



Deck Replacement of I-89 Bridges with weekend closures

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A Straightforward Precast Deck System

An accelerated bridge construction project requires seamless coordination and execution of many construction activities. Technologies simple for construction are the keys to project success. The AccelBridge precast deck system is developed to simplify construction and minimize field operations.



Figure 1. Precast deck panel erection is in progress

Simple Details with Innovative Structure Principle

AccelBridge employs match-cast deck joint to replace conventional cast-in-place joints. The match-cast joint can be rapidly assembled with less field labor. In addition, AccelBridge uses an innovative method of compressing the bridge deck by jacking against girders, eliminating the material and labor of post-tensioning. The innovation simplifies construction and improves durability.

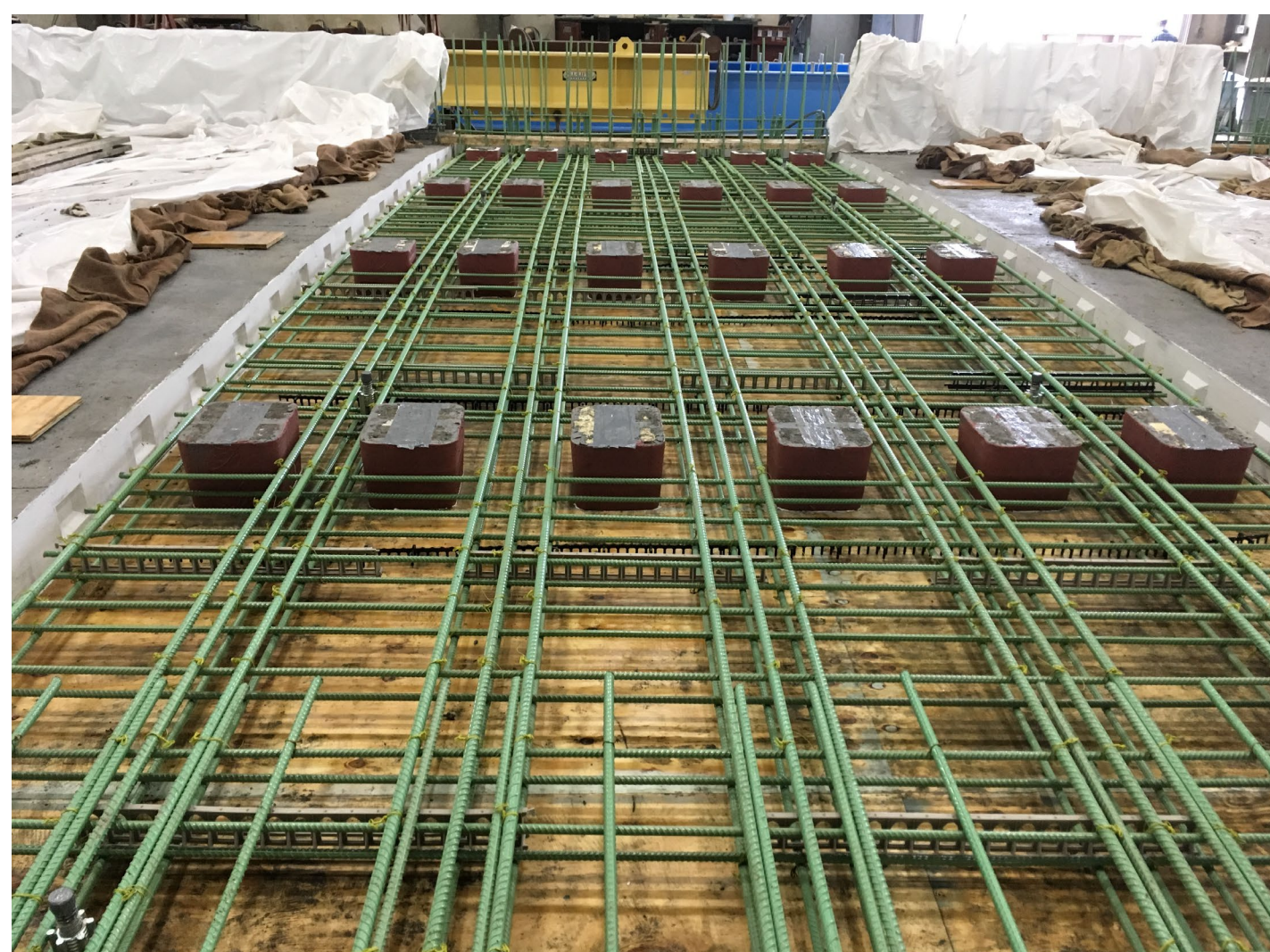


Figure 2. Match-casting panels in precasting yard

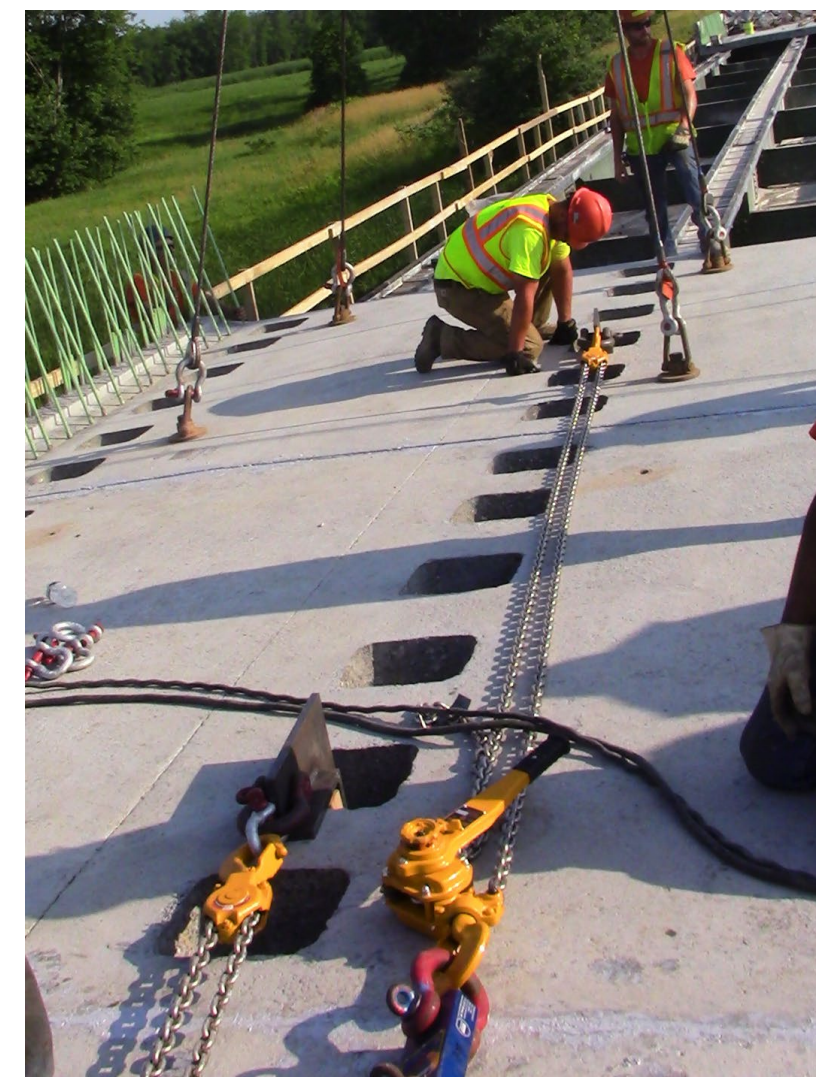


Figure 3. Assembling match-cast joint on site

Successful Implementation

The Colchester I-89 Bridges Project was a rehabilitation of four existing bridges located on the busiest interstate segment in Vermont. Rehabilitation of these bridges included replacement of heavily deteriorated bridge decks with new precast deck panels, steel repairs, as well as replacement of the bridge backwalls, approach slabs, and sleeper slabs. The Vermont Agency of Transportation (VTTrans) allotted for six separate weekend shutdowns to perform the rehabilitation work on four separate bridges. All four bridges were replaced on time and within budget.



Figure 4. Deck erection completed and ready for jacking



Figure 5. Placing deck panels by crane.

A Practical Accelerated Bridge Construction Method

Project experience indicated that AccelBridge is a practical tool for Accelerated Bridge Construction (ABC). Its simplicity minimizes construction field works, shortens schedule and reduces construction risk.

Acknowledgments

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