

TOWNSHIP ESTABLISHMENT APPLICATION HOLDING 1, SUNRELLA A.H. AND PORTION 80 OF THE FARM BULTFONTEIN 533 JQ

OUTLINE SCHEME REPORT WATER AND SANITATION

REPORT 2019-094-11 Rev-1

MARCH 2023

CLIENT: GROWTHPOINT & APETURE PROPERTIES



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Outline Scheme Report Information Sheet

Report number : 2019-094-11- Rev 1
Local authority : City of Johannesburg Metropolitan Municipality
Proposed change : Township Establishment Application
Development type : Industrial 3, Warehouses
Property description : Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 - JQ

Report undertaken by:

Name : D.H. van der Merwe


Signature : 

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Report reviewed by:

Name : F.H.B van Eyk Pr. Eng

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Qualifications : B.Eng (Civil), B.Eng (Hons) (Water Resources)

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**HOLDING 1, SUNRELLA A.H. AND 80 OF THE FARM
BULTFONTEIN 533 - JQ
OUTLINE SCHEME REPORT
WATER AND SANITATION**

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1 INTRODUCTION

EDS Engineering Design Services (Pty) Ltd (EDS Engineers) was appointed to compile an Outline Scheme Report for the township application of Erf 934 and Erf 935, Lanseria Extension 12 on the Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 – JQ.

The application site is located in Lanseria and falls in the area of jurisdiction of the City of Johannesburg Metropolitan Municipality.

This report describes the existing civil engineering services in proximity to the application site, the expected demands as a result of the change of the zoning rights and evaluates the capacity of the existing networks to accommodate the expected demands.

2 DETAILS OF THE APPLICANT

The details of the applicant:

Company Name: GROWTHPOINT PROPERTIES
Physical Address: The place
1 Sandton Drive
Sandton
Gauteng
2196
Contact Person: Polla Scholtz
Telephone Number: (011) 944 6050

Company Name: APERTURE PROPERTIES
Physical Address: 89 Bute Lane, Sandown
Sandton
South Africa
Contact Person: Hilton Carty
Telephone Number: (079) 916 3982

The details of the town planner:

Company Name: The Town Planning Hub cc
Physical Address: Lombardy Corporate Park
Block B, Unit M,
Cole Rd, Shere
Pretoria
Contact Person: Adele Coertze
Telephone Number: (012) 809 2229

3 SITE INFORMATION

3.1 SITE LOCATION

The site located within the municipal boundaries of the City of Johannesburg, on the Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 - JQ.

The site details are as follows:

Site		Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 - JQ
Size		6.4569 ha
Boundaries	North	Airport Road
	East to South	Side Road and Portion 155, 154, 153, 152 and 151 of the farm Bultfontein
	West	Lanseria Airport Extension 1

The location of the proposed township is shown in **Annexure A**.

3.2 PROPERTY DESCRIPTION

The application site is on the Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 – JQ.

The physical combined size of the Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 - JQ is 6.4569 ha including current servitude of 0.2634 ha. A request to the city of Johannesburg Metropolitan Municipality for the approval of the township establishment of Lanseria Extension 12 consolidation of Erf 934 with Erven 935 measuring 6.1935 ha in extent has been submitted.

Erf 934 and Erf 935 of Lanseria Extension 12 will be consolidated. The proposed subdivision layout is included in **Annexure C**.

4 DEVELOPMENT INFORMATION

4.1 EXISTING LAND-USE RIGHTS

Holding 1, Sunrella A.H. and Portion 80 of the farm Bultfontein 533 - JQ is currently zoned “Agriculture” permitting land and building use for any bona fide farming activity. A copy of the zoning certificate is included in **Annexure D**.

The exiting land use rights are summarised in **Table 4.1.1** below.

Table 4.1.1: Existing land use rights

Erf nr	Existing zoning	Size (ha)	Density	Coverage	FAR	Height (m)
Holding 1 and Portion 80	Agriculture	6.1935	N/A	N/A	N/A	N/A
Road		0.2634				

4.2 PROPOSED LAND-USE RIGHTS

The zoning of the application site will change to “Industrial 3”.

The schedule of rights as well as an extract of the motivation memorandum as submitted by town planner, indicating the proposed development controls, are included in **Annexure E**.

The proposed land use rights are summarised in **Table 4.2.1** below.

Table 4.2.1: Proposed land use rights

Erf nr	Proposed zoning	Size (ha)	Density	Coverage	FAR	Height (m)
Erf 934 & 935 (Lanseria Extension 12)	Industrial 3	6.1935	N/A	60%	0.6	25
Road		0.2634				

5 WATER RETICULATION

5.1 EXISTING WATER RETICULATION NETWORK

The existing water reticulation consists of the following:

- A reservoir located at position 25°57'12.87"S (Latitude) and 27°55'25.03"E (Longitude).

The following assumptions were made regarding existing water infrastructure:

- The existing reservoir and water tower have sufficient capacity to accommodate the proposed development.
- The proposed site is lower than the reservoir hence it was assumed that enough pressure is available to site.
- An existing pipeline is located to adjacent development.

The existing water information was received from Johannesburg Water and is included in **Annexure F**, page 2.

5.2 PROPOSED INTERNAL UPGRADES AND CONNECTION POINT

Internal water reticulation and fire hydrants are to be installed by the developer.

It is proposed that new 150mm water connection points for domestic and fire water be provided for the application site. A new 110mm uPVC waterline will connect from the 160mm watermain that will be installed.

The existing water reticulation network in precinct to the application site as well as the proposed water connection points are indicated in **Annexure B**, Figure 6.

5.3 ESTIMATED WATER DEMAND

The estimated water demand for the existing zoning rights is shown in **Table 5.3.1** below.

Table 5.3.1: Estimated water demand for existing zoning rights

Erf nr	Current Zoning	Site area (ha)	FAR	Water demand (kl/ha gross site area)	AADD (kl/day)	Peak factor	Peak flow (l/s)
Bultfontein 5233-JQ Farm	Agriculture	6.1935	N/A	3.6	22.3	4	1.1

The estimated water demand for the proposed zoning rights is shown in **Table 5.3.2** below.

Table 5.3.2: Estimated water demand for proposed zoning rights

Erf nr	Current Zoning	Site area (ha)	FAR	Water demand (kl/ha gross site area)	AADD (kl/day)	Peak factor	Peak flow (l/s)
Erf 932 & 933	Industrial 3	6.1935	0.6	13.75	85.2	4	4.0

The fire flow requirement for *Moderate Risk Business* development is minimum flow of 50 l/s.

5.4 PROPOSED EXTERNAL WATER UPGRADES

A new 160mm uPVC waterline will be connected from the existing watermain from the reservoir to the developing site. Johannesburg Water should confirm that bulk upgrades are required for the proposed development.

The existing water reticulation network in precinct to the application site as well as the proposed water connection points are indicated in **Annexure A**.

All cost excluding VAT.

ITEM	QTY	COST
P & G's (10% of Installation Cost)	10%	R 57 808.49
Pipe Installation Cost	350m	R 385 389.93
Total Construction Cost	350m	R 443 198.42
Professional Fee (12% of Construction Cost)	12%	R 53 183.81
Total Cost		R 496 382.23 (Excl. VAT)

The water upgrade cost is estimated at around R 496 382.23 (Excl. VAT).

5.5 ESTIMATED BULK CONTRIBUTIONS FOR WATER

The estimated bulk contribution for water is calculated based on a contribution rate of R 5 472.85 /kl.

The increase in water demand from “Agricultural” to “Industrial 3” for the proposed development of Willow Park Manor Extension 90 is as follows:

- Water demand for “Agricultural” = 22.3 kl/day
- Water demand for “Industrial 1” = 85.2 kl/day
- Increase in water demand = 62.9 kl/day

The bulk contributions for water payable in respect of the township is estimated to be R 344 242.27 (Excl. VAT).

5.6 REFUNDABLE CONTRIBUTION COST

- Internal Upgrade Cost	= R 496 382.23 (Excl. VAT)
- Bulk Contributions	= R 344 242.27 (Excl. VAT)
- Refundable Cost	= R 152 139.96 (Excl. VAT)

The water network contribution refundable in respect to the township is estimated to be R 152 139.96 (Excl. VAT).

6 SEWER RETICULATION

6.1 EXISTING SEWER RETICULATION NETWORK

There are no existing municipal sewer services in the vicinity of the development.

As for the internal sewer treatment works operated by Lanseria are closed off to the surrounding sites.

The existing sewer information was received from Johannesburg Water and is included in **Annexure F**, page 1.

6.2 PROPOSED INTERNAL UPGRADES AND CONNECTION POINT

Internal sewer reticulation would consist of 110mm Ø and 160mm Ø sewer pipes and are to be installed by the developer.

The existing sewer reticulation network in precinct to the application site as well as the proposed sewer connection points for the application site are indicated on in **Annexure B, Figure 6**.

6.3 EXPECTED SEWER OUTFLOW

The estimated sewer effluent for the existing zoning rights is shown in **Table 6.3.1** below.

Table 6.3.1: Estimated sewer effluent for existing zoning rights

Erf nr	Current Zoning	Site area (ha)	FAR	Demand (kl/holding)	ADDWF (kl/day)	PDWWF (kl/day)	Peak factor	Peak flow (l/s)
Holding 1	Agriculture	6.1935	0.6	2.2	2.2	2.53	1	0.03
Portion 80				2.2	2.2	2.53	1	0.03
								Total

The estimated sewer effluent for the proposed zoning right is shown in **Table 6.3.2**.

Table 6.3.2: Estimated sewer demand for proposed zoning rights

Erf nr	Proposed Zoning	Site area (ha)	FAR	Demand (kl/ha gross Area)	ADDWF (kl/day)	PDWWF (kl/day)	Peak factor	Peak flow (l/s)
Erf 932 & 933	Industrial 3	6.1935	0.6	9	44.6	108.7	2.1	1.26

AADWF – Average Daily Dry Weather Flow

PDWWF – Peak Daily Wet Weather Flow (an additional 15% of AADWF is allowed for any other extraneous flow as per the *Guidelines and Standards for the Design and Maintenance of Water and Sanitation Services* published by Johannesburg Water)

6.4 PROPOSED EXTERNAL SEWER UPGRADES

Sewer package plant will be implemented on site until Johannesburg Water municipal bulk sewer lines is available.

Sewer package plant will be maintained by the developer according to Johannesburg Water and Water Affairs (Guideline Document: Package Plant for the treatment of Domestic Wastewater) guidelines.

The package plant will be decommissioned once a bulk municipal connection becomes available. The decommissioning will happen with within three months after the bulk connection is operational.

Guidelines for the outflow of the waste water package plant parameters will be as follows:

SECTOR SPECIFIC EFFLUENT QUALITY GUIDELINES FOR DISCHARGES INTO NATURAL WATER BODIES (MAXIMUM PERMISSIBLE LEVELS)

	PARAMETER	SECTORS						
		Textile	Food & Beverages	Paints & Chemicals	Pharmaceuticals	Paper and Pulp	Hotels and Resorts	Wood and wood processing
1.	pH	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9
2.	Oil & Grease (mg/l)	5	5	10	5	10	5	5
3.	Temperature increase	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient
4.	Colour (TCU)	400	200	300	150	200	150	250
5.	COD (mg/l)	250	250	250	250	250	250	250
6.	BOD ₅ (mg/l)	50	50	50	50	50	50	50
7.	Total Dissolved Solids (mg/l)	1000	1000	1000	1000	1000	1000	1000
8.	Chromium (+6) mg/l	0.1				0.1	0.1	0.1
9.	Sulphide (mg/l)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
10.	Phenol (mg/l)	2	2	2	2	2	2	2
11.	Total Coliforms (MPN/100 ml)	400	400	400		400	400	400

BULTFONTEIN 533 – JQ – HOLDING 1, SUNRELLA A.H. AND PORTION 80

		Textile	Food & Beverages	Paints & Chemicals	Pharmaceuticals	Paper and Pulp	Hotels and Resorts	Wood and wood processing
12.	E. Coli (MPN/100 ml)	10	10	10	10	10	10	10
13.	Turbidity (N.T.U.)	75	75	75	75	75	75	75
14.	Total Suspended Solids (mg/l)	50	50	50	50	50	50	50
15.	Lead (mg/l)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
16.	Nitrate (mg/l)	50	50	50	50	50	50	50
17.	Total Phosphorous (mg/l)	2	2	2	2	2	2	2
18.	Conductivity (µS/cm)	1500	1500	1500	1500	1500	1500	1500
19.	Mercury (mg/l)	0.005	0.005	0.005	0.005	0.005	0.005	0.005
20.	Ammonia as N (mg/l)		1.0				1.0	1.0
21.	Total Pesticides (mg/l)		0.5				0.5	0.5
22.	Total Arsenic (mg/l)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
23.	Soluble Arsenic (mg/l)	0.1	0.1	0.1	0.1	0.1	0.1	
24.	Alkalinity as CaCO ₃ (mg/l)	150	150	150		150		
25.	Fluoride (mg/l)		10					
26.	Chloride (mg/l)	250	250	250	250	250	250	250

**SECTOR SPECIFIC EFFLUENT QUALITY GUIDELINES FOR DISCHARGES INTO NATURAL WATER BODIES
(MAXIMUM PERMISSIBLE LEVELS)**

	PARAMETER	SECTORS						
		Cement, Ceramics and Tiles Industry	Thermal Power Plant	Glass Industry	Hospitals and Clinics	Oil and Gas Exploration, Production and Refining	Mining and Minerals Processing	Metals Industry
1.	pH	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9
2.	BOD ₅ (mg/l)	50	50	50	50	50	50	50
3.	Oil & Grease (mg/l)	5	5	5	5	10	10	5
4.	Total Dissolved Solids (mg/l)	1000			1000	1000	1000	1000
5.	Total Suspended Solids (mg/l)	50	50	50	50	50	50	50
6.	Cadmium (mg/l)	0.1				0.1	0.1	0.1
7.	Total Phosphorus (mg/l)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
8.	Temperature increase	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient	< 3°C above ambient
9.	Colour (TCU)	200	200	150	150	200	150	200
10.	COD (mg/l)	250	250	250	250	250	250	250
11.	Chromium (+6) mg/l	0.1		0.1	0.1	0.1	0.1	0.1
12.	Sulphide (mg/l)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
13.	Phenol (mg/l)				2	2	2	2
14.	Total Coliforms			400	400	400	400	400

	(MPN/100 ml)							
15.	E. Coli (MPN/100 ml)			10	10	10	10	10
16.	Turbidity (N.T.U.)	75	75	75	75	75	75	75
17.	Lead (mg/l)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
18.	Nitrate (mg/l)	50	50	50	50	50	50	50
19.	Conductivity (µS /cm)	1500			1500	1500	1500	1500
20.	Mercury (mg/l)				0.005	0.005	0.005	0.005
21.	Zinc (mg/l)					10	10	10
22.	Tin (mg/l)							5
23.	Total Chromium (mg/l)					0.5	0.5	
24.	Total Iron (mg/l)					10	10	10
25.	Free Cyanide (mg/l)						0.2	
26.	Cyanide as Weak Acid Dissociable (mg/l)						0.6	
27.	Total Cyanide (mg/l)						1.0	
28.	Aluminium (mg/l)							5.0
29.	Total Antimony (mg/l)						1.5	1.5
30.	Fluoride (mg/l)							10
31.	Chloride (mg/l)							250
32.	Alkalinity as CaCO ₃ (mg/l)							150
33.	Copper (mg/l)					5	5	5
34.	Total Arsenic (mg/l)	1.0		2			1.0	1.0
35.	Soluble Arsenic (mg/l)	0.1					0.1	0.1

The waste water treatment plant technical specifications sheet is included in **Annexure G**.

6.5 ESTIMATED BULK CONTRIBUTIONS FOR SEWER

No bulk contributions will be payable due to no sewer infrastructure networks in the surround areas.

Bulk Contributions will be paid once a connection point becomes available.

7 CONCLUSIONS AND RECOMMENDATION

It is proposed that water will be obtained from the water tower south-west of the proposed development. A link pipeline will be required to service the proposed development.

No connection to the municipal sewer is available and therefore a package plant is proposed.

It is furthermore recommended that the Outline Scheme report be approved by Johannesburg Water.



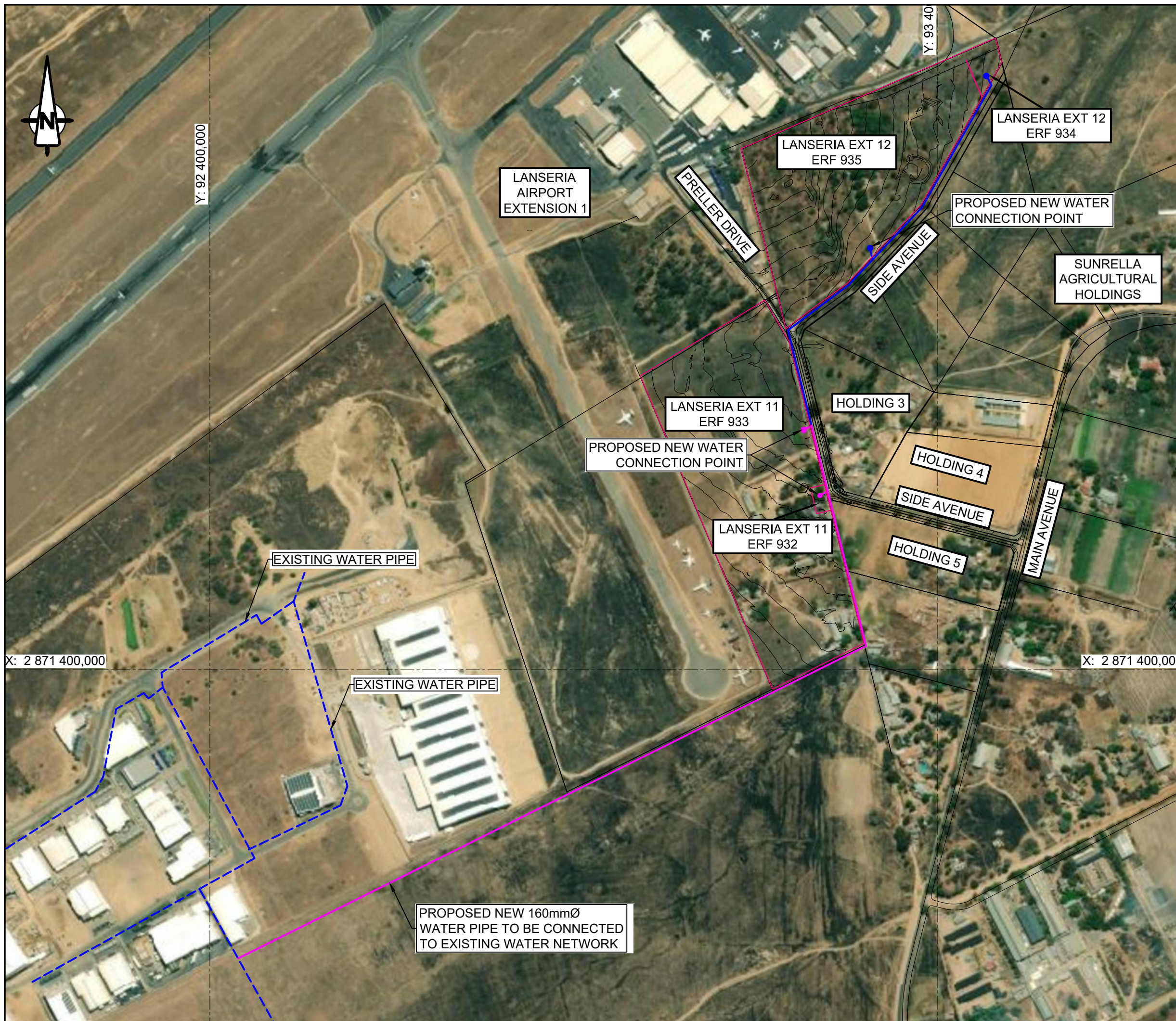
F.H.B van Eyk Pr. Eng. (20160826)

Annexures:

- Annexure A: Site location Map
- Annexure B: Service Layout Drawings
- Annexure C: Proposed Township Layout
- Annexure D: Existing Zoning Certificates
- Annexure E: Conditions of Establishment
- Annexure F: Existing Water and Sewer Information
- Annexure G: Waste Water Treatment Plant Technical Specification

ANNEXURE A: SITE LOCATION MAP

ANNEXURE B: SERVICE LAYOUT DRAWINGS



- GENERAL NOTES:**
1. REFER TO ALL RELEVANT DRAWINGS & SPECIFICATIONS, DO NOT SCALE ANY DIMENSIONS.
 2. WHERE DISCREPANCIES OCCUR BETWEEN THE PROJECT DRAWINGS OR SPECIFICATIONS, THESE SHOULD BE REPORTED IMMEDIATELY TO THE PRINCIPAL AGENT.
 3. ALL DIMENSIONS AND LEVELS TO BE CHECKED ON SITE AND CORRELATED WITH THE ARCHITECTS DRAWING BEFORE CONSTRUCTION COMMENCES.
 4. ALL WATERPROOFING AND EARTH POISONING DETAILS TO BE IN ACCORDANCE WITH THE ARCHITECT'S SPECIFICATION AND INSTRUCTIONS.

B	15/03/23	FOR INFORMATION	DvdM
A	10/10/22	FOR INFORMATION	S.K
Rev. No:	Date:	Revision Details:	By:

Client:

Architect:



Structural, Civil and Transportation Engineers

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Project:

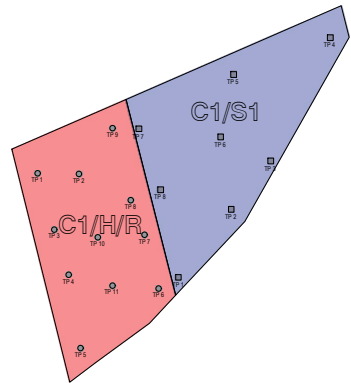
LANSERIA PROJECT RUNWAY

Description:

WATER RETICULATION AND CONNECTION POINT 2 (FIGURE 4)

Paper size:	Drawn:	Checked:	Designed:
A3	S.K	D vd M	D vd M
Scale:	Project Number:	Drawing Number:	Revision:
1:5000	2019-094	0024	A

ANNEXURE C: PROPOSED TOWNSHIP LAYOUT



- NOTES continued:**
- Erf 934 is indicated by points deCfd.
 - Erf 935 is indicated by points AabcdfDEFGA.
 - Erf 935 is subject to a servitude for electrical purposes as indicated.
 - The line ag is also the boundary between the geological zones.

HOLDING 1 ZONE CLASSIFICATION: C1/H/R

C1: Silty sands, sands, sandy and gravelly soils with expected range of soil movement of 5,0 mm - 10 mm.
 H: Fine grained soils with moderate to very high plasticity (clays, silty clays, clayey silts and sandy clays) with expected range of soil movements of < 7,5 mm.
 R: Rock (excluding mud rocks which may exhibit swelling to some depth).

IT IS HEREBY CERTIFIED THAT THE TOWNSHIP LAYOUT HAS BEEN COMPILED IN ACCORDANCE WITH THE FINDINGS LISTED IN THE GEOTECHNICAL INVESTIGATION JOB NUMBER 07257 DATED MAUGUST 2007, BY GEOSTRATEGIES CONSULTING ENGINEERS.

THANNO SOKAWE (119039)
 NAME & PR. SCI NAT. REG NO.

21/10/2022
 DATE

PORTION 80 ZONE CLASSIFICATION: C1/S1

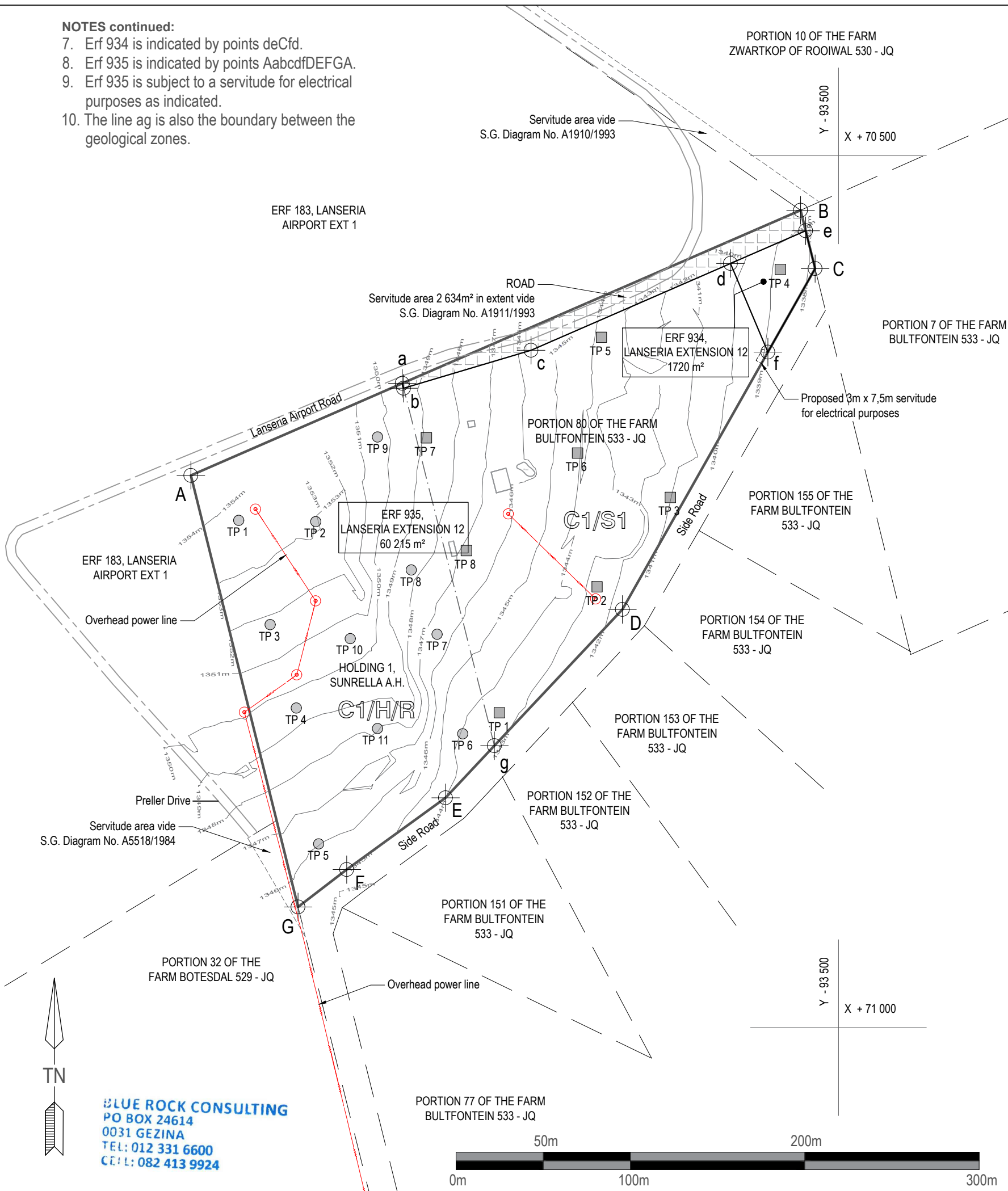
No significant geotechnical problems, potential does exist that blasting will be required to remove rock in excavations for services and the potential for shallow seepage from seasonal, perched water table should be borne in mind. Bearing pressure not exceeding 50 kPa may be utilised. Any core stones found in the foundation trenches should be removed and replaced with mass concrete or well compacted (95% mod AASHTO) granular fill as these will result in localised stress developing in the structure.

IT IS HEREBY CERTIFIED THAT THE TOWNSHIP LAYOUT HAS BEEN COMPILED IN ACCORDANCE WITH THE FINDINGS LISTED IN THE GEOTECHNICAL INVESTIGATION REPORT NUMBER 2006-0050/1 DATED MARCH 2007, BY BLUE ROCK CONSULTING (PTY) LTD.

Al Quintes
 NAME & PR. SCI NAT. REG NO.

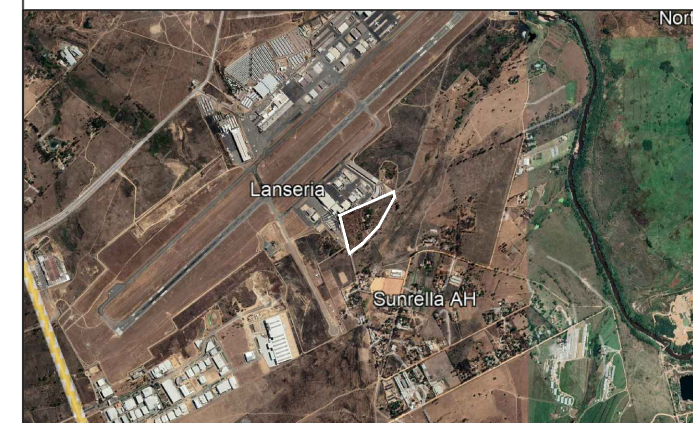
24 OCT 2022
 DATE

BLUE ROCK CONSULTING
 PO BOX 24614
 0031 GEZINA
 TEL: 012 331 6600
 CELL: 082 413 9924



LOCALITY PLAN

SCALE 1 : 50 000



NOTES:

- The township boundaries are indicated by points ABCDEFGA.
- Holding 1 of Sunrella A.H. is indicated by points AagEFGA.
- Portion 80 of the farm Bultfontein 533JQ is indicated by points aBCDga.
- All areas and distances are estimated, subject to final survey for General Plan purposes.
- The township is affected by a servitude area, as indicated.
- All existing buildings to be demolished.
- Line ag is also the geological zone delineation.

PROPOSED TOWNSHIP: **LANSERIA EXTENSION 12**

SITUATED ON: **HOLDING 1, SUNRELLA A.H. AND PORTION 80**

OF THE FARM: **BULTFONTEIN-533JQ**

LOCAL AUTHORITY: **CITY OF JOHANNESBURG METROPOLITAN MUNICIPALITY**

LAND USE TABLE

USE	AREA	OF TOWNSHIP	# OF ERVEN	ERF NUMBERS
"INDUSTRIAL 3"	61 935 m ²	95.90 %	2	934 - 935
"ROADS"	2 634 m ²	4.10 %		
TOTAL	64 569 m²	100 %	2	934 - 935

SIZE OF ERVEN			STREETS	
USE	MINIMUM	RULING	MINIMUM GRADIENT:	N / A
			MAXIMUM GRADIENT:	N / A
			TOTAL LENGTH:	N / A
			SCALE:	1 : 2 5 0 0 on A 3
			LA VIEW:	CPD / LSA X 12 / 1
DATE	SUBMISSION / AMENDMENT		CONTOUR INTERVAL:	1m
10/2022	1//SUBMISSION		GEODETIC SYSTEM:	WGS 84
			CONTOUR SURVEY:	Geomax Surveys / November 2019
			DESIGNED BY:	A. Coertze
			APPLICANT:	B.E. Fletcher



B.E. Fletcher

IT IS HEREBY CERTIFIED THAT THE PROPERTY SHOWN ON THIS DRAWING IS NOT AFFECTED BY FLOODWATER 1:50 AND 1:100 YEAR RECURRENCE INTERVAL EVENT DETERMINED IN ACCORDANCE WITH SECTION 144 OF THE NATIONAL WATER ACT (ACT 36 OF 1998).

PHS van Eyk 2050826
 INITIAL AND SURNAME PR. ENG. REG NO.

25/10/2022
 DATE

ANNEXURE D: EXISTING ZONING CERTIFICATES

**ZONING INFORMATION
CERTIFICATE PAD
FOR APPLICATION SUBMISSIONS**



a world class African city

Date: 2022/10/03

Requested by:	Sandy Ngwenya
Town Planning Scheme:	City of Johannesburg Land Use Scheme 2018
Name of Applicant:	THE TOWN PLANNING HUB CC
Erf/Holding Name/Farm Portion:	Portion 80
Township/Holding Name/Farm Name:	Bultfontein 533-JQ
Street Name and No:	
ZONING INFORMATION	
Use Zone:	Undetermined
Height Zone:	A (As per attached table 4)
Floor Area Ratio:	As per attached table 6
Coverage:	As per attached table 5
Density:	No Density
Building Line:	As per attached table 7
Parking:	As per scheme
AMENDMENT SCHEME APPLICABLE:	N/A
Served By:	Sandy Ngwenya

Terms and Conditions:

The Town Planning Scheme is open for inspection on the 8th Floor 158 loveday Street Braamfontein between 8:00 and 15:30 weekdays. The applicant must verify the information contained herein by inspection of the scheme. Whilst the utmost is done to ensure accuracy the City of Johannesburg does not accept responsibility for any incorrect information given on this form. The applicant's attention is drawn to the general provisions of the Town Planning Scheme. It should be noted that the provisions of the Town Planning Scheme do not override any restrictive conditions that may be contained in the Title Deeds. PLEASE NOTE: No Information will be given telephonically due to the technical and interpretive complications.

**ZONING INFORMATION
CERTIFICATE PAD
FOR APPLICATION SUBMISSIONS**



a world class African city

Date: 2022/10/03

Requested by:	Sandy Ngwenya
Town Planning Scheme:	City of Johannesburg Land Use Scheme 2018
Name of Applicant:	THE TOWN PLANNING HUB CC
Erf/Holding Name/Farm Portion:	Holding 1
Township/Holding Name/Farm Name:	Sunrella A.H.
Street Name and No:	Side avenue
ZONING INFORMATION	
Use Zone:	Undetermined
Height Zone:	A (As per attached table 4)
Floor Area Ratio:	As per attached table 6
Coverage:	As per attached table 5
Density:	No Density
Building Line:	As per attached table 7
Parking:	As per scheme
AMENDMENT SCHEME APPLICABLE:	N/A
Served By:	Sandy Ngwenya

Terms and Conditions:

The Town Planning Scheme is open for inspection on the 8th Floor 158 loveday Street Braamfontein between 8:00 and 15:30 weekdays. The applicant must verify the information contained herein by inspection of the scheme. Whilst the utmost is done to ensure accuracy the City of Johannesburg does not accept responsibility for any incorrect information given on this form. The applicant's attention is drawn to the general provisions of the Town Planning Scheme. It should be noted that the provisions of the Town Planning Scheme do not override any restrictive conditions that may be contained in the Title Deeds. PLEASE NOTE: No Information will be given telephonically due to the technical and interpretive complications.

ANNEXURE E: CONDITIONS OF ESTABLISHMENT

STATEMENT OF THE CONDITIONS UNDER WHICH THE APPLICATION MADE BY GROWTHPOINT PROPERTIES LIMITED (REGISTRATION NUMBER 1987/004988/06) (HEREINAFTER REFERRED TO AS THE TOWNSHIP OWNER) IN TERMS OF THE PROVISIONS OF PART 3 OF CHAPTER 5 OF THE CITY OF JOHANNESBURG MUNICIPAL PLANNING BY-LAW, 2016 (HEREINAFTER REFERRED TO AS THE BY-LAW), FOR THE ESTABLISHMENT OF A TOWNSHIP ON HOLDING 1, SUNRELLA AGRICULTURAL HOLDINGS AND PORTION 80 (A PORTION OF PORTION 55) OF THE FARM BULTFONTEIN 533JQ, REGISTRATION DIVISION J.Q, GAUTENG PROVINCE, HAS BEEN APPROVED

1. CONDITIONS TO BE COMPLIED WITH PRIOR TO THE OPENING OF THE TOWNSHIP REGISTER AND THE DECLARATION OF THE TOWNSHIP AS AN APPROVED TOWNSHIP.

(1) CANCELLATION OF EXISTING CONDITIONS OF TITLE

The township owner shall at its own costs, cause the following restrictive conditions and/or servitudes to be cancelled or the township area to be freed therefrom:

T73481/2022 (Holding 1, Sunrella Agricultural Holdings)

"A (a) The holding is held as an agricultural holding and it may be used only for the purpose contemplated by the definition of that term contained in the Agricultural Holdings (Transvaal) Registration Act, 1919.

That definition reads as follows:

"Agricultural holding shall mean a portion of land not less than 8565 square metres in extent, used solely or mainly for the purpose of agriculture or horticulture or for breeding or keeping domestic animals, poultry or bees."

(b) The Applicant and any other person or body or persons, so authorised in writing by the Minister shall, for the purpose of securing the enforcement of these conditions, have the right and power at all reasonable times to enter into and upon the holding for the purpose of such inspection or inquiry, as may be necessary to be made for the abovementioned purpose.

(c) (i) The holding may not be subdivided nor may any portion be sold, leased or disposed of in any way without the written approval of the Board first had and obtained.

(ii) The holding shall not be sold or held jointly by two or more persons.

(d) (i) Not more than one dwelling house, together with such buildings as are ordinarily required to be used in connection with a holding, may be erected on the holding except in special circumstances and then only with the consent, in writing, of the Board which may prescribe such further conditions as it may deem necessary.

(ii) The dwelling house, exclusive of the buildings to be erected on the holding, shall be of the value of not less than R3000.00.

(iii) The dwelling house shall be erected simultaneously with, or before the erection of the outbuildings, and it shall be a completed house and not one partly erected and intended for completion at a later date.

(iv) No building erected on the holding shall be located within a distance

of 30,48 metres from the boundary of that holding abutting on a road.

- (v) No wood and/or iron buildings or buildings of unburnt clay-brick shall be erected on the holding.
- (vi) Plans and specifications of all buildings or additions or alterations shall be submitted to the local authority whose approval, in writing, shall be obtained before the commencement of building operations. All buildings and additions or alterations to buildings shall be completed within a reasonable time after commencement.
- (e) No store or place of business whatsoever may be opened or conducted on the holding.
- (f) The owner shall fence the holding and maintain such fence in good order and repair.
- (g) Neither the owner nor any other person shall have the right to make of permit to be made upon the holding for any purpose whatsoever any bricks, ties, earthenware pipes, or other articles of a like nature.
- (h) A system of sanitation which complies with the requirements and specifications of the Local Authority, shall be installed.
- (i) No piggeries shall be conducted on the holding and the number of large stock which may be kept on the holding shall not exceed six.
- (j) DEFINITIONS:

In the foregoing conditions, the following terms shall have the meaning assigned to them:

- (i) "APPLICANT" shall mean SUNNYBRAE ESTATES (PROPRIETARY) LIMITED and its successors in title to the agricultural holdings.
- (ii) "BOARD" shall mean the Board constituted under the Agricultural Holdings (Transvaal) Act No 22 of 1919.
- (iii) "DWELLING HOUSE" shall mean a house designed for use as a dwelling for a single family.
- (iv) "LARGE STOCK" shall mean equines, bovines and their hybrids."

T73482/2022 (Portion 80 (a portion of Portion 55) of the farm Bultfontein 533 – JQ)

"A ONDERHEWIG AAN DIE VOLGENDE VERDERE VOORWAARDES:

- (a) No store or place of business whatsoever may be opened or conducted on the holding.
- (b) The owner shall fence the holding and maintain such fence in good order and repair.
- (c) Neither the owner nor any other person shall have the right to make or permit to be made upon the holding for any purpose whatsoever any bricks,

tiles, earthenware pipes, or other articles of a like nature.

- (d) A system of sanitation which complies with the requirements and specifications of the Local Authority shall be installed.
- (e) NO piggeries shall be conducted on the holding and the number of large stock which may be kept on the holding shall not exceed six.
- (f) DEFINITIONS:

In the foregoing conditions the following shall have the meaning assigned to them:

- (i) "Applicant" shall mean "SUNNYBRAE ESTATE (PROPRIETARY) LIMITED, and its Successors in Title to the agricultural holdings.
- (ii) "Board" shall mean the Board constituted under the Agricultural holdings (Transvaal) Registration Act No. 22 of 1919.
- (iii) "Dwelling-house" shall mean a house designed for use as a dwelling for a single family.
- (iv) "Large stock" shall mean equines, bovines and their hybrids."

(2) REGISTRATION OF SERVITUDES

The township owner shall at its own costs, cause the following servitudes to be registered to the satisfaction of the City of Johannesburg Metropolitan Municipality:

- (a) Servitude measuring approximately 1506m² in extent for stormwater attenuation purposes over proposed Erf 934, in favour of Erf 935.

(3) CANCELLATION OF SERVITUDES

The township owner shall, at its own costs cause the following servitudes to be cancelled:

None

(4) GENERAL

- (a) The local authority shall, after approval of the General Plan, make arrangements with Corporate Geo-Informatics (CGIS) for the allocation of street numbers to the newly created erven in the township.
- (b) A satisfactory geo-technical report (in triplicate) shall be submitted to the local authority and the Amendment Scheme shall not be considered/approved by the local authority until such time as the comments on the said report have been obtained and included in the mentioned Amendment Scheme.
- (c) The 1:100 year floodline certification, duly signed by a professional engineer, in respect of the property on which the township will be established, shall be obtained and indicated on the layout plan, if applicable.
- (d) The township owner shall submit acceptable proof that all outline scheme reports have been submitted to the Municipal Entities (Johannesburg Water and Johannesburg Roads Agency).

- (e) Authorisation/exemption to establish the township in terms of the National Environmental Management Act (No 107 of 1998) shall be obtained (or re-obtained) from the Department of Agriculture and Rural Development and shall be submitted to the local authority.
- (f) The comments of the South African National Roads Agency Limited on the establishment of the township, shall be obtained /re-obtained and shall be submitted to the local authority.
- (g) The comments of the Department: Mineral Resources on the establishment of the township shall be obtained/re-obtained and shall be submitted to the local authority.
- (h) The comments of the Department of Roads and Transport (Gauteng Provincial Government) on the establishment of the township, shall be obtained/re-obtained and shall be submitted to the local authority.
- (i) The township owner shall obtain and submit a certificate from City Power Johannesburg that electricity supply to the township, is available. Provided that if supply is not available and the township has been approved by the local authority 5 years or more than 5 years ago, a letter from City Power shall be submitted confirming that supply is not available.
- (j) The township owner shall, after approval of the General Plan of the township, submit the relevant Amendment Scheme to the local authority for approval, in order that it can be published simultaneously with the declaration of the township as an approved township.
- (k) The township owner shall comply with the provisions of sections 28(5), (9), (10) and (11) of the By-Law.

2. CONDITIONS OF ESTABLISHMENT.

(1) NAME

The name of the township is **Lanseria Extension 12**.

(2) DESIGN

The township consists of erven as indicated on layout plan CPD/LSA X12/1.

(3) DESIGN AND PROVISION OF ENGINEERING SERVICES IN AND FOR THE TOWNSHIP

The township owner shall, to the satisfaction of the local authority, make the necessary arrangements for the design and provision of all engineering services of which the local authority is the supplier.

(4) GAUTENG PROVINCIAL GOVERNMENT (DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT)

Should the development of the township not been commenced with before the application to establish the township, shall be resubmitted to the Department of Agriculture and Rural Development for exemption/authorisation in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), as amended.

(5) GAUTENG PROVINCIAL GOVERNMENT (DEPARTMENT OF ROADS AND TRANSPORT)

- (a) The township owner shall, before or during development of the township, erect a physical barrier which is in compliance with the requirements of the said Department along the lines of no access as indicated on the approved layout plan of the

township. The erection of such physical barrier and the maintenance thereof shall be done to the satisfaction of the said Department.

- (b) The township owner shall comply with the conditions of the Department as set out in the Department's letter dated

(6) NATIONAL GOVERNMENT (DEPARTMENT: MINERAL RESOURCES)

Should the development of the township not been completed before the application to establish the township, shall be resubmitted to the Department : Mineral Resources for reconsideration.

(7) ACCESS

- (a) Access to or egress from the township shall be provided to the satisfaction of the local authority and/or Johannesburg Roads Agency (Pty) Ltd and/or the Department of Roads and Transport.
- (b) No access to or egress from the township shall be permitted via the line/lines of no access as indicated on the approved layout plan of the township.

(8) ACCEPTANCE AND DISPOSAL OF STORMWATER DRAINAGE

The township owner shall arrange for the stormwater drainage of the township to fit in with that of the adjacent road/roads and all stormwater running off or being diverted from the road/roads shall be received and disposed of.

(9) REFUSE REMOVAL

The township owner shall provide sufficient refuse collection points in the township and shall make arrangements to the satisfaction of the local authority for the removal of all refuse.

(10) REMOVAL OR REPLACEMENT OF EXISTING SERVICES

If, by reason of the establishment of the township, it should be necessary to remove or replace any existing municipal, TELKOM and/or ESKOM services, the cost of such removal or replacement shall be borne by the township owner.

(11) DEMOLITION OF BUILDINGS AND STRUCTURES

The township owner shall at its own costs cause all existing buildings and structures situated within the building line reserves, side spaces or over common boundaries to be demolished to the satisfaction of the local authority, when requested thereto by the local authority.

(12) OBLIGATIONS WITH REGARD TO THE CONSTRUCTION AND INSTALLATION OF ENGINEERING SERVICES AND RESTRICTIONS REGARDING THE TRANSFER OF ERVEN

- (a) The township owner shall, after compliance with clause 2.(3) above, at its own costs and to the satisfaction of the local authority, construct and install all engineering services including the internal roads and the stormwater reticulation, within the boundaries of the township. Erven and/or units in the township may not be transferred into the name of a purchaser, prior to the local authority certifying to the Registrar of Deeds that these engineering services had been constructed and installed.

- (b) The township owner shall fulfil its obligations in respect of the installation of electricity, water and sanitary services as well as the construction of roads and stormwater drainage and the installation of systems therefor, as agreed between the township owner and the local authority in terms of clause 2.(3) above. Erven and/or units in the township, may not be transferred into the name of a purchaser, prior to the local authority certifying to the Registrar of Deeds that sufficient guarantees/cash contributions in respect of the engineering services have been submitted or paid to the said local authority.

(13) **OBLIGATIONS WITH REGARD TO THE PROTECTION OF ENGINEERING SERVICES**

The township owner shall, at its costs and to the satisfaction of the local authority, survey and register all servitudes required to protect the constructed/installed services. Erven and/or units in the township may not be or transferred into the name of a purchaser, prior to the local authority certifying to the Registrar of Deeds that these engineering services had been or will be protected to the satisfaction of the local authority.

3. DISPOSAL OF EXISTING CONDITIONS OF TITLE.

All erven shall be made subject to existing conditions and servitudes, if any:

- (1) Including the following condition, due to locality;

T73482/2022 (Portion 80 (a portion of Portion 55) of the farm Bultfontein 533 – JQ)

“B. FURTHER subject to a perpetual servitude in favour of the Town Council of Krugersdorp in extent 2 634 square metres, as indicated by the figures A B C D E on diagram S.G. No. A5531/1992, as will more fully appear from Deed of Cession No. K3859/1993S dated the 14th June 1993.”

4. CONDITIONS OF TITLE.

A Conditions of Title imposed in favour of the local authority in terms of the provisions of Chapter 5 Part 3 of the By-law.

- (1) **ALL ERVEN**

- (a) Each erf is subject to a servitude, 2m wide, in favour of the local authority, for sewerage and other municipal purposes, along any two boundaries other than a street boundary and in the case of a panhandle erf, an additional servitude for municipal purposes 2m wide across the access portion of the erf, if and when required by the local authority: Provided that the local authority may dispense with any such servitude.
- (b) No building or other structure shall be erected within the aforesaid servitude area and no large rooted trees shall be planted within the area of such servitude or within 2m thereof.
- (c) The local authority shall be entitled to deposit temporarily on the land adjoining the aforesaid servitude such material as may be excavated by it during the process of the construction, maintenance or removal of such sewerage mains and other works as it, in its discretion may deem necessary and shall further be entitled to reasonable access to the said land for the aforesaid purpose subject to any damage done during the process of the construction, maintenance or removal of such sewerage mains and other works being made good by the local authority.

5. CONDITIONS TO BE INCORPORATED IN THE TOWN PLANNING SCHEME IN TERMS OF SECTION 54 OF THE BY-LAW, IN ADDITION TO THE PROVISIONS OF THE CITY OF JOHANNESBURG LAND USE SCHEME, 2018.

(1) ERVEN 934 AND 935

- (a) Use Zone 13: "Industrial 3"
- (b) Primary Rights: Industrial purposes, commercial purposes, business purposes (excluding restaurants, motor showrooms, medical consulting rooms, domestic service industries), builders yard, building material storage.
- (c) Secondary uses: Uses in Column (3)
- (d) Uses not permitted: Uses in Column (4)
- (e) Height: 25m (3 storeys)
- (f) Coverage: 60%
- (g) F.S.R: 0.6
- (h) Density: Not applicable
- (i) Parking: Adequate, paved parking spaces, together with the necessary manoeuvring area, shall be provided on the erf to the satisfaction of the Council, in the following ratios:
- | | |
|-------------|--------------------------------|
| Commercial: | 0.3 bays per 100m ² |
| Offices: | 2 bays per 100m ² |
- (j) Building Lines: **Streets: 3m**
Other: Western boundary – 4,5 m
Eastern boundary – 0 m
- (k) General:
1. A site development plan, on a scale of 1:200 or such other scale as approved by the Council shall be submitted to the Council for approval before submission of any buildings plans. No building may be erected prior to the approval of such development plan by the Council and the entire development of the Council, the plan may be amended for time to time.
 2. The erven shall be landscaped and maintained to the satisfaction of the Council.
 3. No good or materials whatsoever nature shall be dumped placed or stored outside any buildings.
 4. Ingress and egress from the site shall be to the satisfaction of the local authority.
 5. The activities on the premises shall in no way be offensive, injurious, or a danger to health, or cause a nuisance, be it by noise, sight or smell.

ANNEXURE F: EXISTING WATER AND SEWER INFORMATION

EXISTING SEWER INFO



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EXISTING WATER INFO



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ANNEXURE G: WASTE WATER TREATMENT PLANT TECHNICAL SPECIFICATION



A Brand of ACO Group

Technical Specification sheet

For

P200-500 treatment plant

Waste water treatment plants Lzara AP-500

W-13231-00-00

Contend

Parameters2

Technological description.....2

 Mechanical pre-treatment, buffer tank.....3

 SBR reactor4

 Storage tank5

 Mechanical and electrical part5

Maintenance and service.....8

Guaranteed parameters of outlet water8

Disposition..... **Error! Bookmark not defined.**



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Parameters

Capacity [EO]	Usable hydraulic load [m ³ /day]	Usable biological load [kg BSK ₅ /day]	El. connection	Electric power installed [kW]	Electric consumption [kWh/day]	Dimensions	Weight [t]
200-500	30 – 75 (100 per 4 cycle)	12 – 30 (40 per 4 cycle)	400V / 50Hz	12,9	52	See page 7	3,47

Waste water treatment plant Lzara AP-500 are designed for treatment of municipal waste water origin from sources such as villages or parts of cities, resorts and hotels, manufacturing companies, and others. They are also suitable to those applications that have different load during the year as mountain hotels, summer resorts, and others.

The units Lzara AP-500 are technological equipment, designed with high resistance to hydraulic overload during daily hydraulic.

The technology is designed to reduce the demand for regular maintenance to a minimum. All electronic devices (pumps and blower) are guarded with alarms; it decreases especially the daily visual checking. Processes are automated and according to real load, the system automatically chooses the optimal operation mode, which significantly save the energy and helps to reach good treatment efficiency.

The technology is installed into strong monolithic polyethylene tank resistant to groundwater and which enables to installation up to load class D.

Sewage treatment plant AP-500 can be equipped with a device for the removing of total phosphorus.

Technological description

Mechanical pre-treatment, buffer tank

SBR reactor

Storage tank

Mechanical and electrical part



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Mechanical pre-treatment, buffer tank

The mechanical treatment tank is formed by mechanical pre-treatment part and buffer area which is designed to be able to hold 25% of daily hydraulic load.

Waste water flows into the tank of mechanical pre-treatment, the heaviest part settles at the tank bottom, and all another suspended solids are caught at high area screens. To make the maintenance of the screens easier, the screens are automatically cleaned with the medium size bubbles.

In the buffer area are accumulate high inflows during daily peak, its large capacity always ensure stability of SBR bioreactor. The end section is equipped with two cast iron submersible centrifugal pump (supply pump) with vortex impeller, each pump has installed power 1,5kW, it works app 20 minutes per day (each pump). The pumps have double protection to dry running. Buffer tank is equipped with alarm for high water level. It shows potential failure or stocking of the pump or request for maintenance of high area screens.

The pre-treated water is pumped to SBR reactor, the pump is commanded from main control unit installed in control panel.

In case of long-time blackout (no electric power is available) or period when the pump in buffer tank is out of operation the water from buffer tank can flow by gravity through by-pass to SBR reactor.



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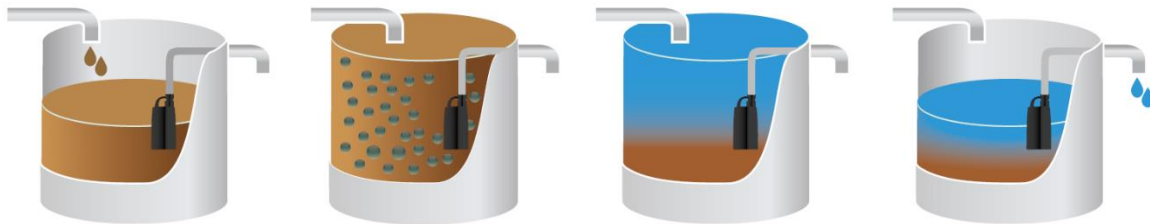
SBR reactor

The unit has two parallel SBR reactors. The filling of the SBR ensured is controlled by main microprocessor unit in control panel.

The function of biological treatment is based on the principle of low-loaded activation with the use of fine-bubble aeration. Sufficient volume and a large depth of the tank, low sludge load, high value oxygenation capacity and large residence time ensuring a high and effective operation of the whole biological process.

Aeration system is made in plastic; the membranes are made from PU.

SBR reactor is operated in sequences:



Filling stage

Pre-treated water is pumped into the SBR reactor.

React stage

Aeration, microorganisms remove organic matters from wastewater.

Settle stage

The interruption of aeration, microorganisms settles at the bottom of the tank and in the upper part gathers a layer of biologically treated water.

The incoming waste water is accumulated in the buffer tank.

Discharge stage

The pump discharges the treated water into the recipient. The incoming waste water is accumulated in the buffer tank.



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Treated water is discharged by two stainless steel submersible pumps with vortex impeller, installed power 0,55 kW each, the pumps runs app 20 minutes per day. The pumps are commanded from main control unit installed in control panel. Each pump has alarm which signalizes motor failure.

Each SBR reactor is equipped with air-lift pump for recirculation of activation sludge. The pumps are powered with air inlet from the blowers.

The SBR reactors are equipped with cast iron submersible centrifugal pump (surplus sludge pump) with vortex impeller, 0,35 kW each, the pumps are in operation 2 minutes per day (each).

The activation tank is equipped with high water level alarm; it indicated failure of discharge pumps or overloading of the units.

Storage tank

The surplus sludge is automatically discharged from each SBR reactor to storage tank. Inside the storage tank the sludge does sedimentation and become to be more concentrated (30-40 kg/m³).

The sludge water goes to SBR reactor.

Mechanical and electrical part

Control panel, microprocessor control unit

The whole waste water treatment plant is commanded from one central control panel. In the control panel is installed main control unit with programmable microprocessor and also all another electronic parts like main switch, motor breakers, switchers, relays, signalization lights, etc. Control panel wet and dust protection is level IP 55.

The standard programme which is uploaded in the microprocessor control unit suit for the most of waste water treatment applications. In case of any needs the programme can be modified directly on site using bottoms on the control panel or after connection with computer (windows application). In any of case all changes are protected by entering of PIN.

The system recognizes the real quantity of sewage inlet. According to this information it modify operation mode and use only necessary energy requested for reaching of perfect efficiency.

Additionally it is possible to add remote-control unit which allows doing controlling and modification of the system through the internet or GSM.

Blower



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The air supply for activation tank is ensured with side-channel blower with an operating power of app. 2,0 kW. The blower is commanded by main control unit installed inside the control panel. The operation time of the blower is depending on the real hydraulic load; usually it is 12-16 hours per day. The only maintenance of the blower is concerning cleaning or changing of the filter; additionally it can be supplied with high area filter to decrease this maintenance demand.

Supply pump

Supply of pre-treated waste water is ensured with high quality grey cast iron submersible pump with vortex impeller, operation power app 0,8 kW. The pump is commanded by main control unit installed inside the control panel. The operation time of the pump is depending on the real hydraulic load; usually it is 20 minutes per day in operation. The pump is equipped with the system of dry running protection. The pump has no regular maintenance demand. In some cases it can happen that the suction part of the pump can be stuck with heavy dirt.

Discharge pumps

Discharging of the treated water from activation tank to the outlet pipe is ensured with two high quality stainless steel submersible pumps with vortex impeller and operation power app. 0,4 kW (each pump). The pumps are commanded by main control unit installed inside the control panel. The operation time of the pumps is depending on the real hydraulic load; usually it is 20 minutes per day. The pump is equipped with the system of dry running protection. The pumps have no regular maintenance demand.

Surplus sludge pump

Removing of surplus sludge is ensured with high quality grey cast iron submersible pump with vortex impeller and, operation power app 0,28 kW.



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Alarms

The control panel signalize with red signal light on the front side:

- High water level in buffer tank
- High water level in activation tank
- Blower motor failure
- Supply pump motor failure
- Discharge pump motor failure
- Surplus sludge pump failure

The signal of the alarms can be additionally transferred to GSM (SMS or short ring) or the acoustic alarm can be added.

The control panel and the blower shall be installed close to the waste water treatment plant inside a technical room or technical object.

All components are high quality and made in European Union.



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Maintenance and service

The maintenance and service works are allowed to do only authorize persons and keeping general safety instruction.

The regular maintenance of the waste water treatment plants requested 8-10 hours of manual work monthly.

Description of activities during operation and maintenance and their frequency

Requested interval	Activity	Description
Daily	Blower operation check	Acoustic checking of the motor operation
Weekly	Visual check	Aeration in activation tank
		Pumps operation
		Treated water quality
		Buffer tank – water level and high area screens
Monthly	Checking of activation sludge	Sedimentation test
	Quality of treated water	Sampling
	Pumps visual check	Lifting and visual check, all pumps
	Checking / changing of blower filter	According to instruction in manual
Yearly	Authorize check of the whole unit	Carried out by authorized service partner, check of the blower, pumps, control unit, general condition of the unit
As needed	Desludging – buffer tank	Removing of primary sludge by faecal car
	Desludging – activation tank	Removing of surplus sludge by faecal car
	Cleaning of inner spaces of the tank	
	Cleaning of the external spaces of the unit	
10 years	Exchanging of aeration elements	Carried out by authorized service partner

Guaranteed parameters of outlet water

Guaranteed treatment results at nominal hydraulic and biological load are:

BOD₅25 mg/l

COD90 mg/l

SS35 mg/l

N-NH₄10 mg/l - temperature 12°C

