2003 â?? Church Street Bridge

Description

Meta Fields

Contact Us | Phone: (305) 348-0110 | Email: abc@fiu.edu | 10555 W. Flagler Street, EC 3680 Miami, FL 33174

Contact Us | Phone: (305) 348-0110 | Email: abc@fiu.edu | 10555 W. Flagler Street, EC 3680 Miami, FL 33174

Contact Us | Phone: (305) 348-0110 | Email: abc@fiu.edu | 10555 W. Flagler Street, EC 3680 Miami, FL 33174

Project Summary : New 320-ft-long steel truss center span was erected over rail yard during 3-hour outage of 10 tracks over weekend.
Project Location : Church Street South Extension over the New Haven Interlocking and Rail Yard, connecting Union Avenue and Sargent Drive in the city of New Haven to provide a direct link between downtown New Haven and the Long Wharf and waterfront areas
Mobility Impact Time : ABC: 10-track outage in active rail yard was limited to 3 hours over weekend; project was completed five months early Conventional: multiple track outages over months; an additional year of construction would have been required
Impact Category : Tier 1 (within 1 day)
Dimensions : 320-ft-long steel truss center span (850-ton self-weight) in 1,274-ft-long 56-ft-wide eight-span bridge
Average Daily Traffic At Time Of Construction : 3900
Traffic Management : Traffic management alternative, if constructed conventionally: multiple track outages over months
Replacement Or New Bridge : The Church Street South Extension project provided a new steel truss center span over the New Haven Interlocking and Rail Yard. The eight-span bridge also includes a 133-ft-long welded steel plate girder span and an 817-ft-long six-span welded steel plate girder unit (90 ft â?? 130 ft â?? 129 ft â?? 161 ft â?? 165 ft â?? 140 ft). The bridge has two 11-ft-wide traffic lanes, an 11-ft-wide median, a 9-ft-wide sidewalk, and 5-ft-wide and 6-ft-wide bike lanes/shoulders.
Construction Method : The truss span was constructed over several months next to the active rail lines. The span was assembled complete with stay-in-place corrugated galvanized steel deck formwork, inspection platforms, utilities, and drainage. The erection plan allowed the use of a single high-capacity crane. The crane was delivered to the site in several hundred tractor-trailer loads and required a month to assemble. On an early Sunday morning in 2003, the power to the electric rail lines was turned off. The crane then lifted the 50-ft-high span 65 ft in the air, moved it 100 ft from its assembly location, then rotated and lowered it into position over the railroad tracks. After erection, MMFX steel deck reinforcement was placed and the 8.25-inch-thick high-performance concrete (HPC) deck was cast. The combination of MMFX deck reinforcement and HPC constituted the deck protection strategy. No additional deck overlay was proposed. To minimize disruption in the rail yard and improve work-zone safety for a crew working over active rail lines, the Connecticut DOT required that the center span be erected in a single weekend night. The contract also included liquidated damages of $5,300 per calendar day in excess of the 1,131 calendar days allowed for the project. The project was completed in 940 calendar days.
Stakeholder Feedback : Metro-North Railroad, operator of the New Haven rail yard, was pleased with progress and outcome of the project. The adjacent prefabrication and single lift-in of the 320-ft-long truss span greatly reduced impact on rail yard operations.
High Performance Material :

- Cast-in-place high-performance concrete (HPC) deck with MMFX deck reinforcement
- High-performance steel (HPS) 70W steel truss members

Contacts : Owner: Timothy Fields, P.E. Project Manager (Bridge) Connecticut Department of Transportation timothy.fields@ct.gov 860-594-3217
Costs : The engineerâ??s estimate for the project was $ 28.6 million. The low bid was $31.9 million ($ 3.3 million = 12% higher than engineerâ??s estimate). There were three bidders. The cost per square foot of bridge was $ 257 compared to $ 210 for conventional construction in this region in 2003. ABC techniques saved an estimated $ 1.1 million in railroad force account costs.
Funding Source : Federal and State
Incentive Program : IBRC (Innovative Bridge Research and Construction Program): $1,200,000
Contract Plans : 6
Year Abc Built : 2003
State : CT
Owner : City of New Haven

Contact Us | Phone: (305) 348-0110 | Email: abc@fiu.edu | 10555 W. Flagler Street, EC 3680 Miami, FL 33174

Contact Us | Phone: (305) 348-0110 | Email: abc@fiu.edu | 10555 W. Flagler Street, EC 3680 Miami, FL 33174