

GOETTLE'S RIVERSIDE DRIVE: HOLDING BACK THE HILLS ALONG THE OHIO RIVER

# FOUNDATION

APRIL  
2019

# DRILLING



**ALDRIDGE INSTALLS  
EVERGLADE FOUNDATIONS**

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**HONORING BILL MAHER  
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**ADSC SUMMER MEETING PREVIEW  
HILTON HEAD, SOUTH CAROLINA**

# ADSC

The International Association of Foundation Drilling



# ALDRIDGE INSTALLS EVERGLADE FOUNDATIONS



BY JENNIFER HUDOCK, ALDRIDGE

In early 2018, NextEra Energy Resources/Florida Power and Light (FPL) moved forward with the construction of a new 500kV transmission line across Palm Beach, Broward and Miami-Dade counties in southern Florida. The Corbett-Sugar-Quarry (CSQ) Line project consists of 69 miles of new line and creates critical ties between substations to increase the reliability on the FPL grid.

With the majority of the line located through the environmentally sensitive Florida Everglades, the CSQ T-Line Project posed many unique challenges in geography, execution, equipment, and safety. As a part of the overall project, Aldridge was selected to install 540 concrete foundations, 57 direct embeds and 384 concrete guy anchors to support the H-frame towers.

## GEOGRAPHY

As a nationwide contractor, Aldridge routinely performs work all across the country in a wide range of terrains and working conditions. However, the CSQ Project marked the first foundation project for Aldridge in South Florida. As with every job, Aldridge brought their innovative strategy, in-depth focus on pre-planning, and daily attention to accommodate the project.

This project required working in extreme temperatures and humidity, with the potential for dangerous weather

scenarios. Florida is well-known for frequent rain and thunderstorms. Due to the high reaching equipment and structures being located in this remote location, lightning became a major hazard. If lightning was within 10 miles of the job site, crews were shut down completely.

**“ Due to the high reaching equipment and structures being located in this remote location, lightning became a major hazard.”**

The amount of rain was also significant. The Everglades get an average of 57 inches of rain per year. During the 11-month duration of the project, the work area saw more than 50 inches of rain, often accompanied by lightning. These weather conditions had a substantial impact on the day-to-day work site activity.

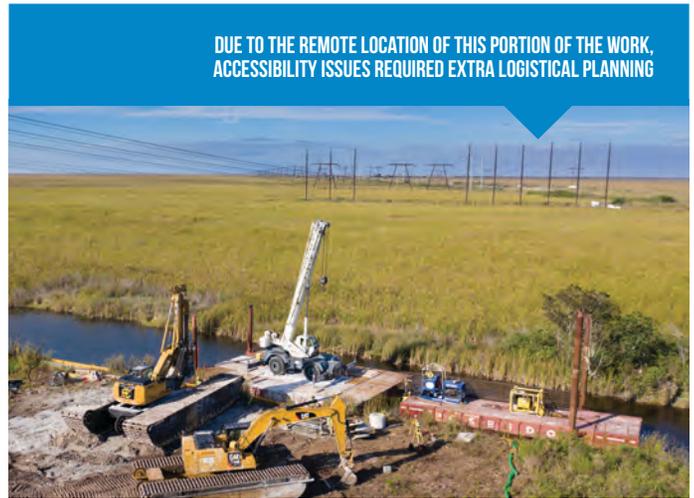
Given the sensitive location in the Everglades, the team's project planning and daily actions involved conscious consideration for the environment and wildlife. The marshy wetlands are filled with alligators and numerous types of snakes. These animals were visible on a daily basis, sometimes even making their way on to the structure sites alongside crews and equipment. Site-specific training and procedures were put in place for working around the wildlife, to ensure that crews understood the protocols for

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various encounters and implemented the proper actions. In addition, turbidity curtains were used effectively to contain sediment runoff and erosion, further protecting the wildlife within the waters surrounding the work areas. Equipment was constantly inspected so that there was no chance of spills of any kind. Special precautions were taken for fueling and repairing equipment, accessing the structure sites, and traversing the right-of-way.



THE MARSHY WETLANDS ARE FILLED WITH ALLIGATORS AND NUMEROUS TYPES OF SNAKES



DUE TO THE REMOTE LOCATION OF THIS PORTION OF THE WORK, ACCESSIBILITY ISSUES REQUIRED EXTRA LOGISTICAL PLANNING

A large portion of work site access roads were adjacent to irrigation canals for sugar cane fields. Accessibility to the jobsite was occasionally impacted by standing water on the roadways from the irrigation process. This unpredictable flooding created the need for last minute changes to the daily schedule, which Aldridge addressed without delaying activities.

## PLAN THE WORK, WORK THE PLAN

Planning a project of any size begins in the bid phase and involves a well-developed work approach and strategy.



Territory Map

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After the project award and before work begins, the extensive pre-planning process continues. Aldridge utilizes a complete project planning process and methodology that addresses risk and improves efficiency. The program is focused on pre-planning, communication, and data analysis. Several tools, such as a work breakdown structure and job productivity studies are used to identify the best way to build a project. It was during this rigorous planning process that the Aldridge team decided to put the drill rigs on amphibious pontoon tracks to work through the 15 miles of canal waterways that were only accessible by water. Though amphibious tracks in the drilling industry are relatively new, Aldridge used an innovative idea to increase efficiency in areas that were inaccessible with conventional equipment.

Having worked in and around water before, this was not a new application for Aldridge, but the use of the amphibious tracks was and presented the opportunity for our crews to develop a new work approach. Our team deployed barges, concrete pump lines, and motorized boats to get to and from the work area. In addition, amphibious excavators and agitators were put on barges to move concrete to the structure locations. Additional planning and care had to be taken to understand how to safely get this floating equipment in to, out of, and through the water. Great consideration was taken to understand the center of gravity of each piece, which ensured stability while on the water.

In other areas of the 69-mile project, Aldridge installed the balance of the foundations using an extensive system of conventional access. The work was performed on newly constructed and improved stone roads and pads. Aldridge encountered a variety of soil conditions from sand, cap rock over sand, solid rock, and high water tables. All subsurface risk was on Aldridge. A standard fleet of equipment and tooling were utilized to install the 400+ structures on land.

Aldridge worked closely with the general contractor, Irby Construction. The two companies created open lines of communication which allowed Irby crews to work right behind Aldridge, installing the tower structures and then transmission line in an expedient fashion.

NEWLY INSTALLED TOWERS IN THE MIDDLE OF THE EVERGLADES



THE AMPHIBIOUS TRACKS WERE OVER 6-FEET TALL IN ORDER TO MOVE THROUGHOUT THE VARIED SOIL CONDITIONS ON THE RIGHT OF WAY

## SAFETY FIRST

Aldridge is committed to safety and being Incident and Injury Free (IIF) every day. Given the safety challenges present on this project, Aldridge made sure to develop a detailed project specific safety plan that addressed the project-specific risk and hazards. Some of the highlights of the plan included outfitting our crews with a brand new safety helmet. Aldridge is part of the first wave of construction companies to supply a new safety helmet



ALDRIDGE CREWS WORE A SOMBRERO ATTACHMENT ON THEIR NEW SAFETY HELMET TO PROVIDE A WIDER BRIM AS AN ADDITIONAL FORM OF SUN PROTECTION

to their employees and rolled out this initiative during the CSQ Line Project. These helmets are at the forefront of industry standards providing a more ergonomic and secure fit for better head protection. They provide crews with protection from slips, trips, and falls, offer multiple attachable accessories to adapt to varying conditions, and an integrated chin strap. The strategically placed foam padding inside the helmet offers critical frontal, rear, and side impact protection while the chin strap keeps the helmet in place. The helmets were well received on the project and many of the crew made good use of the neck shades and sombrero safety helmet attachments to protect against the strong UV rays and the hot Florida sun.

Aldridge's Heat Stress Prevention Program was stringently followed. It calls for increased rest periods, access to cooling stations, providing adequate amounts of cool drinking water, information sharing on heat-related illness and extra monitoring by a field leader who is First Aid/CPR certified. Each day that the heat index rose above 85 degrees Fahrenheit, the crews

would review procedures for responding to possible heat-related illness and discuss signs and symptoms during the daily task analysis.

Everyone at Aldridge has a duty to themselves and to their co-workers to be constantly aware of potentially hazardous conditions and take action when such conditions are identified. It is everyone's responsibility to speak up and even stop a project if there is a safety concern. Aldridge is proud to report that there were no recordable incidents during this project.

"As a safety professional, I was very impressed by the way our team came together to enhance safety on the FPL Corbett-Sugar-Quarry Project by keeping lines of communication open between the field, upper management, the general contractor, and the owner. This fostered the ability and willingness to share information about challenges the team would be facing to complete the project successfully. Essentially, I was proud to be a part of this project, that as a team we created an atmosphere where our team-

mates were able to feel that they could speak up or even stop work, all in the pursuit of maintaining the highest level of safety." - Jacob Stoehr CSP, CHST, STS, Safety Manager Aldridge.

## MISSION ACCOMPLISHED

Aldridge would like to recognize FPL, Irby, and all members of the CSQ project team for creating the strong team culture and consistent communication that resulted in a successful project.

Aldridge has experience installing a wide range of foundation solutions through numerous varieties of rock and soil formations. Accessibility and varying soil conditions require diligence in the pre-planning process. With over 25 years of experience in the foundation industry and project experience in 45 states, Aldridge is equipped to handle complex projects anywhere. ▲

To learn more about Aldridge's capabilities, please visit [aldridgroup.com](http://aldridgroup.com)

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