



2017 – Cannelville Road Bridge

Description

Meta Fields

Abc Construction Equipment : conventional

Prefabricated Bridge Elements : Orthotropic deck - SPS (Sandwich Plate System); MDhBs (Modular hybrid-Decked steel Beam - SPS deck on press-brake-formed tub girders)

Longitude : -82.0680542

Latitude : 39.8044434

Nbi # : SFN - 6036083

State Id # : Mus-C0007-00.01

Construction Equipment : Conventional

Total Bridge Length Ft : 52.5

Max Span Length Ft : 52.5

Beam Material : Steel

Spans : One-span

Location : Rural

Owner : Muskingum County

State : OH

Year Abc Built : 2017

Contract Plans : 1

Additional Information : [September 2017 ABC-UTC Monthly Webinar](#) ABC-UTC

Website/Resources/Implemented Advanced Technologies: [Sandwich Plate System \(SPS\)](#)

Incentive Program : 2016 AID Demonstration (Accelerated Innovation Deployment Demonstration) grant

Contacts : Owner: Doug Davis, P.E., P.S. County Engineer Muskingum County

davis.mceo@rroho.com 740-819-0629 Submitter: Robert Maier, P.E. SPS North America Holdings Ltd

robert.maier@spstechnology.com 613-569-3111 Designer: Muskingum County Douglas Davis

P.E., P.S. County Engineer davis.mceo@rroho.com 740-819-0629 Fabricator of Modular Decked

Beams: US Bridge Contractor: Art Rogyvin, Owner US Bridge art@usbridge.com 740-819-0053

High Performance Material : SPS deck panels; press-brake-formed steel tub girders

Stakeholder Feedback : Because this structure was a "one-off" structure, the design was cumbersome since there were no standard ODOT drawings to reference.

Construction Method : The bridge roadway was closed and all traffic was re-routed to an 8-mile-long detour. Standard construction methods were used for the substructure (cast-in-place concrete footer

and abutments). The superstructure was prefabricated offsite and delivered to the jobsite on two flatbed trailers. The half-width modules were erected in 20 minutes and bolted together in one day, followed by application of the waterproof membrane and asphalt overlay. After setting the superstructure, the road was opened to traffic less than 10 days later. The bridge was replaced in a total of 26 days, ahead of the 30-day maximum allowed closure.

Replacement Or New Bridge : Each of the two modular decked beam units weighed 31 tons and had two galvanized Press-Brake-Formed Steel Tub Girders with spray metallized Sandwich Plate System (SPS) deck panels, complete with bridge railing, for a projected 100-year service life. Advantages of this innovative superstructure include prefabrication and weight savings that allowed the rapid onsite installation, and reduced section depth due to the thin SPS decks and structurally efficient girder cross section.

Existing Bridge Description :

The existing 38-ft-long and 22-ft-wide bridge was deteriorated and needed replacement.

Traffic Management :

Conventional construction would have required extended use of the 8-mile detour.

Average Daily Traffic At Time Of Construction : 639

Dimensions : 52.5 ft long and 24 ft wide single span

Primary Drivers : reduced onsite construction time - helped maintain essential services while reducing life cycle costs and maintenance cost due to the nature of the watershed

Impact Category : Tier 4 (within 1 month)

Mobility Impact Time : The superstructure was erected in 20 minutes and bolted together in one day. The bridge was closed a total of 26 days. The impact to the neighboring community was minimal. Fire, EMS, and school systems saved many dollars not having extended use of the 8-mile detour.

Project Location :

Cannelville Road over Riders Run Creek in the village of Roseville in Muskingum County, Ohio

Project Summary :

SPS deck on press-brake-formed steel tub girder Modular Decked Beams