CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS

Chapter 2E Subchapter and Section Organization

GENERAL

2E.01 Scope of Freeway and Expressway Guide Sign Standards
2E.02 Freeway and Expressway Signing Principles
2E.03 Guide Sign Classification
2E.04 Characteristics of Urban Signing
2E.05 Characteristics of Rural Signing
2E.06 Signing of Named Highways
2E.07 Designation of Destinations

SIGN DESIGN

2E.08 General
2E.09 Color of Guide Signs
2E.10 Retroreflection or Illumination
2E.11 Interchange Classification
2E.12 Size of Signs and Letters
2E.13 lnterline and Edge Spacing
2E.14 Sign Borders
2E.15 Amount of Legend on Guide Signs
2E.16 Abbreviations
2E.17 Symbols
2E.18 Arrows for Interchange Guide Signs

INSTALLATION

2E.19 Overhead Sign Installations
2E.20 Lateral Offset

GUIDE SIGNING FOR INTERCHANGES

2E.21 Interchange Guide Signs
2E.22 Interchange Exit Numbering
2E.23 Interchange Advance Guide Signs (E1-1 through E1-3)
2E.24 Interchange Sequence Signs (E9-1 and E9-2)
2E.25 Exit Direction Signs (E4 Series)
2E.26 Exit Gore Signs and Plaque (E5-1 Series)
2E.27 Pull-Through Signs (E6-1 Series and E6-2 Series)
2E.28 Signing for Interchange Lane Drops Without an Optional Exit Lane
2E.29 Signing by Type of Interchange
2E.30 Minor Interchange
2E.31 Diamond Interchange
2E.32 Diamond Interchange in Urban Area
2E.33 Cloverleaf Interchange
2E.34 Cloverleaf Interchange with Collector-Distributor Roadways
2E.35 Partial Cloverleaf Interchange
2E.36 Collector-Distributor Roadways for Successive Interchanges
2E.37 Freeway-to-Freeway Interchanges
2E.38 Freeway Split with Dedicated Lanes
2E.39 Signing for Option Lanes at Splits and Multi-Lane Exits
2E.40 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes
2E.41 Design of Freeway and Expressway Diagrammatic Advance Guide Signs
2E.42 Signing for Intermediate and Minor Interchange Multi-Lane Exits with an Option Lane
2E.43 Number of Signs at an Overhead Installation, Information Provided by Freeway Signing, and Sign Spreading

2E.44 Closely-Spaced Interchanges
2E.45 Guide Signing in Tunnels and Similar Structures

OTHER GUIDE SIGNS

2E.46 Next Exit Plaques (E2-1P and E2-1aP)
2E.47 Post-Interchange Signs
2E.48 Post-Interchange Distance Signs (E7-1 through E7-3)
2E.49 Post-Interchange Travel Time Sign (E7-4)
2E.50 Distance and Travel Time Sign (E7-5) and Comparative Travel Time Sign (E7-6)
2E.51 Supplemental Guide Signs (E3 Series)
2E.52 ~~Community Interchanges Identification Signs (E9-4 and E9-5)~~ DELETED
2E.52A Downtown Exit Signs
2E.53 Next Exits Signs (E9-3 and E9-3a)
2E.54 ~~Weigh Station Signing~~ DELETED
2E.54A Commercial Motor Vehicle (CMV) Inspection Station Signing (D8 Series)
2E.55 Route Signs and Trailblazer Assemblies
2E.56 Eisenhower Interstate System Signs (M1-10 and M1-10a)

SIGNS FOR ROUTE DIVERSION BY VEHICLE CLASS

2E.57 Signs for Route Diversion by Vehicle Class

INTERFACE WITH CONVENTIONAL ROADWAYS

2E.58 Signing on Conventional Road Approaches and Connecting Roadways
2E.59 Wrong-Way Traffic Control at Interchange Ramps

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 Sign Designs for Texas" 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.**

Support:

04 For additional information on freeway and expressway guide signs, refer to TxDOT's "Freeway Signing Handbook."

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. DOWNTOWN EXIT signs (see Section 2E.52A);
E. Next Exits signs (see Section 2E.53);

F. CMV signs (see Section 2E.54A);
G. Route signs and Trailblazer Assemblies (see Section 2E.55);
H. General Information signs (see Chapter 2H);
I. Reference Location signs (see Sections 2H.11 and 2H.12);
J. General Service signs (see Chapter 2I);
K. Rest and Scenic Area signs (see Section 2I.05);
L. Tourist Information and Welcome Center signs (see Section 2I.08);
M. Radio Information, Travel Information, and Roadside Assistance signs (see Sections 2I.09 through 2I.13);
N. Carpool and Ridesharing signs (see Section 2I.14);
O. Specific Service signs (see Chapter 2J);
P. Recreational and Cultural Interest Area signs (see Chapter 2M);
Q. Toll Road signs (see Chapter 2F); and
R. Preferential and Managed Lane signs (see Chapter 2G).

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.

03 *For non-Interstate roadways, major destinations should be prioritized by the following:*

A. The next city that serves as the government jurisdiction's county seat; and

B. A city or town considered by engineering judgement to be a significant destination.

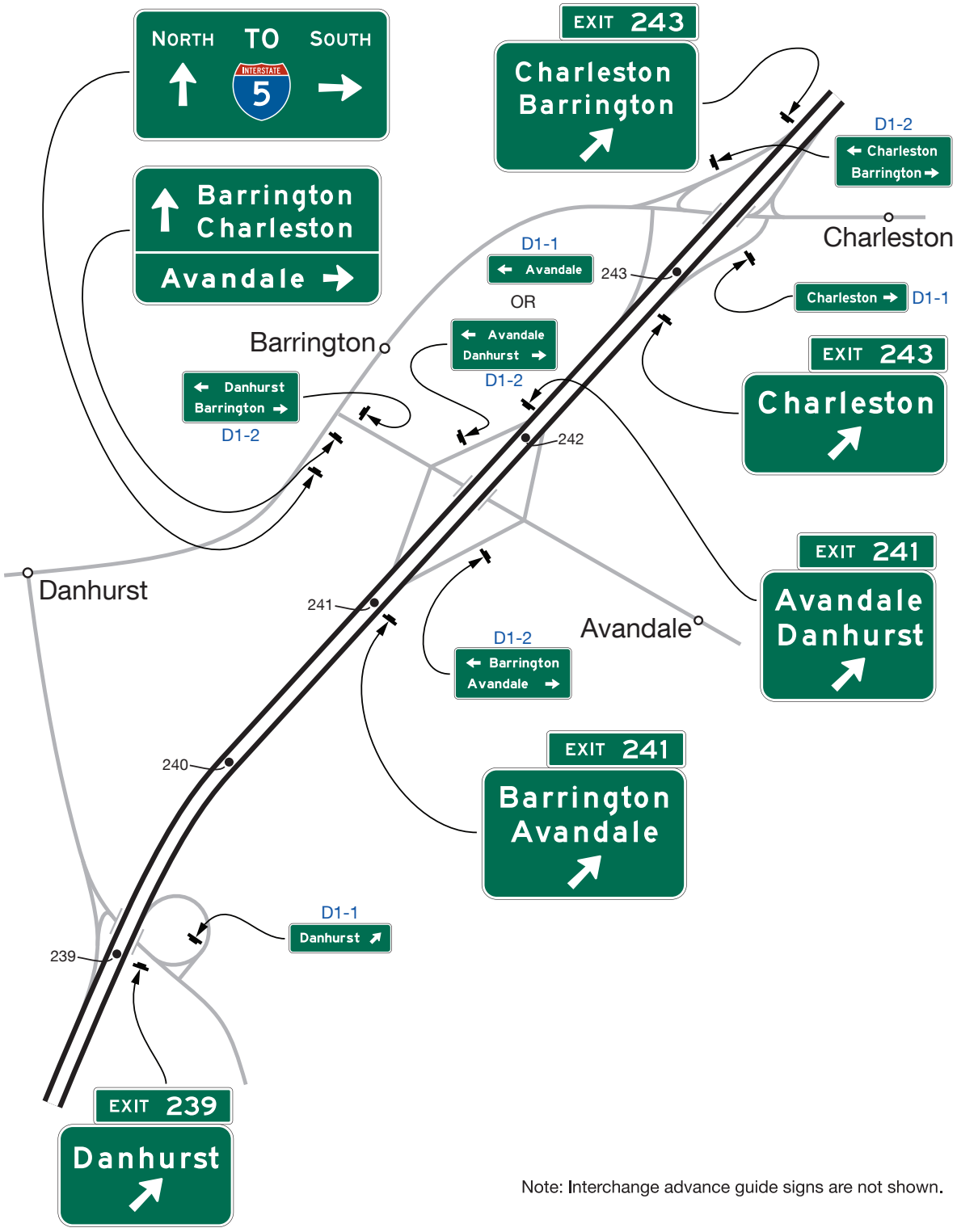
Support:

04 Continuity of destination names is also useful on expressways serving long-distance or intrastate travel.

05 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 Signing, 5th Edition," 2016, AASHTO.

Rev. 1

Figure 2E-1. Designation of Destination for Interchanges in Opposing Directions of Travel



Note: Interchange advance guide signs are not shown.

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.

Guidance:

03 *Where roadway geometry limits the headlight illumination on an overhead sign, engineering judgement should be used to determine if illumination is needed.*

Section 2E.11 Interchange Classification

Support:

01 For signing purposes, interchanges are classified as major, intermediate, and minor. 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 the "Standard Highway Sign Designs for Texas" publication (see Section 1A.05).**

02 **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.**

03 **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 freeway and expressway guide signs according to type of sign and component of sign legend shall be as shown in Tables 2E-4A, 2E-5, and Figure 2E-1A.

04 **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 as shown in the "Standard Highway Sign Designs for Texas" publication (see Section 1A.05).**

05 **Lettering size on freeway and expressway signs shall be the same for both rural and urban conditions.**

Support:

06 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.

07 Designs for upper-case and lower-case FHWA Standard Alphabets, together with tables of recommended letter spacing, are shown in the "Standard Highway Sign Designs for Texas" publication (see Section 1A.05).

Guidance:

08 *Freeway lettering sizes (see Tables 2E-4A and 2E-5) should be used when expressway geometric design is comparable to freeway standards.*

09 *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:

10 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.

Table 2E-1. ~~Freeway or Expressway Guide Sign and Plaque Sizes~~ DELETED

Table 2E-2. ~~Minimum Letter and Numeral Sizes for Expressway Guide Signs According to Interchange Classification~~ DELETED

Table 2E-3. ~~Minimum Letter and Numeral Sizes for Expressway Guide Signs According to Sign Type~~ DELETED

Table 2E-4. ~~Minimum Letter and Numeral Sizes for Freeway Guide Signs According to Interchange Classification~~ DELETED

Table 2E-4A. (TX) Minimum Letter and Numeral Sizes for Advance Guide and Exit Direction Signs

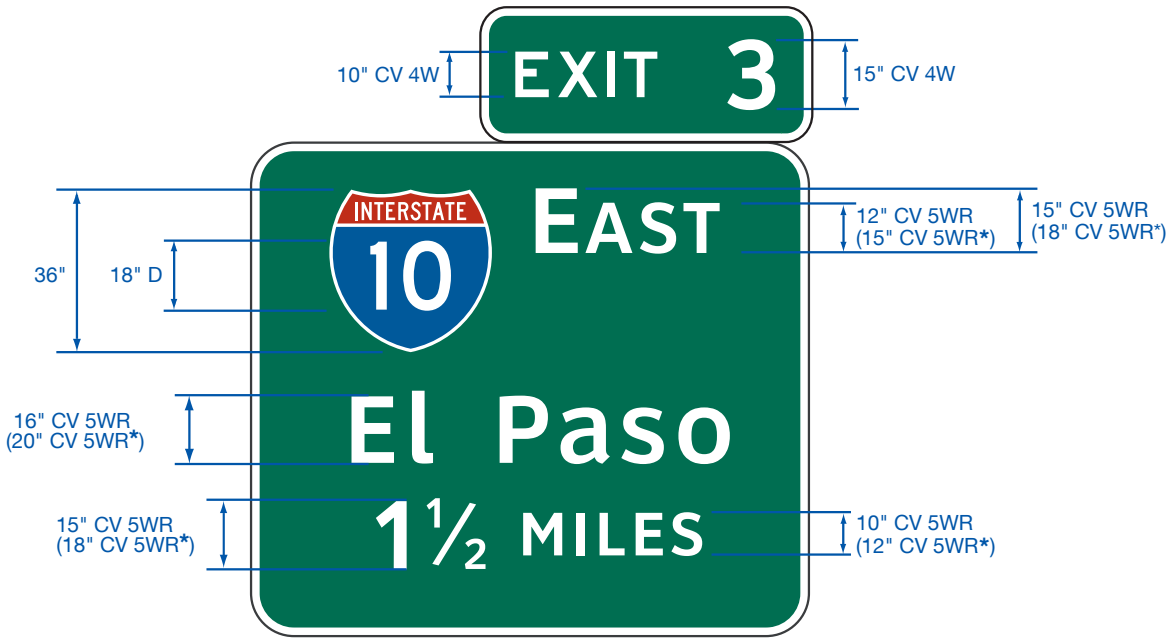
Type of Sign and Sign Elements	Minimum Size in inches
Exit Panel	
Word	10
Numeral and Letter	15
Interstate Route Sign, Business Loop or Spur Interstate Route Sign	
Numeral (see note 1 below)	15 D Series
Shield (1-2 Digit)	36 x 36
Shield (3 Digit)	45 x 36
U.S. or State Route Sign	
Numeral (see note 1 below)	18 D Series
Shield (1-2 Digit)	36 x 36
Shield (3 Digit)	45 x 36
U.S. or State Route Text Identification (Example: US 56)	
Numerals & Letters	15 (18*)
Cardinal Direction	
First Letter	15 (18*)
Rest of Word	12 (15*)
Auxiliary and Alternative Route Legends (Examples: JCT, TO, ALT, BUSINESS)	
Word	12 (15*)
Name of Place, Street or Highway	
Word	16 (20*)
Distance Message	
Numeral	15 (18*)
Fraction	10 (12*)
Word	10 (12*)
Exit Gore	
Word	12
Numerals & Letters	18

* Major Interchange ground-mount signs shall use larger font shown in parenthesis.

Note: 1. Minimum size listed for 3-digit shields. Larger numeral sizes used for 1-digit, some 2-digit, and some 3-digit shields.

2. See the "Standard Highway Sign Designs for Texas (SHSD)" publication for font styles and Sign layout details.

Figure 2E-1A. (TX) Letter Style and Minimum Letter/Numeral Sizes for Advance Guide Signs



* Refer to Table 2E-4A

Table 2E-5. Minimum Letter and Numeral Sizes for Freeway Guide Signs According to Sign Type

Type of Sign	Minimum Size
A. Pull-Through Signs	
Destinations — Upper-Lower Case Letters	16
Route Signs as Message	
1- or 2-Digit Shields	36 x 36
3-Digit Shields	45 x 36
Cardinal Direction	
First Letter	15
Rest of Word	12
B. Supplemental Guide Signs	
Exit Number Words	10
Exit Number Numerals and Letters	15
Place Names — Upper-Lower Case Letters	13.33
Action Messages	10
C. Interchange Sequence Signs	
Words — Upper-Lower Case Letters	13.33
Numerals	13.33
Fraction Numerals	10
D. Next X Exits Sign	
Place Names — Upper-Lower Case Letters	13.33
NEXT X EXITS — Words	10
NEXT X EXITS — Number	15
E. Distance Signs	
Words — Upper-Lower Case Letters	8
Numerals	8
F. General Service Signs (see Chapter 2I)	
Exit Number Words	10
Exit Number Numerals and Letters	15
Services	10
G. Rest Area and Scenic Area Signs (see Chapter 2I)	
Words	12
Distance Numerals	15
Distance Fraction	10
Distance Words	10
Action Message Words	12

Type of Sign	Minimum Size
H. Reference Location Signs (see Chapter 2H)	
Words	4
Numerals	10
I. Boundary and Orientation Signs (see Chapter 2H)	
Words — Upper-Lower Case Letters	8
J. Next Exit and Next Services Signs	
Words and Numerals	8
K. Exit Only Signs	
Words	12
L. Overhead Arrow-per-Lane Signs**	
Arrowhead (Type D Directional Arrow)	20/16.25
Arrow Shaft Width	7.5/6.094
Arrow Height	
Through	48/39
Left Only	38/30.875
Right Only	38/30.875
Optional-Diverge (Through with Left or Right)	48/39
Optional-Split (Left and Right)	42/34.125
Vertical Separator Width	2
Vertical Space between Vertical Separator and Top of Nearest Arrow	6.5/5.0
Horizontal Space between Vertical Separator and Top of Nearest Through Arrow	12/9
Horizontal Space between Arrow Shaft and EXIT and ONLY Panels	12
EXIT and ONLY Panels	54 x 18
M. Diagrammatic Signs	
Arrowhead (Type D Directional Arrow)	13.5***
Stem Height to Upper Point of Departure	30
Horizontal Space between Arrowhead and Route Shield or Destination	12

* Minimum size listed for 3-digit shields. Larger numeral sizes used for 1-digit, some 2-digit, and some 3-digit shields. See the Standard Highways Signs publication for more information on Route Sign numeral heights and Standard Alphabet series.

** Overhead Arrow-per-Lane sign example layouts and design elements sizing are provided in the "Standard Highway Sign Designs for Texas" publication. Sizes shown as XX/XX correspond to 20-inch/16-inch destination letter legend sizes respectively.

*** The size shown is the arrowhead width per lane depicted on the corresponding arrow shaft.

Note: Sizes are shown in inches and where applicable are shown as width x height.

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 60 square feet, the border should have a width of 2 inches. For smaller guide signs, a border width of 1 inch 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 Sign Designs for Texas" 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 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 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.**

Rev. 1

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 to the side of the legend 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 Sign Designs for Texas" 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 Sign Designs for Texas" 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 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.

Rev. 1

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:

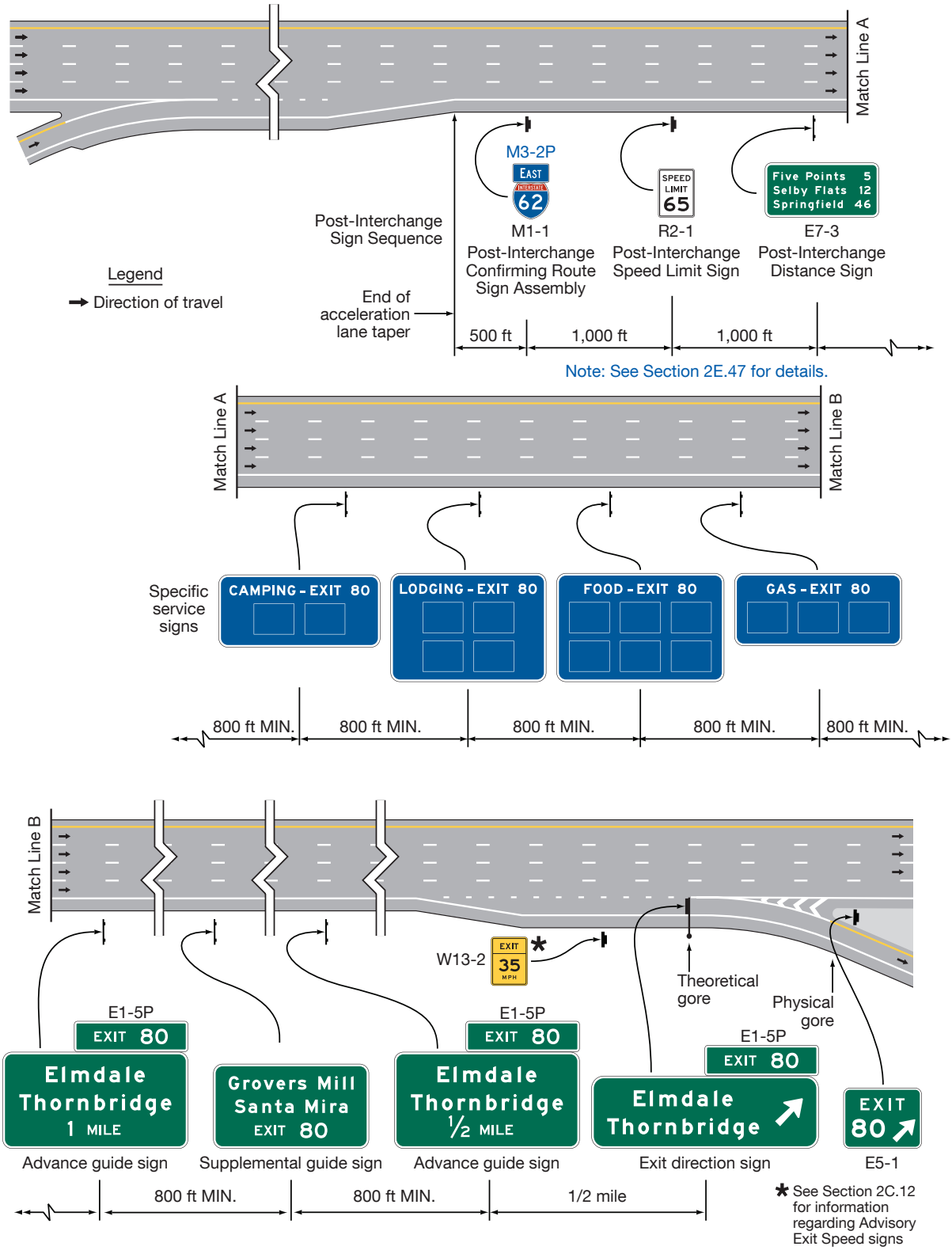
06 Figure 2E-2 shows a typical sequence of interchange guide signs.

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).*

Figure 2E-2. Typical Sequence of Interchange Guide Signs



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-4A and 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 through E1-5eP) 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 (E1-5fPT through E1-5kPT) 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.** Rev. 1

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 interchange exit numbering.** Rev. 1

Guidance:

21 *The route chosen for continuity of interchange exit numbering should also have reference location sign continuity (see Figure 2E-8).*

Figure 2E-3. Examples of Interchange Exit Numbering

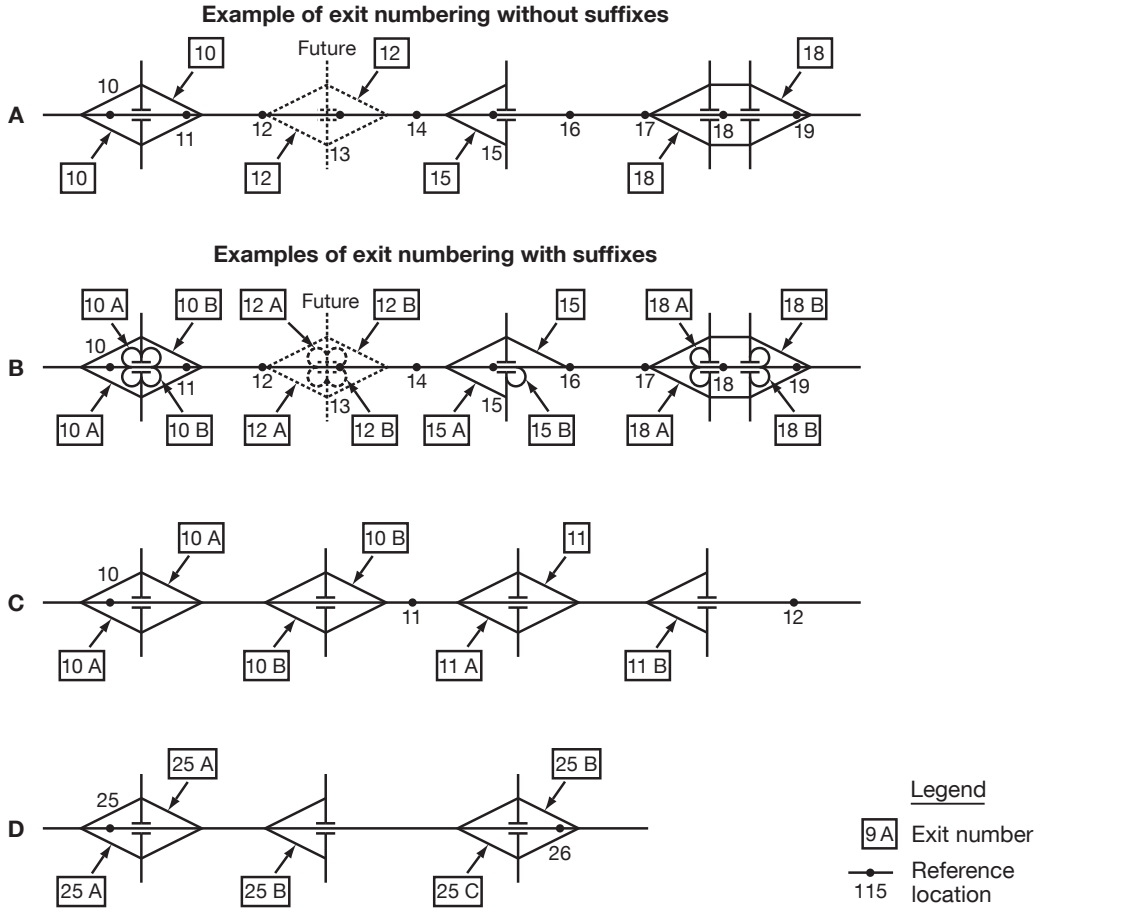


Figure 2E-4. Example of Interstate Loops and Spurs

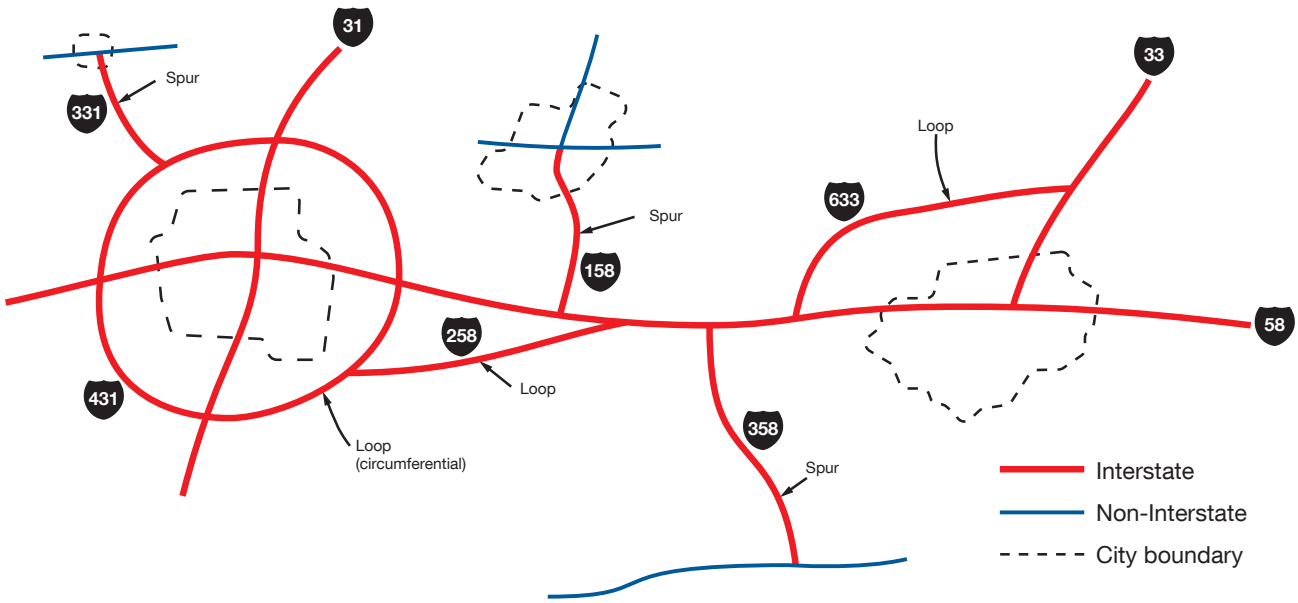
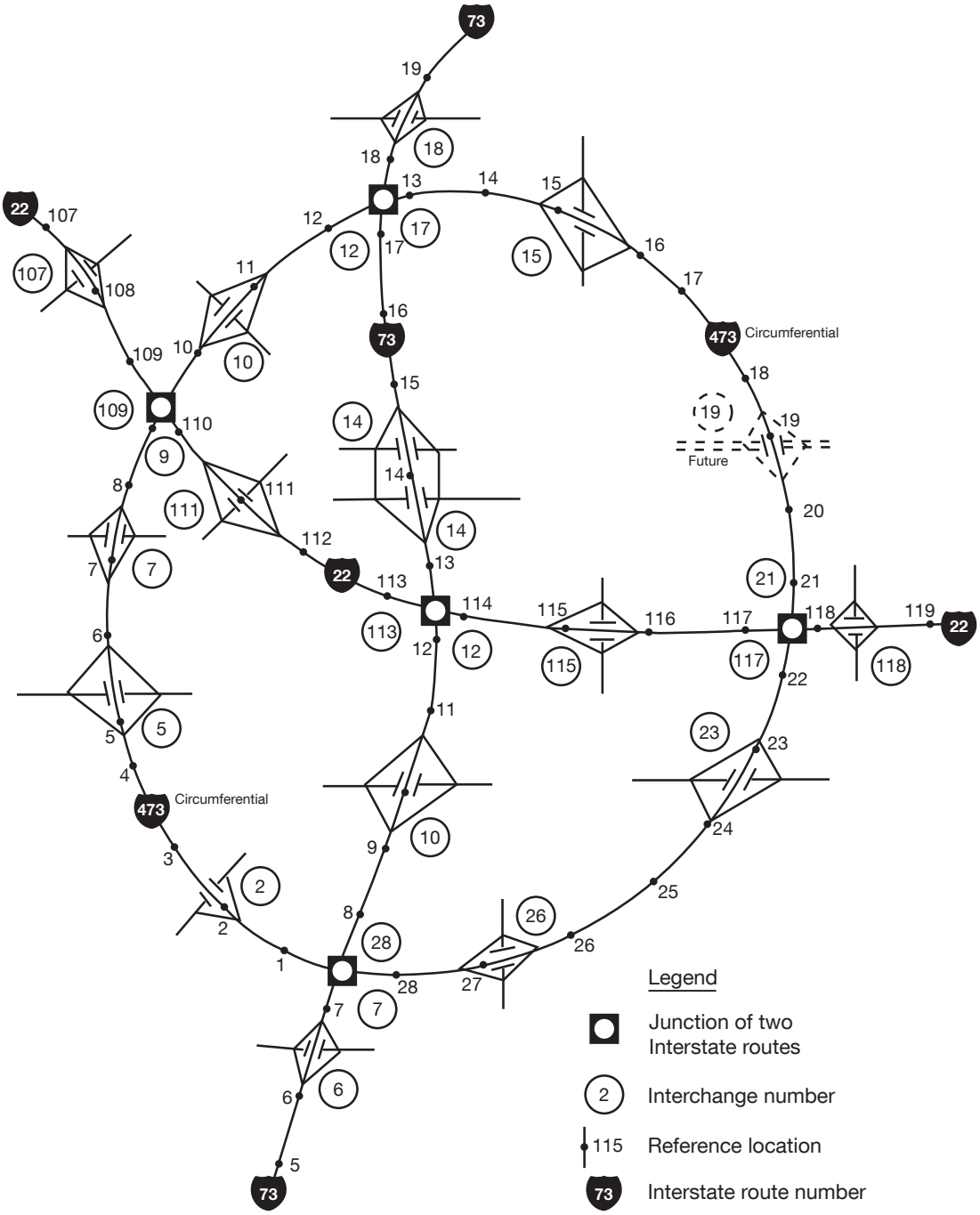
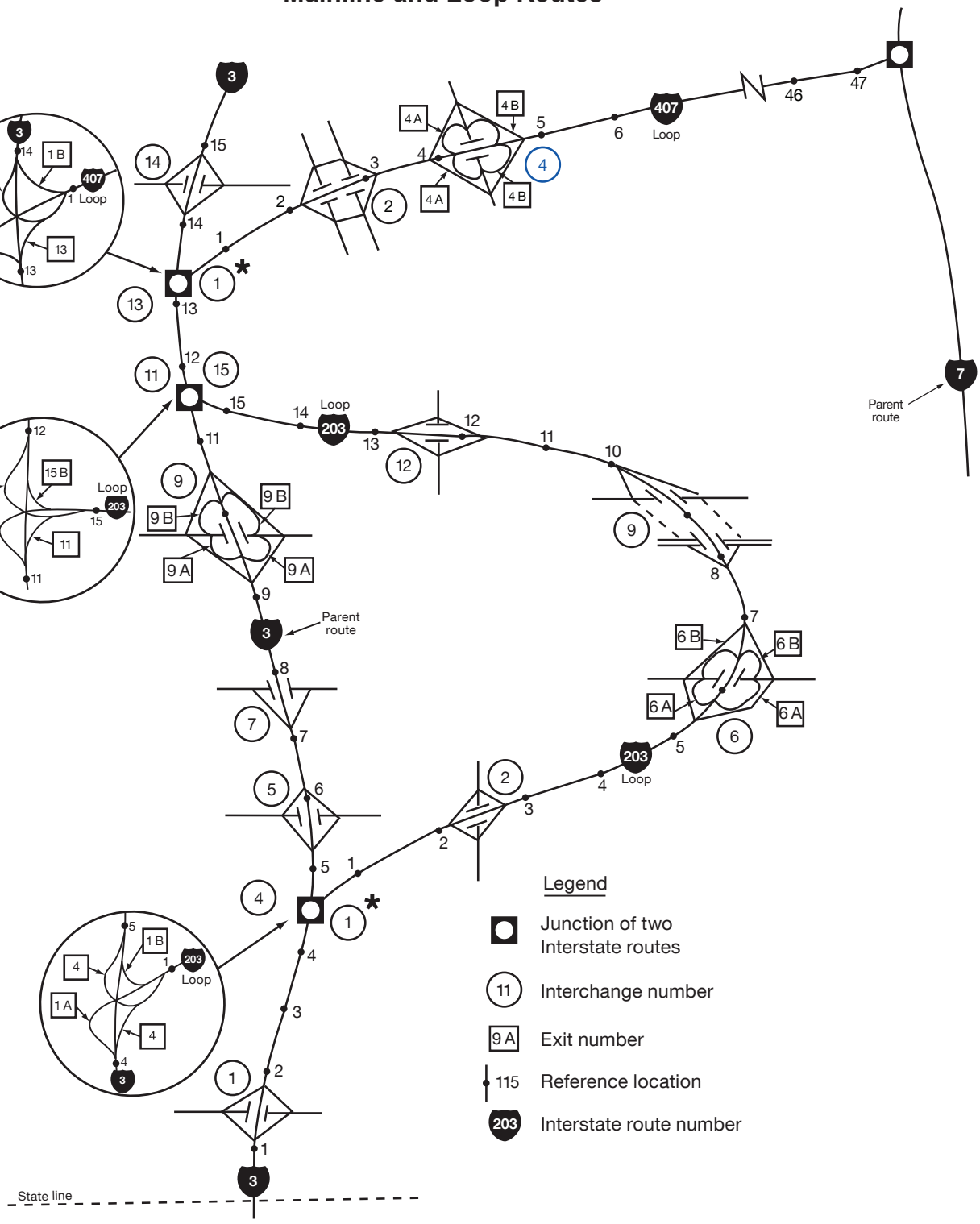


Figure 2E-5. Example of Interchange Numbering for Mainline and Circumferential Routes



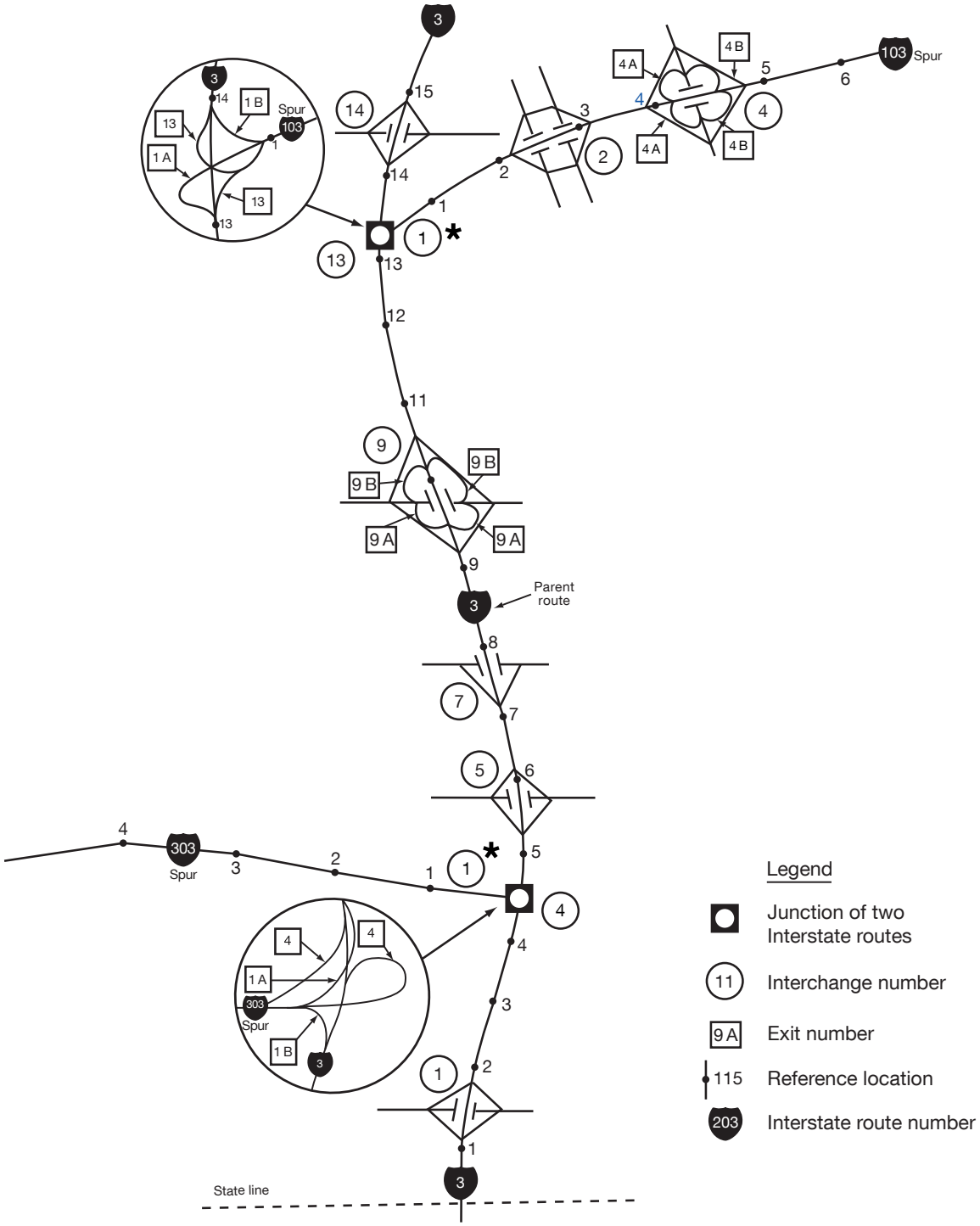
Rev. 1

Figure 2E-6. Example of Interchange Numbering for Mainline and Loop Routes



* The freeway/freeway interchange where the beginning of the loop or spur route intersects with the mainline route may be called either Exit 1 or Exit 0 on the loop or spur route.

Figure 2E-7. Example of Interchange Numbering for Mainline and Spur Routes

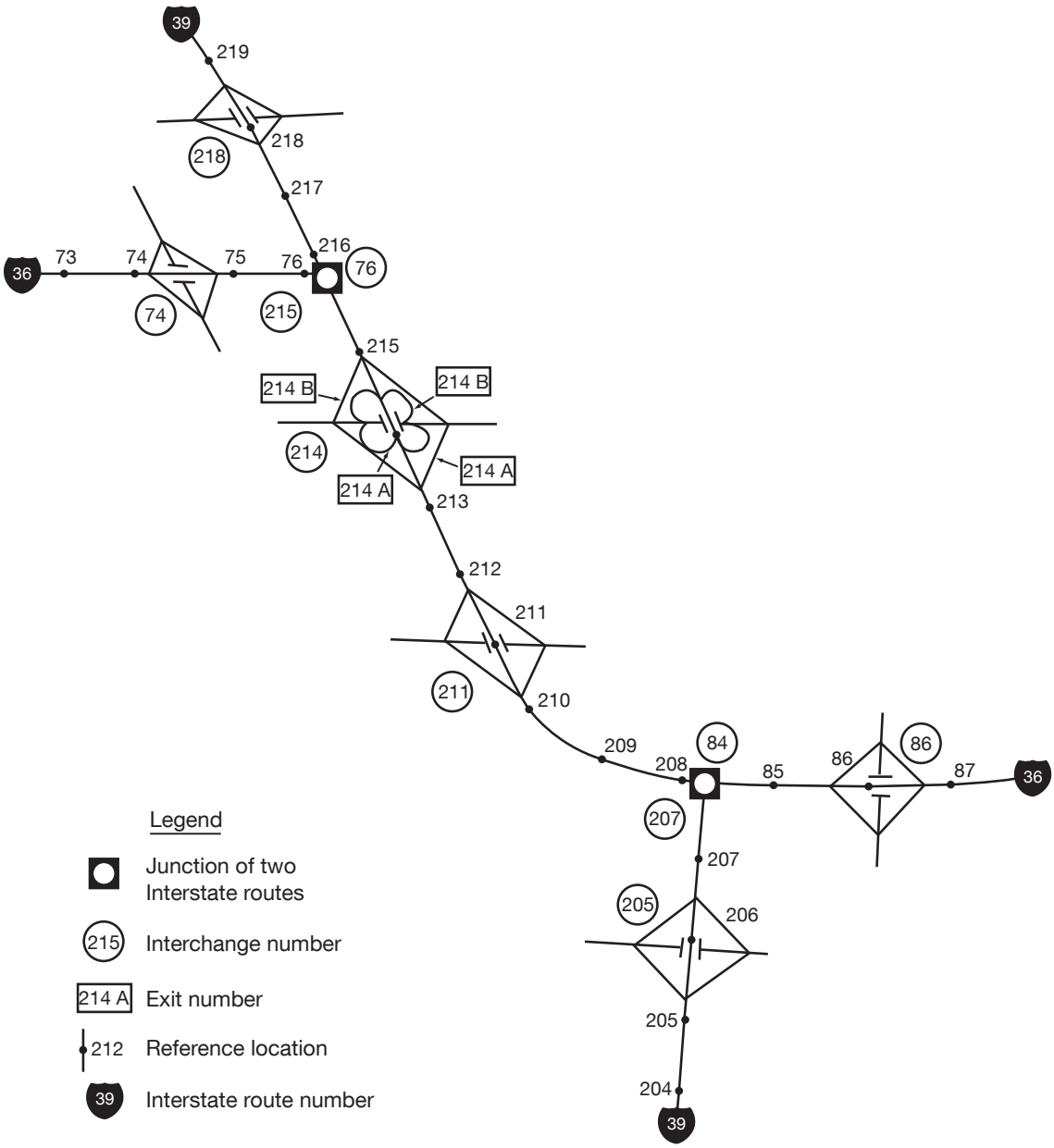


* The freeway/freeway interchange where the beginning of the loop or spur route intersects with the mainline route may be called either Exit 1 or Exit 0 on the loop or spur route.

Rev. 1

Rev. 1

Figure 2E-8. Example of Interchange Numbering for Overlapping Routes



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.** Rev. 1

Guidance:

07 *Where an Interchange Advance guide sign is located more than 1,000 feet 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 guide signs shall be displayed using an Exit Number plaque above and abutting the Interchange Advance guide sign.** Rev. 1

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**T **through E1-5kP**T**) plaque (see Figure 2E-9) shall be added above the top left-hand edge of the sign (see Figures 2E-18 and 2E-34).** Rev. 1

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:

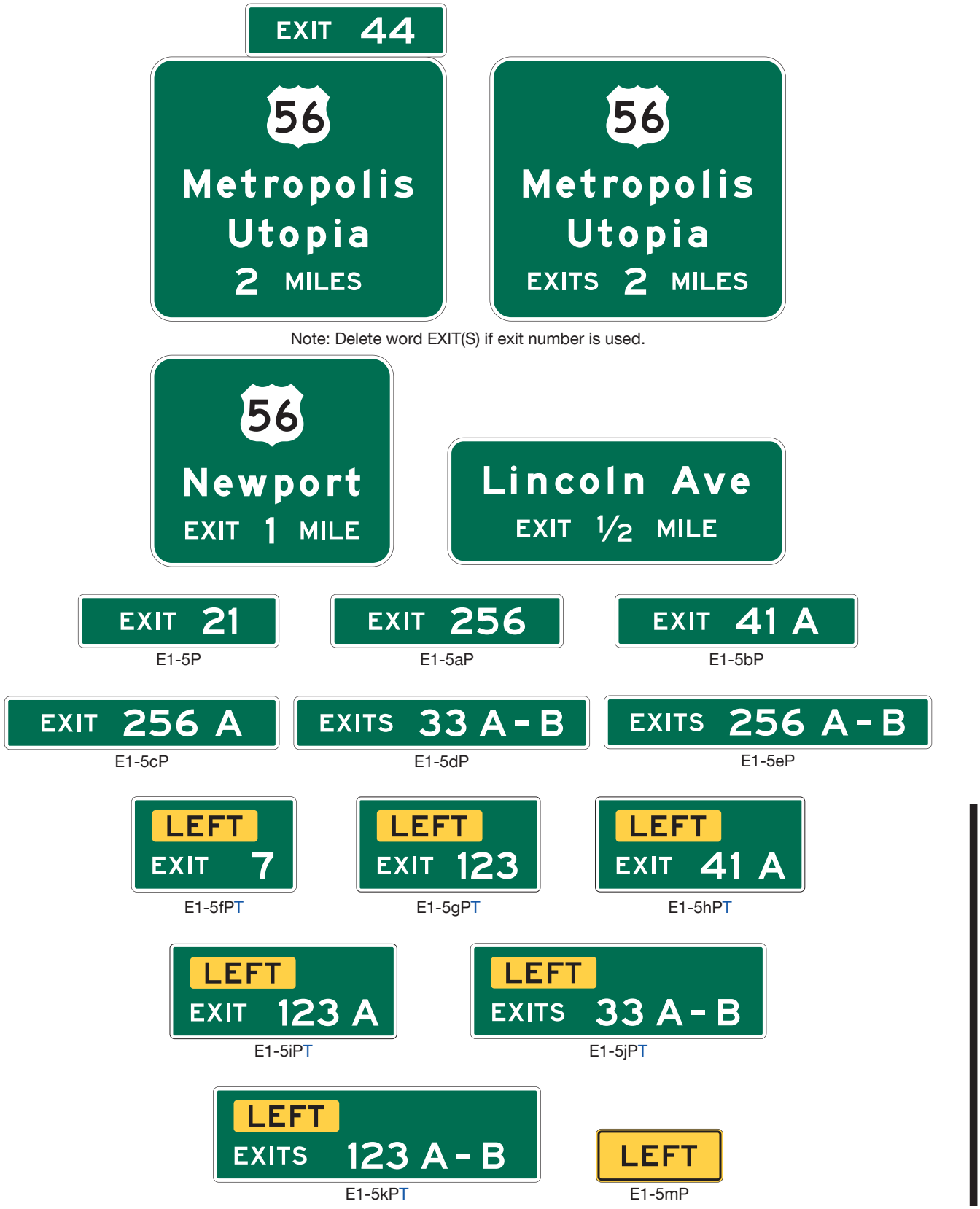
15 Where the distance between interchanges is more than 1 mile, but less than 2 miles, the first Interchange Advance guide sign may be closer than 2 miles, but not placed so as to overlap the signing for the preceding exit. Duplicate Interchange Advance guide signs or Interchange Sequence Series signs 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.*

Figure 2E-9. Examples of Interchange Advance Guide Signs, Exit Number Plaques, and LEFT Plaque



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:

Rev. 1

10 **Interchange Sequence signs located in the median shall be installed at overhead sign height (see Section 2A.15).**

Option:

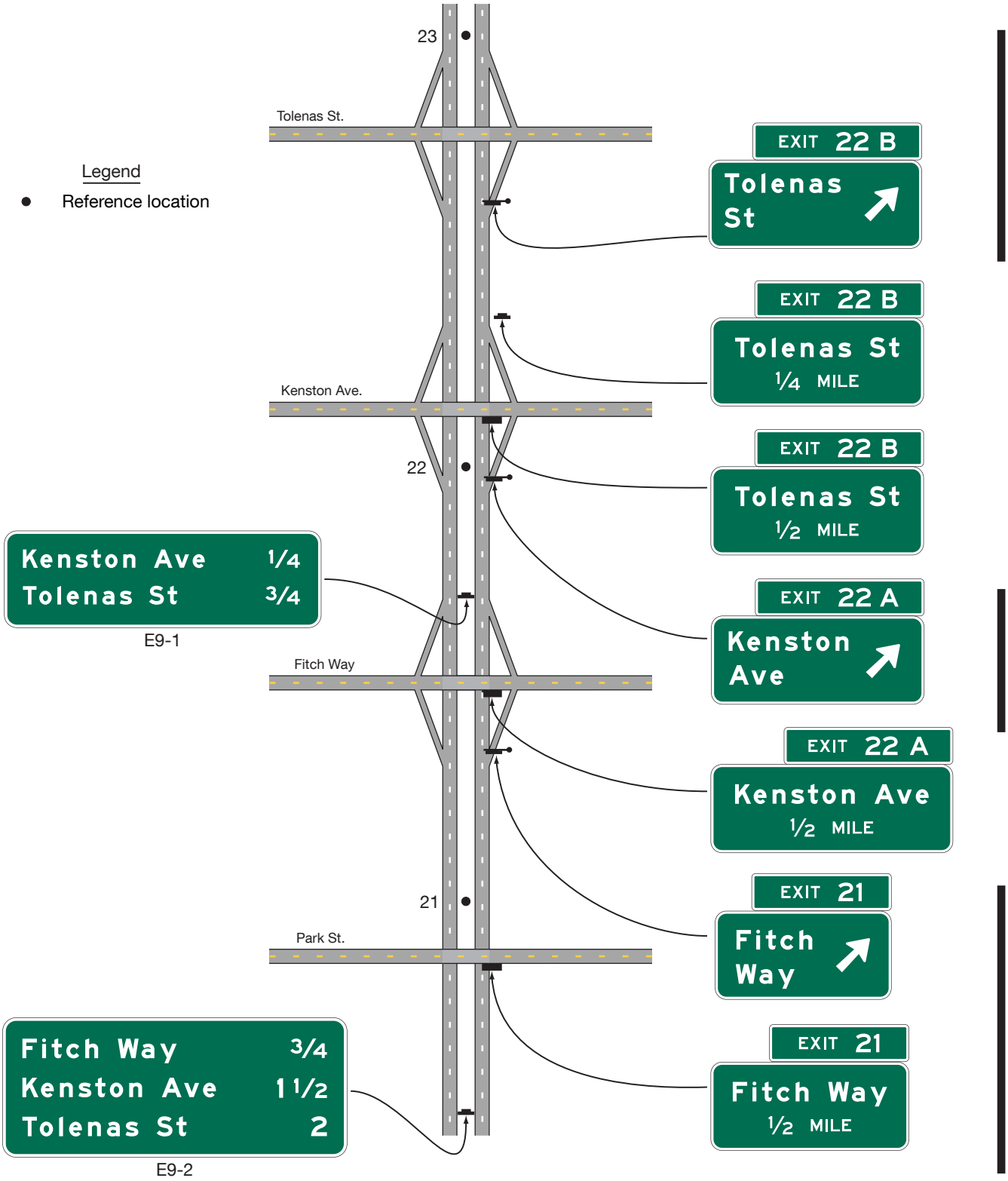
11 Interchange exit numbers may be displayed to the left of the interchange name or route number.

Figure 2E-10. Example of an Interchange Sequence Sign



E9-2

Figure 2E-11. Example of Using a Series of Interchange Sequence Signs for Closely-Spaced Interchanges



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).**

Rev. 1

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, 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).**

Rev. 1

- **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.**

Rev. 1

10 **For numbered exits to the left, a Left Exit Number (E1-5fPT through E1-5kPT) 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.

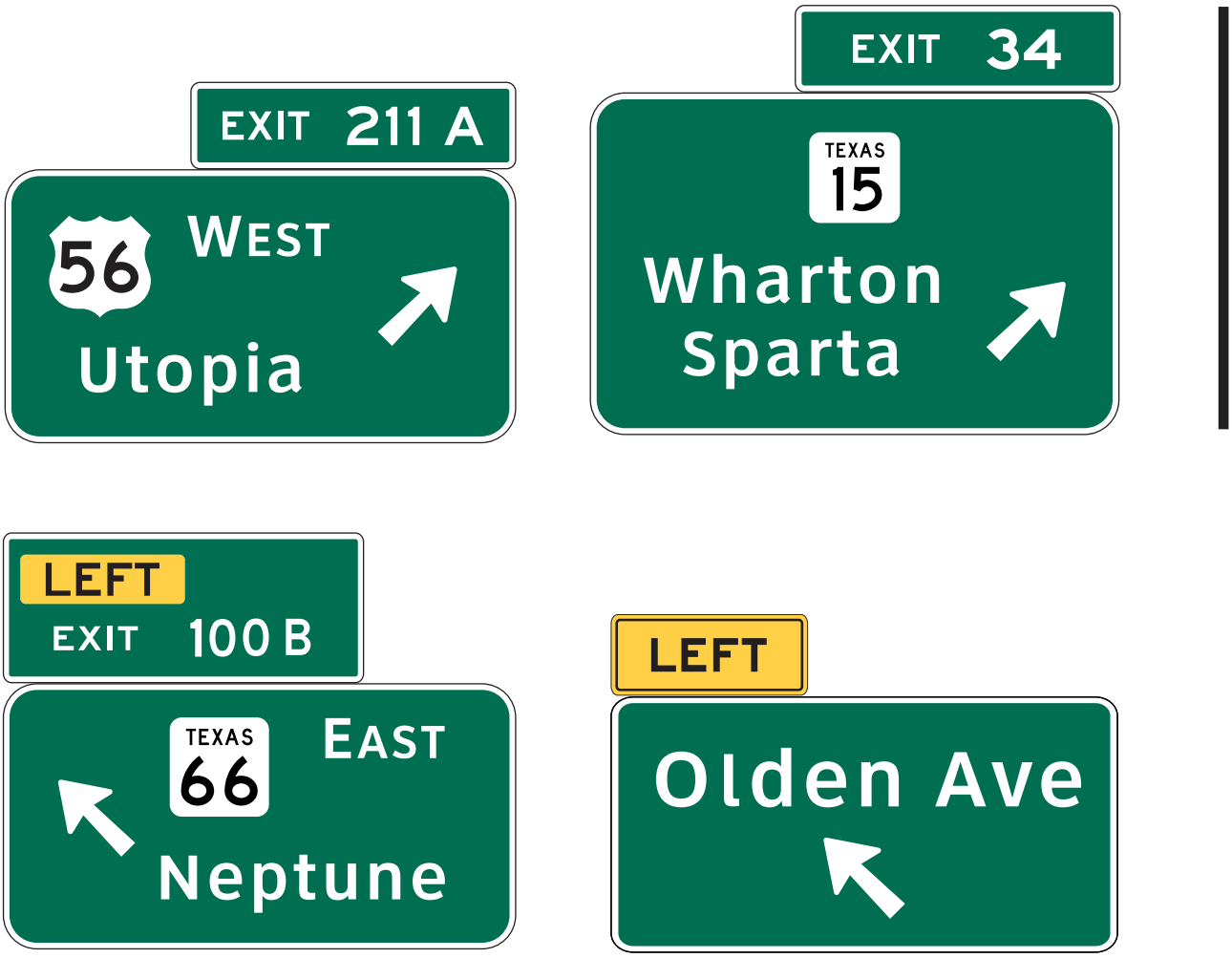
Standard:

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.**

Guidance:

18 *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.*

Figure 2E-12. Examples of Exit Direction Signs



Rev. 1

Figure 2E-13. Exit Direction Sign Placement

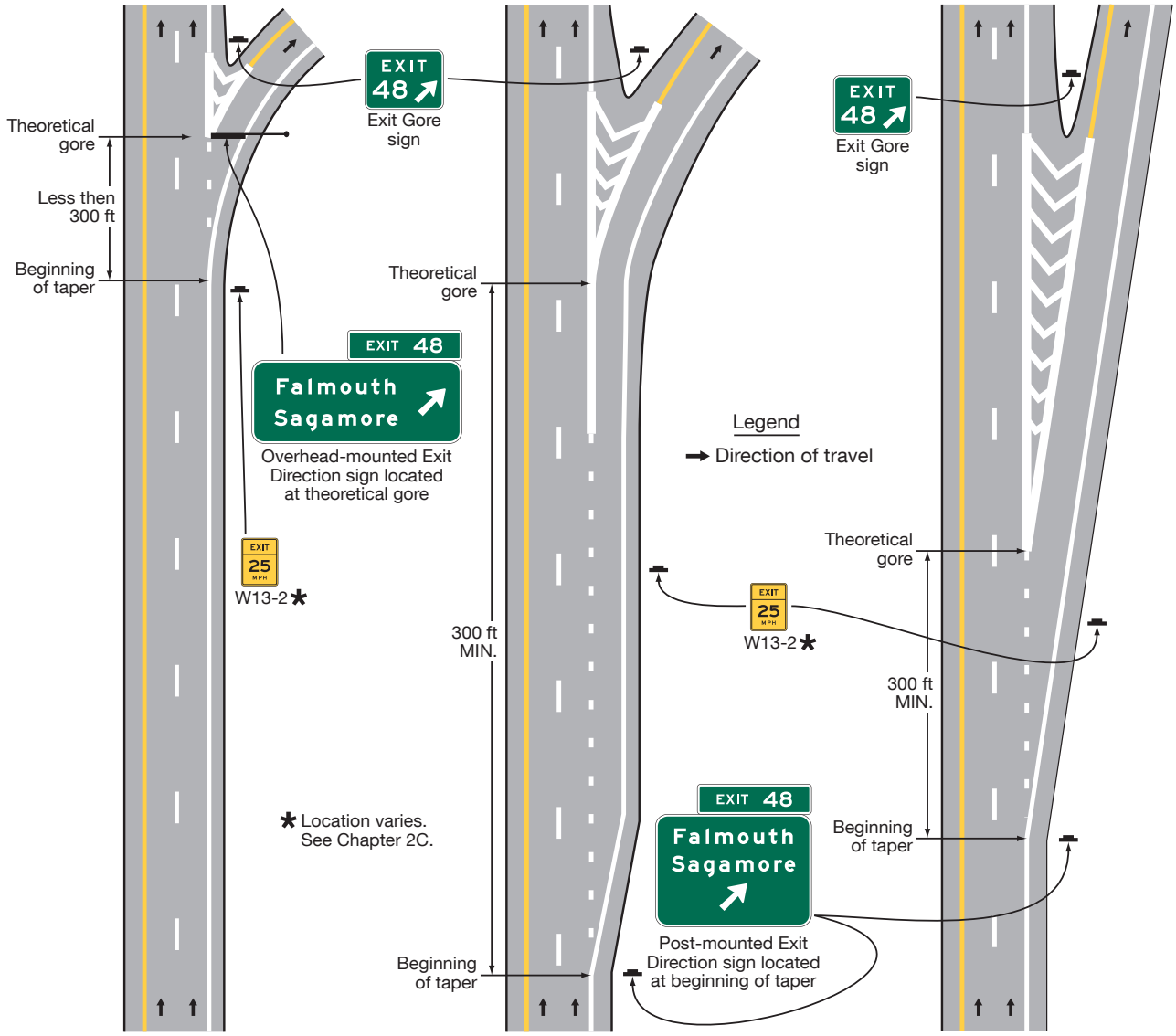
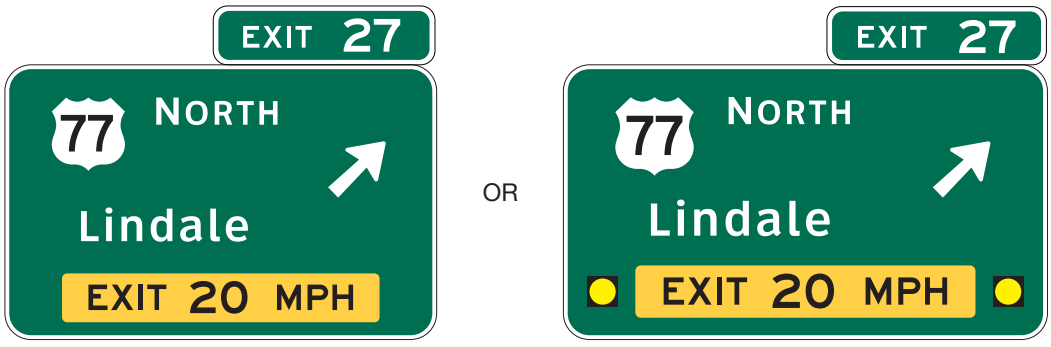


Figure 2E-14. Examples of Exit Direction Signs with Advisory Speed Panels and Flashing Yellow Beacons



Exit Direction sign with E13-2 sign panel

Exit Direction sign with E13-2 sign panel and flashing yellow beacons

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.

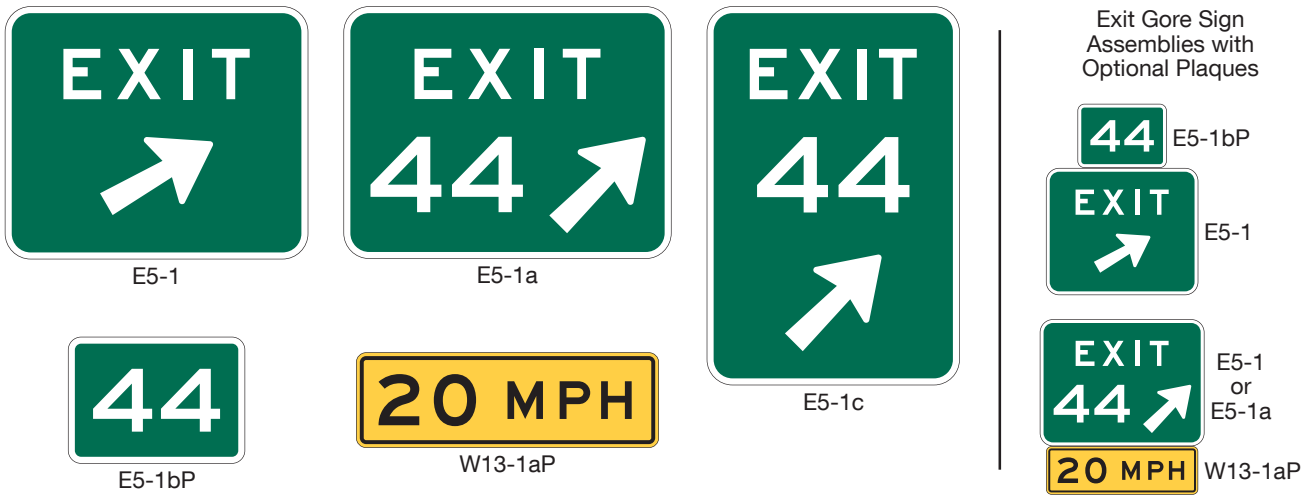
07 To improve the visibility of the gore for exiting drivers, a Type 1 object marker (see Chapter 2C) may be installed 4 feet above the ground line on each sign support below the Exit Gore sign.

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 or E5-1c) sign shall be used when the replacement of an existing assembly of an E5-1 or E5-1c sign and E5-1bP plaque becomes necessary.**

Figure 2E-15. Exit Gore Signs and Plaques



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.**

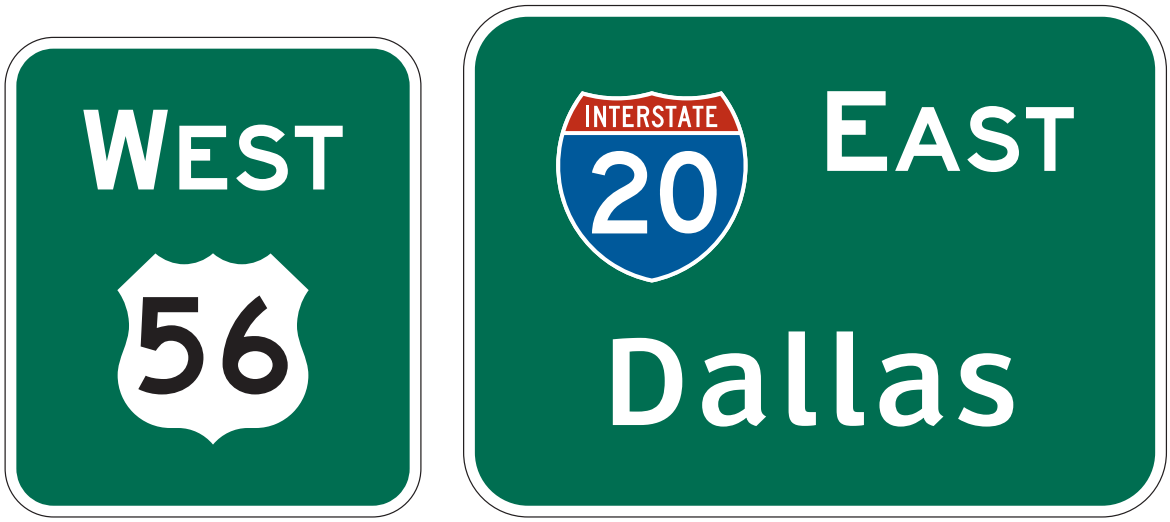
Option:

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 signes 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.

Figure 2E-16. Examples of Pull-Through Signs



E6-1 E6-1a

Note: The E6-2 and E6-2a sign designs correspond to the E6-1 and E6-1a sign designs, respectively, but with the addition of a down arrow on each.

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, 2E.40, and 2E.42 shall apply.**

Rev. 1

02 **Except as provided in Paragraph 14 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.**

Rev. 1

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 signs for a dropped auxiliary lane between separate interchanges using overhead and post-mounted guide signs, respectively. Figure 2E-22 shows guide signs used for an auxiliary lane that is ½ mile or longer.

Rev. 1

12 Sections 2E.39 through 2E.42 contain information on the signing of lane drops at exits that also have an option lane.

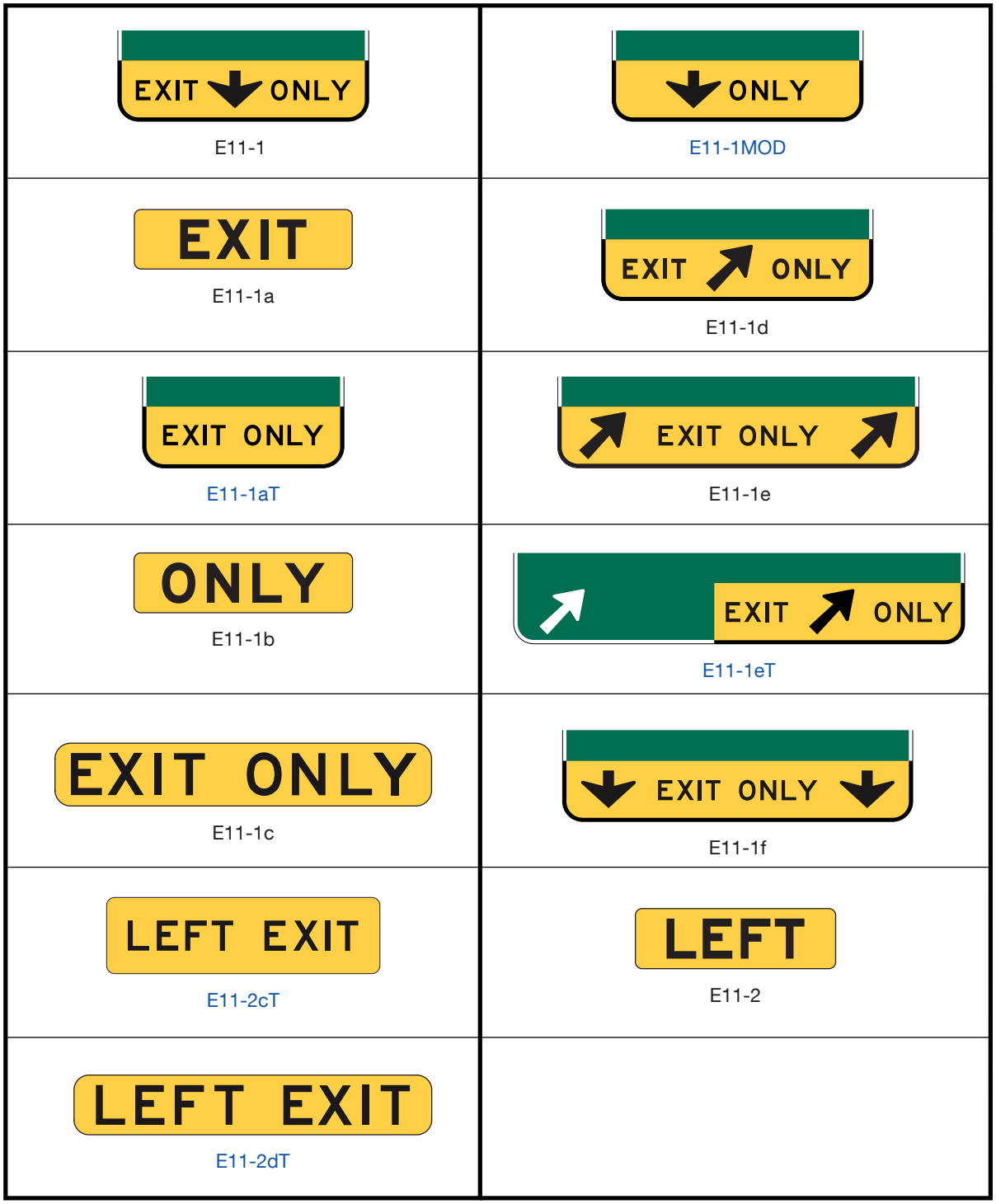
13 Section 2B.31 contains information regarding regulatory signs that can also be used for freeway lane drop situations and Section 2C.50 contains information regarding warning signs that can also be used for freeway lane drop situations.

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 MUST EXIT (R3-33) or 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.*

Figure 2E-17. EXIT ONLY and LEFT Sign Panels



Rev. 1

Figure 2E-18. Guide Signs for a Single-Lane Exit to the Left with a Dropped Lane

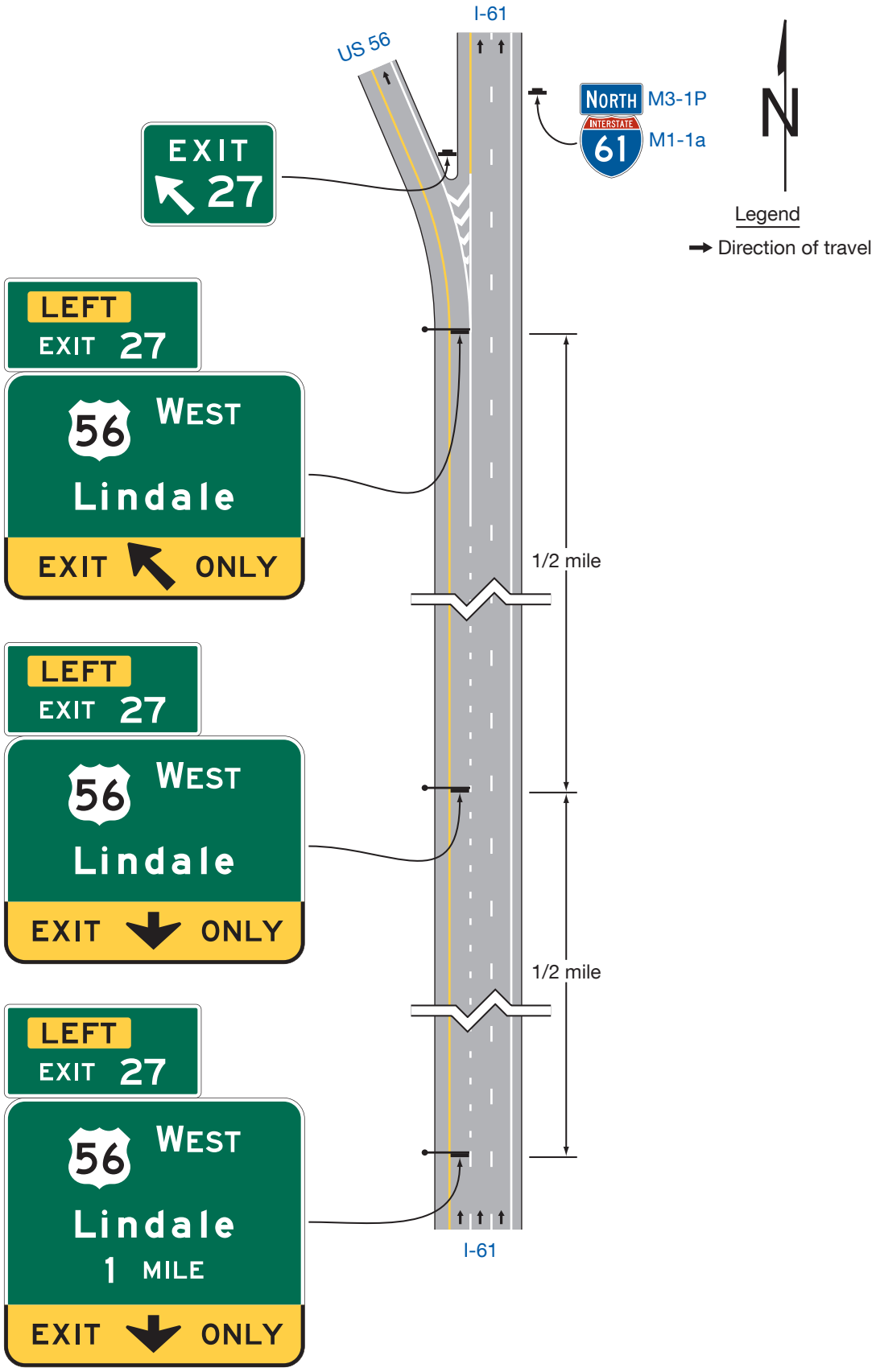


Figure 2E-19. Guide Signs for a Single-Lane Exit to the Right with a Dropped Lane

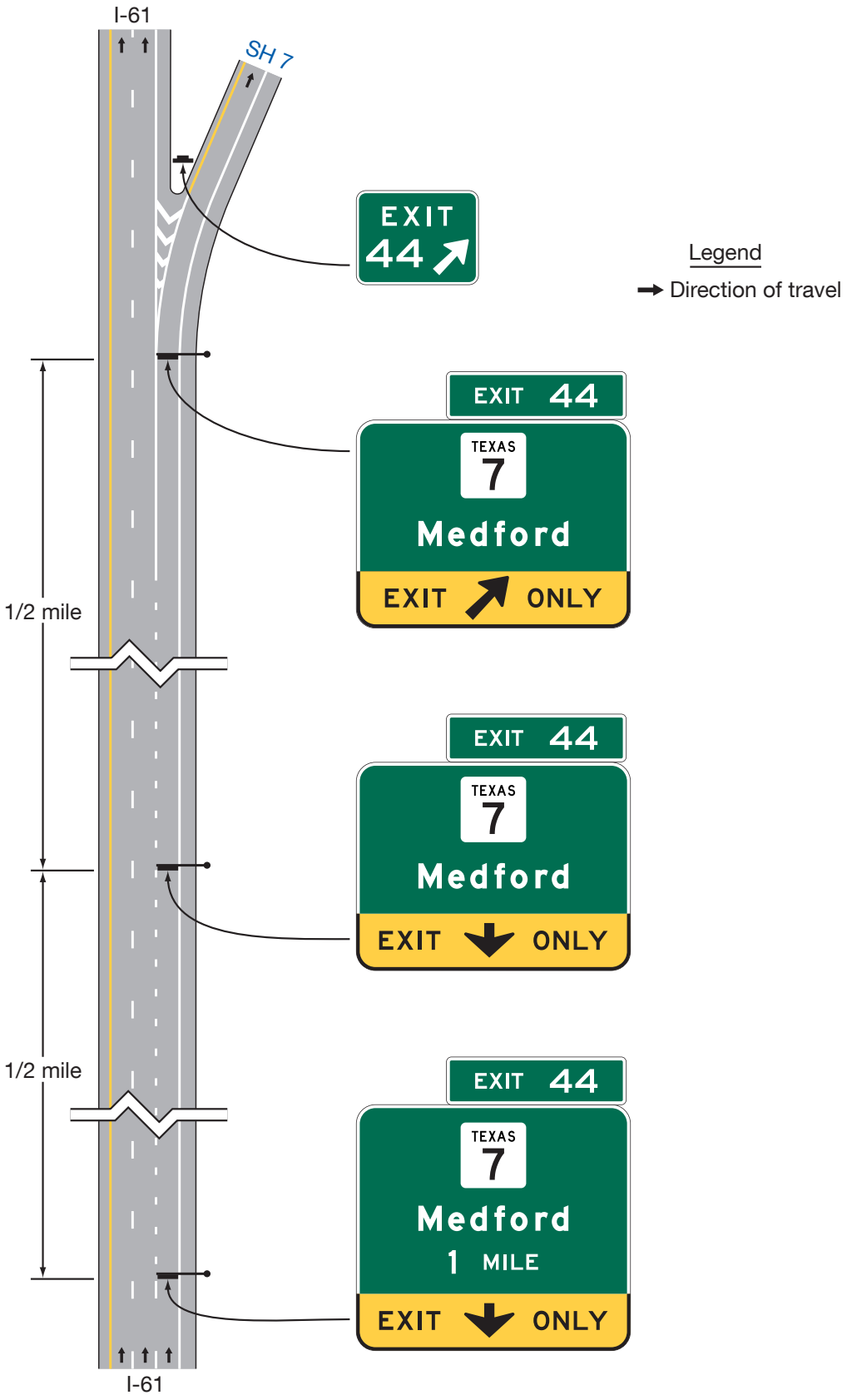
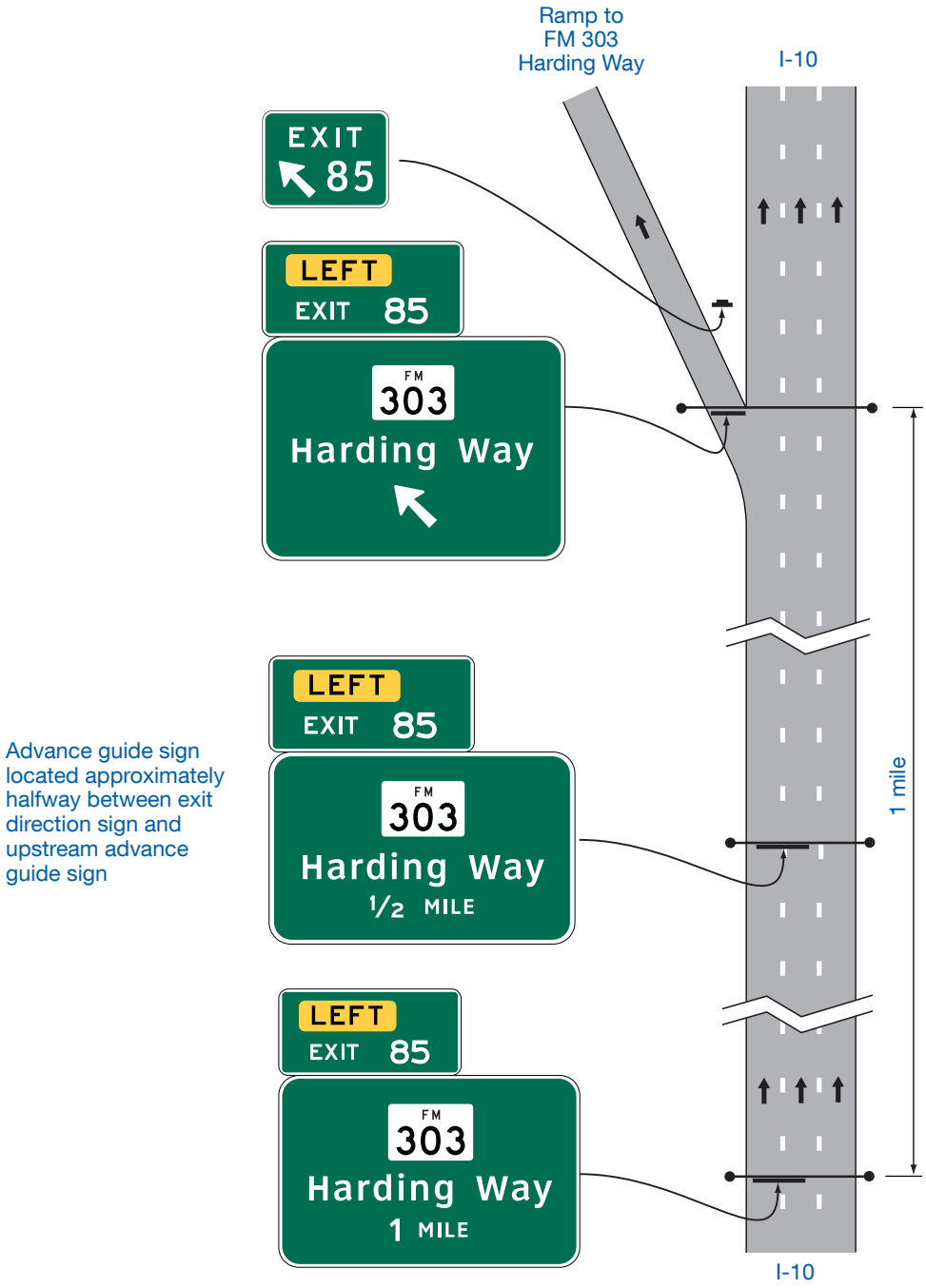


Figure 2E-19A. (TX) Guide Signs for a Single-Left Lane Exit



Notes:

1. The distance on signs should be rounded to the nearest half mile except as provided in Section 2E.33.
2. Three (3) advance guide signs are preferred for major interchanges.

Rev. 1

Rev. 1

Rev. 1

Rev. 1

Figure 2E-20. Example of Overhead Guide Signs for a Dropped Auxiliary Lane between Separate Interchange Ramps

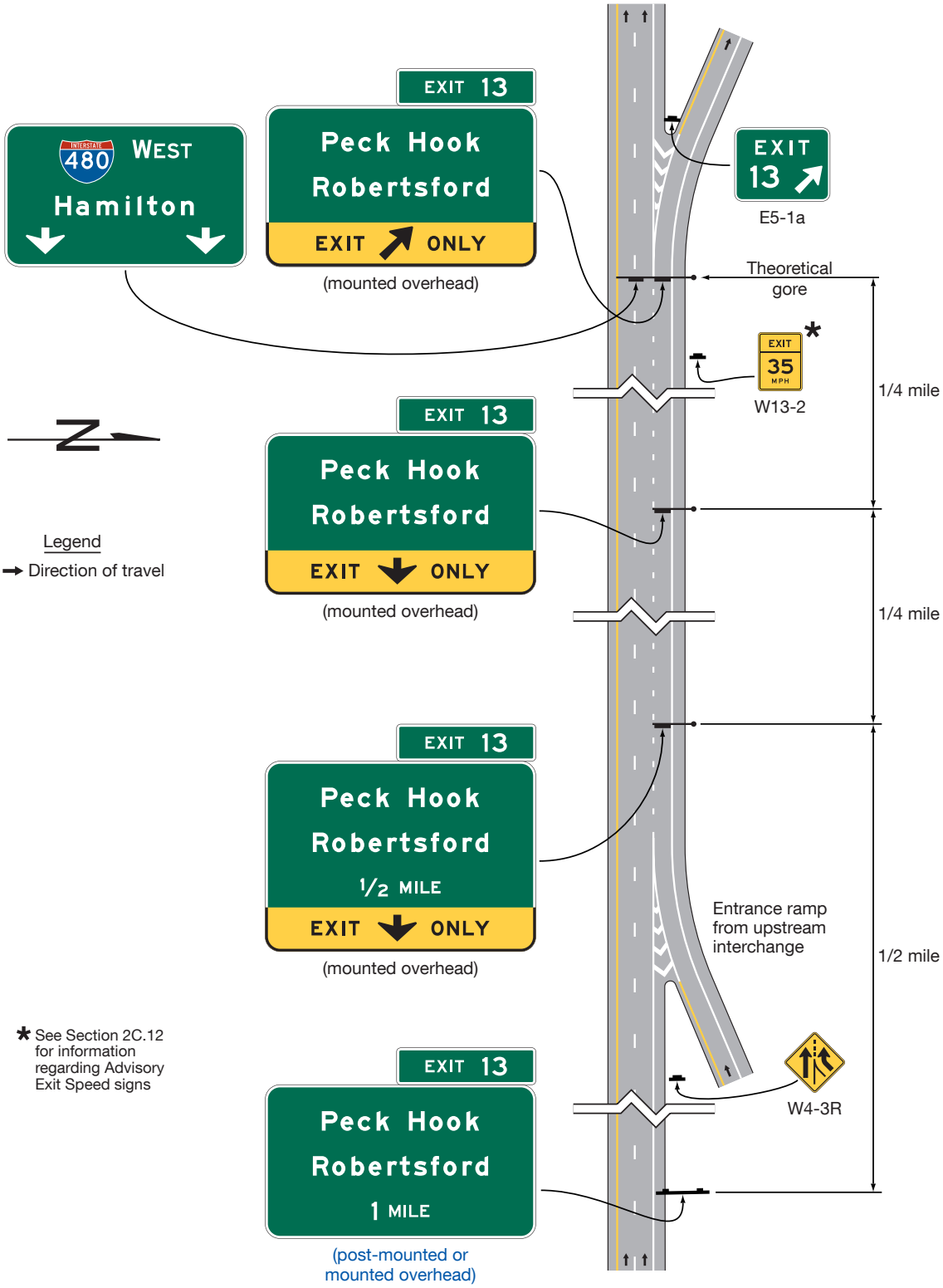
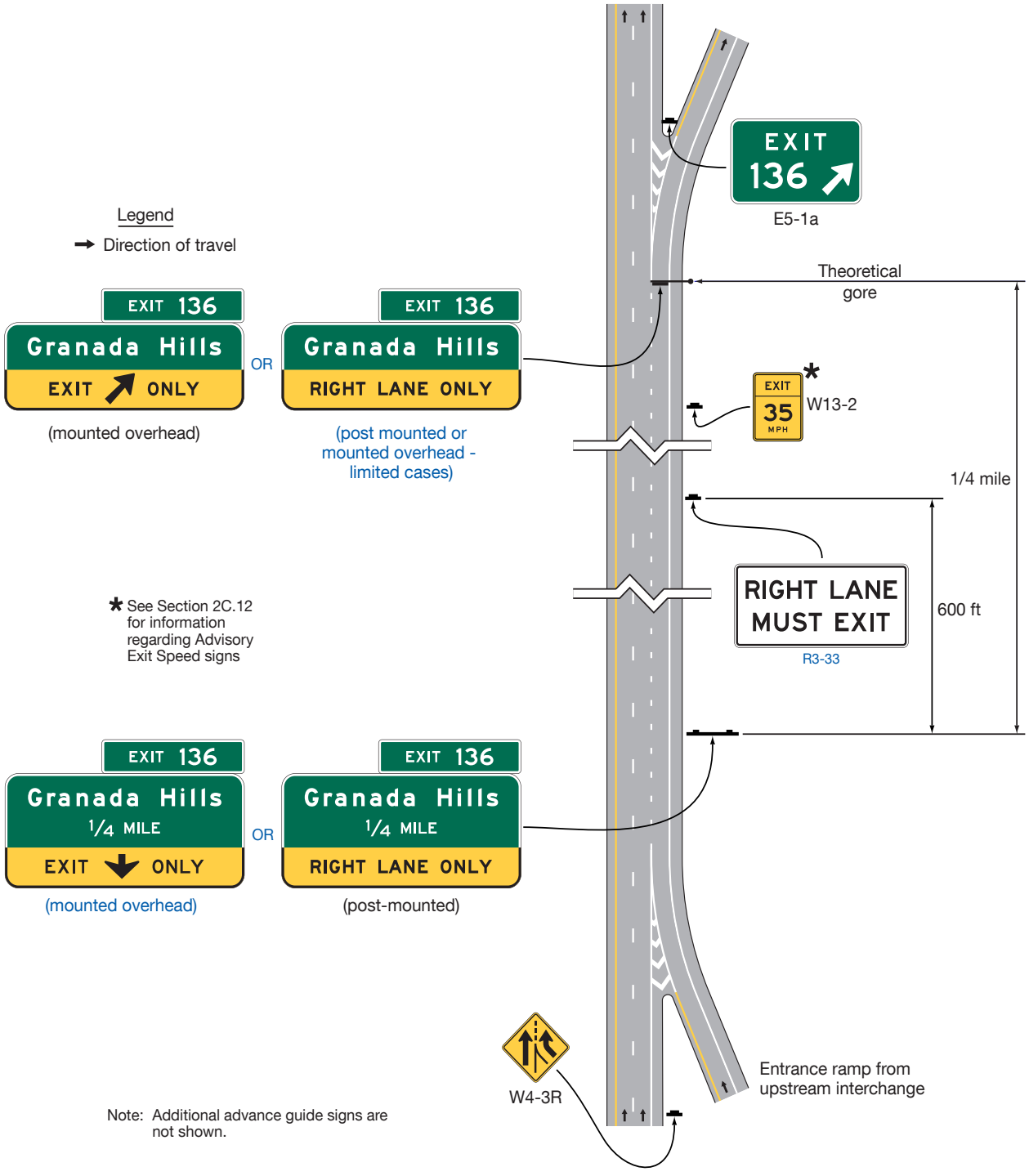


Figure 2E-21. Example of Advance Guide and Supplemental Signs for a Dropped Auxiliary Lane between Separate Interchange Ramps



Rev. 1

Rev. 1

Figure 2E-22. Example of Guide Signs for an Auxiliary Lane of at Least One-Half Mile in Length

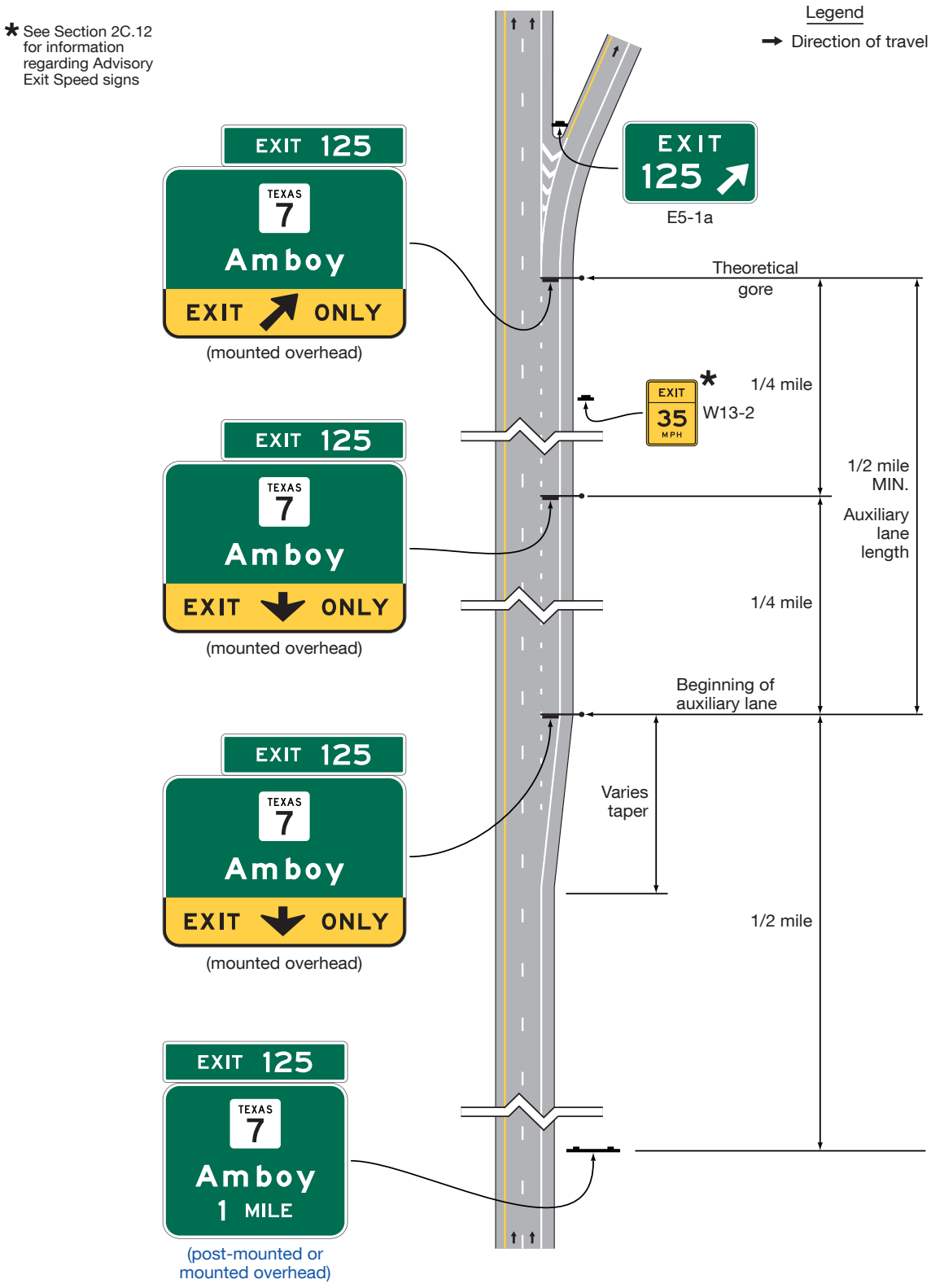
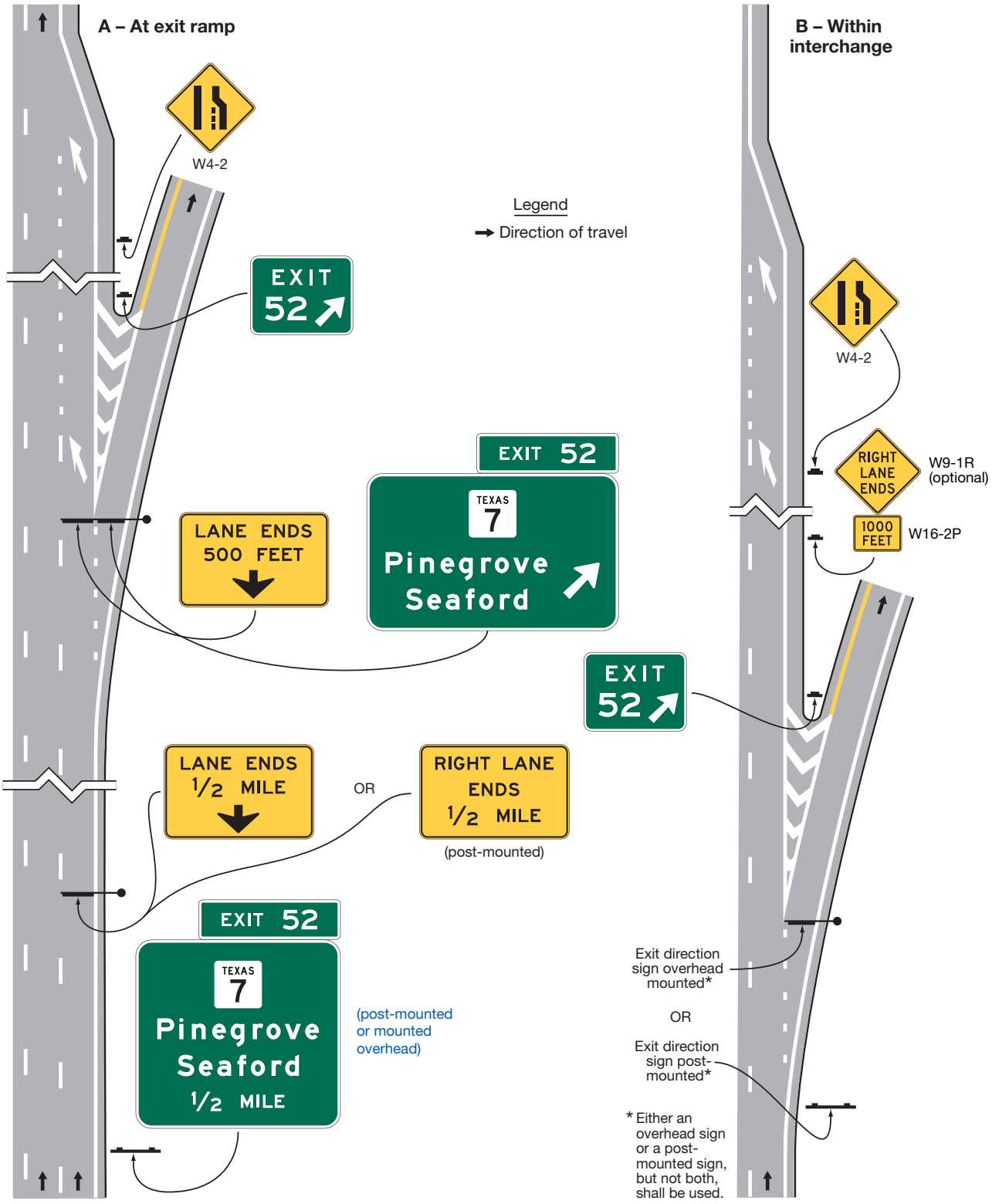


Figure 2E-23. Examples of Signing for Mainline Terminations within an Interchange



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 interchange 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.*

Figure 2E-24. Example of Signing for an Intermediate Interchange within a Major Interchange

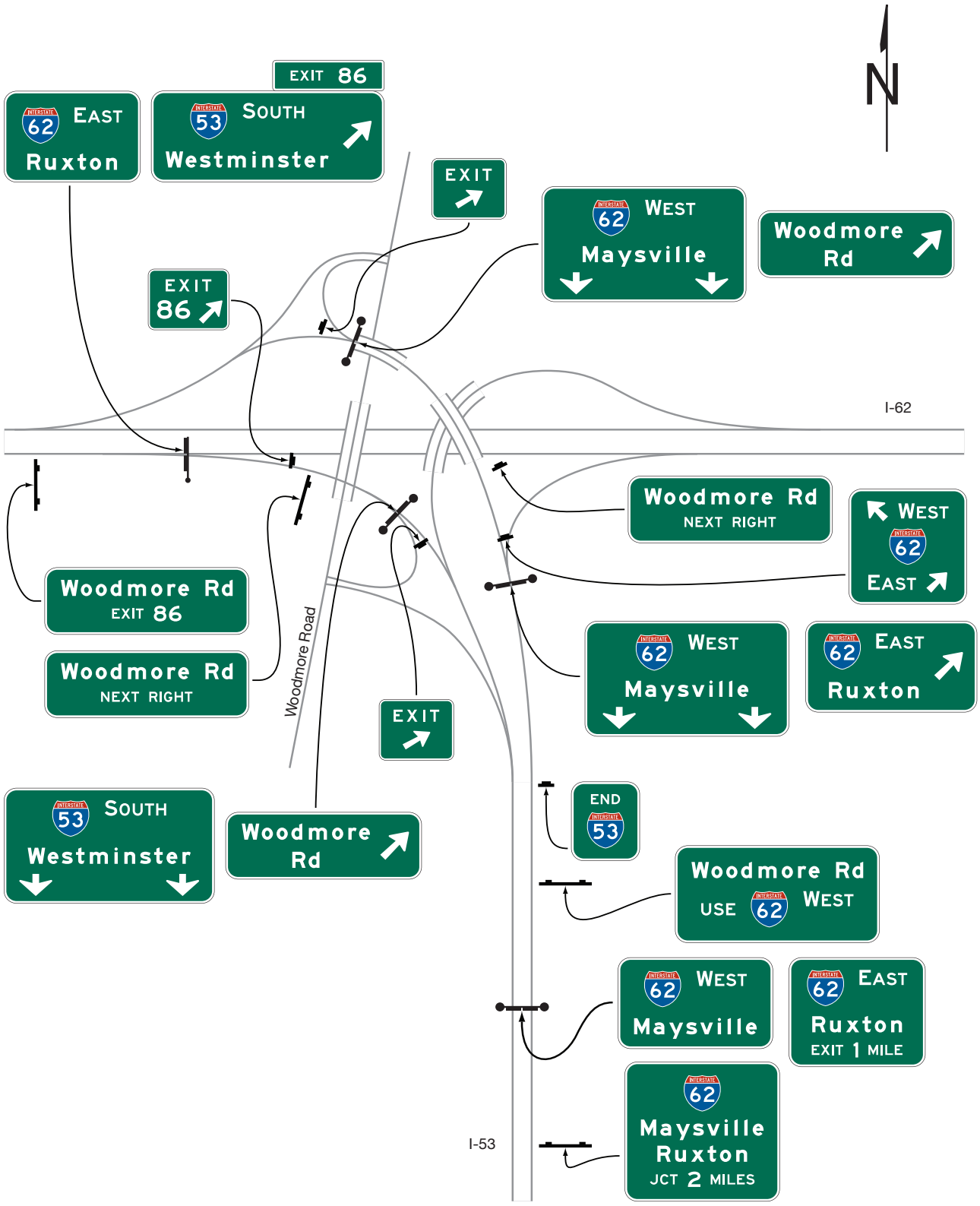


Figure 2E-25. Examples of Signing for an Interchange Exit Ramp with a Downstream Split (Sheet 1 of 2)

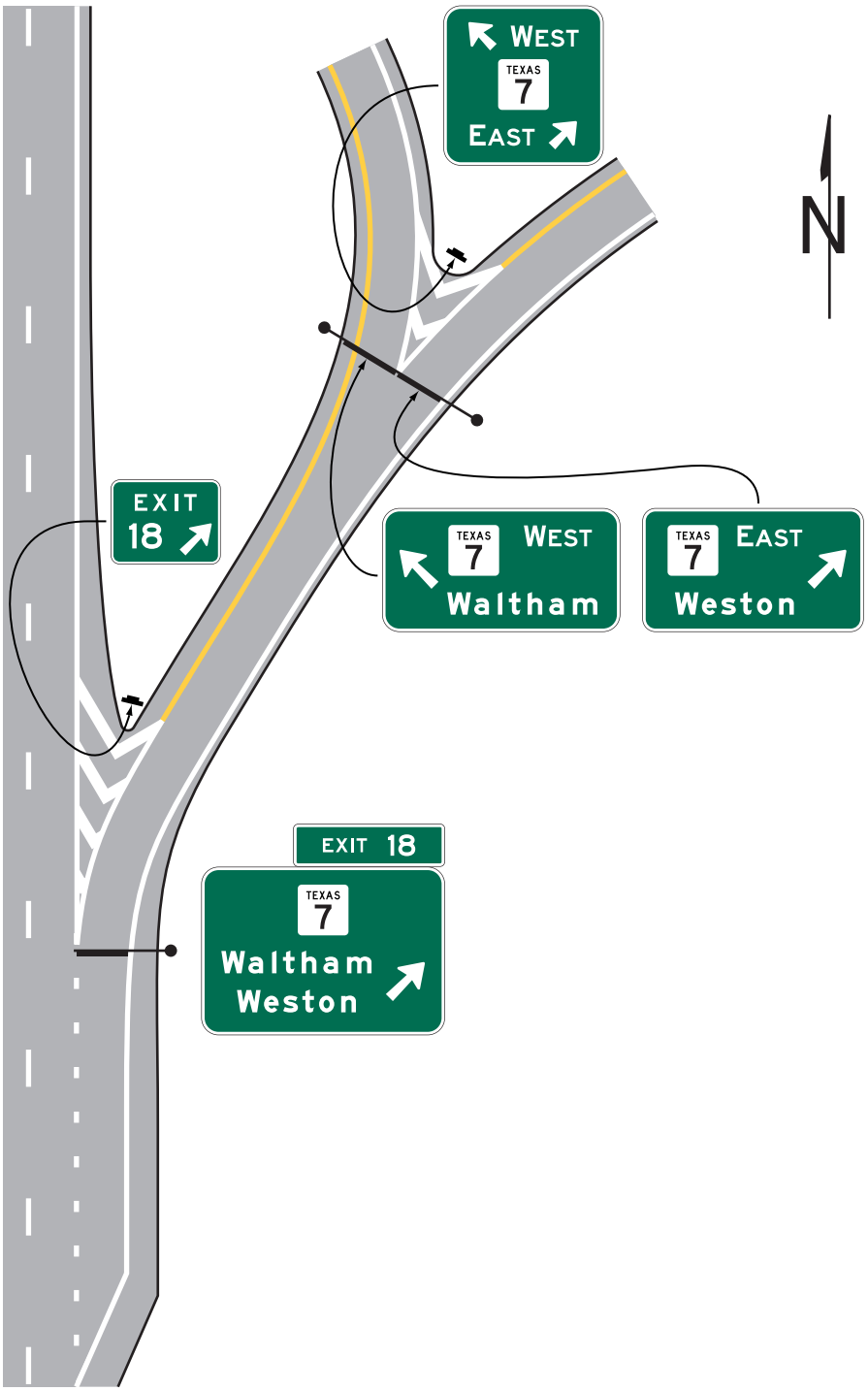


Figure 2E-25. Examples of Signing for an Interchange Exit Ramp with a Downstream Split (Sheet 2 of 2)

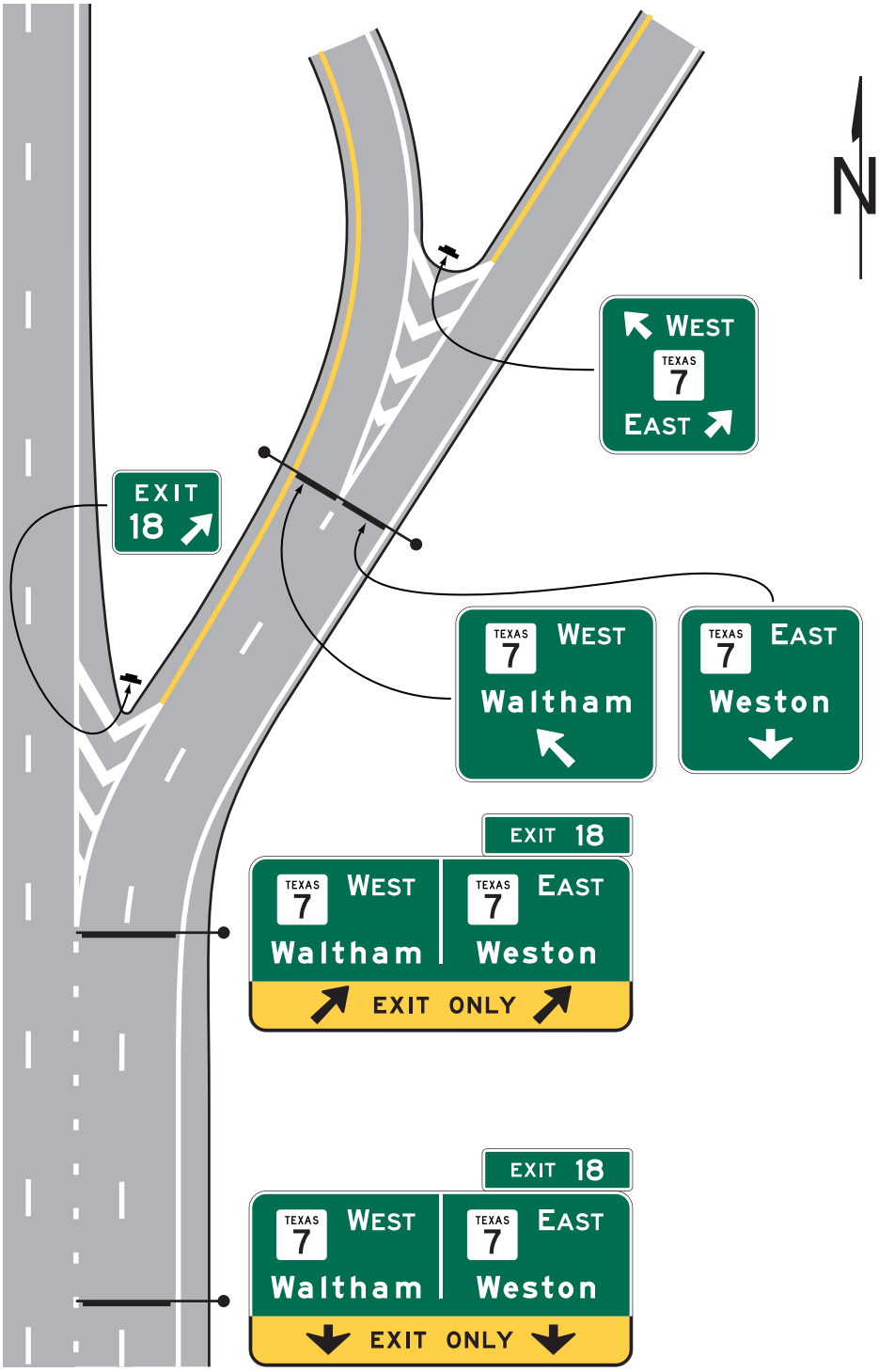
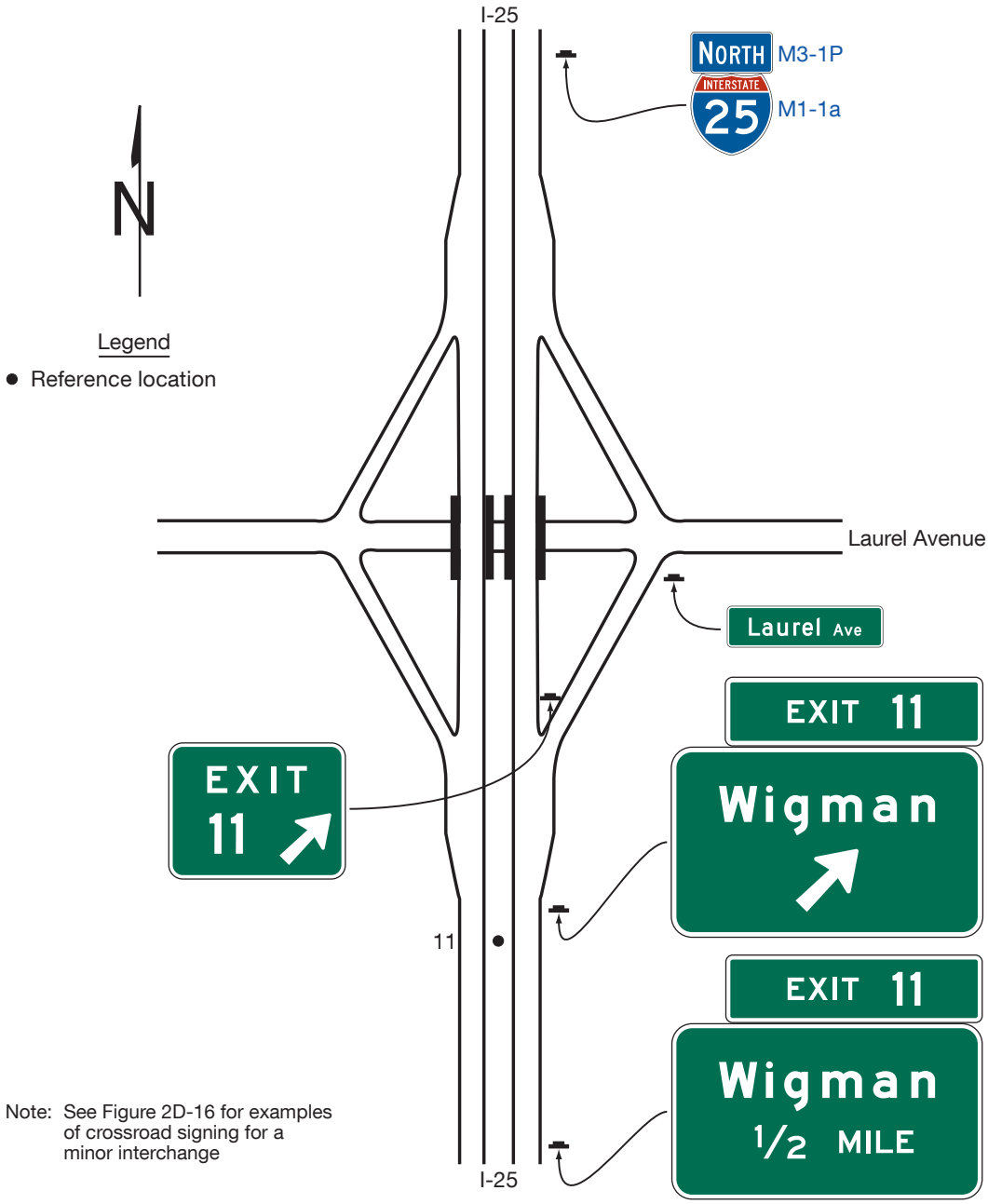


Figure 2E-26. Examples of Guide Signs for a Minor Interchange



Note: See Figure 2D-16 for examples of crossroad signing for a minor interchange

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:

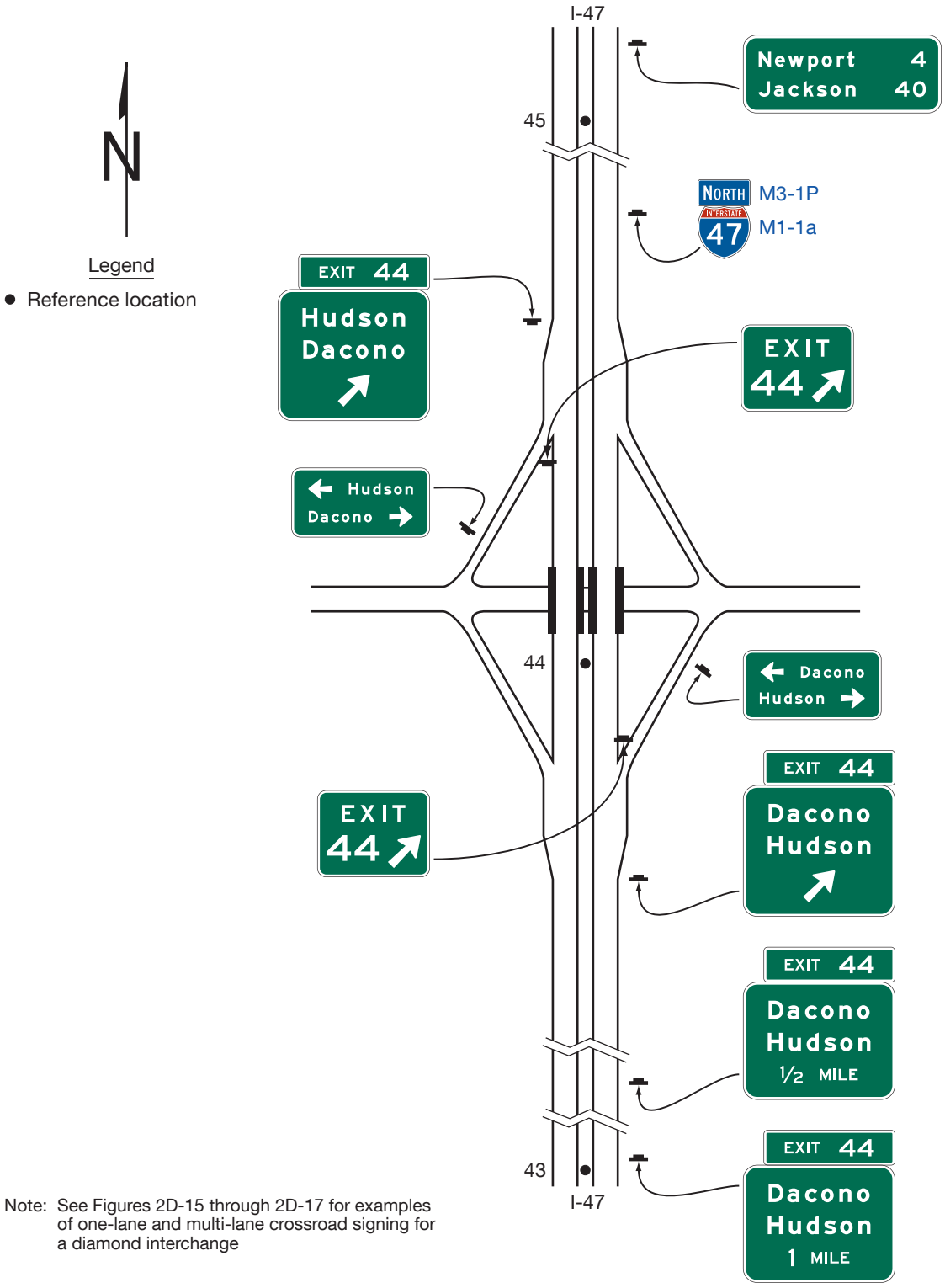
05 A Stop Ahead (W3-1) or Signal Ahead (W3-3) warning sign (see Section 2C.35) may be placed, where engineering judgment indicates a need, along the ramp in advance of the crossroad, to give notice to the driver.

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.*

Figure 2E-27. Example of Guide Signs for a Diamond Interchange



Note: See Figures 2D-15 through 2D-17 for examples of one-lane and multi-lane crossroad signing for a diamond interchange

Section 2E.32 Diamond Interchange in Urban Area

Support:

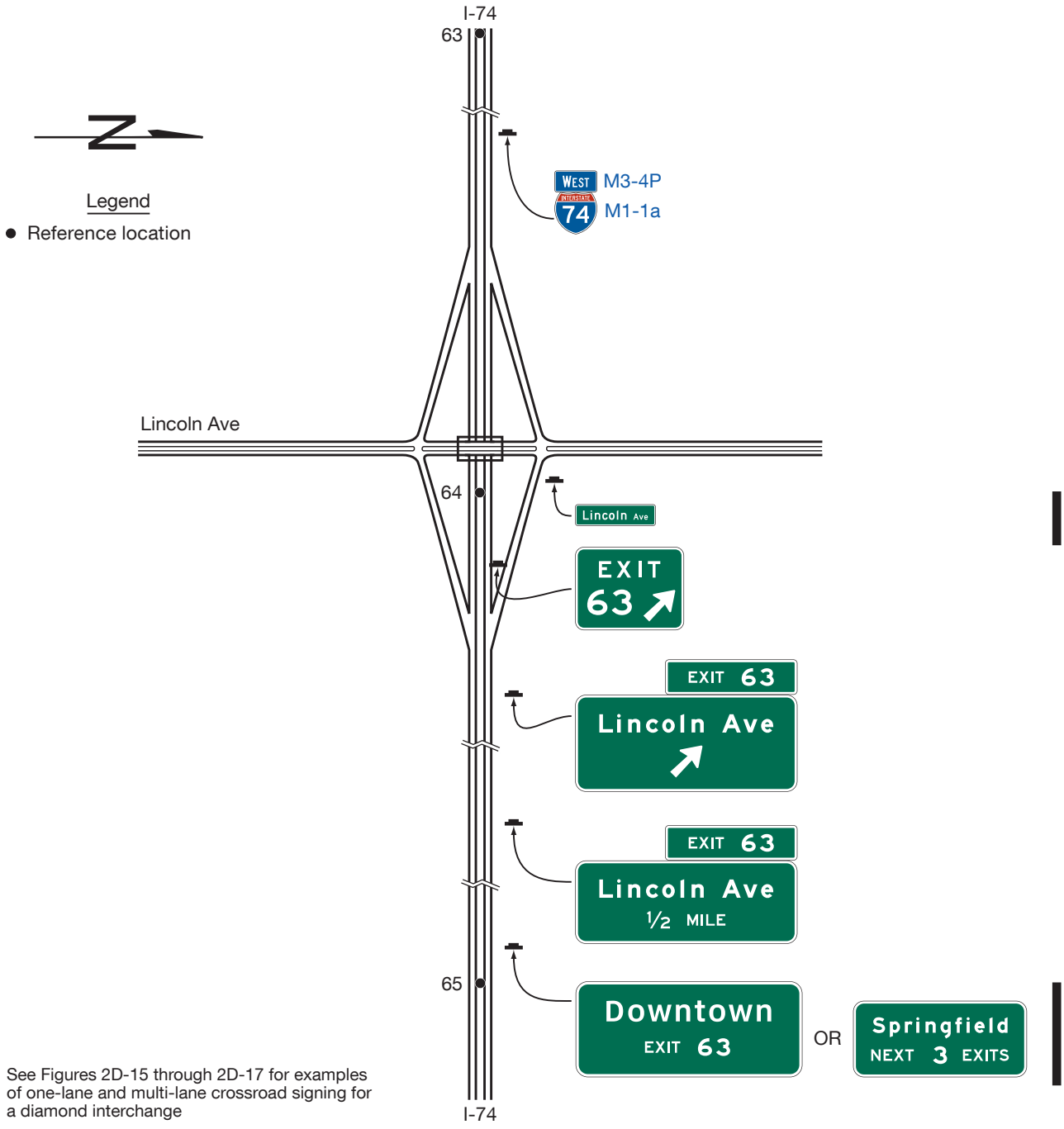
01 An example of guide signs for a diamond interchange in an urban area is shown in Figure 2E-28. This example includes the use of the Next Exits sign (see Section 2E.53), which might be useful if two or more interchanges serve the same community.

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.

Figure 2E-28. Example of Guide Signs for a Diamond Interchange in an Urban Area



Note: See Figures 2D-15 through 2D-17 for examples of one-lane and multi-lane crossroad signing for a diamond interchange

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.**

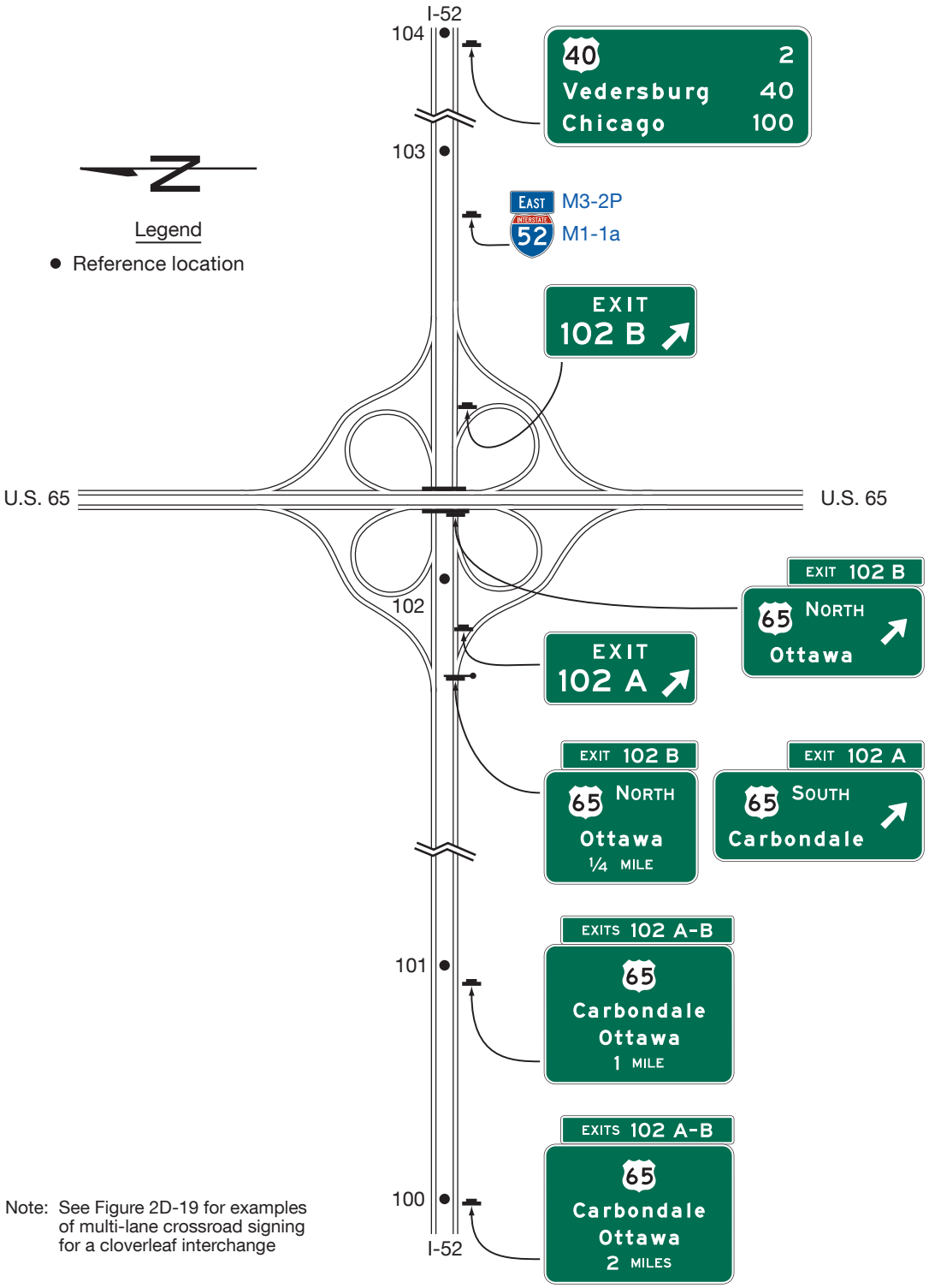
04 **Interchanges with more than one exit from the main roadway shall be numbered as described in Section 2E.22 with an appropriate suffix.**

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).*

Figure 2E-29. Example of Guide Signs for a Full Cloverleaf Interchange



Note: See Figure 2D-19 for examples of multi-lane crossroad signing for a cloverleaf interchange

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.*

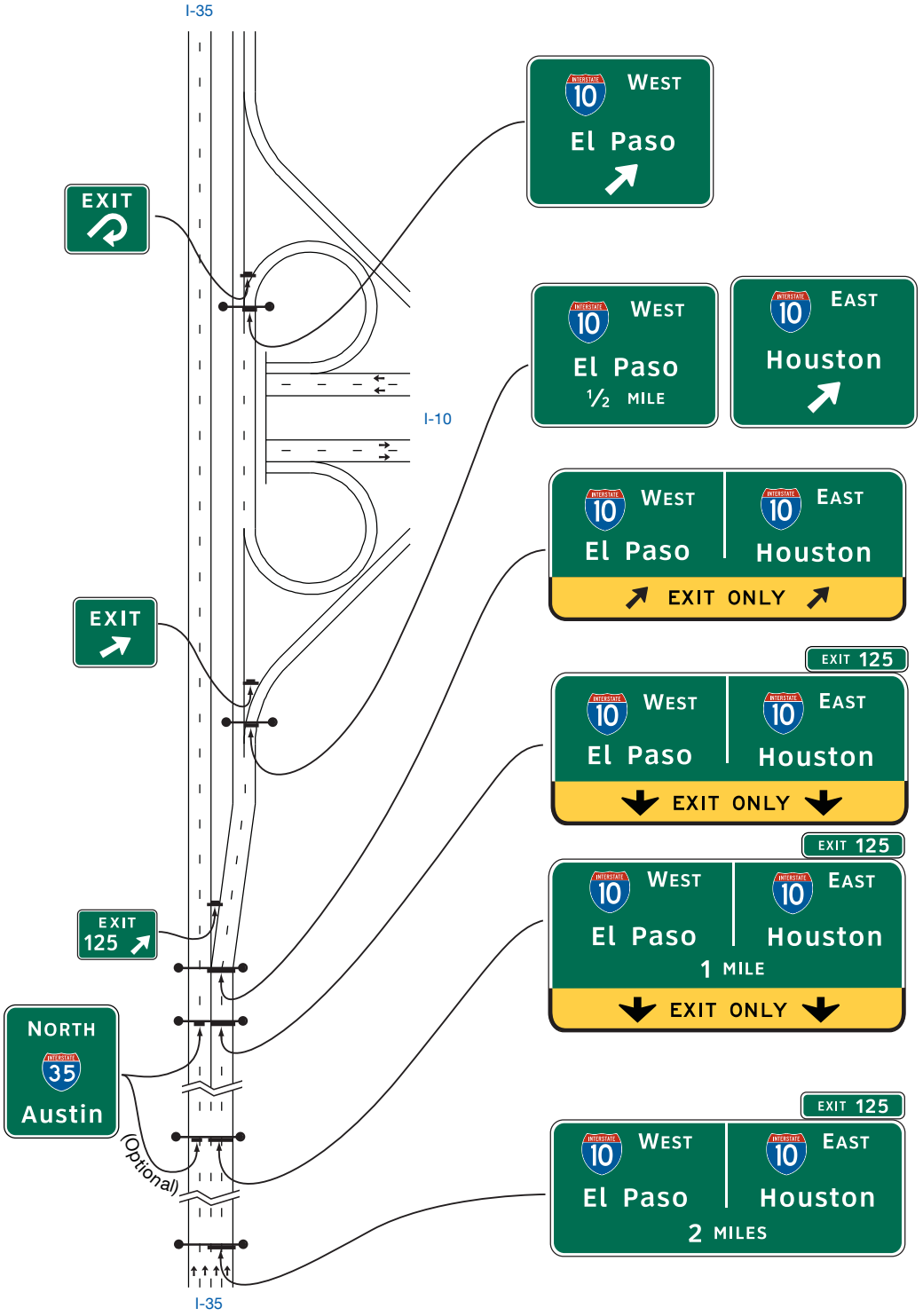
Standard:

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.*

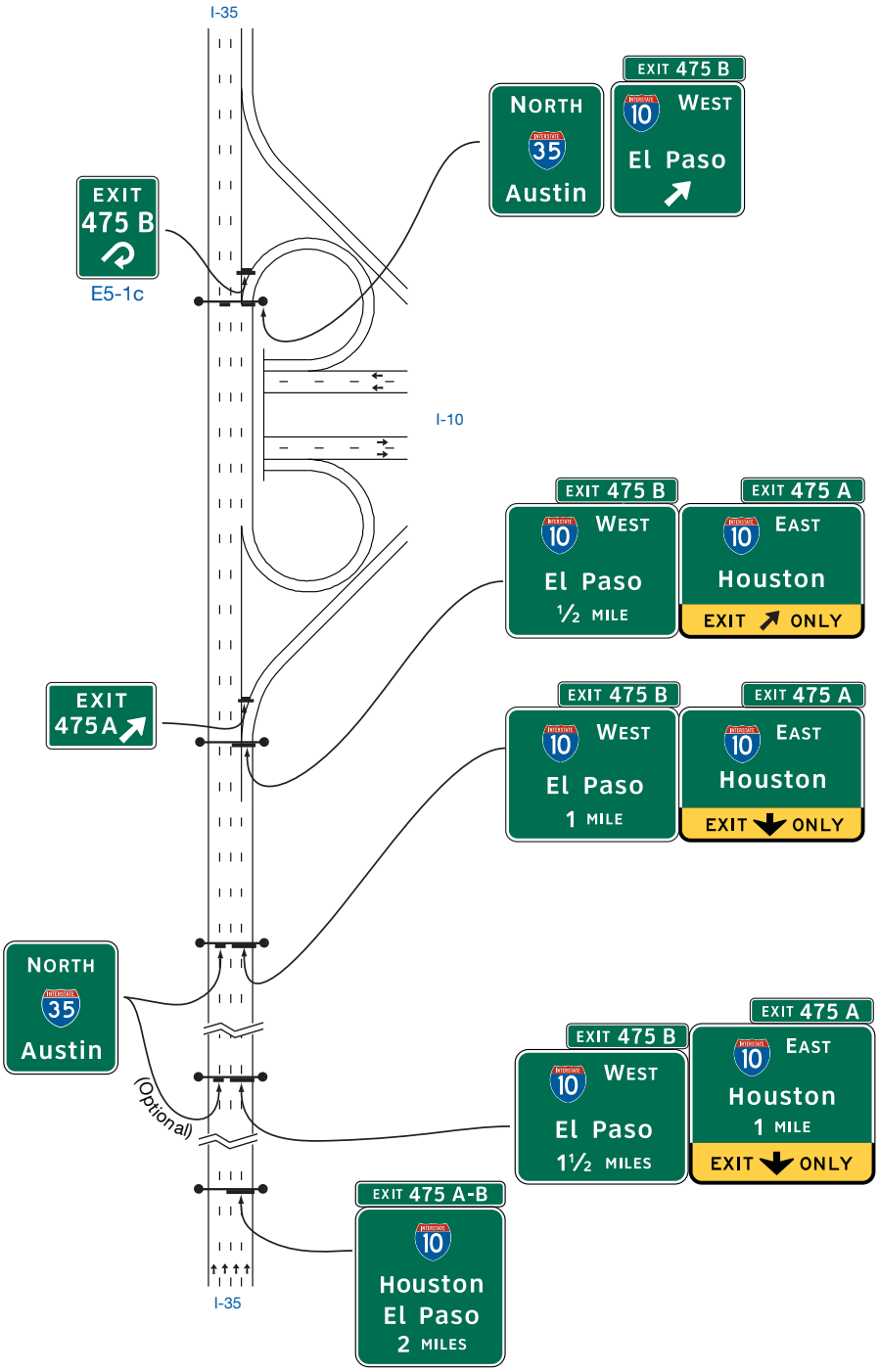
Figure 2E-30. Example of Guide Signs for a Full Cloverleaf Interchange with Collector-Distributor Roadways



Notes:

1. The distance on signs should be rounded to the nearest half mile except as provided in Section 2E.23.
2. Downward arrows should be centered on travel lanes.

Figure 2E-30A. (TX) Example of Guide Signs for a Full Cloverleaf Interchange without Collector-Distributor Roadways



Notes:
1. The distance on signs should be rounded to the nearest half mile except as provided in Section 2E.23.
2. Downward arrows should be centered on travel lanes.

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:

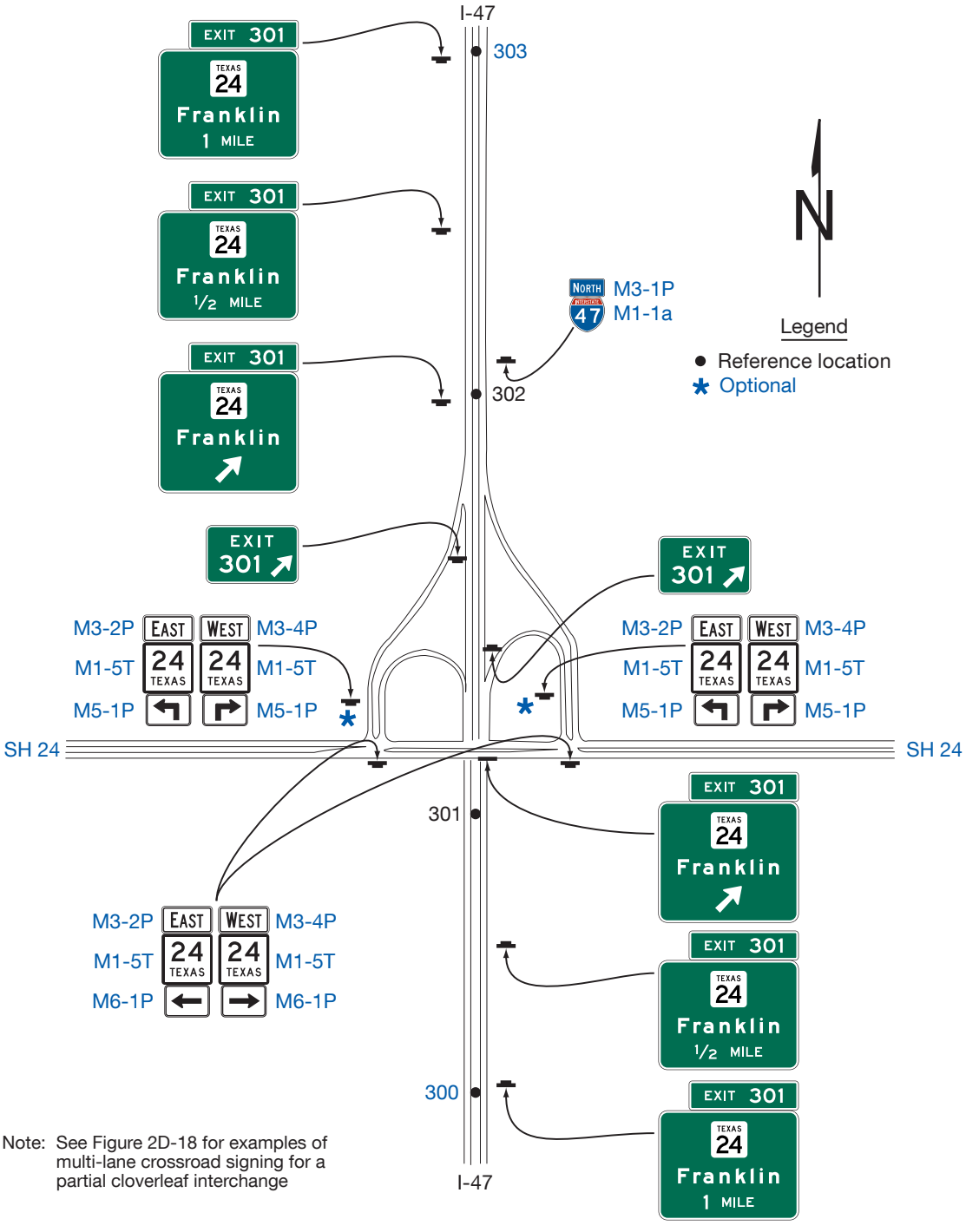
02 *Where access to successive interchanges is provided from a single collector-distributor roadway, the number of lines of destination information displayed on the major guide signs on the main roadway approach to the collector-distributor roadway should comply with the provisions of Section 2E.15. 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.*

Figure 2E-31. Example of Guide Signs for a Partial Cloverleaf Interchange



Note: See Figure 2D-18 for examples of multi-lane crossroad signing for a partial cloverleaf interchange

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 (E1-5fPT through E1-5kPT) 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.

Rev. 1

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).**

Figure 2E-32. Examples of Guide Signs for Successive Interchanges with Collector-Distributor Roadways (Sheet 1 of 2)

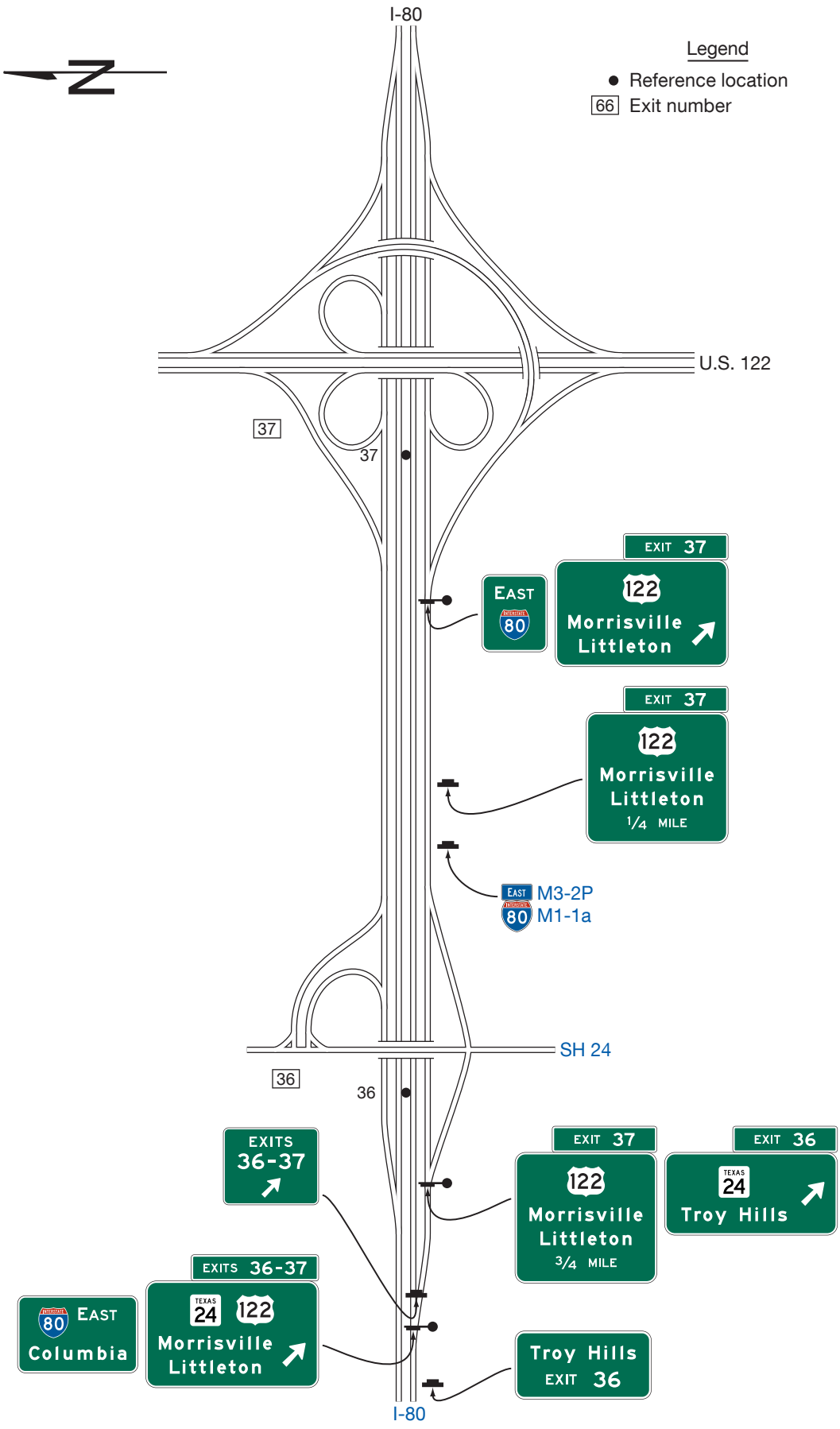


Figure 2E-32. Examples of Guide Signs for Successive Interchanges with Collector-Distributor Roadways (Sheet 2 of 2)

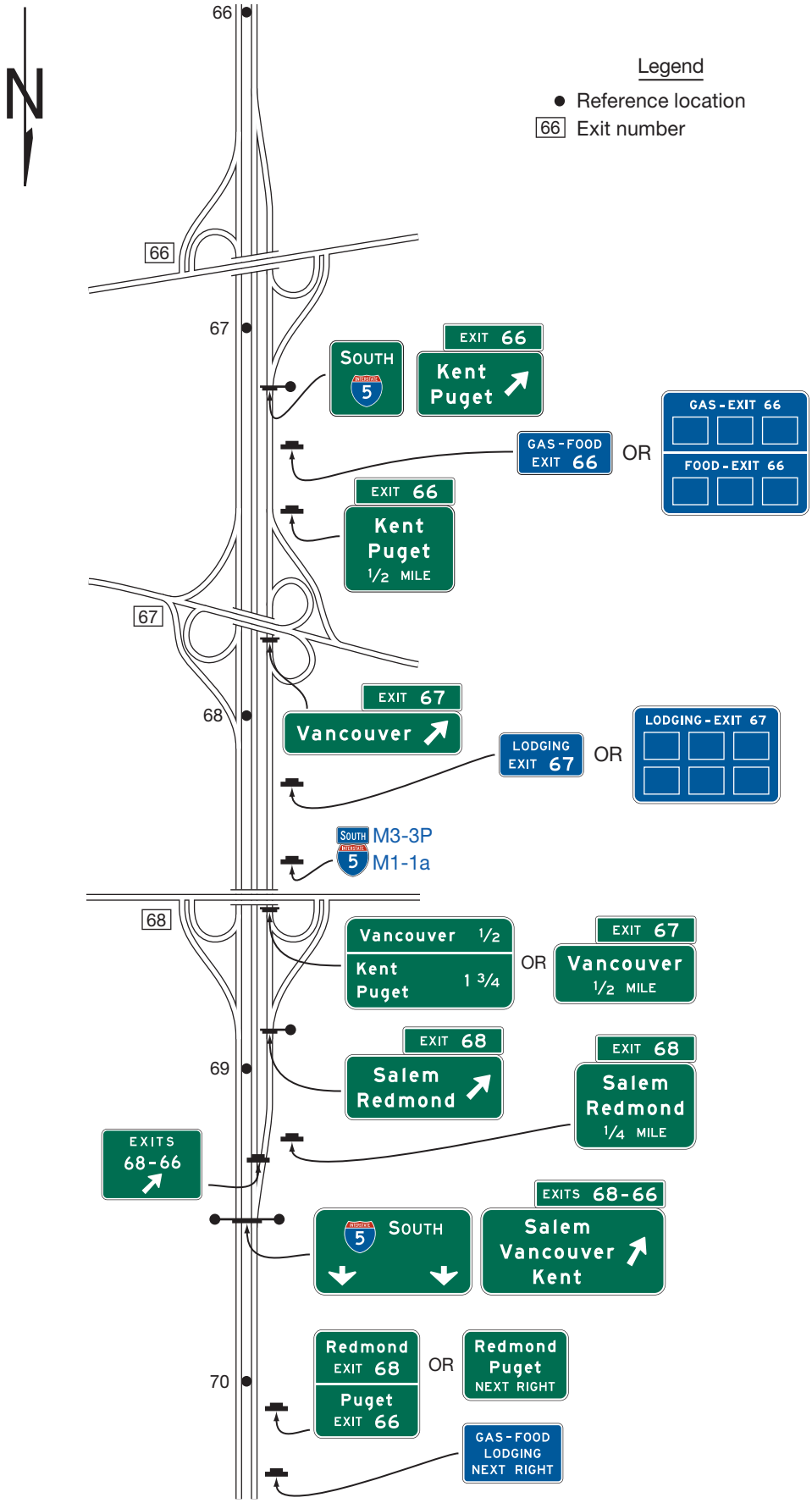


Figure 2E-33. Examples of Guide Signs for a Freeway-to-Freeway Interchange
(Sheet 1 of 2)

A – Example of signing for a two-lane exit ramp with two dropped lanes and a bifurcation beyond the mainline gore

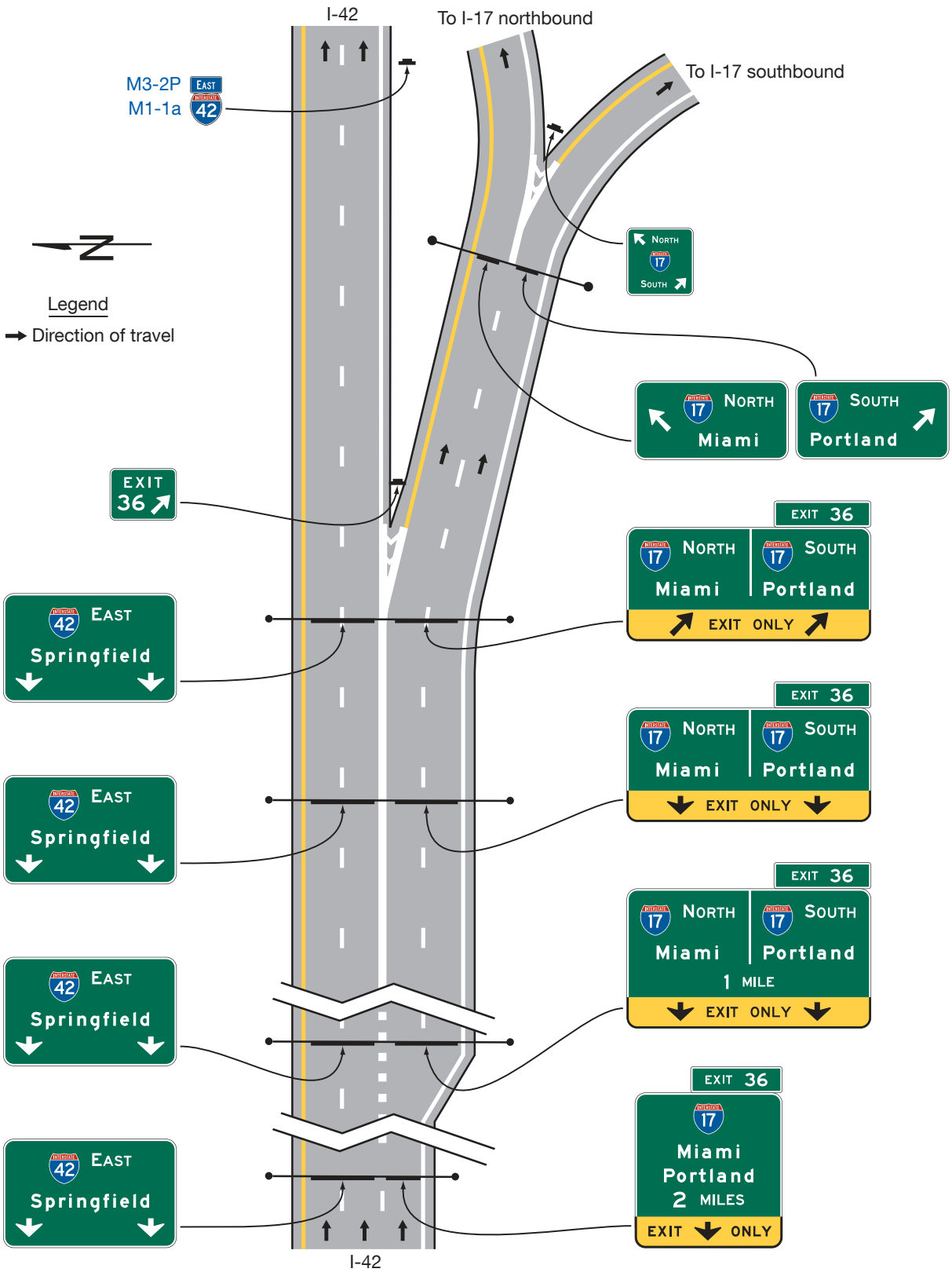


Figure 2E-33. Examples of Guide Signs for a Freeway-to-Freeway Interchange
(Sheet 2 of 2)

B – Example of signing for successive exit ramps with a dropped lane at the second exit

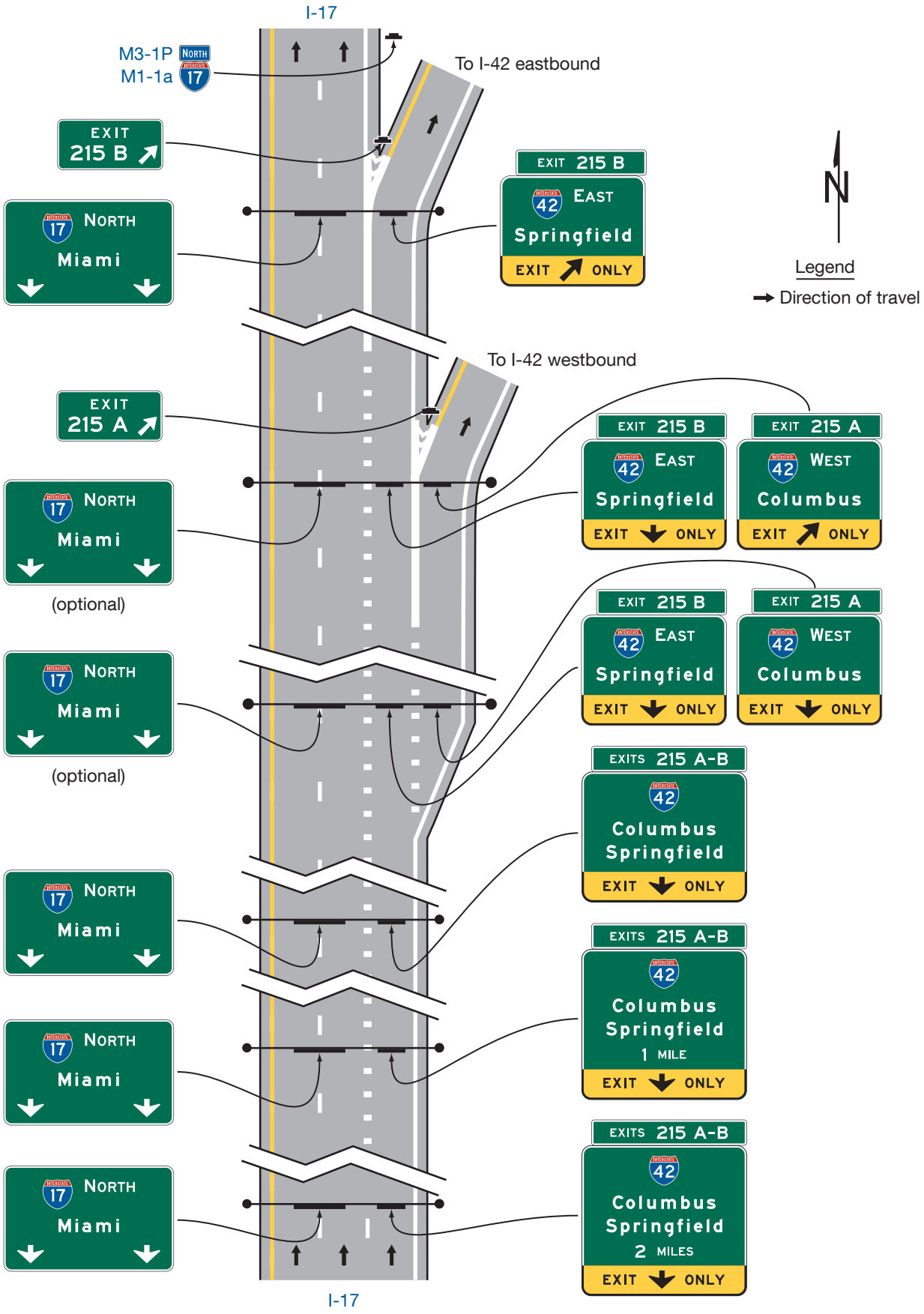
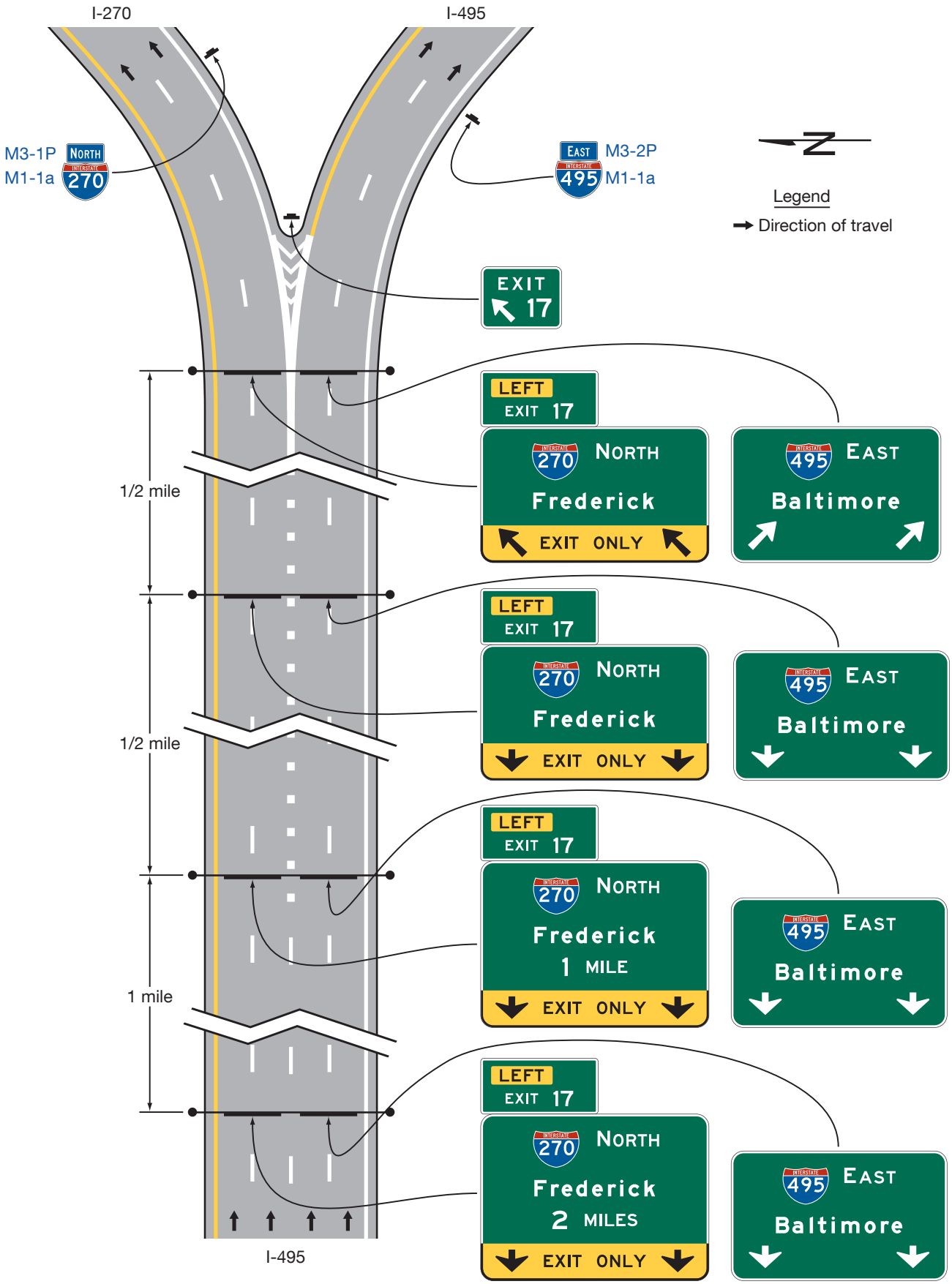


Figure 2E-34. Example of Guide Signs for a Split with Dedicated Lanes



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, Overhead Arrow-per-Lane guide sign designs, as provided in Section 2E.40, 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 Sections 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.

Figure 2E-35. Example of an Overhead Arrow-per-Lane Guide Sign for a Multi-Lane Exit with an Option Lane



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:

Rev. 1

04 **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, when an Exit Direction sign is being retained as provided in Paragraph 3 of this Section. 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:**

Rev. 1

- **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 through E1-5eP) or Left Exit Number (E1-5fP**T **through E1-5kP**T**) 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 Sign Designs for Texas" 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, Exit Direction, and Pull-Through 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). Rev. 1

Table 2E-6. Overhead Arrow-per-Lane Arrow Height Based on Principal Legend Letter Height

Principal Legend Letter Height	Through Arrow	Turn Arrow	Through with Turn Arrow	Split Arrow
20	48	38	48	42
16 or less	39	30.875	39	34.125

Note: Letter and arrow heights are shown in inches.

Figure 2E-36. Example of Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane

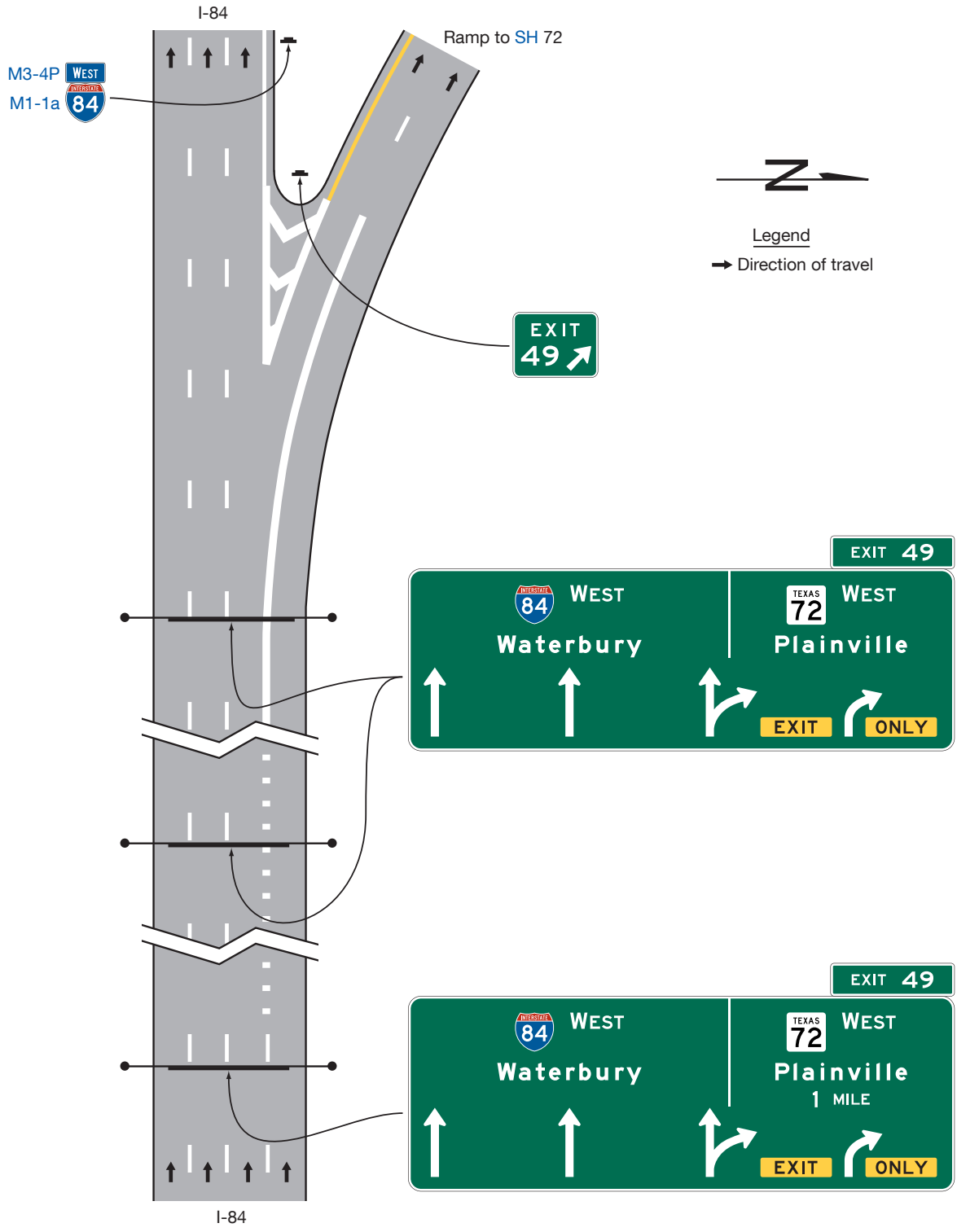


Figure 2E-37. Example of Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane (Through Lanes Curve to the Left)



Figure 2E-38. Example of Overhead Arrow-per-Lane Guide Signs for a Split with an Option Lane

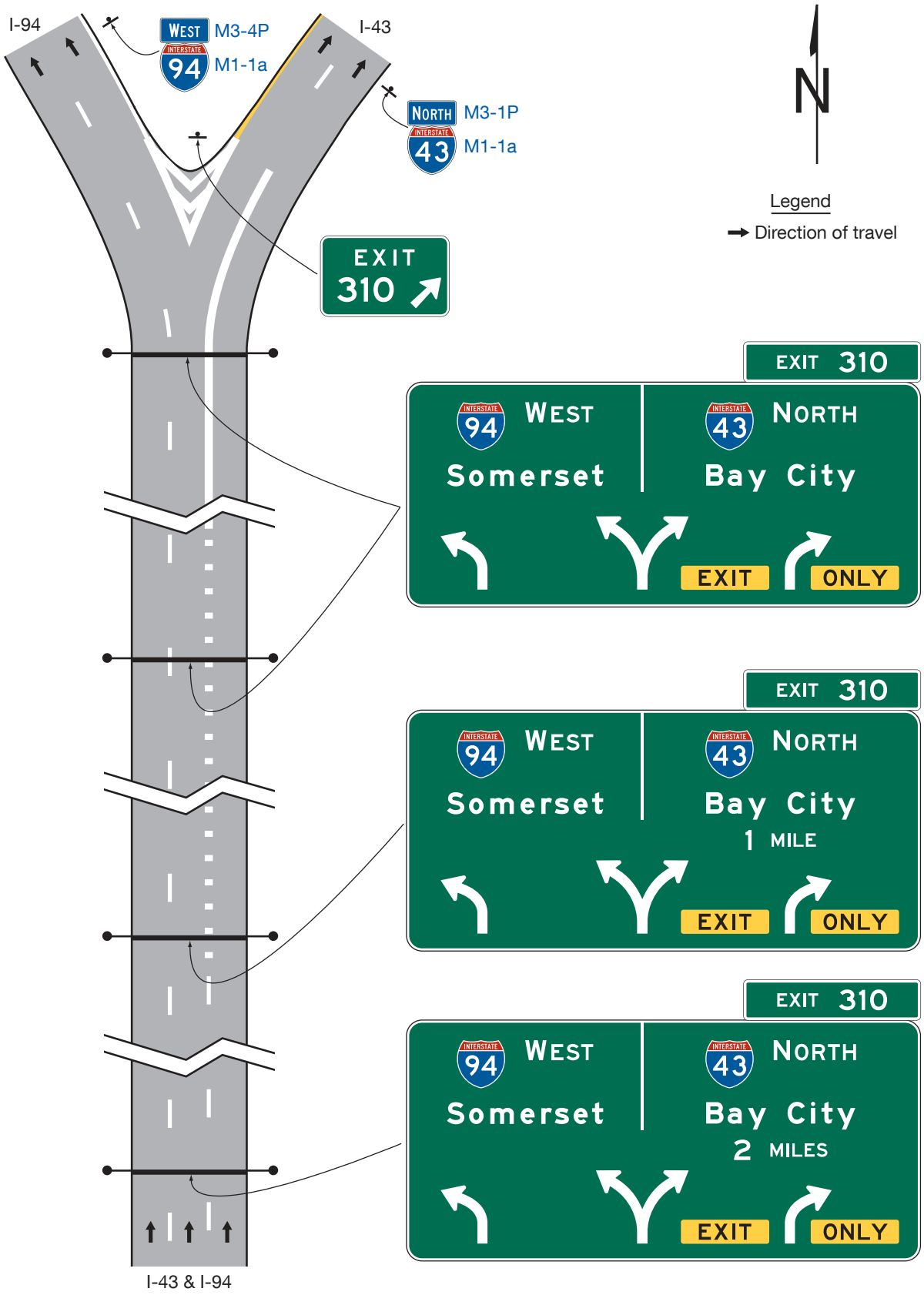
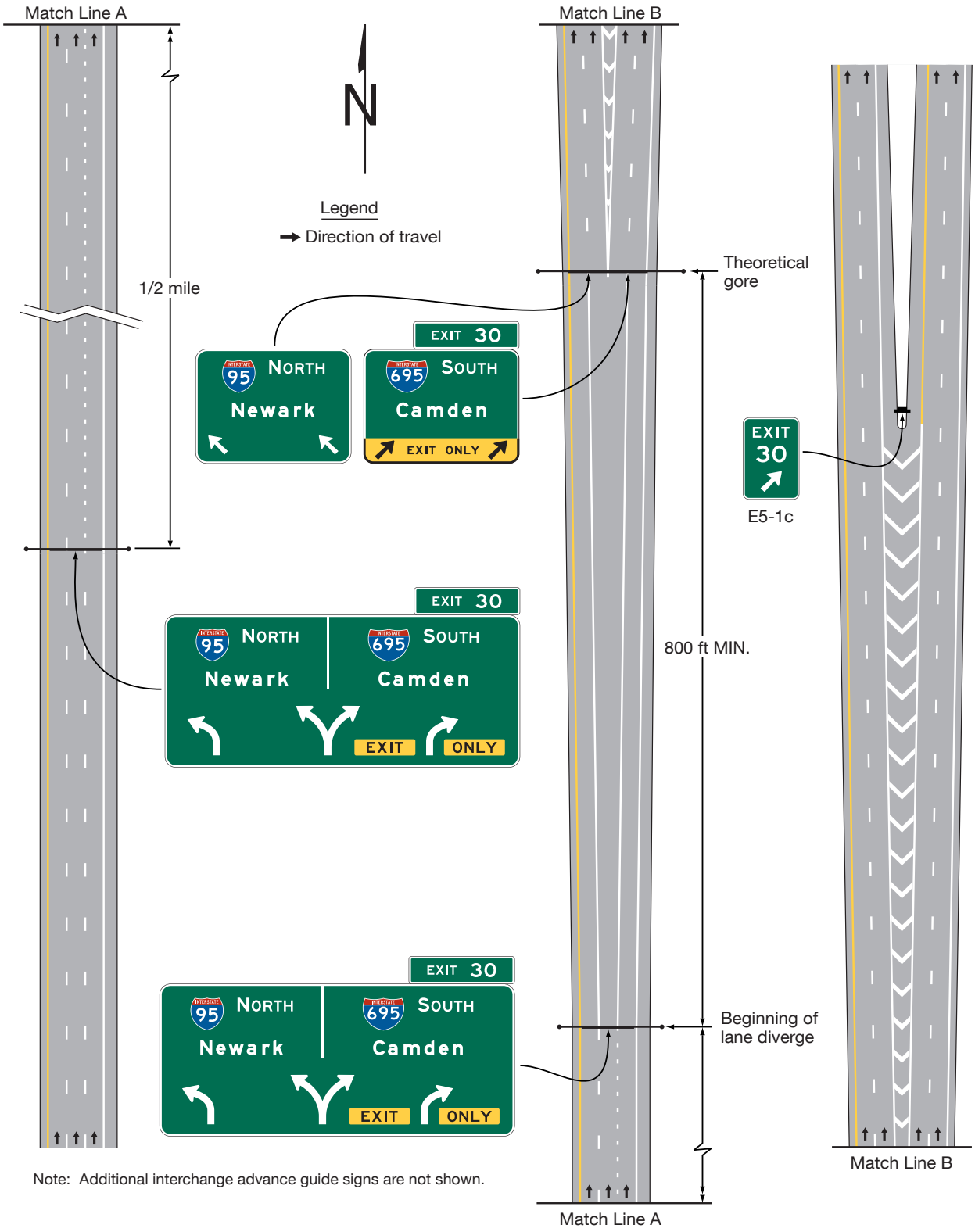
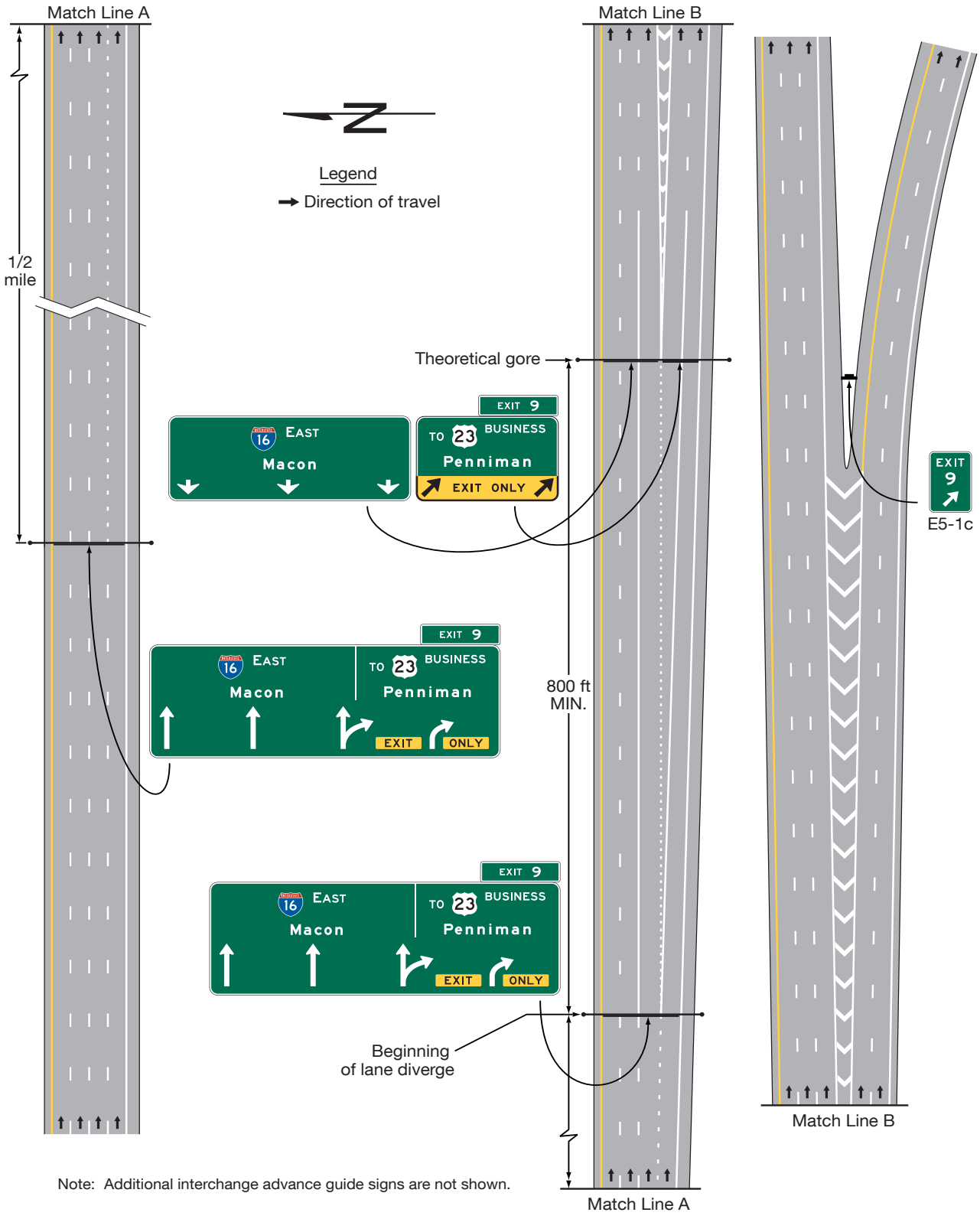


Figure 2E-39. Example of Guide Signing for a Narrow Gore at a Split with an Option Lane



Note: Additional interchange advance guide signs are not shown.

Figure 2E-40. Example of Guide Signing for a Narrow Gore at a Two-Lane Exit with an Option Lane



Note: Additional interchange advance guide signs are not shown.

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 through E1-5eP) or Left Exit Number (E1-5fPT through E1-5kPT) plaque shall be used at the top of the sign in accordance with Section 2E.22. For unnumbered left exits, the LEFT (E1-5mP) 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 Sign Designs for Texas" publication (see Section 1A.05).

Option:

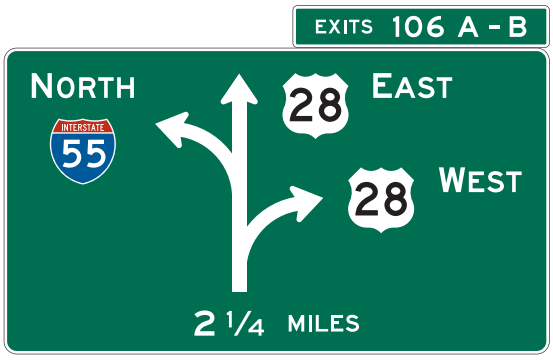
08 Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.

09 Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2 sign panel.

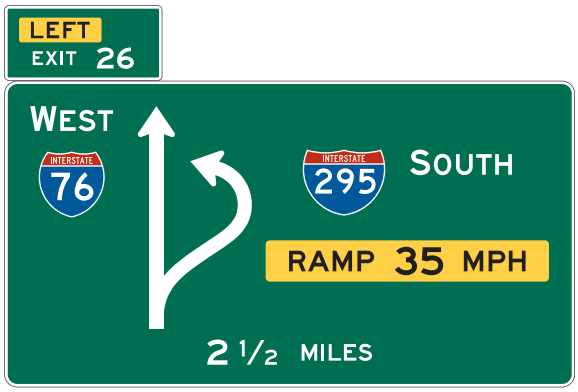
10 Diagrammatic Advance guide signs may be used on any class of roadway and may be modified to depict relative movements for intersections on conventional roads.

Figure 2E-41. Examples of Diagrammatic Advance Guide Signs

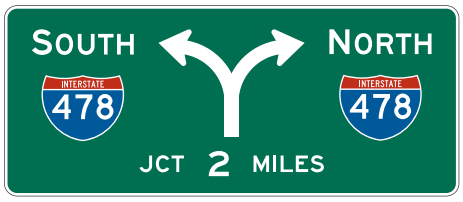
A – Through route on an off-movement



B – Through route with complex geometry and reduced speed on an off-movement



C – Split at terminus of an expressway route



D – Successive exit ramps from opposite sides of a roadway

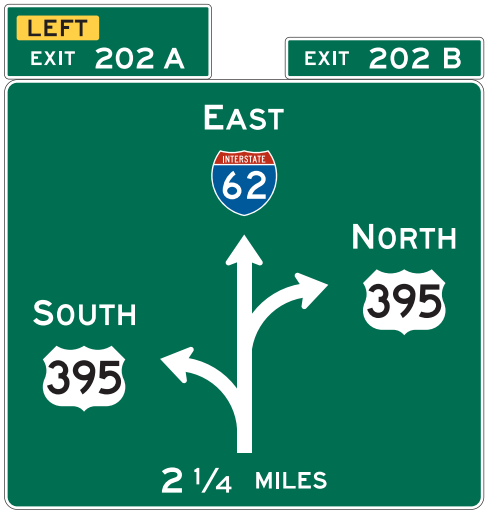
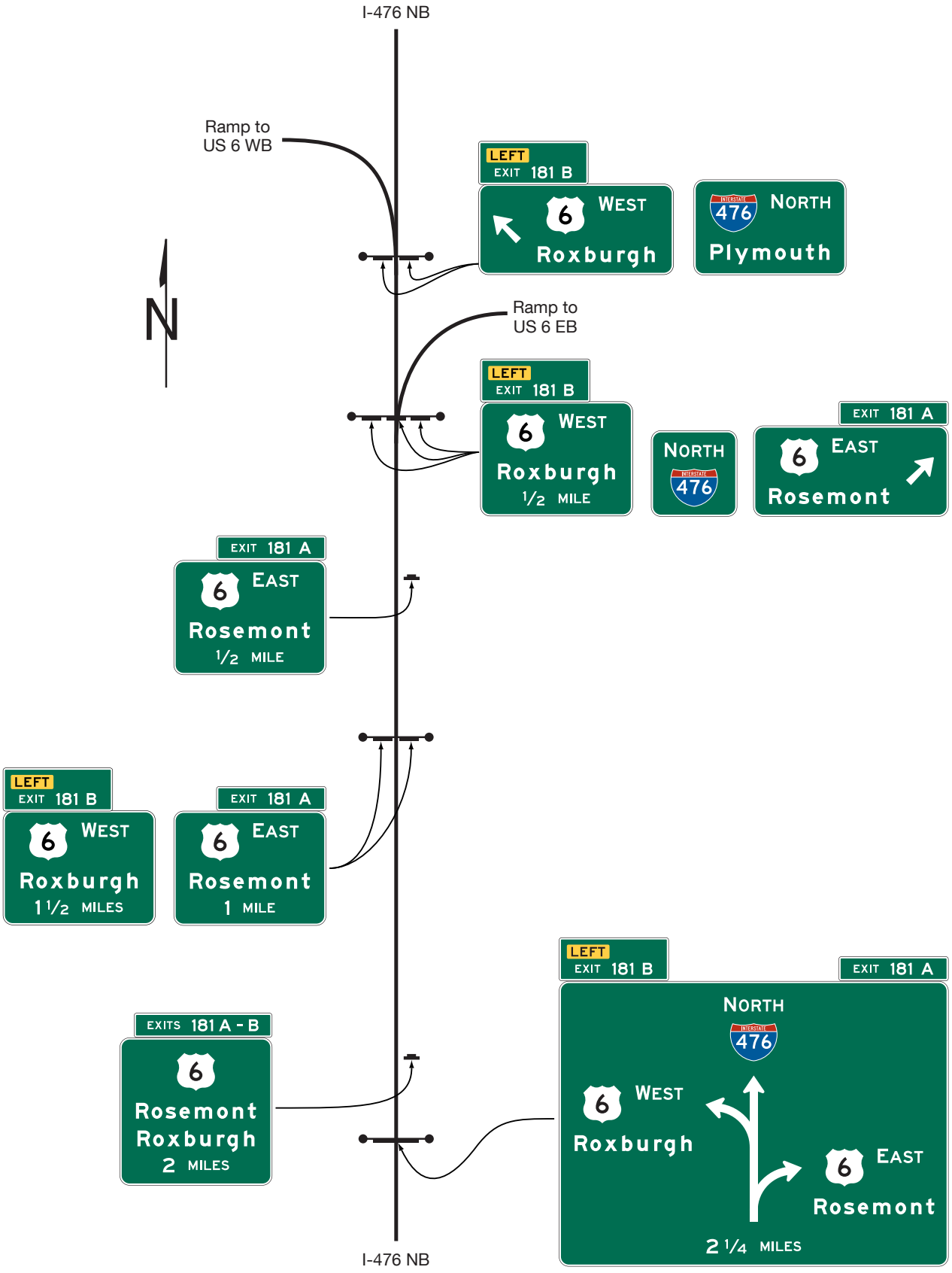


Figure 2E-42. Example of Diagrammatic Advance Guide Sign Use



Rev. 1

Rev. 1

Rev. 1

Section 2E.42 Signing for Intermediate and Minor Interchange Multi-Lane Exits with an Option Lane

Support:

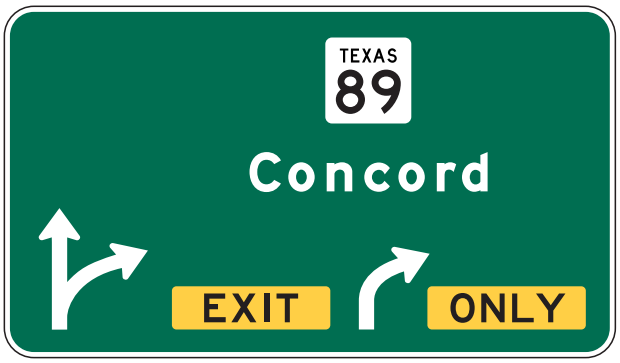
01 Intermediate and minor multi-lane exits might have an operational need for the presence of an option lane for only the peak period during which excessive queues might otherwise develop if the option lane were not available. In such cases, the Overhead Arrow-per-Lane guide signing described for option 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 arrowhead of the bifurcated arrow depicting the through movement.*

Rev. 1

Figure 2E-43. Example of a Partial-Width Overhead Arrow-per-Lane Guide Sign for Intermediate or Minor Interchanges



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 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.*

Rev. 1

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 partial-width 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.**

Figure 2E-44. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with an Option Lane and a Dropped Lane using Partial-Width Overhead Arrow-per-Lane Signs



Figure 2E-45. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with Option and Auxiliary Lanes using Partial-Width Overhead Arrow-per-Lane Sign

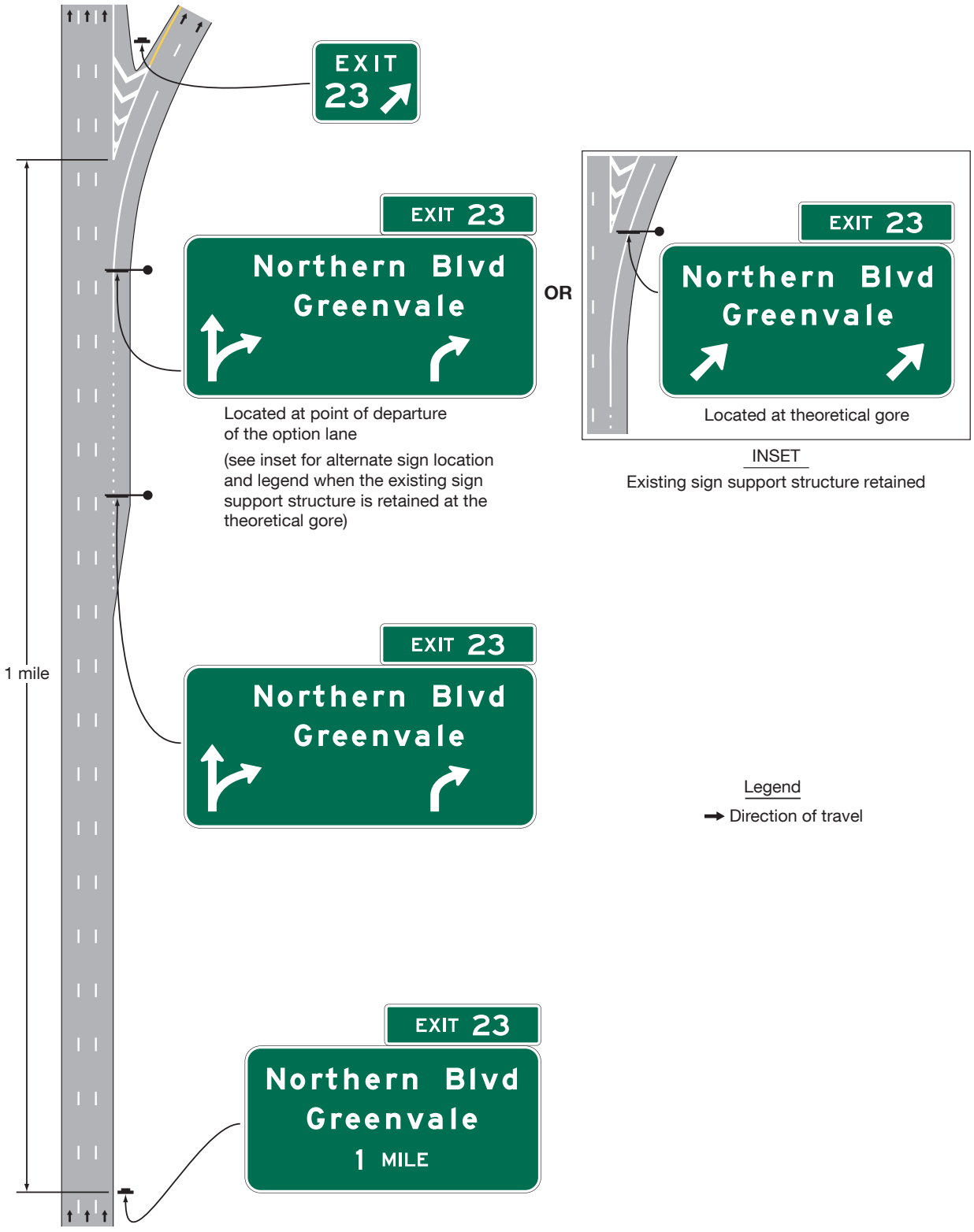


Figure 2E-46. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with an Option Lane and a Dropped Lane

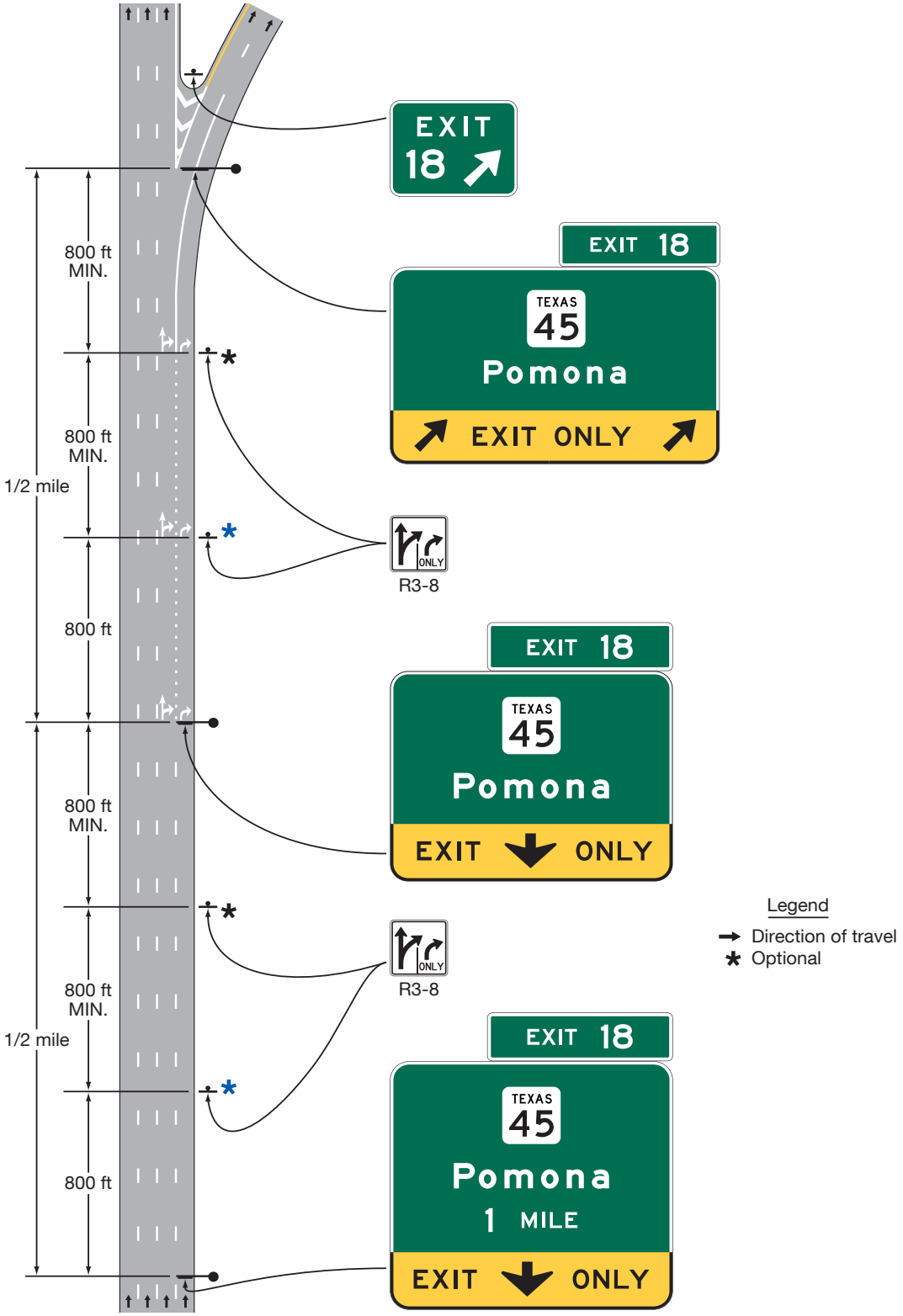
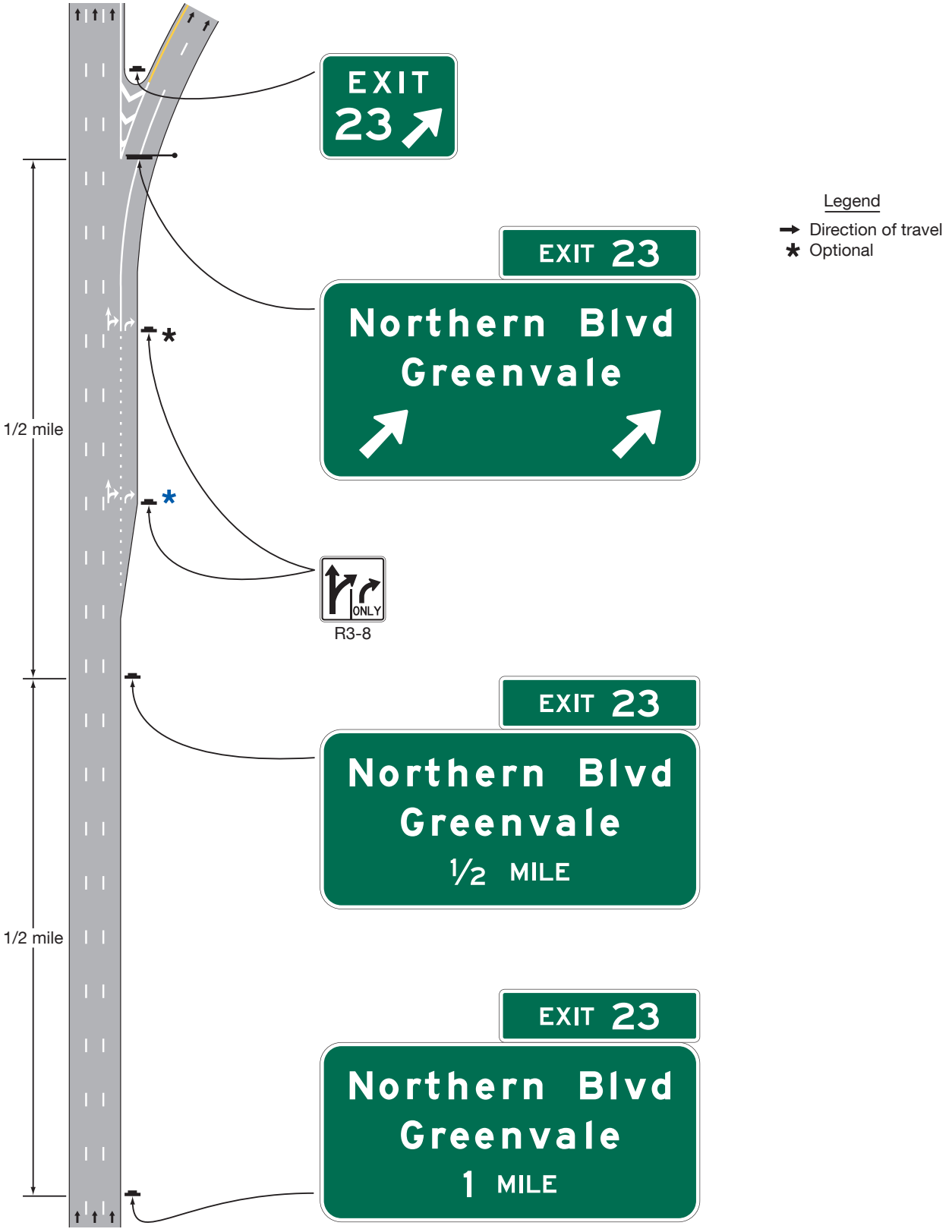


Figure 2E- 47. Example of Signing for a Two-Lane Intermediate or Minor Interchange Exit with Option and Auxiliary Lanes



Section 2E.43 Number of Signs at an Overhead Installation, Information Provided by Freeway Signing, and Sign Spreading

Guidance:

01 *If overhead signs are warranted, as set forth in Section 2A.14, 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.*

02 *Due to the high-speed and high-volume conditions typically present on freeways, freeway signing should strive to provide information in a manner that provides quick processing and clear meaning. Freeway signing should provide information to meet the needs of the unfamiliar road user. Freeway signing should provide advance information about approaching decision points in a manner that provides adequate time for response at freeway speeds. Freeway signing does not have to identify every possible choice for the driver. The maximum amount of information on any sign structure should not exceed 20 units. See Table 2E-6A and Figure 2E-47A.*

Option:

03 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.

Table 2E-6A. (TX) Maximum Amount of Information per Freeway Guide Sign Structure

Number of Sign Panels	Condition	Units of Information per Structure
2	Desirable	12
	Maximum	16
3	Desirable	16
	Maximum	18
4	Desirable	18
	Maximum	20
5	Desirable	Undesirable Design
	Maximum	20

Support:

Rev. 1

04 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:

05 *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.

Figure 2E-47A. (TX) Example of Guide Sign Information Units

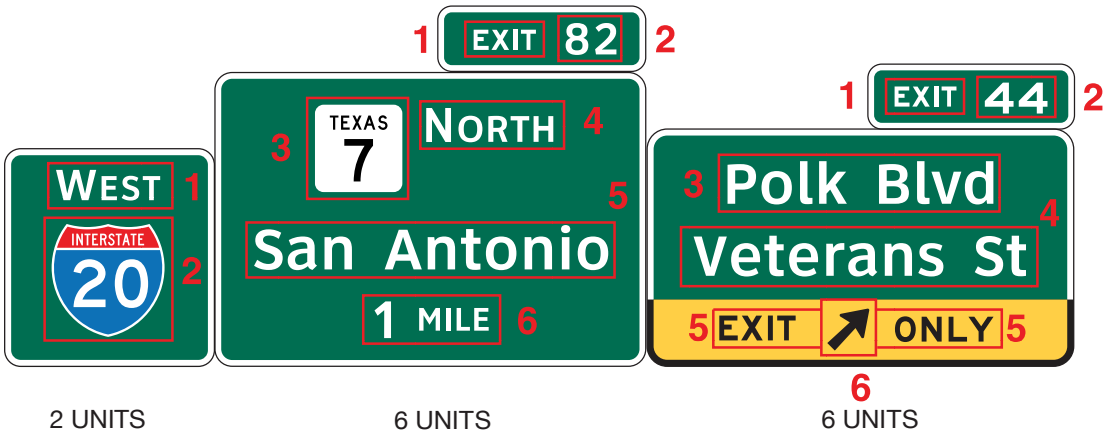
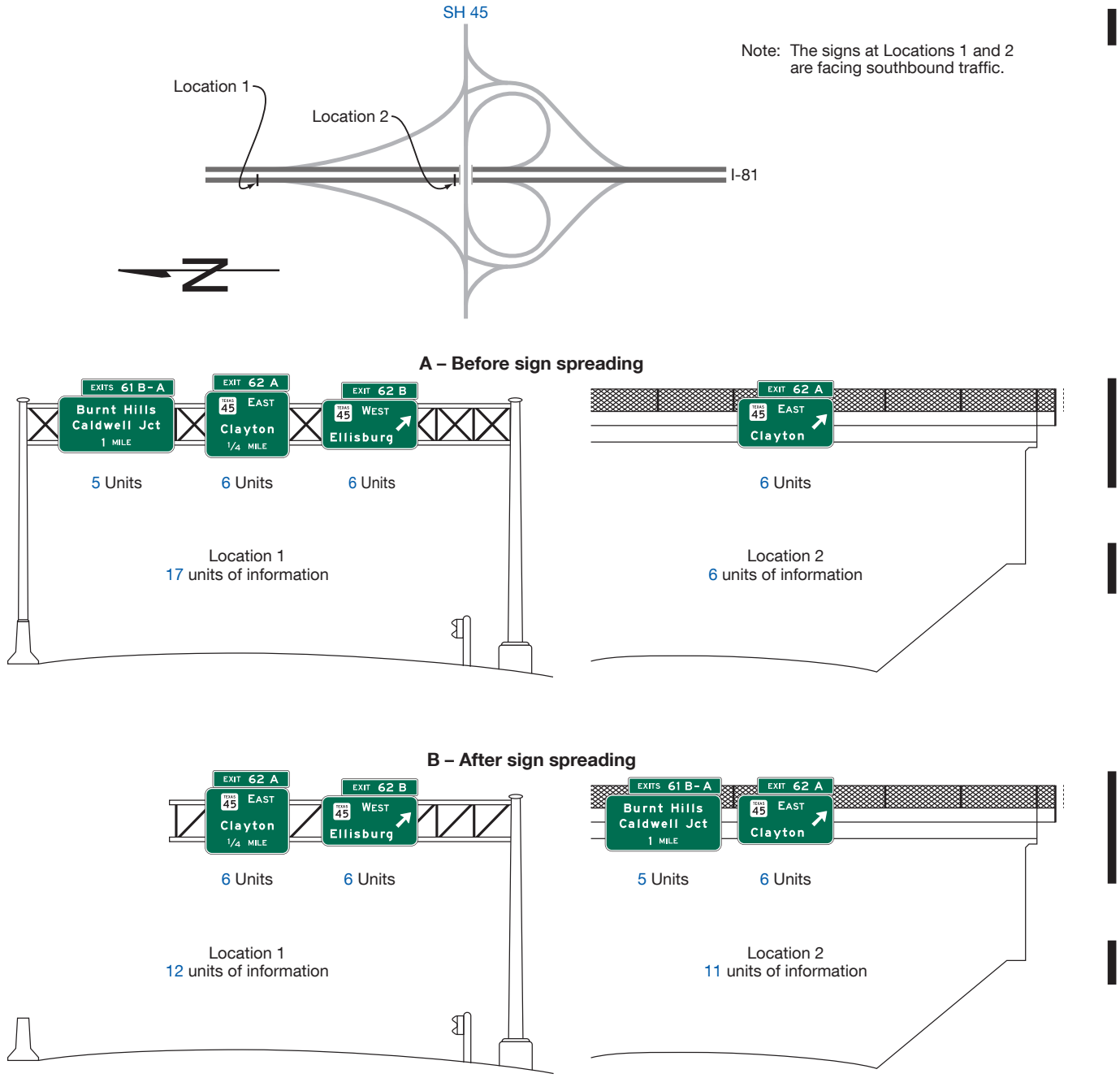


Figure 2E-48. Example of Sign Spreading



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 with an initial upper-case letter 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.**

Figure 2E-49. Next Exit Plaques



E2-1P E2-1aP

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-4A and 2E-5.

Option:

03 The text identification of a route may be displayed instead of a route shield, such as “US XX,” “SH XX”, or “CO RD 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.*

Figure 2E-50. Example of a Post-Interchange Distance Sign



E7-3

Note: The one-line version (E7-1) and two-line version (E7-2) of the Post-Interchange Distance signs are not shown.

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 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.48 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.**

Figure 2E-51. Example of a Post-Interchange Travel Time Sign



E7-4

Rev. 1

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.**

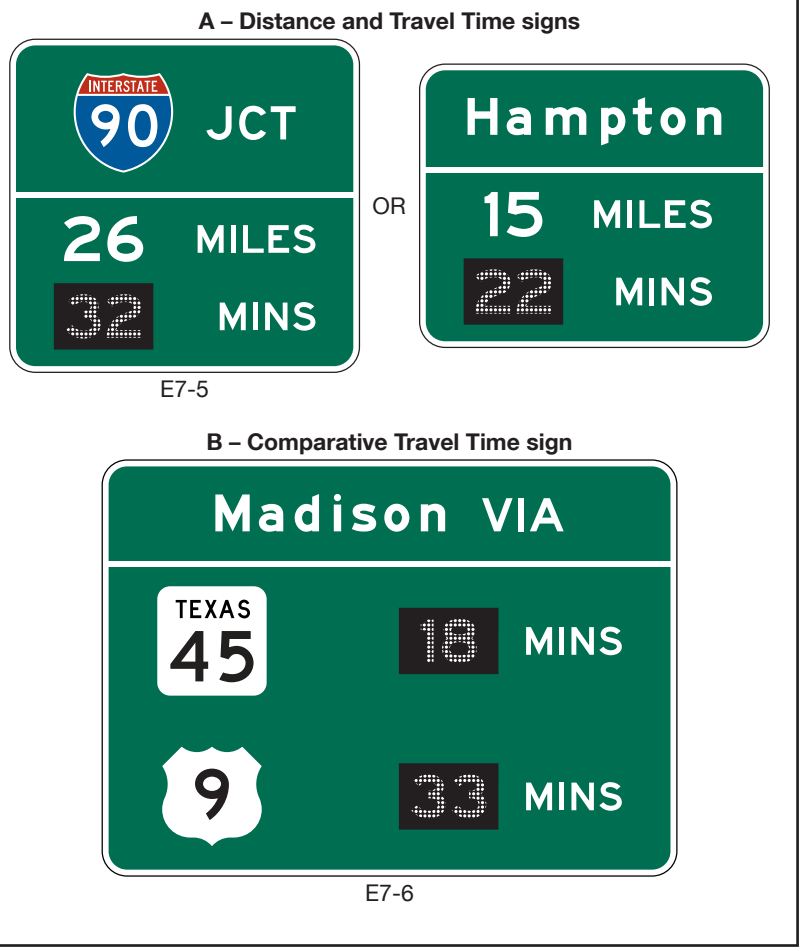
06 **Comparative travel times shall not be used to promote different modes of travel, such as personal vehicle highway travel compared with transit, or different forms of transit.**

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.*

Figure 2E-52. Examples of Travel Time Signs



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.

Figure 2E-53. Example of a Supplemental Guide Sign for a Multi-Exit Interchange



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 exit 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 exit 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.*

Rev. 1

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.**

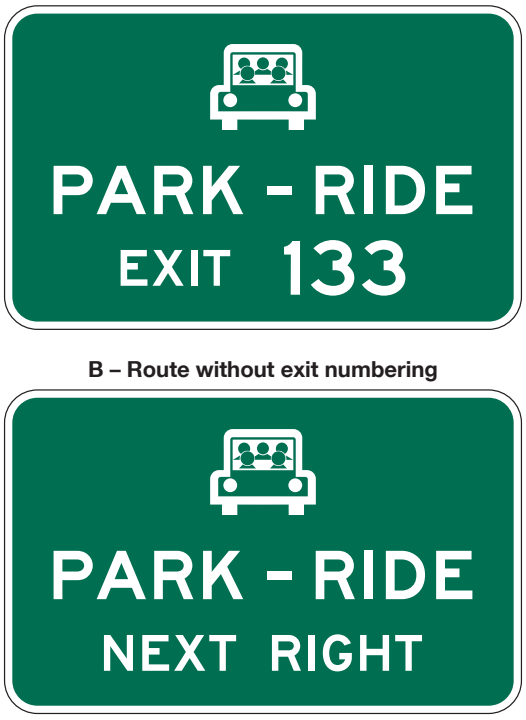
Option:

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.*

Figure 2E-54. Examples of Supplemental Guide Signs for a Park-and-Ride Facility



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.**

Section 2E.52 ~~Community Interchanges Identification Signs (E9-4 and E9-5)~~ DELETED

Figure 2E-55. ~~Example of a Community Interchanges Identification Sign~~ DELETED

Figure 2E-56. ~~Example of the Use of a Community Interchange Identification Sign~~ DELETED

Section 2E.52A Downtown Exit Signs

Option:

01 A Downtown sign (see Figure 2E-56A) may be used if the marked route is within the city limits.

Standard:

02 **If a Downtown sign is used, the following criteria shall be met:**

- **A. A distinct central business district shall exist within an established multi-street system. Strip development business centers shall not qualify.**
- **B. Only one such supplemental sign shall be permitted for each direction of travel for the best and most direct route serving the downtown core.**

Figure 2E-56A. (TX) Downtown Supplementary Signs



A – ROUTE WITH EXIT NUMBERING



B – ROUTE WITHOUT EXIT NUMBERING

Support:

03 It is not necessary that signs denoting Downtown for different directions of travel be confined to the same interchange. See the Traffic Generator Criteria (Table 2M-1A) for additional information.

Section 2E.53 Next Exits Signs (E9-3 and E9-3a)

Support:

01 Many freeways or expressways pass through 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 city 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).*

Support:

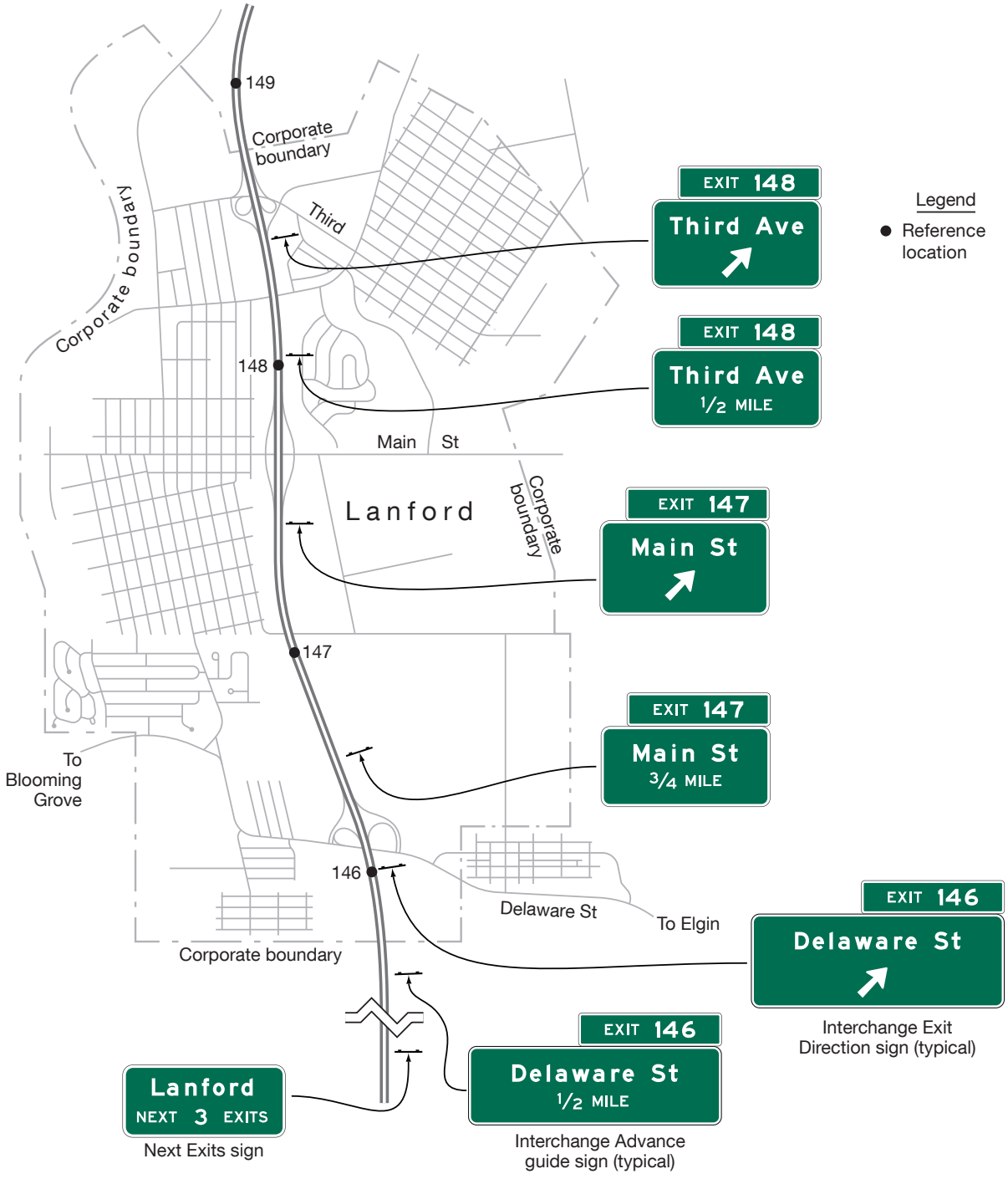
05 The Traffic Generator Criteria (Table 2M-1A) contains additional information regarding signing for cities.

Figure 2E-57. Example of a Next Exits Sign



E9-3

Figure 2E-58. Example of the Use of a Next Exits Sign



Section 2E.54 ~~Weigh Station Signing~~ DELETED

Section 2E.54A Commercial Motor Vehicle (CMV) Inspection Station Signing (D8 Series)

Standard:

01 **CMV Inspection Station signing on freeways and expressways shall be the same as that provided in Section 2D.51A, except for lettering size and the advance posting distance of the Exit Direction sign, which shall be located a minimum of 1,500 feet in advance of the gore.**

Support:

02 The general concept for Commercial Motor Vehicle Inspection Station signing is similar to Rest Area signing (see Section 2I.05) because in both cases traffic using either area remains within the right-of-way.

Standard:

03 **The standard installation for Commercial Motor Vehicle Inspection Station signing shall include the following signs (see Figure 2E-59)**

A. Advance signs (D8-1T and D8-1aT),

B. Regulatory sign (R13-1T), and

C. Exit Direction / Gore sign (D8-1bT).

Guidance:

04 *The Exit Direction/Gore sign (D8-1bT) or the Advance signs (D8-1T and D8-1aT) should display, either within the sign border or on a supplemental plaque or sign panel, the changeable message OPEN or CLOSED.*

Option:

05 A plaque with the legend OPEN WHEN FLASHING may be added to the Advance CMV 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 CMV station.

Support:

06 CMV Inspection Station sign layouts for freeway and expressway applications are shown in the "Standard Highway Sign Designs for Texas" publication (see Section 1A.05). An example of CMV inspection station signing for use on freeways and expressways is shown in Figure 2E-59.

Figure 2E-59. Example of Commercial Vehicle Station Signing on Freeways

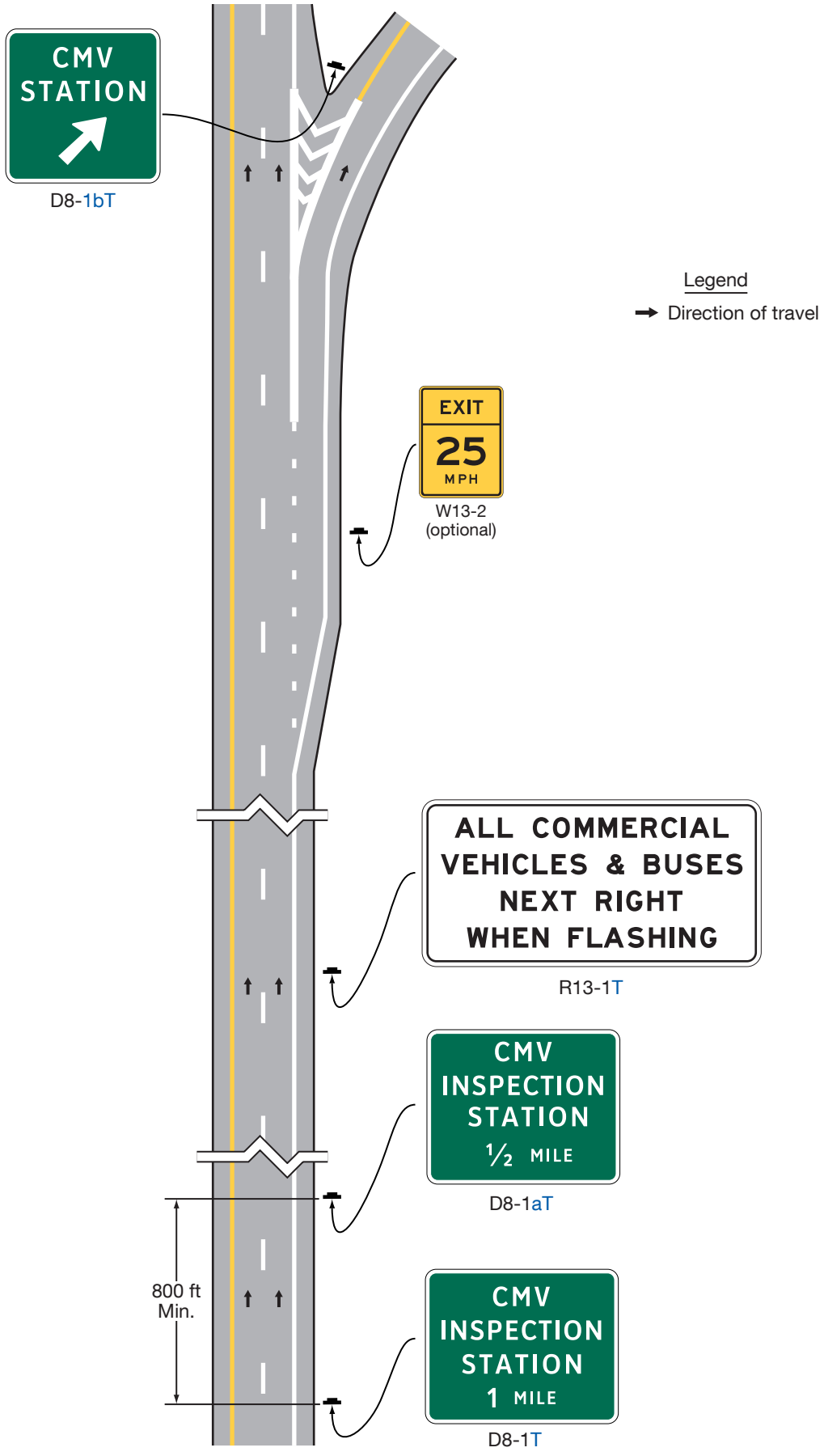


Figure 2E-60. ~~Interstate, Off-Interstate, and U.S. Route Signs~~ DELETED

Section 2E.55 Route Signs and Trailblazer Assemblies

Guidance:

01 *Route signs (see Figure 2D-4) 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 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.*

Standard:

02 **A 24 x 24-inch minimum 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 for all independent ground-mount confirmation assemblies.**

Guidance:

03 *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 Sign Designs for Texas" publication (see Section 1A.05). 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:

04 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.

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:

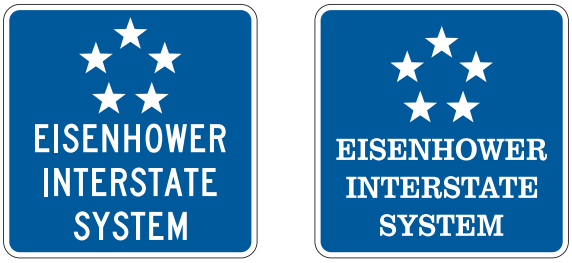
01 The Eisenhower Interstate System (M1-10 and M1-10a) signs (see Figure 2E-61) may be used, in accordance with Paragraphs 2 and 3 of this Section, on Interstate highways at periodic intervals and in rest areas, scenic overlooks, or other similar roadside facilities on the Interstate Highway System.

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 signs 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.**

Figure 2E-61. Eisenhower Interstate System Signs



M1-10 M1-10a

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:

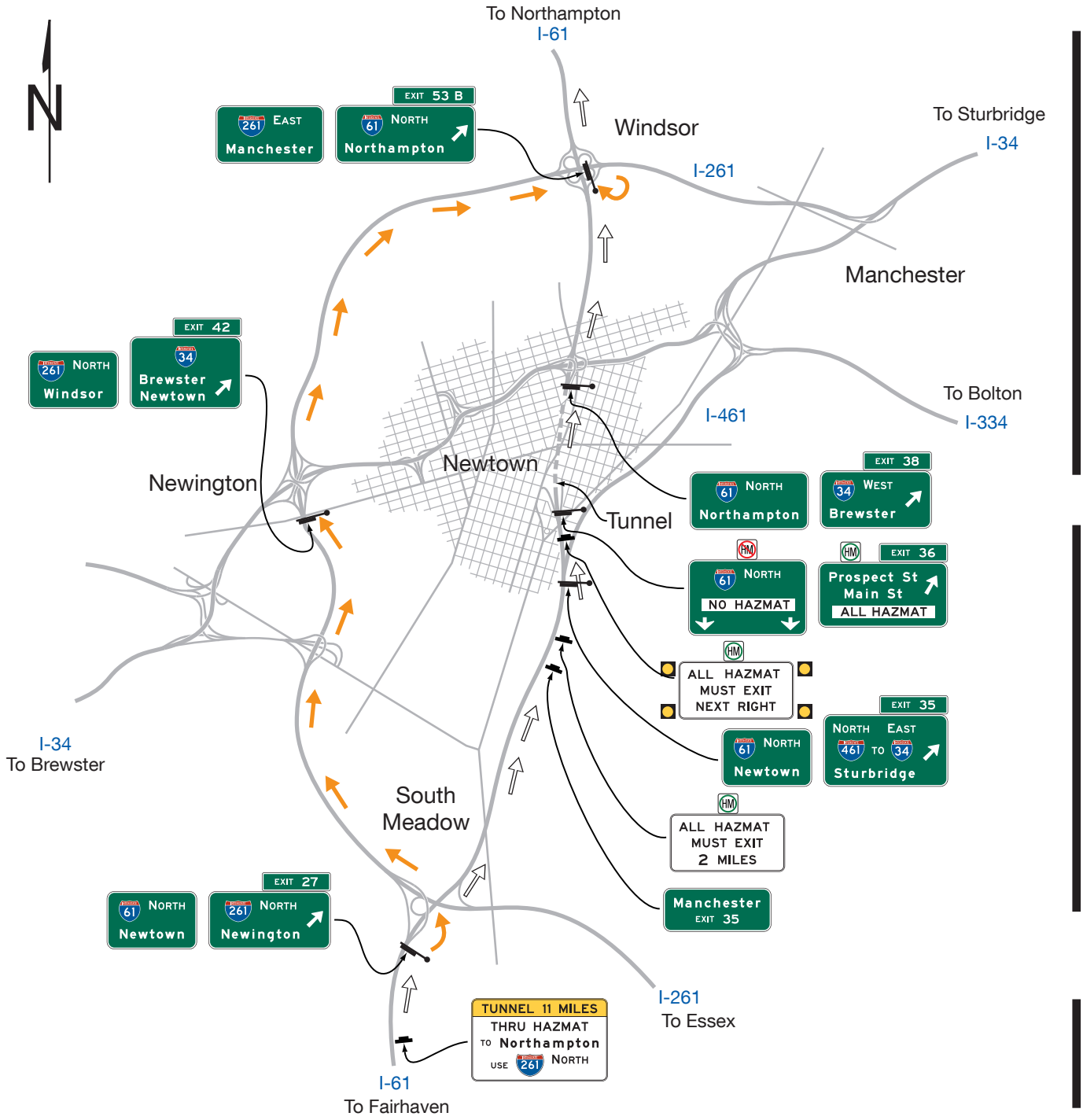
03 The interchange and pull-through guide signs for the last point at which restricted vehicles must exit may be modified to incorporate regulatory and/or warning panels with word legends to display the regulations and/or warning messages relative to the vehicle class restriction.

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.

Figure 2E-62. Example of Signing for Route Diversion by Vehicle Class



Legend

⇨ Direct through route

→ Route for diverted vehicles

Note: Some interchange advance guide signs are not shown.

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.