



Caltrans Division of Research,
Innovation and System Information

Research

Notes

Seismic /
Structures

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Project Title:
Seismic - Bridge System Research for
Accelerated Bridge Construction

Task Number: 2757

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Completion Date: June 14, 2019

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Bridge System Research for Accelerated Bridge Construction (ABC)

Develop and optimize the design and construction of ABC bridges that can demonstrate seismic resilience and serviceability.

WHAT IS THE NEED?

Cost effective and reliable bridges are essential elements of the highway network that affect the economic well-being and quality of life for California residents and visitor. Reducing construction time and having better quality bridges will significantly reduce the maintenance cost of the bridge in the long run and will save money for California taxpayers. By studying and evaluating Accelerated Bridge Construction (ABC) techniques, important and reliable bridge systems could be added to the tool box available to designers that could improve the efficiency of highway bridge construction in California and save costs in quickly constructing bridges when needed.

WHAT ARE WE DOING?

Through collaboration with Caltrans bridge engineers the principle investigator will construct and test two, 2-span bridges on three shake-tables.

WHAT IS OUR GOAL?

The primary objective of this study is to develop and optimize the design and construction of ABC bridges that can demonstrate seismic resilience and serviceability. The goal of this research is to validate that ABC bridges can be built with serviceability and seismic resiliency compare to conventional cast-in-place bridges and reduce construction claims.

The "product" from this project will be a proven method to design and construct ABC bridges using ABC bridge elements. A final report will be provided on recommendations in a format that is consistent with Caltrans Standards to facilitate its adoption by Caltrans Engineers.



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knowledge that improves
California's transportation system

WHAT IS THE BENEFIT?

Lower construction cost of the bridges and shorter construction time. Further savings could materialize because of shorter traffic delays, less cost of traffic control, improved construction site safety, and less frequent maintenance because of the higher bridge quality.

WHAT IS THE PROGRESS TO DATE?

Begin work as described in the scope.