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Foundation Repair

Foundation Repair

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SERVICE:

Compaction Grouting

Associated Processes: Grouting Contractors, Concrete Repair, Concrete Leveling, Concrete Alignment, Misaligned Concrete, Heaved Concrete, Concrete Restoration, Pressure Grouting, Compaction Grouting, Raising Foundations, Settled Foundations, Foundation Leveling, Foundation Contractors, Consultants, Screw Piles, Compression Piles, Foundation Underpinning, Foam Jacking, Foam Raising, Foam Leveling, Foam Fill

Over the years, literally hundreds of structural settlement problems have been solved using compaction grouting techniques to stabilize faulty support soils. Frequently, subsurface densification and improvement of inadequate support soils can be accomplished economically, via an important geotechnical tool termed compaction grouting.

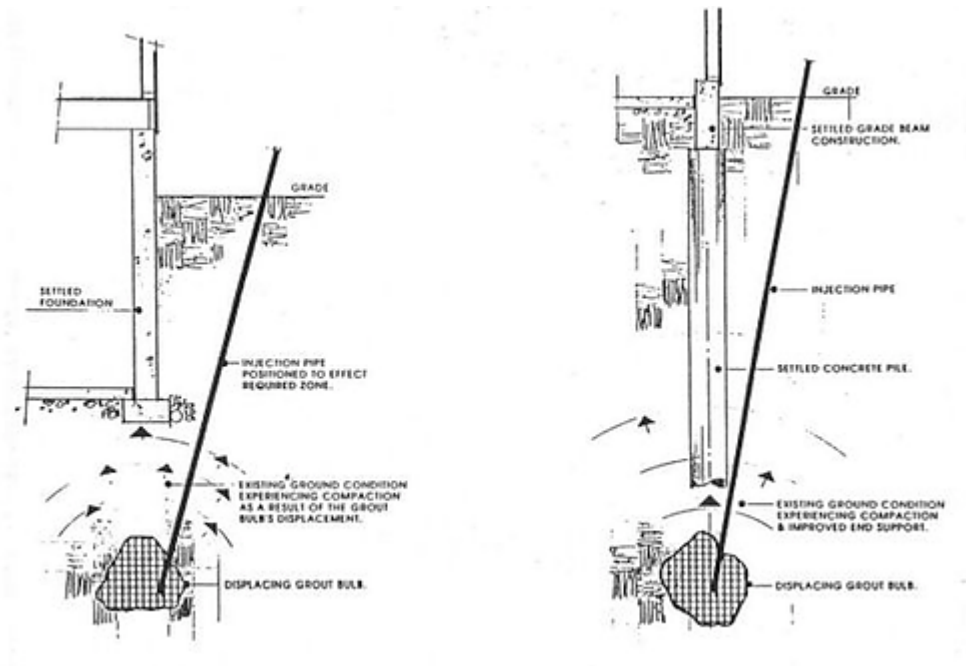
Compaction grouting involves the injection of a stiff granular

mortar grout into subsurface soils under high pressure, to displace, densify, and improve the adjacent soils. The key element in any grouting program is the effective control and placement of the grout. In compaction grouting, this control is accomplished by the use of a very stiff, granular grout mix with concrete cone slumps in the range of $\frac{1}{2}$ " to $2\frac{1}{2}$ ". The use of more fluid mixes, under the pressures required for effective compaction usually results in loss of control of the grout location, the splitting or fracturing of the ground, and migration of the grout away from the intended treatment zone. Injection of grout mortars with slumps of 3" to 5", although normally considered a stiff mix when pumping concrete, has been shown to easily fracture, even overconsolidated soils, and to run several feet away from the grout pipe tip, even under pressures as low as 100 or 200 psi. In contrast, pressures in excess of 500 psi have been used with the very stiff compaction grouts resulting in a homogeneous grout bulb that grows somewhat symmetrically about the grout pipe tip and remains generally within the intended treatment area.

The selection of the mortar aggregate and water-retaining agents such as cement, fly ash, clay, etc. is extremely important to achieve a pumpable mix that still exhibits high internal shearing resistance to flow and can avoid sand blockages in the lines under high pumping pressures. Special pumping equipment is obviously required to mix and inject such materials under high pressure.

Widely variable conditions that can be treated using compaction grouting techniques include the stabilization of poor backfill material behind retaining walls and under footings and floor slabs, treatment and displacement of peak areas underlying structures, the elimination of convey settlements in soft natural materials loaded by subsequent man-made loads, and most recently the replacement and densification of tunnel crown soils during soft ground tunneling operations to reduce surface settlements and

eliminate the need for conventional underpinning.

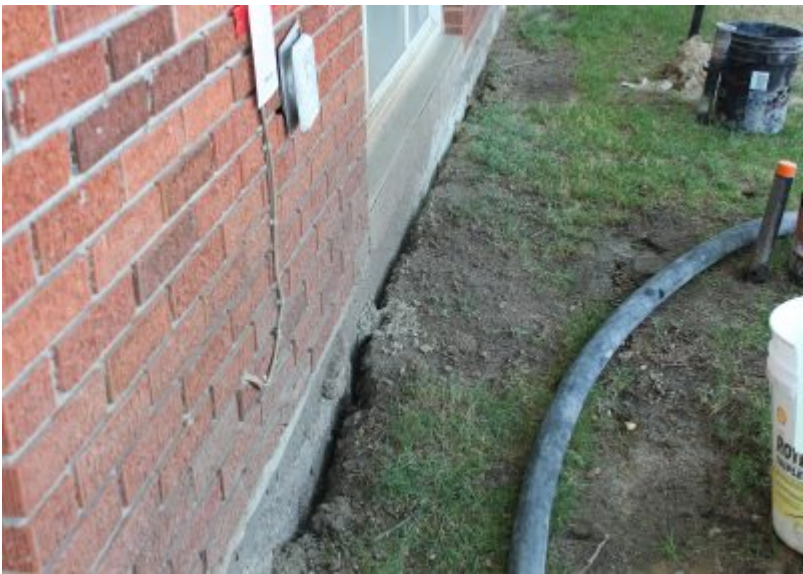


Additional applications include improvement of slope stability using compaction grouting in conjunction with reinforcing techniques.

The success of compaction grouting techniques depends on the correct understanding of the cause of foundation distress or settlements and proper evaluation of the subsurface conditions as well as competent application of the grouting procedure. In addition, a concurrent monitoring program should be carried out during grouting, to observe any potential surface heave and associated movements and to verify the effectiveness of the grouting operation by observation of slight surface heaves.

For assistance in incorporating compaction grouting techniques into the design and implementation of underground construction projects, or for remedial solutions to ground stabilization problems contact Gunner Ltd. at any time.

[Contact Us For Free Quote](#)















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Foundation Leveling, Foundation Contractors, Consultants, Screw Piles, Compression Piles, Foundation Underpinning, Foam Jacking, Foam Raising, Foam Leveling, Foam Fill

SERVICE:

Compression Pile Underpinning System Raising Settled Foundations

Associated Processes: Concrete Repair, Concrete Leveling, Concrete Alignment, Misaligned Concrete, Heaved Concrete, Concrete Restoration, Pressure Grouting, Compaction Grouting, Raising Foundations, Settled Foundations, Foundation Leveling, Foundation , Contractors, Consultants, Screw Piles, Compression Piles, Foundation Underpinning, Foam Jacking, Foam Raising, Foam Leveling, Foam Fill

Often, foundation settling reaches a point where lifting the structure back to its original elevation must be considered. Generally, this is the range of 2" or more of settlement. Our preferred method is compression pile underpinning steel.

The process of compression piles involves the installation of piles into a zone of stable ground below the foundation walls. Our preferred method is jack-down piles. Compression piles are smart piles that structurally design themselves.

As many as 10 to 20 of these pipes may be used to raise and support a project. Jacking continues until sufficient resistance is attained to effectively lift the structure. If only stabilization is required, work stops there. Otherwise, all pipe locations are incrementally raised until the foundation is leveled.

Compression piling provides a support system to last a

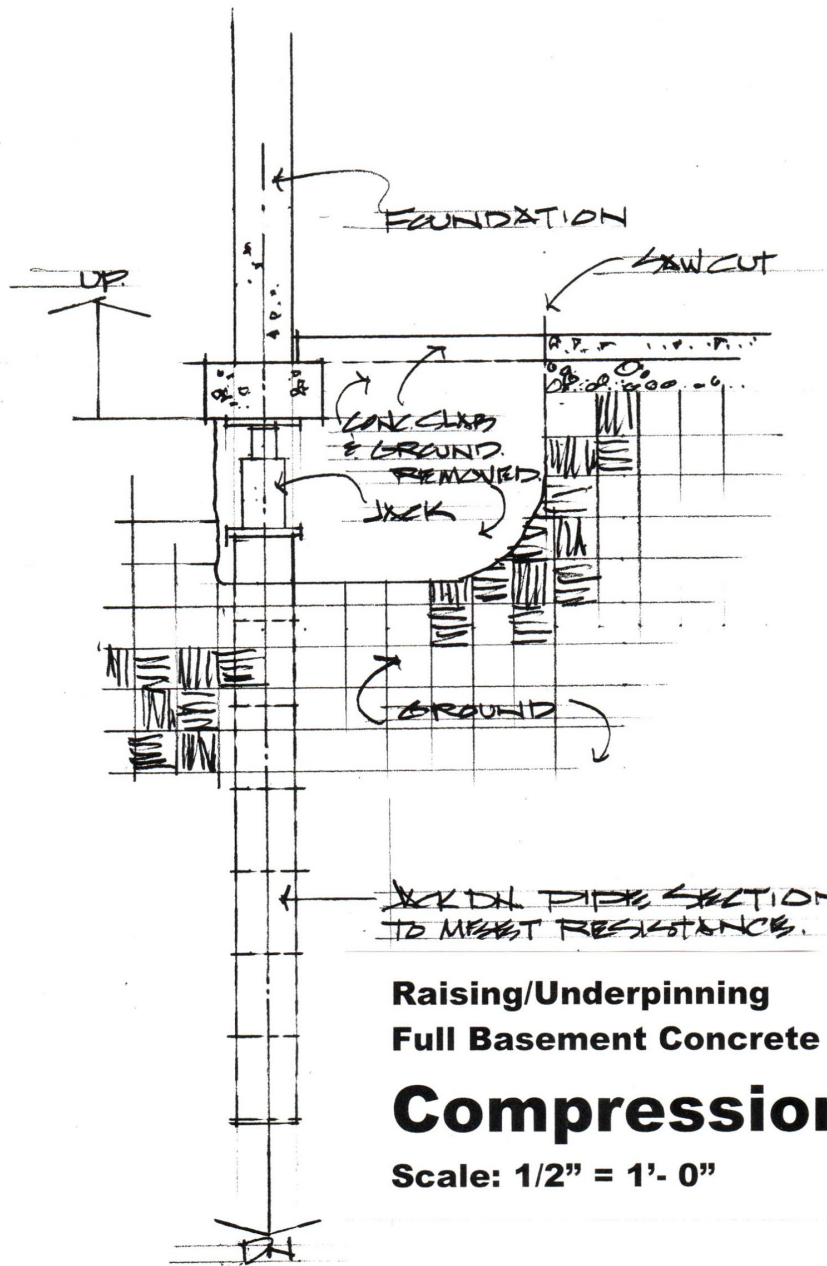
lifetime. Our compaction piling system is an excellent structural addition to historic properties or your own private home. Contact Gunner LiftCrete about your foundation settlement concerns.

This system is a great compliment to Compaction Grouting when foundations need to be raised and structurally underpinned.

An excavation is done below the foundation footings. A high-pressure hydraulic jack and interlocking steel casings are then positioned. Additional steel casing sections are added and jacked down into the bearing ground, using the foundation's weight as the resistance. The installation continues until the resistance initiates elevation lift on the foundation.

The process is complete when the structure is raised to the required elevation. The steel casings are then filled with concrete to form piles.

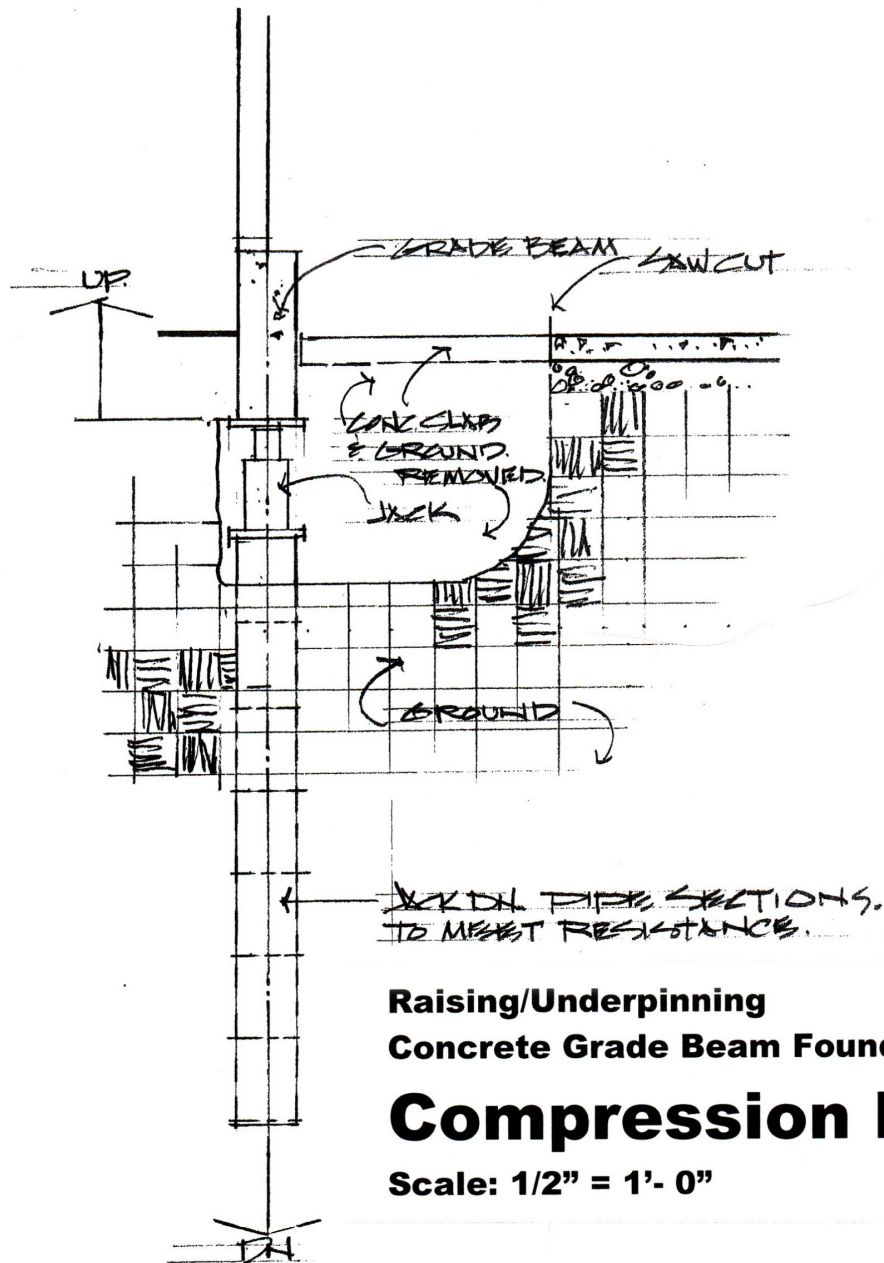
This installation process can be done from the exterior, or within the basement area. This allows the compression piling system to be done at any time of the year.



**Raising/Underpinning
Full Basement Concrete Foundation**

Compression Pile

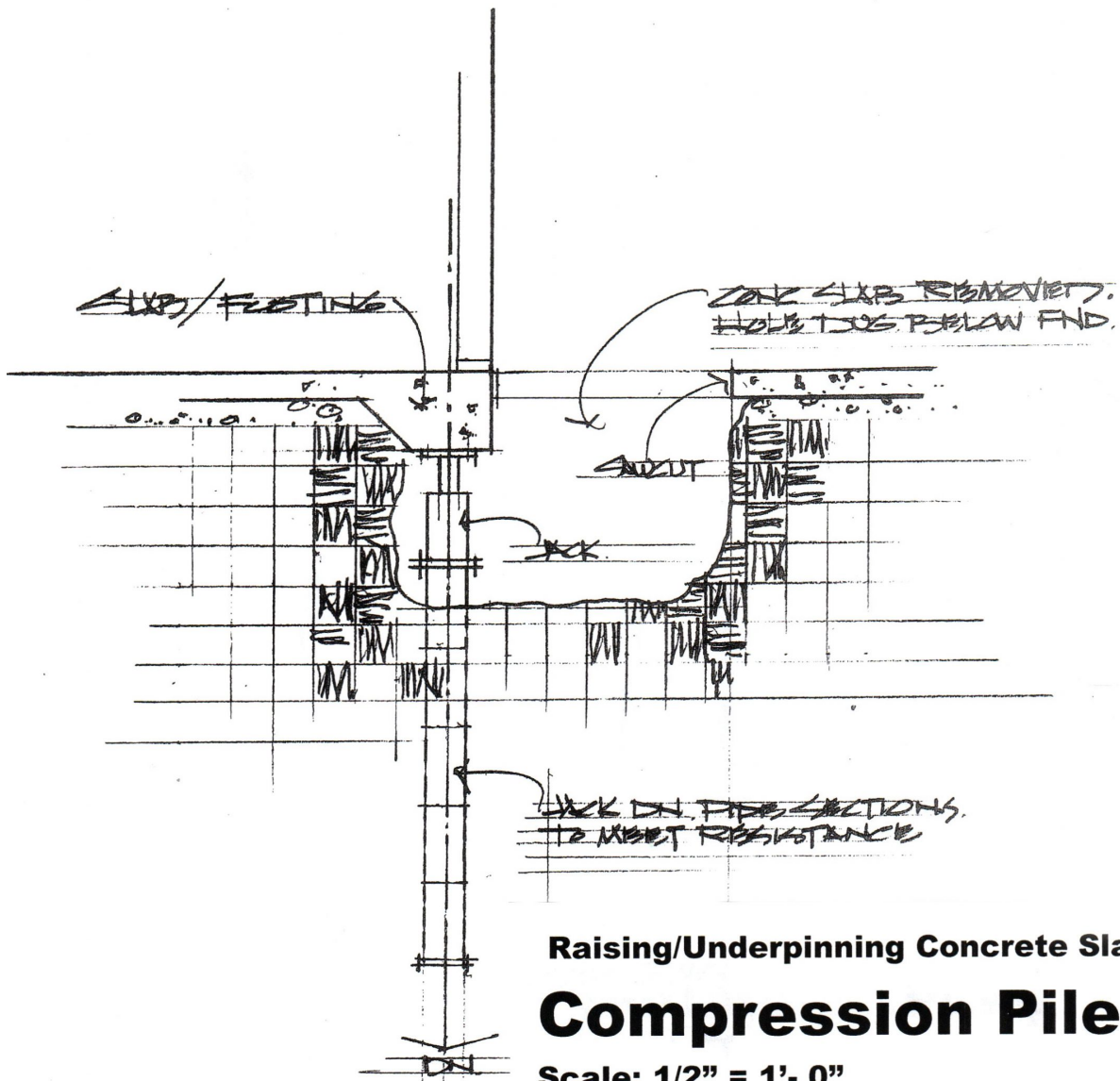
Scale: 1/2" = 1'-0"



**Raising/Underpinning
Concrete Grade Beam Foundation**

Compression Pile

Scale: 1/2" = 1'- 0"



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Residential • Commercial • Industrial

Serving the Prairie Provinces

Contact Us

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Services Include

[Mudjacking/Slabjacking:](#)

Raising settled concrete slabs

[Compaction Grouting:](#)

Raising settled foundations

[Compression Pile Underpinning System:](#)

Raising settled foundations

[Shotcrete & Guniting Repair Application](#)

[Liquid Backfill:](#)

Raising settled grades & cavity fill

Liquid Topsoil:

Finishing grading

Clay Spray:

Slope, stabilization and fill

Concrete Pumping:

Placing concrete into forms



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