STE Subsurface & Tunnel Engineering llc

PROJECT ELEMENTS

- Assessment of Construction Impacts on Existing Structures
- Protection of Existing Structures
- Precast Segmental Lining Connection Design

ROLE:

- Protection of Structures Package Engineer of Record (EoR)

PERIOD OF SERVICE

- July 2017 – Current

COST

- Est. Construction: $550Million

OWNER

- DC Water

CLIENT

Brierley Associates/Lane Construction

Northeast Boundary Tunnel Project

Washington, DC

23ft ID Northeast Boundary Tunnel

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) served as the Engineer of Record (EoR) to lead the Protection of Structures Design Packages.

DESIGN PACKAGES:

- Preliminary and detailed construction impact assessment for over 2000 structures along the NEBT alignment. Th packages included (1) project wide assessment and evaluation of construction methods for the shaft, shallow excavations, and tunnel; (2) Evaluation of existing buildings, bridges, and underground utilities; (3) Performed empirical and numerical analyses (including structural and geomechanical); (4) Recommendations for monitoring and mitigation measures; (5) Recommendations for mitigation measures; (6) Preparing comprehensive reports to present the analysis, findings, and recommendations. The project included over 2000 existing structures along the project alignment to be investigated. – above ground (bridges, structures, roads, and railroads) and underground facilities and utilities including pressurized pipelines and gravity pipelines, many of which are over 100 years old.