

# GROUND FRAME™



## INSTALLATION INSTRUCTIONS

### GROUND FRAME COLUMN (GFC-125 & GFC-200)

*These instructions are only for installations that have been reviewed by Pin Foundations, Inc. (PFI) or the project engineer of record. They are intended to be generic but may require revision for specific projects or unique applications.*

#### Prior to Installation

You will need:

- ✓ Two- or three-person crew for installation
- ✓ Ground Frame® Columns, each including the corresponding pipes and caps
- ✓ Framing posts (if specified)
- ✓ Square-edge shovel
- ✓ Electric driving hammer (60 lb or 90 lb) with driving bit
- ✓ Sledgehammer or sliding post driver
- ✓ Small level with magnetic edge
- ✓ Ratcheting wrench

Check all Ground Frame Columns for pipe fit. The locking bolt and corresponding Force Plate® locking mechanism are factory set for proper pipe slide, but may have been altered during shipping or handling. If pipes do not slide easily through the holes, loosen the locking bolt. If the bolt is loosened and the pipes do not slide easily through the holes, the supplier or manufacturer must be notified and the column replaced.

Check for buried utilities before beginning to dig or drive the Ground Frame pipes.

Wear proper safety gear, including safety goggles, ear protection, steel toe work boots, and rubber-insulated work gloves.

Prepare site. The site is to be grubbed and bladed substantially flat prior to installation. Grading should be limited to that necessary for proper site drainage and desired floor height. For moderately sloped sites, benching may be required.



### **Step 1: Dig Square Hole for Column**

Dig a square hole that is slightly larger than the size of the steel Column and 4-10" deep, depending on your project parameters. (On sloping terrain, dig the hole deeper on the uphill side so that the Column sits plumb.)

### **Step 2: Position Column in Hole**

Following safe lifting procedures, position the Column in the hole, plumb and centered on its alignment. (Note: For most frames, alignment will be based on the final wood sill beam position above, which is typically wider than the Column or embedded post to allow for field adjustments. The Column should be positioned accordingly.) Replace just enough of the removed soils back around the sides of the Column at grade, without packing too hard, to maintain plumb and alignment during pipe driving (see Note 1 below).

### **Step 3: Begin Driving Pipes**

Slide opposing pipes through the holes in the Column, and set the pipes a foot or two into the soil with a sledgehammer or sliding post driver while checking and adjusting for plumb and alignment. Do not attempt to drive the pipes all the way down with the sledgehammer (see Notes 1 and 2 below). Using the electric driving hammer, drive each pipe alternately in increments while continuing to monitor level and alignment. Do not hit the Ground Frame Column with the driving hammer.

### **Step 4: Finish Driving Pipes**

Finish driving each pipe with the driving hammer, leaving approximately 2" protruding from the sides of the Column and being careful not to damage the Column coating or upper ends of the pipes.

### **Step 5: Tighten Locking Bolts and Complete Installation**

Once all the pipes have been fully driven, use the ratcheting wrench provided (or similar tool) to tighten the locking bolt (recommended 50 lb-ft torque). Then cover the exposed end of each pipe with a rubber top cap.

### **Step 6: Repeat Steps 1-5 for the Remaining Ground Frame Columns**

## Note 1

Do not drive a pipe all the way down at once if this causes the Column to be pulled to one side (the Column should not be installed more than 5 degrees out of level). If this begins to occur, stop driving that pipe and continue to rotate around the Column, driving the pipes in increments, until the growing strength in the pipe group is sufficient to allow final driving. If loss of level is not a problem, the pipes may be driven all the way down one at a time. Do not continue to hammer away at a pipe that is bouncing or rattling against an impassable object if it causes the Column to ride up the pipe, pushes the Column to one side, or risks damaging the Column. Ensure that the Column will remain in place when encountering difficulties in the soil and when following the steps in Note 2.

## Note 2

Ground Frames are not refusal driving systems. Specified pipe pairs of a specific length are configured to provide bearing, uplift, and lateral capacities when driven their full length. If a pipe meets substantial resistance in the soil before it has been driven its full length,\* it may be left in this partially driven position and cut off IF: (1) using caution to avoid damaging the Column, the pipe will not drive more than an inch during a full 60 seconds of uninterrupted hammering using the 90 lb driving hammer; (2) using caution to avoid damaging the Column, attempts to drive the pipe with single sudden sledgehammer blows have been made; and (3) after a reasonable period, attempts to redrive the pipe using both methods have been made without success.

If a pipe has been approved for cutting, its length and location should be recorded and mapped, and the information forwarded to PFI and the project engineer.

*\*If a root or rock is close to the surface, it may be dug up and removed, the soils recompacted, and the pipes redriven.*