

## Courthouse Metro Plaza Arlington, Virginia



**Description:** Three-level retail/office building constructed over the existing Courthouse Metro Rail Station and two Metro Rail tunnels approximately 65 feet below the building. Column loads for the structure ranged from 30 kips to 575 kips with load combinations on combined footings as high as 1,210 kips.

**Subsurface Conditions:** Clay, clayey and silty sand and silt fill to depths of up to 17 feet below grade. Fill was underlain by medium-dense silty sand and gravel and dense silt.

**Design Details:** The building permit approval process required that the stress that the *Geopier*® supported footings imposed on the tunnel and station below the requirements of the Metro 'Adjacent Construction Design Manual'. The project was readily approved by Metro based on meeting the manual guidelines and their familiarity of the *Geopier* system from previous projects. A total of 129 *Geopier* elements were installed on the project. *Geopier* elements saved \$100,000 and 4 weeks in time compared to the caisson deep foundation option.

**Geopier Designer & Installer:** GeoStructures, Inc.; GeoConstructors, Inc.

**Owner:** The Jenco Group, Arlington, VA

**General Contractor:** The Dietze Construction Group - Chantilly, VA

**Architect:** Bignell Watkins Hasser Architects - Vienna, VA

**Structural Engineer:** The Watkins Partnership - Bowie, MD

**Geotechnical Engineer:** Engineering Consulting Services, Ltd. - Chantilly, VA

**Metrorail Structure & Tunnel Monitoring:** Froehling & Robertson, Inc. - Sterling, VA

**Construction Testing:** PSI - Sterling, VA