

Narrow Bridges and Culverts

Bridges and culverts that are narrower than the approach roadway present a potential conflict for drivers and should be considered for appropriate warning signing and marking. Traffic control devices and markings that provide positive guidance with sufficient information to direct motorists through existing obstructions may be appropriate. Sections 2C.13 through 2C.15 and Part 3 of the *MUTCD* contain several signs and markings that warn of narrowing roadway conditions.

A Narrow Bridge sign (W5-2 or W5-2a) is intended for use in advance of a bridge or culvert that has a clear two-way roadway width of 16 to 18 feet or any structure with a roadway clearance less than the approach pavement. Use of object markers, delineators, and pavement markings can provide additional guidance.



W5-2



W5-2a

A One Lane Bridge sign (W5-3) is intended for use on two-way roadways in advance of bridges and culverts with one of these features:

- a clear roadway width of less than 16 feet
- a clear roadway width of less than 18 feet where significant commercial vehicle use exists (approximately 10% of total volume)
- an approach roadway alignment that results in poor visibility to structures with clear roadway width of less than 18 feet

Additional guidance for drivers can be provided with object markers, delineators, and pavement markings.



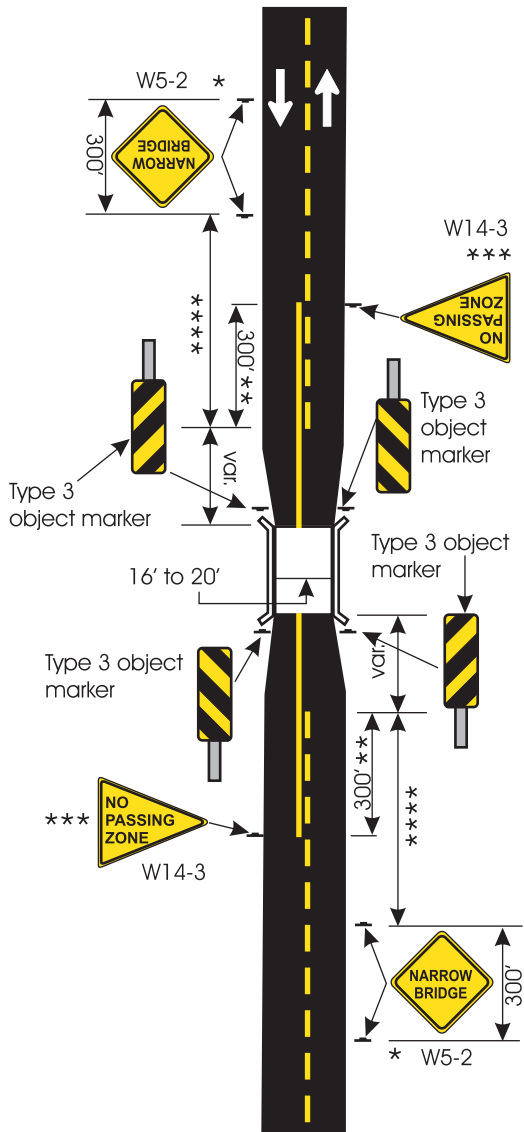
W5-3

A Road Narrows sign (W5-1) is intended for use in advance of a situation where a roadway narrows abruptly to a width that would not permit two cars to pass safely without reducing speed. Use of object markers and delineators can provide additional guidance for motorists.

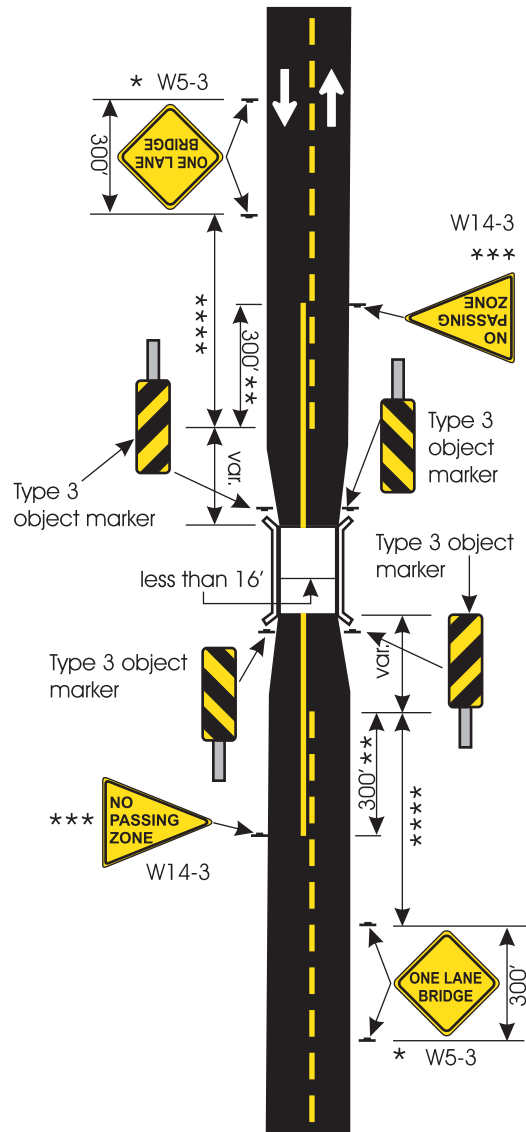


W5-1

The following illustrations suggest layouts for signing and marking of narrow and one-way bridges or culverts.



Narrow bridges (16' to 20')



One-lane bridges (less than 16')

Typical signing and marking with Type 3 object markers on all four corners

Note: Inside edge of object marker shall be mounted flush with inside edge of hub guards or bridge rail.

* If horizontal or vertical alignment warrants, an additional sign may be erected at the 300-foot distance shown.

** Nominal distance—other distance may be

used if engineering study indicates.

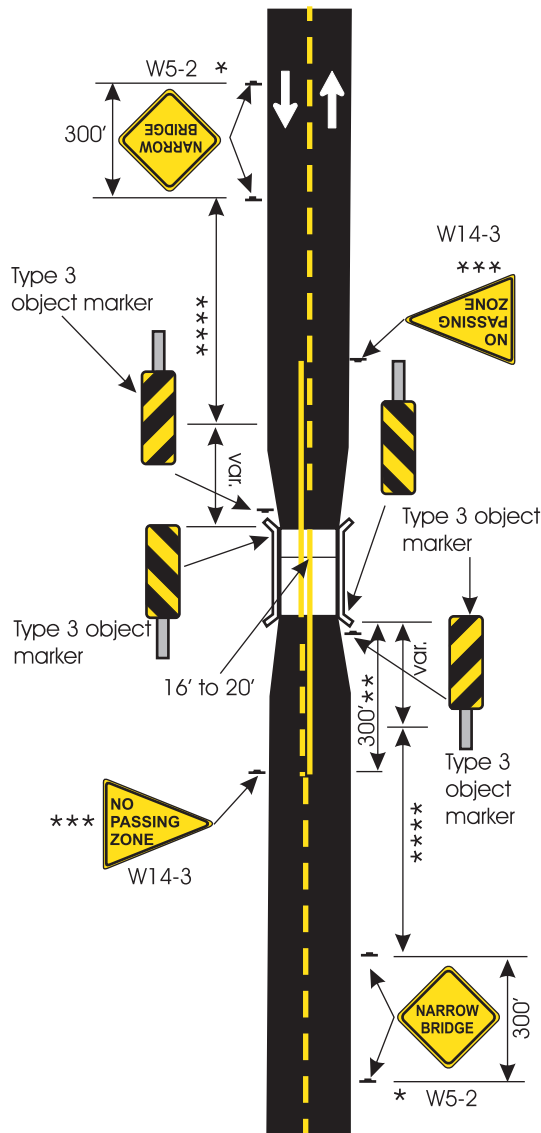
*** No Passing Zone sign suggested on paved roads.

**** Use PIEV distance—other distance may be used if engineering study warrants. (PIEV distance is defined in the article "Warning Sign Placement" (C18) in this manual.)

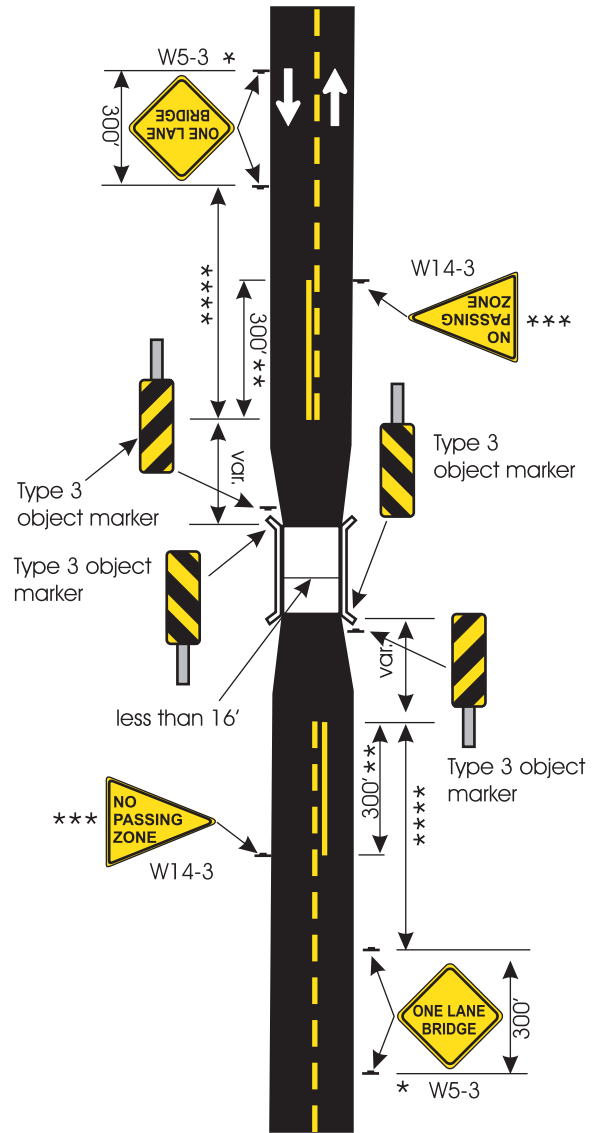
In rural areas, increased numbers of wide farm equipment can present a challenge in maintaining signs and markers. Here are a few suggestions that can be used in these situations:

- Place Type 3 object markers, back to back, on the right side only of each approach as shown in the following illustrations. This may permit wide equipment to “wiggle through.”

- Reduce the height of object markers to permit wide equipment to pass over, but be sure not to lower the markers below the height of the obstruction. Frequent removal of vegetation and other debris may be needed to maintain visibility. Jurisdictions using this option should properly document the reason for the practice.
- Use flexible supports for object markers to reduce permanent displacement when impacted.



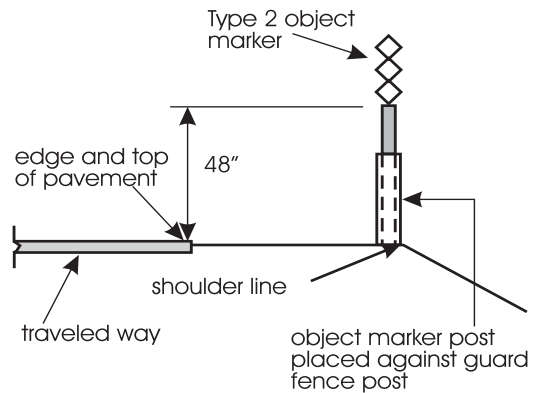
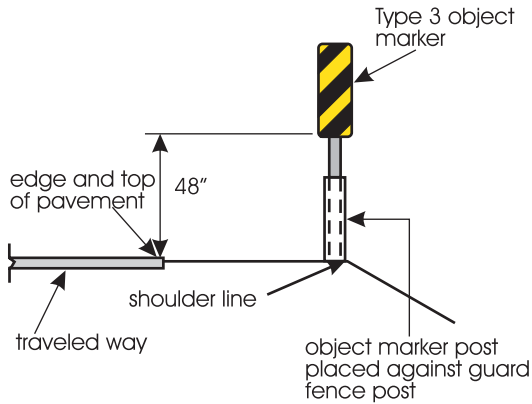
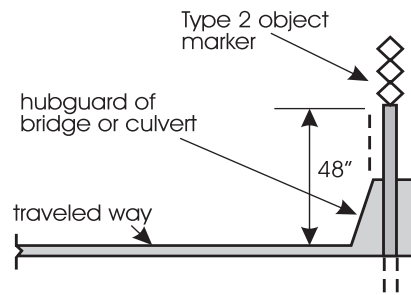
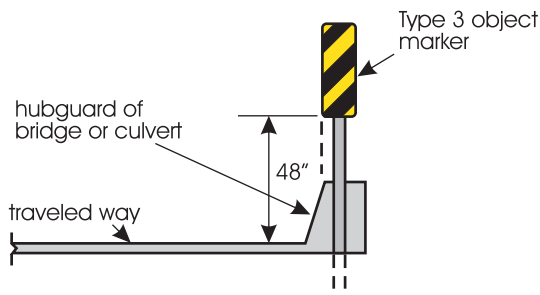
Narrow bridge (16' to 20')



One-lane bridge (less than 16')

Typical signing and marking for the “wiggle-through” option

*See notes on previous page.



Typical mounting of Type 3 object marker

Typical mounting of Type 2 object marker

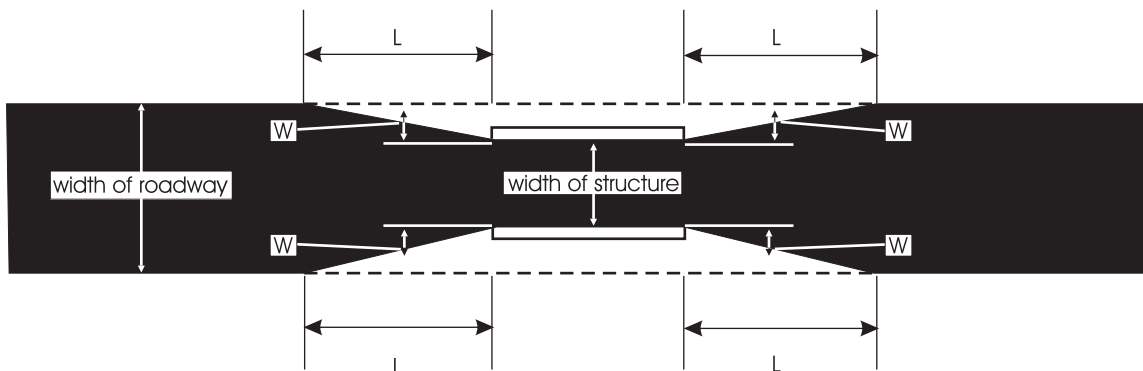
Tapering Recommendations

A tapered pavement or roadway edge may be used to guide the driver away from hazardous obstacles such as bridge abutments, dropoffs, culverts, or other objects that narrow the driving width.

Minimum recommended taper lengths (L) are shown in the table at right and the figure below.

Minimum taper lengths

W (ft)	Operating Speed		
	Less than 30 mph	30-40 mph	Over 40 mph
2 or less	30'	50'	100'
3	45'	75'	150'
4	60'	100'	200'
5	75'	125'	250'
6	90'	150'	300'



Taper details