

GEOTECHNICAL PROJECT EXPERIENCE – Various Railroads

Wang has completed numerous major geotechnical projects throughout the Chicago Area for the Various Rail Lines. The projects have included Grade Separations, Bridge and Retaining Wall Reconstruction and/or Rehabilitation and new track and embankment widening. Some of the projects we have recently completed or are currently working on in the Chicago Area:

Chicago Region Environmental And Transportation Efficiency Program (Create) P-1 Project

The CREATE Program is a first-of-its-kind partnership between the nation's freight and passenger railroads, State of Illinois, and City of Chicago. CREATE will include numerous improvements to both railroad infrastructure and the local road system in the Chicago region. In general, CREATE will include grade separation of six railroad-railroad crossings by creating rail-to-rail "flyovers" to eliminate train interference and the associated delay, primarily between passenger trains and freight trains; grade separation of 25 highway-rail crossings, to reduce motorist delay, improve safety, eliminate crossing accidents, decrease energy consumption, and reduce air pollution; additional rail connections, crossovers, trackage, and other improvements to expedite train movements in five rail corridors traversing the Chicago region.

As part of CREATE P-1, Wang conducted the subsurface investigations, laboratory testing, in-situ testing, and geotechnical evaluations for the design and construction of the bridges and retaining walls proposed at the intersection of the Metra Rock Island Line and Norfolk Southern Line. The project area also included track work from North of 57th Street to South of 69th Street in Chicago, Illinois.

Wang provided recommendations for bridge and retaining wall foundations, soil parameters for the design of substructures, global embankment stability evaluations (effective and total stress analyses), soil parameters for the walls. The following structures were included in our investigation:

- Flyover Bridge over Norfolk Southern, 63rd Street and Dan Ryan Expressway. The subsurface investigation consisted of 19 performed by Wang and supplemented by four borings drilled by others.
- Bridges over 59th Street, 61st Street, Wentworth Avenue, 67th Street, and 69th Street and closure of the bridges over 60th Street and 66th Street. The subsurface investigation consisted of eight borings performed by Wang and supplemented by and 21 borings performed by others.
- Retaining walls proposed at the intersection of Metra Rock Island Line / Norfolk Southern Line and 500 feet North of 57th Street to 500 feet South of 69th Street. The subsurface investigation consisted of 19 borings performed by Wang and five borings performed by others.

Chicago Region Environmental And Transportation Efficiency Program (CREATE) WA-4 Project

The CREATE Program is a first-of-its-kind partnership between the nation's freight and passenger railroads, State of Illinois, and City of Chicago. The BNSF Railroad requested the design and construction of a new retaining wall, parallel to the BNSF right of way, located just south of 23rd street bridge over BNSF tracks in Chicago, Illinois. The new retaining wall will support the loads from railroad tracks located 16 to 20 ft away from the wall alignment.

Wang performed the subsurface investigation, laboratory testing, and geotechnical analyses and evaluations. A geotechnical report prepared according to the specifications of the Chicago Department of Transportation, Office of Underground Coordination. The fast-tracked schedule for reporting, including hand-calculated analyses, was submitted within three weeks after Wang's notice to proceed.

Chicago Transit Authority Morgan Street Station

Wang Engineering, Inc. performed the subsurface investigations, laboratory testing, and geotechnical data compilation to support the design and construction of the proposed new Chicago Transit Authority Station along the Green Line Service at Morgan Street.

The existing CTA structure consists of two tracks: one track eastbound to the Loop and one track westbound to Harlem Avenue in Oak Park. The scope of the project included the construction of a new heavy rail transit station with entrances and a fare collection system at grade on both the north and south sides of Lake Street, one inbound and one outbound platform, escalators and elevators at both entrances leading up to the platform level, a mezzanine level above the station house, a pedestrian bridge above the platform level allowing passageway between the inbound and outbound platforms, and canopies for weather protection.

Metra/Union Pacific Railroad North Line Reconstruction

Wang has performed the subsurface exploration, laboratory testing and geotechnical engineering analyses to provide recommendations for the removal and replacement of six bridges and the design of 4.5 linear miles of retaining walls associated with the proposed widening of the mainline track embankments from the Deering Bridge to Bryn Mawr Avenue, Chicago along Metra's Union Pacific North Line. The new bridges, located at Irving Park Road, Montrose Avenue, Sunnyside Avenue, Wilson Avenue, Leland Avenue, and Lawrence Avenue were designed with four through girders to accommodate New Tracks 1 and 2 and a future center track in between. The new interior girders will be designed for a future center track.