

CASE STUDIES**NEW-CONSTRUCTION HELICALS SUPPORT****70-FOOT****CYLINDRICAL STORAGE TOWER****36**HELICAL
PILES
INSTALLED**COMMERCIAL****RAM JACK TENNESSEE**www.ramjacktn.com | 731-686-0370

Milan, Tennessee



RAM JACK HELICALS SUPPORTS 70 FT. TALL STORAGE TANK

MILLINGTON, TENNESSEE

Ram Jack customer, nexAir, needed to install a new tank in their Millington location. The tank was projected to tower at 70 feet. To successfully install the new tank, the company would need to commission the help of engineers to design a solid foundation. All cylindrical storage tanks require a very specific foundation. It is required that vertical, lateral, and overturning moment forces are addressed in the design.

PROBLEM

After being tasked with designing the foundation for nexAir's new tank, the Ram Jack Tennessee team, partnered with S. Gordin Structural Design, quickly saw that the installation would call for helical piles. Due to the height of the tank, the significant overturning moment would increase the compression loads on the piles and induce tension forces, which Ram Jack would need to take into account. After calculating all of the loads and reactions, the team of experts began designing the optimum foundation to meet all of the load requirements.

PROPOSED SOLUTION

Once the foundation was designed, Ram Jack, headed by Keith Lusk, along with S. Gordin Structural Design, proposed the installation of (20) 5½" piles to be placed around the perimeter edge of the foundation. This was required to resist additional tension and compression loads induced by the overturning moment. (16) 2⅞" piles were installed to resist the remainder of the vertical compression loads, providing uncompromised support across the board. The load requirements for the 5½" dia. piles called for 71.4 kips in compression, and 48.8 kips tension. The 2⅞" dia. piles were installed to 32.3 kips allowable. All piles were installed to an average depth of 50-feet.

OUTCOME

The team managed to install a total of 36 piles and carry the project from start to finish in just four days. Everything went according to plan, and no unexpected hurdles were documented. nexAir was very pleased with the result and the team's commitment to completing the job within the requested time frame. The remaining tank installation process went smooth and error-free, with a solid foundation to support the tank.

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INSTALLATION OVERVIEW

COMMERCIAL INSTALLATION

RAM JACK TENNESSEE

PRODUCTS USED

5½" HELICAL PILES
2⅞" HELICAL PILES

PRODUCT TYPE

NEW-CONSTRUCTION HELICAL PILES

TYPICAL APPLICATIONS

Ram Jack's 5½" external connection helical piles are typically used in compression and tension applications.

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Proudly Made in America

ISO 9001:2015
CERTIFIED



ICC-ES Recognized



CCMC Recognized



Custom Engineered Solutions Rooted in Quality.



At Ram Jack®, we are focused on providing custom-engineered solutions that meet the unique needs of our commercial clients. You can move forward with confidence knowing we maintain code compliance, providing piles and brackets that reach the highest rating among competitors' products recognized by ESR-1854. Our company has the most products recognized by the ICC and boast an ISO 9001:2015 certified manufacturing facility.

We have the facility to design and fabricate custom products—we are the one-stop solution for engineers and even offer our own in-house engineers for assistance with your project. If you need assistance with foundation designs, we also provide engineer tools and resources and our engineers can work with the project's EOR to develop a custom-designed solution.

Everything an Engineer Needs

The Ram Jack Technical Manual provides engineers with the information that you will need to understand, design, and specify Ram Jack's helical and driven piles. It also provides information verifying compliance with current building codes and ICC-approved acceptance criteria.

Everything an engineer could ever want and need to know about Ram Jack Helicals and Driven Piles in one book. If you or your firm would be interested in a Ram Jack Technical Manual, please contact your local Ram Jack dealer by emailing info@ramjack.com.

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