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ENGINEERING & INSTALLATION

BUILD ON IT TODAY.™

ENGINEERS & BUILDERS OF THE LOWEST-COST SOLDIER PILE RETAINING WALLS

Retaining walls are major investments that are used to resist land movement, stabilize soil, establish new land elevations, and maximize usable space. Innovations in design and installation techniques have reduced total installed costs of retaining walls, yet not without tradeoffs. Today's common high-capacity retaining wall systems are soldier pile walls and block walls.

Pile Driving Is Expensive

Soldier pile retaining walls enjoy a reputation for resisting the highest loads and maintaining structural integrity for decades. When combined with concrete lagging, they provide a strongly preferred solution for longevity and performance. However, pile driving is expensive, requires heavy equipment, and can create high levels of vibration.

Block Walls Have a High Failure

Block retaining walls with mechanically-stabilized earth systems have grown in popularity for their relatively lower installed cost. In some loading scenarios, they have been specified as an acceptable alternative to soldier pile walls. However, they are widely regarded as having an unacceptably high rate of failure. *

* Steve Wendland, "When Retaining Walls Fail," Civil + Structural Engineer.

Structural Foundations has the solution that combines the integrity of soldier pile walls with the lower cost of block walls!

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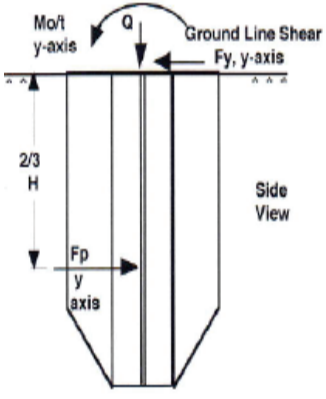
Our system provides the capacity, longevity, and safety benefits of a soldier pile retaining wall without the pile driving, but at cost comparable to block walls. Instead of a driven pile, we hydraulically install a steel foundation called a "moment pile foundation" that provides superior resistance to lateral and overturn loading. We only use domestic steel and domestic precast reinforced concrete.

Our moment pile foundation is designed and fabricated for the loading requirements and brought by crane into position.

The foundation is installed with hydraulic force to engineer's specifications, providing a tested and verified loading capacity. Hydraulic installation takes mere minutes with negligible vibration.

To the foundation, a galvanized steel upright is welded. Precise placement of the upright is easily achieved. The galvanized coating provides decades of corrosion resistance and attractive appearance.

Precast concrete lagging, reinforced with steel rebar, is placed between the uprights.



Structural Foundations has more than 800 installations and over 30 years of field performance.

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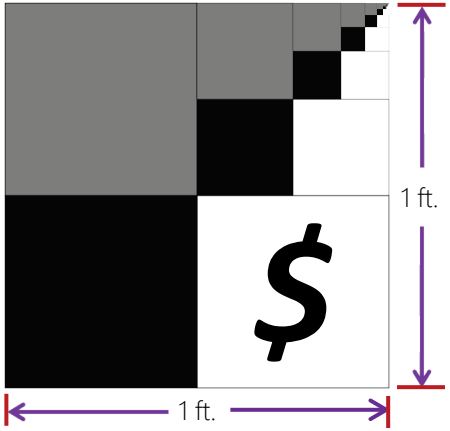
The Lowest Cost



Per square foot of wall surface area, our soldier pile retaining wall system has the lowest total installed cost of any soldier pile retaining wall system. This is possible because of our fast-installing moment pile foundation, vertical integration, and resident engineering.

High-Capacity

Virtually any application for a high-capacity retaining wall is appropriate for Structural Foundations' system. We have experience constructing retaining walls over 20 feet in height that retain slopes of poor clay soils with high surcharge loads. Our moment pile foundations and steel uprights are scalable to the loads specified, and where appropriate, we also install anchored tiebacks for additional resistance.

Low Installation Vibration

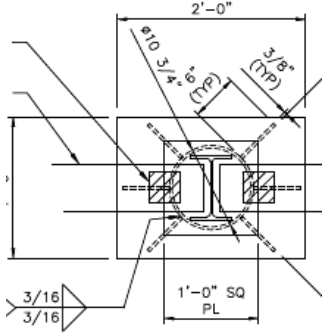
Our installation method produces negligible vibration, in contrast to pile driving. Equipment needs are also light and ideal for tight job site spaces.

Durability

Our use of galvanized steel and reinforced precast concrete offers a superior combination for resisting the elements and providing an attractive appearance. Steel uprights are hot-dip galvanized in accordance with ASTM A123 / A123M standards for corrosion resistance. Precast concrete lagging is manufactured in a highly controlled environment, where concrete is poured and cured in ideal conditions.

Safety

A soldier pile wall is an ideal, time-tested structure for retaining earth. Our designs have high safety factors and are stamped by a registered professional engineer (P.E.) for the respective jurisdiction of installation.



Cross-section overlay drawing of a moment pile foundation and upright beam for a retaining wall.

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New Construction

For construction of a new building, road, or parking lot, our retaining walls are used for forming the building footprint, establishing new land elevations, maximizing usable land area, and stabilizing site soils.

Existing Construction

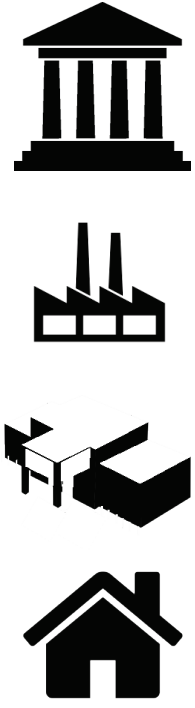
Where existing structures are present, our retaining walls are used for stabilizing and preventing structure movement, creating usable land area and green space, and preventing soil erosion.

Land Slips & Stabilization

Where land slips have developed, our retaining walls are used for restoring topography, resisting land movement and stabilizing soils, and preventing future slips.

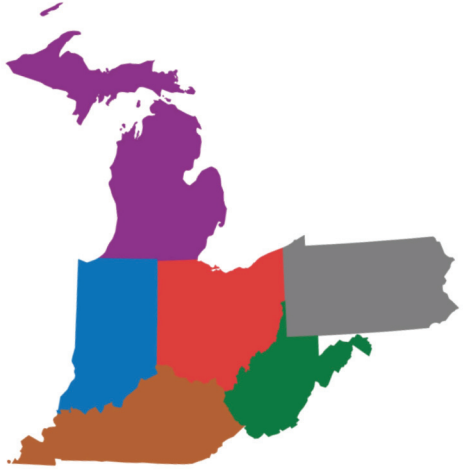
Project Types

We've done it all: public, industrial, commercial, and residential projects!



Construction Geography

We build retaining walls primarily in these states.



Structural Foundations is a licensed general contractor and is available as a general contractor or subcontractor in most states and localities.

All engineering drawings for construction are prepared by a professional engineer (P.E.) registered in the respective jurisdiction of construction. Retaining wall projects usually involve geotechnical and structural engineering work, as well as supporting technical services in surveying and soil sampling.

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Welch, West Virginia and surrounding McDowell County have endured multiple devastating floods of the Tug Fork River over the past century, violently washing away homes and buildings. Needing a flood and retaining wall system built before the next devastating flood in Welch, the **Federal Emergency Management Agency (FEMA) selected Structural Foundations as the general contractor.**

Our engineering team designed and our **crew hydraulically installed nearly 100 foundations, constructing a wall system of 800 feet in length**. Holes were drilled and each foundation was located 8'1 ½" on center. To these, steel uprights were welded and prefabricated concrete lagging was then set between the uprights, with backfilling and compacting operations following. **The use of our foundation technology cost dramatically less than traditional soldier pile / H-pile or poured concrete wall systems, and installed in a fraction of the time**. We bring to each retaining wall project the engineering, construction, and project management expertise from successfully executing this major civil project.

Structural Foundations engineers and hydraulically installs high-capacity steel foundations for buildings and industrial structures, and specializes in engineering and turnkey construction of high-capacity retaining and flood wall systems. With more than 800 installations and over 30 years of field performance and engineering innovation, Structural Foundations is proven to provide substantial cost savings and time savings, and superior performance, over conventional foundation installation and high-capacity retaining wall construction. We have developed and embraced multiple technologies in prefabricated structures, including those fabricated from high-strength steel, that enable rapid installation of custom foundations having high-capacity and several unique capabilities. Our engineering drawings are Professional Engineer (P.E.) stamped for the respective location of installation. Structural Foundations is a licensed general contractor (#WV056746).

- More than 800 installations across the United States.
- First foundation installation completed in 1986.
- Professional Engineer (P.E.) stamped foundation designs.
- Fabricated steel components only made with U.S. produced steel and fabricated in the U.S. by American Welding Society (AWS) certified welders.
- Seven issued U.S. patents, multiple issued foreign patents, and additional patents pending.

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