

Boardwalks, Pedestrian Bridges & More: Ideal Applications for Helical Piles

Jeff Kortan, P.E. Director of Engineering

Even smaller diameter helical piles can develop relatively high capacities, yet be installed with hand held equipment and smaller machines such as mini-excavators and skid steers. This makes helical piles well-suited for projects with limited or tight access and for sites that would be sensitive to disturbance under typical, larger construction vehicles such as pile-drivers, drill rigs and concrete trucks. Pedestrian bridges and boardwalks along cart paths at golf courses and along park trails are specific examples of structures often planned in limited access, sensitive areas. For these projects, considering all factors from soil conditions to design loads to site access, helical piles are more often viewed as the ideal deep foundation option.

Boardwalk supported on 2.375" O.D. vertical and battered helical piles



Smaller installation equipment means there is less site disturbance. Many clients with trail and boardwalk projects want the construction methods to have minimal impact on the project site and the surrounding areas. They want to maintain as narrow a construction corridor as possible by clearing only those trees necessary to grade trails and provide access for materials and

Custom saddle bracket connected with clevis to battered helical pile



equipment. Helical foundation systems are therefore a great option. Helical pile installation also does not auger soil to the surface so no spoils are generated as the piles are advanced into the ground. This again minimizes site disturbance since spoils do not have to be spread across the site or hauled away.

Boardwalk construction over wetlands can be a challenge if deep water and soft soil exists, or if the goal is to simply prevent disturbance to the wetlands. In these cases, foundation installation would have to be completed during dryer periods or in the winter over ice or frozen ground. When this is not possible, or if the construction schedule does not allow it, the boardwalk can be designed to support the helical pile installation equipment. Helical piles can then be installed in pairs or groups reaching out ahead of the constructed boardwalk. Proper design and sequenced construction allows pile installation and boardwalk construction in sections without ever disturbing the wetlands below. The tops of the helical piles are advanced or cut to design elevation and fitted with custom saddle brackets to accept the timber girders. Battered piles typically provide lateral support to the boardwalk.



Jeff Kortan, P.E. Director of Engineering

Jeff is involved in product design, product verification testing, preliminary design applications, project consulting, conducting installation, sales and marketing training, as well as developing and presenting education-based material. Jeff routinely travels throughout the United States and Canada to consult with local installing contractors about general or project-specific needs, and to present technical information to engineers, architects and general contractors.