

# LUC-24-6.19 Ramp D Realignment and LUC-24-1272 Value Engineering

Lucas County, Ohio

## CLIENT

Beaver Excavating/Mosser  
Construction/Joint Venture  
2000 Beaver Place, SW  
Canton, OH 44706  
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(330) 478-2151  
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## COMPLETION DATE

May 2010 (Design)  
May 2013 (Construction)

## PROJECT COST

\$300,000 (Design)  
\$64.4 Million (Construction)

## VALUE ENGINEERING SAVINGS

\$3 Million

## E.L. ROBINSON'S ROLE

*Prime Consultant*  
Roadway Design  
Structural Design  
Geotechnical Design

## PRIMARY CONTACT

Kevin White, PE

## KEY STAFF

Dave Traini, PE  
Rick Engel, PE  
Jamal Nusairat, PE, PhD  
Barry Logan, PE



This project involved a value engineering change proposal for structures LUC-24-1272 (State Route 24 over Norfolk Southern Railroad) and LUC-24-1293 (State Route 24 over Ramp D) including the adjacent MSE walls. The VECP included the realignment of Ramp D which allowed for the elimination of the 306' long precast concrete arch structure over the Norfolk Southern Railroad and the 330' long precast concrete arch structure over Ramp D. The two eliminated structures were replaced with a two span rigid frame/slab structure with a 57° +/- skew and an average length of approximately 213'. A strut and tieback system has been provided for the two span structure to provide footing lateral stability; thereby, permitting the footing size and pile pattern to be reduced. The two span rigid frame/slab is classified as a buried structure. The main slab reinforcing steel was designed and detailed to be perpendicular to the substructure units. The roadway barrier was designed to be integral with a substantial reinforced concrete edge beam. The two span structure was designed for oversized load applied by the contractor's earth moving equipment. In addition, the area of MSE walls was reduced by approximately 21,000 sq. ft.