Project Profile: MICROTUNNELING

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
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ENGINEER:
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CONTRACTOR:
Park Construction of NC, Inc.

COMPLETION DATE:
4/12/2013

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

EXCAVATION METHOD:
Herrenknecht AVN-1200 MTBM
Herrenknecht AVN-1500 MTBM

MINING DIMENSIONS:
100' x 75.4"Ø, 300' x 75.4"Ø, & 260' x 62.9"Ø

FINAL LINING:
60" & 72" Fiber Reinforced Pipe

FOR MORE INFORMATION:
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Refer to Project 521