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Contacting Representative from Wyoming DOT:	14. Sponsoring Agency Code	
David H. Pope State Bridge Engineer		
16. Abstract		
<p>The objective of this study is to crash test and evaluate a new Wyoming bridge railing design in accordance with guidelines set forth in NCHRP Report 350 for Test Level 4 (TL-4) conditions. The following three crash tests were conducted:</p> <ol style="list-style-type: none"> 1. Test designation 4-10. A 820-kg passenger car impacting the length-of-need section of the bridge railing at a nominal speed and angle of 100 km/h and 20 degrees. 2. Test designation 4-11. A 2,000-kg pickup truck impacting the length-of-need section of the bridge railing at a nominal speed and angle of 100 km/h and 25 degrees. 3. Test designation 4-12. An 8,000-kg single unit truck impacting the length-of-need section of the bridge railing at a nominal speed and angle of 80 km/h and 15 degrees. <p>Results of the three crash tests are presented in this report. The bridge railing contained and smoothly redirected the impacting vehicles in all three tests. The occupant risk factors were all well within the preferred limits. The small car and pickup truck remained upright and stable during and after the impact sequence. The box of the single unit truck attained a maximum roll angle of 31 degrees during the impact sequence and the vehicle rolled on its left side after exiting from the test installation. The instability and subsequent rollover of the vehicle after exiting from the bridge rail was apparently caused by the front axle separating from the vehicle during the impact. The exit conditions of all three vehicles indicated minimal potential for the vehicles to intrude into adjacent traffic lanes. In summary, the proposed Wyoming TL-4 bridge railing design successfully met all evaluation criteria for a Test Level 4 (TL-4) bridge railing as outlined in NCHRP Report 350 or a Performance Level 2 (PL-2) bridge railing under guidelines set forth in the 1989 AASHTO <i>Guide Specifications for Bridge Railings</i>.</p>		
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