



## Capital One Office Building

McLean, Virginia

**By choosing the Geopier GP3® system, bearing pressures for the entire project site were substantially increased while also saving the project owners money**

**Description:** Construction of a 14-story office building with column loads ranging from 400 to 3,080 kips.

**Subsurface Conditions:** Subsurface conditions consist of residual silts with varying consistency, with certain areas containing weathered rock.

**Geopier Solution:** Though isolated areas of the site, where the weathered rock was located, could provide an allowable bearing pressure of 8 ksf, the remaining areas could provide substantially less. In areas where footings were located adjacent to the new below-grade walls, only 3 ksf bearing could be achieved on compacted fills. The Geopier GP3® system was recommended as a means to improve the weaker natural soils and fill so that all footings could be designed for 8 ksf. In areas where Rammed Aggregate Pier® elements support footings placed adjacent to retaining walls, cement-treated aggregate was utilized to transfer the footing stress through the Geopier® elements below the retaining wall footings. Aside from providing superior foundation support, use



of the Geopier system saved the project owners money that would have been needed for the cost of the footing concrete.

### PROJECT TEAM

**Owner:**

Capital One

**Geotechnical Engineer:**

Engineering Consulting Svcs., Ltd.

**Structural Engineer:**

Rathgeber/Goss Associates

**General Contractor:**

James G. Davis Construction

**Geopier Installer:**

GeoConstructors, Inc.

**Geopier Designer:**

GeoStructures, Inc.