

# Executive Summary

## Category C Structural Systems

### Thomas McCall Bridge Rehabilitation, SR 0209 Section 10B Carbon County, Pennsylvania

The Thomas McCall Memorial Bridge serves as the main Lehigh River crossing for Franklin Township and Leighton Borough and is used by 23,358 cars every day. Originally constructed in 1938, the bridge was in serious need of repair in order to remove its structurally deficient classification and avoid the need for a weight restriction through load posting.

The superstructure had numerous issues, including deterioration of the 17 deck joints, chloride contamination in the deck, and paint system failure throughout. As a result, the superstructure received numerous repairs including a new paint system, cover plates, and stiffeners where necessary. All bearings, with the exception of the truss bearings, were also replaced. To help reduce future corrosion and removed the deleterious concrete, the deck was scarified with hydro-demo, a latex modified overlay was applied to the deck, and all deck joints were replaced. In addition to a new paint system, 132 of the gusset plates required stiffeners on their unsupported edges.

The substructure was in similarly deteriorated condition, where 13 out of 15 piers were deteriorated to the extent that their structural capacity was reduced and they required concrete repairs. Pier 4, in particular, was severely deteriorated to the point that rehabilitation was no longer a viable option. The entire unit was replaced with a new pier founded on micro-piles, while maintaining traffic throughout the operation. Finally, piers 2 and 3 received scour protection. CDM Smith successfully completed the design of the project two months ahead of the scheduled completion date.