# Project Profile: SHAFT CONSTRUCTION

BRADSHAW CONSTRUCTION CORPORATION
TUNNELING SPECIALISTS

## Crabtree Basin Waste Water Conveyance Phase 1
Raleigh, NC




### PROJECT OVERVIEW AND CHALLENGES

Phase 1 of the Crabtree Basin Wastewater improvements project consisted of 21,000 feet of 30" to 72" diameter gravity sewer pipe. Three segments were designed for trenchless construction by microtunneling. These included two road crossings and one crossing under existing 60" RCP pipeline connected to an active pump station. Bradshaw microtunneled all three crossings in rock and mixed face soil conditions below the water table. The slurry microtunnels were one pass (direct) pipe jacking of 60" & 72" centrifugally cast fiberglass reinforced polymer mortar (CCFRPM) pipe. The primary challenge was the hard granitic rock conditions as well as the mixed face (soil over rock) tunneling conditions. Unexpected buried tree trunks were also found in one shaft and tunnel drive. Bradshaw constructed all the microtunneling launch shafts using ribs and liner plates.






### PROJECT INFORMATION - 521

**OWNER:**
City of Raleigh
Public Utilities Department
Aaron Bower
(919) 857-4540
aaron.bower@raleighnc.gov

**ENGINEER:**
McKim & Creed
Chris Windley
(919) 233-5261
cwindley@mckimcreed.com

**CONTRACTOR:**
Park Construction of NC, Inc.

**COMPLETION DATE:**
4/12/2013

**GEOLOGY:**
Silty Sand, Sandy Silt, Granitic Rock, Tree trunks

**EXCAVATION METHOD:**
Mini Excavator

**MINING DIMENSIONS:**
22'x40 VF, 22'x24 VF, & 22'x24 VF

**FINAL LINING:**
Liner Plate & Rib Lagging

**FOR MORE INFORMATION:**
Eric Eisold, Vice President
(410) 970-8300
eeisold@bradshawcc.com
Refer to Project 521