

National Committee on Uniform Traffic Control Devices

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National Committee on Uniform Traffic Control Devices (NCUTCD) Recommended Changes to Proposed Text for 11th Edition of the MUTCD Docket Number: FHWA-2020-0001

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12 13 **Federal Register Item Number:** 155-184 (see listing below) **NPA MUTCD Section Number:** Sections 2D.01 – 2D.59

Legend: Base text shown in proposal is the NPA "clean" proposed text.

- Addition to NPA text: <u>Added text proposed by NCUTCD</u>.
- Deletion of NPA text: Deleted text proposed by NCUTCD.
- Moving NPA text: <u>Moved text proposed by NCUTCD</u>.
- NPA text that was not previously approved by NCUTCD, but is now approved.
- Explanatory note (normally accompany each change within the NPA text): [Note that explains purpose of recommended change.]

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The following pages present NCUTCD recommendations for changes to the MUTCD NPA proposed text, tables and figures for Chapter 2D. Below is a short summary of the NCUTCD position for each section of this chapter. A more detailed summary is provided at the beginning of each section.

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- NPA #155, Section 2D.01: Changes recommended based on Council action in spring 2021.
- No NPA Item, Section 2D.02: NCUTCD agrees with NPA content (no changes recommended).
- No NPA Item, Section 2D.03: NCUTCD agrees with NPA content (no changes recommended).
- No NPA Item, Section 2D.04: NCUTCD agrees with NPA content (no changes recommended).
- NPA #156, Section 2D.05: Changes recommended based on Council action in spring 2021.
- No NPA Item, Section 2D.06: NCUTCD agrees with NPA content (no changes recommended).
- NPA #157, Section 2D.07: Changes recommended based on Council action in spring 2021.
- NPA #158, Section 2D.08: Changes recommended based on Council action in spring 2021.
- NPA #159, Section 2D.09: NCUTCD agrees with NPA content (no changes recommended).
- No NPA Item, Section 2D.10: NCUTCD agrees with NPA content (no changes recommended).
- NPA #160, Section 2D.11: Changes recommended based on Council action in spring 2021.
- NPA #161, Section 2D.12: Changes recommended based on Council action in spring 2021.
- No NPA Item, Section 2D.13: NCUTCD agrees with NPA content (no changes recommended).
- No NPA Item, Section 2D.14: NCUTCD agrees with NPA content (no changes recommended).
- No NPA Item, Section 2D.15: NCUTCD agrees with NPA content (no changes recommended).
- NPA #162, Section 2D.16: NCUTCD agrees with NPA content (no changes recommended).
- NPA #163, Section 2D.17: NCUTCD agrees with NPA content (no changes recommended).
 - No NPA Item, Section 2D.18: NCUTCD agrees with NPA content (no changes recommended).
 - No NPA Item, Section 2D.19: NCUTCD agrees with NPA content (no changes recommended).
 - No NPA Item, Section 2D.20: NCUTCD agrees with NPA content (no changes recommended).
 - No NPA Item, Section 2D.21: NCUTCD agrees with NPA content (no changes recommended).

43 No NPA Item, Section 2D.22: NCUTCD agrees with NPA content (no changes recommended). 44 No NPA Item, Section 2D.23: NCUTCD agrees with NPA content (no changes recommended). 45 No NPA Item, Section 2D.24: NCUTCD agrees with NPA content (no changes recommended). 46 No NPA Item, Section 2D.25 NCUTCD agrees with NPA content (no changes recommended). 47 No NPA Item, Section 2D.26: Changes recommended based on Council action in spring 2021. 48 No NPA Item, Section 2D.27: NCUTCD agrees with NPA content (no changes recommended). 49 No NPA Item, Section 2D.28: Changes recommended based on Council action in spring 2021. 50 NPA #164, Section 2D.29: Changes recommended based on Council action in spring 2021. 51 No NPA Item, Section 2D.30: NCUTCD agrees with NPA content (no changes recommended). 52 No NPA Item, Section 2D.31: Changes recommended based on Council action in spring 2021. 53 No NPA Item, Section 2D.32: NCUTCD agrees with NPA content (no changes recommended). 54 No NPA Item, Section 2D.33: NCUTCD agrees with NPA content (no changes recommended). 55 NPA #165, Section 2D.34: NCUTCD agrees with NPA content (no changes recommended). 56 NPA #166, Section 2D.35: Changes recommended based on Council action in spring 2021. 57 NPA #167, Section 2D.36: Changes recommended based on Council action in spring 2021. 58 NPA #168, Section 2D.37: Changes recommended based on Council action in spring 2021. 59 No NPA Item, Section 2D.38: Changes recommended based on Council action in spring 2021. 60 No NPA Item, Section 2D.39: Changes recommended based on Council action in spring 2021. NPA #169, Section 2D.40: Changes recommended based on Council action in spring 2021. 61 62 No NPA Item, Section 2D.41: Changes recommended based on Council action in spring 2021. 63 NPA #170, Section 2D.42: NCUTCD agrees with NPA content (no changes recommended). 64 NPA #171, Section 2D.43: NCUTCD agrees with NPA content (no changes recommended). 65 No NPA Item, Section 2D.44: NCUTCD agrees with NPA content (no changes recommended). NPA #172, Section 2D.45: Changes recommended based on Council action in spring 2021. 66 67 NPA #173, Section 2D.46: Changes recommended based on Council action in spring 2021. 68 NPA #174, Section 2D.47: NCUTCD agrees with NPA content (no changes recommended). 69 No NPA Item, Section 2D.48: NCUTCD agrees with NPA content (no changes recommended). 70 NPA #175, Section 2D.49: Changes recommended based on Council action in spring 2021. 71 No NPA Item, Section 2D.50: NCUTCD agrees with NPA content (no changes recommended). 72 NPA #176, Section 2D.51: Changes recommended based on Council action in spring 2021. 73 NPA #177, Section 2D.52: NCUTCD agrees with NPA content (no changes recommended). 74 NPA #178, Section 2D.53: Changes recommended based on Council action in spring 2021. 75 NPA #179, Section 2D.54: Changes recommended based on Council action in spring 2021. 76 NPA #180, Section 2D.55: Changes recommended based on Council action in spring 2021. 77 No NPA Item, Section 2D.56: NCUTCD agrees with NPA content (no changes recommended). 78 NPA #182, Section 2D.57: Changes recommended based on Council action in spring 2021. 79 NPA #183, Section 2D.58: Changes recommended based on Council action in spring 2021. 80 NPA #184, Section 2D.59: Changes recommended based on Council action in spring 2021.

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Section 2D.01 Comments: NCUTCD agrees with 2D.01 as presented in the NPA.

Section 2D.01 Scope of Conventional Road Guide Sign Standards and Application

Standard:

The provisions of this Chapter shall apply to any road or street other than expressways and freeways, except as stated elsewhere in this Manual.

Guidance:

The selection of primary or control destinations (those displayed consistently over longer distances along a route) displayed on guide signs should be meaningful to road users in navigation and orientation. The destinations selected should be identifiable on official maps.

The familiarity of the road users with the road should be considered in determining the need for guide signs on low-volume roads.

Support:

Low-volume roads generally do not require guide signs to the extent that they are needed on higher classes of roads. Because guide signs are typically only beneficial as a navigational aid for road users who are unfamiliar with a low-volume road, guide signs might not be needed on low-volume roads that serve only local traffic.

Guidance:

If used on <u>low-volume roads</u>, destination names should be as specific and descriptive as possible. Destinations such as campgrounds, ranger stations, recreational areas, and the like should be clearly indicated so that they are not interpreted to be communities or locations with road user services. Option:

Guide signs may be used <u>on low-volume roads</u> at intersections to provide information for road users returning to a higher class of roads.

Support:

Guide signs are essential to direct road users along streets and highways, to inform them of intersecting routes, to direct them to cities, towns, villages, or other important destinations, to identify nearby rivers and streams, parks, forests, and historical sites, and generally to give such information as will help them along their way in the most simple, direct manner possible.

Chapter 2A addresses placement, location, and other general criteria for signs.

Guide signs, other than Street Name signs, generally are not used on low-volume rural roads except as needed to guide road users back to the major roadways.

Many roadways within airport facilities (including terminal curbside roadways) would be considered conventional roads because they typically have frequent driveways and at-grade intersections and might have pedestrian activity along and/or across them.

Some airport roadways have full or partial control of access and operating speeds higher than 45 mph and thus would be classified as freeways or expressways for signing purposes (see Chapter 2E). Freeway or expressway conditions typically exist on the approaches to the airport from other highways, on the approaches to access points to terminals, parking, and other patron facilities, and on roadways that provide exits from the airport facility to connect with the local or regional highway network.

Roadways within airports and other similarly contained roadway networks with multiple closely-spaced access points to multiple destinations (such as terminals, parking facilities, rental car facilities, and other airport services) often present challenges for the application of guide signing. Closely spaced signs, excessive sign messaging either co-located or in succession, and the resulting excessive informational load imposed on the road user are of particular concern for such roadways.

An example of major guide signing within an airport facility roadway network is shown in Figure 2D-1.

Figure 2D-1. Example of Guide Signing Within an Airport Facility Roadway Network

NCUTCD generally agrees with Figure 2D-1 as presented in the NPA, but notes the figure title is different in the NPA text as compared to the NPA figures. NCUTCD recommends selecting one of these titles as the final figure title.

Guidance:

If adequate sign spacing cannot be provided due to the site and roadway characteristics of an airport or similar facility, then the speeds of vehicles on the roadway should be reduced to provide road users with adequate time to comprehend and respond, or sign letter heights should be increased, or both.

Where a single terminal serves a large number of airlines, the airline information should be displayed on separate signs that appear in sequence to limit the number of airlines displayed on a single sign or at a single location. Changeable message signs (see Chapter 2L) should not be used to rotate the display airlines to an approaching road user.

Section 2D.02 Comments: NCUTCD agrees with 2D.02 as presented in the NPA.

Section 2D.02 Color, Retroreflection, and Illumination

151 Support:

Requirements for illumination, retroreflection, and color are stated under the specific headings for individual guide signs or groups of signs. General provisions are given in Sections 2A.07, 2A.08, and 2A.10.

155 Standard:

Except where otherwise provided in this Manual for individual signs or groups of signs, guide signs on streets and highways shall have a white message and border on a green background. All messages, borders, and legends shall be retroreflective and all backgrounds shall be retroreflective or illuminated.

Support:

Color coding is sometimes used to help road users distinguish between multiple potentially confusing destinations. Examples of valuable uses of color coding include guide signs for roadways approaching or inside an airport property with multiple terminals serving multiple airlines, and community wayfinding guide signs for various traffic generator destinations within a community or area.

Standard:

Except where otherwise provided in this Manual, different color sign backgrounds shall not be used to provide color coding of destinations. The color coding shall be accomplished by the use of different colored square or rectangular sign panels on the face of the guide signs.

Option:

The different colored sign panels on the face of a sign may include a black or white (whichever provides the better contrast with the panel color) letter, numeral, or other appropriate designation to identify an airport terminal or other destination.

173 Support:

Examples of color-coded signs are shown in Figure <u>2D-2</u>. Section <u>2D.55</u> contains specific provisions regarding Community Wayfinding guide signs.

	Figure 2D-2. Examples of Color-Coded Destination Guide Signs
Section	n 2D.03 Comments: NCUTCD agrees with 2D.03 as presented in the NPA.
Section	n 2D.03 Size of Signs
Standa	rd:
	cept as provided in Section 2A.11, the sizes of conventional road guide signs that have rdized designs shall be as shown in Table 2D-1.
Suppor	t:
Sec Option:	etion 2A.11 contains information regarding the applicability of the various columns in Table 2D
•	ns larger than those shown in Table 2D-1 may be used (see Section 2A.11).
	Table 2D-1. Conventional Road Guide Sign Sizes
NCUT	CD generally agrees with Table 2D-1 as presented in the NPA, but notes the table title
	nt in the NPA text as compared to the NPA tables. NCUTCD recommends selecting on e titles as the final table title.
Suppor	t:
The sig	other guide signs, the legends are so variable that a standardized design or size is not appropriant is determined primarily by the length of the message, and the size of lettering and spacinary for proper legibility.
Option:	
	duced letter height, reduced interline spacing, and reduced edge spacing may be used on guide sign size must be limited by factors such as lane width or vertical or lateral clearance.
Guidan	ce:
reducin meet un the prin	duced spacing between the letters or words on a line of legend should not be used as a means of the overall size of a guide sign, except where determined necessary by engineering judgment thusual lateral space constraints. In such cases, the legibility distance of the sign legend should mary consideration in determining whether to reduce the spacing between the letters or the workeen the words and the sign border, or to reduce the letter height.
	en a reduction in the prescribed size is necessary, the design used should be as similar as poss lesign for the standard size.
Section	n 2D.04 Comments: NCUTCD agrees with 2D.04 as presented in the NPA.
Castia	n 2D.04 Lettering Style

The design of upper-case letters, lower-case letters, numerals, route shields, and spacing shall be as provided in the "Standard Highway Signs" <u>publication</u> (see Section 1A.11).

The lettering for names of places, streets, and highways on conventional road guide signs shall be a combination of lower-case letters with initial upper-case letters (see Section 2A.13). The nominal loop height of the lower-case letters shall be 3/4 the height of the initial upper-case letter. When a mixed-case legend letter height is specified referring only to the initial upper-case letter, the height of the lower-case letters that follow shall be determined by this proportion. When the height of a lower-case letter is referenced, the reference is made to the nominal loop height. The height of the initial upper-case letter shall also be determined by this proportion.

All other word legends on conventional road guide signs shall be in upper-case letters.

The unique letter forms for each of the Standard Alphabet series shall not be stretched, compressed, warped, or otherwise manipulated. Modifications to the length of a word for a given letter height and series shall be accomplished only by the methods described in Section 2D.03

Section 2D.05 Comments: NCUTCD recommends revising 2D.05 by removing all references to lower-case letter height and instead refer solely to upper case or mixed case letter height. Although Section 2D.04 discusses the concept of loop height and its relationship to upper case height, and sign fabricators decades ago specified lower case letters by loop height, current electronic sign design practice uses only the upper case letter height to correctly select the letter size for all text, similar to nearly all other instances of text selection in computer software (including the one being used to type this comment). Also, the MUTCD specifies shorter upper case letter heights for letters following the initial letter in cardinal direction legends, which may be conditioning some sign designers to also think that the text size must be changed in a similar manner for mixed case text. Retaining the obsolete practice of specifying lower-case text height separately results in some sign designers thinking they need to change the text height for lower case text in the sign software during layout similar as to what is expected for cardinal directions, apparently not understanding the lower case height is a loop height. This then creates a sign with lower case legend that is too small, which greatly reduces legibility and no longer meets MUTCD Standards.

Section 2D.05 Size of Lettering

Support:

Sign legibility is a direct function of letter size and spacing. Legibility distance has to be sufficient to give road users enough time to read and comprehend the sign. Under optimum conditions, a guide sign message can be read and understood in a brief glance. The legibility distance takes into account factors such as inattention, blocking of view by other vehicles, unfavorable weather, inferior eyesight, or other causes for delayed or slow reading. Where conditions permit, repetition of guide information on successive signs gives the road user more than one opportunity to obtain the information needed.

Standard:

Design layouts for conventional road guide signs showing interline spacing, edge spacing, and other specification details shall be as shown in the "Standard Highway Signs" <u>publication</u> (see Section 1A.11).

Except as otherwise provided in this Manual, the principal legend on <u>post-mounted</u> guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, <u>or have a leading upper-case letter height of at least a combination of 6 inches in height for <u>mixed-case</u></u>

letters. upper-case letters and 4.5 inches in height (see Section 2D.04) for lower-case letters. On low-volume roads with speeds of 25 mph or less, and on urban streets with speeds of 25 mph or less, the principal legend on post-mounted guide signs shall be in letters at least 4 inches in height for all upper-case letters, or have a leading upper-case letter height of at least a combination of 4 inches in height for mixed case letters. upper-case letters and 3 inches in height for lower-case letters.

The principal legend on overhead guide signs shall be in letters and numerals at least 12 inches in height for all upper-case letters, or have a leading upper-case letter height of at least a combination of 12 inches in height for mixed-case letters upper-case letters and 9 inches in height (see Section 2D.04) for lower-case letters.

Option:

On conventional roadways with speed limits of 40 miles per hour or less, overhead guides sign destinations may have a leading upper-case letter height of use an upper case letter at least 10.67 inches in height for mixed case letters. followed by lower case letters 8 inches in height.

Guidance:

Lettering sizes should be consistent on any particular class of highway.

The minimum lettering <u>and numeral</u> sizes provided in this Manual <u>(see Table 2D-2)</u> should be exceeded where conditions indicate a need for greater legibility.

NCUTCD generally agrees with Table 2D-2 as presented in the NPA, but recommends revising as follows:

- Revise the title to add "Recommended" at the beginning and change "by Roadway Type" to "According to Speed", as speed is now a primary criterion used for selecting letter height
- Delete all rows and references to "Following Lower Case Letters or Ordinals", as this has been misinterpreted as specifying a smaller ascender height for lower case text, not as a loop height, regardless of the footnote (see comments on Section 2D.05)
- On Sheet 2, section A, for names of destinations or roads, revise the upper case letter height for overhead signs from 13.33" to 10.67" in accordance with Section 2D.05
- Delete the footnote on lower case loop height, as the rows it references for lower case height are deleted

Table 2D-2. Recommended Minimum Letter and Numeral Sizes for Conventional Road Guide Signs According to Speed by Roadway Type

Table 2D-2. Recommended Minimum Letter and Numeral Sizes for Conventional Road Guide Signs According to Speed* (Sheet 1 of 2)

A - Post-Mounted Signs

		Single-Lane		Multi-Lane		
Type of Sign	Less than 30 mph	30-40 mph	Greater than 40 mph	Less than 30 mph	30-40 mph	Greater than 40 mph
A. Intersection or Interchan			d Entrance Dire	ection Guide 9	Signs	
Interstate, U.S., State, or Off-Interst	ate Business Rout	te Signs				
Numerals	9	12	18	12	12	18
1- or 2-Digit Shields	18 x 18	24 x 24	36 x 36	24 x 24	24 x 24	36 x 36
3-Digit Shields	22.5 x 18	30 x 24	45 x 36	30 x 24	30 x 24	45 x 36
County Route Signs						
Numerals	9	12	18	12	12	18
1-, 2-, or 3-Digit Shields	18 x 18	24 x 24	36 x 36	24 x 24	24 x 24	36 x 36
U.S. or State Route Text Identificati	on (Examples: U S	56, Md 2)				
Numerals & Letters	8	12	15	10	12	15
Cardinal Directions (North, South,	EAST, WEST)					
First Letter - Upper-Case	6	8	10	8	8	10
Rest of Word - Upper-Case	5	6	8	6	6	8
Auxiliary and Alternative Route Leg	ends (Examples: J	CT, TO, ALT, BUS				
Words - Upper-Case	5	6	8	6	6	8
Names of Destinations or Roads (E	xamples: Springfie	ld, Main St, 2nd A	ve)			
Leading Upper-Case Letter or Numerals	6	8	10.67	8	10.67	13.33
Following Lower-Case Letters or Ordinals**	4.5	6	8	6	8	10
Distance or Action Messages (Exan	nples: 2 MILES, 1/	2 MILE, KEEP RIG	HT)			
Distance Numerals	6	6	8	6	8	10
Distance Fraction Numerals	4.5	4.5	6	4.5	6	8
Distance Words - Upper-Case	4.5	4.5	6	4.5	6	8
Action Message Words - Upper-Case	6	6	8	6	8	10
B. Destination and Other Gu	iide Signs					•
Names of Destinations or Roads (E	xamples: Springfie	ld, Main St, 2nd A	ve)			
Leading Upper-Case Letter or Numerals	4	6	8	6	8	10.67
Following Lower Case Letters or Ordinals**	3	4.5	6	4.5	6	8
Distance or Action Messages (Examples: 2 MILES, 1/2 MILE, KEEP RIGHT)						
Distance Numerals	5	6	8	5	6	8
Distance Fraction Numerals	4	4.5	6	4	4.5	6
Distance Words - Upper-Case	4	4.5	6	4	4.5	6
Action Message Words - Upper-Case	5	6	8	6	6	8

^{*} Except as provided otherwise in this Manual

Notes

- 1. Sizes are shown in inches and where applicable are shown as width x height
- 2. For Street Name (D3-1 Series) signs, see Table 2D-5

^{**} Lower-case letter height (loop height) is determined by the initial upper-case letter height (see Sec. 2A.08)

Table 2D-2. Recommended Minimum Letter and Numeral Sizes for Conventional Road Guide Signs According to Speed* (Sheet 2 of 2) B - Overhead-Mounted Signs

Type of Sign	Less than 35 mph	35-55 mph	Greater than 55 mph
	ge Advance Guide Signs and	d Entrance Direction Gui	de Signs
Interstate, U.S., State, or Off-Interst	ate Business Route Signs		
Numerals	9	12	18
1- or 2-Digit Shields	18 x 18	24 x 24	36 x 36
3-Digit Shields	22.5 x 18	30 x 24	45 x 36
County Route Signs			
Numerals	9	12	18
1-, 2-, or 3-Digit Shields	18 x 18	24 x 24	36 x 36
J.S. or State Route Text Identification	on (Examples: U.S. 56, Md 2)		
Numerals & Letters	8	12	15
Cardinal Directions (NORTH, SOUTH,	EAST, WEST)		
First Letter - Upper-Case	6	8	12
Rest of Word - Upper-Case	5	6	10
Auxiliary and Alternative Route Lege	ends (Examples: JCT, TO, ALT, BUS	SINESS)	
Words - Upper-Case	5	6	10
Names of Destinations or Roads (Ex	kamples: Springfield, Main St, 2nd A	ve)	<u>. </u>
Leading Upper-Case Letter or Numerals	6	8	10.67 15.53 (min.) 16 (des.)
Following Lower Case Letters or Ordinals**	4.5	6	10 (min.) 12 (des.)
Distance or Action Messages (Exam	ples: 2 MILES, $\frac{1}{2}$ MILE, KEEP RIG	GHT)	
Distance Numerals	6	6	12 (min.) 15 (des.)
Distance Fraction Numerals	4.5	4.5	10 (min.) 12 (des.)
Distance Words - Upper-Case	4.5	4.5	10 (min.) 12 (des.)
Action Message Words - Upper-Case	6	6	12 (min.) 15 (des.)
3. Destination and Other Gu	iide Signs		•
Names of Destinations or Roads (Ex	kamples: Springfield, Main St, 2nd A	ve)	
Leading Upper-Case Letter or Numerals	6	8	13.33 (min.) 16 (des.)
Following Lower Case Letters or Ordinals**	4.5	6	10 (min.) 12 (des.)
Distance or Action Messages (Exam	ples: 2 MILES, 1/2 MILE, KEEP RIG	GHT)	•
Distance Numerals	6	6	12 (min.) 15 (des.)
Distance Fraction Numerals	4.5	4.5	10 (min.) 12 (des.)
Distance Words - Upper-Case	4.5	4.5	10 (min.) 12 (des.)
Action Message Words - Upper-Case	6	6	12 (min.) 15 (des.)

^{*} Except as provided otherwise in this Manual

Notes

- 1. Sizes are shown in inches and where applicable are shown as width \boldsymbol{x} height
- 2. For Street Name (D3-1 Series) signs, see Table 2D-5

^{**} Lower-case letter height (loop height) is determined by the initial upper-case letter height (see Sec. 2A.08)

Section 2D.06 Amount of Legend

Support:

The longer the legend on a guide sign, the longer it will take road users to <u>recognize and</u> comprehend it, regardless of letter size.

Guidance:

Except where otherwise provided in this Manual, guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions. Where two or more signs are included in the same overhead display, the amount of legend should be further minimized. Where appropriate, a distance message or action information, such as an exit number, NEXT RIGHT, or directional arrows, should be provided on guide signs in addition to the destinations.

Section 2D.07 Comments: NCUTCD generally agrees with 2D.07 as presented in the NPA, but recommends revising "apparent complexity" to "reading time" for clarity, and revising table references (see comments on Table 2D-3).

Section 2D.07 Abbreviations

Support:

The use of commonly recognized abbreviations for certain words can be useful in reducing the apparent complexity reading time of a sign message. Descriptors and directional or quadrant orientations for street names and destinations, such as Boulevard (Blvd), North (N), and Southwest (SW), are some examples of commonly recognized abbreviations. Examples of the use of abbreviations are shown in Figure 2D 3 1D-1.

Figure 2D-3. Examples of the Use of Abbreviations

NCUTCD generally agrees with Figure 2D-3 as presented in the NPA, but notes the figure title is different in the NPA text as compared to the NPA figures. NCUTCD recommends selecting one of these titles as the final figure title.

Standard:

The words NORTH, SOUTH, EAST, and WEST shall not be abbreviated when used to indicate cardinal directions of numbered or named highways on guide signs.

Guidance:

Abbreviations should be kept to a minimum; however, they are useful when complete destination messages produce excessively long signs. If used, abbreviations should be unmistakably recognized by road users (see Section 1A.15). Longer commonly used words that are not part of a proper name and are readily recognizable, such as street name descriptors (Street, Boulevard, Avenue, etc.), should be abbreviated as provided in Table 2D-3 1D-1 (combine with Table 1D-1) to expedite recognition of the sign legend by reducing the amount and complexity of the legend. Shorter street name descriptors should not be abbreviated (see Table 2D-41D-3). (reference Table 1D-3)

Periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens should not be used in abbreviations, unless necessary to avoid confusion.

Table 2D-3. Acceptable Abbreviations for Street Name Descriptors NCUTCD recommends deleting Table 2D-3, combining its content with Table 1D-1, and changing all references to Table 1D-1. As part of this consolidation, NCUTCD recommends adding "Cr" to Table 1D-1 for Crossing.

Table 2D-3. Acceptable Abbreviations for Street Name Descriptors

Descriptor	Standard Abbreviation	Descriptor	Standard Abbreviation
Avenue	Ave	Northwest	NW
Boulevard	Blvd	Parkway	Pkwy
Bypass	Вур	Place	PI
Causeway	Cswy	Plaza	Plz
Circle	O'r	Road	Rd
Corner	Cor	Route	Rte
Court	Ct	South	S*
Crescent	Cres	outheast	SE*
Drive	Dr	couthwest	SW*
East	E*	Square	Sq
Expressway	Ехру	Street	St
Extension	_xt	Terrace	Ter
Freeway	Fwy	Thruway	Thwy
Highway	Hwy	Trafficway	Trfwy
Lane	La, Ln	Trail	Tr
Landing	Lndg	Turnpike	Трк
North	N*	West	W*
N rtheast	NE*		

^{*} For pre- or post-directional desginations or cardinal orientations, such as E Main St or 3rd St SW.

GMI Comments: Add Alt for Alternate, CR for crossing. Merge this Table with Table 1D-1. For the descriptor of Avenue, allow the abbreviation option of either Ave or Av.

Table 2D-4. Street Name Descriptors Not Acceptable for Abbreviation

Table 2D-4. Street Name Descriptors Not Acceptable for Abbreviation

Descriptor	Descriptor
Alley	Oval
Belt	Pass
Beltway	Passage
Close	Path
Cove	Kidge
Edge	Now
Gate	Run
Green	Trace
Grove	Turn
Hill	View
Loop	Vista
Mews	Walk

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369 Section 2D.08 Arrows

370 Support:

Arrows are used for lane assignment and to indicate the direction toward designated routes or destinations. Figure 2D-4 shows the various standard arrow designs that have been approved for use on guide signs. Detailed drawings and standardized sizes based on ranges of letter heights are shown for these arrows in the "Standard Highway Signs" publication (see Section 1A.11).

Section 2D.08 Comments: NCUTCD generally agrees with 2D.08 as presented in the NPA, but

recommends the term "circular intersection" be changed to "roundabout" to clarify the

375 Standard:

appropriate use of the Type E arrow.

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On overhead signs where it is desirable to indicate a lane to be followed, a down arrow shall be positioned over the approximate center of the lane and shall point vertically downward toward the approximate center of that lane. Down arrows shall be used only on overhead guide signs that restrict the use of specific lanes to traffic bound for the destination(s) and/or route(s) indicated by these arrows. Down arrows shall not be used unless an arrow can be located over and pointed to the approximate center of each lane that can be used to reach the destination displayed on the sign.

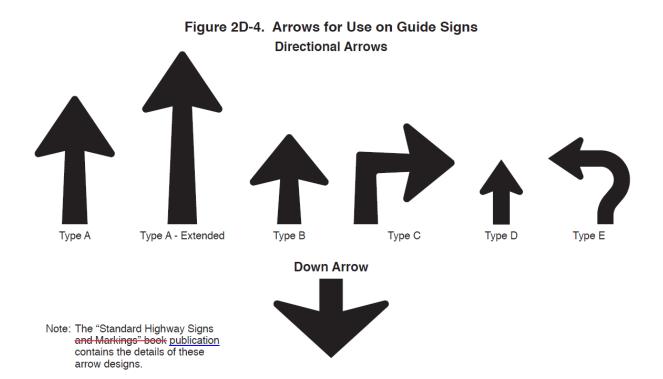
If down arrows are used, having more than one down arrow pointing to the same lane on a single overhead sign (or on multiple signs on the same overhead sign structure) shall not be permitted.

Where a roadway is leaving the through lanes, a directional arrow shall point upward at an angle that approximates the alignment of the exit roadway in the vicinity of the point of departure.

The Type E directional arrow for roundabouts circular intersections shall not be used on any sign that is not associated with a roundabout circular intersection.

Figure 2D-4. Arrows for Use on Guide Signs

NCUTCD generally agrees with Figure 2D-4 as presented in the NPA, but recommends revising the note to refer to the "Standard Highway Signs publication".



Guidance:

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The Type A directional arrow should be used on guide signs on freeways, expressways, and conventional roads to indicate the direction to a specific destination or group of destinations, except as otherwise provided in this Section and in Section 2E.19.

When a directional arrow in a vertical, upward-pointing orientation is placed to the side of a group of destinations to indicate a through movement, the Type A directional arrow should be used. When a directional arrow in a vertical, upward-pointing orientation is placed to the side of a single destination or under a destination or group of destinations, the Type B directional arrow should be used.

The Type B directional arrow should be used on guide signs on conventional roads when placed at any angle to the side of a single destination or when placed in a horizontal orientation to the side of a group of destinations.

The Type C advance turn directional arrow should be used on conventional road guide signs placed in advance of an intersection where a turn must be made to reach a posted destination or group of destinations.

The Type D directional arrow should be used primarily for sign applications other than guide signs, except as provided in Paragraph <u>15 of this Section</u>.

If the Type E directional arrow is used, the principles set forth in Sections 2D.26 through 2D.29 should be followed.

Option:

The Type A-Extended directional arrow may be used on guide signs where additional emphasis regarding the direction is needed relative to the amount of legend on the sign.

The Type C directional arrow may be used to the side of the legend of an overhead guide sign to accentuate a sharp turn exit maneuver from a mainline roadway (see Section 2E.36 for additional information regarding Exit Direction signs for low advisory ramp speeds).

On conventional roads on the approach to an intersection where the Combination Lane-Use/Destination overhead guide sign (see Section 2D.38) is not used, the Type C advance turn directional arrow may be used beneath the legend of an overhead guide sign to indicate the fact that a turn must be made from a mandatory movement lane over which the sign is placed to reach the destination or destinations displayed on the sign.

The Type D directional arrow may be used on post-mounted guide signs on conventional roads with lower operating speeds if the height of the text on the sign is 8 inches or less.

The Type E directional arrow (see Figure 2D-4) may be used on guide signs on approaches to roundabouts eircular intersections to represent the intended driver paths to destinations involving left-turn movements around the circulatory island.

The directional and down arrows shown in Figure <u>2D-4</u> may be used on signs other than guide signs for the purposes of providing directional guidance and lane assignment.

Guidance:

Arrows used on guide signs to indicate the directions toward designated routes or destinations should be pointed at the appropriate angle to clearly convey the direction to be taken. A horizontally oriented directional arrow design should be used at right-angle intersections.

On a post-mounted guide sign, a directional arrow for a straight-through movement should point upward. Except as provided in Section 2D.<u>50</u>, for a turn, the arrow on a guide sign should point horizontally or at an upward angle that approximates the sharpness of the turn.

At an exit, an arrow should be placed at the side of the sign that will reinforce the movement of exiting traffic. The directional arrow design should be used.

441 Option:

Arrows may be placed below the principal sign legend or on the appropriate side of the legend that is consistent with the direction of the movement.

On a post-mounted sign at an exit where placement of the arrow to the side of the legend farthest from the roadway would create an unusually wide sign that limits the road user's view of the arrow, the directional arrow may be placed at the bottom portion of the sign, centered under the legend.

Guidance:

The width across the arrowhead for the Types A, B, and C directional arrows should be between 1.5 and 1.75 times the height of the upper-case letters of the principal legend on the sign. The width across the arrowhead for the Type D directional arrow should be at least equal to the height of the upper-case letters of the principal legend on the sign. For down arrows used on overhead signs, the width across the arrowhead should be approximately two times the height of the upper-case letters of the principal legend on the sign.

Arrows used in Overhead Arrow-per-Lane and Diagrammatic guide signing, if used on conventional roads, except for signs on approaches to roundabouts, should <u>comply with</u> the <u>provisions of</u> Section 2E.19. Arrows used in Diagrammatic guide signing on approaches to roundabouts should follow the principles set forth in Section 2D.39.

458 Support:

The "Standard Highway Signs" <u>publication</u> (see Section 1A.11) contains design details and standardized sizes of the various arrows based on ranges of letter heights of principal legends.

ROUTE SIGNS AND AUXILIARY PLAQUES

Section 2D.09 Comments: NCUTCD agrees with 2D.09 as presented in the NPA.

Section 2D.09 Numbered Highway Systems

Support:

The purpose of numbering and signing highway systems is to identify routes and facilitate travel.

The Interstate and United States (U.S.) highway systems are numbered by the American Association of State Highway and Transportation Officials (AASHTO) upon recommendations of the State highway organizations because the respective States own these systems. State and county road systems are numbered by the appropriate authorities.

The basic policy for numbering the Interstate and U.S. highway systems is contained in the following Purpose and Policy statements published by AASHTO (see Page i for AASHTO's address):

- A. "Establishment and Development of United States Numbered Highways," and
- B. "Establishment of a Marking System of the Routes Comprising the National System of Interstate and Defense Highways."

478 Guidance:

The principles of these policies should be followed in establishing the highway systems described in Paragraph 2 and any other systems, with effective coordination between adjacent jurisdictions. Care should be taken to avoid the use of numbers or other designations that have been assigned to Interstate, U.S., or State routes in the same geographic area. Overlapping numbered routes should be kept to a minimum.

Standard:

Route systems shall be given preference in this order: Interstate, United States, State, and county. The preference shall be given by installing the highest-priority <u>route number</u> on the top or the left of the sign, except as provided in Paragraph 7.

(Interstate route numbering shall be approved by FHWA. Option:
<u> </u>	The prioritization of route systems may be modified when a different prioritization would better commodate the expectancy of the road user and provide more effective direction, such as for separate ecision points for routes that are encountered in a particular order.
5	Support:
٤	Section 2D. <u>56</u> contains information regarding the signing of unnumbered highways to enhance route guidance and facilitate travel.
_	
\$	Section 2D.10 Comments: NCUTCD agrees with 2D.10 as presented in the NPA.
\$	Section 2D.10 Route Signs and Auxiliary Plaques
5	tandard:
i	Except as provided in Paragraph 9 of Section 2D.29, all numbered highway routes shall be dentified by route signs and auxiliary plaques.
ł	The signs for each system of numbered highways, which are distinctive in shape and color, shall be used only on that system and the approaches thereto.
(Option:
1	Route signs and auxiliary <u>plaques</u> may be proportionally enlarged where greater <u>conspicuity or</u> egibility is needed.
5	Support:
	Route signs are typically mounted in assemblies with auxiliary <u>plaques</u> .
	Section 2D. <u>57</u> contains information regarding the signing for National Scenic Byways.
<u>t</u>	Section 2H.07 contains information regarding the signing <u>for State-designated scenic byways, historic rails, and auto tour routes</u> .
_	
	Section 2D.11 Comments: NCUTCD generally agrees with 2D.11 as presented in the NPA, but
	ecommends adding two instances of "Except as otherwise provided in this Manual" to minimum ign size Standard text, since there are a number of route signs (such as for county highways and
	icycle routes) that use sizes smaller than 24".
	10 10 10 10 10 of that also sizes sinurer than 2 i
•	Section 2D 11 Design of Route Signs
	Section 2D.11 Design of Route Signs
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e	The design of standard route signs shall conform to the designs provided in the "Standard Highway Signs" <u>publication</u> (see Section 1A.11). <u>The design of other route signs shall be stablished by the authority having jurisdiction and shall be in general conformance with the lesigns provided in the "Standard Highway Signs" publication.</u>
-	Interstate Route (M1-1 and M1-1a) signs (see Figure 2D-5) shall consist of a cutout shield, with
t	he route number in white letters on a blue background, the word INTERSTATE in white upper-

case letters on a red background, and a white border. This sign shall be used on all Interstate routes and in connection with route sign assemblies on intersecting highways.

Except as otherwise provided in this Manual, a 24 x 24-inch minimum sign size shall be used for Interstate route numbers with one or two digits, and a 30 x 24-inch minimum sign size shall be used for Interstate route numbers having three digits.

Figure 2D-5. Route Signs

Option:

When the Interstate Route sign is used in a Route Sign assembly (see Section 2D.29), the M1-1a sign, containing the State name in white upper-case letters on a blue background <u>as detailed in the "Standard Highway Signs" publication</u>, may be used in place of the M1-1 sign.

Standard:

Use of the M1-1a sign shall be limited to Route Sign assemblies.

Off-Interstate Business Route (M1-2 and M1-3) signs (see Figure 2D-5) shall consist of a cutout shield displaying the number of the connecting Interstate route and the words BUSINESS and either LOOP (when the route rejoins the same Interstate route) or SPUR (when the route leaves the corresponding Interstate route and does not rejoin) in upper-case letters. The legend and border shall be white on a green background, and the shield shall be the same shape and dimensions as the Interstate Route sign. In no instance shall the word INTERSTATE appear on the Off-Interstate Business Route sign.

Option:

The Off-Interstate Business Route sign may be used on a major highway that is not a part of the Interstate system, but one that serves the business area of a city from an interchange on the system.

Standard:

U.S. Route signs (see Figure <u>2D-5</u>) shall consist of black numerals on a white shield surrounded by a rectangular black background without a border. This sign shall be used on all U.S. routes and in connection with route sign assemblies on intersecting highways.

Except as otherwise provided in this Manual, a A-24 x 24-inch minimum sign size shall be used for U.S. route numbers with one or two digits, and a 30 x 24-inch minimum sign size shall be used for U.S. route numbers having three digits.

State Route signs shall be designed by the individual State highway agencies.

The legend on State Route signs shall conform to the Standard Alphabets contained in the "Standard Highway Signs" publication.

Guidance:

State Route signs (see Figure <u>2D-5</u>) should be rectangular and should be approximately the same size as the U.S. Route sign. State Route signs should also be similar to the U.S. Route sign by containing approximately the same size black numerals on a white area surrounded by a rectangular black background without a border, <u>and should be devoid of complex graphics</u>. The shape of the white area should be circular in the absence of any determination to the contrary by the individual State concerned.

Where U.S. or State Route signs are used as components of guide signs, only the distinctive shape of the shield itself and the route numerals within should be used. The rectangular background upon which the distinctive shape of the shield is mounted, such as the black area around the outside of the shields on the M1-4 and standard M1-5 signs, should not be included on the guide sign. Where U.S. or State Route signs are used as components of other signs of non-contrasting background colors, the rectangular background should be used to so that recognition of the distinctive shape of the shield can be maintained.

Standard:

If county road authorities elect to establish and identify a special system of important county roads, a statewide policy for such signing shall be established that includes a uniform numbering system to uniquely identify each route. The County Route (M1-6) sign (see Figure 2D-5) shall consist of a pentagon shape with a yellow county name and route number and border on a blue background. Except as otherwise provided in this Manual. County Route signs shall be a minimum size of 24 x 24 inches.

If a jurisdiction uses letters instead of numbers to identify routes, all references to numbered routes in this Chapter shall be interpreted to also include lettered routes.

Guidance:

If used with other route signs in common assemblies, the County Route sign should be of a size compatible with that of the other route signs.

Standard:

The design of the National Forest Route (M1-7) sign (see Figure 2D-5) shall be as detailed in the "Standard Highway Signs" publication. Route signs for other park and forest roads shall be designed with an appropriate level of distinctiveness and adequate legibility, but in general compliance with the design principles for route signs and of a size compatible with other route signs used in common assemblies.

Section 2D.12 Comments: NCUTCD generally agrees with 2D.12 as presented in the NPA, with minor editorial revisions.

Section 2D.12 Design of Route Sign Auxiliary Plaques

Standard:

Route sign <u>auxiliary plaques</u> <u>auxiliaries</u> <u>displaying</u> word legends, except the JCT <u>auxiliary plaque</u>, shall have a <u>minimum</u> standard size of 24 x 12 inches. <u>The JCT auxiliary plaque and those auxiliary plaques displaying</u> arrows shall have a <u>minimum</u> standard size of 21 x 15 inches. All route sign <u>auxiliary plaques</u> shall match the color combination of the route sign that they supplement.

Guidance:

The background, legend, and border of a route sign auxiliary <u>plaque</u> should have the same colors as those of the route sign with which the auxiliary plaque is mounted in a route sign assembly (see Section 2D.29). For a route sign design that uses multiple background colors, such as the Interstate route sign, the background color of the corresponding auxiliary plaque should be that of the background area on which the route number is placed on the route sign.

Option:

A route sign and any auxiliary plaques used with it may be combined on a single sign as a guide sign.

Standard:

If a route sign and its auxiliary <u>plaques</u> are combined to form a <u>signal single</u> guide sign, the background color of the sign shall be green and the design shall comply with the basic principles for the design of guide signs. The auxiliary messages shall be white legends placed directly on the green background. Auxiliary plaques shall not be mounted directly to a guide sign or other type of sign.

Support:

Chapter 2F contains information regarding auxiliary plaques for toll highways.

Sec	tion 2D.13 Comments: NCUTCD agrees with 2D.13 as presented in the NPA.
Sec	tion 2D.13 Junction Auxiliary Plaque (M2-1P)
Sta	ndard:
sigr Car inte	The Junction (M2-1) auxiliary <u>plaque</u> (see Figure <u>2D-6</u>) shall <u>display</u> the abbreviated legend I and shall be mounted at the top of an assembly (see Section 2D.30) directly above the route at the sign for an alternative route (see Section 2D.17) that is part of the route designation, or the redinal Direction auxiliary <u>plaque</u> where access is available only to one direction of the ersected route. The minimum size of the Junction auxiliary <u>plaque</u> shall be 21 x 15 inches for apatibility with auxiliary <u>plaques</u> <u>displaying</u> arrow symbols.
	Figure 2D-6. Route Sign Auxiliaries Auxiliary Plaques
NC	UTCD generally agrees with Figure 2D-6 as presented in the NPA, but recommends revising
	title from "Route Sign Auxiliaries" to "Route Sign Auxiliary Plaques".
Sec	tion 2D.14 Comments: NCUTCD agrees with 2D.14 as presented in the NPA.
Sec	tion 2D.14 Combination Junction Sign (M2-2)
Opt	ion:
join	As an alternative to the standard Junction assembly where more than one route is to be intersected or ed, a rectangular guide sign may be used <u>displaying</u> the word JUNCTION above the route numbers.
Sta	ndard:
whi	The Combination Junction (M2-2) sign (see Figure $\underline{2D-6}$) shall have a green background with te border and lettering for the word JUNCTION.
Gui	dance:
reg	The Combination Junction sign should comply with the specific provisions of Section 2D.11 arding the incorporation of the route signs as components of guide signs.
	Although the size of the Combination Junction sign will depend on the number of routes involved, the
	nerals should be large enough for clear legibility and should be of a size comparable with those in the
indi	vidual route signs.
~	
Sec	tion 2D.15 Comments: NCUTCD agrees with 2D.15 as presented in the NPA.
Can	tion 2D.15 Cardinal Direction Auxiliary Plaques (M3-1P through M3-4P)

Caro	2:
	inal Direction auxiliary <u>plaques</u> (see Figure <u>2D-6)</u> <u>displaying</u> the legend NORTH, EAST, or WEST should be used to indicate the general direction of the entire route.
Standar	1:
cardinal If us	nprove the readability and recognition of the cardinal directions, the first letter of the direction words shall be ten percent larger, rounded up to the nearest whole number size. ed, the Cardinal Direction auxiliary <u>plaque</u> shall be mounted directly above a route sign or an auxiliary <u>plaque</u> for an alternative route.
Section	2D.16 Comments: NCUTCD agrees with 2D.16 as presented in the NPA.
	2D.16 Auxiliary Plaque for Alternative Routes (M4-1P through M4-4P)
Option:	
	liary <u>plaques</u> , <u>displaying</u> legends such as ALTERNATE, BY-PASS, BUSINESS, or TRUCK, sed to indicate an alternate route of the same number between two points on that route.
Standar	1:
If us sign.	ed, the auxiliary <u>plaques</u> for alternative routes shall be mounted directly above a route
Section	2D.17 Comments: NCUTCD agrees with 2D.17 as presented in the NPA.
C4.	2D 17 AT TERMATE A
	2D.17 ALTERNATE Auxiliary Plaques (M4-1P, M4-1aP)
Option:	
Option:	ALTERNATE (M4-1 \underline{P}) or the ALT (M4-1a \underline{P}) auxiliary plaque (see Figure 2D-6) may be used to an officially designated alternate routing of a numbered route between two points on that route.
Option: The A indicate a Standard If us	ALTERNATE (M4-1 \underline{P}) or the ALT (M4-1a \underline{P}) auxiliary plaque (see Figure 2D-6) may be used to an officially designated alternate routing of a numbered route between two points on that route.
Option: The A indicate a Standard If us sign. The	ALTERNATE (M4-1 <u>P</u>) or the ALT (M4-1a <u>P</u>) auxiliary plaque (see Figure 2D-6) may be used to an officially designated alternate routing of a numbered route between two points on that route. d: ed, the ALTERNATE or ALT auxiliary <u>plaque</u> shall be mounted directly above a route M4-1P Series plaques shall not be used to sign an alternative routing that is not officially
Option: The aindicate a Standard If us sign. The designat	ALTERNATE (M4-1 <u>P</u>) or the ALT (M4-1a <u>P</u>) auxiliary plaque (see Figure 2D-6) may be used to an officially designated alternate routing of a numbered route between two points on that route. d: ed, the ALTERNATE or ALT auxiliary <u>plaque</u> shall be mounted directly above a route <u>M4-1P Series plaques shall not be used to sign an alternative routing that is not officially ed and incorporated into the numbered highway system, such as alternative routings for</u>
Option: The a indicate a Standard If us sign. The designat	ALTERNATE (M4-1P) or the ALT (M4-1aP) auxiliary plaque (see Figure 2D-6) may be used to an officially designated alternate routing of a numbered route between two points on that route. d: ed, the ALTERNATE or ALT auxiliary plaque shall be mounted directly above a route M4-1P Series plaques shall not be used to sign an alternative routing that is not officially ed and incorporated into the numbered highway system, such as alternative routings for management or emergency detours.

Section 2D.18 Comments: NCUTCD agrees with 2D.18 as presented in the NPA.

Section 2	2D.18 BY-PASS Auxiliary Plaque (M4-2P)
Option:	
branches f	SY-PASS (M4-2 <u>P</u>) auxiliary <u>plaque</u> (see Figure <u>2D-6</u>) may be used to designate a route that from the numbered route through a city, bypasses a part of the city or congested area, and e numbered route beyond the city.
Standard	:
If use	d, the BY-PASS auxiliary <u>plaque</u> shall be mounted directly above a route sign.
Section 2	2D.19 Comments: NCUTCD agrees with 2D.19 as presented in the NPA.
Cartion 1	DD 10 DUCINIECS Assertions Diagna (MA 2D)
	2D.19 BUSINESS Auxiliary Plaque (M4-3P)
Option:	NICRIECC (MA 2D)'I'
route that	BUSINESS (M4-3 \underline{P}) auxiliary <u>plaque</u> (see Figure <u>2D-6</u>) may be used to designate an alternate branches from a numbered route, passes through the business portion of a city, and rejoins the route beyond that area.
Standard	:
If use	d, the BUSINESS auxiliary plaque shall be mounted directly above a route sign.
Section 2	2D.20 Comments: NCUTCD agrees with 2D.20 as presented in the NPA.
	2D.20 TRUCK Auxiliary Plaque (M4-4P)
Option:	
that branc	RUCK (M4-4 <u>P</u>) auxiliary <u>plaque</u> (see Figure <u>2D-6</u>) may be used to designate an alternate route hes from a numbered route, when it is desirable to encourage or require commercial vehicles to ternate route.
Standard	
	d, the TRUCK auxiliary <u>plaque</u> shall be mounted directly above a route sign.
	u, the TROCK auxiliary <u>praque</u> shan be mounted unfectly above a foute sign.
Section 2	2D.21 Comments: NCUTCD agrees with 2D.21 as presented in the NPA.
Section 2	2D.21 TO Auxiliary Plaque (M4-5P)
Option:	v 1 /
•	O (M4-5P) auxiliary plaque (see Figure 2D-6) may be used to provide directional guidance to
	road facility from other highways in the vicinity (see Section 2D 34)

735 Standard: 736 If used, the TO auxiliary plaque shall be mounted directly above a route sign or an auxiliary 737 plaque for an alternative route. If a Cardinal Direction auxiliary plaque is also included in the 738 assembly, the TO auxiliary plaque shall be mounted directly above the Cardinal Direction auxiliary 739 plaque. 740 741 742 **Section 2D.22 Comments:** NCUTCD agrees with 2D.22 as presented in the NPA. 743 744 Section 2D.22 END Auxiliary Plaque (M4-6P) 745 Guidance: 746 The END (M4-6P) auxiliary plaque (see Figure 2D-6) should be used where the route being traveled 747 ends, usually at a junction with another route. 748 Standard: 749 If used, the END auxiliary plaque shall be mounted either directly above a route sign or above a sign for an alternative route that is part of the designation of the route being terminated. 750 751 752 753 **Section 2D.23 Comments:** NCUTCD agrees with 2D.23 as presented in the NPA. 754 755 Section 2D.23 BEGIN Auxiliary Plaque (M4-14P) 756 Option: 757 The BEGIN (M4-14P) auxiliary plaque (see Figure 2D-6) may be used where a route begins, usually 758 at a junction with another route. 759 Standard: 760 If used, the BEGIN auxiliary plaque shall be mounted at the top of the first Confirming 761 assembly (see Section 2D.33) for the route that is beginning. 762 Guidance: 763 If a BEGIN auxiliary plaque is included in the first Confirming assembly, a Cardinal Direction 764 auxiliary plaque should also be included in the assembly. Standard: 765 766 If a Cardinal Direction auxiliary plaque is also included in the assembly, the BEGIN auxiliary 767 plaque shall be mounted directly above the Cardinal Direction auxiliary plaque. 768 769 770 Section 2D.24 Comments: NCUTCD agrees with 2D.24 as presented in the NPA. 771 772 **Section 2D.24 TEMPORARY Auxiliary Plaques (M4-7P, M4-7aP)** 773 Option:

774 The TEMPORARY (M4-7P) or the TEMP (M4-7aP) auxiliary plaque (see Figure 2D-6) may be used 775 for an interim period to designate a section of highway that is not planned as a permanent part of a 776 numbered route, but that connects completed portions of that route. 777 **Standard:** 778 If used, the TEMPORARY or TEMP auxiliary plaque shall be mounted directly above the 779 route sign, above a Cardinal Direction auxiliary plaque, or above an auxiliary plaque for an 780 alternate route that is a part of the route designation. 781 TEMPORARY or TEMP auxiliary plaques shall be promptly removed when the temporary 782 route is abandoned. 783 784 785 Section 2D.25 Comments: NCUTCD agrees with 2D.25 as presented in the NPA. 786 787 Section 2D.25 Temporary Detour Signs and Auxiliary Plaques 788 Support: 789 Chapter 6F contains information regarding Temporary Detour signs and Auxiliary plaques. 790 791 792 Section 2D.26 Comments: NCUTCD generally agrees with 2D.26 as presented in the NPA, but 793 recommends the term "circular intersection" be changed to "roundabout" to clarify the 794 appropriate use of the M5-3 plaque. 795 796 Section 2D.26 Advance Turn Arrow Auxiliary Plaques (M5-1P, M5-2P, M5-3P) 797 Standard: 798 If used, the Advance Turn Arrow auxiliary plaque (see Figure 2D-7) shall be mounted directly 799 below the route sign in Advance Route Turn assemblies, and shall display a right or left arrow, the 800 shaft of which is bent at a 90-degree angle (M5-1) or at a 45-degree angle (M5-2). 801 If used, the Roundabout Circular Intersection Advance Turn Arrow auxiliary (M5-3P) plaque shall be used only on the approach to a roundabout eircular intersection to depict a movement 802 803 along the circulatory roadway around the central island and to the left, relative to the approach 804 roadway and entry into the intersection. 805 Guidance: 806 If the M5-3P plaque is used, then this arrow type should also be used consistently on any regulatory 807 lane-use signs (see Chapter 2B), Destination signs (see Section 2D.36), and pavement markings (see Part 808 3) for a particular destination or movement. 809 810 Figure 2D-7. Advance Turn and Directional Arrow Auxiliary Signs NCUTCD agrees with Figure 2D-7 as presented in the NPA. 811 812

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6	Section 2D.27 Comments: NCUTCD agrees with 2D.27 as presented in the NPA.
7	
}	Section 2D 27 Lone Designation Auxiliany Plagues (M5 4D M5 5D M5 6D)
)	Section 2D.27 Lane Designation Auxiliary Plaques (M5-4P, M5-5P, M5-6P)
	Option:
	A Lane Designation (M5-4 <u>P</u> , M5-5 <u>P</u> , or M5-6 <u>P</u>) auxiliary plaque (see Figure <u>2D-7</u>) may be mounted directly below the route sign in an Advance Route Turn assembly on multi-lane roadways to allow road users to move into the appropriate lane prior to reaching the intersection or interchange.
	Standard:
	If used, the Lane Designation auxiliary <u>plaques</u> shall be used only where the designated lane is a mandatory movement lane and shall be located adjacent to the full-width portion of the mandatory movement lane. The Lane Designation auxiliary <u>plaques</u> shall not be installed adjacent to a through lane in advance of a lane that is being added or along the taper for a lane that is being added.
)	
	Section 2D.28 Comments: NCUTCD generally agrees with 2D.28 as presented in the NPA, but
	recommends the term "circular intersection" be changed to "roundabout" to clarify double-
	headed arrows are prohibited specifically at roundabouts.
	Section 2D.28 Directional Arrow Auxiliary Plaques (M6 Series)
	Standard:
	If used, the Directional Arrow auxiliary plaque (see Figure 2D-7) shall be mounted below the
	route sign and any other auxiliary plaques in Directional assemblies (see Section 2D.32), and shall
	display a single- or double-headed arrow pointing in the general direction that the route follows.
	A Directional Arrow auxiliary plaque that displays a double-headed arrow shall not be
	mounted in any Directional assembly in advance of or at a <u>roundabout</u> circular intersection .
	Option:
	The decomposition of the discount among sometimes (MC 2-D) who we have a discount in a Discotional
	The downward pointing diagonal arrow auxiliary (M6-2aP) plaque may be used in a Directional
	assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or
	assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section $2D.\underline{50}$).
	assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section 2D. <u>50</u>). Standard:
	assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section $2D.\underline{50}$).
.7 .8 .9	assembly at the far corner of an intersection to indicate the immediate entry point to a freeway or expressway entrance ramp (see Section 2D. <u>50</u>). Standard: The M6-2aP <u>plaque</u> shall not be used on the approach to or on the near side of an intersection,

Section 2D.29 Comments: NCUTCD generally agrees with 2D.29 as presented in the NPA, but recommends moving Guidance language and the reference to Figure 2D-8 to the end of this section since it makes sense to first present the standard case of route sign assemblies in full before presenting the consolidation of such assemblies thereof. NCUTCD also recommends the term "circular intersection" be changed to "roundabout" to clarify the appropriate use of D1-5 and D1-5a signs.

Section 2D.29 Route Sign Assemblies

Standard:

A Route Sign assembly shall consist of a route sign and auxiliary <u>plaques</u> that further identify the route and indicate the direction. <u>Except as provided in Paragraph 9</u>, Route Sign assemblies shall be installed on all approaches to numbered routes that intersect with other numbered routes.

Where two or more routes follow the same section of highway, the route signs for Interstate, U.S., State, and county routes shall be mounted in that order from the left in horizontal arrangements and from the top in vertical arrangements. Subject to this order of precedence, route signs for lower-numbered routes shall be placed at the left or top.

Within groups of assemblies, information for routes intersecting from the left shall be mounted at the left in horizontal arrangements and at the top or center of vertical arrangements. Similarly, information for routes intersecting from the right shall be at the right or bottom, and for straight-through routes at the center in horizontal arrangements or top in vertical arrangements.

Route Sign assemblies shall be mounted in accordance with the general specifications for signs (Chapter 2A), with the lowest sign in the assembly at the height prescribed for single signs.

Guidance:

Assemblies for two or more routes, or for different directions on the same route, should be mounted in groups on a common support.

Where more than four Route signs would be needed in a single Advance Route Turn or Directional assembly, the Route signs should instead be mounted in a Guide sign to minimize the need for repetition of the same information on multiple Cardinal Direction and Directional Arrow auxiliary plaques (see Figure 2D-8).

Figure 2D-8. Example of Consolidation of Directional Assembly into Direction Guide Sign Option:

Route Sign assemblies may be installed on the approaches to numbered routes on unnumbered roads and streets that carry an appreciable amount of traffic destined for the numbered route.

The diagrammatic route guide sign format, such as the D1-5 and D1-5a signs shown in Figure 2D-12, may be used on approaches to roundabout circular intersection.

If engineering judgment indicates that groups of assemblies that include overlapping routes or multiple turns might be confusing, route signs or auxiliary signs may be omitted or combined, provided that clear directions are given to road users.

Route Sign assemblies may be omitted for routes that are part of an agency's internal numbering system, such as for maintenance or other purposes, and are not publicly mapped or intended to be used for navigational purposes by the general public.

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934 Section 2D.31 Advance Route Turn Assembly

935 Standard:

An Advance Route Turn assembly shall consist of a route sign, an Advance Turn Arrow or word message auxiliary <u>plaque</u>, and a Cardinal Direction auxiliary <u>plaque</u>, if needed. It shall be installed in advance of an intersection where a turn must be made to remain on the indicated route.

Option:

The Advance Route Turn assembly may be used to supplement the required Junction assembly in advance of intersecting routes.

Guidance:

Where a multi-lane highway approaches an interchange or intersection with a numbered route, the Advance Route Turn assembly should be used to <u>provide advance notice so that turning vehicles are positioned</u> in the correct lanes from which to make their turn. (editorial - improve readability)

946 Option:947 Lan

Lane Designation auxiliary <u>plaques</u> (see Section 2D.27) may be used in Advance Route Turn Assemblies in place of the Advance Turn Arrow auxiliary <u>plaques</u> where engineering judgment indicates that specific lane information associated with each route is needed and overhead signing is not practical and the designated lane is a mandatory movement lane. An assembly with the Lane Designation auxiliary <u>plaques</u> may supplement or substitute for an assembly with Advance Turn Arrow auxiliary <u>plaques</u>.

952 Guidance:

In low-speed areas, the Advance Route Turn assembly should be installed not less than 200 feet in advance of the turn. In high-speed areas, the Advance Route Turn assembly should be installed not less than 300 feet in advance of the turn. In rural areas, the minimum distance between an Advance Route Turn assembly and either a Destination sign or a Junction assembly should be 200 feet.

Standard:

An assembly that includes an Advance Turn Arrow auxiliary <u>plaque</u> shall not be placed where there is an intersection between it and the designated turn.

Guidance:

Sufficient distance should be allowed between the assembly and any preceding intersection that could be mistaken for the indicated turn.

Section 2D.32 Comments: NCUTCD agrees with 2D.32 as presented in the NPA.

Section 2D.32 Directional Assembly

Standard:

A Directional assembly shall consist of a Cardinal Direction auxiliary <u>plaque</u>, if needed; a route sign; and a Directional Arrow auxiliary <u>plaque</u>. The various uses of Directional assemblies shall be as provided in Items A through D:

- A. Turn movements (indicated in advance by an Advance Route Turn assembly) shall be marked by a Directional assembly with a route sign displaying the number of the turning route and a single-headed arrow pointing in the direction of the turn.
- B. The beginning of a route (indicated in advance by a Junction assembly) shall be marked by a Directional assembly with a route sign displaying the number of that route and a single-headed arrow pointing in the direction of the route.

- C. An intersected route (indicated in advance by a Junction assembly) on a crossroad where the route is designated on both legs shall be designated by:
 - 1. Two Directional assemblies, each with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary <u>plaque</u>, and a single-headed arrow pointing in the direction of movement on that route; or
 - 2. A Directional assembly with a route sign displaying the number of the intersected route and a double-headed arrow, pointing at appropriate angles to the left, right, or ahead.
 - D. An intersected route (indicated in advance by a Junction assembly) on a side road or on a crossroad where the route is designated only on one of the legs shall be designated by a Directional assembly with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary <u>plaque</u>, and a single-headed arrow pointing in the direction of movement on that route.

Guidance:

Straight-through movements should be indicated by a Directional assembly with a route sign displaying the number of the continuing route and a vertical arrow. A Directional assembly should not be used for a straight-through movement in the absence of other assemblies indicating right or left turns, as the Confirming assembly sign beyond the intersection normally provides adequate guidance.

Directional assemblies should be located on the near right corner of the intersection. At major intersections and at Y or offset intersections, additional Directional assemblies should be installed on the far right or left corner to confirm the near-side assemblies. When the near-corner position is not practical for Directional assemblies, the far right corner should be the preferred alternative, with oversized signs, if necessary, for legibility. Where unusual conditions exist, the location of a Directional assembly should be determined by engineering judgment with the goal being to provide the best possible combination of view and safety.

Support:

It is more important that guide signs be readable, and that the information and direction displayed thereon be readily understood, at the appropriate time and place than to be located with absolute uniformity.

Figure <u>2D-9</u> shows typical placements of Directional assemblies.

Section 2D.33 Comments: NCUTCD agrees with 2D.33 as presented in the NPA.

Section 2D.33 Confirming or Reassurance Assemblies

1012 Standard:

If used, Confirming or Reassurance assemblies shall consist of a Cardinal Direction auxiliary <u>plaque</u> and a route sign. Where the Confirming or Reassurance assembly is for an alternative route, the appropriate auxiliary <u>plaque</u> for an alternative route (see Section 2D.16) shall also be included in the assembly.

Guidance:

A Confirming assembly should be installed just beyond intersections of numbered routes. It should be placed 25 to 200 feet beyond the far shoulder or curb line of the intersected highway.

If used, Reassurance assemblies should be installed between intersections in urban areas as needed, and beyond the built-up area of any incorporated city or town.

Route signs for either confirming or reassurance purposes should be spaced at such intervals as necessary to keep road users informed of their routes.

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Section 2D.34 Comments: NCUTCD agrees with 2D.34 as presented in the NPA.

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Section 2D.34 Trailblazer Assembly

1030 Support:

Trailblazer assemblies provide directional guidance to a particular road facility from other highways in the vicinity. This guidance is accomplished by installing Trailblazer assemblies at strategic locations to indicate the direction to the nearest or most convenient point of access. The use of the word TO indicates that the road or street where the sign is posted is not a part of the indicated route, and that a road user is merely being directed progressively to the route.

Standard:

A Trailblazer assembly shall consist of a TO auxiliary plaque (M4-5, see Section 2D.21), a route sign for a numbered or named highway (see Section 2D.56) or an identification sign for a byway, historic trail, or auto tour route sign (see Section 2D.57 and 2D.58), and a single-headed Directional Arrow auxiliary plaque pointing in the direction leading to the route. Where the Trailblazer assembly is for an alternative route, the appropriate auxiliary plaque for an alternative route (see Section 2D.16) shall also be included in the assembly.

Option:

A Cardinal Direction auxiliary <u>plaque</u> (see Section 2D.15) may be used in a Trailblazer assembly where the direction leading to the route provides access only to one direction of travel for that route.

1046 Guidance:

The TO auxiliary <u>plaque</u>, Cardinal Direction auxiliary <u>plaque</u>, and Directional Arrow auxiliary plaque should be of the standard size provided for auxiliary <u>plaques</u> of their respective type. The route sign should be the size provided in Section 2D.11.

1050 Option:

Trailblazer assemblies may be installed with other Route Sign assemblies, or alone, in the immediate vicinity of the designated facilities.

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1054	DESTINATION AND DISTANCE SIGNS
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1056 1057	Section 2D.35 Comments: NCUTCD generally agrees with 2D.35 as presented in the NPA, with minor editorial revisions.
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1059	Section 2D.35 Destination and Distance Signs
1060	Support:
1061 1062 1063	In addition to guidance by route numbers, it is desirable to supply the road user information concerning the destinations that can be reached by way of numbered or unnumbered routes. This is done by means of Destination signs and Distance signs.
1064	Option:
1065 1066	Route shields and cardinal directions may be included on the Destination sign with the destinations and arrows.
1067	Guidance:
1068 1069 1070 1071	If Route shields and cardinal directions are included on a Destination sign, the height of the Route shields should be at least two times the height of the upper-case letters of the principal legend and not less than 18 inches, and the <u>letter height</u> of cardinal directions should be at least the minimum <u>letter</u> height specified for these signs.
1072 1073 1074	If used, destination names <u>on low-volume rural roads</u> should be as specific and descriptive as possible. Destinations such as campgrounds, ranger stations, <u>and</u> recreational areas should be clearly indicated so that they are not interpreted to be communities or locations with road user services.
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1077 1078 1079	Section 2D.36 Comments: NCUTCD generally agrees with 2D.36 as presented in the NPA, with a minor editorial revision.
1079	Section 2D.36 Destination Signs (D1 Series)
1080	Standard:
1081 1082 1083 1084	Except on approaches to interchanges (see Section 2D. <u>49</u>), the Destination (D1-1 through D1-3) sign (see Figure <u>2D-10</u>), if used, shall be a horizontal rectangle displaying the name of a city, town, village, or other traffic generator, and a directional arrow.
1085	Option:
1086 1087 1088 1089 1090	The distance (see Section 2D.43) to the place named may also be displayed on the Destination (D1-1a through D1-3a) sign (see Figure 2D-10). If several destinations are to be displayed at a single point, the several names may be placed on a single sign with an arrow (and the distance, if desired) for each name. If more than one destination lies in the same direction, a single arrow may be used for such a group of destinations.
1091	Guidance:
1092 1093 1094 1095	Adequate separation should be made between any destinations or group of destinations in one direction and those in other directions by suitable design of the arrow, spacing of lines of legend, heavy lines entirely across the sign, or separate signs.

096	Figure 2D-10. Destination and Distance Signs
097	NCUTCD agrees with Figure 2D-10 as presented in the NPA.
098	
099	Support:
100	Separation of destinations by direction by the use of a horizontal separator line can enhance the
101 102	readability of a Destination sign by relating an arrow and its corresponding destination(s) and by eliminating the need for multiple arrows that point in the same direction and excessive space between
102	lines of legend.
104	Standard:
105	Except as otherwise provided in this Manual, an arrow pointing to the right shall be at the
106	extreme right of the sign, and an arrow pointing left or up shall be at the extreme left. The distance
107	numerals, if used, shall be placed to the right of the destination names.
108	Option:
109 110	An arrow pointing up may be placed at the extreme right of the sign when the sign is mounted to the left of the traffic to which it applies.
111	Guidance:
112	Unless a sloping arrow will convey a clearer indication of the direction to be followed, the
113	directional arrows should be horizontal or vertical.
114 115	If several individual name signs are assembled into a group, all signs in the assembly should be of the same horizontal width.
116	Destination signs should be used:
117	A. At the intersections of U.S. or State numbered routes with Interstate, U.S., or State numbered
118	routes; and
119 120	B. At points where they serve to direct traffic from U.S. or State numbered routes to the business section of towns, or to other destinations reached by unnumbered routes.
121	Standard:
122 123 124 125 126	Where a total of three or <u>fewer</u> destinations are <u>displayed</u> on the Advance <u>guide</u> (see Section 2E.33) and Supplemental <u>g</u> uide (see Section 2E.35) signs, no more than three destination names shall be <u>displayed</u> on a Destination sign. Where four destinations are <u>displayed</u> on the Advance <u>guide</u> and Supplemental <u>guide</u> signs, no more than four destination names shall be <u>displayed</u> on a Destination sign.
127	Guidance:
128 129	If space permits, four destinations should be displayed on two separate signs at two separate locations.
130	Option:
131	Where space does not permit, or where all four destinations are in one direction, a single sign may be
132 133	used. Where a single sign is used and all destinations are in the same direction, the arrow may be placed below the destinations for the purpose of enhancing the conspicuity of the arrow.
134	Standard:
135	Where a single four-name sign assembly is used, a heavy line approximating the width of the
136 137	<u>sign border</u> entirely across the sign or separate signs shall be used to separate destinations by direction.
138	Guidance:
139	The closest destination lying straight ahead should be at the top of the sign or assembly, and below it
140	the closest destinations to the left and to the right, in that order. The destination displayed for each

- 1141 direction should ordinarily be the next county seat or the next principal city, rather than a more distant 1142 destination. In the case of overlapping routes, only one destination should be displayed in each direction
- 1143 for each route.

1144 Standard:

> If more than one destination is displayed in the same direction, the name of a nearer destination shall be displayed above the name of a destination that is farther away.

1147

Overhead destination guide signs are sometimes helpful on multi-lane conventional roadways with complex or unusual roadway alignments or geometrics at intersecting highways to provide positive direction to destinations and to assign lanes to be used for destinations. Option:

Overhead signs using the Arrow-Per-Lane sign design configuration (See Figure 2E-35) may be used to provide lane assignments for some or all lane destinations at the approach to a multilane intersection (See Section 2D.37).

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1157 Section 2D.37 Comments: NCUTCD recommends revising 2D.37 to clearly distinguish 1158 between overhead Arrow-Per-Lane signs on freeways and expressways versus signs on 1159 conventional roadways and to note that not all lanes will have arrows, add a reference to Figure 1160

2A-4, and revise "option lane" to "optional movement lane" in the Guidance statement.

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Section 2D.37 Overhead Arrow-Per-Lane Destination Guide Signs

Overhead Arrow-Per-Lane destination guide signs are sometimes used on multi-lane conventional roadways to provide positive direction to destinations and to indicated lanes to be used for those destinations. These locations typically include complex or unusual roadway alignments or geometrics, such as those found at Diverging Diamond Interchanges. Overhead Arrow-Per-Lane signs on conventional roads do not always have arrows for every roadway lane. Unlike the Combined Lane-Use/Destination (D15-1) sign Overhead Arrow-Per-Lane signs can be used to provide lane assignments where the designated lane is not a mandatory movement lane. Figure 2A-4 Sheet 2 shows an example of the use of an Overhead Arrow-Per-Lane Guide sign on a conventional road. Option:

At complex intersection approaches involving multiple lanes and destinations, an Overhead Arrow-Per-Lane guide sign may be used to provide destination information for some or all of the lanes. Destination information may include cardinal direction, route numbers, street names, and/or place names.

As opposed to a the Combination Lane-Use/Destination sign, an the Overhead Arrow-Per-Lane signs may be used to indicate allowable movements from an optional provide lane assignments where the designated lane is not a mandatory movement lane.

1179 Guidance:

1180 Destination information should be kept to a minimum necessary to provide positive guidance without overloading the road user.

1182 Option:

Overhead Arrow-Per-Lane signs may be used on conventional roads to indicate lane assignments for turns that do not include an optional movement lane (See Figure 2D-11).

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Standard:

The height of the straight arrow on an Overhead Arrow-Per-Lane sign use on a conventional road shall be a minimum of 36 inches.

Guidance:

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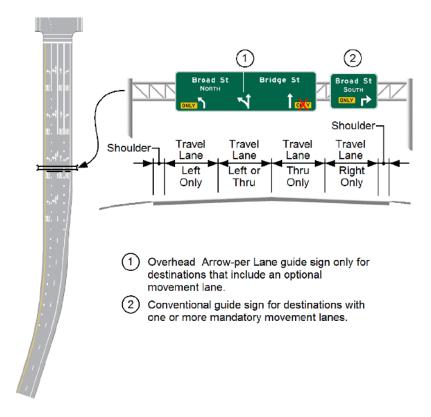
Arrow heights greater than 36 inches should be used on high speed approaches to provide adequate time for road users to enter the proper lane for their destination.

NCUTCD recommends revising Figure 2D-11 as follows:

- Sign #1: remove the black on yellow ONLY plaque, since this is not typically used for the through movement
- Use the figure title as presented in the NPA figures document

Figure 2D-11. Overhead Arrow-Per-Lane Guide Sign for a Multi-Lane Exit with an Option Lane

Figure 2D-11. Example of Overhead Arrow-per-Lane Sign at an Intersection



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Section 2D.38 Comments: NCUTCD generally agrees with 2D.38 as presented in the NPA, but recommends deleting the reference to Figure 2A-5 for the usage of the D15-1 sign. Figure 2A-5 does not provide an example of the usage of D15-1 signs, and there currently is not a Figure for this anywhere in the NPA.

Section 2D.38 Combination Lane-Use/Destination Overhead Guide Sign (D15-1)
Option:

At complex intersection approaches involving multiple turn lanes and destinations, a Combination

At complex intersection approaches involving multiple turn lanes and destinations, a Combination Lane-Use/Destination (D15-1) overhead guide sign that combines a lane-use regulatory sign with destination information such as a cardinal direction, a route number, a street name, and/or a place name may be used.

1213 Support:

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At such locations, the combined information on the D15-1 signs can be even more effective than separate lane-use and guide signs for conveying to unfamiliar drivers which lane or lanes to use for a particular destination.

Figure 2D-<u>10</u> shows an example of a D15-1 sign that combines lane-use and route number information and an example of a D15-1 sign that combines lane-use and street name information. <u>Figure 2A-5 shows an example of the use of the D15-1 sign.</u>

Standard:

The Combination Lane-Use/Destination (D15-1) overhead guide sign shall be used only where the designated lane is a mandatory movement lane. The D15-1 sign shall not be used for lanes with optional movements.

The D15-1 sign shall have a green background with a white border. As shown in Figure 2D-10, the lane-use sign (see Chapter 2B) shall be placed near the bottom of the sign and the destination information shall be placed near the top of the sign. The D15-1 sign shall be located over the approximate center of the lane to which it applies.

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Section 2D.39 Comments: NCUTCD recommends revising 2D.39 to change multiple references of "circular intersection" to "roundabout" since these signs are intended specifically for

roundabouts, and revise "Chapter 3C" to "Chapter 3D" in the last Support statement.

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Section 2D.39 Destination Signs at Roundabouts Circular Intersections

1235 Standard:

Destination signs that are used at <u>roundabouts</u> <u>eireular intersections</u> shall comply with the provisions of Section 2D.36, except as provided in this Section.

1238 Option

Exit destination (D1-1d, D1-1e) signs (see Figure 2D-<u>12</u>) with diagonal upward-pointing arrows or Directional assemblies (see Section 2D.32) may be used to designate a particular exit from a <u>roundabout</u> <u>circular intersection</u>.

<u>Destination</u> (D1-2d, D1-3d) signs (see Figure 2D-<u>12</u>) with curved-stem arrows may be used on approaches to <u>roundabouts</u> <u>eircular intersections</u> to represent the left-turn movements.

Curved-stem arrows on <u>roundabout eircular intersection</u> destination signs may point in diagonal directions to depict the location of an exit relative to the approach roadway and entry into the intersection.

1246	Destination (D1-5 or D1-5a) signs (see Figure 2D-12) with a diagram of the roundabout eircular
1247	intersection may be used on approaches to roundabouts circular intersections.
1248	
1249	NCUTCD generally agrees with Figure 2D-12 as presented in the NPA, but recommends
1250	revising the title from "Destination Signs for Circular Intersections" to "Destination Signs for
1251	Roundabouts" since these signs are intended specifically for roundabouts.
1252	Figure 2D-12. Destination Signs for Roundabouts Circular Intersections
1253	
1254	Guidance:
1255	If curved-stem arrows are used on destination signs, then this arrow type should also be used
1256	consistently on any regulatory lane-use signs (see Chapter 2B), Directional assemblies (see Section
1257	2D.32), and pavement markings (see Part 3) for a particular destination or movement.
1258	Support:
1259	Figure 2D-13 illustrates examples of guide signing for roundabouts eircular intersections.
1260	Diagrammatic guide signs (D1-5 or D1-5a) might be preferable where space is available and where
1261	the geometry of the roundabout circular intersection is non-typical, such as where more than four legs
1262	are present or where the legs are not at approximately 90-degree angles to each other. In such cases,
1263	minimizing the amount of legend for each destination and designing the sign so that the arrows for each
1264	destination clearly align with the roadway geometry will aid road user understanding of the sign and
1265	navigation through the area.
1266	Standard:
1267	If used, diagrammatic guide signs for roundabouts eircular intersections shall not depict the
1268	number of lanes within the intersection's circulatory roadway, or on its approaches or exits,
1269	through the use of lane lines, multiple arrow shafts for the same movement, or other methods.
1270	Support:
1271	Chapter 2B contains information regarding regulatory signs at roundabouts eircular intersections.
1272	Chapter 2C contains information regarding warning signs at roundabouts eircular intersections, and

Chapter 3C 3D contains information regarding pavement markings at roundabouts eireular

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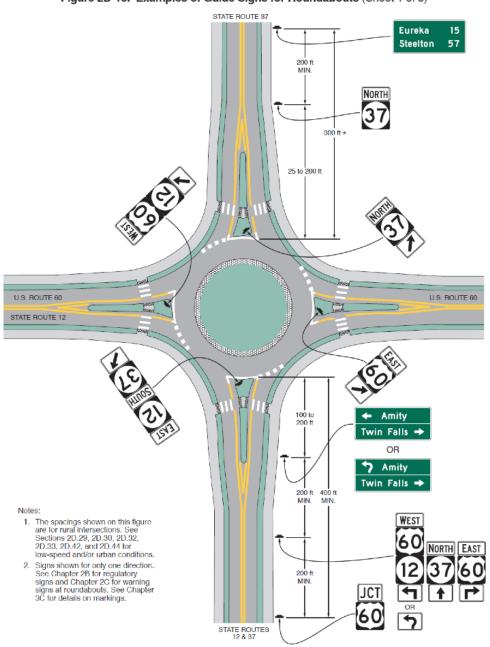
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intersections.

Figure 2D-13. Examples of Guide Signs for Roundabouts

Figure 2D-13. Examples of Guide Signs for Roundabouts (Sheet 1 of 3)



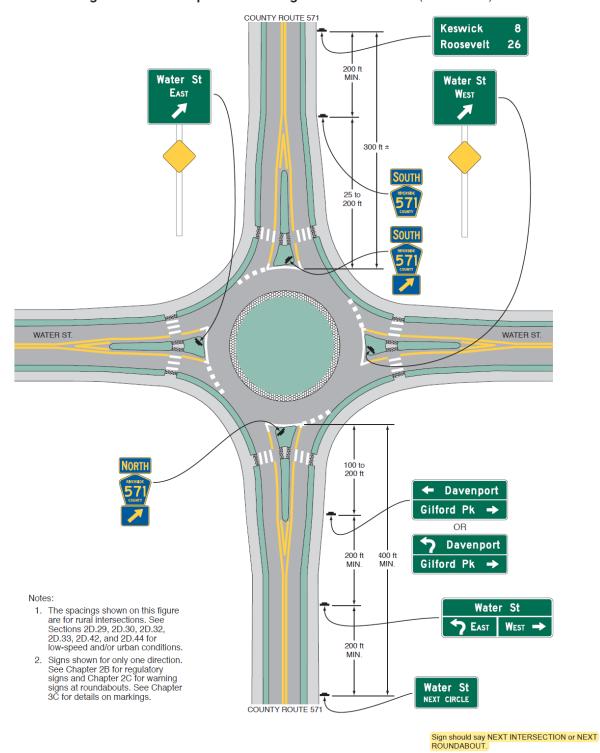


Figure 2D-13. Examples of Guide Signs for Roundabouts (Sheet 2 of 3)

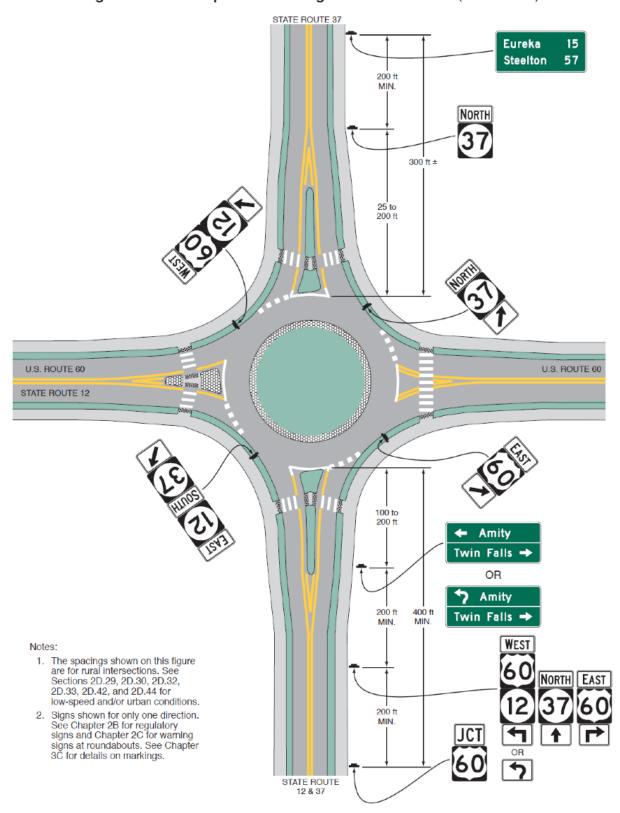


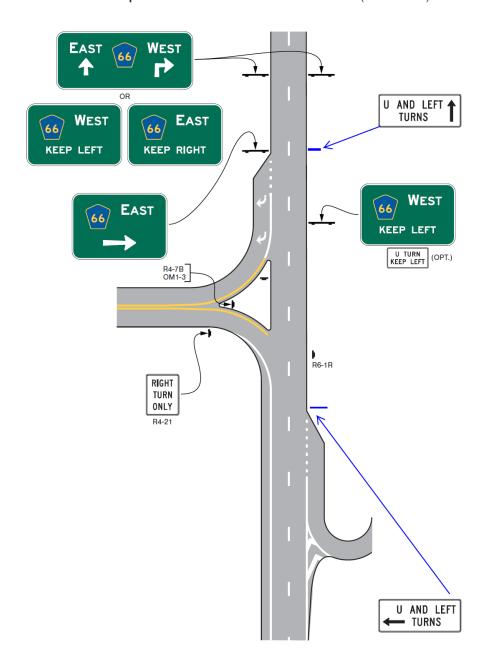
Figure 2D-13. Examples of Guide Signs for Roundabouts (Sheet 3 of 3)

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1290 1291 1292 1293 1294	Section 2D.40 Comments: NCUTCD recommends revising 2D.40 to restore the Option statement from the 2009 MUTCD referencing engineering judgment on guide signing at jughandles. There are many areas of the US where jughandles are not common, and diagrammatic signs have been used to help educate drivers and help them turn at the correct location. NCUTCD also recommends correcting the figure reference from 2B-5 to 2B-9.
1295	
1296	Section 2D.40 Destination Signs at Jughandles
1297	Standard:
1298	Destination signs that are used at jughandles shall comply with the provisions of Section 2D.36
1299 1300 1301 1302 1303 1304 1305	Option: If engineering judgment indicates that standard destination signs alone are insufficient to direct road users to their destinations at a jughandle, a diagrammatic guide sign depicting the appropriate geometry may be used to supplement the normal destination signs. Support: Section 2B.36 contains information regarding regulatory signs for jughandle turns. Figure 2B-59 shows examples of regulatory and destination guide signing for various types of jughandle turns.
1307 1308 1309	Section 2D.41 Comments: NCUTCD generally agrees with 2D.41 as presented in the NPA, with minor editorial revisions.
1310	
1311	Section 2D.41 Destination Signs at Intersections with Indirect Turning Movements
1312	Guidance:
1313 1314	A system of guides signs along with associated lane markings should be used to direct traffic through intersections with indirect turning movements.
1315	Support:
1316 1317	<u>Figures 2D-14 shows examples of destination guide signing for intersections with indirect turning movements.</u>
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1319	

- NCUTCD generally agrees with Figure 2D-14 as presented in the NPA, but recommends revising as follows:
- Select either the title in the NPA text or the title in the figures document as the final table title
- Add leader lines between the U AND LEFT TURN signs and sign locations on sheet 1

Figure 2D-14. Example of Signing for Intercepted Crossroad with left Turn Prohibited

Figure 2D-14 Example of Signing for Intersection with Indirect Left Turns A - Intercepted Crossroad with Left Turns Prohibited (Sheet 1 of 3)



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1328	Section 2D.42 Comments: NCUTCD agrees with 2D.42 as presented in the NPA.
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1330	Section 2D.42 Location of Destination Signs
1331	Guidance:
1332 1333 1334 1335	When used in high-speed areas, Destination signs should be located 200 feet or more in advance of the intersection, and following any Junction or Advance Route Turn assemblies that might be required. In rural areas, the minimum distance between a Destination sign and either an Advance Route Turn assembly or a Junction assembly should be 200 feet.
1336	Option:
1337	In urban areas, shorter advance distances may be used.
1338 1339	Because the Destination sign is of lesser importance than the Junction, Advance Route Turn, or Directional assemblies, the Destination sign may be eliminated when sign spacing is critical.
1340	Support:
1341	Figure <u>2D-9</u> shows typical placements of Destination signs.
1342	
1343 1344	Section 2D.43 Comments: NCUTCD agrees with 2D.43 as presented in the NPA.
	Section 2D.43 Comments. NCOTCD agrees with 2D.43 as presented in the NTA.
1345	
1346	Section 2D.43 Distance Signs (D2 Series)
1347	Standard:
1348	If used, the Distance (D2-1 through D2-3) sign (see Figure <u>2D-10</u>) shall be a horizontal rectangle
1349 1350	of a size appropriate for the required legend, <u>displaying</u> the names of no more than three cities, towns, junctions, or other traffic generators, and the distance (to the nearest mile) to those places.
1351	The distance numerals shall be placed to the right of the destination names as shown in Figure
1352	2D-10.
1353	Guidance:
1354	The distance displayed should be selected on a case-by-case basis by the jurisdiction that owns the
1355	road or by statewide policy. A well-defined central area or central business district should be used where
1356	one exists. In other cases, the layout of the community should be considered in relation to the highway

one exists. In other cases, the layout of the community should be considered in relation to the highway being signed and the decision based on where it appears that most drivers would feel that they are in the center of the community in question.

The top name on the Distance sign should be that of the next place on the route having a post office or a railroad station, a route number or name of an intersected highway, or any other significant geographical identity. The bottom name on the sign should be that of the next major destination or control city. If three destinations are displayed, the middle line should be used to indicate communities of general interest along the route or important route junctions.

Option:

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The choice of names for the middle line may be varied on successive Distance signs to give road users additional information concerning communities served by the route.

1367 Guidance: 1368 The control city should remain the same on all successive Distance signs throughout the length of the 1369 route until that city is reached. 1370 Option: 1371 If more than one distant point may properly be designated, such as where the route divides at some 1372 distance ahead to serve two destinations of similar importance, and if these two destinations cannot 1373 appear on the same sign, the two names may be alternated on successive signs. 1374 On a route continuing into another State, destinations in the adjacent State may be displayed. 1375 1376 Section 2D.44 Comments: NCUTCD agrees with 2D.44 as presented in the NPA. 1377 1378 1379 Section 2D.44 Location of Distance Signs 1380 Guidance: 1381 If used, Distance signs should be installed on important routes leaving municipalities and just beyond 1382 intersections of numbered routes in rural areas. If used, they should be placed just outside the municipal 1383 limits or at the edge of the built-up area if it extends beyond the limits. 1384 Where overlapping routes separate a short distance from the municipal limits, the Distance sign at 1385 the municipal limits should be omitted. The Distance sign should be installed approximately 300 feet 1386 beyond the separation of the two routes. 1387 Where, just outside of an incorporated municipality, two routes are concurrent and continue 1388 concurrently to the next incorporated municipality, the top name on the Distance sign should be that of 1389 the place where the routes separate; the bottom name should be that of the city to which the greater part 1390 of the through traffic is destined. 1391 Support: 1392 Figure 2D-9 shows typical placements of Distance signs. 1393

STREET NAME AND PARKING SIGNS

Section 2D.45 Comments: NCUTCD generally agrees with 2D.45 as presented in the NPA, but recommends revising as follows:

- Delete text specifying legend heights and replace with references to Table 2D-5)
- Revise the reference for "Section 2A.13" to "Section 2A.08"
- Revise Guidance in accordance with NCUTCD recommendation 14A-GMI-02 recommending display of street name signs front and back, as street name signs are also viewed by pedestrians traveling both directions on one-way streets

Section 2D.45 Street Name Signs (D3-1, D3-1a)

Guidance:

Street Name (D3-1 or D3-1a) signs (see Figure <u>2D-15</u>) should be installed in urban areas at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.

To minimize wrong-way movements onto freeway or expressway exit ramps, Street Name signs should not be used at the intersection of a freeway or expressway exit ramp with the crossroad to display the name of the freeway or expressway to traffic on the crossroad.

Ontion:

For streets that are part of a U.S., State, or county numbered route, a D3-1a Street Name sign (see Figure <u>2D-15</u>) that incorporates a route shield may be used to assist road users who might not otherwise be able to associate the name of the street with the route number.

NCUTCD agrees with Figure 2D-15 as presented in the NPA.

Figure 2D-15. Street Name and Parking Signs



1428 Standard:

The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see Section 2A.1308).

1431 Guidance

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The determination of letter heights to be used on Street Name signs should be based on, but not limited to the following considerations:

- A. Use of Advance Street Name signs (see Section 2D.46);
- B. Number of lanes on the intersection approach;
- C. Length of turn lanes;
- <u>D.</u> Distance the Street Name sign is located across the intersection (if a sign is not provided on the near side of the intersection).

Lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.

On multi-lane streets with speed limits greater than 40 mph, the lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height.

Letter heights on street name signs should be as shown in Table 2D-5.

Option:

For two-lane local roadways with speed limits of 25 mph or less, the lettering on post-mounted Street Name signs may be composed of initial upper case letters at least 4 inches in height and lower case letters at least 3 inches in height.

Guidance:

If overhead Street Name signs are used, the lettering should be composed of initial upper-case letters at least 12 inches in height and lower-case letters at least 9 inches in height.

Support:

The recommended minimum letter heights for Street Name signs are summarized in Table 2D-5. The speed limits specified and the recommended minimum letter heights provided in this Section apply to the roadway that each Street Name sign faces rather than to the street that has its name displayed on the Street Name sign. The letter heights specified in Table 2D-5 are the initial upper-case letter of a mixed-case legend.

NCUTCD generally agrees with Table 2D-5 as presented in the NPA, but recommends deleting all columns and references to lower case letter height, as this has been misinterpreted as specifying a smaller ascender height for lower case text, not as a loop height (see comments on Section 2D.05)

Table 2D-5. Minimum Letter Heights for Street Name Signs

Table 2D-5. Minimum Letter Heights on Street Name Signs

Type of Mounting	Type of Street or	Speed Limit	Recommended Minimum Letter Height *			
Mounting	Highway		Initial Upper-Case	Lower Case		
Overhead	All types	All speed limits	12 inches	9 inches		
Post-mounted	Multi-lane	More than 40 mph	8 inches	6 inches		
Post-mounted	Multi-lane	40 mph or less	6 inches	4.5 inches		
Post-mounted	2-lane	All speed limits	6 inches**	4.5 inches**		

^{*} Letter heights shown are for the street name. Descriptors or other supplementary legend may be displayed in smaller lettering of at least 3 inches.

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Each Street Name sign in a sign assembly may use different letter heights determined by the speed limit of the street that each sign faces.

The letter height of the street name descriptor (such as St, Ave, or Rd), the directional legend (such as NW) or any other supplemental legend such as block or house numbers (see Paragraph 15) on the D3-1 and D3-1a signs may be smaller than that of the street name itself. Guidance:

The letter height of the street name descriptor, the directional legend, or any other supplemental legend on the D3-1 and D3-1a signs should be at least two-thirds of the letter height of the street name itself, but not less than 3 inches for the initial upper-case letters and not less than 2.25 inches for the lower-case letters.

Conventional abbreviations (see Section 1A.15) should be used except for the street name itself. Acceptable abbreviations for street name descriptors such as "Ave" for Avenue and "Blvd" for Boulevard should be as provided in Table 2D-3 (see Section 2D.07). Table 2D-4 provides street name descriptors that should not be abbreviated (see Section 2D.07).

Option:

Block or house numbers may be displayed as a supplemental legend on a Street Name sign to aid emergency responders and road users in locating addresses.

1486 Guidance:

> If block or house numbers are displayed on a Street Name sign where only a single Street Name sign is provided for the cross street, the block or house numbers for the left and right blocks should be positioned at the left and right sides of the sign, respectively.

^{**} On two-lane local streets with speed limits of 25 mph or less, 4-inch initial upper-case letters with 3-inch lower-case letters may be used.

1490 <u>If block or house numbers are displayed on a Street Name sign where two Street Name signs are</u>
 1491 provided for the cross street, such as on diagonally opposite corners of an intersection, each Street Name
 1492 sign should display only the block or house numbers associated with that block of the cross street.
 1493 Option:

A pictograph (see definition in Section 1A.13) <u>representing the municipality</u> (ADD TO GRAPHIC) may be used on a D3-1 sign.

1496 Standard:

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Pictographs shall not be displayed on D3-1a or Advance Street Name (D3-2) signs (see Section 2D.46).

If a pictograph is used on a D3-1 sign, the height and width of the pictograph shall not exceed the upper-case letter height of the principal legend of the sign.

Guidance:

The pictograph should be positioned to the left of the street name.

1503 Standard:

The Street Name sign shall be retroreflective or <u>illuminated in accordance with the provisions</u> of Section 2A.07

Option:

The border may be omitted from a <u>post-mounted</u> Street Name sign.

1508 Guidance

The decision to omit the border from a post-mounted Street Name sign should be based on such factors as the visual complexity of the environment and the degree of conspicuity needed to provide for adequate recognition of the sign by the road user.

1512 <u>Option:</u> 1513 An

An alternative background color (see Paragraph 27) other than the standard guide sign color of green may be used for Street Name (D3-1 or D3-1a) signs where the highway agency determines this is necessary to assist road users in determining jurisdictional authority for roads.

1516 Standard:

Alternative background colors shall not be used for Advance Street Name (D3-2) signs (see Section 2D.46).

The only acceptable alternative background colors for Street Name (D3-1 or D3-1a) signs shall be blue, brown, or white. Regardless of whether green, blue, or brown is used as the background color for Street Name (D3-1 or D3-1a) signs, the legend (and border, if used) shall be white. For Street Name signs that use a white background, the legend (and border, if used) shall be black. *Guidance:*

An alternative background color for Street Name signs, if used, should be applied to the Street Name (D3-1 or D3-1a) signs on all roadways under the jurisdiction of a particular highway agency.

In business or commercial areas and on principal arterials, Street Name signs should be placed at least on diagonally opposite corners. In residential areas, at least one Street Name sign should be mounted at each intersection. Signs naming both streets should be installed at each intersection. They should be mounted with their faces parallel to the streets they name.

Where used, especially in urban areas, Street Name signs should display their legends on both the front and back sides of the sign to facilitate navigation for pedestrians.

To optimize visibility, Street Name signs may be mounted overhead. Street Name signs may also be placed above a regulatory or STOP or YIELD sign with no required vertical separation.

Guidance:

In urban or suburban areas, especially where Advance Street Name signs for signalized and other major intersections are not used, the use of overhead Street Name signs should be strongly considered. Option:

At intersection crossroads where the same road has two different street names for each direction of travel, both street names may be displayed on the same sign along with directional arrows, except where

the arrow would point in a direction opposing the flow of traffic on a one-way street or where a turn in the direction of the arrow is not allowed.

On lower speed roadways, historic street name signs within locally identified historic districts that are consistent with the criteria contained in 36 CFR 60.4 for such structures and districts may <u>remain in service</u> without complying with the provisions of Paragraphs 3, 4, 6, 9, 12 through 14, and 18 through 20 of this section.

Guidance:

Streets or segments of a street that have been memorialized or dedicated should not use a second Street Name sign to display the memorial or dedication name (see Section 2D.56). When signed, the Memorial or Dedication sign should be located to minimize its conspicuity to and potential for confusion by vehicular traffie.

1552 Support: 1553 Infor

Information regarding the use of street names on supplemental plaques for use with intersection-related warning signs is contained in Section 2C.58.

<u>Information regarding the identification of overcrossing and undercrossing roadways at grade separations is contained in Section 2H.10.</u>

Section 2D.46 Comments: NCUTCD generally agrees with 2D.46 as presented in the NPA, but recommends a minor editorial revision and revising the term "circular intersection" to "roundabout" to clarify appropriate use of curved-stem arrows.

Section 2D.46 Advance Street Name Signs (D3-2 Series)

Support:

Advance Street Name (D3-2) signs (see Figure 2D-15 2D-16 identify a downstream intersection. Although this is often the next intersection, it could also be several intersections away in cases where the next signalized intersection is referenced.

Standard:

Advance Street Name (D3-2) signs, if used, shall supplement rather than be used instead of the Street Name (D3-1) signs at the intersection.

Option:

Advance Street Name (D3-2) signs may be installed in advance of signalized or unsignalized intersections to provide road users with advance information to identify the name(s) of the next intersecting street to prepare for crossing traffic and to facilitate timely deceleration and/or lane changing in preparation for a turn.

Guidance:

On arterial highways in rural areas, Advance Street Name signs should be used in advance of all signalized intersections and in advance of all intersections with exclusive turn lanes.

In urban areas, Advance Street Name signs should be used in advance of all signalized intersections on major arterial streets, except where signalized intersections are so closely spaced that advance placement of the signs is impractical.

The heights of the letters on Advance Street Name signs <u>should comply with the provisions of Section</u>
2D.05.

1584 Standard:

1585 If used, Advance Street Name signs shall have a white legend and border on a green background. Alternative background colors shall not be used on Advance Street Name signs.

If used, Advance Street Name signs shall provide the name(s) of the intersecting street(s) on the top line(s) of the legend and the distance to the intersecting streets or messages such as NEXT SIGNAL, NEXT INTERSECTION, NEXT ROUNDABOUT, or directional arrow(s) on the bottom line of the legend.

Pictographs shall not be displayed on Advance Street Name signs.

Option:

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Directional arrow(s) may be placed to the right or left of the street name or message such as NEXT SIGNAL, as appropriate, rather than on the bottom line of the legend. Curved-stem arrows may be used on Advance Street Name signs on approaches to <u>roundabouts eircular intersections</u>.

For intersecting crossroads where the same road has a different street name for each direction of travel, the different street names may be displayed on the same Advance Street Name sign along with directional arrows.

In advance of two closely-spaced intersections where it is not practical to install separate Advance Street Name signs, the Advance Street Name sign may include the street names for both intersections along with appropriate supplemental legends for both street names, such as NEXT INTERSECTION, 2ND INTERSECTION, or NEXT LEFT and NEXT RIGHT, or directional arrows.

Guidance:

If two street names are used on the Advance Street Name sign, the street names should be displayed in the following order:

- A. For a single intersection where the same road has a different street name for each direction of travel, the name of the street to the left should be displayed above the name of the street to the right; or
- B. For two closely-spaced intersections, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see Figure 2C-12).

Option:

An Advance Street Name (W16-8P or W16-8aP) plaque (see Section 2C.<u>64</u>) with black legend on a yellow background, installed to <u>supplement</u> an Intersection (W2 series) or Advance Traffic Control (W3 series) warning sign may be used instead of an Advance Street Name guide sign.

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Section 2D.47 Comments: NCUTCD agrees with 2D.47 as presented in the NPA.

- 1621 Section 2D.47 Parking Area Guide Sign (D4-1)
- 1622 Option:
- The Parking Area (D4-1) guide sign (see Figure <u>2D-15</u>) may be used to show the direction to a nearby public parking area or parking facility.
- 1625 Standard:
- 1626 The smaller size of 18 x 15 inches for the Parking Area guide sign shall be limited to minor, low-speed streets.
- 1628 Guidance:

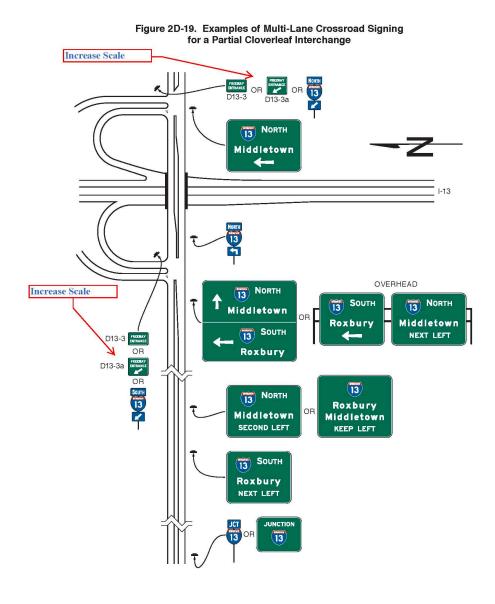
1629 If used, the Parking Area guide sign should be installed on major thoroughfares at the nearest point 1630 of access to the parking facility and where it can advise drivers of a place to park. The sign should not be 1631 used more than four blocks from the parking area. 1632 1633 1634 **Section 2D.48 Comments:** NCUTCD agrees with 2D.48 as presented in the NPA. 1635 1636 Section 2D.48 PARK - RIDE Sign (D4-2) 1637 Option: 1638 PARK - RIDE (D4-2) signs (see Figure 2D-15) may be used to direct road users to park - ride 1639 facilities. 1640 Standard: 1641 The signs shall display the word message PARK - RIDE and direction information (arrow or 1642 word message). 1643 Option: 1644 PARK - RIDE signs may display the local transit pictograph and/or carpool symbol. 1645 **Standard:** 1646 If used, the local transit pictograph and/or carpool symbol shall be located in the top part of the 1647 sign above the message PARK - RIDE. In no case shall the vertical dimension of the local transit 1648 pictograph and/or carpool symbol exceed 18 inches. 1649 Guidance: 1650 If the function of the parking facility is to provide parking for persons using public transportation, the local transit pictograph should be used on the guide sign. If the function of the parking facility is to serve 1651 carpool riders, the carpool symbol should be used on the guide sign. If the parking facility serves both 1652 1653 functions, both the pictograph and carpool symbol should be used. 1654 Standard: 1655 These signs shall have a retroreflective white legend and border on a rectangular green 1656 background. The carpool symbol shall be as shown for the D4-2 sign. The color of the local transit 1657 pictograph shall be selected by the local transit authority. 1658 Option: 1659 To increase the target value and contrast of the local transit pictograph, and to allow the local transit 1660 pictograph to retain its distinctive color and shape, the pictograph may be included within a white border 1661 or placed on a white background. 1662 1663 1664

66	<u>FREEWAY ENTRANCE SIGNS</u>
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68 69 70	Section 2D.49 Comments: NCUTCD generally agrees with 2D.49 as presented in the NPA, but recommends changing the term "transposed-alignment crossroads for a diamond interchange" to the commonly-used "diverging diamond interchange".
71	Section 2D.49 Signing on Conventional Roads on Approaches to Interchanges
72	Support:
73 74 75 76 77	Because there are a number of different ramp configurations that are commonly used at interchanges with conventional roads, drivers on the conventional road cannot reliably predict whether they will be required to turn left or right in order to enter the correct ramp to access the freeway or expressway in the desired direction of travel. Consistently applied signing for conventional road approaches to freeway or expressway interchanges is highly desirable.
78	Standard:
9 0 1 2	On multi-lane conventional roads approaching an interchange, guide signs shall be provided to identify which direction of turn is to be made and/or which specific lane to use for ramp access to each direction of the freeway or expressway.
3	Guidance:
ļ	The signing of conventional roads with one lane of traffic approaching an interchange should consist of a sequence containing the following signs (see Figure <u>2D-16</u>):
5	A. Junction Assembly B. Destination sign
	C. Directional Assembly or Entrance Direction sign for the first ramp
	D. Advance Route Turn Assembly or Advance Entrance Direction sign with an advance turn arrow E. Directional Assembly or Entrance Direction sign for the second ramp
	L. Directional Assembly of Entrance Direction sign for the second ramp
	Figure 2D-16. Example of Interchange Crossroad Signing for a One-Lane Approach
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	NCUTCD agrees with Figure 2D-16 as presented in the NPA.
	Standard:
	If used, the Entrance Direction sign shall consist of a white legend and border on a green
,	background. It shall contain the freeway or expressway route shield(s), cardinal direction, and
,	directional arrow(s).
)	Option:
)	The Entrance Direction sign may contain a destination(s) and/or an action message such as NEXT
1	RIGHT.
	At minor interchanges, the following sequence of signs may be used (see Figure <u>2D-17</u>):
	A. Junction Assembly
	B. Directional Assembly for the first ramp
	C. Directional Assembly for the second ramp
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1709	Figure 2D-17. Example of Minor Interchange Crossroad Signing
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1711	NCUTCD agrees with Figure 2D-17 as presented in the NPA.
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1713	Guidance:
1714 1715	On multi-lane conventional roads approaching an interchange, the sign sequence should contain the following signs (see Figures $2D-18$ through $2D-20$):
1716 1717 1718 1719 1720 1721	 A. Junction Assembly B. Advance Entrance Direction sign(s) for both directions (if applicable) of travel on the freeway or expressway C. Entrance Direction sign for first ramp D. Advance Turn Assembly
1721	E. Entrance Direction sign for the second ramp
1723	Support: Advance Entrance Direction signs are used to direct road users to the appropriate lane(s).
1723	Standard:
1725 1726	The Advance Entrance Direction sign shall consist of a white legend and border on a green background. It shall contain the freeway or expressway route shield(s) and cardinal direction(s).
1727	Option:
1728 1729 1730	The Advance Entrance Direction sign may have destinations, directional arrows, and/or an action message such as KEEP LEFT, NEXT LEFT, or SECOND RIGHT. Signs in this sequence may be mounted overhead to improve visibility as shown in Figures <u>2D-18</u> through <u>2D-20</u> .
1731	Support:
1732 1733 1734 1735 1736	A post-mounted Advance Entrance Direction diagrammatic guide sign (see Figure 2D-21), within the sequence of approach guide signing described in Paragraphs 3, 6, and 7, might be helpful in depicting the location of a freeway or expressway entrance ramp that is in close proximity to an intervening intersection on the same side of the approach roadway and where signing for only the ramp might cause confusion to road users.
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1738	Figure 2D-18. Examples of Multi-Lane Crossroad Signing for a Diamond Interchange
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1740	NCUTCD agrees with Figure 2D-18 as presented in the NPA.
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NCUTCD generally agrees with Figure 2D-19 as presented in the NPA, but recommends increasing the size of the FREEWAY ENTRANCE signs on the figure to be more readable. NCUTCD also recommends adding a note on Figure 2D-19 that reads: "Regulatory signs to deter wrong way movements are not shown. See Figure 2B-19 for examples of regulatory signing and pavement markings to deter wrong-way entry" to address measures deterring wrong-way movements at partial cloverleaf interchanges because the entrance and exit ramps are adjacent.

Figure 2D-19. Examples of Multi-Lane Crossroad Signing for a Partial Cloverleaf Interchange



Regulatory signs to deter wrong way movements are not shown. See Figure 2B-19 for examples of regulatory signing and pavement markings to deter wrong-way entry.

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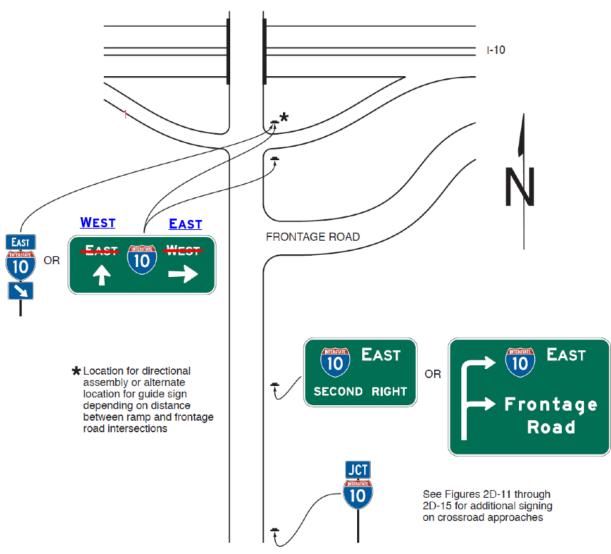
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NCUTCD generally agrees with Figure 2D-21 as presented in the NPA, but recommends switching the cardinal directions on the guide sign at the ramp, as it is inconsistent with the other signs.

Figure 2D-21. Example of Crossroad Signing for an Exit Ramp with a Nearby Frontage Road

Figure 2D-21. Example of Crossroad Signing for an Entrance Ramp with a Nearby Frontage Road



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1767 Standard:

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1777 1778 1779 If used, the post-mounted Advance Entrance Direction diagrammatic guide sign shall display only the two successive turns from the same side of the roadway, one of which shall be the entrance ramp. The post-mounted Advance Entrance Direction sign shall depict only the successive turns and shall not depict lane use with lane lines, multiple arrow shafts for the approach roadway, action messages, or other representations.

Support:

Examples of guide signing for single-point urban intersection and diverging transposed-alignment erossroads for a diamond interchange are shown in Figures 2D-22 and 2D-23.

Section 2D.<u>50</u> contains information regarding the use of a Directional assembly or a FREEWAY ENTRANCE sign to mark the entrance to a freeway or expressway at the far corner of an intersection.

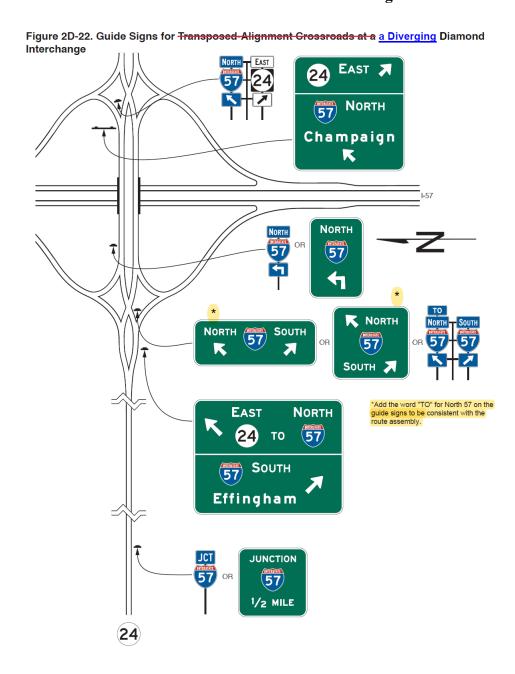
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- Revise the title from "Guide Signs for Transposed-Alignment Crossroads at a Diamond Interchange" to the commonly-used "Guide Signs for a Diverging Diamond Interchange"
- Add "TO" as sign legend adjacent to or above the NORTH cardinal direction on both of the dual diagonal arrow advanced direction guide signs to be consistent with the route assembly

Figure 2D-22. Guide Signs for <u>a Diverging</u> Transposed-Alignment Crossroads at a Diamond Interchange



- NCUTCD generally agrees with Figure 2D-23 as presented in the NPA, but recommends revising as follows:
- Revise the first part of the title from "Example of Traffic Control Devices" to "Guide Signs" to convey that guide signs are the primary focus of this figure
- Delete all traffic signal items

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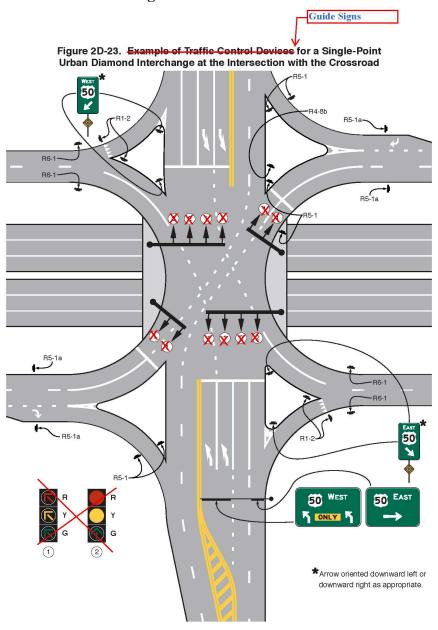
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• Rotate the pavement marking arrow on the top right of the detail 90 degrees clockwise to show the correct orientation

Figure 2D-23. Example of Traffic Control Devices Guide Signs for a Single-Point Urban Diamond Interchange at the Intersection with the Crossroad



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1801 1802 1803 Section 2D.50 Comments: NCUTCD agrees with 2D.50 as presented in the NPA. 1804 1805 1806 Section 2D.50 Freeway Entrance Signs (D13-3, D13-3a) 1807 Option: 1808 FREEWAY ENTRANCE (D13-3) signs or FREEWAY ENTRANCE with downward pointing 1809 diagonal arrow (D13-3a) signs (see Figure 2D-19) may be used on entrance ramps near the crossroad to 1810 inform road users of the freeway or expressway entrance, as appropriate. The D13-3 and D13-3a signs may display an alternate legend in place of FREEWAY, such as 1811 1812 EXPRESSWAY or PARKWAY, as appropriate, or may display the name of an unnumbered highway. 1813 A Directional assembly (see Section 2D.32) with a downward pointing diagonal arrow auxiliary 1814 (M6-2a) plaque (see Section 2D.28) may be used at the far left-hand corner of an intersection with a 1815 freeway or expressway entrance ramp as an alternative to the D13-3a sign, facing left-turning traffic on 1816 the conventional road approach to indicate the immediate point of entry to the freeway or expressway and distinguish the entrance ramp from an adjoining exit ramp terminal at the same intersection with the 1817 1818 conventional road (see Figure 2D-19). A similar Directional assembly may be used at the far right-hand 1819 corner of an intersection with a freeway or expressway entrance ramp where the entrance ramp and a 1820 crossroad or side road follow one another in close succession on the conventional road approach and the 1821 point of entry to the freeway or expressway might be difficult for the road user to distinguish from the 1822 crossroad or side road on the conventional road approach (see Figure 2D-19). 1823 Support: 1824 Section 2B.41 contains information regarding the use of regulatory signs to deter wrong-way 1825 movements at intersections of freeway or expressway ramps with conventional roads, and in the area 1826 where entrance ramps intersect with the mainline lanes.

WEIGH STATION, TRUCK LANE, PASSING LANE, CROSSOVER AND EMERGENCY AND SLOW VEHICLE TURN-OUT SIGNS

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- Section 2D.51 Comments: NCUTCD recommends revising 2D.51 as follows:
- Delete the second sentence of the first Support paragraph because permanent signing is generally not installed for a temporary facility
- Add "or Inspection" to the second Support paragraph because many of these facilities are now designated as inspection stations
- Revise the sign in list item A in the first Standard statement to a new "WEIGH STATION AHEAD (D8-1a)" sign
- Add an Option paragraph allowing omitting the weigh station exit gore sign where overhead signing is provided
 - Revise the Option statement to allow alternate sign legends to better identify the purpose of the station
 - Revise the Guidance statement to improve wording on placement of open/closed messages
 - Revise the final Standard statement to simplify wording

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Section 2D.51 Inspection WEIGH STATION Signing (D8 Series)

1846 Support:

Independent facilities or areas have been added along many highways where certain commercial vehicles are directed to stop to be weighed and/or inspected. These areas are sometimes permanent, such as in a roadside area, or temporary mobile facilities deployed along the roadway.

The general concept for <u>signing permanent</u> Weigh <u>or Inspection</u> Stations 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:**

The standard <u>sequence of signs</u> for a Weigh Station <u>signing</u> <u>on a conventional highway</u> shall include three basic signs <u>(see Figure 2D-24)</u>:

- A. Advance Weigh Station Distance Ahead (D8-1A) sign,
- B. Weigh Station Next Right (D8-2) sign, and
- C. Weigh Station Exit Directional (D8-3) sign.

1859 Guidance:

An Exit Gore sign with the same basic legend as the Weigh Station Exit Direction (D8-3) sign should also be used to emphasize the entrance to the weigh station.

Option:

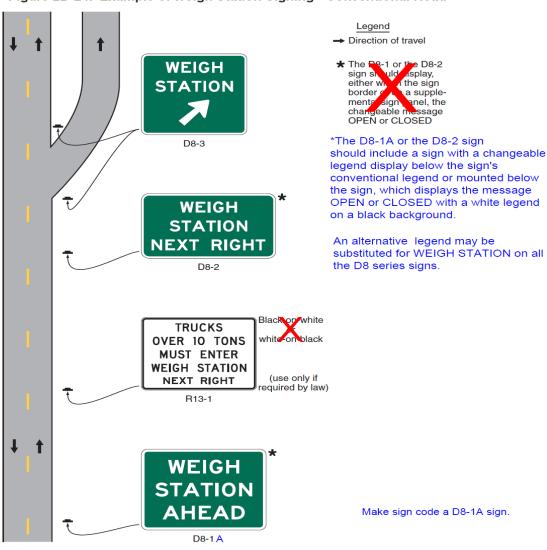
1863 <u>W</u>
1864 <u>may b</u>

When an overhead Weigh Station Exit Direction sign is provided, the Weigh Station Exit Gore sign may be omitted.

- NCUTCD recommends Figure 2D.24 be revised as follows:
- 1868 Revise the note referencing placement of open/closed messages
 - Add a note stating "an alternative legend may be substituted for WEIGH STATION on all D8 series signs" to be consistent with Section 2E.53
 - Delete the note adjacent to the R13-1 sign that allows white on black to be consistent with Section 2B.67

Figure 2D-24. Example of WEIGH STATION Signing

Figure 2D-24. Example of Weigh Station Signing - Conventional Road



Option:

Where State law requires trucks of a certain weight to enter the Weigh Station, a Weigh Station (R13-1) regulatory sign (see Section 2B.60) may be located following the Advance Weigh Station Ahead Distance sign (see Figure 2D-24).

Where only commercial vehicle inspections are conducted in the inspection area, the WEIGH STATION legend of the D8 series signs may be replaced with the alternate legend, COMMERCIAL

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	<u>LE INSPECTION AREA.</u> Where the location conducts only one specific type of inspection
	series Weigh Station legend may be replaced by an alternative legend such as "INSPECTIO"
	CULTURE", "PORT OF ENTRY" or other appropriate legend to match the specific type of
Guidan	on conducted at the station.
	e. Weigh Station Next Right (D8-2) Sign or the Advance Weigh Station Ahead Distance (D8-1A
	uld display, either within the sign border on the sign or on a supplemental plaque or sign pa
	geable <u>legend</u> OPEN or CLOSED.
<u>Standaı</u>	
	en the WEIGH STATION legend of the D8 series signs is replaced with an alternative t
	ERCIAL VEHICLE INSPECTION AREA legend, as provided in Paragraph 6 of this the WEIGH STATION legend of the R13-1 sign shall be replaced with the alternate le
	THE WEIGH STATION legend of the RIS-1 sign shan be replaced with the alternate le
H (OI E)	511011111111111
Section	2D.52 Comments: NCUTCD agrees with 2D.52 as presented in the NPA.
Section	2D.52 Crossover Signs (D13-1, D13-2)
Option:	
Cros	ssover signs may be installed on divided highways to identify median openings not otherwise
identifie	d by warning or other guide signs.
Standaı	rd:
	ROSSOVER (D13-1) sign (see Figure <u>2D-25</u>) shall not be used to identify a median ope termitted to be used only by official or authorized vehicles.
Guidano	·
	ed, the CROSSOVER sign should be installed immediately beyond the median opening, eithe
	t-hand side of the roadway or in the median.
Option:	
•	Advance Crossover (D13-2) sign (see Figure 2D-25) may be installed in advance of the
	OVER sign to provide advance notice of the crossover.
Guidano	
	distance displayed on the Advance Crossover sign should be 1 MILE, 1/2 MILE, or 1/4 MIL.
	nusual conditions require some other distance. If used, the sign should be installed either or
right-ha	nd side of the roadway or in the median at approximately the distance displayed on the sign.
NCUTO	CD agrees with Figure 2D-25 as presented in the NPA.
1,001	Figure 2D-25. Crossover Signs (D13-1, D13-2)
	Figure 2D-23. Crossover Signs (D13-1, D13-2)
Soction	2D.53 Comments: NCUTCD generally agrees with 2D.53 as presented in the NPA
	nends adding an Option statement to allow adjustment of the location and distance of
rccomm	and D17-4 signs, plus minor editorial revisions.

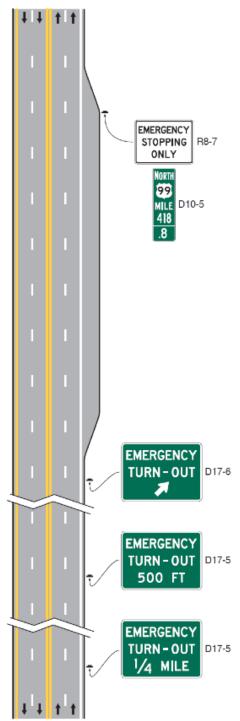
1925	Section 2D.53 Truck and Passing Lane Signs (D17-1, D17-2, D17-3, D17-4)
1926	Guidance:
1927 1928 1929	If an extra lane has been provided <u>to the right-hand side of the travel lanes</u> for <u>use by</u> trucks and other slow-moving traffic, a TRUCK LANE $1/2$ MILE (D17- 2) sign (see Figure 2D- 26) should be installed in advance of the lane.
1930 1931	If a series of truck lanes are is provided along a highway, a NEXT TRUCK LANE XX MILES (D17-1) sign (see Figure 2D-26) should be installed after each truck lane segment.
1932 1933 1934 1935 1936 1937	If an extra lane has been provided to the left-hand side of the travel lane for passing slower moving vehicles in the travel lane, a PASSING LANE ½ MILE (D17-4) sign (see Figure 2D-26) should be installed in advance of the lane. If a series of passing lanes are provided along a highway, a NEXT PASSING LANE XX MILES (D17-3) sign (See Figure 2D-26) should be installed after each passing lane segment.
1938	Option:
1939 1940	The location of and distance shown on the D17-2 and D17-4 signs may be adjusted, based on site geometry, sight distance or other physical features.
1941	Support:
1942	An example of singing signing for a truck lane is shown in Figure 2D-27. An example of signing for
1943	an intermittent passing lane is shown in Figure 2D-28.
1944	Section 2B.31 contains information regarding regulatory signs for these types of lanes.
1945	
1946	
1947	NCUTCD agrees with Figure 2D-26 as presented in the NPA.
1948	Figure 2D-26. Truck and Passing Lane Signs (D17-1 through D17-4)
1949	
1950	NCUTCD generally agrees with Figure 2D-27 as presented in the NPA, but recommends
1951	showing all signs and dimensions consistently with other Figures in other chapters of the
1952	MUTCD related to lane ends signing and markings.
1953	Figure 2D-27. Example of Signing for a Truck Lane
1954	g
1955	NCUTCD generally agrees with Figure 2D-28 as presented in the NPA, but recommends
1955	showing all signs and dimensions consistently with other Figures in other chapters of the
1957	MUTCD related to lane ends signing and markings.
1958	Figure 2D-28. Example of Signing for an Intermittent Passing Lane
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1962 1963 1964	Section 2D.54 Comments: NCUTCD generally agrees with 2D.54 as presented in the NPA, but recommends revising the Guidance statement to also allow for emergency turn-out signing in locations where there is part-time shoulder use consistent with Section 2G.23.
1965	Section 2D.54 Emergency and Slow Vehicle Turn-Out Signs (D17-5 through D17-7)
1966	Guidance:
1967 1968 1969 1970 1971	If an emergency turn-out area has been provided where a shoulder is not available for emergency stopping or where there is part-time shoulder use by traffic (see Section 2G.23), Emergency Turn-Out signs should be installed. The Emergency Turn-Out advance (D17-5) sign (see Figure 2D-29) should be installed between ¼ mile and 500 feet in advance of the turn-out area. The Emergency Turn-Out directional (D17-6) sign should be installed near the beginning of the turn-out area
1972 1973	If a slow vehicle turn-out area has been provided for slow-moving traffic, a SLOW VEHICLE TURN OUT XX MILES (D17-7) sign (see Figure 2D-29) should be installed in advance of the turn-out area.
1974	Support:
1975	An example of signing for an emergency turn-out is shown in Figure 2D-30.
1976 1977	Section 2B.35 contains information regarding regulatory signs for slow vehicle turn-out areas.
1978	NCUTCD agrees with Figure 2D-29 as presented in the NPA
1979	New Figure 2D-29. Emergency and Slow Vehicle Turn-Out Signs (D17-5 through D17-7)
1980	
1981	

NCUTCD generally agrees with Figure 2D-30 as presented in the NPA, but recommends revising the far left edge line to white (not yellow). NCUTCD notes the figure title is different in the NPA text as compared to the NPA figures. NCUTCD recommends selecting one of these titles as the final figure title.

New Figure 2D-30. Example of Emergency Turn-Out Signing Figure 2D-30. Example of Signing for an Emergency Turnout

The southbound right edgeline needs to be shown as white, not yellow.



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Section 2D.55 Comments: NCUTCD generally agrees with 2D.55 as presented in the NPA, but recommends using the term "scanning graphics" to agree with NCUTCD recommendations for Section 2A.04 and Section 2H.07, plus minor editorial revisions.

Section 2D.55 Community Wayfinding Signs

Support:

Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to key civic, cultural, visitor, and recreational attractions and other <u>similar secondary</u> destinations within a city or a local urbanized or downtown area.

Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification marker for destinations within an overall wayfinding guide sign plan for an area.

Figures 2D-<u>31</u> through 2D-<u>33</u> illustrate various examples of the design and application of community wayfinding guide signs.

Standard:

The use of community wayfinding guide signs shall be limited to conventional roads. Community wayfinding guide signs shall not be installed on freeway or expressway mainlines or ramps. Direction to community wayfinding destinations from a freeway or expressway shall be limited to the use of a Supplemental Guide sign (see Section 2E.35) on the mainline and a Destination sign (see Section 2D.36) on the ramp to direct road users to the area or areas within which community wayfinding guide signs are used. The individual wayfinding destinations shall not be displayed on the Supplemental Guide and Destination signs except where the destinations are in accordance with the State or agency policy on Supplemental Guide signs.

Community wayfinding guide signs shall not be used to provide direction to primary destinations or highway routes or streets. Destination or other guide signs shall be used for this purpose as described elsewhere in this Chapter and shall have priority over any community wayfinding sign in placement, prominence, and conspicuity.

Because regulatory, warning, and other guide signs have a higher priority, community wayfinding guide signs shall not be installed where adequate spacing cannot be provided between the community wayfinding guide sign and other higher priority signs. Community wayfinding guide signs shall not be installed in a position where they would obscure the road users' view of other traffic control devices.

Community wayfinding guide signs shall not be mounted overhead.

Guidance:

If used, a community wayfinding guide sign system should be established on a local municipal or equivalent jurisdictional level or for an urbanized area of adjoining municipalities or equivalent that form an identifiable geographic entity that is conducive to a cohesive and continuous system of signs. Community wayfinding guide signs should not be used on a regional or statewide basis where infrequent or sparse placement does not contribute to a continuous or coordinated system of signing that is readily identifiable as such to the road user. In such cases, Destination or other guide signs detailed in this Chapter should be used to direct road users to an identifiable area in which the type of eligible destination described in Paragraph 1 is located.

When a system of community wayfinding guide signs is being considered, the entire system of existing signs should be evaluated for serviceability and general conformance with the provisions of this Manual. Systematic upgrading (see Paragraphs 22 through 24 of the Introduction to this Manual) of higher

priority signs, such as regulatory, warning, and major Destination guide signs, should occur prior to the installation of the community wayfinding signs.

NCUTCD generally agrees with Figure 2D-31 as presented in the NPA, but recommends restoring sign details as seen in the 2009 MUTCD depicting color coding for destinations, as the NPA content allows this option.

Figure 2D-31. Example of Community Wayfinding Guide Signs

NCUTCD agrees with Figure 2D-32 as presented in the NPA.

Figure 2D-32. Example of a Community Wayfinding Guide Sign System Showing Direction from a Freeway or Expressway

 NCUTCD generally agrees with Figure 2D-33 as presented in the NPA, but recommends restoring sign details as seen in the 2009 MUTCD depicting color coding for destinations, as the NPA content allows this option.

Figure 2D-33. Example of a Color-Coded Community Wayfinding Guide Sign System

Support:

The specific provisions of this Section regarding the design of community wayfinding sign legends apply to vehicular community wayfinding signs and do not apply to those signs that are intended only to provide information or direction to pedestrians or other users of a sidewalk or roadside area.

Guidance:

Because pedestrian wayfinding signs typically use smaller legends that are inadequately sized for viewing by vehicular traffic and because they can provide direction to pedestrians that might conflict with that appropriate for vehicular traffic, wayfinding signs designed for and intended to provide direction to pedestrians or other users of a sidewalk or other roadside area should be located to minimize their conspicuity to vehicular traffic. Such signs should be located as far as practical from the street, such as at the far edge of the sidewalk. Where locating such signs farther from the roadway is not practical, the pedestrian wayfinding signs should have their conspicuity to vehicular traffic minimized by employing one or a combination of the following methods:

- A. Locating signs away from intersections where high-priority traffic control devices are present.
- B. Facing the pedestrian message toward the sidewalk and away from the street.
- C. Cantilevering the sign over the sidewalk if the pedestrian wayfinding sign is mounted at a height consistent with vehicular traffic signs, removing the pedestrian wayfinding signs from the line of sight in a sequence of vehicular signs.

To further minimize their conspicuity to vehicular traffic during nighttime conditions, pedestrian wayfinding signs should not be retroreflective.

2074 Support:

Color coding is sometimes used on community wayfinding guide signs to help road users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area.

2078 Option:

At the boundaries of the geographical area within which community wayfinding guide signing is used, an informational guide sign (see Figures <u>2D-31</u> and 2D-<u>33</u>) may be posted to inform road users about the presence of wayfinding signing and to identify the meanings of the various color codes or pictographs that are being used.

Standard:

These informational guide signs shall have a white legend and border on a green background and shall have a design similar to that illustrated in Figures 2D-2 and 2D-31 and shall be consistent with the basic design principles for guide signs. These informational guide signs shall not be installed on freeway or expressway mainlines or ramps.

The color coding or a pictograph of the identification markers of the community wayfinding guide signing system shall be included on the informational guide sign posted at the boundary of the community wayfinding guide signing area. The color coding or pictographs shall apply to a specific, identifiable neighborhood or geographical subarea within the overall area covered by the community wayfinding guide signing. Color coding or pictographs shall not be used to distinguish between different types of destinations that are within the same designated neighborhood or subarea. The color coding shall be accomplished by the use of different colored square or rectangular panels on the face of the informational guide sign, each positioned to the left of the neighborhood or named geographic area to which the color-coding panel applies. The height of the colored square or rectangular panels shall not exceed two times the height of the upper-case letters of the principal legend on the sign.

Option:

The different colored square or rectangular panels may include either a black or a white (whichever provides the better contrast with the color of the panel) letter, numeral, or other appropriate designation to identify the destination.

Except for the informational guide sign posted at the boundary of the wayfinding guide sign area, community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system. Color-coded community wayfinding guide signs may be used with or without the boundary informational guide sign displaying corresponding color-coding panels described in Paragraphs 13 through 16. Except as provided in Paragraphs 18 and 19, in addition to the colors that are approved in this Manual for use on official traffic control signs (see Section 2A.10), other background colors may also be used for the color coding of community wayfinding guide signs.

Standard:

The standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink shall not be used as background colors for community wayfinding guide signs, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users.

The minimum contrast value of legend color to background color for community wayfinding guide signs shall be at least 0.70 (or 70%).

All messages, borders, legends, and backgrounds of community wayfinding guide signs and any identification markers shall be retroreflective (see Sections 2A.07 and 2A.08).

Community wayfinding guide signs, exclusive of any identification marker used, <u>shall</u> be rectangular in shape.

Guidance:

Simplicity and uniformity in design, position, and application as described in Section 2A.06 are important and should be incorporated into the community wayfinding guide sign design and location plans for the area.

Community wayfinding guide signs should be limited to three destinations per sign (see Section 2D.06).

Abbreviations (see Section 1A.15) should be kept to a minimum, and should include only those that are commonly recognized and understood.

Horizontal lines of a color that contrasts with the sign background color should be used to separate groups of destinations by direction from each other.

2132 Support:

The basic requirement for all highway signs, including community wayfinding signs, is that they be legible to those for whom they are intended and that they be understandable in time to permit a proper response. Section 2A.06 contains additional information on the design of signs, including desirable attributes of effective designs.

2137 Guidance:

Word messages should be as brief as practical and the lettering should be large enough to provide the necessary legibility distance.

Standard:

The minimum specific ratio of letter height to legibility distance shall comply with the provisions of Section 2A.13. The size of lettering used for destination and directional legends on community wayfinding signs shall comply with the provisions of minimum letter heights as provided in Section 2D.05.

Interline and edge spacing shall comply with the provisions of Section 2D.<u>05</u>.

Except as provided in Paragraph <u>33</u>, the lettering style used for destination and directional legends on community wayfinding guide signs shall comply with the provisions of Section 2D.<u>04</u>.

The lettering for destinations on community wayfinding guide signs shall be a combination of lower-case letters with initial upper-case letters (see Section 2D.<u>04</u>). All other word messages on community wayfinding guide signs shall be in all upper-case letters.

Guidance:

Except as provided in Paragraphs 34 and 35, letters, numerals, and other characters should be composed of the Standard Alphabets as detailed in the "Standard Highway Signs" publication.

Option:

A lettering style other than the Standard Alphabets provided in the "Standard Highway Signs" <u>publication</u> may be used on community wayfinding guide signs if an engineering study determines that the legibility and recognition values for the chosen lettering style meet or exceed the values for the Standard Alphabets for the same legend height and stroke width, <u>as provided in Paragraph 32 of this</u> Section.

Standard:

An alternative lettering style as provided in Paragraph 33 of this Section shall be conventional in form. The letters, numerals, and other characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

<u>In accordance with Section 1D.09</u>, except for signs that are <u>designed and located with the</u> intent to be viewed only by pedestrians, bicyclists stopped out of the flow of traffic, or occupants of parked vehicles, Internet and e-mail addresses, including domain names and uniform resource locators (URL), <u>scanning graphics <u>quick-response</u> (QR) <u>codes</u>, <u>barcodes</u>, <u>or other graphics intended for optical scanning</u> to obtain information, shall not be displayed on any community wayfinding guide sign or sign assembly.</u>

The arrow location and priority order of destinations shall follow the provisions described in Sections 2D.08 and 2D.36. Arrows shall be of the designs provided in Section 2D.08.

2173 Option:

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Pictographs (see definition in Section 1A.13) may be used on community wayfinding guide signs.

2175 Standard:

If a pictograph is used, its height shall not exceed two times the height of the upper-case letters of the principal legend on the sign.

Except for pictographs, symbols that are not approved in this Manual for use on guide signs shall not be used on community wayfinding guide signs.

Business logos, commercial graphics, or other forms of advertising (see Section 1A.01) shall not be used on community wayfinding guide signs or sign assemblies.

Option:

Other graphics that specifically identify the wayfinding system, including identification markers, may be used on the overall sign assembly and sign supports.

Support:

An <u>identification</u> marker consists of a shape, color, and/or pictograph that is used as a visual identifier for the community wayfinding guide signing system for an area. Figure <u>2D-29</u> <u>31</u> shows examples of identification marker designs that can be used with community wayfinding guide signs.

Option:

An identification marker may be used in a community wayfinding guide sign assembly, or may be incorporated into the overall design of a community wayfinding guide sign, as a means of visually identifying the sign as part of an overall system of community wayfinding signs and destinations.

Standard:

The sizes and shapes of identification markers shall be smaller than the community wayfinding guide signs themselves. Identification markers shall not be designed to have an appearance that could be mistaken by road users as being a traffic control device.

Guidance:

The area of the identification marker should not exceed 1/5 of the area of the community wayfinding guide sign with which it is mounted in the same sign assembly.

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Section 2D.56 Comments: NCUTCD agrees with 2D.56 as presented in the NPA.

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Section 2D.56 Signing of Named Highways for Mapping and Address Purposes

2205 Support:

A highway name is the officially designated name of a freeway, expressway, or conventional road for navigational, official mapping, and address purposes. Some highways are named in addition to or in lieu of being assigned a highway route number. Memorial, honorary, ceremonial, or other secondary names, such as touring route and byway names, are not considered to be highway names.

2210 Option:

Guide signs may contain street or highway names if the purpose is to enhance driver communication and guidance; however, they are to be considered as supplemental information to route numbers.

2213 Standard:

Highway names shall not replace official numeral designations.

Memorial, <u>honorary</u>, <u>or other secondary</u> names (see Section 2M.10) shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.

The use of route signs shall be restricted to signs officially used for guidance of traffic in accordance with this Manual and the "Purpose and Policy" statement of the American Association of State Highway and Transportation Officials that applies to Interstate and U.S. numbered routes (see Page i for AASHTO's address).

Option:

Unnumbered routes having major importance to proper guidance of traffic may be signed if carried out in accordance with the aforementioned policies. For unnumbered highways, a name to enhance route guidance may be used where the name is applied consistently throughout its length.

2226 Guidance

Only one name should be used to identify any highway, whether numbered or unnumbered.

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- Section 2D.57 Comments: NCUTCD generally agrees with 2D.57 as presented in the NPA, but
- recommends deleting the second Support paragraph as it does not support the content in this
- Section, and a proper system of signing routes and sites allows a driver to navigate without
- taking their eyes off the road.
- 2234 Section 2D.57 National Scenic Byways Sign and Plaque (D6-4, D6-4aP)
- 2235 Support:

Certain roads have been designated by the U.S. Secretary of Transportation as National Scenic Byways or All-American Roads based on their archeological, cultural, historic, natural, recreational, or scenic qualities.

Direction along routes and to sites relies primarily on touring maps rather than directional signing and route marking for the byway itself.

Option:

State and local highway agencies may install the National Scenic Byways (D6-4) sign or (D6-4aP) plaque at entrance points to a route that has been recognized by the U.S. Secretary of Transportation as a National Scenic Byway or an All-American Road. The D6-4 sign may be installed as independent Directional (see Section 2D.32) or Confirming (see Section 2D.33) assemblies at periodic intervals along the designated route and near intersections where the designated route turns or follows a different numbered highway. The D6-4aP plaque may be installed below a Route sign in a Confirming assembly. At locations where roadside features have been developed to enhance the traveler's experience such as rest areas, historic sites, interpretive facilities, or scenic overlooks, the National Scenic Byways sign or plaque may be placed on the associated sign assembly to inform travelers that the site contributes to the byway travel experience.

2252 Guidance:

Where the byway is identified only by the National Scenic Byways sign, the Directional assembly should consist of the D6-4 sign and an M5 series or M6 series Auxiliary plaque when indication of a turn is necessary to remain on the byway route.

Where the name of the byway is to be displayed on identification signs along the byway route, the name should be displayed in a Directional or Confirming assembly as follows:

2258	A.	On a	nlaaue	mounted	helow	the l	06-4	sion:	or

B. On an identification sign with the D6-4aP plaque mounted below the sign.

In either case, the size of the National Scenic Byways (D6-4) sign or the byway identification sign should be consistent with that specified for route signs (see Section 2D.10) for the roadway classification.

Where the name of the byway is to be displayed along the byway route as provided in Paragraph 5 of this Section, the byway Directional or Confirming assemblies should be located separately from any Route Sign assemblies or Destination guide signs.

Standard:

When a National Scenic Byways sign is installed on a National Scenic Byway or an All-American Road, the design shown for the D6-4 <u>sign</u> or D6-4aP <u>plaque</u> in Figure 2D-<u>34</u> shall be used. Use of this design shall be limited to routes that have been designated as a National Scenic Byway or All-American Road by the U.S. Secretary of Transportation.

If used, the D6-4 $\underline{\text{sign}}$ or D6-4a \underline{P} plaque shall be placed such that the $\underline{\text{highway Route}}$ signs have primary visibility for the road user.

The D6-4 sign or the D6-4aP plaque shall not be installed as sign panels on a guide sign or as part of a guide sign assembly.

NCUTCD agrees with Figure 2D-34 as presented in the NPA.

Figure 2D-34. Examples of Use of the National Scenic Byways Sign

Section 2D.58 Comments: NCUTCD generally agrees with 2D.58 as presented in the NPA, but recommends revising as follows:

- Delete the second Support paragraph as it does not support the content in this Section, and a
 proper system of signing routes and sites allows a driver to navigate without taking their eyes
 off the road
- Revise the Standard statement to clarify that scenic byway, historic trail and auto tour route signs do not appear similar to highway route markers, so that the trail or byway is not mistaken to be a route of equal importance
- Delete the final Support sentence because Figure 2D-36 does not provide directions from a freeway or expressway interchange

Section 2D.58 State-Designated Scenic Byway, Historic Trail, and Auto Tour Route Signs Support:

Signing for historic trails, auto tour routes, and State-designated scenic byways, is similar in concept to that for National Scenic Byways as provided in Section 2D.57. Direction along routes and to sites relies primarily on touring maps rather than directional signing and route marking for the trail, tour route, or byway itself.

Named highways are officially designated and shown on official maps and serve the purpose of providing route guidance, primarily on unnumbered highways, and property addresses. A highway designated as a trail, auto tour route, or byway is not considered to be a named highway for the purposes of highway signing or road user navigation and orientation. Section 2D.56 contains provisions for the signing of named highways.

Section 1A.08 provides information on the authority for placement of traffic control devices within the highway right-of-way.

2303 Guidance:

Route Sign assemblies and Destination guide signs should have priority in visibility and location over signing related to historic trails, auto tour routes, and byways.

2306 Option:

Identification signs for a historic trail, such as the National Historic Trails administered by the National Park Service, may be installed along segments of conventional roads that coincide with the original route of the trail.

<u>Identification signs for a State scenic byway may be installed along conventional roads that have been designated as part of a State scenic byway system.</u>

Where a National Scenic Byway is part of a State scenic byway system, the National Scenic Byways (D6-4aP) plaque (see Section 2D.57) may be installed in a Directional or Confirming assembly below the identification sign for the State scenic byway (see Figure 2D-35).

A State scenic byway system sign may be installed in a Directional or Confirming assembly with the name of the byway displayed on a plaque below the sign (see Figure 2D-35).

NCUTCD agrees with Figure 2D-35 as presented in the NPA.

Figure 2D-35. Example of Use of National Historic Trails, National, State Scenic Byways Signs

Guidance:

The design and size of historic trail and State scenic byway identification or system signs should comply with the general provisions and principles for Route signs (see Section 2D.10). Designs should be simple, dignified, and devoid of complex graphics. The size of the signs should not exceed the size of the Route signs used along a particular route.

Standard:

Scenic byway, historic trail and auto tours route signs designs shall not incorporate highway route signs or any component thereof. standard highway sign legend elements into their design.

Guidance:

Where used, historic trail and State scenic byway identification signs should be installed as Directional (see Section 2D.32) or Confirming (see Section 2D.33) assemblies at independent locations, separate from other Route Sign assemblies and Destination guide signs. Where used, confirming assemblies for the trail or byway should be installed at less frequent intervals than Confirming assemblies for the numbered route.

2338 Support:

Where all or part of the original route of a historic trail does not follow a roadway, an auto tour route is sometimes established along a conventional road in the general vicinity of the historical route of the trail. Examples include auto tour routes following other routes that parallel the original routes of the Lewis and Clark National Historic Trail, the Oregon National Historic Trail, and the Santa Fe National Historic Trail. The auto tour route is shown on touring maps along State or other highways and provides access to sites on the trail from those highways.

A system of signing providing direction along conventional roads for a historic trail with an auto tour route is shown in Figure 2D-36. Examples of Destination and Supplemental guide signs (see Section

2347 <u>2E.55) providing direction to historic trail sites from a freeway or expressway interchange are shown in Figure 2D-36.</u>

NCUTCD agrees with Figure 2D-36 as presented in the NPA.

Figure 2D-36. Example of Guide and Directional Signing for a National Historic Trail

Guidance:

Signing for historic trails should be limited to Destination signs for the sites related to the trail and to Directional and Confirming assemblies for the original portions of the trail itself. If an auto tour route has been designated along other highways to provide access to sites along the original trail as described in Paragraph 11, then the signing should be limited to Destination signs for those sites and directional signing to access the original route of the trail. Identification signs for the auto tour route should not be installed. Instead, direction along the auto tour route should rely on the touring map and other directional signs for the highways that the auto tour route follows.

Standard:

Identification signs for historic trails, auto tour routes, and scenic byways shall not be installed on freeways or expressways, except as necessary to provide continuity between discontinuous segments of conventional roadways that are designated as a trail, auto tour route, or byway, for which the freeway or expressway provides the only connection between the segments. If installed on freeways or expressways, the identification signs shall be installed as independent trailblazer assemblies (see Sections 2D.34 and 2E.27) and shall not be installed with other Route signs or confirming assemblies or on guide signs. If installed on freeways or expressways, the trailblazer assemblies for the trail, auto tour route, or byway shall be installed at less frequent intervals than confirming assemblies for the highway route.

<u>Identification signs for historic trails, auto tour routes, and scenic byways shall not be installed as sign panels on a guide sign or as part of a guide sign assembly.</u>

Section 2D.59 Comments: The intent of this signing is to bypass incidents on the main route rather than be a bypass for emergencies. Use of the term EMERGENCY for signing as described in this proposal conflicts with the public's more common understanding of the word EMERGENCY, such as for medical, fire or evacuation. In some states, activation of a signed emergency route would require an emergency declaration such as for regulations related to snow emergency routes. The marking of emergency routes is also typically done as a response to a declaration of an emergency (hurricane, snow emergency, etc.) Based on this, NCUTCD recommends revising 2D.59 in accordance with NCUTCD recommendation 18A-GMI-01 as follows:

> Revise the section title from "EMERGENCY ROUTE and EMERGENCY ROUTE TO Signs and Plaques" to "INCIDENT BYPASS Signs and Plaques"

 Change all instances of "EMERGENCY ROUTE and EMERGENCY ROUTE TO" to "INCIDENT BYPASS"

Other editorial revisions as needed

Section 2D.59 EMERGENCY ROUTE and EMERGENCY ROUTE TO INCIDENT BYPASS Signs and Plaques

2393 Support:

As part of an agency's transportation incident management plan it is sometimes desirable to permanently sign routes that provide rerouting of traffic around highway segments susceptible to traffic incidents. Permanently installed INCIDENT BYPASS EMERGENCY ROUTE and EMERGENCY ROUTE TO signs and plaques (see Figure 2D-37) provide direction on conventional roads from an exit off a highway upstream of an area susceptible to traffic incidents back to the original route at a point downstream of the incident susceptible area. Option:

INCIDENT BYPASS EMERGENCY ROUTE and EMERGENCY ROUTE TO signs or plaques mounted used on a directional assembly may be permanently installed on conventional roadways to provide trailblazing along a pre-planned diversion route to bypass direction back to the highway when diverted off of it for a traffic incident.

Support:

The purpose of INCIDENT BYPASS EMERGENCY ROUTE and EMERGENCY ROUTE
TO signs is for corridor management along routes that have reoccurring recurring incidents and have reasonable rerouting paths available. These signs are intended to be permanently installed to provide instant rerouting guidance to motorists when backups first begin even before emergency responders could provide temporary traffic control for rerouting traffic. These signs can be used as a standalone system or be a part of a larger system which may incorporate other devices such as dynamic message signs. These signs provide motorists assurance that a diversionary route given exit point will lead them back to their original route of travel.

Standard:

INCIDENT BYPASS EMERGENCY ROUTE and EMERGENCY ROUTE TO signs shall only be installed at departure points and along diversion routes for directing motorists around highway segments in areas that are more susceptible to traffic incidents; see Figure 2D-38. INCIDENT BYPASS EMERGENCY ROUTE and EMERGENCY ROUTE TO signs shall be placed at each turning decision points along the designated route until it rejoins the original route or until other directional signs leading back to the original route are provided.

INCIDENT BYPASS EMERGENCY ROUTE and EMERGENCY ROUTE TO signs shall have a green background with white legend.
Option:

For emphasis the legend INCIDENT BYPASS EMERGENCY ROUTE or EMERGENCY ROUTE TO may be displayed in a yellow panel with black letters on the top of the sign; see Figure 2D-37.

Standard:

Orange or pink shall not be used as alternate colors on permanently installed signs or plaques for rerouting traffic during an incident or other event. If a route shield is displayed as part of the message, the wording of the sign or plaque shall be INCIDENT BYPASS EMERGENCY ROUTE TO as shown in Figure 2D-37.

Option:

An INCIDENT BYPASS EMERGENCY ROUTE TO plaque with either a white legend on a green background or black legend on a yellow background may be added to the top of a conventional Route Assembly on a diversion route to provide providing direction back to the original route downstream of past the incident; see Figure 2D-37, 2D-38.

- 2439 NCUTCD recommends revising Figure 2D-37 in accordance with NCUTCD recommendation 2440 18A-GMI-01 as follows:
 - Select one of these titles as the final figure title
 - Revise all instances of "EMERGENCY ROUTE" and "EMERGENCY ROUTE TO" to "INCIDENT BYPASS"

Figure 2D-37. Example of Guide Signs for Rerouting Due to Traffic Incidents

Figure 2D-37. Signs for Rerouting Due to Traffic Incidents













NCUTCD recommends that **EMERGENCY ROUTE and EMERGENCY ROUTE TO** text on signs be replaced with INCIDENT BYPASS TEXT.





Examples of guide signs for rerouting





WHEN FLASHING I-78 CLOSED AHEAD **USE EMERGENCY ROUTE NEXT RIGHT**

Example of advance sign for rerouting

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2442 2443

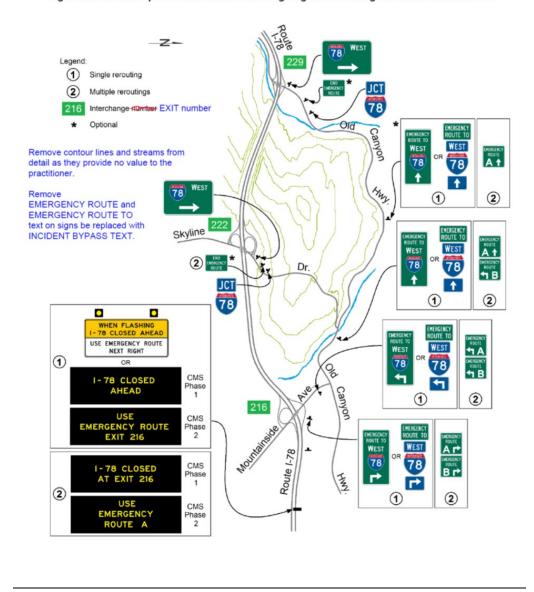
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- NCUTCD recommends revising Figure 2D-38 in accordance with NCUTCD recommendation 18A-GMI-01 as follows:
 - Select one of these titles as the final figure title
 - Revise all instances of "EMERGENCY ROUTE" and "EMERGENCY ROUTE TO" to "INCIDENT BYPASS"
 - Remove the contour and river/stream lines as they provide no value to the reader

Figure 2D-38. Example of Signing for Rerouting Due to Traffic Incidents

Figure 2D-38. Example of Permanent Guide Signing for Rerouting Due to Traffic Incidents



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