based on an engineering study taking into account the geometry of the toll plaza and the lanes, as well as other appropriate safety and operational factors.

07 A Speed Limit (R2-1) sign should not be installed for a toll plaza lane that is controlled by a STOP (R1-1) sign or where a stop is required.

08 Where speed limit signs are installed over a toll plaza lane on the toll plaza canopy, on the approach end of the toll booth island, on the toll booth itself, or on a vertical element of the canopy structure, then down arrows or diagonally downward-pointing directional arrows should be used to supplement the speed limit signs if there is a need to clarify the applicability of a sign to a specific lane or to improve compliance.

Standard:

09 A STOP (R1-1) sign shall not be installed for a toll plaza lane that is operated as an ETC-Only lane and that is designed for tolls to be collected while vehicles continue moving.

Option:

10 A STOP (R1-1) sign may be installed to require all vehicles to come to a complete stop to pay a toll in an attended or exact change lane, even if that lane is also available for optional use by vehicles with registered ETC accounts. A PAY TOLL (R3-29P) or TAKE TICKET (R3-30P) plaque (see Figure 2F-2), as appropriate to the operation, may be installed directly under the STOP (R1-1) sign for a toll plaza lane, if needed.

11 The mounting height of the STOP sign and any supplemental plaque may be less than the normal mounting height requirements if constrained by the physical features of the toll island or toll plaza.

12 The lateral offset of a STOP or other regulatory sign located within a toll plaza island may be reduced to a minimum of 1 foot from the face of the toll island or raised barrier to the nearest edge of the sign.

Guidance:

13 If used, a STOP (R1-1) sign for a toll plaza cash payment lane should be located in a longitudinal position as near as practical to the point where a vehicle is expected to stop to pay the toll or take a ticket.

Option:

14 A Toll Rate (R3-28) sign (see Figure 2F-2) may be installed in advance of the toll plaza to indicate the toll applicable to the various vehicle types.

Guidance:

15 If used, the Toll Rate (R3-28) sign should be located between the toll plaza and the first advance sign informing road users of the toll plaza.

16 The R3-28 sign should not contain more than three lines of legend. Each line that shows a toll amount should display only a single toll amount.

Option:

17 Additional toll rate information exceeding three lines of legend may be displayed on the toll booth adjacent to the payment window of an attended lane or the payment receptacle of an exact change or automatic lane where it is visible to a road user who has stopped to pay the toll, but is not visible to approaching road users who have not yet entered the toll lane.

Section 2F.05 Electronic Toll Collection (ETC) Account-Only Regulatory Sign and Plaque (R3-31 and R3-32P)

Standard:

01 In any route sign assembly providing directions to a toll facility, or to a tolled segment of a highway, where electronic toll collection (ETC) is the only payment method accepted and all vehicles are required to have a registered ETC account, the ETC Account-Only (R3-31) sign (see Figure 2F-3(VA)) shall be mounted directly below the route sign of the numbered or named toll facility. The R3-31 sign shall have a white border and purple background and incorporate the pictograph adopted by the toll facility's ETC payment system and the word ONLY in black letters on a white panel set on the purple background of the sign.

Option:

02 The NO CASH (R3-32P) plaque (see Figure 2F-3(VA)) with a black legend and border on a white background may be mounted directly below the R3-31 sign in a Directional or other sign assembly.

WARNING SIGNS

Section 2F.06 Pay Toll and Take Ticket Advance Warning Signs (W9-6 and W9-6e)

Standard:

01 The Pay Toll (W9-6) and Take Ticket (W9-6e) Advance Warning signs shall display the distance to the toll plaza and, except for toll-ticket facilities or electronic-only facilities where the toll varies based on distance traveled, the toll for passenger or 2-axle vehicles (see Figure 2F-4). Where the toll for passenger or 2-axle vehicles is variable by time of day and three or more rates are charged, a changeable message element shall be incorporated into the W9-6 sign to display the toll in effect. If there are only two toll rates such as peak and off-peak, a static sign displaying both rates or a changeable message element shall be incorporated into the W9-3 sign to display the toll in effect.

Guidance:

02 The Pay Toll Advance Warning (W9-6) sign should be installed at approximately 1 mile and ½ mile in advance of mainline toll plazas at which some or all lanes are required to come to a stop to pay a toll (see Sections 2F.14 and 2F.15).

03 The Take Ticket Advance Warning (W9-6e) sign should be installed ~~overhead~~ at approximately 1 mile and ½ mile in advance of mainline toll plazas at which some or all lanes are required to come to a stop to take a toll ticket (see Sections 2F.14 and 2F.15).

04 The Pay Toll and Take Ticket Advance Warning signs should be mounted overhead.

Option:

05 If there is insufficient space for the W9-6 or W9-6e sign at the 1-mile or ½-mile advance location, the Pay Toll or Take Ticket Advance Warning (W9-6bP or W9-6gP) plaque (see Section 2F.07) may be installed at those advance locations above the appropriate guide sign(s) that relate to toll payment types.

06 An additional W9-6 or W9-6e sign may be installed approximately 2 miles in advance of a mainline toll plaza. This sign may be either mounted overhead or post-mounted.

07 If the visibility of a ramp toll plaza at which some or all lanes are required to come to a stop to pay a toll or take a ticket is limited, the W9-6 or W9-6e sign may also be installed in advance of the ramp toll plaza.

Section 2F.07 Pay Toll and Take Ticket Advance Warning Plaques (W9-6bP, W9-6dP, and W9-6gP)

Option:

01 The Pay Toll or Take Ticket Advance Warning (W9-6bP and W9-6gP) plaques (see Figure 2F-4) may be installed above the appropriate guide sign(s) relating to toll payment types at the 1-mile and/or ½-mile advance locations on the approach to a toll plaza if there is insufficient space for the W9-6 or W9-6e sign (see Section 2F.06) at those advance locations.

Standard:

02 The W9-6bP and W9-6gP plaques shall display the distance to the toll plaza and, except for toll-ticket facilities or electronic-only facilities where the toll varies based on distance travelled, the toll for passenger or 2-axle vehicles. Where the toll for passenger or 2-axle vehicles is variable by time of day and three or more rates are charged, a changeable message element shall be incorporated into the W9-6bP plaque to display the toll in effect. If there are only two toll rates such as peak and off-peak, a static sign displaying both rates or a changeable message element shall be incorporated into the W9-3 sign to display the toll in effect.

Option:

03 The distance to the toll plaza may be omitted from the W9-6bP and W9-6gP plaques if the distance is displayed on the guide sign that the plaque accompanies.

04 The Pay Toll (W9-6dP) plaque may be used if the toll information is displayed on the guide sign that the plaque accompanies.

05 The toll for passenger or 2-axle vehicles may be omitted from the W9-6bP plaque if the toll information is displayed on the guide sign that the plaque accompanies.

Section 2F.08 Stop Ahead Pay Toll and Take Ticket Warning Signs (W9-6a and W9-6f)

Standard:

01 The Stop Ahead Pay Toll (W9-6a) warning sign (see Figure 2F-4) shall display the toll for passenger or 2-axle vehicles. Where the toll for passenger or 2-axle vehicles is variable by time of day, a changeable message element shall be incorporated into the W9-6a sign to display the toll in effect.

Option:

01a If there are only two toll rates such as peak and off-peak, a static sign displaying both rates may be used instead of a changeable message sign.

Guidance:

02 The Stop Ahead Pay Toll (W9-6a) sign should be installed downstream from the W9-6 sign that is ½ mile in advance of a mainline toll plaza where some or all of the lanes are required to come to a stop to pay a toll (see Sections 2F.14 and 2F.15).

03 The Take Ticket (W9-6f) warning sign (see Figure 2F-4) should be installed downstream from the W9-6e sign that is ½ mile in advance of a mainline toll plaza where some or all of the lanes are required to come to a stop to take a toll ticket (see Sections 2F.14 and 2F.15).

04 The W9-6a and W9-6f signs should be mounted overhead. The location of the overhead sign should coincide with the approximate location where the mainline lanes begin to widen on the approach to the toll plaza lanes.

05 Where open-road tolling is used in addition to a toll plaza at a particular location, the W9-6a or W9-6f sign should be located such that the message is clearly related to the lanes that access the toll plaza and not to the open-road tolling lanes.

Option:

06 If there is insufficient space for the W9-6a or W9-6f sign at the recommended location, the Stop Ahead Pay Toll (W9-6cP) or the Stop Ahead Take Ticket (W9-6hP) plaque (see Section 2F.09) may be installed at that location above the appropriate guide sign that relates to toll payment types.

07 If the visibility of a ramp toll plaza at which some or all lanes are required to come to a stop to pay a toll or take a ticket is limited, the W9-6a or W9-6f sign may also be installed in advance of the ramp toll plaza.

Section 2F.09 Stop Ahead Pay Toll and Take Ticket Warning Plaques (W9- 6cP and W9-6hP)

Option:

01 The Stop Ahead Pay Toll (W9-6cP) warning plaque (see Figure 2F-4) may be installed above the appropriate guide sign at the location specified for the Stop Ahead Pay Toll (W9-6a) sign (see Section 2F.08) if there is insufficient space for the W9-6a sign at that location and the toll information is displayed on the guide sign that the plaque accompanies.

02 The Take Ticket (W9-6hP) warning plaque (see Figure 2F-4) may be installed above the appropriate guide sign at the location specified for the Take Ticket (W9-6f) sign (see Section 2F.08) if there is insufficient space for the W9-6f sign at that location.

Section 2F.10 LAST EXIT BEFORE TOLL Warning Plaques (W16-16P and W16-16aP)

Standard:

01 The LAST EXIT BEFORE TOLL (W16-16P or W16-16aP) warning plaque (see Figure 2F-4) ~~should~~ shall be used to notify road users of the last exit from a highway before it becomes a facility on which toll payments are required. The plaque ~~should~~ shall be installed above the appropriate guide signs for the exit (see Sections 2E.23 and 2E.25), but below the Exit Number or LEFT plaque if used.

Option:

01a If the toll is only charged during predefined hours of the day, the plaque may list the times that the toll in charged or use a changeable message element.

Section 2F.11 TOLL Warning Plaque (W16-17P)

Standard:

01 The TOLL (W16-17P) warning plaque (see Figure 2F-3(VA)) shall have a black legend and border on a yellow background and shall be mounted directly above the route sign of a numbered toll highway or, if used, above the cardinal direction and alternative route auxiliary signs, in any route sign assembly providing direction to a toll highway or to a segment of a highway on which the payment of a toll is required.

GUIDE SIGNS

Section 2F.12 Toll Facility and Toll Plaza Guide Signs – General

Support:

01 Toll plazas are used on many toll highways, bridges, and tunnels for collection of tolls from road users. Electronic toll collection and/or open-road tolling might also be used on such facilities, either in addition to or in place of collecting toll payments at toll plazas.

02 Chapter 2G contains information regarding signs for preferential and managed lanes that are applicable to toll roads.

03 Chapter 3E contains information regarding pavement markings for certain toll plaza applications.

Standard:

04 Directional assemblies for entrances to a toll highway, or to a road leading directly to a toll highway with no opportunity to exit before paying or being charged a toll, shall clearly indicate that the facility is a toll facility. Except where the State Toll Route sign (see Paragraph 8 of this Section) is used, the TOLL (W16-17P) warning plaque (see Section 2F.11) shall be used above the route sign of a numbered toll facility in any route sign assembly that provides directions to the toll route from another highway (see Figure 2F-5).

Guidance:

04a If a sign showing the amount of toll is used, it should be located far enough from on-ramps so that drivers are able to decide whether or not to use the facility and transition into the appropriate lane.

Standard:

05 Except where the State Toll Route sign (see Paragraph 8 of this Section) is used and on Exit Gore signs or destination guide (D1 series) signs, a rectangular panel with the black legend TOLL on a yellow background shall be incorporated into the guide signs leading road users to a tolled highway (see Figures 2F-6 through 2F-8).

06 Guide signs for toll highways, toll plazas, and tolled or priced managed lanes (see Chapter 2G) shall have white legends and borders on green backgrounds, except as specifically provided by Sections 2F.12 through 2F.16.

Option:

07 A State Toll Route sign (see Paragraph 8 of this Section) may be used in lieu of the State Route (M1-5) sign in combination with the TOLL (W16-17P) warning plaque or the TOLL panel (see Paragraphs 10 and 11 of this Section).

Standard:

08 A State Toll Route sign shall incorporate into its design the word TOLL using the same letter height, legend, background colors, and overall plaque dimensions specified for the W16-17P warning plaque.

09 The Interstate, Off-Interstate, and U.S. Route signs shall not be modified for tolled facilities.

Option:

10 Where conditions do not accommodate separate signs, or where it is important to associate a particular regulatory or warning message with specific guidance information, regulatory and/or warning messages may be combined with guide signs for toll plazas using plaques, header panels, or rectangular regulatory or warning panels incorporated within the guide signs, as long as the proper legend and background colors are preserved.

Standard:

11 When regulatory messages are incorporated within a guide sign, they shall be on a rectangular panel with a black legend on a white background. When warning messages are incorporated within a guide sign, they shall be on a rectangular panel with a black legend on a yellow background.

Guidance:

12 Guide signs for toll plazas should be designed in accordance with the general principles of guide signs and the specific provisions of Chapter 2E.

13 Signs for toll plazas should systematically provide road users with advance and toll plaza lane-specific information regarding:

A. The amount of the toll, the types of payment accepted, and the type(s) of registered ETC accounts accepted for payment;
B. Which lane or lanes are required or allowed to be used for each available payment type; and
C. Restrictions on the use of a toll plaza lane or lanes by certain types of vehicles (such as cars only or no trucks).

Standard:

14 Signs for attended lanes at toll plazas shall incorporate the Toll Collector (M4-17) symbol panel (see Figure 2F-9(VA)).

Option:

15 Signs for attended lanes at toll plazas may also display word legends, such as FULL SERVICE, CASH, CHANGE, or RECEIPTS (see Figure 2F-9(VA)), to supplement the required symbol panel when lanes have different services available through them.

Standard:

16 Signs for Exact Change lanes at toll plazas shall incorporate the Exact Change (M4-18) symbol panel and, except for ticketed systems, display the amount of the toll for passenger vehicles (see Figure 2F-9(VA)).

Option:

17 Signs for Exact Change lanes at toll plazas may include an appropriate word legend, such as EXACT CHANGE (see Figure 2F-9(VA)), to supplement the required symbol panel.

Standard:

18 When used, the M4-17 and M4-18 symbol panels shall be used only as panels within guide signs. The M4-17 and M4-18 symbols or panels shall not be used as an independent sign or within a sign assembly.

19 If only vehicles with registered ETC accounts are allowed to use a toll plaza lane, the signs for such lanes shall incorporate the pictograph adopted by the toll facility's ETC payment system and the regulatory message ONLY (see Figures 2F-1 and 2F-8(VA) through 2F-11(VA)). The use, size, and placement of the ETC pictograph shall comply with the provisions of Sections 2F.02 and 2F.03.

20 An Overhead Arrow-per-Lane guide sign (see Figure 2F-10(VA)) shall be used in advance of a location where the mainline lanes split to separate traffic entering Open-Road ETC lanes from lanes entering a toll plaza where other methods of payment are accepted and an option lane is provided at the split (see Figure 2F-11(VA)). An Overhead Arrow-per-Lane guide sign shall not be used if there is no option lane at the split.

Option:

21 The ETC payment system's pictograph, without a purple underlay or purple header panel, may be used on signs for Exact Change or attended lanes at toll plazas to indicate that vehicles with registered ETC accounts may also use those lanes.

Section 2F.13 Electronic Toll Collection (ETC) Signs – General

Support:

01 Figure 2F-8(VA) shows examples of guide signs for entrances to various types of toll highways and for ETC account-only entrances to non-toll highways.

Standard:

02 Signing for entrances to toll highways where ETC is employed only through license plate character recognition such that road users are not required to establish a toll account or register their vehicle equipment shall comply with the provisions of Paragraphs 4 and 5 of Section 2F.12.

Support:

03 Figure 2F-12(VA) shows examples of guide signs for the entrance to a toll highway on which tolls are collected electronically only and registration in a toll-account program is not required.

Standard:

04 If only vehicles with registered ETC accounts are allowed to use a toll highway, the guide signs for entrances to such facilities shall incorporate the pictograph adopted by the toll facility's ETC payment system and the regulatory message ONLY (see Figures 2F-1 and 2F-8(VA) through 2F-12(VA)). The use, size, and placement of the ETC pictograph and the use and color of the background and underlay panel shall comply with the provisions of Sections 2F.02 and 2F.03.

Support:

05 Sections 2F.05, 2F.11, and 2F.17 contain additional provisions regarding signs for toll highways that only accept ETC payments.

06 Sections 2G.16 through 2G.19 contain additional provisions regarding signs for priced managed lanes that only accept ETC payments.

07 Figure 2F-13(VA) shows an example of guide signs for alternative toll and non-toll ramp connections to a non-toll highway (see Section 2F.18).

08 Many different ETC payment systems are used by the various toll facility operators. Some of these systems accept payment from other systems' accounts.

Option:

09 Where a facility will accept payments from other systems' accounts in addition to its primary ETC-account payment system, such information may be displayed on a separate information sign near the entrances to such a facility or in advance of a toll plaza or open-road tolling lanes, as space allows between primary signs.

Section 2F.14 Advance Signs for Conventional Toll Plazas

Guidance:

01 For conventional toll plazas (those without a divergence onto a separate alignment from mainline-aligned open-road tolling or ETC-only lanes), one or more sets of overhead advance guide signs complying with the provisions of this Section should be provided. The advance guide signs for multi-lane toll plazas should provide information regarding which lanes to use for all of the toll payment methods accepted at the toll plaza. These signs should include toll plaza lane numbers (if used), or action messages or lane-use information such as LEFT LANE(S), CENTER LANE(S), RIGHT LANE(S), or down arrows over the approximate center of each applicable lane. These signs should also incorporate regulatory messages indicating any restrictions or prohibitions on the use of the lanes associated with the various types of payment methods by certain types of vehicles. For mainline toll plazas, these signs should be at least ½ mile in advance of the toll plaza, and farther if practical.

02 Additional guide signs with lane information for the toll payment types should be provided between approximately ¼ mile and 800 feet in advance of the toll plaza at a location that avoids or minimizes obstruction of toll plaza canopy signs (see Section 2F.16) and lane-use control signals.

03 The number, mounting, and/or spacing of sets of advance signs for approaches to toll plazas on ramps, toll bridges, or tunnels, to accommodate a limited distance to the plaza from an intersection or from the start of the approach road to the bridge or tunnel, should be based on an engineering study or engineering judgment.

Support:

04 Figure 2F-14(VA) shows examples of advance signs for a conventional toll plaza.

Section 2F.15 Advance Signs for Toll Plazas on Diverging Alignments from Open-Road ETC Account-Only Lanes

Support:

01 Open-Road ETC lanes are sometimes located on the normal mainline alignment while the lanes for other toll payment methods are located at a toll plaza on a separate alignment (see Figure 2F-15(VA)). Since road users paying cash tolls must diverge from the mainline alignment, similar to a movement for an exit, it is important that the guide signs in advance of and at the point of divergence clearly indicate the required lane use and/or movements.

Guidance:

02 For toll plazas located on a separate alignment that diverges from mainline-aligned Open-Road ETC lanes where vehicles are required to have a registered ETC account to use the Open-Road Tolling lanes, overhead advance signs should be provided at approximately 1 mile and ½ mile in advance of the divergence point. Both the 1-mile and ½-mile advance signs should include:

A. The ETC (pictograph) Account-Only guide sign (see Figures 2F-9(VA) and 2F-15(VA)) with a down arrow over the approximate center of each lane that will become an Open-Road ETC lane;
B. For the lane or lanes which will diverge to a toll plaza, guide signs conforming to the provisions of Section 2F.12, indicating which lane or lanes will diverge to the toll plaza for the various cash toll payment methods; and
C. Regulatory signs, plaques, or panels within the guide signs, indicating any restrictions or prohibitions of certain types of vehicles from toll plaza lanes associated with the various types of payment methods.

03 At or near the theoretical gore of the divergence point, an additional set of overhead guide signs should be provided and should include:

A. The ETC (pictograph) Account-Only guide sign (see Figures 2F-9(VA) and 2F-15(VA)) with a down arrow over the approximate center of each Open-Road ETC lane;
B. Guide signs conforming to the provisions of Section 2F.12 and 2F.13, with diagonally upward-pointing directional arrow(s) over the approximate center of each lane indicating the direction of the divergence, and providing lane information for all types of payment methods accepted at the toll plaza; and
C. Regulatory signs, plaques, or panels within the guide signs, indicating any restrictions or prohibitions on the use of the toll plaza lanes associated with the various types of payment methods by certain types of vehicles.

04 Approximately 800 feet in advance of the toll plaza at a location that avoids or minimizes any obstruction of the toll plaza canopy signs (see Section 2F.16) and lane-use control signals, an additional set of overhead advance signs with lane information for the toll payment types should be provided.

Standard:

05 The use of down and directional arrows on the signs at the locations described in Paragraphs 2 through 4 of this Section shall comply with the provisions of Section 2D.08.

Support:

06 Figure 2F-15(VA) shows an example of advance signs for toll plazas on a diverging alignment from Open-Road ETC Account-Only Lanes.

07 Section 4R.02 contains information regarding the use of lane-use control signals for Open-Road ETC lanes for temporary lane closure purposes.

Section 2F.16 Toll Plaza Canopy Signs

Standard:

01 A sign complying with the provisions of Section 2F.12 shall be provided above the approximate center of each lane that is not an Open-Road ETC lane, mounted on or suspended from the toll plaza canopy, or on a separate structure immediately in advance of the plaza located such that each sign is clearly related to an individual toll lane, indicating the payment type(s) accepted in the lane and any restrictions or prohibitions of certain types of vehicles that apply to the lane. Except for toll-ticket systems, the toll for passenger or 2-axle vehicles shall be included on the canopy sign or on a separate sign mounted on the upstream side of the tollbooth.

02 The background color of a canopy sign for an ETC Account-Only toll plaza lane shall be purple (see Figure 2F-16(VA)).

Option:

03 Where vehicles are required to have a registered ETC account to use the lane, one or two flashing yellow beacons (see Section 4R.03) may supplement a canopy sign over an ETC Account-Only lane to call special attention to the location of the ETC Account-Only lane within the plaza.

04 The canopy sign for an ETC Account-Only toll plaza lane in which a regulatory speed limit is not posted and in which vehicles are not required to stop may display an advisory speed within a horizontal rectangular panel with a black legend and yellow background within the bottom portion of the canopy sign.

Standard:

05 Flashing beacons supplementing a canopy sign over an ETC Account-Only lane shall be mounted directly above or alongside the sign in a manner that is separated from any lane-use control signals for that lane (see Figure 2F-16(VA)).

06 For multi-lane toll plazas, lane-use control signals (see Section 4R.02) shall be provided above the approximate center of each toll plaza lane that is not an Open-Road ETC lane to indicate the open or closed status of each lane. Lane-use control signals shall not be used to call attention to a lane for a specific toll payment type such as ETC Account-Only lanes.

Support:

07 Part 6 contains information regarding the closing of a lane for temporary traffic control purposes.

08 Figure 2F-16(VA) shows examples of toll plaza canopy signs.

Section 2F.17 Guide Signs for Entrances to Electronic Toll Collection (ETC) Only Facilities

Support:

01 Some toll highways, bridges, and tunnels are restricted to use only by vehicles with a specific registered ETC account, referred to as ETC Account-Only facilities. Other facilities collect tolls electronically using license plate character recognition in which the registered vehicle owner is then billed by postal mail and registration in an ETC account program is not required but could be an optional payment method. These facilities are commonly referred to as All-Electronic Tolling (AET) or Cashless Tolling.

Standard:

02 Guide signs for facilities that only collect tolls electronically shall comply with the applicable provisions of Chapter 2E and Section 2F.13.

03 Guide signs for the entrance ramps to ETC Account-Only facilities shall incorporate the pictograph of the toll facility's primary ETC payment system and the word ONLY in a header panel or plaque designed in accordance with the provisions of Section 2F.13 (see Figure 2F-8(VA)).

Option:

04 A separate information sign displaying the route number, the TOLL warning panel (see Section 2F.11), and the legend NO CASH may be located within the sequence of the Advance guide signs on the approach to the entrance to an ETC Account-Only facility ~~(see Drawing B in Figure 2F-12)~~.

05 Exit Gore signs for entrance ramps to such ETC Account-Only facilities may incorporate the pictograph of the toll facility's ETC payment system and the word ONLY in a header panel or plaque designed in accordance with the provisions of Section 2F.13 (see Figure 2F-13(VA) and Drawing B in Figure 2F-12(VA)).

06 If more than one ETC account program is accepted for toll payments on an ETC Account-Only facility, the additional accepted ETC account program pictographs may be displayed on a separate informational guide sign with the legend, ALSO ACCEPTED, within the sequence of advance guide signs for the entrance to the facility.

Support:

07 Section 2F.05 contains information regarding ETC Account-Only signs and plaques for use with route signs in route sign assemblies.

Standard:

08 Where vehicles are not required to have a registered ETC account to use an ETC-Only facility, guide signs for the facility shall comply with the applicable provisions of Chapter 2E and specifically with the applicable provisions of Section 2F.13.

09 Advance and Exit Direction guide signs for the entrances to facilities that do not require registration in an ETC toll account program shall not display a pictograph of an accepted ETC payment system or use purple as a background color on any portion of the signs.

10 Information on accepted toll payment methods for a facility that does not require registration in an ETC toll account program shall only be provided on a separate informational guide sign, if used, that displays one of the following legends (see Drawing C in Figure 2F-12(VA)):

A. TOLL BILLED BY MAIL ONLY, if there is no alternative payment method; or

B. TOLL BILLED BY MAIL OR [ETC Account Pictograph], if the facility also accepts payments from registered users of an ETC account program.

Option:

11 If there is more than one ETC toll account program accepted, all ETC account program pictographs of the accepted ETC accounts may be displayed on the separate informational guide sign below the TOLL BILLED BY MAIL OR legend. A plaque with the legend NO CASH may be added below the signs described in Paragraph 10 of this Section.

Guidance:

12 The signs described in Paragraph 10 of this Section should be located within the sequence of Advance Guide signs for the entrance to the facility and/or at a location along the facility itself (see Drawing C in Figure 2F-12(VA)).

Option:

13 If the ETC-Only facility also accepts payments from multiple ETC account programs, but does not require registration in the primary ETC account program associated with the facility in order to use the facility, then the pictographs of the other accepted ETC account programs may be displayed on the separate information sign beneath the legend TOLL BILLED BY MAIL and the word OR.

14 If, in addition to a toll, a nominal surcharge (not a fine, penalty, or violation) is assessed road users not registered in the toll account program, or registered toll account users are assessed a discounted toll, such information may be displayed on a separate information sign on the approach to the entrance to the facility.

Section 2F.18 Guide Signs for ETC-Only Entrance Ramps to Non-Toll Highways

Support:

01 In some cases, access to or from a non-toll route might be provided by a ramp on which a toll is charged in order to manage congestion, limit access, or for other reasons. The toll ramp might be provided as an alternative to or in lieu of a ramp providing similar access without charging a toll. Figures 2F-8(VA) and 2F-13(VA) show examples of guide signs for a ramp on which a toll is charged to enter a non-toll route.

Standard:

02 Guide signs for ETC-Only Entrance Ramps to non-toll highways shall comply with the provisions of Section 2F.17.

Option:

03 A NO TOLL panel with a black legend and a yellow background may be included on the top section of the Exit Gore sign for an exit that provides access to the facility without charging a toll ~~(see Figure 2F-8)~~.

Section 2F.19 ETC Account Program Information Signs

Standard:

01 Except as provided in Paragraph 2 of this Section, signs that inform road users of telephone numbers, Internet addresses, including domain names and uniform resource locators (URLs), or e-mail addresses for enrolling in an ETC account program of a toll facility or managed lane, obtaining an ETC transponder, and/or obtaining ETC account program information shall only be installed in rest areas,

parking areas, or similar roadside facilities where the signs are viewed only by pedestrians or occupants of parked vehicles.

Option:

02 ETC account program information signs displaying telephone numbers that have no more than four characters may be installed on roadways in locations where they will not obscure the road user's view of higher priority traffic control devices and that are removed from key decision points where the road user's view is more appropriately focused on other traffic control devices, roadway geometry, or traffic conditions, including exit and entrance ramps, intersections, toll plazas, temporary traffic control zones, and areas of limited sight distance.

CHAPTER 2G. PREFERENTIAL AND MANAGED LANE SIGNS

Chapter 2G Subchapter and Section Organization

GENERAL

Section 2G.01 Scope

Support:

01 Preferential lanes are lanes designated for special traffic uses such as high-occupancy vehicles (HOVs), light rail, buses, or taxis. Preferential lane treatments might be as simple as restricting a turning lane to a certain class of vehicles during peak periods, or as sophisticated as providing a separate roadway system within a highway corridor for certain vehicles.

02 Preferential lanes might be barrier-separated (on a separate alignment or physically separated from the other travel lanes by a barrier or median), buffer-separated (separated from the adjacent general-purpose lanes only by a narrow buffer area created with longitudinal pavement markings), or contiguous (separated from the adjacent general-purpose lanes only by a lane line). Preferential lanes might allow continuous access with the adjacent general-purpose lanes or restrict access only to designated locations. Preferential lanes might be operated in a constant direction or operated as reversible lanes. Some reversible preferential lanes on a divided highway might be operated counter-flow to the direction of traffic on the immediately adjacent general-purpose lanes.

03 Preferential lanes might be operated on a 24-hour basis, for extended periods of the day, during peak travel periods only, during special events, or during other activities.

04 Open-road tolling lanes and toll plaza lanes that segregate traffic based on payment method are not considered preferential lanes. Chapter 2F contains information regarding signing of open-road tolling lanes and toll plaza lanes.

05 Managed lanes typically restrict access with the adjacent general-purpose lanes to designated locations only.

06 Under certain operational strategies, such as the occupancy requirement of an HOV lane changing in response to actual congestion levels, a managed lane is a special type of preferential lane (see Sections 2G.03 through 2G.07).

07 A managed lane operated on a real-time basis in response to changing conditions might be operated as an HOV lane for a period of time as needed to manage congestion levels.

08 Sections 2G.17 through 2G.19 contain additional information regarding signs for managed lanes that use tolling or pricing as a management strategy.

09 Section 9B.04 contains information regarding Preferential Lane signs for bicycle lanes.

Standard:

10 Unless otherwise provided, the provisions of this Chapter shall not apply to bicycle lanes.

Section 2G.02 Sizes of Preferential and Managed Lane Signs

Standard:

01 Except as provided in Section 2A.07, the minimum sizes of preferential and managed lane signs that have standardized designs shall be as shown in Table 2G-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2G-1.

Option:

03 Signs larger than those shown in Table 2G-1 may be used (see Section 2A.07).

REGULATORY SIGNS

Section 2G.03 Regulatory Signs for Preferential Lanes – General

Standard:

01 When a preferential lane is established, the Preferential Lane regulatory signs (see Figure 2G-1) and pavement markings (see Chapter 3E) for these lanes shall be used to advise road users.

Support:

02 Preferential Lane (R3-10 series through R3-15 series) regulatory signs (see Figure 2G-1) consist of several different general types of regulatory signs as follows:

A. Vehicle Occupancy Definition signs define the vehicle occupancy requirements applicable to an HOV lane (such as "2 OR MORE PERSONS PER VEHICLE") or types of vehicles not meeting the minimum occupancy requirement (such as motorcycles or Inherently Low Emission Vehicles (ILEVs)) that are allowed to use an HOV lane (see Section 2G.04).
B. Preferential Lane Operation signs notify road users of the days and hours during which the preferential restrictions are in effect (see Section 2G.05).
C. Preferential Lane Advance signs notify road users that a preferential lane restriction begins ahead (see Section 2G.06).
D. Preferential Lane Ends signs notify users of the termination point of the preferential lane restrictions (see Section 2G.07).

Standard:

03 Regulatory signs applicable only to a preferential lane shall be distinguished from regulatory signs applicable to general-purpose lanes by the inclusion of the applicable symbol(s) and/or word(s) (see Figure 2G-1).

Support:

04 The symbol and word message displayed on a particular Preferential Lane regulatory sign will vary based on the specific type of allowed traffic and on other related operational constraints that have been established for a particular lane, such as an HOV lane, a bus lane, or a taxi lane.

Option:

05 Changeable message signs may supplement, substitute for, or be incorporated into static Preferential Lane regulatory signs where travel conditions change or where multiple types of operational strategies (such as variable occupancy requirements or vehicle types) are used and varied throughout the day or week, or on a real-time basis, to manage the use of, control of, or access to preferential lanes.

Support:

06 Figure 2G-1 illustrates examples of changeable messages incorporated into static Preferential Lane regulatory signs displaying open and closed status using lane-use control signal indications (see Chapter 4T).

Standard:

07 When changeable message signs (see Chapter 2L) are used as regulatory signs for preferential lanes, they shall be the required sign size and shall display the required letter height and legend format that corresponds to the type of roadway facility and design speed.

Guidance:

08 When Preferential Lane regulatory signs are used on conventional roads, the decision regarding whether to use a post-mounted or overhead version of a particular type of sign should be based on an engineering study that considers the available space, the existing signs for the adjacent general-purpose traffic lanes, roadway and traffic characteristics, the proximity to existing overhead signs, the ability to install overhead signs, and any other unique local factors.

09 If overhead regulatory signs applicable only to a preferential lane are located in approximately the same longitudinal position along the highway as overhead signs applicable only to the general-purpose lanes, the signs for the preferential lane should be separated laterally from the signs for the general-purpose lanes to the maximum extent practicable to minimize conflicting information, while maintaining their visual relationship to the lanes below necessitated by specific legend or arrows indicating lane assignment.

Standard:

10 If used, overhead Preferential Lane (R3-13 series, R3-14 series, and R3-15 series) regulatory signs shall be installed on the side of the roadway where the entrance to the preferential lane is located and any appropriate adjustments shall be made to the sign message.

Option:

11 Where a median of sufficient width is available, the R3-13 series and R3-15 series signs may be post-mounted.

Support:

12 The sizes for Preferential Lane regulatory signs will differ to reflect the design speeds for each type of roadway facility. Table 2G-1 provides sizes for each type of roadway facility.

Guidance:

13 The edges of Preferential Lane regulatory signs that are post-mounted on a median barrier should not project beyond the outer edges of the barrier, including in areas where lateral clearance is limited.

Option:

14 Where lateral clearance is limited, Preferential Lane regulatory signs that are post-mounted on a median barrier and that are 72 inches or less in width may be skewed up to 45 degrees in order to fit within the barrier width or may be mounted higher, such that the vertical clearance to the bottom of the sign, light fixture, or structural support, whichever is lowest, is not less than 17 feet above any portion of the pavement and shoulders.

Standard:

15 Where lateral clearance is limited, Preferential Lane regulatory signs that are post-mounted on a median barrier and that are wider than 72 inches shall be mounted with a vertical clearance that complies with the provisions of Section 2A.~~14~~13 for overhead mounting if any portion of the sign extends over the roadway.

Guidance:

16 On conventional roadways, Preferential Lane regulatory sign spacing should be determined by engineering judgment based on speed, block length, distances from adjacent intersections, and other site-specific considerations.

Support:

17 Sections 2G.04 and 2G.05 contain provisions regarding the placement of Preferential Lane regulatory signs on freeways and expressways.

Standard:

18 The signs illustrated in Figure 2G-1 that incorporate the diamond symbol shall be used exclusively with preferential lanes for high-occupancy vehicles to indicate the particular occupancy requirement and time restrictions applying to that lane. The signs illustrated in Figure 2G-1 that do not have a diamond symbol shall be used with preferential lanes that are not HOV lanes, but are designated for use by other types of vehicles (such as bus and/or taxi use).

19 The diamond symbol shall not be used on the bus, taxi, or bicycle Preferential Lane signs.

20 Vehicle Occupancy Definition, Preferential Lane Operation, and Preferential Lane Advance regulatory signs for HOV lanes shall display the minimum allowable vehicle occupancy requirement established for each HOV lane, displayed immediately after the word message HOV.

20a The diamond symbol shall not be used on signs intended for lanes that have multiple restriction types and one or more of the restricted types is a non-HOV (e.g. where vehicles not meeting the minimum allowable vehicle occupancy requirement can legally access the lane by paying a toll).

Support:

21 The agencies that own and operate HOV lanes have the authority and responsibility to determine how they are operated and the minimum occupancy requirements. Information about federal requirements for certain types of vehicles not meeting the minimum occupancy requirement to be eligible to use HOV lanes that receive Federal-aid program funding and about requirements associated with proposed significant

changes to the operation of an existing HOV lane and certain vehicles are contained in the "Federal-Aid Highway Program Guidance on High Occupancy Vehicle (HOV) Lanes."

22 Figures 2G-2 and 2G-3 illustrate the use of regulatory signs for the beginning, along the length, and at the end of contiguous or buffer-separated preferential lanes that provide continuous access with the adjacent general-purpose lanes.

Section 2G.04 Vehicle Occupancy Definition Signs (R3-10 Series and R3-13 Series)

Standard:

01 The R3-10, R3-13, and R3-13a Vehicle Occupancy Definition signs (see Figure 2G-1) shall be used where agencies determine that it is appropriate to provide a sign that defines the minimum occupancy of vehicles that are allowed to use an HOV lane.

Guidance:

02 The Inherently Low Emission Vehicle (ILEV) (R3-10a) sign (see Figure 2G-1) should be used when it is permissible for a properly labeled and certified ILEV, regardless of the number of occupants, to use an HOV lane. When used, the ILEV signs should be post-mounted in advance of and at intervals along the HOV lane based upon engineering judgment and the placement of other Preferential Lane regulatory signs. The R3-10a sign is only applicable to HOV lanes and should not to be used with other preferential lane applications.

Support:

03 ILEVs are defined by the Environmental Protection Agency (EPA) as vehicles having no fuel vapor (hydrocarbon) emissions and are certified by the EPA as meeting the emissions standards and requirements specified in 40 CFR §88.311-93 and 40 CFR §88.312-93(c).

04 Section 2G.18 contains information regarding the legends of Vehicle Occupancy Definition signs for a priced managed lane that has an occupancy requirement for non-toll travel.

Standard:

05 For barrier-separated, buffer-separated, or contiguous preferential lanes where access between the preferential and general-purpose lanes is restricted to designated locations on freeways and expressways, an overhead Vehicle Occupancy Definition (R3-13 or R3-13a) sign shall be installed at least ½ mile in advance of the beginning of or initial entry point to an HOV lane. These signs shall only be displayed in advance of the beginning of or initial or intermediate entry point to HOV lanes.

06 For buffer-separated or contiguous HOV lanes where access is restricted to designated locations on freeways and expressways, the sequence of a post-mounted Preferential Lane Operation (R3-11a) sign (see Section 2G.05) followed by a post-mounted Vehicle Occupancy Definition (R3-10) sign shall be located at intervals not greater than ½ mile along the length of designated gaps where vehicles are allowed to legally access the HOV lane, and within designated enforcement areas as defined by the operating agency.

Option:

07 For buffer-separated or contiguous HOV lanes where access is restricted to designated locations on freeways and expressways, the sequence of a post-mounted Preferential Lane Operation (R3-11a) sign (see Section 2G.05) followed by a post-mounted Vehicle Occupancy Definition (R3-10) sign may be located at intervals of approximately ½ mile along the length of the HOV lane.

08 For barrier-separated HOV lanes on freeways and expressways, the sequence of a post-mounted Preferential Lane Operation (R3-11a) sign (see Section 2G.05) followed by a post-mounted Vehicle Occupancy Definition (R3-10) sign may be located at intervals of approximately ½ mile along the length of the HOV lane, at intermediate entry points, and at designated enforcement areas as defined by the operating agency.

Standard:

09 For buffer-separated or contiguous HOV lanes where continuous access with the adjacent general-purpose lanes is provided on freeways and expressways, the sequence of a post-mounted Preferential Lane Operation (R3-11a) sign (see Section 2G.05) followed by a post-mounted Vehicle

Occupancy Definition (R3-10) sign, and ILEV (R3-10a) signs, if appropriate, shall be located at intervals not greater than ½ mile along the length of the HOV lane.

Guidance:

10 On freeways and expressways, the signs within each Preferential Lane regulatory sign sequence should be separated by a minimum distance of 800 feet and a maximum distance of 1,000 feet.

Option:

10a Distances shorter than 800 feet or longer than 1000 feet may be used if other regulatory or warning signs are placed in this area and engineering judgement determines it is appropriate to spread signs.

Guidance:

11 On conventional roads, the distance between Preferential Lane regulatory signs within each sequence should be determined by engineering judgment based on speed, block length, distances from adjacent intersections, and other site-specific considerations.

11a On conventional roads at interchanges providing access to a toll facility, signs showing the amount of toll should be located far enough from on-ramps so that drivers are able to make a decision whether to use the facility and transition into the appropriate lane.

Standard:

12 For all types of direct access ramps that provide access to or lead to HOV lanes, a post-mounted Vehicle Occupancy Definition (R3-10) sign, and an ILEV (R3-10a) sign, if appropriate, shall be used at the beginning or initial entry point for the direct access ramp.

Section 2G.05 Preferential Lane Operation Signs (R3-11 Series and R3-14 Series)

Support:

01 The standardized sizes of post-mounted Preferential Lane Operation (R3-11 series) signs are consistent to accommodate any future addition or removal of a single line of legend for each sign. Each size accommodates two lines of legend for the times of day and days of week that the regulation is in effect. Consistent sign sizes are beneficial for agencies when ordering sign materials, as well as when making legend changes to existing signs if changes occur to operating times or occupancy restrictions in the future.

Guidance:

02 Where the regulation is in effect during more than one time period of the day, such as during the morning and afternoon peak periods, the height of the R3-11 and R3-14 series signs should be suitably increased to accommodate the additional line(s) of legend.

Standard:

03 When used, the post-mounted Preferential Lane Operation (R3-11 series) signs shall be located adjacent to the preferential lane, and the overhead Preferential Lane Operation (R3-14 series) signs shall be mounted directly over the lane.

04 The legend format of the post-mounted Preferential Lane Operation (R3-11 series) signs shall have the following sequence:

- **A. Top Lines: Lanes applicable, such as "RIGHT LANE" or "2 RIGHT LANES"**
- **B. Middle Lines: Eligible uses, such as "HOV 2+ ONLY" (or 3+ or 4+, if appropriate) or "BUSES ONLY" or other applicable uses or eligible turning movements**
- **C. Bottom Lines: Applicable times and days, such as "7 AM – 9 AM" or "6:30 AM – 9:30 AM, MON-FRI"**

05 The legend format of the overhead Preferential Lane Operation (R3-14 series) signs shall have the following sequence:

- **A. Top Lines: Eligible uses, such as "HOV 2+ ONLY" (or 3+ or 4+, if appropriate) or "BUSES ONLY" or other applicable uses or eligible turning movements**
- **B. Bottom Lines: Applicable times and days, with the time and day placed above the down arrow, such as "7 AM – 9 AM" or "6:30 AM – 9:30 AM, MON-FRI." When the operating periods exceed the available line width, the hours and days of the week shall be stacked as shown for the R3-14a sign in Figure 2G-1.**

06 For preferential lane restrictions that are in effect on a full-time (24 hours per day, seven days per week) basis, the Preferential Lane Operation (R3-11b, R3-11c, R3-11e, R3-11g, R3-14b, R3-14e, and R3-14g) signs that include a period of operation legend shall be modified to display no legend relative to the period of operation except as provided in Paragraph 7 of this Section.

Option:

07 In lieu of removing the period of operation text from the Preferential Lane Operation signs for full-time operation, the legend 24 HOURS may be substituted for the times and days of the week on the Preferential Lane Operation (R3-11, R3-11a, R3-11d, R3-11f, R3-14, R3-14d, and R3-14f) signs for preferential lane restrictions that are in effect on a full-time basis.

Support:

08 The 24 HOURS legend displayed on the R3-11c sign reinforces the full-time operation where several facilities in the same area have different hours of operation—some part time, others full time, or where the same lane changes from part-time to full-time operation somewhere along its length.

Standard:

09 The full-time Preferential Lane Operation (R3-11b, R3-11c, R3-11e, R3-11g, R3-14b, R3-14e, and R3-14g) signs that do not display a period of operation legend, as described in Paragraph 6 of this Section, shall not be used where the preferential lane restriction is in effect only on a part-time basis.

Option:

10 Where additional movements are allowed from a preferential lane on an approach to an intersection by vehicles not meeting the preferential lane regulation, the format and words used in the legend in the middle lines on the post-mounted Preferential Lane Operation (R3-11 series) signs and on the top line of the overhead Preferential Lane Operation (R3-14 series) signs may be modified to accommodate the allowable movements (such as "HOV 2+ AND RIGHT TURNS ONLY").

11 The MOTORCYCLES ALLOWED (R3-11hP) plaque (see Figure 2G-1) may be used where motorcycles, regardless of the number of occupants, are allowed to use an HOV lane.

Standard:

12 If used, the MOTORCYCLES ALLOWED plaque shall be mounted below a post-mounted Preferential Lane Operation (R3-11, R3-11a, or R3-11b) sign.

13 For all barrier-separated or buffer-separated or contiguous preferential lanes where access is restricted to designated locations, an overhead Preferential Lane Operation (R3-14 series) sign shall be used at the beginning or initial entry point on freeways, expressways, and at locations on conventional roadways where the preferential lane is not the outermost (far right or far left) lane of the roadway, and at any intermediate entry points or gaps in the barrier or buffer where vehicles are allowed to legally enter the access-restricted preferential lanes. For all barrier-separated and buffer-separated preferential lanes, post-mounted Preferential Lane Operation (R3-11 series) signs shall be used only as a supplement to the overhead signs on freeways, expressways, and at locations on conventional roadways where the preferential lane is not the outermost lane of the roadway at the beginning or initial entry point, or at any intermediate entry points or gaps in the barrier or buffer.

14 For buffer-separated or contiguous preferential lanes where continuous access with the adjacent general-purpose lanes is provided, including those where a preferential lane is added to the roadway (see Figure 2G-2 for HOV lanes) and those where a general-purpose lane transitions into a preferential lane (see Figure 2G-3 for HOV lanes), an overhead Preferential Lane Operation (R3-14 series) sign shall be used at the beginning or initial entry point of the preferential lane on freeways and expressways.

Option:

15 On conventional roads where preferential lane operations exist, R3-11 series post-mounted signs may be used in lieu of or in addition to overhead R3-14 series signs, except where overhead signs are required as provided in Paragraph 14 of this Section.

16 Additional overhead (R3-14 series) or post-mounted (R3-11 series) Preferential Lane Operation signs may be provided along the length of any type of preferential lane.

Standard:

17 For all types of direct access ramps that provide access to or lead to preferential lanes, a post-mounted Preferential Lane Operation (R3-11 series) sign shall be used at the beginning or initial entry point of the direct access ramp.

Option:

18 For direct access ramps to preferential lanes, an overhead Preferential Lane Operation (R3-14 series) sign may be used at the beginning or initial entry point to supplement the required post-mounted signs.

19 Lane-use control signals (see Chapter 4T) may be used at access points to preferential lanes to indicate that a ramp or access roadway leading to the preferential lane or facility, or one or more specific lanes of the facility, are open or closed (see Figure 2G-1).

Section 2G.06 Preferential Lane Advance Signs (R3-12, R3-12e, R3-12f, R3-15, R3-15a, and R3-15d)

Guidance:

01 The Preferential Lane Advance (R3-12, R3-12f, R3-15, and R3-15d) signs (see Figure 2G-1) should be used for advance notification of a barrier-separated, buffer-separated, or contiguous preferential lane that is added to the general-purpose lanes (see Figure 2G-2).

02 The Preferential Lane Advance (R3-12e and R3-15a) signs (see Figure 2G-1) should be used for advance notification of a general-purpose lane that becomes a preferential lane (see Figure 2G-3).

Option:

03 The legends on the R3-12f and R3-15d signs may be modified to suit the type of preferential lane.

Guidance:

04 On conventional roads, for general-purpose lanes that become preferential lanes, a post-mounted (R3-12e) or overhead (R3-15a) Preferential Lane Advance sign should be installed in advance of the beginning of or initial entry point to the preferential lane at a distance determined by engineering judgment based on speed, traffic characteristics, and other site-specific considerations. The distance selected should provide adequate opportunity for ineligible vehicles to vacate the lane prior to the beginning of the restriction.

05 On freeways and expressways, for general-purpose lanes that become preferential lanes, an overhead Preferential Lane Advance (R3-15a) sign should be installed at least 1 mile in advance of the beginning of the preferential lane restriction.

Option:

06 Additional post-mounted or overhead Preferential Lane Advance signs may be placed farther in advance of or closer to the beginning or initial entry points to a preferential lane.

Section 2G.07 Preferential Lane Ends Signs (R3-12a, R3-12b, R3-12c, R3-12d, R3-12g, R3-12h, R3-15b, R3-15c, and R3-15e)

Standard:

01 A post-mounted Preferential Lane Ends (R3-12b or R3-12h) sign (see Figure 2G-1) shall be installed at least ½ mile in advance of the termination of a preferential lane on freeways and expressways.

02 Except as provided in Paragraph 7 of this Section, a post-mounted Preferential Lane Ends (R3-12a or R3-12g) sign shall be installed at the point where a preferential lane and restriction end and traffic must merge into the general-purpose lanes.

03 A post-mounted Preferential Lane Ends (R3-12d) sign (see Figure 2G-1) shall be installed at least ½ mile in advance of the point where a preferential lane restriction ends and the lane becomes a general-purpose lane on freeways and expressways.

03a A post-mounted Preferential Lane Ends (R3-12d) sign and a Preferential Lane Advance (R3-12e) sign (see Figure 2G-1) shall be installed at least ½ mile in advance of the point where a preferential lane restriction changes from one restriction type to another.

04 Except as provided in Paragraph 8 of this Section, a post-mounted Preferential Lane Ends (R3-12c) sign shall be installed at the point where a preferential lane restriction ends and the lane becomes a general-purpose lane.

Guidance:

05 On conventional roads, the distance at which Preferential Lane Ends signs are installed in advance of the termination of a preferential lane and/or restriction should be determined by engineering judgment.

Option:

06 The legends on the R3-12g and R3-15e signs may be modified to suit the type of preferential lane.

07 An overhead Preferential Lane Ends (R3-15b or R3-15e) sign may be installed instead of or in addition to a post-mounted R3-12a or R3-12g sign at the point where a preferential lane and restriction ends and traffic must merge into the general-purpose lanes.

08 An overhead Preferential Lane Ends (R3-15c) sign may be installed instead of or in addition to a post-mounted R3-12c sign at the point where the preferential lane restriction ends and the lane becomes a general-purpose lane.

WARNING SIGNS AND PLAQUE

Section 2G.08 Warning Signs on Median Barriers for Preferential Lanes

Option:

01 When a warning sign applicable only to a preferential lane is installed on a median barrier with limited lateral clearance to the adjacent travel lanes or shoulders, the warning sign may have a vertically-oriented rectangular shape. For a high-occupancy vehicle lane, such signs may be used instead of using the HOV (W16-11P) plaque (see Section 2G.09) with a standard diamond-shaped warning sign.

Standard:

02 When a vertically-oriented rectangular-shaped warning sign applicable only to a preferential lane is installed on a median barrier, the top portion of the sign shall be comprised of a white symbol or legend denoting the type of preferential lane (such as the diamond symbol for HOV or the legend BUS LANE) on a black background with a white border, and the bottom portion of the sign shall be comprised of the standard word message or symbol of the standard warning sign as a black legend on a yellow background with a black border (see Figure 2G-4).

Guidance:

03 Where lateral clearance is limited, such as when a post-mounted warning sign applicable only to a preferential lane is installed on a median barrier, the edges of the sign should not project beyond the outer edges of the barrier.

Option:

04 Where lateral clearance is limited, warning signs applicable only to a preferential lane that are post-mounted on a median barrier and that are 72 inches or less in width may be skewed up to 45 degrees in order to fit within the barrier width or may be mounted higher, such that the vertical clearance to bottom of the sign, light fixture, or its structural support, whichever is lowest, is not less than 17 feet above any portion of the pavement and shoulders.

Standard:

05 Where lateral clearance is limited, Preferential Lane warning signs that are post-mounted on a median barrier and that are wider than 72 inches shall be mounted with a vertical clearance that complies with the provisions of Section 2A.15 for overhead mounting.

Section 2G.09 High-Occupancy Vehicle (HOV) Plaque (W16-11P)

Option:

01 In situations where there is a need to warn drivers in an HOV lane of a specific condition, the HOV (W16-11P) plaque (see Figure 2G-4) may be used above a warning sign. The HOV plaque may be used to differentiate a warning sign applicable to the HOV lanes when the sign is also visible to traffic on the adjacent general-purpose roadway. Among the warning signs that may be possible applications of the HOV plaque are the Advisory Exit Speed, Added Lane, and Merge signs.

02 The diamond symbol may be used instead of the word message HOV on the W16-11P plaque. When appropriate, the words LANE or ONLY may be used on this plaque.

Support:

03 Section 2G.08 contains information regarding warning signs that can be mounted on barriers for HOV or other types of preferential lanes.

GUIDE SIGNS

Section 2G.10 Preferential Lane Guide Signs – General

Support:

01 Preferential lanes are used on freeways, expressways, and conventional roads. Except as otherwise provided, Sections 2G.10 through 2G.15 apply only to guide signs for preferential lanes on freeways and expressways.

Guidance:

02 On conventional roads, guide signs applicable only to preferential lanes are ordinarily not needed, but if used, they should comply with the provisions for guide signs in Chapter 2D and any principles for Preferential Lane guide signs in Sections 2G.10 through 2G.15 that engineering judgment finds to be appropriate for the conditions.

Support:

03 Additional guidance and standards related to the designation, operational considerations, signs, pavement markings, and other considerations for preferential lanes are provided in Sections 2G.03 through 2G.07, 2G.09, and Chapter 3E.

Guidance:

04 The appropriate combinations of pavement markings and standard overhead and post-mounted regulatory, warning, and guide signs for a specific preferential lane application should be selected based on an engineering study.

05 If overhead signs applicable only to a preferential lane are located in approximately the same longitudinal position along the highway as overhead signs applicable only to the general-purpose lanes, the signs for the preferential lane should be separated laterally from the signs for the general-purpose lanes to the maximum extent practicable to minimize conflicting information.

06 The Preferential Lane signs should be designed and located to avoid overloading the road user. The order of priority of guide signs should be Advance Guide, Preferential Lane Entrance Direction, and finally Preferential Lane Exit Destination Supplemental guide signs.

Standard:

07 Signs applicable only to a preferential lane shall be distinguished from signs applicable to general-purpose lanes by the inclusion of the applicable symbol(s) and/or word(s).

Support:

08 The symbol and/or word message that appears on a particular guide sign applicable only to a preferential lane will vary based on the specific type of traffic allowed and on other related operational constraints that have been established for a particular lane, such as an HOV lane, a bus lane, or a taxi lane.

Standard:

09 For HOV lanes, the diamond symbol shall appear on each Advance Guide (E8-3) sign (see Figure 2G-5), Preferential Lane Entrance Direction (E8-2 or E8-2a) sign (see Figure 2G-6), and Preferential Lane Entrance Gore (E8-1 or E8-1a) sign (see Figure 2G-7) for the designated entry and exit points for barrier-separated and buffer-separated geometric configurations and direct access ramps to or from such lanes. The diamond symbol shall not be used with preferential lanes for other types of traffic, such as bus lanes or taxi lanes.

10 Signing for an HOV lane that is managed by means of varying the occupancy requirement in response to changing conditions shall also comply with these provisions.

11 The diamond symbol shall be displayed in the legend of each Preferential Lane guide sign at the designated entry and exit points for all types of HOV lanes (including barrier-separated, buffer-separated, contiguous, and direct access ramps) in order to alert motorists that there is a minimum allowable vehicle occupancy requirement for vehicles to use the HOV lanes. Guide signs shall not display the occupancy requirement for the preferential lane.

12 A combination of guide and regulatory signs shall be used in advance of and at the initial entry point and all intermediate entry points from general-purpose lanes or facilities to contiguous, barrier-

separated, and buffer-separated preferential lanes where access between the preferential and general-purpose lanes is restricted to designated locations. The regulatory signs shall comply with the provisions of Sections 2G.03 through 2G.07.

13 Regulatory signs alone shall be used in advance of, at the beginning of, and at periodic intervals along contiguous or buffer-separated preferential lanes that provide continuous access between the adjacent general-purpose lanes and the preferential lane (see Figures 2G-2 and 2G-3). The design and placement of the regulatory signs shall comply with the provisions of Sections 2G.03 through 2G.07.

14 Except as otherwise provided in Sections 2G.10 through 2G.13, guide signs applicable to a preferential lane with a vehicle occupancy requirement shall be distinguished from those applicable to general-purpose lanes by displaying the white diamond symbol on a black background at the left-hand edge of these signs.

Option:

15 When post-mounted guide signs applicable only to a preferential lane are installed on a median barrier with limited lateral clearance to the adjacent travel lanes or shoulders, the guide signs may have a vertically-oriented rectangular shape.

Standard:

16 When vertically-oriented rectangular-shaped guide signs applicable only to a preferential lane are installed on a median barrier, the top portion of the signs shall be comprised of the applicable white symbol or white word message that identifies the type of preferential lane (such as the diamond symbol for an HOV lane) on a black background with a white border, and the bottom portion of the sign shall be comprised of the appropriate guide sign legend on a green background with a white border (see Figures 2G-7 through 2G-9).

Guidance:

17 Where lateral clearance is limited, such as when a post-mounted Preferential Lane guide sign is installed on a median barrier, the edges of the sign should not project beyond the outer edges of the barrier.

Option:

18 Where lateral clearance is limited, Preferential Lane guide signs that are 72 inches or less in width may be skewed up to 45 degrees in order to fit within the barrier width or may be mounted higher, such that the vertical clearance to the bottom of the sign, light fixture, or its structural support, whichever is lowest, is not less than 17 feet above any portion of the pavement and shoulders.

Standard:

19 Where lateral clearance is limited, Preferential Lane guide signs that are post-mounted on a median barrier and that are wider than 72 inches shall be mounted with a vertical clearance that complies with the provisions of Section 2A.15 for overhead mounting.

Option:

20 Lane-use control signals (see Chapter 4T) may be used at access points to preferential lanes to indicate that a ramp or access roadway leading to or from the preferential lane or facility, or one or more specific lanes of the facility, are open or closed.

21 Changeable message signs may supplement, substitute for, or be incorporated into static guide signs (see Figure 2G-6) where travel conditions change or where multiple types of operational strategies (such as variable occupancy requirements, vehicle types, or pricing policies) are used and varied throughout the day or week to manage the use of, control of, or access to preferential lanes.

Standard:

22 When changeable message signs (see Chapter 2L) are used as guide signs for preferential lanes, they shall be the required sign size and shall display the required letter height and legend format that correspond to the type of roadway facility and design speed.

23 Advance Guide signs, Preferential Lane Entrance Direction signs, and Preferential Lane Entrance Gore signs for the initial entry point and intermediate entry points into a preferential lane from the general-purpose lanes on the same designated route shall not identify the entry point as an exit by using the word "EXIT" on the sign or on a plaque.

Guidance:

24 Advance Guide signs and Preferential Lane Entrance Direction signs for initial and intermediate entry points into a preferential lane should use the word "ENTRANCE," such as "HOV LANE ENTRANCE" (see Figures 2G-5 and 2G-6), to convey the fact that vehicles are not leaving the designated route.

25 Preferential Lane Entrance Gore signs (see Figure 2G-7) at the initial entry point to a preferential lane should use the word "ENTRANCE." Preferential Lane Entrance Gore signs at intermediate entry points to a barrier-separated preferential lane where the sign would be located immediately adjacent to and directly viewed by traffic in the preferential lane should not use the word "ENTRANCE."

Standard:

26 When the entry point is on the left-hand side of the general-purpose lanes, a LEFT (E1-5aP) plaque (see Figure 2E-9) shall be added to the top left edge of the Advance Guide and Preferential Lane Entrance Direction signs. The LEFT plaque shall not be used on a preferential lane regulatory sign.

Section 2G.11 Signing for Initial Entry Points to Preferential Lanes

Standard:

01 Except where a buffer-separated or contiguous preferential lane is added or where a general-purpose lane becomes a buffer-separated or contiguous preferential lane, and provides continuous access with the adjacent general-purpose lanes as illustrated in Figures 2G-2 and 2G-3, an Advance Guide sign shall be provided at least ½ mile prior to the initial entry point to all types of preferential lanes in any type of geometric configuration on freeways and expressways. A Preferential Lane Entrance Direction sign shall also be provided at the initial entry point. Advance Guide and Preferential Lane Entrance Direction signs for such entry points shall not include the word "EXIT" (see Section 2G.10).

02 Where a general-purpose lane becomes a preferential lane that does not provide continuous access with the adjacent general-purpose lanes, an Advance Guide sign shall also be provided at approximately 1 mile in advance of the initial entry point. The Advance Guide and Entrance Direction signs in this sequence shall include a panel at the bottom of the sign with a black legend and border on a yellow background displaying a down arrow and the word ONLY as illustrated in Figure 2G-8.

Guidance:

03 Unless an Advanced Guide Sign is already required in Paragraph 2 of this Section, an Advance Guide sign should also be installed and located approximately 1 mile in advance of the initial entry point to a preferential lane on freeways and expressways that restricts access to the adjacent general-purpose lanes.

Option:

04 An Advance Guide sign may also be installed and located approximately 2 miles in advance of the initial entry point to a preferential lane that restricts access with the adjacent general-purpose lanes to designated locations.

Standard:

05 For barrier-separated, buffer-separated, or contiguous preferential lanes where entry is restricted to only designated points on freeways and expressways, the Advance Guide and Preferential Lane Entrance Direction signs shall be mounted overhead.

Guidance:

06 Preferential Lane Exit Destination guide signs, identifying final destination and downstream exit locations accessible from the preferential lane (see Figures 2G-8, 2G-9, 2G-14, 2G-16, and 2G-17), should be installed in advance of the initial entry points to access-restricted preferential lanes (such as barrier-separated and buffer-separated). These signs should be located based on the priority of the message, the available space, the existing signs on adjacent general-purpose traffic lanes, roadway and traffic characteristics, the proximity to existing overhead signs, the ability to install overhead signs, and other unique local factors.

Standard:

07 Advance destination guide signs for preferential lanes shall include an upper section displaying a black legend that includes the type of preferential lane and the word "EXITS," such as "HOV EXITS," on a white background. For preferential lanes that incorporate a vehicle occupancy requirement, the white diamond symbol on a black background shall be displayed at the left-hand edge of this upper section (see Figure 2G-9).

Support:

08 Figure 2G-8 shows an example of signing for a general-purpose lane that becomes a preferential lane that does not provide continuous access with the adjacent general-purpose lanes.

09 Figure 2G-9 shows an example of signs for the initial entry point to a preferential lane.

Section 2G.12 Signing for Intermediate Entry Points to Preferential Lanes

Standard:

01 For barrier-separated, buffer-separated, and contiguous preferential lanes where entry is restricted only to designated points, an overhead Preferential Lane Entrance Direction sign shall be provided at intermediate entry points to the preferential lane from the general-purpose lanes.

Guidance:

02 For barrier-separated and buffer-separated preferential lanes where intermediate entry from the general-purpose lanes is provided via a separate lane or ramp (see Figure 2G-10), at least one Advance Guide sign should be provided in addition to the Preferential Lane Entrance Direction sign.

03 For access-restricted preferential lanes where intermediate entrance and egress are at the same designated access location, the Preferential Lane Entrance Direction sign should be located between ½ and ¼ of the length of the designated entry area, as measured from the downstream end of the entry area (see Figure 2G-11).

Standard:

04 The Advance Guide signs, if used for intermediate entry points to a preferential lane from the general-purpose lanes, shall be overhead.

Option:

05 Advance Guide signs may be provided at approximately ½ mile, 1 mile, and 2 miles in advance of intermediate entry points from the general-purpose lanes to a preferential lane.

Standard:

06 Advance Guide and Preferential Lane Entrance Direction signs for intermediate entry points shall not include the word "EXIT" (see Section 2G.10).

06a No more than three exits shall be listed on an Exit Destination guide sign.

Guidance:

07 Exit Destination guide signs, identifying the final destination and downstream exit locations accessible from the preferential lane, should be installed in advance of intermediate entry points from the general-purpose lanes to access-restricted preferential lanes.

Option:

07a Instead of a destination being listed, an Exit Destination guide sign may identify roads that have general purpose lane exits but not preferential lane exits with "NO ACCESS TO [destination]".

Support:

08 Section 2G.11 contains information on the design and placement of Preferential Lane Exit Destination guide signs.

09 Figures 2G-10 and 2G-11 show examples of signs for various geometric configurations of intermediate entry to a barrier-separated or buffer-separated preferential lane where access is restricted to designated locations.

Section 2G.13 Signing for Egress from Preferential Lanes to General-Purpose Lanes

Standard:

01 Except as provided in Paragraphs 4 and 5 of this Section, for barrier-separated, buffer-separated, and contiguous preferential lanes where egress is restricted only to designated points, post-mounted Advance Guide (E8-6) and post-mounted Intermediate Egress Direction (E8-5) signs (see Figure 2G-12) shall be installed in the median or on median barriers that separate two directions of traffic prior to and at the intermediate exit points from the preferential lanes to the general-purpose lanes (see Figure 2G-11).

02 The legends of these signs shall refer to the next exit or exits from the general-purpose lanes by displaying the appropriate destination information, exit number(s), or both. The Intermediate Egress Direction signs for egress from the preferential lanes to the general-purpose lanes shall not refer to the egress as an exit.

Support:

03 Section 2G.10 contains information on the design of post-mounted guide signs applicable to a preferential lane when installed on a median barrier. Figures 2G-11 and 2G-13(VA) show examples of signs for various geometric configurations of intermediate egress from a barrier-separated or buffer-separated preferential lane where access is restricted to designated locations.

Guidance:

04 Where two or more adjacent preferential lanes are present in a single direction, consideration should be given to the use of overhead guide signs to display the information related to egress from the preferential lanes.

05 For barrier-separated and buffer-separated preferential lanes where egress from a preferential lane to the general-purpose lanes is restricted only to designated points via a separate lane or ramp, the Advance Guide and Intermediate Egress Direction signs for the egress should be mounted overhead and a Pull-Through sign should be mounted with the Intermediate Egress Direction sign (see Figure 2G-13(VA)).

Standard:

06 For preferential lanes that incorporate a vehicle occupancy requirement, the design of the overhead Advance Guide and Egress Direction signs for intermediate egress from the preferential lanes to the general-purpose lanes shall display a white diamond symbol on a black background at the left-hand edge of the signs.

07 The design of Pull-Through signs when used in conjunction with an Egress Direction sign at an intermediate egress from the preferential lanes to the general-purpose lanes shall be distinguished from those applicable to general-purpose lanes by inclusion of an upper section with the applicable black legend on a white background, such as HOV LANE. For preferential lanes that incorporate a vehicle occupancy requirement, the white diamond symbol on a black background shall be displayed at the left-hand edge of this upper section.

Section 2G.14 Signing for Direct Entrances to Preferential Lanes from Another Highway

Standard:

01 For direct access ramps to preferential lanes from a transit facility (such as a park-and-ride lot or a transit station or terminal) that is accessible from surface streets, advance guide signs shall be provided along the adjoining surface streets to direct traffic into and through the transit facility to the preferential lane (see Figure 2G-14(VA)).

Support:

02 Figure 2G-14(VA) provides examples of recommended uses and layouts of signs for HOV lanes for direct access ramps, park-and-ride lots, and access from surface streets.

Section 2G.15 Signing for Direct Exits from Preferential Lanes to Another Highway

Standard:

01 For contiguous preferential lanes on the left-hand side of the roadway, Advance Guide signs, Exit Direction signs, and Exit Gore (E8-4) signs (see Figure 2G-15) specifically applicable to the

preferential lanes shall be used for exits to direct access ramps, such as HOV lane ramps (see Figure 2G-16(VA)) or ramps to park-and-ride facilities.

02 The design of Advance Guide, Exit Direction, and Pull-Through signs for direct exits from preferential lanes shall be distinguished from those applicable to general-purpose lanes by inclusion of an upper section with the applicable black legend on a white background, such as HOV LANE (for Pull-Through signs) or HOV EXIT (for Advance Guide and Exit Direction signs). For preferential lanes that incorporate a vehicle occupancy requirement, the white diamond symbol on a black background shall be displayed at the left-hand edge of this upper section (see Figures 2G-16(VA) and 2G-17).

Guidance:

03 Advance Guide and Exit Direction signs for exits to direct access ramps from a preferential lane should be mounted overhead. A Pull-Through sign over the preferential lane should be used with the Exit Direction sign at exits to direct access ramps.

Standard:

04 Post-mounted guide signs in a vertically-oriented rectangular shape installed on a median barrier shall not be used for the Advance Guide and Exit Direction signs for exits to direct access ramps.

05 Because direct access ramps for preferential lanes at interchanges connecting two freeways are typically left-hand side exits and typically have design speeds similar to the preferential lane, overhead Advance Guide signs and overhead Exit Direction signs shall be provided in advance of and at the entry point to each freeway-to-freeway preferential lane ramp (see Figure 2G-17).

Guidance:

06 The use of guide signs for preferential lanes at freeway interchanges should comply with the provisions for guide signs established in Chapter 2E of this Manual.

Support:

07 Guide signs for direct access ramps for preferential lanes at interchanges connecting two freeways are similar to those for a connecting ramp between two freeway facilities.

MANAGED LANE SIGNS, PLAQUES, AND LANE-USE CONTROL SIGNALS

Section 2G.16 Signs for Managed Lanes – General

Standard:

01 The provisions of Sections 2G.03 through 2G.07 regarding regulatory signs for preferential lanes shall apply to managed lanes operated at all times or at certain times by varying vehicle occupancy requirements (HOV) or by using vehicle type restrictions as a congestion management strategy. Such managed lanes shall use changeable message signs or changeable message elements within static signs to display the appropriate regulatory sign messages only when they are in effect.

02 When certain types of vehicles (such as trucks) are prohibited from using a managed lane or when a managed lane is restricted to use by only certain types of vehicles during certain operational strategies, regulatory signs or regulatory panels within the appropriate guide signs that include changeable message elements shall be used to display the open/closed status of the managed lane for such vehicle types.

03 When the vehicle occupancy required for use of an HOV lane is varied as a part of a managed lane operational strategy, regulatory signs that include changeable message elements shall be used to display the required minimum vehicle occupancy in effect.

Support:

04 Section 2G.18 contains information about regulatory signs for managed lanes that use tolling or pricing as a congestion management strategy, either exclusively or with other management strategies.

Section 2G.17 Signs for Priced Managed Lanes – General

Support:

01 A priced managed lane is a managed lane that employs tolling or pricing, typically through electronic toll collection, to manage congestion levels and maintain a certain level of service for users of the facility. A priced managed facility typically provides a less-congested alternative to adjacent lanes along the same designated route, or to a nearby facility, that experience recurring congestion during peak periods. A priced managed lane might allow non-toll travel by certain vehicles based on occupancy or other criteria. A variety of operational management strategies might be used in conjunction with tolling or pricing.

02 The number and combination of operational strategies that are applied to a managed lane to manage congestion or improve efficiency might be practically limited by the amount of information that can be legibly displayed on signs or in signing sequences and still be readily comprehended by road users. Such factors to consider when evaluating alternatives for managed lanes are locations of signs for general-purpose interchanges and for other roadway conditions, the number of intermediate access points between the managed and general-purpose lanes and the need to repeat the operational information, and the distance over which a signing sequence that displays all of the eligibility requirements can be displayed.

03 Because managed lanes have the capability to employ a variety of operational strategies on a changing basis, it is not practical to assign a naming convention to such lanes for the purpose of signing based on the specific operational management strategies, as is more readily accomplished with other types of preferential lanes, such as HOV, bus, or bicycle lanes. Instead, the various requirements, restrictions, and eligibility criteria are more appropriately conveyed through a sequence of regulatory and guide signs with a more encompassing designation for the purpose of providing directional information.

04 As priced managed lanes have become prevalent as an operational strategy, it is important to maintain a uniform naming convention to distinguish those lanes that are an alternative to travel on adjacent general-purpose lanes on the same designated route to effectively communicate to motorists the range of basic requirements for similar facilities in different regions.

Standard:

05 Priced managed lanes that are adjacent to general-purpose lanes along the same designated route shall be signed using the legend EXPRESS LANE(S) as provided in this Chapter. This provision shall apply when any of the following operational strategies is used for a managed lane:

A. All users of the managed lane are charged a fixed or variable toll;

B. General-purpose traffic using the managed lane is charged a fixed or variable toll, but HOV traffic is allowed to travel without being charged a toll on either a full-time or part-time basis;
C. General-purpose traffic using the managed lane is charged a fixed or variable toll, but HOV traffic is offered a discounted toll on either a full-time or part-time basis; or
D. General-purpose traffic using the managed lane is charged a fixed or variable toll, but HOV traffic registered with a local program travels at a discounted toll or without being charged a toll on either a full-time or part-time basis (a transponder or other identifier is typically required of HOVs to indicate registration in conjunction with electronic or visual enforcement and verification of vehicle occupancy).

06 The legends EXPRESS and EXPRESS LANE(S) shall not be used on signs for entrances to highways on which all lanes are managed and there are no adjacent general-purpose lanes on the same designated route. The legends EXPRESS and EXPRESS LANE(S) shall not be used on signs for a managed ramp connection that provides an alternative to a general-purpose ramp connection (see Figure 2F-13(VA)), except where the ramp leads directly to a managed lane as described in Section 2G.14. The legends EXPRESS and EXPRESS LANE(S) shall not be used on signs for open-road tolling lanes that bypass a conventional toll plaza (see Chapter 2F).

Section 2G.18 Regulatory Signs for Priced Managed Lanes

Standard:

01 Except as otherwise provided in this Section, the provisions of Sections 2G.03 through 2G.07 regarding regulatory signs for Preferential lanes shall apply to priced managed lanes operated at all times or at certain times with a toll payment requirement of some or all vehicles to use the lane(s). Such managed lanes shall use changeable message signs or changeable message elements within static signs to display the appropriate regulatory sign messages only when they are in effect.

02 Regulatory signs for preferential lanes shall be appropriately modified for adaptation to a priced managed lane, where applicable, as shown in Figure 2G-18(VA).

03 Regulatory signs shall be used to indicate the toll charged. If the toll varies the R3-48 and R3-48a signs that are shown in Figure 2G-18(VA) shall be used to display the actual toll amount in effect at any given time.

04 When only vehicles with a registered ETC account are allowed to use a managed lane where some or all vehicles are charged a toll, regulatory signs to indicate such a restriction shall be provided and shall incorporate the pictograph adopted by the toll facility's ETC payment system and the word ONLY (see Section 2G.19 for the incorporation of such regulatory legends into the guide signs for the entrances to such facilities). The display of the ETC system pictograph shall comply with the provisions of Sections 2F.02 and 2F.03 as shown in Figures 2G-18(VA) and 2G-19(VA).

05 When HOV traffic is allowed to use a priced managed lane without paying a toll and registration in a local program is not required to receive the toll exemption, the Vehicle Occupancy Definition (R3-10 or R3-13) signs (see Section 2G.04) shall be modified to delete the diamond symbol to create priced managed lane Vehicle Occupancy Definition (R3-40 and R3-43) signs to indicate the minimum occupancy related to the management strategy (see Figure 2G-~~19~~18(VA)).

06 A Priced Managed Lane Operation (R3-44, R3-44a, or R3-44b) sign ~~priced managed lane HOV Lane Operation (R3-44 or R3-44a) sign~~ (see Figure 2G-18(VA)) shall be installed at the beginning or initial entry point, and at any intermediate entry points where vehicles are allowed to legally enter an access-restricted priced managed lane.

07 When the vehicle occupancy required for non-toll use of a managed lane is varied as a part of a priced managed lane operational strategy, regulatory signs that include changeable message elements shall be used to display the required vehicle occupancy in effect for non-toll travel.

Option:

08 Where registration in a local program or ETC account is required for HOV traffic to travel in a priced managed lane without being charged a toll or by being charged a discounted toll, such information may be displayed on a separate sign within the sequence of the required regulatory and guide signs.

Standard:

09 R3-42 series and R3-45 series signs (see Figure 2G-18(VA)) shall be installed in accordance with the provisions of Section 2G.07 to indicate the termination of a priced managed lane or restriction. The R3-42, R3-42a, and R3-45 signs shall be used only where the managed lane and restriction end and traffic must merge into the general-purpose lanes. The R3-42b, R3-42c, and R3-45a signs shall be used only where the managed lane restriction ends and the lane becomes a general-purpose lane.

Section 2G.19 Guide Signs for Priced Managed Lanes

Standard:

01 Except as otherwise provided in this Section, guide signs for barrier-separated, buffer-separated, and contiguous managed lanes shall follow the specific provisions for Preferential Lane guide signs contained in Sections 2G.10 through 2G.15. Except as otherwise provided in this Section, guide signs for highways on which all lanes are managed shall follow the general provisions for freeway and expressway guide signs as contained in Chapter 2E as a whole. Guide signs for highways on which all lanes are managed and tolling or pricing is used as a management strategy shall follow the applicable provisions for toll road guide signs as contained in Chapter 2F, in addition to the general provisions of Chapter 2E.

02 If fixed or variable tolls are used as an operational strategy for a managed lane, the guide signs shall comply with the provisions of Sections 2F.02, 2F.03, and 2F.17 regarding the use, size, and placement of ETC-account pictographs.

03 Guide signs at the initial and intermediate entry points to a priced managed lane in which all general-purpose passenger vehicles are allowed shall include the legend EXPRESS LANE(S). Except as provided in Paragraph 5 of this Section, the guide signs shall incorporate the pictograph of the ETC account system into a header panel within the guide sign in accordance with Sections 2F.02, 2F.03, and 2F.17. For a priced managed lane that allows non-toll travel by HOV traffic without registration in a local program, the header panel shall be modified to a regulatory format to display both the pictograph of the ETC account system and the minimum occupancy requirement for non-toll travel with a black legend on a white background (see Figure 2G-19(VA)).

04 Guide signs at the initial and intermediate entry points to a managed lane that allows only HOV traffic with either a fixed or variable occupancy requirement shall follow the provisions of Sections 2G.10 through 2G.12 and 2G.14.

05 If registration in a toll-account program is not required for travel in a managed lane in which tolls are charged, then the ETC-account pictographs shall not be displayed on primary guide signs directing traffic to the managed lane. In such cases, the purple header panel shall be replaced with a warning header panel with a black legend and border on a yellow background displaying the word TOLL as illustrated in Figure 2G-20(VA).

Option:

06 If the managed lane does not accept toll payments from an ETC account system and collects tolls only by post-travel billing of registered vehicle owners, then the legend TOLL BILLED BY MAIL ONLY may be displayed on a separate information sign within the sequence of primary guide signs in advance of the entrance to the managed lane.

07 If the managed lane accepts payments from registered ETC accounts, but does not require registration to use the lane, then the pictographs of the accepted ETC account programs may be displayed on a separate information sign within the sequence of primary guide signs in advance of the entrance to the managed lane. The information sign may also display the legend TOLL BILLED BY MAIL OR in addition to the pictograph of the accepted ETC account program.

Support:

08 Figure 2G-19(VA) shows examples of Guide signs for entrances to priced managed lanes and other ETC account-only toll facilities that incorporate header panels with ETC account pictographs and regulatory legends.

09 Figures 2G-21(VA) through 2G-24(VA) show examples of guide signs for various configurations of initial and intermediate entrances to a priced managed lane.

Guidance:

10 Exit Destination supplemental guide signs, identifying final destination and downstream exit locations accessible from the managed lane (see Figure 2G-25), should be installed in advance of the initial entry points to priced managed lanes. These signs should be located in accordance with the provisions of Paragraph 6 of Section 2G.11.

11 For managed lanes that are available as an alternative to travel on adjacent general-purpose lanes on the same designated route, changeable message signs indicating the comparative travel times or congestion levels using the managed lanes versus the general-purpose lanes (see Figure 2G-26(VA)) should be installed in advance of the initial and intermediate entry points to the managed lanes.

Option:

12 Changeable message signs may also be used on non-managed highways to display comparative travel times or congestion levels for a nearby managed highway.

Standard:

13 The use and locations of guide signs for intermediate egress locations and direct exits from a priced managed lane (see Figures 2G-24(VA) and 2G-27(VA) through 2G-29) shall comply with the provisions of Sections 2G.13 and 2G.15. The signs shall be suitably modified to display header messages of white legend on a green background that relate the guide sign legends to the managed lane(s) as appropriate in accordance with the following:

- **A. Post-mounted or overhead-mounted Advance Guide signs for intermediate egress to the general-purpose lanes shall include the legend LOCAL EXITS in a header panel within the guide signs, destination information or the exit number(s) for the next exit(s) accessible from the general-purpose lanes, and the appropriate distance information to the location of the egress (see Figure 2G-27(VA)).**
- **B. Post-mounted or overhead-mounted Intermediate Egress Direction signs shall include the legend LOCAL EXITS in a header panel within the signs, the destination information or the exit number(s) of the next exit(s) accessible from the general-purpose lanes, and a diagonally upward-pointing directional arrow (see Figure 2G-27(VA)).**
- **C. For direct exits to another roadway, the legend EXPRESS EXIT shall be used on the Advance Guide and Exit Direction signs (see Figure 2G-28).**
- **D. For Pull-Through signs, the legend EXPRESS LANE(S) shall be used, either as a header panel within the Pull-Through sign or as the principal legend of the sign without a header panel (see Figures 2G-27(VA) through 2G-29).**

Option:

13a EXPRESS EXIT Advance Guide and Exit Direction signs may display exit numbers.

Support:

14 Section 2G.13 contains information on the use of overhead-mounted guide signs for intermediate egress to the general-purpose lanes.

15 Figures 2G-30(VA) and 2G-31(VA) show examples of guide signing for direct entrances to a priced managed lane from a crossroad or surface street.

Section 2G.20 Signs for Part-Time Travel on a Shoulder – General

Support:

01 In some cases, paved shoulders are allowed to be used for driving use during peak periods to manage congestion. Configurations might be on freeways and expressways, as well as on conventional roads. Travel on the shoulder during these periods might be restricted to certain classes of vehicles, such as buses or HOV, or might be open to general traffic. When the part-time travel on a shoulder is limited to certain classes of vehicles, the signing is similar to that for preferential lanes. Additional signing is typically used to advise road users that the shoulder is not available for emergency use during these periods. Part-time travel on a shoulder might also employ lane-use control signals and/or blank-out signs to inform traffic of the allowable use of the shoulder. Depending on the design of exit ramp terminals and auxiliary lanes, guide signs must account for exit maneuvers during both shoulder use conditions and might necessitate changeable legend elements. However, additional guide signs are not normally necessary specifically for the condition when the shoulder is

used for travel. The pavement markings might also be modified where travel allowed on the shoulder begins and ends.

02 Figure 2G-32(VA) shows an example of signing for part-time travel on a shoulder.

Standard:

03 A shoulder that has been opened to travel on a permanent, full-time basis shall be considered a travel lane and shall be signed and marked in accordance with other provisions of this Manual.

Support:

04 Section 3E.04 contains provisions regarding the placement of markings on paved shoulders that are open for part-time travel.

Section 2G.21 Regulatory Signs and Plaques for Part-Time Travel on a Shoulder

Standard:

01 Regulatory signs shall be used to notify road users of the periods of operation that travel is allowed on a paved shoulder. The Part-Time Travel on Shoulder Operation (R3-51) sign (see Figure 2G-32(VA)) shall be used where traffic is allowed to travel on the shoulder during certain fixed periods of operation. The Part-Time Travel on Shoulder Variable Operation (R3-51d) sign (see Figure 2G-32(VA)) with two flashing beacons (see Chapter 4S) mounted above it shall be used when the period of operation is variable.

02 If certain classes of vehicles are not allowed to use the shoulder during these periods, then a Selective Exclusion (R3-51aP or R3-51bP) plaque shall be mounted below the R3-51 or R3-51d sign. If the travel on the shoulder is restricted to certain classes of vehicles, then the regulatory signs shall display that information.

Option:

03 The EMERGENCY STOPPING ONLY OTHER TIMES (R3-51cP) plaque may be mounted below the R3-51 sign if the R3-51aP or R3-51bP plaque is not used.

Guidance:

04 The TRAVEL ON SHOULDER BEGINS ½ MILE (R3-52c) sign should be used in advance of the location where part-time travel on shoulder first begins and followed by the DO NOT DRIVE ON SHOULDER (R4-17) sign appropriately spaced downstream.

Standard:

05 Approximately ½ mile from where part-time travel on shoulder ends, the TRAVEL ON SHOULDER ENDS (R3-52a) sign shall be used. At the location provided for traffic to transition from shoulder travel back to permanent highway lane travel, an END TRAVEL ON SHOULDER (R3-52) sign shall be used. After this transition location a DO NOT DRIVE ON SHOULDER (R4-17) sign shall be used.

Guidance:

06 Where a shoulder that allows part-time travel is interrupted by a deceleration lane for an exit, the BEGIN EXIT LANE (R3-56) sign should be used at the beginning of the deceleration lane where traffic is allowed to enter during the periods that travel is prohibited on the shoulder.

07 On a conventional road where a shoulder that is open to part-time travel becomes a mandatory turn lane, the BEGIN RIGHT TURN LANE (R3-20R) sign should be post-mounted on the right-hand side of the roadway at the upstream end of the turn lane taper of a mandatory right-turn lane. Where the shoulder is on the left-hand side of the roadway, the BEGIN LEFT TURN LANE (R3-20L) sign may be post-mounted on a median (or on the left-hand side of the roadway for a one-way street) at the upstream end of the turn lane taper of a mandatory left-turn lane.

08 Where turn-outs are provided for emergency stopping during periods when travel is allowed on the shoulder, the EMERGENCY STOPPING ONLY (R8-7) sign (see Section 2B.52) should be used adjacent to the turn-out (see Drawing D in Figure 2G-32(VA)).

09 Where traffic on an entrance ramp is required to yield to traffic using the shoulder of the freeway or expressway mainline during the periods when travel is allowed on the shoulder, the TO TRAFFIC ON

SHOULDER (R3-57P) plaque should be mounted below the YIELD (R1-2) sign (see Section 2B.05 and Drawing C in Figure 2G-32(VA)).

Section 2G.22 Warning Signs for Part-Time Travel on a Shoulder

Guidance:

01 The Traffic Using Shoulder (W3-9) sign should be used on a ramp that enters a freeway or expressway on which part-time travel is allowed on the shoulder. When used, the W3-9 sign should be located on the right-hand side of the ramp from which the shoulder traffic approaches (see Drawing C in Figure 2G-32(VA)).

Option:

02 A second W3-9 sign may be used on the left-hand side of the ramp opposite the W3-9 sign on the right-hand side of the ramp to provide greater visibility to oncoming traffic.

03 The W3-9 sign may be used on a conventional road that is required to stop for or yield to the through street or highway on which part-time travel is allowed on the shoulder.

Section 2G.23 Guide Signs for Part-Time Travel on a Shoulder

Support:

01 Guide signs for part-time travel on a freeway or expressway shoulder generally consist of the typical interchange guide sign sequence (see Chapter 2E). While specialized guide signs are not normally necessary, modifications to the typical guide signs might be necessary, especially where an interchange lane drop is created only during the periods when the shoulder is open to travel.

Standard:

02 Where an interchange lane drop is created only during the periods when a shoulder is open to travel, the Advance and Exit Direction guide signs (see Sections 2E.23 and 2E.25) shall be overhead-mounted and shall be modified to include a blank-out or changeable EXIT ONLY message that complies with the provisions of Section 2E.28 and is displayed only during the periods that the shoulder is open to travel (see Drawing E in Figure 2G-32(VA)).

03 Guide signs located in conjunction with part-time travel on a shoulder shall otherwise comply with the provisions of Chapters 2D and 2E.

Guidance:

04 Where turn-outs are provided for emergency stopping during periods when travel is allowed on the shoulder, the Emergency Turn-Out Directional (D17-6) sign (see Drawing D in Figure 2G-32(VA)) should be used as provided in Section 2D.54.

Section 2G.24 Lane-Use Control Signals for Part-Time Travel on a Shoulder

Support:

01 Lane-use control signals (see Chapter 4T) are sometimes used for part-time travel on a paved shoulder (see Drawing A in Figure 2G-32(VA)), in addition to signs, to indicate the allowable use of the shoulder.

Option:

02 Overhead lane-use control signals may be used above a shoulder on which part-time travel is allowed.

Standard:

03 Except as otherwise provided in this Section, lane-use control signals that are used for part-time travel on a shoulder shall comply with the provisions of Chapter 4T. When used for part-time travel on a shoulder, lane-use control signals shall not be required above the lanes adjacent to the shoulder. When used for part-time travel on a shoulder, a steady RED X signal indication shall be displayed when the shoulder is available for emergency stopping only and travel on the shoulder is otherwise prohibited.

04 When part-time travel on shoulder is allowed for variable periods of operation, lane-use control signals (see Chapter 4T) shall be used and evenly spaced approximately every ½ mile or less and centered over the shoulder to indicate when the shoulder is open or closed to vehicle travel. The lane-

use control signals shall display a steady DOWNWARD GREEN ARROW signal indication during times when travel is allowed on the shoulder, followed by a steady YELLOW X signal indication just before the shoulder is to be closed to travel, and a steady RED X signal indication when shoulder travel is discontinued. Additionally, during the period when travel is allowed on the shoulder, a lane-use control signal that continuously displays a steady YELLOW X signal indication shall be used approximately ½ mile in advance of the location where part-time travel on the shoulder ends, and then displays a steady RED X signal indication when the travel on shoulder ends. A lane-use control signal with a steady RED X signal indication shall be displayed at all times at the location where part-time travel on the shoulder ends.

Option:

05 For part-time travel on shoulder with variable periods of operation, post-mounted TRAVEL ON SHOULDER ALLOWED WHEN FLASHING (R3-51d) signs (see Drawing A in Figure 2G-32(VA)) with flashing beacons may be used in lieu of the lane-use control signals at the same intervals.

06 The TRAVEL ON SHOULDER ON GREEN ARROW ONLY (R3-51e) sign (see Drawing A in Figure 2G-32(VA)) may be used with a lane-use control signal and may be mounted adjacent to the signal head, elsewhere on the signal support, or post-mounted next to, or in advance of, the signal.

Section 2G.25 Lane-Use Control Signals for Active Lane Management on Freeways and Expressways

Support:

01 Active lane management is a component of active traffic management in which the use of travel lanes and speed limits might be varied in real time in response to traffic conditions to manage congestion. Active lane management might employ lane-use control signals (see Chapter 4T) and/or changeable message signs (see Chapter 2L). Figure 2G-33 shows an example of lane-use control signals and variable Speed Limit signs for active lane management during an incident

Standard:

02 Except as otherwise provided in this Section, lane-use control signals that are used for active lane management shall comply with the provisions of Chapter 4T. When used for active lane management on a freeway or expressway, a steady YELLOW X signal indication shall be displayed to warn road users to vacate the lane when the next downstream lane-use control signal over the same lane is displaying a steady RED X signal indication.

Option:

03 A steady YELLOW X signal indication may be displayed on one or more lane-use control signals in advance of the steady YELLOW X signal indication required by Paragraph 2 of this Section as conditions warrant to warn road users to vacate the lane.

Support:

04 Using too many steady YELLOW X signal indications could diminish the effectiveness of the steady YELLOW X signal indication in conveying the lane is closed a short distance ahead and the road user needs to vacate the lane soon.

Standard:

05 When operated in conjunction with a temporary planned lane closure, lane-use control signals shall only supplement the temporary traffic control devices as provided in Part 6 of this Manual.

Guidance:

06 Spacing of lane-use control signals for active lane management on freeways and expressways should be at ½-mile intervals. Closer spacing should be used where the viewing distance is limited by the roadway geometry, overcrossings or other sight obstructions, or where traffic entering from intervening interchange ramps is not adequately served by the ½-mile spacing.

07 Combining lane-use control signals with overhead sign support structures should be minimized to avoid overloading road users with too much information or conflicting or incorrect messages, such as exclusive lane use or lane drop implied by the display of a steady DOWNWARD GREEN ARROW signal indication below a guide sign.

Section 2G.26 Variable Speed Limits for Active Traffic Management on Freeways and Expressways

Support:

01 Active traffic management on freeways and expressways might employ variable speed limits as an element of an overall congestion management plan using variable Speed Limit (R2-1) sign (see Section 2B.21).

02 Careful consideration is needed in locating variable Speed Limit signs along the roadway and potential positioning adjacent to guide signs or lane-use control signals so that the speed displayed is clearly associated with the lane or lanes intended to be regulated and not other adjacent lanes, ramps, or roadways. This might result in the need to place variable Speed Limit signs on separate supports away from guide and other signs or lane-use control signals.

Standard:

03 The regulatory speed displayed on a variable Speed Limit sign shall comply with Paragraph 13 of Section 2B.21 and the "Standard Highway Signs" publication (see Section 1A~~1C~~.05).

Guidance:

04 The location and positioning of variable Speed Limit signs should clearly associate the speed displayed to the lane or lanes intended to be regulated such that it would not present a conflict or confusion with other posted speed limits or advisory speeds for adjacent lanes, ramps, or roadways. Variable Speed Limit signs should not be located on overhead guide sign installations (see Section 2E.43).

05 In addition to the post-interchange Speed Limit sign (see Paragraph 17 of Section 2E.47), the spacing of variable Speed Limit signs on freeways and expressways should be based on an engineering study that considers such factors as recurring congestion, high-volume interchanges, weaving sections, and other location-specific factors that are known to affect travel speeds. The variable Speed Limit signs should be placed far enough in advance of known congestion points to adequately adjust the operating speed to minimize the extent of vehicle queuing.

CHAPTER 2H. GENERAL INFORMATION SIGNS

Section 2H.01 Scope

Support:

01 General Information signs provide road users with navigational or orientation, geographic, or other information useful for traffic operational purposes. They include such items as State lines, city limits, time zones, stream names, elevations, landmarks, and similar geographic features. Chapter 2M contains recreational and cultural interest area symbol signs that are sometimes used in combination with General Information Signs. Section 1D.09 contains information on unnecessary traffic control devices. Section 2A.20 contains information on the excessive use of signs and sign clutter.

Option:

02 A General Information (I3-5 through I4-2) symbol sign (see Figure 2H-1) may be used to provide direction to a transportation (I3 series signs) or other (I4 series signs) facility. The symbol sign may be supplemented by an educational plaque where necessary. The name of the facility may be used, if needed, to distinguish between similar facilities in the same area.

03 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary plaques (see Figure 2H-1) with white arrows on green backgrounds may be used with General Information symbol signs to create a General Information Directional Assembly.

04 The Recycling Center (I4-2) symbol sign may be used to direct road users to recycling centers.

Guidance:

05 The Recycling Center symbol sign should not be used on freeways and expressways.

Option:

06 The Passengers Only Ferry Terminal (I3-10) symbol sign may be used with the FERRY (I3-10P) plaque (see Figure 2H-1) mounted below it in a directional assembly to direct road users to passenger-only ferry terminals.

Guidance:

07 General Information signs should not be installed within a series of guide signs, or at other equally critical locations, unless there are specific reasons for orienting the road user or identifying control points for activities that are clearly in the public interest. On all such signs, the designs should be simple and dignified, devoid of any tendency toward advertising, such as complex graphics or unnecessary messages, and in general compliance with other guide signing.

Standard:

08 Promotional descriptive messages that are not relevant to navigation and orientation, such as "Scenic" or "Historic," shall not be included in the legends of General Information signs, except as otherwise provided in this Chapter or in cases in which these terms are part of an official name, such as for a Scenic Byway or Historic District.

09 Except for State Welcome signs (see Section 2H.07), Acknowledgment signs (see Section 2H.13), and Alternative Fuels Corridor signs (see Section 2H.14), General Information signs shall have white legends and borders on green rectangular-shaped backgrounds.

Section 2H.02 Sizes of General Information Signs

Standard:

01 Except as provided in Section 2A.07, the sizes of General Information signs that have a standardized design shall be as shown in Table 2H-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2H-1.

Option:

03 Signs larger than those shown in Table 2H-1 may be used (see Section 2A.07), except where a maximum allowable size is specified.

Section 2H.03 Airport Signs

Support:

01 Guide signs for commercial service airports and general aviation airports may be provided from the nearest Interstate, other freeway, or conventional highway intersection directly to the airport, normally not to exceed 15 miles. The Airport (I3-5) symbol sign (see Figure 2H-1) along with a supplemental plaque may be used to indicate the specific name of the airport. An Airport symbol sign, with or without a supplemental name plaque or the word AIRPORT, and an arrow may be used as a trailblazer.

Standard:

02 Airport pictographs or other graphical representation of the specific airport shall not be used with or in place of the specific airport name on guide signs.

Guidance:

03 If airport guide signs are used, adequate trailblazer signs should be used to provide motorist direction to the airport.

Support:

04 Location and placement of all airport guide signs depends upon the availability of longitudinal spacing on highways.

05 Figure 2D-39 shows an example of the guide signing that is typically used for a large commercial airport.

Section 2H.04 Traffic Signal Speed Sign (I1-1)

Option:

01 The Traffic Signal Speed (I1-1) sign (see Figure 2H-1) displaying the legend SIGNALS SET FOR XX MPH may be used to indicate a section of street or highway on which the traffic control signals are coordinated into a progressive system timed for a specified speed at all hours during which they are operated in a coordinated mode.

02 If different system progression speeds are set for different times of the day, a changeable message element may be used for the numerals of the Traffic Signal Speed sign. If the system is operated in coordinated mode only during certain times, a blank-out version of the Traffic Signal Speed sign may be used to display the entire message only during those times.

Standard:

03 An electronic-display changeable section of the Traffic Signal Speed sign shall be a white legend on a black opaque or green background.

Guidance:

04 If used, the Traffic Signal Speed sign should be mounted as near as practical to each intersection where the timed speed changes, and at intervals of several blocks throughout any section where the timed speed remains constant.

Section 2H.05 Jurisdictional Boundary Signs (I2-1)

Option:

01 The Jurisdictional Boundary (I2-1) sign may be used to mark the location of the jurisdictional boundary of a State, county, or municipality or the limits of an unincorporated municipal-level community, Tribal Nation, or governmental district where legal jurisdiction, road maintenance responsibility, or emergency response obligation changes.

Guidance:

02 If used, the Jurisdictional Boundary sign should be located at or as near as practicable to the jurisdictional boundary without interfering with higher-priority traffic control devices. Notices of statutes or local ordinances should be located separately using regulatory signs (see Chapter 2B).

03 If used for an unincorporated community, the community should be one that is readily identifiable on official maps and be consistent with postal mailing addresses.

Standard:

04 In accordance with Section 2H.01, the Jurisdictional Boundary sign shall be rectangular in shape and shall have a white legend on a green background. The sign shall display only the name of the State, county, municipality, Tribal Nation, or other identifiable community, and an appropriate legend such as ENTERING, STATE LINE, County, or the municipal classification.

05 Names of elected officials or promotional messages, such as notable accomplishments or claims, shall not be displayed on a Jurisdictional Boundary sign or added as a supplemental sign or plaque.

Option:

06 A pictograph representing the jurisdiction may be displayed on the Jurisdictional Boundary sign.

Standard:

07 If a pictograph is displayed on the Jurisdictional Boundary sign, it shall be the official seal of the jurisdiction and shall comply with the provisions of Section 2A.04. The pictograph shall be placed to the left of the legend. The height of the pictograph shall not exceed 2 times the height of the initial upper-case letter of the principal legend.

Guidance:

08 Signs should not be used to identify the boundaries of special-purpose governmental districts, such as school districts, sanitary districts, or improvement districts, as such signs are generally promotional in nature and do not provide navigational or orientation assistance in conjunction with official maps that are available to the general public.

Support:

09 Section 2H.07 contains information on State Welcome signs.

Section 2H.06 Geographical Feature Signs (I2-2)

Option:

01 The Geographical Feature (I2-2) sign may be used to mark the locations of land features such as river or stream crossings, and summits, that are identifiable on maps or serve as landmarks in providing navigational orientation or reference to the road user.

Guidance:

02 If used, the Geographical Feature sign should display only the name of the geographical feature. Additional information that is unnecessary for navigational or orientation purposes, such as watershed or tributary names, should not be displayed on the sign.

Section 2H.07 State Welcome Signs

Support:

01 The design, placement, and function of State Welcome signs that are used to identify State lines differ from Jurisdictional Boundary (I2-1) signs (see Section 2H.05). Because of these differences, it is necessary to distinguish State Welcome signs from State line Jurisdictional Boundary signs.

Option:

02 A State Welcome sign may be located at or in the vicinity of the State boundary except as prohibited in Paragraph 4 of this Section.

03 State Welcome signs may display the State seal or the State flag, the officially-adopted State motto or slogan, and the name of the Governor, in addition to the State name. State Welcome signs may use legend and background colors that provide adequate visual contrast rather than the standard sign colors.

Standard:

04 State Welcome signs shall be located separate from other signs where they will not interfere with or detract from other traffic control devices.

05 State Welcome signs shall not display changeable or other electronic-display messages (see Chapter 2L). State Welcome signs shall not display messages that emulate promotional advertising of any type. State Welcome signs shall not incorporate Acknowledgment signs or messages (see Section 2H.13), or business identification sign panels or logos (see Section 2J.03) into their legends or assemblies. In accordance with Section 2A.04 of this Manual, telephone numbers, Internet addresses, and e-mail addresses, including domain names and uniform resource locators (URLs), and scanning graphics for the purpose of obtaining information shall not be displayed in the legends of State Welcome signs or on their supports.

Guidance:

06 State Welcome signs should be located farther from the edge of the roadway than other traffic control devices.

07 The maximum size of a State Welcome sign should be consistent with the prevailing size of other guide signs based on the roadway type.

Section 2H.08 Future Interstate Corridor Signs (I2-4 and I2-4a)

Option:

01 The Future Interstate Corridor (I2-4 and I2-4a) signs (see Figure 2H-2) may be used sparingly along an existing route that will be reconstructed as an Interstate route or along an existing route adjacent to a corridor through which an Interstate route will be constructed, in accordance with the Policy and Conditions stated in 23 CFR 470, Appendix C.

02 Where the route number has been approved by the FHWA, either the I2-4 or I2-4a sign may be used.

Standard:

03 The I2-4a sign shall not be used where the route number has not been approved by the FHWA.

04 Future Interstate Corridor signs shall not be located where they could interfere with or detract from other traffic control devices. If used, Future Interstate Corridor signs shall be installed as independent, post-mounted sign assemblies.

05 Future Interstate Corridor signs shall not imply that an existing route has already been designated and marked as an Interstate route. Signs indicating that an existing route is designated as a future Interstate route or corridor shall not provide directional or distance information. Route Sign assemblies (see Section 2D.29) of any type shall not be used to sign a route as a future Interstate or other route. The Interstate route marker, or likeness thereof, shall not be displayed on the Future Interstate Corridor signs.

Guidance:

06 Future Interstate Corridor signs should be limited to strategic locations, such as at the beginning of the designated route or corridor, or beyond interchanges connecting from existing Interstate highways.

Section 2H.09 Project Information Sign (I2-5)

Support:

01 The Project Information (I2-5) sign (see Figure 2H-3) provides limited information to road users about a highway construction project on which work is imminently forthcoming or ongoing.

Standard:

02 The Project Information sign legend shall be limited to the following project information:

- **A. The roadway name or route number,**
- **B. A brief description or title of the project,**
- **C. The completion date expressed in either a month or season (Spring, Summer, Fall, or Winter), and**
- **D. The agency name.**

Option:

03 Project Information signs installed more than one week prior to commencement of work may include a start date.

Standard:

04 Project Information signs shall not be installed more than one month prior to the commencement of work. When installing Project Information signs prior to the commencement of work, the jurisdiction shall have a policy on when the Project Information signs are to be installed. Project Information signs shall be removed at the conclusion of work on the project, even if the final inspection or project closeout has not yet occurred.

05 The number of Project Information signs shall be limited to one per direction of travel on the roadway on which the project is based. The location of the Project Information sign shall not interfere with the temporary traffic control zone devices.

06 The Project Information sign shall have a white legend on a green background and shall not display Internet addresses, e-mail addresses, or telephone numbers (see Section 2A.04).

Section 2H.10 Grade-Separated Roadway Identification Signs (I2-3 and I2-3a)

Option:

01 The Grade-Separated Roadway Identification (I2-3 and I2-3a) signs (see Figure 2H-4) may be used to identify a grade separation of another highway or other transportation facility such as a railway, bikeway, or pathway.

Guidance:

02 Except as provided in Paragraph 4 of this Section, when used to identify an overcrossing structure, the I2-3 sign should be mounted above the travel lanes or shoulder of the highway below.

03 When used to identify an undercrossing structure, the I2-3 or I2-3a sign should be post-mounted in advance of the structure as near to it as practicable.

Option:

04 When used to identify an overcrossing structure, the I2-3 or I2-3a sign may be post-mounted in front of an overcrossing or may be mounted to the abutment of the overcrossing facing approaching traffic.

Section 2H.11 Reference Location Signs (D10-1 through D10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a)

Support:

01 There are two types of reference location signs:

A. Reference Location (D10-1 through D10-3) signs (see Figure 2H-5) show an integer distance point along a highway, and
B. Intermediate Reference Location (D10-1a through D10-3a) signs (see Figure 2H-6) show the same information as Reference Location signs, but they also show a tenth-of-a-mile decimal so that they can be installed between integer distance points along a highway.

Standard:

02 Except when Enhanced Reference Location signs (see Section 2H.12) are used instead, Reference Location (D10-1 through D10-3) signs shall be placed on all expressway facilities that are located on a route where there is reference location sign continuity and on all freeway facilities to assist road users in estimating their progress, to provide a means for identifying the location of emergency incidents and traffic crashes, and to aid in highway maintenance and servicing.

Option:

03 Reference Location (D10-1 through D10-3) signs may be installed along any section of a highway route or ramp to assist road users in estimating their progress, to provide a means for identifying the location of emergency incidents and traffic crashes, and to aid in highway maintenance and servicing.

04 To augment the Reference Location sign system, Intermediate Reference Location (D10-1a through D10-3a) signs, which show the tenth of a mile with a decimal point, may be installed at one tenth of a mile, two tenths of a mile, or one-half mile intervals.

Standard:

05 When Intermediate Reference Location (D10-1a through D10-3a) signs are used to augment the reference location sign system, the reference location sign at the integer mile point shall display a decimal point and a zero numeral.

06 Reference Location and Intermediate Reference Location signs shall have a minimum mounting height of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the roadway, and shall not be governed by the mounting height requirements prescribed in Section 2A.15.

07 The distance numbering shall be continuous for each route within a State, except where overlaps occur (see Section 2E.22). Where routes overlap, reference location sign continuity shall be established for only one of the routes. If one of the overlapping routes is an Interstate route, that route shall be selected for continuity of distance numbering.

08 The route selected for continuity of distance numbering shall also have continuity in interchange exit numbering (see Section 2E.22).

Guidance:

09 On a route without continuity of distance numbering, the first reference location sign beyond the overlap should indicate the total distance traveled on the route (including on the portion that did not have continuity of distance numbering) so that road users will have a means of correlating their travel distance between reference location signs with that shown on their odometer.

Standard:

10 For divided highways, the distance measurement shall be made on the northbound and eastbound roadways. The reference location signs for southbound or westbound roadways shall be set at locations directly opposite the reference location signs for the northbound or eastbound roadways.

11 Zero distance shall begin at the south and west State lines, or at the south and west terminus points where routes begin within a State.

12 Except as provided in Paragraph 13 of this Section, reference location signs shall be installed on the right-hand side of the roadway.

Option:

13 Where conditions limit or restrict the use of reference location signs on the right-hand side of the roadway, they may be installed in the median. On two-lane conventional roadways, reference location signs may be installed on one side of the roadway only and may be installed back-to-back. Reference location signs may be placed up to 30 feet from the edge of the pavement.

14 If a reference location sign cannot be installed in the correct location, it may be moved in either direction as much as 50 feet.

Guidance:

15 If a reference location sign cannot be placed within 50 feet of the correct location, it should be omitted.

Section 2H.12 Enhanced Reference Location Signs (D10-4) and Intermediate Enhanced Reference Location Signs (D10-5)

Support:

01 There are two types of enhanced reference location signs:

A. Enhanced Reference Location (D10-4) signs (see Figure 2H-7), and
B. Intermediate Enhanced Reference Location (D10-5) signs (see Figure 2H-7).

Option:

02 An Enhanced Reference Location (D10-4) sign, which enhances the reference location sign system by identifying the route, may be placed on freeways or expressways (instead of reference location signs) or on conventional roads.

03 To augment an enhanced reference location sign system, an Intermediate Enhanced Reference Location (D10-5) sign, which shows the tenth of a mile with a decimal point, may be installed along any section of a highway route or ramp at one tenth of a mile, two tenths of a mile, or one-half mile intervals.

Standard:

04 When an Intermediate Enhanced Reference Location (D10-5) sign is used to augment the reference location sign system, the Enhanced Reference Location sign at the integer mile point shall display a decimal point and a zero numeral.

05 Except as provided in Paragraph 6 of this Section, if enhanced reference location signs are used, they shall be vertical signs having a green background with a white legend and border, except for the route shield, which shall be the standard color and shape. The top line shall display the cardinal direction for the roadway. The second line shall display the applicable route shield for the roadway. The third line shall identify the mile reference for the location and the bottom line of the Intermediate Enhanced Reference Location sign shall give the tenth of a mile reference for the location preceded by a decimal point.

Support:

06 The provisions in Section 2H.11 regarding mounting height, distance numbering and measurements, sign continuity, and placement with respect to the right-hand shoulder and/or median for reference location signs also apply to enhanced reference location signs.

Section 2H.13 Acknowledgment Signs and Plaques (I20 Series)

Support:

01 Acknowledgment signs and plaques (see Figure 2H-8) are a way of recognizing a company, business, or volunteer group that provides or sponsors a highway-related service. Acknowledgment signs include sponsorship signs for adopt-a-highway litter removal programs, maintenance of a parkway or interchange, and other highway maintenance or beautification sponsorship programs.

Guidance:

02 A State or local highway agency that elects to have a sponsorship acknowledgement program should develop a policy on Acknowledgment signs and plaques. The policy should require that eligible sponsoring organizations comply with State laws prohibiting discrimination based on race, religion, color, age, sex, national origin, and other applicable laws.

Standard:

03 The State or local acknowledgment sign policy shall include all of the provisions regarding placement and design of Acknowledgment signs and plaques that are contained in this Section.

04 Because regulatory, warning, and guide signs have a higher priority, Acknowledgment signs shall only be installed where adequate spacing is available between the Acknowledgment sign and other higher priority signs. Acknowledgment signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

05 Acknowledgment signs shall not be installed at any of the following locations:

- **A. On the front or back of, adjacent to, or around any other traffic control device, including traffic signs, highway traffic signals, and changeable message signs;**
- **B. On the front or back of, adjacent to, or around the supports or structures of other traffic control devices, or bridge piers; or**
- **C. At key decision points where a road user's attention is more appropriately focused on other traffic control devices, roadway geometry, or traffic conditions, including exit and entrance ramps, merging or weaving areas, lane terminations, intersections, grade crossings, toll plazas, temporary traffic control zones, and areas of limited sight distance.**

06 Acknowledgment signs and plaques shall have a white legend and border on a blue background. Acknowledgment signs shall be independent post-mounted roadside installations only and shall not be mounted overhead.

Option:

07 An Acknowledgment sign may be used to acknowledge the sponsor of a rest area or welcome center.

Standard:

08 Acknowledgment signs for a rest area, when located on the highway mainline, shall be limited to one sign per direction of travel from which the rest area is accessible, shall be located at least 500 feet from other traffic control devices, and shall not display names or representations of specific products or services provided by the sponsor within the rest area. Acknowledgment signs for rest areas shall display the legend REST AREA as the program activity, such as REST AREA SPONSORED BY. In accordance with Paragraph 5 of this Section, the Rest Area and Welcome Center Acknowledgment (I20-4 and I20-4a) signs shall not be combined in the same sign assembly with or substitute for the Rest Area General Service guide signs (see Section 2I.05).

Option:

09 An additional Acknowledgment sign may be used within the rest area provided that it is not visible from the highway mainline or ramps to and from the rest area.

10 If a State has officially adopted and is actively promoting a program to encourage the use of safety rest areas through the use of a program name, then that program name may be displayed in smaller lettering below the legend REST AREA on the Rest Area Acknowledgment sign.

Standard:

11 Program names or slogans, as described in Paragraph 14 of this Section, shall not be displayed on the Rest Area General Service guide signs or other types of traffic signs.

Guidance:

12 The minimum spacing between Acknowledgment signs and any other traffic control signs, except parking regulation signs, should be:

A. 150 feet on roadways with speed limits of less than 30 mph,
B. 200 feet on roadways with speed limits of 30 to 45 mph, and
C. 500 feet on roadways with speed limits greater than 45 mph.

13 If the placement of a newly-installed higher-priority traffic control device, such as a higher-priority sign, a highway traffic signal, or a temporary traffic control device, conflicts with an existing Acknowledgment sign, the Acknowledgment sign should be relocated, covered, or removed.

Option:

14 State or local highway agencies may use their own pictograph (see definition in Section 1C.02) and/or a brief jurisdiction-wide program name, such as "Adopt-A-Highway" or "Litter Removal," as part of any portion of the Acknowledgment sign, provided that the signs comply with the provisions for shape, sign and legend size, color, and lettering style in this Chapter and in Chapter 2A.

Guidance:

15 Acknowledgment signs should clearly indicate the type of highway services provided by the sponsor.

Standard:

16 In addition to the general provisions for signs described in Chapter 2A and the sign design principles covered in the "Standard Highway Signs" publication (see Section 1A.05), Acknowledgment sign and plaque designs developed by State or local highway agencies shall comply with the following provisions:

A. Neither the sign or plaque design nor the sponsor acknowledgment name or logo shall contain any contact information, directions, slogans (other than a brief jurisdiction-wide program name, if used), telephone numbers, e-mail or Internet addresses, including domain names and uniform resource locators (URLs), metadata tags ("hash-tags"), or quick-response (QR) codes, bar codes, or similar scanning graphics (see Section 2A.04);
B. Except for the sponsor acknowledgment logo, all of the lettering shall be in upper-case letters of the Standard Alphabets as provided in the "Standard Highway Signs" publication (see Section 1A.05);

C. If a logo, instead of a word legend, is used to represent the sponsor, the logo shall be the primary logo that identifies the sponsoring entity. Secondary or alternate logos, slogans, products, mascots, spokespersons, or other items associated with the sponsoring entity's commercial advertising or marketing shall not be displayed on Acknowledgment signs or plaques;

D. In order to keep the main focus on the highway-related service and not on the sponsor acknowledgment name or logo, the area reserved for the sponsor acknowledgment name or logo shall not be located at the top of the sign or plaque, shall be a maximum of 8 square feet in area, and shall not exceed ⅓ of the total area of the sign;

E. The entire sign display area of an Acknowledgment sign assembly shall not exceed 24 square feet;

F. The sign or plaque shall not contain any messages, lights, symbols, or logos that resemble any official traffic control devices;

G. The sign or plaque shall not contain any external or internal illumination, light-emitting diodes, luminous tubing, fiber optics, luminescent panels, or other flashing, moving, or animated features;

H. The sign or plaque shall not distract from official traffic control messages such as regulatory, warning, or guidance messages;

I. The area of the plaque shall not exceed the lesser of ⅓ the area of the General Service sign below which it is mounted or 24 square feet;

J. The plaque size shall be based on the standard sizes as specified in Table 2H-1. If the size of the General Service sign is oversized for its application (greater than the size specified for the corresponding roadway application in Table 2H-1), or if the size of the General Service sign increases due to modification of the sign legend, a corresponding increase in the size of the plaque shall not be allowed; and

K. The sign or plaque shall not display promotional or contact information about the agency's sponsorship program, including if the sign or plaque does not currently display a sponsor.

Option:

17 If a specific outlet of a business with multiple locations in the same area is the sponsoring entity, such as a franchisee, the area reserved for the sponsor acknowledgment name or logo may include the name of the municipality or neighborhood in which the sponsoring entity is located.

18 An Acknowledgment plaque may be mounted below the following General Service signs to acknowledge the sponsor of a corridor-based or region-based highway-related service:

A. Radio-Weather Information (D12-1) sign (see Section 2I.09);

B. Radio-Traffic Information (D12-1a) sign (see Section 2I.09);

C. TRAVEL INFO CALL 511 (D12-5 and D12-5a) signs (see Section 2I.12); and

D. Roadside Assistance (D12-6) sign (see Section 2I.13).

Standard:

19 An Acknowledgment plaque shall not be mounted in conjunction with any other sign or traffic control device. An Acknowledgment plaque shall not be used alone or without one of the General Service signs specified in Paragraph 18 of this Section.

20 The general restrictions on the type of content allowed for display on Acknowledgment signs (see Paragraph 16 of this Section) shall apply to the legends of Acknowledgment plaques.

Section 2H.14 Alternative Fuels Corridor Sign (D9-19)

Option:

01 The Alternative Fuels Corridor (D9-19) sign (see Figure 2H-9) may be used to inform motorists of an alternative fuels corridor highway segment that has been designated by the Secretary of Transportation as "Corridor Ready."

Standard:

02 Alternative Fuels Corridor signs shall only be used to designate alternative fuels corridor highway segments that have been designated by the Federal Highway Administration as "Corridor Ready." The appropriate General Service signs or plaques identifying the alternative fuels available in the corridor shall be included with the Alternative Fuels Corridor sign in a sign assembly. The alternative fuel services for an alternative fuels corridor shall be limited to electric vehicle charging, compressed natural gas, liquid natural gas, liquified petroleum, and hydrogen.

Support:

03 The General Service (D9-11a, D9-11b, D9-11d, D9-11e, and D9-11f) symbol signs for use with an Alternative Fuels Corridor sign are shown in Figure 2I-1.

Standard:

04 Alternative Fuels Corridor signs shall only be post-mounted on the side of the road and shall not be mounted overhead.

05 State or agency variations of the Alternative Fuels Corridor sign shall not be allowed. Acknowledgments of sponsors shall not be allowed in Alternative Fuels Corridor sign assemblies.

06 Except as provided in Paragraph 7 of this Section, Alternative Fuels Corridor signs shall be limited to one sign at or near the beginning of the alternative fuels corridor in each direction of travel.

Option:

07 For long corridors, such as segments connecting control cities or major urban areas, additional signs may be located beyond major intersections or major interchanges following the typical post-interchange sign sequence.

08 The beginning of an alternative fuels corridor may be indicated with a BEGIN (M4-14P) plaque (see Figure 2H-9) with a white legend and border on a blue background mounted above the alternative fuels corridor sign in the sign assembly.

09 The end of an alternative fuels corridor may be indicated with an END (M4-6P) plaque (see Figure 2H-9) with a white legend and border on a blue background mounted above the Alternative Fuels Corridor sign in the sign assembly.

Standard:

10 The General Service signs shall not be used in the sign assembly indicating the end of a corridor.

11 When the availability of one or more of the alternative fuel facilities discontinues in an alternative fuels corridor, the LAST IN CORRIDOR (W16-19P) plaque (see Figure 2H-9) shall be included on the last General Service directional assembly on the approach to the interchange or intersection.

Option:

12 When the availability of one or more of the alternative fuel facilities discontinues in an alternative fuels corridor, an Alternative Fuels Corridor sign with accompanying General Service signs indicating the types of fuels still available in the corridor may be provided beyond the intersection or interchange where the last discontinued fuel facilities were available.

13 When the distance between electric vehicle (EV) charging services in an alternative fuels corridor is greater than 50 miles, the Next EV Charging (D9-17a) sign (see Figure 2H-9) may be located after the EV charging directional assembly, but before the EV charging service exit or turn, to inform road users of the extended distance to the next EV charging service.

Standard:

14 The Alternative Fuels Corridor (D9-19) sign shall not be used as a directional sign in a directional assembly, or be combined with other signs, except as provided in this Section.

Option:

15 Up to three General Service symbol signs arranged horizontally displaying the alternative fuels available in the designated corridor may be installed below the Alternative Fuels Corridor sign (see Figure 2H-10).

Standard:

16 The size of the General Service symbol signs for the alternative fuels available shall not exceed 18 x 18 inches when mounted with the 24 x 24-inch Alternative Fuels Corridor sign and 24 x 24 inches when mounted with the 36 x 36-inch Alternative Fuels Corridor sign.

Guidance:

17 When the number of eligible alternative fuels available in the corridor exceeds three, a separate plaque with the two-letter or three-letter designations (D9-19aP or D9-19bP) of each of the fuels available (see Figure 2H-9) should be used in place of the General Service symbol signs.

Standard:

18 When the Alternative Fuels Corridor sign is used in a designated corridor on a freeway or expressway, the applicable General Service signs shall be installed on the approach to an interchange in the corridor from which the designated fuel services are available. If the services are not visible from the ramp of a single-exit interchange, the service signing shall be repeated at the intersection of the exit ramp and the crossroad (see Figure 2H-10). Where the alternative fuel facility is not located along the crossroad, additional General Service directional assemblies shall be installed in advance of each subsequent turn to reach the facility (see Figure 2H-11).

Support:

19 Because regulatory, warning, and guide signs are necessary for safe and efficient movement of traffic, they have a higher priority in placement location over Alternative Fuels Corridor signs.

Standard:

20 Alternative Fuels Corridor sign assemblies shall be limited to those locations where adequate spacing is available between the Alternative Fuels Corridor sign and other signs. Alternative Fuels Corridor signs shall not be installed in a location where they might distract driver's attention from other traffic control devices or the roadway in a complex roadway environment. If the placement of a newly-installed, higher-priority traffic control device conflicts with an existing Alternative Fuels Corridor sign, the Alternative Fuels Corridor sign shall be relocated, covered, or removed.

21 Alternative Fuels Corridor signs shall not be installed on routes other than those officially designated as alternative fuels corridors, even if to provide directional information to such corridors.

CHAPTER 2I. GENERAL SERVICE SIGNS

Section 2I.01 Sizes of General Service Signs

Standard:

01 Except as provided in Section 2A.07, the sizes of General Service signs that have a standardized design shall be as shown in Table 2I-1.

Support:

02 Section 2A.07 contains information regarding the applicability of the various columns in Table 2I-1.

Option:

03 Signs larger than those shown in Table 2I-1 may be used (see Section 2A.07).

Section 2I.02 General Service Signs for Conventional Roads

Support:

01 On conventional roads, commercial services such as gas, food, and lodging generally are within sight and are available to the road user at reasonably frequent intervals along the route. Consequently, on this class of road there usually is no need for special signs calling attention to these services. Moreover, General Service signing is usually not needed in urban areas except for hospitals, law enforcement assistance, tourist information centers, and camping.

Option:

02 General Service signs (see Figure 2I-1) may be used on conventional roads where such services are infrequent and are found only on an intersecting highway or crossroad.

Standard:

03 All General Service signs and supplemental sign panels shall have a white legend and border on a blue background.

Guidance:

04 General Service signs should be installed at a suitable distance in advance of the turn-off point or intersecting highway.

05 States that elect to provide General Service signing should establish a statewide policy or warrant for its use, and criteria for the availability of services. Local jurisdictions electing to use such signing should follow State policy for the sake of uniformity.

Option:

06 Individual States may sign for whatever alternative fuels are available at appropriate locations.

Support:

06a General Motorist Service signs are a part of VDOT's Integrated Directional Signing Program (IDSP) and are installed, maintained, modified, and removed by the IDSP contractor. For further information about the IDSP, refer to Section 2A.V1 and to the VDOT IDSP website.

Standard:

07 To be eligible for an EV Charging General Service sign on a conventional road, the EV chargers provided shall meet the criteria for Direct Current Fast Chargers provided in 23 CFR 680.106 and be in continuous operation at least 16 hours per day, 7 days per week.

08 General Service signs, if used at intersections, shall be accompanied by a directional message.

Option:

09 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary plaques (see Figure 2I-1) with white arrows on blue backgrounds may be used with General Service symbol signs to create a General Service directional assembly.

10 The General Service sign legends may be either symbols or word messages.

Standard:

11 Symbols and word message General Service legends shall not be intermixed on the same sign.

12 The Pharmacy (D9-20) sign shall only be used to indicate the availability of a pharmacy that is open, with a State-licensed pharmacist present and on duty, 24 hours per day, 7 days per week, and that is located within 3 miles of an interchange on the Federal-aid system. The D9-20 sign shall have a 24 HR (D9-20aP) plaque mounted below it.

13 Use of the Hospital (D9-2) sign or the HOSPITAL (D9-13aP) plaque (see Figure 2I-1) shall be limited to facilities that operate 24 hours per day, 7 days per week.

Option:

14 The Emergency Medical Services (D9-13) sign (see Figure 2I-1 and Paragraph 20 of this Section) may be used for facilities that provide emergency medical care but do not operate on a full-time basis.

Support:

15 Formats for displaying different combinations of these services are described in Section 2I.03.

Option:

16 If the distance to the next point at which services are available is 10 miles or more, a Next Services Advance (D9-17P) plaque (see Figure 2I-2) may be installed below the General Service sign.

17 The International Symbol of Accessibility (D9-6) sign (see Figure 2I-1) may be used beneath General Service signs where paved ramps and rest room facilities accessible to, and usable by, persons with disabilities are provided.

Guidance:

18 When the D9-6 sign is used in accordance with Paragraph 16 of this Section, and van-accessible parking is available at the facility, a VAN ACCESSIBLE (D9-6P) plaque (see Figure 2I-1) should be mounted below the D9-6 sign.

Option:

19 The Recreational Vehicle Sanitary Station (D9-12) sign (see Figure 2I-1) may be used as needed to indicate the availability of facilities designed for the use of dumping wastes from recreational vehicle holding tanks.

20 The Litter Container (D9-4) sign (see Figure 2I-1) may be placed in advance of roadside turn-outs or rest areas, unless it distracts the driver's attention from other more important regulatory, warning, or directional signs.

21 The Emergency Medical Services (D9-13) symbol sign (see Figure 2I-1) may be used to identify medical service facilities that have been included in the Emergency Medical Services system under a signing policy developed by the State and/or local highway agency.

Standard:

22 The Emergency Medical Services symbol sign shall not be used to identify services other than qualified hospitals, ambulance stations, and qualified free-standing emergency medical treatment centers. If used, the Emergency Medical Services symbol sign shall be supplemented by a sign or plaque, as provided in Paragraph 22 of this Section, identifying the type of service provided.

Option:

23 The Emergency Medical Services symbol sign may be used above the HOSPITAL (D9-13aP) plaque or above a plaque with the legend AMBULANCE STATION (D9-13bP), EMERGENCY MEDICAL CARE (D9-13cP), or TRAUMA CENTER (D9-13dP). The Emergency Medical Services symbol sign may also be used to supplement Telephone (D9-1), Channel 9 Monitored (D12-3) (see Figure 2I-8), or POLICE (D9-14) signs.

Standard:

24 The legend EMERGENCY MEDICAL CARE shall not be used for services other than qualified free-standing emergency medical treatment centers.

Guidance:

25 Each State should develop a policy for the implementation of the Emergency Medical Services symbol sign.

26 The State should consider the following guidelines in the preparation of its policy:

A. AMBULANCE

1. 24-hour service, 7 days per week.
2. Staffed by two State-certified persons trained at least to the basic level.
3. Vehicular communications with a hospital emergency department.
4. Operator should have successfully completed an emergency-vehicle operator training course.

B. HOSPITAL

1. 24-hour service, 7 days per week.
2. Emergency department facilities with a physician (or emergency care nurse on duty within the emergency department with a physician on call) trained in emergency medical procedures on duty.
3. Licensed or approved for definitive medical care by an appropriate State authority.
4. Equipped for radio voice communications with ambulances and other hospitals.

C. Channel 9 Monitored

1. Provided by either professional or volunteer monitors.
2. Available 24 hours per day, 7 days per week.
3. The service should be endorsed, sponsored, or controlled by an appropriate government authority to guarantee the level of monitoring.

Section 2I.03 General Service Signs for Freeways and Expressways

Support:

01 General Service (D9-18 series) signs (see Figure 2I-3) are generally not appropriate at major interchanges (see definition in Section 2E.11) and in urban areas.

Standard:

02 General Service signs shall have a white legend and border on a blue background. Letter and numeral sizes shall comply with the minimum requirements of Tables 2E-2 through 2E-5. All approved symbols shall be permitted as alternatives to word messages, but symbols and word service messages shall not be intermixed on the same sign. If the services are not visible from the ramp of a single-exit interchange, the service signing shall be repeated in smaller size at the intersection of the exit ramp and the crossroad. Such service signs shall use arrows to indicate the direction to the services.

Guidance:

03 Where General Service signs are used along routes with exit numbering, the General Service sign should include the exit number within the sign face as shown in Figure 2I-3.

04 Distance to services should be displayed on General Service signs along the exit ramp where distances are more than 1 mile from the ramp intersection with the crossroad.

05 General Service signing should only be provided at locations where the road user can return to the freeway or expressway and continue in the same direction of travel.

Guidance:

06 Only services that fulfill the needs of the road user should be displayed on General Service signs. If State or local agencies elect to provide General Service signing, there should be a statewide policy for such signing and criteria for the eligibility and availability of the various types of services. The criteria should consider the following:

A. Gas, diesel, and/or alternative fuels, except for electric vehicle (EV) charging, if all of the following are available:

1. Vehicle services such as gas, oil, and water;
2. Modern sanitary facilities and drinking water; and
3. Continuous operations at least 16 hours per day, 7 days per week.

B. Food if all of the following are available:
   1. Licensing or approval, where required;
   2. Continuous operation to serve at least two meals per day, at least 6 days per week; and
   3. Modern sanitary facilities.

C. Lodging if all of the following are available:
   1. Licensing or approval, where required;
   2. Adequate sleeping accommodations; and
   3. Modern sanitary facilities.

D. Public telephone if continuous operation, 7 days per week is available.

E. Hospital if continuous emergency care capability, with a physician on duty 24 hours per day, 7 days per week is available. A physician on duty would include the following criteria and should be signed in accordance with the priority as follows:
   1. Physician on duty within the emergency department;
   2. Registered nurse on duty within the emergency department, with a physician in the hospital on call; or
   3. Registered nurse on duty within the emergency department, with a physician on call from office or home.

F. 24-Hour Pharmacy if a pharmacy is open, with a State-licensed pharmacist present and on duty, 24-hours per day, 7 days per week and is located within 3 miles of an interchange on the Federal-aid system.

G. Camping if all of the following are available:
   1. Licensing or approval, where required;
   2. Adequate parking accommodations; and
   3. Modern sanitary facilities and drinking water.

Standard:

07 To be eligible for an EV Charging General Service sign on freeways and expressways, the EV chargers provided shall meet the criteria for Direct Current Fast Chargers provided in 23 CFR 680.106 and be in continuous operation at least 16 hours per day, 7 days per week.

Support:

08 Motorist expectations for facilities providing alternative fuels, such as EV Charging, compressed natural gas, liquefied natural gas, liquefied petroleum gas, and hydrogen, vary considerably and alternative fuel vehicles might have different needs than conventional fuel vehicles.

Guidance:

09 The policy criteria for alternative fuel vehicles should take into account the needs, convenience, and safety of alternative fuel vehicle users (see Section 2H.14).

Standard:

10 For any service that is operated on a seasonal basis only, the General Service signs shall be removed or covered during periods when the service is not available.

11 The General Service signs shall be mounted in an effective location, between the Advance Guide sign and the Exit Direction sign, in advance of the exit leading to the available services.

Option:

12 If the distance to the next point where services are available is greater than 10 miles, a Next Services Advance (D9-17P) plaque (see Figure 2I-2) may be installed below the Exit Direction sign.

Standard:

13 Signs for services shall comply with the format for General Service signs (see Section 2I.02) and as provided in this Manual. No more than six general road user services shall be displayed on one sign,

which includes any appended supplemental signs or plaques. General Service signs shall display the legends for one or more of the following services: Food, Gas, EV Charging, Lodging, Camping, Phone, Hospital, 24-Hour Pharmacy, or Tourist Information.

14 The qualified services available shall be displayed at specific locations on the sign.

Guidance:

15 To provide for future services that might become available, the sign space normally reserved for a given service symbol or word should be left blank when that service is not present.

16 The standard display of word messages should be FOOD and PHONE in that order on the top line, and GAS and LODGING on the second line. If used, HOSPITAL, 24-HOUR PHARMACY, and CAMPING should be on separate lines (see Figure 2I-3).

Option:

17 Signing for EV Charging, DIESEL, LP-GAS, or other alternative fuel services may be substituted for any of the general services or appended to such signs. The International Symbol of Accessibility (D9-6) sign (see Figure 2I-1) may be used for facilities that qualify.

Guidance:

18 When symbols are used for the road user services, they should be displayed as follows:

A. Six services:

1. Top row—GAS, FOOD, and LODGING
2. Bottom row—PHONE, HOSPITAL, and CAMPING

B. Four services:

1. Top row—GAS and FOOD
2. Bottom row—LODGING and PHONE

C. Three services:

1. Top row—GAS, FOOD, and LODGING

Option:

19 Substitutions of other services for any of the services described in Paragraph 18 of this Section may be made by placing the substitution in the lower right (four or six services) or extreme right (three services) portion of the sign. An action message or an interchange number may be used for symbol signs in the same manner as they are used for word message signs. The Diesel Fuel (D9-11) symbol or the LP-GAS (D9-11e) symbol may be substituted for the symbol representing fuel or appended to such assemblies. The Tourist Information (D9-10) or the 24-Hour Pharmacy (D9-20 and D9-20aP) symbol may be substituted on any of the configurations provided in Paragraph 18 of this Section.

20 At rural interchange areas where limited road user services are available and where it is unlikely that additional services will be provided within the near future, a Rural Interchange General Services (D9-18dP, D9-18eP, or D9-18fP) plaque displaying one to three services (words or symbols) may be mounted below a post-mounted Interchange Advance guide sign.

Standard:

21 If more than three services become available at rural interchange areas where limited road user services were anticipated, the appended supplemental plaque described in Paragraph 20 of this Section shall be removed and replaced with an independently-mounted General Service sign as described in this Section.

Option:

22 A separate Telephone Service (D9-1) sign (see Figure 2I-1) may be installed if telephone facilities are located adjacent to the route at places where public telephones would not normally be expected.

23 The Recreational Vehicle Sanitary Station (D9-12) sign (see Figure 2I-1) may be used as needed to indicate the availability of facilities designed for dumping wastes from recreational vehicle holding tanks.

24 In some locations, signs may be used to indicate that services are not available.

25 A separate Truck Parking (D9-16) sign (see Figure 2I-1) may be mounted below the other general road user services to direct truck drivers to designated parking areas.

26 A TRUCK EXTERNAL POWER (D9-16aP) plaque (see Figure 2I-1) may be mounted below the Truck Parking (D9-16) sign to indicate the availability of receptacles providing power for electrical devices within the truck.

Section 2I.04 Interstate Oasis Signing (D5-12 Series)

Support:

01 An Interstate Oasis is a facility near an Interstate highway that provides products and services to the public, 24-hour access to public restrooms, and parking for automobiles and heavy trucks. Interstate Oasis guide signs inform road users on Interstate highways as to the presence of an Interstate Oasis at an interchange and which businesses have been designated by the State within which they are traveling as having met the eligibility criteria of the Federal Highway Administration's Interstate Oasis policy. The FHWA's policy, which is dated October 18, 2006, and which can be viewed on the MUTCD Web site at http://mutcd.fhwa.dot.gov/res-policy.htm, provides a more detailed definition of an Interstate Oasis and specifies the eligibility criteria for an Interstate Oasis designation in compliance with the requirements of laws enacted by Congress.

Guidance:

02 If a State elects to provide or allow Interstate Oasis signing (see Figure 2I-4), there should be a statewide policy, program, procedures, and criteria for the designation and signing of a facility as an Interstate Oasis that complies with the FHWA's policy and with the provisions of this Section.

03 States electing to provide or allow Interstate Oasis signing should use the following signing practices on the freeway for any given exit to identify the availability of a designated Interstate Oasis:

A. If adequate sign spacing allows, a separate Interstate Oasis (D5-12) sign should be installed in an effective location with spacing of at least 800 feet from other adjacent guide signs, including any Specific Service signs. This Interstate Oasis sign should be located upstream from the Advance Guide sign or between the Advance Guide sign and the Exit Direction sign for the exit leading to the Interstate Oasis. The Interstate Oasis sign should display the words INTERSTATE OASIS and the exit number or, for an unnumbered interchange, an action message such as NEXT RIGHT.

B. If the spacing of the other guide signs precludes the use of a separate sign as described in Item A of this Paragraph, an INTERSTATE OASIS (D5-12aP) supplemental plaque should be mounted below an existing D9-18 series General Service sign for the interchange.

Option:

04 If Specific Service signing is provided at the interchange, a business designated as an Interstate Oasis and having a business identification sign panel on the Food and/or Gas Specific Service signs may use the bottom portion of the business identification sign panel to display the word OASIS.

05 If Specific Service signing is not provided at the interchange, the name of the business designated as an Interstate Oasis may be displayed on a business identification sign panel, in compliance with the provisions of Sections 2J.03 through 2J.05, below the INTERSTATE OASIS legend on the D5-12 sign.

Standard:

06 If Specific Service signs containing the OASIS legend as a part of the business identification sign panel(s) are not used on the ramp and if the Interstate Oasis is not clearly visible and identifiable from the exit ramp, an Interstate Oasis Directional (D5-12b) sign shall be provided on the exit ramp to indicate the direction and distance to the Interstate Oasis.

07 If needed, additional trailblazer guide signs shall be used along the crossroad to guide road users to an Interstate Oasis.

Section 2I.05 Rest Area and Other Roadside Area Signs (D5-1 through D5-11 Series)

Standard:

01 Rest Area signs (see Figure 2I-5) shall have a retroreflective white legend and border on a blue background.

02 Signs that include the legend REST AREA shall be used only where parking and restroom facilities are available.

Guidance:

03 A roadside area that does not contain restroom facilities should be signed to indicate the major road user service that is provided. For example, the sign legends for an area with only parking should use the words PARKING AREA (D5-9 series) instead of REST AREA. The sign legends for an area with only picnic tables and parking should use words such as PICNIC AREA, ROADSIDE TABLE, or ROADSIDE PARK (D5-10 series) instead of REST AREA.

04 Rest areas that have tourist information and welcome centers should be signed as provided in Section 2I.08.

05 Scenic area signing should be consistent with that provided for rest areas, except that the legends should use words such as SCENIC AREA, SCENIC VIEW, or SCENIC OVERLOOK (D5-11 series) instead of REST AREA.

06 If a rest area or other roadside area is provided on a conventional road, a D5-1 and/or D5-1a sign should be installed in advance of the rest area or other roadside area to permit the driver to reduce speed in preparation for leaving the highway. A D5-5 sign (or a D5-2 sign if an exit ramp is provided) should be installed at the turn-off point where the driver needs to leave the highway to access the rest area or other roadside area.

07 If a rest area or other roadside area is provided on a freeway or expressway, a D5-1 sign should be placed 1 mile and/or 2 miles in advance of the rest area.

Standard:

08 A D5-2a sign shall be placed at the rest area or other roadside area exit gore.

Option:

09 A D5-1a sign may be placed between the D5-1 sign and the exit gore on a freeway or expressway. A second D5-1 sign may be used in place of the D5-1a sign with a distance to the nearest ½ or ¼ mile displayed as a fraction rather than a decimal for distances of less than 1 mile.

10 To provide the road user with information on the location of succeeding rest areas, a Next Rest Area (D5-6) sign (see Figure 2I-5) may be installed independently or as a supplemental sign mounted below one of the REST AREA advance guide signs.

Standard:

11 All signs on freeways and expressways for rest and other roadside areas shall have letter and numeral sizes that comply with the minimum requirements of Tables 2E-2 through 2E-5. The sizes for General Service signs that have standardized designs shall be as shown in Table 2I-1.

Option:

12 If the rest area has facilities for persons with disabilities (see Section 2I.02), the International Symbol of Accessibility (D9-6) sign (see Figure 2I-1) may be placed with or beneath an advance guide sign for the rest area.

13 If telecommunication devices for the deaf (TDD) are available at the rest area, the TDD (D9-21) symbol sign (see Figure 2I-1) may be used to supplement the advance guide signs for the rest area.

14 If wireless Internet services are available at the rest area, the Wireless Internet (D9-22) symbol sign (see Figure 2I-1) may be used to supplement the advance guide signs for the rest area.

Section 2I.06 Brake Check Area Signs (D5-13 and D5-14)

Guidance:

01 If an area has been provided for drivers to pull off of the roadway to check the brakes on their vehicle, a Brake Check Area Advance (D5-13) sign (see Figure 2I-6) should be installed in advance of the brake check area.

Section 2I.07 Chain-Up Area Signs (D5-15 and D5-16)

Guidance:

01 If an area has been provided for drivers to pull off of the roadway to install chains on their tires, a Chain-Up Area Advance (D5-15) sign (see Figure 2I-6) should be installed in advance of the chain-up area, and a D5-16 sign (see Figure 2I-6) should be placed at the entrance to the chain-up area.

Section 2I.08 Tourist Information and Welcome Center Signs (D5-7 Series and D5-8)

Support:

01 Tourist information and welcome centers have been constructed within rest areas on freeways and expressways and are operated by either a State or a private organization. Others have been located within close proximity to these facilities and operated by civic clubs, chambers of commerce, or private enterprise.

Guidance:

02 The number of supplemental sign panels installed with Tourist Information or Welcome Center signs should be limited to three so as not to impose an undue informational load on the road user.

Standard:

03 Tourist Information or Welcome Center signs (see Figure 2I-7) shall have a white legend and border on a blue background. Continuously staffed or unstaffed operation at least 8 hours per day, 7 days per week, shall be required.

04 If operated only on a seasonal basis, the Tourist Information or Welcome Center signs shall be removed or covered during the off seasons.

Guidance:

05 For freeway or expressway rest area locations that also serve as tourist information or welcome centers, the following signing criteria should be used:

A. The locations for tourist information and welcome center Advance Guide, Exit Direction, and Exit Gore signs should meet the General Service signing requirements described in Section 2I.03.
B. If the signing for the tourist information or welcome center is to be accomplished in conjunction with the initial signing for the rest areas, the message on the Rest Area Tourist Info Center Advance (D5-7) sign should be REST AREA, TOURIST INFO CENTER, XX MILES or REST AREA, STATE NAME (optional), WELCOME CENTER XX MILES. On the Rest Area Tourist Info Center Entrance Direction (D5-8) sign the message should be REST AREA, TOURIST INFO CENTER with a diagonally upward-pointing directional arrow (or NEXT RIGHT), or REST AREA, STATE NAME (optional), WELCOME CENTER with a diagonally upward-pointing directional arrow (or NEXT RIGHT).
C. If the initial rest area Advance Guide and Exit Direction signing is in place, these signs should include, on supplemental signs, the legend TOURIST INFO CENTER or STATE NAME (optional), WELCOME CENTER.
D. The Exit Gore sign should contain only the legend REST AREA with the arrow and should not be supplemented with any legend pertaining to the tourist information center or welcome center.

Option:

06 As an alternative to the supplemental TOURIST INFO CENTER legend, the Tourist Information (D9-10) sign (see Figure 2I-1) may be appended beneath the REST AREA advance guide sign.

07 The name of the State or local jurisdiction may appear on the Advance Guide and Exit Direction tourist information/welcome center signs if the jurisdiction controls the operation of the tourist information or welcome center and the center meets the operating criteria set forth in this Manual and is consistent with State policies.

Guidance:

08 For tourist information centers that are located off the freeway or expressway facility, additional signing criteria should be as follows:

A. Each State should adopt a policy establishing the maximum distance that a tourist information center can be located from the interchange in order to be included on official signs.

B. The location of signing should be in accordance with requirements pertaining to General Service signing (see Section 2I.03).

C. Signing along the crossroad should be installed to guide the road user from the interchange to the tourist information center and back to the interchange.

Option:

09 As an alternative, the Tourist Information (D9-10) sign (see Figure 2I-1) may be appended to the guide signs for the exit that provides access to the tourist information center. As a second alternative, the Tourist Information sign may be combined with General Service signing.

Section 2I.09 Radio Information Signing (D12-1 Series)

Option:

01 A Radio-Weather Information (D12-1) sign (see Figure 2I-8) may be used in areas where difficult driving conditions commonly result from weather systems. Radio-Traffic Information (D12-1a) signs may be used in conjunction with traffic management systems.

Standard:

02 Radio-Weather and Radio-Traffic Information signs shall have a white legend and border on a blue background. Only the numerical indication of the radio frequency shall be used to identify a station broadcasting travel-related weather or traffic information. No more than three frequencies shall be displayed on each sign. Only radio stations whose signal will be of value to the road user and who agree to broadcast either of the following two items shall be identified on Radio-Weather and Radio-Traffic Information signs:

A. Periodic weather warnings at a rate of at least once every 15 minutes during periods of adverse weather; or

B. Driving condition information (affecting the roadway being traveled) at a rate of at least once every 15 minutes, or when required, during periods of adverse traffic conditions, and when supplied by an official agency having jurisdiction.

03 If a station to be considered operates only on a seasonal basis, its signs shall be removed or covered during the off season.

Guidance:

04 The radio station should have a signal strength to adequately broadcast at least 70 miles along the route. Signs should be spaced as needed for each direction of travel at distances determined by an engineering study. The stations to be included on the signs should be selected in cooperation with the association(s) representing major broadcasting stations in the area to provide: (1) maximum coverage to all road users on both AM and FM frequencies; and (2) consideration of 24 hours per day, 7 days per week broadcast capability.

Option:

05 The URGENT MESSAGE WHEN FLASHING (D12-1bP) plaque may be mounted below the D12-1 or D12-1a sign if supplemented by Warning Beacons (see Section 4S.03) that flash only when a message related to adverse travel conditions is being broadcast.

06 In roadway rest area locations, a smaller sign using a greater number of radio frequencies, but of the same general design, may be used.

Standard:

07 Radio-Weather and Radio-Traffic Information signs installed in rest areas shall be positioned such that they are not visible from the main roadway.

Section 2I.10 Channel 9 Monitored Sign (D12-3)

Option:

01 A Channel 9 Monitored (D12-3) sign (see Figure 2I-8) may be installed as needed. Official public agencies or their designees may be displayed as the monitoring agency on the sign.

Standard:

02 Only official public agencies or their designee shall be displayed as the monitoring agency on the Channel 9 Monitored sign.

Section 2I.11 EMERGENCY CALL 911 Sign (D12-4)

Option:

01 An EMERGENCY CALL 911 (D12-4) sign (see Figure 2I-8) may be used for cellular telephone communications.

Section 2I.12 TRAVEL INFO CALL 511 Signs (D12-5 and D12-5a)

Option:

01 A TRAVEL INFO CALL 511 (D12-5 or D12-5a) sign (see Figure 2I-8) may be installed if a 511 travel information services telephone number is available to road users for obtaining traffic, public transportation, weather, construction, or road condition information.

02 The pictograph of the transportation agency or the travel information service or program that is providing the travel information may be displayed in place of the 511 pictograph on the D12-5 sign above the TRAVEL INFO CALL 511 legend.

Standard:

03 The logo of a commercial entity shall not be incorporated within the TRAVEL INFO CALL 511 signs.

04 If the pictograph of the transportation agency or the travel information service or program is used in place of the 511 pictograph on the D12-5 sign (see Paragraph 2 of this Section), the maximum height of the pictograph shall not exceed the height of the 511 pictograph on the standard sign size specified for the roadway classification in Table 2H-1.

05 The TRAVEL INFO CALL 511 signs shall have a white legend and border on a blue background.

Section 2I.13 Roadside Assistance Sign (D12-6)

Option:

01 A Roadside Assistance (D12-6) sign (see Figure 2I-8) displaying the Highway Assistance cellular telephone code designated for that roadway or jurisdiction may be used along a highway that is served by an authorized roadside assistance program with authorized service vehicles and personnel that provide roadside vehicle repair assistance to road users free of charge.

Section 2I.14 Carpool and Ridesharing Signing (D12-2)

Option:

01 In areas having carpool matching services, a Carpool Information (D12-2) sign (see Figure 2I-8) may be provided adjacent to highways with preferential lanes or along any other highway.

02 Carpool Information signs may include an Internet domain name or telephone number of more than four characters within the legend.

Standard:

03 If a local transit pictograph or carpool symbol is incorporated into the Carpool Information sign, the maximum vertical dimension of the pictograph or symbol shall not exceed 18 inches and the maximum horizontal dimension shall not exceed 30 inches.

Section 2I.15 Signing for Truck Parking Availability (D9-16b through D9-16e)

Option:

01 General Service signs may be used to display the number of available truck parking spaces at roadside areas such as rest areas, welcome centers, and weigh stations, and at facilities off a highway that are open to the public and provide parking for commercial vehicles 24 hours per day, 7 days per week.

Standard:

02 The Truck Parking Availability General Service (D9-16b through D9-16e) signs (see Figure 2I-9) shall include a changeable message element with a white changeable legend on a black opaque background that displays only the number of parking spaces currently available at each location or the legend FULL. The upper section of the sign shall display the Truck Parking (D9-16) symbol sign and the legend SPACES OPEN. The sign shall display the number of available truck parking spaces for no more than three parking facilities. Where two lines of legend, such as the location and a distance, are displayed for a parking facility, not more than two parking facilities shall be displayed on the sign.

03 Where the truck parking facility is located off the main highway and is accessed from the crossroad, directional assemblies with the Truck Parking (D9-16) sign shall be installed along the ramp and along crossroads where the route to the facility requires a turn, where it is unclear as to which roadway to follow, or where additional guidance is needed.

Support:

04 Displaying the number of parking spaces available at a facility when the number is low could result in truckers choosing to continue to a distant facility that no longer has available space by the time they arrive.

Option:

05 The word FULL in a white legend may be displayed on changeable message elements of a Truck Parking Availability General Service sign when the number of truck parking spaces available at the associated facility reaches a predetermined lower threshold.

Guidance:

06 Truck Parking Availability signs should be located 3 to 5 miles in advance of the nearest parking facility. The parking facilities displayed on the sign should be no more than 60 miles from the sign location.

Support:

07 Examples of uses of Truck Parking Availability signs are shown in Figure 2I-10.

CHAPTER 2J. SPECIFIC SERVICE SIGNS

Section 2J.01 Eligibility

Standard:

01 Specific Service signs shall be defined as guide signs that provide road users with business identification and directional information for eligible services. Eligible service categories shall be limited to gas, food, lodging, camping, attractions, and electric vehicle (EV) charging.

Guidance:

02 The use of Specific Service signs should be limited to areas primarily rural in character with adequate space for all signs to be properly accommodated.

~~Support:~~

~~03 When services at an interchange are abundant, this is an indication that the character of the area is no longer primarily rural and General Service signs would be more appropriate.~~

Option:

04 Where an engineering study determines a need, Specific Service signs may be used on any class of highway, including freeways, expressways, and conventional roads.

Guidance:

05 Specific Service signs should not be installed at an interchange where the road user cannot conveniently reenter the freeway or expressway and continue in the same direction of travel.

Standard:

06 Eligible service facilities shall comply with laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and laws concerning the licensing and approval of service facilities.

07 The attraction services shall include only facilities that have the primary purpose of providing amusement, historical, cultural, or leisure activities to the public.

Guidance:

08 Except as provided in Paragraph 9 of this Section, distances to eligible services should not exceed 3 miles in any direction.

Option:

09 If, within the 3-mile limit, facilities for the services being considered are not available or choose not to participate in the program, the limit of eligibility may be extended in 3-mile increments until one or more facilities for the services being considered chooses to participate, or until 15 miles is reached, whichever comes first.

Standard:

10 If State or local agencies elect to provide Specific Service signing, there shall be a statewide policy for such signing and criteria for the eligibility and availability of the various types of services.

Guidance:

11 The criteria for the statewide policy should consider the following:

- *A. To qualify for a GAS business identification sign panel, a business should have:*
  - *1. Vehicle services including gasoline, oil, and water;*
  - *2. Continuous operation at least 16 hours per day, 7 days per week for freeways and expressways, and continuous operation at least 12 hours per day, 7 days per week for conventional roads; and*
  - *3. Modern sanitary facilities and drinking water.*
- *B. To qualify for a FOOD business identification sign panel, a business should have:*
  - *1. Licensing or approval, where required;*
  - *2. Continuous operations to serve at least 2 meals per day, at least 6 days per week; and*
  - *3. Modern sanitary facilities.*
- *C. To qualify for a LODGING business identification sign panel, a business should have:*
  - *1. Licensing or approval, where required;*

2. *Adequate sleeping accommodations; and*
3. *Modern sanitary facilities.*

D. *To qualify for a CAMPING business identification sign panel, a business should have:*

1. *Licensing or approval, where required;*
2. *Adequate parking accommodations; and*
3. *Modern sanitary facilities and drinking water.*

E. *To qualify for an ATTRACTION business identification sign panel, a facility should have:*

1. *Regional significance, in compliance with the provisions of Paragraph 7 of this Section; and*
2. *Adequate parking accommodations.*

Standard:

12 To be eligible for an Electric Vehicle (EV) CHARGING business identification sign panel, the EV chargers provided shall meet the criteria for Direct Current Fast Chargers provided in 23 CFR 680.106 and be in continuous operation at least 16 hours per day, 7 days per week.

Option:

13 Business identification sign panels for a proprietary electric vehicle charging service may be included on an EV Charging Specific Service sign if it meets the eligibility criteria in Paragraph 12 of this Section.

Support:

13a Specific Service Signs are a part of VDOT's Integrated Directional Signing Program (IDSP) and are installed, maintained, modified, and removed by the IDSP contractor. For further information about the IDSP, refer to Section 2A.V1 and to the VDOT IDSP website.

14 Section 2J.12 contains additional information on criteria for the statewide policy regarding signing.

15 Section 2I.04 contains information regarding the Interstate Oasis program.

Section 2J.02 Application

Support:

01 Examples of Specific Service signs are shown in Figure 2J-1.

02 Examples of sign locations are shown in Figure 2J-2.

Standard:

03 The number of Specific Service signs along an approach to an interchange or intersection, regardless of the number of service types displayed, shall be limited to a maximum of four. Except as provided in Paragraph 4 of this Section, in the direction of traffic flow, successive Specific Service signs shall be for attraction, camping, lodging, food, EV charging, and gas services, in that order.

Option:

04 When spacing does not allow EV Charging Specific Service signs to be located as described in Paragraph 3 of this Section, then the EV Charging Specific Service signs may be located anywhere within the successive Specific Service sign order where adequate spacing between signs allows.

Guidance:

05 *The Specific Service signs should be located to take advantage of natural terrain, to have the least impact on the scenic environment, and to avoid visual conflict with other signs within the highway right-of-way.*

06 Where a service type is displayed on two signs, the signs for that service should follow one another in succession.

Standard:

07 A Specific Service sign shall display the word message GAS, EV CHARGING, FOOD, LODGING, CAMPING, or ATTRACTION, an appropriate directional legend such as the word message EXIT XX, NEXT RIGHT, SECOND RIGHT, or directional arrows, and the related business

identification sign panels. Distances to eligible facilities shall not be displayed on the Specific Service signs on the approach to an interchange.

08 A business that does not offer gasoline, but offers alternative fuels, shall not be signed using GAS Specific Service signs.

Option:

09 A business that does not offer gasoline but offers alternative fuels may be signed using General Service signs for the alternative fuel provided.

Support:

10 General Service signs for facilities providing alternative fuels, including EV charging, compressed natural gas, liquefied natural gas, liquefied petroleum gas, and hydrogen, are provided in Chapter 2I.

~~*Guidance:*~~

~~*11 Due to the unique and widely varying characteristics of the services that qualify as attractions, and lesser recognition of their business identification sign panels (see Paragraph 12 of this Section), ATTRACTION Specific Service signs should have no more than four business identification sign panels.*~~

~~Support:~~

12 The types of services that meet the definition of attraction, such as those providing amusement, historical, cultural, or leisure activities to the public, vary considerably. In most cases, attractions do not include well-known services or easily recognizable logos, making it more difficult and requiring more time to distinguish between types of attractions shown on an ATTRACTION sign than for other categories of Specific Service signs.

Standard:

13 No more than three types of services shall be represented on any sign or sign assembly and no more than six business identification sign panels shall be displayed on any one sign. If three types of services are displayed on one sign, then the business identification sign panels shall be limited to two for each service type (for a total of six business identification sign panels). If two types of services are displayed on one sign, then the business identification sign panels shall be limited to either three for each service type, or four for one service type and two for the other service type (for a total of six business identification sign panels in either case). The legend and business identification sign panels applicable to a service type shall be displayed such that the road user will not associate them with another service type on the same sign. Other configurations or arrangements of business identification sign panels shall not be allowed.

14 No service type shall appear on more than two signs (see Paragraph 6 of this Section).

15 The Specific Service signs shall have a blue background, a white border, and white legends of upper-case letters, numerals, and arrows.

Guidance:

16 If a service type is no longer available from an interchange or intersection, the Specific Service sign should be removed when the business identification sign panels are removed. If a sign is to remain, but the service type is no longer available, then the service type legend should be covered so that road users do not misinterpret the sign as a General Service sign implying that the service is available.

17 A Specific Service sign should not be installed unless a service type is currently available from an interchange or intersection.

Option:

18 If there is indication that a service type will again be available in the near future, the sign may be covered, in accordance with Paragraph 16 of this Section, rather than removed.

19 Separate installations of General Service signs (see Figure 2J-3 and Sections 2I.02 and 2I.03) may be used in conjunction with Specific Service signs for eligible types of services that are not represented by a Specific Service sign.

Section 2J.03 Logos and Business Identification Sign Panels

Standard:

01 A business identification sign panel legend shall be either an identification trademark or a word message of the business's name. Each logo or word message shall be placed on a separate business identification sign panel that shall be attached to the Specific Service sign. Logos or trademarks used alone for a business identification sign panel shall be reproduced in the colors and general shape consistent with customary use, and any integral legend shall be in proportionate size. A logo that resembles an official traffic control device shall not be used.

02 Scanning graphics that are visible to the road user from the roadway for the purpose of obtaining information shall not be displayed on business identification sign panels, including on any logo displayed thereupon.

Guidance:

03 The logo or trademark used on a business identification sign panel should be consistent with the on-premise business identification signs at the location of the business that are visible from the roadway.

04 A word message business identification sign panel that does not use a logo or trademark should have a blue background with a white legend and border.

Support:

05 Section 2J.05 contains information regarding the minimum letter heights for business identification sign panels.

Option:

06 A portion of a business identification sign panel may be used to display a supplemental message horizontally along the bottom of the business identification sign panel, provided that the message displays essential motorist information consistent with the service category type and related to the operation of the business (see Figure 2J-4).

Standard:

07 All supplemental messages shall be displayed within the business identification sign panel and shall have letters and numerals that comply with the minimum height requirements shown in Table 2J-1. Supplemental messages promoting the availability of products, amenities, or services that are not directly related to the service category and/or those not available to non-patrons of the primary service provided for the service category, such as car wash, automated teller machines, Internet, lottery, or swimming pool, shall not be displayed on business identification sign panels.

08 Messages related to the promotion or availability of business identification sign panel space shall not be displayed on Specific Service signs.

09 To be eligible for an EV CHARGING supplemental message on a business identification sign panel, the business shall:

- **A. Offer electric vehicle charging to the general public without purchasing the primary service (gas, food, lodging, camping, or attraction, as appropriate); and**
- **B. For the service categories of gas, food, and attraction, provide EV chargers meeting the criteria for Direct Current Fast Chargers (DCFC) provided in 23 CFR 680.106; or**
- **C. For the service categories of camping and lodging, provide EV chargers meeting the criteria for DCFCs provided in 23 CFR 680.106 and/or AC Level 2 Charging.**

Option:

10 A Supplemental message identifying an alternative fuel available may be added only to the business identification sign panels on the GAS Specific Services sign for gasoline facilities that provide the specified alternative fuel in addition to gasoline.

11 The Supplemental message EV CHARGING may be added to a business identification sign panel for the service categories of gas, food, lodging, or camping in accordance with the criteria in Paragraph 9 of this Section.

Guidance:

12 A business identification sign panel should not display more than one supplemental message.

13 The supplemental message should be displayed in a black legend on a yellow background for that portion of the business identification sign panel.

14 State or local agencies that elect to allow supplemental messages on business identification sign panels should develop a statewide policy for such messages.

Support:

15 Typical supplemental messages might include DIESEL, LP-GAS, EV CHARGING, 24 HOURS, CLOSED SUNDAY, and RV ACCESS.

Guidance:

16 If a State or local agency elects to display the designation of businesses as providing on-premise accommodations for recreational vehicles with the RV ACCESS supplemental message, there should be a statewide policy for such designation and criteria for qualifying businesses. The criteria should include such site conditions as access between the public roadway and the site, on-premise geometry, and parking.

Option:

17 If a business designated as an Interstate Oasis (see Section 2I.04) has a business identification sign panel on the Food and/or Gas Specific Service signs, the word OASIS may be displayed on the bottom portion of the business identification sign panel for that business.

Standard:

18 A business identification sign panel shall not display the identification logo/trademark or name of more than one business. A business identification sign panel shall not display more than one name or identification logo/trademark for the same business. Slogans, such as marketing slogans associated with the business, shall not be displayed on business identification sign panels or the Specific Service sign itself.

Section 2J.04 Number and Size of Signs and Business Identification Sign Panels

Guidance:

01 Sign sizes should be determined by the amount and height of legend and the number and size of business identification sign panels attached to the sign. All business identification sign panels on a sign should be the same size.

Standard:

02 Each Specific Service sign or sign assembly shall be limited to no more than six business identification sign panels.

Option:

03 Where more than six businesses of a specific service type are eligible for business identification sign panels at the same interchange, additional business identification sign panels of that same specific service type may also be displayed in accordance with the provisions of Paragraph 4 of this Section. The additional business identification sign panels may be displayed either by placing more than one specific service type on the same sign (see Paragraph 13 of Section 2J.02) or by using a second Specific Service sign of that specific service type if the additional sign can be added without exceeding the limit of four Specific Service signs at an interchange or intersection approach (see Paragraph 3 of Section 2J.02).

Standard:

04 Where business identification sign panels for more than six businesses of a specific service type are displayed at the same interchange or intersection approach, the following provisions shall apply:

A. No more than 12 business identification sign panels of a specific service type shall be displayed on no more than two Specific Service signs or sign assemblies;

B. No more than six business identification sign panels shall be displayed on a single Specific Service sign; and

C. No more than four Specific Service signs shall be displayed on the approach.

Support:

05 Section 2J.08 contains information regarding Specific Service signs for double-exit interchanges.

06 Section 2J.09 contains information regarding Specific Service signs for multiple interchanges that are accessed from collector-distributor roadways rather than from the highway mainline.

Standard:

07 Each business identification sign panel attached to a Specific Service sign shall be a horizontally oriented rectangle with a width longer than the height. A business identification sign panel on signs for freeways and expressways shall not exceed 60 inches in width and 36 inches in height (see Table 2J-2). A business identification sign panel on signs for conventional roads and freeway and expressway ramps shall not exceed 30 inches in width and 18 inches in height (see Table 2J-2). The vertical and horizontal spacing between business identification sign panels shall not exceed 8 inches and 12 inches, respectively.

Support:

08 Sections 2A.10, 2E.13, and 2E.14 contain information regarding borders, interline spacing, and edge spacing.

Section 2J.05 Size of Lettering

Standard:

01 All Specific Service signs and business identification sign panels shall have letter and numeral sizes that comply with the minimum requirements of Table 2J-1.

Guidance:

02 Any legend on a business identification graphic/trademark should be proportional to the size of the graphic trademark.

Section 2J.06 Signs at Interchanges

Standard:

01 The Specific Service signs shall be installed between the preceding interchange and at least 800 feet in advance of the Exit Direction sign at the interchange from which the services are available (see Figure 2J-2).

02 Specific Service signs shall not be used at freeway-to-freeway interchanges (see Section 2E.37), except where the exit ramp also provides direct access to a conventional road within that interchange (see Figure 2J-5).

Guidance:

03 There should be at least an 800-foot spacing between the Specific Service signs, except for Specific Service ramp signs. Excessive spacing should not be used between Specific Service signs, as this is not desirable either.

04 Specific Service ramp signs should be spaced at least 100 feet longitudinally beyond the Exit Gore sign, from each other, and from the ramp terminal. Specific Service ramp signs should be spaced at least 200 feet longitudinally from any Destination guide signs along the ramp. Longer longitudinal spacing should be provided between Specific Service ramp signs and any warning or regulatory signs along the ramp, and any intersection traffic control devices at the ramp terminal.

05 When the distance to the next exit providing access to EV charging service is 50 miles or greater, the Next EV Charging (D9-17a) sign should be used (see Figure 2H-9). When used, the Next EV Charging sign should be located directly after the General Service sign for the fuel type displayed in the signing sequence for the exit (see Figure 2H-10).

Section 2J.07 Single-Exit Interchanges

Standard:

01 At numbered single-exit interchanges, the name of the service type followed by the exit number shall be displayed on one line above the business identification sign panels. At unnumbered interchanges, the directional legend NEXT RIGHT (LEFT) shall be used in place of the exit number.

02 At single-exit interchanges where traffic is allowed to turn onto the crossroad in either direction from the ramp, Specific Service ramp signs shall be installed along the ramp or opposite the ramp terminal for facilities that have business identification sign panels displayed along the main roadway if the facilities are not readily visible from the ramp terminal. Directions to the service facilities shall be indicated by arrows on the ramp signs. Business identification sign panels on Specific Service ramp signs shall be duplicates of those displayed on the Specific Service signs located in advance of the interchange, but shall be reduced in size (see Paragraph 7 of Section 2J.04).

Option:

03 Specific Service ramp signs may display distances (see Paragraphs 14 and 15 of Section 2A.08) to a service facility when the facility is not visible from ramp intersection with the crossroad.

Guidance:

04 Distances of less than ¼ mile, when displayed, should be displayed to the nearest 1/10 mile.

Section 2J.08 Double-Exit Interchanges

Guidance:

01 At double-exit interchanges, the Specific Service signs should consist of two sections, one for each exit (see Figure 2J-1).

Standard:

02 At a double-exit interchange, the top section shall display the business identification sign panels for the first exit and the bottom section shall display the business identification sign panels for the second exit. At numbered interchanges, the name of the service type and the exit number shall be displayed above the business identification sign panels in each section. At unnumbered interchanges, the word message NEXT RIGHT (LEFT) and SECOND RIGHT (LEFT) shall be used in place of the exit number. The number of business identification sign panels on the sign (total of both sections) or the sign assembly shall be limited to six.

Guidance:

03 At a double-exit interchange, where a service type is displayed on two Specific Service signs in accordance with the provisions of Section 2J.04, one of the signs should display the business identification sign panels for that service type for the businesses that are accessible from one of the two exits and the other sign should display the business identification sign panels for that service type for the businesses that are accessible from the other exit.

Option:

04 At a double-exit interchange where there are four business identification sign panels to be displayed for one of the exits and one or two business identification sign panels to be displayed for the other exit, the business identification sign panels may be arranged in three rows with two business identification sign panels per row.

05 At a double-exit interchange, where a service is to be signed for only one exit, one section of the Specific Service sign may be omitted, or a single exit interchange sign may be used.

06 Signs on ramps and crossroads as described in Section 2J.07 may be used at a double-exit interchange.

Section 2J.09 Collector-Distributor Roadways for Successive Interchanges

Support:

01 Examples of Specific Service signs used in advance of interchanges for collector-distributor roadways that provide access to multiple interchanges are shown in Figure 2J-6.

Option:

02 If services are available from more than one of the interchanges along the collector-distributor roadway and those services are signed with Specific Service signs as described in Paragraph 4 of this Section, then Specific Service signs may be used on the mainline in conformance with the provisions of this Chapter.

Standard:

03 No more than four Specific Service signs shall be displayed on a highway mainline approach to a collector-distributor roadway.

04 If Specific Service signs are located on the highway mainline for services accessed from the collector-distributor roadway, then the business identification sign panels displayed on the collector-distributor roadway shall be only duplicates of those displayed on the highway mainline.

05 If more than four Specific Services signs would be required on the mainline in advance of the collector-distributor roadway in order to display all the business identification sign panels used on Specific Service signs in advance of the collector-distributor roadway exits, then General Service signs shall be used on the mainline to identify the types of services displayed on Specific Service signs on the collector-distributor roadway.

Section 2J.10 Specific Service Trailblazer Signs

Support:

01 Specific Service trailblazer signs (see Figure 2J-7) are guide signs with one to four business identification sign panels that display business identification and directional information for services and eligible attractions. Specific Service trailblazer signs are for facilities that have installed along crossroads business identification sign panels displayed along the main roadway and ramp, and that require additional vehicle maneuvers or are a long distance from the ramp along the crossroad.

Standard:

02 Specific Service trailblazer signs shall be installed along crossroads where the route to the business requires a direction change, where it is questionable as to which roadway to follow, or where additional guidance is needed. Where it is not feasible or practical to install Specific Service trailblazer signs to such businesses, those businesses shall not be considered eligible for signing from the ramp and main roadway. A Specific Service trailblazer sign shall not be required at the point where the business is visible from the roadway and its access is readily apparent.

Guidance:

03 If used, a Specific Service trailblazer sign should be located a maximum of 500 feet in advance of any required turn.

Standard:

04 The location of other traffic control devices shall take precedence over the location of a Specific Service trailblazer sign.

05 When used, each Specific Service trailblazer sign or sign assembly shall be limited to no more than four business identification sign panels. The business identification sign panels on Specific Service trailblazer signs shall be duplicates of those displayed on the Specific Service ramp signs.

06 Appropriate legends, such as directional arrows or the action message NEXT RIGHT or SECOND RIGHT, shall be displayed with the business identification sign panel to provide proper guidance. The directional legend and border shall be white and shall be displayed on a blue background.

Option:

07 Specific Service trailblazer signs may contain various types of services on a single sign or on a sign assembly.

08 Specific Service trailblazer signs may be placed farther from the edge of the road than other traffic control signs.

Section 2J.11 Signs at Intersections

Guidance:

01 If both tourist-oriented information (see Chapter 2K) and specific service information are proposed to be used at the same intersection, the tourist-oriented directional and Specific Service signs should be spaced sufficiently apart from one another, as well as apart from other guide, warning, and regulatory signs, to avoid confusion and allow sufficient time for road users to read and react to the information.

Standard:

02 If sufficient space to provide appropriate reading and reaction to all proposed signs is not available, higher priority shall be given to guide, warning, and regulatory signs and either the tourist-oriented directional signs or the Specific Service signs, or both, shall not be used.

Guidance:

03 If Specific Service signs are used on conventional roads or at intersections on expressways, they should be installed between the previous interchange or intersection and at least 300 feet in advance of the intersection from which the services are available.

04 Business identification sign panels should not be displayed for a type of service for which a qualified facility is readily visible.

Standard:

05 If Specific Service signs are used on conventional roads or at intersections on expressways, the name of each type of service shall be displayed above its business identification sign panel(s), together with an appropriate legend, such as NEXT RIGHT (LEFT) or a directional arrow, either displayed on the same line as the name of the type of service or displayed below the business identification sign panel(s).

Option:

06 Signs similar to Specific Service ramp signs as described in Section 2J.07 may be provided on the crossroad.

Section 2J.12 Signing Policy

Standard:

01 In addition to a statewide policy for eligibility of service providers (see Section 2J.01), each highway agency that elects to use Specific Service signs shall establish a signing policy.

Guidance:

02 The signing policy should include, at a minimum, the provisions of Section 2J.01 and at least the following criteria:

- *A. Selection of eligible businesses;*
- *B. Distances to eligible services;*
- *C. The use of business identification sign panels, legends, and signs complying with the provisions of this Manual and State design requirements;*
- *D. Removal or covering of business identification sign panels during off seasons for businesses that operate on a seasonal basis;*
- *E. The circumstances, if any, under which Specific Service signs are permitted to be used in non-rural areas; and*
- *F. Determination of the costs to businesses for initial permits, installations, annual maintenance, and removal of business identification sign panels.*

CHAPTER 2K. TOURIST-ORIENTED DIRECTIONAL SIGNS

Section 2K.01 Purpose and Application

Support:

01 Tourist-oriented directional signs are post-mounted guide sign assemblies with one or more signs that display the business identification of and directional information for eligible business, service, and activity facilities.

Standard*:*

02 A facility shall be eligible for tourist-oriented directional signs only if it derives its major portion of income or visitors during the normal business season from road users not residing in the area of the facility.

Option:

03 Tourist-oriented directional signs may include businesses involved with seasonal agricultural products.

Standard:

04 The use of tourist-oriented directional signs shall be limited to rural highways (see definition in Section 1C.02). Tourist-oriented directional signs shall not be installed on conventional roads in urban or urbanized areas or on freeway or expressway main roadways or ramps.

Option:

05 Tourist-oriented directional signs may be used in conjunction with General Service signs (see Section 2I.02).

Support:

06 Section 2K.07 contains information on the adoption of a State policy for States that elect to use tourist-oriented directional signs.

06a Tourist-oriented directional signs are a part of VDOT's Integrated Directional Signing Program (IDSP) and are installed, maintained, modified, and removed by the IDSP contractor. For further information about the IDSP, refer to Section 2A.V1 and to the VDOT IDSP website.

Section 2K.02 Design

Standard:

01 Tourist-oriented directional sign assemblies shall have one or more signs (see Figure 2K-1) for the purpose of displaying the business identification of and directional information for eligible facilities. Except as provided in Paragraph 7 of this Section, each sign shall be rectangular in shape and shall have a white legend and border on a blue background.

02 The content of the legend on each sign shall be limited to the identification and directional information for no more than one eligible business, service, or activity facility. The legends shall not include promotional advertising.

Guidance:

03 Each sign should have a maximum of two lines of legend including no more than one symbol (see Paragraph 4 of this Section), a separate directional arrow, and the distance to the facility displayed beneath the arrow. Arrows pointing to the left or up should be at the extreme left of the sign panel. Arrows pointing to the right should be at the extreme right of the sign panel. Symbols, when used, should be to the left of the word legend or business identification sign panel (see Paragraphs 6 and 9 of this Section).

Option:

04 The General Service sign symbols (see Section 2I.02) and the symbols for recreational and cultural interest area signs (see Chapter 2M) may be used on tourist-oriented directional signs.

05 Based on engineering judgment, the hours of operation may be displayed on the sign.

06 Business identification sign panels (see Section 2J.03) for specific businesses, services, and activities may be used in place of word legends on tourist-oriented direction signs.

Standard:

07 When used, recreational and cultural interest area symbols shall be white on a brown background.

08 When used, symbols shall be an appropriate size (see Section 2K.04).

09 When used, business identification sign panels shall not exceed 24 inches in width and 15 inches in height. Logos resembling official traffic control devices shall not be permitted.

Option:

10 The word message TOURIST ACTIVITIES may be displayed at the top of the tourist-oriented directional sign assembly.

Standard:

11 The TOURIST ACTIVITIES word message shall have a white legend in all upper-case letters and a white border on a blue background. If used, it shall be placed above and in addition to the directional signs.

Support:

12 Examples of tourist-oriented directional signs are shown in Figures 2K-1 and 2K-2.

Section 2K.03 Style and Size of Lettering

Guidance:

01 All letters and numbers on tourist-oriented directional signs, except on the business identification sign panels, should be upper-case and at least 6 inches in height. Any legend on a business identification sign panel should be proportional to the size of the business identification sign panel.

Standard:

02 Design standards for letters, numerals, and spacing shall be as provided in the "Standard Highway Signs" publication (see Section 1A.05).

Section 2K.04 Arrangement and Size of Signs

Standard:

01 The total height of the tourist-oriented directional signs in a sign assembly shall be limited to a maximum of 6 feet. Additional height shall be allowed to accommodate the addition of the optional TOURIST ACTIVITIES message provided in Section 2K.02 and the action messages provided in Section 2K.05.

Guidance:

02 The number of intersection approach sign assemblies (one sign assembly for tourist-oriented destinations to the left, one for destinations to the right, and one for destinations straight ahead) installed in advance of an intersection should not exceed three. The number of signs installed in each assembly should not exceed three. The signs for right-turn, left-turn, and straight-through destinations should be on separate sign assemblies. Signs for facilities in the straight-through direction should be considered only when there are signs for destinations in either the left or right direction.

03 If it has been determined to be appropriate to combine the left-turn and right-turn destination signs on a single sign assembly, the left-turn destination signs should be above the right-turn destination signs (see Figure 2K-1). When there are multiple destinations in the same direction, they should be in order based on their distance from the intersection. Except as provided in Paragraph 5 of this Section, a straight-through sign should not be combined in a sign assembly displaying left-turn and/or right-turn destinations.

04 The signs should not exceed the size necessary to accommodate two lines of legend without crowding. Symbols on a directional sign should not exceed the height of two lines of a word legend. All directional signs and other parts of the sign assembly should be the same width, which should not exceed 6 feet.

Option:

05 At intersection approaches where three or fewer facilities are displayed, the left-turn, right-turn, and straight-through destination sign panels may be combined on the same sign.

Section 2K.05 Advance Signs

Guidance:

01 Advance signs should be limited to those situations where sight distance, intersection vehicle maneuvers, or other vehicle operating characteristics require advance notification of the destinations and their directions.

02 The design of the advance sign should be identical to the design of the intersection approach sign. However, the directional arrows and distances to the destinations should be omitted and the action messages NEXT RIGHT, NEXT LEFT, or AHEAD should be placed on the sign above the business identification signs. The action messages should have the same letter height as the other word messages on the directional signs (see Figures 2K-1 and 2K-2).

Standard:

03 The action message signs shall have a white legend in all upper-case letters and a white border on a blue background.

Option:

04 The legend RIGHT ½ MILE or LEFT ½ MILE may be used on advance sign assemblies when there are intervening minor roads.

05 The height required to add the directional word messages recommended for the advance sign assembly may be added to the maximum sign height of 6 feet.

Guidance:

06 The optional TOURIST ACTIVITIES message, when used on an advance sign assembly, and the action message should be combined on a single sign with TOURIST ACTIVITIES as the top line and the action message as the bottom line (see Figure 2K-2).

Section 2K.06 Sign Locations

Guidance:

01 If used, the intersection approach signs should be located at least 200 feet in advance of the intersection. Sign assemblies should be spaced at least 200 feet apart and at least 200 feet from other traffic control devices.

02 If used, advance signs should be located approximately ½ mile from the intersection with 500 feet between these sign assemblies. In the direction of travel, the order of advance sign placement should be to show the destinations to the left first, then destinations to the right, and last, the destinations straight ahead (see Figure 2K-2).

03 Position, height, and lateral offset of sign assemblies should be governed by Chapter 2A except as permitted in this Section.

Option:

04 Tourist-oriented directional signs may be placed farther from the edge of the road than other traffic control signs.

Standard:

05 The location of other traffic control devices shall take precedence over the location of tourist-oriented directional signs.

Section 2K.07 State Policy

Standard:

01 To be eligible for tourist-oriented directional signing, facilities shall comply with applicable State and Federal laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and with laws concerning the licensing and approval of

service facilities. Each State that elects to use tourist-oriented directional signs shall adopt a policy that complies with these provisions.

Guidance:

02 The State policy should include:

A. A definition of tourist-oriented business, service, and activity facilities.
B. Eligibility criteria for signs for facilities.
C. Provision for covering signs during off seasons for facilities operated on a seasonal basis.
D. Provisions for signs to facilities that are not located on the crossroad when such facilities are eligible for signs.
E. A definition of the immediate area in compliance with the provisions of Paragraph 2 of Section 2K.01.
F. Maximum distances to eligible facilities. The maximum distance should be 15 miles.
G. Provision for information centers (plazas) when the number of eligible sign applicants exceeds the maximum permissible number of sign panel installations.
H. Provision for limiting the number of signs when there are more applicants than the maximum number of signs permitted.
I. Criteria for use at intersections on expressways.
J. Provisions for controlling or excluding those businesses which have illegal signs as defined by the Highway Beautification Act of 1965 (23 U.S.C. 131).
K. Provisions for States to charge fees to cover the cost of signs through a permit system.
L. A definition of the conditions under which the time of operation is displayed.
M. Provisions for determining if advance signs will be permitted, and the circumstances under which they will be installed.

CHAPTER 2L. CHANGEABLE MESSAGE SIGNS

Section 2L.01 Description of Changeable Message Signs

Support:

01 A changeable message sign (CMS) is a traffic control device that is capable of displaying one or more alternative messages. Some CMS have a blank mode when no message is displayed, while others display multiple messages with only one of the messages displayed at a time (such as OPEN/CLOSED signs at weigh stations).

02 The provisions in this Chapter apply to both permanent and portable changeable message signs with electronic displays or the electronic display portion of an otherwise conventional static sign. Additional provisions that only apply to portable changeable message signs (PCMS) can be found in Section 6L.05. The provisions in this Chapter generally do not apply to CMS with non-electronic displays that are changed either manually or electromechanically, such as a hinged-panel, rotating-drum, or back-lit curtain or scroll CMS.

03 The CMS is a traffic control device at all times regardless of the type of message being displayed. Accordingly, the limitations on design, format, and manner of display of a message conveyed on a conventional sign apply to CMS regardless of the type of message being displayed at any given time. Some of the general provisions regarding traffic control devices are reiterated in this Chapter. However, this Chapter is not an independent or stand-alone reference for CMS. Users of CMS are expected to consult the other chapters in this Manual for criteria on how to develop effective messages that comply with this Manual and that meet the expectancy and limitations of the road user. In this regard, the engineering processes applied to decisions about whether to use a particular sign, for example, are no different for the decisions about the type and content of the message under consideration for display on a CMS. The other limited-use messages allowed on CMS as provided for in this Chapter likewise fall under the same MUTCD provisions as the primary-use traffic operation regulatory, warning, and guidance messages except as stated otherwise in this Chapter.

04 CMS messaging can be subject to habituation, a phenomenon by which repeated exposure to a stimulus results in diminished response. CMS habituation can occur through repeated exposure to messages, especially those messages that might not be perceived as having relevance to the road user, resulting in diminished responsiveness of the road user to that message. Because messages can be changed or extinguished, the effectiveness of CMS is tied more to the messages displayed thereon, the frequency of displayed messages, and the relevance to the road user, rather than to the installation of the signs themselves.

Guidance:

05 Changeable message signs should be used judiciously to avoid habituation and preserve their effectiveness during the display of real-time messages about traffic conditions or traffic advisories.

Standard:

06 The design of legends for non-electronic display CMS shall comply with the provisions of Chapters 2A through 2K, 2M, and 2N of this Manual. Other CMS shall comply with the design and application principles established in this Chapter, Chapter 2A, and provisions elsewhere in this Manual for specific signs.

07 No items other than inventory or maintenance-related information (see Section 2A.04) shall be displayed on the front or back of a CMS or portable CMS. Names or logos of the manufacturer, brand, or model shall not be displayed on a CMS or portable CMS, either in the message display itself or on the exterior housing.

Guidance:

08 Blank-out signs that display only single-phase, predetermined electronic-display legends that are limited by their composition and arrangement of pixels or other illuminated forms in a fixed arrangement (such as a blank-out sign indicating a part-time turn prohibition, a blank-out or changeable lane-use sign, or

a changeable OPEN/CLOSED sign for a weigh station) should comply with the provisions of the applicable Section for the specific type of sign, provided that the letter forms, symbols, and other legend elements are duplicates of the conventional messages as detailed in the "Standard Highway Signs" publication (see Section 1A.05). Because such a sign is effectively an illuminated version of a conventional sign, the size of its legend elements, the overall size of the sign, and the placement of the sign should comply with the applicable provisions for the conventional version of the sign.

Section 2L.02 Applications of Changeable Message Signs

Standard:

01 CMS shall display only traffic operational, regulatory, warning, and guidance information except as otherwise provided in this Chapter. Advertising or other messages not related to traffic control shall not be displayed on a CMS or on its supports or other equipment.

Option:

02 CMS may display traffic safety campaign messages (see Section 2L.07), transportation-related messages, emergency homeland security messages, and America's Missing: Broadcast Emergency Response (AMBER) alert messages, all as provided for in this Chapter.

03 Transportation-related messages for the purpose of improving traffic conditions, such as those providing information on alternative means of transportation, electronic toll collection, or carpooling may be displayed to remind or inform drivers of relevant options or opportunities for transportation.

Support:

04 Messages regarding broader transportation items not related to improving traffic conditions, such as reminders of driver's license or vehicle registration renewal, vehicle recall information, and vehicle maintenance, do not meet the purpose of a transportation-related message.

05 Examples of transportation-related messages include "STADIUM EVENT SUNDAY, DELAYS NOON TO 4 PM" and "OZONE ALERT—USE TRANSIT."

Guidance:

06 A CMS should not be used to display a transportation-related message if doing so could adversely affect respect for the sign. "CONGESTION AHEAD" or other overly simplistic or vague messages should not be displayed alone. These messages should be supplemented with a message on the location or distance to the congestion or incident, delay and travel time, alternative route, or other similar messages.

07 CMS should not be used in place of conventional signs for conditions that do not change, except for blank-out type signs used to display regulatory, warning, and guidance information that routinely reoccurs, but only on a part-time basis. Similarly, when only certain elements of a message on a non-changeable sign are subject to change, only those elements of the sign should be in an electronic display, for example the prices shown on the R3-48 and R3-48a signs (see Figure 2G-18).

Support:

08 The purpose of CMS is to provide real-time traffic regulatory, warning, or guidance messages as follows:

A. Incident management and route diversion;
B. Warning of adverse roadway travel conditions due to weather;
C. Special event applications associated with traffic control or conditions;
D. Lane, ramp, and roadway control;
E. Priced or other types of managed lanes;
F. Travel times;
G. Warning situations;
H. Traffic regulations;
I. Speed control or warning;
J. Variable destination guidance;
K. Supporting temporary traffic control; or

L. Active Traffic Management.

09 CMS provide significant flexibility and capability in communicating many types of real-time traffic control messages to road users. While their intended purpose is the display of traffic regulatory, warning, or guidance information, other limited uses are also allowed under certain conditions, as provided in this Chapter. Their integrity as an official traffic control device rests significantly on their judicious use and proper messaging format and content, regardless of the message type being displayed.

Standard*:*

10 State and local highway agencies that have permanently-installed or positioned CMS shall issue and maintain a policy regarding the use and display of all types of messages to be used on their CMS. The policy shall define the types of messages that will be allowed, the priority of messages, the proper syntax of messages, the timing of messages, and other important messaging elements to ensure messages displayed meet the basic principles that govern the design and use of traffic control devices in general (see Section 1D.01) and traffic signs in particular as provided for in this Manual.

Guidance:

11 State and local agencies that use CMS, but do not have permanently-installed or positioned signs, should develop and establish a policy as discussed in Paragraph 10 of this Section.

12 When CMS are used at multiple locations to address a specific situation, the message displays should be consistent along the roadway corridor and adjacent corridors, which might necessitate coordination among different operating agencies.

13 AMBER alerts (see Paragraph 2 of this Section), when displayed, should not preempt messages related to traffic or travel conditions. AMBER alert messages should be kept as brief as possible and, when possible, direct road users to another source, such as broadcast or highway advisory radio, for detailed information about the alert.

Standard:

14 Types of "alert" messages other than AMBER alerts that are unrelated to traffic or travel conditions shall not be displayed on CMS.

15 The format of CMS displays shall not be of a type that could be considered similar to advertising or promotional displays.

Support:

16 In times of a declared state of emergency, it might be appropriate to display messages related to evacuation, homeland security, or emergency information. Traffic patterns, movement, or other situations might be atypical due to the emergency, necessitating unique messaging not specifically related to traffic conditions.

Standard:

17 Homeland security and emergency messages shall only be displayed in declared states of emergency when there is an imminent threat to the general population. Generic security or personal safety messages shall not be displayed when there is no context of a declared state of emergency or known imminent national security threat. Homeland security and emergency messages shall not be promotional or advisory in nature, including the message design, layout, or manner of display.

Guidance:

18 Homeland Security and emergency messages should undergo significant levels of scrutiny prior to being approved for broadcast to ensure accuracy and consistency with emergency conditions. These messages should be designed to convey a clear and simple meaning in a similar format to traffic control messages.

Support:

19 Section 2B.21 contains information regarding the design of CMS that are used to display variable speed limits that change based on ambient or operational conditions on the variable Speed Limit (R2-1) sign.

20 Section 2C.13 contains information regarding the design of CMS that are used to display the speed at which approaching vehicles are traveling on the Vehicle Speed Feedback (W13-20 and W13-20aP) sign and plaque.

21 Section 2H.04 contains information regarding the design of CMS that are used to display variable speeds for traffic signal progression on the Traffic Signal Speed (I1-1) sign.

22 Section 5B.01 contains provisions for LEDs used in electronic-display signs to accommodate driving automation systems.

Section 2L.03 Legibility and Visibility of Changeable Message Signs

Support:

01 The maximum distance at which a driver can first correctly identify letters and words on a sign is called the legibility distance of the sign. Legibility distance is affected by the characteristics of the sign design and the visual capabilities of drivers. Visual capabilities, and thus legibility distances, vary among drivers.

02 For the more common types of CMS, the longest measured legibility distances on sunny days occur during mid-day when the sun is overhead. Legibility distances are much shorter when the sun is behind the sign face, when the sun is on the horizon and shining on the sign face, or at night.

03 Visibility is the characteristic that enables a CMS to be seen. Visibility is associated with the point where the CMS is first detected, whereas legibility is the point where the message on the CMS can be read. Environmental conditions such as rain, fog, and snow impact the visibility of CMS and can reduce the available legibility distances. During these conditions, there might not be enough viewing time for drivers to read the message.

Guidance:

04 CMS used on roadways with speed limits of 55 mph or higher should be visible from ½ mile under both day and night conditions. The message should be designed to be legible from a minimum distance of 600 feet for nighttime conditions and 800 feet for normal daylight conditions. When environmental conditions that reduce visibility and legibility are present, or when the legibility distances stated in the previous sentences in this paragraph cannot be practically achieved, messages composed of fewer units of information should be used and consideration should be given to limiting the message to a single phase (see Section 2L.05 for information regarding the lengths of messages displayed on CMS).

05 The electronic display of standardized regulatory and warning signs used individually or as part of the legend for a larger sign should meet the size and legend requirements for those specific signs in Chapters 2B and 2C.

Section 2L.04 Design Characteristics of Messages

Standard:

01 Except as provided in Paragraph 2 of this Section, messages shall not include animation, flashing, dissolving, exploding, scrolling, or other dynamic display elements.

02 When a portable CMS is used as an arrow board that uses a flashing or sequential display for a lane or shoulder closure, the display and operation shall be considered that of an arrow board and shall comply with the provisions of Sections 6L.05 and 6L.06.

Guidance:

03 In developing messages for display on CMS, the provisions of Section 1D.01 should be consulted for the principles of an effective traffic control device.

Standard:

04 All message displays on CMS, whether for traffic operational, regulatory, warning, or guidance information, or for the other allowable message types as defined in this Chapter, shall follow the same design and display principles found in this Manual used for other traffic control signs, except as provided elsewhere in this Chapter.

Guidance:

05 Except in the case of a limited-legend CMS (such as a blank-out or a part-time regulatory sign display) that is used in place of a conventional regulatory sign or an activated blank-out warning sign that supplements a conventional warning sign at a separate location, the signs should be used as a supplement to and not as a substitute for conventional signs and markings unless otherwise provided for in this Manual.

Support:

06 When CMS are overused for messages not directly associated with real-time driving conditions, road users might pay less attention to the sign, thereby limiting their effectiveness as traffic control devices.

Guidance:

07 Warning Beacons (see Section 4S.03) should not be installed on CMS, rather CMS should be used predominately to display messages that are critical to real-time travel conditions. CMS word messages should be limited to no more than three lines, with no more than 20 characters per line.

08 The spacing between characters in a word should be between 25 and 40 percent of the letter height. The spacing between words in a message should be between 75 and 100 percent of the letter height. Spacing between the message lines should be between 50 and 75 percent of the letter height. Table 2L-1 contains information for spacing between characters, words, and lines of text.

09 Except as otherwise provided in this Manual, word messages on CMS should be composed of all upper-case letters. The minimum letter height should be 18 inches for CMS on roadways with speed limits of 45 mph or higher. The minimum letter height should be 12 inches for CMS on roadways with speed limits of less than 45 mph. When a message is composed of two phases and higher informational load (see Section 2L.05), the letter height should be 18 inches, regardless of the speed limit, to optimize legibility distance and available viewing time.

Option:

10 CMS used to replicate a conventional sign may use the character size of the conventional sign being replicated.

Support:

11 Using letter heights of more than 18 inches will not result in proportional increases in legibility distance.

Guidance:

12 The width-to-height ratio of the sign characters should be between 0.7 and 1.0. The stroke width-to-height ratio should be 0.2.

Support:

13 The width-to-height ratio is commonly accomplished using a minimum font matrix density of five pixels wide by seven pixels high.

Standard:

14 CMS shall automatically adjust their brightness under varying light conditions to maintain legibility.

Guidance:

15 The luminance design of a CMS should meet industry criteria for daytime and nighttime conditions. Luminance contrast design should be between 8 and 12 for all conditions.

Support:

16 CMS maintenance and replacement practices might need to account for the reduction of LED luminance and luminance contrast that occurs naturally over time and might substantially impact legibility.

Guidance:

17 Contrast orientation of CMS should always be positive, that is, with luminous characters on a dark or less-luminous background.

Support:

18 Legibility distances for negative-contrast CMS are likely to be at least 25 percent shorter than those of positive-contrast messages. In addition, the increased light emitted by negative-contrast CMS has not been shown to improve detection distances and might visually overwhelm the darker characters of the sign legend.

Standard:

19 The colors used for the legends and backgrounds on CMS shall be as provided in Table 2A-2.

20 Except as provided for in Paragraph 21 of this Section, if a black background is used, the color used for the legend on a CMS shall match the background color that would be used on a standard sign for that type of legend as specified in Table 2A-2.

Option:

21 CMS that use only yellow or amber LEDs may display a yellow or amber legend that does not match the background color used on a standard sign for that type of legend as specified in Table 2A-2.

Standard:

22 If a green background is used for a guide message on a CMS or if a blue background is used for a motorist services message on a CMS, the background color shall be provided by green or blue lighted pixels such that the entire CMS would be lighted, not just the white legend.

Support:

23 Some CMS that employ newer technologies have the capability to display a near duplicate of a standard sign or other sign legend using standard symbols, the Standard Alphabets and letter forms, route shields, and other typical sign legend elements with no apparent loss of resolution or recognition to the road user when compared with a conventional version of the same sign legend. Such signs are of the full-matrix type and can typically display full-color legends. Figure 2L-1 shows comparative examples of the effects of varying pixel densities on legend form.

Guidance:

24 If used, the CMS described in Paragraph 23 of this Section should not display symbols or route shields unless they can do so in the appropriate legend and background color combinations. Where an LED matrix is used to form the changeable legend, signs with pixel spacing greater than 20 millimeters should display only word legends and no symbols or route shields.

25 For a single-phase message where the Standard Alphabets and other legend elements of standard designs are used, the lettering style, size, and line spacing should comply with the applicable provisions for the type of message displayed as provided elsewhere in this Manual. For two-phase messages, larger legend heights should be used as described previously in this Section because of the need for such messages to be legible at a greater distance. Regardless of the number of phases, the CMS should comply with the legibility and visibility provisions of Section 2L.03.

Section 2L.05 Message Length and Units of Information

Guidance:

01 The maximum length of a message should be dictated by the number of units of information contained in the message, in addition to the size of the CMS. A unit of information, which is a single answer to a single question that a driver can use to make a decision, should not be more than four words.

Support:

02 In order to illustrate the concept of units of information, Table 2L-2 shows an example message that is comprised of four units of information.

03 The maximum allowable number of units of information in a CMS message is based on the principles described in this Section, the current highway operating speed, the legibility characteristics of the CMS, and the lighting conditions.

Standard:

04 Each message shall consist of no more than two phases. A phase shall consist of no more than three lines of text. Each phase shall be understood by itself, and the meaning of the entire message shall be the same, regardless of the sequence in which the phases are read. Each line of legend shall be centered on the sign. Except for signs located on toll plaza structures or other facilities with a similar booth-lane arrangement, if more than one CMS is visible to road users, then only one sign shall display a sequential message at any given time.

Option:

05 A legend on a CMS that replicates a legend on a conventional sign that would not normally be center justified may be left justified or right justified as appropriate, such as a travel time or a variable rate toll display.

Standard:

06 Abbreviations displayed on CMS shall comply with the provisions of Section 1D.08.

Guidance:

07 When designing and displaying messages on CMS, the following principles should be used:

A. The minimum time that an individual phase is displayed should be based on 1 second per word or 2 seconds per unit of information, whichever produces a lesser value. The display time for a phase should never be less than 2 seconds.
B. The maximum cycle time of a two-phase message should be 8 seconds.
C. The duration between the display of two phases should not exceed 0.3 seconds.
D. No more than three units of information should be displayed in a message phase.
E. No more than four units of information should be in a message when the traffic operating speeds are 35 mph or more.
F. No more than five units of information should be in a message when the traffic operating speeds are less than 35 mph.
G. Only one unit of information should appear on each line of the CMS.

Support:

08 Table 2L-2 provides an example of the number of units of information in a message.

Option:

09 A unit of information consisting of more than one word may be displayed on more than one line. An additional CMS at a downstream location may be used for the purpose of allowing the entire message to be read twice.

10 If more than two phases would be needed to display the necessary information, additional CMS may be used to display this information as a series of two distinct, independent messages with a maximum of two phases at each location, in accordance with the provisions of Paragraph 4 of this Section.

Support:

11 Tables 2L-3 and 2L-4 provide examples of message construction for CMS. Each example shows the message content, layout, and phasing for a potential message and an improved message. The improved message for each example has been optimized for recognition, comprehension, and effectiveness.

Section 2L.06 Travel Time Messages

Support:

01 Travel times provide road users useful information about the level of congestion on segments of highways where motorists experience frequent incidents that slow traffic. Travel times are only helpful to the road user if they have a general understanding of the length of the road segment the travel time is related to so that they can compare that to the time it takes them to travel a similar distance on a highway without

congestion. However, travel time messages require road users to read and process a significant amount of information and careful consideration is needed to ensure the overall message is not overloading the motorist.

Guidance:

02 Travel times should be tied to the distance to a particular destination or junction so that road users can estimate the level of congestion based on the time to travel that distance. When travel times are displayed on CMS, such as during peak traffic conditions, the message should comply with the provisions of Sections 2E.49 and 2E.50. If both a travel time and a distance are displayed, the sign should display only one destination. A distance displayed as part of a travel time message should be rounded to the nearest whole mile.

Option:

03 When comparative travel time displays are used providing travel times on different routes to one destination, distances to that destination may be eliminated.

04 A reference-location-based exit number (see Section 2E.22) may be displayed in lieu of a destination name or junction thereby providing the necessary distance information to the road user. If reference-location-based exit numbers are displayed, then up to two travel times may be displayed provided that the distance to the exit is not also displayed.

Section 2L.07 Traffic Safety Campaign Messages

Support:

01 An allowable ancillary use of CMS is the display of traffic safety messages in conjunction with a traffic safety campaign that includes other forms of media as the primary communication and education mechanism.

Standard:

02 Traffic control messages shall have priority over traffic safety campaign messages.

Guidance:

03 When a CMS is used to display a traffic safety campaign, the message should be simple, direct, brief, legible, and clear (see Section 1D.01). Traffic safety campaign messages should be relevant to the road user on the roadway on which the message is displayed. For example, messages regarding school bus stop safety should not be displayed on freeways where school bus stops are not found.

04 A CMS should not be used to display a traffic safety campaign message if doing so could adversely affect respect for the sign. Messages with obscure or secondary meanings, such as those with popular culture references, unconventional sign legend syntax, or that are intended to be humorous, should not be used as they might be misunderstood or understood only by a limited segment of road users and require greater time to process and understand. Similarly, slogan-type messages and the display of statistical information should not be used.

05 The broad traffic safety campaign marketing message should be appropriately shortened or otherwise modified to comply with the provisions of Section 2L.05 when a traffic safety campaign message is displayed on a CMS.

06 Traffic safety campaign messages should emphasize the applicable regulation or warning and should reference any penalties associated with violations of the regulation. Traffic safety campaigns using CMS should include coordinated enforcement efforts where penalties or enforcement type warnings are part of the message displayed on the CMS.

07 Traffic safety campaign messages should not be displayed on CMS unless they are part of an active, coordinated safety campaign that uses other media forms as the primary means of outreach. For consistency on a national level, traffic safety campaigns should be coordinated with those on the National Highway Transportation Safety Administration's annual communications calendar.

Support:

08 Examples of traffic safety campaign messages include “UNBUCKLED SEAT BELTS FINE + POINTS” and “IMPAIRED DRIVERS LOSE LICENSE + JAIL.”

Section 2L.08 Permanently-Located Changeable Message Signs

Support:

01 Careful consideration of CMS installation location is important to having a safe and effective message, taking into account several factors. CMS message length and complexity will vary and often include two-phase displays, all of which might require longer glance times by motorists than would be required for conventional sign messages.

02 Permanently-located CMS are generally used on higher-speed, multi-lane facilities with high traffic volumes where more time might be required to properly respond to a message, such as by changing lanes or reducing speed. It also is common for other signs to be in the same vicinity of the desired location for a permanently-located CMS raising the concern of overloading road users with information.

Guidance:

03 A CMS that is used in place of a conventional sign (such as a blank-out or variable legend regulatory sign) should be located in accordance with the provisions of Chapter 2A and the provisions for the conventional sign it replaces.

04 Permanently-located CMS should:

A. Be located sufficiently upstream of known bottlenecks and high crash locations to enable road users to select an alternate route or take other appropriate action in response to a recurring condition.

B. Be located sufficiently upstream of major diversion decision points, such as interchanges, to provide adequate distance over which road users can change lanes to reach one destination or the other.

C. Not be located within an interchange except for toll plazas or managed lanes.

D. Not be positioned at locations where the information load on drivers is already high because of guide signs and other types of information.

E. Not be located in areas where drivers frequently perform lane-changing maneuvers in response to guide sign information, or because of merging or weaving conditions.

Support:

05 Many of the factors in locating permanently-located CMS apply to PCMS. Information regarding the design and application of PCMS in temporary traffic control zones is contained in Section 6L.05.

CHAPTER 2M. RECREATIONAL AND CULTURAL INTEREST AREA SIGNS

Section 2M.01 Scope

Support:

01 Recreational or cultural interest areas are attractions or traffic generators that are open to the general public for the purpose of play, amusement, or relaxation. Recreational attractions include such facilities as parks, campgrounds, game-hunting facilities, and ski areas, while examples of cultural attractions include museums, art galleries, and historical buildings or sites.

02 The purpose of recreation and cultural interest area signs is to guide road users to a general area and then to specific facilities or activities within the area.

Option:

03 Recreational and cultural interest area guide signs directing road users to significant traffic generators may be used on freeways and expressways where there is direct access to these areas as provided in Section 2M.09.

04 Recreational and cultural interest area signs may be used off the road network, as appropriate.

Section 2M.02 Application of Recreational and Cultural Interest Area Signs

Support:

01 Provisions for signing recreational or cultural interest areas are subdivided into two different types of signs: (1) symbol signs and (2) destination guide signs.

Guidance:

02 Highway agencies providing recreational and cultural interest area signing should establish a policy with signing criteria for the eligibility of the various types of services, accommodations, and facilities. These signs should not be used where they might be confused with other traffic control signs.

Option:

03 Recreational and cultural interest area guide signs may be used in recreational or cultural interest areas for signing non-vehicular events and amenities such as trails, structures, and facilities.

Support:

04 Symbols for use only within recreational and cultural interest area facilities are noted in Table 2M-1.

05 Section 2A.09 contains information regarding the use of recreational and cultural interest area symbols on other types of signs.

Section 2M.03 Regulatory and Warning Signs

Standard:

01 All regulatory and warning signs installed on roads and streets open to public travel within recreational and cultural interest areas shall comply with the requirements elsewhere in this Manual.

Section 2M.04 General Design Requirements for Recreational and Cultural Interest Area Symbol Guide Signs

Standard:

01 When a General Information symbol contained in Chapter 2H (see Figure 2H-1) is used in conjunction with recreational and cultural interest area signing on roadways outside a recreational and cultural interest area facility, the legend and background color of the General Information symbol sign shall be as prescribed in Chapter 2H.

02 When a General Service symbol contained in Chapter 2I (see Figure 2I-1) is used in conjunction with recreational and cultural interest area signing on roadways outside a recreational and cultural interest area facility, the legend and background color of the General Service symbol sign shall be as prescribed in Chapter 2I.

Option:

03 For roadways inside a recreational and cultural interest area, General Information symbol signs and General Service symbol signs may have a white legend on a brown background (see Figures 2H-1 and 2I-1).

Standard:

04 Except as provided in Section 2M.09, recreational and cultural interest area symbol guide signs shall be square or rectangular in shape and shall have a white symbol or message and white border on a brown background. The symbols shall be grouped into the following usage and series categories:

- **A. General Applications,**
- **B. Accommodations,**
- **C. Services,**
- **D. Land Recreation,**
- **E. Water Recreation, and**
- **F. Winter Recreation.**

Support:

05 Table 2M-1 contains a listing of the symbols within each series category.

Option:

06 Mirror images of symbols may be used where the reverse image will better convey the message (see Section 2A.09).

Section 2M.05 Symbol Sign Sizes

Guidance:

01 Recreational and cultural interest area symbol signs should be 24 x 24 inches. Where greater visibility or emphasis is needed, larger sizes should be used. Symbol sign enlargements should be in 6-inch increments.

02 Recreational and cultural interest area symbol signs should be 30 x 30 inches when used on guide signs on freeways or expressways.

Option:

03 A smaller size of 18 x 18 inches may be used on low-speed, low-volume roadways and on non-road applications.

Section 2M.06 Use of Educational Plaques

Guidance:

01 Educational plaques should accompany all initial installations of recreational and cultural interest area symbol signs. If used, the educational plaque should be the same width as the symbol sign.

Option:

02 Symbol signs that are readily recognizable by the public may be installed without educational plaques.

Support:

03 Figure 2M-1 illustrates some examples of the use of educational plaques.

Section 2M.07 Use of Prohibitive Circle and Diagonal for Non-Road Applications

Standard:

01 Where it is necessary to indicate a prohibition of an activity or an item within a recreational or cultural interest area for non-road use and a standard regulatory sign for such a prohibition is not provided in Chapter 2B, the appropriate recreational and cultural interest area symbol shall be used in combination with a red prohibitive circle and diagonal. The recreational and cultural interest area symbol and the sign border shall be black and the sign background shall be white. The symbol shall be scaled proportionally to fit completely within the circle. The diagonal shall be oriented from the upper left to the lower right portions of the circle as shown in Figure 2M-1 and as detailed in the "Standard Highway Signs" publication.

02 Requirements for retroreflection of the red circle and diagonal shall be the same as those requirements for backgrounds, legends, symbols, arrows, and borders.

Section 2M.08 Placement of Recreational and Cultural Interest Area Symbol Signs

Standard:

01 If used, recreational and cultural interest area symbol signs shall be placed in accordance with the general requirements contained in Chapter 2A. The symbol(s) shall be placed as sign panels in the uppermost part of the sign and the directional information shall be placed below the symbol(s).

02 If the name of the recreational or cultural interest area facility or activity is displayed on a destination guide sign (see Section 2M.09) and a symbol is used, the symbol shall be placed below the name (see Figure 2M-2).

Option:

03 The symbols displayed with the facility or activity name may be placed below the destination guide sign as illustrated in Figure 2M-2 instead of as sign panels placed with the destination guide sign.

04 Secondary symbols of a smaller size (18 x 18 inches) may be placed beneath the primary symbols (see Drawing A in Figure 2M-1), where needed.

Standard:

05 Recreational and cultural interest area symbols installed for non-road use shall be placed in accordance with the general sign position requirements of the authority having jurisdiction.

Support:

06 Figure 2M-3 illustrates typical height and lateral mounting positions. Figure 2M-4 illustrates some examples of the placement of symbol signs within a recreational or cultural interest area. Figures 2M-5 through 2M-10 illustrate some of the symbols that can be used.

Guidance:

07 The number of symbols used in a single sign assembly should not exceed four.

Option:

08 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary signs (see Figure 2D-6) with white arrows on brown backgrounds may be used with recreational and cultural interest area symbol guide signs to create a recreational and cultural interest area directional assembly. The symbols may be used singularly, or in groups of two, three, or four on a single sign assembly (see Figures 2M-1, 2M-3, and 2M-4).

Section 2M.09 Destination Guide Signs

Standard:

01 When recreational or cultural interest area destinations are displayed on a Supplemental guide sign (see Section 2E.51), the sign shall be rectangular in shape with a white legend on a green or brown background.

Option:

02 Trapezoidal-shaped signs (see Figure 2M-2) may be used to display recreational and cultural interest area destinations on conventional roads.

Standard:

03 Whenever the trapezoidal shape is used, the color combination shall be a white legend and border on a brown background. When the trapezoidal shape is used for a sign with a directional arrow, a right-angled trapezoid with the wider dimension of the bases (parallel sides) at the top of the sign shall be used. The diagonal leg of the trapezoid shall be oriented in the same direction as the directional arrow. When the trapezoidal shape is used for an advance sign legend, such as with a distance or action message, an isosceles trapezoid with the wider dimension of the bases at the top of the sign shall be used.

Option:

04 Destination guide signs with a white legend and border on a brown background may be posted at the first point where an access or crossroad intersects a highway where recreational or cultural interest areas are a significant destination along conventional roads, expressways, or freeways. Supplemental guide signs with a white legend and border on a brown background may be used along conventional roads, expressways, or freeways to direct road users to recreational or cultural interest areas. Where access or crossroads lead exclusively to the recreational or cultural interest area, the Advance guide sign (see Section 2E.23) and the Exit Direction sign (see Section 2E.25) may have a white legend and border on a brown background.

Standard:

05 All Exit Gore (E5-1 series) signs (see Section 2E.26) shall have a white legend and border on a green background. The background color of the interchange Exit Number (E1-5P or E1-5bP) plaque (see Section 2E.22) shall match the background color of the guide sign above which it is mounted. Design characteristics of conventional road, expressway, or freeway guide signs shall comply with Chapter 2D or 2E except as provided in this Section for color combination.

06 The Advance guide sign and the Exit Direction sign shall retain the white-on-green color combination where the crossroad also leads to a destination other than a recreational or cultural interest area.

Support:

07 Figure 2M-2 illustrates destination guide signs commonly used for identifying recreational or cultural interest areas or facilities.

Section 2M.10 Memorial or Dedication Signing

Support:

01 Legislative bodies will occasionally adopt an act or resolution memorializing or dedicating a highway, bridge, or other component of the highway.

02 Named highways (see Section 2D.56) are officially designated and shown on official maps and serve the purpose of providing route guidance, primarily on unnumbered highways, and property addresses. A highway designated as a memorial or dedication is not considered to be a named highway for the purposes of highway signing or road user navigation and orientation.

03 Section 2A.20 contains information regarding excessive use of signs. Because memorial or dedication names are not official highway names, memorial and dedication signing is not essential to providing navigational guidance.

Guidance:

04 Such memorial or dedication names should not appear on or along a highway, or be placed on bridges or other highway components. If a route, bridge, or highway component is officially designated as a memorial or dedication, and if notification of the memorial or dedication is to be made on the highway right-of-way, such notification should consist of installing a memorial or dedication marker in a rest area, scenic overlook, recreational area, or other appropriate location where parking is provided with the signing inconspicuously located relative to vehicle operations along the highway.

05 Memorial or dedication signs should have a white legend and border on a brown background. On all such signs, the design should be simple and dignified, devoid of any appearance of advertising, and in general compliance with other signing.

06 The lettering for the name of the person or entity being recognized should be composed of a combination of lower-case letters with initial upper-case letters.

Standard:

07 Where such memorial or dedication signs are installed on the highway mainline because the provisions of Paragraph 4 of this Section cannot be met, (1) memorial or dedication names shall not appear on directional guide signs, (2) memorial or dedication signs shall not interfere with the placement of any other traffic control devices, and (3) memorial or dedication signs shall not compromise the safety or efficiency of traffic flow. The memorial or dedication signing shall be limited

to one sign at an appropriate location in each route direction, each as an independent post-mounted sign installation.

08 Memorial or dedication signs shall be rectangular in shape. The legend displayed on memorial or dedication signs shall be limited to the name of the person or entity being recognized and a simple message preceding the name, such as "DEDICATED TO." Additional legend, such as biographical information, shall not be displayed on memorial or dedication signs. Decorative or graphical elements, pictographs, logos, or symbols shall not be displayed on memorial or dedication signs. All letters and numerals displayed on memorial or dedication signs shall be as provided in the "Standard Highway Signs" publication (see Section 1A.05). The route number or officially mapped name of the highway shall not be displayed on the memorial or dedication sign.

09 Memorial or dedication signs shall not imply that a highway has been officially renamed.

10 Memorial or dedication names shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.

Guidance:

11 Freeways and expressways should not be signed as memorial or dedicated highways.

12 When used, memorial or dedication signs should be located in accordance with the provisions for excessive use of signs (see Section 2A.20).

Support:

13 Paragraph 36 of Section 2D.45 contains provisions regarding the use of memorial or dedication signing in conjunction with Street Name signs.

CHAPTER 2N. EMERGENCY MANAGEMENT SIGNS

Section 2N.01 Emergency Management

Guidance:

01 Contingency planning for an emergency evacuation should be considered by all State and local jurisdictions and should consider the use of all applicable roadways.

02 In the event of a disaster where highways that cannot be used will be closed, a successful contingency plan should account for the following elements: a controlled operation of certain designated highways, the establishment of traffic operations for the expediting of essential traffic, and the provision of emergency centers for civilian aid.

Section 2N.02 Design and Use of Emergency Management Signs

Standard:

01 Emergency Management signs (see Figure 2N-1) shall be used to guide and control highway traffic during an emergency.

Guidance:

02 During an emergency, permanently-installed regulatory and warning signs that conflict with Emergency Management signs should be removed or covered until such time as the Emergency Management signs are no longer necessary.

03 Except for Evacuation Route signs, Emergency Management signs that are no longer necessitated by the emergency should be promptly removed and signs that normally provide regulation, warning, or guidance that were removed or covered during the emergency should be promptly displayed again.

Standard:

04 Advance planning for transportation operations emergencies shall be the responsibility of State and local authorities.

Support:

05 The Federal Government provides guidance to the States as necessitated by changing circumstances.

Standard:

06 Except as provided in Section 2A.07, the sizes for Emergency Management signs shall be as shown in Table 2N-1.

Support:

07 Section 2A.07 contains information regarding the applicability of the various columns in Table 2N-1.

Option:

08 Signs larger than those shown in Table 2N-1 may be used (see Section 2A.07).

Guidance:

09 As conditions permit, the Emergency Management signs should be replaced or augmented by standard signs.

10 Except where specifically required elsewhere in this Chapter, the background of Emergency Management signs should be retroreflective.

11 Because Emergency Management signs might be needed in large numbers for temporary use during an emergency, consideration should be given to their fabrication from any light and economical material that can serve through the emergency period.

Option:

12 Any Emergency Management sign that is used to mark an area that is contaminated by biological or chemical warfare agents or radioactive fallout may be accompanied by the standard symbol that is illustrated in the upper left corner of the EM4-1b and EM4-1c signs in Figure 2N-1.

Section 2N.03 Evacuation Route Signs (EM1 Series)

Standard:

01 An Advance Turn Arrow (M5 series) or Directional Arrow (M6 series) auxiliary plaque (see Figure 2D-6) shall be installed below the EM1-2 sign. The Advance Turn Arrow or Directional Arrow auxiliary plaque shall have a white arrow and border on a blue background when used with an EM1-2 sign.

Option:

02 Where different evacuation conditions use different evacuation routes in the same area, the word HURRICANE, or a word that describes some other type of evacuation route, may be added above the EVACUATION ROUTE legend within the blue circular symbol on the EM1-1a sign.

Standard:

03 The EM1-1 series signs shall include a white directional arrow. The arrow designs on the EM1-1 series signs shall include a straight, vertical arrow pointing upward, a straight horizontal arrow pointing to the left or right, or a bent arrow pointing to the left or right for advance warning of a turn.

Guidance:

04 If used, the Evacuation Route sign, with the appropriate arrow, should be installed 150 to 300 feet in advance of, and at, any turn in an approved evacuation route. The sign should also be installed elsewhere for straight-ahead confirmation where needed.

Standard

05 If used in urban areas, the Evacuation Route sign shall be mounted at the right-hand side of the roadway, not less than 7 feet above the top of the curb, and at least 1 foot back from the face of the curb. If used in rural areas, the Evacuation Route sign shall be mounted at the right-hand side of the roadway, not less than 7 feet above the near edge of the pavement and not less than 6 feet or more than 10 feet to the right of the right-hand roadway edge.

06 Evacuation Route signs shall not be placed where they will conflict with other signs. Where a conflict in placement would occur between the Evacuation Route sign and a standard regulatory sign, the regulatory sign shall take precedence.

Option:

07 In case of a conflict with guide or warning signs, the Evacuation Route sign may take precedence.

Guidance:

08 Placement of Evacuation Route signs should be made under the supervision of the officials having jurisdiction over the placement of other traffic signs. Coordination with Emergency Management authorities and agreement between contiguous political entities should occur to assure continuity of routes.

09 Use of the specific Evacuation Route (EM1-1a and EM1-2) signs should be limited to areas where different evacuation conditions use different evacuation routes.

Section 2N.04 AREA CLOSED Sign (EM2-1)

Guidance:

01 The AREA CLOSED (EM2-1) sign (see Figure 2N-1) should be used to close a roadway in order to prohibit traffic from entering the area. It should be installed on the shoulder as near as practical to the right-hand edge of the roadway, or preferably, on a portable mounting or barricade partly or entirely in the roadway.

02 For best visibility, particularly at night, the sign height should not exceed 4 feet measured vertically from the pavement to the bottom of the sign. Unless adequate advance warning signs are used, it should not be placed to create a complete and unavoidable blocked route. Where feasible, the sign should be located at an intersection that provides a detour route.

Section 2N.05 TRAFFIC CONTROL POINT Sign (EM2-2)

Guidance:

01 The TRAFFIC CONTROL POINT (EM2-2) sign (see Figure 2N-1) should be used to designate a location where an official traffic control point has been set up to impose such controls as are necessary to limit congestion, expedite emergency traffic, exclude unauthorized vehicles, or protect the public.

02 The sign should be installed in the same manner as the AREA CLOSED sign (see Section 2N.04), and at the point where traffic must stop to be checked.

03 A STOP (R1-1) sign (see Section 2B.04) should be used in conjunction with the TRAFFIC CONTROL POINT sign.

04 The TRAFFIC CONTROL POINT sign should be mounted directly below the STOP sign.

Section 2N.06 MAINTAIN TOP SAFE SPEED Sign (EM2-3)

Option:

01 The MAINTAIN TOP SAFE SPEED (EM2-3) sign (see Figure 2N-1) may be used on highways where conditions are such that it is prudent to evacuate or traverse an area as quickly as possible.

02 Where an existing Speed Limit (R2-1) sign is in a suitable location, the MAINTAIN TOP SAFE SPEED sign may be mounted directly over the face of the speed limit sign that it supersedes.

Support:

03 Since any speed zoning would be impractical under such emergency conditions, no minimum speed limit can be prescribed by the MAINTAIN TOP SAFE SPEED sign in numerical terms. Where traffic is supervised by a traffic control point, official instructions will usually be given verbally, and the sign will serve as an occasional reminder of the urgent need for maintaining the proper speed.

Guidance:

04 The sign should be installed as needed, in the same manner as other standard speed signs.

Standard:

05 If used in rural areas, the MAINTAIN TOP SAFE SPEED sign shall be mounted on the right-hand side of the road at a horizontal distance of not less than 6 feet or more than 10 feet from the

roadway edge, and at a minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of 5 feet. If used in urban areas, the minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, shall be 7 feet, and the nearest edge of the sign shall be not less than 1 foot back from the face of the curb.

Section 2N.07 Permit Required Sign (EM2-4)

Support:

01 The intent of the Permit Required (EM2-4) sign (see Figure 2N-1) is to notify road users of the presence of the traffic control point so that those who do not have priority permits issued by designated authorities can take another route, or turn back, without making a needless trip and without adding to the screening load at the post. Local traffic, without permits, can proceed as far as the traffic control post.

Standard:

02 If used, the Permit Required (EM2-4) sign shall be used at an intersection that is an entrance to a route on which a traffic control point is located.

03 If used, the EM2-4 sign shall be installed in a manner similar to that of the MAINTAIN TOP SAFE SPEED sign (see Section 2N.06).

Section 2N.08 Emergency Aid Center Signs (EM3-1 Series)

Standard:

01 In the event of emergency, State and local authorities shall establish various centers for civilian relief, communication, medical service, and similar purposes. To guide the public to such centers a series of directional signs shall be used.

02 Emergency Aid Center (EM3-1 series) signs (see Figure 2N-1) shall display the designation of the center and an arrow indicating the direction to the center. They shall be installed as needed, at intersections and elsewhere, on the right-hand side of the roadway, in urban areas at a minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of 7 feet, and not less than 1 foot back from the face of the curb, and in rural areas at a minimum height, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way, of 5 feet, and at a horizontal distance of not less than 6 feet or more than 10 feet from the roadway edge.

03 Emergency Aid Center signs shall display one of the following legends, as appropriate, or others designating similar emergency facilities:

- **A. MEDICAL CENTER (EM3-1),**
- **B. WELFARE CENTER (EM3-1a),**
- **C. REGISTRATION CENTER (EM3-1b), or**
- **D. DECONTAMINATION CENTER (EM3-1c).**

04 The Emergency Aid Center sign shall be a horizontally-oriented rectangle. Except as provided in Paragraph 5 of this Section, the Emergency Aid Center signs shall have a black legend and border on a white background.

Option:

05 When Emergency Aid Center signs are used in an incident situation, such as during the aftermath of a nuclear or biological attack, the background color may be fluorescent pink (see Chapter 6O).

Section 2N.09 Shelter Directional Signs (EM4-1 Series)

Standard:

01 Shelter Directional (EM4-1 series) signs (see Figure 2N-1) shall be used to direct the public to selected shelters that have been licensed and marked for emergency use.

02 The installation of Shelter Directional signs shall comply with established signing standards. Where used, the signs shall not be installed in competition with other necessary highway regulatory, guide, and warning signs.

03 The Shelter Directional sign shall be a horizontally-oriented rectangle. Except as provided in Paragraph 4 of this Section, the Shelter Directional signs shall have a black legend and border on a white background.

Option:

04 When Shelter Directional signs are used in an incident situation, such as during the aftermath of a nuclear or biological attack, the background color may be fluorescent pink (see Chapter 6O).

05 The distance to the shelter may be omitted from the sign when appropriate.

06 Shelter Directional signs may display one of the following legends, or others designating similar emergency facilities:

A. EMERGENCY (EM4-1),
B. HURRICANE (EM4-1a),
C. FALLOUT (EM4-1b), or
D. CHEMICAL (EM4-1c).

07 If appropriate, the name of the facility may be used.

08 The Shelter Directional signs may be installed on the Interstate Highway System or any other major highway system when it has been determined that a need exists for such signs as part of a State or local shelter plan.

09 The Shelter Directional signs may be used to identify different routes to a shelter to provide for rapid movement of large numbers of persons.

Guidance:

10 The Shelter Directional sign should be used sparingly and only in conjunction with approved plans of State and local authorities.

11 The Shelter Directional sign should not be posted more than 5 miles from a shelter.