



# Emdeni Transport Facility Outline Scheme Report

Date: 24 July 2018

**Prepared for: Johannesburg Development Agency (JDA)**

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EMDENI/ZOLA TRANSPORT FACILITY				
STORMWATER MANAGEMENT PLAN REPORT				
CONTROL PAGE				
CSM PROJECT NO:		0901107C		
Issue	Date of Report	Description		Revision
1	24 July 2018	Outline Scheme Report		0
DISTRIBUTION AND COMMUNICATION				
No.	Name	Institution	Tel. No.	E-mail
DISTRIBUTION LIST:				
1.	Johannesburg Water	Johannesburg Water	011 688 1400	
2.	Humbelani Mudau	Johannesburg Development Agency	011 688 7838	
CORE REVIEW TEAM				
	Name	Designation	Discipline	Signature
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## **Executive Summary**

The Outline Scheme Report for Emdeni Public Transport Facility is herewith tendered for approval. Johannesburg Development Agency (JDA) plans to develop 1.1 ha located in Emdeni, on the remainder of the farm Soweto No 387-IQ. The water and sanitation service connections are proposed to existing Johannesburg Water infrastructure located in close proximity to the site. The water network is a pressure system while the sewer network is a gravity system.

Water demand and sewer flow results obtained from the Johannesburg Water Guidelines and Standards are reflected herein.

## 1 INTRODUCTION

Johannesburg Development Agency (JDA) plans to develop on portion the farm Soweto 387-IQ. The project aims to provide a public transportation facility in the Emdeni, Soweto area. CSM Consulting Services has been appointed by JDA for the Civil and Structural Engineering services on the project. Formulation and getting approval for the developments Outline Scheme Report forms part of the Civil Engineering Services Contract Scope.

The Outlines Scheme Report for Emdeni is herewith presented for Johannesburg Water approval.

## 2 DRAWINGS

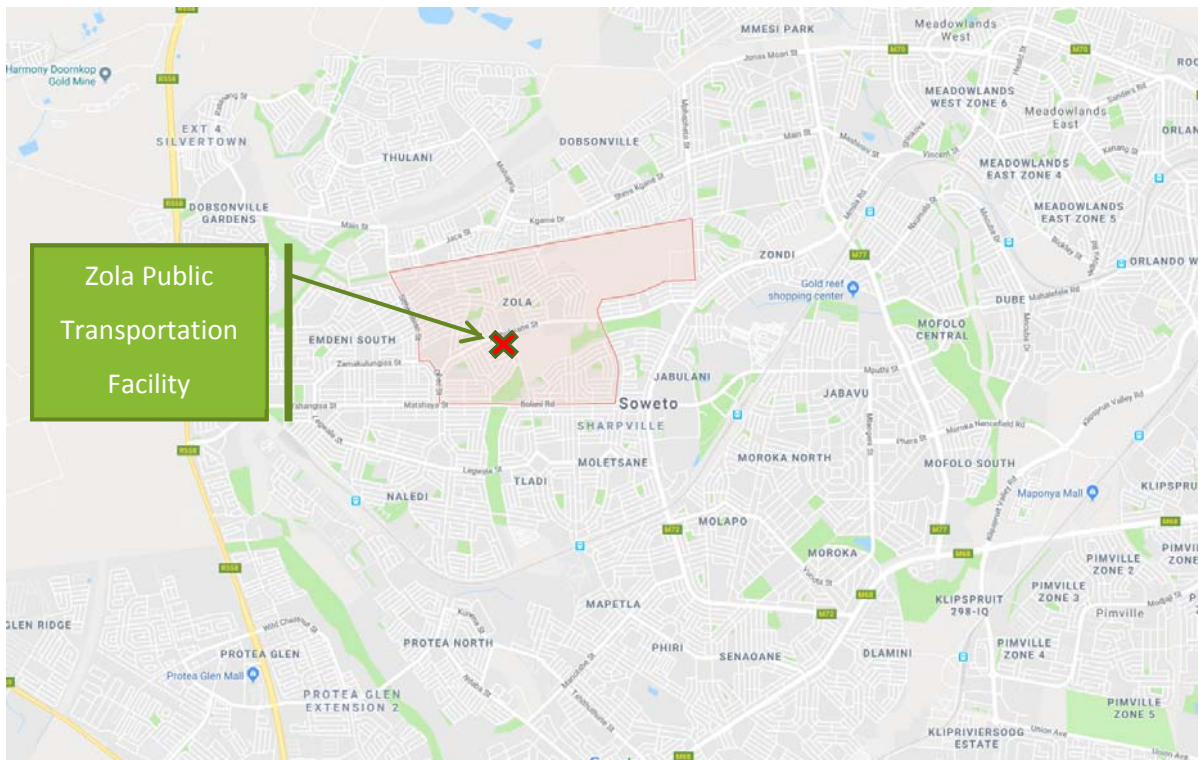
The document includes and refers to the following list of drawings:

Drawing description	Drawing Number
Development Site Layout	ZOLA-PTF/STG003/000
Topographical Survey	Detail plan of erf 6105, Zola Township, Soweto
Water Layout	0901107C/C/03/100
Sewer Layout	0901107C/C/03/101
Water Details	0901107C/C/03/600
Sewer Details	0901107C/C/03/601

## 3 PROPOSED DEVELOPMENT

### 3.1 Location

Johannesburg Development Agency (JDA) plans to develop 1.1 ha located in Zola, on the remainder of the farm Soweto No 387-IQ. The site is located east of Ntshunyana Street, approximately 70m from the intersection of Maholwane Street and Ntshunyana Street, shown in Figure 1. The development aims to provide a Public Transportation Facility (PTF).



**Figure 1 : Zola PTF location within greater Gauteng.**

A general layout of the proposed development, shown in Figure 2, will provide the following facilities:

- Parking bays and taxi holding areas: 42
- Taxi bay's: 40
- Kiosks: 8
- Public ablution facilities
- Shower blocks
- Offices for taxi associations
- Guard House

Site topography is characterised by moderately steep sparsely covered grass covered gradients that slope in a south eastern direction. Site runoff drains into a tributary of the upper reaches of the Klip River. The average dominant slope along the primary drainage path is in the order of 2%.

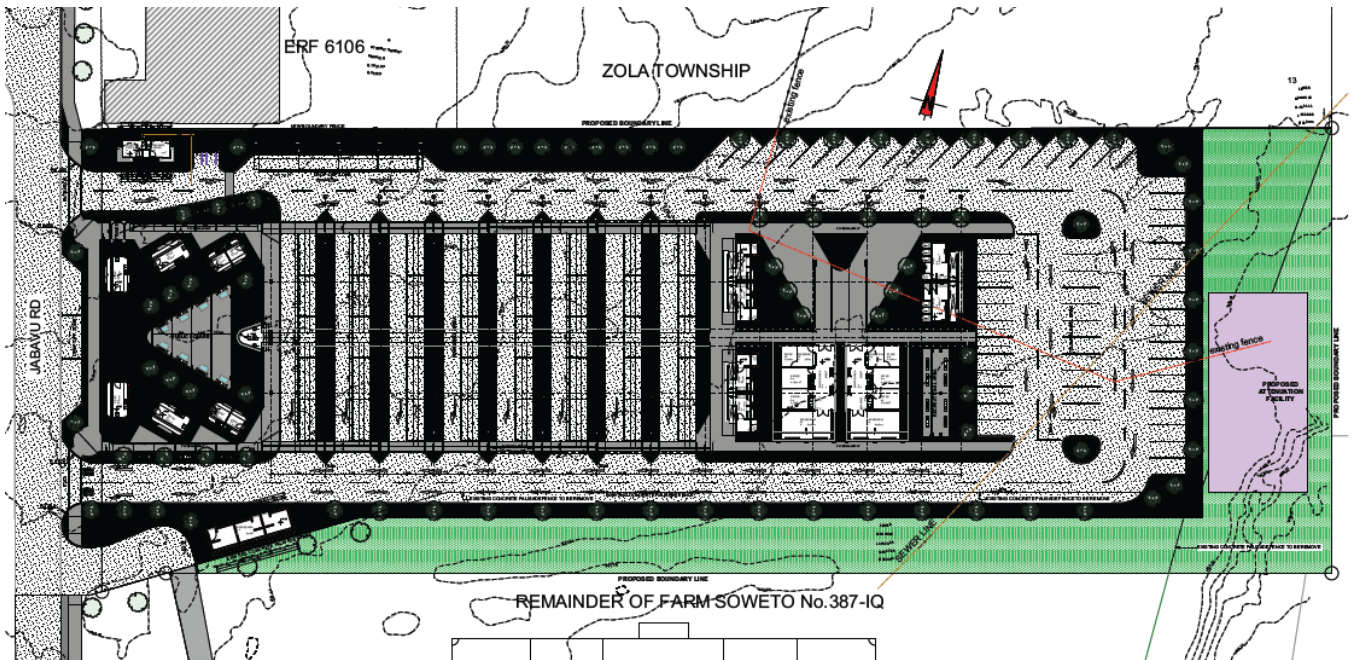


Figure 2 : Proposed site layout.

### 3.2 Existing/Proposed Zoning Rights

The proposed site is currently situated on a Soweto farm portion 387-IQ with title deed number T58752/1987 and agricultural use zoning. The proposal is to sub-divide the property and submit a sub-division diagram to the Surveyor General which has already been achieved (refer to Appendix A for SG Diagram). A re-zoning application will also be submitted for the development. A report drafted by the appointed Town Planner which records the site information is attached as Appendix B.

## 4 DESIGN STANDARDS & SPECIFICATIONS

All designs are based on the guidelines and parameters provided in the design codes and standards listed below to ensure compliance with required regulations. The following Civil Engineering guidelines are used as reference for this report:

- Johannesburg Water Guidelines and Standards for the Design and Maintenance of Water and Sanitation Services (July 2016)
- Guidelines for Human Settlement Planning & Design, Volume 1 & 2 (Red Book)
- SABS 0252-1 : Water Supply Installations for Buildings
- SABS 0252-2 : Drainage Installations for Buildings



## 5 WATER INFRASTRUCTURE

### 5.1 Existing Water Infrastructure

The information obtained from Johannesburg Water, Figure 3, indicates that there is a 300mm asbestos cement water reticulation line running along Ntshunyana/Jabavu Street. The water reticulation system adjacent to the proposed site is part of the Avalon Depot and feeds from Zondi Reservoir. This proposed connection system has a flow of 26.19ℓ/s, a velocity of 0.37m/s with an average residual head of 35.00m as summarized in table 1.

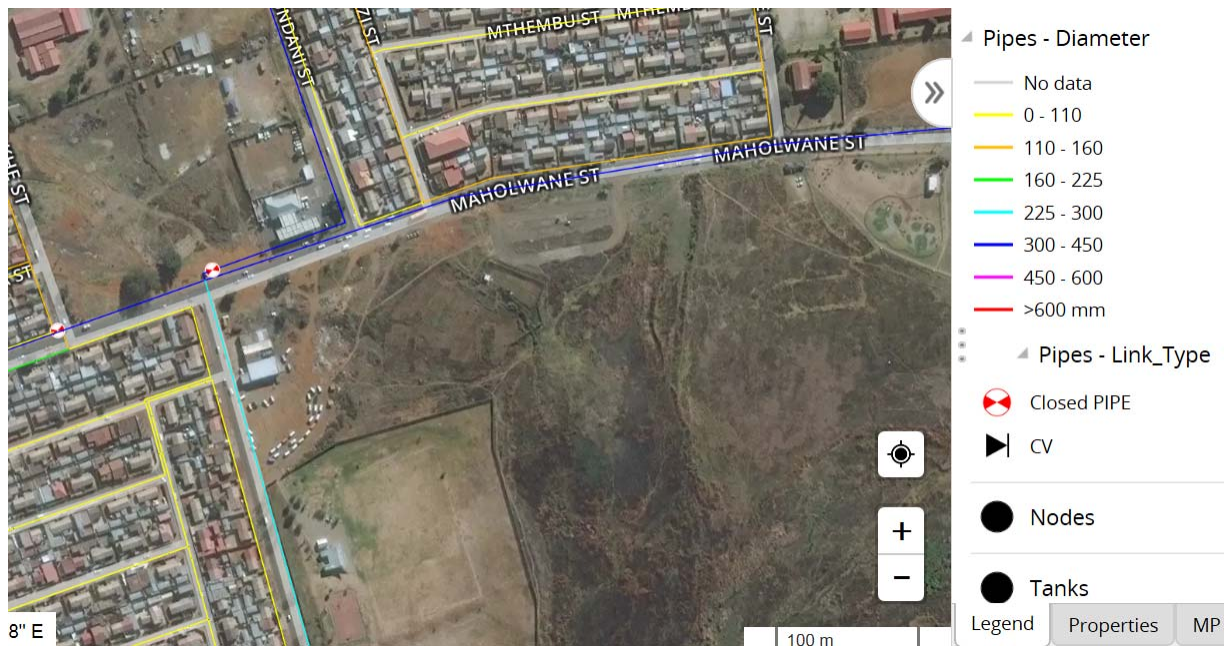


Figure 3 : Emdeni location on Satellite imagery

Table 1 : Existing Water Infrastructure Information

Parameter	Results
Flow, ℓ/s	26.19
Velocity, m/s	0.37
Average head, m	35.08

## 5.2 Design Basis

The design of the internal reticulation is based on the following project information:

- Provision of administration and security office area with external ablution facilities
- Provision of multiple kiosks with basins
- Provision of a refuse area

Table 2 records the design requirements based on the Johannesburg Water guidelines.

**Table 2 : Water Infrastructure Design Basis**

Parameter	Requirement (JW)
Commercial FAR up to 0.5 ha	0.30kℓ/100m <sup>2</sup> GFA
Minimum water pressure	1.5 bars
Maximum water pressure for all pipes	9
Pipe roughness coefficient (k)	0.01mm
Peak factor	4
Minimum pipe cover:	1000mm

## 5.3 Water Demand

As per the Johannesburg Water land use categories, this development is classified as a commercial development with a Floor Area Ratio (FAR) up to 0.5 ha where the FAR is the building area divided by the total erf area. The FAR is equivalent to 0.22. Table 3 provides a summary of the calculated daily demand which is 8.14 kℓ/day with the peak daily demand calculated as 0.38 ℓ/s based on a peak factor of 4.

**Table 3 : Domestic Water Demand**

Johannesburg Water				
Consumer Description	Demand	GFA	Total Consumption	Peak Consumption
Commercial Development (FAR up to 0.5)	0.30 kℓ/100m <sup>2</sup> GFA	2621.23m <sup>2</sup>	8.14 kℓ/day	0.38 ℓ/s

## 5.4 Water Reticulation Design

The internal water system is modelled with a single connection to the external bulk network along Ntshunyana Street , which will be formalized with a flow meter, strainer and shut off valve assembly as per Johannesburg Water standards.

Hydraulic analysis of the pipeline using EPANET Software was based on the Darcy-Weisbach equations for turbulent flows, with the estimated flows through the internal network based on terminal water fitting demand which are obtained from the Architect’s sanitary schedule. The minimum pressure of 3 bars for reticulation mains is considered at the connection point to the JW infrastructure when conducting the analysis. The probable flow demands for the different buildings are provided in Table 4 with the EPANET output data attached as Appendix C.

Table 4: Design Flow Demands

Stack Unit Type	Design Flow Demand, ℓ/min
Security Office	51.31
Kiosk	78.30
Ablution Block D	164.48
Ablution Block E	164.48
Ablution Block F	51.31
Ablution Block G	51.31
Ablution Block H	126.53

The hydraulic analysis reveals that the average pressure available at each node connection is at least 1.5 bars which is sufficient as it exceeds the minimum pressure requirements.

The primary network is preliminary designed as a 75mm uPVC Class 16 pipe. The minimum cover is taken as 1.0 m in all trafficked areas with increased installation depth in areas with other pipelines (sewer or stormwater) that are either in close proximity or crossing the water pipeline for additional protection.

## 6 SEWER INFRASTRUCTURE

### 6.1 Existing Water Infrastructure

The information obtained from Johannesburg Water, Figure 4, indicates that there is an existing 250mm clay sewer pipe crossing the outside borders of the site on which the sewer connection is proposed. The collective system is part of the Avalon Depot and collects to the Naledi system. This system has a full flow capacity of 57.09 ℓ/s, a full velocity of 1.16m/s and a spare capacity of 77.46%. The system information is recorded in Table 5.



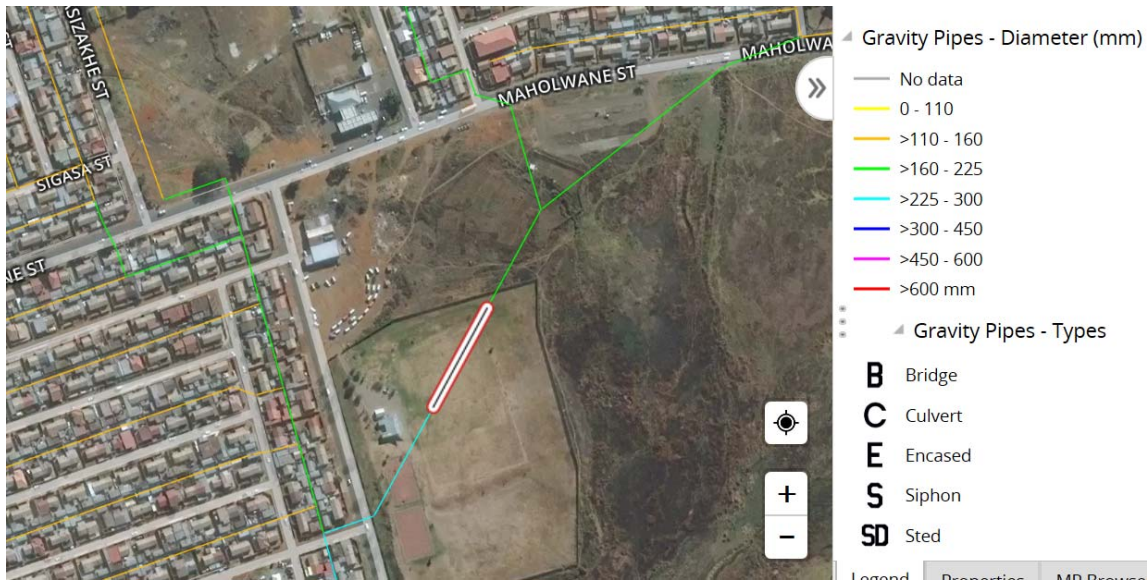


Figure 4 : Existing Sewer Infrastructure

Table 5: Existing Sewer Infrastructure Information

Parameter	Results
Full flow, ℓ/s	57.09
Maximum flow, ℓ/s	12.87
Minimum flow, ℓ/s	4.83
Full velocity, m/s	1.16
Velocity @ maximum flow, m/s	0.95
Velocity @ minimum flow, m/s	0.72
Hydraulic spare capacity, ℓ/s	44.22
Absolute spare capacity, %	77.46

## 6.2 Design Basis

The design of the internal reticulation is based on the following project information:

- Provision of administration and security office area with external ablution facilities
- Provision of multiple kiosks with basins
- Provision of a refuse area

Table 6 records the design requirements based on the Johannesburg Water guidelines.

**Table 6 : Sewer Infrastructure Design Basis**

Parameter	Requirement
Commercial	0.2 kℓ/100m <sup>2</sup>
Infiltration	15%
Peak Factor	1.5
Minimum Velocity	0.7 m/s
Minimum diameter	110 mm diameter (ID)
Minimum Gradients	1:100
Minimum Cover	1000m

### 6.3 Sewer Flow

As per the Johannesburg Water land use categories, this development is classified as a commercial development with a Floor Area Ratio (FAR) up to 0.5 ha where the FAR is the building area divided by the total erf area. The FAR is equivalent to 0.22. Table 7 provides a summary of the calculated daily discharge which is 5.42 kℓ/day with the peak flow calculated as 0.11 ℓ/s based on a peak factor of 1.5 and considering an infiltration factor of 15%.

**Table 7:Sewer Discharge**

Johannesburg Water				
Consumer Description	Demand	GFA	Total Discharge	Peak Discharge
Commercial Development (FAR up to 0.5)	0.20 kℓ/100m <sup>2</sup> GFA	2621.23m <sup>2</sup>	5.42 kℓ/day	0.11 ℓ/s

### 6.4 Sewer Reticulation Design

The internal network is designed to have 110DN uPVC Class 34 main line with minimum gradient of 1:85 while ensuring that the maximum flow depth does not exceed the stipulated 67% at peak discharge and the design velocity ranges from 0.7 to 3m/s. The internal reticulation network connects to an existing manholes invert levels of 1627.45m. The sewer design details are attached as Appendix D.

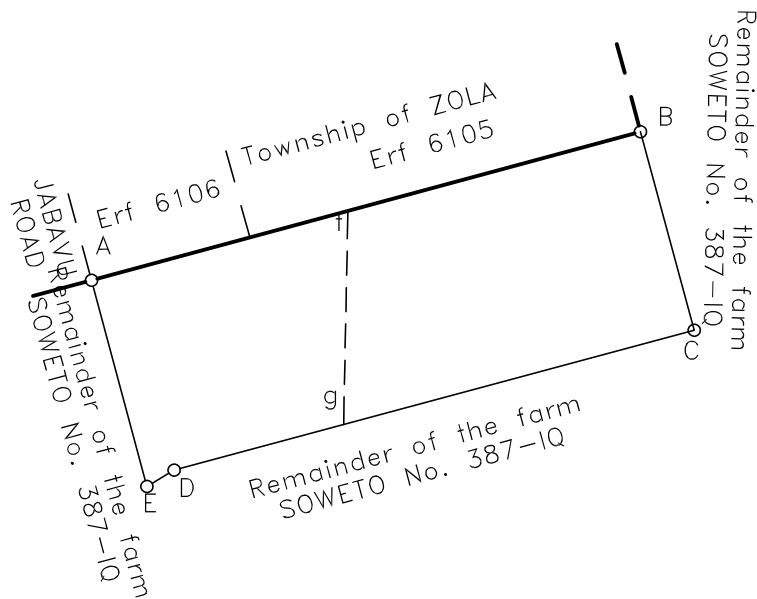
## 7 Conclusion

The proposed development is classified as a commercial development with a Floor Area Ratio of 0.22. The domestic water demand and sewer flow requirements for the proposed Public Transport Facility at Zola are presented. A total daily water demand of 8.14 kℓ/day with a peak demand of 0.38 ℓ/s is when considering a peak factor of 4. The sewer discharge is calculated as 5.42 kℓ/day with a peak discharge of 0.11 ℓ/s when considering a peak factor of 1.5 and infiltration of 15%.

## 8 Appendix A: SG Diagram

SUBDIVISIONAL DIAGRAM

SIDES Metres		ANGLES OF DIRECTION		CO-ORDINATES Y System: WG 27°		S.G. No. X DRAFT
		Constants:		± 0,00	+2 800 000,00	
AB	185,94	254 51 30	A	-83 886,29	+103 934,23	
BC	67,19	1 59 50	B	-84 065,77	+103 885,66	
CD	176,09	74 55 50	C	-84 083,33	+103 950,52	
DE	10,31	59 04 30	D	-83 913,29	+103 996,30	
EA	69,77	164 55 10	E	-83 904,45	+104 001,60	
Meadowlands W.T.S.617		△		-85 890,32	+104 280,78	for SURVEYOR- GENERAL
Dobsonville W.T. 695		△		-85 453,86	+102 803,38	
Description of Beacons						
A,B,C,D,E		12mm Round Iron Peg				
						Ordinance No. 15/198 Section 92



The figure A B C D E A  
represents 1,1792 hectares of land being  
Portion of the farm  
SOWETO No. 387-IQ

City of Johannesburg Metropolitan Municipality  
Province of Gauteng  
Surveyed in February 2018 by me

C.J. Kirchhoff (PLS 0962)  
Professional Land Surveyor

This diagram is annexed	The original diagram is	File :
No.	S.G. No. A2463/1987	S.R. :
d.d. :	D/T T58752/1987	Comp. IQNP 1363, IQNP 1364, IQNP 1391
i.f.o.		
Registrar of Deeds: JHB		

## 9 Appendix B: Town Planner Report

**PROPOSED PUBLIC TRANSPORT FACILITY ON FARM 387 - IQ,  
SOWETO (REMAINING EXTENT. ZOLA - SOWETO)**

Prepared for:



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## 1. Introduction

The City of Johannesburg has adopted an urban development policy, which strongly centres on the need to create compact cities and limit urban sprawl in order to utilise urban infrastructure and land more effectively.

The City of Johannesburg through the Johannesburg Development Agency has identified land parcels which have are currently being utilized informally by the taxi industry, thus giving rise to the need to formalize the sites and provide infrastructure towards the proposed taxi rank development for holding, loading purposes, as well as the associated ancillary uses that complement the development.

YB Mashalaba & Associates Consultants have been appointed by Johannesburg Development Agency (JDA) to investigate the development controls of the site. This document will outline the zoning of the property and the development controls i.e. height, coverage, and building lines etc.





## 2.2. Policy and framework analysis

The proposed development is very much aligned with the development framework of Region D and by several strategic development documentation of the City of Johannesburg Metropolitan Municipality, below is a summary of the status quo, development proposal and a snapshot of strategic documentation in support of the proposed development typology.

According to the Regional Spatial Development Framework (RSDF) of Region D, (2009/2010); the city's Growth Management Strategy (GMS) of 2008, the region is both a marginalized and public transport high priority area. Such areas will receive capital investment and immediate service upgrading. The major modes of transport are the minibus (taxi) and rail. However, the state of many of the taxi ranks, rail stations and public transport routes is in dire need of upgrading and formalisation. The proposed area of the development also falls within the Bus Rapid Transit (BRT Route), thereby leveraging the possibility for commuters to benefit from complimenting public transport facilities that promote the North-South linkages.

The proposed development is supported by the Integrated Development Plan (IDP) in that the city seeks to Integrate the Rea Vaya BRT station management functions of the Metropolitan Trading Company into the Transport Department and other facilities management functions, including taxi ranks, into the Johannesburg Property Company, as the development of taxi rank or taxi holding areas is also a high priority to the city, (IDP Review 2013/14:246). This project falls within the marginalised areas prioritised in the regional spatial development framework as a Growth Management Strategy (GMS) priority areas.



### 2.3. Title Deed Description

The property is held vide **Title Deed No T58752/1987** and is described as the following:

**Table 2: Property detail**

Deeds registry	PRETORIA
Property type	FARM
Farm name	SOWETO
Farm number	387
Portion	0 (REMAINING EXTENT)
Province	GAUTENG
Registration division/Administrative district	IQ
Local authority	CITY OF JOHANNESBURG
Diagram deed number	T58752/987
Extent	291.9278 H
LPI Code	TOIQ00000000038700000

Table 2 above is a summary of the property details as per deed search. The property is held in the name of; City of Johannesburg Metropolitan Municipality.

### 2.4. Area

The property is part of a remainder of the Farm Soweto, measuring an area of 291.92 hectares. The exact extent of the piece required for the proposed development is yet to be established.



## 2.5. Current Zoning

The current zoning of the subject property in terms of the Town Planning Scheme, being Annexure F of the Black Communities development Act; is "Agricultural". A township establishment is anticipated on the subdivided portion as extracted and will be proposed to be zoned "Business" with consent for Taxi Rank and ancillary uses.

TABLE A			
Use zone	Permitted uses	Uses permitted only with the consent of the responsible authority	Prohibited uses
(1)	(2)	(3)	(4)
Residential .....	Residential buildings .....	Places of public worship, places of instruction, social halls, sports and recreational purposes, institutions, medical suites, special purposes	Uses not under column (2) or (3).
<b>Business .....</b>	<b>Shops, business purposes, residential buildings, places of public worship, places of instruction, social halls, sports and recreational purposes, institutions</b>	Uses not under column (2) or (4).....	Noxious industries.
Industrial .....	Industry, business purposes, shops, public garages, scrapyards, parking areas	Noxious industries, special purposes.....	Uses not under column (2) or (3).
Community facility ...	Places of public worship, places of instruction, social halls, sports and recreational purposes, institutions	Residential buildings, special purposes .....	Uses not under column (2) or (3).
Municipal .....	Municipal purposes .....	Residential buildings, special purposes .....	Uses not under column (2) or (3).
Undetermined .....	Nothing.....	Uses not under column (4).....	Noxious industries.
Public open space .....	Parks, sports and recreational facilities and buildings used in connection therewith	Residential buildings, special purposes .....	Uses not under column (2) or (3).

**Figure 2: "Annexure F" Use zone Table**

Figure 2 above is an extract of Annexure F with the Use Zones thereof. Zoning information note pad from the CoJ is attached hereto as an Annexure B.

The development controls for "Business" zoning is outlined below:

**Height Zone:** To the satisfaction of the Local Authority

**Height Restriction:** To the satisfaction of the Local Authority

**Building line:** To the satisfaction of the Local Authority

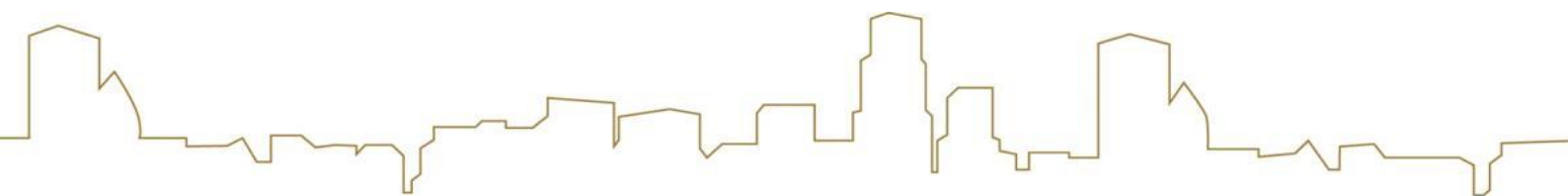


### 3. Way forward

A discussion meeting will need to be held with the Town Planner at the City of Johannesburg post receipt of the Development Concept/Proposal of the Site Development Plan provided by the Architects to confirm that the intended development proposal and uses fall within the allowable uses of "Business" and development controls as per Annexure F of the Black Communities development Act.



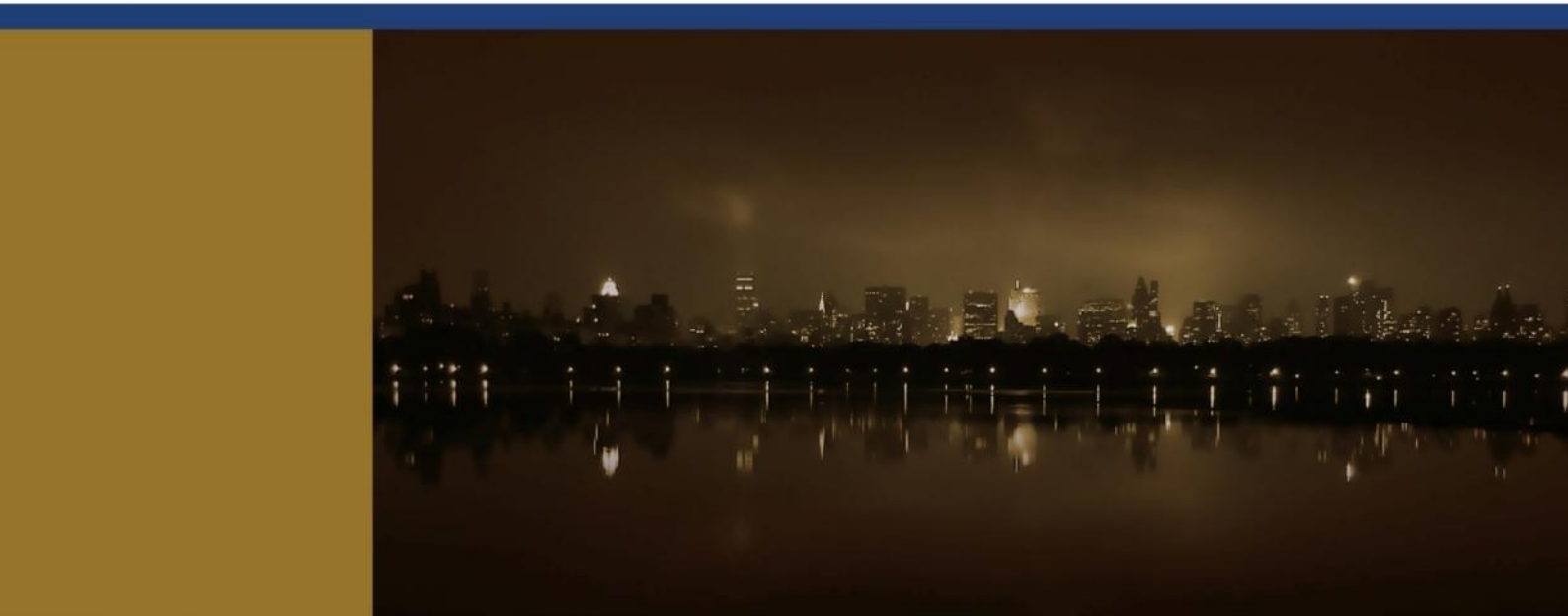
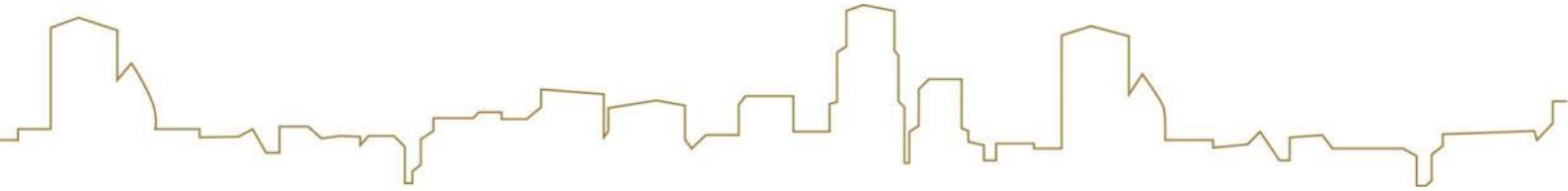
# LIST OF ANNEXURES



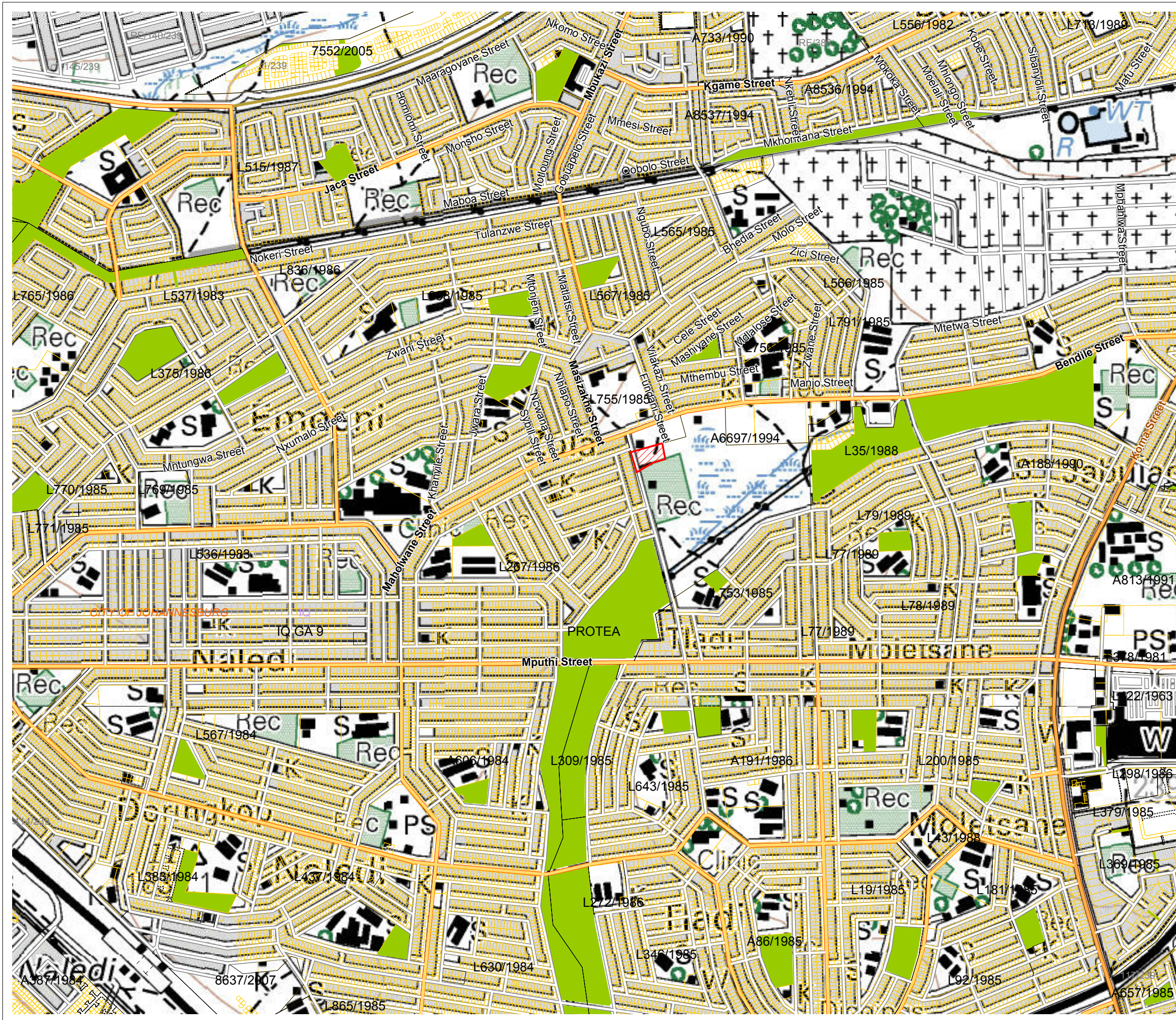


# ANNEXURE A

## LOCALITY MAP



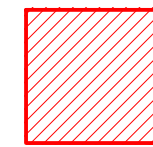




LOCALITY MAP FOR ZOLA  
PUBLIC TRANSPORT  
FACILITY

**NOTES:  
RE FARM 387  
SOWETO**

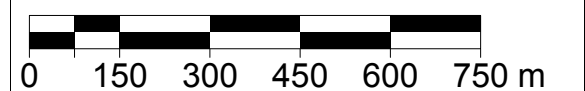
**Legend**



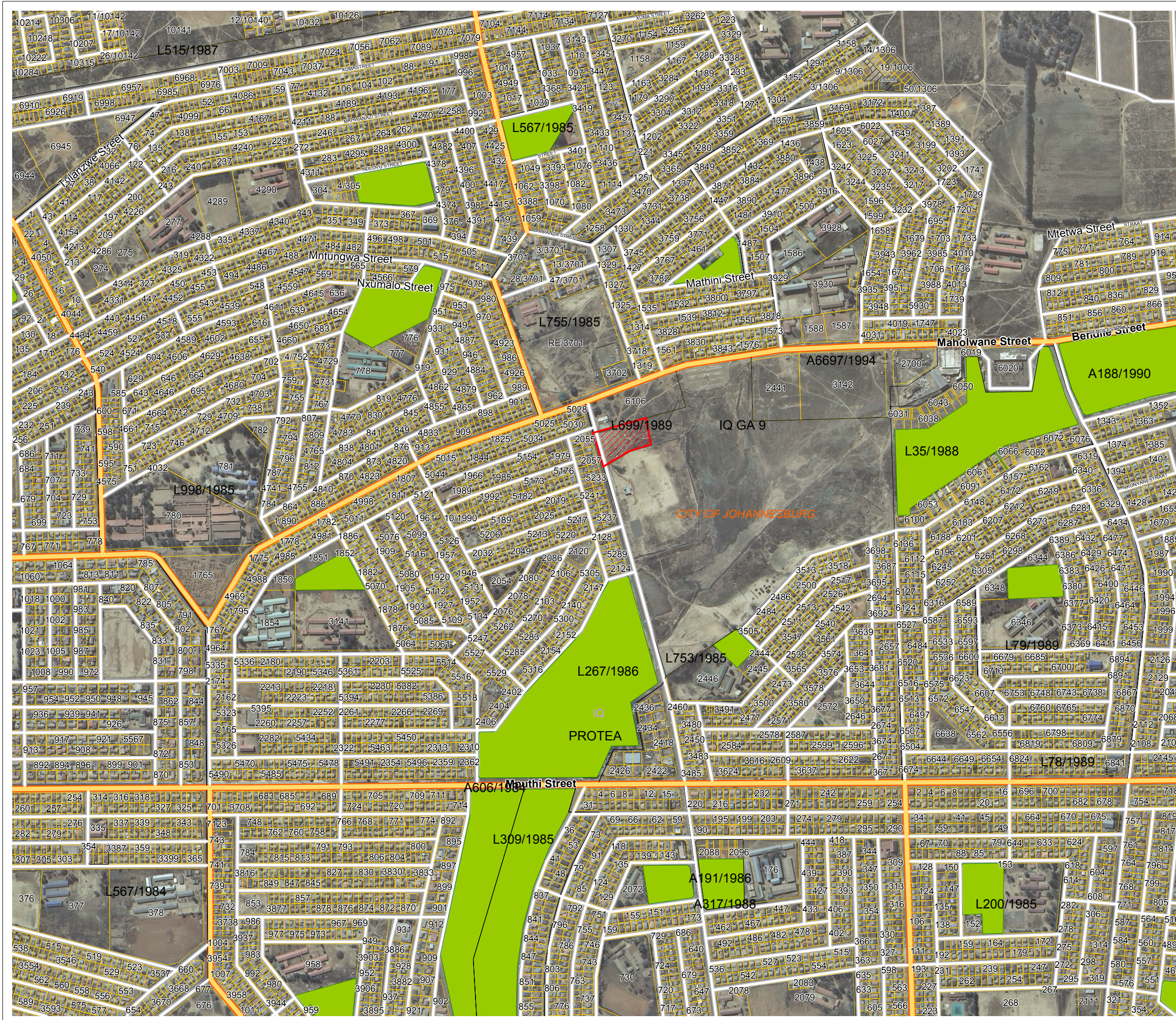
**Locality**

Design: AJ Pelser  
Drawn: AJ Pelser  
Approved: YB Mashalaba  
Date: March 2017

Scale 1:12500







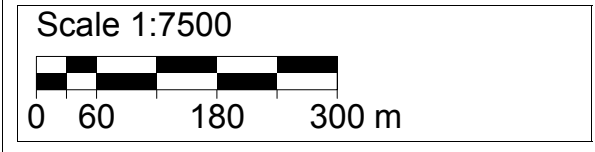
LOCALITY MAP FOR ZOLA  
PUBLIC TRANSPORT  
FACILITY

**NOTES:  
RE FARM 387  
SOWETO**

## Legend

Locality

Design: AJ Pelsler  
Drawn: AJ Pelsler  
Approved: YB Mashalaba  
Date: March 2017

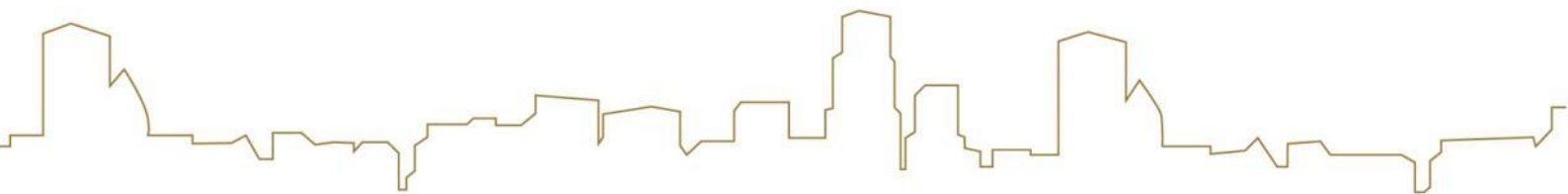


**Mashalaba**  
& ASSOCIATES CONSULTANTS



# ANNEXURE B

## ZONING PAD - CoJ





a world class African city

# ZONING INFORMATION NOTE PAD

REQUESTED BY:

TOWN PLANNING SCHEME: ANNEXURE F, 1991

NAME OF APPLICANT:

ERF / HOLDING / FARM PORTION: RE/387-IQ (2223488 m<sup>2</sup>)

TOWNSHIP NAME / HOLDING NAME / FARM NAME: SOWETO 387-IQ

STREET NAME AND NUMBER:

## ZONING INFORMATION

USE ZONE: AGRICULTURAL

HEIGHT ZONE:

FLOOR AREA RATIO:	Business	Residential	Institutional	Industrial	Other
COVERAGE:					
DENSITY:	1 Dwelling per			m <sup>2</sup>	
BUILDING LINE:					
PARKING:					

AMENDMENT SCHEME APPLICABLE: N/A

SERVED BY: AGNES

DATE: 23/11/2016

The Town Planning Scheme is open for inspection at the 8<sup>th</sup> floor, 158 Civic boulevard (previously 158 Loveday street) between 8:00 and 15:30 weekdays. The applicant must verify the information contained herein by inspection of the Town Planning 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.

## 10 Appendix C: EPANET Output Data

```

*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                 *
*                               Analysis for Pipe Networks                   *
*                               Version 2.0                                 *
*****
    
```

Input File: Water Reticulation\_EPANET.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
A3	1	3	32.59	65
N9	3	4	11.80	65
O1	4	5	7.46	40
N8	4	6	11.80	65
N7	6	8	77.64	65
K6.1	8	9	4	40
N6	8	11	10.68	65
K5	11	12	4	40
N5	11	13	12.88	65
N4	13	14	11.96	65
K4	14	15	4	40
N3	14	16	12.33	65
K3	16	17	4	40
N2	16	18	9.37	65
K2	20	21	3.75	40
G2	22	23	7.5	40
A1	6	24	14.76	65
A2	24	7	17.83	65
G1	22	2	3.37	40
N1	2	18	11.50	65
Connection	2	Connection	4.48	65
K1	18	20	15.34	40

Node Results:

Node ID	Demand LPM	Head m	Pressure m	Quality
1	126.43	1647.24	16.93	0.00
3	0.00	1647.46	17.72	0.00
4	0.00	1647.55	17.73	0.00
5	102.62	1647.18	17.30	0.00
6	0.00	1647.78	17.75	0.00
7	164.48	1647.02	16.47	0.00
8	0.00	1655.44	24.36	0.00
9	19.57	1655.43	24.17	0.00
11	0.00	1656.56	25.25	0.00

## Node Results: (continued)

Node ID	Demand LPM	Head m	Pressure m	Quality
12	9.79	1656.55	25.38	0.00
13	0.00	1657.95	26.48	0.00
14	0.00	1659.25	27.73	0.00
15	9.79	1659.24	27.90	0.00
16	0.00	1660.62	28.65	0.00
17	9.79	1660.62	28.86	0.00
18	0.00	1661.70	29.56	0.00
20	9.79	1661.61	29.71	0.00
21	19.57	1661.60	29.81	0.00
22	0.00	1663.09	30.25	0.00
23	51.31	1662.98	30.41	0.00
24	164.48	1647.22	16.85	0.00
2	0.00	1663.14	29.35	0.00
Connection	-687.62	1663.78	0.00	0.00 Reservoir

## Link Results:

Link ID	Flow LPM	Velocity m/s	Headloss m/km	Status
A3	-126.43	0.64	6.90	Open
N9	-126.43	0.64	6.91	Open
O1	102.62	1.36	48.54	Open
N8	-229.05	1.15	19.88	Open
N7	-558.01	2.80	98.62	Open
K6.1	19.57	0.26	2.64	Open
N6	-577.59	2.90	104.96	Open
K5	9.79	0.13	0.82	Open
N5	-587.37	2.95	108.21	Open
N4	-587.37	2.95	108.21	Open
K4	9.79	0.13	0.82	Open
N3	-597.16	3.00	111.49	Open
K3	9.79	0.13	0.82	Open
N2	-606.95	3.05	114.82	Open
K2	19.57	0.26	2.66	Open
G2	51.31	0.68	14.23	Open
A1	328.96	1.65	38.03	Open
A2	164.48	0.83	11.02	Open
G1	-51.31	0.68	14.22	Open
N1	636.31	3.20	125.09	Open
Connection	-687.62	3.45	143.98	Open
K1	29.36	0.39	5.36	Open

## 11 Appendix D: Sewer Design Details



auto Input  
Storm Drain Computation

Pipe Description	Start MH	End MH	Length [L] m	Design Flow [Q <sub>DESIGN</sub> ] m <sup>3</sup> /s	Pipe Diameter [D] mm	Manning Roughness	Invert Level		Slope [S <sub>i</sub> ] m/m	Full Capacity [Q <sub>FULL</sub> ] m <sup>3</sup> /s	V <sub>FULL</sub> m/s	Partially Full		
							Start	End				h/D	Flow Depth [h] mm	V <sub>DESIGN</sub> m/s
Connection	C	MH1	5.37	0.009	100	0.011	1627.92	1628.33	0.076	0.017	2.148	0.518	51.752	2.178
P1	MH1	MH2	11.706	0.007	100	0.011	1628.33	1628.72	0.033	0.011	1.419	0.590	58.966	1.502
P2	MH2	MH3	11.706	0.006	100	0.011	1628.72	1629.11	0.033	0.011	1.419	0.520	52.038	1.441
P3	MH3	MH4	77.356	0.002	100	0.011	1629.11	1630.4	0.017	0.008	1.004	0.321	32.091	0.812
P4	MH4	MH5	10.15	0.002	100	0.011	1630.4	1630.58	0.018	0.008	1.035	0.316	31.611	0.830
P5	MH5	MH6	31.239	0.001	100	0.011	1630.58	1631.49	0.029	0.010	1.327	0.236	23.609	0.897
P6	MH6	MH7	11.188	0.001	100	0.011	1631.49	1631.82	0.029	0.010	1.335	0.235	23.539	0.901
P7	MH7	B	7.146	0.000	100	0.011	1631.82	1631.91	0.013	0.007	0.872	0.101	10.130	0.344
P8	B	RE	9.136	0.000	100	0.011	1631.91	1632.02	0.012	0.007	0.853	0.102	10.237	0.338
P1.1	MH1	RE	40.024	0.002	100	0.011	1628.33	1629.88	0.039	0.012	1.530	0.259	25.879	1.093
P1.2	MH2	RE	15.927	0.001	100	0.011	1628.72	1629.38	0.041	0.012	1.582	0.231	23.056	1.054
P1.3	MH3	RE	40.01	0.004	100	0.011	1629.11	1630.22	0.028	0.010	1.295	0.454	45.412	1.246
P1.5.1	MH5	B	18.335	0.001	100	0.011	1630.58	1631.14	0.031	0.011	1.358	0.158	15.753	0.712
P1.5.2	B	RE	8.544	0.001	100	0.011	1631.14	1631.64	0.059	0.015	1.880	0.135	13.530	0.893
P1.7.1	MH7	B	14.399	0.001	100	0.011	1631.82	1632.61	0.055	0.014	1.821	0.156	15.589	0.948
P1.7.2	B	RE	5.227	0.001	100	0.011	1632.61	1632.71	0.019	0.008	1.075	0.200	19.953	0.655