



DRAINAGE/FOUNDATION SUPPORT NSESE TO INDIAN OCEAN FERTILIZERS PIPELINE

CASE STUDY

PROJECT: Richards Bay Pipeline
CLIENT: Richards Bay Transitional Local Council
CONSULTANT: G F J Consulting Engineers.
CONTRACTOR: Cerimele Construction

DATE: May 2001
QUANTITY: ±12 000m²
PRODUCT: bidim A4

A 500mm diameter Glass Reinforced Plastic (GRP) pipeline was installed to supply a new reservoir at Indian Ocean Fertilizers (IOF) with water from the Nsese Water Works. The water would then be fed into the IOF plant.

The total length of the pipeline is 8 700m, transversing through some rough terrain and very unsuitable soil conditions. The pipe had to be placed at a 1.5m invert with the water table being

intersected at depths as shallow as 0.5m in places. This created some very difficult installation conditions as a stable dry foundation and excellent pipe bedding compaction is imperative. The solution to this problem involved the excavation of a further 300mm depth to accommodate two additional, engineered layers.

The design called for a 150mm drainage layer, consisting of a 19mm stone wrapped in **bidim A4**. This

layer performed the dual function of both a drainage layer and a foundation layer. The **bidim A4** also performed two functions. The primary function, as a filter, was to allow water to drain into the drainage layer giving the contractor a firm foundation on which to place and compact a 150mm selected, dry, bedding layer. The secondary function, as a separator, ensures that none of the pipe encapsulating soil migrates into the drainage layer, which would otherwise cause unwanted settlement under and around the pipe. The system worked very effectively, saving construction time and allowing the required compaction densities to be achieved, without unnecessary effort.

