UTC Project Information

Project Title	MPC-484 – Effect of Service Temperature on Joint Removal in Steel Bridges
University	Colorado State University
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Funding Agencies	USDOT, Research and Innovation Technology Administration
Agency ID or Contract Number	DTRT13-G-UTC38
Project Cost	$99,956
Start and End Dates	September 30, 2013 to September 30, 2018
Project Duration	September 30, 2013 to September 30, 2018
Brief Description of Research Project	This study will provide departments of transportations and consultant engineers with the insight needed to effectively consider the influence of temperature changes on steel bridges. This will be realized through numerical finite element modeling of prototype bridges in Colorado. Contingent upon the approval of CDOT, the bridges will be instrumented with strain gauges, scratch sensors, and thermocouples to monitor the actual bridge movements and the corresponding thermal temperatures and strains. The models will be constructed using SAP2000 and will include sufficient level of details such that all complex phenomena are captured. The results of the study will give engineers an insight on possible details that can be considered as a substitute for aged or damaged expansion joints. This enhanced understanding will also allow for the design of new bridges with fewer joints for higher long term performance lower maintenance cost.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	CDOT was very interested in the outcome of this work and they are in the process of determining how to move forward with implementation.
Impacts/Benefits of Implementation (actual, not anticipated)	If the finding of this study is implemented, it could result in substantial cost savings to DOTs, federal funding, and taxpayer's money.
Web Links • Reports • Project Website	https://www.ugpti.org/resources/reports/details.php?id=948