Structural, Civil and Transportation Engineers

LANSERIA AIRPORT EXTENSION 1
SOUTHERN PRECINCT

OUTLINE SCHEME REPORT
WATER AND SANITATION

REPORT 2023-195-01 Rev-1

NOVEMBER 2025

CLIENT: GROWTHPOINT PROPERTIES, APERTURE PROPERTIES & LANSERIA INTERNATIONAL AIRPORT

PREPARED BY:
EDS Engineering Design Services (Pty) Ltd
473 Lynnwood Road
Sussex Office Park, Block B Ground Floor
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Outline Scheme Report Information Sheet

Report number	:	2023-195-01-Rev-1
Local authority	:	City of Johannesburg Metropolitan Municipality
Zoning type	:	Special
Property description	:	Lanseria Extension 1, Southern Precinct

Report undertaken by:

Name	:	D.H. van der Merwe
Signature	:	
Qualifications	:	B.Eng (Civil)
Email address	:	dean@edseng.co.za

Report reviewed by:

Name	:	F.H.B van Eyk Pr. Eng
Signature	:	
Qualifications	:	B.Eng (Civil), B.Eng (Hons) (Water Resources)
ECSA Registration	:	Pr. Eng. 20160826
Email address	:	derik@edseng.co.za

LANSERIA AIRPORT EXTENSION 1 – SOUTHERN PRECINCT
OUTLINE SCHEME REPORT
WATER AND SANITATION

CONTENTS

1 INTRODUCTION

EDS Engineering Design Services (Pty) Ltd (EDS Engineers) was appointed to compile a Water and Sanitation Outline Scheme Report for a portion of Erf 183 Lanseria Airport Extension 1 referred to as the southern precinct of Lanseria Airport Extension 1.

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 development under the existing land-use rights and evaluates the proposed water and sew..er networks to accommodate the expected demands from the southern precinct of Lanseria Airport Extension 1.

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 Gauteng 2196
Contact Person:	Hilton Carty
Telephone Number:	(079) 916 3982
Company Name:	LANSERIA INTERNATIONAL AIRPORT
Physical Address:	Airport Road Lanseria 1748 South Africa
Contact Person:	Trevor Teegler
Telephone Number:	(012) 809 2229
Telephone Number:	(074) 800 0058

3 SITE INFORMATION

3.1 SITE LOCATION

The site is located within the municipal boundaries of the City of Johannesburg.

The site details are as follows:

Site		Erf 138 Lanseria Airport Extension 1 – Southern Precinct
Size		25.5 ha
Boundaries	North	Lanseria Extension 1 - Runway
	East	Extension 11 & 12
	West	Lanseria Ext 35 RE/5/530-JQ
	South	Lanseria Ext 75

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

3.2 PROPERTY DESCRIPTION

The application site is on the southern precinct portions of Lanseria Airport Extension 1.

The physical combined size of Southern Precinct applicable to the civil services of Lanseria Airport Extension 1 is 25.5 ha.

For the purposes of this report, the site will hereafter be referred to as Southern Precinct of Lanseria Airport Extension 1.

The proposed layout is included in **Annexure B**.

4 DEVELPOPMENT INFORMATION

4.1 EXISTING LAND-USE RIGHTS

Erf 183 Lanseria Airport Extension 1 is currently zoned “Special” permitting land use for purposes necessary and in connection with airport, including aircraft hangers, aircraft maintenance, storage of goods, and accessories related to aircraft maintenance offices which are related to the use of the erf and buildings for the purposes of aircraft operations, including shops, retail and place of refreshment facilities subservient to the main use of the erf (which shall not exceed 2 500m²), aircraft runways, taxi aprons, air traffic control towers, repair and maintenance facilities, and such other associated land uses which the municipality may approve in writing.

A copy of the land use rights certificates is included in **Annexure C**.

Table 4.1.1: Existing land use rights

Erf nr	Existing zoning	Size (ha)	Density	Coverage	FAR	Height
Lanseria Airport X1 Southern Precinct	Special	25.5	N/A	N/A	0.2	5 Storeys

All new developments will be situated within the existing township of Lanseria Airport Extension 1 and will not exceed the approved land use rights applicable to the township.

5 WATER RETICULATION

5.1 EXISTING WATER RETICULATION NETWORK

The existing water reticulation surrounding the development consists of the following:

- A reservoir located at position 25°57'12.87"S (Latitude) and 27°55'25.03"E (Longitude). Not commissioned.
- Lanseria Extension 1 receives water from the Cosmo City reservoir via a 250dia bulk supply

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

The existing internal water reticulation for the development consists of the following:

- From the bulk connection point a internal reticulation waterline supplies a water storage tank system. Which distributes the water internally.
- A 100 KL water storage tank with booster pumps.
- Existing 110mmΦ HDPE and PVC water network.

The existing as-built water information was received from Lanseria International Airport and is included in **Annexure E**, page 2.

5.2 DESIGN PARAMETERS

The following design parameters will be used for the detailed design of the water network:

- The Johannesburg Water Guidelines and Standards for the Design and Maintenance of Water and Sanitation Services will be used as the basis for the design parameters
- Guidelines for Human Settlement Planning and Design, 2019
- Design Consumption / Demand Criteria is obtained from Section 7.1.1
- Peak factors are obtained from Section 7.1.2 as follows:
    - In general, a peak factor may be taken as 4 times the average daily water demand
    - This is deemed to be too high, and diurnal water use patterns obtained from peer reviewed literature was used to reduce the infrastructure cost
- Flow velocities will be adhered to according to the table below:

Table 3: Preferred pipe velocities

Pipe	Preferred Velocity	Maximum Velocity
Diameter ≤ 160 mm	0.7 m/s	1.0 m/s – 3.5 m/s
Diameter ≥ 200 mm	1.0 m/s	1.5 m/s – 2.5 m/s
Feeder pipes to reservoirs	1.5 m/s	2.0 m/s
Special Fittings	n/a	6.0 m/s

- Water Pressure & Minimum Head
    - Design pressure should ideally be between 2.5 bar and 9.0 bar with an absolute minimum static pressure of 2.0 bar
    - The minimum residual head shall be 1.5 bar at any connection
- Fire Flow Criteria
    - The fire flow requirements are obtained from Table 7 in Section 7.1.4.
- Fire flow minimum diameter
    - The diameter of a pipe supplying water to a fire hydrant shall not be less than 100 mm

Further design parameters are applicable for the layout of the water reticulation in relation to the erf boundaries as well as the depth at which the pipes are to be installed.

5.3 ESTIMATED WATER DEMAND

The estimated water demand for the proposed development under existing land-use rights is shown in **Table 5.3.1** below.

Table 5.3.1: Estimated water demand for existing land-use rights under proposed development

Erf nr	Current Zoning	Site area (ha)	*GFA (ha)	Water demand (kl/ha *GFA)	AADD (kl/day)	Peak Factor	Peak flow (l/s)
Lanseria Airport X1 Southern Precinct	Special	25.5	7.651	10	76.51	4	3.54

*GFA – Gross Floor Area

Fire flow is to be calculated and submitted by the fire engineer at SDP and building approval stage.

The demand calculations are included in **Annexure F**. The actual usage can be gathered as this is an existing township.

5.4 PROPOSED INTERNAL UPGRADES AND CONNECTION POINT

The proposed development will be situated within the existing township of Lanseria Airport Extension 1 (X1).

A new internal water reticulation system will be implemented for the development, which will connect to the existing Lanseria Airport X1 infrastructure. All new water reticulation pipelines and fire hydrants will be installed by the developer.

A 110mm uPVC Class 12 domestic water pipeline is proposed to connect to the existing internal 110mm water reticulation pipe.

The layout of the existing water reticulation network within Lanseria Airport Extension

1, to which the new development will be connected, is included in **Annexure G**.

5.5 PROPOSED EXTERNAL WATER UPGRADES

No external water infrastructure upgrades will be required as part of this development.

5.6 ESTIMATED DEVELOPMENT CONTRIBUTIONS FOR WATER

No development charges are payable, as the existing land use rights will remain unchanged.

6 SEWER RETICULATION

6.1 EXISTING SEWER RETICULATION NETWORK

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

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

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

The existing internal sewer network and treatment works for the development consists of the following:

- Lanseria Airport has its own Waste Water Treatment Works (WWTW) that is currently in operation. For all existing demands and the current capacity of the WWTW, refer to **Annexure H**.
- The existing WWTW is located to the northeast of Lanseria Airport X1 runway.

The existing as-built water information was received from Lanseria International Airport and is included in **Annexure E**, page 1.

6.2 WATER-USE LICENCE

The approved water-use license for Lanseria Airport Waste Water Treatment Works (WWTW) is provided in **Annexure I**.

6.3 DESIGN PARAMETERS

The following design parameters will be used for the detailed design of the sewer network:

- The Johannesburg Water Guidelines and Standards for the Design and Maintenance of Water and Sanitation Services will be used as the basis for the design parameters
- Design flow criteria is obtained from Section 8.1.1 that outlines sewer discharge for various consumers
- Peak factors are obtained from Section 8.1.2 as follows:
    - 2.3 Factor for Residential
    - 1.3 Factor for Business
    - 1.5 Factor for Commercial
    - 1.8 – 2.3 Factor for Industrial
- Hydraulic design of gravity systems will be used according to the list below:
    - Minimum flow velocity 0.7 m/s

- Maximum flow velocity 3.0 m/s
- Minimum Pipe Diameter 160 mm for reticulation
- 110 mm for erf connections
- Maximum flow depth 67% at peak discharge

Further design parameters are applicable for the layout of the sewer reticulation in relation to the erf boundaries as well as the depth at which the pipes are to be installed.

Manholes must be placed at every change in gradient, junctions, and horizontal direction. The maximum spacing of manholes is 80 m.

6.4 EXPECTED SEWER OUTFLOW

The estimated sewer effluent for the proposed development under existing land-use 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)	*GFA (ha)	Demand (kl/100m^2 GFA)	ADDWF (kl/day)	ADWWF (kl/day)	Peak Factor	Peak flow (l/s)
Lanseria Airport X1 Southern Precinct	Special	25.5	7.651	0.16	122.42	140.78	1.8	2.93

*GFA – Gross Floor Area

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)

The demand calculations are included in **Annexure F**.

6.5 PROPOSED INTERNAL UPGRADES AND CONNECTION POINT

The new proposed development will be dedicated to aircraft-related operations and will rely on access to Taxiway Charlie. The levels and alignments within the development are governed by the *ICAO Doc 9157 – Aerodrome Design Manual, Part 2* standards. As a result of these design constraints, the proposed development will be situated at a lower elevation than the existing gravity sewer system that leads to the wastewater treatment plant (WWTP).

The development will therefore include a central sewer pump station, which will collect effluent via a gravity-fed network and pump it to the nearest gravity sewer line leading to the WWTP, as illustrated in **Annexure G**.

The internal sewer reticulation system will comprise 110mm Ø gravity sewer pipes and a 63mm Ø pumped rising main, both to be installed by the developer. Due to the proposed development, the existing 200mm Ø gravity sewer main will be rerouted accordingly.

The new proposed layout does not allow for the new network to gravity feed to the existing 200 Ø internal Lanseria network because of the strict Aerodrome Design Guidelines. The new buildings will be connected by a gravity pipe system that leads to an internal sewer pumpstation. From there the effluent will be pumped to the existing internal gravity system which leads to the Lanseria WWTW.

The layout of the existing sewer network within Lanseria Airport Extension 1, to which the new development will connect, is provided in **Annexure G**.

6.6 PROPOSED EXTERNAL SEWER UPGRADES

No external sewer infrastructure upgrades will be required as part of this development.

6.7 ESTIMATED BULK CONTRIBUTIONS FOR SEWER

No development charges are payable, as the existing land use rights will remain unchanged.

7 CONCLUSIONS AND RECOMMENDATION

The proposed development is located within the approved township of Lanseria Extension 1, which holds existing land use rights and established municipal service connections. The proposed development, situated in the southern precinct, will connect to these existing services.

An adequate on-site connection to the domestic water network is available for the development, and the existing water infrastructure has sufficient capacity to meet the anticipated water demand. Furthermore, the wastewater treatment works (WWTW) has the necessary capacity to accommodate the projected sewer load from the new development.

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: Proposed Township Layout
- Annexure C: Existing Land-Use Rights
- Annexure D: Existing JRA Water and Sewer Information
- Annexure E: Lanseria As-built Water and Sewer Drawings
- Annexure F: Demand Calculations
- Annexure G: Service Layout Drawings
- Annexure H: WWTW Capacity and Demands Information
- Annexure I: Water Use Licence

ANNEXURE A: SITE LOCATION MAP

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.

Rev. No:	Date:	Revision Details:	By:
A	28/03/'25	FOR INFORMATION	KB

Client:

Architect:

e•d•s
Structural, Civil and Transportation Engineers
Sussex Office Park
473 Lynnwood Road
Lynnwood
Pretoria
Tel: 012 991 1205
Fax: 012 991 1373
e-mail: info@edseng.co.za

Project:

LANSERIA AIRPORT EXTENSION1

Description:

LOCALITY PLAN (FIGURE 1)

Paper size:	Drawn:	Checked:	Designed:
A3	KB	D vd M	D vd M

Scale:	Project Number:	Drawing Number:	Revision:
1:5000	2019-094	0080	A

ANNEXURE B: PROPOSED TOWNSHIP LAYOUT

LAND LEASE PORTIONS

Scale 1 : 2000

GENERAL NOTES

ALL WORKS TO COMPLY WITH SANS 10400
OR BY RATIONAL APPROVED DESIGN
TO COMPLY WITH FOLLOWING GUIDELINES

B: Structural Design SANS 10400-B, *Structural design*
C: Dimensions SANS 10400-C, *Dimensions*
D: Public Safety SANS 10400-D, *Public safety*
F: Site Operations SANS 10400-F, *Site operations*
G: Excavations SANS 10400-G, *Excavations*
H: Foundations SANS 10400-H, *Foundations*
J: Floors SANS 10400-J, *Floors*
K: Walls SANS 10400-K, *Walls*
L: Roofs SANS 10400-L, *Roofs*
M: Stairways SANS 10400-M, *Stairways*
N: Glazing SANS 10400-N, *Glazing*
O: Lighting and Ventilation SANS 10400-O, *Lighting and ventilation*
P: Drainage SANS 10400- P, *Drainage*
Q: Non-water-borne Means of Sanitary Disposal
SANS 10400-Q, *Non-water-borne means of sanitary disposal*
R: Stormwater Disposal SANS 10400-R, *Stormwater disposal*
S: Facilities for Persons with Disabilities SANS 10400-S, *Facilities for persons with disabilities.*
T: Fire Protection SANS 10400-T, *Fire protection*
V: Space Heating SANS 10400-V, *Space heating*
W: Fire Installation SANS 10400-W, *Fire installation*

REV #	DATE	BY	DESCRIPTION
N	2025.09.29		ISSUED FOR INFORMATION
M	2025.09.16	DJF	ISSUED FOR INFORMATION
L	2025.09.16	DJF	ISSUED FOR INFORMATION
K	2025.09.08	DJF	ISSUED FOR INFORMATION
J	2025.08.07	DJF	ISSUED FOR INFORMATION
I	2025.08.04	DJF	ISSUED FOR INFORMATION
H	2025.06.17	DJF	ISSUED FOR INFORMATION
G	2025.06.04	DJF	ISSUED FOR INFORMATION
F	2024.11.19	DJF	ISSUED FOR INFORMATION
E	2024.05.02	DJF	ISSUED FOR INFORMATION
D	2024.04.22	DJF	ISSUED FOR INFORMATION
C	2024.04.19	DJF	ISSUED FOR INFORMATION
B	2024-04-17	DJF	ISSUED FOR INFORMATION
A	2023-11-30	DJF	ISSUED FOR INFORMATION

empowered spaces architects
tel: 011 883 8380/6 fax : 086 632 8181 16 Holt Street,Glenadrienne
P.O Box 5178, Rivonia,2128 info@espaces.co.za www.espaces.co.za

client
GROWTHPOINT

signature

project
PROPOSED NEW DEVELOPMENT

stand number
BULTFONTEIN 533-JQ
BOTESDAL 529-JQ

engineer	.
contact	.
signature	

project architect	JONATHAN LEIBOWITZ
contact	011 883 8380
signature	

drawing description
LAND LEASE PORTIONS

job number	drawing number
1625	P012

A1	drawn	DJF
	scale	1 : 2000
	date	Issue Date

revision number	issued for
N	INFORMATION

2025/09/29 10:11:46

ANNEXURE C: EXISITNG LAND-USE RIGHTS

DEVELOPMENT PLANNING
LEGAL ADMINISTRATION

Memo

TO : **GIS - J THOMAS**
VALUATION SERVICES

OUR REF : 03-17300

DATE : 12 March 2019

ERF 183 Lanseria Airport Ext.1

Attached, please find copies of approved Map 3 documents as well as the Notice to the Gazette for proclamation, for your records.

DEPUTY DIRECTOR: LEGAL ADMINISTRATION
DEVELOPMENT PLANNING

Phaswana Mulalo J
TEL : 407-7119
FAX : 339-1707

CITY OF JOHANNESBURG
DEVELOPMENT PLANNING
2019 -03- 13
DOCUMENT RECEIVED:.....
ADMIN ASSISTANT: REGISTRATION
LEGAL ADMINISTRATION

PLAASLIKE OWERHEID KENNISGEWING 415 VAN 2019

STAD VAN TSHWANE METROPOLITAANSE MUNISIPALITEIT

KENNISGEWING VAN 'N AANSOEK VIR DIE OPHEFFING VAN BEPERKENDE TITELVOORWAARDES IN DIE TITELAKTE INGEVOLGE ARTIKEL 16(2) VAN DIE STAD TSHWANE GRONDGEBRUIKBESTUURSBYWET, 2016

Ons, The Town Planning Hub cc, synde die gemagtigde agent/aansoeker van **Gedeelte 20 van die plaas Hartebeestfontein 484-JR**, gee hiermee ingevolge Artikel 16(1)(f) van die Stad Tshwane Grondgebruikbestuur Verordening, 2016 kennis dat ons by die Stad van Tshwane Metropolitaanse Munisipaliteit aansoek gedoen het vir die verwydering van sekere voorwaardes soos vervat in die Titel Akte in terme van Artikel 16(2) van die Stad Tshwane Grondgebruikbestuur Verordening, 2016 van die bogenoemde eiendom. Die eiendom is geleë suid van die R495; oos van die stad Rayton op pad na Ekangala in die ooste.

Die aansoek is vir die opheffing van voorwaardes (b)(i), (b)(ii), (b)(iii) in Titelakte T44692/2005 van die eiendom. Die bedoeling van die eienaar is om die bestaande trou venue te wettig deur middel van 'n toestemmingsgebruik aansoek. Daar is egter beperkende voorwaardes vervat in die Titelakte, wat verwyder moet word.

Enige besware en/of kommentare wat duidelik die gronde van die beswaar, asook die persoon(ne) se volle kontakbesonderhede, waar sonder die Munisipaliteit nie met die persoon(ne) kan korrespondeer nie, moet binne 'n tydperk van 28 dae vanaf **6 Maart 2019**, skriftelik by of tot die Strategiese Uitvoerende Direkteur: Stadsbeplanning en Ontwikkeling, ingedien of gerig word by Posbus 3242, Pretoria, 0001, of na CityP_Registration@tshwane.gov.za tot **3 April 2019**.

Volledige besonderhede en planne (as daar is) kan gedurende gewone kantoorure geinspekteer word by die Munisipale kantore soos hieronder uiteengesit, vir 'n tydperk van 28 dae vanaf die datum van eerste publikasie van die kennisgewing in die Provinsiale Koerant, Beeld en Citizen koerante.

Adres van Munisipale Kantore: Munisipale Kantore, Isivuno House, Kamer LG004, 143 Lilian Ngoyistraat, Pretoria.
Sluitingsdatum vir enige besware en/of kommentaar: 3 April 2019
Adres van agent : The Town Planning Hub cc; Posbus 11437, Silver Lakes, 0054; 98 Pony Straat, Tijgervallei Kantoor Park, Silver Lakes, Pretoria. Tel: (012) 809 2229 Faks: (012) 809 2090. Ref: TPH18281
Datums waarop die advertensie geplaas word: 6 en 13 Maart 2019
Verwysing nr: CPD484-JR/1004/00020 **Item nr:** 29894

6-13

LOCAL AUTHORITY NOTICE 416 OF 2019

AMENDMENT SCHEME 03-17300

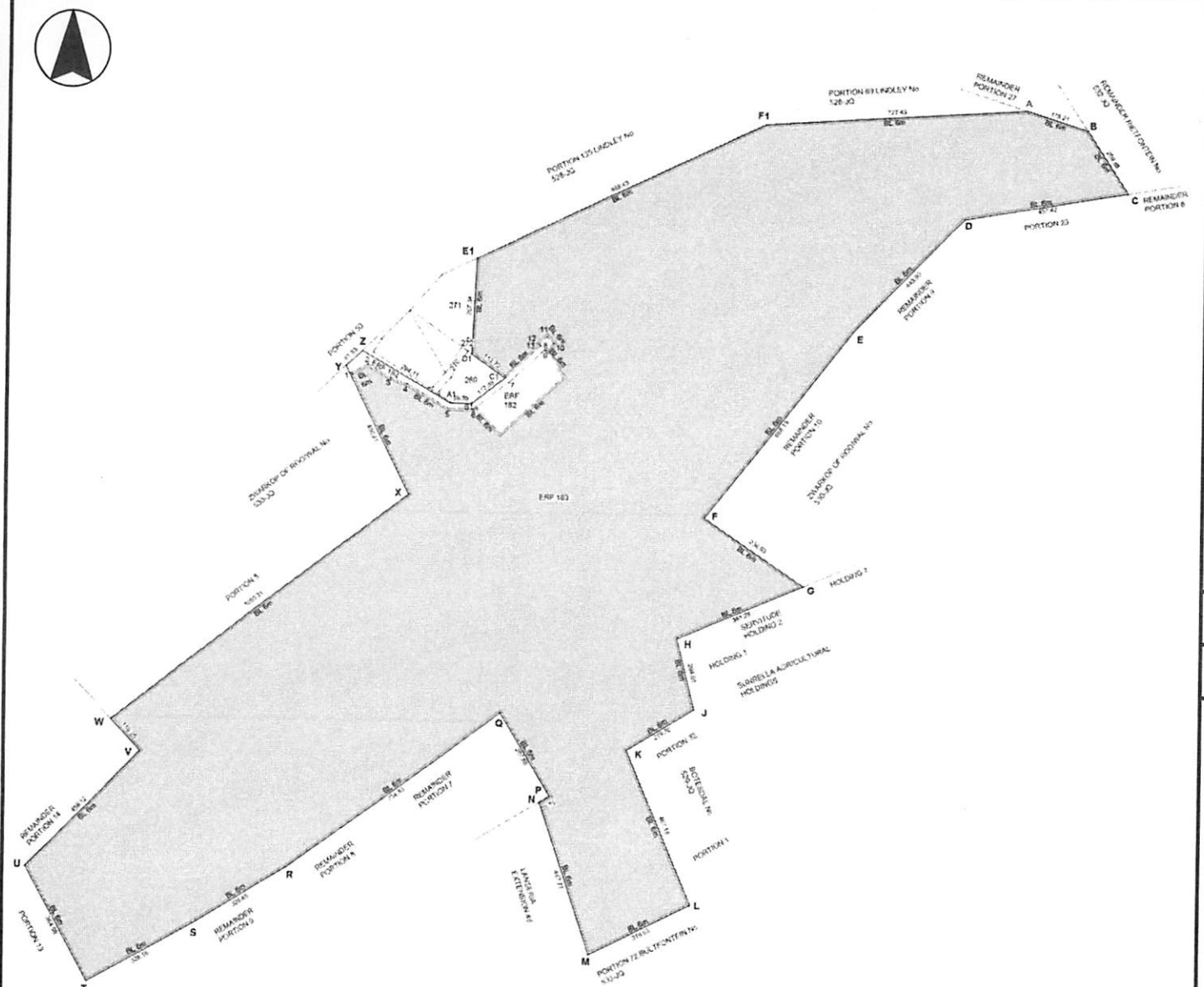
Notice is hereby given in terms of Section 22(4) of the City of Johannesburg Municipal Planning By-Law, 2016, that the City of Johannesburg Metropolitan Municipality has approved the amendment of the Peri-Urban Areas Town Planning Scheme, 1975, by the rezoning of Erf 183 Lanseria Airport Extension 1 from "Special" to "Special", subject to certain conditions as indicated in the approved application, which Amendment Scheme will be known as Amendment Scheme 03-17300 Amendment Scheme 03-17300 will come into operation on the date of publication hereof.

The Amendment Scheme is filed with the Executive Director: Development Planning, 158 Civic Boulevard, Metropolitan Centre, A Block, 8th Floor, Braamfontein 2017 and is open for inspection at all reasonable times.

Hector Bheki Makhubo
Deputy Director: Legal Administration
City of Johannesburg Metropolitan Municipality /
Notice No 187/2019

CODE 111 PERI-URBAN AREAS TOWN PLANNING SCHEME 1975 MAP **3** **A** SERIES AMENDMENT SCHEME 03-17300 • SHEET 1 OF 4

SCALE 1:12500



ERF 183 LANSERIA AIRPORT EXTENSION 1

REFERENCE

USE ZONES

SPECIAL

GENERAL

BUILDING LINE FOR THE PROPERTY BOUNDARY

TOWNSHIP BOUNDARY

APPROVED

EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING (CITY OF JOHANNESBURG)

23/07/18

DATE

USE ZONES

Use Zone:	**XI: Special**
Primary Rights:	**The erf and the buildings thereon shall be used for the purpose necessary and in connection with an airport, including aircraft hangars, aircraft maintenance, storage of goods, and accessories related to aircraft maintenance offices which are related to the use of the erf and buildings for the purpose of aircraft operations, including shops, retail and place of refreshment facilities subservient to the main use of the erf (which shall not exceed 2 500 m²), aircraft runways, taxi aprons, air traffic control towers, repair and maintenance facilities, and such other associated land uses which the municipality may approve in writing.**
Consent Rights:	**As per Scheme**
Height:	**5 Storeys**
Coverage:	**Coverage shall be to the satisfaction of the local authority in accordance with the Site Development Plan**
Floor Area:	**0.2**
Density:	**N/A**
Parking Provision:	**As per Scheme**
Building lines:	**As per scheme, provided that these may be relaxed in accordance with an approved Site Development Plan**
Parking:	**Office – 2 parking spaces per 100 m² of floor area. Aircraft hangars – 1 parking space per 300 m² floor area Place of Refreshment – 1 parking space per 4 seats Other land uses – To the satisfaction of the municipality Provided that these parking requirements may be relaxed in accordance with an approved Site Development Plan**

ERF 183 LANSERIA AIRPORT EXTENSION 1

APPROVED

EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING (CITY OF JOHANNESBURG)

23/07/10

DATE

ERF 183 LANSERIA AIRPORT EXTENSION 1

Building Lines: As Per Scheme.
Provided that the building lines may be relaxed on approval of a Site Development Plan.

General

1. A Site Development Plan, compiled to a scale of 1:500 or such other scale as may be approved by the local authority shall be submitted for approval to the local authority prior to submission of any building plans. No buildings shall be erected on the erf until such Site Development Plan has been approved by the local authority, and the entire development of the erf shall be in accordance with the approved site development plan.

2. Access to and ingress from the erven shall be to the satisfaction of the relevant authorities.

3. All comments from the City's Municipal Owned Entities (MOE's) to be adhered to, to the satisfaction of the council.

4. All conditions stipulated by the Civil Aviation Authority to be adhered to, to the satisfaction of the council.

APPROVED

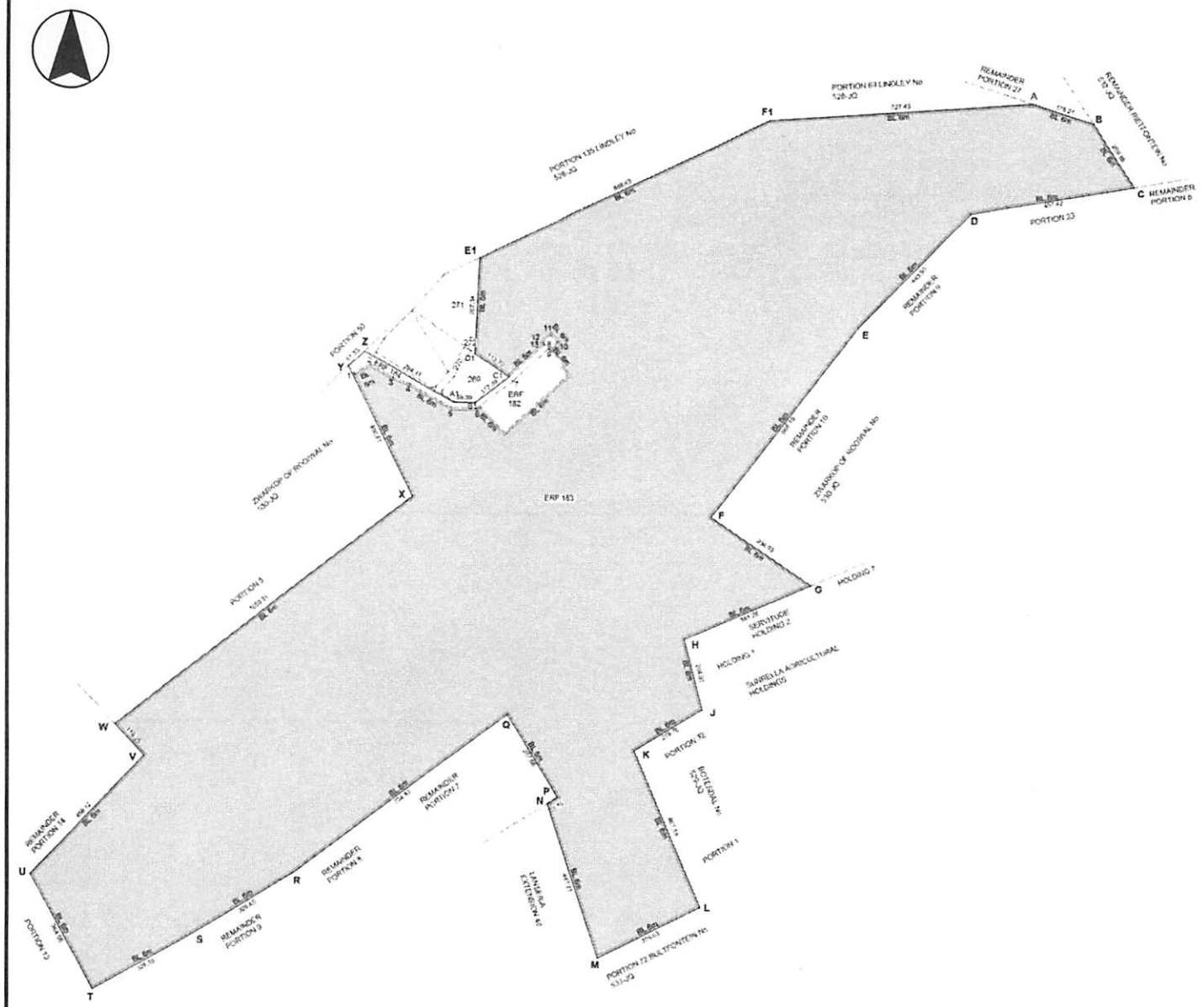
EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING
(CITY OF JOHANNESBURG)

23/07/18

DATE

CODE 111 PERI-URBAN AREAS TOWN PLANNING SCHEME 1975 MAP 3 A SERIES AMENDMENT SCHEME 03-17300 • SHEET 1 OF 4

SCALE 1:12500



ERF 183 LANSERIA AIRPORT EXTENSION 1

REFERENCE

USE ZONES

SPECIAL

GENERAL

BUILDING LINE FOR THE PROPERTY BOUNDARY

TOWNSHIP BOUNDARY

APPROVED

EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING (CITY OF JOHANNESBURG)

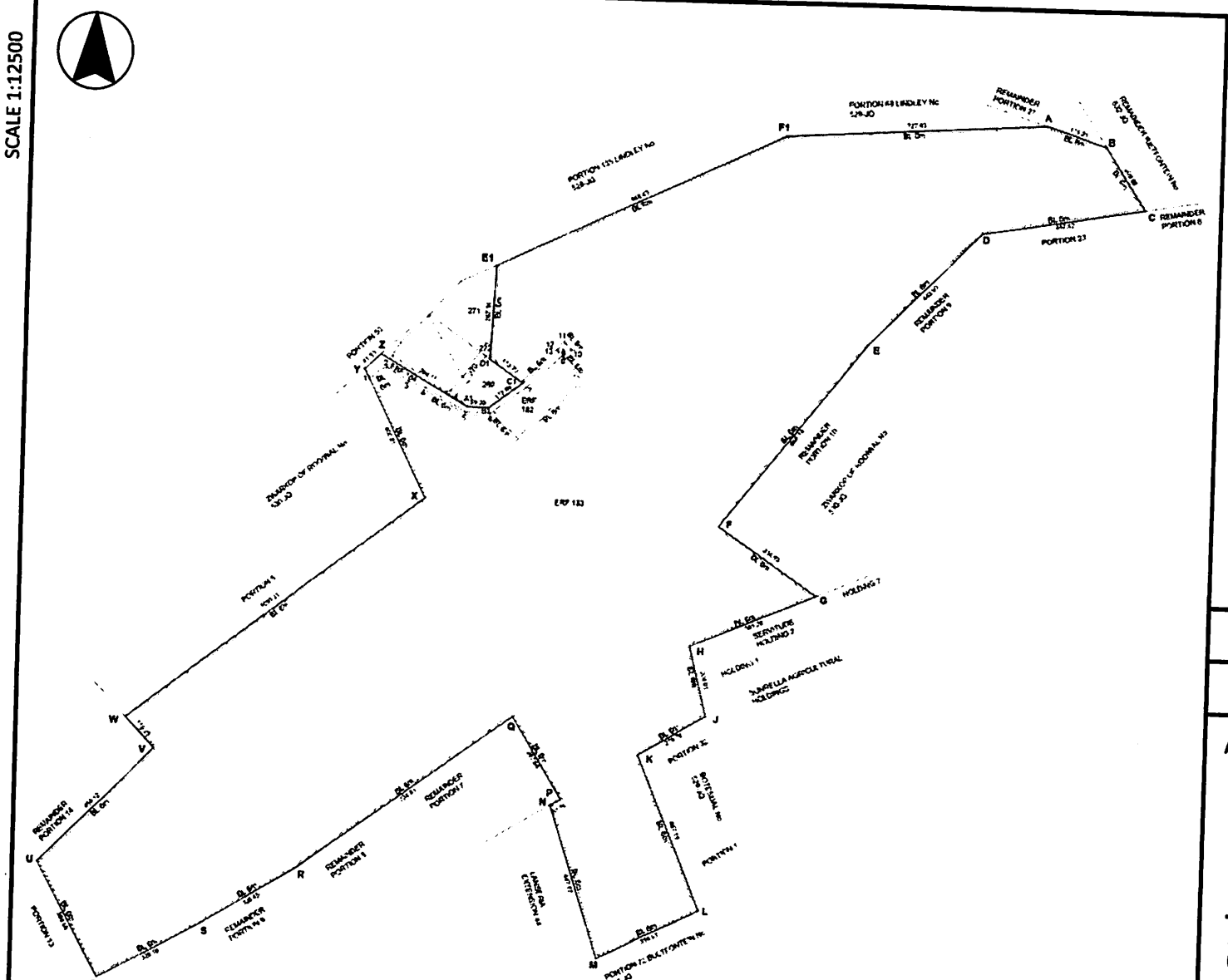
23/07/18

DATE

USE ZONES

CODE 111 PERI-URBAN AREAS TOWN PLANNING SCHEME 1975 MAP 3 A SERIES AMENDMENT SCHEME 03-17300 • SHEET 2 OF 4

SCALE 1:12500



ERF 183 LANSERIA AIRPORT EXTENSION 1

REFERENCE

GENERAL

BUILDING LINE FOR THE PROPERTY BOUNDARY (6 m AS PER SCHEME)

TOWNSHIP BOUNDARY

APPROVED

EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING (CITY OF JOHANNESBURG)

27/07/18

DATE

DENSITY ZONES AND HEIGHT ZONES

Use Zone:	**XI: Special**
Primary Rights:	**The erf and the buildings thereon shall be used for the purpose necessary and in connection with an airport, including aircraft hangars, aircraft maintenance, storage of goods, and accessories related to aircraft maintenance offices which are related to the use of the erf and buildings for the purpose of aircraft operations, including shops, retail and place of refreshment facilities subservient to the main use of the erf (which shall not exceed 2 500 m²), aircraft runways, taxi aprons, air traffic control towers, repair and maintenance facilities, and such other associated land uses which the municipality may approve in writing.**
Consent Rights:	**As per Scheme**
Height:	**5 Storeys**
Coverage:	**Coverage shall be to the satisfaction of the local authority in accordance with the Site Development Plan**
Floor Area:	**0.2**
Density:	**N/A**
Parking Provision:	**As per Scheme**
Building lines:	**As per scheme, provided that these may be relaxed in accordance with an approved Site Development Plan**
Parking:	**Office – 2 parking spaces per 100 m² of floor area. Aircraft hangars – 1 parking space per 300 m² floor area Place of Refreshment – 1 parking space per 4 seats Other land uses – To the satisfaction of the municipality Provided that these parking requirements may be relaxed in accordance with an approved Site Development Plan**

ERF 183 LANSERIA AIRPORT EXTENSION 1

APPROVED

EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING (CITY OF JOHANNESBURG)

23/07/18

DATE

ERF 183 LANSERIA AIRPORT EXTENSION 1

Building Lines: **As Per Scheme.**
Provided that the building lines may be relaxed on approval of a Site Development Plan.

General

1. A Site Development Plan, compiled to a scale of 1:500 or such other scale as may be approved by the local authority shall be submitted for approval to the local authority prior to submission of any building plans. No buildings shall be erected on the erf until such Site Development Plan has been approved by the local authority, and the entire development of the erf shall be in accordance with the approved site development plan.

2. Access to and ingress from the erven shall be to the satisfaction of the relevant authorities.

3. All comments from the City's Municipal Owned Entities (MOE's) to be adhered to, to the satisfaction of the council.

4. All conditions stipulated by the Civil Aviation Authority to be adhered to, to the satisfaction of the council.

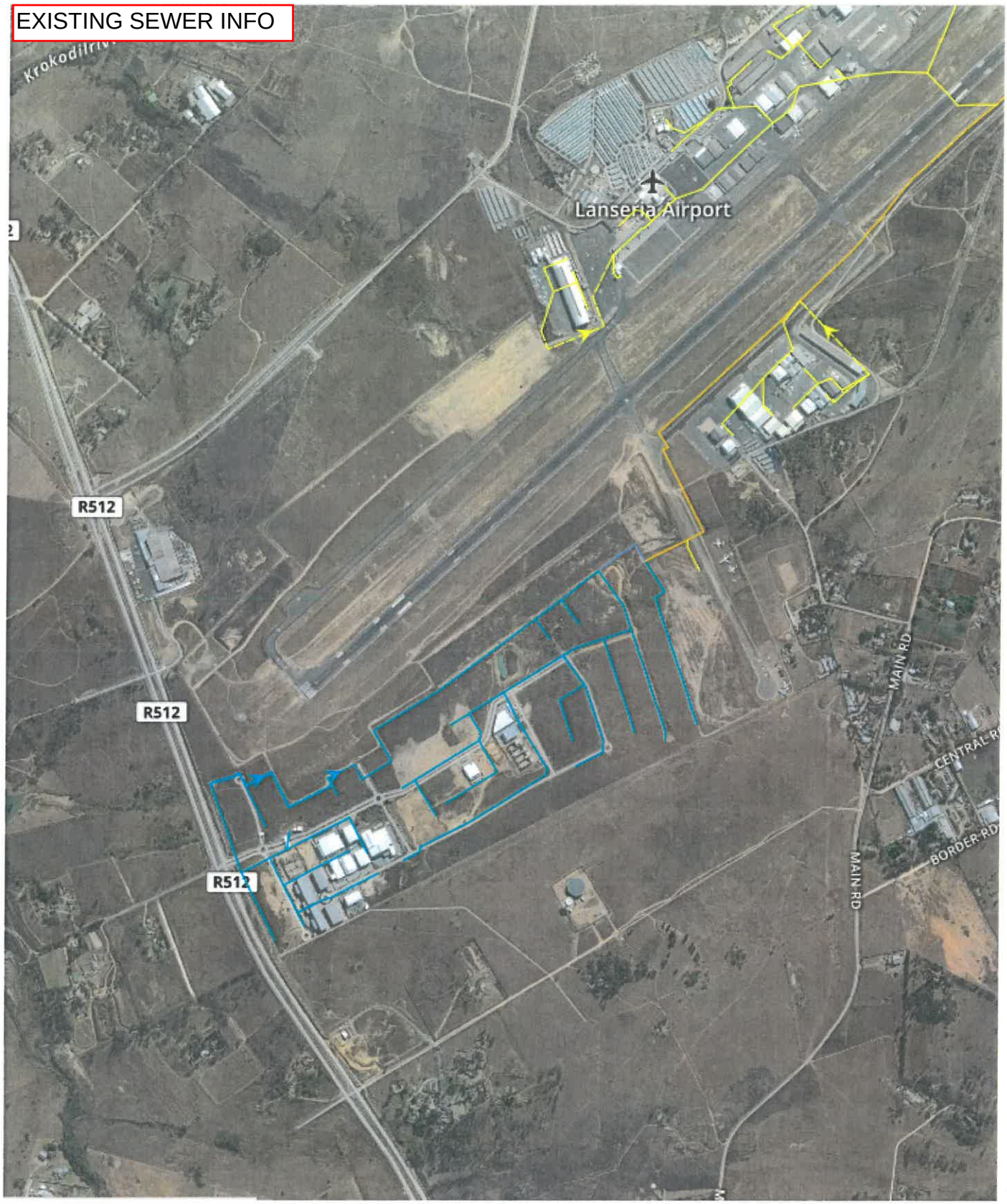
APPROVED

EXECUTIVE DIRECTOR: DEVELOPMENT PLANNING
(CITY OF JOHANNESBURG)

27/07/18

DATE

ANNEXURE D: EXISTING JRA WATER AND SEWER INFORMATION



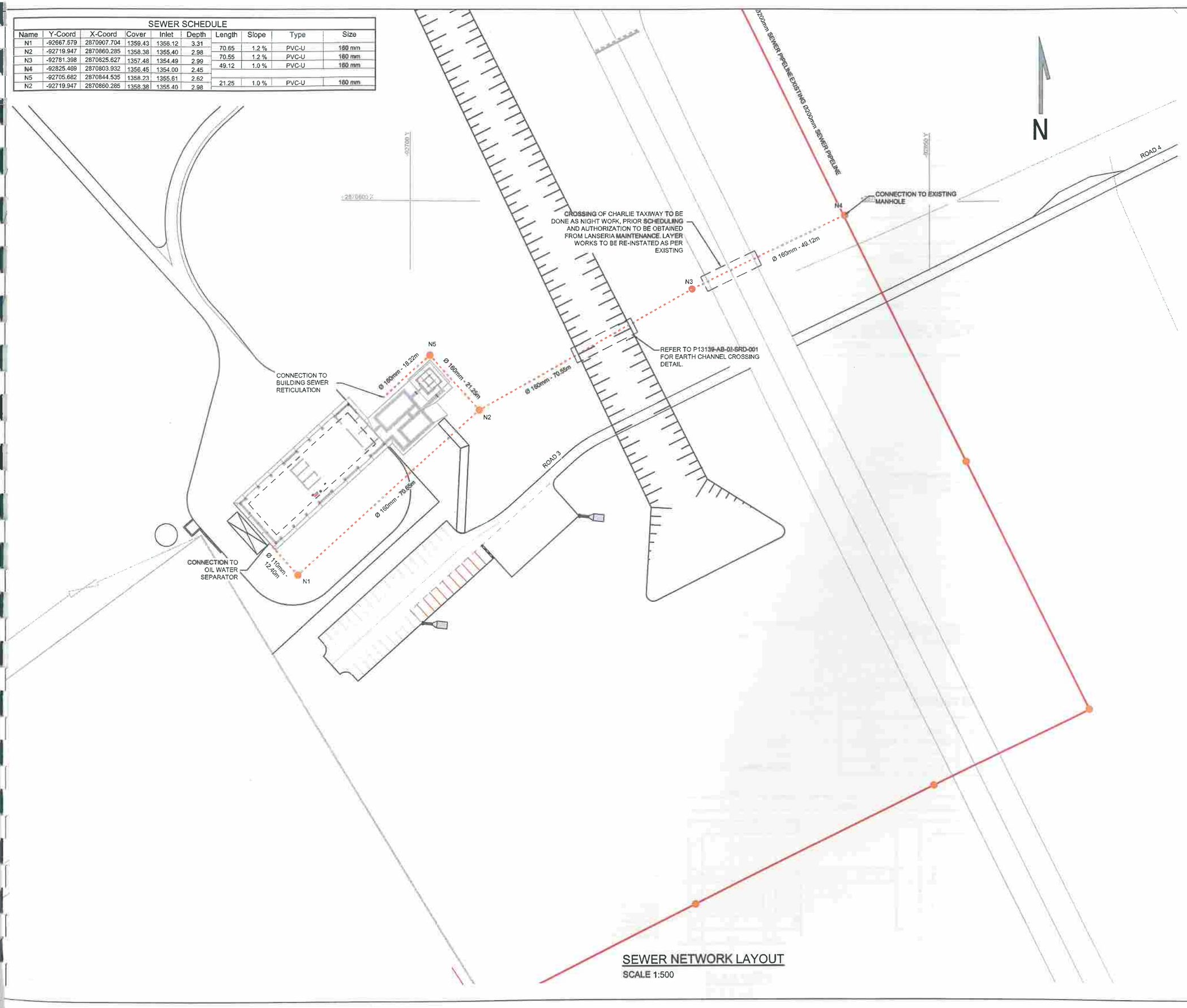
Disclaimer

Disclaimer

ANNEXURE E: LANSERIA AS-BUILT WATER AND SEWER DRAWINGS

SEWER SCHEDULE

Name	Y-Coord	X-Coord	Cover	Inlet	Depth	Length	Slope	Type	Size
N1	-92667.579	2870907.704	1359.43	1356.12	3.31				
N2	-92719.947	2870860.285	1358.38	1355.40	2.98	70.65	1.2 %	PVC-U	160 mm
N3	-92781.398	2870825.627	1357.48	1354.49	2.99	70.55	1.2 %	PVC-U	160 mm
N4	-92825.469	2870803.932	1356.45	1354.00	2.45	49.12	1.0 %	PVC-U	160 mm
N5	-92705.682	2870844.535	1358.23	1355.61	2.62				
N2	-92719.947	2870860.285	1358.38	1355.40	2.98	21.25	1.0 %	PVC-U	160 mm



SEWER NETWORK LAYOUT
SCALE 1:500

Cad File Name: OBEC-MRPRO-09-06
P13139-AB-02-SR-001 REV 1 - SEWER NETWORK LAYOUT

GREEN BUILDING COUNCIL | CESA

LEGEND:

- SEWER NETWORK
- SEWER NETWORK
- SEWER MAN HOLES

AS BUILT – SOOS GEBOU

FOR DELTA BUILT ENVIRONMENT CONSULTANTS

AS BUILT

Rev	Date	Description of changes	By
1	23-06-2017	AS BUILT DRAWING	PDW

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APPROVED PR ENG NO:920100

THE MASTER HELD AT DELTA BUILT ENVIRONMENT CONSULTANTS BEARS THE ORIGINAL SIGNATURE OF APPROVAL.

SIGNATURE: NAME: DATE:

Project

LANSERIA INTERNATIONAL AIRPORT

Project Description

LIA FIRE STATION AND TOWER

Drawing Title

SEWER NETWORK LAYOUT

Drawing Units	Drawing Size
METERS	A1

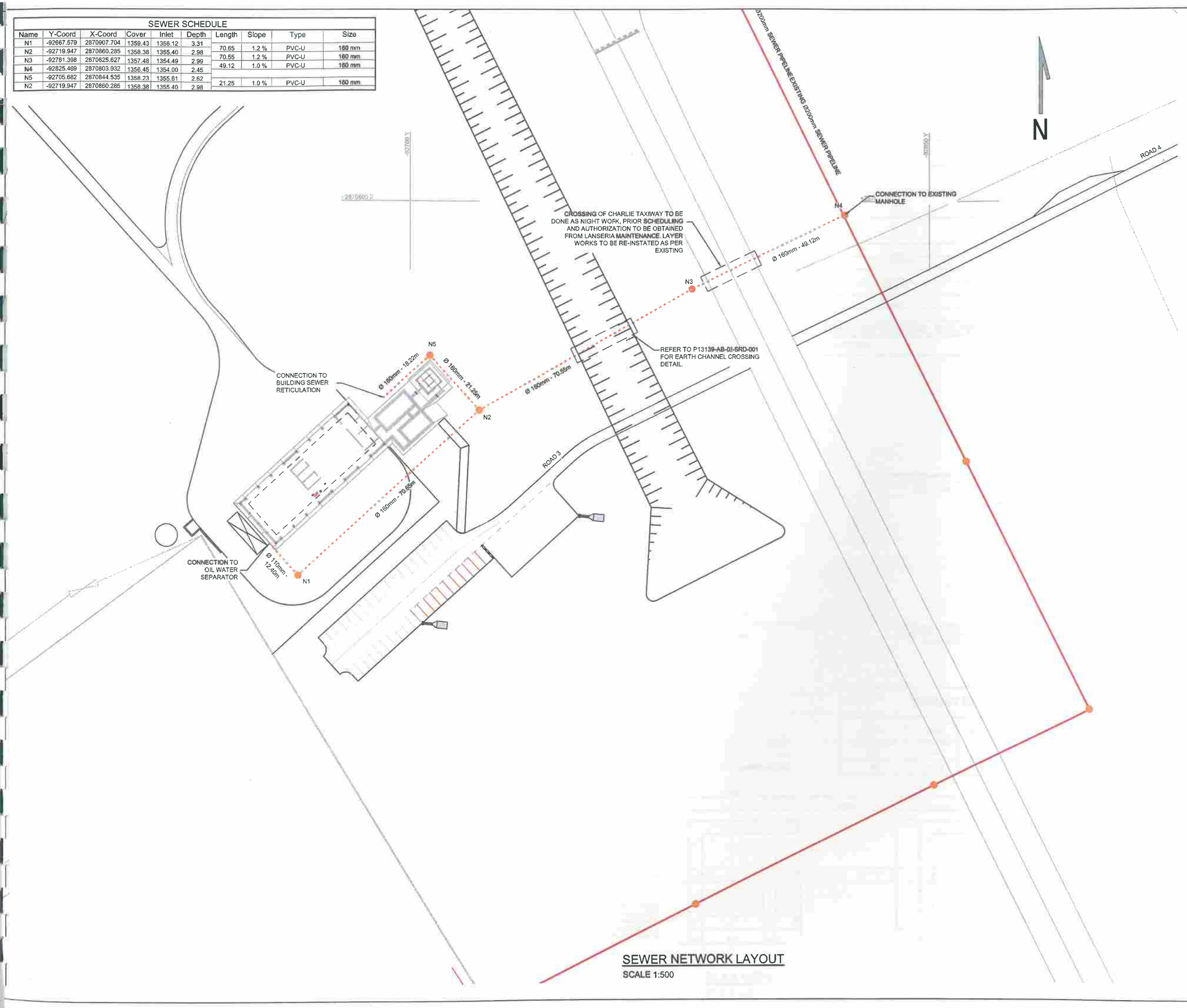
Date	Scale	Designed By
MARCH 2015	1:500	G MCKENZIE

Checked By	Drawn By	Approved By
S LE ROUX	W RAMOKGABA	P DE WET

Drawing No. P13139-CN-02-SR-001 Rev 1

SEWER SCHEDULE

Name	Y-Coord	X-Coord	Cover	Inlet	Depth	Length	Slope	Type	Size
N1	-92667.579	2870907.704	1359.43	1356.12	3.31				
N2	-92719.947	2870860.285	1358.38	1355.40	2.98	70.65	1.2 %	PVC-U	160 mm
N3	-92781.398	2870825.627	1357.48	1354.49	2.99	70.55	1.2 %	PVC-U	160 mm
N4	-92825.469	2870803.932	1356.45	1354.00	2.45	49.12	1.0 %	PVC-U	160 mm
N5	-92705.682	2870844.535	1358.23	1355.61	2.62				
N2	-92719.947	2870860.285	1358.38	1355.40	2.98	21.25	1.0 %	PVC-U	160 mm



SEWER NETWORK LAYOUT
SCALE 1:500

Cad File Name: OBEC-MRPRO-09-06
P13139-AB-02-SR-001 REV 1 - SEWER NETWORK LAYOUT

GREEN BUILDING COUNCIL | CESA

LEGEND:

- SEWER NETWORK
- SEWER NETWORK
- SEWER MAN HOLES

AS BUILT – SOOS GEBOU

FOR DELTA BUILT ENVIRONMENT CONSULTANTS

AS BUILT

Rev	Date	Description of changes	By
1	23-06-2017	AS BUILT DRAWING	PDW

REVISIONS

Client

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APPROVED PR ENG NO:920100

THE MASTER HELD AT DELTA BUILT ENVIRONMENT CONSULTANTS BEARS THE ORIGINAL SIGNATURE OF APPROVAL.

SIGNATURE: NAME: DATE:

Project

LANSERIA INTERNATIONAL AIRPORT

Project Description

LIA FIRE STATION AND TOWER

Drawing Title

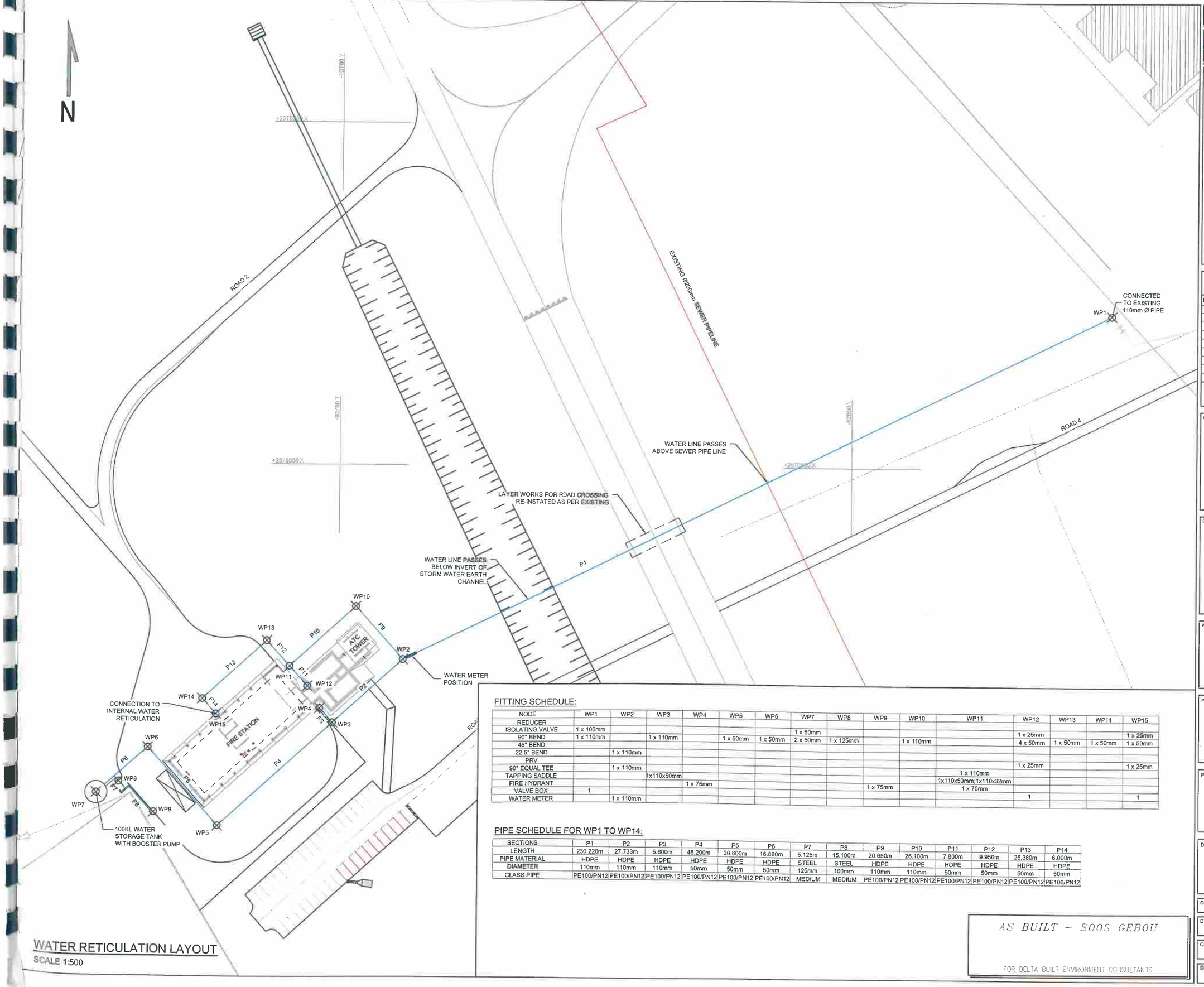
SEWER NETWORK LAYOUT

Drawing Units	Drawing Size
METERS	A1

Date	Scale	Designed By
MARCH 2015	1:500	G MCKENZIE

Checked By	Drawn By	Approved By
S LE ROUX	W RAMOKGABA	P DE WET

Drawing No. P13139-CN-02-SR-001 Rev 1



WATER RETICULATION LAYOUT

SCALE 1:500

FITTING SCHEDULE:

NODE	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	WP11	WP12	WP13	WP14	WP15
REDUCER							1 x 50mm					1 x 25mm			1 x 25mm
ISOLATING VALVE	1 x 100mm														
90° BEND	1 x 110mm		1 x 110mm		1 x 50mm	1 x 50mm	2 x 50mm	1 x 125mm		1 x 110mm		4 x 50mm	1 x 50mm	1 x 50mm	1 x 50mm
45° BEND		1 x 110mm													
22.5° BEND												1 x 25mm			1 x 25mm
PRV		1 x 110mm									1 x 110mm				
90° EQUAL TEE			1x110x50mm								1x110x50mm;1x110x32mm				
TAPPING SADDLE				1 x 75mm					1 x 75mm		1 x 75mm				
FIRE HYDRANT												1			1
VALVE BOX	1														
WATER METER		1 x 110mm													

PIPE SCHEDULE FOR WP1 TO WP14:

SECTIONS	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14
LENGTH	230.220m	27.733m	5.600m	45.200m	30.600m	16.880m	5.125m	15.100m	20.650m	26.100m	7.800m	9.950m	25.380m	6.000m
PIPE MATERIAL	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE	STEEL	STEEL	HDPE	HDPE	HDPE	HDPE	HDPE	HDPE
DIAMETER	110mm	110mm	110mm	50mm	50mm	50mm	125mm	100mm	110mm	110mm	50mm	50mm	50mm	50mm
CLASS PIPE	PE100/PN12	PE100/PN12	PE100/PN12	PE100/PN12	PE100/PN12	PE100/PN12	MEDIUM	MEDIUM	PE100/PN12	PE100/PN12	PE100/PN12	PE100/PN12	PE100/PN12	PE100/PN12

AS BUILT - SOOS GEBOU

FOR DELTA BUILT ENVIRONMENT CONSULTANTS

Cad File Name: DBEC-MRPRO-06-06
P13139-AB-02-WR-001 REV 1 WATER RETICULATION LAYOUT

GREEN BUILDING COUNCIL | CESA

LEGEND:

NOTE:
THESE DRAWINGS ARE TO BE USED FOR CONSTRUCTION PURPOSES **ONLY** AND **NOT** FOR AERONAUTICAL PURPOSES.

NEW WATER NETWORK

AS BUILT

Rev	Date	Description of changes	By
1	23-06-2017	AS BUILT DRAWING	PDW

REVISIONS

Client

LANSERIA INTERNATIONAL AIRPORT

PRIVATE BAG X1
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FAX: +27-12-348-4738

APPROVED PR ENG NO: 920100

THE MASTER HELD AT DELTA BUILT ENVIRONMENT CONSULTANTS BEARS THE ORIGINAL SIGNATURE OF APPROVAL

SIGNATURE: NAME: DATE:

Project

LANSERIA INTERNATIONAL AIRPORT

Project Description

LIA FIRE STATION AND TOWER

Drawing Title

WATER RETICULATION LAYOUT

Drawing Units	Drawing Size
METERS	A1

Date	Scale	Designed By
MARCH 2017	1:500	G MCKENZIE

Checked By	Drawn By	Approved By
E SMIT	W RAMOKGABA	P DE WET

Drawing No. P13139-AB-02-WR-001 Rev 1

ANNEXURE F: WATER AND SEWER DEMAND CALCULATIONS

PROPERTY INFORMATION:

DATE 08/04/2025

Application Type	Existing Rights Unchanged	
Site Name	Lanseria Extension 1, Southern Precinct	
Property Size	255000	m2
Property Size	25.5	ha

WATER DEMAND

Proposed Development Conditionson Existing Land Use Rights:

Portion No.	Zoning	Site Area (m²)	FAR	Gross Floor Area (ha)	Water Demand (kℓ/ha/d)	AADD (kl/day)	Peak Factor	Peak Flow (l/s)
Lanseria Extension 1, Southern Precinct	'Special'	255000	0.2	7.6514	10	76.51	4	3.54
Total		**255000**				**76.51**		**3.54**

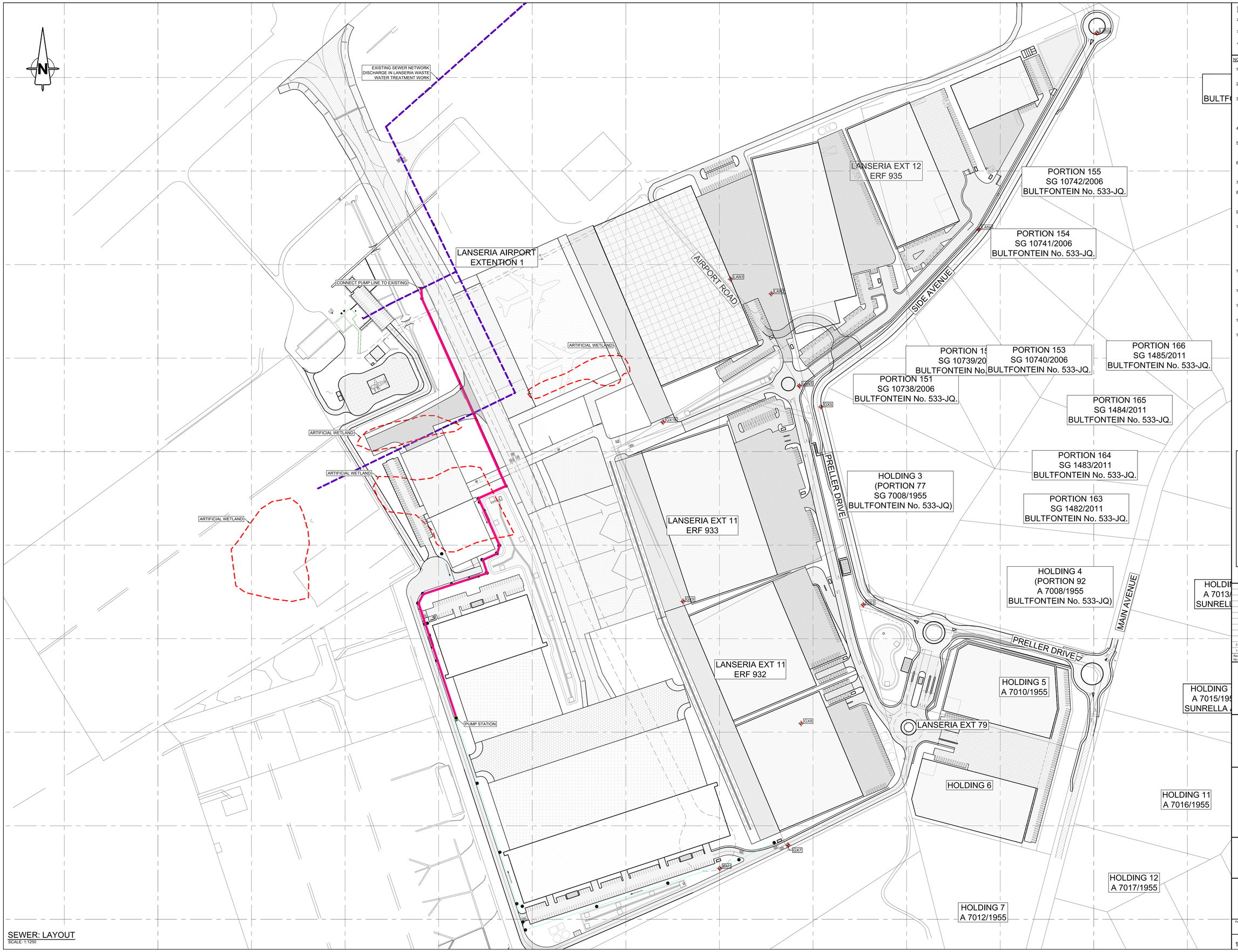
Total Flow Required	**3.54**
Pipe Size (mm)	110
Pipe Velocity (m/s)	1.50
Area (m^2)	0.01
Pipe Flow (l/s)	**14.25**

SEWER DEMAND

Proposed Development Conditions on Existing Land Use Rights:

Portion No.	Zoning	Site Area (m²)	FAR	Gross Floor Area (ha)	Avg Daily Sewer Discharge (kℓ/100m² *GFA)	ADDWF (kl/day)	ADWWF (kl/day)	Peak Factor	PDWWF (l/s)
Lanseria Extension 1, Southern Precinct	'Special'	255000	0.2	7.6514	0.16	122.42	140.79	1.8	2.93
Total		**255000**				**122.42**	**140.79**		**2.93**

ANNEXURE G: SERVICES LAYOUT DRAWINGS



SEWER: LAYOUT
SCALE: 1:1250

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.

NOTES: SEWER

1. THE STANDARD SPECIFICATION SANS 1200 A, D, DB, G, LB AND LD (EXCLUDING PAYMENT CLAUSES) IS APPLICABLE.
2. UNPLASTICIZED POLY (VINYL CHLORIDE) (PVC-U) PIPES TO COMPLY WITH THE RELEVANT REQUIREMENTS OF SANS 791:2014.
3. THE COMPLETE INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LOCAL AUTHORITIES BY-LAWS AND REGULATIONS, THE NATIONAL BUILDING REGULATIONS, AND TO THE SATISFACTION OF THE ENGINEER.
4. ALL WORK TO BE CARRIED OUT BY OR UNDER THE DIRECT SUPERVISION OF LICENSED PLUMBERS AND DRAIN LAYERS.
5. ALL DRAIN PIPES BELOW GROUND TO BE DPI CORFLO UPVC AND INSTALLED TO DPI PLASTICS PUBLISHED RECOMMENDATIONS (UNLESS OTHERWISE SPECIFIED).
6. ALL DRAIN PIPES IN BASEMENT AREA TO BE PLAIN ENDED CAST IRON WITH SSN COUPLINGS AND FIXED WITH APPROVED BRACKETS TO CONCRETE WALL AND CEILING.
7. ACCESS TO BE PROVIDED AT THE FOOT OF ALL STACKS.
8. RODDING EYES (CE) SHALL BE IN CAST IRON, ENCASED IN CONCRETE AND INSTALLED COMPLETELY FLUSH ON THE GROUND OR PAVING LEVEL.
9. ALL MANHOLES SHALL BE CONSTRUCTED IN CIRCULAR PRECAST CONCRETE UNITS AS PER DETAIL.
10. INSPECTION TESTS SHALL BE CARRIED OUT ON DRAINS IN STAGES AS WORK PROCEEDS. THE INSPECTION TEST SHALL BE BY MEANS OF A SMOOTH BALL, HAVING A DIAMETER 12MM LESS THAN THE INTERNAL DIAMETER OF THE PIPE TO BE TESTED, WHICH SHALL, WHEN INSERTED AT THE HIGHER END OF THE PIPE, ROLL DOWN WITHOUT ASSISTANCE OR INTERRUPTION TO THE LOWER END OF THE PIPE.
11. FOR MANHOLES WITHIN ROAD RESERVES, THE MANHOLE COVERS MUST BE FLUSH AND ACCORDING TO THE SLOPE OF THE PAVEMENT OR THE ROAD SURFACE
12. EXISTING INVERTS AND POSITIONS AT CONNECTION POINTS TO BE CONFIRMED ON SITE BEFORE ANY CONSTRUCTION COMMENCE.
13. THE ENGINEER MUST BE NOTIFIED TO DO INSPECTIONS ON ALL PIPE BEDDING PRIOR TO INSTALLATION OF PIPES.
14. THE ENGINEER MUST BE NOTIFIED TO DO INSPECTIONS ON ALL BLANKET AROUND PIPE PRIOR TO BACKFILLING ON TOP OF BLANKET.
15. INSPECTOR FROM LOCAL AUTHORITY TO BE NOTIFIED TO DO INSPECTIONS OF PIPE AND MANHOLES INSTALLED BEFORE ANY BACKFILLING IS DONE.

SEWER LEGEND:

- MANHOLE
- EXISTING MANHOLE
- CE — CLEANING EYE
- LH — LAMP HOLE
- 63mmØ PUMP LINE
- 160mmØ GRAVITY LINE
- EXISTING SEWER TO BE REDUNDANT
- FUTURE SEWER LINE
- HOUSE CONNECTION
- PUMP STATION

Rev. No:	Date:	Revision Details:	By:
B	14/11/25	FOR INFORMATION	GvdW
A	14/04/25	FOR INFORMATION	JDHV

Client:

Architect:

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Project:
LANSERIA

Description:
SEWER: LAYOUT

Paper size:	Drawn:	Checked:	Designed:
A0	KB	GvdW	GvdW
Scale:	Project Number:	Drawing Number:	Revision:
1250	2019-094	4301	B

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.

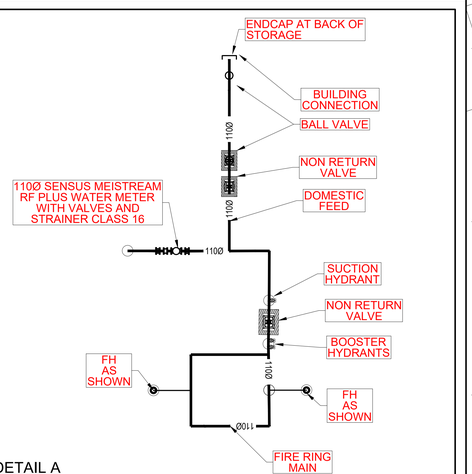
NOTES : WATER

1. THE STANDARD SPECIFICATION SABS 1200 DB, L, LB AND LF (EXCLUDING PAYMENT CLAUSES) IS APPLICABLE.
2. THE COMPLETE INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LOCAL AUTHORITIES BYELAWS AND REGULATIONS, THE NATIONAL BUILDING REGULATIONS, AND TO THE SATISFACTION OF THE ENGINEER.
3. ALL WORK TO BE CARRIED OUT BY OR UNDER THE DIRECT SUPERVISION OF LICENSED PLUMBERS.
4. CONTRACTOR TO MEASURE CIRCUMFERENCE OF EXISTING PIPES BEFORE ORDERING OF FITTINGS
5. ALL FITTINGS TO BE PROVIDED WITH GASKETS AND NUTS AND BOLTS, ALL NUTS, BOLTS AND OTHER FASTENERS TO BE HOT DIPPED GALVANIZED
6. ALL EXISTING WATER INVERTS AND POSITIONS TO BE CONFIRMED ON SITE BEFORE ANY CONSTRUCTION ON WATER STARTS.
7. MINIMUM COVER ABOVE PIPES TO BE 1M.
8. THE ENGINEER MUST BE NOTIFIED TO DO INSPECTIONS ON ALL PIPE BEDDING PRIOR TO INSTALLATION OF PIPES.
9. THE ENGINEER MUST BE NOTIFIED TO DO INSPECTIONS ON ALL BLANKET AROUND PIPE PRIOR TO BACKFILLING ON TOP OF BLANKET.
10. INSPECTOR FROM LOCAL AUTHORITY TO BE NOTIFIED TO DO INSPECTION OF PIPE AND MANHOLES INSTALLED BEFORE ANY BACKFILLING IS DONE.
11. ALL VALVES POSITIONS MUST BE MARKED WITH AN ENGRAVED "V" AND WHITE PAINTED BLOCK AROUND IT ON THE KERB
12. ALL WATER PIPE CROSSINGS MUST BE MARKED WITH AN ENGRAVED "W" IN THE KERB

WATER LEGEND:
- 110mmØ uPVC CLASS 12
- 315mmØ uPVC CLASS 12
- EXISTING 110mmØ HDPE PN12
- FIRE HYDRANT
- WATER VALVE
- END CAP
- PRESSURE RELEASE VALVE
- AIR VALVE
- WATER METER
- NON RETURN VALVE
- SUCTION HYDRANT
- BOOSTER CONNECTION

LANSERIA AIRPORT EXTENTION 1
LANSERIA EXT 12 ERF 935
LANSERIA EXT 11 ERF 933
LANSERIA EXT 11 ERF 932
LANSERIA EXT 79
PORTION 155 SG 10742/2006 BULTFONTEIN No. 533-JQ.
PORTION 154 SG 10741/2006 BULTFONTEIN No. 533-JQ.
PORTION 153 SG 10740/2006 BULTFONTEIN No. 533-JQ.
PORTION 166 SG 1485/2011 BULTFONTEIN No. 533-JQ.
PORTION 151 SG 10738/2006 BULTFONTEIN No. 533-JQ.
PORTION 165 SG 1484/2011 BULTFONTEIN No. 533-JQ.
PORTION 164 SG 1483/2011 BULTFONTEIN No. 533-JQ.
PORTION 163 SG 1482/2011 BULTFONTEIN No. 533-JQ.
HOLDING 3 (PORTION 77 SG 7008/1955 BULTFONTEIN No. 533-JQ)
HOLDING 4 (PORTION 92 A 7008/1955 BULTFONTEIN No. 533-JQ)
HOLDING 5 A 7010/1955
HOLDING 6
HOLDING 7 A 7012/1955
HOLDING 10 A 7015/1955 SUNRELLA A.H.
HOLDING 11 A 7016/1955
HOLDING 12 A 7017/1955
AIRPORT ROAD
SIDE AVENUE
PRELLER DRIVE
MAIN AVENUE
EXISTING 110mmØ HDPE PN12
CONNECT TO EXISTING WATER LINE INVERT LEVEL AND POSITION TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION
CONNECT TO EXISTING WATER LINE INVERT LEVEL AND POSITION TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION
REFER TO DETAIL A FOR WATER CONNECTION DETAIL
ARTIFICIAL WETLAND
WATER METER
LAN1 LAN2 LAN3 LAN4 LAN5 GX1 GX2 GX3 GX4 GX5 GX6 GX7 GX8 BM1

DETAIL A
N.T.S



WATER: LAYOUT
SCALE: 1:1250

Rev. No.	Date:	Revision Details:	By:
B	14/11/25	FOR INFORMATION	DvdM
A	14/04/25	FOR INFORMATION	JDrH

Client:

Architect:

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e-mail: info@edseng.co.za

Project:
LANSERIA

Description:
WATER: LAYOUT

Paper size:	Drawn:	Checked:	Designed:
A0	KB	PdL	DvdM
Scale:	Project Number:	Drawing Number:	Revision:
1250	2019-094	4801	B

ANNEXURE H: WWTW CAPACITY AND DEMANDS INFORMATION

EXECUTIVE SUMMARY

Delta Waste Management (DWM) has been operating Lanseria International Airport's (LIA) wastewater treatment works since February 2010. Inspections are conducted on a weekly and monthly basis by DWM operations officers and Delta Built Environment Consultants (Delta BEC) engineers. The monthly report presents an overview of September 2024 and compares it with the data of the previous months.

Inflow data

DESCRIPTION	SEPTEMBER 2024	AUGUST 2024	2024 MONTHLY AVERAGE (JAN - SEP)	2023 MONTHLY AVERAGE (JAN – DEC)
Total monthly rainfall (mm)	2.0	0.0	29.9	55.3
Minimum flow (kl/day)	147	235	201	229
Average flow (kl/day)	267	340	375	458
Maximum flow (kl/day)	390	403	644	916
Total influent treated (kl)	8 013	10 526	11 051	13 851

August – Inflow limits

DESCRIPTION	PERIOD – DAYS	INCOMING AMOUNT (kl)	ACCEPTABLE AMOUNT (kl)	PERCENTAGE USED
Month plant capacity (kl)	30	8 013	16 500	48.56%
Year plant capacity (kl)	366	99 461	201 300	49.41%
Daily allowed limit (kl/day)	550			

Outflow data

DESCRIPTION	SEPTEMBER 2024	AUGUST 2024	2024 MONTHLY AVERAGE (JAN - SEP)	2023 MONTHLY AVERAGE (JAN – DEC)
Minimum flow (kl/day)	6	0	30	20
Average flow (kl/day)	137	189	268	306
Maximum flow (kl/day)	744	800	787	844
Total effluent irrigation (kl)	4 123	5 861	8 134	9 285
Total effluent LCE (kl)	1 592	3 484	2 949.78	845
Total effluent discharged (kl)	5 715	9 345	11 083.8	9 285

EXECUTIVE SUMMARY

Delta Waste Management (DWM) has been operating Lanseria International Airport's (LIA) wastewater treatment works since February 2010. Inspections are conducted on a weekly and monthly basis by DWM operations officers and Delta Built Environment Consultants (Delta BEC) engineers. The monthly report presents an overview of August 2024 and compares it with the data of the previous months.

Inflow data

DESCRIPTION	AUGUST 2024	JULY 2024	2024 MONTHLY AVERAGE (JAN - AUG)	2023 MONTHLY AVERAGE (JAN – DEC)
Total monthly rainfall (mm)	0.0	0.0	33.4	55.3
Minimum flow (kl/*day*)	235	182	220	229
Average flow (*kl/day*)	340	313	386	458
Maximum flow (kl/*day*)	403	332	686	916
Total influent treated (kl)	10 526	9 695	11 431	13 851

August – Inflow limits

DESCRIPTION	PERIOD – DAYS	INCOMING AMOUNT (kl)	ACCEPTABLE AMOUNT (kl)	PERCENTAGE USED
Month plant capacity (kl)	31	10 526	16 500	63.79%
Year plant capacity (kl)	366	91 448	201 300	45.42%
Daily allowed limit (kl/day)	550			

Outflow data

DESCRIPTION	AUGUST 2024	JULY 2024	2024 MONTHLY AVERAGE (JAN - AUG)	2023 MONTHLY AVERAGE (JAN – DEC)
Minimum flow (kl/day)	0	0	61.0	20
Average flow (kl/day)	189	61	284	306
Maximum flow (kl/day)	800	566	459	844
Total effluent irrigation (kl)	5 861	1 882	8 636	9 285
Total effluent LCE (kl)	3 484	5 242	3 119.5	845
Total effluent discharged (kl)	9 345	7 124	11 755	9 285

EXECUTIVE SUMMARY

Delta Waste Management (DWM) has been operating Lanseria International Airport's (LIA) wastewater treatment works since February 2010. Inspections are conducted on a weekly and monthly basis by DWM operations officers and Delta Built Environment Consultants (Delta BEC) engineers. The monthly report presents an overview of July 2024 and compares it with the data of the previous months.

Inflow data

DESCRIPTION	JULY 2024	JUNE 2024	2024 MONTHLY AVERAGE (JAN - JUL)	2023 MONTHLY AVERAGE (JAN – DEC)
Total monthly rainfall (mm)	0.0	3.2	38.1	55.3
Minimum flow (kl/day)	182	141	253	229
Average flow (kl/day)	313	253	380	458
Maximum flow (kl/day)	332	349	514	916
Total influent treated (kl)	9695	7587	11 560	13 851

July – Inflow limits

DESCRIPTION	PERIOD – DAYS	INCOMING AMOUNT (kl)	ACCEPTABLE AMOUNT (kl)	PERCENTAGE USED
Month plant capacity (kl)	31	9 695	16 500	58.76%
Year plant capacity (kl)	366	80 922	201 300	40.20%
Daily allowed limit (kl/day)	550			

Outflow data

DESCRIPTION	JULY 2024	JUNE 2024	2024 MONTHLY AVERAGE (JAN - JUL)	2023 MONTHLY AVERAGE (JAN – DEC)
Minimum flow (kl/day)	0	0	33.0	20
Average flow (kl/day)	61	220	297	306
Maximum flow (kl/day)	566	672	459	844
Total effluent irrigation (kl)	1 882	6 586	9 032	9 285
Total effluent LCE (kl)	5 242	184	3 067.4	845
Total effluent discharged (kl)	7 124	6770	9 032	9 285

ANNEXURE I: WATER USE LICENCE

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria, 0001, Sedibeng Building, 185 Francis Baard Street, Pretoria,
Tel: (012) 336-7500 Fax: (012) 323-4472 / (012) 326-2715

LICENCE IN TERMS OF CHAPTER 4 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) (THE ACT)

I, ***Trevor Balzer,*** in my capacity as Deputy Director-General: Special Projects in the Department of Water and Sanitation: and acting under authority of the powers sub- delegated to me by the Acting Director- General of Water and Sanitation, hereby authorize the following water uses in respect of this licence.

SIGNED: .....

DATE: 6/03/2019

LICENCE NO: 07/A21C/EG/8603
FILE NO: 27/2/2/A321/97/7

1. Licensee **Lanseria Airport 1993 (Pty) Ltd: Lanseria Airport WWTW**

Postal Address Private Bag X1
Lanseria
1748

2. Water Uses

2.1 Section 21(e) of the Act: Engaging in a controlled activity, subject to the conditions set out in Appendices I and II

2.2 Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource, subject to the conditions set out in Appendices I and III

3. Properties in respect of which this licence is issued

3.1 Farm Lanseria Airport 911

4. Registered owner of the Properties

4.1 Lanseria Airport 1993 (Pty) Ltd

B08803

5. Licence and Review Period

5.1 This licence is valid for a period of Twenty (20) years from the date of issuance and it may be reviewed at intervals of not more than five (5) years.

6. Definitions

"Any word or term defined under the National Water Act, 1998 (Act 36 of 1998) shall have the same meaning as defined in the Act, unless otherwise specifically stated."

"The Regional Head" means Head of Regional Office: North West, Department of Water and Sanitation, Private Bag X 5, Mmabatho, 2735".

"Department" means Department of Water and Sanitation

"Responsible Authority" means the Department of Water and Sanitation or Catchment Management Agency.

"Report" refers to the reports entitled:

i. Water Use Licence Application Report dated May 2017 by Delta Built Environmental Consultants (Pty) Ltd.

ii. Geohydrological study dated September 2016 by Delta Built Environmental Consultants (Pty) Ltd.

7. Description of activity

This licence authorises Lanseria Airport 1993 (Pty) Ltd to undertake section 21 (e) and (g) water uses in terms of Section 40 of the National Water Act, 1998 (Act No. 36 of 1998) for the Lanseria Airport WWTW. The activity that triggers Section 21(e) involves irrigating land with treated effluent. The activities that trigger Section 21(g) 2 sludge ponds and 4 maturation ponds. The activity falls within quaternary catchment A21C of the Crocodile West Marico Water Management Area.

APPENDIX I

General conditions for the licence

1. This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998).

2. The responsibility for complying with the provisions of the licence is vested in the Licensee and not any other person or body.

3. The Licensee must immediately inform the Regional Head of any change of name, address, premises and/or legal status.

4. If the property in respect of which this licence is issued is subdivided or consolidated, the Licensee must provide full details of all changes in respect of the properties to the Regional Head of the Department within 60 days of the said change taking place.

5. If a water user association is established in the area to manage the resource, membership of the Licensee to this association is compulsory.

6. The Licensee shall be responsible for any water use charges or levies imposed by a Responsible Authority.

7. While effect must be given to the Reserve as determined in terms of the Act, where a desktop determination of the Reserve has been used in issuance of a licence, when a comprehensive determination of the Reserve has finally been made; it shall be given effect.

8. The licence shall not be construed as exempting the Licensee from compliance with the provisions of any other applicable Act, Ordinance, Regulation or By-law.

9. The licence and amendment of this licence are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.

10. The Licensee must conduct an annual internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the Regional Head within one month of the finalization of the audit.

11. The Licensee must appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within six (6) months from the date of issuance of this licence and a report on the audit shall be submitted to the Regional Head within one month of finalisation of the report.

12. Any incident that causes or may cause water pollution must be reported to the Regional Head or his/her designated representative within 24 hours.

13. The Department accepts no liability for any damage, loss or inconvenience, of whatever nature, suffered as a result of / amongst other things:
    13.1 Inundation of flood;
    13.2 Any *force majeure* event and
    13.3 Siltation of the wetland or dam basin.

APPENDIX II

Section 21(e) of the Act: Engaging in a controlled activity; Irrigation of any land with waste or water containing waste

1. QUANTITY OF WATER CONTAINING WASTE FOR IRRIGATION

1.1 This licence authorises a maximum quantity of five hundred cubic meters per day (500 m^3/day) of treated wastewater for irrigating the land.

Table 1 Summary of water use

Water Use Activity	Purpose	Property	Dimensions/ Capacity (m)	Co-ordinates	
				Start	End
Section 21 (e)					
Irrigation with treated effluent	Maintenance of the grass	Farm Lanseria Airport 911	500 m^3 /day	25° 55' 47.1" S 27° 56' 26.1" E	25° 55' 47.9" S 27° 56' 28.1" E

eded.

2. QUALITY OF WATER CONTAINING WASTE

The quality of the wastewater to be disposed through irrigation with must not exceed limits shown in Table 1.

Table 2: Quality of waste water to irrigate

Variable	Limits
pH	5.5-9.5
Electrical Conductivity EC	70 - 150 (mS/m)
Chemical Oxygen Demand	≤ 75 mg/l
Residual Chlorine	≤ 0.1mg/l
Free and saline ammonia (as N at pH 8)	≤ 2 mg/l
E.coli	130 CFU/100ml
SS	≤ 25 mg/l
Soap, grease or oil	≤ 2.5 mg/l
Nitrate	≤ 6 mg/l
Orthophosphate (as P)	≤ 1 mg/l
Flouride	≤1 mg/l

3. MONITORING

3.1 Quantity

3.1.1 The quantity of water containing waste irrigated must be metered and recorded daily.

3.1.2 Monitoring for the quantity of the water containing waste for irrigation must be at the inlet.

3.1.3 Water quantity measuring, recording and integrating devices must be maintained in a sound state of repair and calibrated by a competent person at intervals of not less than two years. Calibration certificates must be available for inspection by the Regional Head or his/her representative upon request.

3.2 Quality

3.2.1 Monitoring points for quality must be at the outlet of the wastewater treatment works.

3.2.2 The date, time and monitoring point in respect of each sample taken must be recorded together with the results of the analysis.

3.2.3 Monitoring points must not be changed prior to notification and written approval by the Regional Head.

3.2.4 The samples taken at outlet point of the WWTWs shall be analysed for the variables at the required frequencies as shown in Table 4.

Table 4: Monitoring variables and frequency

Variable	Frequency
pH	Monthly
Electrical Conductivity EC	Monthly
Chemical Oxygen Demand	Monthly
Residual Chlorine	Monthly
Free and saline ammonia (as N at pH 8)	Monthly
E.coli	Monthly
SS	Monthly
Soap, grease or oil	Monthly
Nitrate	Monthly
Orthophosphate (as P)	Monthly
Flouride	Monthly

4. METHODS OF ANALYSIS

4.1 Analyses shall be carried out in accordance with methods prescribed by and obtainable from the South African Bureau of Standards (SABS), in terms of the Standards Act 1982, (Act 30 of 1982).

4.2 The samples shall be tested in an accredited laboratory.

4.3 The methods of analysis must not be changed without prior notification to and written approval by the Regional Head.

5. GENERAL IRRIGATION PRACTICES

5.1 Irrigation with wastewater must be practised in accordance with the guidelines prescribed in the document titled "*Guide: Permissible Utilisation and Disposal of Treated Sewage Effluent*", issued by the former Department of Health under reference 11/2/5/3 and dated 30 May 1978, or in accordance with any relevant regulations promulgated under section 26 of the Act.

5.2 Irrigation with wastewater must be practiced in a systematic manner and precautions shall be taken so as to prevent:

5.2.1 Water logging and pooling of waste in any location.

5.2.2 Pollution of underground water or surface water due to seepage or otherwise

5.2.3 Fly breeding, public health hazard, odour or secondary pollution.

5.2.4 Runoff from the irrigation area because of wet weather or any other conditions whatsoever and

5.2.5 The site of the irrigation area shall be adequately fenced to prevent the entry of animals and unauthorised persons.

6. PIPELINES

6.1 The pipelines used for the conveyance of waste or waste water must be painted in a conspicuous colour or manufactured of a coloured material distinctly different from the colour of the pipelines in which drinking water is flowing to avoid the possibility of any cross-connections of the different pipelines.

6.2 All stop-valves and taps on the pipelines conveying the waste or waste water shall be of a type that can be opened and closed by means of a loose wrench. This wrench shall be in the safekeeping of a responsible member of the staff to prevent unauthorised use thereof.

6.3 Notices manufactured of a durable weather-proof material warning against the use of water containing waste for drinking and washing purposes must be displayed at prominent places where the waste is being reused and at all taps. Such notices shall be worded in the official languages applicable in the area.

7. STORM WATER MANAGEMENT

7.1 The Licensee should ensure that all storm water run-off diverted from the site must be received and disposed off in a way that will not negatively impact the quality and total integrity of the receiving water resource.

7.2 The Licensee must construct berms or furrows around the irrigation area are in order to prevent storm water ingress or water containing waste from entering any river, stream or wetland.

7.3 The Licensee must ensure that seepage and runoff from the area under irrigation does not flow beyond the boundaries of the irrigation area.

APPENDIX III

Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource

1 QUANTITY OF WASTE TO BE DISPOSED

1.1 The Licensee is authorised to dispose treated effluent on the emergency dam, maturation ponds and sludge ponds as outlined in Table 5 below.

Table 5: Summary of water use

Water Use Activity	Purpose	Property	Capacity (m^3)	Co-ordinates	
				Start	End
Section 21 (g)					
Maturation pond 1	Storage of treated effluent	Farm Lanseria Airport 911	2900.00 m^3	25° 55' 45.2" S 27° 56' 26.0" E	25° 55' 45.2" S 27° 56' 28.2" E
Maturation pond 2	Storage of treated effluent	Farm Lanseria Airport 911	1463.97 m^3	25° 55' 46.1" S 27° 56' 26.1" E	25° 55' 46.1" S 27° 56' 27.1" E
Maturation pond 3	Storage of treated effluent	Farm Lanseria Airport 911	1463.97 m^3	25° 55' 46.1" S 27° 56' 27.2" E	25° 55' 46.1" S 27° 56' 28.2" E
Maturation pond 4	Storage of treated effluent	Farm Lanseria Airport 911	3497.00 m^3	25° 55' 47.1" S 27° 56' 26.1" E	25° 55' 47.1" S 27° 56' 28.1" E
Sludge pond 1	Sludge storage	Farm Lanseria Airport 911	1266.00m^3	25° 55' 46.0" S 27° 56' 25.0" E	25° 55' 46.0" S 27° 56' 25.9" E
Sludge pond 2	Sludge storage	Farm Lanseria Airport 911	1266.00m^3	25° 55' 45.2" S 27° 56' 25.0" E	25° 55' 45.2" S 27° 56' 25.9" E
Emergency storage pond	Storage of treated effluent	Farm Lanseria Airport 911	227.00m^3	25° 55' 47.0" S 27° 56' 24.5" E	25° 55' 47.0" S 27° 56' 24.8" E

2. Groundwater Monitoring

2.1 The Licensee must develop and implement a groundwater monitoring plan (upstream and downstream) the sewage treatment plant and its associated infrastructure) which will serve as an early warning system to detect any polluted seepage that might occur from the wastewater system. This plan must be submitted, for approval, to the Provincial Head within six (6) months of issuance of this licence.

2.2 If groundwater pollution occurs or may possible occur the Licensee must conduct and complete a groundwater study to determine the impact on ground water associated with the sewage treatment plant and any mitigating actions that could be required. This must be done in consultation with the Provincial Head and at the timeframes set by the Provincial Head.

3. SLUDGE MANAGEMENT

3.1 Sewage sludge from the drying beds and other solid sewage waste, for instance grit and screenings, shall be handled, stored, transported, utilized or disposed of in such a manner as not to cause any odour, flies, health hazard, secondary pollution or other nuisance.

3.2 Sewage sludge or any other solid sewage waste may be alienated for utilisation or disposal thereof, only in terms of a written agreement and provided that the responsibility for complying with the requirements contained in this licence is accepted by the Licensee and such other party, jointly and separately.

3.3 Sludge emanating from the treatment process must be quantified, analysed, dealt with according to the requirements of chapter 5 of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) and the Guideline for the Utilisation and Disposal of wastewater sludge (volume 1-5), dated March 2006 and any updates thereafter, to the satisfaction of the Head of Provincial Operation.

4. OPERATION AND MAINTENANCE

4.1 The sewage purification works shall be supervised and controlled by a suitably qualified and experienced employee of the Licensee who shall have under his control an adequate number of operators who have been classified in terms of Regulation 2834 in terms of section 26 of the National Water Act, 1998 (Act 36 of 1998), or any update thereto to ensure proper functioning of the works and processes at all times.

4.2 The Licensee must ensure that Suitable qualified and experienced mechanical and electrical artisans shall be available to be called in for inspection and maintenance of the works.

4.3 No intractable or toxic waste must be allowed to find its way into the Sewage Treatment plant and /or be discharged with the final effluent. The Licensee must take all steps possible to prevent discharge of any substance into the Sewage treatment plant, which could have a deleterious effect on the operation of works and/or final waste.

5. PUMP STATIONS

5.1 The Licensee shall develop and implement a scheduled monitoring and maintenance plan for all wastewater pump stations and manholes under its control.

5.2 All pump stations shall have an emergency containment facility with sufficient capacity to ensure untreated effluent retention up to a 24-hour period.

6. CONTINGENCY PLANS AND INCIDENT REPORTING

6.1 The Licensee must develop and implement an Emergency and Contingency Plan.

6.2 The Licensee must implement and promote an environmental call and reporting centre where the following can be reported:

6.2.1 Illegal disposals of waste and/or littering;

6.2.2 Broken, ruptured or leaking pipelines wasting potable water;

6.2.3 Open or leaking taps on the property of the Licensee;

6.2.4 Open manholes;

6.2.5 Leaking or broken sewerage lines and pipes;

6.2.6 Overflowing manholes and pump stations;

6.2.7 Possible offenders of any environmental regulations, by-laws and/or ordinances; and

6.2.8 Any other aspect that might hamper the effective management of the water resources.

6.3 The Licensee must compile an environmental call and reporting centre protocol, that must be included in the Plan, and which will investigate every complaint within 24 hours of it being reported.

6.4 The Licensee must rectify all valid issues reported within 7 days of the issue being reported to the Licensee. All incidents shall be recorded in an incident register which will include reasons for non-rectification of issues raised.

7. REPORTING

7.1 The Licensee must compile an annual Wastewater Management Report including Management Plans that must be submitted during July, annually; indicating compliance with the conditions of this licence, the corrective measures to address non-compliance, as well as the results of the monitoring programmes.

7.2 Information and data must also be submitted in a digital format as required by the Provincial Head in the prescribed format to be included in the regional database.

[END OF LICENCE]