



Research on Evaluation and Standardization of Accelerated Bridge Construction (ABC) Techniques

Description

Meta Fields

Project Completion Year : 2015

Project Starting Year : 2013

Other Documents 0 Other Documents File : 2544

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Project Length : 24

Budget : 249000.00

Key Words : Bridge construction; Bridge foundations; Modular structures; Piles (Supports);
Prefabricated bridges; Standardization

Abstract :

Through efforts to expedite bridge construction Michigan Department of Transportation (MDOT) is researching accelerated techniques to build bridges faster and impact traffic less. Such techniques as bridge slides, incremental launching, Self-Propelled Modular Transports (SPMT) to move or launch bridges or Prefabricated Bridge Element Systems (PBES) used in conjunction with these techniques are some options to be considered. The most challenging aspects associated with Accelerated Bridge Construction (ABC), in particular with moves and slides, are (a) evaluation of a site for implementation of such technologies and (b) the construction of deep foundations under the existing structure. The research will address the following three activities: (1) Selection of accelerated bridge replacement techniques based on site-specific conditions, (2) Design and construction tasks and associated details related to the selected construction technique, and (3) Construction of deep foundations under the existing structure (selection of foundation type and method of construction based on sitespecific conditions). Most preferred will be low displacement or non-displacement pile types as well as low vibration, low headroom and high capacity. The research proposed here is to develop solutions to MDOT questions related to ABC implementation. The primary focus of the research is ABC implementations of Self-Propelled Modular Transports (SPMT) and bridge slides. PBES implementations which are the subject of current research will also be in part integrated with the proposed work. The integration will allow MDOT to make ABC decisions with site-specific data for

comparing multiple ABC technologies. With regard to the implementations of PBES in progress, we will document and evaluate the activities to help fine-tune the process to have a positive impact in Michigan projects. The project team will request input from the design engineer of these projects. The team will also request to be included in the project meetings including post-construction meetings

Group : Standards

Category : Completed Projects