



# CMF / CRF Details

**CMF ID: 5267**

**Install centerline and shoulder rumble strips**

**Description: Milled or rolled rumble strips.**

**Prior Condition: No centerline or rumble strips present**

**Category: Roadway**

**Study: [Rumble Strips in North Dakota: A Comparison of Road Segments, Safety, and Crash Patterns, A. Kubas, P. Kayabas, K. Vachal, and M. Berwick, 2013](#)**

<b>Star Quality Rating:</b>	
<input type="text" value="✘ Star"/>	<a href="#">[View score details]</a>

<b>Crash Modification Factor (CMF)</b>	
<b>Value:</b>	1.6
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	0.564

<b>Crash Reduction Factor (CRF)</b>	
<b>Value:</b>	-60 (This value indicates an <b>increase</b> in crashes)
<b>Adjusted Standard Error:</b>	
<b>Unadjusted Standard Error:</b>	56.4

## Applicability

**Crash Type:** Other

**Crash Severity:** All

**Roadway Types:** Not specified

**Number of Lanes:** 2

**Road Division Type:** Undivided

**Speed Limit:**

**Area Type:** Rural

**Traffic Volume:**

**Time of Day:** All

*If countermeasure is intersection-based*

**Intersection Type:**

**Intersection Geometry:**

**Traffic Control:**

**Major Road Traffic Volume:**

**Minor Road Traffic Volume:**

## Development Details

**Date Range of Data Used:** 2007 to 2011

**Municipality:**

**State:** ND

**Country:**

**Type of Methodology Used:** 3

<b>Sample Size Used:</b>	Crashes
<b>Before Sample Size Used:</b>	13 Crashes
<b>After Sample Size Used:</b>	25 Crashes

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Dec-02-2013
<b>Comments:</b>	Traffic volume was reported in VMT. VMT before was 86,522,040 vehicle-miles and 104,286,686 after. Roll-over crashes

---

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

*The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment.*