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SCHNABEL
PRINCIPLED. PROVEN.

PROJECT
OWNER

FDOT

BACKGROUND INFORMATION

The Florida Department of Transportation (FDOT) has initiated a comprehensive project with multiple phases along Interstate 275 over Old Tampa Bay, stretching between Hillsborough and Pinellas counties. This extensive project includes the construction of the new Howard Franklin Bridge, the expansion of existing roads, and the establishment of pedestrian and cycling pathways. I-275 serves as a vital artery, facilitating the seamless movement of both commuters and goods across the Tampa Bay region.

SCHNABEL'S ROLE

In May 2023, Mastec Civil, the general contractor for the project, contracted with Schnabel to build a cost-effective earth-retention solution to reclaim land along Old Tampa Bay. Schnabel's earth retention system would allow for the construction of new driving lanes, and pedestrian/bicycle pathways. Schnabel's scope of work consisted of the installation of sheet piles and tieback anchors to retain a 5,500-foot segment of the newly reclaimed land. Schnabel successfully installed over 1,100 pairs of sheet piles and 534 tiebacks. Schnabel also conducted 453 proof tests, 54 performance tests, and 27 creep tests to ensure the tiebacks would be able to achieve the tensile capacities they were designed for.

Schnabel's sheet pile wall retained using Schnabel installed steel waler and tiebacks

SPECIALIZED EQUIPMENT SOLUTIONS FOR THE PROJECT

Schnabel's crane suspended drill for waterfront projects and other projects with limited bench space/quality

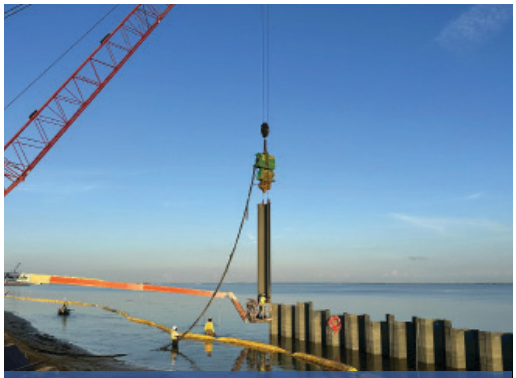
The location where Schnabel needed to install the tiebacks presented significant challenges due to its waterfront setting. Traditional methods involving barges were rendered ineffective due to the shallow water, prompting Schnabel to devise an alternative approach.

Their solution involved utilizing a drill mast suspended by a crane positioned inland, behind the sheet pile wall. Schnabel's Equipment Division (SEQ) played a crucial role in this endeavor by developing a drill mast that could be suspended from a crane. This innovative technique enabled them to drill the tiebacks at the precise designated angle and depth as per the design specifications.

Recognizing the sensitivity of the marine ecosystem and foreseeing potential environmental concerns, especially regarding hydraulic fluid leaks into Tampa Bay, SEQ took proactive steps. They opted for biodegradable hydraulic fluid instead of the conventional variety, thus effectively minimizing the environmental impact in case of any leaks.

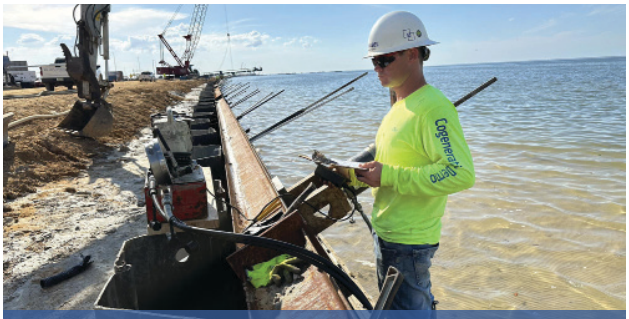
ADDITIONAL CHALLENGES

Adverse weather conditions and the project's proximity to Tampa International Airport posed significant challenges. The intense Florida summer heat, with temperatures exceeding 110°F, subjected workers to demanding conditions, prompting frequent breaks at cooling stations. Strong winds often interrupted operations due to safety concerns, as wind speeds reached hazardous levels for hoisting sheet piles and the drill mast. Additionally, the project had to adhere to FAA-imposed height restrictions due to its proximity to the airport, requiring constant monitoring of crane heights. Moreover, Hurricane Idalia caused a major setback, leading to the shutdown of operations for several weeks.



Schnabel installing sheet pile wall in shallow water using crane-suspended vibratory hammer and manlifts

CONCLUSION



Schnabel performing tieback tests per FDOT specification to ensure a quality product

Despite facing numerous operational and weather-related obstacles, Schnabel successfully completed the project three months ahead of FDOT's tentative schedule. Their earth retention services along the I-275 corridor will support FDOT in constructing new pedestrian paths and lanes, ultimately easing traffic congestion and offering more commuting and recreational options for the growing Tampa Bay region.