

GUIDANCE:

If used, these signs should be placed in advance of the horizontal alignment changes. The application of these signs should conform to Table 2C-5.

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.

OPTION:

An Advisory Speed (W13-1) plaque (see Section 2C.46) may be used to indicate the speed for the change in horizontal alignment. The supplemental distance plaque NEXT XX MILES (W7-3a) may be installed below the Winding Road sign where continuous roadway curves exist (see Section 2C.45). The combination Horizontal Alignment/Advisory Speed sign (see Section 2C.7) or the combination Horizontal Alignment/Intersection sign (see Section 2C.8) may also be used.

STANDARD:

When engineering judgment determines the need for a horizontal alignment sign, one of the W1-1 through W1-5, W1-10, W1-11, or W1-15 signs shall be used.

OPTION:

If the reduction in speed is 15 mph or greater, a supplemental combination Horizontal Alignment/Advisory Speed sign may be installed as near as practical to the point of curvature.

2C.7 Horizontal Alignment/Advisory Speed Sign Assembly



W1-2
750 x 750 mm
30" x 30"

W13-1
450 x 450 mm
18" x 18"

OPTION:

The Turn (W1-1) sign or the Curve (W1-2) sign may be combined with the Advisory Speed (W13-1) plaque (see Section 2C.46) to create a combination Horizontal Alignment/Advisory Speed sign assembly.

STANDARD:

When used, the combination Horizontal Alignment/Advisory Speed sign assembly shall supplement other advance warning signs and shall be installed at the beginning of the turn or curve.

The minimum size of the W13-1 sign shall be 450 x 450 mm (18 x 18 in) when used in combination with a 750 x 750 mm (30 x 30 in) Horizontal Alignment sign. On high-speed expressway facilities, the minimum size of the W13-1 sign shall be 600 x 600 mm (24 x 24 in) when used in combination with a 900 x 900 mm (36 x 36 in) Horizontal Alignment sign.

2C.8 Combination Horizontal Alignment/Intersection Sign (W1-10)



W1-10
750 x 750 mm
30" x 30"

OPTION:

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) sign that depicts the condition where an intersection occurs within a turn or curve.

GUIDANCE:

Elements of the combination Horizontal Alignment/Intersection sign related to horizontal alignment should conform to Section 2C.6, and elements related to intersection configuration should conform to Section 2C.37. No more than one Cross Road or two Side Road symbols should be shown on any one combination Horizontal Alignment/Intersection sign.

**2C.30 Speed Reduction Signs
(W3-5, W3-5a)**



W3-5
900 x 900 mm
36" x 36"

W3-5a
900 x 900 mm
36" x 36"

GUIDANCE:

A Speed Reduction (W3-5a) sign should be used to inform road users of a reduced speed zone when engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.

STANDARD:

If used, Speed Reduction signs shall be followed by a Speed Limit (R2-1) sign installed at the beginning of the zone where the speed limit applies.

The speed limit displayed on the Speed Reduction sign shall be identical to the speed limit displayed on the subsequent Speed Limit sign.

Compliance Date: December 22, 2018

2C.31 Merge Sign (W4-1)



W4-1
900 x 900 mm
36" x 36"

OPTION:

A Merge (W4-1) sign may be used to warn road users on the major roadway that merging movements might be encountered in advance of a point where lanes from two separate roadways converge as a single traffic lane and no turning conflict occurs.

A Merge sign may also be installed on the side of the entering roadway to warn road users on the entering roadway of the merge condition.

GUIDANCE:

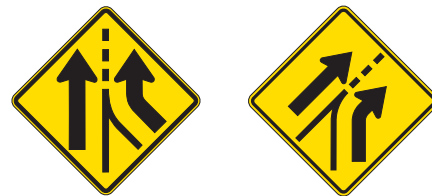
The Merge sign should be installed on the side of the major roadway where merging traffic will be encountered and in such a position as to not obstruct the road user's view of entering traffic.

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

The Merge sign should not be used where two roadways converge and merging movements are not required.

The Merge sign should not be used in place of a Lane Ends sign where lanes of traffic moving on a single roadway must merge because of a reduction in the actual or usable pavement width (see Section 2C.33).

2C.32 Added Lane Sign (W4-3, W4-6)



W4-3
900 x 900 mm
36" x 36"

W4-6
900 x 900 mm
36" x 36"

GUIDANCE:

The Added Lane (W4-3) sign 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.

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 should be used to better portray the actual geometric conditions to road users on the curving roadway.

Compliance Date: December 22, 2013

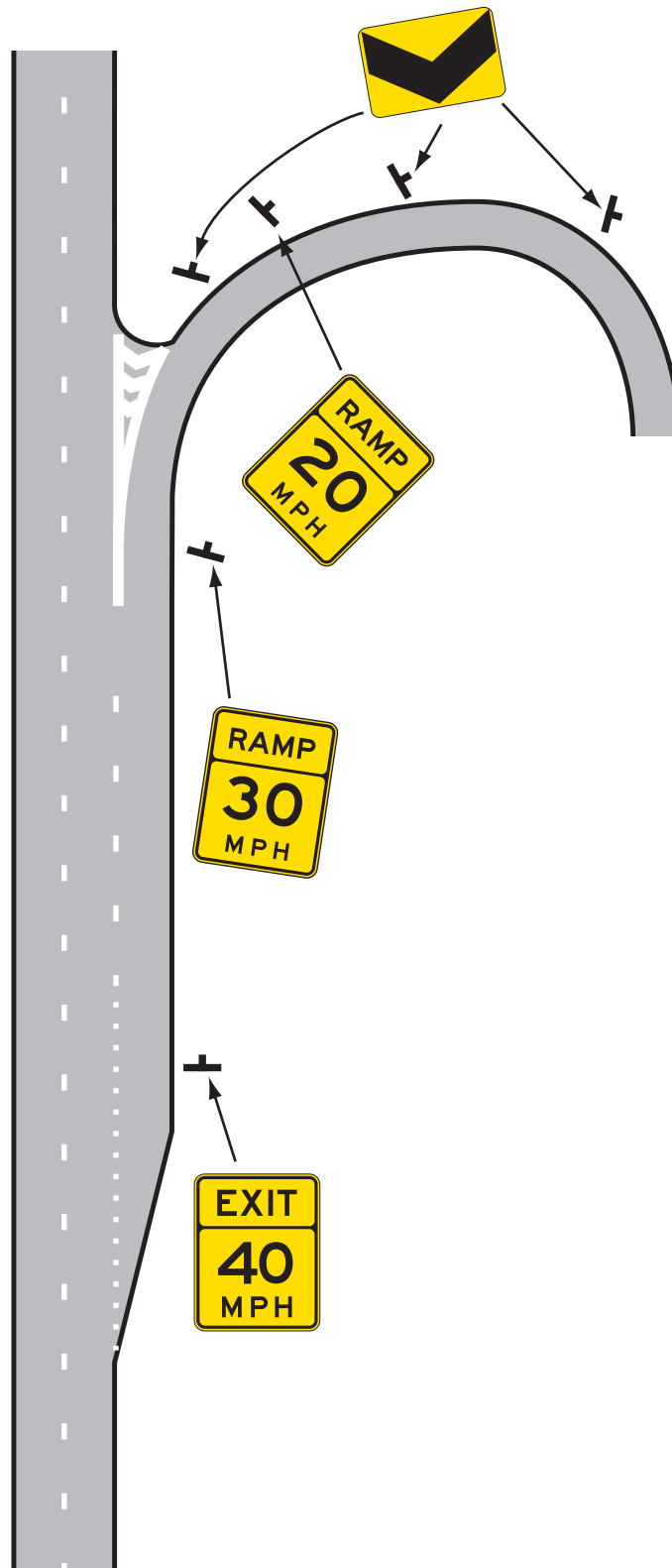
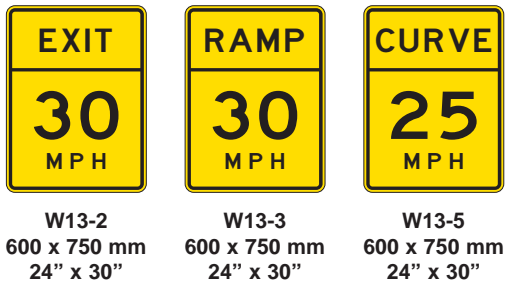


Figure 2C-7. Example of Advisory Speed Signing for an Exit Ramp

2C.36 Advisory Exit, Ramp, and Curve Speed Signs (W13-2, W13-3, W13-5)



STANDARD:

Advisory Exit, Ramp, and Curve Speed signs shall be vertical rectangles. The advisory Exit Speed (W13-2), Ramp Speed (W13-3), or Curve Speed (W13-5) signs shall be used where engineering judgment indicates the need to advise road users of the recommended speed on an exit, a ramp, or a curve.

GUIDANCE:

When used, the Exit Speed sign should be installed along the deceleration lane.

The Exit Speed sign should be visible in time for the road user to make a reasonably safe slowing and exiting maneuver.

The Ramp Speed sign should be visible in time for the road user to reduce to the recommended speed.

OPTION:

One or more Ramp Speed signs may be used beyond the gore (see Figure 2C-7). Based on engineering judgment, the Ramp Speed sign may be installed on the inside or outside of the curve to enhance its visibility.

A Turn (W1-1) or Curve (W1-2) sign with an Advisory Speed (W13-1) plaque may be used in place of a Ramp Speed sign if it is located such that it clearly does not apply to drivers on the main roadway.

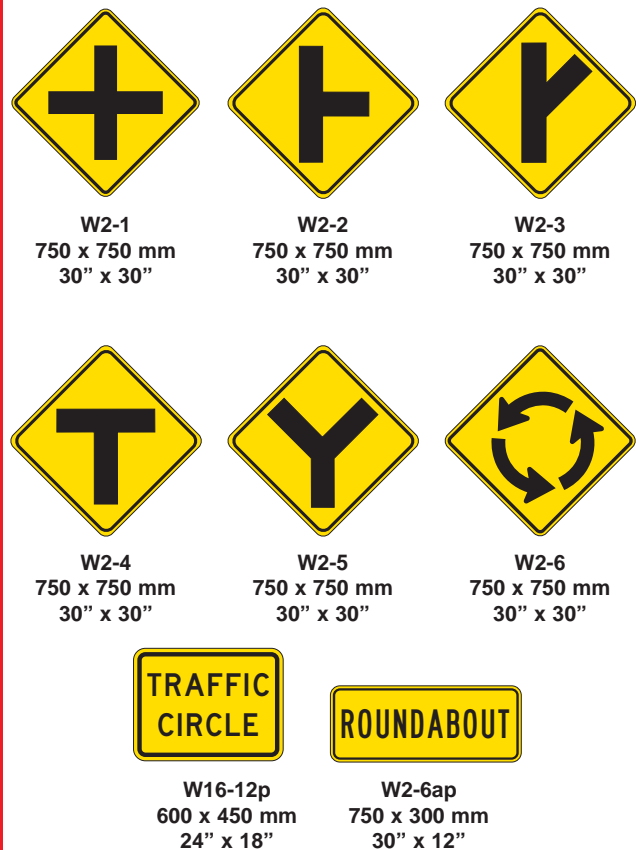
A Curve Speed sign may be used at and beyond the beginning of a curve following a Horizontal Alignment and Advisory Speed sign combination. When there is a need to remind road users of the recommended speed, or where the recommended speed changes because of a change in curvature, install the first Curve Warning sign with Advisory Speed plaque in advance of the curve (see Table 2C-4). Based on engineering judgment, the Curve Speed sign may be installed on the inside or outside of the curve to enhance its visibility.

The advisory speed may be the 85th-percentile speed of free-flowing traffic, the speed corresponding to a 10-degree ball bank indicator reading, or the speed otherwise determined by an engineering study because of unusual circumstances.

SUPPORT:

A 10-degree ball-bank indicator reading, used in determining advisory speeds, is based on research from the 1930s. In modern passenger vehicles, the 85th-percentile speed on curves approximates a 16-degree reading.

2C.37 Intersection Warning Signs (W2-1 through W2-6)



OPTION:

A Cross Road (W2-1) symbol, Side Road (W2-2 or W2-3) symbol, T-Symbol (W2-4), or Y-Symbol (W2-5) sign may be used in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic. The Circular Intersection (W2-6) symbol sign accompanied by an educational TRAFFIC CIRCLE (W16-12p) plaque may be installed in advance of a circular intersection.

2C.45 Distance Plaques
(W16-2 series, W16-3 series,
W16-4, W7-3a)



OPTION:

The Distance Ahead (W16-2 series and W16-3 series) plaques may be used to inform the road user of the distance to the condition indicated by the warning sign.

The Next Distance (W7-3a and W16-4) plaques may be used to inform road users of the length of roadway over which the condition indicated by the warning sign exists.

2C.46 Advisory Speed Plaque (W13-1)



OPTION:

The Advisory Speed (W13-1) plaque may be used to supplement any warning sign to indicate the advisory speed for a condition.

STANDARD:

The Advisory Speed plaque shall be used where an engineering study indicates a need to advise road users of the advisory speed for a condition.

If used, the Advisory Speed plaque shall carry the message XX MPH. The speed shown shall be a multiple of 5 mph.

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.

GUIDANCE:

Because changes in conditions, such as roadway geometrics, surface characteristics, or sight distance, might affect the advisory speed, each location should be periodically evaluated and the Advisory Speed plaque changed if necessary.

OPTION:

The advisory speed may be the 85th-percentile speed of free-flowing traffic, the speed corresponding to a 10-degree ball bank indicator reading, or the speed otherwise determined by an engineering study because of unusual circumstances.

SUPPORT:

A 10-degree ball-bank indicator reading, used in determining advisory speeds, is based on research from the 1930s. In modern passenger vehicles, the 85th-percentile speed on curves approximates a 16-degree reading.

2C.47 Supplemental Arrow Plaques
(W16-5p, W16-6p, W16-7p)



GUIDANCE:

If the condition indicated by a warning sign is located on an intersecting road and the distance between the intersection and condition is not sufficient to provide adequate advance placement of the warning sign, a Supplemental Arrow (W16-5p, W16-6p, or W16-7p) plaque should be used below the warning sign.

STANDARD:

Supplemental Arrow plaques shall have the same legend design as the Advance Turn and Directional Arrow auxiliary signs (see Sections 2D.25 and 2D.26) except that they shall have a black legend and border on a yellow or fluorescent yellow-green background, as appropriate.