



Highway Safety & Design Engineering Instructions (HSDEI)

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Approved:  **Date:** 9/8/2014
Kenneth A. Robie, P.E.,
Director of Project Delivery

Subject: Guidelines For Milled Centerline Rumble Stripes

Administrative Information:

- Effective Date:** HSDEI 14 – 101 shall be effective from the date of approval.
- Superseded HSDEI:** HSDEI 14 – 100 Guidelines For Milled Centerline Rumble Stripes
- Exceptions:** Not applicable.
- Disposition of HSDEI Content:** The content of HSDEI 14 – 101 will be incorporated into a future revision to the Roadway Design Manual and/or other applicable design guidance documentation.

Purpose:

Centerline rumble stripes (CLRS) are a proven strategy for reducing head-on and opposite direction sideswipe crashes. They are also expected to be effective in reducing run-off-road crashes where vehicles cross center line prior to leaving the roadway, reducing lane drift due to distracted/fatigued driving, and in reducing speed and off-tracking in curved sections. CLRS are also expected to improve centerline visibility in wet pavement conditions and provide enhanced guidance during snow events.

Technical Information:

CLRS should be installed along all National Highway System routes where the following criteria is met and considered for all other two-lane and multi-lane non-divided highways also meeting the following criteria:

1. Combined travel lane and shoulder is 14 feet or greater in each direction.
2. Speed limit is 45 mph or higher.
3. AADT is 1500 or greater.
4. Pavement condition is new or good, with no paving/overlay projects anticipated within three years following installation of CLRS. (Installing CLRS in microsurfacing overlays is currently experimental)
5. CLRS may be considered for highways not meeting these criteria based on engineering judgment, especially where the crash history indicates a pattern of head on, sideswipe, or single vehicle crashes, or the local legislative body requests such treatment.
6. CLRS may be considered for site-specific crash mitigation such as approaches to intersections near vertical crests where “NO LEFT TURN EXCEPT AT BREAK IN CENTERLINE” sign is used in order to encourage drivers not to turn before maximum sight distance is available, or on approaches where undivided highways become divided highways in order to mitigate wrong way vehicles.

Design Guidance:

1. Thermoplastic markings shall not be used, because the application method (extruded ribbon) does not allow for uneven surfaces. Tape is also not appropriate for use in CLRS segments. Polyurea, epoxy, and paint are compatible with CLRS. Where durable markings are to be recessed, recesses shall be grooved prior to installing CLRS.
2. CLRS should be the same width as the double yellow centerline (12” for 4” lines and 18” for 6” lines). Double yellow lines should be installed directly over CLRS with no overhang.
3. CLRS should be 3/8” deep, 7” long, and either 12” or 18” wide. The groove pattern shall be two grooves at 12” on-center with 24” spacing between pairs (as if grooves were placed continuously 12” on-center and then every third groove was removed).
4. CLRS should be continuous through marked passing zones.
5. Special consideration should be given when truck tracking over the centerline may occur at intersections and sharp curves.
6. CLRS should be discontinued where or at:
 - Centerline breaks are provided (ie, for intersections and railroad crossings).
 - Residences within 100 feet of the centerline (to mitigate noise).
 - Breaks total a length greater than 50% of the total length within a half mile section.
 - The minimum length of rumble segments is less than 500 feet
 - Raised medians are provided (engineering judgment should be used for painted medians).
 - Two way left turn lanes (TWTL) are provided.
 - Closely spaced commercial drives with high volume turning traffic.
 - Bridges where the curb to curb width is less than 28 feet.
 - Bridges or concrete roadways with less than 2.5” of bituminous pavement overlay.

Public Outreach (for projects where CLRS are not currently installed):

1. The appropriate Operations district and Regional Planning Commission shall be made aware of the intent to install CLRS within their district or region prior to contracting the project.
2. Contact, either through email or by letter, shall be made with the select board, town administrator and/or legislators for any town through which the CLRS are to be installed.
3. The designer shall coordinate with the Policy, Planning & Intermodal Development Division’s Public Outreach Manager to inform the public of the additions to the roadway.
4. Provide the local legislative body the opportunity for a public meeting during the design phase.

Implementation:

The content of HSDEI 14 – 101 is to be implemented beginning immediately for all projects produced and or managed by VTrans.

Transmitted Materials:

Not applicable.