

DSI References



### Reference Details

**Owner** Maryland Department of Transportation, State Highway Administration, USA +++ **General Contractor** G.A. & F.C. Wagman, Inc., USA +++ **Consulting Engineer** Potomac Crossing Consultants (Rummel, Klepper and Kahl LLP, URS, and Parsons Brinckerhoff), USA +++ **Architect** KCI Technologies, USA +++ **Contractor/Engineer** GeoStructures, Inc. (formerly Terratech, LLC)

**DSI Unit** DSI USA, BU Geotechnics, Toughkenamon PA, USA  
**DSI Scope** Supply of 450 DYWIDAG DCP Tieback Anchors grade 150: S 830/1035 N/mm<sup>2</sup>, accessories; technical assistance



## DYWIDAG Tieback Anchors Stabilize Retaining Wall at I-295 Interchange

Woodrow Wilson Bridge, Washington D.C., USA


The new Woodrow Wilson Bridge over the Potomac River south of Washington D.C. is to be finished in 2008. It is part of the Washington beltway, where traffic has increased considerably during the past few years. A further increase of traffic is expected once the new Woodrow Wilson Bridge is completed since its primary purpose is to ease a current bottleneck in the South.

During this project, additional capacity to handle future traffic was also required for most access roads, for example at the Intersection of I-495 and I-295 in Oxon Hill, MD. A new 410m long (1,345 ft) by 12m high (40 ft) permanent soldier pile and lagging wall with a cast-in-place concrete face was built to stabilize the widening of the highway. Wall reinforcement was achieved using DYWIDAG Double Corrosion Protected (DCP) Tieback Anchors. The new soldier pile wall provides a dual purpose as it simultaneously serves as a tie back wall for the existing, mechanically stabilized MSE wall and for the roadway above.

The original plans and specifications called for drilled soldier piles using a caisson rig. However, due to the steep slope and limited room at the jobsite, it was determined that driven piles would actually result in the use of smaller equipment and a more economical approach that ultimately resulted in considerable savings to the owner.

Construction of the retaining wall began with two soldier piles driven next to each other at a distance of 0.6m (2ft) on center. These served as the foundation for the construction of a special waler detail where both a trumpet pipe and anchor plate were welded at a previously determined angle. This waler detail helped ease the installation of over 450 permanent 32mm (1-1/4") grade 150: S 830/1035 N/mm<sup>2</sup> DYWIDAG DCP Tieback Anchors with an average length of 15m (49ft). Since the soil properties behind the retaining wall varied from one point to another, a special post grouting solution was required. In order to allow for additional grout reinforcement in suspect soil areas, all of the DCP anchors were installed with a DSI regROUT tube.

After 15 months of construction and excellent teamwork, the retaining wall was completed on schedule in August 2007. DSI is proud to have contributed to the realization of this technically demanding project by supplying high quality products.

 more information please call: + 49.89.309050.200 or fax: + 49.89.309050.252 or e-mail: [DSI Munich](mailto:DSI.Munich)