Delaware MUTCD

Part 2
SIGNS
TRAINING

February 10, 2011
• 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

http://regulations.delaware.gov/services/current_issue.shtml

• All presentation materials are DRAFT
• Paragraphs are numbered
• Guidance is italicized
• No more metric
• Definitions relocated to Part 1
• Standards remain bold
• Options and support remain unformatted
• Delaware Revisions in blue with line in margin and “(DE Revision)” at beginning of paragraph
 Definitions of Headings, Words, and Phrases in this Manual

• Standards are requirements that **SHALL** be followed unless there is an Option

• DE Standard: **Reverted to 2003 MUTCD language allowing engineering judgment**

• Guidance is recommended and **SHOULD** be followed

• Options **MAY** be followed and are sometimes modifications to Standards and Guidance
PART 2 SIGNS

- **2A: General**
- **2B: Regulatory Signs, Barricades, and Gates**
- **2C: Warning Signs and Object Markers**
- **2D: Guide Signs – Conventional Roads**
- **2E: Guide Signs – Freeways and Expressways**
- **2F: Toll Road Signs**
- **2G: Preferential and Managed Lane Signs**
- **2H: General Information Signs**
- **2I: General Service Signs**
- **2J: Specific Service Signs**
- **2K: Tourist-Oriented Directional Signs**
- **2L: Changeable Message Signs**
- **2M: Recreational and Cultural Interest Area Signs**
- **2N: Emergency Management Signing**

Section 2A.01 – Signing for all types of highways and private roads open to public travel
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
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
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
Section 2A.15 Enhanced Conspicuity for Standard Signs

Option:

01 Based upon engineering judgment, where the improvement of the conspicuity of a standard regulatory, warning, or guide sign is desired, any of the following methods may be used, as appropriate, to enhance the sign's conspicuity (see Figure 2A-1):

A. Increasing the size of a standard regulatory, warning, or guide sign.
B. Doubling-up of a standard regulatory, warning, or guide sign by adding a second identical sign on the left-hand side of the roadway.
C. Adding a solid yellow or fluorescent yellow rectangular “header panel” above a standard regulatory sign, with the width of the panel corresponding to the width of the standard regulatory sign. A legend of “NOTICE,” “STATE LAW,” or other appropriate text may be added in black letters within the header panel for a period of time determined by engineering judgment.
D. Adding a NEW plaque (see Section 2C.62) above a new standard regulatory or warning sign, for a period of time determined by engineering judgment, to call attention to the new sign.
E. Adding one or more red or orange flags (cloth or retroreflective sheeting) above a standard regulatory or warning sign, with the flags oriented so as to be at 45 degrees to the vertical.
F. Adding a solid yellow, a solid fluorescent yellow, or a diagonally striped black and yellow (or black and fluorescent yellow) strip of retroreflective sheeting at least 3 inches wide around the perimeter of a standard warning sign. This may be accomplished by affixing the standard warning sign on a background that is 6 inches larger than the size of the standard warning sign.
G. Adding a warning beacon (see Section 4L.03) to a standard regulatory (other than a STOP or a Speed Limit sign), warning, or guide sign.
H. Adding a speed limit sign beacon (see Section 4L.04) to a standard Speed Limit sign.
I. Adding a stop beacon (see Section 4L.05) to a STOP sign.
J. Adding light emitting diode (LED) units within the symbol or legend of a sign or border of a standard regulatory, warning, or guide sign, as provided in Section 2A.07.
K. Adding a strip of retroreflective material to the sign support in compliance with the provisions of Section 2A.21.
L. Using other methods that are specifically allowed for certain signs as described elsewhere in this Manual.

• New section; some Options currently in use in DE
  – Increased size
  – Double posting
  – NEW plaque
  – Warning beacon
  – Header panel
  – Stop beacon
Section 2A.15 Enhanced Conspicuity for Standard Signs

SR 1 north of Dartmouth Dr

Header panel above regulatory sign
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 &
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 PLAQUE IN RURAL AREA

**Where parking or pedestrian movements are likely to occur

E - ROADSIDE ASSEMBLY IN RURAL AREA

F - SIGN ON NOSE OF MEDIAN

* Lateral offset may be reduced to 2 ft minimum in areas where space is limited due to site specific conditions (e.g., limited right-of-way, sight distance, etc.)

G - FREEWAY OR EXPRESSWAY SIGN WITH SECONDARY SIGN

Strathmore Sheffield Park
EXIT ½ MILE

NEXT EXIT 6 MILES

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.
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>Conventional Road</th>
<th>Expressway</th>
<th>Freeway</th>
<th>Minimum</th>
<th>Oversized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Lane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Sizes shall follow Table 2B-1
- 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)
Section 2B.03 Size of Regulatory Signs

US 13 at Paddock Rd / Joe Goldsborough Rd
Intersection of multi-lane and single lane roads

YIELD facing Paddock Rd should be 48” x 48” x 48”

YIELD facing US 13 shall be 48” x 48” x 48”
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
I-95 off-ramp YIELD signs should be 60” x 60” x 60”

I-95 southbound off-ramps to SR 896
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
Guidance:

03 The decision to install multi-way stop control should be based on an engineering study.

04 The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:

1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

• No change in guidance for multi-way stop control
  – 5 or more crashes (susceptible to correction) in 12-month period
  – Total major street volume: ≥ 300 vph for 8 hrs
  – Total minor street volume: ≥ 200 vph for 8 hrs
  – Reduction for approach speed
  – Reduction for combination of crash and volume criteria
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)
YIELD sign installed beyond crosswalk because of large island

SR 58 at Christiana Hospital
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
Optional W11-2 assemblies; R1-5 signs shall not block W11-2 signs

Standard size now 36” x 36”

Parking prohibition

E. Main St, Newark
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**
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.

50 MPH Speed Limit signs shall be posted, not END 40 M.P.H. signs

US 113 southbound south of SR 14
Section 2B.13 Speed Limit Sign (R2-1) & Section 2C.38 Reduced Speed Limit Ahead Sign (W3-5, W3-5-DE)

Guidance:

(DE Revision) A Reduced Speed Limit Ahead (W3-5) sign (see Section 2C.38) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.

- Used where speed reduction exceeds 10 MPH
- Installed in advance of downstream Speed Limit sign based on Condition A in Table 2C-4

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 traffic</th>
<th>Advance Placement Distance¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>225 ft, 100 ft²</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>25 mph</td>
<td>325 ft, 100 ft²</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>30 mph</td>
<td>460 ft, 100 ft²</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>35 mph</td>
<td>565 ft, 100 ft²</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>40 mph</td>
<td>670 ft, 125 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>45 mph</td>
<td>775 ft, 175 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>50 mph</td>
<td>885 ft, 250 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>55 mph</td>
<td>990 ft, 325 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>60 mph</td>
<td>1,100 ft, 400 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>65 mph</td>
<td>1,200 ft, 475 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>70 mph</td>
<td>1,250 ft, 550 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>75 mph</td>
<td>1,350 ft, 650 ft</td>
<td>0², 10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
</tbody>
</table>

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
Section 2B.18 Movement Prohibition Signs
(R3-1 through R3-4, R3-18, and R3-27)

- Installed overhead and adjacent to appropriate signal face(s) at signals

If turn prohibition signs are installed in conjunction with traffic control signals:

A. The No Right Turn sign should be installed adjacent to a signal face viewed by road users in the right-hand lane.

B. The No Left Turn (or No U-Turn or combination No U-Turn/No Left Turn) sign should be installed adjacent to a signal face viewed by road users in the left-hand lane.

C. A NO TURNS sign should be placed adjacent to a signal face viewed by all road users on that approach, or two signs should be used.

- No Left Turn sign should be installed adjacent to leftmost signal head
Standard:

14  The No Left Turn (R3-2) sign, the No U-Turn (R3-4) sign, and the combination No U-Turn/No Left Turn (R3-18) sign shall not be used at approaches to roundabouts to prohibit drivers from turning left onto the circulatory roadway of a roundabout.

• Shall not be used on approaches to roundabouts
**Guidance:**

03 When Intersection Lane Control signs are mounted overhead, each sign should be placed over the lane or a projection of the lane to which it applies.

04 On signalized approaches where through lanes that become mandatory turn lanes, multiple-lane turns that include shared lanes for through and turning movements, or other lane-use regulations are present that would be unexpected by unfamiliar road users, overhead lane control signs should be installed at the signalized location over the appropriate lanes or projections thereof and in advance of the intersection over the appropriate lanes.

05 Where overhead mounting on the approach is impractical for the advance and/or intersection lane-use signs, one of the following alternatives should be employed:

**A.** At locations where through lanes become mandatory turn lanes, a mandatory movement lane control (R3-7) sign should be post-mounted on the left-hand side of the roadway where a through lane is becoming a mandatory left-turn lane on a one-way street or where a median of sufficient width for the signs is available, or on the right-hand side of the roadway where a through lane is becoming a mandatory right-turn lane.

**B.** At locations where a through lane is becoming a mandatory left-turn lane on a two-way street where a median of sufficient width for the signs is not available, and at locations where multiple-lane turns that include shared lanes for through and turning movements are present, an Advance Intersection Lane Control (R3-8 series) sign should be post-mounted in a prominent location in advance of the intersection, and consideration should be given to the use of an oversized version in accordance with Table 2B-1.

**Option:**

07 Where the number of through lanes on an approach is two or less, the Intersection Lane Control signs (R3-5, R3-6, or R3-8) may be overhead or post-mounted.

- Overhead signs should be centered over lane
- Overhead signs at signals with lane drops or combo lanes and ≥ 3 through lanes
- Post-mounted signs with ≤ 2 through lanes
Oversized R3-8 sign installed because of double left with combo lane along SR 1 off-ramp

SR 1 southbound off-ramp to US 13 (Exit 119 B, North Smyrna)
Although unconventional, R3-8 signs may be overhead with ≤ 2 approach lanes; prohibited overhead along approaches with ≥ 3 lanes.

Signalized lane drop should have R3-7 sign in advance of intersection on left-hand side.

SR 2 (Lincoln St) eastbound at SR 52
Located in advance of intersection or at intersection

R3-7 signs for post-mounting only

Overhead R3-5 and R3-5a signs for approaches with ≥ 3 through lanes
Guidance:
05 If the R3-5 or R3-5a sign is post-mounted on an approach with two or fewer through lanes, a supplemental plaque (see Figure 2B-4), such as LEFT LANE (R3-5bP), HOV 2+ (R3-5cP), TAXI LANE (R3-5dP), CENTER LANE (R3-5eP), RIGHT LANE (R3-5fP), BUS LANE (R3-5gP), or BOTH LANES, should be added above the sign to indicate the specific lane to which the mandatory movement applies. If Mandatory Lane Movement Control (R3-5) symbol signs with supplemental R3-5bP or R3-5fP plaques are used, they should be mounted adjacent to and along only the full width portion of the turn lane.
06 The use of the Mandatory Lane Movement Control (R3-7) word message sign should be limited to only locations that are adjacent to the full-width portion of a mandatory turn lane. The R3-7 sign should not be installed adjacent to a through lane in advance of a turn bay taper or adjacent to a turn bay taper.
07 Mandatory Movement Lane Control signs should be accompanied by lane-use arrow markings, especially where traffic volumes are high, where there is a high percentage of commercial vehicles, or where other distractions exist.

- Plaques should be used with post-mounted R3-5 and R3-5a signs
- R3-7 signs should be adjacent to full-width turn lane, not in advance or along taper
- Pavement marking arrows should be installed to supplement signs
Section 2B.20 Mandatory Movement Lane Control Signs
(R3-5, R3-5a, R3-7, R3-20, and R3-20-DE)

Should not be adjacent to through lane

Salem Church Rd north of Chapman Rd

Salem Church Rd south of Chapman Rd

Should not be adjacent to taper

Should have lane arrow marking
Section 2B.20 Mandatory Movement Lane Control Signs (R3-5, R3-5a, R3-7, R3-20, and R3-20-DE)

11 (DE Revision) The BEGIN RIGHT TURN LANE (R3-20R) sign (see Figure 2B-4) may be post-mounted on the right-hand side of the roadway at the upstream end of the turn lane taper of a mandatory right-turn lane. The BEGIN LEFT TURN LANE (R3-20L) sign or TURN LANE (R3-20-DE) sign (see Figure 2B-4) may be post-mounted on a median (or on the left-hand side of the roadway for a one-way street) at the upstream end of the turn lane taper of a mandatory left-turn lane.

Guidance:

11A (DE Revision) The TURN LANE (R3-20-DE) sign should be post-mounted on the left-hand side of the roadway at the upstream end of the turn lane taper of a mandatory left-turn lane along multi-lane divided roadways.

- New optional turn lane signs
- DE Guidance: TURN LANE signs at start of left-turn taper along multi-lane divided highways

US 13 north of Duck Creek Rd
Section 2B.21 Optional Movement Lane Control Sign (R3-6)

Standard:

01 If used, the Optional Movement Lane Control (R3-6) sign (see Figure 2B-4) shall be used for two or more movements from a specific lane or to emphasize permitted movements. If used, the Optional Movement Lane Control sign shall be located in advance of the intersection, such as near the upstream end of an adjacent mandatory movement lane, and/or at the intersection where the regulation applies.

02 If used, the Optional Movement Lane Control sign shall indicate all permissible movements from specific lanes.

03 Optional Movement Lane Control signs shall be used for two or more movements from a specific lane where a movement, not normally allowed, is permitted.

04 The Optional Movement Lane Control sign shall not be used alone to effect a turn prohibition.

05 Where the number of lanes available to through traffic on an approach is three or more, an Optional Movement Lane Control (R3-6) sign, if used, shall be mounted overhead over the specific lane to which it applies (see Section 2B.19).

Guidance:

06 If the Optional Movement Lane Control sign is post-mounted on an approach with two or fewer through lanes, a supplemental plaque (see Figure 2B-4), such as LEFT LANE (R3-5bP), HOV 2+ (R3-5cP), TAXI LANE (R3-5dP), CENTER LANE (R3-5eP), RIGHT LANE (R3-5fP), or BUS LANE (R3-5gP), should be added above the R3-6 sign to indicate the specific lane from which the optional movements can be made.

- Located in advance of intersection or at intersection
- Overhead installation for approaches with ≥ 3 through lanes
- Plaques should be used with post-mounted signs

Not “OK” in DE
Section 2B.22 Advance Intersection Lane Control Signs (R3-8 Series)

Guidance:
03 If used, an Advance Intersection Lane Control sign should be placed at an adequate distance in advance of the intersection so that road users can select the appropriate lane (see Figure 2A-4). If used, the Advance Intersection Lane Control sign should be installed either in advance of the tapers or at the beginning of the turn lane.

Option:
04 An Advance Intersection Lane Control sign may be repeated closer to the intersection for additional emphasis.

Standard:
05 Where three or more approach lanes are available to traffic, Advance Intersection Lane Control (R3-8 series) signs, if used, shall be post-mounted in advance of the intersection and shall not be mounted overhead (see Section 2B.19).

- Installed in advance of tapers or at beginning of turn lane
- May be repeated for additional emphasis
- Overhead installation prohibited with ≥ 3 approach lanes
Guidance:

01 Two-Way Left Turn Only (R3-9a or R3-9b) signs (see Figure 2B-6) should be used in conjunction with the required pavement markings where a non-reversible lane is reserved for the exclusive use of left-turning vehicles in either direction and is not used for passing, overtaking, or through travel.

Option:

02 The post-mounted R3-9b sign may be used as an alternate to or a supplement to the overhead R3-9a sign. The legend BEGIN or END may be used within the border of the main sign itself, or on an R3-9cP or R3-9dP plaque (see Figure 2B-6) mounted immediately above it.

- Installed in conjunction with the required pavement markings

SR 300 west of US 13

R3-9b sign should be adjacent to two-way left-turn lane pavement markings
• New section with figures depicting regulatory and guide signs
Figure 2B-9. Examples of Applications of Jughandle Regulatory and Guide Signing (Sheet 3 of 3)

C - Turns made beyond the intersection

SR 896 northbound at Chestnut Hill Rd

US 9 eastbound at SR 1
Section 2B.32 Keep Right and Keep Left Signs (R4-7, R4-8)

**Guidance:**

01A (DE Revision) The Keep Right sign should be installed at median openings along divided highways on both approach ends where the median width is greater than or equal to 4 feet and less than 18 feet (see Figure 2B-16).

**Option:**

01B (DE Revision) The Keep Right sign may be installed at median openings along divided highways on both approach ends where the median width is greater than or equal to 18 feet and less than 30 feet.

**Guidance:**

02 At locations where it is not readily apparent that traffic is required to keep to the right, a Keep Right sign should be used.

03 If used, the Keep Right sign should be installed as close as practical to approach ends of raised medians, parkways, islands, and underpass piers. The sign should be mounted on the face of or just in front of a pier or other obstruction separating opposite directions of traffic in the center of the highway such that traffic will have to pass to the right-hand side of the sign.

**Standard:**

09 A narrow Keep Right (R4-7c) sign shall not be installed on a median island that has a width of 4 feet or more at the point where the sign is to be located.

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. (From Section 2B.40)

- Installed as close as practical to approach end of median
- Optional narrow Keep Right (R4-7c) for medians < 4 ft wide
- **Keep Right or ONE WAY at median openings < 30 ft wide**
- DE Guidance: Keep Right at median widths ≥ 4 ft and < 18 ft
- DE Option: Optional Keep Right at median widths ≥ 18 ft and < 30 ft
Section 2B.32  Keep Right and Keep Left Signs (R4-7, R4-8)

Figure 2B-16. Keep Right, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths ≥ 4 Feet and < 18 Feet (Delaware Revision)

Legend
→ Direction of travel
Section 2B.32 Keep Right and Keep Left Signs (R4-7, R4-8)

Figure 2B-16A. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths ≥ 18 Feet and < 30 Feet (Delaware Revision)

Legend
- Direction of travel
* Optional

Note:
See Figure 2B-16 for example of placing optional Keep Right signing
Option:
01 A STAY IN LANE (R4-9) sign (see Figure 2B-10) may be used on multi-lane highways to direct road users to stay in their lane until conditions permit shifting to another lane.

Guidance:
02 If a STAY IN LANE sign is used, it should be accompanied by a double solid white lane line(s) to prohibit lane changing.

• May be used to prevent lane changes (e.g., high-speed E-ZPass lanes and MOT lane shifts)
• Double solid white lines adjacent to sign

SR 1 northbound at Biddle’s Toll Plaza
Should have double solid lane line adjacent to STAY IN LANE
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**

No longer using this sign legend

SR 4 eastbound approaching SR 7
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
Section 2B.38 **WRONG WAY Sign (R5-1a)**

Option:

01 The WRONG WAY (R5-1a) sign (see Figure 2B-11) may be used as a supplement to the DO NOT ENTER sign where an exit ramp intersects a crossroad or a crossroad intersects a one-way roadway in a manner that does not physically discourage or prevent wrong-way entry (see Figure 2B-12).

Guidance:

02 If used, the WRONG WAY sign should be placed at a location along the exit ramp or the one-way roadway farther from the crossroad than the DO NOT ENTER sign (see Section 2B.41).

02A (DE Revision) A WRONG WAY (R5-1a) 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 state-maintained roadways (excluding subdivision streets) where the median width is greater than 30 feet (see Figure 2B-12).

Option:

02B (DE Revision) A WRONG WAY (R5-1a) sign may be installed on the left-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction to supplement a WRONG WAY sign installed on the right-hand side of the roadway (see Figure 2B-12).

- 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*
Section 2B.37 **DO NOT ENTER** Sign (R5-1) & Section 2B.38 **WRONG WAY** Sign (R5-1a)

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)*

Legend
- Direction of travel
- Optional
Figure 2B-12A. Locations of Do Not Enter Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider Intersections of Divided Highways with Subdivision Streets, Non-DelDOT Owned Roadways, Private Driveways, and Median U-Turn Openings

(Delaware Revision)
Section 2B.39 Selective Exclusion Signs

Standard:
02 If used, Selective Exclusion signs shall clearly indicate the type of traffic that is excluded.

02A (DE Revision) §179 of Title 17 of the Delaware Code states that
notice of prohibition of use of
controlled-access facilities by specific classes of motor-driven vehicles or other
vehicles shall be posted on
traffic-control devices at the entrances to controlled-access facilities.

Guidance:
04A (DE Revision) A NO NON-MOTORIZED TRAFFIC (R5-7) sign (see Figure 2B-11) should be posted at the
entrance to controlled-access facilities per §179 of Title 17 of the Delaware Code.

• DE Code requires posting prohibitions at entrances (i.e., on-ramps) to controlled-access facilities

• DE Guidance: NO NON-MOTORIZED TRAFFIC sign should be used
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 ≥ 30 ft
- DE Guidance: Intersections along divided highways with median widths ≥ 18 ft and < 30 ft
- Near right and far left corners of intersection
Section 2B.40 ONE WAY Signs (R6-1, R6-2)

Figure 2B-14. Locations of ONE WAY Signs

Legend
* Optional
→ Direction of travel
Section 2B.40 ONE WAY Signs (R6-1, R6-2)

Figure 2B-15. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider

(Delaware Revision)

Legend
- Direction of travel
* Optional

Notes:
If a YIELD sign is used, the appropriate pavement marking would be a yield line (see Section 3B.16) rather than a stop line.

See Figures 2B-12 and 2B-12A for examples of placing DO NOT ENTER and WRONG WAY signing.

Double yellow center line should be placed in the median if the median width is greater than or equal to 50 ft. Engineering judgement should be used to determine whether a double yellow center line should be placed in the median if the median width is greater than or equal to 30 ft and less than 50 ft.
Section 2B.40 ONE WAY Signs (R6-1, R6-2)

Figure 2B-16A. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths ≥ 18 Feet and < 30 Feet

(Delaware Revision)

Legend
→ Direction of travel
* Optional

Note:
See Figure 2B-16 for example of placing optional Keep Right signing
Section 2B.41 Wrong-Way Traffic Control at Interchange Ramps

Standard:

At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs shall be used (see Figure 2B-18):

A. At least one ONE WAY sign for each direction of travel on the crossroad shall be placed where the exit ramp intersects the crossroad.
B. At least one DO NOT ENTER sign shall be conspicuously placed near the downstream end of the exit ramp in positions appropriate for full view of a road user starting to enter wrongly from the crossroad.
C. At least one WRONG WAY sign shall be placed on the exit ramp facing a road user traveling in the wrong direction.

Guidance:

01A (DE Revision) At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs should be used (see Figure 2B-18):

A. An additional DO NOT ENTER sign should be used.
B. An additional WRONG WAY sign should be used.

- **At least one ONE WAY, DO NOT ENTER, and WRONG WAY sign**
- **Double yellow center line (i.e., no passing zone) approaching off-ramp**
- **Lane arrow at downstream end of off-ramp**
- **DE Guidance: Two DO NOT ENTER and WRONG WAY signs**
Section 2B.41 Wrong-Way Traffic Control at Interchange Ramps

SR 1 northbound off-ramp to SR 72

*Should have additional DO NOT ENTER sign based on DE Guidance*
Section 2B.41 Wrong-Way Traffic Control at Interchange Ramps

Figure 2B-18. Example of Application of Regulatory Signing and Pavement Markings at an Exit Ramp Termination to Deter Wrong-Way Entry

(Delaware Revision)

Legend
- Direction of Travel
- Lane-Use Arrows

Use stop line if STOP sign is installed

Notes: Modify as appropriate for multi-lane crossroads
Standard:

01 On unsignalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway that has a median width at the intersection itself of 30 feet or more, except as provided in Paragraph 2, a Divided Highway Crossing (R6-3 or R6-3a) sign (see Figure 2B-13) shall be used to advise road users that they are approaching an intersection with a divided highway (see Figure 2B-15).

Option:

02 If the divided highway that has a median width at the intersection itself of 30 feet or more has a traffic volume of less than 400 AADT and a speed limit of 25 mph or less, the Divided Highway Crossing signs facing the unsignalized minor-street approaches may be omitted.

Guidance:

02A (DE Revision) On unsignalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway that has a median width at the intersection greater than or equal to 4 feet and less than 30 feet, a Divided Highway Crossing (R6-3 or R6-3a) sign should be used to advise road users that they are approaching an intersection with a divided highway (see Figure 2B-16, 2B-16A, 2B-17, and 2B-17A).

04 If a Divided Highway Crossing sign is used at a four-legged intersection, the R6-3 sign shall be used. If used at a T-intersection, the R6-3a sign shall be used.

05 The Divided Highway Crossing sign shall be located on the near right corner of the intersection, mounted beneath a STOP or YIELD sign or on a separate support.

- Unsignalized intersections along divided highways with median widths ≥ 30 ft
- Located on near right corner of intersection below STOP or YIELD
- DE Guidance: Unsignalized intersections along divided highways with median widths ≥ 4 ft and < 30 ft
Section 2B.42 Divided Highway Crossing Signs (R6-3, R6-3a)  2011 DE MUTCD (DRAFT)

Figure 2B-15. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider (Delaware Revision)

Notes:
If a YIELD sign is used, the appropriate pavement marking would be a yield line (see Section 2B.16) rather than a stop line.
See Figures 2B-12 and 2B-12A for examples of placing DO NOT ENTER and WRONG WAY signing.
Double yellow center line should be placed in the median if the median width is greater than or equal to 50 ft. Engineering judgement should be used to determine whether a double yellow center line should be placed in the median if the median width is greater than or equal to 30 ft and less than 50 ft.
Section 2B.42 Divided Highway Crossing Signs (R6-3, R6-3a)

Figure 2B-16. Keep Right, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths $\geq 4$ Feet and $< 18$ Feet (Delaware Revision)
Figure 2B-16A. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths ≥ 18 Feet and < 30 Feet

(Delaware Revision)

Note:
See Figure 2B-16 for example of placing optional Keep Right signing
Section 2B.43 Roundabout Directional Arrow Signs (R6-4, R6-4a, and R6-4b)

Guidance:
01 Where the central island of a roundabout allows for the installation of signs, Roundabout Directional Arrow (R6-4 series) signs (see Figure 2B-20) should be used in the central island to direct traffic counter-clockwise around the central island, except as provided in Paragraph 11 in Section 2B.40.

Standard:
02 The R6-4 sign shall be a horizontal rectangle with two black chevron symbols pointing to the right on a white background. The R6-4a sign shall be a horizontal rectangle with three black chevron symbols pointing to the right on a white background. The R6-4b sign shall be a horizontal rectangle with four black chevron symbols pointing to the right on a white background. No border shall be used on the Roundabout Directional Arrow signs.
03 Roundabout Directional Arrow signs shall be used only at roundabouts and other circular intersections.

Support:
13 Using ONE WAY signs on the central island of a roundabout might result in some drivers incorrectly concluding that the cross street is a one-way street. Using Roundabout Directional Arrow signs might reduce this confusion. However, using ONE WAY signs might be necessary in States that have defined a roundabout as a series of T-intersections. (From Section 2B.40)

• Installed in central island instead of Chevron Alignments and ONE WAY

West Park Dr roundabout (Blue Ball)
**Guidance:**

01 Where the central island of a roundabout does not provide a reasonable place to install a sign, Roundabout Circulation (R6-5P) plaques (see Figure 2B-20) should be placed below the YIELD signs on each approach.

02 At roundabouts where Roundabout Directional Arrow signs and/or ONE WAY signs have been installed in the central island, Roundabout Circulation plaques may be placed below the YIELD signs on approaches to roundabouts to supplement the central island signs.

03 The Roundabout Circulation plaque may be used at any type of circular intersection.

- **Installed below YIELD where central island is too small to install Roundabout Directional Arrow**
- **Optional below YIELD at locations with directional signs in central island**
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.40, and 2D.42 for low-speed and/or urban conditions
5. All guide signs are optional

* See Table 2C-4 for placement distance. Placement of guide signs should be adjusted, as necessary, to provide a minimum of 100 ft spacing between signs.
Standard:

01 Traffic Signal signs applicable to pedestrian actuation (see Figure 2B-26) or bicyclist actuation (see Figure 9B-2) shall be mounted immediately above or incorporated into the pushbutton detector units (see Section 4E.08).

- Mounted immediately above or incorporated into pushbutton device
- DE Guidance: 12 common educational signs
Non-countdown pedestrian displays

Pushbutton(s) aligned with crosswalk

Crossing to median only

Two pushbuttons on one pole

No pushbutton
Section 2B.52 Traffic Signal Pedestrian and Bicycle Actuation Signs (R10-1 through R10-4, and R10-24 through R10-26)

Countdown pedestrian displays

Pushbutton(s) aligned with crosswalk

Crossing to median only

Two pushbuttons on one pole

No pushbutton
Section 2B.52 Traffic Signal Pedestrian and Bicycle Actuation Signs (R10-1 through R10-4, and R10-24 through R10-26)

SR 4 (Maryland Ave) at Alban Dr

BEFORE

No more pushbutton stickers

AFTER

---

From: Grant Jerry (LegHall)
Sent: Friday, October 16, 2009 10:14:02 AM
To: Luszcz Mark (DelDOT); Meyer Tom (DelDOT); Hutson Bob (DelDOT)
Cc: Buckley Matt (DelDOT); Mitchell John L (LegHall)
Subject: RE: Signage

Auto forwarded by a Rule

I spoke with Mr. Strupczewski, he still thinks a larger sign should be installed (says the current one is "the size of a "playing card"), it sounds like the crossing buttons are obscured by another pole.
**Face of pushbutton should be parallel to crosswalk** (see Part 4); **ped sign shall be mounted above pushbutton**

**Arrowhead should not be covered for this type of installation**
DE-specific sign omits arrows for ped signal poles with 2 pushbuttons
Guidance:
03 If used, the LEFT ON GREEN ARROW ONLY (R10-5) sign, the LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign, or the LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign should be located adjacent to the left-turn signal face.

Option:
04 If needed for additional emphasis, an additional LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign with an AT SIGNAL (R10-31P) supplemental plaque (see Figure 2B-27) may be installed in advance of the intersection.

- Located adjacent to the left-turn signal
- Optional (supplemental) advance sign with plaque

Sign should be adjacent to left-turn signal (partially blocked); advance sign can only supplement overhead sign; use standard R10-12 sign
The EMERGENCY SIGNAL (R10-13) sign (see Figure 2B-27) shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4G.02).

- Installed adjacent to the signal heads at all emergency-vehicle (fire) signals
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)

R10-23 sign installed adjacent to the pedestrian hybrid beacons

SR 72 at Farm Ln / Webb Ln
• **Modifications to two common signs**

**OLD**

- TURNING TRAFFIC MUST YIELD TO PEDESTRIANS
  - Used where motorists need to be reminded to yield to pedestrians

**NEW**

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

**OLD**

- TURN ON FLASHING RED WITH CAUTION AFTER STOP

**NEW**

- LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP

• **New sign for right-turn overlap signal phasing**
Section 2B.54 No Turn on Red Signs
(R10-11 Series, R10-17a, and R10-30)

Standard:
01 Where a right turn on red (or a left turn on red from a one-way street to a one-way street) is to be prohibited, a symbolic NO TURN ON RED (symbolic circular red) (R10-11) sign (see Figure 2B-27) or a NO TURN ON RED (R10-11a, R10-11b) word message sign (see Figure 2B-27) shall be used.

Guidance:
02 If used, the No Turn on Red sign should be installed near the appropriate signal head.

Option:
06 On signalized approaches with more than one right-turn lane, a NO TURN ON RED EXCEPT FROM RIGHT LANE (R10-11c) sign (see Figure 2B-27) may be post-mounted at the intersection or a NO TURN ON RED FROM THIS LANE (with down arrow) (R10-11d) sign (see Figure 2B-27) may be mounted directly over the center of the lane from which turns on red are prohibited.
08 A RIGHT TURN ON RED MUST YIELD TO U-TURN (R10-30) sign (see Figure 2B-27) may be installed to remind road users that they must yield to conflicting U-turn traffic on the street or highway onto which they are turning right on a red signal after stopping.

08A (DE Revision) A NO TURN ON RED (Arrow) (R10-11-DE) sign (see Figure 2B-27) may be installed to remind road users that they are not permitted to turn right when facing a RED ARROW signal indication.

- Installed where rights on red are prohibited
- Located adjacent to the appropriate signal head
- Option to remind motorists to yield to U-turns
- Optional signs for double rights
- DE Option: R10-11-DE educational sign commonly used with “T” signal heads
Section 2B.54 No Turn on Red Signs (R10-11 Series, R10-17a, and R10-30)

**BEFORE**

**AFTER**

Sign should be adjacent to appropriate signal head

Adams St at 11th St / I-95 southbound off-ramp
Section 2B.55 Photo Enforced Signs and Plaques
(R10-18, R10-18a, R10-19P, R10-19aP)

Option:
03A (DE Revision) A Traffic Signal Photo Enforced (R10-18a) sign (see Figure 2B-3) may be installed on an approach to a signalized location where red-light cameras are present on the approach to the signalized location.

Standard:
03C (DE Revision) If used, the Traffic Signal Photo Enforced sign shall be individually installed on a separate post or mounting.

Option:
03F (DE Revision) On one-way streets or where a median of sufficient width is present, an additional Traffic Signal Photo Enforced sign may be placed on the left-hand side of the roadway in accordance with Paragraph 11 of Section 2A.16.

- DE Option: Installed where red-light cameras are present on the approach
- DE Option: Installed in median along divided highways with medians of sufficient width

Can be posted on both sides of an approach; use new standard R10-18a sign

SR 896 at SR 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
Section 2B.67 Barricades

WOOD BARRICADE POST CHART

<table>
<thead>
<tr>
<th>ROADWAY WIDTH</th>
<th>NUMBER OF BARRICADES</th>
<th>TYPE OF POST</th>
<th>OUTSIDE OVERHANG</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'-0&quot; (120)</td>
<td>1-POST</td>
<td>2'-0&quot; (600)</td>
<td></td>
</tr>
<tr>
<td>6'-0&quot; (180)</td>
<td>1-POST</td>
<td>3'-0&quot; (900)</td>
<td></td>
</tr>
<tr>
<td>8'-0&quot; (240)</td>
<td>2-POST</td>
<td>4'-0&quot; (120)</td>
<td></td>
</tr>
<tr>
<td>10'-0&quot; (300)</td>
<td>2-POST</td>
<td>5'-0&quot; (150)</td>
<td></td>
</tr>
<tr>
<td>12'-0&quot; (360)</td>
<td>2-POST</td>
<td>6'-0&quot; (180)</td>
<td></td>
</tr>
<tr>
<td>14'-0&quot; (420)</td>
<td>2-POST</td>
<td>7'-0&quot; (210)</td>
<td></td>
</tr>
<tr>
<td>16'-0&quot; (480)</td>
<td>3-POST</td>
<td>1'-0&quot; (300)</td>
<td></td>
</tr>
<tr>
<td>18'-0&quot; (540)</td>
<td>3-POST</td>
<td>2'-0&quot; (600)</td>
<td></td>
</tr>
<tr>
<td>20'-0&quot; (600)</td>
<td>3-POST</td>
<td>3'-0&quot; (900)</td>
<td></td>
</tr>
<tr>
<td>24'-0&quot; (720)</td>
<td>3-POST</td>
<td>4'-0&quot; (120)</td>
<td></td>
</tr>
<tr>
<td>30'-0&quot; (900)</td>
<td>3-POST</td>
<td>5'-0&quot; (150)</td>
<td></td>
</tr>
<tr>
<td>36'-0&quot; (1080)</td>
<td>3-POST</td>
<td>6'-0&quot; (180)</td>
<td></td>
</tr>
<tr>
<td>48'-0&quot; (1440)</td>
<td>3-POST</td>
<td>7'-0&quot; (210)</td>
<td></td>
</tr>
<tr>
<td>50'-0&quot; (1500)</td>
<td>3-POST (ENDS)</td>
<td>1'-0&quot; (300)</td>
<td></td>
</tr>
</tbody>
</table>

NOTES:

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" (1.2m) 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 PRISOMATIC, RETROREFLECTIVE SHEETING. STRIPES SHALL SLOPE DOWNWARD TOWARDS THE CENTER OF THE CLOSURE.
3. ATTACH BARRICADE RAIL AND OBJECT MARKER TO THE 4" X 4" (100 X 100) PRESSURE TREATED WOOD POST USING 1-1/2" (10) MINIMUM LAG BOLTS 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-4-3) SHALL BE 18" (450) X 18" (450) WITH RED PRISOMATIC, 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.
Section 2B.68 Gates

Standard:
05 Except as provided in Paragraph 6, gate arms, if used, shall be fully retroreflectORIZED on both sides, have vertical stripes alternately red and white at 16-inch intervals measured horizontally as shown in Figure 8C-1.

Standard:
08 The gate arm shall extend across the approaching lane or lanes of traffic to effectively block motor vehicle and/or pedestrian travel as appropriate.
09 When gate arms are in the vertical position or rotated to an open position, the closest part of the gate arm and support shall have a lateral offset of at least 2 feet from the face of the curb or the edge of the traveled way.
10 When gate arms that are located in the median or on an island are in the horizontal position or rotated to a closed position, the closest part of the counterweight or its supports shall have a lateral offset of at least 2 feet from the face of the curb or the edge of the traveled way of the open roadway on the opposite side of the median or island.
15 Except as provided in Paragraph 16, rolling sections of fence, if used, shall include either a horizontal strip of retroreflectORIZED sheeting on both sides of the fence with vertical stripes alternately red and white at 16-inch intervals measured horizontally to simulate the appearance of a gate arm in the horizontal position, or one or more Type 4 object markers (see Section 2C.66), or both. If a horizontal strip of retroreflectORIZED sheeting is used, the bottom of the sheeting shall be located 3.5 to 4.5 feet above the roadway surface.

- New section for gates at movable bridges, grade crossings, access gates, etc.
- **Alternating 16” vertical red and white stripes**
- 2-ft min. lateral offset
- Object marker or striped sheeting on rolling fences (access gates)
Section 2B.68 Gates

SR 1A (Rehoboth Ave) draw bridge

Shall have vertical stripes at 16-inch intervals, not diagonal stripes
Section 2B.68 Gates

Shall have Type 4 object markers or retroreflective striped sheeting

SR 1 emergency access gate
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

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.

02 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.

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

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
Guidance:

The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps should be the size identified in Table 2C-2 for the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway Column, the Expressway size should be used. If a minimum size is not provided in the Freeway or the Expressway Column, the Oversized size should be used.

- On-ramp and off-ramp sign sizes should correspond to mainline roadway classification

SR 1 southbound off-ramp to US 13
(Exit 119 B, North Smyrna)

Off-ramp sign sizes correspond to mainline, e.g., 36” x 36” (min.) W1-2
48” x 48” (min.) W3-3
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 to XX MPH: Speed reduction in advance of hazard (e.g., curve)</th>
<th>Condition B to 0 MPH: Stop and yield conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>10^4</td>
<td>10^4</td>
<td>Condition B to 0 MPH: Stop and yield conditions</td>
</tr>
<tr>
<td>25 mph</td>
<td>20^4</td>
<td>20^4</td>
<td></td>
</tr>
<tr>
<td>30 mph</td>
<td>30^4</td>
<td>30^4</td>
<td></td>
</tr>
<tr>
<td>35 mph</td>
<td>40^4</td>
<td>40^4</td>
<td></td>
</tr>
<tr>
<td>40 mph</td>
<td>50^4</td>
<td>50^4</td>
<td></td>
</tr>
<tr>
<td>45 mph</td>
<td>60^4</td>
<td>60^4</td>
<td></td>
</tr>
<tr>
<td>50 mph</td>
<td>70^4</td>
<td>70^4</td>
<td></td>
</tr>
</tbody>
</table>

Condition A: Speed reduction and lane changing in heavy traffic

Condition B: Deceleration to the listed advisory speed (mph) for the condition

Advance Placement Distance:

- 10 ft
- 20 ft
- 30 ft
- 40 ft
- 50 ft
- 60 ft
- 70 ft

Table 2C-4. Guidelines for Advance Placement of Warning Signs
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>
<th>Posted or 85th Percentile Speed</th>
<th>Minimum Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>100 ft</td>
<td>45 mph</td>
<td>300 ft</td>
</tr>
<tr>
<td>25 mph</td>
<td>100 ft</td>
<td>50 mph</td>
<td>400 ft</td>
</tr>
<tr>
<td>30 mph</td>
<td>100 ft</td>
<td>55 mph</td>
<td>500 ft</td>
</tr>
<tr>
<td>35 mph</td>
<td>150 ft</td>
<td>60 mph</td>
<td>600 ft</td>
</tr>
<tr>
<td>40 mph</td>
<td>200 ft</td>
<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.
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
- W1-15
- W13-1P
- W13-2
- W13-3
- W13-6
- W13-7
Section 2C.06 Horizontal Alignment Warning Signs

Standard:

02 (DE Revision) In advance of horizontal curves on freeways, on expressways, and on roadways with more than 1,000 AADT that are functionally classified as arterials or collectors, horizontal alignment warning signs shall be used in accordance with Table 2C-5 based on the speed differential between the roadway’s posted or statutory speed limit or 85th-percentile speed on the tangent approach to the curve and the horizontal curve’s advisory speed.

Option:

02B (DE Revision) Where an advisory speed determined in accordance with Section 2C.08 equals or exceeds the posted or statutory speed limit, horizontal alignment warning signs, excluding Advisory Speed plaques, may be installed based upon engineering judgment.

03 Horizontal Alignment Warning signs may also be used on other roadways or on arterial and collector roadways with less than 1,000 AADT based on engineering judgment.

- Requirements for freeways, expressways, and arterials and collectors with > 1,000 AADT based on Table 2C-5
- Can be used on other roads regardless of AADT or classification
- DE Option: Can be installed where advisory speed exceeds speed limit (excluding Advisory Speed plaques)
Section 2C.06 Horizontal Alignment Warning Signs

Guidance:

02A (DE Revision) The provisions of Table 2C-5 that recommend or require the use of certain signs or plaques should be applied only where the advisory speed for the curve is less than the posted or statutory speed limit on the tangent approach to the curve.

Support:

03A (DE Revision) FHWA’s Interpretation Letter 2(09)-2 (I) - Determination of Speed Differential for Curve Warning Signs and Plaques clarifies data collection requirements recognizing that it is unrealistic to collect data in advance of every curve where Table 2C-5 is applied.

- DE Guidance: Table 2C-5 applies where advisory speed < posted or statutory speed limit
- DE Support: Data collection and formal studies not required at all curves

### 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*</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 85th-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)

06. If the curve has a change in horizontal alignment of 135 degrees or more, the Hairpin Curve (W1-11) sign may be used instead of a Curve or Turn sign.

07. If the curve has a change of direction of approximately 270 degrees, such as on a cloverleaf interchange ramp, the 270-degree Loop (W1-15) sign may be used instead of a Curve or Turn sign.

Guidance:

08. When the Hairpin Curve sign or the 270-degree Loop sign is installed, either a One-Direction Large Arrow (W1-6) sign or Chevron Alignment (W1-8) signs should be installed on the outside of the turn or curve.

- **Alignment change ≥ 135 degrees** – W1-11
- **Alignment change of about 270 degrees** – W1-15
- **Should be supplemented with W1-6 or W1-8**

W1-11 installed in advance; therefore, W1-8 signs are also used along the off-ramp

SR 1 southbound at Exit 148
Section 2C.07 Horizontal Alignment Signs (W1-1 through W1-5, W1-11, W1-15)

- **Installed in advance of curve based on Condition B in Table 2C-4**

### 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 traffic</th>
<th>Advance Placement Distance¹</th>
<th>Condition B: Deceleration to the listed advisory speed (mph) for the condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>225 ft, 100 ft</td>
<td>10⁴, 20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
<td>20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
</tr>
<tr>
<td>25 mph</td>
<td>325 ft, 100 ft</td>
<td>20⁴, 30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
<td></td>
</tr>
<tr>
<td>30 mph</td>
<td>460 ft, 100 ft</td>
<td>30⁴, 40⁴, 50⁴, 60⁴, 70⁴</td>
<td></td>
</tr>
<tr>
<td>35 mph</td>
<td>565 ft, 100 ft</td>
<td>40⁴, 50⁴, 60⁴, 70⁴</td>
<td></td>
</tr>
<tr>
<td>40 mph</td>
<td>670 ft, 125 ft</td>
<td>50⁴, 60⁴, 70⁴</td>
<td></td>
</tr>
<tr>
<td>45 mph</td>
<td>775 ft, 175 ft</td>
<td>60⁴, 70⁴</td>
<td></td>
</tr>
<tr>
<td>50 mph</td>
<td>885 ft, 250 ft</td>
<td>70⁴</td>
<td></td>
</tr>
<tr>
<td>55 mph</td>
<td>990 ft, 325 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 mph</td>
<td>1,100 ft, 400 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 mph</td>
<td>1,200 ft, 475 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 mph</td>
<td>1,250 ft, 500 ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75 mph</td>
<td>1,350 ft, 650 ft</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Distance in feet.
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

Legend
- Direction of travel

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
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)
- Supplements other warning sign; not installed as separate sign
Section 2C.08 Advisory Speed Plaque (W13-1P)

Shall not be used as a separate sign; MPH abbreviation shall not have punctuation.

I-95 northbound off-ramp to US 202
Section 2C.09 Chevron Alignment Sign (W1-8)

Standard:
01 The use of the Chevron Alignment (W1-8) sign (see Figures 2C-1 and 2C-2) to provide additional emphasis and guidance for a change in horizontal alignment shall be in accordance with the information shown in Table 2C-5.

Option:
02 When used, Chevron Alignment signs may be used instead of or in addition to standard delineators.
04 If used, Chevron Alignment signs shall be installed on the outside of a turn or curve, in line with and at approximately a right angle to approaching traffic. Chevron Alignment signs shall be installed at a minimum height of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

- 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
Section 2C.09 Chevron Alignment Sign (W1-8)

Shall not be used to sign the end of roadway

Old County Rd at Glasgow Ave
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
Standard:
03 The One-Direction Large Arrow sign shall be a horizontal rectangle with an arrow pointing to the left or right.
04 The use of the One-Direction Large Arrow sign shall be in accordance with the information shown in Table 2C-5.
05 If used, the One-Direction Large Arrow sign shall be installed on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.
06 The One-Direction Large Arrow sign shall not be used where there is no alignment change in the direction of travel, such as at the beginnings and ends of medians or at center piers.
07 The One-Direction Large Arrow sign directing traffic to the right shall not be used in the central island of a roundabout.

Guidance:
08 If used, the One-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.

• 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
Standard:
01 Advisory Exit Speed (W13-2) and Advisory Ramp Speed (W13-3) signs (see Figure 2C-1) shall be vertical rectangles. The use of Advisory Exit Speed and Advisory Ramp Speed signs on freeway and expressway ramps shall be in accordance with the information shown in Table 2C-5.

Guidance:
02 If used, the Advisory Exit Speed sign should be installed along the deceleration lane and the advisory speed displayed should be based on an engineering study. When a Truck Rollover (W1-13) sign (see Section 2C.13) is also installed for the ramp, the advisory exit speed should be based on the truck advisory speed for the horizontal alignment using recommended engineering practices.
03 If used, the Advisory Exit Speed sign should be visible in time for the road user to decelerate and make an exiting maneuver.

Support:
04 Table 2C-4 lists recommended advance sign placement distances for deceleration to various advisory speeds.

Guidance:
05 If used, the Advisory Ramp Speed sign should be installed on the ramp to confirm the ramp advisory speed.

- Installed based on criteria in Table 2C-5
- W13-2 installed along deceleration lane based on Condition B in Table 2C-4
- W13-3 should be installed along the off-ramp
Section 2C.16 Hill Signs (W7-1, W7-1a) & Section 2C.18 HILL BLOCKS VIEW Sign (W7-6)

Guidance:

01 The Hill (W7-1) sign (see Figure 2C-4) should be used in advance of a downgrade where the length, percent of grade, horizontal curvature, and/or other physical features require special precautions on the part of road users.

02 The Hill sign and supplemental grade (W7-3P) plaque (see Section 2C.57) used in combination, or the W7-1a sign used alone, should be installed in advance of downgrades for the following conditions:
   A. 5% grade that is more than 3,000 feet in length,
   B. 6% grade that is more than 2,000 feet in length,
   C. 7% grade that is more than 1,000 feet in length,
   D. 8% grade that is more than 750 feet in length, or
   E. 9% grade that is more than 500 feet in length.

03 These signs should also be installed for steeper grades or where crash experience and field observations indicate a need.

- **Used in advance of downgrades of specific length**
- **Also installed based on crash experience or field observations**

Option:

01 A HILL BLOCKS VIEW (W7-6) sign (see Figure 2C-4) may be used in advance of a crest vertical curve to advise road users to reduce speed as they approach and traverse the hill as only limited stopping sight distance is available.

Guidance:

02 When a HILL BLOCKS VIEW sign is used, it should be supplemented by an Advisory Speed (W13-1P) plaque indicating the recommended speed for traveling over the hillcrest based on available stopping sight distance.

- **Advise motorists of crest curve with limited sight distance**
- **Advisory speed plaque based on stopping sight distance**
Appropriate use; however, *should be installed on right-hand side of road and spaced apart from Curve sign*
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**
W5-2 installed because 20-ft clearance on bridge is less than the two 12-ft lanes on the approach

Bridge 1/1A, Rising Sun Ln over Brandywine Creek
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.

- 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.

- Installed adjacent to end of divided highway
- Used with AHEAD plaque where one-way street becomes two-way street
Shall not be used on the approach end of a median island
Section 2C.44 Two-Way Traffic Sign (W6-3)

SR 4 westbound (S. Monroe St)

Should be used with AHEAD plaque in advance of transition from one-way to two-way traffic.
Section 2C.25 Double Arrow Sign (W12-1)

Option:
01 The Double Arrow (W12-1) sign (see Figure 2C-5) may be used to advise road users that traffic is permitted to pass on either side of an island, obstruction, or gore in the roadway. Traffic separated by this sign may either rejoin or change directions.

Guidance:
02 If used on an island, the Double Arrow sign should be mounted near the approach end.
03 If used in front of a pier or obstruction, the Double Arrow sign should be mounted on the face of, or just in front of, the obstruction. Where stripe markings are used on the obstruction, they should be discontinued to leave a 3-inch space around the outside of the sign.

- Used to advise motorists of diverge with traffic either rejoining (e.g., SR 1 E-ZPass lanes) or changing directions
- Installed near approach end of median or barrier
Section 2C.26 DEAD END/NO OUTLET Signs
(W14-1, W14-1a, W14-2, W14-2a)

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.27 Low Clearance Signs (W12-2 and W12-2a)

The Low Clearance (W12-2) sign (see Figure 2C-5) shall be used to warn road users of clearances less than 12 inches above the statutory maximum vehicle height.

Support:

01A (DE Revision) §4502 and 4503 of Title 21 of the Delaware Code establish a maximum vehicle height of 13 feet 6 inches.

Guidance:

02 The actual clearance should be displayed on the Low Clearance sign to the nearest 1 inch not exceeding the actual clearance. However, in areas that experience changes in temperature causing frost action, a reduction, not exceeding 3 inches, should be used for this condition.

03 Where the clearance is less than the legal maximum vehicle height, the W12-2 sign with a supplemental distance plaque should be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.

Option:

06 The Low Clearance sign may be installed on or in advance of the structure. If a sign is placed on the structure, it may be a rectangular shape (W12-2a) with the appropriate legend (see Figure 2C-5).

- DE Code states max. vehicle height of 13’-6”; therefore, **W12-2 installed for all vertical clearances less than 14’-6”**
- **Clearances less than 13’-6” should have advance signing for detours or U-turns**
- W12-2a may be installed on structure
Section 2C.28 – Section 2C.35
Roadway and Weather Condition Signs

- BUMP (W8-1)
- DIP (W8-2)
- PAVEMENT ENDS (W8-3)
- SOFT SHOULDER (W8-4)
- WHEN WET (W8-5)
- ICE (W8-5aP)
- STEEL DECK (W8-5bP)
- EXCESS OIL (W8-5cP)
- LOOSE GRAVEL (W8-7)
- ROUGH ROAD (W8-8)
- LOW SHOULDER (W8-9)
- UNEVEN LANES (W8-11)
- NO CENTER LINE (W8-12)
- BRIDGE ICES BEFORE ROAD (W8-13)
- FALLEN ROCKS (W8-14)
- GROOVED PAVEMENT (W8-15)
- METAL BRIDGE DECK (W8-15P)
- SHOULDER DROP-OFF (W8-17P)
- ROAD MAY FLOOD (W8-18)
- GUSTY WINDS AREA (W8-19)
- WATER ON ROAD (W21-7-DE)
- FOG AREA (W8-22)
- NO SHOULDER (W8-23)
- SHOULDER ENDS (W8-25)
- SPEED HUMP (W17-1)
Section 2C.36 Advance Traffic Control Signs (W3-1, W3-2, W3-3, W3-3-DE, W3-3-DE1, W3-3P-DE, W3-4)

Standard:
01 The Advance Traffic Control symbol signs (see Figure 2C-6) include the Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) signs. These signs shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-4). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.

- W3-1 and W3-2 installed if STOP or YIELD visibility distance is less than AASHTO stopping sight distance (Exhibit 3-1)
- Located in advance of STOP or YIELD based on Condition B (to 0 MPH) in Table 2C-4

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 traffic</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td></td>
<td>225 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>25 mph</td>
<td></td>
<td>325 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>30 mph</td>
<td></td>
<td>460 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>35 mph</td>
<td></td>
<td>565 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>40 mph</td>
<td></td>
<td>670 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>45 mph</td>
<td></td>
<td>775 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>50 mph</td>
<td></td>
<td>885 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>55 mph</td>
<td></td>
<td>990 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>60 mph</td>
<td></td>
<td>1,100 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>N/A</td>
</tr>
<tr>
<td>65 mph</td>
<td></td>
<td>1,200 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
</tr>
<tr>
<td>70 mph</td>
<td></td>
<td>1,260 ft</td>
<td>150 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
</tr>
<tr>
<td>75 mph</td>
<td></td>
<td>1,350 ft</td>
<td>150 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>100 ft</td>
</tr>
</tbody>
</table>

Note: Brake reaction distance predicted on a time of 2.5 s; deceleration rate of 3.4 m/s² [11.2 ft/s²] used to determine calculated sight distance.

AASHTO—Geometric Design of Highways and Streets
Exhibit 3-1. Stopping Sight Distance
Standard:

01 The Advance Traffic Control symbol signs (see Figure 2C-6) include the Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) signs. These signs shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-4). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.

Option:

01A (DE Revision) Signal Ahead (W3-3) signs may be omitted on the approaches to traffic signals along corridors with closely spaced traffic signals where there is sufficient signal visibility (see Table 2C-4).

01B (DE Revision) A XX SIGNALS NEXT XX MILES (W3-3P-DE) sign (see Figure 2C-12) may be mounted below a Signal Ahead (W3-3) sign located on the approach to the first upstream traffic signal along a corridor of closely spaced traffic signals.

Table 4D-2. Minimum Sight Distance for Signal Visibility

<table>
<thead>
<tr>
<th>85th-Percentile Speed</th>
<th>Minimum Sight Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>175 feet</td>
</tr>
<tr>
<td>25 mph</td>
<td>215 feet</td>
</tr>
<tr>
<td>30 mph</td>
<td>270 feet</td>
</tr>
<tr>
<td>35 mph</td>
<td>325 feet</td>
</tr>
<tr>
<td>40 mph</td>
<td>390 feet</td>
</tr>
<tr>
<td>45 mph</td>
<td>460 feet</td>
</tr>
<tr>
<td>50 mph</td>
<td>540 feet</td>
</tr>
<tr>
<td>55 mph</td>
<td>625 feet</td>
</tr>
<tr>
<td>60 mph</td>
<td>715 feet</td>
</tr>
</tbody>
</table>

Note: Distances in this table are derived from stopping sight distance plus an assumed queue length for shorter cycle lengths (60 to 75 seconds).

- W3-3 installed if signal visibility for all primary signal indications < Table 4D-2
- DE Option: W3-3 signs not required at every signal along corridors with closely spaced signals
Option:

01C (DE Revision) A Pedestrian Hybrid Beacon Ahead (W3-3-DE1) sign (see Figure 2C-12) may be installed on the approach to a pedestrian hybrid beacon. A supplemental educational plaque containing the legend PED SIGNAL AHEAD may be installed below a Pedestrian Hybrid Beacon Ahead sign.

11A (DE Revision) A RED SIGNAL AHEAD WHEN FLASHING (W3-3-DE) sign (see Figure 2C-6) supplemented with warning beacons may be installed on an approach to a traffic signal where engineering judgment indicates a need to provide additional warning to motorists of a red signal indication.

- DE Option: Pedestrian Hybrid Beacon (“HAWK”) Ahead (W3-3-DE1) sign and educational plaque on approach to “HAWK” signals

- DE Option: RED SIGNAL AHEAD WHEN FLASHING (W3-3-DE) installed to address sight distance or high crash locations

SR 72 at Farm Ln / Webb Ln
Section 2C.39 **DRAW BRIDGE** Sign (W3-6)

Standard:

01 A DRAW BRIDGE (W3-6) sign (see Figure 2C-6) shall be used in advance of movable bridge signals and gates (see Section 4J.02) to give warning to road users, except in urban conditions where such signing would not be practical.

- **W3-6** required in advance of all movable bridges, except where impractical in urban areas
Section 2C.40 Merge Signs (W4-1, W4-5) & Section 2C.41 Added Lane Signs (W4-3, W4-6)

**Guidance:**

03 The Merge sign should be installed on the side of the major roadway where merging traffic will be encountered and in such a position as to not obstruct the road user’s view of entering traffic.

04 Where two roadways of approximately equal importance converge, a Merge sign should be placed on each roadway.

05 When a Merge sign is to be installed on an entering roadway that curves before merging with the major roadway, such as a ramp with a curving horizontal alignment as it approaches the major roadway, the Entering Roadway Merge (W4-5) sign (see Figure 2C-8) should be used to better portray the actual geometric conditions to road users on the entering roadway.

- Installed along major road approaching the merge point
- Installed on both roads if roads are of equal importance
- W4-5 used on curved alignments – e.g., ramp approaching major road

**Guidance:**

01 The Added Lane (W4-3) sign (see Figure 2C-8) should be installed in advance of a point where two roadways converge and merging movements are not required. When possible, the Added Lane sign should be placed such that it is visible from both roadways; if this is not possible, an Added Lane sign should be placed on the side of each roadway.

02 When an Added Lane sign is to be installed on a roadway that curves before converging with another roadway that has a tangent alignment at the point of convergence, the Entering Roadway Added Lane (W4-6) sign (see Figure 2C-8) should be used to better portray the actual geometric conditions to road users on the curving roadway.

- Used in advance of a lane addition in a location visible to both roads
- Installed on both roads if one sign is insufficient for both roads
- W4-6 used on curved alignments – e.g., ramp approaching major road
Section 2C.41 Added Lane Signs (W4-3, W4-6)

I-95 northbound at I-295 on-ramp

Should only install one W4-3 if sign is clearly visible from both roads

Additional sign is used because I-95 NB sign is not clearly visible to SR 141 traffic

Should have W4-6 facing SR 141 traffic because of curved alignment

SR 141 on-ramp to I-95 northbound
Section 2C.42 Lane Ends Signs (W4-2, W9-1, W9-2, W9-2-DE)

Guidance:

01 The LANE ENDS MERGE LEFT (RIGHT) (W9-2) sign or the Lane Ends (W4-2) sign should be used to warn of the reduction in the number of traffic lanes in the direction of travel on a multi-lane highway (see Figure 2C-8).

01A (DE Revision) The LANE ENDS ((Left, Right) Arrows) (W9-2-DE) sign should be placed at the upstream end of the taper at lane reductions along roadways with a posted speed limit or 85th percentile speed equal to or greater than 45 mph.

Option:

01C (DE Revision) Lane-reduction signing shown in Figures 3B-14A, 3B-14B, and 3B-14C may be adjusted based on engineering judgment at existing locations where space is limited due to site-specific conditions.

Guidance:

03 If used, the RIGHT (LEFT) LANE ENDS (W9-1) sign should be installed adjacent to the Lane-Reduction Arrow pavement markings.

Option:

04 On one-way streets or on divided highways where the width of the median will permit, two Lane Ends signs may be placed facing approaching traffic, one on the right-hand side and the other on the left-hand side or median.

07 Lane Ends signs should not be installed in advance of the downstream end of an acceleration lane.

Standard:

08 In dropped lane situations, regulatory signs (see Section 2B.20) shall be used to inform road users that a through lane is becoming a mandatory turn lane. The W4-2, W9-1, and W9-2 signs shall not be used in dropped lane situations.

- **W9-1 installed adjacent to arrow marking**
- **Should not be installed for acceleration lanes**
- **Shall use regulatory signs for lane drops, not warning signs**
- **DE Option: Sign spacing shown in Fig. 3B-14A, 3B-14B, and 3B-14C may be adjusted where space is limited**
Additional sign can be installed on left-hand side where space permits; standard sign symbol shall be used.
Lane Ends warning signs shall not be used at lane drops.

SR 2 / SR 72 (Library Ave) north of SR 4
Section 2C.42 Lane Ends Signs (W4-2, W9-1, W9-2, W9-2-DE)

Figure 3B-14A. Example of Lane Reduction Markings for Interstates, Freeways or Expressways (45 MPH or greater)
(Delaware Revision)

Legend
• Direction of travel
• Warning Sign

L = TAPER LENGTH - WS
S = 85th PERCENTILE SPEED
W = LANE WIDTH IN FEET

Warning Sign Spacing (d)
(See Section 2C.05)

<table>
<thead>
<tr>
<th>S</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>550 ft</td>
</tr>
<tr>
<td>50</td>
<td>625 ft</td>
</tr>
<tr>
<td>55</td>
<td>700 ft</td>
</tr>
<tr>
<td>60</td>
<td>775 ft</td>
</tr>
<tr>
<td>65</td>
<td>850 ft</td>
</tr>
</tbody>
</table>

Dotted 5 in lane line markings consisting of 3 ft line segments and 9 ft gaps
Section 2C.42 Lane Ends Signs (W4-2, W9-1, W9-2, W9-2-DE)

Figure 3B-14B. Example of Lane Reduction Beyond Intersection Marking Application Along All Other Roads (Non-Interstates, Freeways or Expressways) (45 MPH or greater) (Delaware Revision)

Legend

Direction of travel

L = TAPER LENGTH = WS
S = 85th PERCENTILE SPEED
W = LANE WIDTH IN FEET

Warning Sign Spacing (d) (See Section 2C.05)

<table>
<thead>
<tr>
<th>S</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>550 ft</td>
</tr>
<tr>
<td>50</td>
<td>625 ft</td>
</tr>
<tr>
<td>55</td>
<td>700 ft</td>
</tr>
<tr>
<td>60</td>
<td>775 ft</td>
</tr>
<tr>
<td>65</td>
<td>850 ft</td>
</tr>
</tbody>
</table>

Dotted 5 in line lane markings consisting of 2 ft line segments and 6 ft gaps

Figure 3B-14C. Example of Lane Reduction Beyond Intersection Marking Application Along All Other Roads (Non-Interstates, Freeways or Expressways) (less than 45 MPH) (Delaware Revision)

Legend

Direction of travel

L = TAPER LENGTH = \( \frac{60S}{10} \)
S = 85th PERCENTILE SPEED
W = LANE WIDTH IN FEET

Warning Sign Spacing (d) (See Section 2C.05)

<table>
<thead>
<tr>
<th>S</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>250 ft</td>
</tr>
<tr>
<td>30</td>
<td>325 ft</td>
</tr>
<tr>
<td>35</td>
<td>400 ft</td>
</tr>
<tr>
<td>40</td>
<td>475 ft</td>
</tr>
</tbody>
</table>

Dotted 5 in lane line marking consisting of 2 ft line segments and 6 ft gaps
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
Section 2C.46 Intersection Warning Signs
(W2-1 through W2-8, W21-9-DE, W21-9P-DE, W21-10-DE)

- **Installed in advance of intersection based on Condition B (to 0 MPH)** in Table 2C-4

### 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 traffic</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph</td>
<td>225 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>25 mph</td>
<td>325 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>30 mph</td>
<td>400 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>35 mph</td>
<td>565 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>40 mph</td>
<td>670 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>45 mph</td>
<td>775 ft</td>
<td>175 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>100 ft</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>50 mph</td>
<td>855 ft</td>
<td>250 ft</td>
<td>200 ft</td>
<td>175 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>55 mph</td>
<td>990 ft</td>
<td>325 ft</td>
<td>275 ft</td>
<td>225 ft</td>
<td>200 ft</td>
<td>125 ft</td>
<td>N/A</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>60 mph</td>
<td>1,100 ft</td>
<td>400 ft</td>
<td>350 ft</td>
<td>325 ft</td>
<td>275 ft</td>
<td>200 ft</td>
<td>100 ft</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>65 mph</td>
<td>1,200 ft</td>
<td>475 ft</td>
<td>450 ft</td>
<td>400 ft</td>
<td>350 ft</td>
<td>275 ft</td>
<td>200 ft</td>
<td>100 ft</td>
<td>—</td>
</tr>
<tr>
<td>70 mph</td>
<td>1,250 ft</td>
<td>550 ft</td>
<td>525 ft</td>
<td>500 ft</td>
<td>450 ft</td>
<td>375 ft</td>
<td>275 ft</td>
<td>150 ft</td>
<td>—</td>
</tr>
<tr>
<td>75 mph</td>
<td>1,350 ft</td>
<td>650 ft</td>
<td>625 ft</td>
<td>600 ft</td>
<td>550 ft</td>
<td>475 ft</td>
<td>375 ft</td>
<td>250 ft</td>
<td>100 ft</td>
</tr>
</tbody>
</table>
Section 2C.46 Intersection Warning Signs
(W2-1 through W2-8, W21-9-DE, W21-9P-DE, W21-10-DE)

- Should not be installed on approaches controlled by STOP signs, YIELD signs, or signals
If used, shall be installed on the 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*
• Installed for permissive left turns with potential “yellow trap” scenario (see Section 4D.05)

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
The Emergency Vehicle (W11-8) sign (see Figure 2C-10) with the EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque (see Figure 2C-10) shall be placed in advance of all emergency-vehicle traffic control signals (see Chapter 4G).

11A (DE Revision) The FIRE SIGNAL STOP ON FLASHING RED (W11-12-DE) sign (see Figure 2C-10) shall not be used at new emergency-vehicle traffic control signals (see Section 2B.53 and Chapter 4G).

12A (DE Revision) The EMERGENCY VEHICLES (W11-8-DE) sign (see Figure 2C-10) may be used in advance of an emergency facility that does not include a fire company.

- **W11-8 sign and W11-12P plaque in advance of all emergency-vehicle traffic control signals**
- **DE Option: W11-8-DE at locations without fire companies**

Old County Rd approaching Aetna Fire Station
• Used at locations with unexpected entries into the roadway

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

Figure 2C-12. Supplemental Warning Plaques (Delaware Revision)

Note: The background color (yellow or fluorescent yellow-green) shall match the color of the warning sign that it supplements.
Section 2C.58 Advance Street Name Plaque (W16-8P, W16-8aP)

Standard:
02 The lettering on Advance Street Name plaques shall be composed of a combination of lower-case letters with initial upper-case letters.

03 If two street names are used on the Advance Street Name plaque, a directional arrow pointing in the direction of the street shall be placed next to each street name. Arrows pointing to the left shall be placed to the left of the street name, and arrows pointing to the right shall be placed to the right of the street name.

Guidance:
04 If two street names are used on the Advance Street Name plaque, the street names and associated arrows should be displayed in the following order:

A. For a single intersection, the name of the street to the left should be displayed above the name of the street to the right; or
B. For two sequential intersections, such as where the plaque is used with an Offset Side Roads (W2-7) or a Double Side Road (W2-8) symbol sign, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see Figure 2C-12).

- Upper-case and lower-case road names and sign border
- At single intersection, left above right
- At offset (sequential) intersections, first (upstream) above second (downstream)
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*
Section 2C.60 SHARE THE ROAD Plaque (W16-1P)

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.
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
Guidance:

03A (DE Revision) The NEW TRAFFIC PATTERN (W23-2P-DE) plaque (see Figure 2C-12) should be used along state-maintained roadways to provide advance warning of a change in a traffic pattern. If used, the NEW TRAFFIC PATTERN plaque should be mounted below a warning or regulatory sign and should be removed when the traffic pattern returns to normal, when the changed pattern is no longer considered to be new, or within six months.

• DE Guidance
  
  – Mounted below regulatory or warning sign for changed traffic pattern

  – Removed no later than 6 months after new traffic pattern is implemented

• DE Standard: **Now black-on-yellow**

S. Washington St at S.E. 2nd St, Milford
Section 2C.62A STRICTLY ENFORCED Plaque (W21-12P-DE)

**Standard:**

01  **(DE Revision)** A STRICTLY ENFORCED (W21-12P-DE) plaque (see Figure 2C-12) shall be installed below a Speed Limit (R2-1) sign where required by §701 of Title 21 of the Delaware Code.

**Option:**

02  **(DE Revision)** A STRICTLY ENFORCED (W21-12P-DE) plaque (see Figure 2C-12) may be used in combination with a Speed Limit (R2-1) sign or other regulatory sign where additional emphasis is needed.

- **DE Standard:** Installed where required by DE Code (36” x 24”)
- **DE Option:** Installed where additional emphasis is needed

(c) Any arrests for violations of § 4168 or § 4169 of this title or any local ordinance equivalent thereof by a municipal, town or city police department within its jurisdiction as defined by its charter on a state highway shall occur only if:

(3) A yellow “strictly enforced” sign is posted below the speed limit sign;

(d) "State highways," as used in subsection (c) of this section, include the following:

1. U.S. 13;
2. U.S. 113;
3. Delaware Route 1 (SR 1);
4. Interstate I-95;
5. Interstate I-495;
6. Delaware Route 141;
7. Delaware Route 2;
8. Delaware Route 896;
9. U.S. Route 40;
10. U.S. Route 301;
11. U.S. 202; and
12. Interstate I-295;

US 13 southbound entering Smyrna
• 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
Section 2D.05 Lettering Style &
Section 2D.06 Size of Lettering

02 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.

03 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**

03 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
Standard:
02 If used, the Lane Designation auxiliary signs shall be used only where the designated lane is a mandatory movement lane and shall be located adjacent to the full-width portion of the mandatory movement lane. The Lane Designation auxiliary signs shall not be installed adjacent to a through lane in advance of a lane that is being added or along the taper for a lane that is being added.

- Installed adjacent to mandatory turn lanes only, not adjacent to through lanes in advance of turn lanes

Shall be installed adjacent to turn lanes, not in advance

US 13 north of Duck Creek Rd
Section 2D.30 Junction Assembly

Standard:
02 The Junction assembly shall be installed in advance of every intersection where a numbered route is intersected or joined by another numbered route.

Guidance:
03 In urban areas, the Junction assembly should be installed in the block preceding the intersection. In urban areas where speeds are low, the Junction assembly should not be installed more than 300 feet in advance of the intersection.
04 In rural areas, the Junction assembly should be installed at least 400 feet in advance of the intersection. In rural areas, the minimum distance between a Junction assembly and either a Destination sign or an Advance Route Turn assembly should be 200 feet.

- Installed in advance of every intersection of two numbered routes
- Urban areas – Installed along block preceding intersection; however, not more than 300 ft in advance of intersection
- Rural areas – Installed at least 400 ft in advance of intersection
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.

Standard:
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.32 Directional Assembly

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

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

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

D. An intersected route (indicated in advance by a Junction assembly) on a side road or on a crossroad where the route is designated only on one of the legs shall be designated by a Directional assembly with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary sign, and a single-headed arrow pointing in the direction of movement on that route.

- Shall be installed for:
  - Turn movements to remain on numbered route
  - Beginning of a numbered route
  - Intersection with a numbered route
Section 2D.32 Directional Assembly

Guidance:

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

- Straight/through assemblies installed for the continuing route at locations with left or right-turn assemblies

SR 16 at SR 36 / St. Johnstown Rd

Should have a vertical arrow (M6-3) to indicate that SR 16 is the continuing route
Section 2D.32 Directional Assembly

- Installed on near right corner of intersection
- At major intersections, supplemental assembly installed on far side of intersection
- Typical placements depicted in Figure 2D-6
Standard:
04 The Combination Lane-Use/Destination (D15-1) overhead guide sign shall be used only where the designated lane is a mandatory movement lane. The D15-1 sign shall not be used for lanes with optional movements.
05 The D15-1 sign shall have a green background with a white border. As shown in Figure 2D-7, the lane-use sign (see Chapter 2B) shall be placed near the bottom of the sign and the destination information shall be placed near the top of the sign. The D15-1 sign shall be located approximately over the center of the lane to which it applies.

- Shall be used with exclusive lanes only, not option lanes
- White-on-green with integrated regulatory sign
- Centered over the travel lane

SR 4 westbound at Marshall St

Shall have white legend on green background
Shall not be used for option lanes
Section 2D.34 Confirming or Reassurance Assemblies

**Guidance:**

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

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

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

- Confirming assembly installed 25 ft to 200 ft downstream of intersections with numbered routes

Confirming assembly installed on far side of intersection
Section 2D.35 Trailblazer Assembly

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

Standard:
02 A Trailblazer assembly shall consist of a TO auxiliary sign, a route sign for a numbered or named highway (see Section 2D.53) or an Auto Tour Route sign (see Section 2H.07), and a single-headed Directional Arrow auxiliary sign pointing in the direction leading to the route. Where the Trailblazer assembly is for an alternative route, the appropriate auxiliary sign for an alternative route (see Section 2D.16) shall also be included in the assembly.
Section 2D.38 Destination Signs at Circular Intersections

DE Guidance omits optional “dot”

Choptank Rd roundabout

Figure 2D-9. Example of Regulatory, Warning, and Guide Signs for Roundabouts.

(Sheet 1 of 2)
(Delaware Revision)

Notes:
1. Signs shown for only one leg
2. See Chapter 2B for regulatory signs and Chapter 2C for warning 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.40, and 2D.42 for low-speed and/or urban conditions
5. All guide signs are optional

See Table 2C-4 for placement distance. Placement of guide signs should be adjusted, as necessary, to provide a minimum of 100 ft spacing between signs.
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 intersections**
- **Upper-case/lower-case letters**
- **Omit sign border (DE preference)**
- **DE Option: White background for private roads**
**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.

- **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

<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).
Section 2D.43 Street Name Signs (D3-1, D3-1-DE, D3-1a)

Overhead street name signs with 12” and 9” upper/lower legend

US 13 at SR 1 S. Smyrna ramps / Simon’s Corner
Guidance:
03 The signing of conventional roads with one lane of traffic approaching an interchange should consist of a sequence containing the following signs (see Figure 2D-11):
   A. Junction Assembly
   B. Destination sign
   C. Directional Assembly or Entrance Direction sign for the first ramp
   D. Advance Route Turn Assembly or Advance Entrance Direction sign with an advance turn arrow
   E. Directional Assembly or Entrance Direction sign for the second ramp

• Signing along single-lane approaches to interchanges should follow Figure 2D-11
Standard:

02 On multi-lane conventional roads approaching an interchange, guide signs shall be provided to identify which direction of turn is to be made and/or which specific lane to use for ramp access to each direction of the freeway or expressway.

Guidance:

07 On multi-lane conventional roads approaching an interchange, the sign sequence should contain the following signs (see Figures 2D-13 through 2D-15):

A. Junction Assembly
B. Advance Entrance Direction sign(s) for both directions (if applicable) of travel on the freeway or expressway
C. Entrance Direction sign for first ramp
D. Advance Turn Assembly
E. Entrance Direction sign for the second ramp

- **Guide signs indicating directions of turns and/or lane use shall be installed along multi-lane roads approaching interchanges**

- **Signing should follow Figures 2D-13 through 2D-15**
Section 2D.45 Signing on Conventional Roads on Approaches to Interchanges

SR 273 at SR 1 interchange
Section 2D.45 Signing on Conventional Roads on Approaches to Interchanges

SR 273 at SR 1 interchange
Section 2D.45 Signing on Conventional Roads on Approaches to Interchanges

2011 DE MUTCD (DRAFT)
CHAPTER 2F.
TOLL ROAD SIGNS

New chapter
CHAPTER 2G.
PREFERENTIAL AND MANAGED LANE SIGNS

Relocated from 2B
CHAPTER 2H.
GENERAL INFORMATION SIGNS

Relocated from 2D & 2E
CHAPTER 2I. GENERAL SERVICE SIGNS

Relocated from 2D & 2E
CHAPTER 2J.
SPECIFIC SERVICE SIGNS

Formerly 2F
**MEMORANDUM**

**TO:** All Users of the Delaware Manual on Uniform Traffic Control Devices

**FROM:** Donald D. Weber, P.E.
Chief Traffic Engineer

**DATE:** February 8, 2010

**SUBJECT:** Interim Guidance
Agricultural Tourism Guide Signs – Part 2G

The purpose of this memorandum is to issue Interim Guidance for the installation of Agricultural Tourism Guide Signs within State of Delaware rights-of-way. The following information presents the standards and guidelines to be followed for the request, approval and installation of Agricultural Tourism Guide Sign until the information can be officially added to the Delaware Manual on Uniform Traffic Control Devices (DEMUTCD). Once this information has been added to the DEMUTCD, this Interim Approval will no longer be valid.

**BACKGROUND**

These interim guidelines for Agricultural Tourism Guide Signs have been developed by the Delaware Department of Transportation (DelDOT) and the Delaware Department of Agriculture (DDA). These interim guidelines govern all requests for agricultural tourism guide signs.

**GENERAL**

- All questions regarding these interim guidelines shall be directed to DDA.
- Installation of signs on state maintained roads is the responsibility of DelDOT who has the final authority for all sign related decisions.
- Eligibility for participation in this program shall be determined by DDA.
- To ensure uniformity, DelDOT will fabricate all signs regardless of the jurisdiction of the placement.
- As the successful applicant’s new signing is erected, old signage not in compliance with this program will be removed.
Today’s presentation will be posted on DelDOT’s DE MUTCD website

http://www.deldot.gov/information/pubs_forms/manuals/de_mutcd/index.shtml
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• March 16th – Part 6 (Temporary Traffic Control)

• April 12th – Part 3 (Markings)

• May 16th – Parts 4 & 7 (Traffic Signals & School Areas)

• June 15th – Parts 8 & 9 (Railroads & Bicycle Facilities)

• T² course registration

http://www.ce.udel.edu/dct/T2Courses.html