



**RAM JACK**<sup>®</sup>

# 2014 CASE STUDY

Type: Residential | Issue: AL201404

## RECOVERY OF COMPLEX RETAINING WALL SYSTEM

85 Piles Stabilize  
a Hard-to-Access  
Hillside Pool  
and Patio

RAM JACK LOCATION:

**Alabama Ram Jack**  
[www.alramjack.com](http://www.alramjack.com) | 877-875-2171  
Bessemer, AL





Cracks in exterior tile along the spa.

## RECOVERY OF POOL & RETAINING WALLS

### ALABAMA RAM JACK

BESSEMER, AL  
877-875-2171  
[www.alramjack.com](http://www.alramjack.com)



This picturesque, functional, and relatively new home in Birmingham, Alabama, boasts plenty of square footage, an oversized yard, and a beautiful pool; it has everything a family could ask for. However, lurking beneath the surface of what looks like a dream pool was a serious problem: a settling foundation. You might not notice it at first, but after close examination, you would find cracks in exterior tile, uneven ground, and other symptoms of foundation settlement.

### Situation

While the pool looks simple enough on the surface, it was built on an elaborate system of retaining walls behind the home. Within only one year of initial construction, everything began to go south, literally. The soil beneath the exterior pool and patio was not properly compacted, and the added weight of the new construction quickly created a settlement problem. The poured-concrete retaining wall around the pool was leaning forward and several segmental masonry retaining walls were also bulging. Complicating the situation, there was no vehicle access to the backyard where the repairs were needed.

### Proposed Solution

Alabama Ram Jack proposed using a complex and delicately engineered system of helical piles to underpin the settling swimming pool, patio, and spa. The piles would not only provide vertical support, but they would also be reinforced with tie-back anchors to prevent horizontal movement and stabilize the leaning walls. Rather than try to repair the leaning segmental retaining walls, Ram Jack proposed the construction of a new poured-concrete retaining wall in front of the failing one. This would not only provide a cosmetic solution, but the wall would be

constructed on top of steel helical piles in order to ensure future settlement would not be a problem.

### Outcome

All of the installation equipment and helical piles were brought in without damaging any existing structures despite the lack of vehicular access to the backyard. All helical piles were installed as intended, and the new retaining wall was beautifully completed. In the end, 85 helical piles were installed to an average depth of 10 ft., lifting the pool and surrounding area 1.5 in. After the job was completed, the structural stability of the patio, pool, and spa are as strong as the area is beautiful.



ABOVE: the settling foundation led to cracks in the retaining walls

BELOW: underpinning the pool area



**RAM JACK**

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