ELECTRICAL BULK SERVICES REPORT FOR

DERDEPOORTPARK EXTENSION 44

NEW RESIDENTIAL DEVELOPMENT

September 2022
Rev 1

PREPARED BY: J. MOUTON

INGPLAN GAUTENG (PTY) LTD
P. O. BOX 35585
MENLO PARK
0102
Tel: (012) 658 0685

ELECTRICAL BULK SERVICES REPORT FOR DERDEPOORTPARK EXTENSION 44

1. INTRODUCTION 3

2. MUNICIPALITY 5

3. ELECTRICAL SUPPLY AUTHORITY 6

4. PREDICTED ELECTRICAL LOAD 7

5. CONCLUSIONS 10

6. RECOMMENDATIONS 11

ANNEXURE A: GOOGLE EARTH PIN LOCATION

1. INTRODUCTION

1.1 Scope of this report

1.1.1 This report on the electricity services for Derdepoortpark Extension 44. The developer is desirous to construct high density residential units on the consolidated stand.

1.1.2 This document has been compiled against the backdrop of the information gained from meetings with Tshwane municipality and information acquired from the developer and their town planner.

1.1.3 The following supporting information is included in this document:

(a) Annexure A: Google Earth pin location

1.1.4 The purpose of this preliminary design report is to report on the following:

(a) The availability of current electrical services.
(b) The expected capacity required for the development.
(c) If the available capacity can accommodate the development.

1.2 Developer

1.2.1 The developer is:

Cosmopolitan Projects
Building F, Hertford Office Park
90 Bekker Road, Midrand, 1685
Tell: 087 405 4172

1.2.2 Contact persons: Mr. Pieter Pistorius

Telephone number: +27 (0) 74 587 7954

Email: PieterP@cosmopro.co.za

1.3 Consultant

1.3.1 The consultant is Ingplan Gauteng (Pty) Ltd.

1.3.2 Their physical address is:

4 Via Salara Crescent
Irene Corporate Corner
Irene
0157

1.3.3 Their postal address is:

PO Box 35585
Menlo Park
Pretoria
0102

1.3.4 Contact persons:

Mr. Jannus Mouton E.Eng:

Telephone number: +27 (0) 81 260 0822
Email: jannus@ingplan.co.za

Director: Mr. Etjan Genis Pr.Eng:

Telephone number: +27 (0) 82 887 8711
Email: etjan@ingplan.co.za

2. MUNICIPALITY

2.1 Location

2.1.1 The proposed development is situated in the suburb of Derdepoort, Pretoria which lies within the jurisdiction of City of Tshwane (COT) Metropolitan Municipality.

2.2 Ownership of electrical infrastructure

2.2.1 Ownership of the infrastructure, that is to be installed as part of the external electrical services for this township, will remain property of the local municipality.

2.2.2 The nearest 11kV sub-stations is Phumulani Sub Station.

2.2.3 Phumulani Sub Station is currently running at 48% capacity

2.2.4 The nearest electrical point, as seen in Fig [1], of Derdepoort portion 426 & 679 is situated in Elangtine St, Roodeplaat.

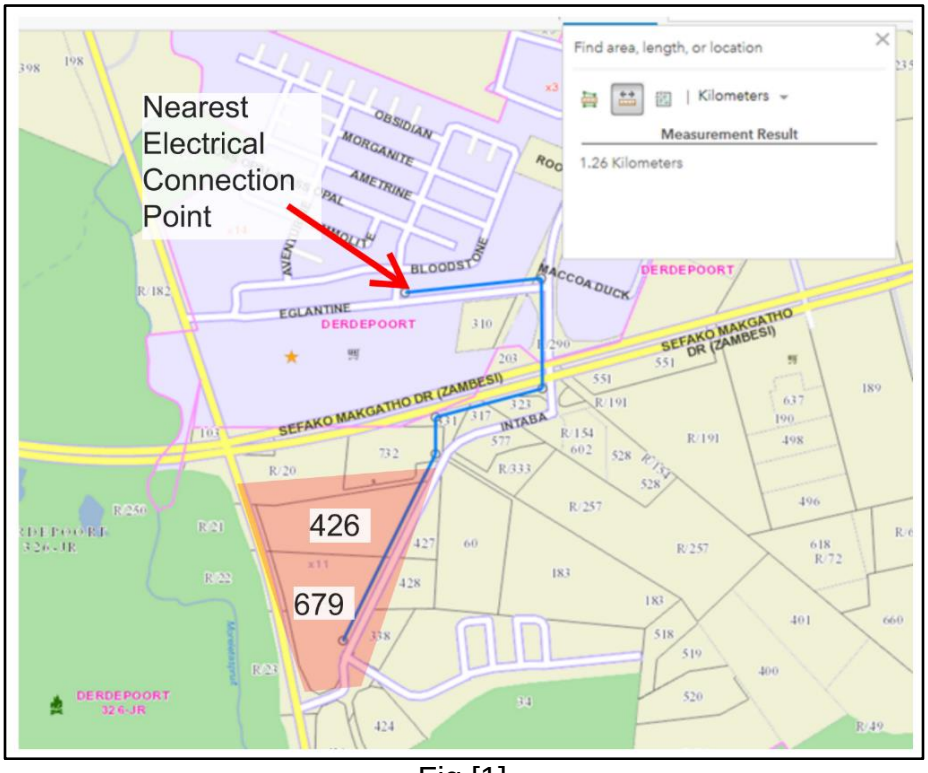

Fig [1]

3. ELECTRICAL SUPPLY AUTHORITY

3.1 Licensed supply area

3.1.1 The proposed development is situated within the licensed supply area of City of Tshwane (COT).

3.2 Maintenance of installed electricity services

3.2.1 COT is responsible for the maintenance of the installed services.

3.2.2 The revenue collection for the energy sales will be the responsibility of COT.

4. PREDICTED ELECTRICAL LOAD

4.1 Basis for load forecast

4.1.1 The load forecast for this development is based on the rights that are assigned to the erf considering the assigned land use components.

4.1.2 COT base their load calculation for the provision of an electricity supply connection to this development on the sum of the loads before diversity.

4.1.3 The erf will be used for residential development.

4.2 Design ADMD

4.2.1 The predicted electrical load of these stands is based on the following design ADMD:

4.2.1.1 Blocks of or groups of housing units with 21 or more units:

ADMD [kVA] = 3N[(N+4)/(N+1)] *where N=Number of units*

4.3 Sum of the design ADMDs

4.3.1 Based on the available information, the sum of the design ADMD **[A]** of the different land uses for this erf is listed below:

$$A = Z \times C$$

Where

A = ADMD of the erf measured in kVA
Z = Zoned maximum demand (ZMD) or AMD (whichever is the higher) equals the kVA value for erf
C = Area factor is not used in calculation where ZMD is used.

The Zoned Maximum Demand [Z] for maximum 743 Units where N = Number of Units

$$Z = 3N[(N+4)/(N+1)]$$
$$= 3(743)[(743+4)/(743+1)]$$
$$\mathbf{= 2237.99\ kVA}$$

Thus

A = Z
= 2237.99 kVA
≈ 2238 kVA

4.4 Load Forecast

4.4.1 The preliminary load forecast for this new development is in the order of **2 238 kVA**.

4.5 Estimated quota charge

4.5.1 Point of supply

(a) The erf will be supplied from the Phumulani Sub-station,

(b) Supply point of Derdepoort portion 426 & 679 is situated in Elangtine St, Roodeplaat. This is to be confirmed by COT.

(c) The quota charges payable, per kVA for a connection at this level to the existing infrastructure, is R 3 431,59 / kVA [**W**].

4.5.2 Quota charge calculation on full capacity **2 238 kVA**

(a) The estimated quota charge [**Q**], to be confirmed by COT, exclusive of VAT, for these stands is simply calculated as follows:

Q = (NMD kVA – existing kVA) x W
= (2 238 kVA – 0 kVA) x R 3 431,59 / kVA
= **R 7 679 898.42 excl. VAT**

Please note the quota charge is subject to revision on 30 June 2023

4.6 Estimated External Electrical Infrastructure Cost

4.6.1 Fig [2] displays the electrical infrastructure needed for the development. This needs to be formally confirmed by COT.

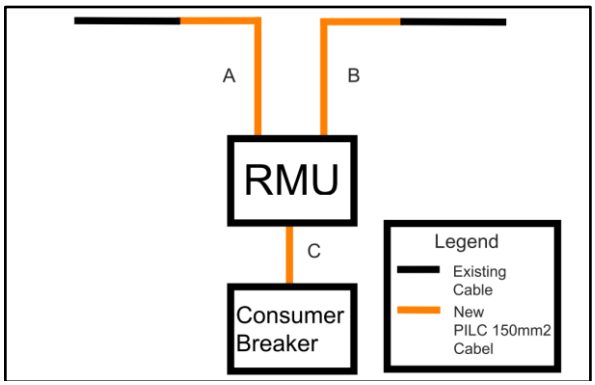

Fig [2]

Electrical Infrastructure	**Cost (excl VAT)**
RM6 RMU - IDI	R 350 000.00
Drilling under R513 road	R 100 000.00
Cable A & B - 2.52km - 150mm^2 PILC	R 4 160 000.00
Cable C - 20m - 150mm^2 PILC	R 40 000.00
1 x Consumer Breaker	R 270 000.00

Table [1]

4.6.2 The total estimated electrical infrastructure cost for the items in Table [1], to be confirmed with COT, is **R 4 920 000.00 excl VAT**

5. CONCLUSIONS

5.1 The following conclusions can be drawn from the contents of this document.

5.1.1 COT to formally confirm that the capacity for this development is available.

5.1.2 The ADMD calculation to be approved.

5.1.3 The existing quota to be confirmed.

5.1.4 The bulk contribution that is payable to COT is to be confirmed.

6. RECOMMENDATIONS

6.1 It is recommended that the design parameters for the electricity services for the proposed development, as set out in this document be approved.

ANNEXURE A: GOOGLE EARTH SITE LOCATION

Site location
(GPS: 25°41'14.7"S 28°17'45.0"E)
Derdepoortpark Extension 44:

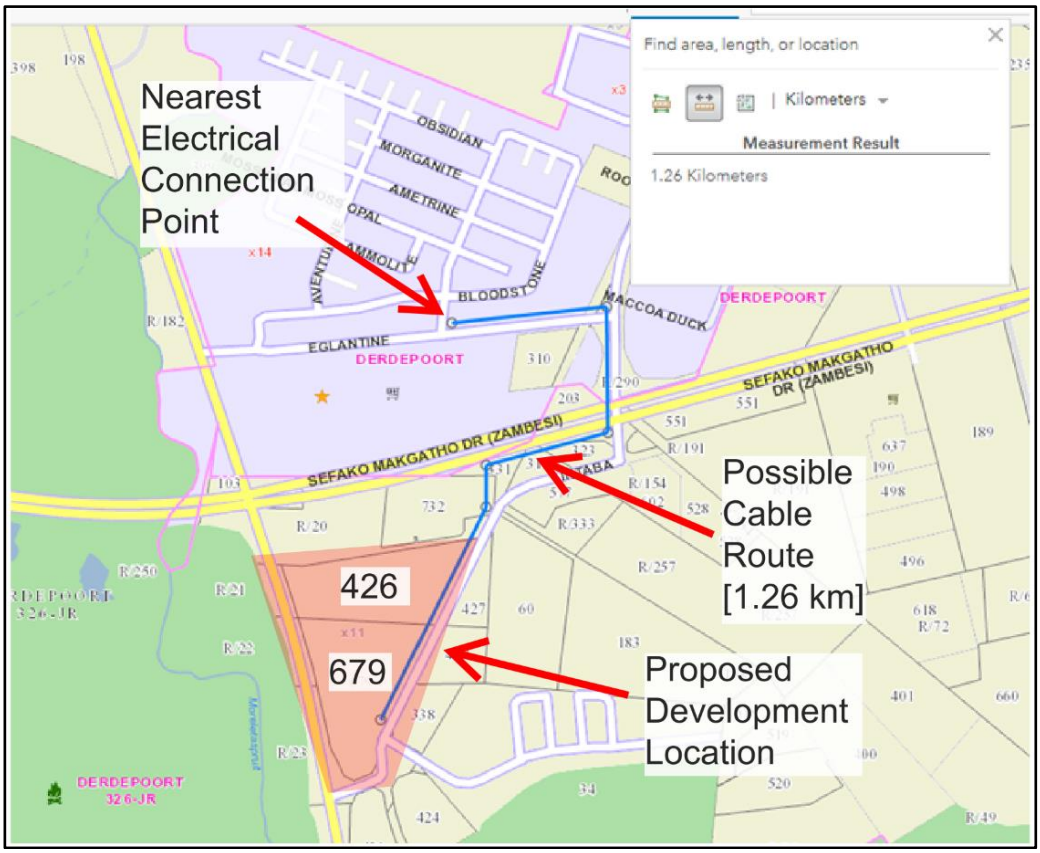

Fig [3]