

ELECTRICAL SERVICES REPORT

FOR THE

**PROPOSED DEVELOPMENT ON
LOT 266 & A PORTION OF REMAINDER OF LOT 21,
RIVERSDALE SETTLEMENT, HESSEQUA
MUNICIPALITY**

FOR

BELLADONNA (PTY) LTD

REPORT NO: G/19076/E/R1

SEPTEMBER 2024



**CLINKSCALES MAUGHAN-BROWN
CONSULTING MECHANICAL
& ELECTRICAL ENGINEERS**

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**PROPOSED DEVELOPMENT ON LOT 266 & A PORTION OF REMAINDER OF LOT 21,
RIVERSDALE SETTLEMENT, HESSEQUA MUNICIPALITY:
ELECTRICAL SERVICES REPORT:
REPORT NO G/19076/E/R1 OF SEPTEMBER 2024**

1.0 INTRODUCTION

This report has been prepared by Messrs. Clinkscales Maughan-Brown, who has been appointed by the Developer, Belladona (Pty) Ltd, as the Electrical Consultants for this project. The purpose of this report is to provide the necessary information on the proposed electrical supply to this Development and the connection to the main infrastructure in the area to obtain approval from the Supply Authority.

2.0 THE AREA

The property to be developed is Lot 266 & a Portion of Remainder of Lot 21, Riversdale Settlement, in the location as indicated on the attached Drawing No. 19076/E/01, Rev.1, which include an estimated 27 Agricultural Zone II Erven, 159 Single Residential Zone I Erven, 364 Group Houses and one Business Zone II erf.

3.0 BASIS OF REPORT

The report is based on the following:

- (i) The layout drawing received from the Developer.
- (ii) Investigation of the existing MV (11kV) network in the area.
- (iii) Discussions with Hessequa Municipality's Electrical Department and the Developer of the adjacent Erf No. RE/22.

4.0 DRAWING

Drawing No. 19076/E/01, Rev.1, which is a plan layout, also depicts the following:

- (i) The extent of the existing MV municipal primary network in the area.
- (ii) The approximate position of the proposed MV reticulation, MV bulk metering points and LV reticulation.
- (iii) The proposed connection points to the external municipal network.
- (iv) The proposed supply points to private developments.

5.0 CONNECTION POINTS

The connection point will be the 35mm² Cu x 3 core MV cable between Miniature Substations "MS-Subsentrale C-Lanoria St" and "MS-Bauhinia St," where a new 4-way ring main unit, i.e. "RMU-Lanoria" will be supplied and installed by the Developer in the approximate location as depicted on Drawing No. 19076/E/01, Rev.1.

When the load requirement of this development and the adjacent Erf RE/22 exceeds the available capacity of 856 kVA of the aforementioned 35mm² Cu x 3 core MV cable, a new 11kV feeder, indicated in green on Drawing No. 19076/E/01, Rev.1, must be supplied and installed from the existing 11kV overhead line between the "Main Intake Substation" and "SS-Main". The 11kV feeder will consist of a ring main unit, 11kV underground cable, and 11kV overhead line.

6.0 **SUPPLY POINTS**

The Supply Points at 11kV to the group housing developments on Erven 29 and 30 will each consist of a plinth mounted ring main unit and kVA/kWh meter to be supplied and installed by the Developer at the approximate locations as depicted on Drawing No. 19076/E/01, Rev.1.

The Supply Points at LV to the group housing development on Erf 31 and the Business Zone II erf on Erf 191 will be the load terminals of the main tariff LV breakers inside the LV distribution compartments of the proposed Miniature Substation No.1 and Miniature Substation No.2 respectively to be supplied and installed by the Developer in the approximate location as depicted on the drawing. The kVA/kWh bulk meters will also be installed inside the LV compartment of said miniature substations.

The supply point to each of the 27 Agricultural Zone II Erven and 159 Single Residential Erven will be the point where the LV underground cable enters the customer's erf.

7.0 **TAKING-OVER OF INTERNAL INSTALLATIONS**

The Municipality indicated that they will take-over:

- The external 11kV electrical reticulation to the two group housing developments on Erven 29 and 30, i.e the 4-way Ring Main Unit "RMU-Lanoria", 11kV underground cable from said ring main unit to the aforementioned private developments, including the 11kV bulk supply points each consisting of a 11kV ring main unit and metering unit.
- The LV connections to the erf boundaries of the group housing developments on Erf 31 and the Business Zone II erf, including the LV bulk supply points each consisting of a tariff circuit breaker and kVA/kWh bulk meter.
- The MV reticulation and LV reticulation to the 27 Agricultural Zone II Erven and 155 single Residential Erven up to the erf boundary of each erf, i.e. MV underground cable, miniature substations, LV kiosks, LV underground cables and streetlights.
- The 11kV underground / overhead line feeder between the Main Intake Overhead line and the aforementioned 4-way ring main unit.

For this reason, the external electrical installations mentioned above would have to comply with the technical requirements of the Municipality and their supply conditions.

The internal 11kV installations on the load side of the MV Supply Points at the private developments, the LV installations on the load side of the LV tariff breakers inside the LV compartment of the miniature substations at Erven 31 and 191 and the LV installation inside each of the single residential and Agricultural Zone II erven, will be taken over by the Developer/ Body Corporate/home owners.

8.0 **TECHNICAL PARTICULARS**

All drawings and specifications of the external supply to this development would have to be approved by Hessequa Municipality before any construction can commence.

The internal MV and LV networks of the private developments will be designed so that any internal faults do not cause nuisance tripping of the upstream network.

9.0 **ENVIRONMENTAL MANAGEMENT PLAN**

All work on site will comply in all respects with the environmental management requirements.

10.0 **SWITCHING OF SUPPLIES AND APPROVALS**

No switching of supplies or trenching adjacent to existing cables will be carried out without prior arrangement with the Town Electrical Engineer's Department. The Electrical Contractor will also liaise with the Town Engineer's Department and Telkom to ensure that no damage is caused to existing underground piped services during construction.

11.0 **DEMAND**

Based on the information presently available, the additional peak kVA demand of this development has been calculated as follows:

27 Agricultural Zone II Erven @ 10,35kVA (45A single phase) x 0,3 df =	84 kVA
159 Single Residential Zone I Erven @ 10.35kVA (45A single phase) x 0,3 df =	494 kVA
364 Group Houses @ 10.35kVA (45A single phase) x 0,3 df =	1 130 kVA
1 Business Zone II erf @ 200kVA x 0,7 df =	140 kVA
Others	<u>100 kVA</u>
	1 948 kVA

This is a provisional calculation and will be finalised after all the network load particulars have been concluded.

12.0 **PROGRAMME**

It is expected that the installation of services at the development will commence immediately after all the necessary approvals have been received.

13.0 **CAPITAL COSTS**

The following assumptions are being made:

- (i) The Developer will be responsible for the supply, installation and commissioning of the complete internal MV and LV installation as indicated above. This work will be done under the direction of an Electrical Engineer and Electrical Contractor to be approved by the Municipality.

- (ii) The Capital Contribution will be calculated in terms of the standard municipal policy in this regard. Hessequa Municipality, however, indicated that the costs to connect to the external 11kV municipal network may be subtracted from the Capital Contribution since this work forms part of the municipal “core network”.

The work that is included as part of the “core network” is as follows:

- Ring Main Unit “RMU Lanoria”, including 11kV connection cables to the existing municipal network.
 - The 11KV underground cable / overhead line feeder between “RMU Lanoria” and the 11kV overhead line between “Main Intake Substation” and “SS – Main”.
- (iii) If the Developer of the adjacent Erf RE/22 decides to develop the property as well, the costs of the 11kV underground cable/overhead line feeder between "RMU Lanoria" and the 11kV overhead line between "Main Intake Substation" and "SS - Main" will be split pro-rata between the two developers of Lot 266 & a Portion of Remainder of Lot 21 and RE/22 based on the development's load requirements.

14.0 **CONCLUSION**

We trust that this information is sufficient for the Municipality to draw-up the Services Agreement.

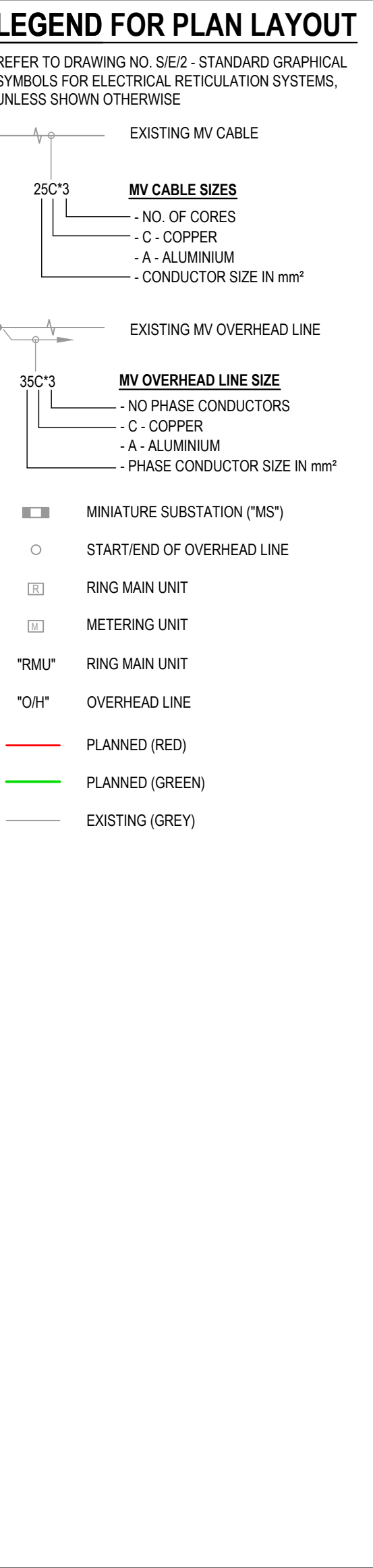
Yours faithfully



J.S. de Villiers Pr. Tech. Eng.
CLINKSCALES MAUGHAN-BROWN

ANNEXURE A:

Drawing No. 19076/E/01, Rev.1



17/09/2024		KM	DESIGN REVISED ACCORDING TO NEW DEVELOPMENT LAYOUT
DATE		DRAWN	DESCRIPTION
REVISIONS			
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THIS DRAWING IS TO BE USED FOR THE ENGINEERING SERVICE SPECIFIED ONLY			
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CLINKSCALES MAUGHAN-BROWN (Pty) Ltd (Pty) Ltd (25220739947)			
PROJECT			
BULK ELECTRICAL SERVICES TO LOT 266 & A PORTION OF REMAINDER OF LOT 21, RIVERSDALE SETTLEMENT, HESSEQUA MUNICIPALITY			
DRAWING TITLE			
PLAN LAYOUT			
DRAWN	DESIGNED	CHECKED	APPROVED
KJM	Jdv	Jdv	
SCALE	DATE	CAD REF No	SWG-SIZE
1:2500	22/04/2024	19076-E-01	A1
DRAWING NO			REVISION
19076/E/01			1