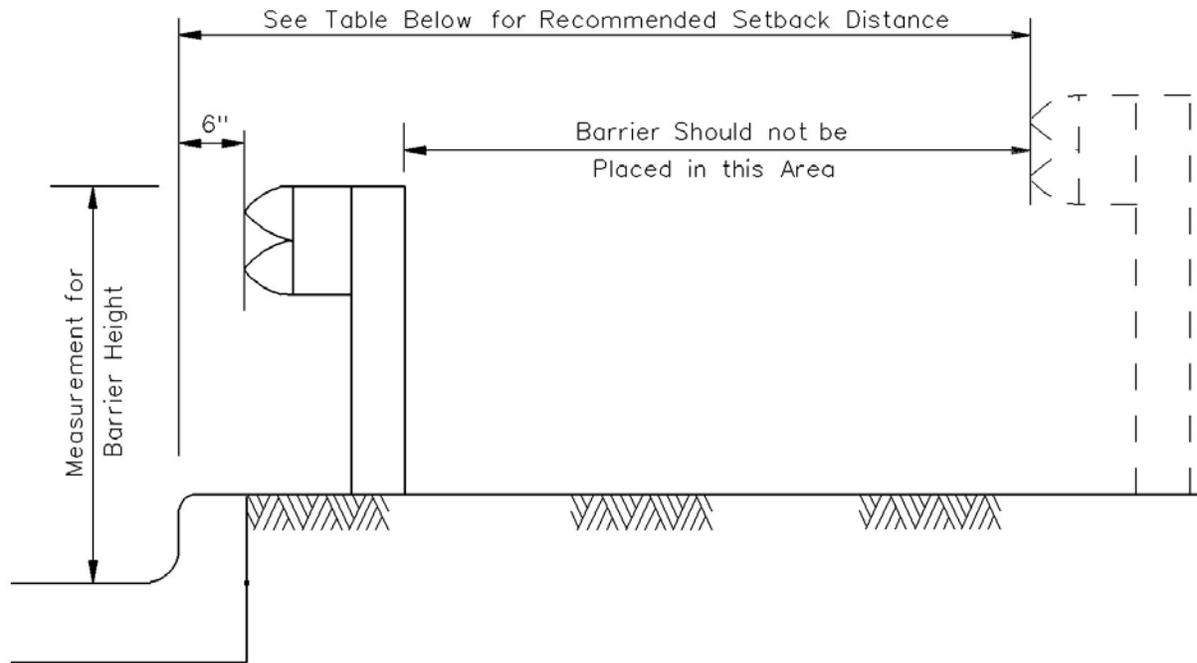


CHAPTER 14 – ROADSIDE SAFETY

CURB TO BARRIER DISTANCES

14.6(15)



Design Speed (mph)	Curb-to-Barrier Distance* (ft)	
	Vertical	Sloping
$V \leq 30$	0.5	0.5
$30 < V \leq 45$	5.6	8.0
$V > 45$	18.2	16.3

*Values in table represent distance beyond which it is acceptable to place a barrier.

Notes:

- The curb-to-barrier distances in the table are based on information presented in the AASHTO 1977 Guide for Selecting, Locating, and Designing Traffic Barriers, Appendix F, pp. 284 – 287. Specifically, the criteria for the vertical curb are based on the Type A Curb. For the $30 < V \leq 45$ mile-per-hour range, the 5-foot distance assumes an encroachment speed of 40 miles per hour and a 10-degree impact angle. For the $V > 45$ mile-per-hour range, the 18-foot distance assumes 60 miles per hour and 25 degrees.

The criteria for the sloping curb are based on the Type E Curb. For the $30 < V \leq 45$ mile-per-hour range, the 8-foot distance assumes an encroachment speed of 45 miles per hour and a 12.5 degree impact angle. For the $V > 45$ mile-per-hour range, the 16-foot distance assumes 60 miles per hour and 20 degrees.

- Barrier should be placed 6 inches behind curb; rail stiffening should be considered. See Section 14.6.3.

PLACEMENT OF BARRIER RELATIVE TO CURBS

Figure 14.6K

Revised Curb to Barrier Distances (10-8-03).

14.6.4 Placement on Slopes

Slopes in front of a barrier should be 10H:1V or flatter. This also applies to the areas in front of the flared section of guardrail and to the area approaching the terminal ends.

14.6.5 Barrier Flare

Using a flared barrier in advance of a roadside hazard may be advantageous. A barrier may be flared to:

- locate the barrier terminal farther from the traveled way,
- minimize a driver's reaction to an obstacle near the roadway by gradually introducing a parallel barrier installation,
- transition a roadside barrier closer to the roadway because of an obstacle, or
- to reduce the total length of barrier need.

Also consider the following:

1. Flared guardrail results in increased impact angles with the potential for greater severity of impact.
2. Flared guardrail increases the likelihood that the vehicle will be redirected into the opposing lane of traffic or across the roadway.
3. The grading required to provide 10H:1V or flatter slopes in front of the flared section of guardrail may interfere with roadside drainage and/or may require additional right of way.

Figure 14.6L presents suggested flare rates for roadside barriers which are intended to balance the advantages and disadvantages of flares.

14.6.6 Terminal Treatments

Barrier terminal sections present a potential roadside hazard for run-off-the-road vehicles; however, they are also critical to the proper structural performance of the barrier system. Therefore, the designer must carefully consider the selection and placement of the terminal end.