

Installation Instructions for Grout and Haunch (GH) Bracket with Helical Piles

These instructions are intended to illustrate the installation and use of the Grout and Haunch (GH) Bracket along with a Type SS Helical Pile. The tools and methods covered herein should be used by competent personnel familiar with and following good work and safety practices. Should additional information and details be desired, or if specific situations arise which are not covered adequately herein, the user should consult with Chance Construction, Hubbell Power Systems, Inc.

Please read and understand the entire instruction sheet before beginning work.

1. Determine where the anchors will be placed and excavate a hole at each location. Place the spoils on tarpaulins or boards to help maintain cleanliness in the area and to speed up backfill after installation. The boards also may be used to cover holes overnight.
2. The size of the hole required will depend on how deep the footing is. A wider hole is required if the footing is more than a few feet below grade. The hole must be wide enough to expose enough wall or footing (more than 18 inches) for the Grout and Haunch Bracket (GH Bracket). The hole should be excavated to a depth below the footing equal to the height of the jack (closed) plus 3 to 4 inches.
3. Prepare the footing by chipping the irregularities from the bottom side if needed. The bottom surface of the footing must be flat and smooth in order to have sufficient bearing area for the lifting jacks and block/shims. Make sure there is no dirt left on the bottom of the footing.

WARNING

Potential soil collapse.
Can cause personal injury or death.
When digging large holes, take appropriate shoring measures.
Always abide by all local and OSHA requirements.

WARNING

Rotating crushing hazard.
Can cause property damage, personal injury or death.
Do not position anyone or anything between the torque bar and the object restraining it. Do not try to restrain the torque bar by hand. Test the direction of rotation before beginning by lightly tapping the hydraulic control valve.

Incorrect footing preparation will not allow the bracket to seat properly and may result in bracket push out or rotation.

This can result in damage to the entire structure, the footing, the bracket, anchor or the jacking equipment.

4. Place the anchor as close to the foundation beam as possible. The lead helix should be under the foundation wall. Lift the anchor installer onto the top of the anchor shaft. Using the pins supplied with the installer, secure it to the pier shaft.
5. When installing anchors with a hand-held installer, be sure the torque bar is secured against an immovable object. The torque bar will try to rotate opposite the anchor (counterclockwise if viewed from above) **and cannot be restrained by hand**. Lightly tap the hydraulic control valve to check the direction of rotation of the torque bar before beginning.

NOTE: Always read and understand the instructions included with your installation equipment before beginning any installations.

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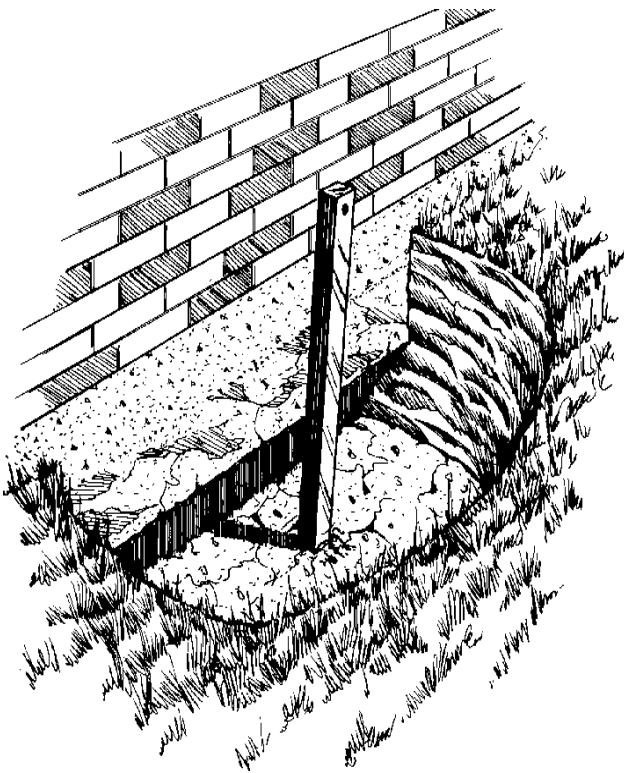


Certificate No. 001136

⚠ WARNING

Helical Pile installation may puncture underground utilities.
Can cause property damage, personal injury or death.
Locate and avoid all underground utility services before digging or installing an anchor.

6. Apply down pressure on the anchor installer to start the helix into the ground. Drive the anchor at a 3 to 5 degree angle from vertical (away from the structure). Install the anchor to the predetermined torque corresponding to your particular load requirements. If more depth is needed, unpin the installer from the shaft. Remove the installer and add an extension shaft to the existing shaft. Bolt the two shafts together and then pin the installer to the extension shaft. Repeat this process as many times as needed to reach the required torque or depth.



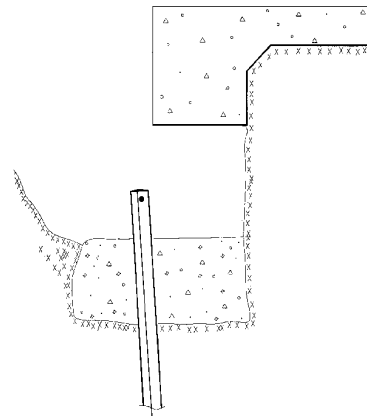
7. Record the installation depth and final torque of installed anchors for future reference.
8. Terminate the anchor with a flat of the square-shaft parallel to the grade beam. If necessary, cut the shaft off at the required height. The shaft should be cut off below the grade beam. This distance below the grade beam is equal to the height of the jack (closed) plus 1 inch. Never use spacers on top of the anchor shaft if the shaft is too low.

⚠ WARNING

Potential support collapse.
Can cause property damage, personal injury or death.
Do not place shims or spacers of any kind on top of the anchor shaft. The GH bracket baseplate must set atop the anchor shaft.

⚠ WARNING

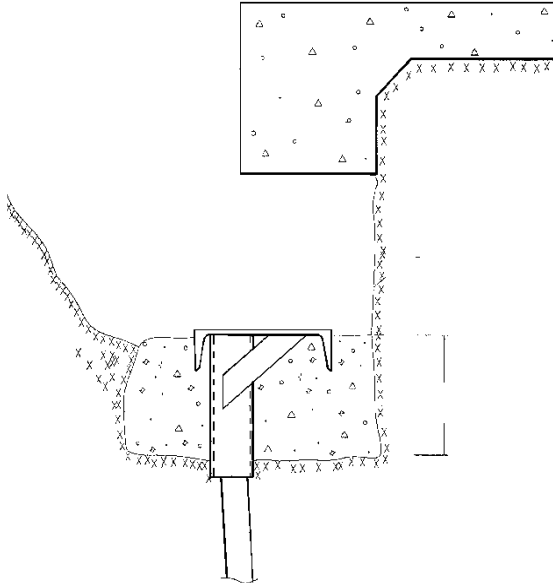
Bending or over-torquing of the anchor or tooling is hazardous.
Can cause property damage, personal injury or death.
Do not allow visible bending or torque greater than the rating of the anchor or tooling.



9. Place enough grout around the exposed shaft to capture all of the GH Bracket baseplate (18" x 8"). The grout should be a minimum of 2 inches thick. The grout must be thick enough to touch the underside of the baseplate when the bracket is placed on the shaft (see Step 10).

NOTE: The grout shall be a 5 sack mix with pea-size gravel. A quick set additive should be used.

10. Place the GH Bracket over the anchor shaft. Push the bracket down until the baseplate settles into the grout. Be sure that the baseplate comes in contact with the top of the shaft. The 18-inch length of the baseplate shall be parallel to the grade beam and level. If the pier was installed correctly, the baseplate should be cocked at a 3 to 5 degree angle away from the structure in the direction perpendicular to the grade beam. The top surface of the baseplate should be free of any grout overflow.

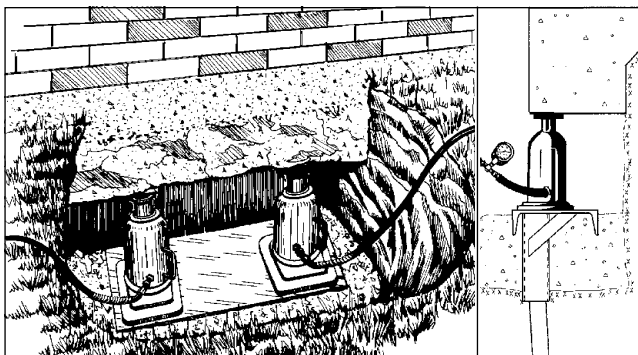


11. Allow an appropriate amount of time for the grout to set up. The grout should be at least the approximate consistency of stiff clay. Follow the directions and time recommendations included with the grout or quick set additive.

12. Place a jack at each end of the baseplate an equal distance from the centerline of the anchor shaft. The jacks must be sufficiently spaced to allow a concrete block to be inserted over the shaft.

NOTE: Always use jacks that have a built in pressure gage to monitor loads.

13. Place 1/2"-thick bearing plates between the top of the jacks and the bottom of the grade beam. These plates should be at least 4" x 4".



14. Begin lifting or stabilizing the structure by simultaneously applying loads to the jacks. Do not exceed the load rating of the GH Bracket.

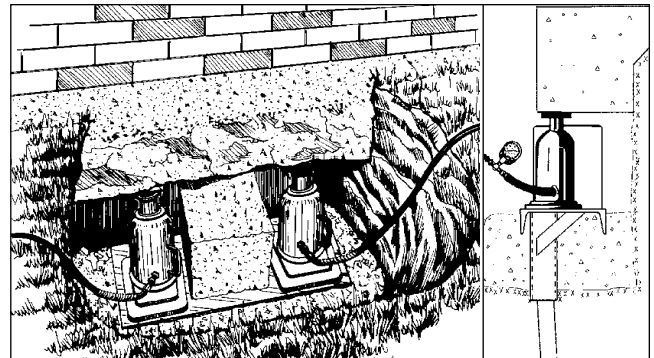
⚠ WARNING

**Potential support collapse.
Can cause property damage, personal injury or death.
Do not exceed the load ratings of the GH Bracket.**

**WORKING LOAD: 10,000 lb.
ULTIMATE LOAD: 20,000 lb.**

15. Record the loads achieved for future reference.

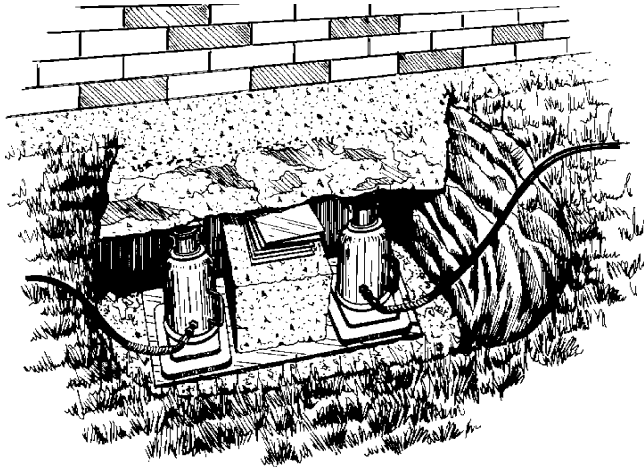
16. When the structure is stabilized or lifted to the desired height, insert a concrete block between the two jacks. The block must be centered right to left over the shaft of the anchor. The block must be set far enough under the foundation to obtain sufficient bearing area with the bottom of the grade beam. See Step 17 for the amount of final bearing area required.



NOTE: All concrete blocks shall have a minimum compressive strength of 3500 psi and a minimum cure time of 8 days. Blocks of varying dimensions, such as 6" x 8" x 10" are preferred so that height adjustment is possible.

17. Place steel shims on top of the concrete block to close the gap between the block and the grade beam. Continue adding shims until the stack (block and shims) is tight between the grade beam and the baseplate of the bracket. Never use more than 2 inches of shims. All shims must maintain at least 9 square inches of bearing area with the grade beam and the concrete block.

NOTE: The steel shims shall be a minimum of 4"x 4" in size. Thicknesses can vary with 1/8" and 1/4" being the most common.



WARNING

Potential support collapse.

Can cause property damage, personal injury or death.

Do not use more than 2 inches of shims. Always maintain at least 9 square inches of bearing area. This helps ensure the shims will not slip or kick out.

18. When the shims are properly placed, release the pressure on the jacks and remove them from the hole. This will transfer load to the GH Bracket/Helical Pile. Check to be sure the shims and block remained aligned and maintained sufficient bearing area.

19. Pack grout all the way around the stack of shims. The grout should be packed so that it extends out at least to the edge of the concrete block.

20. Backfill the hole and clean up the area.

TYPICAL INSTALLATION

