



Buro Tech Consulting Engineers CC

141 Main Street, Heatherdale, Akasia, 0182
PO Box 59887, Karenpark, 0118

Tel: 00 27 (0)12) 542 1010
Fax: 086 516 4024

E-mail: burotech@burotech.co.za
Website: www.burotech.co.za

To:	Nkanivo Development Consultants	From:	Nico van Wyk
Tel No:	083 277 7347	Cell No:	082 600 8328
For Att:	Mr. Nyiko Baloyi	Email	nicovw@burotech.co.za
Email:	nyiko@nkanivo.co.za	Page:	1 of 17
Date:	11 Nov 2022	Ref:	PL06-X2/DSN

**RE: PROPOSED TOWNSHIP DEVELOPMENT – GREATER SEVILLE EXTENSION 2,
SITUATED ON REMAINDER OF PORTION 1 AND 2 OF THE FARM SEVILLE 224
KU
ELECTRICAL SERVICES – BASIC OUTLINE SERVICES REPORT – Version 2**

Dear Mr Baloyi,

Enclosed please find for your information and attention the basic outline services report for the electrical services as requested.

Update Notes

Version

01 :	24 August 2022	Original Issue
02 :	11 November 2022	Report updated to latest Layout, reserved township names & land description.

Kindly contact us should any additional information be required.

Yours Faithfully

Nico van Wyk (Pr. Eng)

Cc: Nil

Enclosed: Report Version 2

Members: NJS van Wyk Pr Eng B Sc (Ing) (Elek) MSAACE MSAIEE MIESSA
CK 92/05979/23



Registered Firm: CESA
Soli Deo Gloria



ELECTRICAL SERVICES

BASIC OUTLINE SERVICES REPORT

PROPOSED TOWNSHIP DEVELOPMENT GREATER SEVILLE X2

SITUATED ON REMAINDER OF PORTION 1 AND 2 OF THE FARM SEVILLE 224 KU



PREPARED BY:

BURO TECH CONSULTING ENGINEERS CC
PO Box 59887
KARENPARK
0118

Tel: 012 542 1010
Email: burotech@burotech.co.za

PREPARED FOR:

Nkanivo Development Consultants
Unit 79, Block 5, Lombardy
66 Graham Road
PRETORIA
0084

Tel: 012 807 7445
Email: nyiko@nkanivo.co.za

DATE: 11 Nov 2022
Version 2

PROJECT: PL06-X2

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PROPOSED TOWNSHIP DEVELOPMENT – GREATER SEVILLE EXTENSION 2, SITUATED ON REMAINDER OF PORTION 1 AND 2 OF THE FARM SEVILLE 224 KU ELECTRICAL SERVICES – BASIC OUTLINE SERVICES REPORT

Date: 11 Nov 2022
Version 2

1. Introduction

Buro Tech Consulting Engineers was appointed on 28 July 2022 as specialist electrical engineers by Mr. Samuel Chauke, managing director at Nkanivo Development Consultants for the proposed development of Greater Seville X2, situated on Remainder of Portion 1 and 2 of the Farm Seville 224 KU.

This report is based on the following information received from:

- Feedback form Eskom dated 08 & 11 August 2022
- Nkanivo Development Consultant on 15 August 2022 with updates on 07 November 2022
- Site visit on 23 August 2022

The locality of the site is indicated below.

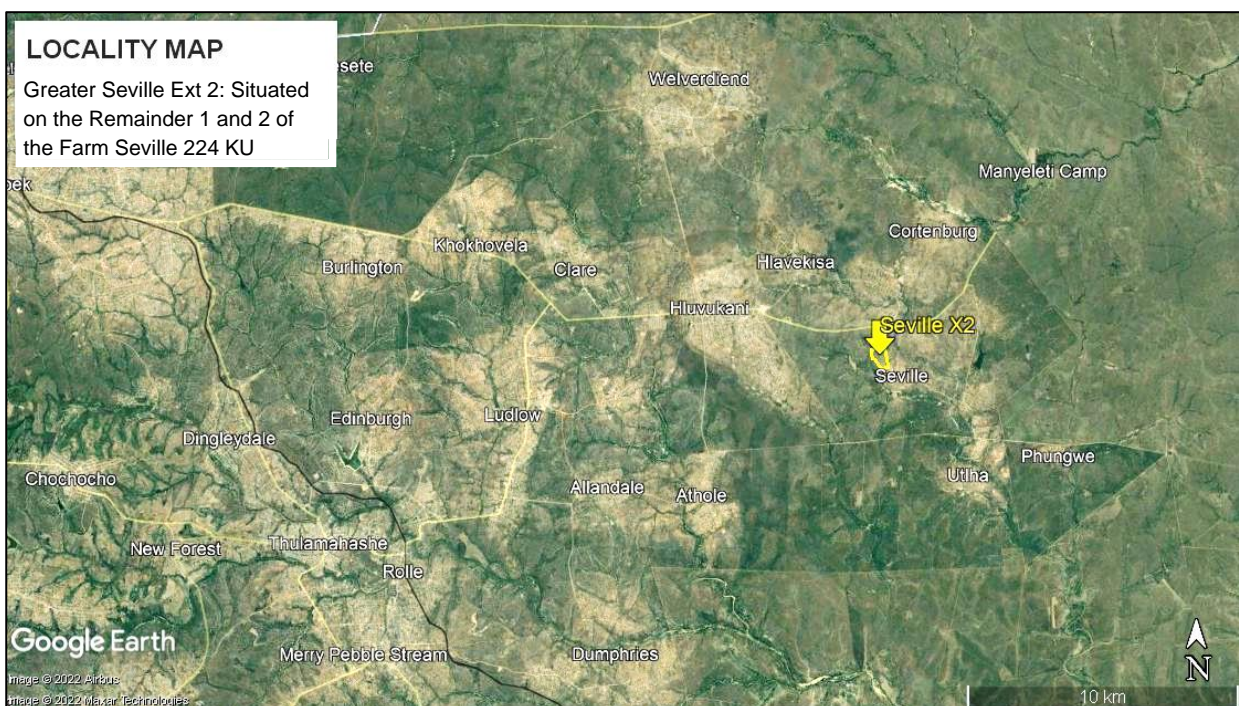


Image 1: Locality Map – Greater Seville Extension 2

2. Brief on Existing Networks

Eskom is the supply authority in the area and have electrical infrastructure servicing adjacent townships in the area.

No electrical infrastructure is currently present on the project site.



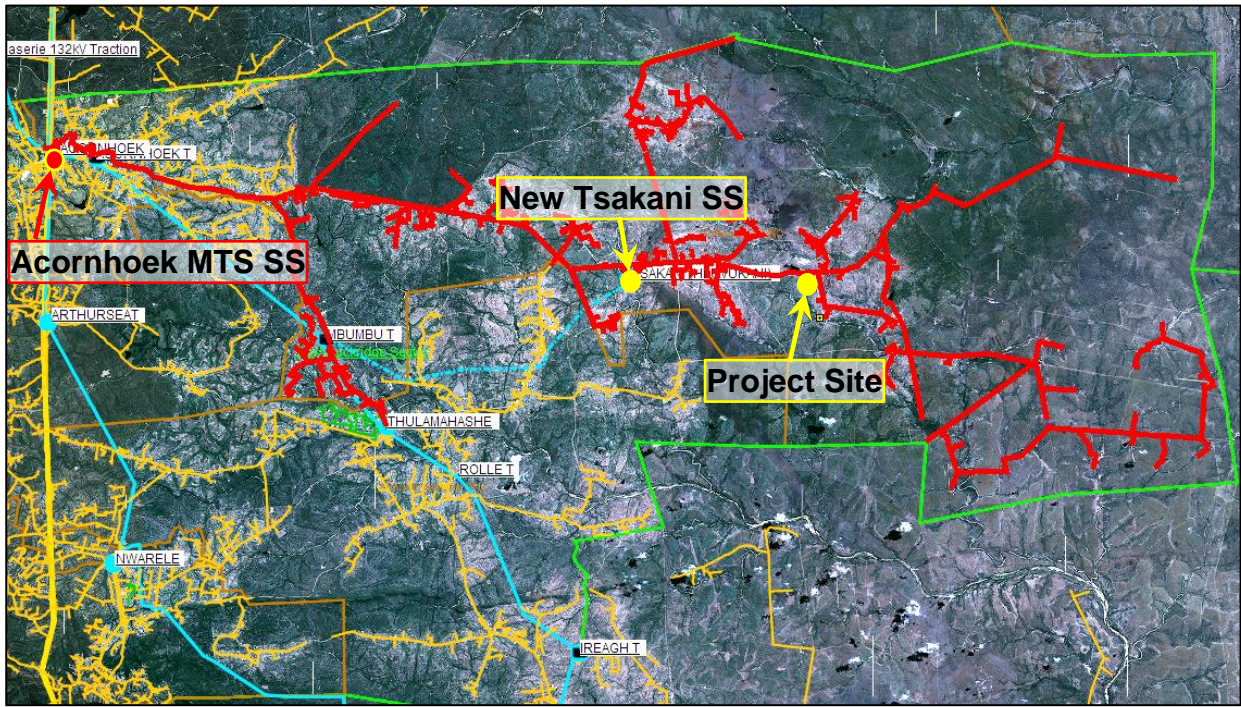
Images 2: Overview of the project site

The area is supplied from the Acornhoek 275/132/22kV MTS Substation via the Acornhoek/Tintswalo 22kV overhead line (shown in red in the image further below).

Refer to images below:



Images 3: The Acornhoek 275/132/22kV MTS Substation



Images 4: Overview of the Acornhoek/Tintswalo 22kV overhead line

Refer to images below for typical medium voltage equipment on the existing Acornhoek/Tintswalo 22kV overhead line in areas adjacent to the project site.



Images 4: The Site, Typical Overhead Medium Voltage (22kV) Lines

3. Estimated Electricity Demand

The electrical demand for Greater Seville Extension 2 is calculated to be:

GREATER SEVILLE X2 (Remainder of Portion 1 and 2 of the Farm Seville 224 KU)							01	2022-11-07	
Erf #	AREA OF ERF Hectare	PROPOSED ZONING	LAND USE COMPONENTS	Units	FAR	DEVELOPABLE FLOOR AREA (m ²)	kVA/unit or VA/m ²	Unit	Total Load (kVA)
483	28.3400 Ha	Res 1	Dwellign Units(s)	483		—	2.00	kVA[ADMD]	966.00 kVA
3	0.2000 Ha	Bus 1	Shops/Retail		0.50	1 000.00 m ²	80.00	VA/m ²	80.00 kVA
3	0.6100 Ha	Institutional	Place of Worship			—	13.80	kVA	41.40 kVA
3	4.3000 Ha	Educational	Creche			—	13.80	kVA	41.40 kVA
3	2.0600 Ha	Municipal	Munic Purposes		0.50	10 300.00 m ²	80.00	VA/m ²	824.00 kVA
3	1.4900 Ha	Public Open Space	Open Space			—	13.80	kVA	41.40 kVA
	15.0200 Ha	Roads	Roads						
SUB-TOTAL									1 994.20 kVA
<i>Diversity Factor</i>									<i>75%</i>
SUB-TOTAL									1 495.65 kVA

TOTAL CALCULATED DEMAND 1.50 MVA

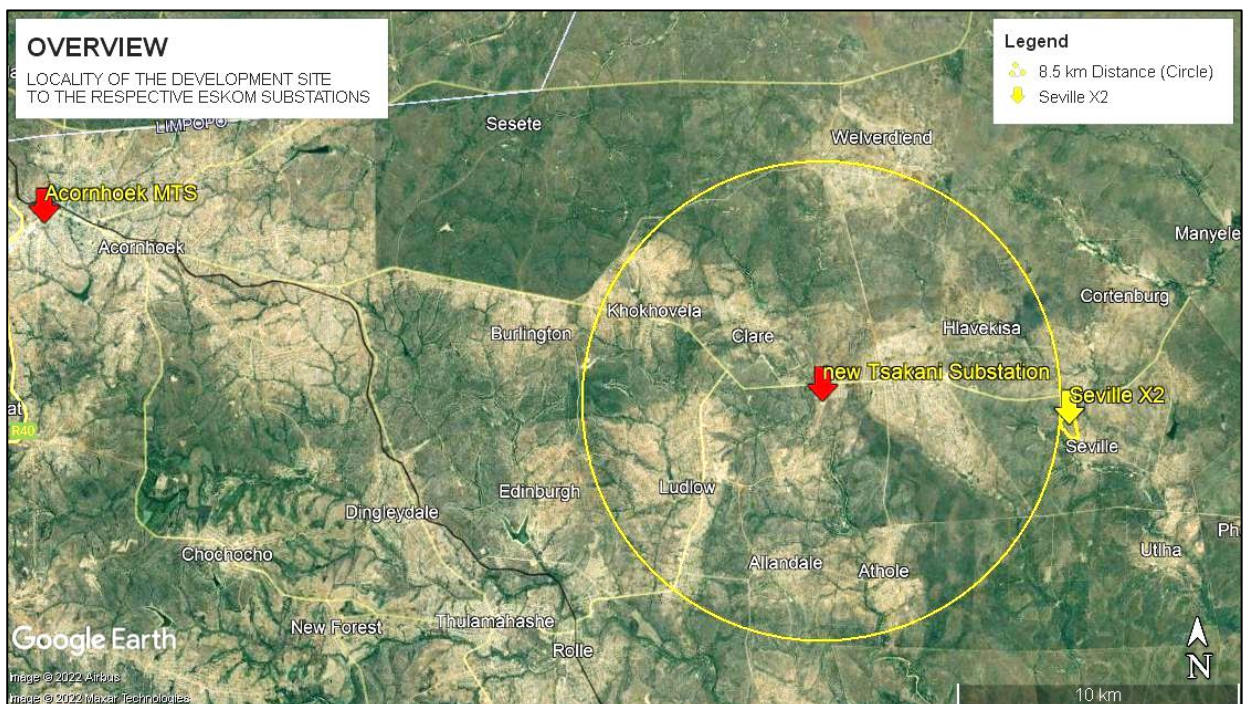
4. Available capacity

Eskom indicated that the Acornhoek MTS Substation have an installed capacity of 2× 40MVA and is currently loaded to 93.9% of firm capacity (thus 37.56MVA).

Eskom indicated that the Acornhoek/Tintswalo 22kV overhead feeder have no spare capacity available.

Eskom indicated that the new Tsakani substation is currently being constructed to:

- De-load the existing Acornhoek/Tintswalo 22kV feeder, and
- unlock additional capacity to the area.



Images 5: Locality of the Project Site with relation to the Eskom Substations

The new Tsakani substation will be located towards Hluvukani have an installed capacity of 1× 20MVA and is scheduled for completion by the end of the 2023/24 financial year.

Refer to Annexure 01 for Eskom correspondence dated 08 & 11 August 2022.

5. Conclusion

The final maximum demand to the new development is calculated to be 1.50 MVA.

The new 1× 20MVA Tsakani substation scheduled for completion in the 2023/24 financial year is intended to unlock additional capacity to the region.

Eskom will require a formal application process to be followed for official feedback and to reserve capacity in this regard.

Annexures:

Annexure 01: Township Layout Plan (Updated)	(1 Page)
Annexure 02: Eskom Feedback dated 08 & 11 August 2022	(4 Pages)
Annexure 03: Overview of the Eskom 22kV overhead distribution feeders	(1 Page)

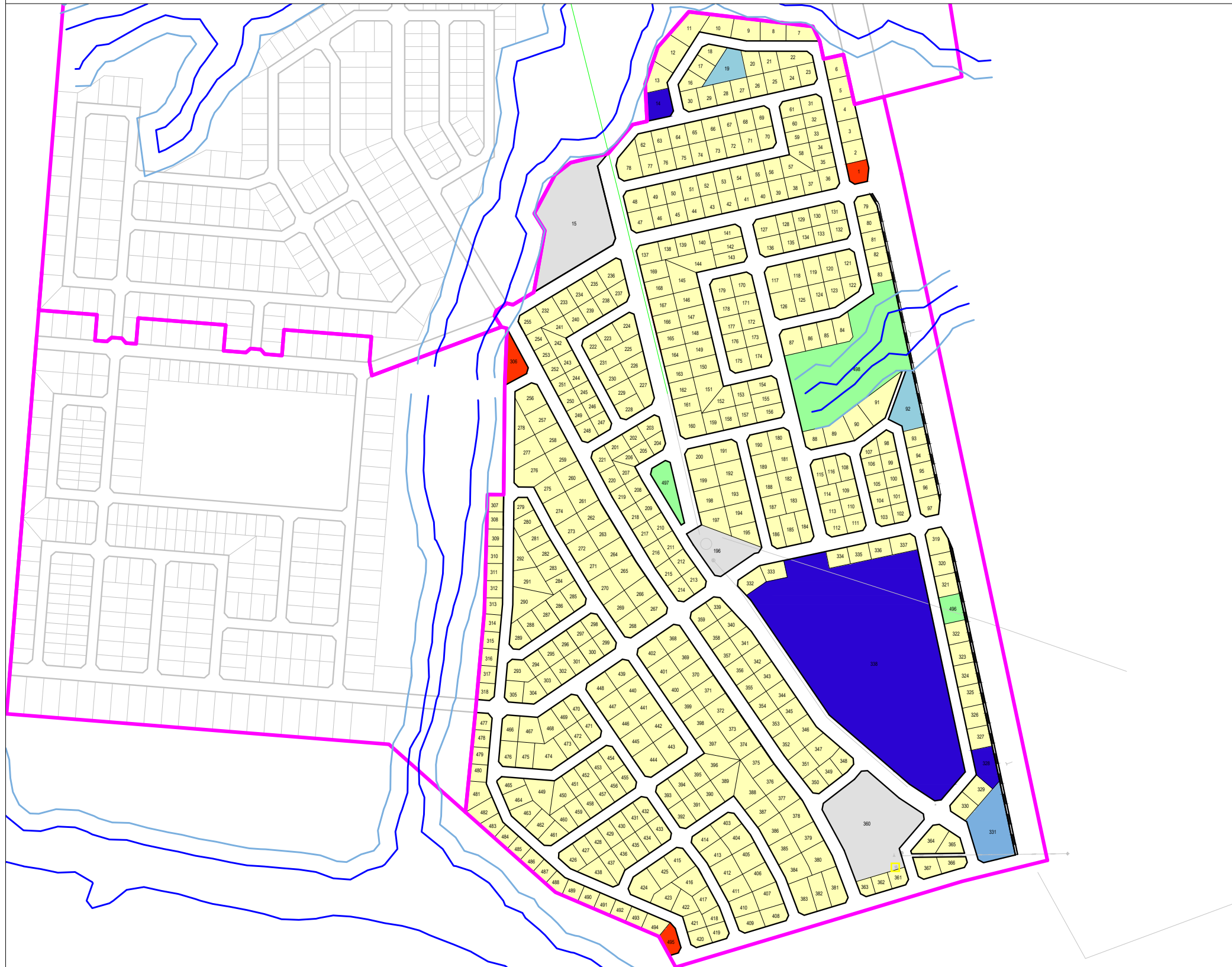
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ANNEXURE 01

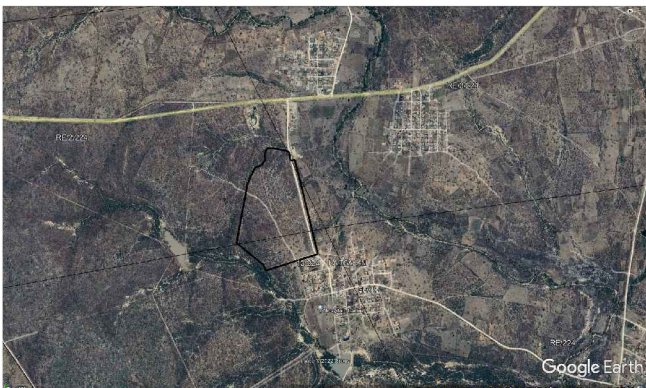
Township Layout Plan (1 Page)

GREATER SEVILLE EXTENSION 2 TOWNSHIP LAYOUT PLAN

SITUATED ON A PORTION OF THE REMAINDER OF PORTION 1 AND 2 OF THE FARM SEVILLE 224 KU



LOCALITY MAP



LEGEND

ZONING	LAND USES	NO. OF ERF	AREA (HA)	AREA (%)	NOTATION
RESIDENTIAL 1	DWELLING UNIT/S	483	28.34	54.03	
BUSINESS 1	SHOPS/RETAIL	3	0.20	0.38	
INSTITUTIONAL	PLACE OF WORSHIP	3	0.61	0.16	
EDUCATIONAL	SECONDARY SCHOOL/CRECHE	3	4.30	8.19	
MUNICIPAL/GOVERNMENT	MUNICIPAL PURPOSES	3	2.06	3.93	
PUBLIC OPEN SPACE	OPEN SPACE	3	1.49	2.84	
ROAD PURPOSES	PROPOSED ROADS		15.45	29.47	
TOTAL DEVELOPABLE AREA		498	52.45	100%	

NOTES:

1. Represents Proposed Township Boundary.
2. Road Reserves: 12m, 15m, & 35m
3. 1:100 Year Floodline
4. 20m Floodline Buffer

SURVEY NOTES:

CONTOUR INTERVALS 1 M IN
ACCORDANCE TO REG.
.....ORDNANCE
SURVEYOR GENERAL
SYSTEM WGS 84

CLIENT:

BUSHBUCKRIDGE
LOCAL MUNICIPALITY



CONSULTANTS	NAME	SIGNATURE
NKANIVO DEVELOPMENT CONSULTANTS	SAMUEL CHAUKE	
DESIGNED: NYIKO BALOYI Pr.Pin A/3125/2022 CHECKED: SAMUEL CHAUKE Pr.Pin A/3130/2022 DRAWING No: 202206-SEV/EXT2/REV1 DATE: 04/11/2022	THESE DRAWINGS: (A) ENJOY COPYRIGHT PROTECTION AND THE COPYRIGHT VESTS IN NKANIVO DEVELOPMENT CONSULTANTS UNLESS OTHERWISE AGREED IN WRITING (B) MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WHATSOEVER TO ANY PERSON WITHOUT THE WRITTEN PERMISSION OF THE COPYRIGHT HOLDER	

COMPILED BY:

SOIL CLASSIFICATION

GEOTECHNICAL INFORMATION

LAND INFORMATION

SCALE

SITE CLASS	DESCRIPTION	DEVELOPMENT POTENTIAL	CONSTRUCTION TYPE	FOUNDATION RECOMMENDATION

SIGNED:

SIGNED:

FLOODLINE CERTIFICATE

1 : 1 300 (A1 Format)
1 : 2 600 (A2 Format)
1 : 5 200 (A3 Format)
1 : 10 400 (A4 Format)



TEL : 012 807 7445
eMail : info@nkanivo.co.za

Nkanivo House
Unit 79, Block 5, Lombardy Business Park
66 Graham Road
Pretoria 0084

ANNEXURE 02

Eskom Feedback (4 Pages)

Ralph Gordon

From: Cyril Thete <TheteC@eskom.co.za>
Sent: 11 August 2022 09:12
To: Ralph Gordon
Subject: RE: Seville - Overview of Electrical networks

Sensitivity: Confidential

Good day Ralph,

The installed capacity will be 1x20MVA
The substation should be completed by the end of 2023/24 Financial Year.

Regards
Cyril Thete

From: Ralph Gordon <ralphg@burotech.co.za>
Sent: Monday, 08 August 2022 16:01
To: Cyril Thete <TheteC@eskom.co.za>
Subject: [CAUTION:EXTERNAL EMAIL] - RE: Seville - Overview of Electrical networks
Sensitivity: Confidential

Good day Cyril,

Thank you for your fast response, much appreciated!

Regarding the Tsakani Substation:
What will be the installed capacity?
When is the substation expected to be commissioned?

Best Regards,



BURO TECH

Ralph Gordon
Buro Tech Consulting Engineers
Tel: +27 (012) 542 1010
Cell: 082 600 2537
Ralphg@burotech.co.za
www.burotech.co.za

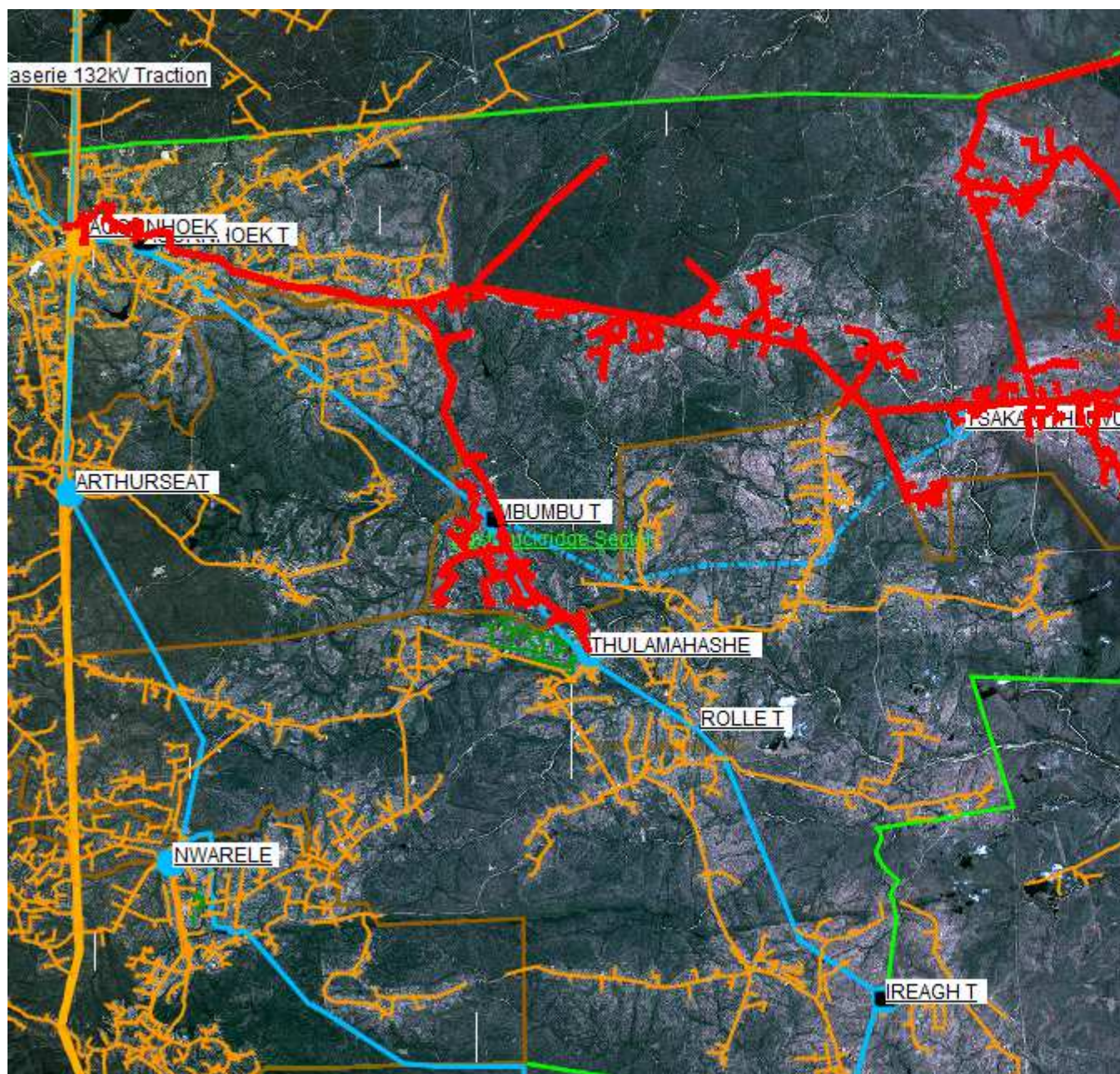
From: Cyril Thete [<mailto:TheteC@eskom.co.za>]
Sent: 08 August 2022 14:21
To: Ralph Gordon <ralphg@burotech.co.za>
Subject: RE: Seville - Overview of Electrical networks
Sensitivity: Confidential

Good day Ralph

Below is the information I managed to gather as per your request.

- Line name - Acornhoek/Tintswalo 22kV Overhead Line
- Line code - AT

- Operating voltage – 22kV
- Installed capacity – (Not available – Please see the next point)
- Spare capacity – **The feeder is currently overloading.**
- Substation Name & Voltage Levels - Acornhoek 275/132/22kV MTS Substation
- Substation Installed Capacity – 2x40MVA
- Substation spare capacity – **The substation is currently loaded at 37.56MVA**
- *We have **Tsakani Substation** that is under construction at the moment and it is In Hluvukani, about 10km from Seville, this substation is going to solve the capacity constraints in that area including de-loading **AT feeder** and I am not aware of any upgrades planned at Acornhoek MTS (if that is what you are asking).*
- I have attached a snapshot of the AT feeder for you. AT Feeder is highlighted In red and in the attachment I have also indicated where Seville Project area is and that will show you how far is it from the feeder.



Regards
Cyril Thete

From: Ralph Gordon <ralphg@burotech.co.za>
Sent: Monday, 08 August 2022 11:09

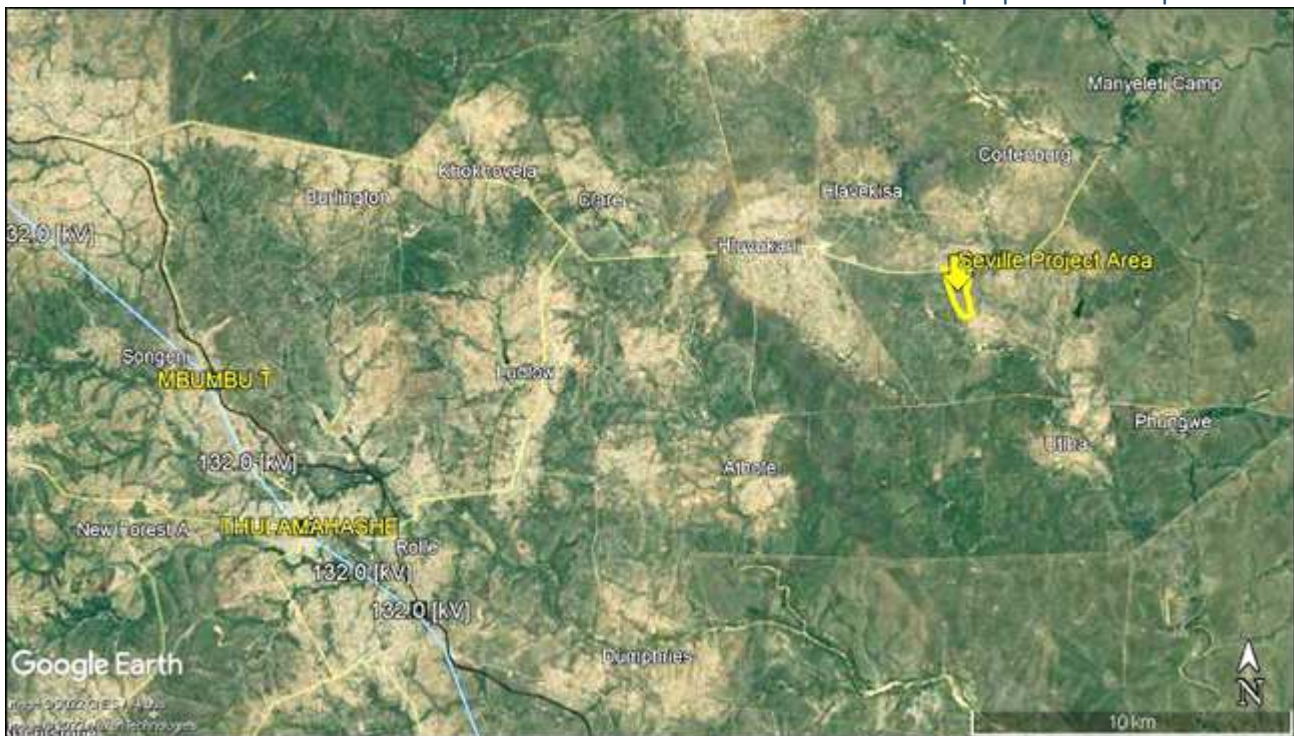
Sensitivity: Confidential

I request your assistance with the following:

Buro Tech has been appointed to submit a report giving an overview of the electrical services in the vicinity of the project, capacity availability & an overview of the Eskom masterplan for upgrades in the area to unlock capacity (if available).

The area is earmarked for the development of residential erven with complimentary business, educational & municipal facilities.

The Thulamahashe 132kV substation is located $\pm 22\text{km}$ to the South-West of the proposed development.



- Line name,
- line code,
- operating voltage,
- installed capacity,
- spare capacity (if any)
- A drawing indicating the line route if available.

3

Overview of the distribution substation supplying this area,

- Substation Name & Voltage Levels (*example: Thulamahashe 132/11kV substation*)
- Substation Installed Capacity (*example: 2x10MVA*)
- Substation spare capacity (if any?), Perhaps the substation is loaded over firm capacity already? (*please advise*)
- Any substation upgrades envisaged in term of the Eskom masterplan for the area? (*if any*)

I acknowledge for more detailed studies & cost estimates the formal application process need to be followed, and will initiate the applications with Eskom, once the project reach this stage.

I look forward to your assistance in this regard.
Many thanks.

Best Regards,



Ralph Gordon

Buro Tech Consulting Engineers

Tel: +27 (012) 542 1010

Cell: 082 600 2537

Ralphg@burotech.co.za

www.burotech.co.za

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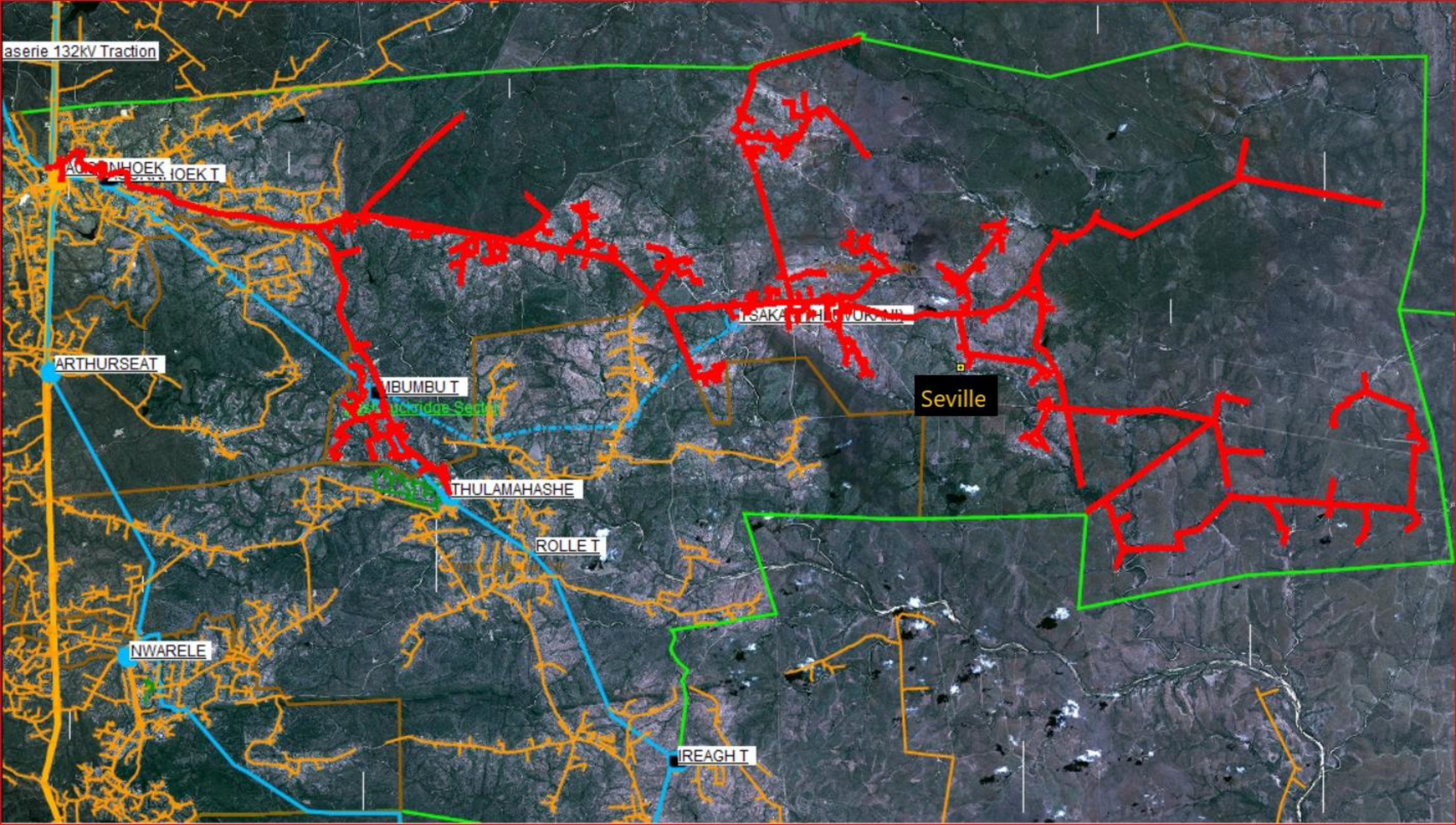
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ANNEXURE 03

OVERVIEW:

**Eskom Acornhoek/Tintswalo 22kV overhead feeder
(1 Page)**

aserie 132kV Traction



ACQUINHOEK 10EKT

ARTHURSEAT

MBUMBU T

Muckridge Sector

THULAMAHASHE

ROLLET

NWARELE

IREAGHT

TSAKA T H G VOR M

Seville