

Project Title:	MASH Test Level 3 Evaluation of Shorter Thrie-Beam Approach Transition
Project Synopsis:	Crash test the recommended transition design from the previous project on short transition.
Project Goal(s):	Determine MASH compliance of the preferred design of the shorter thrie-beam approach transition.
Project Background:	<p>When roadways intersect with restrictive features such as a bridge rail, it becomes difficult to fit a transition system with proper length. For this project, American Association of State Highway and Transportation (AASHTO) Manual for Assessing Safety Hardware (MASH) Test Level 3 (TL-3) W beam transitions with shorter length are desired to be tested.</p> <p>In a previous effort, a short approach thrie beam transition design was developed and crash tested. Due to the high occupant ridedown acceleration during the crash test, the short transition did not satisfy the performance criteria for MASH Test 3-21 for transitions. The researchers conducted post-test analyses and recommended some design modifications to improve the systems performance (two options listed below). Under this project, the preferred design with the improved performance will be crash tested.</p> <ul style="list-style-type: none"> - Using two W6×15 posts at the upstream of the parapet would reduce the excessive dynamic deflection which should mitigate the pickup interaction with the parapet (retrofit option) - Using a concrete parapet with larger tapering reduces the interaction of the rail with the parapet's blunt end (new installation)
Proposed Work Plan: Work with TTI	<p><u>Tasks:</u></p> <ol style="list-style-type: none"> 1. Drawings & System Construction 2. Crash Testing 3. Reporting
Deliverables:	A report describing the developed system and the result of the crash test.

Urgency and Expected Benefit:	<p>A shorter approach transition from guardrail to a rigid barrier and the ability to address the guardrail of an intersecting roadway is an issue for all states at numerous bridge locations.</p> <p>Other solutions are cost prohibitive or not feasible for other reasons. At this time projects are having to be constructed that are not in compliance due to the lack of a compliant system being developed.</p>
Problem Funding and Research Period: Work with TTI	Total Cost Estimate = \$120,000 Work Schedule: (Project Duration = 9 months from initiation of the project)
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