

MAXIM PLANNING SOLUTIONS
PO BOX 21114
PROEA PARK
0305

Ref: Services Report/WK 74 R1

7 November 2022

Attention: D Bos

RE: DEVELOPMENT OF WATERKLOOF EXTENSION 74: BULK ELECTRICAL INFRASTRUCTURE (Situated on Portion 214, 269 & 60 of the Farm Waterkloof 305JQ)

With reference to the abovementioned project and your request for the submission of a background report related to the bulk and internal electrical infrastructure to the proposed development the following:

Please note that the report addresses the background related to bulk electrical services. The final bulk requirements will be addressed in the services agreement to be entered into with the Rustenburg Local Municipality once the township has been approved.

The area earmarked for the Development falls within the Rustenburg Local Municipality electrical license distribution area. The Rustenburg Local Municipality is further responsible for the operation and maintenance to the current electrical networks surrounding the proposed development.

AFTER DIVERSITY MAXIMUM DEMAND

The after diversity maximum demand of the development - based on the guidelines of the SANS 507-1, the latest Rustenburg Local Municipality Electrical Engineering Contribution Policy and our load estimates - is as follows:

| Size (Ha) | Zoning | Floor area relation / Number of units | ADMD (kVA) |
|------------------------------|--|---------------------------------------|------------|
| 8.1926 | Roads, access control, private open space, municipal use | | 0 |
| 3.0421 | Business 1 | 0.5 | 1,217 |
| 10.1209 | Residential 1 | 168 erven | 605 |
| 10.7628 | Residential 2 | 40 Units / Ha – 431 units | 1,293 |
| TOTAL ESTIMATED DEMAND (kVA) | | | 3,115 |

BULK ELECTRICITY SUPPLY AND LINK SERVICES

The area surrounding the proposed development is supplied by the Boschdal 2 x 20MVA 33/11kV Substation which is supplied from the Industries 33/11kV Substation. The substation is in Safarituine – A suburb of the south-eastern part of Rustenburg. Boschdal Substation currently has a recorded maximum demand of just over 20MVA which implies that limited spare capacity exist at the source substation to cater for the additional load as a result of the development.

A new substation – Hills 3 x 20MVA 33/11kV substation was constructed and completed in 2018. This substation is in Waterkloof Hill – approximately 1.4 km northeast of the proposed development. The substation is currently operated below 10% of its rated capacity and has adequate capacity to cater for the development.

It is proposed that a new 11kV link service be installed from Hills Substation to the proposed development by utilizing the bulk services contributions payable with the development of Waterkloof Ext 74.

The above works will be undertaken by the Developer on behalf of the Rustenburg Local Municipality.

INTERNAL ELECTRICAL INFRASTRUCTURE

Medium voltage reticulation will be by means of underground 11kV supplies linked to the existing and or upgraded 11kV network in the area. The new 11kV network will be installed in servitudes or in the street reserves. Medium voltage cable will be of type 6.35/11kV XLPE Type B Al.

The network will be supplied with miniature substations with 11kV protective devices. The 11kV protection device will be the compact SF6 ring main units of approved manufacture.

Metering for the business and commercial zoning will be done either on the low voltage side of the miniature substation or on the 11kV breakers pending final agreement.

Low voltage infrastructure system on the residential component will be underground aluminium low voltage cables to metering kiosks and distributions stubbies. Low voltage service connection cables will terminate onto pre-paid energy meters located within the houses.

Provision will further be made for a street lighting system that will be designed and installed to be in accordance with the SANS 048. Street lighting to public roads is handed over to the local authority for the operation and maintenance thereof.

It should be noted that the complete electrical infrastructure system up to the metering points will comply with the requirements of Rustenburg Local Municipality. The system will further be handed over to the Rustenburg Local Municipality after the completion for the operation and maintenance thereof.

Trusting you find the above in order.

If any additional information is needed, please do not hesitate to contact the undersigned.

Regards



Albert Viljoen (Pr Eng)

for **Ampcon** Consulting Engineers (Pty) Ltd