



## **EXCAVATION SUPPORT | JET GROUTING | SOIL MIXING SOIL NAILING | SECANT PILES | TIEBACKS**

### **PATRIOTS PLAZA (SQUARE 537) - WASHINGTON D.C.**

Schnabel was the selected bidder for this substantial project which included more than 68,000 square feet of excavation support that extended up to 68 feet below four heavily traveled CSX railway lines. Schnabel's work also included supporting a cut of 25 foot below 16 floors of the adjacent Marriott Residence Inn that included a water pressure surcharge which extended 28 ft above subgrade. Specialized equipment was utilized to install a cutoff wall to impede the flow of groundwater into the excavation. The cut off wall included a combination of technologies including , deep soil mixing, jet grouting and secant piles due to the difficult soil conditions at the site which contained running sands, nested cobbles, and boulders over a very hard clay.

In addition to the cutoff wall, the earth retention system also included soil nailing, bracket piles, corner diagonal braces, and 539 tiebacks with 270 sealed penetrations through the cutoff wall where the tiebacks were below the groundwater water table. Over 475 tons of steel was used to fabricate 176 soldier piles which included internal connections for tiebacks. Despite setbacks, due to difficult soil conditions and buried man-made obstructions, this project was completed in eight months.

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**Owner: Trammel Crow Company**  
**General Contractor: Helix Constructors, LLC**  
**Design/Build Specialty Contractor:**  
**Schnabel Geotechnical Design & Construction**

TrammelCrowCompany

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For more information on this project or any other of our projects please contact Schnabel at:

**(703) 742-0020 or visit our website at [www.schnabel.com](http://www.schnabel.com)**