

Railroad Bridge over Upper Valley Pike Springfield, Ohio



This project involved the replacement of a deficient 100 year-old railroad bridge carrying the WESTCO/ Indiana & Ohio Railroad over Upper Valley Pike and an environmentally sensitive tributary of the Mad River in Springfield, Ohio. The old two-span bridge consisted of a deck plate girder superstructure resting on a reinforced concrete substructure. Vertical clearance

was insufficient at the posted 12'-8", resulting in numerous girder impacts over the years. EMH&T Inc., of Columbus, Ohio, partnered with Cooke Consulting Group, was selected to provide the West Central Ohio Port Authority (WESTCO) with the necessary engineering and construction management services to replace the bridge with a suitable and aesthetically pleasing structure. Armstrong Steel Erectors of Newark, Ohio was selected as the prime construction contractor on the project.

Early in the preliminary planning stages of the proposed bridge, the existing rear abutment seat fractured, and the possibility of bridge failure became imminent. A temporary support was designed immediately and installed in front of the abutment to support the aging structure. The location of this support was chosen to be the location of the new rear abutment, so that components of the support could be incorporated into the proposed foundation design, saving time and money.

The finished replacement bridge was designed to comply with current AREMA specifications and consists of 4 spans, including a main "through girder" span of 100 feet, and three open jumper spans. Tracks within the main span are connected to a concrete deck by means of direction fixation tie plates, as a traditional ballasted deck would have raised the track profile an undesirable amount. The straightforward design allowed the project to be completed just four months after demolition of the old bridge began. The track was out of service for just 85 days during construction. This short construction duration limited disruption to rail traffic and minimized inconvenience to motorists.

Vertical clearance under the bridge has increased to exceed minimum requirements, and the span configuration can accommodate future widening of Upper Valley Pike to six lanes at current design speeds. The inclusion of architectural details into the concrete substructure design and bold color choices enhance the aesthetic appeal of this prominent Springfield structure.

Total project cost was just over two million dollars, with funding comprised of federal funds from the Clark County-Springfield Transportation Coordinating Committee, state funds from the Ohio Rail Development Commission, private funds of the Indiana & Ohio Railway Company, and local funds from the port authority.