

Project Title:	31" W-beam Guardrail (Steel-Post) in Asphalt Mow-Strip
Project Synopsis:	There is a need to install the W-beam guardrail system in asphalt without having to construct a concrete mow-strip to control vegetation. Currently there is no design of the mow-strip for asphalt.
Project Goal(s):	<p>To develop and test an asphalt mow-strip that allows installation of a steel-post W-beam guardrail with posts installed directly in asphalt as opposed to a backfilling low-strength grout in concrete mow-strip. Testing would be needed for MASH TL-3.</p> <p>It would be desirable to have an asphalt mow-strip that specifies a single thickness of the asphalt and an offset behind the post. It would be ideal if the steel posts are directly driven into the asphalt. Such a design will be more economical and a preferred method over the current concrete mow-strip.</p>
Project Background:	There is a need to have a MASH system that allows installation of the steel-post guardrail in asphalt, without the need of a concrete mow-strip. Under NCHRP Report 350, TTI/TxDOT performed some evaluation of asphalt backfill that was installed in a concrete mowstrip. However, the concrete mow-strip confined the asphalt and resulted in the posts failing prematurely. A design is needed that would allow installation of the steel post guardrail system in asphalt without a concrete mow-strip.
Proposed Work Plan:	<p>Task 1: Bogie Testing and Design</p> <ul style="list-style-type: none"> - Use bogie testing to evaluate variations of asphalt pavement thickness and distance behind the post. The goal of this task will be to select a pavement design that results in a post force-deflection response similar to a post installed in soil. <p>Task 2: Construction</p> <ul style="list-style-type: none"> - Construct test installation of the guardrail with the asphalt mow-strip with asphalt design selected from bogie testing <p>Task 3: Full-Scale MASH TL-3 Testing and Final Report</p> <ul style="list-style-type: none"> - Perform MASH Tests 3-11 and 3-10 for evaluate the dynamic performance of the steel-post guardrail in asphalt mow-strip - Prepare final report
Deliverables:	An engineering drawing of the systems and final report
Urgency and Expected Benefit:	<p>A successful design will allow agencies to install the steel-post W-beam guardrail system in asphalt without having to construct a concrete mow-strip to control vegetation. Currently there is no design of the mow-strip for asphalt.</p> <p>If successful, this design will see immediate implementation.</p>
Problem Funding and Research Period	<p>Total Estimated Cost: \$219,096</p> <p>Task 1: Bogie Testing and Design</p> <ul style="list-style-type: none"> - \$18,714 Design and Drafting - \$11,471 Construction and Demo - \$43,770 Bogie Testing (8 Tests) <p>Task 2: Construction and Demolition</p> <ul style="list-style-type: none"> - \$54,874 <p>Task 3: MASH Tests 3-11 and 3-10 and Final Report</p> <ul style="list-style-type: none"> - \$41,079 Test 3-10 - \$49,188 Test 3-11 <p>Research Period: 12 months</p>

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