



Greenside Aircraft Taxiway and Hangar Complex - Wick Drains

Quantico, VA

UNITED STATES

**Owner**Naval Facilities Engineering
Command**Engineer**

Thornton Tomasetti

General contractor

Archer Western

Dates of work

2009/09 2011/02

Description

The Greenside Aircraft Taxiway and Hangar Complex is a large-scale public project at the Marine Corps Air Facility in Quantico, VA. The Greenside Type II Hangar will house the existing fleet of CH-53, new CH-53K Sikorsky Helicopters, and the proposed MV-22 Osprey aircraft. As part of the large design-build team, Menard provided a ground improvement solution that included expediting settlement prior to the construction of an adjacent taxiway.

Ground conditions

The site consists of a shallow layer of loose sand over a thick layer of very soft organic clay, underlain by a dense silty sand. The soft organic clay layer varied in thickness across the project site, but was consistently in the 30-to-35-ft thick range. The presence of the organic clay layer was of great concern to project designers due to the large settlements that were expected to occur following the construction of the taxiway.

Main figures

Wick drains

20000 EA.

Solution

Due to the extremely soft nature of the fatty clay deposits, many deep ground improvement alternatives, such as stone columns or aggregate piers, were not financially or technically feasible.

To expedite the natural settlement of the clays under the taxiway, Menard installed wick drains beneath a 414,000 sq ft surcharge. Consolidation of the organic clays took place in a fraction of the time required under surcharge alone. A total of 20,000 wick drains were installed to depths ranging from 55 to 60 ft on 5 ft triangular spacing using two Menard wick drain stitchers.

In summary, to expedite the soil settlement for an aircraft taxiway at the Marine Corps Air Facility, Menard used two wick drain stitchers to install wick drains in the area of a 414,000 sq. ft of surcharge.