



Division I Diversion Structure

Washington, D.C.

Keller performed the jet grouting work in a sensitive and congested environment without impacting or damaging numerous existing active utilities.



The project

The Clean Rivers Project is a system of deep tunnels, sewers, and diversion facilities designed to reduce Washington, D.C.'s combined sewer overflow during heavy rain events before it reaches the public waterways. The Division I Diversion Structure ties into existing utilities and diverts water to the main pumping station and it is then transferred to the Blue Plains Water Treatment Plant. Excavation for construction of the diversion structure involved the installation of secant pile earth support through soft, compressible silts and clays with lenses of sand and gravel.

The challenge

The soft, compressible soils below the excavation subgrade provided limited support at the base of the cantilevered secant pile support of excavation. Potential water inflow through the earth support and into the excavation from the sand and gravel lenses was also a concern, as was the settlement of existing active utilities during the installation of a new portion of the driven tunnel.

The solution

Keller provided a super jet grouting solution to 1) strategically underpin and support the existing utilities during new tunnel section installation, 2) reinforce the soils around the earth support to provide additional passive resistance, and 3) minimize water flow into the excavation. Maintaining jet grouting spoil return can be challenging in clays and silts and is critical when jetting beneath existing structures and utilities. Keller implemented a jet grouting process customized for the site and subsurface conditions to avoid damage to the utilities.

“ [Keller] worked safely and efficiently in an extremely limited work space and completed their work in a timely manner with minimal impact to other project work activities.

David Levine
Project Manager, Corman Construction Inc.

Project facts

Owner(s)

District of Columbia Water and Sewer Authority

Keller business unit(s)

Keller

Main contractor(s)

Corman Construction Inc.

Engineer(s)

Whitman, Requardt & Associates, LLP

Solutions

Underpinning

Markets

Infrastructure
Water, sewage and waste disposal

Techniques

Jet grouting

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