Replacement of Bridge No. 02719

Middlefield, CT

Client
The Connecticut Department of Transportation
State Project No. 081-091

Completed
2016

Description
Zuvic Carr prepared contract documents for the replacement of the Route 147 Bridge over Lyman Meadow Brook in Middlefield. The 13-foot bridge was a single span structure built in 1920. It consisted of a cast-in-place concrete slab supported by stone masonry abutments.

Our design included complete replacement with a single 12'x5' precast concrete box culvert using Accelerated Bridge Construction (ABC) methods, realigning Route 147, and widening the roadway and bridge. Most of the work was completed in nine days. This innovative delivery project was featured in a CTDOT press release: http://www.zuvic.com/pdfs/ctdot_press_release_middlefield.pdf

Our design included a replacement culvert consisting of precast units, a substructure of four precast concrete wingwalls with integral spread footings, precast cut-off walls at both ends of the culvert, and cast-in-place parapets with a stone masonry form liner pattern. 1,100' of Route 147 was realigned, widened, and superelevated. Over 1,200' of guiderail was installed near Lyman Orchards to address Town and State Police safety concerns. Overhead electric, telecommunications, and cable lines on utility poles were relocated, temporarily supported, or shielded during installation of precast concrete bridge components.

Maintenance and protection of traffic required complete bridge closure and traffic detour for just nine days and temporary off-peak lane closures for the remainder of construction. Temporary stream bypass pipe and cofferdams designed by the Contractor were utilized during the work. This ABC project was completed significantly ahead of schedule with no design-initiated change orders.