



Flood Damages to DR08079 in Umzimvubu



Pre-Construction



Location	Umzimvubu, Eastern Cape, South Africa 
Client	Department of Roads & Public Works: Eastern Cape  Planning, Prelim and Detailed Design, Construction Project Manager: Mr B Cabangana Contact No. (047) 505 - 2744
Period	2013 – 2013
Total Project Value	ZAR 30.5 Million (T-Square fees: ± ZAR 3.1 million)

Situation

The slope of the road at the section of the road in question is too steep (almost 23%) for constructing a gravel road. Otherwise the gravel will be lost with the first rains. It was therefore decided that the steep section of road be constructed using concrete. After further investigations, it was realised that trying to build at such a slope with plain concrete will present construction problems in that the concrete would flow down the slope. It was therefore suggested that geo-fabric multi-cells be used in the construction process. The typical cross section of the road was limited to 5 metres with a concrete side drain on one side to minimise erosion.

Assignment

The design criteria and standards used for this project were gathered from an extensive list of sources. However, the principal sources used include;

- Multi-Cell Guidelines: Kaytec Engineered Fabrics,
- Vulindlela Road D1125: Case Study
- TRH 14: Guidelines for Road Construction Materials,
- Guidelines for Human Settlement Planning and Design,
- Eastern Cape Standard Details, and
- SANRAL Drainage Manual.

The section of road is constructed with an operational speed of 40km/hr. It is designed to carry minimal traffic. The road is considered as Class D. The proposed pavement design is summarised below:

Proposed Pavement

100 mm AC

150 mm C4 Base

150 mm G7 Sub-base

150 mm Rip and Compact



During-Construction



Post-Construction



Project Deliverables

- The construction of the section of the DR08079 road (15km) offers employment and training opportunities for local residents. There is also the opportunity for the establishment of local enterprises to carry out portions of the work through capacity building.

However, there are many aspects of the work which are appropriate for implementation using labour. Examples include:

- o Clearing and grubbing the site
- o Installation of sub-soil and surface drainage
- o Installation of the multi-cell fabric
- o Placing concrete
- o Construction of 15km of surfaced road

Project Impact to the Community

- The road and bridge were opened to the community on the 26th May 2013. Local Community was invited to the opening and expressed their gratitude towards the new infrastructure.
- The community indicated that this section of the road used to be problematic most especially during rainy seasons as vehicles could not drive up the steep terrain and crossing the adjacent river banks was also challenging.
- The Project provided temporary employment to 15 local community members for a period of over five (5) months.
- Below is the picture expressing their gratitude towards the new infrastructure.



Focus Power Engineering (Pty) Ltd

Gecko Business Park, 9 Buffelsfontein Road, Mount Pleasant,
PORT ELIZABETH, 6070

P O Box 70237, The Bridge, **PORT ELIZABETH**, 6025

T +27 41 368 - 7305

F +27 41 368 - 7535

samuelm@focuspower.co.za

pe@focuspower.co.za

www.focuspower.co.za

