



## ELECTRICAL SERVICES REPORT

FOR

## NEW BITOU HOUSING PROJECTS: GREEN VALLEY PHASE 2

REPORT NO: G/11643/E6/R1

Dated: 4 October 2017

**Prepared by:**

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CLINKSCALES MAUGHAN-BROWN

CONSULTING MECHANICAL  
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## 1.0 **INTRODUCTION**

This report has been prepared by Clinkscales Maughan-Brown at their George office who has been appointed as the Electrical Consultant member of the professional team for this project. The purpose of this report is to provide the necessary information on electrical services for the proposed development and the connection to the main infrastructure in the area in order to obtain the necessary statutory approvals.

## 2.0 **LOCATION**

The proposed development is situated along the eastern boundaries of the existing Green Valley Settlement near Wittedrift as shown on Drawing No. 11643/E6/01, which is attached as Annexure A.

The proposed development consists of approximately 730 residential erven.

## 3.0 **SUPPLY AUTHORITY**

The proposed development is an extension from an existing area whose Supply Authority is Eskom.

Bitou Municipality's Electrical and Mechanical Engineering Department has, however, indicated that they intend, for numerous reasons, to take-over the proposed area from Eskom and become the Supply Authority. They will be submitting the application to Nersa for approval and revisions to their current Electricity Distributor License to include Green Valley Phase 2.

The services report will thus be prepared based on assumption that the Municipality will eventually become the Supply Authority. Should the Municipality be unsuccessful in their application to Nersa, the only difference in the installation between them and Eskom will be the installation of the service connections, which will be underground for the Municipality or overhead for Eskom. All the other parts of the electrical reticulation will be similar as detailed under Item No. 8.0 below.

## 4.0 **BASIS OF REPORT**

The report is based on the following:

- (i) Latest preliminary framework and rezoning plan prepared by Messrs. WM de Kock Associates and dated 24 August 2017.
- (ii) Numerous meetings held with the Municipality's Manager for Electrical and Mechanical, Mr. P. Harpestad..
- (iii) General information received from the other members of the professional team during planning meetings.

## 5.0 **DEMAND**

Based on the information available, the peak kVA demand of the proposed development has been estimated as follows:

$$730 \text{ erven @ } 9\text{kVA @ } 0,3 \text{ diversity} = 2\,000\text{kVA}$$

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

Energy saving measures will be implemented where economically viable, in order to reduce the demand on the national grid.

## 6.0 **BULK SERVICES**

It is proposed that the bulk supply be taken at 22kV from the terminal pole at the existing 200kVA pole mounted transformer adjacent to the intersection of High and Gysman Streets as shown on the attached drawing.

A new 22kV bulk supply metering unit will be installed on poles adjacent to the aforementioned transformer and a 22kV underground cable will be installed for the metering unit to the 22kV reticulation to be provided along road reserves within the proposed development.

## 7.0 **AVAILABILITY OF CAPACITY**

There is currently no capacity available on the Eskom's 22kV bulk network for the proposed development or any other development on the eastern side of Plettenberg Bay CBD.

Spare capacity will only be available at approximately 2021/22, when Eskom has constructed their new 66/22kV Substation adjacent to the Wittedrift turn-off near Bitou River from the N2-National Road.

## 8.0 **INTERNAL SERVICES**

The internal electrical services will be provided by a private Electrical Contractor to be appointed by the Municipality under the management and supervision of a Consultant, i.e. Clinkscapes Maughan-Brown, if the professional team remains appointed for this project, and will consist of the following:

- 22kV overhead lines constructed using wooden poles, galvanised support steelwork, aluminium alloy stranded bare conductors and porcelain and/or silicon rubber insulators.
- Distribution substations which will be pole mounted transformers to lower 22kV to 415 / 240V for further distribution via the main Low Voltage (LV) network.
- LV overhead lines which will be XLPE insulated, hard drawn and stranded aluminium bundle conductors suspended on wooden poles.
- LV distribution boxes which will be polyethylene/glass fibre/steel type and mounted against wooden poles and serve as the distribution points for service connections. Circuit breakers and Main Control Units of the split prepayment meters will be housed within these boxes.

- Service connection cables which will be copper cored PVCAS type LV cables and installed underground.
- Streetlighting which will be energy efficient high mast floodlighting or conventional streetlights along the entrance roads beyond the boundaries of the development.

Each house will be fitted with the User Interface Unit of the split prepayment meter and each consumer (house/unit owner) will have to enter into a separate supply agreement with the Municipality.

All internal electrical services will be installed within the road reserves.

No switching of supplies or work in close proximity of the overhead lines will be carried-out without prior arrangement with the relevant Supply Authority. The Electrical Contractor will also be required to liaise with the relevant departments of the Municipality, Telkom and Eskom to ensure that no damage is caused to the existing services during construction.

On completion, the installation immediately downstream from the bulk supply metering unit will be handed-over to Bitou Municipality who will become the owner and be responsible for operation and maintenance of same.

#### 9.0 **ENVIRONMENTAL REQUIREMENTS**

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

#### 10.0 **PROGRAMME**

The completion period for the installation of the electrical reticulation and high mast floodlighting is estimated as follows:

- Main electrical infrastructure including high mast floodlights and streetlighting - 11 months
- Service connections to erven - inline with the housing program

#### 11.0 **CONCLUSION**

We trust that this information is sufficient to obtain all the necessary approvals.



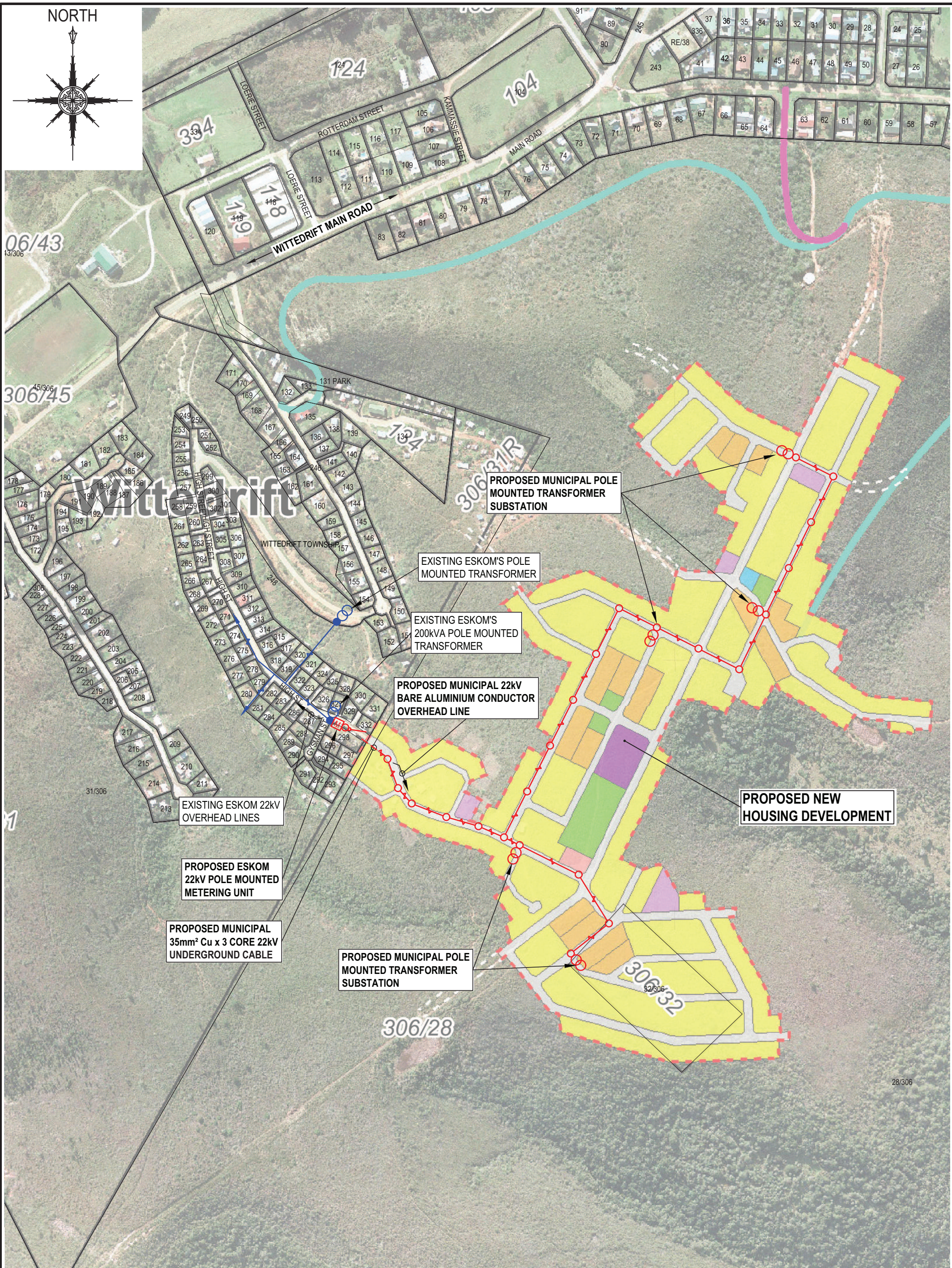
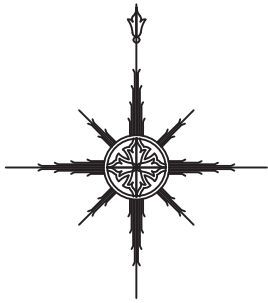
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**CLINKSCALES MAUGHAN-BROWN**

## **ANNEXURE A**

Drawing No. 11643/E6/01



NORTH



28/306

No.	DATE	DRAWN	DESCRIPTION
REVISIONS			

**cmb**  
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CLIENT  
**BITOU MUNICIPALITY**

PROJECT  
**NEW BITOU HOUSING PROJECTS:  
GREEN VALLEY PHASE 2**

DRAWING TITLE  
**PLAN LAYOUT FOR PROPOSED 11kV  
BULK SUPPLY**

DRAWN <b>KJM</b>	DESIGNED <b>MG</b>	CHECKED <b>MG</b>	APPROVED
SCALE <b>1:4000</b>	DATE <b>07-09-2017</b>	CAD REF No. <b>11643-E6-01</b>	DWG-SIZE <b>A3</b>
DRAWING NO. <b>11643/E6/01</b>			REVISION