



**STIKLAND SOUTH DEVELOPMENT**

**BASELINE REPORT**

**FOR**

**THE ELECTRICAL INFRASTRUCTURE**

Triocon Consulting Engineers (Pty) Ltd  
PO Box 36573  
Chempet  
7442  
Tel : (021) 552 4949  
Fax : (021) 552 4291

**C4078 STIKLAND SOUTH DEVELOPMENT**

Revision: 08

Date: 13 August 2025

## Table of Contents

1.0	The Brief
2.0	Existing Bulk Electrical Infrastructure
3.0	Existing Electrical Servitude
Appendix A	Electrical Load Estimate
Appendix B	Existing Electrical Network Layout Drawing
Appendix C	Electrical Machinery Regulations
Appendix D	Location and Dimension of Overhead Servitude
Appendix E	Bulk Infrastructure Cost Estimate – High Level



additional capacity required, for the proposed development of 42 Ha, without the need for infrastructure upgrades. The current confirmed NMD is 1000kVA.

The electrical load estimate of this development is based on similar developments completed in the past as well as considering the updated information made available during the design development. The prescribed Design Load Parameters from the City of Cape Town (4,04kVA ADMD) was also used to determine the electrical load for the new planned residential units. Allowances were made for the existing infrastructure on site as well as for auxiliary services required (streetlights, etc). The final connected load for the area was calculated to be approximately 20.75 MVA. See Appendix A attached.

The City of Cape Town has indicated additional requirements needed for the infrastructure upgrades:

- Appropriate switching station sites are required to internally distribute the electrical supply for the proposed development. It is currently estimated that five switching stations will be required for the area under consideration. The five switching station sites, 20m x 14m each, must be included on the plan for the subdivision and must be rezoned, registered, and transferred free of charge to the City of Cape Town.
- The City of Cape Town requires the switching station sites to be placed within the proposed development, on the erf boundary and adjacent to public roads. The position of the switching station sites will be determined by the electrical load concentration in the area and served by each switching station.
- The switching station sites shall have direct 24-hour unrestricted vehicular access.
- The switching stations will be fed from the City's existing Oakdale Main Substation. A lead time of up to 24 months, from the date of a formal supply application up until such time that the necessary supply is available, will be applicable. This lead time is required for any upgrading of the bulk electrical supply at the existing Oakdale Main Substation and must be confirmed at the time of application.
- The property owner will be required to submit an electricity reticulation design report to the Director: Electricity Generation and Distribution for approval. Such a report shall set out the necessary detail of the proposed infrastructure to be handed over to the City in terms of the Electricity Supply By-Law and shall be prepared by a consulting electrical engineering practitioner registered with ECSA in the appropriate category.

Site electrical reticulation will consist of the following:

- Bulk primary medium voltage electrical infrastructure from Oakdale Substation to the five new switching stations.
- Bulk secondary medium voltage electrical infrastructure installed in a ring configuration from each switching station.
- The secondary medium voltage ring networks will distribute electricity to miniature substations or transformers located at the various points of supply in the development.
- The medium voltage primary network will consist of appropriate 300mm<sup>2</sup> aluminium cables, buried in the ground, as per City of Cape Town standards.
- The medium voltage secondary rings will consist of 185 mm<sup>2</sup> aluminium cables, buried in the ground, as per City of Cape Town standards
- All miniature substations or local transformers will be located on dedicated sites which will be registered as portion of the road reserve.

### **3.0 Existing Electrical Servitude**

The City of Cape Town confirmed that there is an existing 22m servitude on the site, as shown in the photograph below. The servitude contains a 66kV overhead line. However, the City plans to upgrade this overhead line to a 132kV line in the near future.



Existing Servitude

The minimum clearances from an overhead line are contained in the Occupational Health and Safety Act & Regulations. Attached a copy of this table in Appendix C. Currently the 72kV line requirements will be applicable but if the lines are upgraded to 132kV then the 145kV line requirements will be applicable.

**Appendix A**

**ELECTRICAL LOAD ESTIMATE**

**LOAD ESTIMATE**

<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>	<b><u>UNIT LOADING (kVA)</u></b>	<b><u>TOTAL LOAD (kVA)</u></b>
Estimated Residential Units	2682	4.04	10 835.37
Allowance for existing infrastructure, Offices and Retail	1	8 930.89	8 930.89
Allowance for auxiliary services (Streetlights, etc)	1	988.31	988.31
Sub Total			20 754.57
Discount existing NMD			1 000.00
<b>TOTAL ADDITIONAL LOAD</b>			<b>19 754.57</b>

**Appendix B**

**EXISTING ELECTRICAL NETWORK LAYOUT DRAWING**



**EXTENT OF WORK TO BE PERFORMED**

0 0.1 0.2 0.4 Kilometers

NOTES



**CITY OF CAPE TOWN**  
ELECTRICITY GENERATION & DISTRIBUTION

PROCESSED:	CHECKED:	OUR REFERENCE:
J. AFRICA	A VAN ZYL	15/3/11
ENGINEER:	DATE	SCALE
E.CAPES	2021/10/18	1:1,500

**BELLVILLE**  
Corner of De la Haye Avenue & Old Paarl Road.  
Planning purposes only

**YOUR REFERENCE**  
**Stikland North**  
**PAGE 2**

## ELECTRICAL MACHINERY REGULATIONS

**15 Clearance of power lines**

(1) The supplier or user shall cause—

- (a) the minimum clearances of electric conductors and other wires of power lines, excluding overhead service connections and line conductors having a voltage not exceeding 1,1 kV r.m.s. consisting of insulated wire of a type which complies with a safety standard incorporated for this purpose in these regulations under section 36 of the Act, to be not less than the clearances indicated in the following table:

Maximum voltage for which insulation is designed, kV r.m.s. phase-to-phase	Minimum safety clearance	Maximum clearance in metres				
		Above ground outside townships	Above ground in townships	Above roads in townships, proclaimed roads outside townships, railways and tramways	To communication lines, other power lines or between power lines and cradles	To buildings, poles and structures not forming part of power lines
1,1 or less.....	—	4,9	5,5	0,1	0,6	3,0
7,2 .....	0,15	5,0	5,5	0,2	0,7	3,0
12 .....	0,20	5,1	5,5	0,3	0,8	3,0
24 .....	0,32	5,2	5,5	0,4	0,9	3,0
36 .....	0,43	5,3	5,5	0,5	1,0	3,0
48 .....	0,54	5,4	5,5	0,6	1,1	3,0
72 .....	0,77	5,7	6,7	0,9	1,4	3,2
100 .....	1,00	5,9	6,9	1,1	1,6	3,4
145 .....	1,45	6,3	7,3	1,3	2,0	3,8
245 .....	1,85	6,7	7,7	1,5	2,4	4,2
300 .....	2,35	6,9	7,9	1,6	2,9	4,7
362 .....	2,90	7,0	8,0	1,7	3,5	5,3
420 .....	3,20	8,1	9,1	1,8	3,8	5,6
600 .....	5,50	10,4	11,4	2,1	6,1	8,6
550 kV d.c.* ...	3,76	6,6	8,6	9,8	4,3	6,1

Provided that these figures are based on the assumption that clearances shall be determined for a minimum conductor temperature of 50°C and a swing angle corresponding to a wind pressure of 500 Pa: Provided

## **Appendix D**

### **Location and Dimension of Overhead Servitude**



CITY OF CAPE TOWN  
16 OCT 2021

22m WIDE SERVITUDE

22m WIDE SERVITUDE

EXTENT OF WORK TO BE PERFORMED

129-300

385-073

- Legend**
- Tower
  - Lv Meter Box
  - Pole
  - Mv Cable JOINT
  - Hv A/c Electric Conductor
  - Mv A/c Electric Cable
  - Mv Cu Electric Cable
  - Lv Cu Electric Conductor
- SubtypeCD**
- Earth Cable
  - Lv A/c Electric Cable
  - Lv Cu Electric Cable
  - Hv A/c Electric Cable
  - Dead Bank
  - Inland Y
  - ROAD
  - Lv Cu Overhead Street Lighting Cable
  - Communication Cable - Copper
  - Communication Cable - Fibre
  - Lv A/c Underground Street Lighting Cable
  - Lv Cu Underground Street Lighting Cable



NOTES



CITY OF CAPE TOWN  
ELECTRICITY GENERATION &  
DISTRIBUTION

PROCESSED:  
J. J. P. O. A.  
CHONCO.

CHECKED:  
A. VAN ZYL  
DATE  
2021/10/18

OUR REFERENCE:  
16/3/21  
SCALE  
1:1,000

BELLVILLE  
Corner of De la Haye Avenue & Old Paarl Road.  
Planning purposes only

YOUR REFERENCE  
Stikland North  
PAGE 2

## **Appendix E**

### **Bulk Infrastructure Cost Estimate – High Level**

Project No: C4078

Project: Stikland South Development

Date: 13 August 2025



Site	Estimated Additional Load (kVA)	Estimated Total Load (kVA)	Quantity Units	Share Network Charge Cost (ZAR)	New Connection Charge - Cable Work	Split Meter Supply	Total	Switching Station Sites	Switching Station Building Size
Stikland South	19 754.57	20 754.57	2682	R 127 877 250.08	R 78 291 708.81	R 5 270 763.27	<b>R 211 439 722.16</b>	5	20m x 14m
Exclusions: 1. 15% VAT 2. Escalation 3. Professional Fee									