

Winfield Pedestrian Underpass under Union Pacific Railroad

Winfield, Illinois

This project was in response to the dramatic increase in the number of trains scheduled daily on the Union Pacific West Line, (104 freight trains and 59 commuter trains daily) which effectively bisected the Village of Winfield. Rempe-Sharpe & Associates worked closely with Union Pacific engineers to analyze acceptable pedestrian access alternatives which would not disrupt this vital rail link. After extensive analysis of soils criteria and requisite AREMA design standards, a creative new technology was developed to horizontally direction drill and then inject grout stabilization in the sand sub-ballast layer.

Rempe-Sharpe:

- Analyzed soils criteria extensively
- Utilized AREMA design standards
- Designed both tunnel and canopy design
- Designed lighting and ventilation
- Acquired property and easements
- Provided construction phase services
- Provided detailed cost estimating
- Designed stormwater lift station and utility and drainage re-routes
- Acted as Resident Engineer overseeing all construction phase

Rempe-Sharpe developed micro-tunneling design and specifications that included horizontally-drilled soil stabilization—a breakthrough installation, utilized for the first time on the Union Pacific Railroad system, which has become their standard. The total length of this 10' diameter steel casing tunnel was 110'. Handicapped ramps and canopies over open areas were also constructed. Lighting and ventilation were incorporated in the design and existing lighting for the commuter lots and METRA station were enhanced. Utility adjustments included re-route of storm sewer and drainage for the underpass including a stormwater lift station (with battery backup power) to discharge any accumulation of water in the ramps or tunnel.



Innovative Technologies Allow Critical Tunnel Completion Under America's Busiest Railroad



State of the Art Corrosion Resistance Creates Long Term Life Cycle

Client Contact: Mr. Curt Barrett
Village Manager 630-933-7100

**APWA
PROJECT
OF THE YEAR**



VILLAGE OF WINFIELD

Incorporated 1921



REMPE-SHARPE & Associates, Inc.