Title:	Investigate the Strength of Struts Crossing Cold Joints
The Problem:	Staged construction, roadway expansion projects, and retrofitting old substructure components for increased load demands necessitate constructing new structural elements connected to the older components. The need to expand existing roadways, to retrofit foundations to support higher loads, and to implement accelerated bridge construction techniques all result in cold joints in bridge superstructures and substructures. In other applications, such as spliced girder bridges, cold joints are deliberately engineered and built in. In multiple cases, and in compliance with AASHTO LRFD Bridge Design Specifications, such elements are to be designed by using the strut-and-tie design provisions. These specifications are silent with respect to the strength of struts crossing such cold joints, and a need exists to develop additional guidance for bridge engineers. Strength of struts crossing cold joints will aid TxDOT designers carry out the necessary design checks at these cold joints to ensure the safety of traveling public and serviceability of bridges as the design community aspires to design bridges for 100-year service life.
Technical Objectives:	This research will study the strength of struts crossing cold joints. To achieve this objective, the work to be performed shall include: 1. Develop a systematic test program aimed at informing most common cases encountered by bridge designers. 2. Conduct full-scale tests to comprehensively study the strength of struts crossing cold joints. 3. Based on full-scale test results, develop design guidance for inclusion in the AASHTO LRFD Bridge Design Specifications and TxDOT Bridge Design Manual. Th he expectation of the project end product(s) shall attain a Technology Readiness Level of 8.
Anticipated Deliverables:	1. Technical memorandum for each task completed. 2. Monthly progress reports. 3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report; not a stand-alone deliverable. 4. Research report documenting the findings of the research, including design guidelines compatible with existing strut-and-tie design provisions to evaluate the strength of struts crossing cold joints. 5. Project Summary Report
Proposal Requirements:	1. Utilize the “Proj/Agre” and “PA_Form” templates located at the TxDOT RTI website. 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 University Handbook, which is also located at the RTI website. 3. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation. 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 TRL, click.