

## **6. ROADSIDE DESIGN Practices and Procedures**

### **6-1 ROADSIDE CLEAR ZONES**

See [EI C2 – Clear Zone](#), [Design Guidance – Clear Zone Relative to Right of Way](#) and Chapter 3 Roadside Topography and Drainage Features of the *AASHTO Roadside Design Guide*.

### **6-2 ROADSIDE BARRIER WARRANTS**

#### **6-2.01 Embankments**

See [Design Guidance – Sideslopes and Backslopes](#)

#### **6-2.02 Roadside Obstacles**

See Section 5.2.2 Roadside Obstacles in the *AASHTO Roadside Design Guide*.

### **6-3 ROADSIDE BARRIER TYPES**

See the [MaineDOT Guardrail and Guardrail Terminal Policy](#) and Section 5.4 Structural and Safety Characteristics of Roadside Barriers in the *AASHTO Roadside Design Guide*.

### **6-4 ROADSIDE BARRIER LAYOUT**

#### **6-4.01 Length of Need**

See [Design Guidance – Barrier Layout - Length of Need](#)

#### **6-4.02 Lateral Placement**

The following will apply to the lateral placement of a roadside barrier:

1. **Relative to Shoulder.** In restricted locations, it is acceptable to place the barrier at the normal shoulder edge, but only if the following conditions can be met: Guardrail should not be placed closer than 4 feet from the edge of travel lane or 16 feet from the centerline. The greater distance will control. The 16 feet minimum is critical to accommodate snowplow widths without excessive encroachment on the opposing lane.

2. **Deflection Distance.** The dynamic deflection of the barrier cannot be violated. Double-nesting the rails or decreasing the post spacing to 3 feet 1.5 inches will decrease the deflection distance by 50%. Either method must extend at least 25 feet in advance of and beyond the trailing end of the obstacle being shielded.
3. **Relative to Embankments.** A minimum of 3 feet should be provided between the face of the barrier and the break in a fill embankment. When minimal impacts are an issue, a 2 foot space may be used, but 8 foot guardrail posts are required.
4. **Bridge Approaches.** Short runs of barrier at less than the desirable lateral offset are acceptable at bridges where the bridge width is narrower than the normal face-of-barrier-to-face-of-barrier width.
5. **Shy Line Offset.** See Section 5.6.1 Barrier Offset in the *AASHTO Roadside Design Guide*.
6. **Flare Rate.** See Section 5.6.3 Flare Rate in the *AASHTO Roadside Design Guide*.

### **6-4.03 Barrier Gap**

Barrier gaps of less than 200 feet should be connected, unless the gap is needed for access (e.g., driveways, maintenance operations).

### **6-4.04 Placement on Slopes**

Roadside barriers should not be placed on roadside slopes steeper than 10:1. This also applies to the area approaching the beginning of the barrier installation.

### **6-4.05 Placement Behind Curbs**

#### **Barrier/Curb Orientation**

The face of the barrier should be flush with the face of the curb (i.e., at the gutter line). The height of the barrier is measured from the pavement surface. Curb height shall not exceed 4 inches.

#### **Sidewalks**

See Section 5.6.2.1 Curbs in the *AASHTO Roadside Design Guide*.

#### **Sidewalks and Bridge Rails**

See Section 5.6.2.1 Curbs in the *AASHTO Roadside Design Guide*.

#### **Guardrail Terminal/Curb Orientation**

Guardrail terminals should not be placed behind curb. Where there is no alternative, curb height should be reduced to 2 inches approximately 50 feet in advance of the terminal. For flared terminals, the 2 inch height should be carried an additional 37 feet beyond the upstream end. For tangent terminals, the 2 inch height should be carried 12 feet beyond the upstream end and the terminal should be offset 1 foot to keep the impact head behind the face of curb.

#### **6-4.06 Rub Rail**

See Section 5.6.2 Terrain Effects in the *AASHTO Roadside Design Guide*.

A rub rail should be considered where a potential snagging problem may exist.

#### **6-4.07 Guardrail Terminals**

See the [MaineDOT Guardrail and Guardrail Terminal Policy](#) and Design Guidance – Guardrail Height Adjustment Considerations.

### **6-5 MEDIAN BARRIERS**

See Chapter 6 Median Barriers in the *AASHTO Roadside Design Guide*.

### **6-6 IMPACT ATTENUATORS**

See Section 8.4 Crash Cushion Design Concepts and 9.3 Crash Cushions (for work zones) in the *AASHTO Roadside Design Guide*. Also see Design Guidance – Crash Cushions.