



## CUY-77-13.80 Design Build (CCG6B)

### Cuyahoga County, Ohio

Client: Kokosing Construction Co.

Contact: Scott Mesick (614) 228-1029

#### Key Personnel:

Rick Rockich, PE (PM)  
 Jason Wise, PE  
 Dave Traini, PE  
 Jamal Nusairat, PE, Ph.D.  
 Peter Narsavage, PE  
 Erik Brokamp, PE  
 Matt Cornett, PE, PTOE

#### Project Cost:

\$30 Million Construction  
 \$2.1 Million Design

#### Year Completed:

September 2019 Construction  
 December 2017 Design

This project consists of replacing the CUY-77-1409 structure carrying Broadway Avenue (SR-14) over IR-77 and reconfiguring the ramps from IR-490EB/WB to IR-77SB to provide standard lane width and merge distances. The existing ramp from Broadway Avenue to IR-77SB was reconstructed into Frontage Road to Pershing Avenue. The intersections of Broadway Avenue with Gallup Avenue, Roseville Court, and Dille Avenue were also reconstructed to match any vertical changes to Broadway and improve curb radii. The mainline lanes of IR-77SB, were resurfaced as part of this project. A multi-use path was constructed along the Frontage Road between Broadway and Pershing Avenues.

A congested urban environment and prescriptive scope requirements required innovative retaining wall designs to minimize conflicts with existing underground utilities. The unique retaining wall designs include jet grouting to construct a concrete gravity wall in place with minimal excavation, underpinning an existing retaining wall with jet grouting, and a 23' high soldier pile wall with two rows of soldier piles to span over a fiber optic duct bank without using ground anchors, which the project scope placed restrictions on using. Working with the contractor and specialty subcontractors, ELR designed the unique retaining walls on a compressed design schedule typical for design-build projects.

The 400' two-span precast concrete beam semi-integral bridge replaced the existing 63-degree skew bridge. The 114", post-tensioned girders are supported on full height abutments and a cap and column pier and feature prescribed aesthetic elements consistent with the I-77 corridor.