

Section 2C.59 Advisory Speed Plaque (W13-1P) and Confirmation Advisory Speed Plaque (W13-1aP)**Option:**

- 01 The Advisory Speed (W13-1P) plaque (see Figure 2C-1) may be used to supplement an advance warning sign to indicate the advisory speed for a condition.
- 02 The Confirmation Advisory Speed (W13-1aP) plaque (see Figure 2C-1) may be used to supplement a One-Direction Large Arrow (W1-6) sign on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.

Standard:

- 03 The use of the Advisory Speed and Confirmation Advisory Speed plaques for horizontal curves shall be in accordance with Section 2C.06 and Table 2C-6. The speed differential in Table 2C-6 shall be the difference between the advisory speed for the horizontal curve and the posted speed limit, statutory speed limit, or the 85th percentile speed on the approach to the curve. 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.

Speed Differential	Use of Advisory Speed Plaque (W13-1P) ¹
5 mph	Optional
10 mph	Recommended
15 mph or more	Required

¹ See Section 2C.59

- 04 The speed displayed on the Advisory Speed and Confirmation Advisory Speed plaques shall be a multiple of 5 mph.

- 05 Except in emergencies or when the condition is temporary, an Advisory Speed or Confirmation Advisory Speed plaque shall not be installed until the advisory speed has been determined by an engineering study.

- 06 The Advisory Speed plaque shall only be used to supplement an advance warning sign. The Advisory Speed plaque or the Confirmation Advisory Speed plaque shall not be installed as a separate sign installation.

Guidance:

- 07 The Advisory Speed plaque, if used with a sign that is also supplemented with another plaque, such as an Advance Street Name plaque (see Section 2C.65), should be mounted immediately below the primary warning sign with any other plaque mounted below the Advisory Speed plaque.

Standard:

- 08 The Confirmation Advisory Speed plaque shall only be used to supplement a One-Direction Large Arrow (W1-6) sign (see Section 2C.10) or an Exit Gore (E5-1 series) (see Section 2E.26) sign and shall not be installed as a separate sign installation.

- 09 The advisory speed shall be determined by an engineering study that follows established engineering practices.

Guidance:

- 10 The advisory speed should be determined based on free-flowing traffic conditions.
- 11 Because changes in conditions, such as roadway geometrics, surface characteristics, or sight distance, might affect the advisory speed, each location should be evaluated periodically or when conditions change.

Support:

- 12 Among the established engineering practices that are appropriate for the determination of the recommended advisory speed for a horizontal curve are the following:

- A. Compass method
- B. Safety-based method
- C. Accelerometer method
- D. Design equation method
- E. Ball-bank method using the following criteria:
 1. 16 degrees of ball-bank for speeds of 20 mph or less
 2. 14 degrees of ball-bank for speeds of 25 to 30 mph
 3. 12 degrees of ball-bank for speeds of 35 mph and higher

- 13 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.

Ball Bank Indicator Worksheet**Draft Version 2**

The Ball Bank Indicator Worksheet can be used when determining the advisory speed for horizontal curves.

1. Enter the relevant information about the roadway segment at the top of the form.
2. Insert a link to locations reviewed or a sketch plan view of the roadway segment being tested with each curve labeled numerically.
3. For each horizontal curve, record the current posted advisory speed limit. If an advisory speed limit is not posted, record "NP" for "not posted".
4. Driving each curve at the posted advisory speed limit, record the ball bank indicator (BBI) reading. For curves without an advisory speed limit, drive at a comfortable speed. Record that value next to the "NP". Repeat 3 times.
5. For curves which have a majority of indicator readings less than 12.0, repeat Step 4 driving 5 mph faster than the posted advisory speed limit. Write this speed and the BBI reading in the next test block. Repeat 3 times. If the majority of the new readings are greater than 12.0, the test is complete for the curve.
For curves which have a majority of indicator readings greater than 12.0, repeat Step 4 driving 5 mph slower than the posted advisory speed limit. Write this speed and the BBI reading in the next test block. Repeat 3 times. If the majority of the new readings are less than 12.0, the test is complete for that curve.
6. For any curves which are not complete, repeat Step 5 increasing or decreasing the speed by an additional 5 mph as necessary.
7. If there are more than 12 curves in the segment, please use multiple copies of this form.

Note: The 11th Edition of the MUTCD indicates that a 12-degree ball bank indicator reading should be used for an advisory speed of 35 mph and higher. For setting advisory speeds of 25 to 30 mph, 14 degrees should be used as the ball bank criteria. For advisory speeds of 20 mph or less, 16 degrees should be used as the ball bank criteria.





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