



Co Reg. 2001/000705/08

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Dear Member,

## **UPGRADING OF GRAVEL ROADS IN RAPTOR'S VIEW WILDLIFE ESTATE**

The condition of the road network in Raptors View has reached a point where normal maintenance methodologies cannot be applied anymore. It should be noted that the gravel roads in Raptors were never constructed to acceptable engineering standards. Roads were, over time, merely graded and ad hoc infill applied.

Considering the traffic load and local conditions it was important to apply an appropriate design. The design was generally informed by the following Engineering guidelines:

- Human Settlement Planning & Design (Vol 2) compiled by the CSIR
- South African Pavement Management Manual (SANRAL)

Because consideration was given to construct the roads in phased layers, due to budget limitations, the advice of an experienced roads engineer were sought. A Mr. FJ Labuschagne Pr Eng, a retired Transportation engineer was contacted for advice. Mr. Labuschagne was previously employed at the CSIR and Department of Transport in Gauteng. He in turn assisted to finalize the design and also referenced Dr. L du Plessis in this regard.

### **The adopted design is as follows;**

#### **1) Road bed preparation**

Preparation of the existing road bed will require ripping to a nominal depth of approximately 150mm, reintroducing existing material that accumulated on the verges and shaping to a smooth surface for compaction at optimum moist to 93% MOD AASHTO density. The latter will only be possible in areas where rock outcrops do not occur. In areas where in situ material is not available to achieve a smooth surface, imported sub base will be introduced to achieve the same, upon approval by the Estate's representative.

2) Sub-base construction

The sub-base will be constructed with approved imported material to a 150mm compacted layer thickness, at optimum moist to 95% MOD AASHTO density.

3) Material specification

- Material grading – G5 (COLTO)
- Minimum CBR – 25 at 95% compaction
- Compaction – 95% MOD AASHTO or refusal at optimum moist
- Maximum size – 75mm
- Preferably a grading coefficient between 16 and 34

A further layer of 150mm will be constructed in 2 to 3 years' time as a final wearing course.

Kind regards

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

RVHOA Board

14<sup>th</sup> August 2019