SECTION 15
DESIGN OF SOUND BARRIERS

15.1 GENERAL REQUIREMENTS
This section provides guidance for the design of sound barriers.

15.2 CODE REQUIREMENTS
This section of the BDM supplements AASHTO Section 15.

15.3 AESTHETICS
A typical CDOT sound barrier consists of a concrete panel mounted on concrete or steel posts. Refer to Section 2.3.3 of this BDM for acceptable concrete aesthetic treatments.

Wood is not allowed because of past experience with durability issues. Staff Bridge will consider other materials and designs if design criteria are met.

15.4 LOADS
Wind loads shall be in accordance with AASHTO. When a sound barrier is in Colorado’s special wind region, use the Partial Special Wind Region Map in Section 32 of this BDM to determine wind speed.

Vehicle collision forces need not be considered for the following cases:

- Sound barriers located beyond the acceptable clear zone.
- Sound barrier/rail systems within the clear zone that have been successfully crash tested.
- Sound barriers behind a crashworthy traffic railing with a setback greater than 4 ft. The Designer should make every effort to achieve a minimum setback greater than 4 ft.
- Sound barriers or portions thereof at locations where the collapse of a wall has minimal safety consequences, as determined by Staff Bridge.

When the above requirements cannot be met, the railing test levels and crash criteria shall be in accordance with AASHTO.

New sound barriers shall meet AASHTO Test Level 3 (TL-3) requirements.

Sound barrier materials shall be selected to limit shattering of the sound barrier during a vehicle collision. When reinforced concrete panels are used, AASHTO recommends the use of two mats of steel to limit the concrete shattering during a vehicle collision.