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Center for Advanced Infrastructure and Transportation

Project Overview Report

1. UTC Identifying Number
   DTRT13-G-UTC28
2. Center Identifying Number
   CAIT-UTC-NC13
3 Project Title
   Dynamic Effects and Friction Values of Bridge Moves for ABC Bridges
4. Principal Investigator & Contact Information
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5. Rutgers/CAIT Project Manager
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7. Project Description
   One Accelerated Bridge Construction (ABC) technique that is being utilized in many locations throughout the US is the construction of bridge superstructures off site and then moving the bridge into position. This method relies on Self-Propelled Modular Transporters (SPMTs). The bridge superstructure undergoes both vertical and horizontal accelerations due to lifting and moving. The proposed work is to perform field tests of several SPMT configurations in order to ascertain appropriate coefficients for use of designers for bridges that will be carried by SPMTs. This fieldwork will be supplemented by modeling to broaden the applicability of the results.
   Another essential question that must be addressed regarding ABC construction is determining the appropriate friction values for bridge sliding and bridge launching. These friction values are crucial in the design process and the variability of the friction must be better defined. The proposed work in this area is an extensive literature search with any deficiencies being filled by laboratory testing conducted in the SMASH lab at Utah State University.
8. Implementation of Research Outcomes (or why not implemented)
   The results of this project will be incorporated into the AASHTO ABC Guide Specification through the NCHRP process. Once included into this guide specification, it will be utilized by designers in the US.
9. Impacts/Benefits of Implementation (actual, not anticipated)
   TBD
10. Dates and Budget
    Start Date: 12/1/2014
    End Date: 9/30/2016 UTC (CAIT) Dollars: $ 65,000
    Cost Sharing: $ 69,472
    Total Dollars: $ 134,472
11. Keywords
    ABC Construction, Dynamic Testing, SPMT Bridge Moves, Bridge Field Testing
12. Web Links (Reports and Project Website)
    https://cait.rutgers.edu/cait/research/dynamic-effects-and-friction-values-bridge-moves-abc-bridges