



BULK SEWER TO SOUTHERN PAARL, DRAKENSTEIN

Paarl, Cape Town, South Africa



Project Facts

Product

Jet Grouting, Pipe Jacking

Market

Infrastructure

Client

Drakenstein Municipality

Main Contractor

Vakala Construction

Achievements

Provide a trenchless solution that would mitigate the risk of any settlement or damage to the roads, services and structure in the vicinity of the works.

- **About the project**

The proposed Drakenstein Municipality bulk sewer, which had to cross the N12 and run adjacent to the Boschenmeer Golf Estate boundary wall for a total of 215m, had to be installed at an invert depth of -6m.

To meet SANRAL's strict requirements of zero influence and settlement on the N12 and to protect the Boschenmeer boundary wall, it was obvious that a trenchless installation method, like pipe jacking, was appropriate.

- **Challenges**

On analysing the ground conditions Franki Africa found, firstly, that the sewer passed directly through a loose cobble layer between -4m to -8m and, when pipejacking through this type of ground, it is virtually impossible to prevent collapse of the cobbles. Secondly, they found a high-water table which would, more than likely, draw fines from the surrounding ground towards the jacking shield. Both of these elements could have led to over-excavation resulting in ground level settlement.

- **The solution**

Franki's proposal to consolidate the in-situ ground condition ahead of the Pipe Jack using the highly technical Jet Grouting technique was accepted and executed. The 1.8Ø O.D Pipe Jack then passed through the treated zone with zero influence on N12 and Boschenmeer boundary wall and the entire project was a great success.

The scope of works included: 135 No. 1.8 Ø Jet Grout Columns, 215m x 1 800 Ø O.D. Pipe Jacking, 3 No. ± 6-8m Deep Shafts and 250m³ Grouting.