

BUILDER TIPS

Optional Pilot Hole Drilling for Installation in Difficult Soils

These instructions are only for projects that have been reviewed by Pin Foundations, Inc. (PFI). They are intended for installations in certain excessively compacted soils. The instructions are generic and may require revision for specific projects or unique applications. They are to be used together with the general product installation instructions.

When hardened or cemented soils, such as till, sandstones, caliche, etc., are encountered during pipe driving, an optional method using predrilled pilot holes may be used to ease driving. It is important to have soils or looser sedimentary rock that will break away toward the inside of the pilot cavity as the permanent pipe is driven in. Drilling is not recommended when hard igneous or metamorphic rock is encountered.

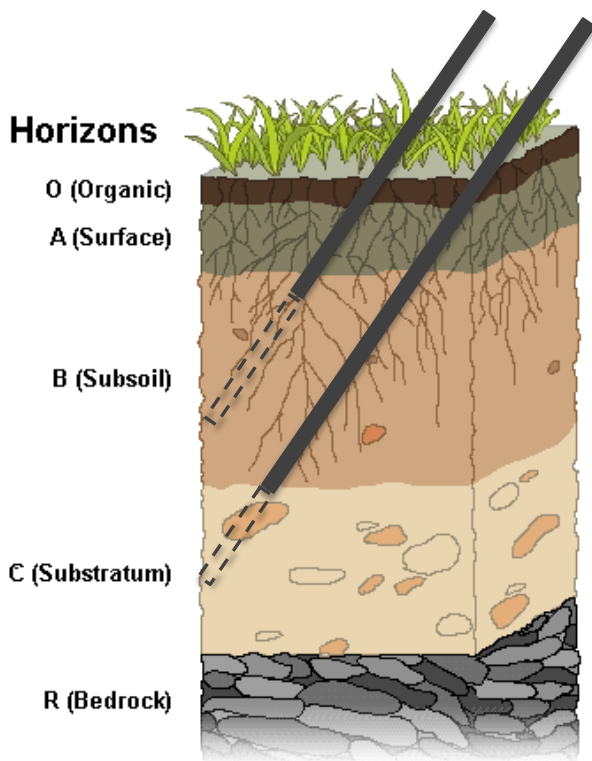


Figure 1. Soil Layers

This soil layer depiction shows looser topsoil material close to the surface and increasingly more compacted soils deeper below grade, underlain by bedrock. Dense, and occasionally relatively thin, cemented layers are sometimes encountered closer to the surface and can restrict pipe driving.

Pilot Hole Drilling Instructions

You will need:

- ✓ 1-1/2" x 39" masonry carbide steel drill bit compatible with SDS or chucks to the drill being used (confirm specifications with PFI)
- ✓ Bosch 11264EVS SDS-max 1-5/8" Combination Hammer or equivalent



Figure 2. Position Ground Frame™ Components

Position Ground Frame components as per the general product installation instructions. Install short lengths ($\pm 10"$) of 2" diameter schedule 40 pipe through upper and lower ellipses, and tighten the Force Plate® locking mechanism. These short pipe sections will act as a centering guide for the drill bit. Leave $\pm 1"$ gap above grade at bottom of centering pipe for drill tailings to escape. Alternatively, the short section can be tapped fully into grade for compressed air blow out. The approach will vary based on the hardened soil type. These short centering guide sections are removed before driving the permanent full length structural pipes.



Figure 3. Tighten Force Plate® Locking Mechanism

Insert drill bit into centering pipe and begin drilling. Work to keep drill bit centered and not in contact with the centering guide pipe. Do not force or over push on the drill, rather allow the drill bit to channel into the hardened soils. Clear drill tailings manually or with compressed air. Stop drilling when required depth is reached or when hardened layer is permeated.



Figure 4. Drill Pilot Hole Through Centering Pipe

Remove the short sections of centering pipe, and install the Ground Frame permanent structural pipes as per general product installation instructions.

Notes

1. The maximum length of the drill bit is 39". Do not use extenders.
2. The pilot hole depth corresponds to a 42" pipe length. The specified structural pipe may still not drive to full depth but will typically provide higher capacities in a properly piloted hole. Consult your project engineer or PFI for review or assignment of improved capacities.