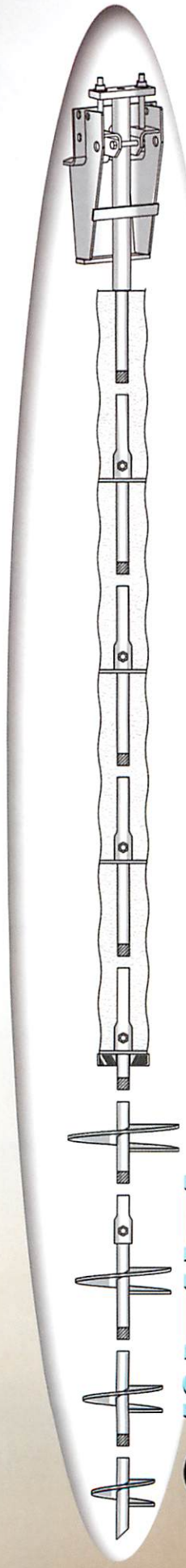
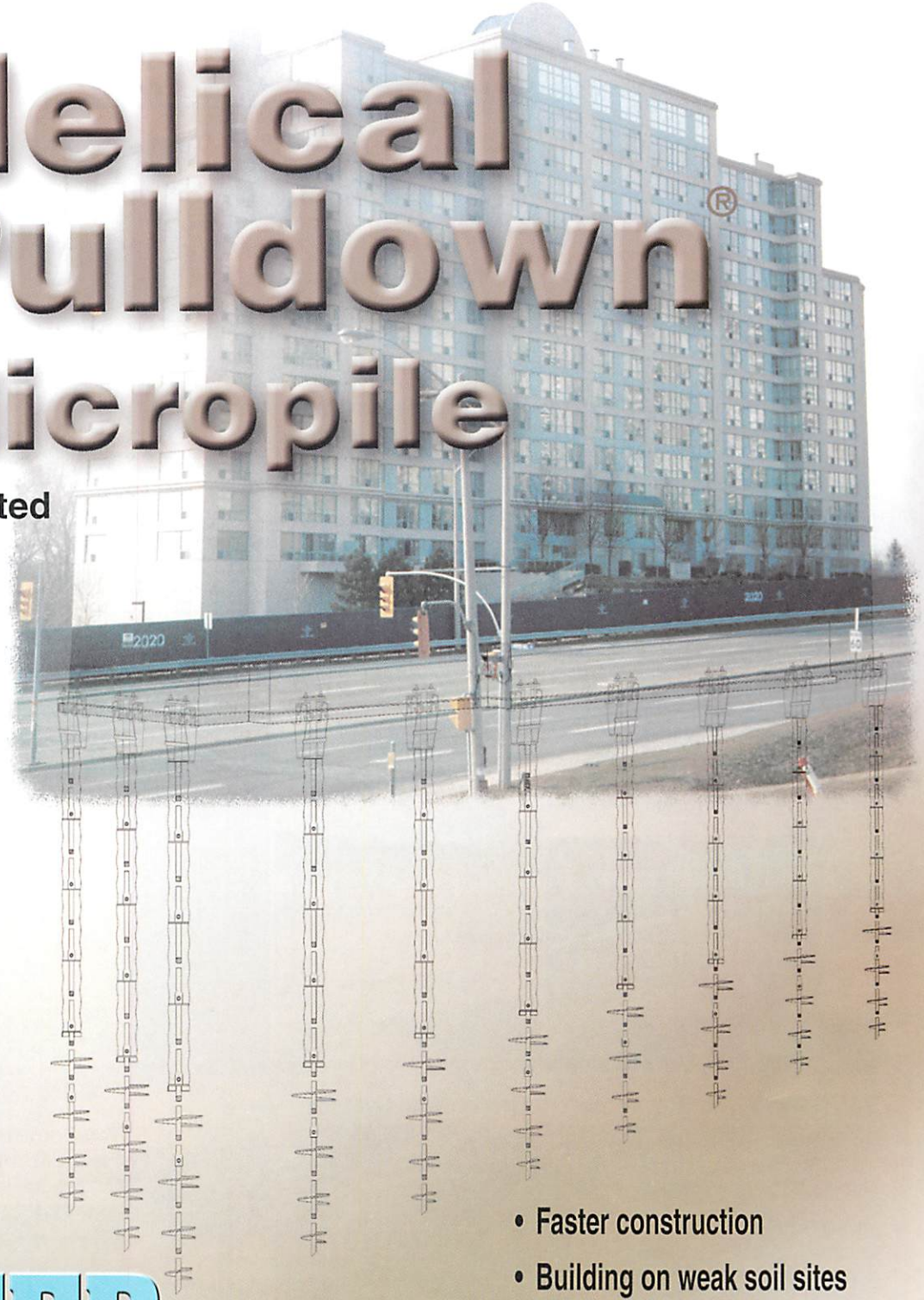


# Helical Pulldown® Micropile

Patented



## DEEP Foundation Solution

CHANCE™

Since 1912

DOWN. RIGHT. SOLID.

- Faster construction
- Building on weak soil sites
- High-capacity applications
- Limited-access installation
- Underpinning foundations
- New construction foundations
- Authorized installation contractors are trained and certified by A.B. Chance, a Division of Hubbell Power Systems, Inc.

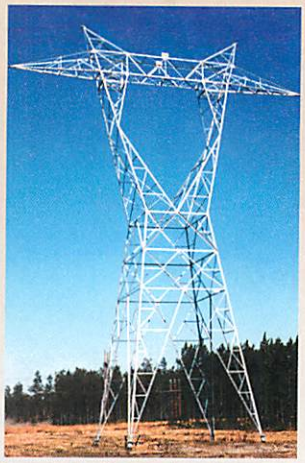
# History of A.B. Chance in Civil Construction

## *. . . standard construction practices to build on*

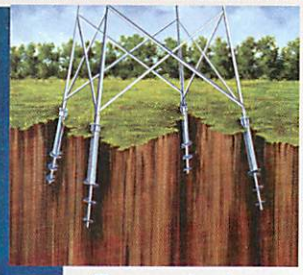
***Since 1912,*** A.B. Chance engineering research and development have advanced the unique advantages of helical anchors to meet today's construction challenges.

A.B. Chance is the world leader in screw anchor technology. Regardless of the application, Chance® products and methods are efficient and predictable. They give a cost-effective alternatives to traditional construction methods.

Chance® helical anchors extend bearing plates into stable strata under soft, loose or expansive surface soils without significant disturbance.

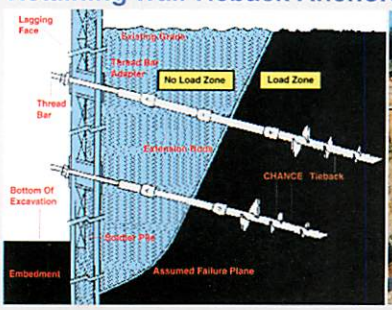



### Helical Pier Foundation System: Underpinning & New Construction Foundations



### Transmission Tower Foundations

### Retaining Wall Tieback Anchors

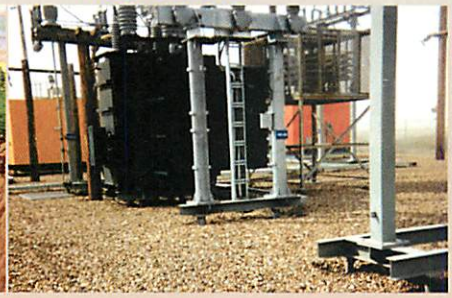


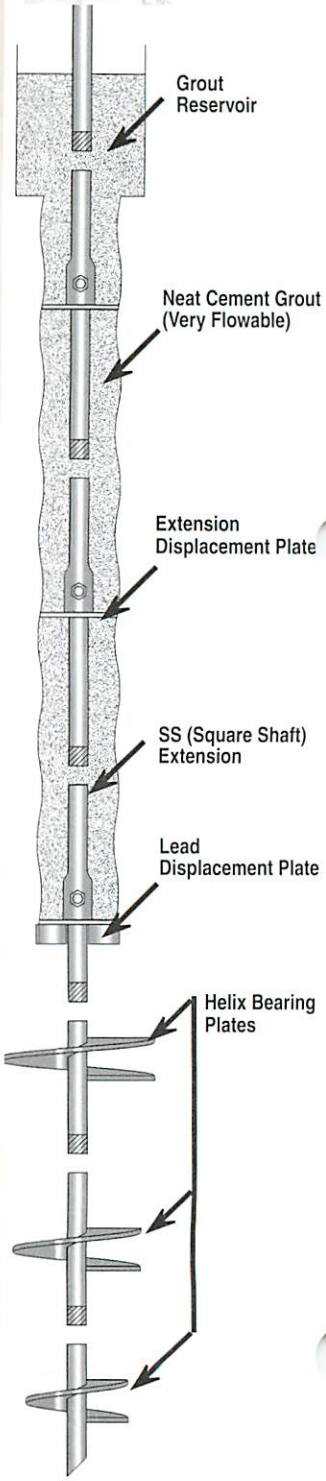

### Soil Nailing with Soil Screw® Retention Wall System

### Telecom Tower Foundations & Guy Anchors

### Pipeline Bouyancy Control Systems

### Substation Foundations





***Higher load capacities*** than ever now are achievable by the patented Helical Pulldown® Micropile technology. It continues to overcome obstacles to traditional foundation methods for a growing number of applications.

# What is a Helical Pulldown® Micropile?

The Helical Pulldown® Micropile is a system for constructing a grout column around the shaft of a standard Helical Pier Foundation System pile.

To begin the process, a screw anchor is placed into the soil by applying torque to the shaft. The helical shape of the bearing plates creates a tremendous pulling force that keeps the anchor advancing downward into the soil. After the lead section with the helical plates penetrates the soil, a Lead Displacement Plate and Extension are bolted onto the shaft. Resuming torque on the assembled shaft advances the helical plates and pulls the displacement plate downward, forcing soil outward to create a cylindrical void around the shaft. From a reservoir at the surface, a flowable grout immediately fills this void, surrounding and encapsulating the shaft. Additional extensions and displacement plates are added until the helical bearing plates reach competent load-bearing soil. This displacement pile system does not require removing spoils from the site.

Benefits of this system include:

- Resistance to buckling in weak surface soils
- Stiffer pile (deflects less at a particular load)
- Additional corrosion protection in aggressive soils

# DEEP Foundation Solution

## •Speed • Ease •High Capacity

The Helical Pulldown® Micropile also develops additional capacity by combining both end-bearing on the helical plates and skin friction along the rough surface of the grout column. The result is a higher capacity pile system.

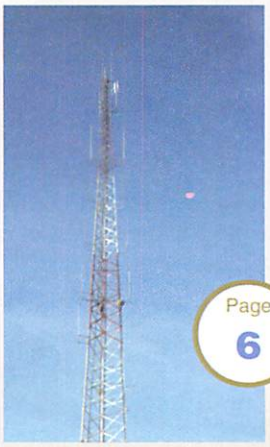
The Micropile could be just the Deep Foundation Solution you're looking for. . .put it to work on your next project.

# Contents


New Construction — Page 4

Underpinning — Page 5

Telecom Towers — Page 6



Substation — Page 6

Extensive Testing — Page 7

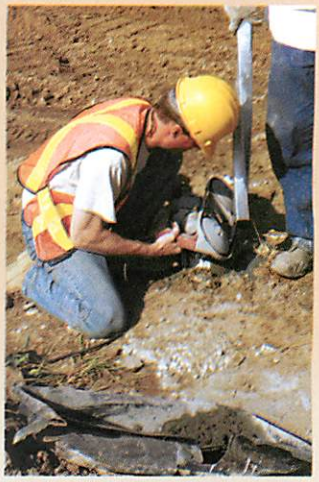
Installation Equipment — Page 7

## *Typical Project* A — New Foundation Construction

Installing a (4) helix lead-section.

Installing an extension with Lead Displacement Plate and PVC grout reservoir.

Installing additional extensions through the PVC reservoir.



Cutting the extension to the required elevation.

## *Typical Project* B — New Foundation Construction

An excavator with torque motor installs a row of Helical Pulldown® Micropiles to support a new building.

Helical lead sections have been installed. Extensions with a Lead Displacement Plate are ready for installation with grout reservoir.

Installion of grout reservoir.

Adding more grout to the reservoir

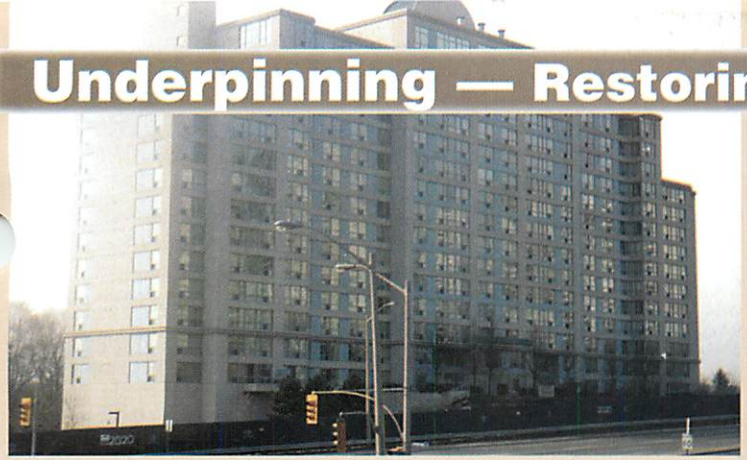
Monitoring torque during installation confirms bearing capacity.

Pulling out the grout reservoir after reaching the specified torque.

A Helical Pulldown® Micropile is a displacement pile that forces soil out around the shaft. The void is filled with grout.

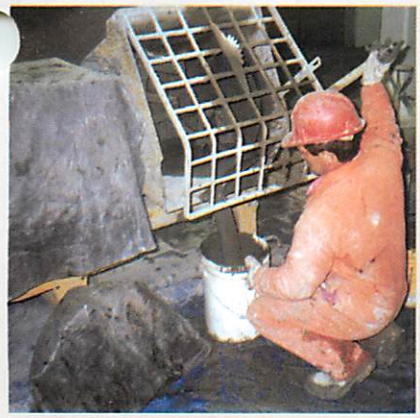
Topping up the micropile with grout.

# Underpinning — Restoring a Settled Foundation



Failing shear-wall foundations were causing distress to the structure.

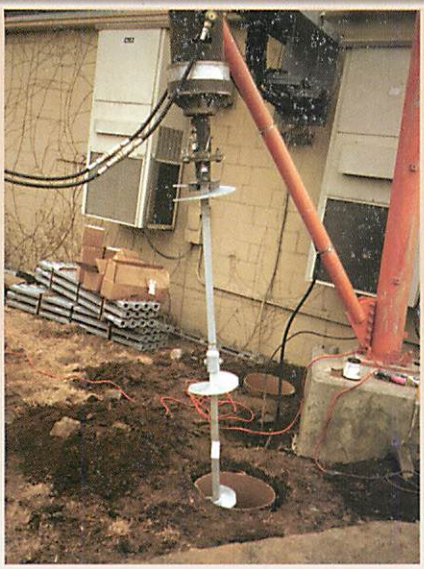
Preparing the footing for a Helical Pulldown® Micropile.

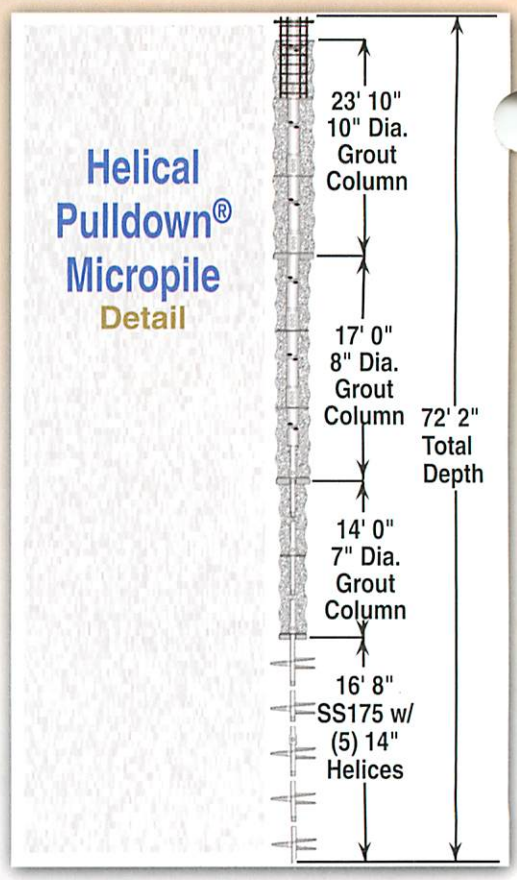


Mixing grout and adding it to a micropile.

Adding an extension to get to founding depth and installing a repair bracket. The PVC casing minimizes negative down-drag forces.

# Telecommunication Tower Foundations






# Substation Foundations

# Extensive Load Testing

Helical Pulldown® Micropile: Tested to 205 tons

Helical Pulldown® Micropile extracted for visual inspection

Close-up of Helical Pulldown® Micropile extracted from clay soil

Cross-section of extracted micropile

# Standard Construction Equipment

Installation of the micropile is completed quickly and easily with a hydraulic torque motor mounted on readily available equipment. Challenging sites, even with limited access, are overcome with the Helical Pulldown® Micropile.



**To locate a Certified Installer in your local area, consult our Distributor Network listed on our web site:**

***www.abchance.com***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