TITLE AND LOCATION *(City and State)*	YEAR COMPLETED	
Hickory Log Creek Dam **Canton, Georgia**	PROFESSIONAL SERVICES 2008	CONSTRUCTION *(If applicable)* 2008

PROJECT OWNER'S INFORMATION

PROJECT OWNER	POINT OF CONTACT NAME	POINT OF CONTACT TELEPHONE NUMBER
City of Canton, Georgia (25%) Cobb County-Marietta Water Authority (75%)	Cecil Pruett – Former Mayor Glenn Page – General Manager	(770) 704-1548 (770) 426-8788

BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost.)*

PROJECT DESCRIPTION

The Hickory Log Creek Dam is a new 180 ft high by 975 ft long roller-compacted-concrete (RCC) gravity dam. The dam is located on an 8.2 square mile drainage basin and will impound a 411 acre reservoir. The dam and reservoir is part of a $40 million pump storage water supply project. The project is being designed in two phases: 1.) foundation excavation and improvement contract to also include site infrastructure improvements and stream diversion; 2.) design of the dam and itsand the aggregate gradation.

PROJECT HIGHLIGHTS

- Construction Management Services Provided for Two Years
- Fourth Highest RCC Dam in United States
- Converging Gated Spillway Over the Dam
- Portion of Dam Placed on Weathered Rock Foundation
- Fast-track Design Built in Two Phases
- Finished On-time and Below Budget

SERVICES PROVIDED

The first task assigned to Schnabel was performing and alternative analysis to determine what type of dam was best suited for the site and was the most economical. This detailed analysis showed that the RCC gravity dam option was superior and less costly than that of an earth fill dam.

Schnabel was responsible for completing the geologic and geotechnical investigation. A Phase I program was implemented to gather information to be used as part of the alternative analysis. After the dam type was selected, a more in-depth field and laboratory program was completed. The in situ field work included pressure meter testing of weathered rock and water pressure testing of the foundation rock. Laboratory work included direct shear tests of the rock and rock/concrete interface to obtain the strength parameters for the stability analysis. Schnabel performed both a static and dynamic finite element analysis to evaluate the stability of the dam with different sections and at various loading conditions. Schnabel designed a two-line grout curtain and seepage control cutoffs and collection components based on data from the field program.

Schnabel completed a hydrologic analysis of the watershed for storms events ranging from the 2-year through the Probable Maximum Precipitation (PMP). Based on this analysis, the RCC dam design included a 250 ft long spillway consisting of a 110 ft section with 6 ft high crest gates. The dam is design to pass the full Probable Maximum Flood (PMF) of 42,000cfs. Due to topographic constraints, the spillway over the dam has to converge from 250 feet to 140 feet at the stilling basin. Schnabel, in conjunction with Utah State University, completed a 1:25 scaled model of the spillway and stilling basin to develop the appropriate rating curve and for optimizing sizing of the stilling basin.

Schnabel provided construction management services over a two year period. Ken Hansen prepared the thermal analysis study and provided consulting on all phases of design and construction involving RCC with special emphasis on mixture proportions and grout enriched RCC (GERCC) for the downstream face.