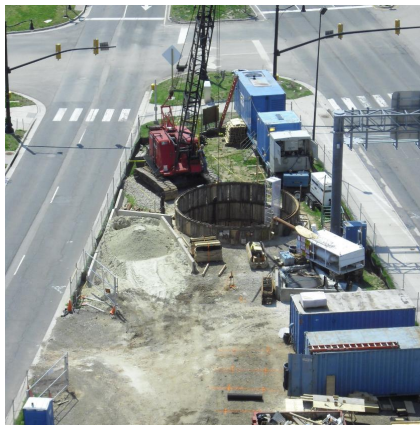


## National Center Sanitary Sewer Project Crystal City, VA



### PROJECT OVERVIEW AND CHALLENGES

The NCSS project highlights Bradshaw Construction's ability to redesign projects to increase efficiency, decrease costs, and streamline logistics. The NCSS project was initially designed as a pilot tube MTBM job. However, this would have involved the installation of 8 shafts in the middle of Jefferson Davis Highway - a major artery into and out of DC. We redesigned the project as a rib-and-board TBM job, which decreased the necessary number of shafts by half: one launch shaft, one receiving shaft, and two 8' diameter intermediary shafts - used for the installation of manholes. All of the shafts were located within the median; no lanes of traffic had to be shut down during the project. From a tunneling standpoint we successfully mined through several hundred feet of cobbles and boulders, none of which were on the boring logs.



### PROJECT INFORMATION - 478

**OWNER:**

Arlington County  
Department of Public Works  
Jerry Kuo  
703.228.3664

**ENGINEER:**

Patton, Harris, and Rust Associates  
Graeme Lake, PE  
410.997.8900

**CONTRACTOR:**

Bradshaw Construction Corporation

**CONTRACT VALUE:**

\$3,248,850

**COMPLETION DATE:**

2/15/2011

**GEOLOGY:**

Sand, Cobbles, Boulders, Clay

**EXCAVATION METHOD:**

Akkerman TBM, 68" Ø

**MINING DIMENSIONS:**

1,890' x 68" Ø

**FINAL LINING:**

Steel Rib and Board

**FOR MORE INFORMATION:**

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Refer to Project 478