

Maine Department of Transportation

Highway Program

Design Guidance

Title: Rumble Strips for Non-Interstate
Highways

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Discipline: Highway Engineering

Originator: Bradford Foley, P.E., Duane
Brunell, P.E., Amelia DeGrace, P.E., Natasha
Collins

Reference: [Standard Details](#)

Approved By: Joyce Taylor, P.E., Chief
Engineer

Background:

Centerline and edge line rumble strips are used to enhance roadway safety by reducing crossover, head-on and run-off-road (ROR) crashes. Rumble strips create an audible (noise) and tactile (rumble or vibratory) warning sensation to alert drivers that the vehicle is leaving the intended lane of travel. Research has demonstrated and supported the significant safety benefits provided by both types of rumble strips.

Rumble strips are designed to gain the attention of a driver through sound and vibration. The natural byproduct of rumble strips is noise. In isolated areas this is usually not a problem; in more populated areas this can be disruptive to nearby residences or businesses. Consideration for high density residential areas and proximity of special occupancies (residences, hotels, motels, campgrounds, nursing homes, etc.) should be weighed in determining the installation of rumble strips.

Guidance:

This Guidance is intended to define when and where centerline and edge line rumble strips may be applied on the state highway system for lane departure mitigation purposes. Except for unusual situations, rumble strips should be considered only for the following conditions:

- Rumble strips are most effective and intended for use on road segments with speed limits of 45 mph and greater.
- Travel lanes are 11 ft. or greater in width; shoulders should be paved and 4 ft. or greater in width.
- If 16' from centerline to edge of pavement is not available, additional traffic control may be necessary during installation.
- The corridor or corridor segment is identified as a priority corridor or by crash

history.

- In developed or urban areas rumble strips should not be installed unless found justifiable on a case by case basis.
- Rumble strips generally should not be installed on bridge decks or overpasses, but should be considered on high speed bridges.
- Before installation, communication with the town(s) is necessary and notification of the abutters is strongly recommended, especially residences/residential
- properties and hotels/motels and campgrounds. Follow-ups with the towns should be made to make sure information has been communicated. Public meetings should be held when public concerns arise.

Centerline Rumble Strips

- Corridor or corridor segment is an undivided highway.
- Centerline rumble strips shall not be used where continuous two-way left-turn lanes exist.
- Centerline rumble strips shall not be installed through intersections or major entrances.
- In no-passing, double solid centerline locations, centerline rumble strips shall be continuous.
- In passing zones, centerline rumble strips shall be segmented with 20 ft. of rumble strip, followed by a 20 ft. break in a repeating pattern for the length of the passing zone.
- Centerline rumble strips may or may not be the physical midpoint of the road, but should coincide with the centerline striping. Painted center lines should be located
- as best as practicable so that they are painted on the centerline rumble strips.

Edge Line Rumble Strips

- Shoulder pavement is at least 3 in. in depth.
- Barrier offset (L_B) shall provide at least a 5 ft. usable shoulder.
- For the safety of bicyclists:
 - In rural areas, a 3 ft. minimum usable shoulder is required
 - In urban or village areas without curb, a 4 ft. minimum usable shoulder is required
 - In urban or village areas with curb, a 5 ft. minimum usable shoulder is required

- Concurrence of the Safety Office in consultation with the Bicycle/Pedestrian Coordinator is required when conditions for any of the above three bullets cannot be met.
- Twelve foot gaps should be provided (rumble strip pattern has 48 ft. long segments of rumble strips and 12 ft. segments of no rumble strips).
 - ✓ On segments where bicycles are prohibited...
 - The minimum shoulder width is 4 ft.
 - Twenty foot gaps should be provided (rumble strip pattern has 80 ft. long segments of rumble strips with 20 ft. segments of no rumble strips)
 - No rumble strips shall be placed where on-street parking exists.
 - Truck off-tracking should be analyzed on the inside of curves. If truck off-tracking conflicts with edge line rumble strip placement, then rumble strips shall be omitted in these locations to mitigate noise pollution.

Other considerations

- Warning signs shall be erected at the limits of the rumble strips and at all routed intersections.
- Centerline and edge line rumble strips may be installed on the same roadway segments or as isolated installations.
- Sealant shall be applied over rumble strips to protect pavement and joints. Item
 - 410.151 Emulsified Asphalt Seal Coat, Applied.
- Use of temporary rumble strips, such as TOMs or raised pavement markers should be considered when an existing rumble strip installation is overlaid and not immediately reinstalled.
- Consultation with Pavement Engineer (or designee) determines surface and shoulder pavement to show no sign of distress or pavement joint deterioration.
- See [Standard Details](#) for installation details.