

<b>UTC Project Information</b>	
Project Title	MPC-696 – Numerical Modeling and Parametric Analysis of Grouted Coupler Connections under Varying Impact Loading Conditions
University	Utah State University
Principal Investigator	Andrew D. Sorensen, Ph.D. Mohsen Zaker Esteghamati, Ph.D.
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Funding Source(s) and Amounts Provided (by each agency or organization)	<p>USDOT, Office of the Assistant Secretary for Research and Technology \$75,000</p> <p>Utah Local Technical Assistance Program \$75,000</p>
Total Project Cost	\$150,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	October 11, 2022 to July 31, 2023
Brief Description of Research Project	<p>Grouted coupler connections are a common connection type used in Accelerated Bridge Construction (ABC). Evaluation for seismic performance of typical ABC column-footing connections has been undertaken in high earthquake prone states like Utah, California, Nevada, and Idaho. However, apart from the dynamic load exhibited by earthquake, the deformation and failure behavior of these connections to vehicular impact is also critical and warrants investigation. This study will seek to develop a sophisticated finite element model would account for an accurate representation of the coupler/rebar interface, energy transfer from the impacted column location through the coupler into the foundation, and material strength degradation. The model will be validated with existing experimental data collected at the USU SMASH Lab. The experimental data consists of single coupler and full scale column testing. The results of the experiments and modelling will also be compared to normal column connections to see if any major differences warrant separate damage index calculations.</p>

Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links <ul style="list-style-type: none"><li>• Reports</li><li>• Project Website</li></ul>	