

POLICY ON LONGITUDINAL MILLED-IN RUMBLE STRIPS  
(SHOULDER AND CENTERLINE)

September 1, 2020

Safety is a priority to the Kansas Department of Transportation (KDOT). To enhance safety, KDOT has been installing longitudinal rumble strips on many Kansas highways. Shoulder rumble strips have been found to reduce run-off-the-road crashes on rural sections of highway while centerline rumble strips have been found to reduce run-off-the-road, head-on and side-swipe crashes.

A K-Tran research study completed in 2012 (KSU-10-7: Study of KDOT Policy on Lane and Shoulder Minimum Width for Application of Centerline Rumble Strips) found that following CLRS installation on several roads in Kansas, total correctable crashes were reduced by 29%, correctable crashes involving fatalities and injuries were reduced by 34%, cross-over crashes were reduced by 67%, and the number of run-off-road crashes were reduced by 19%.

According to information provided by the Federal Highway Administration as part of their Every Day Counts 5 Reducing Rural Roadway Departures initiative: Shoulder rumble strips can reduce fatal and injury run-off-road crashes by 36 percent on two-lane rural roads and by 17 percent on rural freeways; Centerline rumble strips can reduce fatal and injury head-on crashes by 45 percent on two-lane rural roads.

POLICY ON MILLED-IN SHOULDER RUMBLE STRIPS

Shoulder rumble strips shall be installed on all reconstruction and new construction projects where 3-ft (or wider) paved shoulders are to be constructed and when 3-ft or wider shoulders are overlaid with 1 or more inches of asphalt, unless:

- An engineering study determines they are unlikely to provide a substantial safety benefit.
- The segment is near a residential area where noise pollution is a concern.
- The route is identified as a designated bicycle route (including “Routes Across Kansas” and U.S. Bicycle Route) in the KanPlan layer titled “Designated and Priority Bicycle Routes”, and a minimum 3 ft of clear, paved shoulder *cannot* be provided for cyclists to travel *outside* the milled rumble strip. For routes identified as a priority bicycle route, check with the Pedestrian & Bicycle Coordinator in the Bureau of Transportation Planning before taking any action.
- A pavement evaluation or shoulder widths do not support the application of rumble strips.

In such cases, the District Engineer must provide a written justification for not installing shoulder rumble strips. In locations where a repaving project is not planned in the next 3 years, rumble strips may be installed through a separate contract. See below for implementation guidance.

On freeways and expressways, rumble strips shall be installed on paved median shoulders which are 3 ft or wider.

Shoulder rumble strips may also be considered on paved shoulders as narrow as 2 feet where:

- An engineering study determines they will provide a safety benefit.
- A rural highway section connects adjacent sections with wider paved shoulders or existing shoulder rumbles strips.
- They are deemed appropriate by the District Engineer.

Shoulder rumble strips shall be installed according to details shown in the latest edition of, applicable KDOT road standards sheets, standard specifications and the appropriate special provisions. In general, rumble strips should be located near the edgeline in order to provide as much smooth shoulder surface as possible outside the rumble strips.

Edge line rumble stripes are a form of shoulder rumble strip, differing in that the rumble strip is in the same vertical plane as the marked edge line. They offer the advantage of improved wet-weather visibility and allow a right-side warning for roadways with little or no shoulder. They may be as narrow as 6.0 in. Edge line rumble stripes may be installed where:

- The locations are deemed appropriate by the District Engineer.
- The route is identified as a designated bicycle route (including “Routes Across Kansas” and U.S. Bicycle Route) in the KanPlan layer titled “Designated and Priority Bicycle Routes”, and a minimum 3 ft of clear, paved shoulder *will* be provided for cyclists to travel *outside* the milled edgeline rumble stripe. For routes identified as a priority bicycle route, check with the Pedestrian & Bicycle Coordinator in the Bureau of Transportation Planning before taking any action.

Implementation is as follows (milled-in shoulder rumble strips):

One contract will be developed per District per year for milled-in shoulder rumble strips on routes where they were not installed as part of the original project and where a paving project is not planned within the next 3 years. Such contract will cover installation for all construction projects to be completed during a set time frame which should receive rumble strips according to policy. The District will assemble the locations needing milled-in shoulder rumble strips into a combined project, prepare a 402 and submit to the Bureau of Construction and Materials by November 1 of each year for letting. The District and contractor will develop a work schedule for milling-in the rumble strips to be completed by spring of the following year.

POLICY ON MILLED-IN CENTERLINE RUMBLE STRIPS

Centerline rumble strips should be used on two-lane, Class B and C, rural highways with asphalt pavement surfaces 1 inch or more in depth having a paved shoulder width of at least 3 ft.

Centerline rumble strips may also be used on two-lane, Class B, C, D, and E, rural highway sections and two-lane sections having less than 3 ft. paved shoulders. An engineering study may determine other locations where centerline rumble strips are appropriate as well as locations where installation may not be desirable such as residential areas. Centerline rumble strips may also be installed at locations deemed appropriate by the District Engineer.

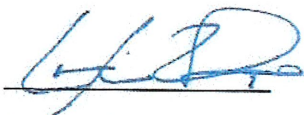
Milled-in centerline rumble strips shall be installed in a continuous pattern according to details shown in the latest edition of, applicable KDOT road standard sheets, standard specifications and the appropriate special provisions. Centerline rumble strips shall be installed on asphalt pavement only. (Installation on concrete pavement is not recommended due to the potential for damaging the pavement at the centerline joint). Experimental test sections of centerline rumble strips on concrete pavement (away from joints) may be conducted to evaluate their performance for potential future use.

Centerline rumble strips will be used on all reconstruction, new construction and surface treatment (UBAS, asphalt overlays, and surface recycle) projects, 5 miles or more in length, based on the criteria above. For any maintenance work less than 5 miles in length (including that which covers or removes existing CLRS) centerline rumble strips are not required to be installed.

Centerline rumble strips should be installed as part of the resurfacing project.

In an effort to effectively track the location of centerline rumble strips on Kansas highways, the Districts should contact the CANSYS Database Manager in the Bureau of Transportation Planning with the County, Route and Milepost (or equivalent GIS reference) at the beginning and ending points of the installation.

This policy supersedes KDOT's Policy on Longitudinal Milled-In Rumble Strips (Shoulder and Centerline) dated July 5, 2007.



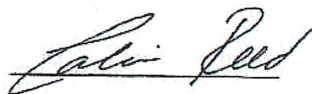
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