

N2 Langhoogte

Slope Stabilisation at Langhoogte on the National Route 2 Section 2 at KM 51.95, Western Cape, South Africa



Project Fact's

Owner

SANRAL (South African National Roads Agency)

Client

SANRAL

Consultant

Aurecon

Quantity

186 No. 800mm Ø Jet Grouted Columns, Reinstatement of the Road & Drainage

Contract Period

February 2014 to October 2014

Franki Africa

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The project came about due to a slope stability problem on a 55m long embankment of the N2 national route, 104km East of Cape Town.

Circular crack failure has been observed at the road surface as a result of a movement of the road embankment fill. The geotechnical investigation showed that the slope failure had occurred as a result of water ingress and percolating piping of water through the underlying fill. This fact led to a design incorporating jet grouting columns, not only to stabilise the slope and roadway, but also to act as a grouting operation to fill the cavities where piping had taken place.

Franki Africa entered into a contract with the South African National Roads Agency for the ground improvement (installation of jet grouting columns), roadworks (pavement rehabilitation) and drainage improvement (installation of concrete culverts).

186 Jet Grout Columns were set out in a grid of 2.5m x 2.5m. The column depth varied between 3m and 14m depending on the insitu mudstone horizon. The column diameter of 800mm with a mushroom head of 1 200mm on the upper meter was verified through the installation of various test columns in different soil conditions.

The remaining civils works comprising of the roadworks and drainage were sub contracted out.