

<b>UTC Project Information</b>	
Project Title	MPC-588 – Hybrid Bridge Bents Using Post-tensioned Precast Columns for Accelerated Bridge Construction in High Seismic Regions
University	University of Utah
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$112,000  Splice Sleeve North America, US Endowment for Forestry and Communities, Corebrace \$124,090
Total Project Cost	\$236,090
Agency ID or Contract Number	69A3551747108
Start and End Dates	January 12, 2019 to July 31, 2022
Brief Description of Research Project	Seismic resilience of bridges improves safety and livability of communities. The State of Utah is likely to experience strong earthquakes. Successful completion of the project will ensure that the proposed method of constructing bridges will improve seismic resilience of bridges for strong earthquakes thus preserving the existing transportation system. The project investigates a bridge bent with self-centering precast concrete columns for Accelerated Bridge Construction (ABC) in high seismic regions. The proposed hybrid system consists of post-tensioned precast concrete columns in a two-column bridge bent with one or two Buckling Restrained Braces (BRBs) as external energy dissipation devices. The proposed activity involves testing and analysis of a bridge bent under cyclic loads built with the proposed system. It is expected that the precast columns will remain repairable after strong earthquakes. The BRB devices could be replaced after the earthquake whereas the gravity load bearing frame should remain undamaged.
Describe Implementation of Research Outcomes (or why not implemented)	Not sufficiently developed for implementation.
Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	The hybrid bridge bent with a BRB displays superior seismic performance under simulated earthquake excitations. Moreover, the replaceable feature of the BRBs makes the hybrid bridge bent seismically resilient; the bridge can recover immediately after an

	<p>earthquake and remain operational. It is recommended that hybrid bridge bents with BRBs can be used in seismic zones due to their reduced residual displacement and higher hysteretic energy dissipation in strong earthquakes.</p>
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project Website</li> </ul>	<ul style="list-style-type: none"> <li>• MPC Research Report – <a href="#">Hybrid Bridge Bents Using Post-tensioned Precast Columns for Accelerated Bridge Construction in High Seismic Regions</a></li> <li>• Journal Paper – <a href="#">Resilient Posttensioned Bridge Bent with Buckling Restrained Brace</a></li> <li>• Journal Paper – <a href="#">Experimental Evaluation of Post-tensioned Bridge Bent under Cyclic Loads and Comparison to Hybrid Bridge Bents</a></li> </ul>