

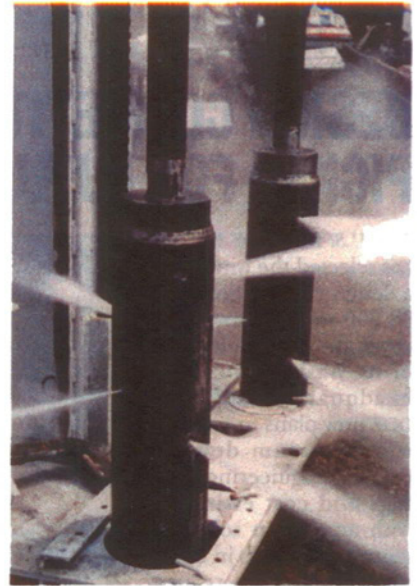
## Construction Methods

# MILES OF JET GROUTED WALL BOLSTER FLORIDA CAUSEWAYS

SOME 19,000 LINEAL FT OF JET grouted retaining walls will line causeway approaches to the Howard Frankland Bridge across Tampa Bay, Fla., before year's end, thanks partly to a double-stem drill system especially developed for the project.

Earth Tech Inc. began work on the \$2-million subcontract in June, says Ron Broadrick, president of the firm's Tampa office. "In 15 years of jet grouting experience, this is the longest we've ever seen, heard of or completed," he says. The walls involve 7,500 interconnected jet grout columns under a design by the Tampa office of PSI.

The nearly 4 miles of jet grouted wall will help protect causeways connecting Interstate 275 between Tampa and St. Petersburg from damage in case of a major storm. Existing interlocking concrete sheet piles have loosened since 1959, causing erosion of roadway foundation soil, say Florida Dept.



**GROUT EXPECTATIONS** New protections will stabilize walls to resist storms.

of Transportation officials. PSI looked at different methods of rehabilitation, such as building new columns. But the firm decided that jet grouting would be the best method because anchoring concrete piles with tieback rods lie every 4 or 5 ft along the wall, "and if we disturbed them, the wall might fail," says Ching Kuo, chief engineer for PSI.

FlaDOT awarded a rehabilitation contract of about \$4 million to David Nelson Construction Co., Palm Harbor, Fla., to build a new concrete barrier wall about 3 ft tall to combat the volume and speed of flooding. Earth Tech is mixing and pumping cement and bentonite with custom-made equipment that had to be downsized and made to fit within a 30-ft construction zone between the wall and shoulders of the eight-lane highway. Some 106,500 vehicles travel across the bridge each day.

"Behind the existing concrete walls we're going in and jet grouting a 3 to 4-ft-thick mass," says Broadrick. "After we stabilize it, [Nelson] will pour a foundation footing on top of our soil." Slots along the wall will allow water to flow back into the bay. Nelson will build the cast-in-place barrier to replace a chain-link fence as well as install new riprap.

An automated double stem drill system allows the subcontractor to simultaneously drill and grout two interconnected columns, according to Nelson. "It's doubling the production, and will hopefully be cost-effective," he says, adding that "we've gotten a few inquiries about the equipment" by other firms doing underpinning or barrier wall projects. □

By Aileen Cho

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