EBS ENGINEERING & CONSTRUCTION LIMITED

# Helical PULL DOWN™ Micro Pile NEW CONSTRUCTION

**Case History, No. 7** **June, 1999**

## The Problem

A single family dwelling was to be built along the shores of a lake. The soil profile at this site consisted of approximately 2 metres (6.5 ft) of loose sand fill, 2.0 metres (6.5 ft) of peat and organics, 0.5 metres (2 ft) of a loose silty sand, 2 metres (6 ft) of a soft silty clay, and at 6.5 to 7.0 metres (21 to 23 ft) weathered bedrock to bedrock layer. A free groundwater table was encountered at 1.2 metres (4 ft) below grade. The underlying fill and peat material and high ground water level rule out the use of conventional spread footings. Therefore a deep foundation was needed to support the proposed single family structure

## The Solution

**CHANCE® HELICAL PIER®** Foundation System was determined to be the most economical and time saving solution to support the proposed structure. The helical pier size and configuration used was the SS-175 with 200mm (8 inch), 250mm (10inch), and 300mm (12 inch) diameter helices. A 150mm (6 inch) diameter PULLDOWN™ Micro Pile (using EBS-301 grout) was sleeved with PVC along the entire shaft of the helical pier to increase the lateral stability and prevent negative skin friction on the helical piers if the loose soils and organics were to settle in the future. Installation depths were consistent across the entire site at 7 metres (23ft), all the helical pier were bearing in the weathered native shale. Twenty-one (21) helical piers were installed to a minimum allowable working load of 133kN (30Kips) or a minimum ultimate load capacity of 266 kN (60Kips).

## Results

The structure was completed ahead of schedule and under budget as time and money were saved with the installation of the CHANCE® HELICAL PIER® Foundation System.

*EBS Engineering & Construction is a member company of The C³ Group*

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