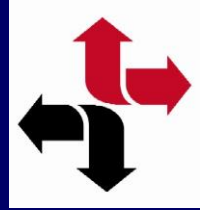
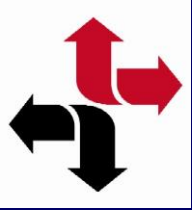


Millennium Edition

Summary of Changes

Part 3: Markings

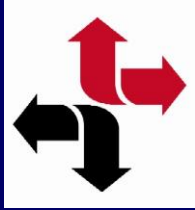
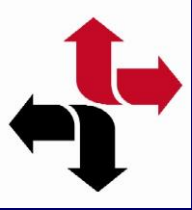




Standardization of Application

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ markings shall conform in all respects to the principles and standards.
Section 3A-2	Section 3A.2

Yellow Text Denotes a Standard

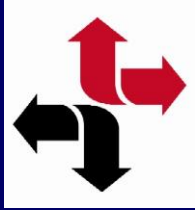
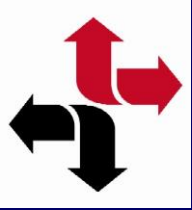


Materials

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD</p> <p>Section 3A-3</p>	<p>□ Object markers and delineators should not present a vertical or horizontal clearance obstacle for pedestrians.</p> <p>Section 3A.3</p>

Yellow Text Denotes a Standard

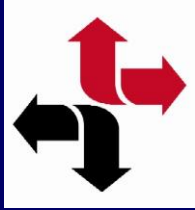
MUTCD PART III. MARKINGS



Colors

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Pavement markings shall be yellow, white, or red.□ Black is permitted in combination with the above colors. <p>Section 3A-4</p>	<ul style="list-style-type: none">□ Markings shall be yellow, white, red, or blue.□ Black in conjunction with one of the above colors shall be a usable color for object markers. <p>Section 3A.04</p>

Yellow Text Denotes a Standard

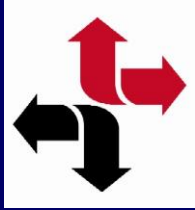
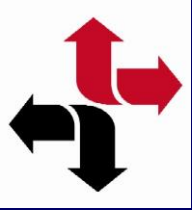


General Principles of Longitudinal Pavement Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none"> □ Paragraph D. Not in 1988 MUTCD. 	<ul style="list-style-type: none"> □ shall conform to the following basic concepts (A-D): □ D. Blue markings delineate parking spaces for persons with disabilities.
<ul style="list-style-type: none"> □ Section 3A-5 	<p>Section 3A.05</p>

Yellow Text Denotes a Standard

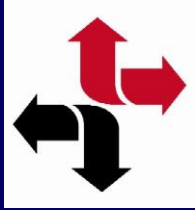
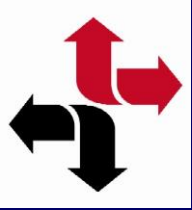
MUTCD PART III. MARKINGS



Widths & Patterns of Longitudinal Line Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Sections 3A-5 and 3A-6. <p>Section 3A-6</p>	<ul style="list-style-type: none">□ 3A-06 (A-G). This section contains the information previously in two sections. <p>Section 3A.06</p>

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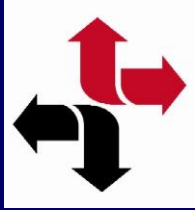
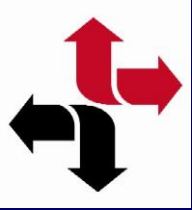


Widths & Patterns of Longitudinal Line Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ A dotted line is used to delineate a line extension...shall be the same color as the line it extends. <p>Section 3A-7</p>	<ul style="list-style-type: none">□ the width shall be at least the same as the width of the line it extends. <p>Section 3A.6</p>

Yellow Text Denotes a Standard

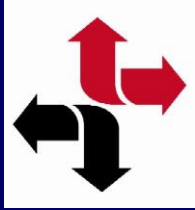
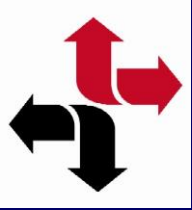
MUTCD PART III. MARKINGS



Widths & Patterns of Longitudinal Line Markings

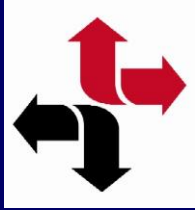
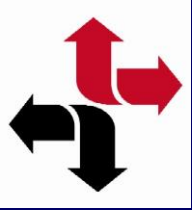
1988 MUTCD	Millennium Edition
<p>□ Sections 3A-6, Paragraph 5: A dotted line(s) is formed by short segments, normally two feet in length, and gaps, normally four feet or longer.</p> <p>Section 3A-6</p>	<p>□ Option: A dotted line may consist of 0.6 m (2 ft) line segments, and 1.2 m (4 ft) or longer gaps with a maximum segment-to-gap ratio of 1-to-3.</p> <p>Section 3A.06</p>

Yellow Text Denotes a Standard



Center Line Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ A center line separates traffic traveling in opposite directions. <p>Section 3B-1</p>	<ul style="list-style-type: none">□ Centerline pavement markings, when used, shall be the pavement markings used to delineate the separation of traffic lanes that have opposite directions of travel on a roadway and shall be yellow. <p>Section 3B.01</p>

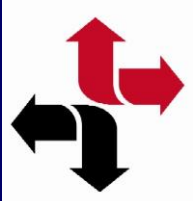
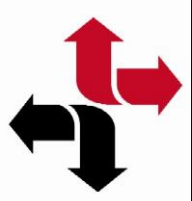


Markings on Four-or-More Lane, Two-Way Roadways

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD. <p>Section 3B-1</p>	<ul style="list-style-type: none">□ The center line markings on undivided two-way roadways with four or more traffic lanes, shall be the two-direction no-passing zone marking. <p>Section 3B.01</p>

Yellow Text Denotes a Standard

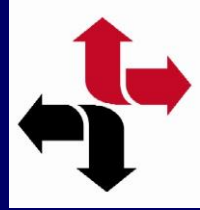
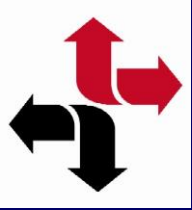
MUTCD PART III. MARKINGS



Yellow Center Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.□ <i>Section 3B.1</i> Version NPA 97□ Centerline Edgeline Final Rule	<ul style="list-style-type: none">□ includes the changes from the Final Rule for Center line and Edge lines. It contains STANDARDS, GUIDANCE, and OPTIONS <p>Section 3B.01</p>

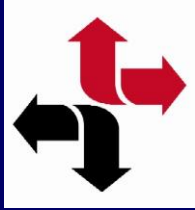
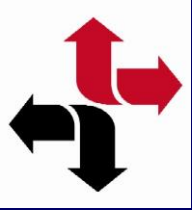
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Urban arterials and collectors with a traveled way width of 6.1 m (20 ft) with ADT>6000 <p>Section 3B.01</p>

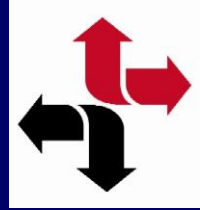
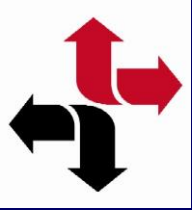
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ ... shall also be placed on all two-way streets and highways that have three or more traffic lanes. <p>Section 3B.01</p>

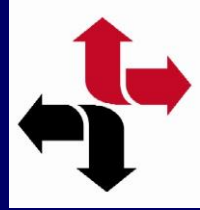
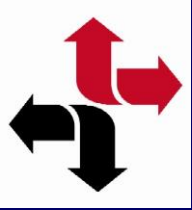
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ . . . marking should be placed . . . Urban arterials and collectors . . . ≥ 4000 ADT. <p>Section 3B.01</p>

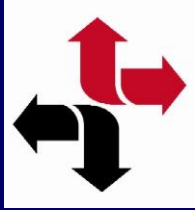
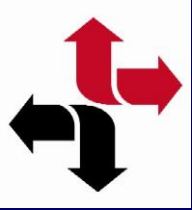
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">Rural arterials and collectors that have a traveled way width of 5.5 m (18 ft) and ADT of 3000 or greater <p>Section 3B.01</p>

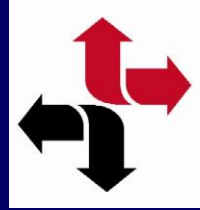
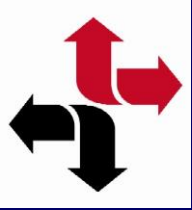
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Centerline markings should also be placed on other traveled ways where an engineering study indicates such a need. <p>Section 3B.01</p>

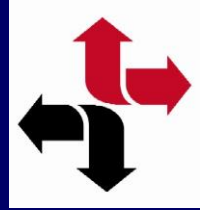
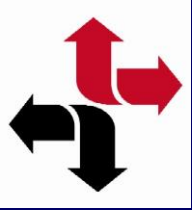
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">Paragraph a.4). engineering study should . . . traveled ways < 4.8m / 16 ft <p>Section 3B.01</p>

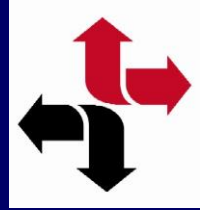
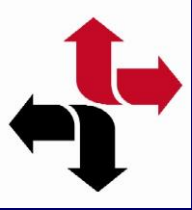
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ In rural districts on two-lane pavements 16 feet or more in width with prevailing speeds of greater than 35 MPH.	<ul style="list-style-type: none">□ OPTION: Centerline markings may be placed on other paved two-way traveled ways that are 4.9 m (16 ft) or more in width. <p>Section 3B.01</p>

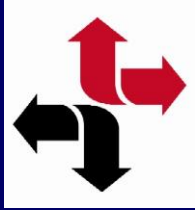
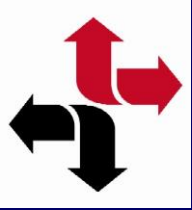
Yellow Text Denotes a Standard



Yellow Longitudinal Line and Left Edge Line Pavement Markings and Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ OPTION: If a traffic count is not available, the ADTs described in this Section may be estimates that are based on engineering judgment. <p>Section 3B.01</p>

Yellow Text Denotes a Standard



Longitudinal Markings

1988 MUTCD

- They shall be used on all Interstate Highways

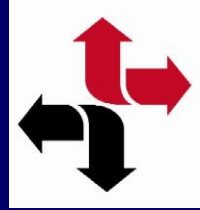
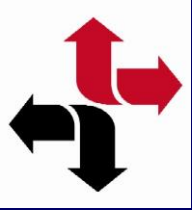
Millennium Edition

- Lane line markings shall be used on all Interstate highways and freeways.

Section 3B.04

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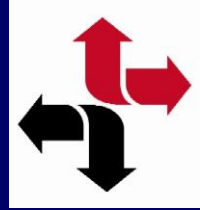
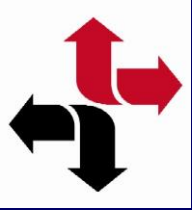
MUTCD PART III. MARKINGS



No-Passing Zone Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Standard: No-passing zone markings shall be used on approaches to highway-rail grade crossings (see Section 8B.16) and at other locations where the prohibition of passing is appropriate.

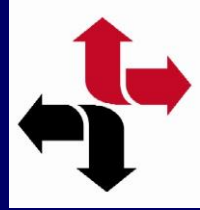
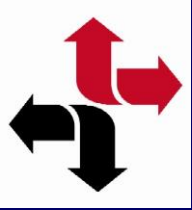
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No-Passing Zone Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ On a three-lane highway .., a no-passing buffer zone shall be provided by transitioning the centerline markings. <p>Section 3B-4</p>	<ul style="list-style-type: none">□ On three-lane roadways ... the center lane transitions from one direction to the other, a no-passing buffer zone shall be provided in the center lane.

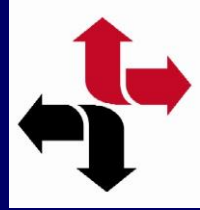
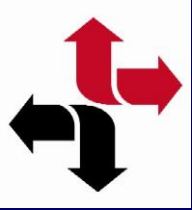
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No-Passing Zone Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ On a three-lane highway .., a no-passing buffer zone shall be provided by transitioning the centerline markings. <p>Section 3B-4</p>	<ul style="list-style-type: none">□ The buffer zone shall be a lane transition, a minimum of a 15 m (50 ft) buffer zone... where no- passing zones are required ... distances, the buffer zone shall be between the no-passing zones.

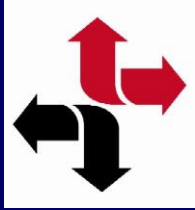
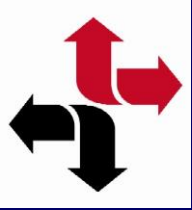
Yellow Text Denotes a Standard



No-Passing Zone Markings

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-8</p>	<p>□ The minimum taper length shall be 30 m (100ft) in urban areas and 60 m (200ft) in rural areas.</p> <p>Section 3B.2</p>

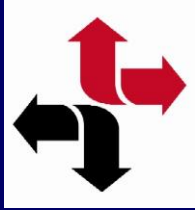
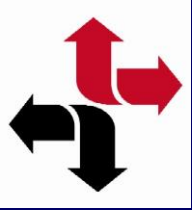
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Warrants for No-Passing Zones at Curves

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ it should be so marked where the sight distance is equal or less than listed for the prevailing off-peak 85 percentile speed or the speed limit. <p>Section 3B-5</p>	<ul style="list-style-type: none">□ shall be used at curves where the sight distance is less than the minimum for safe passing at the 85th percentile or posted or statutory speed limit limit. <p>Section 3B.02</p>

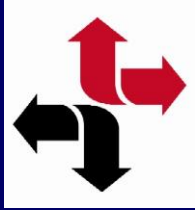
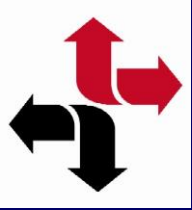
Yellow Text Denotes a Standard



Lane Line Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD. <p>Section 3B-2</p>	<ul style="list-style-type: none">□ When used, lane line pavement markings delineating the separation of traffic lanes that have the same direction of travel shall be white. <p>Section 3B.04</p>

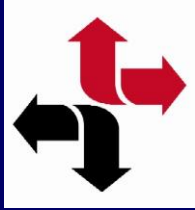
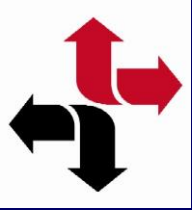
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Solid Lane Line Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ A normal solid white line may be used as the lane line in critical areas where it is advisable to discourage lane changing. <p>Section 3B-2</p>	<ul style="list-style-type: none">□ Where crossing the lane line markings is discouraged, the lane line markings shall consist of a normal solid white line. <p>Section 3B.2-2</p>

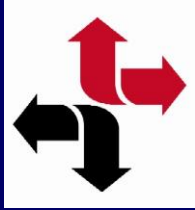
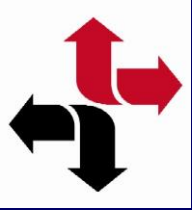
Yellow Text Denotes a Standard



Edge Line Marking Warrants

1988 MUTCD	Millennium Edition
<p>□ shall be provided on all Interstate highways, on rural multilane divided highways, and may be used on other classes of roads.</p> <p>Section 3B-2</p>	<p>□ shall be placed on all freeways, expressways, and on all rural arterials which have a traveled way width of 6.1 m (20ft) and ADT of 6000.</p> <p>Section 3B.07</p>

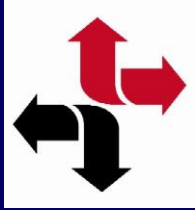
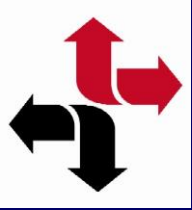
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Edge Line Marking Warrants

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-2</p>	<p>□ should be placed on paved streets or highways with ... rural arterials and collectors with a traveled way width 6.1 m (20ft) and and ADT of 3000 or greater.</p> <p>Section 3B.07</p>

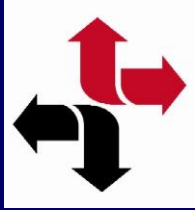
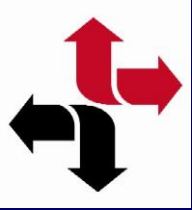
Yellow Text Denotes a Standard



Edge Line Marking Warrants

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-2</p>	<p>□ should be placed on paved streets or highways with ... At other paved streets and highways where an engineering study indicates a need for edge line markings.</p> <p>Section 3B.07</p>

Yellow Text Denotes a Standard

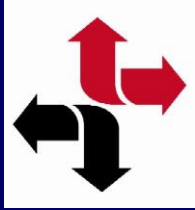
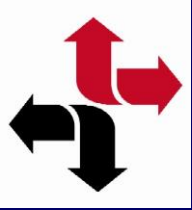


Edge Line Marking Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD	<ul style="list-style-type: none">Edge line markings should not be placed where an engineering study or engineering judgment indicates that providing them would decrease safety.

Yellow Text Denotes a Standard

MUTCD PART III. MARKINGS

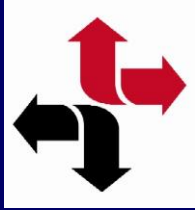
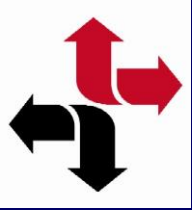


Edge Line Marking Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ Option: Edge line markings may be placed on streets and highways that do not have centerline markings.

Yellow Text Denotes a Standard

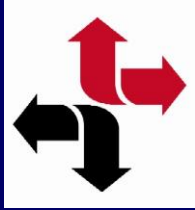
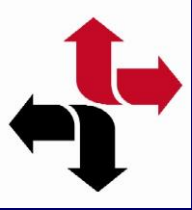
MUTCD PART III. MARKINGS



Edge Line Marking Warrants

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ Option: Edge line markings may be excluded, based on engineering judgment, for reasons such as if the traveled way edges are delineated by curbs, parking, bicycle lanes, or other markings.

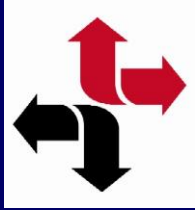
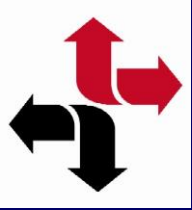
Yellow Text Denotes a Standard



Extensions Through Intersections or Interchanges

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ a dotted line may be used to extend markings as necessary through the interchange or intersection. <p>Section 3B.7</p>	<ul style="list-style-type: none">□ shall be the same color and at least the same width as the line markings they extend. <p>Section 3B.08</p>

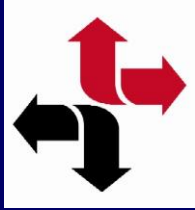
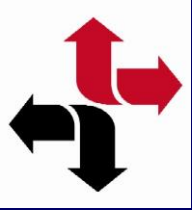
Yellow Text Denotes a Standard



Extensions Through Intersections or Interchanges

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ <i>Section 3B-7</i> is an Option	<ul style="list-style-type: none">□ This Option was changed to GUIDANCE.

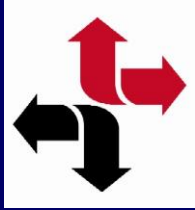
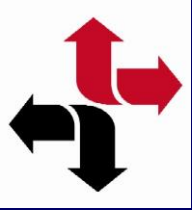
Yellow Text Denotes a Standard



Marking Approach to an Obstruction

1988 MUTCD	Millennium Edition
<p>□ $L = WS^2/60$ should be used to compute taper length where speeds are ≥ 40 mph.</p> <p>Section 3B-13</p>	<p>□ ... should be computed by $L = .62WS$, ($L = WS$) for roadways with speed limit of 45 mph or greater.</p> <p>Section 3B.10</p>

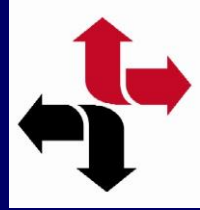
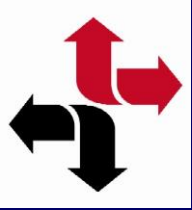
Yellow Text Denotes a Standard



Raised Pavement Markers

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD. <p>Section 3B-15</p>	<ul style="list-style-type: none">□ The color shall conform to the color of the marking for which they serve as a positioning guide, or for which they supplement or substitute. <p>yellow denotes a standard. Section 3B.11</p>

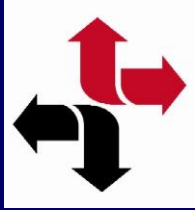
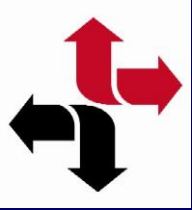
Yellow Text Denotes a Standard



Raised Pavement Markers

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-15</p>	<p>□ Raised pavement markers not retroreflective should not be used alone, as a substitute for other types of pavement markings.</p> <p>Section 3B.11</p>

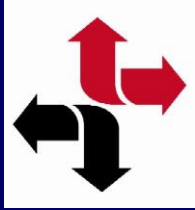
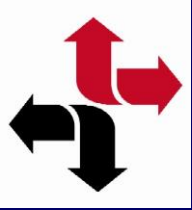
Yellow Text Denotes a Standard



Raised Pavement Markers

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-15</p>	<p>□ Directional configurations should be used to maximize correct and minimize confusing info..should be used to avoid confusion.</p> <p>Section 3B.11</p>

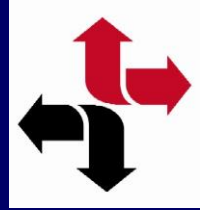
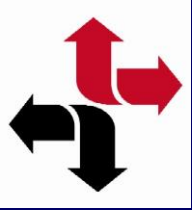
Yellow Text Denotes a Standard



Transverse Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Word and symbol markings on the pavement..shall be white in color. <p>Section 3B-20</p>	<ul style="list-style-type: none">□ shoulder markings, word and symbol markings, stop lines, crosswalk lines, speed markings, parking space markings .., shall be white unless specified. <p>Section 3B.15</p>

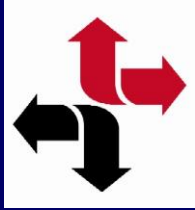
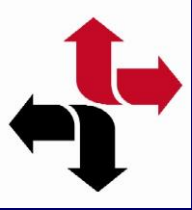
Yellow Text Denotes a Standard



Transverse Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ All letters, numerals and symbols should be in conformance with the Standard Alphabets for Highway Signs and Pavement Markings.* <p>Section 3B-20</p>	<ul style="list-style-type: none">□ shall be installed in accordance with the “Standard Alphabets for Highway Signs and Pavement Markings.” <p>Section 3B.15</p>

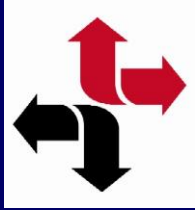
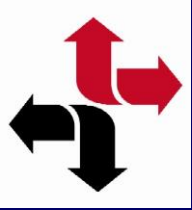
Yellow Text Denotes a Standard



Stop and Yield Lines

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Stop lines are solid white lines, normally 12" to 24" wide.. <p>Section 3B-17</p>	<ul style="list-style-type: none">□ Stop lines should be 12" to 24" wide. <p>Section 3B.16</p>

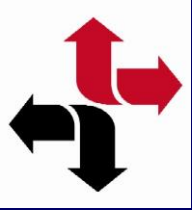
Yellow Text Denotes a Standard



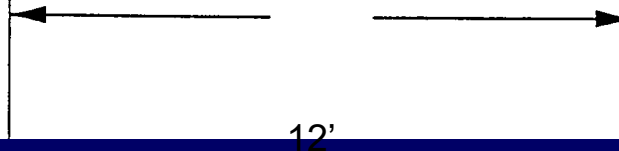
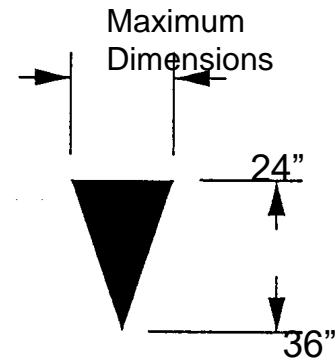
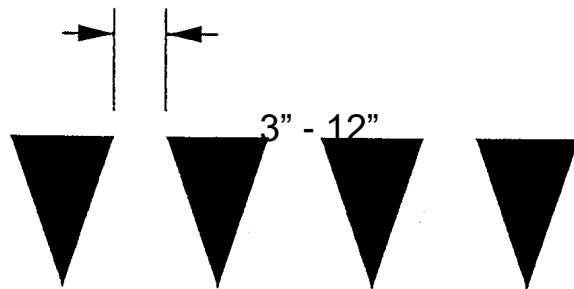
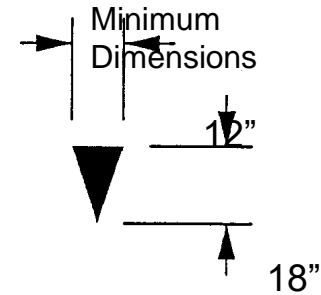
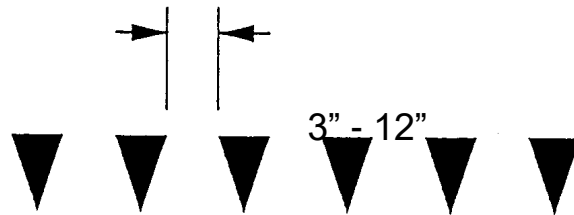
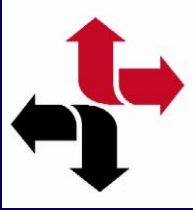
Stop and Yield Lines

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Yield lines consist of a row of isosceles triangles extending across approach lanes, and pointing toward approaching vehicles Section 3B.16

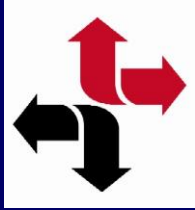
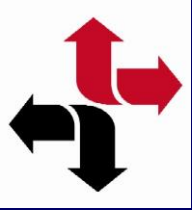
Yellow Text Denotes a Standard



Yield Line Markings



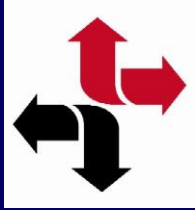
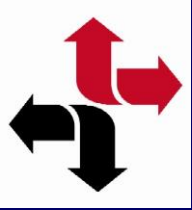
Note:
Triangle length is equal to 1 1/2 times the base dimension.



Stop and Yield Lines

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">The individual triangles comprising the yield line should have a base of 0.3 m to 0.6 m (12" to 24"). <p>Section 3B.16</p>

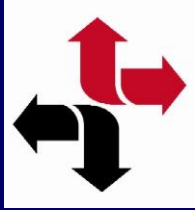
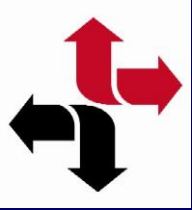
Yellow Text Denotes a Standard



Stop and Yield Lines

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">OPTION: Yield lines may be used where it is important to indicate the point behind which vehicles are required to yield in compliance with a YELD sign. <p>Section 3B.16</p>

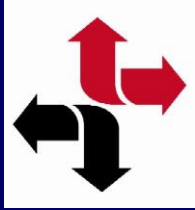
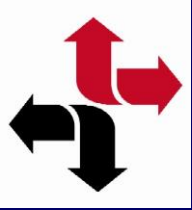
Yellow Text Denotes a Standard



Stop and Yield Lines

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ <i>Section 3B.16</i> Stop and Yield Lines, . . . should be placed 1.2 m (4 ft) in advance of and parallel to the nearest crosswalk line, except at roundabouts as . . . in <i>Section 3B.24</i>.

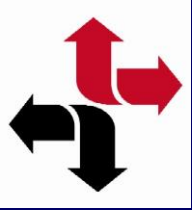
Yellow Text Denotes a Standard



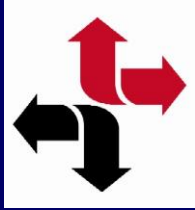
Stop and Yield Lines

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ . . . absence of a marked crosswalk, stop line or yield line should be placed at the desired stopping or yielding point, <p>Section 3B.16</p>

Yellow Text Denotes a Standard



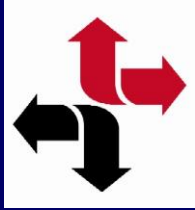
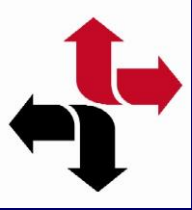
Pavement Word and Symbol Markings



1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">A yield-ahead triangle symbol or “YIELD AHEAD” word pavement markings may be used on approaches to intersections... encounter a yield sign.

Yellow Text Denotes a Standard

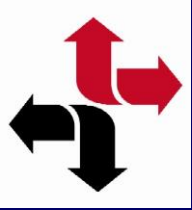
MUTCD PART III. MARKINGS



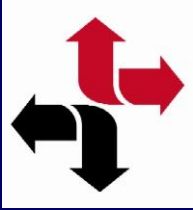
Pavement Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ Added two optional warning pavement markings: Yield Ahead & Yield Ahead triangle symbol Figure 3B-24. <p>Section 3B.19</p>

Yellow Text Denotes a Standard

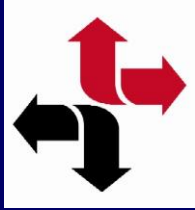
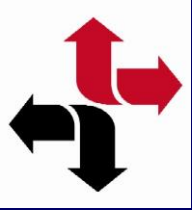


Pavement Word and Symbol Markings



1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD	<ul style="list-style-type: none">Figures 3B-14 and 3B-24 for Yield Line and Yield Ahead pavement markings. <p>Section 3B.19</p>

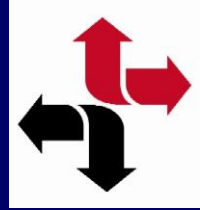
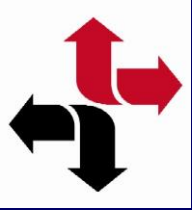
Yellow Text Denotes a Standard



Pavement Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ The yield-ahead triangle symbol of “YIELD AHEAD” word pavement marking <u>shall</u> not be used unless a YIELD sign is in place... <p>Section 3B.19</p>

Yellow Text Denotes a Standard



Pavement Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Large letters and numerals should be used, 8 ft or more in height. <p>Section 3B-20</p>	<ul style="list-style-type: none">□ Large letters and numerals should be 6ft or more in height. <p>Section 3B.19</p>

Yellow Text Denotes a Standard

Pavement Symbol Markings

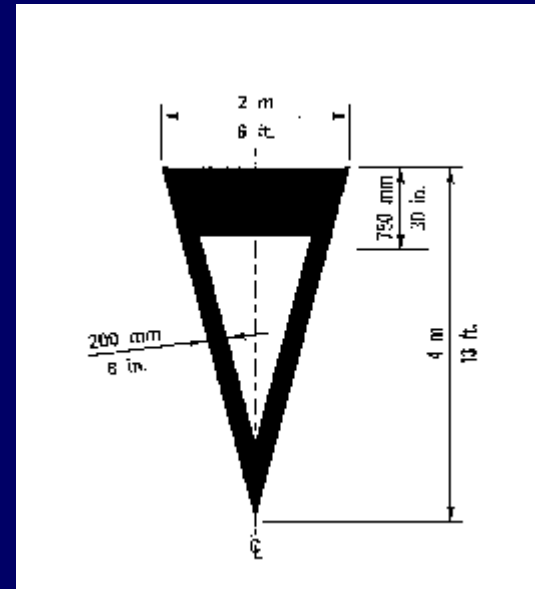
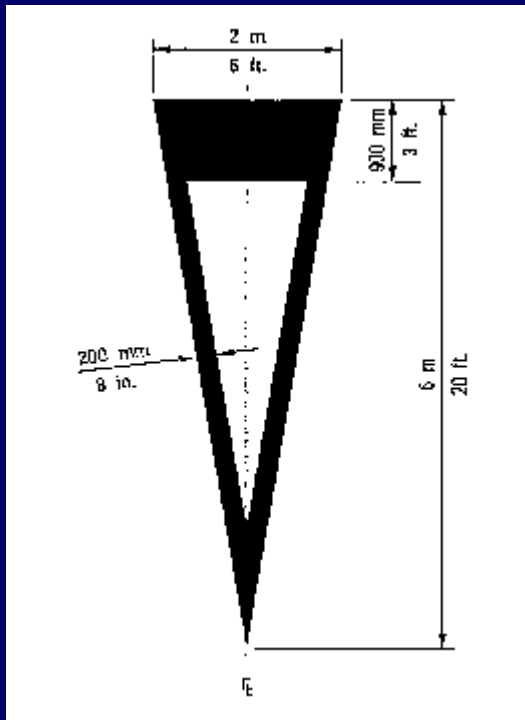
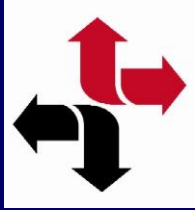
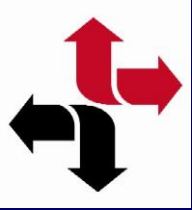


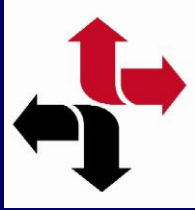
Figure 3-25. Typical Yield Ahead Triangle Symbols.



Pavement Word and Symbol Markings

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-20</p>	<p>□ OPTION: International symbol of accessibility parking space marking with blue background and white border options.</p> <p>Section 3B-19</p>

Yellow Text Denotes a Standard

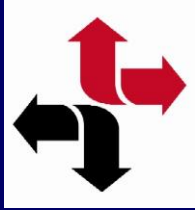
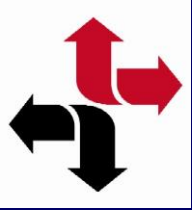


Pavement Word and Symbol Markings

1988 MUTCD	Millennium Edition
<p>❑ Not in 1988 MUTCD.</p> <p>❑ Section 3B-20</p>	<p>❑ Lane-Use, Lane Reduction and Wrong-Way Arrows for Pavement Markings. Shall be designed as shown in Figure 3B-20.</p> <p>Section 3B.19</p>

Yellow Text Denotes a Standard

MUTCD PART III. MARKINGS

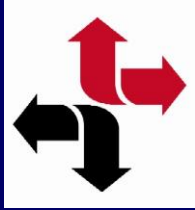
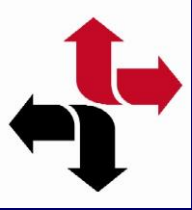


Pavement Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD. <p>Section 3B-20</p>	<ul style="list-style-type: none">□ Where channelization or ramp geometrics do not make wrong-way movements difficult, a lane-use arrow should be placed clearly visible to road user. <p>Section 3B.19</p>

Yellow Text Denotes a Standard

MUTCD PART III. MARKINGS



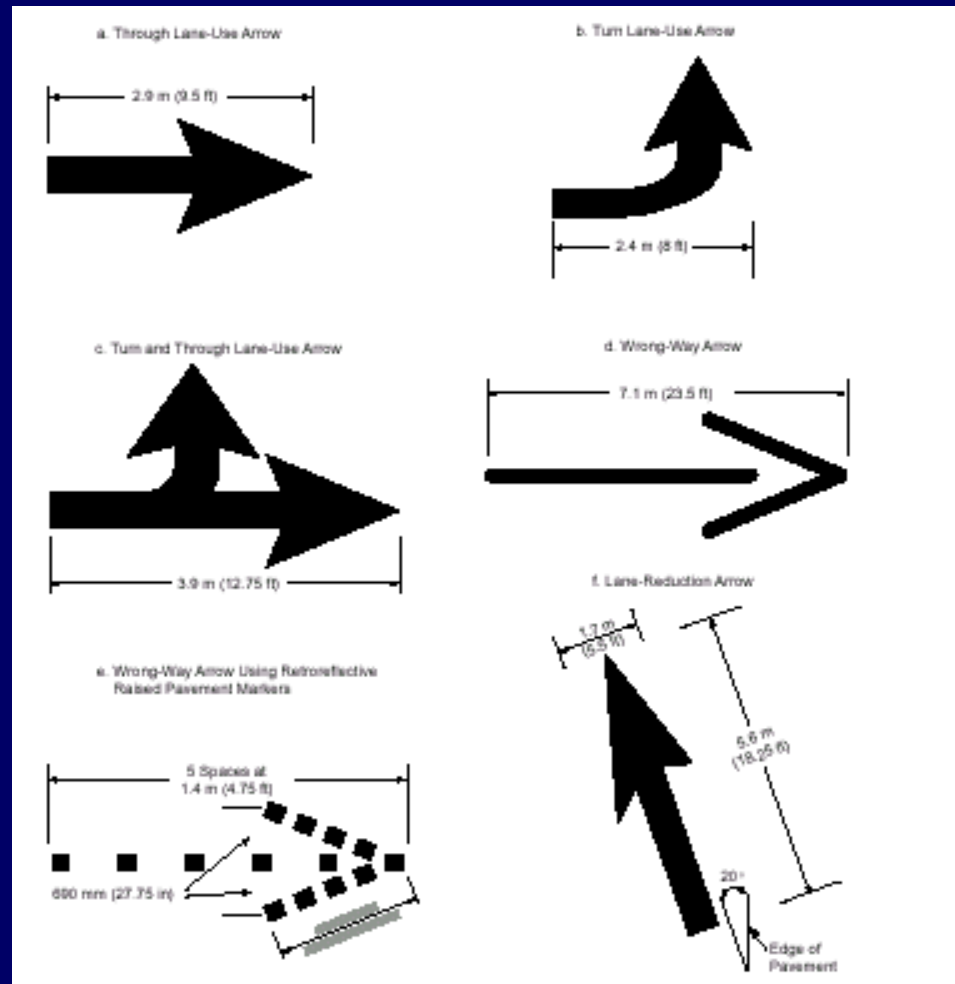
Pavement Word and Symbol Markings

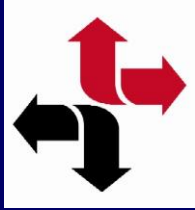
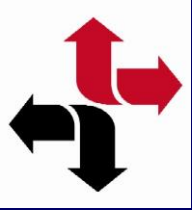
1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3B-20</p>	<p>□ Arrow markings at entrance ramp terminals where design does not clearly indicate the direction of flow.</p> <p>Section 3B.19</p>

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MUTCD PART III. MARKINGS

Pavement Symbol Markings

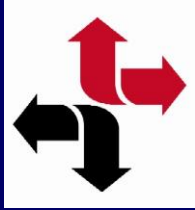
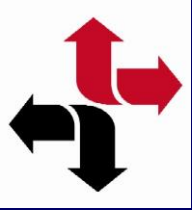




Curb Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ when local authorities prescribe special colors for curb markings as supplemental to standard signs, they may be used. <p>Section 3B-21</p>	<ul style="list-style-type: none">□ Signs shall be used with curb markings where curb markings are obliterated by snow and ice.. curb colors shall conform to general principles of markings. <p>Section 3B.21</p>

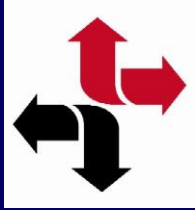
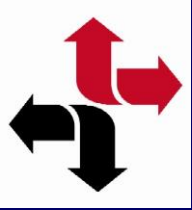
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Preferential Lane Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ Preferential lane marking <u>shall</u> consist of white lines formed in a diamond shape. The Diamond <u>shall</u> be at least 750 mm x 3.6 m (2.5 ft x 12 ft). <p>Section 3B.22</p>

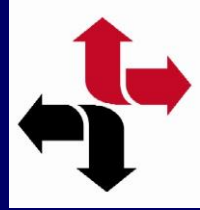
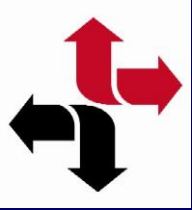
Yellow Text Denotes a Standard



Preferential Lane Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD	<ul style="list-style-type: none">□ SUPPORT: Preferential lanes may be designated to identify a wide variety of special uses. <p>Section 3B.22</p>

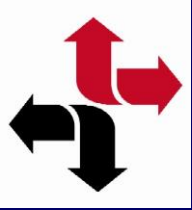
Yellow Text Denotes a Standard



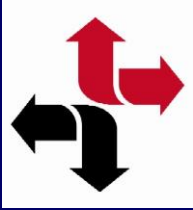
Preferential Lane Word and Symbol Markings

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">Four paragraphs added to specify the preferential lane marking (HOV, bicycles, bus, taxi, etc.) <p>Section 3B.22</p>

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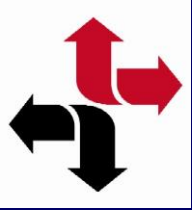
Preferential Lane Longitudinal Line Markings for Motorized Vehicles



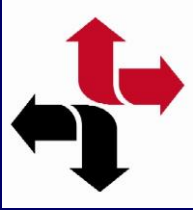
1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Preferential lane longitudinal markings shall be marked with the appropriate word or symbol pavement markings.

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MUTCD PART III. MARKINGS

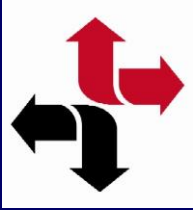
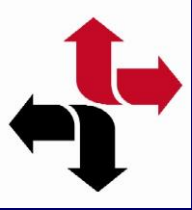


Preferential Lane Longitudinal Line Markings for Motorized Vehicles



1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ The STANDARD addresses Physically-separated, reversible, non-reversible, and concurrent flow preferential lanes.

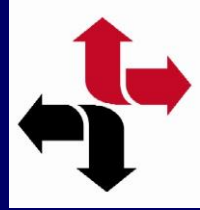
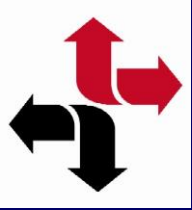
Yellow Text Denotes a Standard



Preferential Lane Longitudinal Line Markings for Motorized Vehicles

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ <i>Table 3-2</i> was made to graphically repeat the 4 paragraphs in this STANDARD.

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Preferential Lane Longitudinal Line Markings for Motorized Vehicles

Figure 3B-25. Typical Markings for Preferential Lanes for Motorized Vehicles (Sheet 1 of 2)

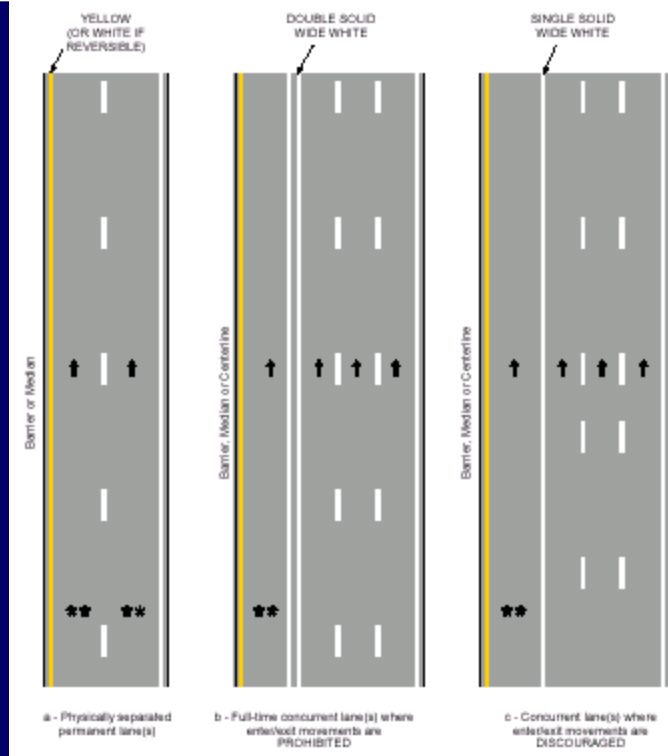
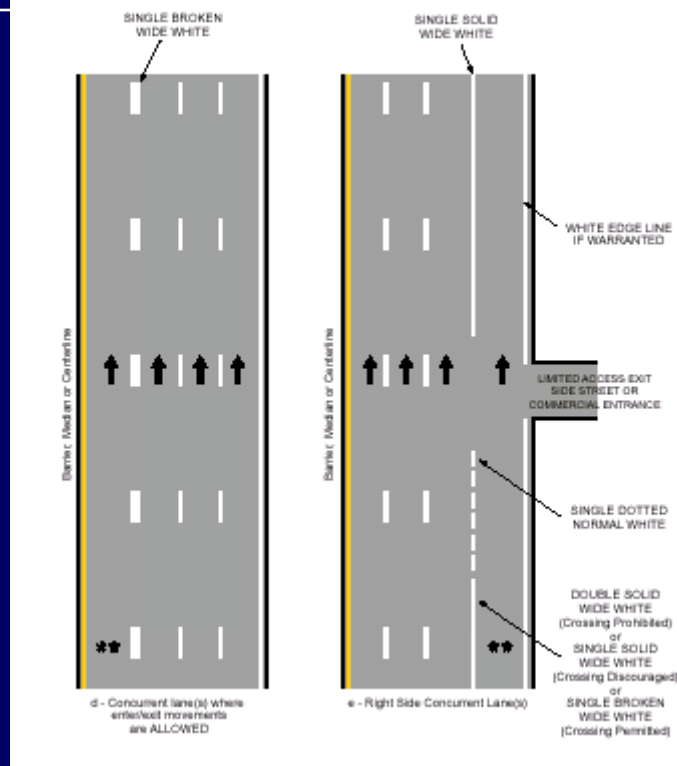
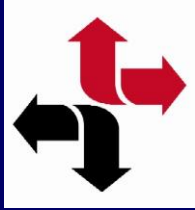
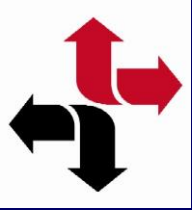


Figure 3B-25. Typical Markings for Preferential Lanes for Motorized Vehicles (Sheet 2 of 2)



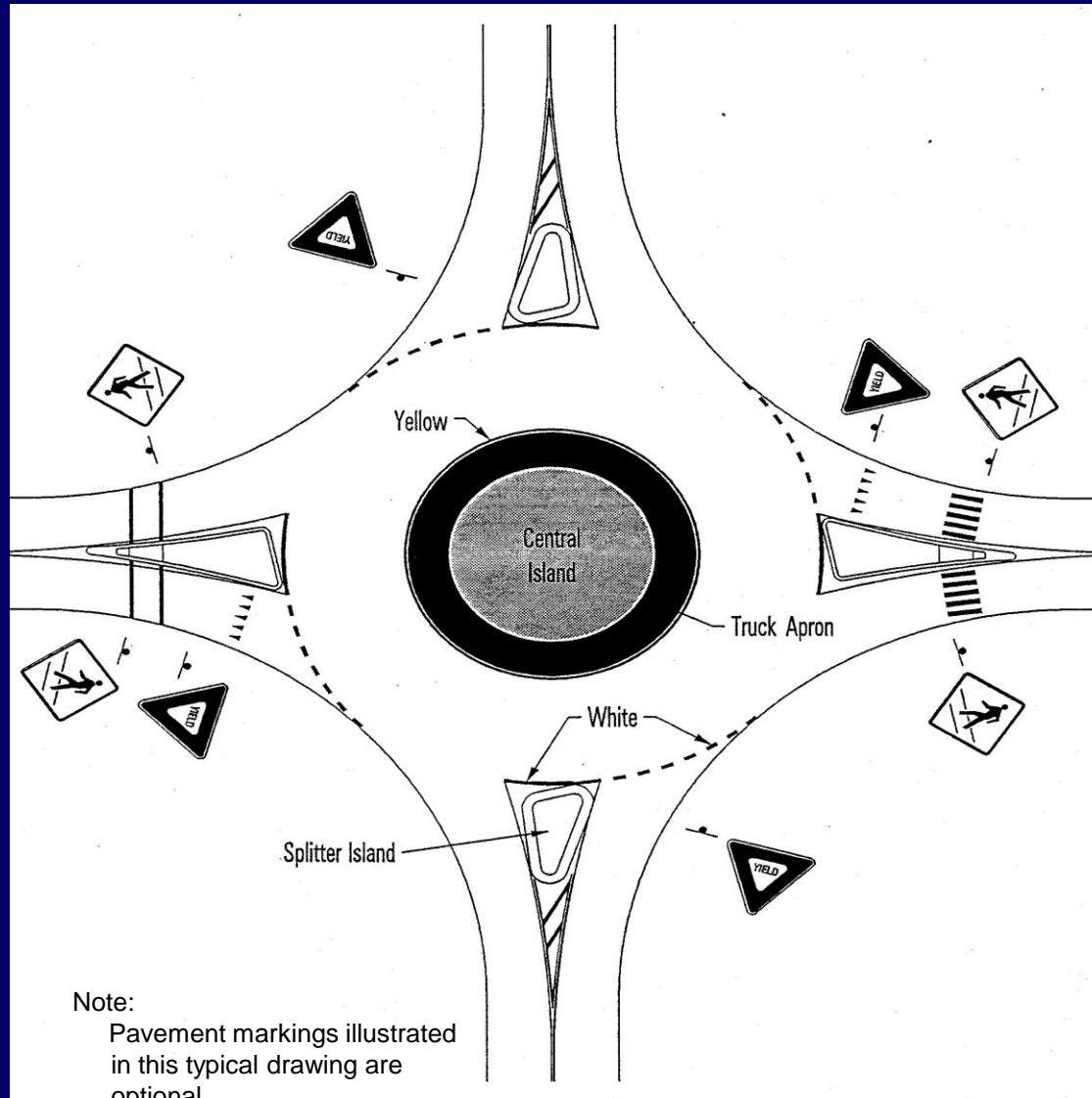


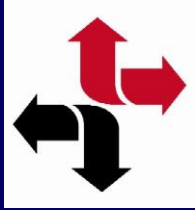
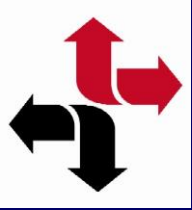
Markings for Roundabouts

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">SUPPORT: Roundabouts are distinctive circular roadways.

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Roundabout Markings (cont.)



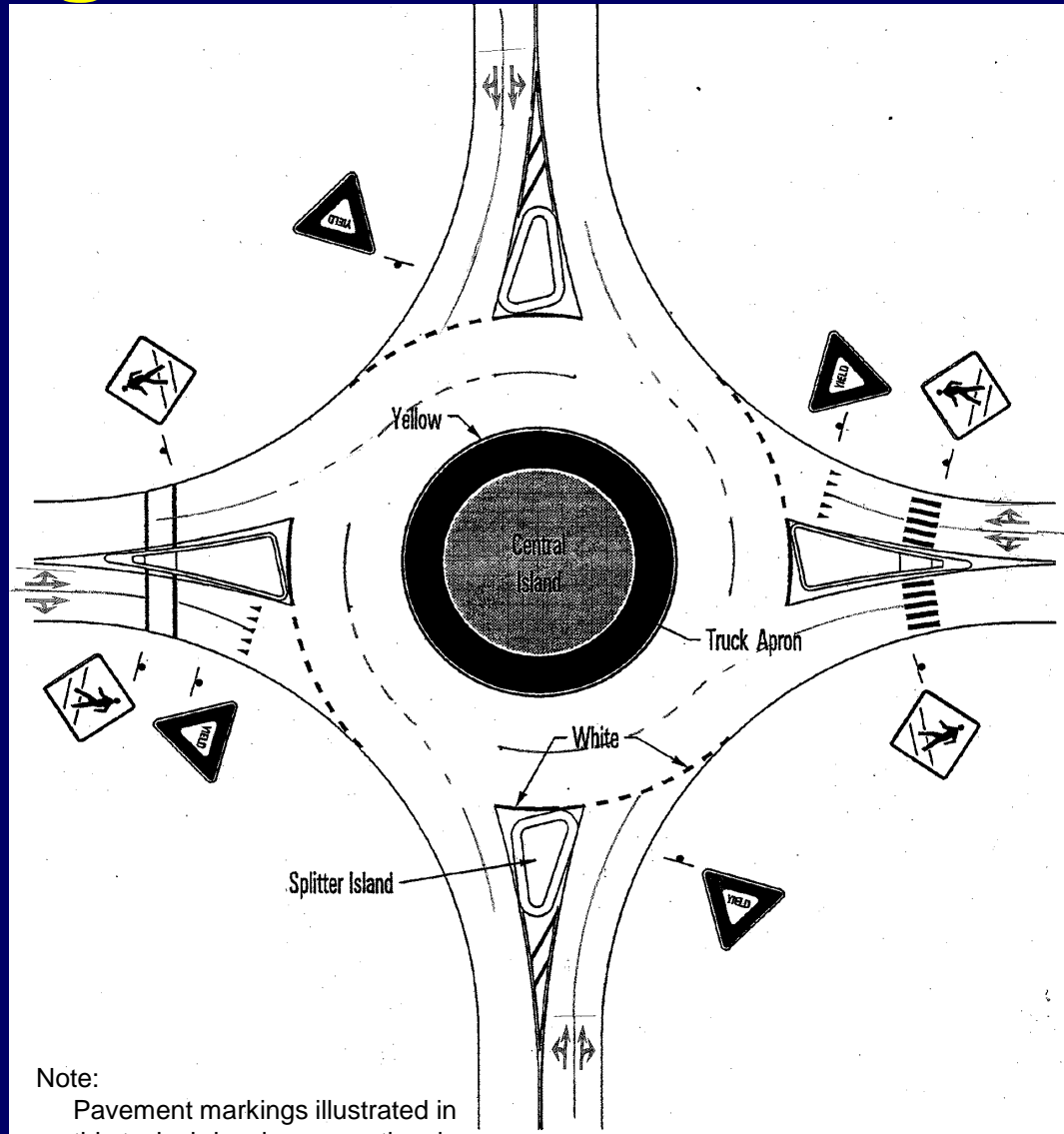


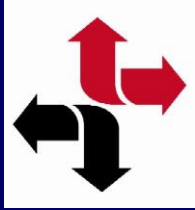
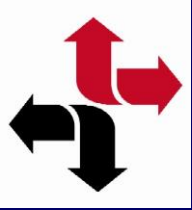
Markings for Other Circular Intersections

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Not in 1988 MUTCD.	<ul style="list-style-type: none">SUPPORT: Other circular intersections include but are not limited to rotaries, traffic circles, and residential traffic calming designs.

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Markings for Other Intersections





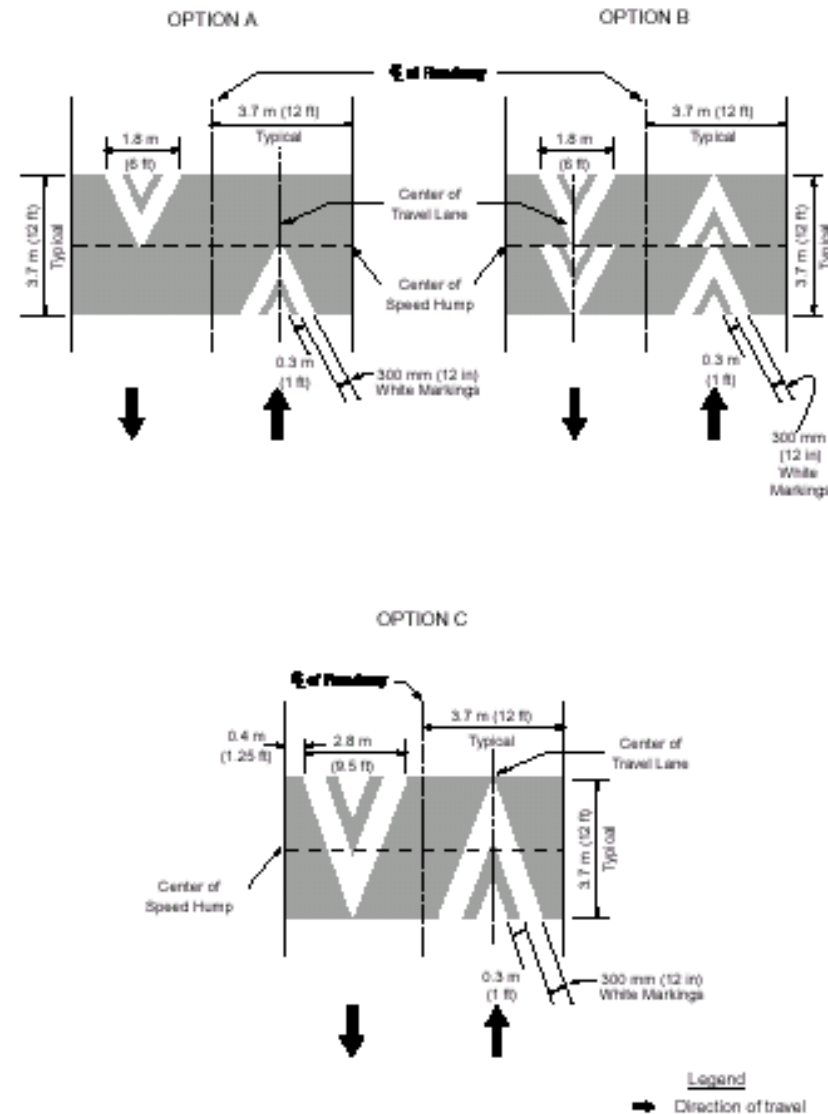
Speed Hump Markings

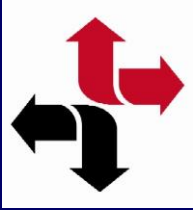
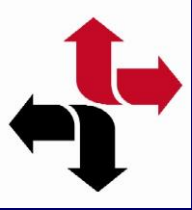
1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Speed hump markings shall be a series of white markings placed on a speed hump to identify its location.

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Speed Hump Markings

Figure 3B-28. Typical Pavement Markings for Speed Humps





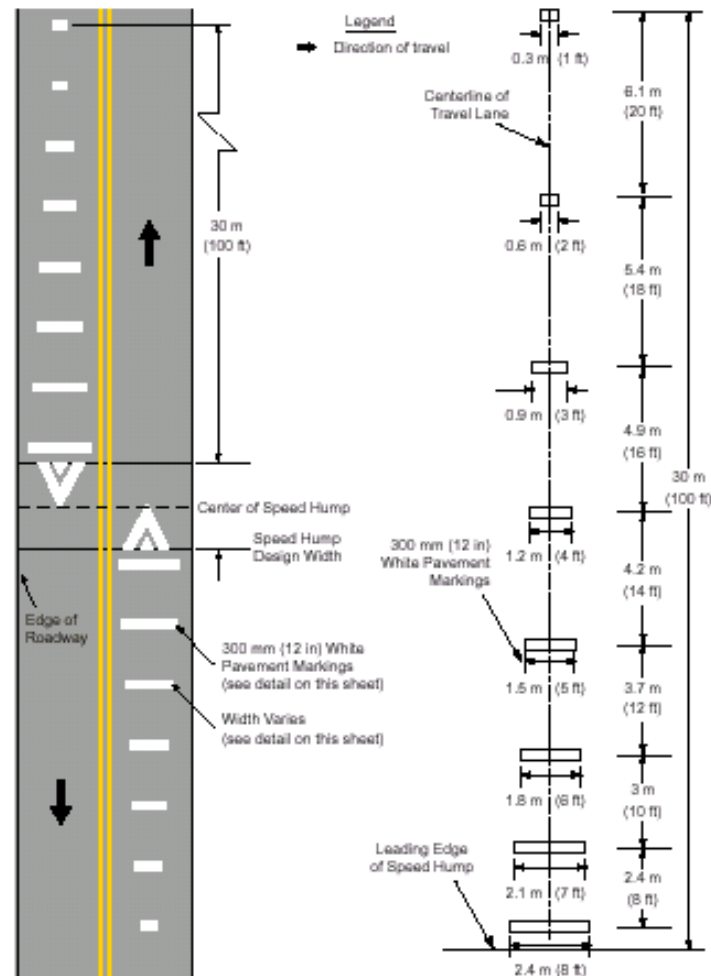
Advance Speed Hump Markings

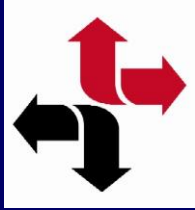
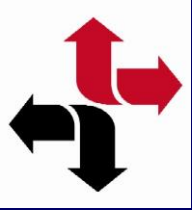
1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD.	<ul style="list-style-type: none">□ Advance speed hump markings shall be a special white marking placed in advance of speed humps...

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Advance Speed Hump Markings

Figure 3B-30. Typical Advance Warning Markings for Speed Humps

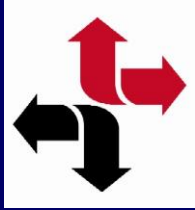
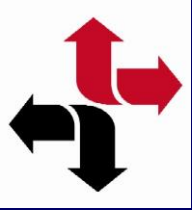




Delineators

1988 MUTCD	Millennium Edition
<p>❑ Road delineators are light-reflecting devices mounted at the side of the roadway, in series, to indicate the roadway alignment.</p> <p>Section 3D-1</p>	<p>❑ Delineators shall be retroreflective devices mounted above the roadway surface along the side of the roadway..</p> <p>Section 3D.1</p>

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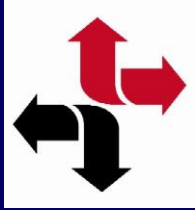
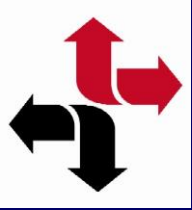


Delineator Application

1988 MUTCD	Millennium Edition
<p>□ Not in 1988 MUTCD.</p> <p>Section 3D-4</p>	<p>□ shall be on the right of expressways, freeways and.. interchange ramps, except :</p> <p>b. sections where continuous lighting is between interchanges.</p> <p>Section 3D.3b</p>

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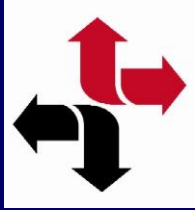
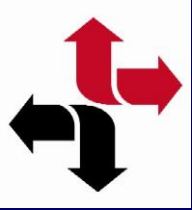
MUTCD PART III. MARKINGS



Delineator Placement and Spacing

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Not in 1988 MUTCD. <p>Section 3D-5</p>	<ul style="list-style-type: none">□ Delineators should be spaced 200 to 528ft apart on mainline tangent sections. Delineators should be spaced 100ft apart on ramp tangent sections. <p>Section 3D.4</p>

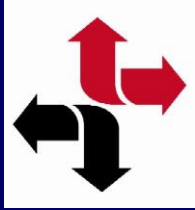
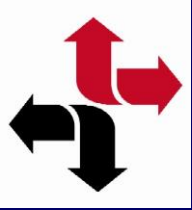
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Barricades

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Red and white barricades are to warn drivers of the terminous of a road,.., in other than construction or maintenance areas. <p>Section 3F-1</p>	<ul style="list-style-type: none">□ Red and white barricades <i>shall</i> be the marking device used to warn road users of the terminous of a roadway in other than construction or maintenance areas. <p>Section 3F.1</p>

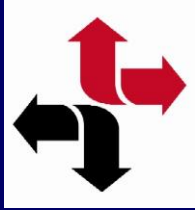
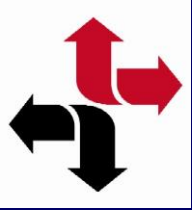
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Channelizing Devices

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ The color of cones and tube markers used outside construction and maintenance areas shall be the same as the pavement marking which they supplement <p>Section 3F-2</p>	<ul style="list-style-type: none">□ The color of channelizing devices used ... traffic control zones shall be either orange or the same color as the marking that they supplement, or substituted <p>Section 3F.2</p>

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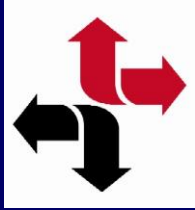
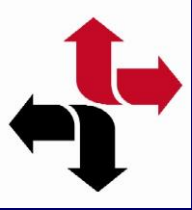


Channelizing Devices

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Reflectorization of tubular markers shall be a minimum of two, 3" bands placed a max of 2" from the top with a max of 6" between the bands. <p>Section 3F-2</p>	<ul style="list-style-type: none">□ Retroreflection of cones shall be provided by a minimum 6" white band placed a minimum of 3" but no more than 4" from the top. <p>Section 3F.2</p>

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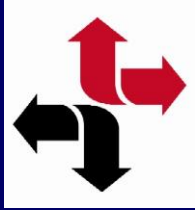
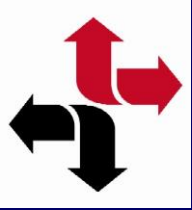
MUTCD PART III. MARKINGS



General

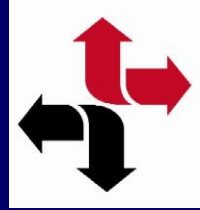
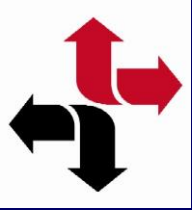
1988 MUTCD	Millennium Edition
<p>□ An island is..defined area between lanes for control..in an intersection, a median or outer separation is considered to be an island.</p> <p>Section 5A-1</p>	<p>□ An island shall be the area between lanes for control... in an intersection, a median or outer separation shall be an island.</p> <p>Section 3G.1</p>

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Approach-End Treatment

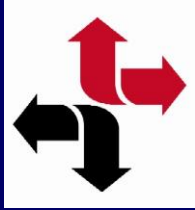
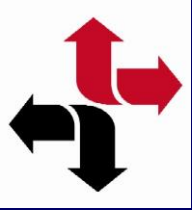
1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">Higher raised bars or buttons may be used in advance of islands having barrier curbs, but they <i>should not</i> be used where they constitute an unexpected hazard. <p>Section 5C-2</p>	<ul style="list-style-type: none">Bars or buttons, when used in advance of islands having raised curbs, <i>shall not</i> be placed in such a manner as to constitute an unexpected obstacle. <p>Section 3G.2</p>



Island Marking Application

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Markings, as related to islands, <i>consist</i> of pavement and curb markings, object markers and delineators. <p>Section 5F-2</p>	<ul style="list-style-type: none">□ Markings, as related to islands, <i>shall</i> consist only of pavement and curb markings, object markers, and delineators. <p>Section 3G.3</p>

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Island Delineators

1988 MUTCD	Millennium Edition
<ul style="list-style-type: none">□ Each travel path through an intersection <i>must</i> be considered separately in positioning delineators to assure maximum effectiveness. <p>Section 5F-5</p>	<ul style="list-style-type: none">□ Each roadway through an intersection <i>shall</i> be considered separately in positioning delineators to assure maximum effectiveness. <p>Section 3G.6</p>

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