

Prefabricated/Precast Bridge Elements and Systems (PBES) for Off-System Bridges

Description

Meta Fields

Category : Completed Projects

Group : Standards

Subject : Off-System Structures

Abstract :

The Federal Highway Administration's (FHWA) "Every Day Counts" initiative aims to shorten the overall project delivery time, enhance safety, and protect the environment both on and around construction projects. Using innovative planning, design, and construction methods, Accelerated Bridge Construction (ABC) techniques reduce on-site construction time for new or replacement bridges. One aspect of ABC is Prefabricated Bridge Elements and Systems (PBES), where bridge components are fabricated off site to reduce on-site construction activities. Many state departments of transportation (DOTs) are currently making efforts to implement PBES for construction of their off-system bridges. The purpose of this research project was to investigate other states' standards and to evaluate them for possible implementation in Florida. An exhaustive search was made, and new literature was reviewed, to learn about current DOT standards and practices. The search revealed that the states with the most prefabricated bridge standards or activities are as follows: Utah, Alabama, Texas, Minnesota, and a collaboration of Northeastern states. These standards were reviewed for details such as the presence of post-tensioning, joint types, design load, and inspectability. The two standard bridge types that show the most promise for adoption by Florida Department of Transportation (FDOT) are Minnesota's Inverted Tee Beam, and PCI's Northeastern Extreme Tee (NEXT) Beam. A summary of the findings, including advantages and disadvantages of the bridge systems, is included in this report. Also included is a comprehensive list of Web links to standard drawings from all state DOTs, as well as more information on ABC and PBES, which could also be helpful to expedite other research that involves standards and bridge construction/design practices.

Key Words :

Accelerated bridge construction, Prestressed concrete, Precast bridges

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Primary Sponsor Contact Info : Florida Department of Transportation Research Center 605 Suwannee Street MS-30 Tallahassee, FL 32399-0450 USA Dennis Golabek Project Manager

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