ABB

Huntersville, NC

ABB Cable Manufacturing Plant under construction in Huntersville, NC required 503 micropiles for support of a 475 ft. tall manufacturing tower. Micropiles were constructed of 3-½" diameter, GR 75 threadbar, and neat cement grout. Micropiles were constructed to a depth of 40 ft. each into partially weathered rock and rock. The piles will be required to support compressive loads of 380 kips and uplift loads of 50 kips.

Owner: ABB Manufacturing
GC: Yeargin Potter Shackelford
Engr: Professional Engineering Associates
Geotechnical Contractor: WEC

Big Storm Brewing

Greenville Hospital – Energy Plant

Greenville, SC

Removal of two buried fuel tanks adjacent to a busy access road and numerous utilities required the use of a long reach drill. WEC had just the right piece of equipment with a drill attachment mounted to a telehandler. We were able to install soil nails above the existing rusted tank without setting the drill rig on top of the tank. Once the ground above the tank was stabilized, the tank was removed in sections and each section soil nailed prior to removing the adjacent portions of the tank.

Owner: Greenville Hospital System
Contractor: J.B. Russell Construction
Environmental Consultant: HRP Associates, Inc.
Geotechnical Contractor: WEC

Now that's a long reach drill !!!

Vogtle Electric Nuclear Plant

Augusta, GA

A new diversion ditch was proposed for the Vogtle Electric Nuclear Plant to reroute surface water runoff during construction of two new units. The ditch was approximately 1,926 ft. long, the base was about 6.5 ft. wide and the side slopes were constructed at 1.5H:1V. The ditch had a surface area of about 90,000 sq. ft. WEC lined the surface of the ditch with 2 inches of fiber reinforced shotcrete. Through careful planning and methodology, the project was completed weeks ahead of schedule

Owner: Georgia Power
Grading Contractor: Morgan Corporation
Contractor: Shaw
Shotcrete Contractor: WEC

Blue Ridge Parkway, MM 400.8

Asheville, NC

A slow moving landslide has been occurring at MM 400.8 along the Blue Ridge Parkway since at least 2002. Extremely large tension cracks (large enough to swallow full size oak trees) and bulging of the roadway below the slide were the result of slide movement. The project consisted of re-grading, stabilization, and roadway repair in the vicinity of the landslide. 140 kip and 240 kip, strand tieback anchors were installed in the hillside as patterned ground anchors. Steel plates transferred the load from the tieback anchors to the hillside. Polyurethane resin grouting was performed to seal up fractures in the rock at selected locations.

Owner: National Park Service
General Contractor: Bryant Development
Geotechnical Contractor: WEC

Oak Trees in Tension Cracks

Hardison Residence

Leicester, NC

A single family residence was constructed at the toe a soil cut slope inclined at approximately 1H:1V . The soil slope failed and caused a portion of a retaining wall at the toe to collapse, causing damage to the residence.

A soil nail wall was constructed to allow removal of the cast-in-place wall and stabilize the slope. A sculpted and stained finish was applied to blend the retaining wall into the hillside.

Owner: Private Residence
Geotechnical Contractor: WEC

Jenest Residence

Asheville, NC

The hillside below the driveway at the Jenest Residence has been moving over the past years. Previous efforts to control the movement included undercutting and replacement with geogrid reinforced fill soils and placement of gabion cells along the slope . Slope movement continued.

WEC proposed construction of a soil nail wall downward from the crest of the slope (approximately 15 feet in height), coupled with partial re-grading and re-vegetation of the slope.

Owner: Private Residence
Engr: McGill Associates
Geotechnical Contractor: WEC

Courtyard Hotel

Greenville, SC

A total of twenty-eight rock anchors were constructed for uplift resistance. Individual rock anchors were extended at least 20 ft into the ground. The uplift anchors were constructed of 1-3/8", GR 150, epoxy coated thread bar and 4,000 psi grout.

GC: Triangle Construction
Geotechnical Contractor: WEC

Chattahoochee Pump Station

Norcross, GA

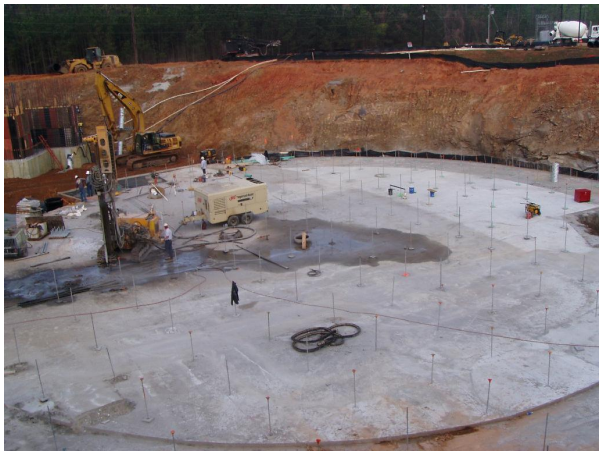
Shoring was required for excavation next to the Chattahoochee River for construction of a pump station. A soldier pile, lagging and tieback wall was first constructed inland of the river. When the sheet piling between the river and the excavation failed, WEC was then asked to tie back a line of pipe piles. The drill rig was set on top of the wall with a crane and Titan self grouting bars and casing were drilled from the top of the wall out into the river for support. A novel approach to a difficult problem.

GC: Atlantic Skanska
Geotechnical Contractor: WEC

Lanier Filter Plant

Gwinnett County, GA

Several hundred uplift rock anchors were installed for two below ground clarifiers. Anchors were grouted into rock then load tested and locked off. To view a press release, enter the following:
http://www.hazenandsawyer.com/news/lanier-filter-plant-project/



Engineer: Hazen and Sawyer
Geotechnical Contractor: WEC

Sculpted and Stained Shotcrete

Anywhere you want it

Sculpted and stained shotcrete is becoming increasingly popular as people want an aesthetically pleasing wall while enjoying the cost benefits and flexibility of soil nail walls. Following are several projects we have recently constructed. They show the variety of sculpted and stained finishes that are possible. Pick out a rock outcropping you like and we will do our best to match it.

Engineer: Yes
Geotechnical Contractor: WEC

I-26 Charleston, SC

Sylva Fire Station, Sylva, NC

Western Carolina Univ.

Montreat, NC

Appalachian State Univ.

Parr Creek Drag Rake Anchors

Parr Creek, SC

North Fork Electric, Inc. (NFEI) installs drag rake intake cleaning systems at dams. Part of the cleaning system requires 1¼ inch, stainless steel cables to be anchored out from the dam.

WEC was retained to drill install the anchors. Work was performed with a Klemm KR806-4 drill rig, a high shear grout plant and high pressure air compressor working off of a barge.

Owner: South Carolina Electric and Gas Company
GC: North Fork Electric, Inc.
Geotechnical Contractor: WEC

Ruth's Chris Steakhouse in Biltmore Village

Asheville, NC

Construction of a new Ruth's Chris Steakhouse was proposed for a lot adjoining the Biltmore Estate. A near vertical, old excavation roughly followed the property line. It was desired to shore the portion of the excavation adjacent to the proposed new restaurant, however, it was not permitted to drill across the property line.

WEC proposed to construct an "L" shaped retaining wall supported on two rows of micropiles for support of the hillside and was awarded the project. The geotechnical consultant and geotechnical engineers with WEC evaluated the existing hillside cut and determined that it would be stable through construction, however, as a precaution, WEC drilled and grouted short dowels into the exposed rock, and applied a relatively thin layer of reinforced shotcrete over the exposed rock surface to prevent a loose rock from falling on the workers.

The retaining wall footing is poured, reinforced concrete, typical of retaining wall construction, however, the vertical portion of the wall was constructed of reinforced shotcrete. The face of the retaining wall is relatively planar with a "gun finish" created by applying an extra layer of shotcrete to cover the previous layers of shotcrete and to fill in low areas. The face of the retaining wall was laid back, and the top trimmed to conform to the contours of the hillside, allowing it to blend into the hillside.

Construction Manager: Biltmore Property Group
GC: Beverly Grant Construction Co.
Geotechnical Contractor: WEC

Rice White Building

Asheville, NC

The Rice White Building, located at 19 Biltmore Ave. was being renovated for office/retail development. The south side of the structure was in poor condition due to weathering of the brick and mortar joints.

An approximately 2" thick layer of lightly reinforced, wet mix shotcrete was placed over the exposed south wall to protect the brick from further weathering damage.

GC: Heartwood Renovations & Building, Inc.
Engineer: Kloesel Engineering
Geotechnical Contractor: WEC

Main Street Grouting

Greenwood, SC

Five crosswalks at two intersections required grouting to fill voids under the crosswalk slab. Photographs showed voids beneath the slabs.

WEC drilled 3/8" holes through the crosswalk slabs on approximately 3 to 5 ft centers. Two component polyurethane grout was pumped through the holes to fill voids beneath the slabs. Traffic was allowed back on the grouted slabs within 30 minutes of grouting.

GC: Chandler Construction
Engineer: Davis & Floyd
Geotechnical Contractor: WEC

Triad Research Park

Winston Salem, NC

WEC constructed a shotcrete overlay on an existing soil nail wall to improve aesthetics. Prior to our work the soil nail wall had an approximately 4 inch thick layer of lightly reinforced shotcrete with shear-studded plates protruding through the shotcrete.

The total wall area faced was approximately 5,000 square feet. The face of the existing wall was pressure washed prior to applying additional shotcrete to improve adhesion. WEC applied a reinforced facing system with a nominal thickness of 8 inches to ensure that the shear studs did not protrude through the facing and that their locations are not apparent after finishing.

GC: Yates Construction
Geotechnical Consultant: ECS
Geotechnical Contractor: WEC

Target at Gaston Mall

Gastonia, NC

A new Target is being constructed in a low lying wet area adjacent to a steep hillside, a portion of which had been used to dispose of stumps, tires and other trash. Construction of the Target required cutting into the existing hillside for construction of a new wetlands area behind the store. At the base of the approximately 1.8H:1V hillside cut, an approximately 15 ft high by 800 ft long soil nail wall was constructed. The construction manager chose not to overshoot the wall as it was constructed for utilitarian purposes. As a result, the locations of soil nails can be seen in photos as humps in the wall.

The base of the soil nail wall was lower than the adjacent creek adding to the challenges of construction. With assistance from the grading contractor and pure determination from WEC crew, the project was completed 3 weeks ahead of schedule.

Standing water and mud after every rain

CM: Stewart Perry
Grading Contractor: CK Contracting
Geotechnical Contractor: WEC