STE Subsurface & Tunnel Engineering llc

PROJECT ELEMENTS
- Independent Design Review

ROLE:
- Tunnel Lining Design

PERIOD OF SERVICE
- Oct 2016 – Jan 2017

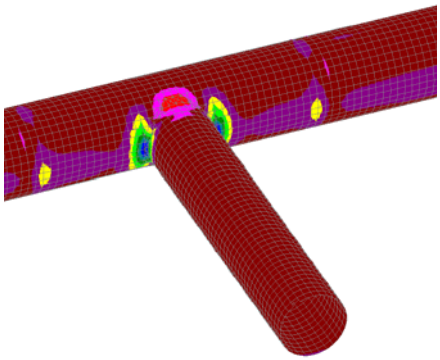
COST
- Est. Construction: $550Million

OWNER
- DC Water

CLIENT
McMillan Jacobs/DC Water

Northeast Boundary Tunnel Project

Washington, DC



NEBT to FST Connection – 3D Modeling

The Northeast Boundary Tunnel (NEBT) project is a component of a larger program to control combined sewer overflows (CSOs) to the District of Columbia's waterways called the Long-Term Control Plan (LTCP). The LTCP is designed to meet the CSO control objectives of DC Water and to meet wat er quality standards in the District of Columbia to mitigate frequency, magnitude, and duration of sewer overflows and to control CSO discharges into the Anacostia River.

The NEBT consists of a 23-ft. internal diameter (ID) tunnel spanning approximately 26,700 ft. from RFK Stadium at CSO-019 Shaft location to the R Street Drop Shaft RSDS at R Street NW & 6th St NW Intersection, in Washington, DC. The tunnel depth ranges from approximately 50 ft. to 160 ft. below ground surface. The NEBT project includes 7 drop shafts (RS-DS, FLA-DS, TS-DS, 4S-DS, RIA-DS, WS-D Sand MOR-DS) and the First Street Tunnel (FST) adit connection. In addition, several near surface structures at each shaft site are planned to include ventilation vaults (VV), diversion chambers (DC), inlets (IN), diversion sewers (DSWR), approach channels (AC), and junction manholes (JMH).

Subsurface & Tunnel Engineering llc (STE) was retained to provide design verification for the NEBT to FST Tunnel connection.

DESIGN PACKAGES:

- STE served as an independent design reviewer of the final concrete lining connection between NEBT and the First Street Tunnel (FST). The purpose was to validate the adequacy of the original connection design using ACI 350 code to meet the environmental and durability requirements for the project life span. STE designed the connection utilizing advanced three dimensional numerical and structural analysis methods and summarized its findings in a comprehensive report.

1 Bank Street // Gaithersburg, Maryland 20878 // 301-685-5321 P // 301-684-6312 F // www.STEng-llc.com