



2012 ?? Burnt River & UPRR Bridge

Description

Meta Fields

Project Summary :

The 160-ft-long and 30.67-ft-wide single-span precast prestressed bulb-tee girder replacement bridge cross-section consists of four 7.5-ft-deep pretensioned bulb-tee (ODOT BT90) girders spaced at 7.33 ft with 8.5-inch-thick full-width 8,000 psi precast high-performance concrete (HPC) deck panels and ultra-high-performance concrete (UHPC) transverse closure joints. This bridge replacement was a precast deck experimental Highways for LIFE demonstration project.

Project Location :

US 30 (Huntington Highway #449) at Milepost 2.75 over Burnt River and Union Pacific Railroad in Baker County, Oregon

Mobility Impact Time : 8 months ABC vs. additional 2-3 weeks for conventional deck

Impact Category : Tier 6 (longer but reduced by months/years)

Dimensions : 160-ft-long and 30.67-ft-wide single-span precast prestressed bulb-tee girder bridge; 25 deg. skew

Average Daily Traffic At Time Of Construction : 60

Traffic Management :

If constructed conventionally: extended use of 7.5-mile detour

Existing Bridge Description :

The existing three-span bridge consisted of a steel through-truss main span and reinforced concrete girder and cross beam approach spans. The bridge was 204-ft long and 20.5-ft wide with concrete substructure. It had two 9.75-ft-wide traffic lanes and no shoulders. Built in 1922, the weight-restricted bridge was deteriorated and required replacement.

Replacement Or New Bridge : The replacement bridge has two 10-ft-wide traffic lanes and two 4-ft-wide shoulders. The cross-section consists of four 7.5-ft-deep pretensioned bulb-tee (ODOT BT90) girders spaced at 7.33 ft with 8.5-inch-thick full-width 8,000 psi precast high-performance concrete (HPC) deck panels and ultra-high-performance concrete (UHPC) transverse closure joints. The abutments consist of a mechanically-stabilized earth (MSE) wall and cast-in-place concrete pile cap over HP 14x89 steel piles at one end and a cast-in-place abutment and spread footing on rock at the other end. This bridge replacement was a precast deck experimental Highways for LIFE demonstration project.

Construction Method :

The four girders and 15 precast deck panels were fabricated at a precast plant and trucked to the bridge site. The 10.28-ft-long full-width panels conformed to the 25° skewed alignment.

Traffic was detoured. The bridge was closed and demolished. Piles were driven; abutment caps and MSE walls were constructed. The girders were erected with a crane onto elastomeric bearing pads on the abutments, galvanized steel diaphragms were installed midspan between girders, and end diaphragms were cast. Full-width full-depth precast deck panels were erected over the shear pocket reinforcement extending from the girders. The panels were placed starting at midspan and alternating outward in each direction, and were then adjusted for proper grade using leveling bolts. Reinforcement bars were placed in the 6-inch-wide transverse deck joints. The transverse deck joints, shear pockets, haunches, and closure joints at the ends of the bridge were filled with UHPC. Standard traffic rails were cast, and protective fence was installed. No overlay was applied. Finish work was completed and the bridge was opened to traffic.

