



THORNWOOD EMBANKMENT REHABILITATION

KwaZulu-Natal, South Africa



Project Facts

Product
Anchors

Market
Infrastructure

Client
Transnet

Main Contractor
RME – Rehabilitation, Maintenance and Emergency Services

Achievements

Franki recognised the technical difficulties and the challenging conditions that the installation of the anchors posed and formulated a feasible and constructible solution.

- About the project**

Transnet’s Thornwood Railway Station, and the steep embankment on which it is situated on, forms part of the critical national railways network line that transport goods between Johannesburg and Durban. Excessive geotechnical movements were identified at the embankment of the station, prompting national rail company, Transnet Freight Rail to act accordingly to avert a possible total collapse of the infrastructure.

- Challenges**

Inconsistent ground conditions before the competent rock made drilling conditions extremely challenging. This included drilling through a previously constructed gabion wall of up to 3m thick, followed by overburden with a mixture of clay, sand and boulders (up to 3m diameter).

Restricted working area, which entailed a two-way road nearby that had to be reduced to a single-lane road to accommodate the drill rig working platform. Despite these efforts, the working area was still confined. Traffic control was put in place to ensure minimal disturbance to the community road.

- The solution**

The project involved the design, supply and installation solution comprising 132 no. 830kN permanent ground anchors of up to 40m in length.

A Symmetrix 193 casing drilling system was utilised for drilling of the cased portion over the free length portion of the anchor holes. The casings were advanced until competent rock was encountered, which was up to 40m deep.