2008 – Hardscrabble Creek Bridge

Description

Meta Fields
Other Related Url 0 Other Related Link : https://dot.ca.gov/programs/engineering-services/working-with-division-of-engineering-services
Specifications 0 Spec File : 2525
Abc Construction Equipment : Lateral Slide {w / roller or pad}
Prefabricated Bridge Systems : Prestressed multi-cell box girder span
Contracting : Full lane closure
Project Delivery : Design-bid-build
Longitude : -124.025964
Latitude : 41.839155
State Id # : 01-0040
Construction Equipment : Lateral Slide
Total Bridge Length Ft : 133.5
Max Span Length Ft : 133.5
Beam Material : Concrete
Spans : One-span
Location : Rural
Owner : State
State : CA
Year Abc Built : 2008
Other Related Url : 1
Contract Plans : 1
Additional Information : Caltrans Accelerated Bridge Construction Manual
Funding Source : Federal and State
Costs : The engineerâ€™s estimate for the project was $3.53 million. The low bid was $2.30 million (35% lower than engineerâ€™s estimate). There were three bidders. The cost per square foot of bridge was $226 per sq ft compared to $179 per sq ft for conventional construction in this region in 2007 (project was bid in 2007 and built in 2008).
Contacts : Owner: Gudmun Setberg, P.E. Structure Project Engineer California Department of Transportation gudmund.setberg@dot.ca.gov 916-227-8282
Stakeholder Feedback :

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- This is the fourth bridge in California built using the jack-and-slide method. The method saves time and lowers construction costs.
- Bridge jacking operations may benefit from pre-qualified sub-contractors performing this phase of the work.
- Unique operations require special skills.

Construction Method : The new bridge superstructure was built conventionally on temporary abutments next to and just upstream of the existing bridge. After completion of the new bridge superstructure, traffic was shifted onto it. The old bridge was then demolished, and concrete abutments were constructed on the existing alignment. Drilled pile foundation was changed to spread footing to speed up construction. The contractor closed the bridge on a Monday night. The new bridge superstructure was jacked up and slid approximately 48 feet into place on the new abutments. The lateral slide took 8 hours. Jacking loads were applied simultaneously to prevent distortion and excessive stresses that would damage the structure. The specifications allowed for 230 working days with liquidated damages of $2,500 per day. Work within the stream bed was restricted to the period between June15 to October 15. Full road closure allowed for a maximum of 8 hours.
Replacement Or New Bridge : The replacement bridge has two 12-ft-wide traffic lanes and two 8-ft-wide shoulders. The cross-section consists of a prestressed concrete multi-cell box girder that was cast next to the final alignment and slid into place to be supported on steel reinforced elastomeric bearing pads.
Existing Bridge Description : The existing bridge was a 120 ft long and 28 ft wide cast-in-place reinforced concrete T-girder that was determined to be functionally obsolete. The existing structure was built in 1929.
Traffic Management : Traffic management alternative: If constructed conventionally the bridge would have been replaced in 2 stages over 2 seasons.
Average Daily Traffic At Time Of Construction : 2900
Dimensions : 133.5-ft-long and 43-ft-wide single-span prestressed concrete multi-cell box girder bridge; 900-ton lateral slide
Primary Drivers : reduced onsite construction time (reduce construction from 2 seasons to 1 season)
Impact Category : Tier 1 (within 1 day)
Mobility Impact Time : ABC: 8 hours Conventional: 3 months in two stages over two seasons
Project Location : US 199 over Hardscrabble Creek between the communities of Hiouchi and Gasquet
Project Summary : 8-hour lateral slide to replace functionally obsolete bridge

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