2023 â?? CO 61 North of Otis, D-25-EA

Description

Meta Fields

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Project Summary : The bridge superstructure was constructed on a temporary foundation next to the existing bridge, then laterally slid over once the existing bridge was demolished. The substructure utilized H-piles with precast abutment caps and precast wingwalls.
Project Location : CO 61 over Surveyor Creek, north of the town of Otis in northeast Colorado
Mobility Impact Time :

- ABC: 12 days
- Conventional: 5 to 7 months

Impact Category : Tier 3 (within 2 weeks)
Dimensions : One-span prestressed concrete adjacent box beam bridge; 118-ft-long and 43-ft-wide out-to-out; no skew
Average Daily Traffic At Time Of Construction : 670
Traffic Management : Detour is 87 miles. However, this would not have been acceptable for conventional construction. A temporary shoo-fly detour would have been constructed at an additional cost to the project.
Existing Bridge Description : Four-span, 92-ft-long timber stringer bridge, with timber caps and timber piling. The structure was built in 1952.
Replacement Or New Bridge : The one-span replacement bridge is 118-ft-long and 40-ft-wide curb to curb with 1.5-ft Type 10 MASH bridge rails. It has two 12-ft-wide traffic lanes and two 8-ft-wide shoulders. The cross-section consists of nine 112-ft-long, 54-inch wide and 46-inch-deep prestressed concrete adjacent box beams with a 5-inch-thick cast-in-place reinforced concrete deck. The deck has a 3-inch-thick asphalt overlay with waterproofing membrane. The precast concrete abutment caps were founded on steel H-piles. Precast concrete elements also included wingwalls, approach slabs, and sleeper slabs.
Construction Method : Steel H piles were driven into the roadway pavement, behind the existing bridge abutments, then covered with asphalt. Once the bridge slide was ready, the existing structure was closed to traffic and demolished, and the piles were excavated and cut to the correct cutoff elevation. A precast abutment cap was placed, and concrete placed around the piles. Grading and riprap underneath the bridge was completed while the concrete cured. The superstructure was laterally slid over, and dowel bars were grouted in place to connect the superstructure and substructure. Precast wingwalls were attached and the approach roadway was backfilled. The full roadway closure was extended to place and grout the precast approach slabs (originally this was planned to be completed with the structure partially open to traffic). The bridge was opened to traffic in November 2023.
Contacts : **Owner:** Michael Collins, P.E. State Bridge Engineer Colorado Department of Transportation Email: Michael.Collins@state.co.us 303-757-9190 **Designer:** Scott Huson, P.E. Design Engineer Colorado Department of Transportation Email: Scott.Huson@state.co.us Phone: 303-757-9189 **Contractor:** Lawrence Construction Company **Precaster:** Plum Creek Structures **Submitter:** Scott Huson, P.E. Design Engineer Colorado Department of Transportation Email: Scott.Huson@state.co.us Phone: 303-757-9189
Costs : $4,389,671 which is $865/sq ft. A nearby conventional construction project replacing two bridges came in at $860/sq ft.
Funding Source : State Only
Contract Plans : 1
Year Abc Built : 2023
State : CO
Owner : State
Location : Rural
Spans : One-span
Beam Material : Concrete
Max Span Length Ft : 112
Total Bridge Length Ft : 118

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