

PEDESTRIAN UNDERPASS—WINFIELD

APWA PROJECT OF THE YEAR



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



**State of the Art Corrosion Resistance
Creates Long Term Life Cycle**

Client: Village of Winfield

Project was in response to the dramatic increase in 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—tragically resulting in the fatality of a resident. Rempe-Sharpe & Associates worked closely with the Union Pacific engineers to analyze acceptable alternatives that 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/inject grout stabilization in the sand sub-ballast layer.

Rempe-Sharpe:

- ◆ Analyzed soils criteria extensively
- ◆ Utilized AREMA design standards
- ◆ Designed 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 & drainage re-routes
- ◆ Acted as Resident Engineer overseeing all construction phase

Rempe-Sharpe developed micro-tunneling design and specifications that included horizontal drilled soil stabilization—a break-through installation utilized for the first time on the Union Pacific Railroad system (became 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. Sidewalks were realigned to maximize the functional utility of the underpass. All ramps, sidewalks, crosswalks, curb cuts and the tunnel were ADA compliant.

Grant funding support for the project was obtained for 100% of construction costs.

Construction Cost: \$5.0 Million

REFERENCE:

Curt Barrett
Village Manager
630.933.7100

