



**RAM JACK**<sup>®</sup>

# 2014 CASE STUDY

Type: Commercial | Issue: AL201402

## RAM JACK TRANSFORMS THE HALLS OF JUSTICE

Custom Brackets and Triple-Helix Configurations  
Preserve the Structural  
Integrity of a Historic Courthouse

RAM JACK LOCATION:

### Alabama Ram Jack

[www.alramjack.com](http://www.alramjack.com) | 877-875-2171

Bessemer, AL

# LIMESTONE COUNTY COURTHOUSE | REPAIR

Athens, Alabama

CASE STUDY 2014



The Limestone County Courthouse is a beautiful, historic building that not only represents justice and peace, but also the heart of the South in Athens, Alabama. With a beautiful stairway leading to a decadent entry surrounded by ornate columns and a clock for all to see, it looks more like a museum than a public office.

## **PROBLEM**

While the 1919 construction had a gorgeous exterior, the interior was in need of updates, which included removing interior walls and enlarging interior rooms. In order to provide adequate support to the structure after the remodel, increased foundational support was required.

### **PROPOSED SOLUTION**

Alabama Ram Jack proposed the installation of a system of helical piles to support the new footings inside the building. A subsurface investigation was not necessary, and it was assumed that the underlying ground was stiff. The project specifications assumed that the helical piles would be only 6 ft. long and that Ram Jack's industry-leading 2 7/8 in. helical piles would suffice. In addition, the plans specified that constant third-party inspections would take place during the entire process of installation.



### **OUTCOME**

After demolition, Alabama Ram Jack faced a number of obstacles with the courthouse, including excessively deep and wide existing footings as well as an extensive system of interior shoring that limited the available space for helical pile installation. Additionally, Alabama Ram Jack could not use mechanical equipment inside the historic structure; therefore, all piles were installed using handheld drivers. After the first pile reached bedrock at a depth of 31 ft. without generating significant torque, it was clear that the soil was not as stiff as originally anticipated.

Alabama Ram Jack quickly dealt with each of the obstacles to complete the job effectively and efficiently. First, Ram Jack supplied custom, heavy-duty, fold out brackets in areas of need to provide added support to the structure. Next, Ram Jack used a triple 8"/12"/14" helix configuration strategically spaced to ensure the building was supported prior to the piles reaching bedrock. Ram Jack Manufacturing supplied custom brackets along with the large helical assemblies, and Alabama Ram Jack installed sixty-one (61) piles to an average depth of 24 ft. in just 14 working days. The remodel was completed successfully, and the historic building's structural integrity was restored.



- Engineered Foundation Solutions
- Products Manufactured in the USA
- 50+ Locations Nationwide



Recognized as Code Compliant to Meet International Building Codes



# HELICAL PILE DESIGN SOFTWARE: FOUNDATION SOLUTIONS™

**Project :: /Ram Jack Distribution / Proposed Building Addition::**

**Soil Profile**

Profile	Maximum Depth	Depth of Ground Water Table
AC		
1	Clay	0
2	Clay	11
3	Clay	11
4	Clay	11
5	Clay	11
6	Clay	11
7	Clay	11
8	Clay	11
9	Clay	11
10	Clay	11
11	Clay	11
12	Clay	11
13	Clay	11
14	Clay	11
15	Clay	11
16	Clay	11
17	Clay	11
18	Clay	11
19	Clay	11
20	Clay	11
21	Clay	11
22	Clay	11
23	Clay	11
24	Clay	11
25	Clay	11
26	Clay	11
27	Clay	11
28	Clay	11
29	Clay	11
30	Clay	11
31	Clay	11
32	Clay	11
33	Clay	11
34	Clay	11
35	Clay	11
36	Clay	11
37	Clay	11
38	Clay	11
39	Clay	11
40	Clay	11
41	Clay	11
42	Clay	11
43	Clay	11
44	Clay	11
45	Clay	11
46	Clay	11
47	Clay	11
48	Clay	11
49	Clay	11
50	Clay	11

**Project Data**

Ram Jack Specialist  
Soil Profile  
**Piles / Anchor Data**  
Calculations  
Shared Users  
Back

**Anchors**

Anchor Information

Lead Shaft (OD) (Inches) 2-7/8    Lead Shaft Length (ft) 15    Extension Shaft OD (Inches) 2-7/8

Shaft Thickness 0.217    Yield Strength 45    Tensile Strength 55

**Cosmetic Data / Back Slope**

Anchor Installation Degree 90    Pile Head Position

X-AXIS 0    Y-AXIS 0

Calculation Box Options

**Estimated Pile Capacity:**

**Compression Results**

Allowable Frictional Resistance:	9.08	kip
Allowable End Bearing Capacity:	25.92	kip
Allowable Pile Capacity:	35.0	kip
Appr. Pile Embedment Depth:	42	ft
Required Min. Installation Torque:	7800	ft-lbs

**NOTE:**

The reported "Appr. Pile Embedment Depth" is based on the required "R" value to realize the required "R" value. The required "R" value is approved otherwise by a licensed professional engineer.

## Create Profiles

- Simulate soil profiles, including peat
- Anchors with varying diameter and helix configurations
- Vertical/battered/tie-back pile design
- Custom pile design

## Mobile-friendly

- Web-based software
- Use anywhere, anytime
- Tablet and PC-friendly

## Share & Report

- PDF output for submittals
- Share projects with other registered users

[www.ramjack.com/FoundationSolutions](http://www.ramjack.com/FoundationSolutions)

888-332-9909



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