

PennDOT Project: SR 4009, Section A10
Temporary support of SR 4009
Babcock Boulevard over Girty's Run
Pittsburgh, Allegheny County
Category J



Executive Summary

Dawood Engineering's (Dawood) submission for the 2015 ACEC Diamond Awards is the design of a temporary support system for the staged construction and replacement of a single span dual riveted steel through girder bridge, SR 4009 (Babcock Boulevard) over Girty's Run in Pittsburgh, Allegheny County, PA. J.F. Shea Construction, Inc. (J.F. Shea) from Mount Pleasant, Pennsylvania partnered with Dawood for the design and construction sequencing of the temporary support system. Dawood also worked directly with PennDOT District 11-0 on review and approval of plans and computations. In an effort to replace the bridge with the least impact on residents, commuters, and local businesses, the construction sequencing allowed for a signalized one lane traffic flow.

Dawood's task was unique and challenging, having to not only design around a structurally deficient bridge built in 1930, but also the complex geometry, existing steel configuration and deterioration that required extensive analysis. Additionally, the fast-paced schedule created challenges, as installation of the temporary support system could only occur during off-peak hours or traffic could only be stopped for a maximum of 15 minute increments. In less than 48 hours, the deck of the existing structure was partially removed, the temporary support system was installed, and the floorbeams and through girder were partially removed. This construction sequence was monitored and performed with minimal impact to traffic flow for a short duration.