



Digging Deep

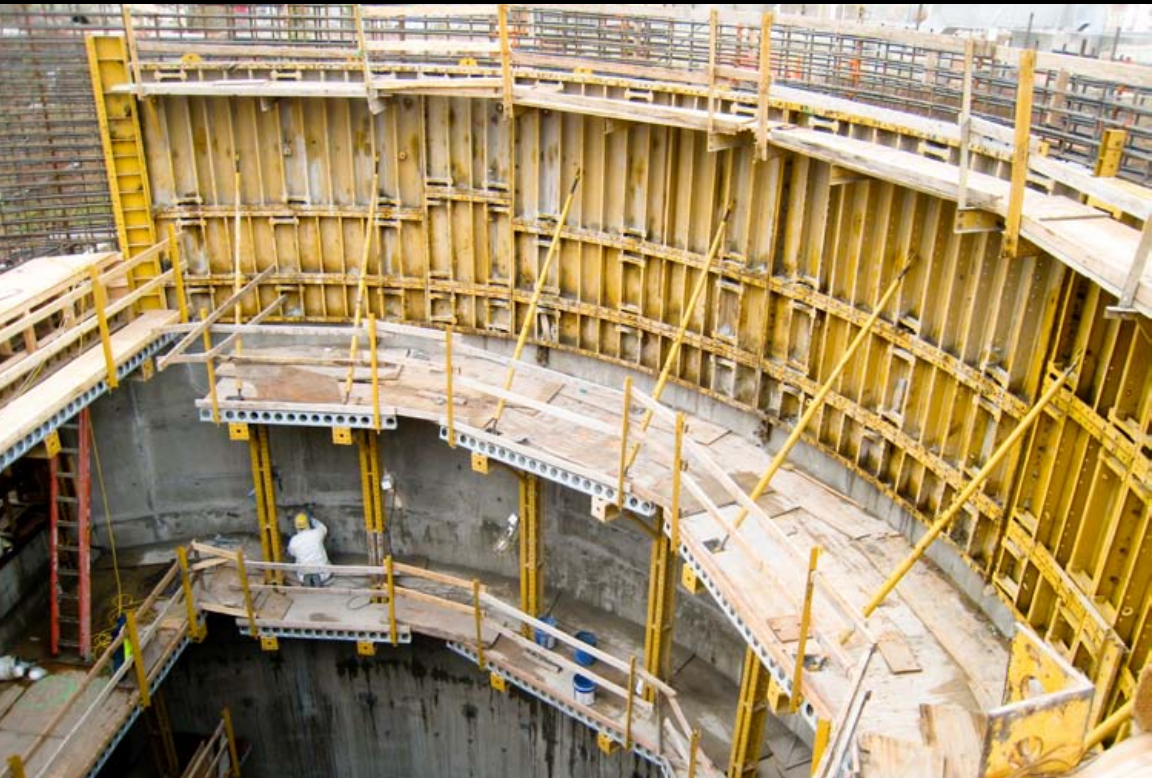
Austell, Georgia

“ We would not have been able to form this project as fast without the use of steel faced panels and the work platforms on the entire circumference. ”

Gilbert Trevino

Superintendent
Archer Western





A Project for Future Generations

The water system in Cobb County, Georgia is responsible for providing water, sewage treatment, and storm water management services to more than 680,000 residents and businesses. Population trends are foretelling county officials to prepare for unprecedented growth in the coming decades. This projected demand has initiated a program to make substantial improvements to the county's water system infrastructure.

To support the continued growth in Cobb County, the Sewer Authority let a \$305 million project bid that called for the construction of a 29,000' (8,800 m) long tunnel leading to a 130 MGD (Million Gallons per Day or 492 million liters per day) influent pump station excavated to a depth of 210' (64 m) with a finished diameter of 104' (32 m). **Archer Western of Atlanta, Georgia** was awarded the sub contract to construct the pump station.

Partnering for Success

Archer Western partnered with EFCO to provide forming solutions for construction of the pump station wet well chambers. The formwork solutions were engineered by EFCO to allow for full liquid head pours. The formwork design utilized cantilevered *PLATE GIRDER*® panels as stiffbacks combined with *REDI-RADIUS*® forms on the typical elevated lifts. The first lift was poured using a *SUPER STUD*® A-frame support structure to allow for full liquid head pour rates. Anchors were cast in each pour and used to support the system as it cycled vertically up the shaft.

The wet well chamber inside the pump station has a 48' (15 m) inside diameter and a divider wall that effectively creates two wet well chambers. The chambers of the wet well include an opening and diverter structure to accommodate tunnel inflow to one or both of the wet well chambers. This diverter structure

included a gate wall. The openings in the wet well chamber and gate wall were shored during the construction process with the EFCO *E-Z DECK*® system and EFCO *SUPER STUD*® frames.

The wet well forming system included EFCO *REDI-RADIUS*® and *PLATE GIRDER*®. Each wet well chamber was raised with one crane lift - over 1400 sq. ft. (130 m²) of EFCO formwork picked at one time! EFCO dowel rod panels were employed in both vertical and horizontal locations to allow intersecting wall and slab dowels to protrude.

A Safe Working Environment

The primary focus of Archer Western from the earliest discussion with EFCO was to ensure a safe working environment along with an efficient forming system. To that end the EFCO engineering team designed a forming system to allow independent support of concrete forming panels and work platforms. The anchors for the formwork system and the work platforms were each a unique diameter eliminating any confusion as to which anchor was to be used. All the steel faced panels were pre-drilled using a template in the EFCO warehouse to allow accurate anchor bolt installation.

Important Work Platforms

The outside walls had work platforms on the entire circumference allowing complete access to the formwork. This minimized the number of crane picks to the outer wall. The wet chambers and the stair/elevator cores had flipper lock platforms with trailing platforms installed. The wet well chamber platforms were designed to accommodate a portable toilet, toolboxes and rebar landing. Trailing platforms allowed patching of the tie holes and flipper pocket locations.

Each typical lift for the outside wall and the wet well were able to be formed on a two-week cycle to satisfy the job specifications requiring a seven-day waiting period between adjacent pours. To work with this schedule EFCO re-engineered the pour sequence of the outside wall and wet well pours to eliminate bulkhead requirements and decrease cycle time.

"As-Struck" Quality Finish

The as-struck high-quality concrete finish achieved with EFCO steel faced panels greatly reduced the amount of crane picks and man-hours allocated to the finishing of concrete. ♦



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- Adam Williams Project Manager
- Jesse Chamberlain .Project Superintendent
- Gilbert Trevino..... Superintendent
- Hans Bluehs.....EFCO Territory Manager
- Jim Ostrander EFCO Field Supervisor
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