

Recommended Installation Procedures

DriveRite Series 29040, 29140, 39040 and 39140 Residential and Commercial Underpinning Brackets

DriveRite Series 29030 and 29130 residential underpinning brackets are steel under-footing brackets that fit DriveRite Series 25000 and 26000 helical piles. DriveRite Series 39030 and 39130 commercial underpinning brackets are steel under-footing brackets that fit DriveRite Series 35000 and 36000 helical piles.

It is imperative that all site safety issues be identified and communicated to the entire installation crew before beginning installation operations. **Helical piles will penetrate underground gas pipelines and electrical cables, as well as other underground utilities, possibly exposing workers to extreme hazards.** State laws require all excavators to have underground utilities marked before digging. Law assigns this responsibility to the person who will do the actual digging; it cannot be delegated to anyone else. Have owners mark all private underground utilities and obstructions. Use only insulated tools for hand excavation.

Helical piles, the equipment used to install them, and powered excavators are electrically conductive and must not be allowed to contact either underground or overhead power lines. When operating mechanized equipment in the vicinity of overhead power lines, ground crewmen must stay clear of the equipment and any attached pile whenever the equipment or its boom is being moved. Personnel should stay clear of equipment outriggers during operations. The equipment may rise and fall during operations, thus posing a threat particularly to feet. All installation crewmembers must wear all OSHA-required personal safety equipment, including at the minimum hard hats, safety glasses, gloves and safety shoes/boots. **The forces developed between moveable parts of this system during installation and subsequent stabilization/restoration of the structure can be deceptively high.** Installation crewmembers should be limited to only properly trained personnel.

Installing the Bracket

Excavate a hole where the pile is to be located, immediately adjacent the foundation. Pile locations may generally be adjusted 24" either way along the foundation from the plan of repair to clear existing obstructions. Pile locations marked as critical require approval from the owner's representative before being moved. The hole must extend approximately 24 inches below the footing and be at least 2 feet wide to allow sufficient room for the bracket mounting, pile driving and stabilization/restoration operations. **Follow all OSHA regulations regarding shoring of the excavation.**

Cut a 20 inch wide slot in the footing back even with the foundation wall, so the bracket can be mounted to the footing vertically beneath the wall. Use a chipping hammer to even out the cut face of the footing where the bracket will be mounted and the bottom of the footing where the bracket will bear.

Install the pile plumb (+/- 3 degrees) approximately 2-5/8 inches away from the newly cut face of the footing, driving it until both minimum embedment depth and minimum effective torsional resistance criteria are met. Multi-helix piles will require excavation of a hole suitable to allow the helices to be slipped in under the bottom of the foundation. Terminate or cut off the pile with the shaft extending no more than 10 inches above the bottom of the footing, being sure to keep any cut straight and square with the pile shaft. The last pile extension section may be removed to facilitate cutting it off if this can be accomplished without backing the pile up. You can excavate along the shaft to expose the first coupling so long as the excavation is backfilled and compacted or refilled with grout, concrete or soil cement. Terminating or cutting the pile off less than 10 inches above the bottom of the footing will reduce the 8 inch maximum lifting capability of the bracket accordingly. However, longer tie rods are available for higher lifts.

Remove the lifting cap and lifting rods from the bracket weldment, if necessary, and lower the bracket weldment over the pile top with the footing support plate facing outwards. Rotate the bracket 180 degrees to place the footing support plate under the footing and raise the bracket into contact with the bottom of the footing. Check for proper fit between the bracket and footing. Place the lifting cap on top of the pile and install both lifting rods. The rods must protrude all the way through the nuts below the bracket weldment and on top of the lift plate. If the structure is to be restored by lifting the footing, at least 2" of lifting rods must protrude above the nuts on top of the lift plate to allow installation of the lifting bar assembly. Tighten lifting rod nuts slightly to hold bracket in place against the bottom of the footing. Install 1/2 inch diameter mounting bolts in the middle of the mounting slots provided on the bracket.

Structure stabilization may be accomplished by simply tightening the nuts on the tie rods with a wrench. Restoration will require the use of a hydraulic jack and lifting bar assembly (see separate instruction sheet for lifting apparatus). Lifting operations should be done on at least three brackets simultaneously, depending on the total number of brackets installed and the specifics of the structural distress being remedied.

Once all brackets have been locked off at final elevation, backfill and compact the excavations.