TRAFFIC AND SAFETY MANUAL

Chapter 2 - Signing
2C - Warning

Roadway Related Signs

Originally Issued: 12-16-05, Last Revised: 07-18-18

Changes in Horizontal Alignment Signs

Warning of changes in horizontal alignment of a section of highway is provided by the use of Horizontal Alignment signs, Combination Horizontal Alignment/Advisory Speed signs, Combination Horizontal Alignment/Intersection signs, One Direction Large Arrow signs and Chevron Alignment signs.

Horizontal Alignment Signs

The Turn warning sign or Reverse Turn warning sign is used if the advisory speed as determined by a curve speed study as described in Section7B-1 of the Traffic and Safety Manual is 30 MPH or less and is equal to or less than the speed limit.

The Curve or Reverse Curve sign is used if the advisory speed as determined by a ball bank study is greater than 30 MPH and equal to or less than the speed limit. The Curve or Reverse Curve sign is not needed for curves of 4 degrees of curvature or less. Curve or Reverse Curve signs are needed for curves of 8 degrees of curvature or greater. The need for a Curve or Reverse Curve sign for curves between 4 and 8 degrees of curvature is determined by a ball bank study. If the ball bank study results in a number of 5 or more on the ball bank indicator at the posted speed limit, use of a Curve or Reverse Curve sign is indicated.

The reverse Turn or Reverse Curve sign is used where two turns or curves are in opposite directions and separated by 600 feet or less. The Winding Road sign is used where there are three or more changes in alignment that are not separated by more than 600 feet and where the first two are in opposite directions. A sign that depicts the direction of the first change of alignment is used in all three cases.

An Advisory Speed Plaque is used when a curve speed study as described in Section 7B-1 of the Traffic and Safety Manual results in an indicated speed equal to or less than the speed limit.

Combination Horizontal Alignment/Advisory Speed Signs

Under certain limited circumstances the Turn sign or Curve sign may be combined with the Advisory Speed plaque to create a combination Horizontal Alignment/Advisory Speed sign. The State Traffic Engineer will provide assistance for use of this sign at the request of the District Office. The Curve Speed sign described in Section 2C.02 of the Traffic and Safety Manual may also be appropriate for certain applications. The State Traffic Engineer will provide assistance for the use of this sign at the request of the district Office.

Combination Horizontal Alignment/Intersection Signs

Under certain circumstances the Curve sign may be combined with the Cross Road or Side Road sign to create a combination Horizontal Alignment/Intersection sign that depicts the condition where an intersection occurs with a turn or curve. The State Traffic Engineer will provide assistance for use of this sign at the request of the District Office.

One-Direction Large Arrow Signs

A One-Direction Large Arrow sign may be used to delineate a change in horizontal alignment. 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. The One-Direction Large Arrow sign is only used where the need has been determined by an engineering study.

Chevron Alignment Signs

The Chevron Alignment Sign may be used to provide additional emphasis and guidance for a change in horizontal alignment. It may be used on curves as an alternate or supplement to standard delineators or to the Large Arrow sign. Spacing of Chevron alignment signs should be such that the road user always has at least two in view, until the change in alignment eliminates the need for the signs. Chevron Alignment signs are used only where the need has been determined by an engineering study. The use of the Chevron Alignment Sign shall be in accordance with the information shown in Table 2C-5 of the Manual on Uniform Traffic Control Devices. Standard Road Plan RD-34 should be used as a guide for placement and installation. Table 2C-6 of the Manual on Uniform Traffic Control Devices provides the approximate spacing of the Chevron Alignment Signs on the turn or curve measured from the point of curvature.

Vertical Alignment Signs

Warning of changes in vertical alignment of a section of highway is provided by the use of Hill signs. The Hill symbol sign is used in advance of a downgrade where the length, percent of grade, horizontal curvature, and/or other physical feature requires special precautions on the part of road users. The Hill symbol sign and supplemental grade plaque should be used in advance of downgrades for the conditions listed in MUTCD Section 2C.11. The State Traffic Engineer will provide assistance at the request of the District Office.

Cross Section Signs

Pavement Narrows Signs

The Pavement Narrows sign is used in advance of a transition on two-lane roads where the pavement width is reduced sharply by two feet or more.

Narrow Bridge Signs

A Narrow bridge sign should be used in advance of a bridge or culvert having a roadway clearance less than the width of the approach travel lanes. Additional emphasis should be provided by the use of object markers as provided in Office of Maintenance Instructional Memorandum 4.112 and pavement markings as shown in Figure 8 of Section 3B-2 of the Traffic and Safety Manual.

One Lane Bridge Signs

A One Lane Bridge sign shall be used on two-way roadways in advance of any bridge or culvert having an approach roadway of 18 feet or less. Additional emphasis should be provided by the use of object markers and pavement markings. The State Traffic Engineer will provide assistance at the request of the District Office.

Divided Highway Signs

A Divided Highway symbol sign should be used on the approaches to a section of highway (not an intersection or junction) where opposing flows of traffic are separated by a median or other physical barrier as shown on Standard Road Plan TC-62.

Divided Highway Ends Signs

A Divided Highway Ends sign should be used at the end of a section of physically divided highway (not an intersection or junction) as a warning of two-way traffic ahead as shown on Standard Road Plan TC-62.

Double Arrow Signs

A Double Arrow sign 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. This sign can be useful at the gore of a wye type intersection or at the gore formed by the beginning of an entrance ramp.

Dead End and No Outlet Signs

A Dead End sign may be used at the entrance of a single road or street that terminates in a dead end or cul-de-sac. A No Outlet sign may be used at the entrance to a road network from which there is no other exit. The Dead End or No Outlet sign is normally placed just beyond the last intersection permitting the road user to avoid the dead end or no outlet condition.

Low Clearance Signs

The Low Clearance sign shall be placed in advance of the structure to warn road users of clearances less than 12 inches above the statutory maximum vehicle height of 13-feet 6-inches. The actual clearance, reduced by 3 inches to allow for frost action, shall be shown for all bridges that are 14-feet 9-inches or less in height. A rectangular sign shall also be placed on the structure. Where the actual clearance is equal to or less than 13-feet 9-inches, the legal limit plus 3 inches to allow for frost action, a Low Clearance sign with a supplemental distance plaque shall also be placed at the nearest intersecting road at which a vehicle can detour or turn around.

The clearance must be re-measured when new construction or other events that change the clearance over any open road take place to ensure that the proper signs are in place and that any new clearance has been reported and posted.

Roadway Surface Condition Signs

Bump and Dip Signs

Bump and Dip signs are used to give advance warning of a sharp rise or depression in the profile of the road. These signs may be supplemented with an advisory speed plaque. A Bump or Dip sign is also placed adjacent to the bump or dip and is supplemented by a downward diagonal arrow below the Bump or Dip sign. Bump and Dip signs are not to be used at rough highway-rail grade crossings.

Speed Hump Signs

Speed Hump signs should be used to give warning of a vertical deflection in the roadway that is designed to limit the speed of traffic. It should be supplemented with and advisory speed plaque.

Rough Crossing Signs

Rough Crossing signs are used to give advance warning of rough highway-rail grade crossings. The sign is placed one third of the distance between the Highway-Rail Grade Crossing Advance Warning sign and the stop line. The Rough Crossing sign is to be supplemented with an advisory speed plaque. Two red metal flags are to be placed above the Rough Crossing sign when the speed limit is 45 M.P.H. or more and the advisory speed is at or below 25 M.P.H.

Pavement Ends Signs

A Pavement Ends sign should be used in advance of a location where a paved surface changes to a granular surface. An advisory speed plaque may be used when the change in roadway condition requires a reduced speed.

Shoulder Signs

A Soft Shoulder sign is used to warn of a soft shoulder condition. A No Shoulder sign is used to warn that the shoulder is two feet or less in width.

Slippery When Wet Signs

The Slippery When Wet sign is used to warn that a slippery condition may exist. It is installed when indicated by test results as described in Policy 600.1, Pavement Friction and Uneven Pavement Surface Program, in the Policies and Procedures Manual.

Falling Rock Signs

The Falling Rock sign is used in locations where cuts have been made through terrain containing rock that tends to become dislodged and fall to the shoulder or pavement surface.

Other Roadway Related Warning signs

Freeway Ends Signs

Special Freeway Ends signs are used where a freeway ends and all traffic must exit. They are not used where a freeway ends and an expressway or conventional road begins. The State Traffic Engineer will provide assistance at the request of the District Office.

Document Revision History: 12-16-05, 04-23-07, 07-18-18