



Certified Installers/Exclusive Dealers - CA, NV, AZ

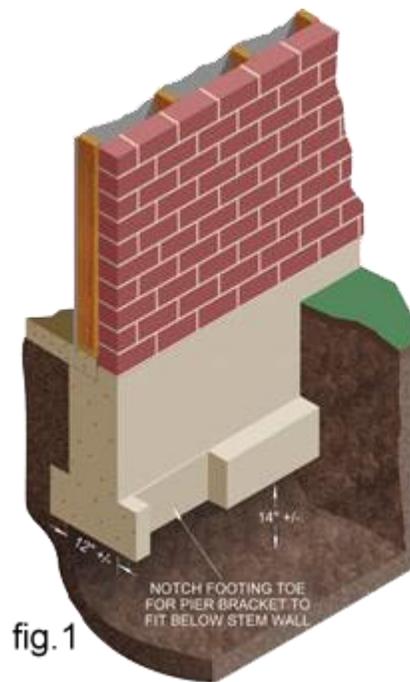
Eccentric Pier Installation Sequence

Quiet vibration free hydraulic equipment is used to install the ECP Steel Pier™. All installation equipment is portable and can be manually transported on the jobsite and into position. After all of the piers are installed and load tested, the structure can be immediately restored by transferring the load to the piers. There's no time wasted, waiting for concrete to cure, and no soil to remove from the site. A measured factor of safety is verified, as the piers are 100% load tested to a force greater than the actual working load.

Whether your foundation is stone, concrete block or poured concrete, the ECP Steel Pier™ should be your first choice as an underpinning solution. Foundation repair or underpinning projects are usually completed in days, not weeks. Should conditions change, the piers can be easily inspected, tested and/or adjusted.

The following nine steps provide an example of the typical installation procedure. Figure 1 shows a structure with a spread footing. Please refer to ECP Typical Specifications for the specific and detailed product installation requirements.

- 1. Site survey:** Pier placements are located and the location of underground utilities verified.
- 2. Excavation:** Small excavations are dug for access at each placement location. The space required at the foundation is usually about 3 feet square. (fig 1)
- 3. Preparation of the foundation:** This includes notching the footing (if required) to place the pier bracket under the stem wall, preparing the bearing area under the footing to a smooth and level condition, and adjusting the face of the stem wall to vertical (plumb) at the point of bracket attachment. (fig 1)



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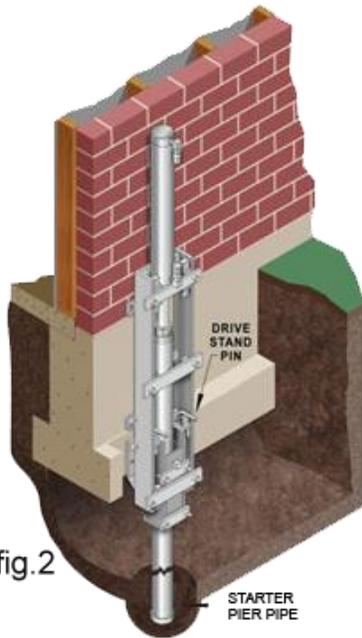


fig.2

4. Utility Bracket Attachment: The utility bracket is secured to the footing using anchor bolts. Attachment of the drive stand and the hydraulic cylinder that is used to force the pier pipe into the soil is mounted on the drive stand. (fig 2)

5. Pier Pipe Installation: The pier pipe is advanced into the soil using the structure as the reaction force with a 10,000 psi hydraulic pump and cylinder combination. The piers may be installed from outside or inside the structure. Pier installation continues until rock or suitable bearing-strata is encountered below the unstable soil near the surface. (fig 2)

6. Load Test: Every pier is load tested by increasing the force on the pier to insure the rock or bearing-strata will support a load greater than needed to guarantee a factor of safety. Typically an engineer will determine the load of the structure and the desired factor of safety before the load tests are performed. (fig 3)

7. Preparations for Restoration: Once all piers have been installed, load tested, and the installation data at each placement recorded; lifting head assemblies and hydraulic lifting rams are placed on the piers. The lifting cylinders are connected with one or more manifolds and operated using a hydraulic pump. (fig 3)

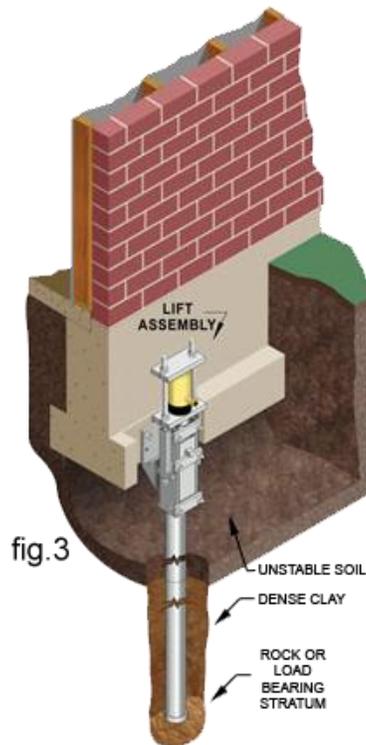


fig.3

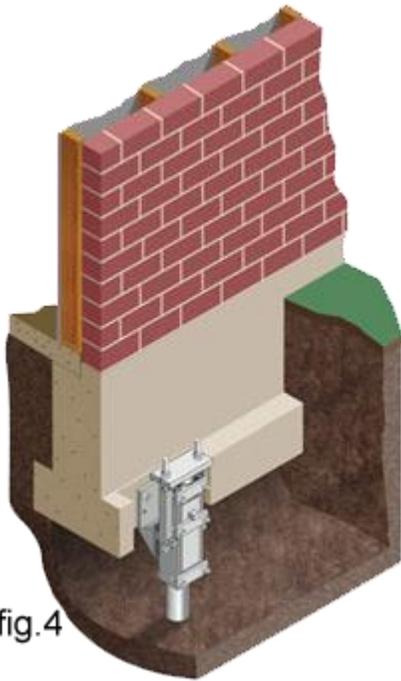


fig.4

8. Restoration: Under careful supervision, the load is transferred from the existing failing strata under the foundation, to the load tested piers. The structure can be transferred gently and evenly lifted to as close to the original elevation or to the recommendation of the engineer. The nuts at the pier caps are secured at each placement and the lifting equipment is removed. . (fig 4)

9. Clean Up: The soil that was excavated at each pier placement is now replaced and compacted. The site is left clean and neat.