

GEOTECHNICAL SERVICES

WICHITA CENTRAL CORRIDOR RAILROAD GRADE SEPARATION WICHITA, KANSAS



Geotechnology monitored vibration and air blast levels from heavy construction activities such as this sheet pile installation.

Owner: City of Wichita,
Kansas

Client: Dondlinger & Sons
Construction

Contact: Mr. Mark Lorenz

**Project
Manager:** Mr. Casey Jones, P.E.

Date: 2005-2007

Project Description

Geotechnology is performing vibration monitoring and dynamic pile testing for the Wichita Central Railroad Corridor Project, a three-year, \$105 million project to elevate the railroad tracks that bisect the heart of Wichita, between William Street and 17th Street. The project includes construction of new railroad tracks, bridges, overpasses, street crossings and retaining walls.

Geotechnology is providing vibration monitoring services to gauge the noise and vibration caused by the construction project. The data gathered enables the contractors to determine appropriate vibration and airblast levels to better manage vibration effects on nearby residences, businesses and infrastructure. Vibration monitoring services begin by working in conjunction with adjacent property owners to conduct a thorough pre-construction survey, including correspondence, visual inspections, video preparation, and photographic and written documentation. This information provides documentation for the pre-construction condition of nearby structures and provides a measuring tool to determine if changes that occur in those structures during the duration of the project are effects of the construction. Geotechnology Field Representatives surveyed all structures within a 100-foot radius of seven new bridges involving driven pile for foundation support. The completed surveys were followed by the installation of vibration and airblast monitoring equipment at the project site. Services that will continue over the consecutive 27 month project schedule include collection of vibration and airblast data, repositioning of monitors, review of the daily log from the construction company, and initial documentation of any complaints from tenants or property owners as provided to Geotechnology. The same Geotechnology Field Representative will visit the project site one day a week to monitor the equipment at the project site.

Geotechnology is also performing dynamic pile testing for 20 separate pile locations. In addition, Wave Equation Analysis Program (WEAP) with drivability analysis will be conducted to assess the proposed driving system to install the piles to the required capacity and desired penetration depth within the allowable driving stress will be conducted.