



## National Committee on Uniform Traffic Control Devices

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

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

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

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

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

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

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

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

**TOPIC: SIZE OF ARROWS FOR OVERHEAD ARROW-PER-LANE ARROWS**

**AFFECTED PORTIONS OF MUTCD: Chapter 2E, Table 2E-5**

**DISCUSSION:** The 2009 MUTCD requires that either Overhead Arrow-per-Lane or Diagrammatic guide sign designs be used for all multi-lane exits at major interchanges that have an optional exit lane [Section 2E.20]. For all new or reconstructed freeways and expressways that meet the above conditions, the 2009 MUTCD requires that Overhead Arrow-per-Lane guide signs be used [Section 2E.21].

Overhead Arrow-per-Lane signs are larger than other forms of guide signing and this is a major issue for state departments of transportation. The sign must be wider because it must provide an arrow over each lane. In addition, the sign height is higher because the through arrows are required to be 72 inches tall. Increased sign width and height adds both weight and wind load to the support structure. For one new freeway facility in Florida, the state Department of Transportation estimated that the additional cost (for both sign and sign structure) for an Arrow-per-Lane sign, compared to a traditional sign design, would be \$500,000 per sign structure. For reconstructed freeway facilities, an existing overhead sign bridge would often need to be replaced due to the additional structural load.

To avoid the need to replace an existing sign structure when an Overhead Arrow-per-Lane sign was installed on an existing sign structure, the Missouri Department of Transportation designed an Overhead Arrow-per-Lane sign with through arrows that are 42 inches tall. This sign design placed a smaller load on the support structure, produced a lower wind load, and allowed an existing sign structure to be used. A reduction in the minimum size of arrows in Table 2E-5 would allow more flexibility in sign design.

[Note: A companion recommendation from the GMI Signs Technical Committee, proposing additional changes to guide signs for option lanes, is also being forwarded to the Council.]

49 **RECOMMENDATION:** The Guide and Motorist Information Signs Technical Committee  
 50 recommends that the minimum size of arrows for Overhead Arrow-per-Lane arrows be reduced.  
 51 The existing sizes are given in Part L of Table 2E-5 (reproduced below).

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

Type of Sign	Minimum Size
<b>A. Pull-Through Signs</b>	
Destinations — Upper-Case Letters	16
Destinations — Lower-Case Letters	12
Route Signs	
1- or 2-Digit Shields	36 x 36
3-Digit Shields	45 x 36
Cardinal Directions — First Letter	15
Cardinal Directions — Rest of Word	12
<b>B. Supplemental Guide Signs</b>	
Exit Number Words	10
Exit Number Numerals and Letters	15
Place Names — Upper-Case Letters	13.33
Place Names — Lower-Case Letters	10
Action Messages	8
Route Signs	
Numerals	12
1- or 2-Digit Shield	24 x 24
3-Digit Shield	30 x 24
<b>C. Interchange Sequence or Community Interchanges Identification Signs</b>	
Words — Upper-Case Letters	13.33
Words — Lower-Case Letters	10
Numerals	13.33
Fraction Numerals	10
Route Signs	
Numerals	12
1- or 2-Digit Shield	24 x 24
3-Digit Shield	30 x 24
<b>D. Next XX Exits Sign</b>	
Place Names — Upper-Case Letters	13.33
Place Names — Lower-Case Letters	10
NEXT XX EXITS — Words	10
NEXT XX EXITS — Number	15
<b>E. Distance Signs</b>	
Words — Upper-Case Letters	8
Words — Lower-Case Letters	6
Numerals	8
Route Signs	
Numerals	9
1- or 2-Digit Shield	18 x 18
3-Digit Shield	22.5 x 18
<b>F. General Services Signs (see Chapter 2I)</b>	
Exit Number Words	10
Exit Number Numerals and Letters	15
Services	10

Type of Sign	Minimum Size
<b>G. Rest Area, Scenic Area, and Roadside Area Signs (see Chapter 2I)</b>	
Words	12
Distance Numerals	15
Distance Fraction Numerals	10
Distance Words	10
Action Message Words	12
<b>H. Reference Location Signs (see Chapter 2H)</b>	
Words	4
Numerals	10
<b>I. Boundary and Orientation Signs (see Chapter 2H)</b>	
Words — Upper-Case Letters	8
Words — Lower-Case Letters	6
<b>J. Next Exit and Next Services Signs</b>	
Words and Numerals	8
<b>K. Exit Only Signs</b>	
Words	12
<b>L. Overhead Arrow-Per-Lane Signs</b>	
Arrowhead (Type D Directional Arrow)	21.625
Arrow Shaft Width	8
Arrow Height	
Through	72
Left Only	48
Right Only	48
Optional-Diverge (Through with Left or Right)	72
Optional-Split (Left and Right)	66
Vertical Separator Width	2
Vertical Space between Vertical Separator and Top of Nearest Arrow	8
Horizontal Space between Vertical Separator and Top of Nearest Through Arrow	15
Horizontal Space between Arrow Shaft and EXIT and ONLY plaques	10
EXIT and ONLY Panels	60 x 18
<b>M. Diagrammatic Signs</b>	
Arrowhead (Type D Directional Arrow)	13.5*
Lane Widths	5
Lane Line Segments	1 x 6
Spacing between Lane Line Segments	6
Stem Height to Upper Point of Departure	30
Horizontal Space between Arrowhead and Route Shield or Destination	12

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

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

53 **RECOMMENDED WORDING:**

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55 **The minimum size for Arrow Height for Overhead Arrow-Per-Lane Signs would be reduced**  
 56 **as shown in the following table.**

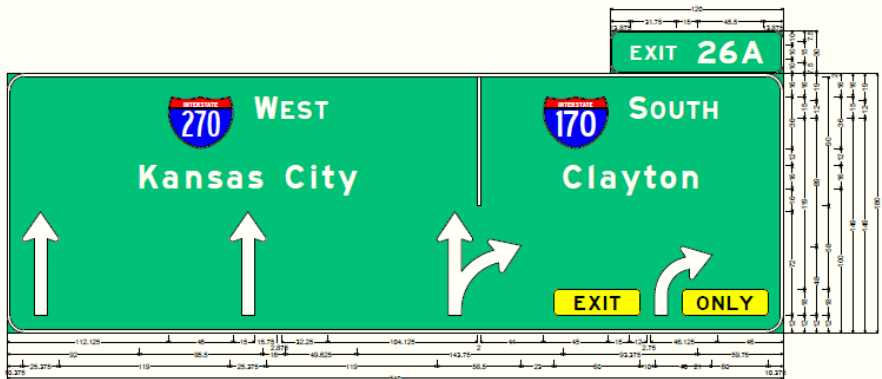
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	2009 MUTCD	Proposed
L. Overhead Arrow-Per-Lane Signs		
Arrowhead (Type D Directional Arrow)	21.625	21.625
Arrow Shaft Width	8	8
Arrow Height		
Through	72	42
Left Only	48	36
Right Only	48	36
Optional-Diverge (Through with Left or Right)	72	42
Optional-Split (Left and Right)	66	36
		64

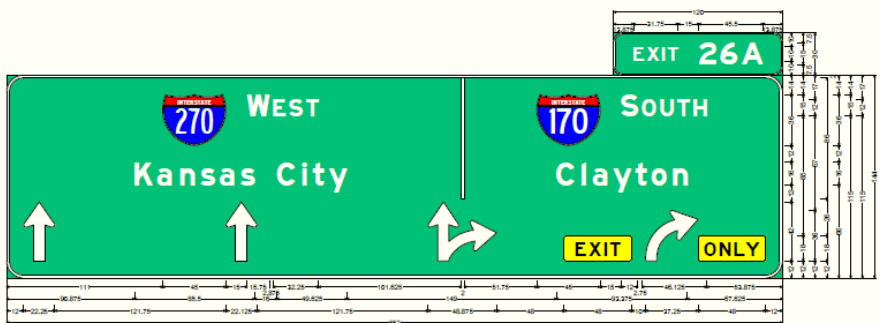
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66 **The two following illustrations show the difference in the form and size of arrows, along with**  
 67 **the effect on total sign size, for the existing MUTCD and the proposed recommendation.**

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MUTCD Arrows - 72 inch  
 &  
 Exit Only Panels - 60 x 18  
**675 sqft**



#1 Proposed Arrows - 42 inch  
 &  
 Exit Only Panels - 48 x 18  
**552 sqft**

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72 **January 19, 2012**

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

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75 **June 20, 2012**

76 **GMI Vote: FOR: 17      AGAINST: 1      ABSTAIN: 0**

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**No modifications made after review of Sponsor comments. GMI recommends presentation to Council.**  
**June 21, 2012**  
**Council Vote:**  
**0 Opposed, 0 Abstentions, 37 For – Unanimous, Motion passed.**