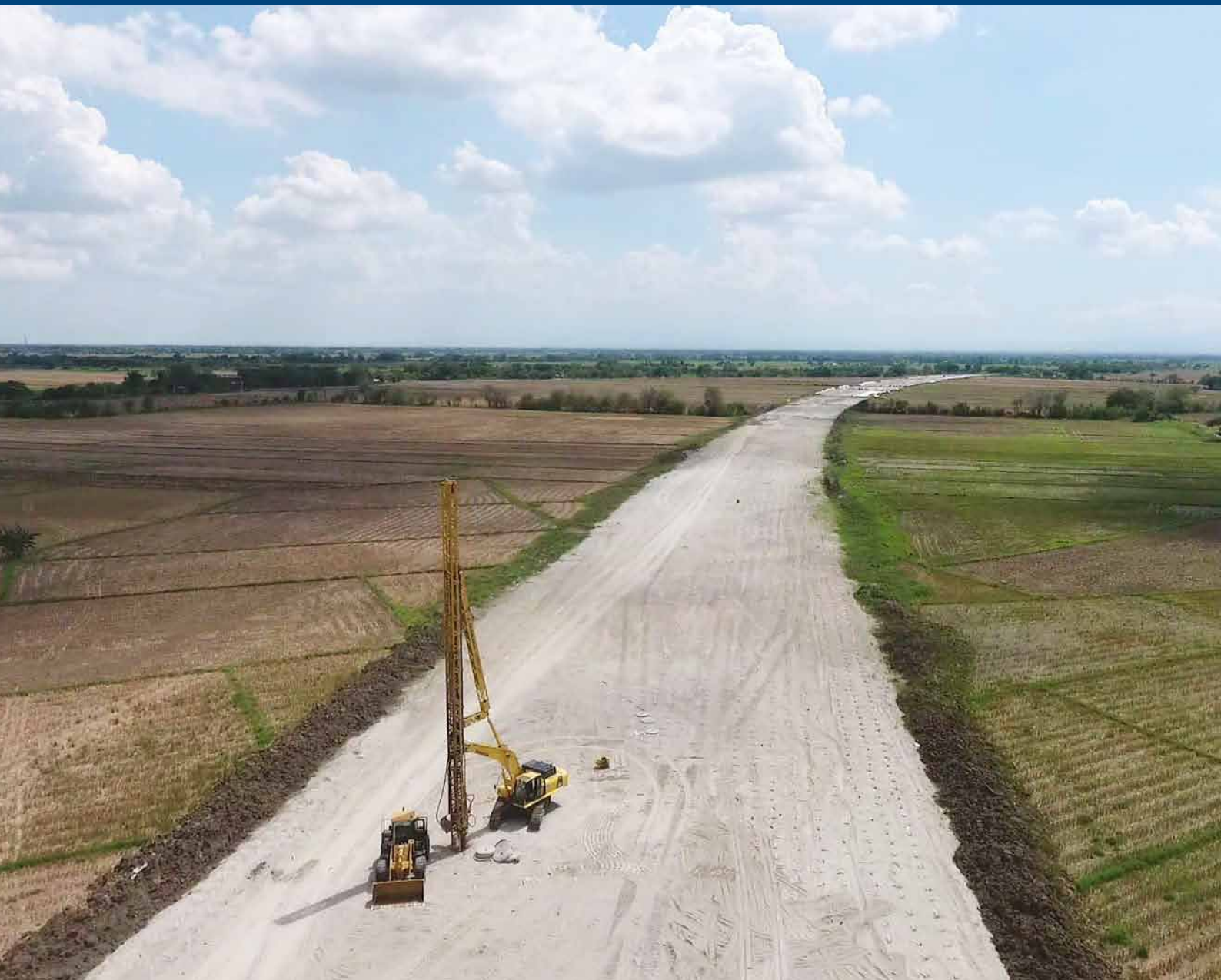


**Accelerated Soft Foundation Consolidation
Region III, Philippines**



Alidrain® PVD – Accelerated Soft Foundation Consolidation

Region III, Philippines

Project Data

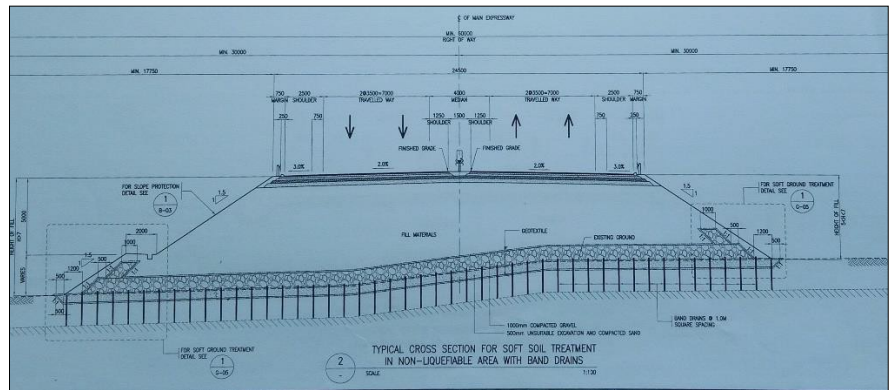
Project	: Central Luzon Link Expressway Project
Client	: Department of Public Works and Highways Region III
Contractor	: Hunan Road & Bridge Const. (P-1), China Road & Bridge Const. (P-2), Ilsung Const. & Pacific Concrete JV (P-3) Quingdao Construction (P-4)
Completion Year	: 2016 - ongoing
Material	: TenCate Polyfelt® Alidrain® Prefabricated Vertical Drain (PVD)

Overview

Central Luzon Link Expressway (CLLEX) is a toll road currently under construction in Central Luzon region that will connect the Subic–Clark–Tarlac Expressway (SCTEx) and Tarlac-Pangasinan-La Union Expressway (TPLEX) to the North Luzon East Expressway which is presently under construction in Cabanatuan towards San Jose, Nueva Ecija.

The project aims to provide a faster access from Metro Manila to Cabanatuan City which is the base (or hub) city for Pacific Ocean Coastal Area Development. It will also decongest the traffic along the Pan- Philippine Highway (Daang Maharlika).

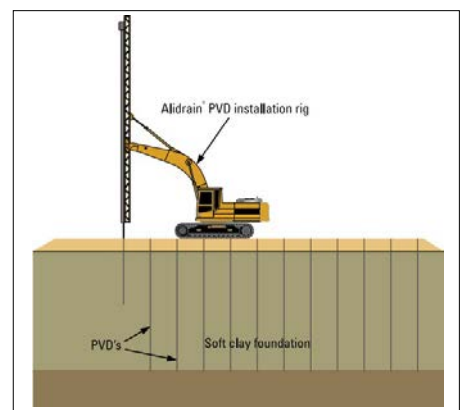
The soil conditions where the expressway will be constructed consist of soft clay foundations. The time required for consolidation for surcharge loading may be unacceptably long and foundation instability may be a serious concern.



Cross-section for soft foundation consolidation

Solution

TenCate's Alidrain® Prefabricated Vertical Drains (PVDs) have been chosen to address the soft soil consolidation for the expressway project. Using Alidrain® PVDs accelerated the rate of settlement of soft clay foundation layers and increased the undrained shear strength of the soft clay foundation. The increase in the rate of gain in the undrained shear strength provided an improvement in stability of the soft clay material.



Alidrain® PVD installation set-up

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Alidrain® PVD – Accelerated Soft Foundation Consolidation Region III, Philippines

Construction

The initial phase of the project required the installation of Alidrain® PVDs. This was done by first constructing a stable working platform over the soft clay foundation. Thereafter, the Alidrain® PVDs were installed by vertically vibrating a hollow steel mandrel containing the prefabricated vertical drains into the soft clay foundation with a 1 meter square spacing. The depth of the installation varies from 2 meters to 7.5 meters depending on the thickness of the soft clay foundation.

The use of Alidrain® PVDs significantly reduced the consolidation time and improved the stability of the soft clay foundation.



Installation of Alidrain® PVD over soft clay foundation to accelerate consolidation.



Embankment fill over consolidated soft clay foundation

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