Manual on Uniform Traffic Control Devices (MUTCD)

Module: Part 2 - Signs

PRESENTED BY:
DELAWARE T² CENTER
Delaware T² Center

- T² Centers or LTAPs located in all 50 states
- Funded by FHWA and state DOTs
- Mission – promote training, tech transfer, research implementation at local level
- Delaware T² hosted by University of Delaware, part of Delaware Center for Transportation
- Delaware T² funded by FHWA and DelDOT
The Preliminaries

Today’s Instructors:
- Dr. Earl “Rusty” Lee – T² Center Coordinator
- Matheu J. Carter, P.E. – Municipal Engineering Circuit Rider

Restrooms, etc.

Standard Reminders:
- Cell phones, pagers, beepers, walkie-talkies
- Sidebar conversations
More Preliminaries

- Questions – any time
- We’re a small crowd – let’s keep it interactive and informal
- Sharing of thoughts or examples – any time
- These slides will be posted on our website – see link on your notes
The T² Center MUTCD Program

What we cover directly:
- Introduction and Part 1 (General) – the basics
- Part 2 (Signs) – today’s module
- Part 3 (Markings)
- Part 6 (Temporary Traffic Control/Work Zones)

What we incorporate:
- Part 7 (School Areas)
- Part 9 (Bicycle Facilities)
The T² Center MUTCD Program

What we don’t cover:

- Part 4 (Traffic Signals)
- Part 5 (Low-Volume Roads)
- Part 8 (Railroad and Light Rail)

Why?:

- These modules are directed towards municipal gov’ts
- Part 4 – you probably don’t own signals
- Part 5 – their definition of low-volume roads excludes municipal streets
- Part 8 – you probably aren’t responsible for RRs or light rail

However

Go to the DE MUTCD website for training slides on the changes to Parts 2, 3, 4, 6, 7, 8, & 9
Acknowledgements

Primary references:
- Delaware MUTCD
- Federal MUTCD

Who we’ve shamelessly stolen from (with our thanks):
- DelDOT
- DelDOT’s consultants
- FHWA MUTCD website
- Numerous others

Good writers borrow from other writers;
Great writers steal from them outright – Aaron Sorkin
Introduction

In this module:

- General (colors, dimensions, mountings, locations, retroreflectivity)
- Regulatory signs, barricades, and gates
- Warning signs and object markers
- Guide signs for conventional roads (as opposed to freeways)
- General information signs
- Tourist-oriented directional signs
- Changeable message signs
- Emergency management signs
- A focus on Delaware MUTCD
Where Are You in the Game?

Show of hands – where do you fit in?

- I can’t spell MUTCD – I’ve never opened it
- I have a passing familiarity – but I’ve always thought it was out of my wheel house
- I was at the Intro module (which was fantastic) and am now a developing MUTCD geek
- I’ve read parts of it over time and applied it as I need
- I’m pretty fluent in the MUTCD
- I know the MUTCD – I could teach this course (careful, you’re now our “go to” person)
Where Are You in the Game?

Regardless of where are you now:

- We hope you’ll have a greater command when we’re done
- Don’t imagine this workshop will make you an expert (unless you already are one) – practice will do that
- As we go, share your challenges, experiences, and solutions – let’s all learn from each other

Ok – let’s get into it
• Federal MUTCD published in Dec. 2009

• DE MUTCD committee began meeting in Jan. 2010 to establish DE-specific guidance

• DE MUTCD submitted to Delaware Register for public comment in Spring 2011

• Except as noted, all presentation materials are the Delaware MUTCD June 2011
Where Do I Find the Delaware MUTCD?

DelDOT Website

http://deldot.gov/index.shtml
Where Do I Find the Delaware MUTCD?
Where Do I Find the Delaware MUTCD?

New Shortcut to this page

Notice there are other documents here too – complimentary guidance, memoranda, etc.
• Paragraphs are numbered
• No more metric
• Definitions relocated to Part 1
• Delaware Revisions in blue with line in margin and “(DE Revision)” at beginning of paragraph

• DE Standard: Reverted to 2003 MUTCD language allowing engineering judgment
  • More on this later

• Standards are bolded
• Guidance is italicized
• Options remain unformatted
How to Read the MUTCD

Throughout the MUTCD, each section will contain one or more of the following in some combination:

- **Standard** — “a statement of required, mandatory, or specifically prohibitive practice regarding a TCD” – these are “SHALLs”

- **Guidance** — “a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate” – these are “SHOULDs”

- **Option** — “a statement of practice that is a permissive condition and carries no requirement or recommendation” – these are “MAYs”

- **Support** — “an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition”
What’s in Part 2 – Signs?

- 2A – General
- 2B – Regulatory signs, barricades, gates
- 2C – Warning signs, object markers
- 2D – Guide signs (conventional roads)
- 2E – Guide signs (freeways/expressways)
- 2F – Toll road signs
- 2G – Preferential and managed lane signs
- 2H – General information signs
- 2I – General service signs
- 2J – Specific service (logo) signs
- 2K – Tourist-oriented signs
- 2L – Changeable message signs
- 2M – Recreational and cultural interest signs
- 2N – Emergency management signs
Standardization and Sign Clutter

• Consistency very important, but at the same time...
• Urban and rural installations – look for differences in sizes, mounting heights, offsets, etc.
• Excessive use of signs
  o Can lose effectiveness
  o Every sign is a liability (crashes, maintenance, etc.)
  o Does it meet the Section 1A.02 guidance?
    ✷ Fulfill a need;
    ✷ Command attention;
    ✷ Convey a clear, simple meaning;
    ✷ Command respect from road users; and
    ✷ Give adequate time for proper response.

Part 2; Section 2A.03 & 2A.04
Standardization and Sign Clutter

- Is there really a need for a sign?
- Does the sign become a feckless substitute for what really needs to be done?
  - Speed enforcement?
  - Other traffic enforcement?
  - Poor geometrics or maintenance?
- Again, does it meet the Section 1A.02 guidance?
  - Fulfill a need;
  - Command attention;
  - Convey a clear, simple meaning;
  - Command respect from road users; and
  - Give adequate time for proper response.

Part 2; Section 2A.03 & 2A.04
"Lesson Learned: The establishment of ordinances and/or policies that restrict the use of TCDs are a proven method for managing risk associated with actions that are consistent with the adopted ordinances."
Section 2A.06 Design of Signs

12 In situations where word messages are required other than those provided in this Manual, the signs shall be of the same shape and color as standard signs of the same functional type.

Option:
13 (DE Revision) DelDOT and local highway agencies may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information, such as when road users need to be notified of special regulations or warned about a situation that might not be readily apparent. Unlike colors that have not been assigned or symbols that have not been approved for signs, new word message signs may be used without the need for experimentation.

Standard:
13A (DE Revision) Special word message signs installed on state-maintained roadways shall be approved by DelDOT Traffic.

- Custom word messages used for special situations that are not readily apparent to motorists
- **Non-standard word messages shall match standard shape and color**

James St bridge, Newport
Emergency one-lane bridge conversion

Custom regulatory plaque to reinforce alternating right-of-way at one-lane bridge
DelDOT Standard Signs Book

- FHWA’s “Standard Highway Signs and Markings”
- Delaware Standard Signs Book – see DelDOT MUTCD page under “Part 2 Signs”
- Both are being updated
Standard:

Regulatory, warning, and guide signs shall be retroreflective or illuminated to show the same shape and similar color by both day and night, unless specifically stated otherwise in the text discussion in this Manual of a particular sign or group of signs.
Retroreflectivity
Retroreflectivity
## Table 2A-3. Minimum Maintained Retroreflectivity Levels

<table>
<thead>
<tr>
<th>Sign Color</th>
<th>Beaded Sheeting</th>
<th>Prismatic Sheeting</th>
<th>Additional Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>III, IV, VI, VII, VIII, IX, X</td>
</tr>
<tr>
<td>White on Green</td>
<td>W*; G ≥ 7</td>
<td>W*; G ≥ 15</td>
<td>W ≥ 250; G ≥ 25</td>
</tr>
<tr>
<td></td>
<td>W*; G ≥ 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black on Yellow or Black on Orange</td>
<td>Y*; O*</td>
<td>Y ≥ 50; O ≥ 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y*; O*</td>
<td>Y ≥ 75; O ≥ 75</td>
<td></td>
</tr>
<tr>
<td>White on Red</td>
<td>W ≥ 35; R ≥ 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black on White</td>
<td>W ≥ 50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The minimum maintained retroreflectivity levels shown in this table are in units of cd/lx/m² measured at an observation angle of 0.2° and an entrance angle of -4.0°.
2. For text and fine symbol signs measuring at least 48 inches and for all sizes of bold symbol signs.
3. For text and fine symbol signs measuring less than 48 inches.

* This sheeting type shall not be used for this color for this application.
MUTCD Table 2A-3
Simplified Flow Diagram
(Post-Mounted Only)
Standard:

Public agencies or officials having jurisdiction shall use an assessment or management method that is designed to maintain sign retroreflectivity at or above the minimum levels in Table 2A-3.
Retroreflectivity

And those methods are:

- **Visual nighttime inspections**
  - Consistent parameters method (60+ year old driver)
  - Calibration signs ("calibrate" eyes with near minimum signs)
  - Comparison panels (using near minimum coupons)

- **Measured sign retroreflectivity**

- **Expected sign life**

- **Blanket replacement**

- **Control signs**

- **Combinations of these**

- **Other methods**
Deadlines:  
- July 2013
- January 22, 2012 – implementation and continued use of an assessment or management method designed to maintain retro above minimum levels
- January 22, 2015 – replacement of regulatory, warning, and post-mounted guide signs (except street name) that fail minimum levels
- January 22, 2018 – replacement of street name and overhead guide signs that fail minimum levels
Retroreflectivity

For now, you can exclude these from retroreflectivity maintenance:

- Parking, standing, stopping (R7 and R8 series)
- Walking, hitchhiking, crossing (R9 series, R10-1 to R10-4b)
- Acknowledgement
- Blue and brown backgrounds
- Bikeway signs exclusively for use by cyclists and peds

But stay sharp – retro levels coming for these, too
In fact, we know the language that’s likely coming:

<table>
<thead>
<tr>
<th>Sign Color</th>
<th>Beaded Sheeting</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>White on green</td>
<td></td>
<td>W; G ≥ 7</td>
<td>W; G ≥ 15</td>
<td>W; G ≥ 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W; G ≥ 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White on blue</td>
<td></td>
<td>W; B ≥ 3</td>
<td>W; B ≥ 5</td>
<td>W; B ≥ 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W; B ≥ 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White on brown</td>
<td></td>
<td>W; Br ≥ 1</td>
<td>W; Br ≥ 5</td>
<td>W; Br ≥ 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W; Br ≥ 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black on yellow or black on orange</td>
<td></td>
<td>Y; O∗</td>
<td>Y ≥ 50; O ≥ 50</td>
<td>Y ≥ 75; O ≥ 75</td>
</tr>
<tr>
<td>White on red</td>
<td></td>
<td></td>
<td></td>
<td>W ≥ 35; R ≥ 7</td>
</tr>
<tr>
<td>Black on white</td>
<td></td>
<td></td>
<td></td>
<td>W ≥ 50</td>
</tr>
</tbody>
</table>
Support:

Compliance with the Standard in Paragraph 2 is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-3. Provided that an assessment or management method is being used, an agency or official having jurisdiction would be in compliance with the Standard in Paragraph 2 even if there are some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time.
Shapes

Shapes are designated for exclusive purposes.

Drivers (as well as peds and bikers) have limited time to gather info – shapes are quickly recognized.

Table 2A-4. Use of Sign Shapes

<table>
<thead>
<tr>
<th>Shape</th>
<th>Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octagon</td>
<td>Stop*</td>
</tr>
<tr>
<td>Equilateral Triangle (1 point down)</td>
<td>Yield*</td>
</tr>
<tr>
<td>Circle</td>
<td>Grade Crossing Advance Warning*</td>
</tr>
<tr>
<td>Pennant Shape/Isosceles Triangle (longer axis horizontal)</td>
<td>No Passing*</td>
</tr>
<tr>
<td>Pentagon (pointed up)</td>
<td>School Advance Warning Sign (squared bottom corners)*</td>
</tr>
<tr>
<td></td>
<td>County Route Sign (tapered bottom corners)*</td>
</tr>
<tr>
<td>Crossbuck (two rectangles in an &quot;X&quot; configuration)</td>
<td>Grade Crossing*</td>
</tr>
<tr>
<td>Diamond</td>
<td>Warning Series</td>
</tr>
<tr>
<td>Rectangle (including square)</td>
<td>Regulatory Series</td>
</tr>
<tr>
<td></td>
<td>Guide Series**</td>
</tr>
<tr>
<td></td>
<td>Warning Series</td>
</tr>
<tr>
<td>Trapezoid</td>
<td>Recreational and Cultural Interest Area Series</td>
</tr>
<tr>
<td></td>
<td>National Forest Route Sign</td>
</tr>
</tbody>
</table>

* This sign shall be exclusively the shape shown.
** Guide series includes general service, specific service, tourist-oriented directional, general information, recreational and cultural interest area, and emergency management signs.
• Colors to be used on standard signs shall be as provided in the applicable sections of the MUTCD.

• That is, you don’t get creative.

• Why? Again – we have limited time to get a message across and standard colors make part of the message arrive intuitively.

• There are approved fluorescent versions of the standard red, yellow, green and orange that can be used as an alternative (¶06).
Section 2A.10 Sign Colors

Option:
06 The approved fluorescent version of the standard red, yellow, green, or orange color may be used as an alternative to the corresponding standard color.

Guidance:
06A (DE Revision) A fluorescent yellow background should be used for overhead warning signs.

• DE Guidance: *Fluorescent yellow (FY) sheeting should be used for overhead warning signs*

• *Fluorescent yellow-green (FYG) background for all school signs*

NCC Industrial Track Greenway, Boulden Blvd crossing

FY sheeting used on overhead Pedestrian warning sign

Plaque shall be FYG
Shapes and Colors
Dimensions

- Width and height of signs must comply with applicable sections of the MUTCD.
- Some are going to strike you as BIG – that’s because they are.
- Particularly in urban environments, their size will make horizontal placement...tricky. More later.

W11-2:
30”x30” single lane
36”x36” multi-lane

R1-5 – 36”x36”

Part 2; Section 2A.09 & 2A.10
Dimensions

Part 2; Section 2A.09 & 2A.10
Section 2A.13 Word Messages

Guidance:
02 Word messages should be as brief as possible and the lettering should be large enough to provide the necessary legibility distance. A minimum specific ratio of 1 inch of letter height per 30 feet of legibility distance should be used.
03 Abbreviations (see Section 1A.15) should be kept to a minimum.
04 Word messages should not contain periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens unless necessary to avoid confusion.
05 The solidus (slanted line or forward slash) is intended to be used for fractions only and should not be used to separate words on the same line of legend. Instead, a hyphen should be used for this purpose, such as “TRUCKS - BUSES.”

Standard:
10 (DE Revision) All sign lettering shall be in upper-case letters as provided in the “Standard Highway Signs and Markings” book (see Section 1A.11) and the Delaware Standard Signs book, unless otherwise provided in this Manual for a particular sign or type of message.
11 The sign lettering for names of places, streets, and highways shall be composed of a combination of lower-case letters with initial upper-case letters.

- Abbreviations should be minimized
- Punctuation should not be used
- Lettering shall be upper-case except for names of places, streets, and highways (combination upper-case and lower-case)

Regulatory signs shall be black-on-white
Section 2A.13 Word Messages

OLD

NEW

Upper-case / lower-case legend now required
Guidance:

03 (DE Revision) For post-mounted signs, the lateral offset should be 6 feet to 12 feet from the edge of the traveled way. If a shoulder wider than 6 feet exists, the minimum lateral offset for post-mounted signs should be 6 feet from the edge of the shoulder.

Option:

09 Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 6 feet from the edge of the traveled way.

10 On conventional roads in areas where it is impractical to locate a sign with the lateral offset prescribed by this Section, a lateral offset of at least 2 feet may be used.

11 A lateral offset of at least 1 foot from the face of the curb may be used in business, commercial or residential areas where sidewalk width is limited or where existing poles are close to the curb.

• DE Guidance: 6-ft to 12-ft lateral offset from pavement edge regardless of shoulder width
  – May be reduced to 2 ft if constrained (e.g., right-of-way, utilities, sight distance)
Section 2A.16 Standardization of Location & Location

Section 2A.19 Lateral Offset

Figure 2A-2. Examples of Heights and Lateral Locations of Sign Installations (Delaware Revision)

A - ROADSIDE SIGN IN RURAL AREA

B - ROADSIDE SIGN IN RURAL AREA

C - ROADSIDE SIGN IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA

D - WARNING SIGN WITH ADVISORY SPEED PLACARD IN RURAL AREA

E - ROADSIDE ASSEMBLY IN RURAL AREA

F - SIGN ON NOSE OF MEDIAN

G - FREEWAY OR EXPRESSWAY SIGN WITH SECONDARY SIGN

H - OVERHEAD SIGN

Strathmore
Sheffield Park
EXIT 1/2 MILE

NEXT EXIT 6 MILES

Main St

Shoulder wider than 6 ft

Note:
See Section 2A.19 for reduced lateral offset distances that may be used in areas where lateral offsets are limited, and in business, commercial, or residential areas where sidewalk width is limited or where existing poles are close to the curb.

Figure 2A-3. Examples of Locations for Some Typical Signs at Intersections

A - ACUTE ANGLE INTERSECTION

B - CHANNELIZED INTERSECTION

C - MINOR CROSSROAD

D - URBAN INTERSECTION

E - DIVISIONAL ISLAND

F - WIDE THROAT INTERSECTION

Note: Lateral offset is a minimum of 6 feet measured from the edge of the shoulder, or 12 feet measured from the edge of the traveled way. See Section 2A.19 for lower minimums that may be used in urban areas, or where lateral offset space is limited.
Lateral Offset

• The typical municipal situation

This probably works – probably >1’ – using the “lean technique” to comply is maybe a tad too creative
Lateral Offsets

- Some aren’t close. Some just squeeze in.

Is this one >1’ from the face of the curb?
Breakaway or Yielding Anchors

- Within the Clear Zone, support anchors shall be crashworthy
  - Breakaway
  - Yielding
  - Shielded with longitudinal barrier

Part 2; Section 2A.19; ¶02

A breakaway design

NOT breakaway, NOT yielding, not acceptable
Breakaway or Yielding Anchors

- DelDOT’s breakaway assembly detail (excerpt)
  - Sleeve in sleeve approach
  - Notice 4” maximum limitation

Part 2; Section 2A.19; ¶02
Breakaway or Yielding Anchors

- Maryland’s wooden breakaway assembly detail (excerpt)
  - Pre-dug hole
  - Tamped backfill (no concrete)
  - 1½” holes drilled at 4” & 18”
  - Perpendicular to roadway

A breakaway design

Part 2; Section 2A.19; ¶02
Breakaway or Yielding Anchors

- Beyond a 4”x4” post, wooden support modifications necessary to ensure a surface break

A breakaway design
There are many ways to enhance sign conspicuity (see Section 2A-15)

One is a strip of retroreflective material on the post

Must be ≥2” wide and run full length of post from bottom of sign to <2’ above roadway

Color shall match background of the sign
Maintenance

- Retroreflectivity
- Graffiti
- Vegetation
Section 2B.03 Size of Regulatory Signs

Guidance:

01A (DE Revision) At intersections of multi-lane roads with single lane roads, the regulatory sign sizes on all approaches to the intersection should be as required for multi-lane roads.

Standard:

03 Except as provided in Paragraphs 4 and 5, the minimum sizes for regulatory signs facing traffic on multi-lane conventional roads shall be as shown in the Multi-lane column of Table 2B-1.

Option:

04 Where the posted speed limit is 35 mph or less on a multi-lane highway or street, other than for a STOP sign, the minimum size shown in the Single Lane column in Table 2B-1 may be used.

05 Where a regulatory sign, other than a STOP sign, is placed on the left-hand side of a multi-lane roadway in addition to the installation of the same regulatory sign on the right-hand side or the roadway, the size shown in the Single Lane column in Table 2B-1 may be used for both the sign on the right-hand side and the sign on the left-hand side of the roadway.

Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 1 of 5)

<table>
<thead>
<tr>
<th>Sign or Plaque</th>
<th>Sign Designation</th>
<th>Section</th>
<th>Conventional Road</th>
<th>Expressway</th>
<th>Freeway</th>
<th>Minimum</th>
<th>Oversized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop</td>
<td>R1-1</td>
<td>29.05</td>
<td>36 x 36**</td>
<td>36 x 36</td>
<td>36 x 36</td>
<td>36 x 36</td>
<td>36 x 36</td>
</tr>
<tr>
<td>Yield</td>
<td>R1-2</td>
<td>29.06</td>
<td>36 x 36 x 36*</td>
<td>48 x 48 x 48</td>
<td>48 x 48 x 48</td>
<td>60 x 60</td>
<td>36 x 36 x 36*</td>
</tr>
<tr>
<td>To Oncoming Traffic</td>
<td>R1-2aP</td>
<td>28.10</td>
<td>24 x 18</td>
<td>24 x 18</td>
<td>36 x 30</td>
<td>48 x 36</td>
<td>24 x 18</td>
</tr>
<tr>
<td>To U-Turning Traffic</td>
<td>R1-2aP-DE</td>
<td>28.10</td>
<td>24 x 18</td>
<td>24 x 18</td>
<td>36 x 30</td>
<td>48 x 36</td>
<td>24 x 18</td>
</tr>
</tbody>
</table>

Note – multi-lane is any road with more than one lane in a single direction

- Sizes shall follow Table 2B-1
- Some Larger sizes for multi-lane roads with a posted speed limit ≥ 40 MPH
- Single Lane size can be used on multi-lane road if same sign is posted on left-hand and right-hand side
- DE Guidance: At intersections of multi-lane and single lane roads, larger sizes should be used on all approaches (e.g., YIELD signs)
Use of “Minimum” Column

- Engineering judgment
- Careful with use
  - Single lane should be the default; not Minimum
  - Subdivision street intersects state maintained – Single Lane

- Appropriate considerations
  - Urban scenarios where space is prohibitive
  - Narrow alley
  - Low ADT residential

Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 1 of 5)

<table>
<thead>
<tr>
<th>Sign or Plaque</th>
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<th>Minimum</th>
<th>Oversized</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Single Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Multi-Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stop</td>
<td>R1-1</td>
<td>28.05</td>
<td>36 x 36**</td>
<td>36 x 36</td>
<td>—</td>
<td>30 x 30*</td>
<td>48 x 48</td>
</tr>
<tr>
<td>Yield</td>
<td>R1-2</td>
<td>28.08</td>
<td>36 x 36 x 36</td>
<td>48 x 48 x 48</td>
<td>60 x 60 x 60</td>
<td>30 x 30 x 30*</td>
<td>—</td>
</tr>
<tr>
<td>To Oncoming Traffic (plaque)</td>
<td>R1-2aP</td>
<td>2B.10</td>
<td>24 x 18</td>
<td>24 x 18</td>
<td>36 x 30</td>
<td>48 x 36</td>
<td>24 x 18</td>
</tr>
<tr>
<td>To U-Turning Traffic (plaque)</td>
<td>R1-2aP-DE</td>
<td>2B.10</td>
<td>24 x 18</td>
<td>24 x 18</td>
<td>36 x 30</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Part 2; Section 2B.03
Section 2B.03 Size of Regulatory Signs

Standard:

06 A minimum size of 36 x 36 inches shall be used for STOP signs that face multi-lane approaches.
07 Where side roads intersect a multi-lane street or highway that has a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches.
08 Where side roads intersect a multi-lane street or highway that has a speed limit of 40 MPH or lower, the minimum size of the STOP signs facing the side road approaches shall be as shown in the Single Lane or Multi-lane columns of Table 2B-1 based on the number of approach lanes on the side street approach.

Guidance:

08A (DE Revision) Except as provided in Paragraph 8B, a minimum size of 36 x 36 inches should be used for STOP signs at intersections that include one or more state-maintained roadway(s).
08B (DE Revision) A minimum size of 30 x 30 inches should be used for STOP signs at the intersection of two subdivision streets.

- DE Guidance: 36” x 36” (min.) STOP signs at intersections with one or more state-maintained roadway(s)
- DE Guidance: 30” x 30” STOP signs at intersection of two subdivision streets

09 The minimum sizes for regulatory signs facing traffic on exit and entrance ramps should be as shown in the column of Table 2B-1 that corresponds to the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversized column should be used.

- On-ramp and off-ramp sign sizes should correspond to mainline roadway classification
Section 2B.05 STOP (R1-1) and ALL WAY Plaque (R1-3P)

Standard:

01 When it is determined that a full stop is always required on an approach to an intersection, a STOP (R1-1) sign (see Figure 2B-1) shall be used.

02 The STOP sign shall be an octagon with a white legend and border on a red background.

03 Secondary legends shall not be used on STOP sign faces.

04 At intersections where all approaches are controlled by STOP signs (see Section 2B.07), an ALL WAY supplemental plaque (R1-3P) shall be mounted below each STOP sign. The ALL WAY plaque (see Figure 2B-1) shall have a white legend and border on a red background.

05 The ALL WAY plaque shall only be used if all intersection approaches are controlled by STOP signs.

06 Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.

- **ALL WAY plaque required, where applicable**
- **2-WAY, 3-WAY, and 4-WAY plaques no longer permitted**
• Use W4-4P at locations where motorists may think that an intersection is an all-way stop

• W4-4aP and/or W4-4bP plaques should be used when all approaches except one are stop-controlled
Crash history indicated side-street motorists assumed all-way stop

- W4-4P installed below STOP
- 2-WAY plaque no longer permitted
So When/Where Do We Use Stop Signs?

- Bottom line – don’t assume that every intersection requires a Stop sign
  - Consider Yield
  - Consider...nothing

Guidance:
01. At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).
02. The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:
   - A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;
   - B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or
   - C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.

Support:
03. The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

Part 2; Section 2B.06
Yield Sign Application

- Yield signs may be used in lieu of Stop signs

Option:

01 YIELD signs may be installed:
   A. On the approaches to a through street or highway where conditions are such that a full stop is not always required.
   B. At the second crossroad of a divided highway, where the median width at the intersection is 30 feet or greater. In this case, a STOP or YIELD sign may be installed at the entrance to the first roadway of a divided highway, and a YIELD sign may be installed at the entrance to the second roadway.
   C. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.
   D. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.
   E. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.

Standard:

02 A YIELD (R1-2) sign shall be used to assign right-of-way at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.

03 (DE Revision) Other than for all of the approaches to a roundabout, YIELD signs shall not be placed on all of the approaches to an intersection as the sole means of traffic control.
Section 2B.10 STOP Sign or YIELD Sign Placement

Standard:
01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.
02 The STOP or YIELD sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

Guidance:
07 STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).
08 A sign that is mounted back-to-back with a STOP or YIELD sign should stay within the edges of the STOP or YIELD sign. If necessary, the size of the STOP or YIELD sign should be increased so that any other sign installed back-to-back with a STOP or YIELD sign remains within the edges of the STOP or YIELD sign.

- Shall be installed on right-hand side
- As close as practical to intersection, while optimizing visibility
- No farther than 50 ft from edge of intersecting road (i.e., does not have to be adjacent to stop line)
- Back-to-back signs should stay within edges of STOP or YIELD (now includes DO NOT ENTER)
Section 2B.10 STOP Sign or YIELD Sign Placement

STOP shall be 36” x 36” on a multi-lane approach and it shall be installed on the right-hand side.

Sign on back (Keep Right) should stay within edges of STOP.

Lantana Dr at SR 7
Section 2B.10 STOP Sign or YIELD Sign Placement

**Guidance:**

12. Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.16. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.16.

13. Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the crosswalk line nearest to the approaching traffic.

14. *(DE Revision)* Except at roundabouts and as provided in Paragraph 18A, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the crosswalk line nearest to the approaching traffic.

18A. *(DE Revision)* YIELD signs may be installed downstream of crosswalks at locations with large channelizing islands where the distance between the crosswalk and the downstream end of the channelizing island exceeds one vehicle length.

- **STOP and YIELD signs should be installed in advance of marked crosswalks**

- **DE Option:** YIELD signs may be installed downstream of crosswalks at locations with large channelizing islands (i.e., > 1 vehicle length between crosswalk and downstream end of channelizing island)
Section 2B.10 STOP Sign or YIELD Sign Placement

Option:
09 Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque may be mounted below the YIELD sign.

09A (DE Revision) Where drivers must yield to U-turning traffic from another intersection approach, a TO U-TURNING TRAFFIC (R1-2aP-DE) plaque may be mounted below the YIELD sign.

09B (DE Revision) Where drivers must yield to turning traffic from another intersection approach, a TO TURNING TRAFFIC (R1-2aP-DE1) plaque may be mounted below the YIELD sign.

Option:
20 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5P) supplemental plaque (see Section 2C.40) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

- **Supplemental YIELD plaques**
  - Reserved for special circumstances
  - NO MERGE AREA (W4-5P) warning plaque; may also be installed below Yield Ahead warning sign
  - DE Option includes two DE-only supplemental plaques
Section 2B.11 Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)

Guidance:
02 If yield (stop) lines and Yield Here To (Stop Here For) Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, they should be placed 20 to 50 feet in advance of the nearest crosswalk line (see Section 3B.16 and Figure 3B-17), and parking should be prohibited in the area between the yield (stop) line and the crosswalk.

Option:
04 Yield Here To (Stop Here For) Pedestrians signs may be used in advance of a crosswalk that crosses an uncontrolled multi-lane approach to indicate to road users where to yield (stop) even if yield (stop) lines are not used.

05 A Pedestrian Crossing (W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward pointing arrow (W16-7P) plaque at the crosswalk location where Yield Here To (Stop Here For) Pedestrians signs have been installed in advance of the crosswalk.

Standard:
06 If a W11-2 sign has been post-mounted at the crosswalk location where a Yield Here To (Stop Here For) Pedestrians sign is used on the approach, the Yield Here To (Stop Here For) Pedestrians sign shall not be placed on the same post as or block the road user’s view of the W11-2 sign.

- **R1-5 size now 36” x 36”** (previously 18” x 18”)
- **Install 20 ft to 50 ft in advance of uncontrolled crosswalk**
- **Parking prohibition between yield line and crosswalk**
- **New Options**
  - R1-5 sign without yield line
  - R1-5 signs with W11-2 assemblies at crosswalk; however, R1-5 signs shall not block W11-2 assemblies
Section 2B.11 Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)

Optional W11-2 assemblies; R1-5 signs shall not block W11-2 signs

Parking prohibition

Standard size now 36" x 36"

E. Main St, Newark
Yield Here to Pedestrians

- If “sharks teeth” or other yield lines are used, must also place an R1-5 sign.

Standard:
01 (DE Revision) Yield Here To (Stop Here For) Pedestrians (R1-5 and R1-5b) signs (see Figure 2B-2) shall be used if yield (stop) lines are used in advance of a marked crosswalk that crosses an uncontrolled multi-lane approach. The Stop Here for Pedestrians signs shall only be used where the law specifically requires that a driver must stop for a pedestrian in a crosswalk. The legend STATE LAW may be displayed at the top of the R1-5 and R1-5b signs, if applicable.

Part 2; Section 2B.11
In-Street Pedestrian Signs

- DE Code says **Yield** to pedestrians (21 Del.C. § 4142)

Support:

01A (DE Revision) §4142 of Title 21 of the Delaware Code states that drivers shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is upon the half of the roadway upon which the vehicle is traveling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger.

Guidance:

01B (DE Revision) Based on current Delaware Code, the Yield Here to Pedestrians sign should be used along state-maintained roadways.

01C (DE Revision) Prior to sign installation, §4142 of Title 21 of the Delaware Code should be reviewed to determine whether the Yield Here to Pedestrians or Stop Here For Pedestrians signs should be used. Local ordinances should be reviewed for Yield Here To (Stop Here For) Pedestrians signs installed along municipal-maintained roadways.

Part 2; Section 2B.11
In-Street Pedestrian Signs

- These must be designed and placed carefully to ensure they don’t create more problems than they solve

Option:

01. The In-Street Pedestrian Crossing (R1-6 or R1-6a) sign (see Figure 2B-2) or the Overhead Pedestrian Crossing (R1-9 or R1-9a) sign (see Figure 2B-2) may be used to remind road users of laws regarding right-of-way at an unsignalized pedestrian crosswalk. The legend STATE LAW may be displayed at the top of the R1-6, R1-6a, R1-9, and R1-9a signs, if applicable. On the R1-6 and R1-6a signs, the legends STOP or YIELD may be used instead of the appropriate STOP sign or YIELD sign symbol.

02. Highway agencies may develop and apply criteria for determining the applicability of In-Street Pedestrian Crossing signs.

Standard:

03. If used, the In-Street Pedestrian Crossing sign shall be placed in the roadway at the crosswalk location on the center line, on a lane line, or on a median island. The In-Street Pedestrian Crossing sign shall not be post-mounted on the left-hand or right-hand side of the roadway.

04. If used, the Overhead Pedestrian Crossing sign shall be placed over the roadway at the crosswalk location.

05. An In-Street or Overhead Pedestrian Crossing sign shall not be placed in advance of the crosswalk to educate road users about the State law prior to reaching the crosswalk, nor shall it be installed as an educational display that is not near any crosswalk.

05A (DE Revision) The installation of In-Street Pedestrian Crossing signs along state-maintained roadways shall be approved by DelDOT Traffic.
In-Street Pedestrian Signs

- DE Code says Yield – not Stop

05B (DE Revision) If In-Street Pedestrian Crossing signs are installed along state-maintained roadways by municipalities or sponsoring agencies, they shall be maintained by the municipality or sponsoring agency and shall not be maintained by DelDOT.

Standard:

08 The In-Street Pedestrian Crossing sign and the Overhead Pedestrian Crossing sign shall not be used at signalized locations.

09 The STOP FOR legend shall only be used in States where the State law specifically requires that a driver must stop for a pedestrian in a crosswalk.

Guidance:

09A (DE Revision) Based on current Delaware Code, the YIELD sign symbol should be used with In-Street Pedestrian Crossing signs and the YIELD TO legend should be used with Overhead Pedestrian Crossing signs along state-maintained roadways.

09B (DE Revision) Prior to sign installation, §4142 of Title 21 of the Delaware Code should be reviewed to determine whether the STOP or YIELD sign symbol should be used with In-Street Pedestrian Crossing signs or whether the legend STOP FOR or YIELD TO should be used with Overhead Pedestrian Crossing signs along state-maintained roadways. Local ordinances should be reviewed for In-Street Pedestrian Crossing and Overhead Pedestrian Crossing signs installed along municipal-maintained roadways.

Option:

09C (DE Revision) If local ordinances indicate that drivers must stop for pedestrians at unsignalized crosswalks, the STOP sign symbol may be used with In-Street Pedestrian Crossing signs and the legend STOP FOR may be used with Overhead Pedestrian Crossing signs along municipal-maintained roadways.

Standard:

09D (DE Revision) Along municipal-maintained roadways, the legend STATE LAW shall not be installed with In-Street Pedestrian Crossing signs with the STOP sign symbol or with Overhead Pedestrian Crossing signs with the STOP FOR legend.

Part 2; Section 2B.12
In-Street Pedestrian Signs

• Posting height exception

10 The In-Street Pedestrian Crossing sign shall have a black legend (except for the red STOP or YIELD sign symbols) and border on a white background, surrounded by an outer yellow or fluorescent yellow-green background area (see Figure 2B-2). The Overhead Pedestrian Crossing sign shall have a black legend and border on a yellow or fluorescent yellow-green background at the top of the sign and a black legend and border on a white background at the bottom of the sign (see Figure 2B-2).

11 Unless the In-Street Pedestrian Crossing sign is placed on a physical island, the sign support shall be designed to bend over and then bounce back to its normal vertical position when struck by a vehicle.

Guidance:

11A (DE Revision) Along state-maintained roadways, In-Street Pedestrian Crossing signs should have a fluorescent yellow-green background area and Overhead Pedestrian Crossing signs should have a fluorescent yellow-green background at the top of the sign (see Figure 2B-2).

Support:

12 The Provisions of Section 2A.18 concerning mounting height are not applicable for the In-Street Pedestrian Crossing sign.

Standard:

13 The top of an In-Street Pedestrian Crossing sign shall be a maximum of 4 feet above the pavement surface. The top of an In-Street Pedestrian Crossing sign placed in an island shall be a maximum of 4 feet above the island surface.

Option:

14 The In-Street Pedestrian Crossing sign may be used seasonally to prevent damage in winter because of plowing operations, and may be removed at night if the pedestrian activity at night is minimal.

15 In-Street Pedestrian Crossing signs, Overhead Pedestrian Crossing signs, and Yield Here To (Stop Here For) Pedestrians signs may be used together at the same crosswalk.
In-Street Pedestrian Signs

- Stop - unenforceable
- Bolt them down

Photos courtesy DelDOT

Part 2; Section 2B.12
Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.

07A (DE Revision) §4169 and 4170 of Title 21 of the Delaware Code establish policies for establishing speed limits.

States and local agencies should conduct engineering studies to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review, such as the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes in traffic control signal coordination, or significant changes in traffic volumes.

No more than three speed limits should be displayed on any one Speed Limit sign or assembly.

When a speed limit within a speed zone is posted, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic.

Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately 1/2 mile, to avoid obtaining skewed results for the 85th-percentile speed.

- **Clarification of speed studies**
  - **Study includes analysis of free-flow speed distribution**
  - **List of significant changes to consider reevaluating speed zones**
  - **Posted speed limit should be within 5 MPH of the free-flow 85th-percentile speed**
  - **Obtain speeds outside ½-mile influence area of traffic signal**
Establishing Speed Limits

- By default (Delaware), maximum speed in residential areas is 25 mph, 50 mph on 2-lane roadways, ...
- Local authorities may establish, through engineering study, higher or lower speeds for their roads
Speed Studies

- Spot counts acceptable
- At least 30 vehicles or 30 minutes; more better
- Free flowing traffic away from stop conditions
- Can do by tube counter and other means, too
Section 2B.13 Speed Limit Sign (R2-1)

- Speed limit shall be posted downstream of speed zone
- Confirmatory Speed Limit signs shall be installed beyond major intersections

At the downstream end of the section to which a speed limit applies, a Speed Limit sign showing the next speed limit shall be installed. Additional Speed Limit signs shall be installed beyond major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.

US 113 southbound south of SR 14

50 MPH Speed Limit signs shall be posted, not END 40 M.P.H. signs
• Used where speed reduction exceeds 10 MPH

• Installed in advance of downstream Speed Limit sign based on Table 2C-4

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**Table 2C-4. Guidelines for Advance Placement of Warning Signs**

<table>
<thead>
<tr>
<th>Posted or 85th-Percentile Speed</th>
<th>Condition A: Speed reduction and lane changing in heavy traffic²</th>
<th>Condition B: Deceleration to the listed advisory speed (mph) for the condition</th>
<th>0³</th>
<th>10⁴</th>
<th>20⁴</th>
<th>30⁴</th>
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<th>50⁴</th>
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New values based on modifications to several assumptions
Section 2B.18 Movement Prohibition Signs (R3-1 through R3-4, R3-18, and R3-27)

Standard:
01 Except as provided in Paragraphs 11 and 13, where specific movements are prohibited, Movement Prohibition signs shall be installed.

Guidance:
02 Movement Prohibition signs should be placed where they will be most easily seen by road users who might be intending to make the movement.
03 If No Right Turn (R3-1) signs (see Figure 2B-4) are used, at least one should be placed either over the roadway or at a right-hand corner of the intersection.
04 If No Left Turn (R3-2) signs (see Figure 2B-4) are used, at least one should be placed over the roadway, at the far left-hand corner of the intersection, on a median, or in conjunction with the STOP sign or YIELD sign located on the near right-hand corner.

- Installed where movements are prohibited (unless ONE WAY signs are installed)
- Placed where easily seen by motorists who might attempt the illegal movement

Overhead or near right corner

Overhead, far left corner, in median, or near right corner with STOP or YIELD
Skip Ahead, Skip Ahead

- 2B.19 Intersection lane control signs
- 2B.20 Mandatory movement lane control signs
- 2B.21 Optional movement lane control
- 2B.22 Advance intersection lane control signs
- 2B.23 Right (left) lane must exit signs
- 2B.24 Two-way left turn only signs
- ...
- 2B.35 Slow vehicle turn-out signs
Section 2B.36 **DO NOT DRIVE ON SHOULDER Sign (R4-17)** and **DO NOT PASS ON SHOULDER Sign (R4-18)**

Option:
01. The DO NOT DRIVE ON SHOULDER (R4-17) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway as a travel lane is prohibited.
02. The DO NOT PASS ON SHOULDER (R4-18) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway to pass other vehicles is prohibited.

• New sign legends for common sign

SR 4 eastbound approaching SR 7

No longer using this sign legend

OLD

NEW
Section 2B.37 DO NOT ENTER Sign (R5-1)

Standard:
01 The DO NOT ENTER (R5-1) sign (see Figure 2B-11) shall be used where traffic is prohibited from entering a restricted roadway.

Guidance:
02 (DE Revision) The DO NOT ENTER sign, if used, should be placed directly in view of a road user at the point where a road user could wrongly enter a divided highway, one-way roadway, or ramp (see Figures 2B-12 and 2B-12A). The sign should be mounted on the right-hand side of the roadway, facing traffic that might enter the roadway or ramp in the wrong direction.
03 If the DO NOT ENTER sign would be visible to traffic to which it does not apply, the sign should be turned away from, or shielded from, the view of that traffic.
03A (DE Revision) DO NOT ENTER (R5-1) signs (see Figure 2B-12) should be installed on both the right-hand and left-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction at intersections of divided highways with state-maintained roadways (excluding subdivision streets) where the median width is greater than 30 feet (see Figure 2B-12).
03B (DE Revision) A DO NOT ENTER (R5-1) sign should be installed on the right-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction at intersections of divided highways with subdivision streets, non-DelDOT owned roadways, private driveways, and median U-turn openings where the median width is greater than 30 feet (see Figure 2B-12A).

Option:
05 (DE Revision) A second DO NOT ENTER sign on the left-hand side of the roadway may be used, particularly where traffic approaches from an intersecting roadway (see Figure 2B-12A).

- **Used where traffic is prohibited from entering a restricted roadway**
- **DE Guidance**: Two R5-1 signs at intersections of divided highways with state-maintained roads and median widths ≥ 30 ft
- **DE Option**: R5-1 sign in median is optional at intersections of divided highways with subdivision streets, U-turn openings, and private driveways and median widths ≥ 30 ft
Supplements DO NOT ENTER sign

Installed farther downstream (with respect to a vehicle travelling in the wrong direction) than DO NOT ENTER

DE Guidance: At least one R5-1a sign at intersections of divided highways with state-maintained roads and median widths ≥ 30 ft
Figure 2B-12. Locations of Do Not Enter and Wrong-Way Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider
Intersections of Divided Highways with State-Maintained Roadways (excluding Subdivision Streets)

(Delaware Revision)
Section 2B.40 ONE WAY Signs (R6-1, R6-2)

Standard:

01 Except as provided in Paragraph 6, the ONE WAY (R6-1 or R6-2) sign (see Figure 2B-13) shall be used to indicate streets or roadways upon which vehicular traffic is allowed to travel in one direction only.

02 ONE WAY signs shall be placed parallel to the one-way street at all alleys and roadways that intersect one-way roadways as shown in Figure 2B-14.

03 At an intersection with a divided highway that has a median width at the intersection itself of 30 feet or more, ONE WAY signs shall be placed, visible to each crossroad approach, on the near right and far left corners of each intersection with the directional roadways (see Figure 2B-15).

04 At an intersection with a divided highway that has a median width at the intersection itself of less than 30 feet, Keep Right (R4-7) signs and/or ONE WAY signs shall be installed (see Figures 2B-16, 2B-16A, 2B-17, and 2B-17A). If Keep Right signs are installed, they shall be placed as close as practical to the approach ends of the medians and shall be visible to traffic on the divided highway and each crossroad approach. If ONE WAY signs are installed, they shall be placed on the near right and far left corners of the intersection and shall be visible to each crossroad approach.

Guidance:

04B (DE Revision) At an intersection with a divided highway that has a median width at the intersection itself of greater than or equal to 18 feet and less than 30 feet, ONE WAY signs should be installed (see Figures 2B-16A and 2B-17A) on the near right and far left corners of the intersection and should be visible to each crossroad approach.

• Used where travel is in one direction only
• Intersections along divided highways with median widths $\geq 30$ ft
• DE Guidance: Intersections along divided highways with median widths $\geq 18$ ft and $< 30$ ft
• Near right and far left corners of intersection
Figure 2B-14. Locations of ONE WAY Signs

Legend
* Optional
→ Direction of travel
Figure 2B-22. Example of Regulatory, Warning, and Guide Signs for a One-Lane Roundabout

(Delaware Revision)

Notes:
1. Signs shown for only one leg
2. See Section 2D.38 for guide signs at roundabouts
3. See Chapter 3C for markings at roundabouts
4. The spacings shown on this figure are for rural intersections. See Sections 2D.29, 2D.30, 2D.32, 2D.34, 2D.46, and 2D.42 for low-speed and/or urban conditions
5. All guide signs are optional
Section 2B.46 – Section 2B.48
Parking, Stopping and Standing Signs

Figure 2B-24. Parking and Standing Signs and Plaques (R7 Series) (Sheet 1 of 2)
(Delaware Revision)

Figure 2B-24. Parking and Standing Signs and Plaques (R7 Series) (Sheet 2 of 2)
(Delaware Revision)

Figure 2B-25. Parking and Stopping Signs and Plaques (R8 Series)
Section 2B.52 Traffic Signal Pedestrian and Bicycle Actuation Signs (R10-1 through R10-4, and R10-24 through R10-26)

- Mounted immediately above or incorporated into pushbutton device
- DE Guidance: *12 common educational signs*
Vibro-tactile Example

R10-3e-DE2
• Installed adjacent to the signal heads at all emergency-vehicle (fire) signals

Aetna Fire Station along Old County Rd

R10-13 sign installed adjacent to the emergency-vehicle signal heads
Section 2B.53 Traffic Signal Signs (R10-5 through R10-30)

Standard:

08 A CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Section 2B.53) shall be mounted adjacent to a pedestrian hybrid beacon face on each major street approach. If an overhead pedestrian hybrid beacon face is provided, the sign shall be mounted adjacent to the overhead signal face.

- Installed adjacent to all pedestrian hybrid ("HAWK") beacons

(From Section 4F.02)
Section 2B.53 Traffic Signal Signs (R10-5 through R10-30)

- Modifications to two common signs

  OLD
  
  TURNING TRAFFIC MUST YIELD TO PEDESTRIANS
  
  R10-15

  NEW
  
  TURNING VEHICLES
  
  R10-15

- Used where motorists need to be reminded to yield to pedestrians

  OLD
  
  TURN ON FLASHING RED WITH CAUTION AFTER STOP
  
  R10-17-DE

  NEW
  
  LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP
  
  R10-27

- Used with DE’s flashing red arrow signal phasing
  - Should be installed overhead adjacent to left-turn signal heads

- New sign for right-turn overlap signal phasing

10 A U-TURN YIELD TO RIGHT TURN (R10-16) sign (see Figure 2B-27) may be installed near the left-turn signal face if U-turns are allowed on a protected left-turn movement on an approach from which a right-turn GREEN ARROW signal indication is simultaneously being displayed to drivers making a right turn from the conflicting approach to their left.
Section 2B.58 ROAD CLOSED Sign (R11-2) and LOCAL TRAFFIC ONLY Signs (R11-3 Series, R11-4)

Guidance:

01 The ROAD CLOSED (R11-2) sign should be installed where roads have been closed to all traffic (except authorized vehicles).

02 ROAD CLOSED—LOCAL TRAFFIC ONLY (R11-3) or ROAD CLOSED TO THRU TRAFFIC (R11-4) signs should be used where through traffic is not permitted, or for a closure some distance beyond the sign, but where the highway is open for local traffic up to the point of closure.

Standard:

03 The Road Closed (R11-2, R11-3 series, and R11-4) signs (see Figure 2B-29) shall be designed as horizontal rectangles. These signs shall be preceded by the applicable Advance Road Closed warning sign with the secondary legend AHEAD and, if applicable, an Advance Detour warning sign (see Section 6F.19).

Option:

04 An intersecting street name or a well-known destination may be substituted for the XX MILES AHEAD legend in urban areas.

05 The word message BRIDGE OUT may be substituted for the ROAD CLOSED legend where applicable.

- Advance Road Closed or Advance Detour warning signs required upstream of closure
- Street name or destination can be used in place of XX MILES AHEAD
Section 2B.58 ROAD CLOSED Sign (R11-2) and LOCAL TRAFFIC ONLY Signs (R11-3 Series, R11-4)

Figure 6H-20. Detour for a Closed Street (TA-20)
(Delaware Revision)

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Notes:
1. Detour trailblazer signs should be installed in advance of a decision point (i.e., 200 ft - 300 ft in advance of an intersection).
2. Where there is insufficient space, a single DETOUR AHEAD sign may be used in place of the DETOUR 1000 FT and the DETOUR 500 FT signs.
3. Where there is insufficient space, a single ROAD CLOSED AHEAD sign may be used in place of the ROAD CLOSED 1000 FT and ROAD CLOSED 500 FT signs.
4. For roadways with a posted speed limit less than or equal to 40 MPH, 6-inch letters should be used. For roadways with a posted speed limit greater than 40 MPH, 8-inch letters should be used.
Section 2B.67 Barricades

Option:
01 Barricades may be used to mark any of the following conditions:
   A. A roadway ends,
   B. A ramp or lane closed for operational purposes, or
   C. The permanent or semi-permanent closure or termination of a roadway.

Standard:
02 When used to warn and alert road users of the terminus of a roadway in other than temporary traffic control zones, barricades shall meet the design criteria of Section 6F.68 for a Type 3 Barricade, except that the colors of the stripes shall be retroreflective white and retroreflective red.

Option:
03 An end-of-roadway marker or markers may be used as described in Section 2C.66.

Guidance:
04 Appropriate advance warning signs (see Chapter 2C) should be used.

- Permanent barricades shall meet criteria for Type 3 Barricades in Part 6
- Alternating retroreflective red and white stripes on all rails
- Standard construction detail T–16: Type 4 end-of-roadway object markers installed on middle rail

US 13 at Hickory Ridge Rd
Section 2B.67 Barricades

1. Barricades shall be placed completely across the roadway from edge of road to edge of road. If necessary, the barricade overhang beyond the outside posts (typically 4'-0" (122 cm)) may be reduced to the "outside overhang" value indicated in the table above if obstacles are present beyond the roadway edge.

2. Markings for barricade rails shall be alternating fluorescent red and white stripes, sloping downward at an angle of 45 degrees, using prismatic, retroreflective sheeting. Stripes shall slope downward towards the center of the closure.

3. Attach barricade rail and object marker to the 4" (100 mm) x 4" (100 mm) pressure treated wood post using lag bolts 12" (300 mm) long, minimum, with washers. Two bolts per rail per post shall be required.

4. All wood shall be pressure treated.

5. The end of road object marker (MUTCD Code OM-31) shall be 18" (450 mm) x 18" (450 mm) with red prismatic, retroreflective sheeting.

6. Treated wood post shall be placed in pre-dug hole, backfilled using suitable material, and tampered thoroughly to provide a rigid sub-surface condition around the post.

7. Barricade rails may be constructed using plastic or wood and should not be metal.

8. Longer width closers can be accommodated by various combinations of 2-post and 3-post barricades.
Warning Signs – Function & Application

- Call attention to **unexpected** conditions on or adjacent to a roadway
- Should be **needed** to alert the driver of the need for some different behavior (e.g., slowing down)
- Should be effective at doing so
- Their use, design, location, should be based on engineering study or on engineering judgment

Part 2; Section 2C.01 & 2C.02
Section 2C.03 Design of Warning Signs

**Standard:**

01 (DE Revision) Except as provided in Paragraph 2 or unless specifically designated otherwise, all warning signs shall be diamond-shaped (square with one diagonal vertical) with a black legend and border on a yellow background. Warning signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the “Standard Highway Signs and Markings” book (see Section 1A.11) and/or in the Delaware Standard Signs book.

**Guidance:**

01A (DE Revision) A fluorescent yellow background should be used for overhead warning signs.

**Option:**

02 A warning sign that is larger than the size shown in the Oversized column in Table 2C-2 for that particular sign may be diamond-shaped or may be rectangular or square in shape.

04 Word message warning signs other than those provided in this Manual may be developed and installed by State and local highway agencies.

- **Black-on-yellow diamond warning signs, unless otherwise specified (e.g., plaques)**
- Signs larger than Oversized size can be rectangular or square
- Custom word messages for special circumstances
- **DE Guidance:** *Fluorescent yellow sheeting should be used for overhead warning signs*

**Custom warning message shall be black-on-yellow; rectangular because it exceeds Oversized size**

**NOTICE header typically reserved for regulatory signs**

**I-495 southbound south of DE-PA state line**
Section 2C.03 Design of Warning Signs

- **Fluorescent yellow-green (FYG) background for all school signs**
  - FYG can be used for ped and bike signs; however, in DE, generally reserved for in-street ped signs and ped signs in beach area

**Standard:**

- Warning signs regarding conditions associated with school buses and schools and their related supplemental plaques shall have a black legend and border on a fluorescent yellow-green background (see Section 7B.07).

- All school signs now FYG; new symbolic S3-1 in Part 7; discontinue use of supplemental plaque

Church St (Rehoboth) approaching SR 1
Section 2C.04 Size of Warning Signs

Standard:
01 Except as provided in Section 2A.11, the sizes for warning signs shall be as shown in Table 2C-2.
03 Except as provided in Paragraph 5, the minimum size for all diamond-shaped warning signs facing traffic on a multi-lane conventional road where the posted speed limit is higher than 35 mph shall be 36 x 36 inches.
05 If a diamond-shaped warning sign is placed on the left-hand side of a multi-lane roadway to supplement the installation of the same warning sign on the right-hand side of the roadway, the minimum size identified in the Single Lane column in Table 2C-2 may be used.

Option:
05 If a diamond-shaped warning sign is placed on the left-hand side of a multi-lane roadway to supplement the installation of the same warning sign on the right-hand side of the roadway, the minimum size identified in the Single Lane column in Table 2C-2 may be used.

• Sizes shall follow Table 2C-2
• Some Larger sizes for multi-lane roads with a posted speed limit > 35 MPH
• Single Lane sizes can be used if same sign is posted on left-hand and right-hand side

Table 2C-2. Warning Sign and Plaque Sizes (Sheet 1 of 4)

<table>
<thead>
<tr>
<th>Sign or Plaque</th>
<th>Sign Designation</th>
<th>Section</th>
<th>Conventional Road</th>
<th>Expressway</th>
<th>Freeway</th>
<th>Minimum</th>
<th>Oversized</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Single Lane</td>
<td>Multi-Lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Alignment</td>
<td>W1,1,2,3,4,5</td>
<td>2C.07</td>
<td>30 x 30</td>
<td>36 x 36</td>
<td>36 x 36</td>
<td>36 x 36</td>
<td>48 x 48</td>
</tr>
<tr>
<td>Combination Horizontal</td>
<td>W1-1a,2a</td>
<td>2C.10</td>
<td>36 x 36</td>
<td>36 x 36</td>
<td>48 x 48</td>
<td>48 x 48</td>
<td>48 x 48</td>
</tr>
<tr>
<td>Alignment/Advisory Speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-Direction Large Arrow</td>
<td>W1-6</td>
<td>2C.12</td>
<td>48 x 24</td>
<td>48 x 24</td>
<td>60 x 30</td>
<td>60 x 30</td>
<td>60 x 30</td>
</tr>
<tr>
<td>Two-Direction Large Arrow</td>
<td>W1-7</td>
<td>2C.47</td>
<td>48 x 24</td>
<td>48 x 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chevron Alignment</td>
<td>W1-8</td>
<td>2C.09</td>
<td>18 x 24</td>
<td>18 x 24</td>
<td>30 x 36</td>
<td>36 x 48</td>
<td>24 x 30</td>
</tr>
</tbody>
</table>

Again, multi-lane is in single direction
Section 2C.05 Placement of Warning Signs

Guidance:
03 Warning signs should be placed so that they provide an adequate PRT. The distances contained in Table 2C-4 are for guidance purposes and should be applied with engineering judgment. Warning signs should not be placed too far in advance of the condition, such that drivers might tend to forget the warning because of other driving distractions, especially in urban areas.

- **Advance placement based on Table 2C-4, which has new values**

<table>
<thead>
<tr>
<th>Posted or 85th-Percentile Speed</th>
<th>Condition A: Speed reduction and lane changing in heavy traffic</th>
<th>Condition B: Deceleration to the listed advisory speed (mph) for the condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0³</td>
<td>10³ 20³ 30³ 40³ 50³ 60³ 70³</td>
</tr>
<tr>
<td>20 mph</td>
<td>225 ft 100 ft³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>25 mph</td>
<td>225 ft 100 ft³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>30 mph</td>
<td>460 ft 100 ft³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>35 mph</td>
<td>565 ft 100 ft³ N/A³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>40 mph</td>
<td>670 ft 125 ft N/A³ 100 ft³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>45 mph</td>
<td>775 ft 150 ft N/A³ 100 ft³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>50 mph</td>
<td>880 ft 175 ft N/A³ 100 ft³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>55 mph</td>
<td>985 ft 200 ft N/A³ 100 ft³ N/A³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>60 mph</td>
<td>1,090 ft 225 ft N/A³ 100 ft³ N/A³ N/A³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>65 mph</td>
<td>1,195 ft 275 ft N/A³ 100 ft³ N/A³ N/A³ N/A³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>70 mph</td>
<td>1,300 ft 325 ft N/A³ 100 ft³ N/A³ N/A³ N/A³ N/A³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
<tr>
<td>75 mph</td>
<td>1,405 ft 375 ft N/A³ 100 ft³ N/A³ N/A³ N/A³ N/A³ N/A³ N/A³ N/A³ N/A³ — — — — — —</td>
<td></td>
</tr>
</tbody>
</table>

- **Condition A: Speed reduction and lane changing in heavy traffic**
- **Condition B to 0 MPH: Stop and yield conditions**
- **Condition B to XX MPH: Speed reduction in advance of hazard (e.g., curve)**
Section 2C.05 Placement of Warning Signs

Guidance:

04 (DE Revision) Minimum spacing between warning signs with different messages should be based on the estimated PRT for driver comprehension of and reaction to the second sign. The minimum warning sign spacing contained in Table 2C-4A should be applied with engineering judgment.

05 The effectiveness of the placement of warning signs should be periodically evaluated under both day and night conditions.

Option:

06 Warning signs that advise road users about conditions that are not related to a specific location, such as Deer Crossing or SOFT SHOULDER, may be installed in an appropriate location, based on engineering judgment, since they are not covered in Table 2C-4.

- DE Guidance: *Table 2C-4A for minimum spacing between warning signs*
- Appropriate to install some signs adjacent to hazard (e.g., Pedestrian warning sign adjacent to crossing)

<table>
<thead>
<tr>
<th>Posted or 85th Percentile Speed</th>
<th>Minimum Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>100 ft</td>
</tr>
<tr>
<td>25 mph</td>
<td>100 ft</td>
</tr>
<tr>
<td>30 mph</td>
<td>100 ft</td>
</tr>
<tr>
<td>35 mph</td>
<td>150 ft</td>
</tr>
<tr>
<td>40 mph</td>
<td>200 ft</td>
</tr>
<tr>
<td>45 mph</td>
<td>300 ft</td>
</tr>
<tr>
<td>50 mph</td>
<td>400 ft</td>
</tr>
<tr>
<td>55 mph</td>
<td>500 ft</td>
</tr>
<tr>
<td>60 mph</td>
<td>600 ft</td>
</tr>
<tr>
<td>65 mph</td>
<td>700 ft</td>
</tr>
</tbody>
</table>
Warning signs should be far enough apart for motorists to comprehend and react to each condition.

I-95 southbound off-ramp to SR 273
Section 2C.06 Horizontal Alignment Warning Signs

Figure 2C-1. Horizontal Alignment Signs and Plaques

W1-1  W1-1a  W1-2  W1-2a  W1-3  W1-4
W1-5  W1-6  W1-8  W1-10  W1-10a  W1-10b
W1-10c  W1-10d  W1-10e  W1-11  W1-13
Section 2C.06 Horizontal Alignment Warning Signs

- DE Guidance: *Table 2C-5 applies where advisory speed < posted or statutory speed limit*

- DE Support: Data collection and formal engineering studies not required at all curves – not practical per FHWA Interpretation Letter (¶03)

### Table 2C-5. Horizontal Alignment Sign Selection (DE Revision)

<table>
<thead>
<tr>
<th>Type of Horizontal Alignment Sign</th>
<th>Difference Between Approach Speed and Curve Advisory Speed&lt;sup&gt;*&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 mph</td>
</tr>
<tr>
<td>Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W1-10 series) (see Section 2C.07 to determine which sign to use)</td>
<td>Recommended</td>
</tr>
<tr>
<td>Advisory Speed Plaque (W13-1P)</td>
<td>Recommended</td>
</tr>
<tr>
<td>Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)</td>
<td>Optional</td>
</tr>
<tr>
<td>Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp</td>
<td>Optional</td>
</tr>
</tbody>
</table>

* Difference Between Approach Speed and Curve Advisory Speed is defined as the difference in speed between the posted or statutory speed limit or 85<sup>th</sup>-percentile speed on the tangent approach to the curve and the advisory speed for the curve.
Section 2C.07 Horizontal Alignment Signs (W1-1 through W1-5, W1-11, W1-15)

Standard:
01 If Table 2C-5 indicates that a horizontal alignment sign (see Figure 2C-1) is required, recommended, or allowed, the sign installed in advance of the curve shall be a Curve (W1-2) sign unless a different sign is recommended or allowed by the provisions of this Section.
02 A Turn (W1-1) sign shall be used instead of a Curve sign in advance of curves that have advisory speeds of 30 mph or less (see Figure 2C-2).

Guidance:
03 Where there are two changes in roadway alignment in opposite directions that are separated by a tangent distance of less than 600 feet, the Reverse Turn (W1-3) sign should be used instead of multiple Turn (W1-1) signs and the Reverse Curve (W1-4) sign should be used instead of multiple Curve (W1-2) signs.

Option:
04 A Winding Road (W1-5) sign may be used instead of multiple Turn (W1-1) or Curve (W1-2) signs where there are three or more changes in roadway alignment each separated by a tangent distance of less than 600 feet.

- Installed based on criteria in Table 2C-5
- W1-1 sign used instead of W1-2 for advisory speeds ≤ 30 MPH
- W1-3 or W1-4 used when tangent ≤ 600 ft between reverse curves/turns
- Optional W1-5 if three or more curves each separated by tangents ≤ 600 ft
Section 2C.07 Horizontal Alignment Signs
(W1-1 through W1-5, W1-11, W1-15)

Figure 2C-2. Example of Warning Signs for a Turn

Notes:
1. See Table 2C-4 for advance placement distance guidelines
2. See Table 2C-5 for the selection of horizontal alignment signs
3. See Table 2C-6 for spacing of W1-8 signs
4. A 25-mph advisory speed is shown for illustrative purposes only
Section 2C.08 Advisory Speed Plaque (W13-1P)

Standard:
02 The use of the Advisory Speed plaque for horizontal curves shall be in accordance with the information shown in Table 2C-5. The Advisory Speed plaque shall also be used where an engineering study indicates a need to advise road users of the advisory speed for other roadway conditions.
04 Except in emergencies or when the condition is temporary, an Advisory Speed plaque shall not be installed until the advisory speed has been determined by an engineering study.
05 The Advisory Speed plaque shall only be used to supplement a warning sign and shall not be installed as a separate sign installation.
08 The 16, 14, and 12 degrees of ball-bank criteria are comparable to the current AASHTO horizontal curve design guidance. Research has shown that drivers often exceed existing posted advisory curve speeds by 7 to 10 mph.

Guidance:
09 The advisory speed should be determined based on free-flowing traffic conditions.

- Installed based on criteria in Table 2C-5
- Requires engineering study (e.g., ball-bank indicator for free-flow traffic)
  - Apparent conflict with 2C.06 ¶03 (Data collection and formal engineering studies not required at all curves – not practical per FHWA Interpretation Letter) – DelDOT struggling with this as much as anyone else
- Supplements other warning sign; not installed as separate sign
Section 2C.09 Chevron Alignment Sign (W1-8)

- Installed based on criteria in Table 2C-5
- Can be used in place of delineators
- Placed on outside of turn or curve with bottom sign 4 ft above pavement (min.)
Section 2C.09 Chevron Alignment Sign (W1-8)

Guidance:
05 The approximate spacing of Chevron Alignment signs on the turn or curve measured from the point of curvature (PC) should be as shown in Table 2C-6.
06 If used, Chevron Alignment signs should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.

Standard:
07 Chevron Alignment signs shall not be placed on the far side of a T-intersection facing traffic on the stem approach to warn drivers that a through movement is not physically possible, as this is the function of a Two-Direction (or One-Direction) Large Arrow sign.
08 Chevron Alignment signs shall not be used to mark obstructions within or adjacent to the roadway, including the beginning of guardrails or barriers, as this is the function of an object marker (see Section 2C.63).

- Spacing based on Table 2C-6
- Visible in advance of curve
- Shall not be used to delineate end of road or obstructions within or adjacent to road

Table 2C-6. Typical Spacing of Chevron Alignment Signs on Horizontal Curves

<table>
<thead>
<tr>
<th>Advisory Speed</th>
<th>Curve Radius</th>
<th>Sign Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 mph or less</td>
<td>Less than 200 feet</td>
<td>40 feet</td>
</tr>
<tr>
<td>20 to 30 mph</td>
<td>200 to 400 feet</td>
<td>80 feet</td>
</tr>
<tr>
<td>35 to 45 mph</td>
<td>401 to 700 feet</td>
<td>120 feet</td>
</tr>
<tr>
<td>50 to 60 mph</td>
<td>701 to 1,250 feet</td>
<td>160 feet</td>
</tr>
<tr>
<td>More than 60 mph</td>
<td>More than 1,250 feet</td>
<td>200 feet</td>
</tr>
</tbody>
</table>

Note: The relationship between the curve radius and the advisory speed shown in this table should not be used to determine the advisory speed.
Section 2C.11 Combination Horizontal Alignment/Intersection Signs (W1-10 Series)

Option:
01 The Turn (W1-1) sign or the Curve (W1-2) sign may be combined with the Cross Road (W2-1) sign or the Side Road (W2-2 or W2-3) sign to create a combination Horizontal Alignment/Intersection (W1-10 series) sign (see Figure 2C-1) that depicts the condition where an intersection occurs within or immediately adjacent to a turn or curve.

Guidance:
02 Elements of the combination Horizontal Alignment/Intersection sign related to horizontal alignment should comply with the provisions of Section 2C.07, and elements related to intersection configuration should comply with the provisions of Section 2C.46. The symbol design should approximate the configuration of the intersecting roadway(s). No more than one Cross Road or two Side Road symbols should be displayed on any one combination Horizontal Alignment/Intersection sign.

Standard:
03 The use of the combination Horizontal Alignment/Intersection sign shall be in accordance with the appropriate Turn or Curve sign information shown in Table 2C-5.

• Option to consolidate Alignment and Intersection warning signs

• Installed in accordance with criteria in Table 2C-5
• Shall meet criteria in Table 2C-5

• Installed on outside of curve/turn at a right angle to traffic

• Shall not be used at roundabouts
Section 2C.19 ROAD NARROWS Sign (W5-1), Section 2C.20 NARROW BRIDGE Sign (W5-2), & Section 2C.21 ONE LANE BRIDGE Sign (W5-3)

Guidance:

01 Except as provided in Paragraph 2, a ROAD NARROWS (W5-1) sign (see Figure 2C-5) should be used in advance of a transition on two-lane roads where the pavement width is reduced abruptly to a width such that vehicles traveling in opposite directions cannot simultaneously travel through the narrow portion of the roadway without reducing speed.

Option:

02 The ROAD NARROWS (W5-1) sign may be omitted on low-volume local streets that have speed limits of 30 mph or less.

- **Abrupt change in roadway cross-section requires braking**
- **Can omit sign on local roads with posted speed ≤ 30 MPH**

Guidance:

01 A NARROW BRIDGE (W5-2) sign (see Figure 2C-5) should be used in advance of any bridge or culvert having a two-way roadway clearance width of 16 to 18 feet, or any bridge or culvert having a roadway clearance less than the width of the approach travel lanes.

- **16 ft to 18 ft clearance or lane widths less than approach**

Guidance:

01 A ONE LANE BRIDGE (W5-3) sign (see Figure 2C-5) should be used on two-way roadways in advance of any bridge or culvert:

- A. Having a clear roadway width of less than 16 feet, or
- B. Having a clear roadway width of less than 18 feet when commercial vehicles constitute a high proportion of the traffic, or
- C. Having a clear roadway width of 18 feet or less where the sight distance is limited on the approach to the structure.

- **Clearance < 16 ft or < 18 ft with high truck percentage or limited sight distance**
Section 2C.22 Divided Highway Sign (W6-1), Section 2C.23 Divided Highway Ends (W6-2), & Section 2C.44 Two-Way Traffic Sign (W6-3)

Guidance:

01. A Divided Highway (W6-1) sign (see Figure 2C-5) should be used on the approaches to a section of highway (not an intersection or junction) where the opposing flows of traffic are separated by a median or other physical barrier.

Standard:

02. The Divided Highway (W6-1) sign shall not be used instead of a Keep Right (R4-7 series) sign on the approach end of a median island.

- Installed on approach to median or barrier separated roadway
- Shall not be used instead of Keep Right on median nose

Guidance:

01. A Divided Highway Ends (W6-2) sign (see Figure 2C-5) should be used in advance of the end of a section of physically divided highway (not an intersection or junction) as a warning of two-way traffic ahead.

02. The Two-Way Traffic (W6-3) sign (see Section 2C.44) should be used to give warning and notice of the transition to a two-lane, two-way section.

- Installed in advance of end of divided highway

Guidance:

01. A Two-Way Traffic (W6-3) sign (see Figure 2C-8) should be used to warn road users of a transition from a multi-lane divided section of roadway to a two-lane, two-way section of roadway.

02. A Two-Way Traffic (W6-3) sign with an AHEAD (W16-9P) plaque (see Figure 2C-12) should be used to warn road users of a transition from a one-way street to a two-lane, two-way section of roadway (see Figure 2B-14).

- Installed adjacent to end of divided highway
- Used with AHEAD plaque where one-way street becomes two-way street
Section 2C.44 Two-Way Traffic Sign (W6-3)

Should be used with AHEAD plaque in advance of transition from one-way to two-way traffic

SR 4 westbound (S. Monroe St)
Shall not be used on the approach end of a median island
Option:

01 The DEAD END (W14-1) sign (see Figure 2C-5) may be used at the entrance of a single road or street that terminates in a dead end or cul-de-sac. The NO OUTLET (W14-2) sign (see Figure 2C-5) may be used at the entrance to a road or road network from which there is no other exit.

02 DEAD END (W14-1a) or NO OUTLET (W14-2a) signs (see Figure 2C-5) may be used in combination with Street Name (D3-1) signs (see Section 2D.43) to warn turning traffic that the cross street ends in the direction indicated by the arrow.

Standard:

05 When the W14-1 or W14-2 sign is used, the sign shall be posted as near as practical to the entry point or at a sufficient advance distance to permit the road user to avoid the dead end or no outlet condition by turning at the nearest intersecting street.

06 The DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall not be used instead of the W14-1 or W14-2 signs where traffic can proceed straight through the intersection into the dead end street or no outlet area.

• DEAD END used at single road ending in dead end or cul-de-sac

• NO OUTLET used at entrance to road “network” (e.g., subdivision) with no other exit

• W14-1a and W14-2a signs installed to face cross street traffic
  – May be installed in conjunction with Street Name sign
  – Shall not replace W14-1 or W14-2 for straight through traffic
Section 2C.28 – Section 2C.35
Roadway and Weather Condition Signs

- Soft Shoulder (W8-4)
- Low Shoulder (W8-9)
- Rough Road (W8-8)
- Uneven Lanes (W8-11)
- No Center Line (W8-12)
- Bridge Ices Before Road (W6-13)
- Fallen Rocks (W8-14)
- Grooved Pavement (W8-15)
- Metal Bridge Deck (W8-16)
- Shoulder Drop-Off (W8-17P)
- Road May Flood (W8-18)
- Gusty Winds Area (W8-19)
- Fost Area (W8-22)
- No Shoulder (W8-23)
- Shoulder Ends (W8-25)
- Speed Hump (W17-1)
- Water on Road (W21-7-DE)
- Bump (W8-1)
- Dip (W8-2)
- Pavement Ends (W8-3)
- When Wet (W8-5P)
- Ice (W8-5aP)
- Steel Deck (W8-5bP)
- Excess Oil (W8-5cP)
- Loose Gravel (W8-7)
W3-1 and W3-2 installed if STOP or YIELD visibility distance is less than AASHTO stopping sight distance (Table 3-1)

Located in advance of STOP or YIELD based on Condition B (to 0 MPH) in Table 2C-4
DE Guidance: W2-6 on the approaches to all roundabouts along state-maintained roads

Typically include W16-8P (Advance Street Name) plaque with Intersection Warning assembly
- Installed in advance of intersection based on Condition B (to 0 MPH) in Table 2C-4
Section 2C.47 Two-Direction Large Arrow Sign (W1-7)

Standard:
02 If used, it shall be installed on the far side of a T-intersection in line with, and at approximately a right angle to, traffic approaching from the stem of the T-intersection.
03 The Two-Direction Large Arrow sign shall not be used where there is no change in the direction of travel such as at the beginnings and ends of medians or at center piers.
04 The Two-Direction Large Arrow sign directing traffic to the left and right shall not be used in the central island of a roundabout.

Guidance:
05 The Two-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration.
05A (DE Revision) The Two-Direction Large Arrow sign should not be installed on the far side of a T-intersection along a divided highway for traffic approaching from the stem of the T-intersection.

- If used, shall be installed on far side of “T” intersection
- Typically supplemented with Type 4 object marker(s)
- DE Guidance – Should not be installed at T-intersections along divided highways
Guidance:

03 Vehicular Traffic Warning signs should be used only at locations where the road user’s sight distance is restricted, or the condition, activity, or entering traffic would be unexpected.

05 The combined Bicycle/Pedestrian (W11-15) sign may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque (see Figure 2C-10) may be mounted below the W11-15 sign. The TRAIL CROSSING (W11-15a) sign may be used to warn of shared-use path crossings where pedestrians, bicyclists, and other user groups might be crossing the roadway.

08 If used in advance of a pedestrian and bicycle crossing, a W11-15 or W11-15a sign should be supplemented with an AHEAD or XX FEET plaque to inform road users that they are approaching a point where crossing activity might occur.

Standard:

09 If a post-mounted W11-1, W11-11, W11-15, or W11-15a sign is placed at the location of the crossing point where golf carts, pedestrians, bicyclists, or other shared-use path users might be crossing the roadway, a diagonal downward pointing arrow (W16-7P) plaque (see Figure 2C-12) shall be mounted below the sign. If the W11-1, W11-11, W11-15, or W11-15a sign is mounted overhead, the W16-7P supplemental plaque shall not be used.

- Installed at locations with limited sight distance or where entering traffic is unexpected
- New combined Bicycle/Pedestrian sign (W11-15)
- AHEAD or XX FT plaque if warning sign is installed in advance of specific ped or bike crossing
- W16-7P plaque required if warning sign is installed adjacent to ped, bike, or golf cart crossing
• Used at locations with unexpected entries into the roadway

• **AHEAD or XX FT** plaque if warning sign is installed in advance of specific crossing

*Watch Children*
W11-2 assembly is generally reserved for unexpected crossing locations, not signalized intersections, where pedestrians are expected.
Standard:
04 If a post-mounted W11-2, W11-6, W11-7, or W11-9 sign is placed at the location of the crossing point where pedestrians, snowmobilers, or equestrians might be crossing the roadway, a diagonal downward pointing arrow (W16-7P) plaque (see Figure 2C-12) shall be mounted below the sign. If the W11-2, W11-6, W11-7, or W11-9 sign is mounted overhead, the W16-7P plaque shall not be used.

- **W16-7P plaque required if warning sign is installed adjacent to crossing**
Avoid mixing yellow and FYG backgrounds

These signs should be FYG per Section 2C.50; all school signs shall be FYG per Section 2A.10
Slow Children at Play

- Studied extensively
- NCHRP Synthesis – Pedestrians and Traffic Control Measures
- Consensus – ineffective at best; dangerous or counterproductive under some circumstances
- Can send the wrong message
- The road is not suitable as a playground
- MUTCD is silent – You didn’t see it in Table 2C-11
Section 2C.53 Use of Supplemental Warning Plaques

Option:
01 A supplemental warning plaque (see Figure 2C-12) may be displayed with a warning or regulatory sign when engineering judgment indicates that road users require additional warning information beyond that contained in the main message of the warning or regulatory sign.

Standard:
02 Supplemental warning plaques shall be used only in combination with warning or regulatory signs. They shall not be mounted alone or displayed alone. If used, a supplemental warning plaque shall be installed on the same post(s) as the warning or regulatory sign that it supplements.
03 Unless otherwise provided in this Manual for a particular plaque, supplemental warning plaques shall be mounted below the sign they supplement.

- Shall not be used alone
- Installed below the sign they supplement
Section 2C.58 Advance Street Name Plaque
(W16-8P, W16-8aP)

New requirements & guidelines:
• *Left road name above right road name*
• *Upper-case / lower-case legend*
• *Border*

OLD

NEW
Option:
01  In situations where there is a need to warn drivers to watch for other slower forms of transportation traveling along the highway, such as bicycles, golf carts, horse-drawn vehicles, or farm machinery, a SHARE THE ROAD (W16-1P) plaque (see Figure 2C-12) may be used.

01A (DE Revision) In situations where there is a need to warn motorists to watch for bicyclists traveling along the highway, including junctions with designated bicycle routes, and on roadways with no shoulder or a shoulder with a width of less than 4 feet, a SHARE THE ROAD (W16-1P) plaque (see Figure 2C-12) may be used in conjunction with the Bicycle (W11-1) sign.

Standard:
02  A W16-1P plaque shall not be used alone. If a W16-1P plaque is used, it shall be mounted below either a Vehicular Traffic Warning sign (see Section 2C.49) or a Non-Vehicular Warning sign (see Section 2C.50). The background color of the W16-1P plaque shall match the background color of the warning sign with which it is displayed.

- Shall not be used alone and shall be mounted below Non-Vehicular Warning sign
- DE Option: Used to supplement Bicycle warning sign where shoulder width < 4 ft
SHARE THE ROAD typically not used when shoulder width exceeds 4 ft; use standard W11-1 with W16-1P

Salem Church Rd south of Chapman Rd
Shared Lane Markings ("Sharrows")

- Roadways with on-street parking only
  - Reduces “dooring”
  - Assists cyclists with lateral positioning
  - Alerts drivers of likely bike positioning
  - Reduces wrong-way cycling

- Not for:
  - Rural areas
  - Areas without on-street parking
  - Roadways with speeds >35 mph
  - Shoulders or designated bike lanes

R4-11 can be used in addition or instead

Part 9; Section 9C.07
Other Bicycle Facility Signage

- Part 9 has a variety of signage appropriate when establishing bicycle facilities
- General guide – spacing L=2WS
Other Bicycle Facility Signage

- When there is a need to warn motorists to watch for cyclists, W16-1P plaque may be used in conjunction with W11-1 sign
  - Examples:
    - Junctions w/bike routes
    - Roadways w/no shoulders
    - Shoulders <4’

Part 9; Section 9B.19
Option:
01 A NEW (W16-15P) plaque (see Figure 2C-12) may be mounted above a regulatory sign when a new regulation takes effect in order to alert road users to the new traffic regulation. A NEW plaque may also be mounted above an advance warning sign (such as a Signal Ahead sign for a newly-installed traffic control signal) for a new traffic regulation.

Standard:
02 The NEW plaque shall not be used alone.
03 The NEW plaque shall be removed no later than 6 months after the regulation has been in effect.

- Mounted above regulatory or warning sign for new traffic regulation
- Shall be black-on-yellow
- Removed no later than 6 months after new regulation is implemented
• Obstructions within the roadway require Type 1 or Type 3 object markers and corresponding pavement markings

• Obstructions adjacent to the roadway may be delineated with Type 2 or Type 3 object markers

• The end of a roadway may be delineated with a Type 4 object marker
Guide Sign Color

- White message on green background
- Also allowed:
  - White on blue
  - Black on white

Section 2D.03  Color, Retroreflection, and Illumination

Support:

01 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.

Standard:

02 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:

03 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.
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 and 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.

- Destination legends shall be combination of upper-case and lower-case letters
- All other legends shall be upper-case

The principal legend on guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, or a combination of 6 inches in height for upper-case letters and 4.5 inches in height for lower-case letters. On low-volume roads (as defined in Section 5A.01) with speeds of 25 mph or less, and on urban streets with speeds of 25 mph or less, the principal legend shall be in letters at least 4 inches in height for all upper-case letters, or a combination of 4 inches in height for upper-case letters and 3 inches in height for lower-case letters.

- 6” upper or 6”/4.5” upper/lower (min.) on roads with posted speed > 25 MPH
- 4” upper or 4”/3” upper/lower (min.) on roads with posted speed ≤ 25 MPH
Subdivision name shall be combination of upper-case and lower-case letters

Old Baltimore Pk at Salem Church Rd / Salem Woods Dr
Skip Ahead, Skip Ahead

- 2D.08 Arrows
- 2D.09 Numbered highway systems
- 2D.10 Route signs and auxiliary signs
- 2D.11 Design of route signs
- 2D.12 Design of a space shuttle
- 2D.13 Junction auxiliary sign
- ...

[Image 672x36 to 706x78]
Section 2D.31 Advance Route Turn Assembly

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

Guidance:
03 Where a multiple-lane highway approaches an interchange or intersection with a numbered route, the Advance Route Turn assembly should be used to pre-position turning vehicles in the correct lanes from which to make their turn.

06 An assembly that includes an Advance Turn Arrow auxiliary sign shall not be placed where there is an intersection between it and the designated turn.

- Installed in advance of an intersection where a turn is required to remain on the numbered route
- Used along multi-lane roads to position motorists in advance of an interchange or intersection with a numbered route
- Typical placement depicted in Figure 2D-6
- Shall not be placed in advance of an intermediate intersection
Section 2D.31 Advance Route Turn Assembly

Advance Route Turn Assembly installed in advance of the intersection to indicate that a turn is required to remain on SR 36

Directional Assemblies at the intersection where a turn is required to remain on SR 36

SR 36 at SR 16 / St. Johnstown Rd
Section 2D.43 Street Name Signs (D3-1, D3-1-DE, D3-1a)

Guidance:
01 Street Name (D3-1 and D3-1a) signs (see Figure 2D-10) 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.

Option:
01A (DE Revision) Private Street Name (D3-1-DE1) signs (see Figure 2D-10) may be installed at the intersection of a state-maintained roadway with a private roadway or at the intersection of two private roadways.

Standard:
03 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.13).

Option:
15 The border may be omitted from a Street Name sign.

- **Installed at all urban intersections**
- **Upper-case/lower-case letters**
- **Omit sign border (DE preference)**
- **DE Option: White background for private roads**
**Section 2D.43 Street Name Signs (D3-1, D3-1-DE, D3-1a)**

**Guidance:**

04 *(DE Revision)* Except as provided in Paragraphs 5, 6, and 7 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.

05 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.

**Option:**

06 *(DE Revision)* At the intersection of two subdivision streets, 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:**

07 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.

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- **Minimum letter heights based on Table 2D-2**
- **DE Guidance: 4” letter heights for intersection of two subdivision streets**

**Table 2D-2. Recommended Minimum Letter Heights on Street Name Signs (Delaware Revision)**

<table>
<thead>
<tr>
<th>Type of Mounting</th>
<th>Type of Street or Highway</th>
<th>Speed Limit</th>
<th>Recommended Minimum Letter Height*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Initial Upper-Case</td>
</tr>
<tr>
<td>Overhead</td>
<td>All types</td>
<td>All speed limits</td>
<td>12 inches</td>
</tr>
<tr>
<td>Post-mounted</td>
<td>Multi-lane</td>
<td>More than 40 mph</td>
<td>8 inches</td>
</tr>
<tr>
<td>Post-mounted</td>
<td>Multi-lane</td>
<td>40 mph or less</td>
<td>6 inches</td>
</tr>
<tr>
<td>Post-mounted</td>
<td>2-lane</td>
<td>All speed limits</td>
<td>6 inches</td>
</tr>
<tr>
<td>Post-mounted</td>
<td>Intersection of two subdivision streets</td>
<td>25 mph or less</td>
<td>4 inches</td>
</tr>
</tbody>
</table>

* Reduced letter height and reduced edge spacing may be used on Street Name signs if the sign size must be reduced due to factors including lane width or vertical or lateral clearance (see Paragraph 5 of Section 2D.04)
Street Name Signs

- ¶14 – street name signs must be retroreflective or illuminated
- ¶16, 18 – alternative background colors (other than green) may be used – blue, brown, white
- ¶18A – private roads white background with black legend
- ¶19 – consistency key – use same background throughout jurisdiction
- ¶21 – street name signs can be mounted overhead to optimize visibility and may be mounted above a regulatory or Stop or Yield sign with no vertical separation
Community Wayfinding Systems

Section 2D.50 Community Wayfinding Signs

Support:
01 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 destinations within a city or a local urbanized or downtown area.
02 Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification enhancement marker for destinations within an overall wayfinding guide sign plan for an area.
03 Figures 2D-18 through 2D-20 illustrate various examples of the design and application of community wayfinding guide signs.

Standard:
04 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.37) 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.
05 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.
06 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.
07 Community wayfinding guide signs shall not be mounted overhead.

Guidance:
08 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.
**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.

**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.

**Option:**

At the boundaries of the geographical area within which community wayfinding guide signing is used, an informational guide sign (see Figures 2D-18 and 2D-20) 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-1 and 2D-18 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.
Except for the informational guide sign posted at the boundary of the wayfinding system, wayfinding guide signs may use background colors other than green in order to provide additional information to the wayfinding destinations by geographical area within the overall wayfinding guide system. Community wayfinding guide signs may be used with or without the boundary information corresponding to the color-coded panels described in Paragraphs 13 through 16. Except as noted in Paragraphs 17 and 18, all color combinations that are approved in this Manual for use on official project 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 signs.

The minimum luminance ratio of legend to background for community wayfinding guide signs shall be 3:1.

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

Relocated from 2D & 2E
General Information Signs

Standard:
Except for political boundary signs, General Information signs shall have white legends and borders on green rectangular-shaped backgrounds.

Table 2H-1. General Information Sign Sizes (Delaware Revision)

<table>
<thead>
<tr>
<th>Sign</th>
<th>Sign Designation</th>
<th>Section</th>
<th>Conventional Road</th>
<th>Freeway or Expressway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Location</td>
<td>D16-1</td>
<td>24.05</td>
<td>10 x 18</td>
<td>12 x 24</td>
</tr>
<tr>
<td>Intermediate Location</td>
<td>D10-1a</td>
<td>24.05</td>
<td>10 x 27</td>
<td>12 x 36</td>
</tr>
<tr>
<td>Reference Location</td>
<td>D10-2</td>
<td>24.05</td>
<td>10 x 27</td>
<td>12 x 36</td>
</tr>
<tr>
<td>Intermediate Location</td>
<td>D10-2a</td>
<td>24.05</td>
<td>10 x 36</td>
<td>12 x 48</td>
</tr>
<tr>
<td>Reference Location</td>
<td>D10-3</td>
<td>24.05</td>
<td>10 x 36</td>
<td>12 x 48</td>
</tr>
<tr>
<td>Intermediate Location</td>
<td>D10-3a</td>
<td>24.05</td>
<td>10 x 46</td>
<td>12 x 60</td>
</tr>
<tr>
<td>Enhanced Reference Location</td>
<td>D10-4</td>
<td>24.05</td>
<td>15 x 27</td>
<td>18 x 36</td>
</tr>
<tr>
<td>Intermediate Enhanced Reference Location</td>
<td>D10-5</td>
<td>24.05</td>
<td>15 x 36</td>
<td>18 x 48</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>D14-1</td>
<td>24.05</td>
<td>36 x 30*</td>
<td>72 x 48*</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>D14-2</td>
<td>24.05</td>
<td>36 x 30*</td>
<td>72 x 48*</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>D14-3</td>
<td>24.05</td>
<td>42 x 24*</td>
<td>90 x 36*</td>
</tr>
<tr>
<td>Adopt A Highway</td>
<td>D14-3-DE</td>
<td>24.06</td>
<td>24 x 24</td>
<td>--</td>
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<tr>
<td>Delaware Airways</td>
<td>D14-4-DE</td>
<td>24.08</td>
<td>24 x 24</td>
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<td>Signals Set for 40 MPH</td>
<td>I-1</td>
<td>24.03</td>
<td>24 x 24</td>
<td>--</td>
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<tr>
<td>Jurisdictional Boundary</td>
<td>I-2</td>
<td>24.04</td>
<td>24 x 18</td>
<td>24 x 30</td>
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<td>Delaware County</td>
<td>I-12-DE</td>
<td>24.02</td>
<td>30 x 24</td>
<td>--</td>
</tr>
<tr>
<td>Now Leaving Corporate Limits</td>
<td>I-12-DE</td>
<td>24.02</td>
<td>30 x 24</td>
<td>--</td>
</tr>
<tr>
<td>Geographical Features</td>
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<td>Airport</td>
<td>D12-2</td>
<td>24.05</td>
<td>30 x 30</td>
<td>30 x 30</td>
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<tr>
<td>Bus Station</td>
<td>D12-3</td>
<td>24.05</td>
<td>30 x 30</td>
<td>30 x 30</td>
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<tr>
<td>Train Station</td>
<td>D12-4</td>
<td>24.05</td>
<td>30 x 30</td>
<td>30 x 30</td>
</tr>
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<td>Library</td>
<td>D12-7</td>
<td>24.05</td>
<td>30 x 30</td>
<td>30 x 30</td>
</tr>
<tr>
<td>Vehicle Ferry Terminal</td>
<td>D12-8</td>
<td>24.05</td>
<td>30 x 30</td>
<td>30 x 30</td>
</tr>
<tr>
<td>Recycling Collection Center</td>
<td>D12-9</td>
<td>24.05</td>
<td>30 x 30</td>
<td>--</td>
</tr>
<tr>
<td>Light Rail Transit Station</td>
<td>D12-10</td>
<td>24.05</td>
<td>30 x 30</td>
<td>--</td>
</tr>
<tr>
<td>Delaware County</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Notes:
1. Larger signs may be used when appropriate, except for the D14 series signs
2. Dimensions in inches are shown as width x height

Part 2; Section 2H.01 & 2H.02
CHAPTER 2K.
TOURIST-ORIENTED DIRECTIONAL SIGNS

Figure 2K-1. Examples of Tourist-Oriented Directional Signs (Delaware Revision)

INTERSECTION APPROACH SIGN

TOURIST ACTIVITIES

Optional message

STEWARD'S JET BOATS

MYRTLEWOOD GIFT SHOP

GREENFOREST ORCHARD

NEXT LEFT

STEWARD'S JET BOATS

COMBINED SIGN

ABCD FARMS

Advance sign

Figure 2K-2. Examples of Intersection Approach Signs and Advance Signs for Tourist-Oriented Directional Signs

INTERSECTION APPROACH SIGN LOCATIONS

TOURIST ACTIVITIES

MYRTLEWOOD GIFT SHOP

GREENFOREST ORCHARD

TOURIST ACTIVITIES

MYRTLEWOOD GIFT SHOP

GREENFOREST ORCHARD

TOURIST ACTIVITIES

MYRTLEWOOD GIFT SHOP

GREENFOREST ORCHARD

TOURIST ACTIVITIES

MYRTLEWOOD GIFT SHOP

GREENFOREST ORCHARD

TOURIST ACTIVITIES

MYRTLEWOOD GIFT SHOP

GREENFOREST ORCHARD

Optional message

(1) Optional message

(2) Use if there is an intervening intersection
CHAPTER 2M.
RECREATIONAL AND CULTURAL INTEREST AREA SIGNS

Formerly 2H
Memorial Signage

- Very popular, but these, theoretically, have to go

Section 2M.10 Memorial or Dedication Signage

Support:
01 Legislative bodies will occasionally adopt an act or resolution memorializing or dedicating a highway, bridge, or other component of the highway.

Guidance:
02 Such memorial or dedication names should not appear on or along a highway, or be placed on bridges or other highway components. If a route, bridge, or highway component is officially designated as a memorial or dedication, and if notification of the memorial or dedication is to be made on the highway right-of-way, such notification should consist of installing a memorial or dedication marker in a rest area, scenic overlook, recreational area, or other appropriate location where parking is provided with the signing inconspicuously located relative to vehicle operations along the highway.

Option:
03 If the installation of a memorial or dedication marker off the main roadway is not practical, memorial or dedication signs may be installed on the mainline.

Guidance:
04 Memorial or dedication signs should have a white legend and border on a brown background.
Memorial Signage

- But, where they are installed, here are the standards

Standard:

06 Where such memorial or dedication signs are installed on the mainline, (1) memorial or dedication names shall not appear on directional guide signs, (2) memorial or dedication signs shall not interfere with the placement of any other necessary signing, and (3) memorial or dedication signs shall not compromise the safety or efficiency of traffic flow. The memorial or dedication signing shall be limited to one sign at an appropriate location in each route direction, each as an independent sign installation.

06 Memorial or dedication signs shall be rectangular in shape. The legend displayed on memorial or dedication signs shall be limited to the name of the person or entity being recognized and a simple message preceding or following the name, such as “Dedicated to” or “Memorial Parkway.” Additional legend, such as biographical information, shall not be displayed on memorial or dedication signs. Decorative or graphical elements, pictographs, logos, or symbols shall not be displayed on memorial or dedication signs. All letters and numerals displayed on memorial or dedication signs shall be as provided in the “Standard Highway Signs and Markings” book (see Section 1A.11). The route number or officially mapped name of the highway shall not be displayed on the memorial or dedication sign.

07 Memorial or dedication names shall not appear on supplemental signs or on any other information sign on or along the highway or its intersecting routes.

Option:

08 The lettering for the name of the person or entity being recognized may be composed of a combination of lower-case letters with initial upper-case letters.

Guidance:

09 Freeways and expressways should not be signed as memorial or dedicated highways.

Support:

10 Named highways are officially designated and shown on official maps and serve the purpose of providing route guidance, primarily on unnumbered highways. A highway designated as a memorial or dedication is not considered to be a named highway. Section 2D.53 contains provisions for the signing of named highways.
What is/are in the Other Modules?

• Introduction and Part 1 (General)
  o A little bit of “MUTCD 101”
  o A general overview of the “Parts”
  o Details of the MUTCD Introduction and Part 1
  o Some thoughts on regulatory liability and tort implications
  o The meaning of “DelDOT maintained street”
  o Retroreflectivity of signs and markings
What is/are in the Other Modules?

- Part 3 (Markings)
  - General (colors, dimensions, materials, retroreflectivity)
  - Pavement and curb markings
  - Delineators
  - Colored pavements
  - Channelizing devices
  - Islands
  - Rumble strip markings
What is/are in the Other Modules?

- Part 6 (Temporary Traffic Controls)
  - General and fundamental principals
  - TTC (aka, Work Zone) elements
  - Pedestrian and worker safety
  - Flagger control
  - Work zone devices
  - Types of work zone activities
  - Typical applications/cases
  - Incident management areas
Where Can I Find This Stuff?


- Delaware MUTCD: [www.mutcd.deldot.gov](http://www.mutcd.deldot.gov)

- Delaware T² Center: [http://www.ce.udel.edu/dct/T2.html](http://www.ce.udel.edu/dct/T2.html)

- These slides: [http://www.ce.udel.edu/dct/T2TechBriefs.html](http://www.ce.udel.edu/dct/T2TechBriefs.html)
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