



# Research Project Statement 20-045 FY 2019 Annual Program

<b>Title:</b>	Develop Guidance for Structural Behavior of Tall Haunches in TxDOT Beam and Girder Bridges
<b>The Problem:</b>	<p>Due to unusual geometric situations or design error, beam and girder bridges sometimes have haunches of significant height such that the constructability and horizontal shear transfer come into question. The haunch is the area between the top of the girder and the bottom of the slab, which might vary due to a variety of circumstances.</p> <p>For prestressed girders, a looped R bar extends from the precast beam into the slab, but is a fixed distance. For taller haunches, a "hat" bar is often used to address the case of taller haunches (e.g.; special grading details of precast concrete panel standard).</p> <p>This detail has never been tested to ascertain effectiveness. For steel girders, a web cutting diagram is developed to ensure a small haunch in practice. Due to design error or unanticipated behavior, steel girder haunches could be substantial rendering the shear studs of insufficient height, and there are no tested details for how to address such situations without the expensive prospect of girder refabrication.</p>
<b>Technical Objectives:</b>	<p>The objective of this research is to develop and test techniques to adequately address horizontal shear in tall haunch situations.</p> <p>The researchers shall address the following:</p> <ol style="list-style-type: none"><li>1. Perform a literature review.</li><li>2. Conduct lab testing of tall haunch situations.</li><li>3. Develop recommended design and detail practices.</li></ol> <p>The expectation of this project is that the end product will obtain a TRL level 5.</p>
<b>Desired Deliverables:</b>	<ol style="list-style-type: none"><li>1. Technical memorandum for each task completed.</li><li>2. Monthly progress reports.</li><li>3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report.</li><li>4. Research report documenting the findings of the research, including a lab test plan and lab test report.</li><li>5. Project Summary Report.</li></ol>
<b>Proposal Requirements:</b>	<ol style="list-style-type: none"><li>1. Utilize the "Proj/Agre" and "PA_Form" templates located at the <a href="#">TxDOT RTI website</a>.</li><li>2. Proposals will be considered non-responsive and will not be accepted for technical evaluation if they are not received by the deadline or do not meet the requirements stated in RTI's <a href="#">University Handbook</a>, which is also located at the RTI website.</li><li>3. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation.</li><li>4. This project will be tracked during the life of the project using a Technology Readiness Level (TRL) scale. For more information about the use of a <a href="#">TRL</a>, click.</li></ol>