



## National Committee on Uniform Traffic Control Devices

17200 West Bell Road No.1135 \* Surprise, Ariz. 85374  
Telephone (623) 214-2403 \* e-mail: ncutcd@aol.com

GMI agenda item II.H.2., January 19, 2012

### National Committee on Uniform Traffic Control Devices GMI SIGNS TECHNICAL COMMITTEE RECOMMENDATION

**TECHNICAL COMMITTEE: NCUTCD Guide and Motorist Information Signs Technical Committee**

**TASK FORCE: Chapter 2E - Jonathan Upchurch**

**GMI SIGNS TECHNICAL COMMITTEE APPROVAL DATE: January 19, 2012**

**TRANSMITTAL TO SPONSORS DATE: March 10, 2012**

**GMI APPROVAL FOLLOWING SPONSORS: June 20, 2012**

**COUNCIL APPROVAL DATE: June 21, 2012**

**TOPIC: GUIDE SIGNS FOR OPTION LANES**

**AFFECTED PORTIONS OF MUTCD: Chapters 2D and 2E, Sections 2D.08, 2E.19 through 2E.23, 2E.32, 2E.33, 2E. 36, 2E.44**

**DISCUSSION:** The 2009 MUTCD requires that either Overhead Arrow-per-Lane or Diagrammatic guide sign designs be used for all multi-lane exits at major interchanges that have an optional exit lane [Section 2E.20]. For all new or reconstructed freeways and expressways that meet the above conditions, the 2009 MUTCD requires that Overhead Arrow-per-Lane guide signs be used [Section 2E.21] (in other words, Diagrammatic guide sign designs are not allowed on new or reconstructed facilities).

A number of state Departments of Transportation believe that required use of Overhead Arrow-per-Lane guide signing is impractical and / or uneconomical for the following reasons.

- In many urban area situations, with closely spaced interchanges, the left side of the sign structure at the gore is often used to provide advance information for downstream interchanges. If an arrow per lane sign is required at the gore, then the sign structure cannot be used to provide information for downstream interchanges. There may not be adequate spacing available to place an additional sign structure downstream of the gore. See the following example.



- Overhead Arrow-per-Lane signs are larger than other forms of guide signing. The sign must be wider because it must provide an arrow over each lane. In addition, the sign height is higher because the through arrows are required to be 72 inches tall. Increased sign width and height adds both weight and wind load to the support structure. For one new freeway facility in Florida, the state Department of Transportation estimated that the additional cost (for both sign and sign structure) for an Arrow-per-Lane sign, compared to a traditional sign design, would be \$500,000 per sign structure. For reconstructed freeway facilities, an existing overhead sign bridge would often need to be replaced due to the additional structural load. [Note: A companion recommendation from the GMI Signs Technical Committee, to allow a reduction in the height of Arrow-per-Lane arrows, is also being forwarded to the Council.]
- The Arizona Department of Transportation has estimated a statewide cost of \$35 million for ADOT to comply with the new option lane signing standards.

The number of lanes affects the sign width because an arrow is required over the center of each lane. In turn, sign width has a big impact on structural load and wind load. For one or two through lanes, state DOT's are more willing to consider Arrow-per-Lane signs. For three, four, five, or more through lanes, state DOT's are more reluctant to consider Arrow-per-Lane signs because of the very large sign that would be required.

For the above reasons, it is proposed that alternatives for signing option lanes be added to Chapter 2E and that additional changes be made to Chapter 2E to provide additional flexibility.

The 2009 MUTCD includes Figures 2E-11 and 2E-12 that illustrate sign designs that may be used at minor and intermediate interchanges that have an option lane. The GMI Signs Technical Committee believes that the sign designs in Figures 2E-11 and 2E-12 have significant shortcomings. Some aspects of the designs are inconsistent with usage in other Sections of Chapter 2E. And, the sign designs in Figures 2E-11 and 2E-12 have not been evaluated through research. Furthermore, the GMI Signs Technical Committee does not believe that the R3-8 post-mounted signs shown in these two figures would be effective due to their relatively small size and location on the right shoulder where they would not be in the view of many motorists. For these reasons the GMI Signs Technical Committee recommends that Figures 2E-11 and 2E-12 be deleted from the MUTCD. The GMI Signs Technical Committee also recommends Figures 2E-I and 2E-J as sign designs to be used at minor and intermediate interchanges that have an option lane.

**RECOMMENDATION:** The following pages present a proposal for changes to Chapters 2D and 2E related to option lane signing. The major portions of the proposed changes are in Sections 2E.20 through 2E.23. However, because provisions in Chapters 2D and 2E are very inter-related among Sections, there are also changes required in other sections to make sure there are no inconsistencies within the two Chapters.

**RECOMMENDED WORDING:** The following changes in Sections 2D.08 and 2E.19 are needed to allow a new sign series as illustrated in Figure 2E-J. Figure 2E-J is presented later in this document. [Note: The adjustment of wording regarding the location of the down arrow positioned over the approximate center of the lane is part of a separate Recommendation that is being forwarded to the Council.]

#### Section 2D.08 Arrows

##### Standard:

02 On overhead signs where it is desirable to indicate a lane to be followed, a down arrow shall be positioned ~~approximately~~ over the approximate center of the lane and shall point vertically downward toward the approximate center of that lane. Except as illustrated in Figure 2E-J, ~~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.

#### Section 2E.19 Arrows for Interchange Guide Signs

##### Standard:

05 On overhead signs where down arrows are used to indicate a lane to be followed, a down arrow shall be positioned ~~approximately~~ over the approximate center of each lane and shall point vertically downward toward the approximate center of that lane. Except as illustrated in Figure 2E-J, ~~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.

The major portions of the proposed changes are in Sections 2E.20 through 2E.23, as follows.

#### Section 2E.20 Signing for Option Lanes at Splits and Multi-Lane Exits

##### Support:

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:~~

~~On freeways and expressways, either the Overhead Arrow per Lane or Diagrammatic guide sign designs as provided in Sections 2E.21 and 2E.22 shall be used for all multi-lane exits at major interchanges (see Section 2E.32) that have an optional exit lane that also carries the through route (see Figures 2E-4, 2E-5, 2E-8, and 2E-9) and for all splits that include an option lane (see Figures 2E-6 and 2E-10). Overhead Arrow per Lane or Diagrammatic 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.~~

**Standard:**

**On freeways and expressways, either the Overhead Arrow-per-Lane or Diagrammatic guide sign designs as provided in Sections 2E.21 and 2E.23 shall be used for all splits that include an option lane (see Figures 2E-6 and 2E-10).**

**Guidance:**

*On freeways and expressways, either the Overhead Arrow-per-Lane or Diagrammatic guide sign designs as provided in Sections 2E.21 and 2E.23 should be used for all multi-lane exits at major interchanges (see Section 2E.32) that have an optional exit lane that also carries the through route (see Figures 2E-4, 2E-5, 2E-8, and 2E-9).*

**Standard:**

**Overhead Arrow-per-Lane or Diagrammatic 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:**

*The Overhead Arrow-per-Lane guide sign design (see Section 2E.21) should also be considered for multi-lane exits with an option lane at intermediate interchanges (see Section 2E.32) 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.*

*Signing for multi-lane exits at minor interchanges (see Section 2E.32) that have an optional exit lane or at intermediate interchanges that have an optional exit lane at which it has been determined that the Overhead Arrow-per-Lane guide sign design is not warranted should use a combination of conventional guide signing and regulatory lane-use signing, in accordance with the provisions of Section 2E.23.*

**Option:**

*There may be situations where use of Overhead Arrow-per-Lane guide signs as described in Section 2E.21, Paragraph 2, are impractical. In these situations, signing for multi-lane exits at major, intermediate, and minor interchanges (see Section 2E.32) that have an optional exit lane may use guide signing in accordance with the provisions of Section 2E.22 and illustrated in Figures 2E-I and 2E-J.*

**Section 2E.21 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes**

**Support:**

Overhead Arrow-per-Lane guide signs (see Figure 2E-3) 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 either conventional guide signs or Diagrammatic guide signs because they convey positive direction about which destination and direction each approach lane serves, particularly for the option lane, which is otherwise difficult to clearly sign.~~

**Standard:**

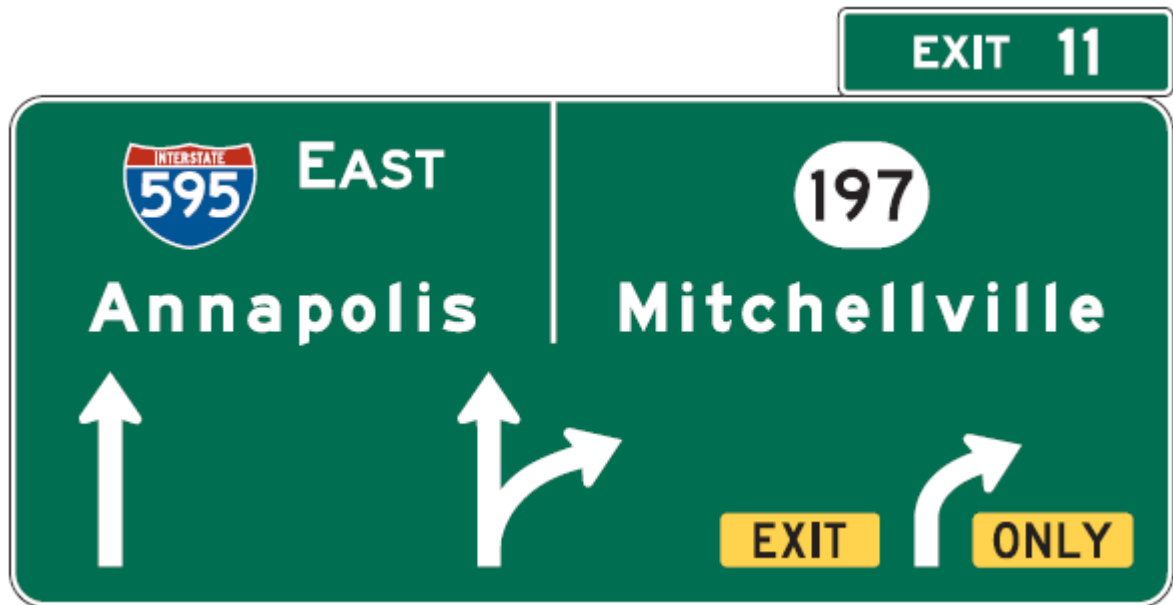
**~~Overhead Arrow-per-Lane guide signs shall be used on all new or reconstructed freeways and expressways as described in Section 2E.20.~~**

[Paragraph 2] Where used, 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:

At existing or non-reconstructed locations where Exit Direction and Pull-Through signs exist at the theoretical gore, the existing sign support structure may remain in place, continuing to use Exit Direction and Pull-Through signs, in conjunction with a replacement of the advance signs using the Overhead Arrow-per-Lane guide sign design.

Figure 2E-3. Overhead Arrow-per-Lane Guide Sign for a Multi-Lane Exit with an Option Lane



**Standard:**

If existing Exit Direction and Pull-Through signs are being retained at an interchange as provided in Paragraph 4, an Overhead Arrow-per-Lane guide sign shall not be used at the location of the Exit Direction and Pull-Through signs at or in the vicinity of the theoretical gore. New installations of Exit Direction and Pull-Through signs shall not be permitted in conjunction with Overhead Arrow-per-Lane guide signs on new or reconstructed facilities.

**Guidance:**

Overhead Arrow-per-Lane guide signs should be located at approximately 1/2 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:**

Overhead Arrow-per-Lane guide signs used on freeways and expressways shall include one arrow above each lane, except as provided in Section 2E.22, and shall be designed in accordance with the following criteria:

- A. The sign shall include an upward-pointing arrow for each lane of the approach to the split or exit, except as provided in Section 2E.22, and the shaft of each arrow shall be located approximately over the approximate center of the lane to which it applies.
- B. Arrows for continuing through lanes shall be vertically upward pointing (see Figure 2E-4) unless those lanes are on a significantly curved alignment beyond the theoretical gore, in which case the arrows for the continuing through lanes shall indicate the approximate degree of curvature (see Figure 2E-5).
- C. 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

**Figure 2E-4. Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane**

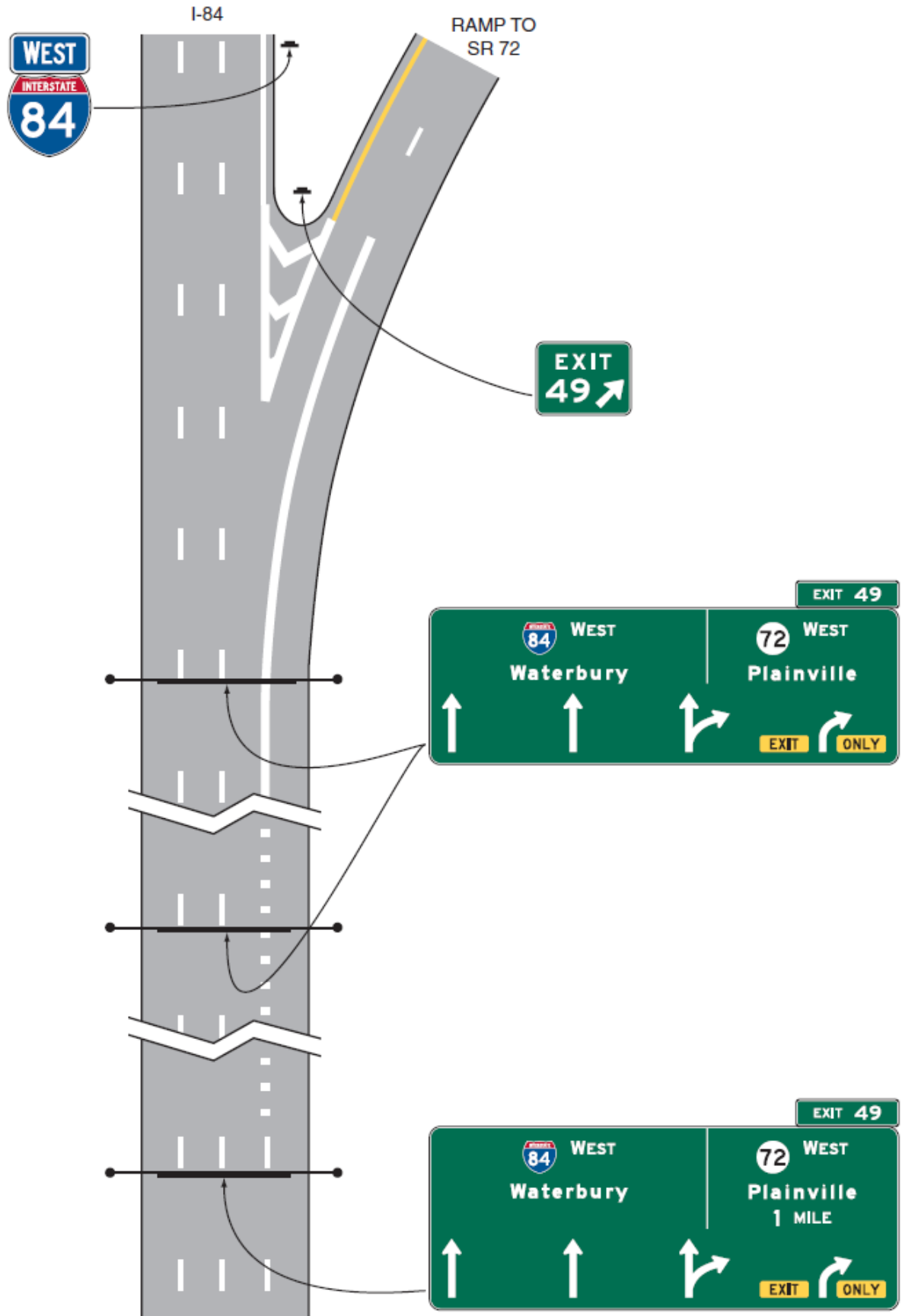


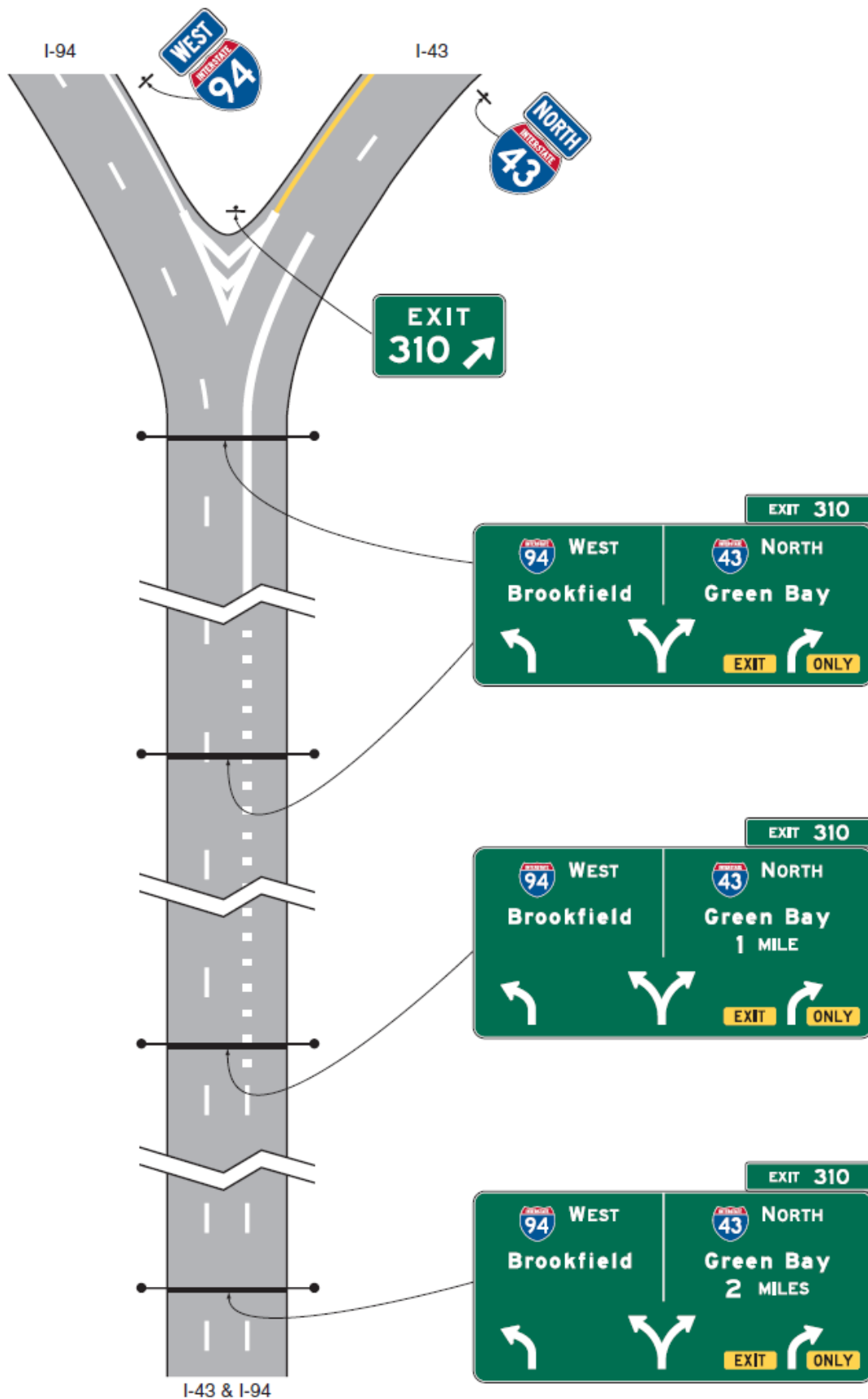


Figure 2E-5. Overhead Arrow-per-Lane Guide Signs for a Two-Lane Exit to the Right with an Option Lane (Through Lanes Curve to the Left)



Figure 2E-6. Overhead Arrow-per-Lane Guide Signs for a Split with an Option Lane

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vertical arrows shall be used for the exiting movement and curved arrows for the through movement.

- D. The arrow for an optional exit lane that also carries the through route shall have a single shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow corresponding to the configuration of the through and exit lanes.
- E. 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 showing the approximate degrees of curvature of the two roadways beyond the theoretical gore (see Figure 2E-6).
- F. A vertical white line shall be used to separate the route shields and destinations for the two diverging movements from each other.
- G. 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.
- H. The number of lanes displayed on a sign shall correspond to the number of lanes at the location of that sign, **except as provided in Section 2E.22**. An advance sign shall not depict lanes that are added downstream of a sign location.
- I. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be used at the top of the sign in accordance with Section 2E.31. For unnumbered left exits, the LEFT (E1-5aP) plaque shall be used at the top left edge of the sign.

*Guidance:*

*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-3).

**Standard:**

**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:**

Specific guidelines for more detailed design of Overhead Arrow-per-Lane guide signs are contained in the “Standard Highway Signs and Markings” book (see Section 1A.11).

**Option:**

Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-27) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.

**[Note: Existing Section 2E.23 is deleted. Existing Section 2E.22 is renumbered to become Section 2E.23. A new Section 2E.22 is added.]**

**Section 2E.22 Alternative Guide Signing for Interchange Multi-Lane Exits with an Option Lane**

**Support:**

Section 2E.20 provides guidance that on freeways and expressways, either the Overhead Arrow-per-Lane or Diagrammatic guide sign designs as provided in Sections 2E.21 and 2E.23 should be used for all multi-lane exits at major interchanges that have an optional exit lane that also carries the through route. The Overhead Arrow-per-Lane or Diagrammatic guide signing described for option lanes in Sections 2E.21 and 2E.23 might not be practical at some locations. Reasons include the need to provide advance guide signing for closely spaced downstream interchanges, a large number of through lanes, and economics due to sign size.

Option:

As an alternative to the Overhead Arrow-per-Lane or Diagrammatic guide signs described in Section 2E.20, either of the alternate sign series shown in Figures 2E-I or 2E-J may be used on freeways and expressways for multi-lane exits at interchanges that have an optional exit lane that also carries the through route.

Standard:

When used, the sign designs illustrated in Figure 2E-I shall include one arrow above each exiting lane and one arrow above each option lane and the shaft of each arrow shall be located approximately over the center of the lane to which it applies.

When the sign designs illustrated in Figures 2E-I and 2E-J are used, the signs for this application shall be mounted overhead.

Guidance

For an Advance Guide sign at a location where the number of lanes is different from the number of lanes immediately upstream of the exit, the arrows on the Advance Guide sign should show the number of lanes present existing at the location of the Advance Guide sign.

If the sign designs in Figure 2E-J are used, Advance Guide signs of this design should be used only where the exit lane is fully developed.

When used, the sign designs in Figure 2E-J should be mounted such that the each arrows are is positioned centered over the approximate center of the lanes to which they it applies.

Advance Guide signs should be placed as provided in Section 2E.23.

Option:

When the sign designs illustrated in Figure 2E-I or 2E-J are used, a Pull-Through sign may be mounted over the through lanes to the left of the Advance Guide sign and / or the sign immediately upstream of the gore.

Standard:

If signing as shown in Figure 2E-I is used, an advance guide sign for a downstream interchange shall not be installed on the same structure.

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Change Figure Title to: Example of Alternative Sign Series for a Two Lane Exit with an Option Lane – Arrow-per-Lane style

Figure 2E-1

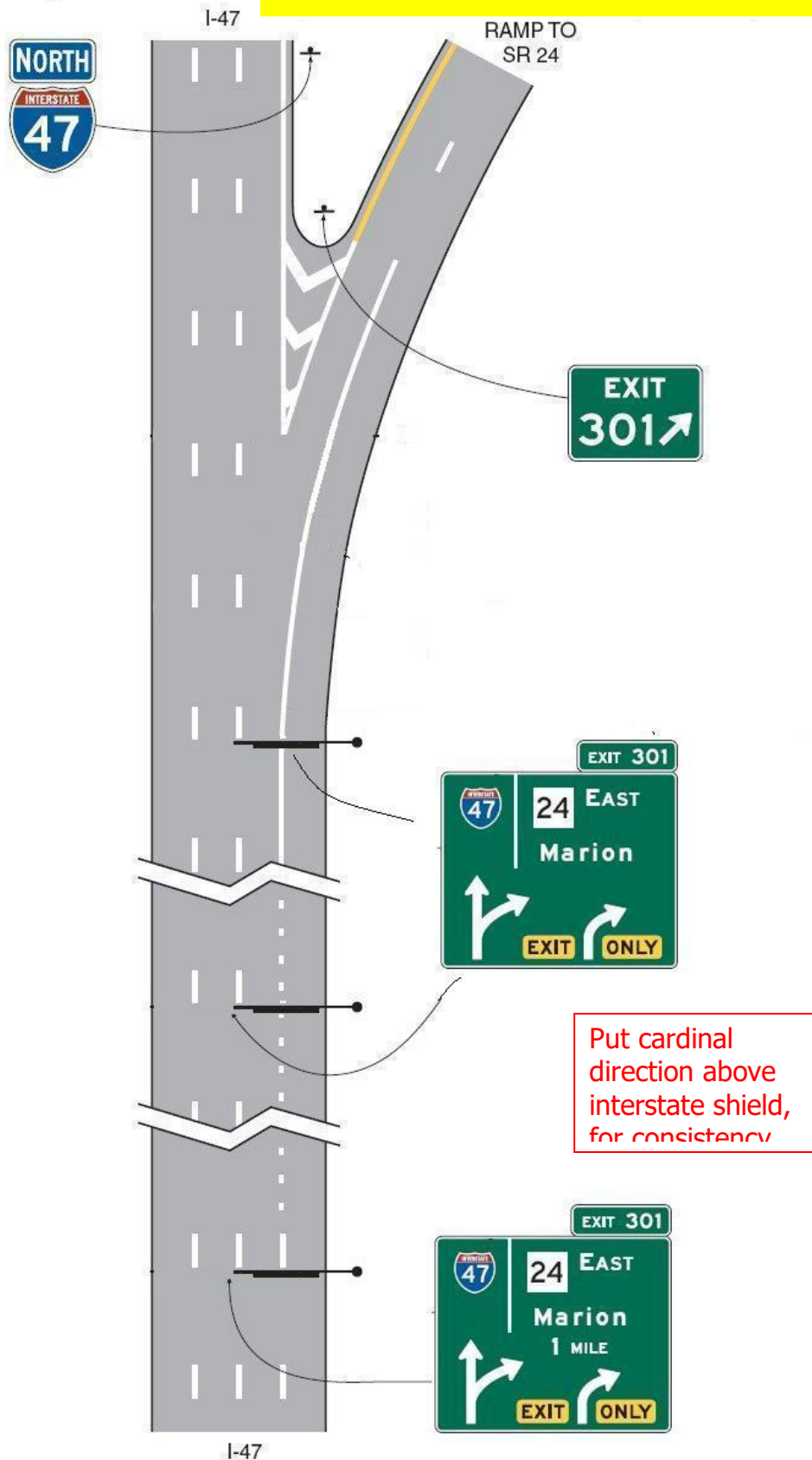
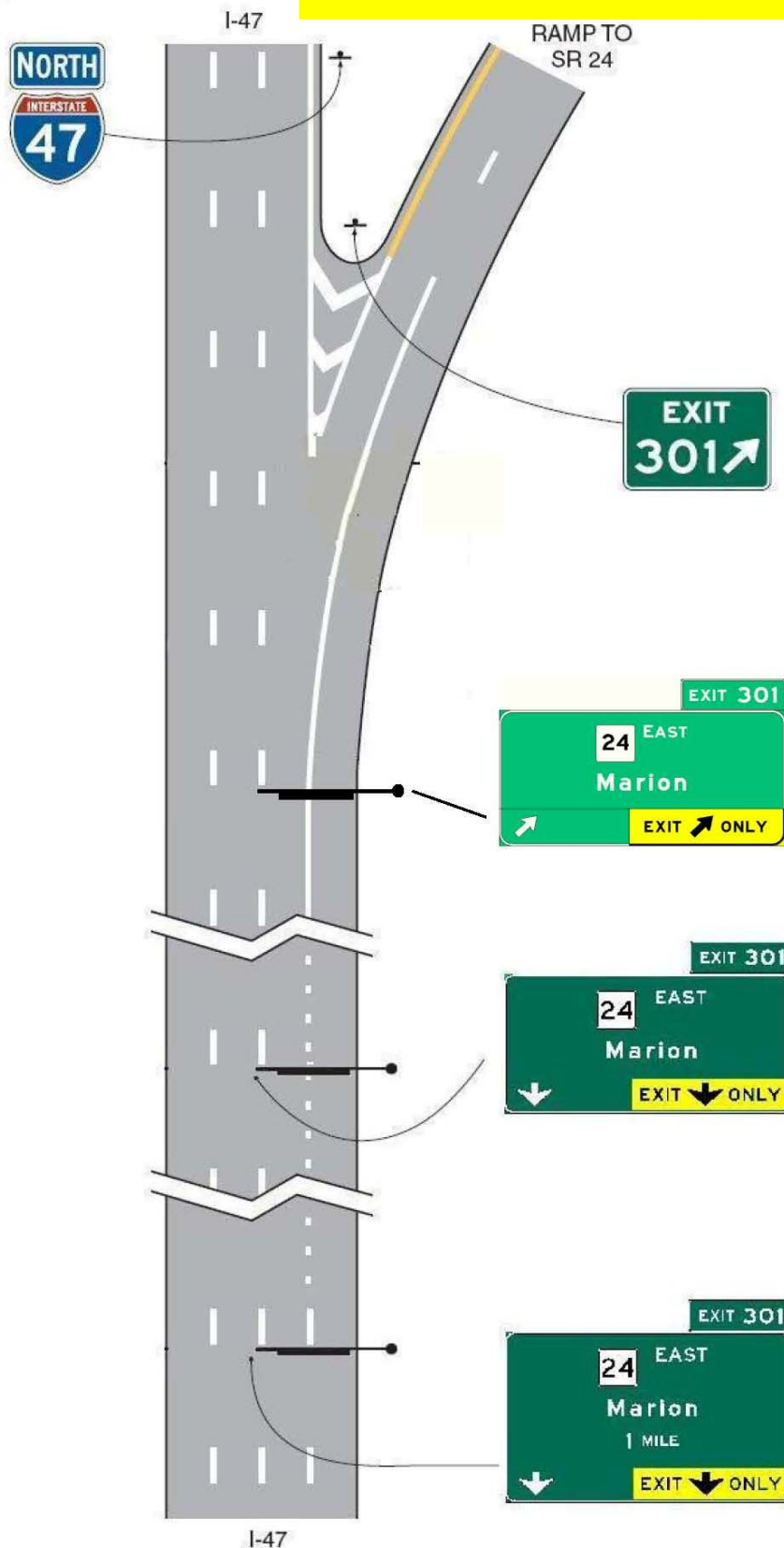


Figure 2E-J



**Section 2E.22**  
**2E.23 Design**  
**of Freeway**  
**and**  
**Expressway**  
**Diagrammatic Guide Signs**  
**for Option**  
**Lanes**

Support:

Diagrammatic guide signs (see Figure 2E-7) are guide signs that show a simplified graphic view of the exit arrangement in relationship to the main highway. While the use of such guide signs might be helpful for the purpose of conveying relative direction of each movement, Diagrammatic guide signs have been shown to be less effective than conventional or Overhead Arrow-per-Lane guide signs at conveying the destination or direction(s) that each approach lane serves, regardless of whether dedicated or option lanes are present.

**Standard:**

Diagrammatic guide signs used where an option lane is present at a freeway or

expressway split or multi-lane exit shall be designed in accordance with the following criteria:

- A. The graphic legend shall be of a plan view showing the off-ramp arrangement.
- B. No other 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.36).
- D. The EXIT ONLY sign panel shall not be used on diagrammatic guide signs in advance of the interchange.
- E. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be used at the top of the sign in accordance with Section 2E.31. For unnumbered left exits, the LEFT (E1-5aP) plaque shall be used at the top left edge of the sign.
- F. The EXIT ONLY (E11-1e or E11-1f) sign panels shall be used on the Exit Direction sign at the theoretical gore, except at splits of two overlapping routes where neither of the routes is designated as an exit.

**Figure 2E-7. Diagrammatic Guide Sign for a Multi-Lane Exit with an Option Lane**



*Guidance:*

*Diagrammatic guide signs used on freeways and expressways should be designed in accordance with the following additional criteria:*

- A. The graphic should not depict deceleration lanes.
- B. No more than one destination should be displayed for each movement, and no more than two destinations should be displayed per sign.
- C. 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 Figures 2E-8 and 2E-9). Where the movements are freeway or expressway splits rather than exits, the arrowheads should be positioned at approximately the same height on the sign (see Figure 2E-10).

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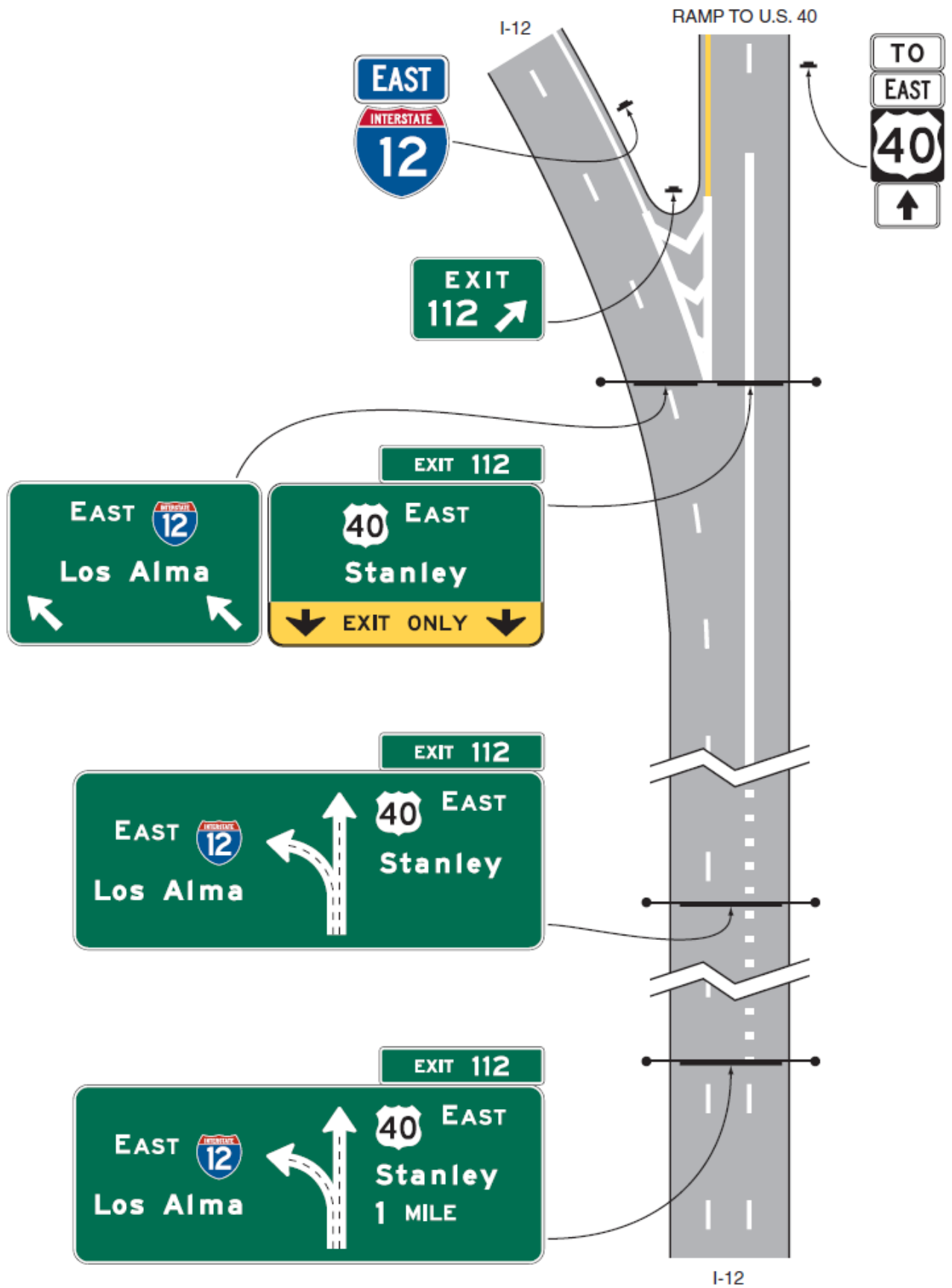
Figure 2E-8. Diagrammatic Guide Signs for a Two-Lane Exit to the Right with an Option Lane



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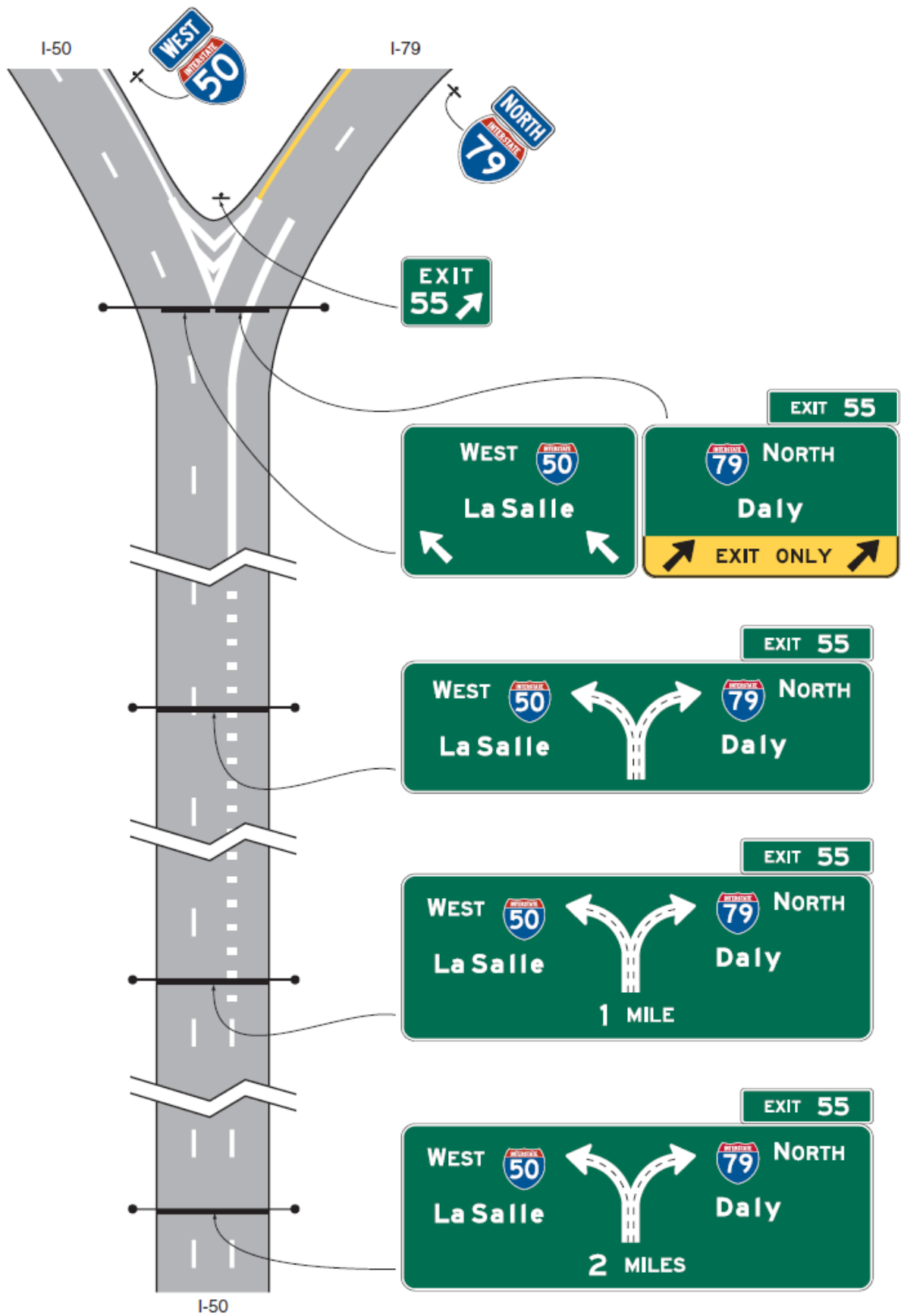






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**Figure 2E-10. Diagrammatic Guide Signs for a Split with an Option Lane**



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- D. Arrow shafts should contain lane lines.
- E. 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 for the off movement.
- F. 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.

**Standard:**

Diagrammatic guide signs shall not be used at cloverleaf interchanges for the purpose of depicting successive departures from the mainline or separate downstream departures from a collector-distributor roadway. The use of Diagrammatic guide signs at cloverleaf interchanges shall be limited to the following cases:

- A. Where the outer (non-loop) exit ramp of the cloverleaf is a multi-lane exit having an optional exit lane that also carries the through route; and
- B. At cloverleaf interchanges that include collector-distributor roadways, such as those illustrated in Figure 2E-36, that are accessed from the mainline by a multi-lane exit having an optional exit lane that also carries the through route. In this case, the Diagrammatic guide sign shall only show the configuration of the lanes at the exit point to the collector-distributor roadway and not the entire interchange configuration.

**Support:**

Specific guidelines for more detailed design of Diagrammatic guide signs are contained in the “Standard Highway Signs and Markings” book (see Section 1A.11).

**Option:**

Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-27) may be placed below the applicable destination legend to supplement, but not to replace, the exit or ramp advisory speed warning signs.

**Section 2E.23 Signing for Intermediate and Minor Interchange Multi-Lane Exits with an Option Lane**

**Support:**

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 or Diagrammatic guide signing described for option lanes in Sections 2E.21 and 2E.22 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:**

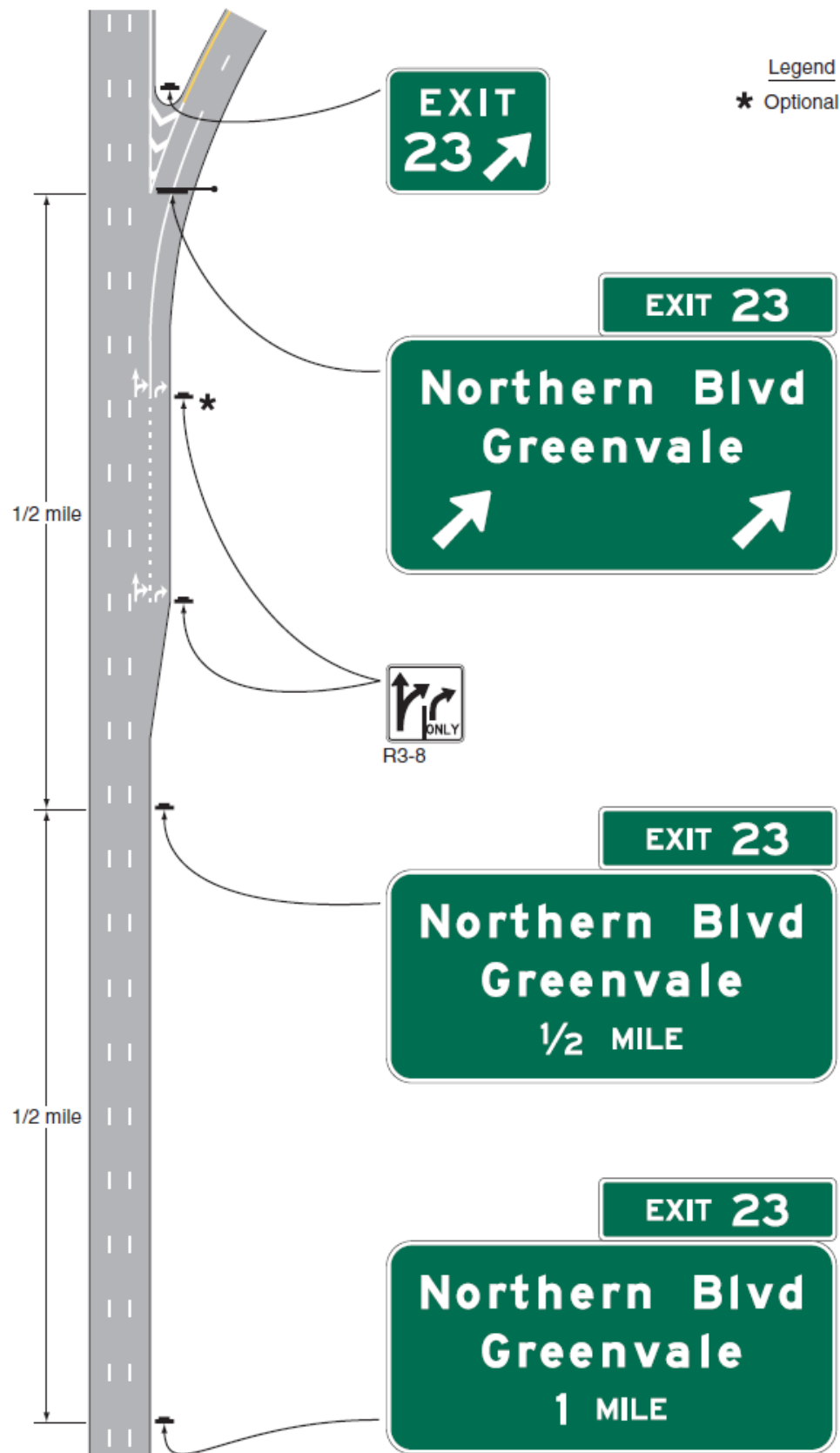
Signing for an intermediate or minor interchange that has a multi-lane exit with an option lane that also carries the through route should use the same basic principles as those for a conventional exit. In such cases, the option lane is not signed on the Advance Guide signs. For such exits that involve the addition of an auxiliary lane that is not present at the Advance Guide sign locations, but do not involve a lane drop (see Figure 2E-12), a sequence of post-mounted or overhead-mounted Advance Guide signs should be used, located in accordance with the interchange classification (see Section 2E.32). The Exit Direction sign should be located at the theoretical gore and 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.

For such interchanges that also have a lane drop (see Figure 2E-11), the Advance Guide and Exit Direction signs should follow the provisions of Section 2E.24. The Exit Direction sign should be located at the theoretical gore and should contain the EXIT ONLY (E11-1e) sign panel.

The presence of the option lane should be conveyed by the use of post-mounted lane-use (R3-8 Series) signs (see Section 2B.22). 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 Advance Guide signs, where the option and exit lanes have developed (see Figure 2E-11). 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

Existing Figure 2E-124 to be deleted

Figure 2E-124 Example of Signing for a Two-Lane Intermediate or Minor Interchange  
Exit with Option and Auxiliary Lanes

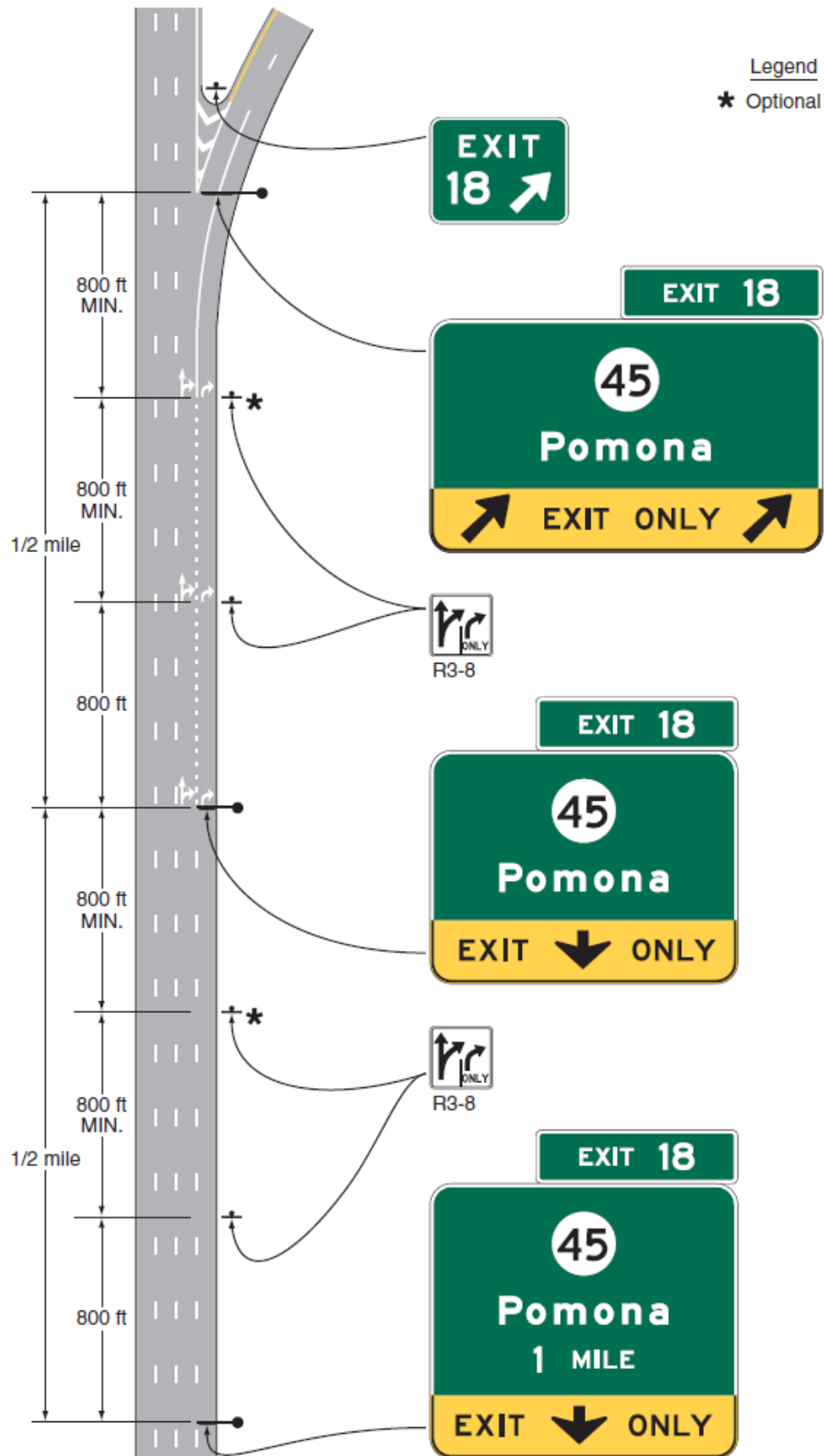


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Existing Figure 2E-112 to be deleted

Figure 2E-112. Example of Signing for a Two-Lane Intermediate or Minor Interchange

Exit with an Option Lane and a Dropped Lane





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~~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-12).~~

~~Support:~~

~~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:~~

~~Advance Guide signs that are mounted overhead shall not display a down arrow over an option lane.~~

The following changes in Sections 2E.32, 2E.33, 2E.36 and 2E.44 are needed to avoid inconsistencies with the major portions of the proposed changes in Sections 2E.20 through 2E.23.

## **Section 2E.32 Interchange Classification**

Support:

For signing purposes, interchanges are classified as major, intermediate, and minor. The minimum alphabet sizes contained in Tables 2E-2 and 2E-4 are based on this classification. 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.33 Advance Guide Signs**

Support:

An Advance Guide sign (see Figure 2E-22) gives notice well in advance of the exit point of the principal destinations served by the next interchange and the distance to that interchange.

Guidance:

*For major and intermediate interchanges (see Section 2E.32), Advance Guide signs should be placed at 1/2 mile and at 1 mile in advance of the exit with a third Advance Guide sign placed at 2 miles in advance of the exit if spacing permits. At minor interchanges, only one Advance Guide sign should be used. It should be located 1/2 to 1 mile from the exit gore. If the sign is located less than 1/2 mile from the exit, the distance displayed should be to the nearest 1/4 mile. Fractions of a mile, rather than decimals, should be displayed in all cases.*

Standard:

For numbered exits to the left, a left exit number (E1-5bP) plaque (see Figure 2E-22) shall be added to the top left-hand edge of the sign.

For non-numbered exits to the left, a LEFT (E1-5aP) plaque (see Figure 2E-22) shall be added to the top left-hand edge of the sign.

Support:

Section 2E.31 contains additional information regarding exit numbering.

Standard:

Advance Guide signs ~~for multi-lane exits having an optional exit lane that also carries the through-route (see Figures 2E-4, 2E-5, 2E-8, and 2E-9) and~~ for splits with an option lane (see Figures 2E-6 and 2E-10) shall be Overhead Arrow-per-Lane or diagrammatic signs designed in accordance with Sections 2E.20, 2E.21 and 2E.23 through 2E.22.

Except as provided in Section 2E.24, Advance Guide signs, if used, shall contain the distance message. Except as provided in Paragraph 8 of this Section, the legend on the Advance Guide signs shall be the same as the legend on the Exit Direction sign, except that the last line shall read EXIT XX

**MILES. If the interchange has two or more exit roadways, the bottom line shall read EXITS XX MILES.**

*Guidance:*

*Where interchange exit numbers are used, the word EXIT(S) should be omitted from the bottom line.*

*Option:*

Where the distance between interchanges is more than 1 mile, but less than 2 miles, the first Advance Guide sign may be closer than 2 miles, but not placed so as to overlap the signing for the previous exit. Duplicate 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:*

*Where there is less than 800 feet between interchanges, Interchange Sequence Series signs (see Section 2E.40) should be used instead of Advance Guide signs for the affected interchanges.*

*The 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-3). The plaque should be installed above the Advance Guide signs.*

*Option:*

If there is insufficient space above the Advance Guide sign because of the presence of an exit number plaque, the W16-16P plaque may be installed below the Advance Guide sign.

### **Section 2E.36 Exit Direction Signs**

[Only Paragraph 5 of Section 2E.36 is shown here]

**Standard:**

Except where Overhead Arrow-per-Lane guide signs are used (see Section 2E.21 and Paragraph 6 of this Section), **or except as shown in Figure 2E-J**, 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-8 through 2E-10<sup>4</sup>, and 2E-14 through 2E-16).

### **Section 2E.44 Freeway-to-Freeway Interchange**

**Support:**

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. Figure 2E-34 shows examples of guide signs at a freeway-to-freeway interchange.

*Guidance:*

*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 signs are used in accordance with the provisions of Sections 2E.20, 2E.21 and 2E.23 through 2E.22.*

**Support:**

At splits where the off-route movement is to the left or where there is an optional lane split, expectancy problems usually result.

**Standard:**

At splits where the off-route movement is to the left, the Left Exit Number (E1-5bP) plaque shall be added at the top left-hand edge of the guide sign (see Section 2E.31). Overhead Arrow-per-Lane or Diagrammatic guide signs (see Sections 2E.21 and 2E.22 2E.23) shall be used for freeway splits with an option lane **and for multi-lane freeway-to-freeway exits having an option lane**.

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 guide signs are used, they shall comply with the provisions of Sections 2E.21 and 2E.22 2E.23.

Option:

Overhead signs may also be used at the 1/2-mile and 2-mile locations.

The arrow and/or the name of the control city may be omitted on signs that indicate the straight-ahead continuation of a route on a Pull-Through sign (see Section 2E.12).

An Advisory Exit Speed sign may be used where an engineering study shows that it is necessary to display a speed reduction message for ramp signing (see Section 2C.14).

Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-2) sign panel (see Figure 2E-27) 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.

**January 19, 2012**

**GMI Vote:** FOR: 23      AGAINST: 0      ABSTAIN: 0

**June 20, 2012**

**GMI Vote: FOR: 12      AGAINST: 03      ABSTAIN: 03**

**GMI acknowledges that new research is being completed and additional proposals addressing this issue may be forthcoming over the next several years.**

**June 21, 2012**

**Council Vote:**

**6 Opposed, 5 Abstentions, 26 For – Motion passed.**