



## SSRG Installs (20) Helical Piles to Underpin a City Garage Building in Lawrenceburg Indiana that was Experiencing Settlement

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<b>Project Name &amp; Location:</b>	Foundation Underpinning & Concrete Repair - Lawrenceburg, IN
<b>Project Date:</b>	April 2017
<b>Project Type:</b>	Helical Pile Underpinning to Mitigate Foundation Failure
<b>Helical Pile Installation Contractor:</b>	<b>SSRG</b> - <a href="http://www.ssrq.com">www.ssrq.com</a>
<b>Geotechnical Engineer:</b>	<b>ATC Geotechnical Group</b> - <a href="http://www.atcgroupservices.com">www.atcgroupservices.com</a>
<b>Helical Pile Specifications:</b>	(20) 2.875" Round Shaft Helical Piles with 12 Inch Helix Bearing Plate; 40 KIP Allowable Capacity; Galvanized
<b>Soils &amp; Embedment Depth:</b>	Controlled Fill to Stiff Clay at 60 ft. With 47-52 SPF Blow Counts Average Pile Embedment 57 ft.
<b>Project Timeline:</b>	Helical Pile Installation - 4 days
<b>Helical Pile Manufacturer:</b>	IDEAL GROUP - Webster, NY

### About Structural Systems Repair Group (SSRG)

SSRG specializes in comprehensive structural repair based on sound technical principles and technology-driven solutions. The company's team of construction engineers brings an in-depth knowledge of structural assemblies and systems with vast field experience and a proven ability in tackling complex situations. Services include:

- Facade & Building Envelope
- Facilities Upgrades & Modifications
- Historic Preservation
- New Construction
- Reinforcing & Strengthening
- Masonry Restoration
- Steel Erection
- Waterproofing
- Shotcrete



The city of Lawrenceburg Indiana equipment garage facility located close to the Ohio River was experiencing significant differential settlement on one side. City engineers contacted SSRG to help evaluate options for correcting the problem and to prevent further settlement. The city also contacted the engineering firm of ATC Geotechnical to provide input.

SSRG project manager, Ben Steinhauer, and the ATC engineer evaluated the situation and recommended that soil borings be done as a first step in order to understand what underpinning options would be best suited for the project.



With 38 ft. of controlled fill with brown silty clay followed by 10 ft. of uncontrolled fill consisting of wet, very soft clay with single digit blow counts, the decision was made to use helical piles to reach competent soils below the uncontrolled fill.

The engineers determined that (3) oversized column pads (6'x6') and a 3'x12" grade beam required underpinning. 2.875" O.D. helical piles with a single 12" helix bearing plate were selected to reach the competent soils at depths of 50-60 feet and because of the limited space for equipment and helical piles do not produce soil spoils.



The (20) piles were installed in four days to an average depth of (57) feet with 12,500 ft. lbs. of torque to reach a (40) kip allowable capacity. Crews mounted side load plate brackets to the grade beam footing and to the column pads, and hydraulic rams were used to pressure the helical piles before bolting them to the brackets.

SSRG was also contracted to complete the concrete repair and replacement requirements once the underpinning works was completed. Crews successfully completing forming, concrete placement and finishing in two days and tuck pointing masonry took one day.

