



DATE: 15 October 2013

YOUR REF:

OUR REF: 1287 / A1

## **PROPOSED RESIDENTIAL DEVELOPMENT ON FARM 1202/59, JOHANNESDAL**

### **REPORT ON THE PROVISION OF CIVIL ENGINEERING SERVICES**

#### **1. INTRODUCTION**

The owner of Farm 1202/59, Johannesdal intends the development of the property into 10 residential erven with sizes varying between 500 m<sup>2</sup> and 1575 m<sup>2</sup>. This report summarises the situation with regard to the provision of the basic civil engineering services, i.e. water supply, sewerage, stormwater drainage and solid waste removal to the proposed development.

#### **2. SITE LOCATION AND DESCRIPTION**

The property is located in the Johannesdal residential village near Stellenbosch.

To the north, the property is bordered by the approved Logie development on Farm 1202/23, to the east by residential erven and to the west and south by undeveloped land. The location of the property and proposed development layout can be seen on Drawing 1278/01 in Appendix B.

The site is currently vacant and covered with bush and trees. The site and surrounding areas are very steep with a general fall of approximately 1 in 6 in a south easterly direction.

#### **3. WATER SUPPLY**

##### **3.1 Demand :**

The demand for potable water from the development is estimated at 10 kl/day, based on an average daily demand of 0,75 kl / erf for the smaller erven, and 1,2 kl / erf for the larger erven.

The development is classified as a "low-risk" fire protection area, with a required fire flow of 15 l/s at 7m minimum residual head.

### **3.2 Supply :**

No water reticulation infrastructure of the Municipality currently exists near the site. The nearest infrastructure is found to the north of the site in Lumley Street in the form of a 160mm Ø watermain as indicated on Drawing 1287/01.

The supply and distribution of water to the development will be via the future municipal reticulation system of the proposed Logie development to the north. It is expected that the development be supplied with water from the upper Johannesdal Reservoir system at 375 m, but that will be dependant on the pressure zone(s) within the Logie development where it will be connecting. Until the Logie development is established, it may not be financially feasible to service this development.

A number of erven in the development has no direct access to the municipal road reserve, and the access will be via private right-of-way servitudes. The watermeters for these erven need to be located at the points of access on the municipal road reserve to make them accessible for the municipal officials.

## **4. SEWERAGE**

### **4.1 Run-off :**

Sewage run-off from the proposed development is estimated at 8 kl/day.

### **4.2 Drainage :**

Similar as for water supply, no sewerage infrastructure of the Municipality is found directly adjacent to the site. Sewage of the developed erven needs to drain via the future sewerage system of the proposed Logie development to the north towards the existing municipal sewer system in Lumley Street where sufficient capacity exists to accommodate the additional flow.

Due to the layout of the development, it is required that a number of the erven drain across adjacent erven towards the road reserves where the municipal reticulation system will in future be located. These pipes need to be protected by servitudes.

### **4.3 Treatment :**

Sewage from the development needs to be treated at the Johannesdal / Pniel Sewage Treatment Works with treatment capacity of 0,8 Ml/day. Limited spare capacity is currently available at the Sewage Treatment Works to accommodate the proposed development. The situation will improve with the upgrading of the Sewage Treatment Works by the Municipality, programmed for completion by the end of 2015.

## 5. STORMWATER DRAINAGE

The Dwars River, to the east of Johannesdal, is the natural drainage course of the area. Stormwater from the village and the mountains to the west of the village is conveyed to the river via natural streams, manmade open channels and pipes.

The 50-year pre-development run-off from the property is estimated at 0,11 m<sup>3</sup>/s. The 50-year run-off after the development has been fully developed is estimated at 0,16 m<sup>3</sup>/s, thus an increased run-off of 0,05 m<sup>3</sup>/s, or 50 l/s.

Due to the small size of the development, no provision has been made in the layout for detention storage of the increased stormwater run-off. It is proposed that stormwater be drained via the pipe system (minor storm) and road sections (major storm) of the adjacent Logie development towards the Dwars River.

## 6. SOLID WASTE REMOVAL


Solid waste to be generated by the development is estimated at 0,5 ton per week.

The Stellenbosch Municipality has indicated that they can provide a solid waste removal service to the developed erven. All three of the roads currently have dead ends without turning circles. While two of these roads are relatively short and can be accommodated by the refuse removal truck, the third is longer and may require a temporary gravel turning area at its end for the refuse removal truck to manoeuvre.

## 7. CONCLUSION

From the above we conclude that it will be possible to provide the required civil engineering services to the proposed development on Farm 1202/59, Johannesdal subject to the constraints and measures as discussed.

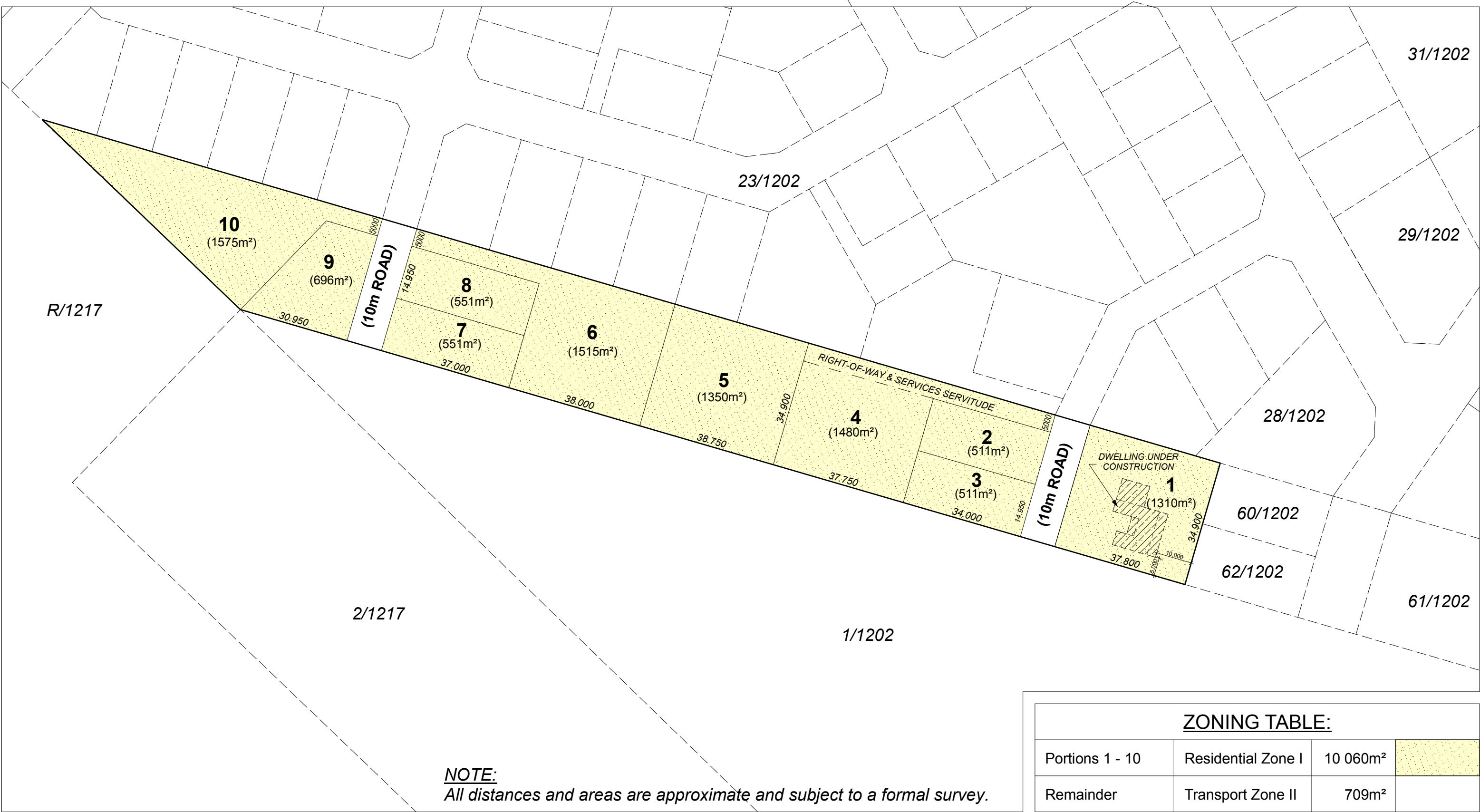
**BART SENEKAL INC.**

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**L J Louw Pr Eng**

**APPENDIX A**  
**SUBDIVISION LAYOUT**



**PLAN NR:**  
FARM 1202/59-PNIEL/SUB\_SEP2013/1

**DATE:**  
SEPTEMBER 2013

**CLIENT:**  
WINGERDSTOK TRUST

**N**

**SCALE**  
1 : 1000@A3

**PROPOSED REZONING AND SUBDIVISION - FARM 1202/59, PAARL SITUATED AT PNIEL**

**ZONING TABLE:**

Portions 1 - 10	Residential Zone I	10 060m <sup>2</sup>	
Remainder	Transport Zone II	709m <sup>2</sup>	
<b>Total</b>		<b>10 769m<sup>2</sup></b>	

**ATLAS**  
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**APPENDIX B**  
**ENGINEERING SERVICES - CONCEPTUAL**

