Pfingsten Road Bridge Reconstruction & Pavement Rehabilitation

Ciorba Group, Inc. was selected by the Village of Deerfield to provide construction engineering services for the superstructure replacement of a precast prestressed concrete (PPC) deck beam bridge over the Metra tracks. Pfingsten/Kates road is a two-lane major collector carrying over 9,000 vehicles per day. In addition to the bridge replacement, the adjacent Mechanically Stabilized Embankment (MSE) retaining walls which supported the approach roadway embankment were repaired in areas that showed deterioration. The adjacent roadway was also rehabilitated from Lake Cook Road to Waukegan Road, a distance of 3700 feet. The rehabilitation included pavement patching, milling and resurfacing of the roadway, removal and replacement of deteriorated curb and gutter, new ADA ramps, and pedestrian signals. The roadway was closed at the bridge and traffic detoured on an approved route to expedite construction.

The initial work consisted of removing the existing superstructure and abutment cap. A new superstructure was constructed consisting of 104’-6” single span PPC I-beams supported by a new abutment cap on the existing piles. Additionally, due to a thicker proposed superstructure depth the roadway vertical profile was raised to meet the required 23’-0” vertical clearance over the Metra and UPRR tracks. This profile raise required that the existing moment slabs and top row of MSE wall panels be removed and replaced adjacent to the bridge to accommodate new approach slabs and roadway profile. The proposed abutments were designed as semi-integral abutments to eliminate the expansion joints, reducing long term future maintenance.

Since the project was being paid with STP-BR funds, the construction engineering services were completed in accordance with IDOT and FHWA requirements services involved:

- Observing the contractor’s operations for conformance with the plans and specifications.
- Coordination with Metra and the UPRR for work over the tracks.
- Final quantity documentation.
- Preparation of change orders and pay estimates.

The Resident Engineer chaired bi-weekly progress meetings with representatives from the contractor, Village and IDOT to discuss progress, construction issues, and resolve conflicts. The Resident Engineer also interacts with the local community, answering questions or concerns raised by residents/businesses during construction.