

## N2 Langhoogte

Western Cape, South Africa

A slope stabilisation solution was required along the N2 National Route in the Western Cape.



### The project

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 was observed at the road surface as a result of a movement of the road embankment fill.

We 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).

## The challenge

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.

## The solution

186 no. 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 in-situ 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.

## Project facts

### Owner(s)

SANRAL

### Keller business unit(s)

Keller South Africa

### Main contractor(s)

SANRAL

### Engineer(s)

Aurecon

### Solutions

Slope stabilisation

### Markets

Infrastructure

### Techniques

Jet grouting

### Email address

[info.za@keller.com](mailto:info.za@keller.com)