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DESIGN/BUILD
SPECIALTY CONTRACTOR

SCHNABEL
PRINCIPLED. PROVEN.

GENERAL
CONTRACTOR

Employee Owned
MGC
QUALITY • PERFORMANCE • VALUE

BACKGROUND INFORMATION

In 2019, El Paso Water outlined plans to expand the Roberto Bustamante Wastewater Treatment Plant (RBWWTP) and enhance the headworks facility to keep up with the growth in its service area. The RBWWTP, originally built in 1988 with modifications made in 2001, required improvements to address operational issues and prepare for the anticipated expansion of the facility. MGC Contractors contracted with Schnabel to provide earth retention and groundwater cutoff services to facilitate the construction of a new influent pump station. This pump station will play a major role in the wastewater treatment process at the RBWWTP.

CONTROLLING GROUNDWATER WITH SOIL MIXING

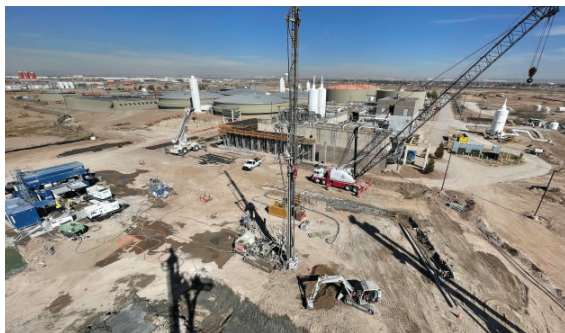
For this project, soil mixing was used as a ground improvement technique to minimize the flow of groundwater and provide lateral support to the excavation. The soil mixing process involved mixing neat cement grout with the in-situ soils and placing a soldier pile within the soil mix. This design produced a system that was both able to resist the earth's pressures and reduce water seepage into the excavation without the use of shotcrete or wood lagging. The soil mixing installation covered a substantial area of over 65,000 square feet.



Vibrating in soldier piles and mixing soil mix panels



APPLICATION OF JET GROUTING



Setup to begin Jet Grouting for seal slab plug

To reduce groundwater seepage from the base of the excavation, jet grouting was employed to create a seal slab. This process involves the injection of high-pressure grout into the ground through a drill string as it is rotated, creating a solid and impermeable column of treated soil. A bottom plug was created by constructing numerous overlapping columns of treated soil at the base of the excavation to cutoff water. A significant quantity of jet grouting was performed on the project, with over 6,200 cubic yards of soil being treated. This extensive application of jet grouting ensured a strong and

reliable plug for the cutoff wall, effectively reducing the groundwater seepage and enhancing the overall stability and integrity of the excavation.

INSTALLATION OF TIEDOWN ANCHORS

Tiedown anchors were installed at the base of the excavation to ensure stability and prevent potential issues such as heaving. The project included over 9,000 linear feet of tiedown anchors installed to depths of 80 feet. The tiedown anchors were installed with a crane with hanging leads with a continuous flight auger. The anchors were drilled through the jet grout plug after it was completed and reinforcing bars were used to create tensile capacity for the tiedowns.



Installing tiedown anchors with CFA through the jet grout plug

CONCLUSION



Completed IPS shoring cutoff wall, jet grout plug and tiedowns

The earth retention and groundwater cutoff services provided by Schnabel at the Roberto Bustamante Wastewater Treatment Plant Headworks Improvements Project will aid in the construction of the new influent pump station. By implementing soil mixing, the influx of groundwater was reduced, contributing to the overall stability and success of the project. The application of jet grouting ensured a strong plug for the cutoff wall, effectively reducing groundwater infiltration. Additionally, tiedown anchors were installed to stabilize the bottom of the excavation. In closing, the RBWWTP Headworks

Improvements Project will result in a 140% increase in plant capacity.

SCAN THE QR CODE TO VIEW A **SPOTLIGHT VIDEO** ON THE RBWWTP HEADWORKS IMPROVEMENT PROJECT



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