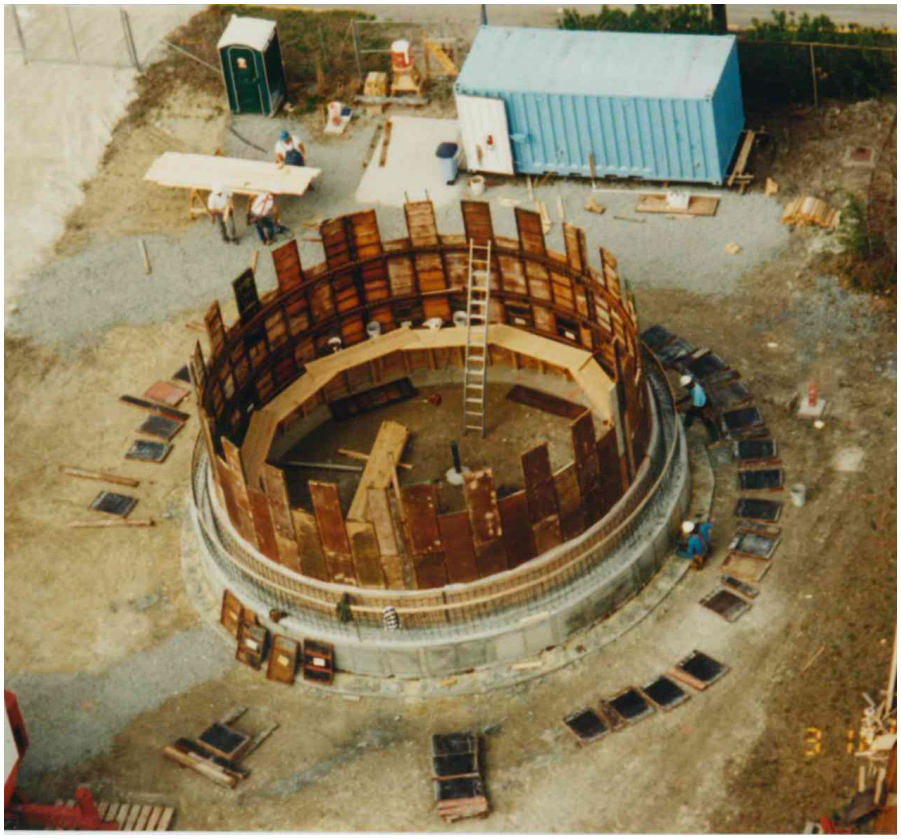
Project Profile: SHAFT CONSTRUCTION

BRADSHAW CONSTRUCTION CORPORATION
TUNNELING SPECIALISTS

East Bay/Calhoun Drainage Facilities Division I - Collection Tunnel System
Charleston, SC



PROJECT OVERVIEW AND CHALLENGES

BTM Joint Venture, led by Bradshaw Construction, managed the construction of two (2) cast-in-place caisson shafts constructed in downtown Charleston, SC. The project was the first phase of flood control instituted by the City. The first caisson was 30’ ID x 150’ deep at Concord St and served as a tunnel mining shaft and future pump station. The second caisson was 16’ ID x 130’ deep in Marion Square Park on Calhoun St and served as the TBM receiving shaft and future mining shaft. Both caissons were reinforced concrete cast in 10’ lifts. Excavation was subaqueous in Charleston “plough” muds down to 50’-70’ to the Cooper Marl clays and performed by a crane with clamshell. The biggest challenge overcome was progressing safely through the soils interface into the clays where free air excavation was used. Once the caissons were installed, a 120 inch rib and board TBM tunnel was mined for a 96 inch cast-in-place concrete storm drain.

PROJECT INFORMATION - 1JV1

OWNER:
City of Charleston
Laura Cabiness
(843) 724-3761

ENGINEER:
Davis & Floyd Engineering, Inc.
Herb Gilliam
(843) 554-8602

CONTRACTOR:
BTM Joint Venture - Bradshaw Construction Managing Partner

CONTRACT VALUE:
$4,368,139.00

COMPLETION DATE:
6/14/1996

GEOLOGY:
Silts and sands over Cooper Marl (clay)

EXCAVATION METHOD:
Sunken Caisson
Crane & Clam Shell

MINING DIMENSIONS:
16' x 130VF & 30' x 150VF

FINAL LINING:
Cast in Place Steel Reinforced Concrete

FOR MORE INFORMATION:
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Refer to Project 1JV1