

CHANCE HELICAL PILE Civil Construction WALKWAY REPORT

A CASE HISTORY

Chance Civil Construction Distributor:
DANBRO Distributors, Philadelphia, Pennsylvania

Project:
Fish House Cove,
Pennsauken, New Jersey

Structural Engineer:
W.J. Castle, P.E. & Associates, P.C.
(Member of THE CASTLE GROUP)

General Contractor:
Hydro-Marine Construction Co., Inc.
(Member of THE CASTLE GROUP)

Background Information:
The original foundation design for the proposed timber walkway and platform in Fish House Cove, Pennsauken, NJ had proven to be unsuitable for the marshland. The design consisted of 12" diameter concrete filled caissons, which when installed, began to rotate and settle. NJ Transit, the owner of the site, wanted to abandon the constructed caissons and use a new foundation system. W.J. Castle, P.E. & Associates, P.C. (CASTLE) was brought in to design and construct the new foundation system for the walkway.



Two helical piles were used at each cap beam creating a bent system. Several of the existing caissons were utilized in locations where they had not failed.



The new foundation design for the platform included adding one helical pile to the timber bents and an additional bent added where required using two helical piles.



Job Description:
CASTLE performed an analysis of the site and developed a new foundation system design for the walkway. CASTLE was able to design a foundation system using approximately 100 1 3/4"-square solid-shaft Chance helical piles. A U-shaped steel bracket was attached to the top of each anchor which supports a timber cap beam.

In these locations, two caissons were placed on the outside and one Chance helical pile was installed in the center making up the bent. Helical shaft extensions with splice plates were added to the caissons to extend up to the same height as the Chance helical piles, creating a level plane for the timber cap beams. Two 1/2"-diameter galvanized bolts were used for each connection to the cap beam.

Once CASTLE received the approval from NJ Transit to proceed with the proposed walkway/platform design, Hydro-Marine Construction Co., Inc. (HYDRO) was brought in to complete the construction. HYDRO is the affiliate construction company to CASTLE and is a certified distributor and installer of Chance helical piles and anchors.



HYDRO performed the construction of the walkway and platform area, including the foundation, deck, and railing system. A total of 118 helical piles were used to complete the walkway.

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Failed foundation system



New foundation system



Platform area



Completed walkway