

NOTICE OF LAND DEVELOPMENT APPLICATION

NOTICE OF LAND DEVELOPMENT APPLICATION IN THE STELLENBOSCH MUNICIPAL AREA

NOTICE NUMBER: 14/25

APPLICATION TYPE: ERF 64, KYLEMORE

The following land use application in terms of the Stellenbosch Land Use Planning Bylaw refers:

Application Property Address: **Skoolstraat, Kylemore**

Application Property Number: **Erf 64, Kylemore, Stellenbosch**

Applicant: **Thoba Mkangisa and Associates** Email: **admin@mkangisa.co.za**
Tel: **043 422 0534 & Fax: 086 489 0540**

Owner: **Department of Public Works and Infrastructure**

Application Reference: LU/18668 (TP1091/2025)

Description of land development proposal:

Application for Rezoning, Subdivision, Street naming & numbering and Cancellation of a Right of Way Servitude: Erf 64, Kylemore and the application is hereby submitted:

- Application is made in terms of Section 15(2)(a) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to rezone Erf 64, Kylemore from Agricultural and Rural Zone to Subdivisional Area Overlay Zone to accommodate the following zonings; Conventional Residential Zone (418 erven), Local Business Zone (1 Erf), Community Zone (1 Erf), Utility Services Zone Erf (1 Erf), Transport Facility Zone (2 Erven), Public Open Space Zone (3 erven) and Public Roads and Parking Zone (6 Erven).
- Application is made in terms of Section 15(2)(d) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to subdivide Erf 64, Kylemore, into 432 Portions.
- Application is made in terms of Section 15(2)(k) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) for the cancellation of an 8m right of way servitude over Erf 64, Kylemore, which will be replaced by a public road.
- Approval of the following street names; Mossie Street, Arend Street, Kanarie Street, Piet My Vrou Street, Bokmakierie Street, Swaeltjie Street, Vink Street, Flamink Street, Houtkapper Street and Tintinkie Street.

Notice is hereby given in terms of the provisions of the said Bylaw that the above-mentioned application has been submitted to the Stellenbosch Municipality for consideration. The application is available for inspection on the Planning Portal of the Stellenbosch Municipal Website for the duration of the public participation process at the following address: <https://www.stellenbosch.gov.za/planning/documents/planning-notices/land-use->

[applications-advertisements](#). If the website or documents cannot be accessed, an electronic copy of the application must be requested from the Applicant.

You are hereby invited to submit comments and / or objections on the application in terms of Section 50 of the said bylaw. Written comment, which must include the reference to the application, the name, contact details and physical address of the person to submit the comments, the reasons for the comments, and the interest of the person who submits the comment in the application, may be submitted to the Applicant by electronic mail as follows: **Trymore Hutu of Thoba Mkangisa and Associates** at **admin@mkangisa.co.za** By lodging an objection, comment or representation, the person doing so acknowledges that information may be made available to the public and to the applicant.

The comments must be submitted within 30 days from the date of this notice to be received on or before the closing date of **11 August 2025**.

The Municipality, in terms of Section 50(5) of the said Bylaw, may refuse to accept any comments/ objection received after the closing date.

For any enquiries on the Application or the above requirements, or if you are unable to write and /or submit your comments as provided for, you may contact the Applicant for assistance at the e-mail address provided or telephonically at **043 4220 534** during normal office hours from **08h00 to 16h00**.

Yours faithfully

Trymore Hutu (town planner) of Thoba Mkangisa and Associates

KENNISGEWING VAN GRONDONTWIKKELINGS AANSOEK

KENNISGEWING VAN GRONDONTWIKKELINGSAANSOEK IN DIE STELLENBOSCH MUNISIPALE AREA KENNISGEWINGNOMMER: 14/25

AANSOEKTIPE: ERF 64, KYLEMORE

Die volgende grondgebruiksaansoek in terme van Stellenbosch se Verordeninge op Grondgebruikbeplanning verwys:

Adres van aansoek eiendom: **Skoolstraat, Kylemore**

Aansoek eiendom beskrywing: **Erf 64, Kylemore, Stellenbosch**

Aansoeker: **Thoba Mkangisa and Associates** E-pos: admin@mkangisa.co.za
Tel: **043 422 0534 & Fax: 086 489 0540**

Eienaar: **Departement van Openbare Werk en Infrastruktuur**

Aansoek Verwysing: LU/18668 (TP1091/2025)

Besonderhede van die grondgebruiksaansoek:

Aansoek om Hersonerings, Onderverdeling, straat naam en nommer toekanning en Kansellasië van 'n Reg-van-Weg-Serwituut: Erf 64, Kylemore en die aansoek word hiermee ingedien:

- Ingevolge artikel 15(2)(a) van die Stellenbosch Munisipale Verordening op Grondgebruikbeplanning (2023) om Erf 64, Kylemore te hersoneer van Landbou- en Landelike Sone na Onderverdelingsgebied-Oorlegsone om die volgende sonerings te akkommodeer; Konvensionele Residensiële Sone (418 erwe), Plaaslike Besigheidsone (1 erf), Nutsdienste-Erf (1 Erf), Gemeenskapsone (1 Erf), Vervoerfasiliteitsone (2 Erwe), Openbare Oop Ruimtesone (3 erwe) en Openbare Paaie en Parkeersone (6 erwe).
- Ingevolge artikel 15(2)(d) van die Stellenbosch Munisipale Verordening op Grondgebruikbeplanning (2023) om Erf 64, Kylemore in 432 gedeeltes te onderverdeel.
- Ingevolge artikel 15(2)(k) van die Stellenbosch Munisipale Verordening op Grondgebruikbeplanning (2023) vir die kansellasië van 'n 8m-reg-van-weg serwituut oor Erf 64, Kylemore, wat deur 'n openbare pad vervang sal word.
- Goedkeuring van die volgende straatname; Mossiestraat, Arendstraat, Kanariestraat, Piet My Vroustraat, Bokmakieriestraat, Swaeltjiesstraat, Vinkstraat, Flaminkstraat, Houtkapperstraat en Tintinkiestraat.

Kennis word hiermee gegee in terme van die voorskrifte van die genoemde Verordeninge dat bovermelde aansoek by die Stellenbosch Munisipaliteit ingedien is vir oorweging. Die aansoek is beskikbaar vir insae op die Beplannings Portaal van die Stellenbosch Munisipaliteit se Webtuiste vir die tydspan van die publieke deelname proses by die volgende adres:

<https://www.stellenbosch.gov.za/planning/documents/planning-notices/land-use-applications-advertisements>. Indien die webtuiste of tersaaklike dokumente nie toeganklik is nie, moet die Aansoeker versoek word om 'n elektroniese kopie van die aansoek beskikbaar te stel.

Kommentaar en/ of besware kan vervolgens gedien word op die aansoek in terms van Artikel 50 van die tersaaklike Verordening. Skriftelike kommentaar, wat besonderhede ten opsigte van die verwysings nommer van die aansoek, die name, fisiese adres en kontak besonderhede van die persoon wat die kommentaar lewer, die redes vir die kommentaar, en die belang van die persoon wat die kommentaar lewer in die aansoek, by die Aansoeker ingedien word by wyse van elektroniese pos as volg: **Trymore Hutu van Thoba Mkangisa and Associates** op **admin@mkangisa.co.za**. Deur 'n beswaar, kommentaar of verhoë te rig, erken die persoon wat dit doen dat inligting aan die publiek en aan die aansoeker beskikbaar gestel kan word.

Die kommentaar moet binne 30 dae vanaf die datum van hierdie kennisgewing gestuur word en moet ontvang word voor of op die laaste dag van die sluitings datum van **11 Augustus 2025**.

Daar moet kennis geneem word dat die Munisipaliteit, in terme van Artikel 50(5) van die vermelde Verordeninge, mag weier om enige kommentaar / beswaar te aanvaar wat na die sluitingsdatum ontvang word.

Indien daar enige navrae op die aansoek of bovermelde vereistes vir die lewer van kommentaar is, of indien dit nie moontlik is om geskrewe kommentaar te lewer of die kommentaar op die wyse te lewer soos voorsienning gemaak is nie, kan die Aansoeker geskakel word vir bystand by die vermelde elektroniese pos adres of telefonies by **043 422 0534** gedurende normale kantoor ure **08h00 tot 16h00**.

Die uwe

Trymore Hutu (Stadsbeplanner) van Thoba Mkangisa and Associates



Address: 7 Tyrell Road, Berea, East London

E-mail: admin@mkangisa.co.za

Tel: 043 4220 534 & Fax 086 489 0540

The Municipal Manager
Stellenbosch Municipality
P. o. Box 17
Stellenbosch, 7599

17 June 2025

Attention: Mr Gerrit Goosen: Town Planner

APPLICATION FOR A PROPOSED SIMULTANEOUS REZONING AND SUBDIVISION OF THE REMAINDER OF ERF 64 KYLEMORE TOWNSHIP FROM AGRICULTURAL AND RURAL ZONE TO SUBDIVISIONAL AREA OVERLAY ZONE AND CANCELLATION OF 8M RIGHT OF WAY SERVITUDE OVER ERF 64 KYLEMORE.

The application is hereby submitted:

- In terms of section 15 (2) (a) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to rezone Erf 64, Kylemore from Agricultural and Rural Zone to Subdivisional Area Overlay Zone to accommodate the following zonings: Conventional Residential Zone (418 erven), Community Zone (1 erf), Local Business Zone (1 erf), Utility Services Zone Erf (1 Erf), Transport Facility Zone (2 Erven), Public Open Space Zone (3 erven) and Public Roads and Parking Zone (6 erven).
- In terms of section 15 (2) (d) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to subdivide Erf 64, Kylemore into 432 portions.
- In terms of section 15 (2) (k) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) for cancellation of an 8m right of way servitude over Erf 64, Kylemore, which will be replaced by a public road in conjunction with the **Stellenbosch Municipality Zoning Scheme By-Law (2019)**. (See **Power of Attorney** attached as **Annexure 8 - Power of Attorney**).

The following documentation has been attached with this report:

- Proposed Layout Plan
- Motivation Report
- SPLUMA Application Form
- Power of Attorney
- Specialist Studies

Should you require any additional information, please do not hesitate to contact the undersigned.

Yours Sincerely,



.....
T. Hufu Pr. Pln. (SA) A/ 1966/2014
Town Planner

MOTIVATION REPORT

APPLICATION FOR A PROPOSED SIMULTANEOUS REZONING AND SUBDIVISION OF THE REMAINDER OF ERF 64 KYLEMORE TOWNSHIP FROM AGRICULTURAL AND RURAL ZONE TO SUBDIVISIONAL AREA OVERLAY ZONE AND CANCELLATION OF 8M RIGHT OF WAY SERVITUDE OVER ERF 64 KYLEMORE.

Prepared by:

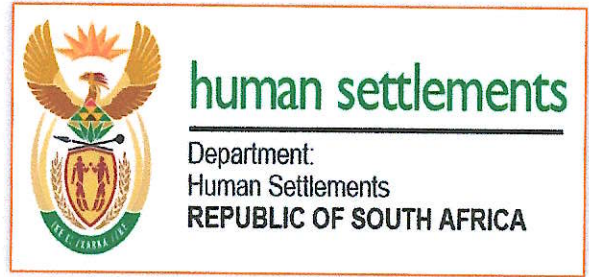


Address: 7 Tyrell Road, Berea, East London

E-mail: admin@mkangisa.co.za

Tel: 043 4220 534 & Fax 086 489 0540

On behalf of



17 June 2025

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1 BACKGROUND

Stellenbosch Local Municipality as part of its human settlement's delivery mandate aims to undertake the development of the remainder of Erf 64 Kylemore which measures approximately 6.9272 Hectors (Ha) in extent. The municipality will through this proposal develop an integrated human settlement by providing sustainable residential opportunities for beneficiaries from Kylemore and surrounds as well as incorporate the current occupancy status on the property.

The property is strategically located and therefore a proposed development which incorporates retail space for economic opportunities is imperative for the financial viability of the development. To achieve the main goal of creating integrated and sustainable human settlements with an expression of green spaces and social facilities, the proposed development must incorporate the proposed land uses approved in 2010 by the municipality which include an early childhood development centre as well as public open spaces.

Rem of Erf 64, Kylemore falls outside the declared PSHDA, (Stellenbosch urban Core), however, the proposed development will apply the following land development as provided for in the Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) which include Spatial Justice, Spatial Sustainability, Efficient, and Spatial Resilience.

2 INTRODUCTION

The Housing Development Agency (HDA), a public entity under the Department of Human Settlements, appointed **THOBA MKANGISA AND ASSOCIATES** for the provision of Professional Services to simultaneously rezone and subdivide Rem of Erf 64, Kylemore, in order to allow for sustainable and integrated human settlements, Stellenbosch Local Municipality (SLM). The application is hereby submitted:

- In terms of section 15 (2) (a) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to rezone Erf 64, Kylemore from Agricultural and Rural Zone to Subdivisional Area Overlay Zone to accommodate the following zonings; Conventional Residential Zone (418 erven), Community Zone (1 erf) Local Business Zone (1 erf), Utility Services Zone Erf (1 Erf), Transport Facility Zone (2 Erven), Public Open Space Zone (3 erven) and Public Roads and Parking Zone (6 erven).

- In terms of section 15 (2) (d) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to subdivide Erf 64, Kylemore into 432 portions.
- In terms of section 15 (2) (k) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) for cancellation of an 8m right of way servitude over Erf 64, Kylemore, which will be replaced by a public road. (See **Power of Attorney** attached as **Annexure 8 - Power of Attorney**).

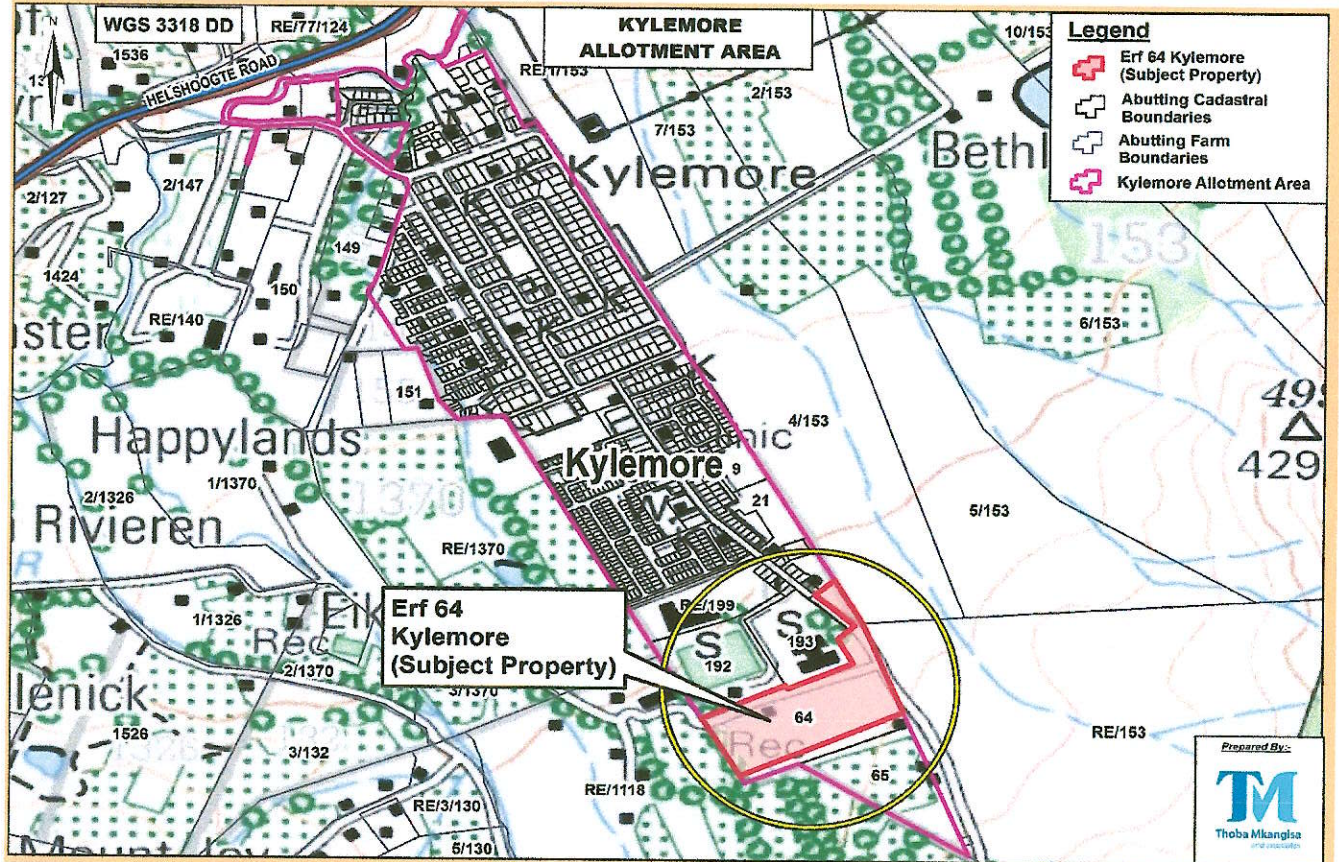
3 PROPERTY LOCALITY & ACCESS, DESCRIPTION, SIZE, AND OWNERSHIP

3.1 Locality & Access

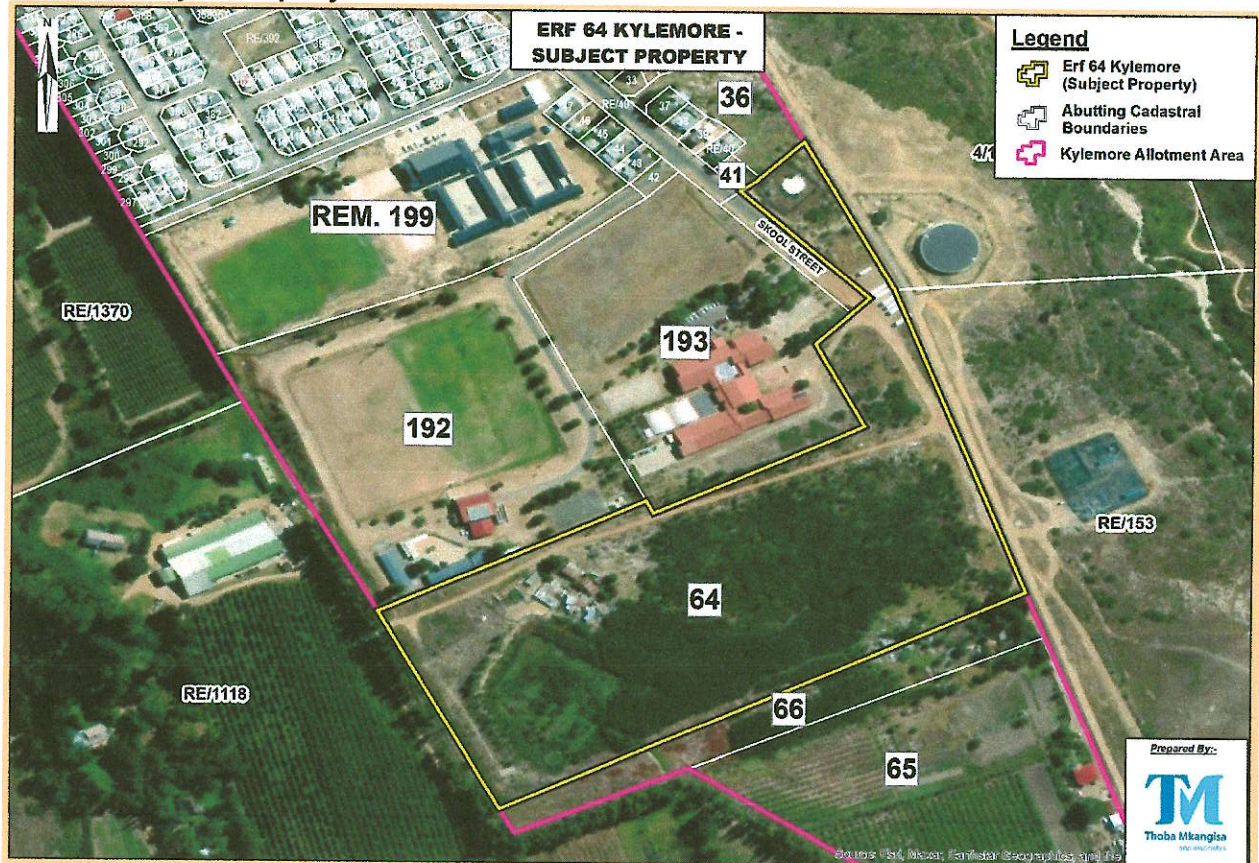
Kylemore is a town in the Stellenbosch Municipality. It is located in the Cape Winelands within Helshoogte Pass on the route from Stellenbosch to Franschhoek. The town is surrounded by mountains and rivers, with walking trails into the neighbouring countryside. This is where the project is going to be conducted. There is a need for the provision of sustainable and integrated human settlements in Kylemore.

The subject property is located in Ward 4 and can be accessed through Helshoogte Road and Skool Street as indicated on **Plans 3-1 to 3-2 below and ANNEXURE A – LOCALITY MAPS**.

Plan 3-1: Kylemore Allotment Area – 1:50 000



Plan 3-2: Subject Property



3.2 Description, Size and Ownership

A copy of the Deed of Transfer that includes the information outlined below is contained

ANNEXURE 5 – DEED OF TRANSFER.

Erf Number:	Remainder Erf 64, Kylemore,
Municipality:	Stellenbosch RD, Province of Western Cape
Province:	Western Cape
Deed No.:	T6822/1949
Property Owners:	Department of Public Works and Infrastructure (DPWI)
Property Size:	6.927 Hectares
Title Deed Restrictions:	None
Bond:	None
Servitude:	A 8m wide right of way servitude is registered over the remainder of Erf 64 in favour of Farm Dwars Rivers Hoek No.1118, Stellenbosch RD as set out in Notarial Deed of Servitude no K983/2002

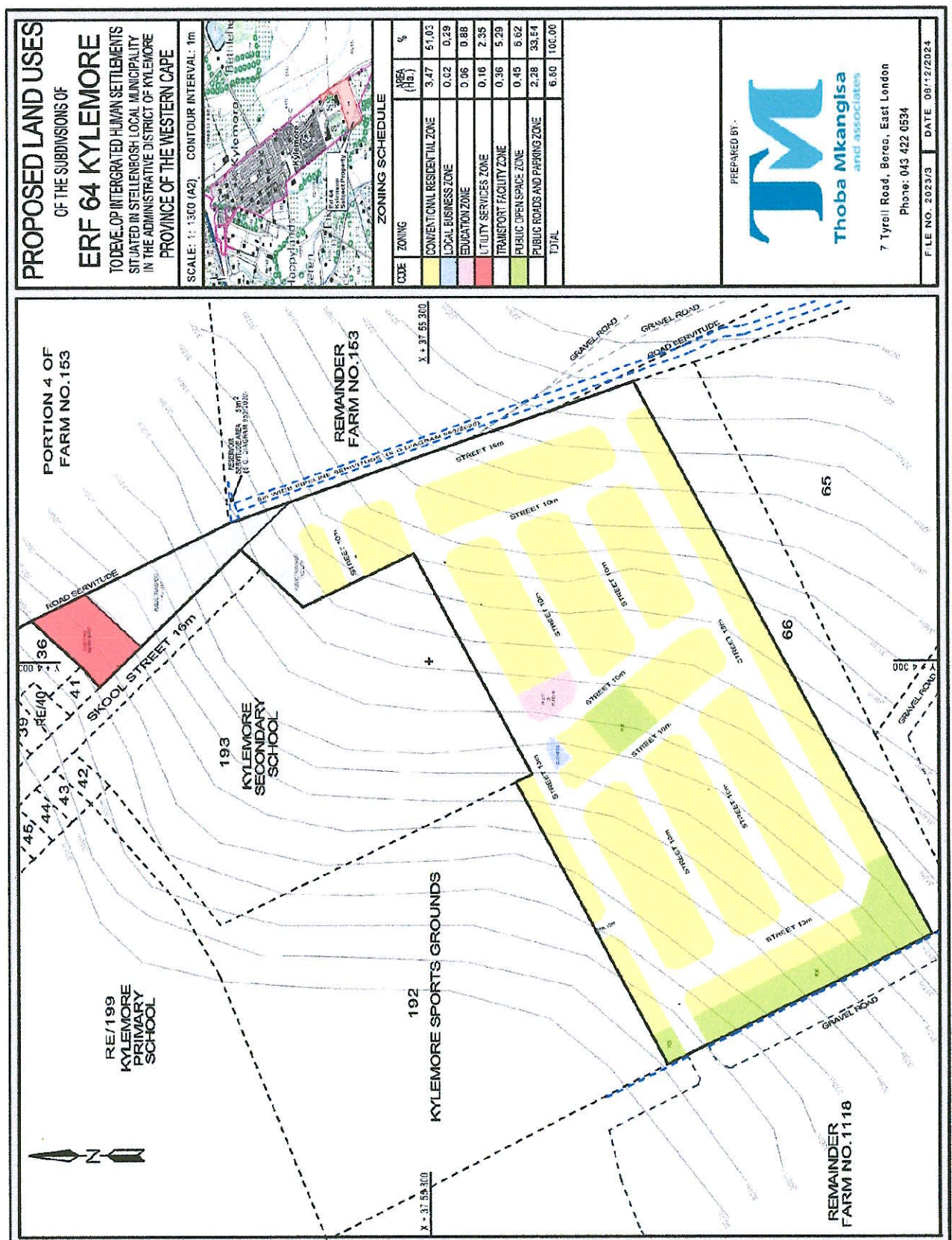
4 SITE DESCRIPTION

4.1 Current and Surrounding Land Uses

The records from Stellenbosch Municipality indicated that ERF 64 is currently zoned as Agricultural and Rural Zone. The property is surroundings include schools and dwelling houses and vast vacant land.

See Plans 4-1 and 4-2 below and ANNEXURE 2: SURROUNDING LAND USES

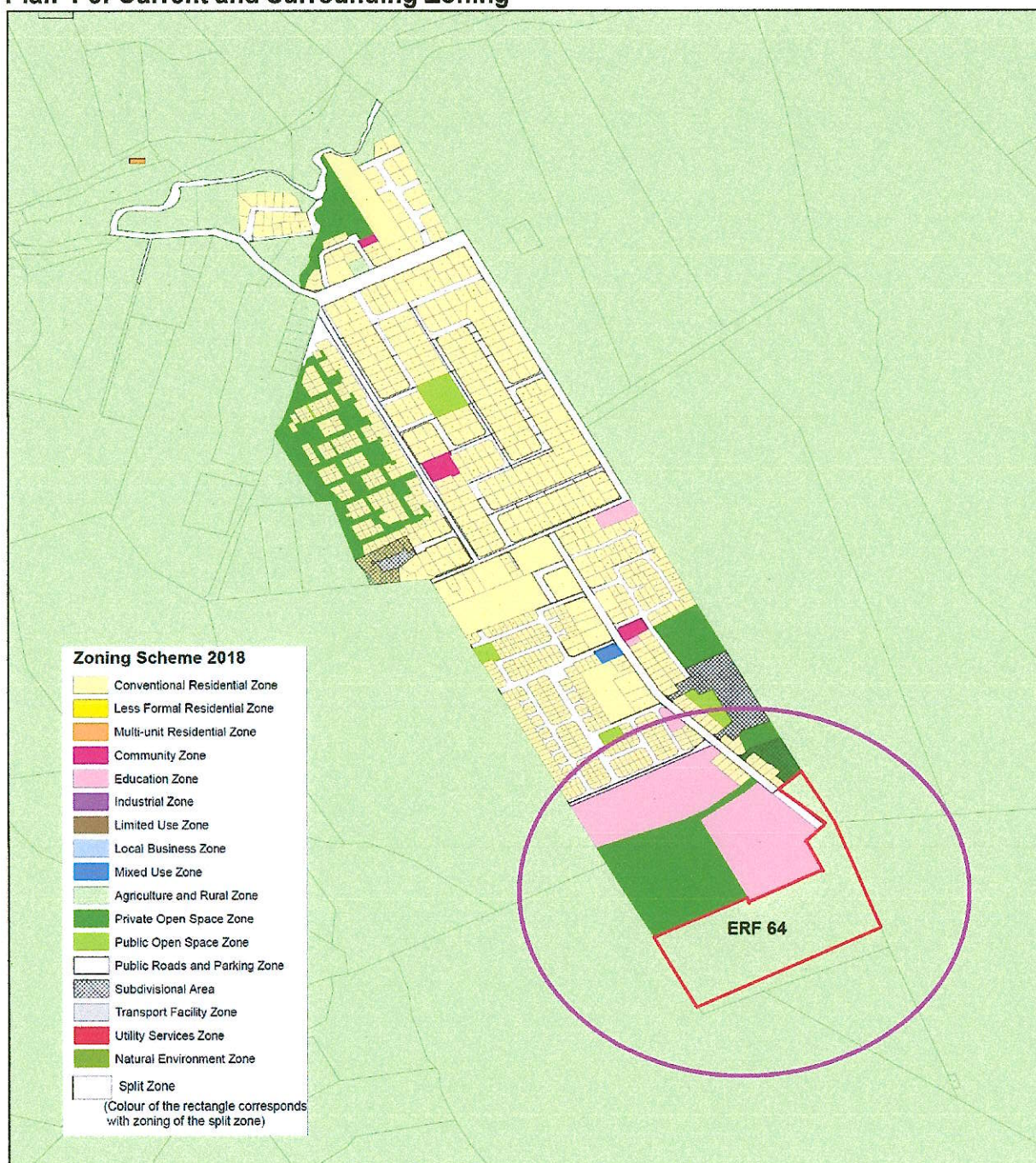
[illegible]



4.2 Use of the property

The Rem of Erf 64 Kylemore, Stellenbosch Municipality, is zoned as Agricultural and Rural Zone to Subdivisional Area Overlay Zone in accordance with the Stellenbosch Municipality Zoning Scheme By-Law (2024) as mentioned above. However, there are a handful of shacks on the located towards the northern boundary abutting the schools. There is a gravel road (also registered as a servitude) that's straddle the site and a retaining dam in the southern portion of the site. But the e major of the sire remains vacant. (see **PLAN 4-2 and ANNEXURE – SURROUNDING ZONING MAP**).

Plan 4-3: Current and Surrounding Zoning

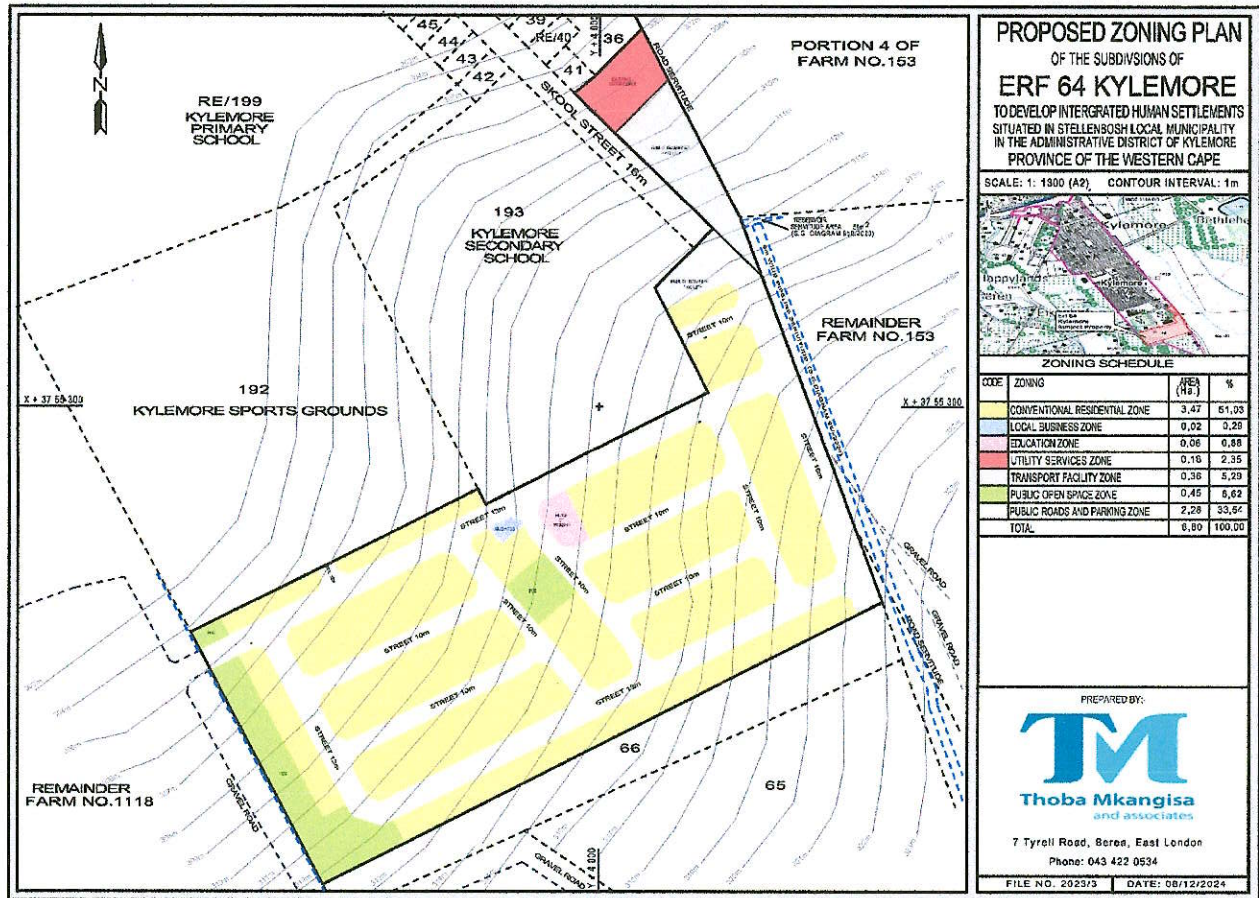


Source: Stellenbosch Municipal zoning scheme 2024

4.3 Proposed Zoning

The property owner wishes to subdivide Remainder Erf 64, Kylemore, (subject property) and subsequently rezone the property from Agricultural and Rural Zone to Subdivisional Area Overlay Zone to accommodate the following zonings; Conventional Residential Zone (418 erven), Local Business Zone (1 erf), Utility Services Zone Erf (1 Erf), Transport Facility Zone (2 Erven), Public Open Space Zone (3 erven) and Public Roads and Parking Zone (6 erven).

Plan 4-4: Proposed Zoning Plan

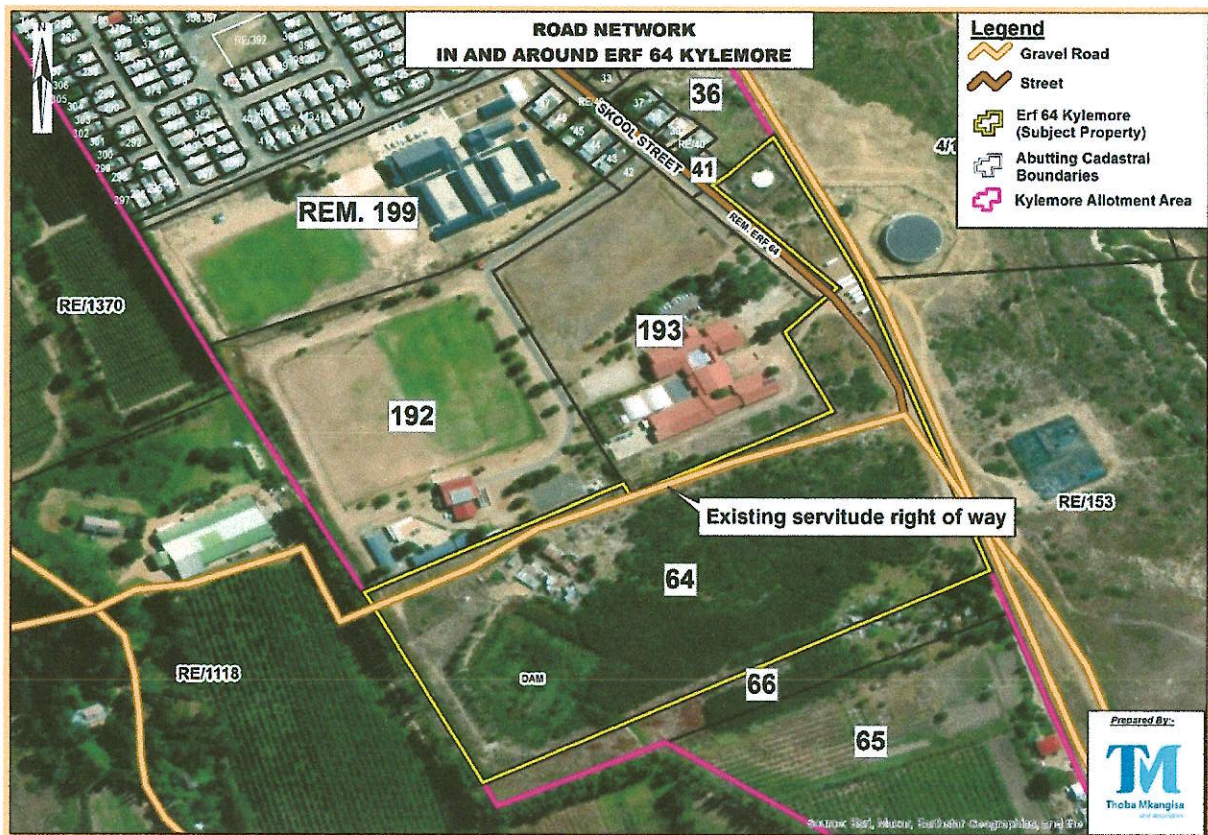


4.4 Infrastructure Services

The study area is within a developed area and some of the services will be connected from nearby formalised areas. All connections and future upgrades to the bulk infrastructure system will be done with the consent of the Municipality Engineering Department.

- **Roads/Accessibility** - Access to the proposed development will be gained via the existing Skool Street. This road currently provides access to Kylemore High School, two farms, a couple of houses and a property of the Department of Water Affairs and Forestry. Skool Street Road reserve is 16 meters wide and the street has a black top width of 5.6 meters with mountable concrete kerbs and channels on both sides.
- Skool Street has been constructed with a permanent surface and kerbs up to the gate of Kylemore High School. Approximately 215 meters of road will have to be constructed to the boundary of the development.

Plan 4-5: Road network in and around Erf 64 Kylemore



- **Stormwater** – A portion of the site. This detention pond is required as part of the stormwater management system of Kylemore, and it must be part of the infrastructure that will be supporting the proposed development of integrated and sustainable human settlement in erf 64, Kylemore, Stellenbosch. The stormwater runoff from the development will be disposed into the said detention pond. A portion of runoff from the lower lying area will be disposed into the adjacent municipal stormwater system below the detention pond. The study further revealed that no upgrading of the existing municipal stormwater disposal system is expected.
- **Sewer** – GLS Engineering provides the information on the existing sewer reticulation system. The sewer connection point for this ERF 64, Kylemore, Stellenbosch Municipality, is at Gouwsblom Street. A 160 mm diameter link sewer line will have to be installed from the proposed development to the connection point. The expected sewage flow from the development is approximately 100kl/day and it is revealed that no upgrading of the treatment works will be required to accommodate the development.

- **Water Supply** – according to GLS Engineering the capacity of the water source and the water treatment works is adequate to accommodate the proposed development. It is further suggested that it will be necessary to provide a new pump station at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 1.5ML Kylemore Upper reservoir (at 360m MSL), and a new 160mm diameter delivery waterline from the new Kylemore Upper reservoir.
- **Electricity** - DK Electrical Consultants liaised with Eskom and they revealed that the proposed development can be supplied with electricity from the existing 11kV overhead network in the area. An 11Kv cable has to be installed from the end of the existing line (approximately 30m from the northern boundary of the erf 64, Kylemore, Stellenbosch Municipality) to supply two new miniature substations inside the proposed development.
- **Refuse Collection** – Stellenbosch Municipality will be responsible for refuse removal in the proposed development.

Plan 4-6: 8 metre wide road servitude diagram over Erf 64 Kylemore

SERWITUUTKAART						KANTOOFAFSKRIF
Friedlaender, Burger & Volkmann Landmeters						L.G. No. 11339/94
SYE Meter	RIGTINGS- HOEKE	Y		KOORDINATE Stelsel Lo 19 ⁰ X		Goedgekeur <i>M. Burger</i> Landmeter-generaal 1995-01-11
	Konstante :	0,00		+ 3700000,00		
AB	188,50	63 06 20	A +	3835,13	+ 54972,85	
BC	50,99	74 25 00	B +	4003,25	+ 55058,12	
CD	140,30	63 06 20	C +	4052,36	+ 55071,82	
			D +	4177,22	+ 55135,15	
	494 Kyle	Δ +		4487,15	+ 54333,05	
	66 Stel B	Δ +		6958,78	+ 56242,25	

BESKRYWING VAN BAKENS
All beacons are 12mm iron pegs

SKAAL 1 : 3000

Die lyn ABCD stel voor die Noordwesterlike grens van n 8,00 meter wyd servituutpad oor die Restant ERF 64 KYLEMORE

gelee in die Kylemore Plaaslike Gebied
Administratiewe Distrik van Stellenbosch
Opgemeet in Desember 1994
deur my

Provinsie Kaap die Goeie Hoop
M. Burger
PLS 0080 D P Burger Pr Landmeter

Hierdie kaart is geheg aan No. Gedateer t.g.v. Registrateur van Aktes	Die oorspronklike kaart is No.3837/1920 geheg aan Transport No.16306/1920	Leer No. 9/Stel 124 M.S. No. E3745/94. Komp. BH-BDBD (3781) BH-BDB/Y4 (1489)
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M

SERWITUUTKAART

Plan 4-7: Servitude over remainder Farm Old Bethlehem No.153 – Diagram 950/2020

Sheet 1 of 2 sheets

SERVITUDE DIAGRAM						OFFICE COPY
SIDES Metres		ANGLES OF DIRECTION	CO-ORDINATES System WG 19°		S.G. No.	
		Constants :	Y	X	950/2020	
A B	23,51	265 23 50	A	+3 917,94	+3 755 190,98	
B C	22,73	74 15 30	B	+3 894,50	+3 755 189,08	
C A	4,54	159 56 40	C	+3 916,38	+3 755 195,24	
D E	266,42	339 50 00	D	+3 907,17	+3 755 192,65	
E F	22,44	333 49 10	E	+3 815,33	+3 755 442,74	
F G	11,25	353 55 30	F	+3 805,43	+3 755 462,87	
G H	255,09	340 15 00	G	+3 804,23	+3 755 474,06	
H J	23,19	299 26 10	H	+3 718,04	+3 755 714,15	
J K	15,33	342 29 10	J	+3 697,84	+3 755 725,54	
K L	21,45	21 01 50	K	+3 693,23	+3 755 740,16	
L M	11,05	341 03 00	L	+3 700,92	+3 755 760,19	
M N	7,03	324 49 10	M	+3 697,34	+3 755 770,64	
N P	7,84	304 35 10	N	+3 693,28	+3 755 776,39	
P Q	28,35	279 18 40	P	+3 686,83	+3 755 780,84	
R S	27,30	235 59 30	R	+3 656,77	+3 755 779,86	
S T	16,00	279 45 00	S	+3 634,14	+3 755 764,60	
T U	21,09	305 21 40	T	+3 618,37	+3 755 767,31	
U V	19,62	354 49 10	U	+3 601,17	+3 755 779,51	
V W	28,98	39 02 50	V	+3 599,40	+3 755 799,05	
W X	13,94	99 21 50	W	+3 617,65	+3 755 821,56	
X Y	39,15	126 47 00	X	+3 631,41	+3 755 819,29	
Y R	17,07	200 33 30	Y	+3 662,77	+3 755 795,85	
INDICATORY DATA						
Z Q	0,53	279 18 40	Z	+3 659,38	+3 755 785,34	
Q R	5,94	200 33 30				
	492	JONK	△	+5 013,33	+3 758 155,35	
	66	STEL 8	△	+7 021,78	+3 756 541,33	
<p>1. The figure ABC represents a reservoir servitude area 51 square metres, as shown.</p> <p>2. The lines DE, EF, FG and GH represent the Eastern boundary, the line HJ represents the North-eastern boundary restricted to the boundary line, the line JK represents the Eastern boundary restricted to the boundary line, the line KL represents the South-eastern boundary restricted to the boundary line, the lines LM and MN represent the Eastern boundary, the line NP represents the North-eastern boundary and the line PQ represents the Northern boundary of a water pipeline servitude 5,00 metres wide, as shown</p> <p>3. The figure RSTUVWXY represents a reservoir servitude area 2421 square metres, as shown.</p> <p style="text-align: center;">over Remainder FARM OLD BETHLEHEM No. 153</p> <p>Situate in the Stellenbosch Municipality Administrative District of Stellenbosch Surveyed in February to June 2019 by me</p> <p style="text-align: right;">Province of Western Cape <i>M Stuart-Fox</i> PLS 1354 M R Stuart-Fox Pr Land Surveyor</p>						
This diagram is annexed to No.		The original diagram is No. 11272/1952		File No. Stel.153 V.1		
Dated K 471/2022 ^s		Annexed to		S.R. No. 510/2020		
i.f.o.		C.C.T. No. 1954- -275		Comp. BH-8DB/Y4 (1489)		
Registrar of Deeds				BH-8DBD (3781)		
				LPI C0670000		
SERV DGM 950/2020						

Friedlaender, Burger & Volkmann - Land Surveyors

EXEMPT FROM PROVISIONS OF ACT
70 OF 1970
SECTION 2 (a) iii

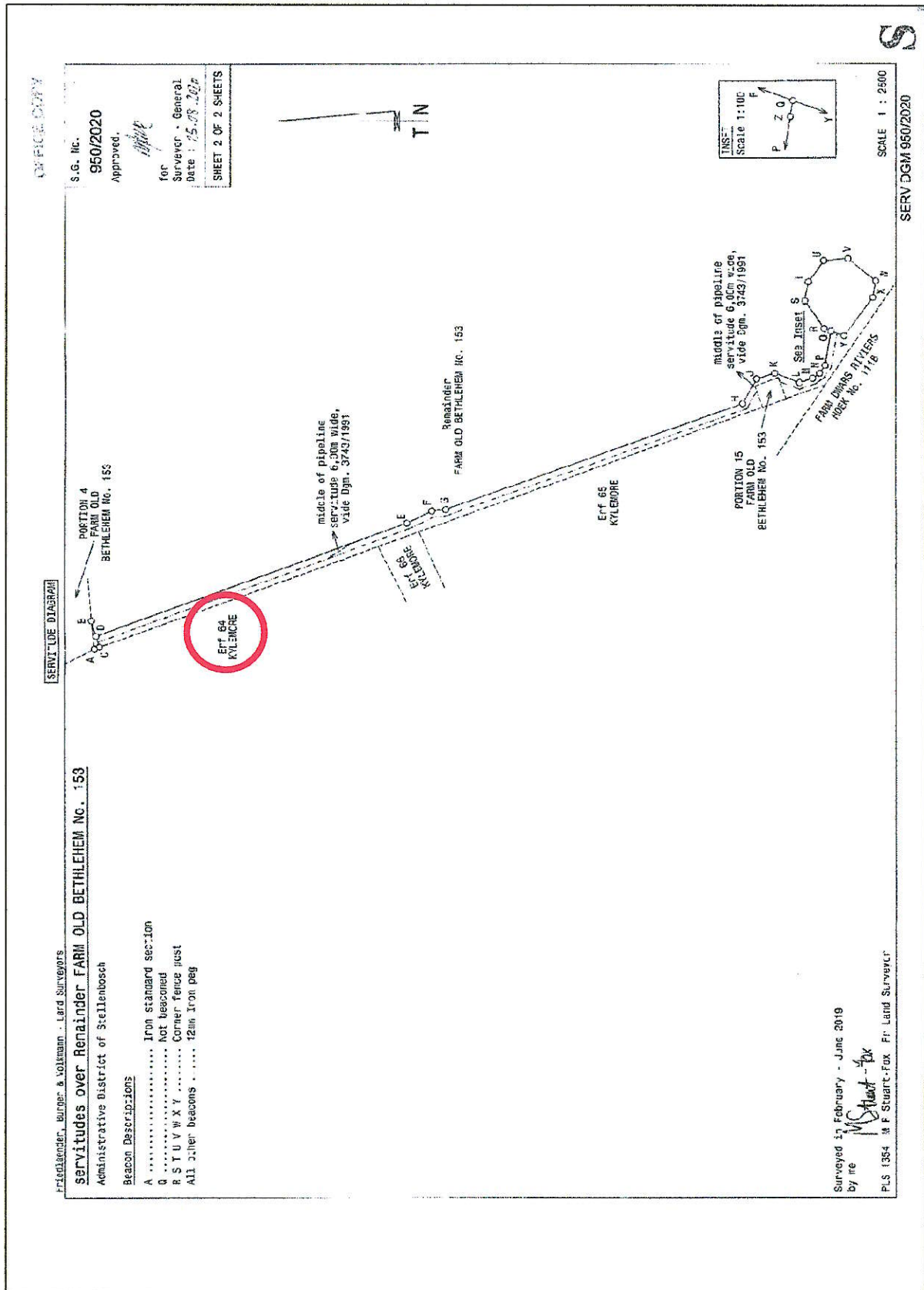
Exempt i.o. Section 24
of Municipal Land Use Planning Bylaw
Ref: 153/1
Date: 20-03-2020

Approved.
M Stuart-Fox
for
Surveyor - General
Date : 25/08/2020

SHEET 1 OF 2 SHEETS

S

Sheet 2 of 2 sheets



4.5 Statutory Specifications

Stellenbosch Municipality Zoning Scheme By-Law (2024)

The **Stellenbosch Municipality Zoning Scheme By-Law (2024)** prescribes specific development parameters applicable to the various proposed land uses. The information below is the summary of the prescribed development parameters for a **CONVENTIONAL RESIDENTIAL ZONE**:

DEVELOPMENT PARAMETERS FOR CONVENTIONAL RESIDENTIAL ZONE				
COLOUR NOTATION:		Yellow		
Primary Use:		Dwelling house		
Additional Uses (not exceeding the threshold in this chapter and subject to technical approval)		<ul style="list-style-type: none">• Bed and breakfast establishment• Home day care centre• Home occupation practice• Home lodging• Second dwelling• Occasional use (one event/year) Private road		
Consent Uses (application required)		<ul style="list-style-type: none">• Commune• Extramural facility• Group housing• Guest house• House shop• Occasional use (>one event/year) Tourist dwelling unit		
BUILDING DEVELOPMENT PARAMETERS IN THIS ZONE				
The following building lines, coverage and height shall apply to all buildings within this zone:				
Area of land unit	Street boundary building lines (m)	Common boundary building lines (m)	Coverage	Height
Up to 250m ²	2m	1m	70%	2 storeys
251m ² to 500m ²	3m	1m	The greater of 175m ² or 60%	2 storeys
501m ² to 1500m ²	4m	2.5m	The greater of 300m ² or 50%	2 storeys
Greater than 1500m ²	4m	2.5m	The greater of 750m ² or 40%	2 storeys

5 DEVELOPMENT PROPOSAL

5.1 Remainder of Erf 64, Kylemore, Stellenbosch & Township Establishment

The development proposal is based on the proposed rezoning and subdivision of remainder 64, Kylemore, Stellenbosch Municipality and cancellation of an 8m right of way servitude over Erf 64, Kylemore, which will be replaced by a public road to permit the development of a conventional residential zone through township establishment (see: **Proposed layout Plan 5-1**).

The proposed township establishment on the remainder of ERF 64, Kylemore, Stellenbosch Municipality, is a Greenfield Development as the area is currently vacant and has never been used for development purposes before. No prior planning was done for the subject property.

The proposed township is ideal as it aims to provide a baseline for the human settlement development proposals as highlighted in Stellenbosch Municipality Spatial Development Framework (2019) and Integrated Development Plan (2022 – 2027).

The application further entails the following:

- In terms of section 15 (2) (a) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to rezone Erf 64, Kylemore from Agricultural and Rural Zone to Subdivisional Area Overlay Zone to accommodate the following zonings; Conventional Residential Zone (418 erven), Community Zone (1 erf) Local Business Zone (1 erf), Utility Services Zone Erf (1 Erf), Transport Facility Zone (2 Erven), Public Open Space Zone (3 erven) and Public Roads and Parking Zone (6 erven).
- In terms of section 15 (2) (d) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) to subdivide Erf 64, Kylemore into 432 portions.
- In terms of section 15 (2) (k) of the Stellenbosch Municipal Bylaw on Land Use Planning (2023) for cancellation of an 8m right of way servitude over Erf 64, Kylemore, which will be replaced by a public road.

Options / Choices on Layout Plans and street names

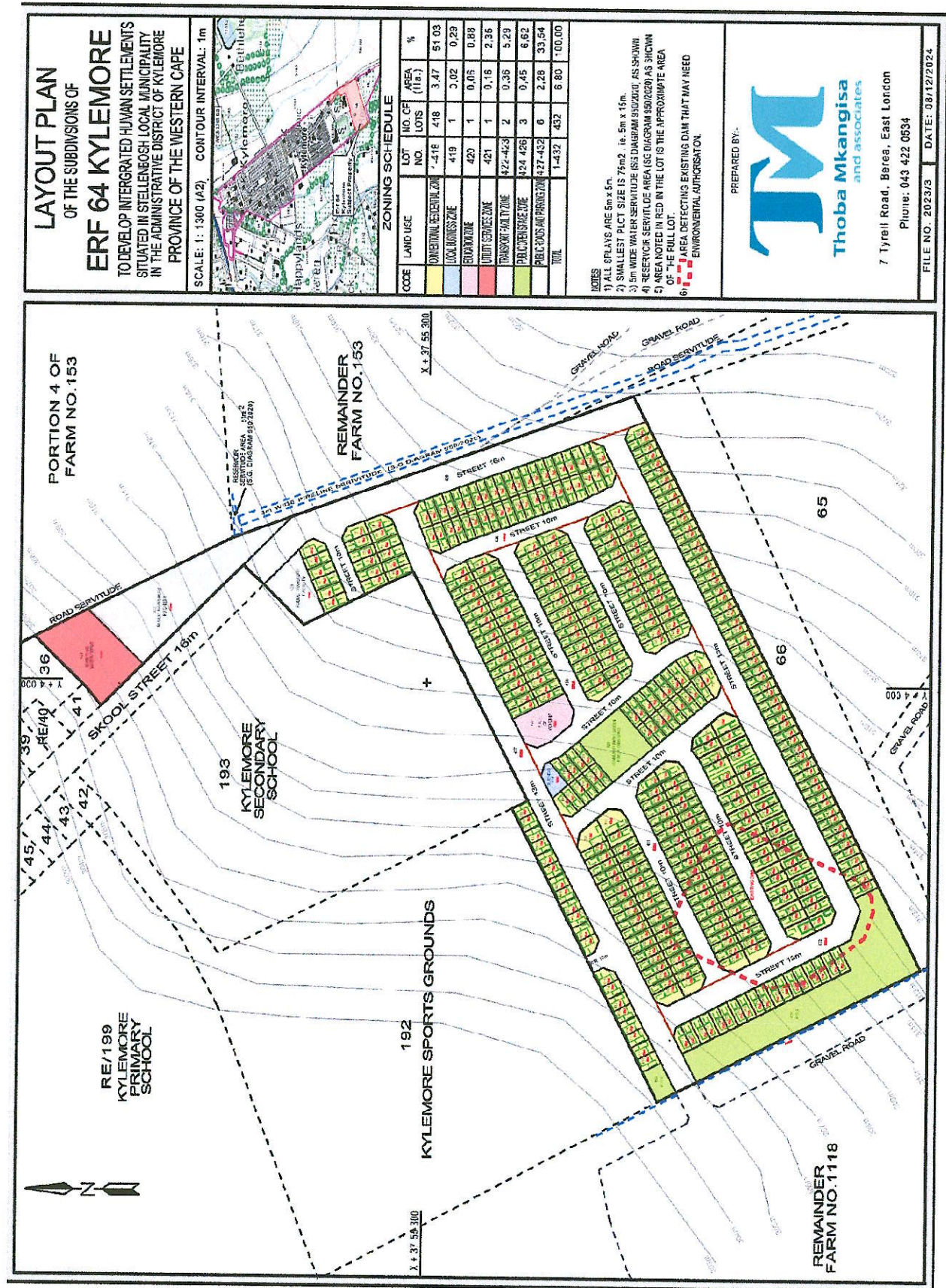
There were three (3) options of layout plans namely Choice A, B & C which were developed and the municipality has provisionally approved **Choice A**. The Choice A has been provided below. Furthermore, these choices or options of Layout plans were attached as annexure 14. In addition, there were three options of street names which proposed by the municipality. The street names which are in Choice A – Layout Plan were selected.

See Table 5-1 and Proposed Layout Plan (Choice A) below.

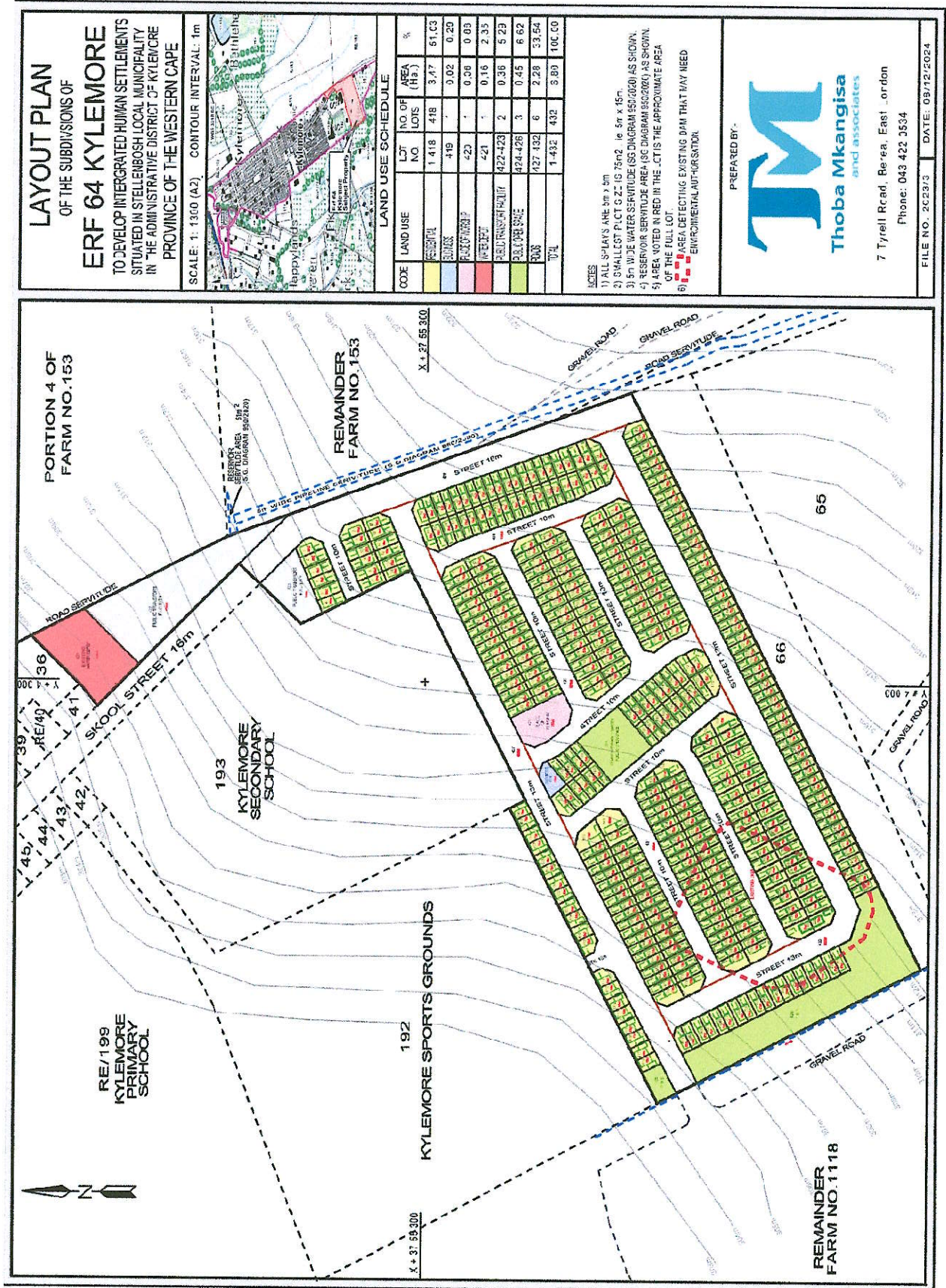
Table 5-1: Proposed Land Use Schedule for the Remainder of Erf 64, Kylemore

LAND USE AND ZONING SCHEDULE						
CODE	ZONING SCHEDULE	LAND USE SCHEDULE	LOT NO.	NO. OF LOTS	AREA (Ha.)	%
	CONVENTIONAL RESIDENTIAL ZONE	RESIDENTIAL	1-418	418	3,47	51,03
	LOCAL BUSINESS ZONE	BUSINESS	419	1	0,02	0,29
	EDUCATION ZONE	PLACE OF WORSHIP	420	1	0,06	0,88
	UTILITY SERVICES ZONE	WATER DEPOT	421	1	0,16	2,35
	TRANSPORT FACILITY ZONE	PUBLIC TRANSPORT FACILITY	422-423	2	0,36	5,29
	PUBLIC OPEN SPACE ZONE	PUBLIC OPEN SPACE	424-426	3	0,45	6,62
	PUBLIC ROADS AND PARKING ZONE	STREET	427-432	6	2,28	33,54
TOTAL			1-432	432	6,80	100,00

Plan 5-1: Proposed Layout Plan – zoning schedule



Plan 5-2: Proposed Layout Plan – with land use schedule



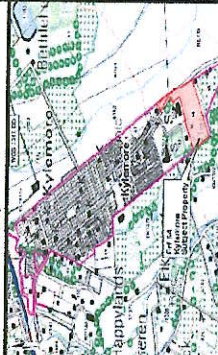
Plan 5-3: Proposed Layout Plan – with an aerial view



LAYOUT PLAN OF THE SUBDIVISIONS OF ERF 64 KYLEMORE

TO DEVELOP INTEGRATED HUMAN SETTLEMENTS
SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY
IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE
PROVINCE OF THE WESTERN CAPE

SCALE: 1:1300 (A2) CONTOUR INTERVAL: 1m



ZONING SCHEDULE

CODE	LAND USE	LOT NO.	NO. OF LOTS	AREA HA	%
RESIDENTIAL	RESIDENTIAL	1-478	410	3.47	5.33
AGRICULTURAL	AGRICULTURAL	479	1	0.02	0.28
INDUSTRIAL	INDUSTRIAL	420	1	0.06	0.88
COMMERCIAL	COMMERCIAL	421	1	0.16	2.35
RECREATION	RECREATION	422-423	2	0.36	5.29
RESIDENTIAL	RESIDENTIAL	424-426	3	0.15	6.62
RECREATION	RECREATION	427-432	5	2.28	35.54
TOTAL		1-432	432	6.80	100.00

NOTES

- 1) ALL SPLAYS ARE 5m x 5m
- 2) SMALLEST PLOT SIZE IS 73m² 16.5m x 16m
- 3) 5m WIDE WATER SERVICE (SS DIAGRAM 900/2020) AS SHOWN
- 4) RESERVOIR SERVICE AREA (SS DIAGRAM 550/2020) AS SHOWN
- 5) AREA NOTED IN RED IN THE LOT IS THE APPROXIMATE AREA OF THE FULL LOT.
- 6) AREA DETECTING EXISTING DATA THAT MAY NEED ENVIRONMENTAL AUTHORIZATION

PREFACE BY:-



**Thoba Mkgangisa
and Associates**

7 Tyrell Road, Berea, East London
Phone: 043 422 0534

FILE NO. 2023/3 DATE: 06/12/2024

Plan 5-4: Layout on Google Earth 2024



Plan 5-5: ERF 192 KYLEMORE (ABUTTING TO ERF 64)

KANTOORAFSKRIF

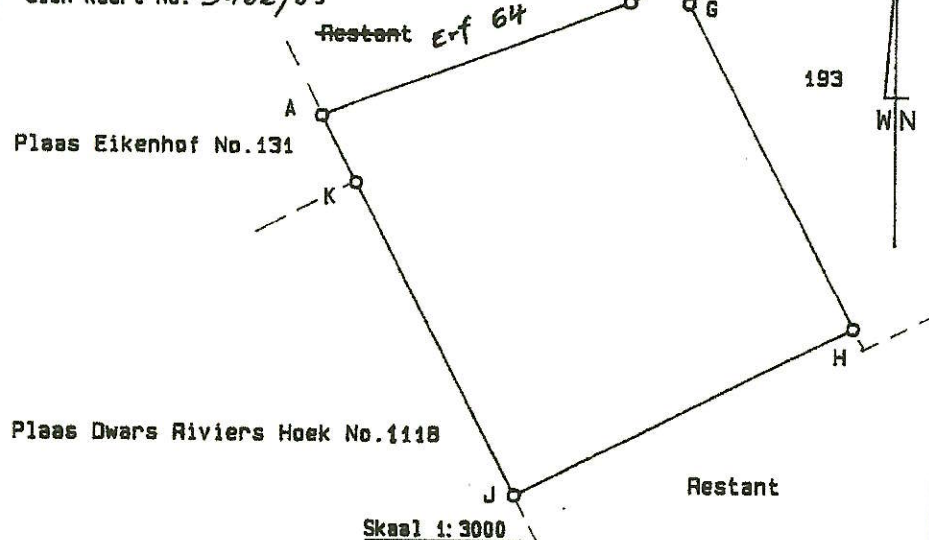
Friedlaender Burger & Volkmann, Land Surveyors

SYE Meter		RIGTINGS- HOEKE		KOÖRDINATE Stelsel L019°			L.G. No.
		Konstante	Y	X			
			+	0,00	+3 700 000,00	3464-89	
A B	165,00	249 08 40	A +	4 274,69	+ 54 943,39	Goedgekeur <i>M. van der</i> Landmeter-generaal <i>1989-08-15</i>	
B C	47,87	241 24 10	B +	4 120,50	+ 54 884,65		
C D	76,15	230 16 50	C +	4 078,47	+ 54 861,74		
D E	28,00	224 25 20	D +	4 019,90	+ 54 813,08		
E F	12,93	314 25 20	E +	4 000,30	+ 54 793,08		
F G	129,90	50 16 50	F +	3 991,07	+ 54 802,13		
G H	183,96	333 06 20	G +	4 090,99	+ 54 885,14		
H J	190,00	63 06 20	H +	4 007,77	+ 55 049,20		
J K	176,80	153 06 20	J +	4 177,22	+ 55 135,15		
K A	38,30	152 50 00	K +	4 257,20	+ 54 977,47		
		Kyle	△ +	4 487,15	+ 54 333,05	Skoelstraat 16m - 43	
		Stel 8	△ +	6 958,78	+ 56 242,25		

Beskrywing van Bakens. Alle bakens is 12mm ysterpenne

Komponente

1. Die figuur DEFL stel voor Restant ERF 42 KYLEMORE
Sien kaart No. 3460/89
2. Die figuur ABCDLGHJK stel voor ERF 190 KYLEMORE
Sien kaart No. 3462/89



Die figuur A B C D E F G H J K

stel voor 4,0376 hektaar

ERF 192 KYLEMORE en bevat 1. en 2. soos hierbo

geleë in Kylemore Plaaslike Gebied

Administratiewe Distrik van Stellenbosch

Opgemeet in Maart 1987 - April 1989

deur my

Provincie Kaap die Goëie Hoop.

J. Burger.
Landmeter

Hierdie kaart is geheg aan

No.
gedateer
t.g.v.

Registrateur van Aktes

Die oorspronklike
kaarte is soos hierb
aangetoon

Lêer No. Stel 124
M.S. No. E1194/89
Komp.

BH- 8080 (3781)
BH- 808/Y4 (1489)

192

Plan 5-6: Erf 193 Kylemore (abutting To Erf 64)

KANTOORAFSKRIF

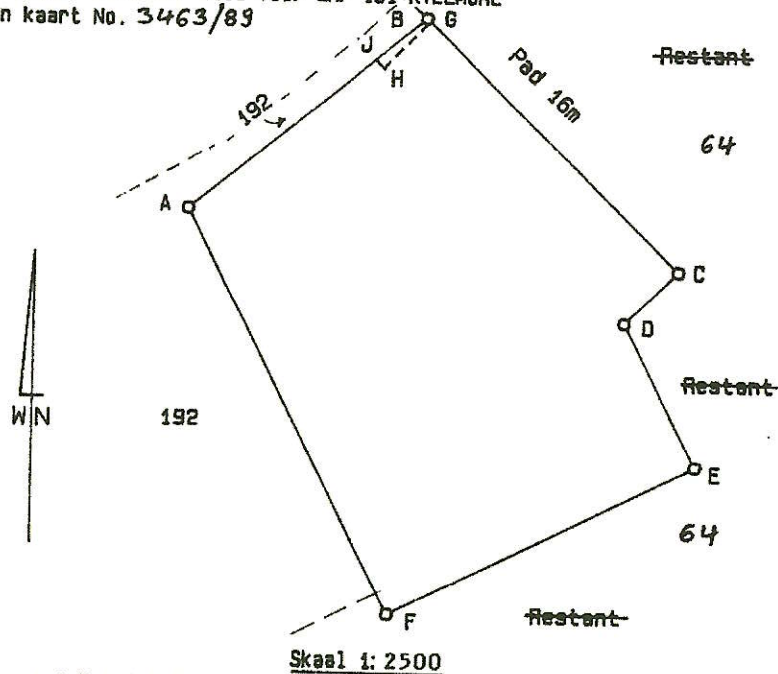
Friedlaender Burger & Volkmann, Land Surveyors

SYE Meter	RIGTINGS- HOEKE	Konstante	Y	KOÖRDINATE Stelsel Lo19"		L.G. No.
				0,00	+3 700 000,00	
A B	129,90	230 16 50	A +	4 090,99	+ 54 885,14	3465-89 Goedgekeur nms <i>M. Burger</i> Landmeter-generaal 1989-07-11 1990-02-15
B C	152,07	314 25 20	B +	3 991,07	+ 54 802,13	
C D	32,07	44 25 50	C +	3 882,45	+ 54 908,57	
D E	68,46	333 06 20	D +	3 904,90	+ 54 931,47	
E F	145,00	63 06 20	E +	3 873,93	+ 54 992,53	
F A	193,96	153 06 20	F +	4 003,25	+ 55 058,12	
		Kyle	Δ +	4 487,15	+ 54 333,05	
		Stel 8	Δ +	6 958,78	+ 56 242,25	

Beskrywing van Bakens. Alle bakens is 12mm ysterpenne

KOMPONENTE:

1. Die figuur BGHJ stel voor ERF 189 KYLEMORE
Sien kaart No. 3461/89
2. Die figuur AJHGDEF stel voor ERF 191 KYLEMORE
Sien kaart No. 3463/89



Die figuur A B C D E F

stel voor 3,1503 hektaar

ERF 193 KYLEMORE en bevat 1. en 2. soos hierbo

geleë in Kylemore Plaaslike Gebied

Administratiewe Distrik van Stellenbosch

Opgemeet in Maart 1987 - April 1989

deur my

grond, synde

Provinsie Kaap die Goeie Hoop.

J.B. Burger
Landmeter

Hierdie kaart is geheg aan

Die oorspronklike
kaarte is soos
hierbo aangetoon

Lêer No. Stel 124
M.S. No. E1194/89
Komp.

No.
gedateer
t.g.v.

Registrateur van Aktes

BH- 8080 (3781)
BH- 808/Y4 (1489)

Plan 5-7: Erf 199 Kylemore (abutting to Erf 64)

Friedlaender, Burger & Volkmann Landmeters

KANTOONBESKRYF

SYE Meter	RIGTINGS- HOEKE	KOORDINATE	
		Y	X
	Konstante :	0,00	+ 3700000,00
AB	240,97	242 50 00	A + 4322,98 + 54849,31
BC	37,38	224 25 20	B + 4108,59 + 54739,28
CD	40,00	314 25 20	C + 4082,43 + 54712,59
DE	28,00	44 25 20	D + 4053,86 + 54740,58
EF	75,00	314 25 20	E + 4073,46 + 54760,58
FG	76,15	50 16 50	F + 4019,90 + 54813,08
GH	47,87	61 24 10	G + 4078,47 + 54861,74
HJ	165,00	69 08 40	H + 4120,50 + 54884,65
JA	105,76	152 49 40	J + 4274,69 + 54943,39
	4 9/16 Kyle	Δ +	4487,15 + 54333,05
	66 Stel B	Δ +	6958,78 + 56242,25

L.G. No 639192

Goedgekeur

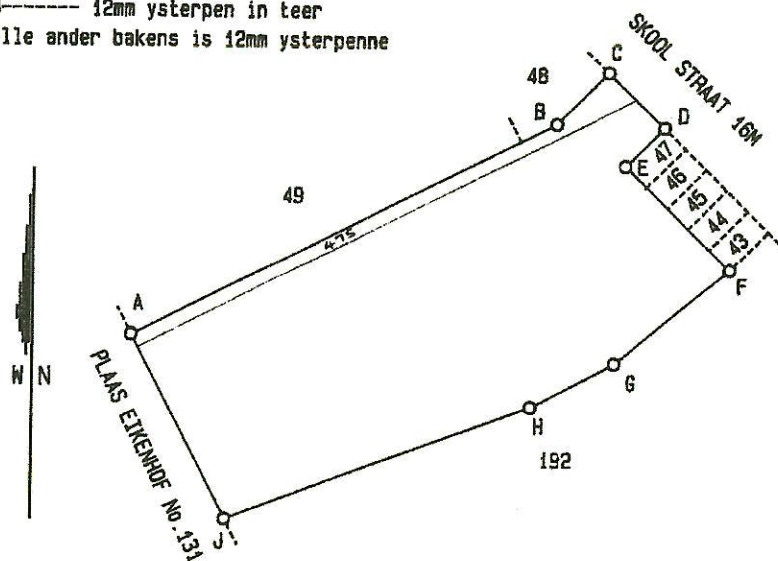
M. E. E. E. E.

1992-02-19
Landmeter-generaal

BESKRYWING VAN BAKENS

B----- 12mm ysterpen in teer

Alle ander bakens is 12mm ysterpenne



SKAAL 1 : 3000

Die figuur ABCDEFGHJ
stel voor 3,2496 hektaar

grond, synde

ERF 199 (GEDEELTE VAN ERF 64) KYLEMORE

gelee in Kylemore Plaaslike Gebied
Administratiewe Distrik van Stellenbosch
Opgemeet in Desember 1991
deur my

Provinsie Kaap die Goeie Hoop

D P Burger Pr Landmeter

Hierdie kaart is geheg aan
No. T. 67271/2002
Gedateer
t.g.v.

Die oorspronklike kaart is
No. 3837/1920

Leer No. Stel. 124
M.S. No. 1251/91 89/92
Komp.

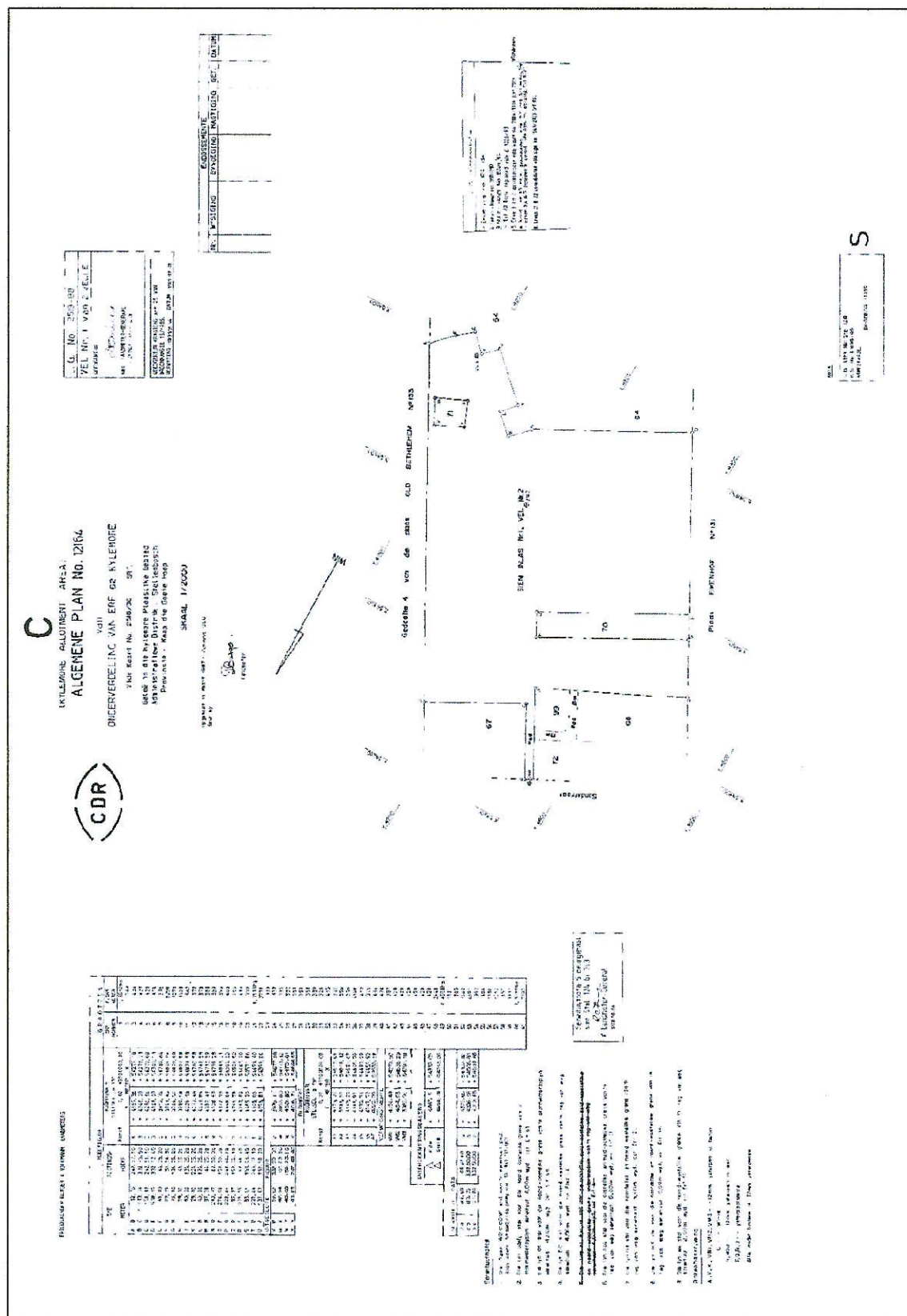
Geheg aan Transport

BH-8080 (3784)
BH-8080/Y4 (1489)

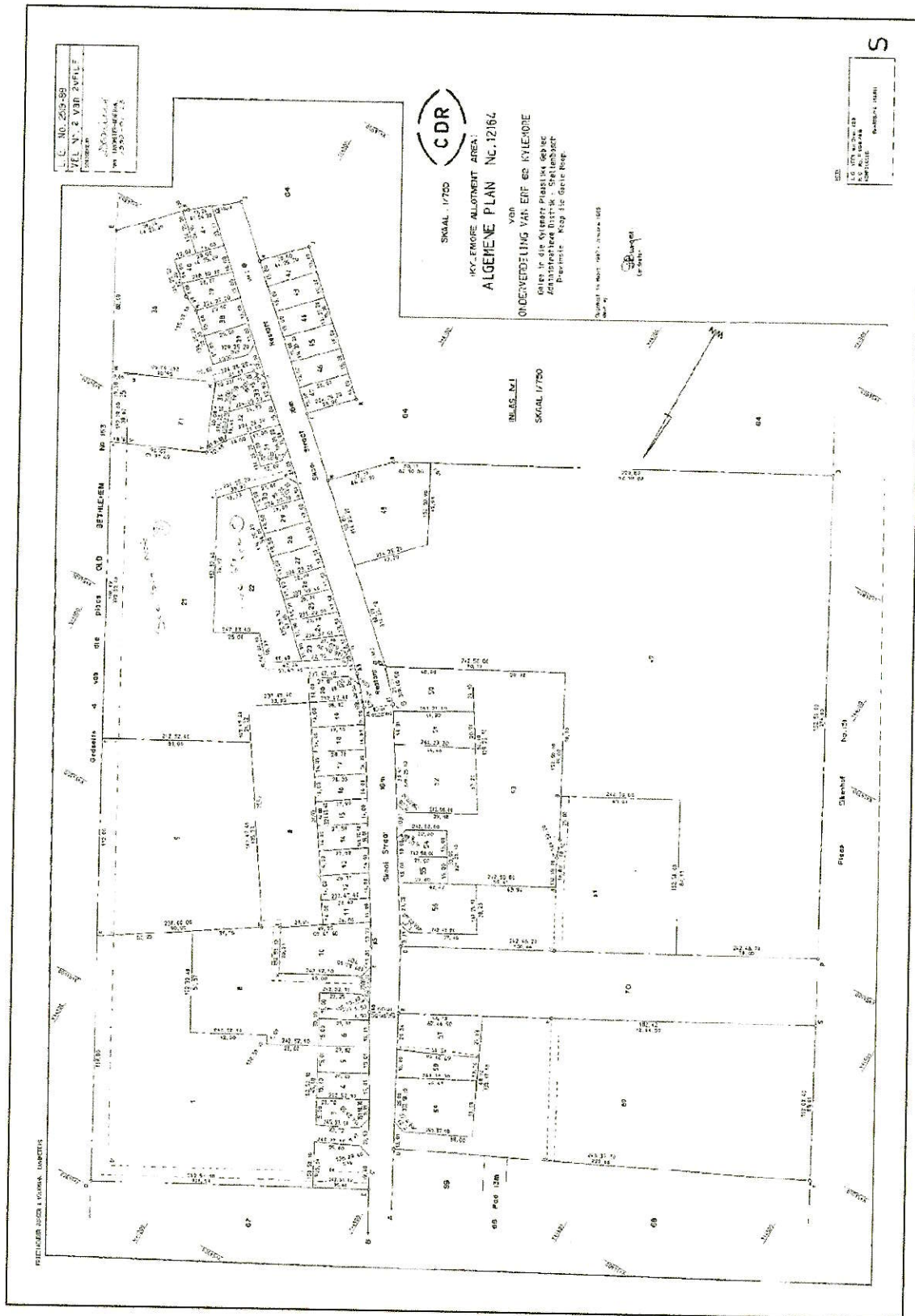
Registrateur van Aktes

1920- -16306

199



Plan 5-9: General Plan No. 12164 – Subdivision of Erf 62 Kylemore
Sheet 2 of 2 sheets



6 FACTORS TO CONSIDER

6.1 Need

The approval for the Subdivision and Rezoning application is needed in order to establish a new township for the low and middle-income class to ensure the security of tenure and access to land by the previously disadvantaged and low-earning working class and most importantly discourage the ongoing invasion of potential land. Furthermore, this development is in line with the SM SDF (2019) spatial proposals promoting sustainable and integrated human settlement development.

The development concept is based on the following:

- To develop the site to its full potential.
- Integration of the subject property with the existing built environment for social-economic integration.
- The design concept supports sustainable public transport initiatives by providing accommodation opportunities in close proximity to public transport networks/routes.
- Promotion of the utilization of existing services & infrastructure through infill development.

The proposed rezoning, subdivision and cancellation of a 8m right of way servitude over Erf 64, Kylemore, which will be replaced by a public road are not going to have a negative impact on the surrounding land uses. The subject property will be of great benefit to the area as it will play a significant role in contributing to local economic development in SM. For that reason, having densified residential and commercial sites within the Kylemore area will have a positive socio-economic impact on the area in terms of providing accommodation and employment opportunities.

6.2 Desirability

The proposed residential development is highly desirable since it will add value to the entire area. The proposed land use will also play significant roles in offering accommodation to the people who are residing in Kylemore and also influence the densification of land uses and encourage the integration of the social and economic aspects of land development.

Furthermore, the development is considered desirable from a town planning point of view in that:

- The proposed development aligns with key policy and legislative prescripts guiding human settlement development.
- The proposed development promotes the principle of spatial justice, thereby securing tenure and creating access to land by the low and middle-income class and previously disadvantaged.
- The proposed development falls within a Policy Development Area (SM SDF 2019).
- The development is in close proximity to Public Transport and other socio-economic opportunities and this further strengthens the accessibility and convenience of this development.
- The proposed development will not impede on any of the existing developments in the vicinity as the subject site is immediately surrounded by a human settlement development.
- The development will help unlock the Kylemore Node and other key developments. The SPLUMA of 2013 encourages mixed-use development in order to ensure that there is diversity of uses and that the need to travel is limited by promoting convenient and universally accessible developments.
- The proposal aligns with sustainable environmental land development practices and processes in that all perceived sensitive have been avoided for development and an Environmental Management Plan is currently underway to ensure sound environmental practices.
- The development helps to ease the pressure of urbanisation and lower the housing needs stats.
- The development is compatible with the surrounding uses which are primarily residential and agricultural.
- Lastly, the proposal aligns with the norms and principles of the SPLUM Act of 2013 with key reference to the principles of Spatial Justice amongst others.
- The proposed development promotes social integration as well as land use integration.
- The proposed development optimises the use of existing resources relating to bulk infrastructure, roads, transportation and social facilities.
- The proposal seeks to develop the subject site to its full potential.
- The study area is located in prime locations which promotes accessibility by all means of transport.

- There are no restrictive conditions, which might hinder the proposed development.

Lastly, the proposal is in line with the SM Zoning Scheme By-Law guidelines relating to land use facilitation and land development management.

7 COMPATIBILITY WITH SPATIAL POLICY DIRECTIVES

The proposed development application is consistent with the approved statutory spatial policy framework for the area.

7.1 Stellenbosch Spatial Development Framework (SDF) (2019)

The proposed development is part of the current MSDF and Kwelera LSDF and this proposal presents an opportunity for the SM to seriously take the area into consideration especially if the municipality is to achieve the development targets of the Kylemore. The new Municipal Spatial Development Framework recognises that the spatial decisions and actions of many make what settlements are. The MSDF Implementation Framework comprises the following sections:

- A proposed settlement hierarchy.
- Priority development areas and themes.
- A policy framework (linked to strategies).
- Guidelines, studies, and information supporting the policies.
- Implications for sector planning and specific development themes, including:
 - Movement.
 - Housing.
 - Local economic development.
- Implications for inter-municipal planning
- Land use management and regulations.
- Catalytic initiatives.
- Further planning work.
- Institutional arrangements.
- Checklists in support of decision-making.
- A municipal leadership and advocacy agenda related to spatial development and management.

Moreover, the SM Spatial Development Framework (SDF, 2019) housing proposals align with the BNG principles in that development should:

- Maximise the use of municipal resources such as infrastructure, and land available within the urban area for socio-economic development and human settlements.
- Promote the inclusion of various classes of society in our human settlements targets.
- Complement the approach of strengthening the administrative and socio-economic component of the urban area.
- Promote integration of social-economic, institutional and physical aspects of land development;
- Ensures that development maintains or enhances safety, health and the environment.

7.2 SM Integrated Development Plan (IDP) (2022 - 2027)

The SM Integrated Development Plan 2022-2027 (IDP) is aimed at coordinating the efforts of various municipal departments in achieving the vision for the municipality as a “valley of opportunity and innovation”. Efforts to achieve this vision are channelled into five specific focus areas:

- Valley of possibility – aimed at attracting investment, growing the economy and employment.
- Green and sustainable valley – aimed at ensuring that the asset base of the municipality is protected and enhanced.
- Safe Valley – aimed at ensuring that its residents are and feel safe.
- Dignified living – aimed at improving conditions for residents through access to education and economic opportunities.
- Good governance – aimed at ensuring that the municipality is managed efficiently and effectively to the benefit of all stakeholders.

7.3 Spatial Planning and Land Use Management Act, 2013 (ACT 16 OF 2013)

In considering the application, the decision maker needs to be guided by the **DEVELOPMENT PRINCIPLES** contained in (Chapter II) of the Spatial Planning and Land Use Management Act 2013 (Act no 16 of 2013) SPLUMA.

Section 7 of the Act describes a set of development principles that need to be considered when evaluating any development application. These principles include the following:

Spatial Justice:

With regards to the proposed development, the **Principle of spatial justice** reads as follows: Indirectly, contextually appropriate provision and densification, and intensification of different land uses in Kylemore, such as this proposal, will cumulatively contribute to spatial justice in terms of giving access to the African people that were hindered in the past to own residential land within the jurisdiction on municipalities.

Spatial Sustainability:

The proposal supports this principle of spatial sustainability in the sense that it facilitates development inside the urban edge thereby limiting the urban OR settlement sprawl and encouraging the optimal use of existing urban land and services.

Spatial Efficiency:

The proposal supports the efficient use of existing resources and infrastructure where decision-making procedures are designed to minimise negative financial, social, economic or environmental impacts. The positive consideration of the application will contribute to the efficient use of urban and rural land with minimal negative impact.

Good Administration:

This principle has no direct bearing on the application however, the Stellenbosch Municipality is obligated to consider the application fairly and within the timeframes provided in terms of the SPLUMA.

8 SPECIALIST STUDIES AND INFRASTRUCTURE SERVICES

8.1 Geo-Technical Study

The Geotechnical Site Investigation study of Rem of Erf 64, Stellenbosch Municipality was conducted by Nortje and De Villiers Consulting Engineers and the findings of the study are as follows:

- The soil investigation that is found in the site is suitable for the construction of housing, roads, services and other development that support integrated and

sustainable human settlements in Rem of Erf 64, Kylemore, Stellenbosch Municipality.

8.2 Transport Impact Assessment (TIA) (2024)

The Traffic Impact Assessment conducted by **Emonti Consulting Engineers** revealed the following:

- The current operating conditions on the road network within the study area are found to be acceptable with no LOS or capacity failures.
- The posted speed limit of 60 km/h along the surrounding road network, in the vicinity of the site accesses, is appropriate for the current and expected future traffic conditions.
- The existing critical peak, in terms of traffic volumes, was found to be the AM peak hour while the PM peak hour tested similarly but with marginally lower demands.
- Once developed and fully occupied, the proposed development may be expected to generate in the order of 130 and 110 new vehicle trips in the AM and PM commuter peak hours respectively.
- The combined critical peak hour of existing and development trips is found to be the AM peak hour.
- The network is not overloaded when development trips are assigned for any of the given tested peak hours, subject to the recommended road network improvements being undertaken.
- The proposed changes to the layout and road network, adequately serve the proposed development.

8.3 ERF 64 Kylemore Catchment Area Wetland Assessment (2024)

The ERF 64 Kylemore Catchment Area Wetland Assessment was conducted for the purpose of stating that the existing dam or stormwater runoff pond can be filled to provide additional housing units or opportunities. Furthermore, to support the findings of the Catchment Area Wetland Assessment, **the EIA process is being undertaken in line with the current Layout Plan (Choice A) which includes the changes or filled up of existing dam in order to provide additional housing opportunities.** The ERF 64 Kylemore Catchment Area Wetland Assessment conducted by Earthguard Consulting revealed that:

The proposed development can be supported, though it is recommended that the three CVB and one UCVB wetland areas have a buffer of 50m and the Banghoek River have a 100m

buffer. These water resources are within 500m of the development site. One of the CVB wetlands identified by NFEPA (south-western end of the property) as a wetland is a man-made dam and thus does not qualify as a wetland. The identification of wetland and aquatic NFEPA's takes place on a large scale and as a result, not all wetland units present on a site are always identified nor are all wetlands identified by NFEPA present on site. The dam intercepts water flowing into the Banghoek River, therefore affecting the river's natural hydrology. The man-made dam is also a safety hazard as it can overflow during unpredictable rain events (due to climate change) and flood the neighbouring areas. It is recommended that the man-dam be closed, and the natural flow path of the water be restored into the Banghoek River. Furthermore, we proposed that a man – made dam can be rehabilitated and used for the development of additional residential units.

8.4 Kylemore Pre-Feasibility Assessment – Environmental (2010)

The pre-feasibility environmental assessment report undertaken by **Pieter Badenhorst Professional Services CC Environmental Management & Engineering Consultant** in 2010 revealed that from the initial assessment undertaken, there were no "red flags" that were identified that might negatively impact the proposed development of integrated and sustainable human settlements in erf 64, Kylemore, Stellenbosch Municipality. The overall finding of the report is that there is no sensitive vegetation that will negatively impact the proposed development layout for the township Establishment in ERF 64, Kylemore, Stellenbosch Municipality.

8.5 Environmental Impact Assessment (EIA)

Ikamva Environmentalists were commissioned by Thoba Mkangisa and Associates to undertake EIA processes of Rem of Erf 64 Kylemore, Stellenbosch Municipality. The EIA processes are at the advanced stage and once the EIA approval is granted, it will be submitted to the municipality. Furthermore, **the EIA process is being undertaken in line with the current Layout Plan (Choice A) which includes the changes or filled up of existing dam in order to provide additional housing opportunities.**

8.6 GLS Study for Civil Engineering (Water and Sanitation) Capacity (2024)

The GLS study for civil engineering (water and sanitation) capacity revealed that:

Stormwater – an existing stormwater detention pond is situated on the southern portion of the site. This detention pond is required as part of the stormwater management system of Kylemore and it must be part of the infrastructure that will be supporting the proposed development of integrated and sustainable human settlement in erf 64, Kylemore, Stellenbosch. The stormwater runoff from the development will be disposed of into the said detention pond. A portion of runoff from the lower-lying area will be disposed of into the adjacent municipal stormwater system below the detention pond. The study further revealed that no upgrading of the existing municipal stormwater disposal system is expected.

Sewer – GLS Engineering provides the information on the existing sewer reticulation system. The sewer connection point for the project area is at Gouwsblom Street. The 160 mm diameter link sewer line will have to be installed from the development to the connection point. The project area will be serviced by the Dwarsrivier Water Treatment Works which have the capacity of 1.35 MI per day. The expected sewage flow from the development is approximately 100 kl/day and it is assumed that no upgrading of the treatment works will be required to accommodate the proposed Township Establishment on erf 64 Kylemore, Stellenbosch. The positioning of the project area will make it easy for connection to the existing bulk sewer mains running in close proximity to the site.

The expected sewage flow from the development is approximately 100/day and it is revealed that no upgrading of the treatment works will be required to accommodate the development.

Water Supply – according to GLS Engineering the sources for water in erf 64, Kylemore, Stellenbosch Municipality are reservoirs. Water to erf 64, Kylemore will be supplied through a main supply line from the Kylemore Lower reservoir and Kylemore Upper reservoir (3x2.5ML). From information given by the Stellenbosch Local Municipality, the current water sources and water treatment capacities are sufficient to meet the water demands of the future residents of erf 64 Kylemore, but additional water infrastructure is required. It is however, proposed that there is a need to provide a new pumpstation at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 2.5 MI Kylemore Upper reservoir (at 360m MSL) and a new 160mm diameter delivery waterline from the Kylemore Upper reservoir.

8.7 Electrical Engineering

DK Electrical Consultants liaised with Eskom and they revealed that the proposed development can be supplied with electricity from the existing 11kV overhead network in the area. An 11Kv cable has to be installed from the end of the existing line (approximately 30m from the northern boundary of the Rem of Erf 64, Kylemore, Stellenbosch Municipality) to supply two new miniature substations inside the proposed development.

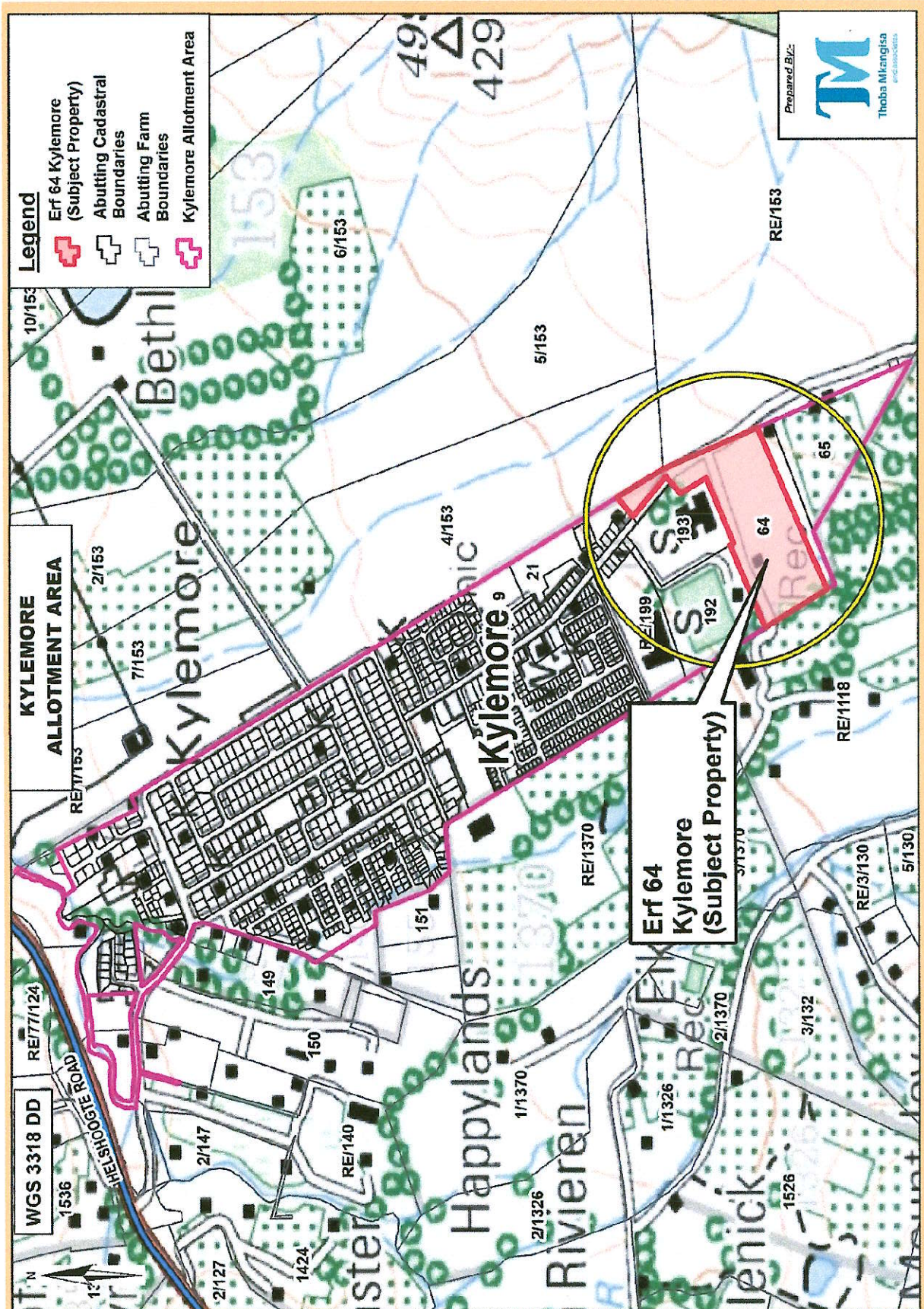
9 CONCLUSIONS

Given the above, the applicant concludes that this applicant is both necessary and desirable from a town planning point of view and will result in a development that enhances the appearance of the whole area.

Application is made to the Stellenbosch Municipality to allow the Housing Development Agency (HDA) to subdivide and rezone the remainder of Rem of Erf 64, Kylemore and cancellation of a 8m right of way servitude over Erf 64, Kylemore, to develop an integrated and sustainable residential area.

ANNEXURES

ANNEXURE 1: LOCALITY MAPS





ANNEXURE 5: DEED OF TRANSFER

The number and date of this Deed are

consistent

Van de Sandt de Villiers Printing
Company, Limited, Capetown.

(B9A) 15306

DEED BOND 25684

Do. of the Deed
B. R. L. (10) (10) (10) (10)

10. 10. 1920

Mortgaged (10) day of 10
for 5 P.C.
a further sum of 5/00
secure costs, etc.
P. R. M. 10/20

Mortgaged (10) day of 10
for 5 P.C.
a further sum of 5/00
secure costs, etc.
P. R. M. 10/20

10. 10. 1920

10. 10. 1920

10. 10. 1920

ISSUED FOR INFORMATION ONLY
ALLEN VIA INFORMASIEDELENIES UITREIK

DEED OF TRANSFER.

DENPERS & VAN RYNEVELD,

Attorneys, Notaries
and Conveyancers,
Kent Chambers, 32, Church
Street,
CAPE TOWN.

Prepared by me

Conveyancer.

Know all Men whom it may concern,

That CORNELIUS NICOLAAS GROENEWALD appeared before
me, Registrar of Deeds, in Cape Town, Province of the Cape of
Good Hope, he, the said appearer, being duly authorised thereto
by a Power of Attorney, dated the
10th day of October 1920 and drawn up at Stellenbosch
and granted to him by

Christoffel Jacobus van Niekirk,

10. 10. 1920

which Power of Attorney was exhibited to me on this day, who declared that his said Constituent _____

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ALLEEN VIR INFORMASIEDOELEINDES UITGEREIK

had truly and legally sold, and that he in his said capacity as Attorney aforesaid, did, by these Presents Cede and Transfer, in full and free Property to and on behalf of

Alfred Macdonnell,

His Heirs, Executors, Administrators, or Assigns

Certain piece of quitrent land, ^{portion of Kylemore} situate in the Division of Stellenbosch, being "East on Vrede South", a portion of the farm "East on Vrede" granted to J. A. de Villiers Jan's son on 7th April 1881 (Stellenbosch Quitrents Vol. 8 No. 53) and lastly transferred to the Appraiser's Constituent on the 10th April 1920 No. 4688. Folio 489.

Measuring: - Fifty two morgen, Four hundred and twenty square rods.

Bounded: - N.W. by Kylemore
N.E. " Bethlehem
S. & S.W. " Zeeva's Rivier
W. "

as will more fully appear from the annexed diagram framed by the Surveyor and further subject to such conditions as are referred to in transfer dated 14th July 1916 No. 5252.

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For Mortgage, if any, use leading of Deed.

The numerical data of this diagram are consistent

Certified a true copy of the original filed
of record in this Registry in terms of

Reg 66

Deeds Registry
Cape Town

30 NOV 2009

Chauberg
Registrar of Deeds

Wherefore the said Appearer, q.q., renouncing all the Right and Title his said Principal heretofore had to the Premises, on behalf as aforesaid, did in consequence, also acknowledge his said Principal to be entirely dispossessed of, and disentitled to the same; and that by virtue of these Presents, the said transferee

His Heirs, Executors, Administrators, or Assigns, now and henceforth shall be entitled thereto, conformably to local custom; moreover promising to free and warrant the property thus sold and transferred, as also to clear it from all Encumbrances and Hypothecations according to the Laws respecting the Purchase and Sale of Landed Property;— Government however, reserving its Rights; And finally, acknowledging to be satisfactorily paid the whole of the Purchase Money, amounting to a sum of

One thousand one hundred and eighty five pounds
fifteen shillings Sixp., (£1185.15.0)

In Witness whereof, I the said Registrar, together with the Appearer, q.q. have subscribed to these presents, and have caused the Seal of Office to be affixed thereto.

THIS DONE AND EXECUTED at the Office of the Registrar of Deeds in CAPE TOWN, Province of the Cape of Good Hope, on the 30th Day of the Month of November, in the Year of Our Lord One Thousand Nine Hundred and

Before me

ISSUED FOR INFORMATION ONLY
ALLEEN VIR INFORMASIEDOELEINDES UITGEEK

Registrar of Deeds.

For Registrar if any, see heading of Deed.

SEELS
STAMPS

ELREG
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GELD 95.00
E R.....

1-3
① B

GEREGISTREER
REGISTERED

Paul
REGISTRATEUR/REGISTRAR

2002-09-23

7311/20 2002-09-20

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ALLEEN VIR INFORMASIEDOELEINDES UITGEREIK

K 983 / 2002

Protocol no: 527

NOTARIAL DEED OF SERVITUDE NO.

BE IT HEREBY MADE KNOWN:

THAT on the 22 day of August Two Thousand and Two (2002) before me
PENELOPE STEPHANIE PLOUGMANN of Cape Town, Western Cape Province, Notary
Public by lawful authority duly sworn and admitted and in the presence of the subscribed
witnesses, personally came and appeared:-

CARLENE BASSON

in her capacity as the duly authorised agent of and herein representing:-

BALDRIC FARMS (PROPRIETARY) LIMITED
Registration number: 1971/009440/07

acting under and by virtue of a Special Power of Attorney signed at STELLENBOSCH
on the 25TH day of JULY 2002 (which said Power of Attorney now remains filed in my
Protocol),

(hereinafter referred to as the "BALDRIC"),

[Handwritten signatures and initials]

and

CARLENE BASSON

she being duly authorised thereto by a Special Power of Attorney dated at CAPE TOWN on the 22ND day of AUGUST 2002 and granted to her by

PUCUKA PENELOPE MALGAS

in her capacity as Assistant Director, State Property Holdings and Asset Management of the Republic of South Africa and as such the duly authorised representative of the Republic of South Africa acting under and by virtue of Power of Attorney No. PA.139/1989, Annexure 3, 6(b)(i),

(hereinafter referred to as the "STATE")

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AND THE APPLICANT q.q., DECLARED THAT:-

WHEREAS the STATE is the registered owner of :-

REMAINDER ERF 64 KYLEMORE, situate in the Municipality and Division of Stellenbosch RD, Province of the Western Cape

MEASURING 18,7741 (EIGHTEEN COMMA SEVEN SEVEN FOUR ONE) hectares;

HELD BY Deed of Transfer No. T.6822/1949

AND WHEREAS BALDRIC is the registered owner of :-

FARM DWARS RIVIERS HOEK NO 1118

**situate in the Municipality and Division of Stellenbosch RD
Province of the Western Cape**

EXTENT: 305,3159 (THREE HUNDRED AND FIVE COMMA THREE ONE FIVE NINE) hectares

HELD BY Certificate of Consolidated Title No. T.

AND WHEREAS the said BALDRIC requires a Servitude Right of Way as shown on Diagram SG 3262/1999 to be registered by the STATE in favour of BALDRIC;

AND WHEREAS the STATE has agreed to grant BALDRIC the said Servitude Right of Way;

NOW THEREFORE THE STATE PRESENTS WITNESSES

ISSUED FOR INFORMATION ONLY
ALLEEN VIR INFORMASIEDOELEINDES UITGEREIK

1. The STATE hereby gives and grants to the said BALDRIC a Servitude Right of Way 7,00 metres wide over REMAINDER Erf 64 Kylemore, situate in the Municipality and Division of Stellenbosch RD, Province of the Western Cape, MEASURING 18,7741 (EIGHTEEN COMMA SEVEN SEVEN FOUR ONE) hectares which servitude is 7 metres wide, the middle of which is indicated by the line ab on Diagram S.G.3262/1999 and approved by the Surveyor General on 8 July 1999 in favour of :-

FARM DWARS RIVIERS HOEK NO 1118
situate in the Municipality and Division of Stellenbosch RD
Province of the Western Cape

EXTENT: 305,3159 (THREE HUNDRED AND FIVE COMMA THREE ONE FIVE NINE) hectares

HELD BY Certificate of Consolidated Title No. T.

subject to the following terms and conditions:-

- 1.1 BALDRIC which terms shall include its employees, agents and contractors, shall have the right of way in perpetuity and the right to lay down, inspect, maintain, repair said servitude right of way as it may consider necessary.
- 1.2 In consequence of the right conferred in terms of Paragraph 2.1 above, BALDRIC shall at all times have the right of access to the servitude area across the land belonging to the STATE and shall for such purpose be entitled to bring onto the said area, such workmen,

conveyances, tools, machinery or materials, as it may deem necessary to carry out any or all of the activities referred to in the said Paragraph 1.1.

- 1.3 BALDRIC in exercising its rights under this Notarial Deed of Servitude, shall at all times maintain the said right of way in good order and condition.
- 1.4 The STATE shall not be entitled to construct, erect or lay down any building or structure over or in such position or in such manner as to interfere with the said right of way nor do anything which is likely to damage, endanger or destroy same.
- 1.5 BALDRIC in exercising its rights under this Notarial Deed of Servitude, shall take all reasonable steps to safeguard against damage or injury to any person or property arising from the exercise of such rights.
- 1.6 Should by mutual agreement, the need for the servitude right of way fall away, BALDRIC shall at its own expense hand the road back to the STATE and cancel the servitude.
- 1.7 BALDRIC shall take all necessary steps to endeavour to prevent soil erosion on the property within the servitude area.
- 1.8 BALDRIC must properly fill up all excavations.
- 1.9 BALDRIC shall be liable for and make good any loss the STATE might suffer directly or indirectly as a result of the use of the servitude area by BALDRIC and indemnifies the STATE against all claims or actions which might be instituted against it by any person whomsoever for loss, injury or damage suffered arising directly or indirectly from the exercise by the owners of the servitude area of its rights and the discharge of its obligations under the servitude conditions.
- 1.10 BALDRIC shall reimburse the STATE all costs in respect of "party and party" as well as "attorney and client" that it might incur in defending any action or rejecting any claim.

2. The said Appearer further declared that the said BALDRIC shall be liable for all costs connected with the Notarial execution and registration of this Notarial Deed of Servitude.
3. These presents shall bind the parties hereto and their respective Successors in Title or Assigns.

ISSUED FOR INFORMATION ONLY
ALLEEN VIR INFORMASIEDOELEINDES UITGEREIK

And the said

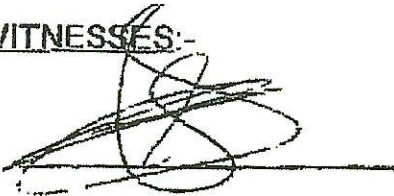
CARLENE BASSON

declared in the name and on behalf of the STATE to accept the grant of rights and the servitude hereinbefore set forth agreeing on behalf of the STATE to fulfil all and singular the conditions imposed on the STATE subject to which this servitude is granted.

THUS DONE and EXECUTED at CAPE TOWN aforesaid on the day, month and year first aforewritten, in the presence of the undersigned competent witnesses.

AS WITNESSES:-

1.



2.



q.q.

q.q.

Quod Attestor

NOTARY PUBLIC

Certified a true copy of the original filed
of record in this Registry in terms of

Reg 66

Deeds Registry
Cape Town

21 JAN 2010

Registrar of Deeds

ANNEXURE 6: SPLUMA APPLICATION FORMS



STELLENBOSCH

STELLENBOSCH • PAUL • GRAYSDRIF

MUNICIPALITY • EMBLEM • MUNICIPALITY

COMMUNITY • LOCAL • REGIONAL
GOVERNMENT • MUNICIPALITY

For Official Use:

Applicant Reference Number	Municipal Reference Number

Status of Application: (insert dates)

Received	Confirmed as complete	Circulation	Advertised	All comments received	Responded to comments	Assessment report	Decision

Applicant / Objectors notified	Appeal received	Appeal Hearing	Final Decision	Other			

SECTION 1

Details of Applicant

Name:	Thoba Mkangisa & Associates	Contact person:	Trymore Hutu
Postal address:	7 Tyrell Road, Berea, East London	Physical address:	7 Tyrell Road, Berea, East London
	_____		_____
	_____		_____
	Code: 5201		
Tel no:	043 4220 534	Cell no:	071 5622 726

Fax no: _____	E-mail address: : thobam@mkangisa.co.za & hututrymore@yahoo.com
SACPLAN Reg No: Pr. Pln. A/1966/2014	_____

SECTION 2

Details of Land Owner (If different from Applicant)

Name: National Department of Public Works and Infrastructure	Contact person: Sanelisiwe Ntshanga
Postal address: Stellenbosch	Physical address: Housing Development Agent, Western Cape
_____	_____
Code: _____	_____
Tel no: 072 788 5611	Cell no: 072 788 5611
Fax no: _____	E-mail address: _____

Note: If the applicant is not the registered owner(s), attach a power of attorney from the registered owner(s) to the application. This also applies if the person applying is still busy obtaining the land unit and if the land unit is owned by a company or more than one person.

SECTION 3

Details of Property

(In accordance with Title deed)	
Erf/ Farm No and portion description: _____	Area (m ² or ha): 6.927ha
Physical address of erf/farm: _____	Existing zoning: Agriculture Zone
Town/suburb _____	Existing land use: Vacant
If not in a town, location from nearest town: _____	Area applicable to application: 6.927ha
Municipal area: _____	Title deed no: T6822/1949

(If not registerable in Deeds Office)	
Registration Division: _____	Area (m ² or ha): _____
Administrative Area: _____	Existing zoning: _____
Traditional Council: _____	Existing land use: _____
Location or Settlement: _____	Area applicable to application: _____
Plot / Lot / PTO of Quitrent Title no (if any): _____	

Note: If the property is situated in a trust or communal land area under traditional council or communal property association, attach proof of land right allocation by the traditional council in terms of the applicable customary law or communal property association. Where applicable, also attach proof of community resolution in terms of Interim Protection of Informal Land Rights Act.

SECTION 4

Details of the Type of Application being Submitted

Application for:

(Please mark applicable block with a cross)

(If application consists of more than one action, mark all relevant actions)

Rezoning of land:	X
Subdivision of land into less than 20 units:	
Subdivision of land into 20 or more units:	X
Consolidation of land:	
Temporary departure from land use scheme provisions applicable to land:	
Permanent departure from land use scheme provisions applicable to land;	
Removal, suspension or amendment of Title Deed Restrictions:	
Consent use:	
Closure of Public Place or Public Road:	

Extension of validity of an existing approval:	
Phasing of an approved subdivision plan:	
Annulment, suspension of amendment of conditions of approval:	
Any other application in terms of national legislation, provincial legislation or municipal by-law:	
Please give a short description of the scope of the application: Rezoning and Subdivision of ERF 64, Kylemore, Stellenbosch Municipality, from Agricultural Zone to CONVENTIONAL RESIDENTIAL ZONE <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	

SECTION 5

Detail of application (Mark with an X and give detail where applicable)

Is space insufficient, refer to section and page of the motivation report where the aspect is being addressed.

Is the land unit currently developed (buildings etc.)?	YES	NO X	If answered YES, what is the nature & condition of the developments/improvements?	
Is the land currently being used in line with its zoning?	YES	NO X	If answered NO, does what is the application/ use of land?	VACANT
Is the property burdened by a bond?	YES	NO X	If answered YES, attach the bondholder's consent to the application:	

Has a similar application been submitted on the property in the past 5 years?	YES	NO X	If answered YES, when and provide particulars of the authority reference numbers and decisions:	
Does the application and development proposal apply to the entire land unit?	YES X	NO	If answered NO, indicate the size of the portion of the land to which the application / development applies, as well as what the remaining extent will be used for:	
Are there any restrictive conditions, servitudes, or other rights, applicable to the land unit in terms of the deed of transfer or S.G. diagram that should be removed, as it might have an influence on this application?	YES	NO X	If answered YES, please provide detail description:	
Are there any physical restrictions (e.g. steep inclines, unstable land formations, marshes, etc.) that might influence the intended development?	YES	NO X	If answered YES, name full particulars and state how the restrictions will be solved (including sketches, designs and plans where applicable):	
Is any portion of the land unit in a flood plain of a river beneath the 1:50 or 1:100 year flood-line?	YES	NO X	If answered YES, please provide detail description:	
Is any portion of the land unit within 100m or 1000m of the high-water mark of the sea or a tidal river?	YES	NO X	If answered YES, please provide detail description:	
Is any other approval that falls outside of this Act, necessary for the implementing of the intended development?	YES	NO X	If answered YES, please provide detail description:	
What arrangements will be made regarding the following services for the development? (Full Engineering Reports must be supplied, where applicable)	Water supply:	SEE MOTIVATION REPORT		
	Electricity supply:	SEE MOTIVATION REPORT		
	Sewerage and waste-water	SEE MOTIVATION REPORT		
	Storm-Water:	SEE MOTIVATION REPORT		
	Road Network:	SEE MOTIVATION REPORT		

Checklist (for the completion by the Applicant only)

YES	NO	N/A	ANNEXURE OR PAGE REFERENCE	DOCUMENT ATTACHED
X				Comprehensive Motivation Report
X				Alignment with applicable Spatial Development Framework
		X		Public participation report (record and minutes of meetings, copies of advertisement and notices etc.)
		X		Proof of community approval granted as a result of a community participation process conducted in terms of Customary Law and the procedures in terms of the Interim Protection of Informal Land Rights Act;
X				Power of Attorney (Board of Directors' / Trustees' resolution / Letters of Authority)
X				Copy of Title Deed(s)
		X		Bond holder's consent
		X		Cadastral information – S.G. diagram/General Plan including servitudes, lease areas, etc.
		X		Status report from Surveyor General – street closure or closure of public place
		X		Topographic map/ aerial map
X				Locality Map
		X		Site Plan
X				Zoning Map
X				Zoning Certificate
X				Land Use Map
		X		Special endorsement/proxy
		X		Home Owners' Association consent
		X		Proposed subdivision plan
		X		Proposed consolidation plan
X				Proposed site development plan
		X		Mineral rights certificate (together with mineral right holder's consent)
X				Environmental Authorisation
X				Heritage Authorisation
X				Detail Engineering Services report (Bulk and internal)
X				Traffic impact study / statement
X				Geo-technical report
		X		Flood line assessment (1:50 and 1:100 years)
		X		Department of Agriculture consent (Subdivision of agricultural land)
X				Two (2) sets of full colour documentation copies

SECTION 7

Declaration

Note:	<i>If application is made by a person other than the owner, a Power of Attorney is compulsory. If the property is owned by more than one person, the signature of each owner is compulsory. Where the property is owned by a company, trust, or other juristic person, a certified copy of the Board of Directors/Trustees' resolution is compulsory</i>										
I hereby certify the information supplied in this application form to be complete and correct and that I am properly authorised to make this application.											
Applicant's/ Owner's Signature:				Date:	09	0	9	2	0	2	3
Full name (print):	Trymore Hutu										
Professional capacity:	Professional Town Planner										
Applicant's ref:	Erf_64_Kylemore										

SECTION 8

Prescribed Notice and advertisement procedures (for the completion and use of Responsible Authority only)

Checklist for required advertisement procedure			Checklist for required proof of advertisement		
YES	NO	DOCUMENTATION AND STEPS TO BE TAKEN	YES	NO	DOCUMENTATION TO BE PROVIDED AS PROOF
X		Notice to be placed in the Local Newspaper			Proof of Notice in Local Newspaper Note: The original newspaper advertisement or full colour copy, indicating page number and date.
		Notice to be placed in the Provincial Gazette (for 2 consecutive weeks)			Proof of Notice in the Provincial Gazette Note: The original newspaper advertisement or full colour copy, indicating page number and date.
		Notices to neighbours Note: The map indicating the neighbouring erven and list of neighbours will be provided. If the applicant chooses to deliver the notices per hand (Option 1), two copies of the notice must be provided on or before the date of the notice to each neighbour. One copy of the notice must be signed by the respective party (neighbour) to be handed back to the			Proof of Notice to neighbours Note: Option 1: The signed notices of all surrounding neighbours, as identified by the Responsible Authority, must be provided. Note: Option 2: The proof of the registered mail must be provided to the Responsible Authority

		Responsible Authority. Alternatively (Option 2), the notices can be sent via registered post.			
		Notice to be placed on the site Note: The notice provided must be placed on the site in a laminated A3 format (two language formats separate on A3) on or before the date of the notice.			Proof of Notice in site Two colour photos of the notice on site must be provided of which one is close up and the other one is taken from a distance in order to see the placing on the site itself.
		Public Meeting Note: The holding of a public meeting in order to inform the general public of the application.			Proof of Public Meeting The applicant must provide proof of the agenda, the attendance register and minutes of the meeting to the Responsible Authority.

		Any Additional components			Proof of additional components

ANNEXURE 7: APPOINTMENT LETTER

01 November 2022

THOBA MKANGISA AND ASSOCIATES
409 Tecla Bluff, Syringa Ave,
Broadacres, Sandton
Gauteng, 2191
Email: thobam@mkangisa.co.za

ATTENTION: Thoba Todd Mkangisa

Dear Sir/Madam

APPOINTMENT LETTER

CONTRACT NO: HDA/CPT/2021/001: BID DESCRIPTION: THE APPOINTMENT OF A SERVICE TO UNDERTAKE THE SUBDIVISION AND REZONING OF LAND FOR DEVELOPMENT INTEGRATED HUMAN SETTLEMENTS ON ERF 64 KYLEMORE, STELLENBOSCH MUNICIPALITY.

We take pleasure in confirming the appointment of Thoba Mkangisa and Associates to undertake the subdivision and rezoning of land for Development Integrated Human Settlements ON ERF 64 Kylemore, Stellenbosch Municipality. The total price for the appointment is R663 021.00 (Six hundred and sixty-three thousand and twenty-one rands only) inclusive of VAT.

1. The appointment is subject to:
 - I. Written acceptance of this appointment; and
 - II. Signing the SLA within five (5) working days from the date of this Appointment letter.
2. The Housing Development Agency reserves the right to withdraw the appointment at any stage should the parties fail to reach an agreement as envisaged above.

Yours faithfully


Mr. Bhekil Khenisa
CEO

01.11.22

ANNEXURE 8: POWER OF ATTORNEY



Special Power of Attorney

I, the undersigned,

Imtiaz Fazel, the Acting Director-General of the National Department of Public Works and Infrastructure (DPWI)

1.

do hereby nominate, constitute and appoint the **Housing Development Agency (HDA)** acting through its authorized employees or nominees with a power of substitution to be my lawful agent(s) in my name, place and stead and specifically for effecting the purposes aforesaid, to:

2.

Facilitate the development process for the Remainder of Erf 64 Kylemore, Western Cape Province, measuring 6.9272 hectares by:

- (a) undertaking any township establishment, rezoning, subdivision, consolidations activities and any related land use processes or other essential measures permitted in law; and
- (b) lodging applications or any relevant documents including the general plans to municipalities and / or any other regulatory authority or public institution for the development of a township.

3.

this Power Of Attorney is restricted only for the activities listed in clause 2 (a) and (b) above and is only valid until the transfer of the **Remainder of Erf 64 Kylemore, Western Cape Province, measuring 6.9272 hectares** is effected and registered under the name of the new owner.

4.

And specifically for effecting the purposes aforesaid, to do or cause to be done whatsoever shall be requisite, as fully and effectually, for all intents and purposes, as I might or could do if personally present and acting herein.

MP SM
✓



public works
& infrastructure
Department
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

Special Power of Attorney

Signed at PREROMA on the 15 day of NOVEMBER 2021 in
the presence of the undersigned witnesses.

Signature
Acting Director General-
Department of Public Works &
Infrastructure (DPWI)

AS WITNESSES:

Full Name and Surname:

1. Molebogeng Masete
2. Sarah Mashuane

Signature

- Treasury prior to the construction or development of low cost houses on the Remainder of Erf 64 Kylemore,
- (v) the DPWI will fulfill or meet all prerequisite legal obligations or requirements specified by and arising from various pertinent legislation (including the Restitution of Land Rights Act, 1994), which may determine the transferability of the property, before transferring the Remainder of Erf 64 Kylemore to the HDA,
 - (vi) before accepting its specific role in this project, each party involved in the project will consider any financial, legal and other liability or implication associated with this project,
 - (vii) any prerequisite environmental impact assessment required by law or government policy will be conducted and considered before the formal construction or development of low cost houses on the Remainder of Erf 64 Kylemore, and
 - (viii) all costs incurred in the holding, transfer and subdivision of the land will be borne by the HDA.
3. The National Treasury remains available to provide any clarification that the DPWI might seek regarding the contents of this letter.

Kind regards



DR MAMPHO MODISE
DEPUTY DIRECTOR-GENERAL: PUBLIC FINANCE
FOR DIRECTOR-GENERAL
Date: 27/10/2021

ANNEXURE 5: DEED OF TRANSFER

The Registrar, Cape of Good Hope.

Consistent

Van der Sandt de Villiers Printing
Company, Limited, Cape Town.

(39A) 15306

DEED BOND 25684

D. B. L. (1920-1921)

Mortgaged to the day of 1920
for £ 800
a further sum of £ 100
secure costs, etc.
D. B. L. la
Col. M. 1920

Mortgaged to the day of 1922
for £ 100
a further sum of £ 100
secure costs, etc.
D. B. L. la
Col. M. 1922

(1375) 16 B. 6. better 4 another

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ALLEN OR INFORMED DELEGATES INTEREST

DEED OF TRANSFER.

DEMPERS & VAN RYNEVELD,

Attorneys, Notaries
and Conveyancers,

Kent Chambers, 32, Church

Street,

CAPE TOWN.

Prepared by me

Conveyancer.

Know all Men whom it may concern,

That CORNELIUS NICOLAAS GROENEWALD appeared before
me, Registrar of Deeds, in Cape Town, Province of the Cape of
Good Hope, he, the said appearer, being duly authorised thereto
by a Power of Attorney, dated the
Full day of October 1920 and drawn up at Stellenbosch
and granted to him by

Christoffel Jacobus van Niekirk.

1920 19/10

which Power of Attorney was exhibited to me on this day, who declared that his said Constituent

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had truly and legally sold, and that he in his said capacity as Attorney aforesaid, did, by these Presents Cede and Transfer, in full and free Property to and on behalf of

Alfred Macdonnell,

his Heirs, Executors, Administrators, or Assigns

Certain piece of quitrent land ^{portion of Stellenbosch} in the Division of Stellenbosch, being "Rust en Vrede South", a portion of the farm "Rust en Vrede" granted to J. A. de Villiers Jan's son on 7th April 1881 (Stellenbosch Quitrents Vol. 8 No. 53) and lastly transferred to the Appraiser's Constituent on the 10th April 1920 No. 4688, Folio 489.

MEASURING:- Fifty two morgen, Four hundred and twenty square rods.

Bounded:- N.W. by Kriemore
N.E. " Bethlehem
S. & S.W. " Zeevaal Rivier on
W. "

as will more fully appear from the annexed diagram framed by the Surveyor and further subject to such conditions as are referred to in transfer dated 14th July 1916 No. 5252.

WI
Title
aforesaid
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In
Appears
Seal of

For Mortgage, if any, see leading of Deed.

The numerical data of this diagram are

consistent

Certified a true copy of the original filed
of record in this Registry in terms of

Reg. 66

Deeds Registry
Cape Town
30 NOV 2009

Chauberg
Registrar of Deeds

Wherefore the said Appearer, q.q., renouncing all the Right and Title his said Principal heretofore had to the Premises, on behalf as aforesaid, did in consequence, also acknowledge his said Principal to be entirely dispossessed of, and disentitled to the same; and that by virtue of these Presents, the said Transferee

His Heirs, Executors, Administrators, or Assigns, now and henceforth shall be entitled thereto, conformably to local custom; moreover promising to free and warrant the property thus sold and transferred, as also to clear it from all Encumbrances and Hypothecations according to the Laws respecting the Purchase and Sale of Landed Property;— Government however, reserving its Rights; And finally, acknowledging to be satisfactorily paid the whole of the Purchase Money, amounting to a sum of

One thousand one hundred and eighty five pounds
fifteen shillings Stg., (£1185.15.0)

In Witness whereof, I the said Registrar, together with the Appearer, q.q. have subscribed to these presents, and have caused the Seal of Office to be affixed thereto.

THUS DONE AND EXECUTED at the Office of the Registrar of Deeds in CAPE TOWN, Province of the Cape of Good Hope, on the 30th Day of the Month of November in the Year of Our Lord One Thousand Nine Hundred and

Before me

For Registrar, if any, see heading of Deed.

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ALLEEN VIR INFORMASIE DOEL ENDES UITGEEK

Registrar of Deeds.



1-3
0 B



Handwritten signature
7311/20 2002-09-20

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ALLEEN VIR INFORMASIEDOELEINDES UITGEREIK

K 983/2002

Protocol no: 527

NOTARIAL DEED OF SERVITUDE NO.

BE IT HEREBY MADE KNOWN:

THAT on the 22 day of August Two Thousand and Two (2002) before me
PENELOPE STEPHANIE PLOUGMANN of Cape Town, Western Cape Province, Notary
Public by lawful authority duly sworn and admitted and in the presence of the subscribed
witnesses, personally came and appeared:-

CARLENE BASSON

in her capacity as the duly authorised agent of and herein representing:-

BALDRIC FARMS (PROPRIETARY) LIMITED

Registration number: 1971/009440/07

acting under and by virtue of a Special Power of Attorney signed at STELLENBOSCH
on the 25TH day of JULY 2002 (which said Power of Attorney now remains filed in my
Protocol),

(hereinafter referred to as the "BALDRIC").

Handwritten signature

Handwritten signature

and

CARLENE BASSON

she being duly authorised thereto by a Special Power of Attorney dated at CAPE TOWN on the 22ND day of AUGUST 2002 and granted to her by

PUCUKA PENELOPE MALGAS

in her capacity as Assistant Director, State Property Holdings and Asset Management of the Republic of South Africa and as such the duly authorised representative of the Republic of South Africa acting under and by virtue of Power of Attorney No. PA.139/1989, Annexure 3, 6(b)(i),

(hereinafter referred to as the "STATE")

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AND THE APPLICANT q.q., DECLARED THAT:-

WHEREAS the STATE is the registered owner of :-

REMAINDER ERF 64 KYLEMORE, situate in the Municipality and Division of Stellenbosch RD, Province of the Western Cape

MEASURING 18,7741 (EIGHTEEN COMMA SEVEN SEVEN FOUR ONE) hectares;

HELD BY Deed of Transfer No. T.6822/1949

AND WHEREAS BALDRIC is the registered owner of :-

FARM DWARS RIVIERS HOEK NO 1118

**situate in the Municipality and Division of Stellenbosch RD
Province of the Western Cape**

EXTENT: 305,3159 (THREE HUNDRED AND FIVE COMMA THREE ONE FIVE NINE) hectares

HELD BY Certificate of Consolidated Title No. T.

AND WHEREAS the said BALDRIC requires a Servitude Right of Way as shown on Diagram SG 3262/1999 to be registered by the STATE in favour of BALDRIC;

AND WHEREAS the STATE has agreed to grant BALDRIC the said Servitude Right of Way;

NOW THEREFORE THE STATE PRESENTS WITNESSES

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1. The STATE hereby gives and grants to the said BALDRIC a Servitude Right of Way 7,00 metres wide over REMAINDER Erf 64 Kylemore, situate in the Municipality and Division of Stellenbosch RD, Province of the Western Cape, MEASURING 18,7741 (EIGHTEEN COMMA SEVEN SEVEN FOUR ONE) hectares which servitude is 7 metres wide, the middle of which is indicated by the line ab on Diagram S.G.3262/1999 and approved by the Surveyor General on 8 July 1999 in favour of :-

FARM DWARS RIVIERS HOEK NO 1118
situate in the Municipality and Division of Stellenbosch RD
Province of the Western Cape

EXTENT: 305,3159 (THREE HUNDRED AND FIVE COMMA THREE ONE FIVE NINE) hectares

HELD BY Certificate of Consolidated Title No. T.

subject to the following terms and conditions:-

- 1.1 BALDRIC which terms shall include its employees, agents and contractors, shall have the right of way in perpetuity and the right to lay down, inspect, maintain, repair said servitude right of way as it may consider necessary.
- 1.2 In consequence of the right conferred in terms of Paragraph 2.1 above, BALDRIC shall at all times have the right of access to the servitude area across the land belonging to the STATE and shall for such purpose be entitled to bring onto the said area, such workmen,

conveyances, tools, machinery or materials, as it may deem necessary to carry out any or all of the activities referred to in the said Paragraph 1.1.

- 1.3 BALDRIC in exercising its rights under this Notarial Deed of Servitude, shall at all times maintain the said right of way in good order and condition.
- 1.4 The STATE shall not be entitled to construct, erect or lay down any building or structure over or in such position or in such manner as to interfere with the said right of way nor do anything which is likely to damage, endanger or destroy same.
- 1.5 BALDRIC in exercising its rights under this Notarial Deed of Servitude, shall take all reasonable steps to safeguard against damage or injury to any person or property arising from the exercise of such rights.
- 1.6 Should by mutual agreement, the need for the servitude right of way fall away, BALDRIC shall at its own expense hand the road back to the STATE and cancel the servitude.
- 1.7 BALDRIC shall take all necessary steps to endeavour to prevent soil erosion on the property within the servitude area.
- 1.8 BALDRIC must properly fill up all excavations.
- 1.9 BALDRIC shall be liable for and make good any loss the STATE might suffer directly or indirectly as a result of the use of the servitude area by BALDRIC and indemnifies the STATE against all claims or actions which might be instituted against it by any person whomsoever for loss, injury or damage suffered arising directly or indirectly from the exercise by the owners of the servitude area of its rights and the discharge of its obligations under the servitude conditions.
- 1.10 BALDRIC shall reimburse the STATE all costs in respect of "party and party" as well as "attorney and client" that it might incur in defending any action or rejecting any claim.

2. The said Appearer further declared that the said BALDRIC shall be liable for all costs connected with the Notarial execution and registration of this Notarial Deed of Servitude.
3. These presents shall bind the parties hereto and their respective Successors in Title or Assigns.

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And the said

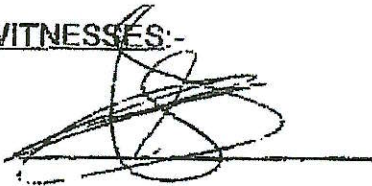
CARLENE BASSON

declared in the name and on behalf of the STATE to accept the grant of rights and the servitude hereinbefore set forth agreeing on behalf of the STATE to fulfil all and singular the conditions imposed on the STATE subject to which this servitude is granted.

THUS DONE and EXECUTED at CAPE TOWN aforesaid on the day, month and year first aforewritten, in the presence of the undersigned competent witnesses.

AS WITNESSES:-

1.



2.



q.q.

q.q.

Quod Attestor

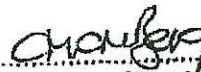
NOTARY PUBLIC

Certified a true copy of the original filed
of record in this Registry in terms of

Reg 66

Deeds Registry
Cape Town

21 JAN 2010


Registrar of Deeds

ANNEXURE 6: SPLUMA APPLICATION FORMS



STELLENBOSCH

STELLENBOSCH • PNEL • FRANSCHHOEK

MUNICIPALITEIT • UMAMPAHA • MUNICIPALITY

INNOVATION CAPITAL
ISIXHO ESIZA NENGOLO

For Official Use:

Applicant Reference Number	Municipal Reference Number

Status of Application: (insert dates)

Received	Confirmed as complete	Circulation	Advertised	All comments received	Responded to comments	Assessment report	Decision

Applicant / Objectors notified	Appeal received	Appeal Hearing	Final Decision	Other			

SECTION 1

Details of Applicant

Name:	Thoba Mkangisa & Associates	Contact person:	Trymore Hutu
Postal address:	7 Tyrell Road, Berea, East London	Physical address:	7 Tyrell Road, Berea, East London
	Code: 5201		
Tel no:	043 4220 534	Cell no:	071 5622 726

Fax no: _____	E-mail address: : thobam@mkangisa.co.za & hututrymore@yahoo.com
SACPLAN Reg No: Pr. Pln. A/1966/2014	_____

SECTION 2

Details of Land Owner (If different from Applicant)

Name: National Department of Public Works and Infrastructure	Contact person: Sanelisiwe Ntshanga
Postal address: Stellenbosch	Physical address: Housing Development Agent, Western Cape
_____	_____
_____ Code: _____	_____
Tel no: 072 788 5611	Cell no: 072 788 5611
Fax no: _____	E-mail address: _____

Note: If the applicant is not the registered owner(s), attach a power of attorney from the registered owner(s) to the application. This also applies if the person applying is still busy obtaining the land unit and if the land unit is owned by a company or more than one person.

SECTION 3

Details of Property

(In accordance with Title deed)	
Erf/ Farm No and portion description: _____	Area (m ² or ha): 6.927ha
Physical address of erf/farm: _____	Existing zoning: Agricultural and Rural Zone
Town/suburb _____	Existing land use: Vacant
If not in a town, location from nearest town: _____	Area applicable to application: 6.927ha
Municipal area: _____	Title deed no: T6822/1949

(If not registerable in Deeds Office)	
Registration Division: _____	Area (m ² or ha): _____
Administrative Area: _____	Existing zoning: _____
Traditional Council: _____	Existing land use: _____
Location or Settlement: _____	Area applicable to application: _____
Plot / Lot / PTO of Quitrent Title no (if any): _____	

Note: If the property is situated in a trust or communal land area under traditional council or communal property association, attach proof of land right allocation by the traditional council in terms of the applicable customary law or communal property association. Where applicable, also attach proof of community resolution in terms of Interim Protection of Informal Land Rights Act.

SECTION 4

Details of the Type of Application being Submitted

Application for:

(Please mark applicable block with a cross)

(If application consists of more than one action, mark all relevant actions)

Rezoning of land:	X
Subdivision of land into less than 20 units:	
Subdivision of land into 20 or more units:	X
Consolidation of land:	
Temporary departure from land use scheme provisions applicable to land:	
Permanent departure from land use scheme provisions applicable to land;	
Removal, suspension or amendment of Title Deed Restrictions:	
Consent use:	
Closure of Public Place or Public Road:	

Extension of validity of an existing approval:	
Phasing of an approved subdivision plan:	
Annulment, suspension of amendment of conditions of approval:	
Any other application in terms of national legislation, provincial legislation or municipal by-law:	X
Please give a short description of the scope of the application: Rezoning and Subdivision of ERF 64, Kylemore, Stellenbosch Municipality, from Agricultural and Rural Zone to CONVENTIONAL RESIDENTIAL ZONE and Cancellation of 8m servitudes	

SECTION 5

Detail of application (Mark with an X and give detail where applicable)

Is space insufficient, refer to section and page of the motivation report where the aspect is being addressed.

Is the land unit currently developed (buildings etc.)?	YES	NO X	If answered YES, what is the nature & condition of the developments/improvements?	
Is the land currently being used in line with its zoning?	YES	NO X	If answered NO, does what is the application/ use of land?	VACANT
Is the property burdened by a bond?	YES	NO X	If answered YES, attach the bondholder's consent to the application:	

Has a similar application been submitted on the property in the past 5 years?	YES X	NO X	If answered YES, when and provide particulars of the authority reference numbers and decisions:	
Does the application and development proposal apply to the entire land unit?	YES X	NO X	If answered NO, indicate the size of the portion of the land to which the application / development applies, as well as what the remaining extent will be used for:	
Are there any restrictive conditions, servitudes, or other rights, applicable to the land unit in terms of the deed of transfer or S.G. diagram that should be removed, as it might have an influence on this application?	YES X	NO X	If answered YES, please provide detail description:	
Are there any physical restrictions (e.g. steep inclines, unstable land formations, marshes, etc.) that might influence the intended development?	YES X	NO X	If answered YES, name full particulars and state how the restrictions will be solved (including sketches, designs and plans where applicable):	
Is any portion of the land unit in a flood plain of a river beneath the 1:50 or 1:100 year flood-line?	YES X	NO X	If answered YES, please provide detail description:	
Is any portion of the land unit within 100m or 1000m of the high-water mark of the sea or a tidal river?	YES X	NO X	If answered YES, please provide detail description:	
Is any other approval that falls outside of this Act, necessary for the implementing of the intended development?	YES X	NO X	If answered YES, please provide detail description:	
What arrangements will be made regarding the following services for the development? (Full Engineering Reports must be supplied, where applicable)	Water supply:		SEE MOTIVATION REPORT	
	Electricity supply:		SEE MOTIVATION REPORT	
	Sewerage and waste-water		SEE MOTIVATION REPORT	
	Storm-Water:		SEE MOTIVATION REPORT	
	Road Network:		SEE MOTIVATION REPORT	

YES	NO	N/A	ANNEXURE OR PAGE REFERENCE	DOCUMENT ATTACHED
X				Comprehensive Motivation Report
X				Alignment with applicable Spatial Development Framework
		X		Public participation report (record and minutes of meetings, copies of advertisement and notices etc.)
		X		Proof of community approval granted as a result of a community participation process conducted in terms of Customary Law and the procedures in terms of the Interim Protection of Informal Land Rights Act;
X				Power of Attorney (Board of Directors' / Trustees' resolution / Letters of Authority)
X				Copy of Title Deed(s)
		X		Bond holder's consent
		X		Cadastral information – S.G. diagram/General Plan including servitudes, lease areas, etc.
		X		Status report from Surveyor General – street closure or closure of public place
		X		Topographic map/ aerial map
X				Locality Map
		X		Site Plan
X				Zoning Map
X				Zoning Certificate
X				Land Use Map
		X		Special endorsement/proxy
		X		Home Owners' Association consent
		X		Proposed subdivision plan
		X		Proposed consolidation plan
X				Proposed site development plan
		X		Mineral rights certificate (together with mineral right holder's consent)
X				Environmental Authorisation
X				Heritage Authorisation
X				Detail Engineering Services report (Bulk and internal)
X				Traffic impact study / statement
X				Geo-technical report
		X		Flood line assessment (1:50 and 1:100 years)
		X		Department of Agriculture consent (Subdivision of agricultural land)
X				Two (2) sets of full colour documentation copies

SECTION 7

Declaration

Note:	<i>If application is made by a person other than the owner, a Power of Attorney is compulsory. If the property is owned by more than one person, the signature of each owner is compulsory. Where the property is owned by a company, trust, or other juristic person, a certified copy of the Board of Directors/Trustees' resolution is compulsory</i>										
I hereby certify the information supplied in this application form to be complete and correct and that I am properly authorised to make this application.											
Applicant's/ Owner's Signature:				Date:	09	0	5	2	0	2	5
Full name (print):	Trymore Hutu										
Professional capacity:	Professional Town Planner										
Applicant's ref:	Erf_64_Kylemore										

SECTION 8

Prescribed Notice and advertisement procedures (for the completion and use of Responsible Authority only)

Checklist for required advertisement procedure			Checklist for required proof of advertisement		
YES	NO	DOCUMENTATION AND STEPS TO BE TAKEN	YES	NO	DOCUMENTATION TO BE PROVIDED AS PROOF
X		Notice to be placed in the Local Newspaper			Proof of Notice in Local Newspaper Note: The original newspaper advertisement or full colour copy, indicating page number and date.
		Notice to be placed in the Provincial Gazette (for 2 consecutive weeks)			Proof of Notice in the Provincial Gazette Note: The original newspaper advertisement or full colour copy, indicating page number and date.
		Notices to neighbours Note: The map indicating the neighbouring erven and list of neighbours will be provided. If the applicant chooses to deliver the notices per hand (Option 1), two copies of the notice must be provided on or before the date of the notice to each neighbour. One copy of the notice must be signed by the respective party (neighbour) to be handed back to the			Proof of Notice to neighbours Note: Option 1: The signed notices of all surrounding neighbours, as identified by the Responsible Authority, must be provided. Note: Option 2: The proof of the registered mail must be provided to the Responsible Authority

		Responsible Authority. Alternatively (Option 2), the notices can be sent via registered post.			
		Notice to be placed on the site Note: The notice provided must be placed on the site in a laminated A3 format (two language formats separate on A3) on or before the date of the notice.			Proof of Notice in site Two colour photos of the notice on site must be provided of which one is close up and the other one is taken from a distance in order to see the placing on the site itself.
		Public Meeting Note: The holding of a public meeting in order to inform the general public of the application.			Proof of Public Meeting The applicant must provide proof of the agenda, the attendance register and minutes of the meeting to the Responsible Authority.

		Any Additional components			Proof of additional components



**NATIONAL PRIDE
ENERGIES**

Refuel for every mile

1 Cavendish Rd, Vincent, East London

043 704 6411

lubabalog@oniresources.co.za

26th May 2025

ATTENTION : GM : Trading
PETROSA
151 Frans Conradie Drive
PAROW
WESTERN CAPE
SOUTH AFRICA

Dear Sir/Madam,

Re : Offer to supply gasoil (diesel) DAP Mossel Bay, South Africa

I trust that I find you well. Further to our recent communication, please find our offer below :

SELLER : NATIONAL PRIDE ENERGIES
7 Tyrell Road
BEREA
EAST LONDON, 5201

BUYER : PETROSA
151 Frans Conradie Drive
PAROW
WESTERN CAPE
SOUTH AFRICA

PRODUCT/QUALITY : Gasoil 50 ppm as per attached will be applicable

CARGO QUANTITY : 42000 Mt x 3

TERMINAL : MOSSEL BAY

DELIVERY : DAP Mossel Bay or any other South African Port requested by PetroSA
Incoterms 2010 (as amended from time to time)
*DAP as ascribed to in Incoterms 2010 (as amended from time to time)

LAYCAN :

Cargo 1	25 th to 27 th June 2025
Cargo 2	29 th to 31 st July 2025
Cargo 3	27 th to 29 th August 2025

PRICING :

Cargo 1 Dap Mossel Bay United States Dollar equivalent
of the average of the daily calendar month June 2025 CEF BFP
daily quotes **June 2025 less 20cpl**, BFP as published on their petrol
price page. Price will be converted into United States Dollars (USD)
at the average of the published daily June 2025 calendar month
BFP exchange rates.

Cargo 2 Dap Mossel Bay United States Dollar equivalent
of the average of the daily calendar month July 2025 CEF BFP
daily quotes **July 2025 less 20cpl**, BFP as published on their petrol
price page. Price will be converted into United States Dollars (USD)

at the average of the published daily July 2025 calendar month BFP exchange rates.

Cargo 3 Dap Mossel Bay United States Dollar equivalent of the average of the daily calendar month August 2025 CEF BFP daily quotes **August 2025 less 20cpl**, BFP as published on their petrol price page. Price will be converted into United States Dollars (USD) at the average of the published daily August 2025 calendar month BFP exchange rates.

Final pricing based on discharge quantity in Mt at 20 degrees Celsius,

PRICING PERIOD : Cargo 1 AVERAGE OF CEF PUBLISHED DAILY BFP IN THE CALENDAR MONTH JUNE 2025.

Cargo 2 AVERAGE OF CEF PUBLISHED DAILY BFP IN THE CALENDAR MONTH JULY 2025.

Cargo 3 AVERAGE OF CEF PUBLISHED DAILY BFP IN THE CALENDAR MONTH AUGUST 2025.

ADDITIONAL PRICING TERMS PER CARGO :

Prices shall be rounded off to three (3) decimals.

PAYMENT TERMS : 45 days from COMPLETION OF DISCHARGE with date of completion of discharge as day zero.

SECURITY : Open credit

LAYTIME :

- Laytime allowed to buyer shall be thirty-six (36) running hours since
- Laytime shall commence, upon acceptance of NOR
- Such notice of readiness may, for the purposes of this contract, be tendered when the vessel has completed anchoring at the customary anchorage or waiting place of the port of discharge or, if the vessel moves directly to the discharge berth, when the vessel is all fast at the discharge berth.
- If the vessel tenders notice of readiness prior to the three (3) day delivery range, laytime shall commence at zero six zero (0600) hours on the first day of the three (3) day delivery range or upon commencement of discharge, whichever occurs first.
- If the vessel tenders notice of readiness after the three (3) day delivery range, laytime shall commence upon commencement of discharge,
- Laytime or, if on demurrage, demurrage shall cease when the delivery hoses are disconnected after the completion of discharge.
- Any time spent and/or lost due to any of the following events shall not count as used laytime or, if on demurrage, as demurrage :
 - i. The inward passage until the vessel all fast at the discharge berth.
 - ii. The handling of, or preparation to handle, ballast or slops or bunkers unless carried out concurrent with discharging.
 - iii. Awaiting daylight, tide, opening of locks, pilot or tugs, moderation of weather prior to berthing, ice, immigration, customs, or free pratique.
 - iv. Cleaning or inspecting cargo tanks.



- v. Due to port closure or due to any restriction imposed by the authorities responsible for the discharge terminal.
- vi. As a result of the vessel's failure to comply with the requirements of the discharging terminal with respect to equipment or documentation aboard or any other reason which causes delay to the discharging operations.
- vii. As a result of
 - a. Breach of this contract by the seller; or
 - b. Any delay due to fault, failure, or inefficiency of the vessel ; or
 - c. Strike, lock-out, stoppage or restraint of labour of master, officers or crew of the vessel or tugboats or pilot.
- Any delays after berthing which are due to adverse weather conditions shall count as one-half laytime or if on demurrage, at one-half demurrage rate.
- The seller should warrant that the vessel shall be capable of discharging her full cargo within twenty-four (24) hours from commencement of pumping, pro-rata for part cargo, or that the vessel shall maintain an average of discharge pressure, at each vessel's manifold in use, of one hundred (100) p.s.i. (7 bar), provided that reception facilities are capable of the same. Any delay due to the inability of the vessel to fulfil the above warranty shall not count as used laytime or, if on demurrage, as demurrage.

DEMURRAGE RATE PER CARGO :

- If the shipment is not discharged within the allowed laytime, buyer shall pay to seller demurrage in US Dollars per running hour and pro rata for a part thereof for all time used in excess of the allowed laytime.

The applicable demurrage rate shall be :

- i. The demurrage rate per day pro-rata provided for in the charter party entered into regarding the carriage of the product, pro-rata for part cargo, or in the absence of such rate,
- ii. At the "worldscale" base demurrage rate, modified by AFRA, effective on the date that the vessel's NOR to discharge was tendered, which applies for a vessel of the same type, size and capacity, pro-rata for part cargo.
- Demurrage rate shall be sent to the Buyer no later than 2 calendar days after BL date
- Demurrage shall constitute seller's sole remedy in respect of any delay in discharging and buyer shall not be liable for any other direct or indirect loss or damage whatsoever or howsoever caused.
- No demurrage whatsoever shall be payable in the event buyer is delayed in receiving all or part of the oil by reason of any force majeure circumstances.
- Buyer shall not be liable for demurrage claims if telex/e-mail/written notice of claim and fully documented claim from the seller is not received by the buyer within thirty (30) and sixty (60) days, respectively, from the date of completion of discharging.

DISCHARGE PORT INSPECTIONS :

The buyer shall appoint a first-class international independent inspector agreeable to the Buyer to ascertain quality and quantity to be transferred from Seller to Buyer at disport. Quantity and quality inspection costs at disport shall be shared 50/50 between buyer and seller.

TITLE AND RISK :

The title and risk of the petroleum products supplied under the terms of this agreement shall pass to Buyer at disport as the petroleum products pass the flange connection between vessel's permanent hose and the receiving tank's hose.



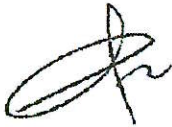
SUPPLY TERM : SPOT

LAW : SOUTH AFRICAN LAW, JOHANNESBURG HIGH COURT

We thank you for the opportunity to offer you our supply solution. We trust that our offer is in order, and we look forward to your favourable response.

Thanking you in anticipation.

Yours truly,



Lubabalo Gwintsa
Chief Executive Officer
National Pride Energies

Cc : Nnamdi Obiagwu – NEPAL
Cliff Williams - NEPAL

OFFER ACCEPTED BY : _____
(Print full names)

SIGNATURE, STAMP & DATE : _____





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DIRECTORATE: PLANNING & ECONOMIC DEVELOPMENT

www.stellenbosch.gov.za/planning-portal/

SUBMIT COMPLETED FORM TO landuse.applications@stellenbosch.gov.za

LAND USE PRE-APPLICATION SCRUTINY FORM

1. This Land Use **Pre-Application Scrutiny Form** is to be submitted prior to the submission of a Land Use and Land Development application in terms of Section 15(2) of the Stellenbosch Municipal Land Use Planning Bylaw, 2015 (SLUPB).
2. It is compulsory to submit a Pre-application Scrutiny Form for any zoning determination, rezoning, subdivision or consolidation of land, the amendment or cancellation of a subdivision plan, the removal of restrictive conditions or an amendment of conditions of approval.
3. It is not a requirement to submit a Pre-Application Scrutiny Form for the other types of applications, although you are advised to do so when any form of guidance is required.
4. Relevant documents can be accessed at the [Planning Portal – Stellenbosch Municipality](https://stellenbosch.gov.za/planning-portal/) <https://stellenbosch.gov.za/planning-portal/>.
5. A signed copy of the form must be submitted by email to landuse.applications@stellenbosch.gov.za.
6. The applicant will receive feedback per e-mail following a weekly internal technical discussion on the pre-application scrutiny submission.
7. A pre-application consultation meeting may be required in terms of Section 37 of the said Bylaw on receipt and consideration of a **Pre-Application Consultation Form**.

PART A: APPLICANT, OWNERSHIP & PROPERTY PARTICULARS

Applicant Name	Thoba Mkomjiss End Associates & HDA
E-Mail Address	admin@mkomjiss.co.za
Tel/ Cell Number	071 5622 726
Registered Owner	Dept of Public Works

Property Description (Erf / Farm Number)	Erf 64 Kylemore, Stellenbosch
Physical / Street Address	
Suburb & Town	Kylemore
Current Zoning	Agriculture
Current Land Use Activities / Buildings	Occupied by few informal buildings.

Are there existing buildings on the subject property(ies)?	Yes	No ☒
Are there any existing unauthorized buildings and/or land use on the subject property(ies)?	Yes	No ☒
If yes, is this application to legalize the building/ land use?	Yes	No ☒
Are there any pending court case(s)/ order(s) relating to the subject property(ies)?	Yes	No ☒
Is the property located in a heritage area or contains any heritage significant buildings?	Yes	No ☒
Does the property fall inside the urban edge?	Yes ☒	No

PART B: APPLICATION

1. WHAT LAND USE PLANNING APPLICATIONS ARE REQUIRED IN TERMS OF SECTION 15(2) OF THE SLUPB?

☒ s15 (2)(a)	Rezoning	☐ s15 (2)(b)	Removal / Suspension Amendment of restrictive conditions	☐ s15 (2)(c)	Permission in terms of condition of approval*	☐ s15 (2)(d)	Disestablishment of HOA*
☐ s15 (2)(b)	Permanent Departure*	☐ s15 (2)(b)	Permission in terms of zoning scheme*	☐ s15 (2)(c)	Determination of a zoning	☐ s15 (2)(d)	Rectify failure by HOA*
☐ s15 (2)(b)	Temporary Departure*	☐ s15 (2)(b)	Amendment of condition(s) of approval	☐ s15 (2)(c)	Closure of a public place*	☐ s15 (2)(d)	Permission required for the reconstruction of a building*
☒ s15 (2)(c)	Subdivision	☐ s15 (2)(b)	Extension of validity period of approval*	☐ s15 (2)(c)	Consent use*		Other:
☐ s15 (2)(e)	Consolidation	☐ s15 (2)(k)	Amendment / cancellation of approved subdivision plan	☐ s15 (2)(p)	Occasional use*		Other:
OTHER	s13 ZSBL Technical Approval*	24(2) SLUPB Exemption*	Title Deed	Title Deed consent / permissions*			

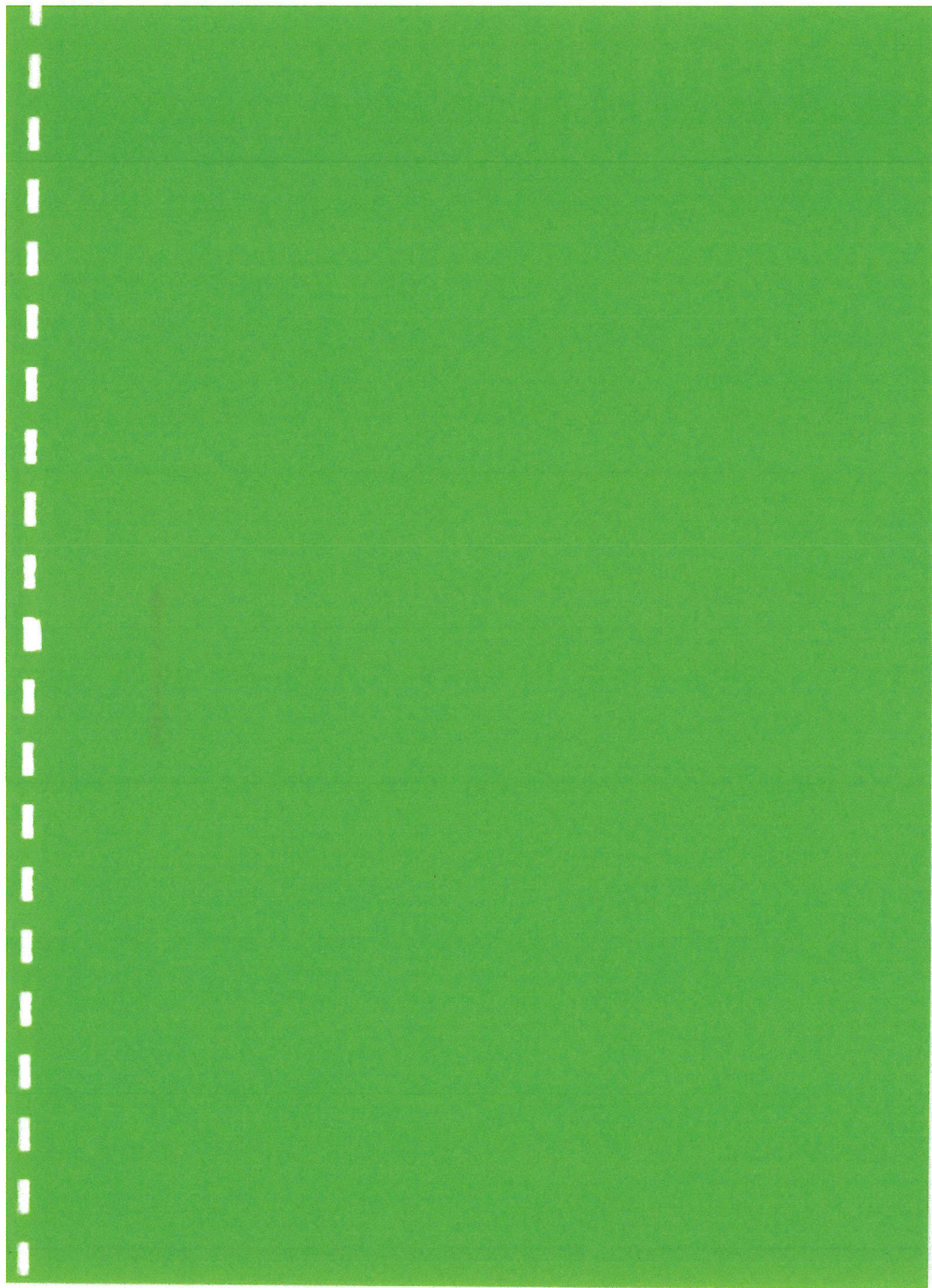
*The submission of a pre-application scrutiny is not compulsory for this land use application and a land use planning application form can be submitted, without completing the pre-application scrutiny form.

Details of the Proposal: (Brief description of development proposal. List expected land use activities. Short motivation of intended land use. Detail planned outcome. If change of zoning is required, list which zoning is applied for. Describe additional use planned for. List type of consent use applied for.)

Rezoning and Subdivision of Erf 64
Kylmore, Stellenbosch to develop
human Settlements.

2. RELEVANCE OF ANY PLANNING LEGISLATION/ POLICIES AND PLANS

RELEVANT PLANNING CONSIDERATIONS		
(a) Are any Municipal plans/policies/guidelines, or any restrictive title conditions, or other legislation / authorizations applicable to the application, and if yes, is the proposal consistent/ compliant with such?	Yes	No
Details with reference to applicable plans/ policies/ guidelines: SDF, IDP, LUMS	☒	☐
(b) Does the proposal require the following additional infrastructure / services? e.g. electricity; water; sewerage; road network; other?	YES	NO
Details on required infrastructure: Roads	☒	☐
(c) Does the development proposal include the provision of residential units, and if so, what is the target market re: range in income bracket/ selling price or rental for the units?	YES	NO
Details on target market: BNG Beneficiaries	☒	☐
(d) In addressing the SPLUMA principle of Spatial Justice and as it relates to prescripts on the provision of inclusionary housing, how will this development proposal target affordable market segments?	YES	NO
Details on inclusionary housing provision: Poor people are going to ^{be} accommodated	☒	☐
(e) Does the subject property fall within the Adam Tas Corridor?	YES	NO
Details on proposed densities:	☐	☒





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DIRECTORATE: PLANNING & ECONOMIC DEVELOPMENT

www.stellenbosch.gov.za/planning-portal/

SUBMIT COMPLETED FORM TO landuse.applications@stellenbosch.gov.za

LAND USE PRE-APPLICATION CONSULTATION FORM

1. Pre-application consultation is an advisory session and does not in any way pre-empt the outcome of any future application which may be submitted to the Municipality.
2. This **Land Use Pre-Application Consultation Form** is to be submitted along with the **Pre-application Scrutiny Form** prior to the submission of a Land Use and Land Development application in terms of Section 15(2) of the Stellenbosch Municipal Land Use Planning Bylaw, 2015 (SLUPB).
3. Relevant documents can be accessed at the [Planning Portal – Stellenbosch Municipality](https://stellenbosch.gov.za/planning-portal/) <https://stellenbosch.gov.za/planning-portal/>.
4. A signed copy of the form must be submitted by email to landuse.applications@stellenbosch.gov.za.

Applicant Details	
Name	Housing Development Agency / Thabo Mkhanyisa and Associates
E-Mail Address	admin@mkhanyisa.co.za
Proposal Details	
Property Description (Erf / Farm Number)	Erf 64 Kylemore, Stellenbosch.
Physical / Street Address or Business Name / Known as	
Details of the Proposal: (Brief description of development proposal. List expected land use activities. Provide details of previous land use approvals.) Subdivision and Rezoning of Erf 64 Kylemore, Stellenbosch to develop integrated and sustainable human settlements.	

List documents provided for discussion at the meeting: (Attach copies of relevant documents.)

See Attachments on Motivation Report

Has pre-application consultation been undertaken for a land development application in terms of section 53 of the Western Cape Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA) and regulation 10 of the Western Cape Land Use Planning Regulations, 2015 (LUP regulations)? (Provide details and attach a copy of the Minutes)

Attendees Required

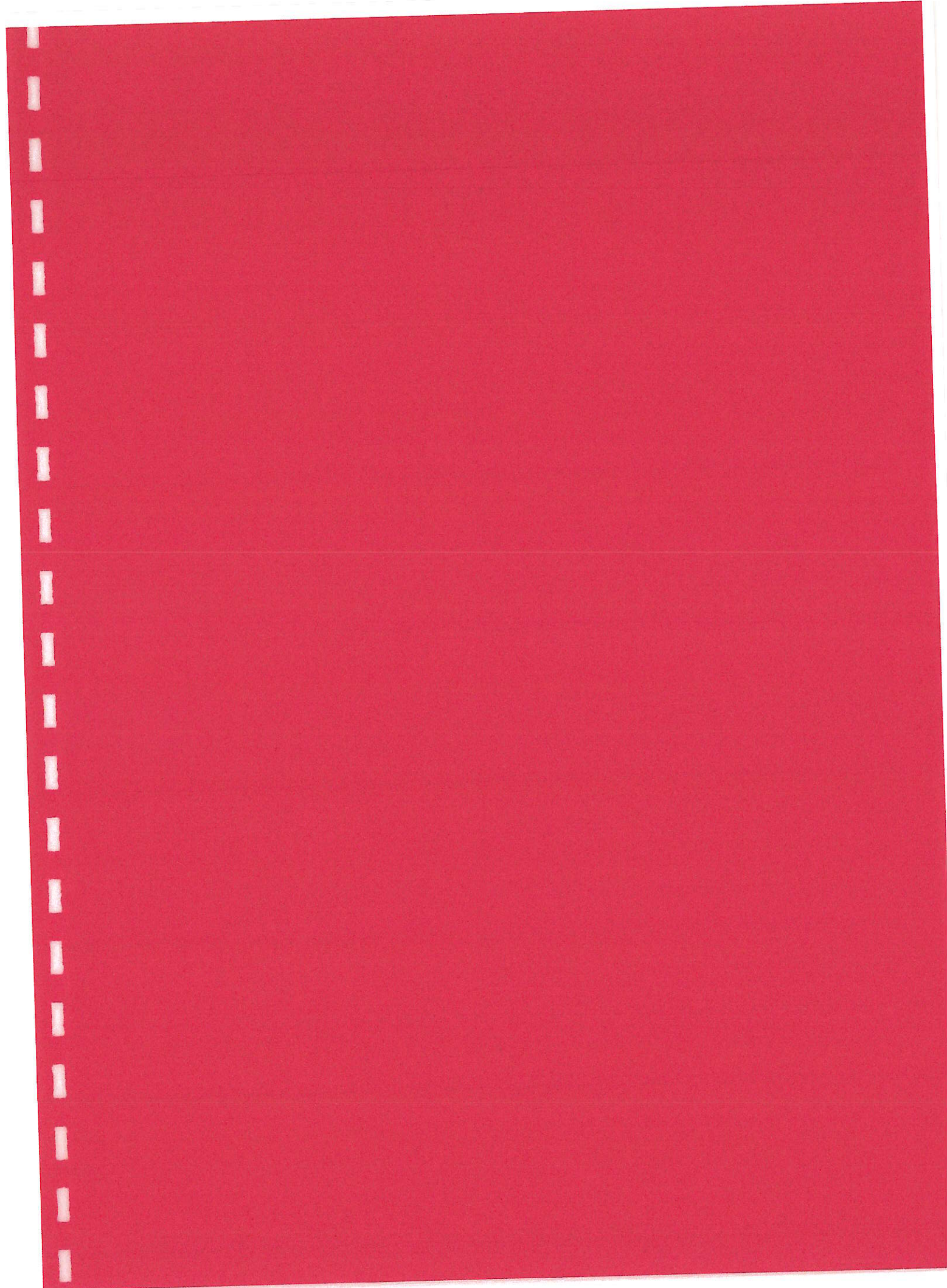
Organisation / Department	Name & Surname	E-mail Address
HDA		
SM		

Proposed Date, Time & Venue

Applicant's signature: _____

F. H. H. H.

Date: 18-02-2025



ANNEXURE 7: APPOINTMENT LETTER



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22 February 2010

Our Ref : KY64
Contact per : C Alexander
Contact no : (021) 808 8656

ZONING CERTIFICATE – ERF NO. 64, KYLEMORE

The Erf No 64, Kylemore, located in the Administrative District of Stellenbosch Municipality, in terms of section 14 of the Land Use Planning Ordinance No 15 of 1985 and the Scheme Regulations promulgated at PN 1048/1988, deemed to be zoned as:

Agricultural Zone I

ZONING	PRIMARY USE	CONSENT USES
(1)	(2)	(3)
Agriculture Zone I	Agriculture	Additional dwelling units Farmstore Farmstall Intensive-feed farming Riding school Nursery Service trade Tourist facility

Definition:- "Agriculture means the cultivation of land for crops and plants or the breeding of animals, or the operation of a game farm on an extensive basis on the natural veld or land, and includes only such activities and buildings as are reasonably connected with the main farming activities of the farm, but does not include the consent uses applicable to agricultural zone 1."

DEPARTMENT: PLANNING & DEVELOPMENT
ZD/ca



ANNEXURE 8: POWER OF ATTORNEY



public works
& infrastructure
Department
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

Special Power of Attorney

Signed at PRATOMA on the 15 day of NOVEMBER 2021 in
the presence of the undersigned witnesses.

Signature
Acting Director General-
Department of Public Works &
Infrastructure (DPWI)

AS WITNESSES:

Full Name and Surname:

1. Molebogeng Masete
2. Sarah Mashiane

Signature

- Treasury prior to the construction or development of low cost houses on the Remainder of Erf 64 Kylemore,
- (v) the DPWI will fulfill or meet all prerequisite legal obligations or requirements specified by and arising from various pertinent legislation (including the Restitution of Land Rights Act, 1994), which may determine the transferability of the property, before transferring the Remainder of Erf 64 Kylemore to the HDA,
 - (vi) before accepting its specific role in this project, each party involved in the project will consider any financial, legal and other liability or implication associated with this project,
 - (vii) any prerequisite environmental impact assessment required by law or government policy will be conducted and considered before the formal construction or development of low cost houses on the Remainder of Erf 64 Kylemore, and
 - (viii) all costs incurred in the holding, transfer and subdivision of the land will be borne by the HDA.

3. The National Treasury remains available to provide any clarification that the DPWI might seek regarding the contents of this letter.

Kind regards



DR MAMPHO MODISE
DEPUTY DIRECTOR-GENERAL: PUBLIC FINANCE
FOR DIRECTOR-GENERAL
Date: 27/10/2021

ANNEXURE 9: ENVIRONMENTAL AUTHORISATION

KYLEMORE

PRE-FEASIBILITY FOR PROPOSED DEVELOPMENT ON RENTAL ERF 64, KYLEMORE



Proposed development site indicated as "Kylemore housing"

Prepared by:
Pieter Badenhorst
December 2009

Prepared by:

Pieter Badenhorst Professional Services CC
Environmental management & engineering consultant
PO Box 1058
Wellington 7654
(pbps@iafrica.com)



Date: December 2009

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Figure 1.2: Initial layout for proposed Kylemore housing site	1

1 Background

This report, compiled for CK Rumboll and Associates, summarises the environmental aspects as part of the pre-feasibility for a proposed housing development on restant of erf 64 in Kylemore. The property is 15,5ha in size and about 10ha will be developed. The locality of the site is shown on the front page with a closer view in Figure 1.1 and initial layout in Figure 1.2.



Figure 1.1: Close-up view of Kylemore proposed housing site

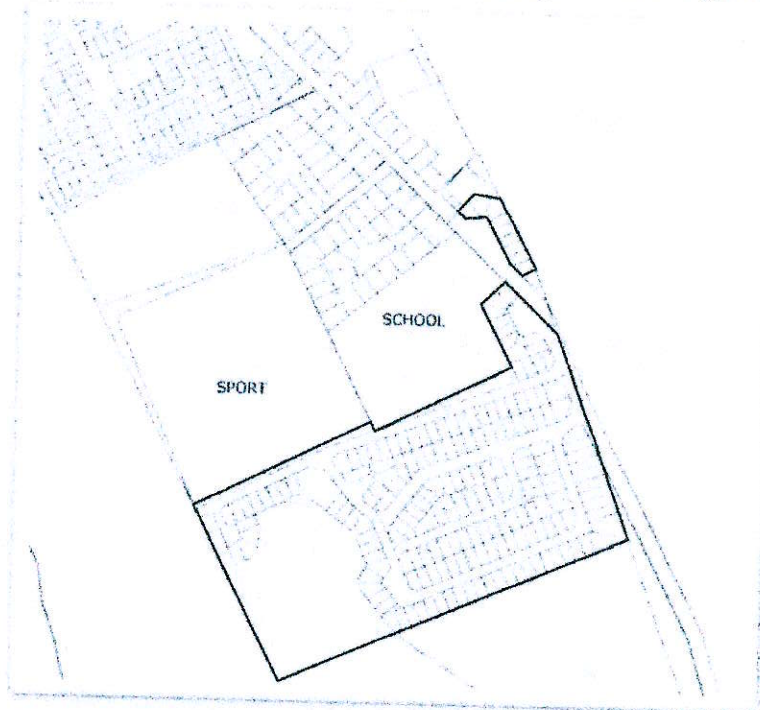


Figure 1.2: Initial layout for proposed Kylemore housing site

2 Discussion

2.1 General

The site was visited on 17 November 2009. It is relatively flat with an attenuation pond on the south western side. Existing school sport fields are located to the north of the high school. A few existing old houses are located on the site. Rumboll and Associates communicated with the existing tenants and findings of those discussions are included in other specialist reports.

2.2 Vegetation

A site visit was undertaken by Dr Dave McDonald on 14 December 2009. A short report is shown in the Appendix. The overall finding is that there is no sensitive vegetation that will negatively impact on the proposed development layout. A full report will be required for the Basic Assessment report that will form part of the application for environmental authorisation.

2.3 Heritage & archaeology

There are no major heritage or archaeological concerns but reports will be required for the environmental application. It is likely that a full HIA might be required.

2.4 Environmental application

The property is smaller than 20ha and therefore a Basic Assessment process will be required in order to obtain environmental authorisation. The listed activities that might potentially be activated are as follows:

Activity number	Activity description
1	The construction of facilities or infrastructure, including associated structures or infrastructure, for – (k) the bulk transportation of sewage and water, including storm water, in pipelines with – (i) an internal diameter of 0,36 metres or more; or (ii) a peak throughput of 120 litres per second or more; (m) any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including – 1. canals; 2. channels; 3. bridges; 4. dams; and 5. weirs;
12	The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
15	The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.
16	The transformation of undeveloped, vacant or derelict land to – (a) establish infill development covering an area of 5 hectares or more, but less than 20 hectares; or (b) residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.
18	The subdivision of portions of land 9 hectares or larger into portions of 5 hectares or less.

2.5 Other studies

Other studies that will be required as part of the environmental application are as follows:

- Services report – indicating availability of services (water, sewage, electricity, waste and stormwater).

- Planning report -indicating existing use of the area as well as planning approvals required to implement the proposed project.
- Traffic report – it is likely that the Municipality will require a TIA to ensure that the additional traffic generated by the proposed development can be catered for or to identify additional measures required.
- Architecture report – indicating the proposed design and visual view of the proposed development.
- Socio- economic report – indicating the benefit to the community.

An additional report that might be required is a visual assessment. It will only be undertaken should an authority request it.

3 Environmental process

The environmental process would, apart from the studies listed above, include the following:

- Notice of intent (NOI) and submission to DEA&DP
- Receive details of neighbours (normally from the land surveyor)
- Finalise planning, layout, etc
- Complete baseline studies and impact of layouts
- Receive consultants reports
- Compile draft Basic Assessment Report (dBAR) and Environmental Management Plan (EMP - the latter now a requirement for all assessments)
- Advertisement for I&AP registration - local newspaper, distribute dBAR (40 day commenting period)
- Inform DEA&DP re applicable authorities; commenting period 40 days from DEA&DP notice.
- Complete Application Form (to be submitted with BAR)
- Receive comments on dBAR
- Arrange for responses from consultants as required
- Finalise BAR
- Distribute BAR to all I&APs – 40 day commenting period
- Submit BAR and application form to DEA&DP

DEA&DP normally allows 6 months for the process to be completed.

4 Conclusion

From the initial assessment undertaken no “red flags” were identified that might negatively impact on the proposed development.

5 Appendix



Bergwind Botanical Surveys & Tours CC.

14A Thomson Road

Claremont

Cape Town

7708

14 December 2009

Mr Pieter Badenhorst
PO Box 1058
Wellington
7654

Dear Pieter

**Botanical Scan for the Proposed Affordable Housing Development on Remainder Erf 64
Kylemore, Stellenbosch Municipality**

This brief report records my observations at Remainder Erf 64, Kylemore Stellenbosch Municipality during a visit to the property on 14 December 2009.

Remainder Erf 64, Kylemore, Stellenbosch is found at the south-east end of Kylemore Village at the base of the Groot Drakenstein mountains. On the north side is the Kylemore High School with its sports fields and on the south, west and east sides is agricultural land. A gravel road runs along the boundary between Remainder Erf 64 and Kylemore High School. The site is roughly rectangular in shape with the long-axis running NE – SW. Apart from a man-made dam that forms a depression towards the south-western end of the property, it is relatively flat. The substrate consists of colluvial soils with large sandstone boulders that lie shallowly just below the surface. The site has a slight slope to the north-west but is effectively exposed in all directions with no aspect dominating in particular. A few houses are found in the north-west quarter opposite the school. Another group of houses is found in the south-east corner of the property.

According to the national vegetation classification (VEGMAP) the original vegetation that would have occurred on the site is Boland Granite Fynbos, an ENDANGERED vegetation type according to the National Spatial Biodiversity Assessment (Rouget *et al.* 2004) which has now been superseded by the Draft National List of Threatened Ecosystems in which it is classified as VULNERABLE - D1. This means that the ecosystem where this vegetation is found has 'threatened plant species associations'.



tel +27 21 671-4056 mobile 082-876-4051 e-mail dave@bergwind.co.za
web www.bergwind.co.za

CK2009\123209\23

The site was visited to determine its state and whether there is any remaining natural vegetation. Having determined prior to the visit that the site was mapped as Boland Granite Fynbos I was mindful that it was possible that there could be Red Data plant species on the property. A foot-survey was conducted from the west corner, through the dam area (the dam has no water at present) then through the central area to the eastern corner. From there the route followed the roads along the boundary. Very small and derelict remnants of the fynbos vegetation persist in an area that is otherwise extremely disturbed.

In the western third of the property the historical construction and presence of the dam has introduced disturbance. The dam is presently empty but plant species such as *Pennisetum macrourum*, *Zantedeschia aethiopica*, *Juncus kraussii* and various sedges that favour wet conditions were evident. The dam wall or embankment is heavily encroached by black wattle (*Acacia mearnsii*) and long-leaf wattle (*Acacia longifolia*). Beefwood (*Casuarina equisetifolia*) is also seeding into this area from the nearby wind-breaks.

To the south of the dam is an open grassy area dominated by exotic but with relatively few invasive shrubs and trees. This grassy area extends down the west side of the property where there is a drainage ditch, to the south-west area (see accompanying annotated photograph). A few geophytes such as *Corycium* sp. and *Gladiolus* sp. were found here but these could not be positively identified since they were finished flowering and dried out.

East of the dam the central to west part of the erf is overwhelmingly invaded by a dense stand of acacias, mainly black wattle (*Acacia mearnsii*) but also some long-leaf wattle (*Acacia longifolia*). These trees form dense impenetrable stands that have shaded out all vegetation in the understorey. Occasionally there are openings with remnant fynbos species such as *Diospyros glabra*, *Searsia angustifolia*, *Cliffortia ruscifolia*, *Ehrharta villosa*, *Asparagus rubicundus*, *Lichtensteinia lacera* and the geophytes *Gladiolus* cf. *carneus*, *Ornithogalum* sp. and *Brunsvigia* sp. The grass *Merxmüllera stricta* dominates in some of these openings and restios (*Ischyrolepis* sp.) also contribute to the graminoid stratum. It appears that the area heavily infested with wattles was previously a plantation of pine trees that were cut down with the area subsequently being invaded by the aggressive black wattles. It also appears that despite the sandstone boulders and shallow soil the area was 'ploughed' in some way contributing to the disturbance. The wattles thus represent a second cycle of invasion and disturbance on this land and the chances of rehabilitation are low. No proteoid or ericoid shrubs typical of Boland Granite Fynbos were found on the erf and no other typical species of this vegetation type were located. From the small fragments of fynbos present and the nature of the substrate it is doubtful if this area would have supported typical Boland Granite Fynbos

but that the natural vegetation would more likely have been transitional between Boland Granite Fynbos and Swartland Alluvium Fynbos.

The eastern corner of the property has a few old houses that are currently still occupied. The area around these houses is highly disturbed with yards around the houses, a large amount of litter and large areas invaded by Kikuyu grass (*Pennisetum clandestinum*).

No threatened plant species (Red Data) were found in the survey.

My observations indicate that Remainder Erf 64, Kylemore, Stellenbosch has been almost completely transformed from the original vegetation that would have occurred there. The condition of the site is very poor. A few remnant fynbos species survive in the habitat which is now dominated by alien invasive *Acacia mearnsii* and to a much lesser extent *Acacia longifolia*. Considerable effort, time and money would be required to rehabilitate this land and there appears to be no reasonable chance that the site would return to the original vegetation even if the alien vegetation was to be removed and attempts made to restore the original fynbos. The site is also surrounded by agriculture – fruit orchards – and Kylemore Village. It has very low connectivity with any other natural areas and does not form part of a natural corridor. Its isolation therefore does not indicate the possibility of a sustainable future for the site in a natural condition.

The poor condition of the site and lack of botanical 'red flags' indicate that no constraints should be placed on the proposed housing development.

Reference should be made to the accompanying annotated aerial photograph (Figure 1) which complements this short report.

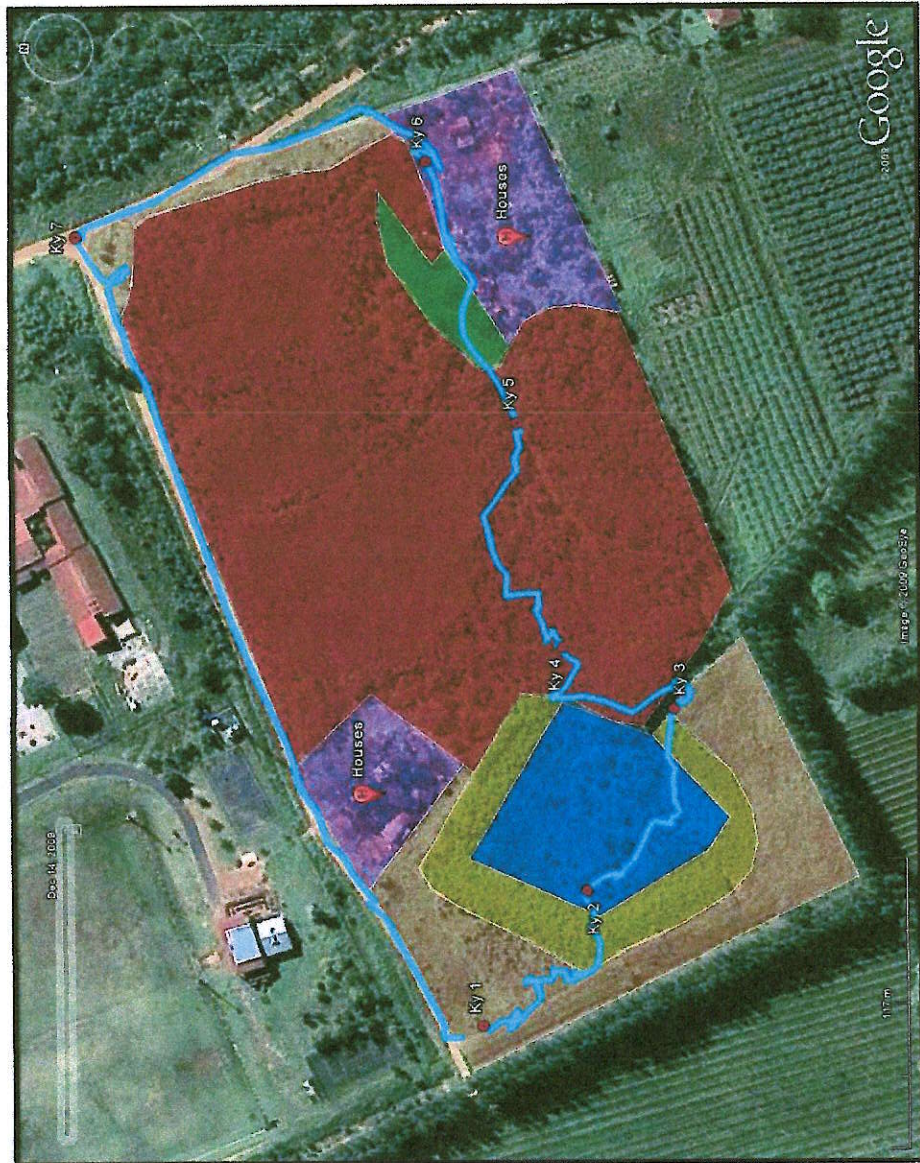
Should more detail be required a set of photographs taken during the survey and more detailed survey information can be supplied.

Yours sincerely



Dr D.J. McDonald Pr. Sci. Nat.
Specialist Botanist

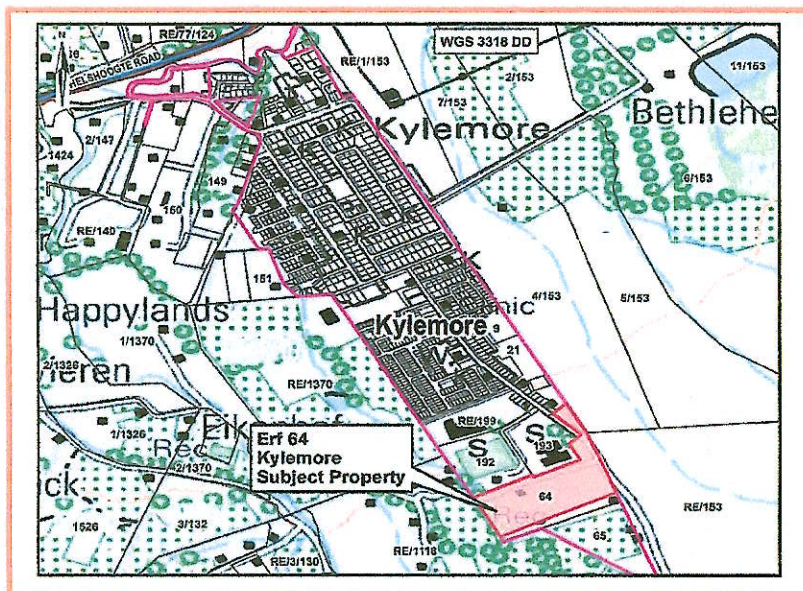
Figure 1. Aerial photograph of Erf 64 Kylemore, Stellenbosch. The blue area represents the dam inundation area (currently empty); the yellow area is the dam wall / embankment that is completely overrun with alien invasive *Acacia* spp. The red area is the central to west area with a jungle of very dense black wattle (*A. mearnsii*). The brown areas to the west and east are dominated by exotic grass. The disturbed area around the houses are shown in purple and the area of dense encroachment by Kikuyu grass is shown in green. The blue line with waypoints (Ky#) is the survey track.



ANNEXURE 10: GLS - CIVIL ENGINEERING STUDIES REPORT

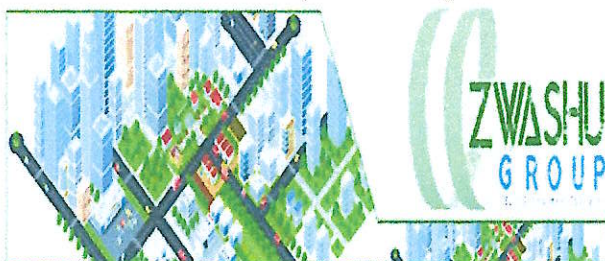
CAPACITY ANALYSIS OF BULK WATER AND SEWER SERVICES: PROPOSED RESIDENTIAL DEVELOPMENT ON ERF 64 KYLEMORE, STELLENBOSCH MUNICIPALITY

(FINAL DRAFT)



04th October 2024

Prepared by:



Prepared for:



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



**Western Cape
Government**

Human Settlements



human settlements

Department:
Human Settlements
REPUBLIC OF SOUTH AFRICA

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ANNEXTURE A: EXISTING AND PROPOSED WATER PIPELINES

DOCUMENT CONTROL SHEET

	RESOURCE	CAPACITY	SIGNATURE
Compiled By:	Lungisani Ndhlovu	PR Eng, Civil 202001466	
	Bereng Marabe	Civil technologist	
	Diogo Borges	Civil technologist	
Reviewed By	Lungisani Ndhlovu	PR Eng, Civil 202001466	

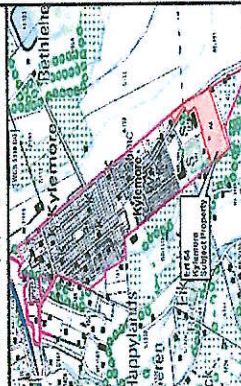
This report has been prepared in accordance with B Engineering Consultants Quality Managing System.

PROPOSED LAYOUT PLAN FOR ERF 64, KYLEMORE, STELLENBOSCH MUNICIPALITY

LAYOUT PLAN

OF THE SUBDIVISIONS OF
ERF 64 KYLEMORE
TO DEVELOP INTEGRATED HUMAN SETTLEMENTS
SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY
IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE
PROVINCE OF THE WESTERN CAPE

SCALE: 1: 1500 (A2) CONTOUR INTERVAL: 1m



LAND USE SCHEDULE

CODE	LAND USE	LOT NO.	NO. OF LOTS	AREA (Ha.)	%
RESIDENTIAL	1-133	133	2,26	33,23	
FLATS	134	1	0,25	3,68	
BUSINESS	135	1	0,04	0,59	
PLACE OF WORSHIP	136	1	0,04	0,59	
COMMUNITY FACILITY	137	1	0,04	0,59	
OFFICE	138	1	0,03	0,44	
WATER DEPOT	139	1	0,16	2,35	
PUBLIC TRANSPORT FACILITY	140	1	0,28	4,12	
COMMUNITY PARK	141	1	0,17	2,50	
PUBLIC OPEN SPACE	142-144	3	1,87	27,60	
STREET	145-148	4	1,86	24,41	
TOTAL	1-148	148	6,80	100,00	

NOTES

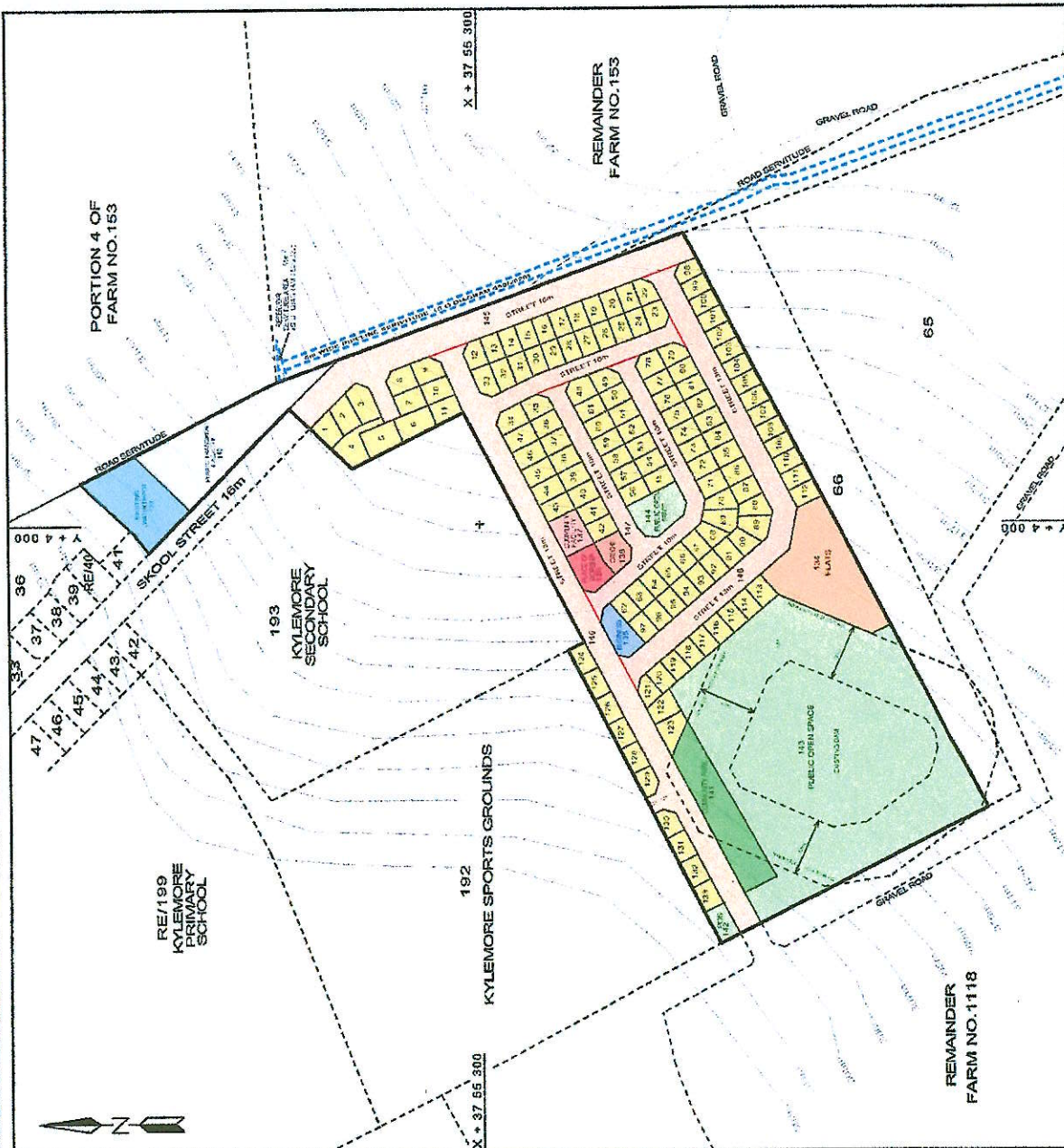
- 1) ALL SPLAYS ARE 5m x 5m
- 2) SMALLEST PLOT SIZE IS 150m² . ie. 15m x 10m.
- 3) 5m WIDE WATER SERVITUDE (SG DIAGRAM S502020) AS SHOWN.
- 4) RESERVOIR SERVITUDE AREA (SG DIAGRAM S502020) AS SHOWN.

PREPARED BY:-



7 Tyrell Road, Berea, East London
Phone: 043 422 0534

FILE NO. 2023/3 DATE: 28/05/2024



1 INTRODUCTION

The Housing Development Agency appointed Thoba Mkangisa and Associates to undertake the subdivision and rezoning of erf 64 Kylemore, Stellenbosch Municipality in which they were requested to source out the services of engineers to prepare a **Capacity Analysis of the Bulk Water and Sewer Services** for the erf 64 Kylemore proposed residential development. Through the request of Housing Development Agency, **Andisa Zwashu Group Pty (Ltd)** has been appointed to undertake the project. Currently, the site is a Greenfield and has no municipal services.

This document must be read in conjunction with the Water Master Plan (performed for the Stellenbosch Municipality) dated June 2018 and the Sewer Master Plan dated June 2018.

1.1 Study Area

Stellenbosch Local Municipality is located in the heart of the Cape Winelands and adjacent to the City of Cape Town and Drakenstein Municipality. As a local authority Stellenbosch Municipality governs the towns of Stellenbosch, Franschhoek and Pniel, and the surrounding rural areas. The area covers 831 square kilometres and adjoins the City of Cape Town (CCT) to the west and south and the Breede Valley, Drakenstein and Theewaterskloof Municipalities to the east and north. Functionally, Stellenbosch Municipality (SM) forms part of the Greater Cape Town metropolitan area.

Kylemore is a town in the Stellenbosch Local Municipality. It is located in the Cape Winelands within Helshoogte Pass on the route from Stellenbosch to Franschhoek. The town is surrounded by mountains and rivers, with walking trails into the neighbouring countryside. This is where the project is going to be conducted. There is a need for the provision of adequate and reliable infrastructure services (water and sewer) in the proposed sustainable and integrated human settlements in Kylemore (erf 64).

LOCALITY : LOCAL CONTEXT

Legend

- Kylemore
- Towns
- ⬢ Allotment Areas
- ⬢ Stellenbosch Local Municipality
- ⬢ Cape Winelands District Municipality
- ⬢ Abutting District Municipalities
- ⬢ Highway
- ⬢ Main Road

The map shows the Kylemore locality, highlighted in yellow, situated within the Stellenbosch Local Municipality. Surrounding municipalities include the City of Cape Town Metropolitan Municipality to the west and south, Drakenstein Local Municipality to the north, and Theewaterskloof Local Municipality to the east. Key roads shown include R312, R301, R304, R310, R44, R45, R21, and various local roads like Kraaifontein-Waasburgh Road, Old Paarl Road, Botterary Road, Bird Road, Polkadraai Road, Old Faure Road, Old Main Road, and Victoria Street. Towns such as Brackenfell, Kuitersrivier, Blue Downs, Khayelitsha, Macassar, Somerset West, Strand, Sir Lowrys Pass, Franschhoek, and Pniel are marked. A north arrow is located in the top left corner.

ERF 64 KYLEMORE - SUBJECT PROPERTY

Legend

- Erf 64 Kylemore (Subject Property)
- Abutting Cadastral Boundaries
- Kylemore Allotment Area

The map displays the following features:

- Subject Property:** Erf 64 Kylemore, outlined in yellow.
- Surrounding Areas:** RE/1370, REM. 199, REM. 192, REM. 193, REM. 118, REM. 153, 36, 41, 64, 65, 66.
- Cadastral Boundaries:** Indicated by white lines.
- Kylemore Allotment Area:** Indicated by pink lines.
- Other Features:** A large green field, a red-roofed building, a blue-roofed building, a swimming pool, and a tennis court.

Prepared By:
TM
Thoba Mhangisi
Surveyor General's Office

2 INFRASTRUCTURE SERVICES (WATER & SANITATION)

The development will access portable water, adequate sanitation facilities, and energy supply. The following minimum levels of services are permitted in terms of the National Norms and Standards.

Table 1: Minimum Level of Services Permitted

Type of Services	Minimum Level
Water	Supply for commercial and residential development as per (FSR)
Sanitation	Waterborne Sewer System
Roads	Paved Roads
Stormwater	Concrete-lined open channels

2.1 Water Distribution System

2.1.1 Distribution Zone

The desktop study revealed that the proposed residential development is accommodated by the existing Kylemore Lower reservoir. The accessibility of establishments to piped water within erf 64 Kylemore, Stellenbosch Municipality is evident from desktop studies and the onsite investigations. The property (erf 64, Kylemore, Stellenbosch Municipality) has a water source and the water treatment works which is sufficient to support the proposed development. However, it will necessary to provide a new pumpstation at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 2.5 Ml Kylemore Upper reservoir (at 360m MSL) and a new 160mm diameter delivery waterline from the Kylemore Upper reservoir.

The proposed residential area is located inside the water priority area.

2.1.2 Existing Bulk Water Supply Schemes

The sources for water in erf 64, Kylemore, Stellenbosch Municipality are reservoirs. Water to erf 64, Kylemore will be supplied through a main supply line from the Kylemore Lower reservoir and Kylemore Upper reservoir (3x2.5ML). The current water sources and water treatment capacities are sufficient to meet the water demands of the future residents of erf 64 Kylemore, Stellenbosch.

2.1.3 Internal Water Services

A definition of the levels of water and sanitation services

The levels of service delivery have been derived from acceptable national policy frameworks applicable for water and sanitation services separately. Definitions are drawn from the National Department of Water and Sanitation. The local municipality will provide the minimum norms specified, as the development is urban.

2.1.4 Proposed Water Demand

It is not easy to quantify the reticulation needs for the proposed project area since the town planning layout has not yet been approved. New bulk water pipelines must be constructed to service the site on approval of the town planning layout. The area demands will be calculated to assist with infrastructure sizing. From information given by the Stellenbosch Local Municipality, the current water sources and water treatment capacities are sufficient to meet the water demands of the future residents of erf 64 Kylemore, but additional water infrastructure is required. It is however, proposed that there is a need to provide a new pumpstation at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 2.5 MI Kylemore Upper reservoir (at 360m MSL) and a new 160mm diameter delivery waterline from the Kylemore Upper reservoir.

2.1.5 Hydraulic Analysis and Design

- Salient Planning Parameters
- Design horizon: 10 years after commissioning (2033)
- Population: Stellenbosch Municipality IDP & Census 2022
- Growth Rate: 1% per annum
- Typical Daily Consumption: Commercial Use (Red book) (AADD) Design
- Loss Factors-Total conveyance losses (LFr): 15%
- Summer Peak Factor (SPF): 1.2
- Gross Average Annual Daily Demand (GAADD): $(1 + LFr) \times AADD$
- Summer Peak Demand (SPD): $SPD = SPF \times GAADD$
- Summer Daily Demand Connector Mains: $SDDpl = SPF \times GAADD$
- Design Peak Factor (DPF): 2
- Design Flow Rate
- Bulk Pumping Mains = Summer Peak Demand (SPD)
- Maximum Static Pressure & Velocity: 250m & 1 m/s (where possible)
- Minimum reticulation residual pressure: 1.5m where possible
- Design pumping period: 20 hours/day (Max period)
- Minimum reticulation size: 75mm for connector mains
- Reservoirs: 48 hours AADD: pumped from one source 24 hours AADD: gravity from the source.

2.2 Sanitation Network

2.2.1 Drainage Area

From the desktop study, indications are Kylemore town has residents who have accessibility to formalized hygienic sanitation. However, there are no existing sewer reticulation networks in the proposed residential development area.

The proposed residential area is located inside the sewer priority area.

2.2.2 Existing Bulk Sanitation Infrastructure & Sewer flow

The sewer connection point for the project area is at Gouwsblom Street. The 160 mm diameter link sewer line will have to be installed from the development to the connection point. The project area will be serviced by the Dwarsrivier Water Treatment Works which have the capacity of 1.35 Ml per day. The expected sewage flow from the development is approximately 100 kl/day and it is assumed that no upgrading of the treatment works will be required to accommodate the proposed Township Establishment on erf 64 Kylemore, Stellenbosch.

The positioning of the project area will make it easy for connection to the existing bulk sewer mains running in close proximity to the site.

2.2.3 Internal Sanitation Services

The sanitation service solution needs to be provided for the proposed residential development area (erf 64 Kylemore, Stellenbosch Municipality). The National minimum sanitation standards in South Africa need to be observed. There is no sewer reticulation network in the area currently, but bulk main routes/servitudes will need to be identified during the preliminary design stages.

3 CONCLUSION

The natural reaction, from a technical perspective, would be to primarily provide a sustainable complete services package for the proposed township establishment through providing the services which not only comply with the norms and standards which match the socio-economic profile of the future residents of erf 64 Kylemore but are essentially "better" than the standards which are set out in the minimum requirements for a development of this nature.

These engineering services play a key role in promoting sustainable and integrated human settlement in Kylemore area. Furthermore, they have a bearing on the economic and social development of the area.

4 RECOMMENDATIONS

The following Level of Service should be adopted for the proposed development areas wherever financially and technically feasible.

4.1 Water

The provision of internal services will have to be provided during the implementation of the project. It will be necessary to provide a new pumpstation at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 2.5 MI Kylemore Upper reservoir (at 360m MSL) and a new 160mm diameter delivery waterline from the Kylemore Upper reservoir.

4.2 Sanitation

The provision of internal services will have to be provided during the implementation of the project.

EXISTING & PROPOSED WATER PIPELINE SERVITUDE

Legend

- Proposed Water Pipeline Connection
- Water Pipeline Servitude
- Gravel Road
- Road Servitude

EXISTING WATER PIPELINE SERVITUDE

PROPOSED WATER PIPELINE CONNECTION

5/153

4/153

RE/153

65

66

64

192

RE/118

41

42

43

44

45

46

47

412

411

410

427

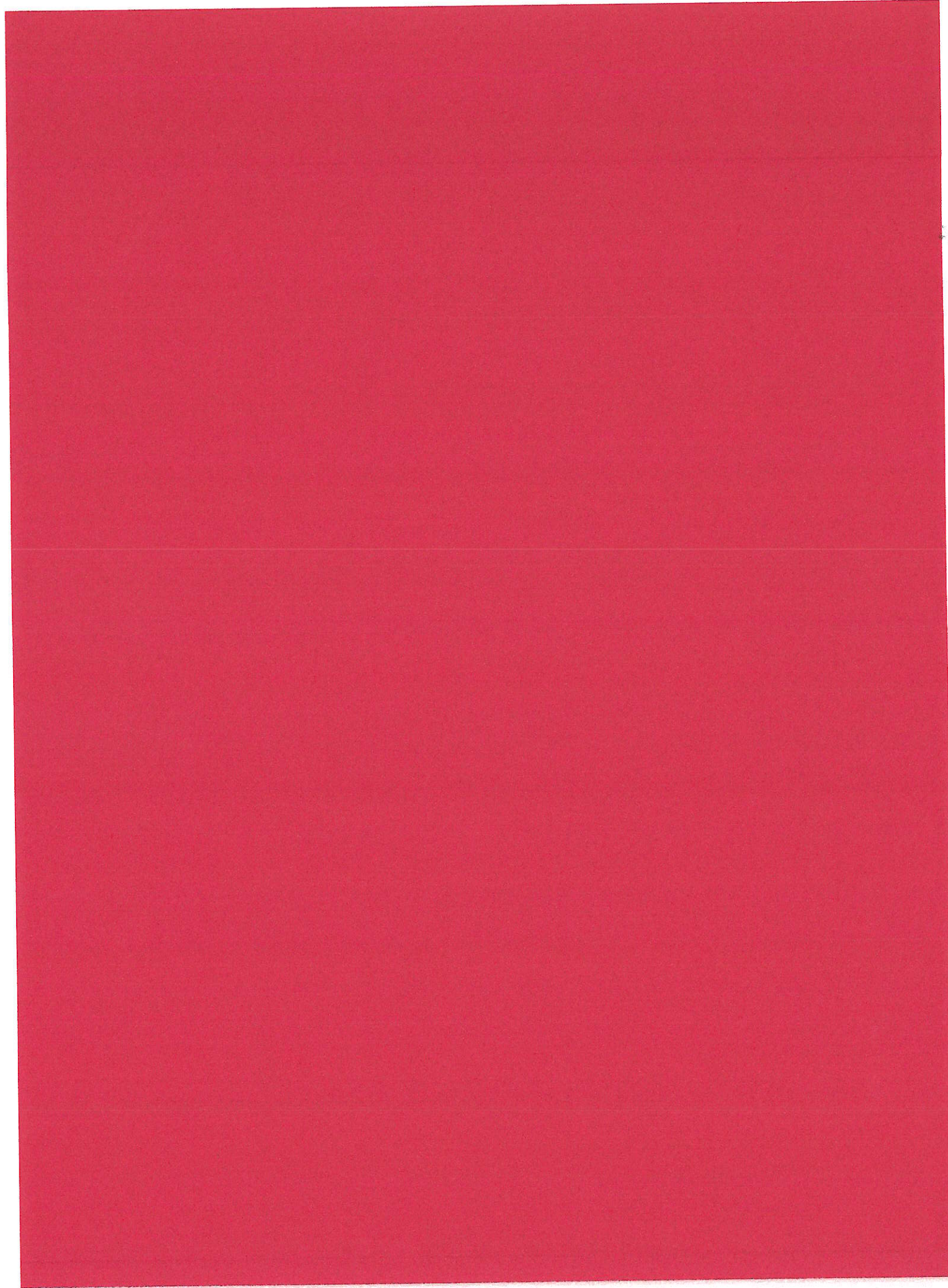
414

475

193

RE/1 ERP 64

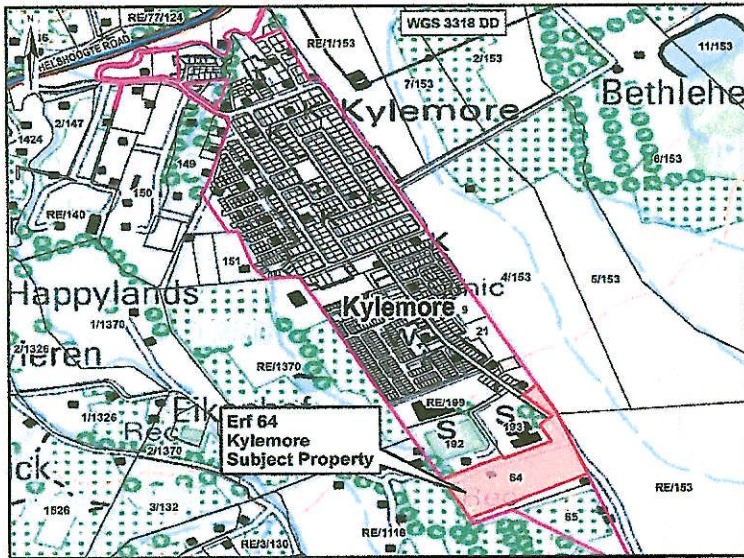
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



SUBDIVISION AND REZONING OF ERF 64 KYLEMORE, STELLENBOSCH MUNICIPALITY

BULK INFRASTRUCTURE AND SERVICES REPORT

(FINAL DRAFT)



26th February 2024

Prepared by:



Prepared for:



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



**Western Cape
Government**
Human Settlements



human settlements

Department:
Human Settlements
REPUBLIC OF SOUTH AFRICA

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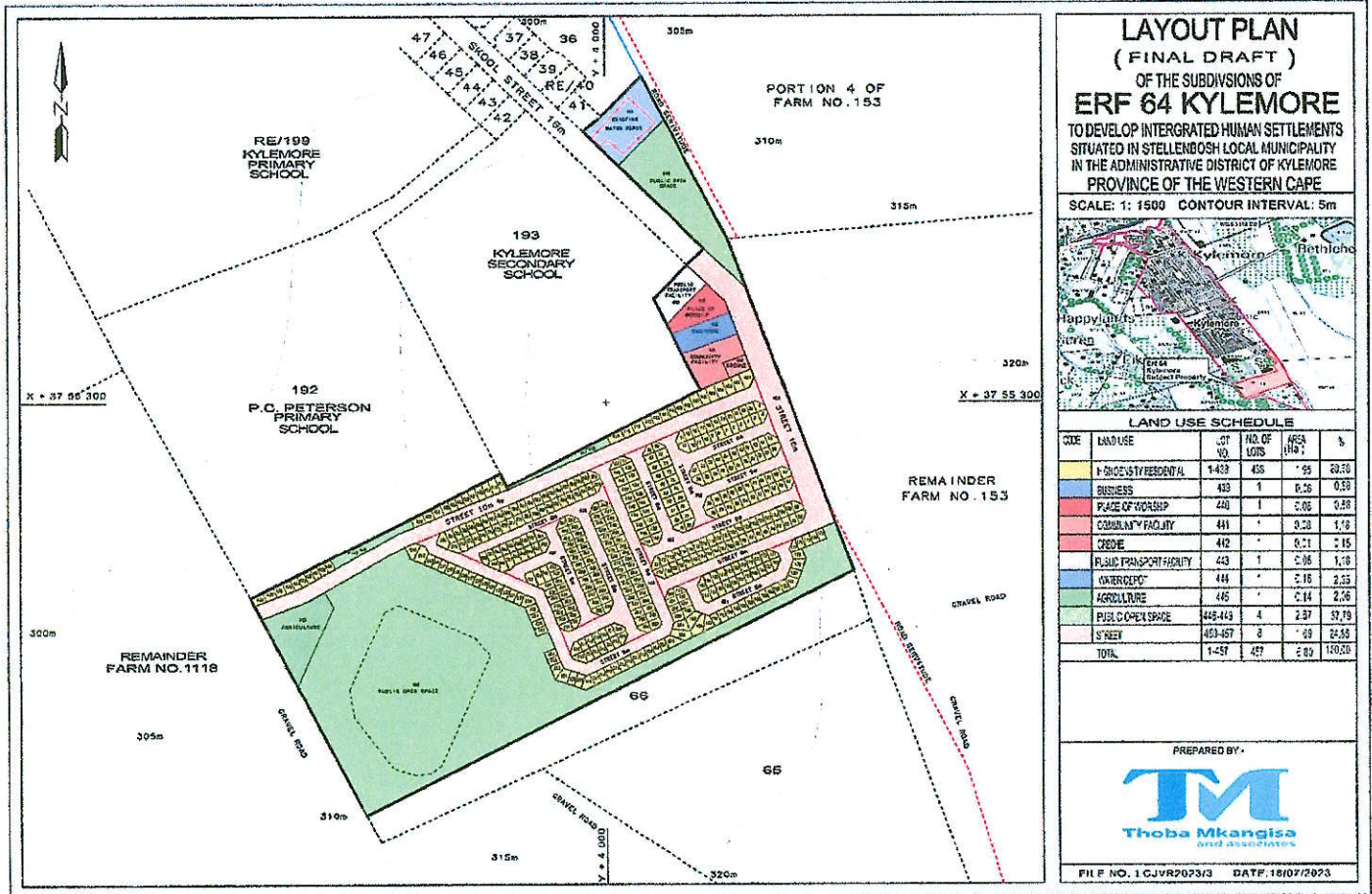
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DOCUMENT CONTROL SHEET

	RESOURCE	CAPACITY	SIGNATURE
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	Bereng Marabe	Civil technologist	
	Diogo Borges	Civil technologist	
Reviewed By	Lungisani Ndhlovu	PR Eng, Civil 202001466	

This report has been prepared in accordance with B Engineering Consultants Quality Managing System.

PROPOSED LAYOUT PLAN FOR ERF 64, KYLEMORE, STELLENBOSCH MUNICIPALITY



1 INTRODUCTION

The Housing Development Agency appointed Thoba Mkangisa and Associates to undertake the subdivision and rezoning of erf 64 Kylemore, Stellenbosch Municipality in which they were requested to prepare a study for a bulk water and sanitation assessment for the erf 64 Kylemore project. Furthermore, **Andisa Zwashu Group Pty (Ltd)** has been appointed by Thoba Mkangisa and Associates for the rendering of professional civil engineering services for the proposed development. Currently, the site is a Greenfield and has no municipal services.

1.1 Study Area

Stellenbosch Local Municipality is located in the heart of the Cape Winelands and adjacent to the City of Cape Town and Drakenstein Municipality. As a local authority Stellenbosch Municipality governs the towns of Stellenbosch, Franschhoek and Pniel, and the surrounding rural areas. The area covers 831 square kilometres and adjoins the City of Cape Town (CCT) to the west and south and the Breede Valley, Drakenstein and Theewaterskloof Municipalities to the east and north. Functionally, Stellenbosch Municipality (SM) forms part of the Greater Cape Town metropolitan area.

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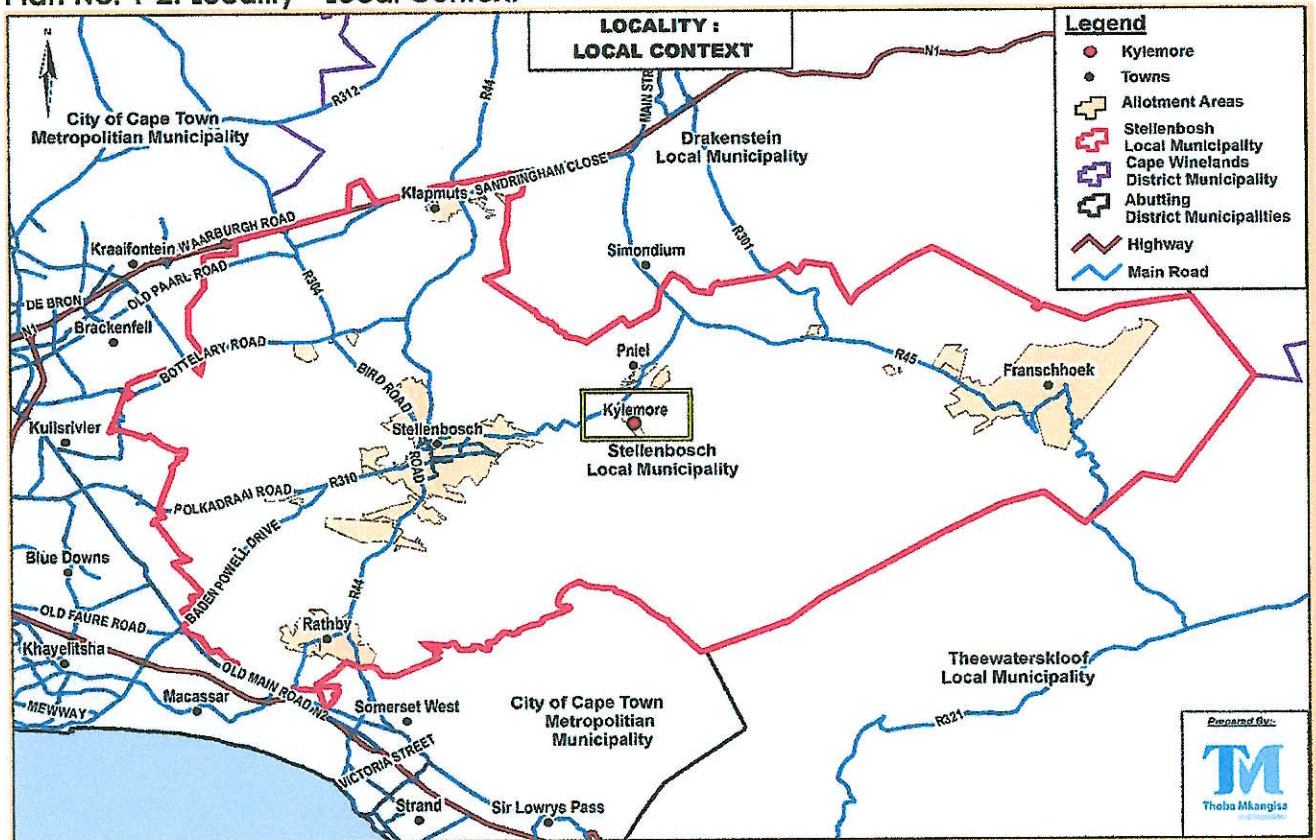
LOCALITY : DISTRICT CONTEXT

Legend

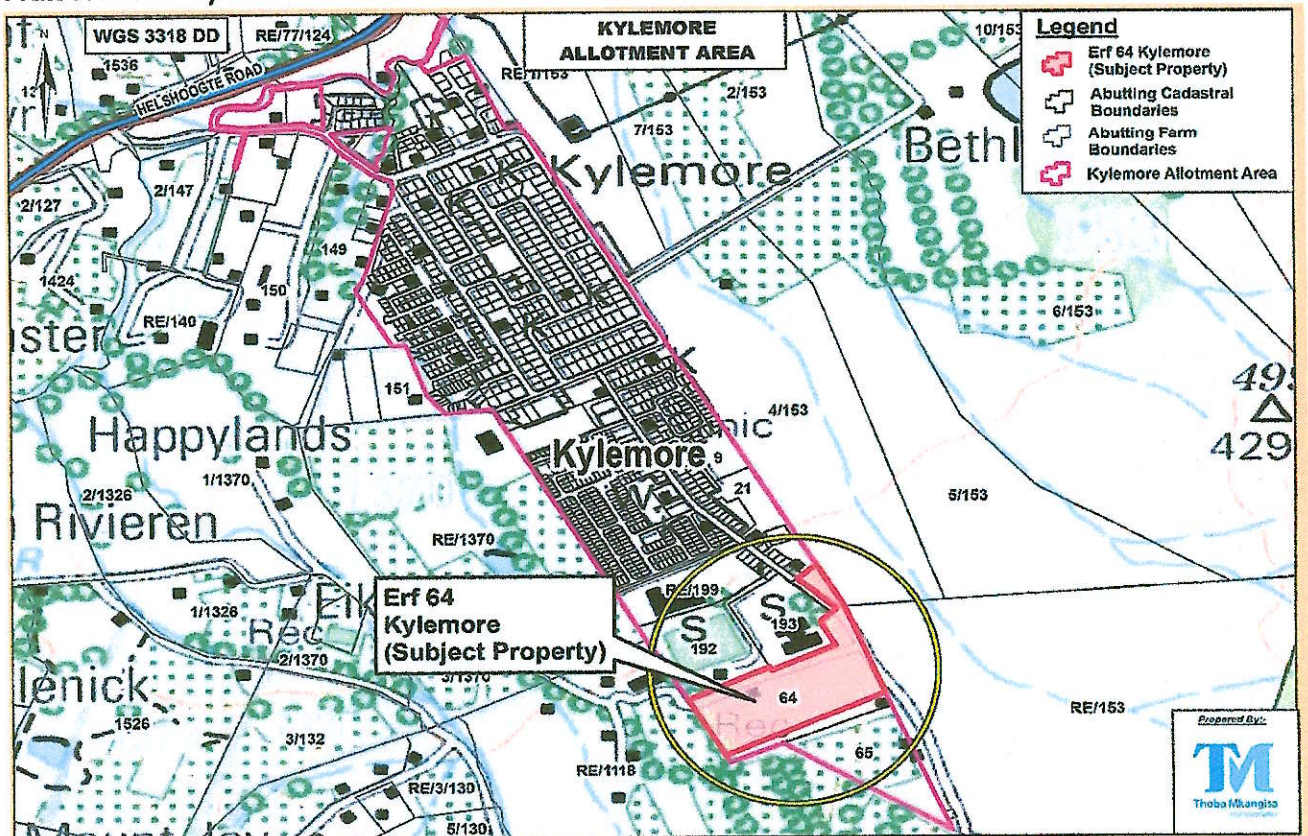
- Kylemore
- Towns
- Stellenbosch Local Municipality
- Cape Winelands District Municipality
- Abutting District Municipalities
- Highway
- Main Road

The map shows the Cape Winelands District Municipality at the center, surrounded by several other municipalities: West Coast District Municipality to the west, Central Karoo District Municipality to the east, Eden District Municipality to the southeast, Overberg District Municipality to the south, and Breede Valley L.M. to the northeast. Within the Cape Winelands District, it also shows Langeberg L.M., Orkney L.M., and Stellenbosch L.M. The City of Cape Town Metropolitan Municipality is located to the southwest. Major roads like R309, R311, R312, R315, R316, R317, R321, R322, R323, R324, R325, R326, R327, R328, R329, R330, R331, R332, R333, R334, R335, R336, R337, R338, R339, R340, R341, R342, R343, R344, R345, R346, R347, R348, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R359, R360, R361, R362, R363, R364, R365, R366, R367, R368, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380, R381, R382, R383, R384, R385, R386, R387, R388, R389, R390, R391, R392, R393, R394, R395, R396, R397, R398, R399, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R420, R421, R422, R423, R424, R425, R426, R427, R428, R429, R430, R431, R432, R433, R434, R435, R436, R437, R438, R439, R440, R441, R442, R443, R444, R445, R446, R447, R448, R449, R450, R451, R452, R453, R454, R455, R456, R457, R458, R459, R460, R461, R462, R463, R464, R465, R466, R467, R468, R469, R470, R471, R472, R473, R474, R475, R476, R477, R478, R479, R480, R481, R482, R483, R484, R485, R486, R487, R488, R489, R490, R491, R492, R493, R494, R495, R496, R497, R498, R499, R500, R501, R502, R503, R504, R505, R506, R507, R508, R509, R510, R511, R512, R513, R514, R515, R516, R517, R518, R519, R520, R521, R522, R523, R524, R525, R526, R527, R528, R529, R530, R531, R532, R533, R534, R535, R536, R537, R538, R539, R540, R541, R542, R543, R544, R545, R546, R547, R548, R549, R550, R551, R552, R553, R554, R555, R556, R557, R558, R559, R560, R561, R562, R563, R564, R565, R566, R567, R568, R569, R570, R571, R572, R573, R574, R575, R576, R577, R578, R579, R580, R581, R582, R583, R584, R585, R586, R587, R588, R589, R590, R591, R592, R593, R594, R595, R596, R597, R598, R599, R600, R601, R602, R603, R604, R605, R606, R607, R608, R609, R610, R611, R612, R613, R614, R615, R616, R617, R618, R619, R620, R621, R622, R623, R624, R625, R626, R627, R628, R629, R630, R631, R632, R633, R634, R635, R636, R637, R638, R639, R640, R641, R642, R643, R644, R645, R646, R647, R648, R649, R650, R651, R652, R653, R654, R655, R656, R657, R658, R659, R660, R661, R662, R663, R664, R665, R666, R667, R668, R669, R670, R671, R672, R673, R674, R675, R676, R677, R678, R679, R680, R681, R682, R683, R684, R685, R686, R687, R688, R689, R690, R691, R692, R693, R694, R695, R696, R697, R698, R699, R700, R701, R702, R703, R704, R705, R706, R707, R708, R709, R710, R711, R712, R713, R714, R715, R716, R717, R718, R719, R720, R721, R722, R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738, R739, R740, R741, R742, R743, R744, R745, R746, R747, R748, R749, R750, R751, R752, R753, R754, R755, R756, R757, R758, R759, R760, R761, R762, R763, R764, R765, R766, R767, R768, R769, R770, R771, R772, R773, R774, R775, R776, R777, R778, R779, R780, R781, R782, R783, R784, R785, R786, R787, R788, R789, R790, R791, R792, R793, R794, R795, R796, R797, R798, R799, R800, R801, R802, R803, R804, R805, R806, R807, R808, R809, R810, R811, R812, R813, R814, R815, R816, R817, R818, R819, R820, R821, R822, R823, R824, R825, R826, R827, R828, R829, R830, R831, R832, R833, R834, R835, R836, R837, R838, R839, R840, R841, R842, R843, R844, R845, R846, R847, R848, R849, R850, R851, R852, R853, R854, R855, R856, R857, R858, R859, R860, R861, R862, R863, R864, R865, R866, R867, R868, R869, R870, R871, R872, R873, R874, R875, R876, R877, R878, R879, R880, R881, R882, R883, R884, R885, R886, R887, R888, R889, R890, R891, R892, R893, R894, R895, R896, R897, R898, R899, R900, R901, R902, R903, R904, R905, R906, R907, R908, R909, R910, R911, R912, R913, R914, R915, R916, R917, R918, R919, R920, R921, R922, R923, R924, R925, R926, R927, R928, R929, R930, R931, R932, R933, R934, R935, R936, R937, R938, R939, R940, R941, R942, R943, R944, R945, R946, R947, R948, R949, R950, R951, R952, R953, R954, R955, R956, R957, R958, R959, R960, R961, R962, R963, R964, R965, R966, R967, R968, R969, R970, R971, R972, R973, R974, R975, R976, R977, R978, R979, R980, R981, R982, R983, R984, R985, R986, R987, R988, R989, R990, R991, R992, R993, R994, R995, R996, R997, R998, R999, R1000.

Plan No. 1-2: Locality - Local Context



Plan No. 1-3: Kylemore Allotment Area – 1:50 000



Plan No. 1-4: Subject Property



2 INFRASTRUCTURE SERVICES

The development will access portable water, adequate sanitation facilities, and energy supply. The following minimum levels of services are permitted in terms of the National Norms and Standards.

Table 1: Minimum Level of Services Permitted

Type of Services	Minimum Level
Water	Supply for commercial development as per (FSR)
Sanitation	Waterborne Sewer System
Roads	Paved Roads
Stormwater	Concrete-lined open channels

2.1 Water

The accessibility of establishments to piped water within erf 64 Kylemore, Stellenbosch Municipality is evident from desktop studies and the onsite investigations. The property (erf 64, Kylemore, Stellenbosch Municipality) has a water source and the water treatment works which is sufficient to support the proposed development. However, it will necessary to provide a new pumpstation at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 2.5 MI Kylemore Upper reservoir (at 360m MSL) and a new 160mm diameter delivery waterline from the Kylemore Upper reservoir.

2.1.1 Existing Bulk Water Supply Schemes

The sources for water in erf 64, Kylemore, Stellenbosch Municipality are reservoirs. Water to erf 64, Kylemore will be supplied through a main supply line from the Kylemore Lower reservoir and Kylemore Upper reservoir (3x2.5ML). The current water sources and water treatment capacities are sufficient to meet the water demands of the future residents of erf 64 Kylemore, Stellenbosch.

2.1.2 Internal Water Services

A definition of the levels of water and sanitation services

The levels of service delivery have been derived from acceptable national policy frameworks applicable for water and sanitation services separately. Definitions are drawn from the National Department of Water Affairs. The local Municipality will provide the minimum norms specified, as the development is urban.

2.1.3 Proposed Water Supply Schemes

It is not easy to quantify the reticulation needs for the proposed project area since the town planning layouts have not yet been approved. New bulk water pipelines must be constructed to service the site on approval of the town planning layouts. The area

demands will be calculated to assist with infrastructure sizing. From observations and information given by the Stellenbosch Local Municipality, the current water sources and water treatment capacities are sufficient to meet the water demands of the future residents of erf 64 Kylemore, but additional water infrastructure is required. It is however, proposed that there is a need to provide a new pumpstation at Kylemore Lower reservoir, a 160 mm diameter rising water main from Kylemore Lower reservoir to Kylemore Upper reservoir, a new 2.5 Ml Kylemore Upper reservoir (at 360m MSL) and a new 160mm diameter delivery waterline from the Kylemore Upper reservoir.

2.1.4 Hydraulic Analysis and Design

- Salient Planning Parameters
- Design horizon: 10 years after commissioning (2033)
- Population: Stellenbosch Municipality IDP & Census 2022
- Growth Rate: 1% per annum
- Typical Daily Consumption: Commercial Use (Red book) (AADD) Design
- Loss Factors-Total conveyance losses (LFr): 15%
- Summer Peak Factor (SPF): 1.2
- Gross Average Annual Daily Demand (GAADD): $(1+LFr) \times AADD$
- Summer Peak Demand (SPD): $SPD = SPF \times GAADD$
- Summer Daily Demand Connector Mains: $SDDpl = SPF \times GAADD$
- Design Peak Factor (DPF): 2
- Design Flow Rate
- Bulk Pumping Mains = Summer Peak Demand (SPD)
- Maximum Static Pressure & Velocity: 250m & 1 m/s (where possible)
- Minimum reticulation residual pressure: 15m where possible

- Design pumping period: 20 hours/day (Max period)
- Minimum reticulation size: 75mm for connector mains
- Reservoirs: 48 hours AADD: pumped from one source 24 hours AADD: gravity from the source.

2.2 Sanitation

From the site investigations conducted on 30 August 2023, indications are Kylemore town has residents who have accessibility to formalized hygienic sanitation. However, there are no existing sewer reticulation networks in the project area.

2.2.1 Existing Bulk Sanitation Infrastructure

The sewer connection point for the project area is at Gouwsblom Street. The 160 mm diameter link sewer line will have to be installed from the development to the connection point. The project area will be serviced by the Dwarsrivier Water Treatment Works which have the capacity of 1.35 Ml per day. The expected sewage flow from the development is approximately 100 kl/day and it is assumed that no upgrading of the treatment works will be required to accommodate the proposed Township Establishment on erf 64 Kylemore, Stellenbosch.

The positioning of the project area will make it easy for connection to the existing bulk sewer mains running in close proximity to the site.

2.2.2 Internal Sanitation Services

One of the following will be assessed as a sanitation service solution for the proposed project. The National minimum sanitation standards in South Africa need to be observed. There is no sewer reticulation network in the area currently, but bulk main routes/servitudes will need to be identified during the prelim design stages.

2.3 Roads

Stellenbosch Municipality is Service Authorities within the project area and will be responsible for routine maintenance and upgrading all internal streets. The site will be accessed via the existing Skool Street. This road currently provides access to Kylemore High School, two farms, a couple of houses and a property of the Department of Sanitation and Water Affairs. Skool Street road reserve is 16 meters wide and the street has a black top width of 5.6 meters with mountable concrete kerbs and channels on both sides. Considering the low expected trip generation from the low cost erven, the existing road network will be able to accommodate the development.

2.3.1 Internal Access Roads Design

New access roads will be constructed for the development as roads are currently needed within the project area. A new stormwater system will be implemented to manage stormwater. The road width varies from 8m wide to 10m wide.

- The upgraded road will conform to the TRH 4 design guidelines wherever possible.
- Topsoil and grass on the verges and shoulders will be removed, stockpiled, and later used for the rehabilitation (top soiling and grassing) of the banks;
- A maximum width of 15 meters will be cleared and grubbed for construction purposes;
- Excavated material from the earthworks box will be used for cut-to-fill purposes, as well as for the construction and fill to the shoulders of the road;
- The in-situ material below the earthworks box will be used as subgrade and will be ripped and re-compacted to a density of 93% Mod AASHTO;
- All clay material will be removed up to a depth of 1m below the earthworks box to ensure that optimum densities are archived in all road layer works;
- Stormwater facilities and culverts will be constructed.
- Road signage and markings will be provided along the total length of the road.

2.3.2 Road Material Sources

Based on the Geotechnical findings, materials for the subgrade, sub-base, and base course will be obtained from approved sources identified by the design engineers. It is recommended for a development of this nature that all construction materials be imported from local commercial sources.

2.3.3 Design Life, Speed, and Traffic

The road design would be done following the relevant TRH 4 guidelines and the Guidelines for Human Settlement Planning and Design (Red Book). An analysis period of 5 years and a design period of 10 years would be used for design purposes.

2.3.4 Pavement Structure

The minimum pavement structure would be designed based on the Catalogue Method (TRH 14 guidelines).

2.3.5 General Cross-section Design

The proposed roads will have a carriageway width of 8m - 10m with sidewalks where practicable. The cross-sectional slope of the road will be cambered with 3%, with falls on either side of the road. A combination of earth drains, earth channels, and Concrete Culverts will be provided to assist with stormwater drainage.

2.3.6 Vertical Alignment

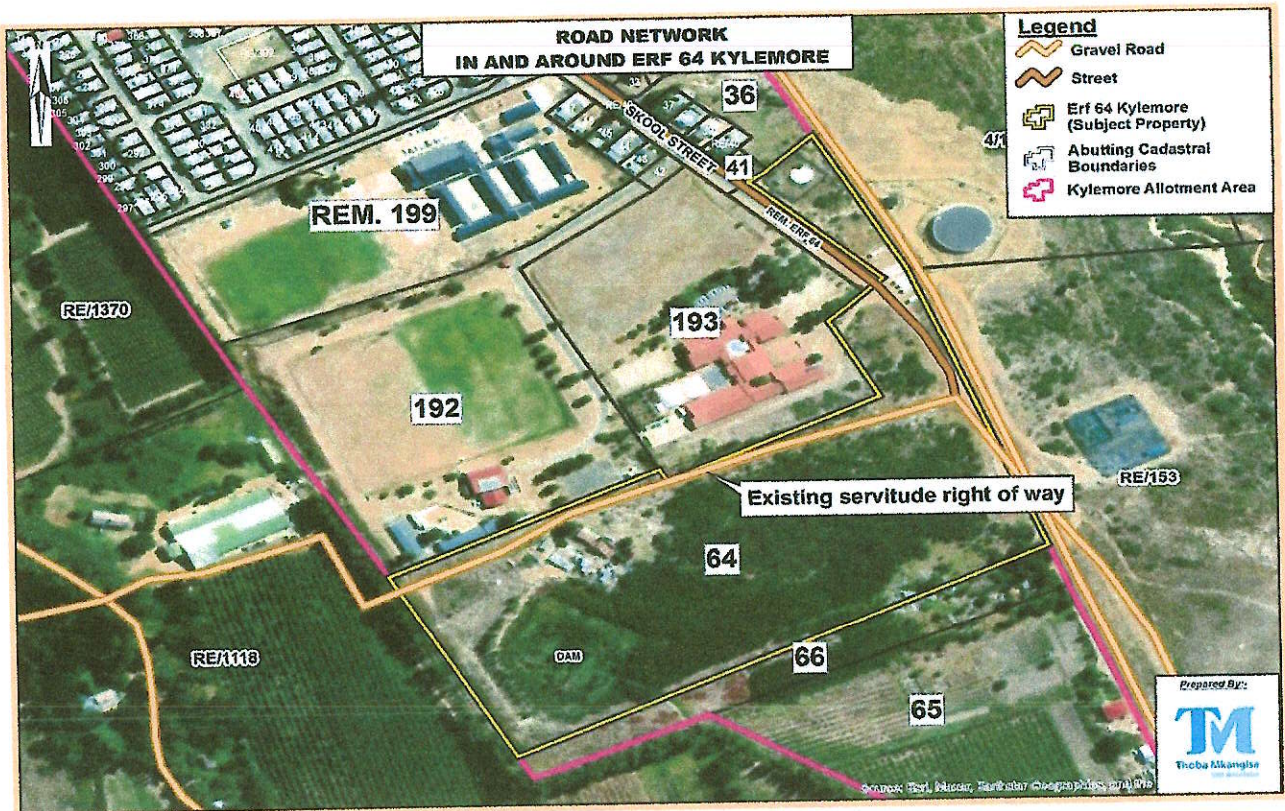
The roads will be designed to follow the existing vertical alignment but within standards to:

- Avoid batters interfering with houses,
- Facilitate stormwater flow and avoid the ponding of water and,
- Improve the quality of the ride.
- Vertical gradients adopted within this alignment will vary with a maximum gradient of 6%, satisfying the following vertical alignment minimum standards:

K min = 16

L min = 100 mw

A max = 7%



2.4 Stormwater

An existing stormwater detention pond is situated on the southern portion of the project site. This detention pond is required as part of the stormwater management system of Kylemore and it cannot be done away with.

The objectives of the stormwater management system should be as follows:

- To adequately dispose of runoff from development areas without causing soil saturation or erosion. This is particularly important on any sites underlain by erosion or collapsible soils;
- To provide overland flow routes through development to cater for significant storms and thereby minimize any risk of damage to property and other immovable assets;
- The stormwater system should be designed to function adequately with low maintenance in the long term and should cater to silting etc.

2.5 Geology and Soils

Geotechnical Site Investigation study of Erf 64, Stellenbosch Municipality was conducted by Nortje and De Villiers Consulting Engineers and the findings of the study are as follows:

- The soil investigation that is found in the site is suitable for the construction of housing, roads, services and other development that support integrated and sustainable human settlements in erf 64, Kylemore, Stellenbosch Municipality.
- The investigation concluded that the site is suitable for the proposed development, provided that the recommendations provided in the report are adhered to.

2.6 Electricity

Stellenbosch Municipality is responsible for planning, supplying, and distributing electricity within the proposed development area. The proposed development can be supplied with electricity from the existing 11kV overhead network in the area. A 11Kv cable has to be installed from the end of the existing line (approximately 30m from the northern boundary of the erf 64, Kylemore, Stellenbosch Municipality) to supply two new miniature substations inside the proposed development.

2.6.1 Existing Infrastructure

Currently, several Medium Voltage transmission lines are running within the project area. The proposed development can be supplied with electricity from the existing 11kV overhead network in the area.

2.6.2 Planned Infrastructure

The provision of electricity supply and metered reticulation to the project area will rest with Stellenbosch Municipality and Eskom, the services authority responsible for the area's planning, supply, and network distribution.

2.7 Telecommunication

Telkom is the fixed landline services authority responsible for planning, supplying, and distributing the fixed landline telecommunication network within the proposed development area. However, all four registered national mobile wireless network license holders, namely, Vodacom, MTN, Cell C, Telkom Mobile, etc., have varying network coverage over the development area.

2.7.1 Planned Infrastructure

No future planning information has been made available – private or semi-private owned infrastructure.

3 CONCLUSION

The natural reaction, from a technical perspective, would be to primarily provide a sustainable complete services package for the proposed township establishment through providing the services which not only comply with the norms and standards which match the socio-economic profile of the future residents of erf 64 Kylemore but are essentially "better" than the standards which are set out in the minimum requirements for a development of this nature.

These engineering services play a key role in promoting sustainable and integrated human settlement in Kylemore area. Furthermore, they have a bearing on the economic and social development of the area.

4 RECOMMENDATIONS

The following Level of Service should be adopted for the proposed development areas wherever financially and technically feasible.

4.1 Water

The provision of internal services will have to be provided during the implementation of the project.

4.2 Sanitation

The provision of internal services will have to be provided during the implementation of the project.

4.3 Roads

Paved wearing course for all internal roads where funding permits this operation to be undertaken should be conducted in the erf 64 Kylemore area.

4.4 Stormwater Drainage

Open stormwater drainage system along road reserves, box or pipe culverts at perennial streams, and stormwater control structures at all access road crossings. All stormwater facilities will be designed for minor floods only. A 1:5-year recurrence period will be used for design purposes.

Further, for a development of this nature, the total product (i.e., essential services package) must be in keeping with the minimum norms and standards, where the needs and aspirations of the prospective end-user/beneficiaries, under the guidance of the Local Municipality, are considered.

ANNEXURE 11: GEO-TECHNICAL STUDIES REPORT



STELLENBOSCH MUNICIPALITY

**PROPOSED NEW HOUSING DEVELOPMENT –
ERF 64, KYLEMORE**

**REPORT ON
PRELIMINARY AND PHASE 1 GEOTECHNICAL INVESTIGATIONS**

September 2011

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1 EXECUTIVE SUMMARY

SKCMasakhizwe Engineers (Pty) Ltd (SKCM) was appointed by Stellenbosch Municipality to perform geotechnical investigations for the development of housing on erf 64, Kylemore.

The current investigation comprised a desk study followed by trial pitting and sampling for laboratory testing.

The geotechnical investigation were undertaken in accordance with the requirements of the Department of Housing's Generic Specification GFSH-2, Geotechnical Site Investigations for Housing Developments, and the National Home Builders Registration Council (NHBRC). This report can be used in the future as supplementary, statutory information to accompany applications for subsidised low cost housing.

The site is situated on the southern extremities of the village of Kylemore, approximately 10km from Stellenbosch. The site is approximately 6.8 Ha in size. Approximately 1.8 Ha of the site is covered by an existing retention pond. This pond, together with existing drainage channels along the northern and western boundary of the proposed site, is an essential part of the greater Kylemore stormwater management system.

The gentle slopes and relatively high permeability of the soils will facilitate good stormwater drainage and prevent ponding of water. In the areas immediately downstream of the retention pond and adjacent to the inlet stream, a perched water table (up to 1m below the surface) may occur for short periods of time. Houses constructed in these areas must be provided with adequate damp proof membranes under floors and in walls. The installation of subsurface drains should also be considered. Dewatering of services trenches may be required during construction.

The soil profile consists of alluvial coarse grained sand in a matrix of stones and large sand stone boulders of the Table Mountain group. The soil matrix is loose when excavated and the sides of excavations are prone to collapse. When undisturbed the soil matrix will not collapse. The soils are cohesionless and have very low potential for expansiveness. The soils will not heave or disperse.

The general NHBRC classification for the area is predominantly C1-R, with the exception of the retention pond embankments which are classified as P – Uncontrolled Fill. The geotechnical classification for the bulk of the site is 1BDEIFJ 3K, representing a general favourable classification. The area immediately below the retention pond embankment and adjacent to the inlet stream is classified as 1DEIFJ 2B 3K, representing generally favourable classification with an occasional perched water table up to 1m below ground level. The areas along the embankments of the retention pond and inside the retention pond are not suitable for housing, as is reflected in the classifications of 1DFJ 2BE 3IK and 1DEIFJ 2B 3LK respectively, indicating occasional flooding and possible unstable and steep slopes.

The sandy soils of the site are classified as a G6/G7 material according to COLTO. As a result the material will be suitable for use as Subbase layers in road construction. The prevalence of large stones and boulders will necessitate extensive material selection in order to render the material suitable for use. Material for the principal road layers will have to be imported, as would material used for bedding of pipes. The in-situ material will be suitable for backfilling of trenches after removal of large stones and boulders.

House foundations must be provided with nominal reinforcement to prevent differential settlement due to the presence of large boulders in the soil matrix. The acidity of the soil increases the risk of concrete corrosion; therefore cover on all reinforcement must be a minimum of 50mm where concrete is cast in contact with the ground. The concrete compressive strength of the foundations must be at least 25MPa.

The main factors to be considered in the evaluation of the subsidy variation are the following:

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Annexure C:	Laboratory Test Results

1. Perched water tables will necessitate dewatering of trenches during construction and possible installation sub soil drainage
2. The use of nominally reinforced foundations with a concrete compressive strength of 25MPa will be required
3. The prevalence of large stones and boulders in the soil matrix resulting will result in over excavations of trenches and road layers, as well as associated backfilling
4. Extensive material selection will be required to remove large stones and boulders to render the material suitable for use in Subbase road layers and service trench backfill.
5. Material for the principal road layers and bedding blankets will have to be imported.

No significant geotechnical constraints were identified in the study area that will be utilised for the proposed subsidy housing. The site is therefore suited for human settlement and subsidy based housing.

2 INTRODUCTION AND TERMS OF REFERENCE

Stellenbosch Municipality is investigating the feasibility of developing low cost housing of erf 64 Kylemore. Initial planning indicates a total of approximately 160 residential erven to be developed.

Stellenbosch Municipality requested SKCM to undertake a geotechnical investigation for the development and to submit a report which would be suitable for use in the various phases of application for low cost housing. The investigations were therefore undertaken in accordance with the requirements of the Department of Housing's Generic Specification GFSH-2, Geotechnical Site Investigations for Housing Developments, and the NHBRC.

The requirements of GFSH-2 for both preliminary and Phase 1 geotechnical investigations, as summarised below, were considered during the investigation.

The objectives of a preliminary geotechnical investigation, as specified in GFSH-2, are to ascertain whether the site is fit for human settlement and suitable for project linked subsidy housing development.

In contrast, a Phase 1 investigation is conducted to:

- identify any potential hazards,
- define the ground conditions,
- provide the Site Classifications and the geotechnical basis for safe and appropriate land use planning, infrastructure and housing design,
- formulate precautionary measures and risk management procedures.

This report presents the results of field investigations, which were undertaken on 22 and 24 August 2011, and the associated laboratory testing. The headings in this report most closely follow the headings prescribed by GFSH-2 for Phase 1 reports, although the work undertaken encompasses both Preliminary and Phase 1 geotechnical investigation.

3 INFORMATION USED IN THE STUDY

3.1 List of Information

The following maps and supplementary information was consulted:

- 1:50 000 Topographic series map 3318DD, Stellenbosch, Fifth Edition, 2000
- 1:10 000 Orthophoto series map 3318DD20, Kylemore, Second Edition, 1990
- Google Earth Images with varying dates from February 2005 to September 2009
- 1:250 000 Geological Series Map, 3318 Cape Town, and the associated explanation sheet entitled "The Geology of the Cape Town Area". Geological Survey of South Africa, 1992.
- National Department of Housing. Project Linked Greenfield Subsidy Project Developments. Geotechnical Site Investigations for Housing Developments. Generic Specification GFSH-2, September 2002.
- National Department of Housing. Home Building Manual, Parts 1, 2 and 3. National Home Builders Registration Council, Revision 1, February 1999.
- Geotechnical Site Investigation erf 64 and erf 199 Kylemore – Report prepared by Messers Nortje and De Villiers Consulting Engineers, January 2010
- Engineering Services Report prepared by Messers Nortje and De Villiers Consulting Engineers, February 2010

- Evaluation of soil suitability for the expansion of the existing cemetery at Kylemore – Report compiled by Dr. JE Hoffman, May 2010
- Proposed Extensions to Kylemore Cemetery, erf 21 Kylemore – Report on Geotechnical and Geohydrological Investigations, as prepared by SKCM, June 2010
- Kylemore Pre-feasibility assessment – Environmental, a report compiled by Messers Pieter Badenhorst Professional services cc

Discussions were also held with Ms. M Francis of Stellenbosch Municipality.

During the site visits a cursory inspection was made of structures on and close to the site to determine if any structural defects are present that could be attributed to geotechnical factors.

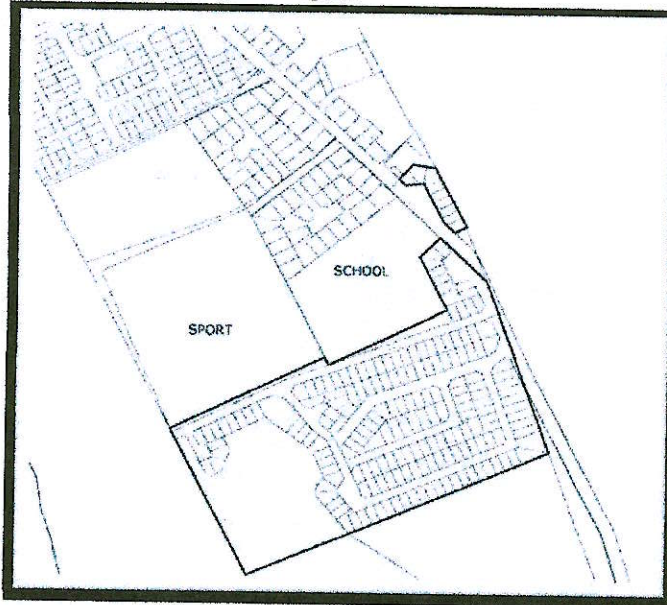
3.2 Evaluation Procedures

The standard specifications, GFSH-2 from the National Department of Housing, as well as guidelines from the NHBRC were considered during the compilation of this report.

Initial evaluations were made using the topographic map (3318DD Stellenbosch) and aerial photograph (3318DD20 Kylemore) and by studying the geological map (3318 Cape Town) and associated explanation sheets.

A proposed site layout, as included in the Environmental assessment report by Messers Pieter Badenhorst Professional Services, was also considered. The proposed layout is reproduced in this report as Figure 1.

Figure 1: Preliminary Site Layout



Discussions with Stellenbosch Municipality indicated that this layout would in all likelihood be changed, therefore the positions of the trial pits were chosen based on prevailing site conditions and information gained from the topographic map and aerial photograph. Dense vegetation resulted in restricted access to parts of the site. Trial pit positions were chosen to provide the best possible representation of soils on the site.

Should the positions of the trial pits coincide with the final positions of roads, service trenches or house foundations, the trial hole must be excavated and recompact to eliminate the risk of settlement.

No open excavations were found on or near the site where the soil profile could be inspected. Final geotechnical assessments in this report are therefore based on the results of trial pitting, DCP and laboratory testing, as well as the soil investigations conducted in the area by Messers Nortje and De Villiers Consulting Engineers in January 2010 and by SKCM at the nearby Kylemore Cemetery in June 2010.

4 SITE DESCRIPTION

The proposed site for the development is situated on the southern extremities of the village of Kylemore in the Dwarsrivier valley, approximately 10km from Stellenbosch, as indicated in Figure 2.

The site is bordered by the existing Kylemore High School and sportsfields to the North, cultivated farm land to the South and West and open land to the East. Existing residential housing borders the school north of the proposed site.

An existing stormwater retention dam is situated on the western side of the proposed site. The dam collects surface runoff from mainly upstream of the site. This runoff is directed into the dam via an existing channel. The dam has an outlet on the western side in the form of a catchpit draining into a concrete stormwater pipe running below the dam wall. This pipe discharges into an existing stormwater channel on the western boundary of the site, from where the water is ultimately directed into the Dwarsrivier. A concrete overflow structure is situated approximately 50m south of the catchpit outlet, also draining into the existing stormwater channel on the western boundary of the site. An existing stormwater channel is evident on the northern boundary of the proposed site that collects surface runoff from the site and directs it towards the main stormwater channel on the western boundary of the site. The retention pond and drainage channels form an important part of the overall stormwater management of the village of Kylemore and is indicated on Figure 3.

Existing houses occur in the south-eastern corner, as well as the north western portion of the site, immediately below the existing dam, also indicated on Figure 3. These houses seem to be in a reasonable structural condition considering the general lack of maintenance. Existing cracking of these structures are not attributed to geotechnical factors. For development to proceed, the residents of these houses will need to be given temporary housing elsewhere, until such time as the development is complete.

The proposed site is situated in a winter rainfall region, receiving approximately 700 to 750mm precipitation per annum. The bulk of this rainfall occurs from June to September.

The site is essentially rectangular in shape and approximately 6.8 Ha in size, of which approximately 1.5Ha is utilised for the retention pond. The ground slopes from south-east to north-west at approximately 2.4°. Altitude varies between approximately 320 and 300m above mean sea level.

Vegetation cover consists of various alien invasive wattle species and isolated areas of kikuyu grass around the existing houses found on the south-eastern and north-western extremities of the site. The wattles form a dense, almost impenetrable bush over large parts of the site. The inside area and banks of the retention pond is substantially overgrown with the invasive wattle trees.

Access to the property is via Skool street, a tarred road up to the school. The final approximately 300m of roadway to the site is currently unpaved. The unpaved road becomes a gravel track that runs along the eastern boundary of the site towards an existing farm house. A gravel track also runs along the northern boundary between the proposed site and the existing school. An existing servitude is registered on this track.

No signs of excessive surface erosion were noticed on the site.

The site is substantially polluted with builder's rubble and domestic waste such as plastic and paper. The pollution is concentrated mainly around the areas surrounding the two groups of existing houses on either end of the site, as well as along the northern boundary of the site. This rubble will need to be cleared and transported to a suitable landfill site during site clearance operations.

5 NATURE OF THE INVESTIGATION

5.1 Desk Study

Prior to the site investigations, a desk study was conducted which entailed gathering information regarding previous soil investigations conducted on or near the proposed site. An initial geotechnical evaluation were done using the information contained in the 1:250 000 geological series map 3318 Cape Town and the associated explanation sheet, as well as information obtained from previous studies in the area.

Site investigations were planned using Google Earth imagery and available Orthophoto maps after discussions with Stellenbosch Municipality indicated that the existing proposed layout (Figure 1) for the development would in all likelihood be changed.

5.2 Site Investigations and Laboratory Testing

Site Investigations were conducted by Mr WL Vosloo and Mr GT Agullhas of SKCM on 22 and 24 August 2011. Trial pitting was conducted on 22 August 2011 using a Bell 315S-J Turbo 4x4 digger/loader hired from Messers Blue Earth Moving.

Laboratory testing was conducted by Messers Matrocast Laboratories (Pty) Ltd at their laboratory in Brackenfell, Cape Town.

5.2.1 Trial Pitting

Seven trial pits were excavated with the digger/loader across the site. The positions of the trial pits are indicated on Figure 4.

Trial pits were excavated up to where the water table was encountered, or excavations with the digger/loader became grossly inefficient due to the presence of large stones and boulders. Excavation was made up to a maximum depth of 2.7m below ground level.

Trial pits were profiled according to standard South African practice and described in terms of the moisture content, colour, consistency, structure, soil type and origin (MCCSSO). The profile descriptions are included in Annexure A.

5.2.2 DCP Testing

DCP testing is normally conducted to determine the consistency of the shallow soil profile. Due to the high prevalence of large boulders on the site, DCP readings taken will not be an accurate reflection of the shallow soil profile consistency, since refusal will inevitably be encountered at relatively shallow depths on a large boulder. As a result the soil profile would appear excessively hard. Consequently, SKCM did not perform DCP tests next to the trial pits excavated in August 2011.

DCP testing was however conducted by Messers Nortje and De Villiers during compilation of their geotechnical report completed in January 2010. From these readings it is clear that DCP penetration was in the order of 150 to 200mm before refusal was encountered. The results of these tests and the positions they were conducted at are represented in Appendix B, comprising extracts of the report prepared by Messers Nortje and De Villiers.

5.2.3 Laboratory Testing

Four disturbed samples were taken for foundation indicator tests including grading and CBR tests. Conductivity and PH tests were also undertaken on four samples.

Due to the cohesionless nature of the soil, undisturbed sampling was not possible.

The result of the laboratory testing is included in Appendix C.

6 SITE GEOLOGY AND GROUNDWATER CONDITIONS

6.1 General Geology

A portion of the 1:250 000 Geological Series Map 3318 Cape Town, showing the location of the site, is presented as Figure 5.

Based on the Geological Series Map, the area in the vicinity of the site is masked by Alluvial soils of Ordovician age (coarse grained sands – Qt) which are underlain by soils and weathered sandstone (quartzitic) rock of the Cape Supergroup, Table Mountain Group (Os), with occasional Granite (N-Cs) outcrops that may occur.

The soils in the general area of the proposed development are classified as weathered transported soils of Clovelly and Oakleaf soil forms, with a medium to high agricultural potential. The prevalence of large boulders on the proposed site results an agricultural potential of medium to low on the proposed site.

6.2 Site Geology and soil profile

The site is situated on the old river terrace and the soil contains a lot of stones and boulders of varying sizes through the profile. The stones and boulders are of Table Mountain Sandstone origin (Os) and are part of the alluvial material deposited here. The sand is generally dark brown in colour and coarse grained (Qt).

The coarse grained sand in a matrix of stones and boulders were encountered in all trial pits across the site, as evident in the profile descriptions included as Annexure A.

6.3 Water Table

The water table was encountered in Trial Pit no 4 at a depth of 1,9m, Trial Pit 6 at depth 1,7m and Trial Pit 7 at depth 1,3m.

Trial Pit no 4 is located downstream of the existing retention pond on the site. The high water table indicates possible water seepage below the dam embankment.

Observations indicate that a perched water table may exist for short periods of time in the areas around the following trial pits:

Table 1: Perched Water Table Depth

Trial Pit No	Trial Pit Depth (m)	Perched water table depth (m Below Ground Level)
1	2.5	2.4
2	2.7	2.6
4	1.9	1
5	2	1.75

7 GEOTECHNICAL EVALUATION

7.1 Engineering and material characteristics and constraints

7.1.1 Site Topography

Field Observation

The general slope of the ground on the site is in a north-westerly direction at an average slope of 1:25. Apart from the existing retention pond embankments, which are sloped at approximately 1 vertical to 2,5 horizontal, no other steep slopes were observed on the site.

Effect on Development

No special measures will be required for the construction of houses and roads due to steep slopes. The gentle and uniform slope of the site will facilitate surface stormwater drainage and prevent ponding.

Dependant on the orientation of the houses, foundation walls as high as 500mm may be required with associated underfloor filling in order to ensure that the house footprint remains above the natural ground level. Alternatively the internal floor level of individual houses may be stepped. The creation of earthworks platforms for individual or groups of houses will not be required.

7.1.2 Soil Profile

Field Observation

The general soil profile comprises coarse grained sandy soils in a matrix of numerous stones and boulders larger than 200mm. This arrangement occurs up to depths of 2.7m excavated across the entire site.

Effect on Development

The presence of numerous stones and boulders in the soil matrix will necessitate the use of lightly reinforced strip footings to eliminate possible differential settlement of the structure.

In general, the footings should be 600mm wide and placed at a depth of 500mm below the surface. Six Y12 bars (Three at the top and three at the bottom) must be placed in the strip footings in the longitudinal direction with one Y10 stirrup at 500 mm distances across. The concrete compressive strength of the foundation must be at least 25MPa.

7.1.3 Grading and Atterburg limits

Laboratory Test Results

The results of the indicator testing is summarised in Table 2 below.

The results of the Grading and Atterburg Limits Tests indicate that the sand from all Trial Pits is non plastic, except the material from Trial Pit No 6 which is slightly plastic.

Sand from Trial Pits No 1 and 3 contains 9% and 7% fines (material passing the 0,075mm sieve) respectively. According to the Unified Soil Classification System this material is classified as SW-SC. Sand from Trial Pits No 5 and 6 contains 13% and 16% fines (material passing the 0,075mm sieve) respectively. According to the Unified Soil Classification System this material is classified as SC.

Table 2 – Summary of Grading and Atterburg Limit Test results

Trial Pit No	Soil Type	Depth (m)	Particle Size Distribution ¹				UCS Classif.	Atterburg Limits		
			4.75mm	0.425mm	0.075mm	0.002mm		LL	PI	LS
1	Sand	0,2 – 1,7	75	41	9	6	SW-SC	-	NP	-
3	Sand	0,25 – 2,5	77	41	7	5	SW-SC	-	NP	-
5	Sand	0,15- 2,0	84	46	13	8	SC	-	NP	-
6	Sand	0,15 – 2,0	83	53	16	11	SC	-	SP	0,05

¹ - % of soil fraction passing the indicated sieve size
 LL – Liquid Limit (%)
 LS – Linear Shrinkage (%)
 SP – Slightly Plastic

UCS – Unified Classification System
 PI – Plasticity Index
 NP – Non Plastic

Effect on Development

The laboratory testing indicates that the sandy soils of the site contain very little clay/silt material, are cohesionless and have low potential for expansiveness, as can be seen from the respective activity diagrams included with the laboratory test results in Annexure C.

7.1.4 Conductivity and PH

Laboratory Test Results

The results of chemical testing are represented in Table 3 below.

Table 3: PH and Conductivity Test Results

Trial Pit No	Soil Type	Depth (m)	PH	Conductivity (mS/m)
1	Sand	0,2 – 1,7	4.2	15.9
3	Sand	0,25 – 2,5	4.3	16.5
5	Sand	0,15-2,0	4.2	21.4
6	Sand	0,15 – 2,0	4.5	28.2

The sand on the proposed site is strongly Acidic (PH <5) and have low conductivities

Effect on Development

The acidic nature of the soils indicate that corrosion of metal elements in the soil will occur. In zones of fluctuating water table levels, the corrosion will be more pronounced than in areas where metal elements are placed above the perched water table. In these areas corrosion are expected in the long term. (10 – 15 Years).

A PH Value of less than 4.3 results in a significant risk of concrete corrosion. A minimum concrete cover of 50mm must be maintained on all reinforcement for concrete cast on or below ground level. Concrete compressive strengths should be at least 25Mpa.

7.1.5 Moisture-Density relationship and CBR

Laboratory Test Results

The results of the CBR tests are summarised in Table 4 below.

Table 4: CBR Test Results

Trial Pit No	Soil Type	Mod A.A.S.H.T.O. Data		CBR @						Max. Swell (%)
		M.D.D. (kg/m³)	O.M.C. (%)	90	93	95	97	98	100	
1	Sand	1966	4.9	14	16	17	21	27	42	0
3	Sand	1908	7.6	16	20	23	28	33	46	0
5	Sand	2067	6.9	19	31	43	51	53	57	0
6	Sand	2038	9.0	28	38	47	58	63	71	0

The sands of Trial Pits No 1 and 3 are classified as G7 material according to the COLTO classification, and those of Trial Pits No 5 and 6 as G6.

Effect on Development

The sands of the area are suitable for use in subbase layers of roadworks when compacted to at least 93% Mod AASHTO maximum density. The prevalence of cobbles and boulders in the soil matrix will however necessitate an extensive selection process of the material to obtain material free of large boulders to use as subbase. Sufficient material should be obtained to use as subbase after selection.

Bedding material for pipework will have to be imported from other sources. After removal of the large boulders, the material found on site should be suitable for use to backfill services trenches.

7.1.6 Compressibility of the soils

Field Observations

Field assessment indicated that the coarse sand/boulder matrix is very loose/loose for the entire depth of excavation if disturbed and excavated near vertical. If undisturbed, the presence of numerous boulders in the matrix will prevent significant compression of the matrix when subjected to the relatively light loads expected from house foundations.

Effect on Development

No significant settlement is expected due to the compression of the soil matrix, provided that the foundations are not founded on disturbed soil. Differential settlements may occur due to the presence of numerous large boulders in the soil matrix. This differential settlement can be eliminated by providing light reinforcement in the strip foundations as discussed in section 7.1.2.

7.1.7 Heave

Field Observations and Laboratory Test Results

The soils on the site are cohesionless and non-plastic. As a result the soils will have a very low potential for expansiveness. This is confirmed by the activity diagrams included with the Foundation Indicator test results.

Effect on Development

The sands of the area are inactive and will not affect the design of foundations for houses.

7.1.8 Collapse Potential

Field Observations

No features indicative of an open soil fabric were observed in the trial pits.

Effect on Development

The collapse potential of the soil is very low and is considered a insignificant factor in the foundation design of the houses.

7.1.9 Dispersivity

Field Observations

The soils on the site are cohesionless and therefore not dispersive.

Effect on Development

Dispersivity will not influence the foundation design of the houses.

7.1.10 Permeability

Field Observations

Studies conducted for extensions to the existing cemetery in close proximity to erf 64 indicated relatively high permeability values. The sand and boulder matrix encountered on erf 64 is similar to that found on the site where the proposed cemetery extension was investigated. The permeability of the soils is expected to be in the region of 1×10^{-4} cm/sec.

Effect on Development

Surface water will infiltrate the soil quite easily and water logging is not expected to occur, provided that adequate measures are implemented to prevent excessive ponding of water. Seepage water may be present in the area immediately downstream of the existing dam and around the inlet channel to the dam. Observations in Trial Pit No 4 and 7 indicate a water level as high as approximately 1,0m below the existing ground level. In these areas the installation of sub surface drainage may be considered where appropriate.

7.1.11 Condition of structures on adjacent developments

Field Observations

Various structures exist adjacent to and in close proximity to the site. To the north the site is bordered by the Kylemore High School and numerous houses beyond that. Isolated structures exist on the site itself as previously described and various farm buildings are situated close to the site. All these structures are built using bricks and mortar, together with timber and galvanised sheeting at places.

Some superficial cracking is present in the brick structures, all structurally insignificant and indicative of normal settlement and movement expected in any structure.

Effect on Development

The general lack of cracking in these structures suggests that the founding conditions are fair to good and/or suitable foundation layouts have been used to date.

7.2 Slope Stability, Erosion and inundation

The average slope of the site is fairly constant and therefore no instability is expected on the site. The banks of the existing retention pond seem stable at present.

Vegetation clearing inside and on the embankments of the pond will be required. Vegetation to be cleared includes mainly invasive Wattle trees, the roots of which should also be removed from the pond embankments. This clearing of vegetation may result in local instabilities, especially where large trees and roots must be removed from the embankment.

The coarse sand and stone/boulder matrix is unstable when excavated and the sides of trench excavations will cave in. Excavations deeper than approximately 500mm will require a batter of 1:0.75 or shoring. The batters should be evaluated on site during construction, especially where ground water is encountered, since flatter slopes may be required. Statutory requirements to ensure safety of workers in trenches must be adhered to at all times.

No notable erosion was observed on the site during the site investigation. The soils on the site are however potentially erodible by wind and water. Suitable erosion control measures must be implemented to prevent erosion until such time as the vegetation cover has re-established.

The high permeability of the soils and the gentle slope of the site will generally prevent the ponding of stormwater.

Seepage water may occur downstream of the existing dam, as well as the area immediately adjacent to the inlet channel to the dam, up to 1,0m below the natural ground level. Construction of houses in these areas must therefore allow for adequate ground water control measures. The only area where inundation will occur is inside the existing retention pond.

7.3 Excavation Classification with respect to services

According to Tables 2.1 and 2.2 of the Generic Specifications, excavation in all the soils would be classified as Soft to Intermediate Excavation Class according to SABS 1200D for restricted excavations and Boulder Excavation Class B for non-restricted excavation. Restricted excavation may include Boulder Class B excavation.

Bedrock might be encountered in deeper excavation (>3m) and would probably be classed as Hard Excavation Class. No rock outcrops were observed on the site and no hard rock formations were encountered during Trial Pit excavations.

Hand excavation will be possible with some difficulty due to the prevalence of large rocks and boulders in the matrix.

7.4 Impact of the geotechnical character of the site on subsidy housing development

7.4.1 Land usage

With the correct preparation, site clearance and founding methods, the entire study area will be suitable for human settlement and subsidy based housing, with the exception of the existing retention pond area. Subsoil drainage should be installed in areas downstream of the pond and immediately adjacent to the inlet stream to protect the structures from possible water damage.

7.4.2 Subsidy variations

In considering the site (excluding the retention pond area) and using Annexure 1 Schedule of Generic Subsidy Variations for Site and Founding Conditions of the General Specification, the following generic subsidy variations for the site and founding conditions are applicable:

Table 5: Generic Subsidy Variations

Category of Subsidy Variation	Verification Criteria	Factors to consider in establishing quantum of subsidy variation
II: Site Conditions		
1. Seepage/ Ground Water		
1.2. Category 2	Permanent or perched water table less than 1.5m below ground surface	Service trenches to be de-watered during construction
<i>This condition may occur in winter in the area immediately below the existing retention pond embankment and in the area adjacent to the stream bisecting the site flowing into the dam. Sub-surface drainage and de-watering of service trenches during construction may be required in these areas. The installation of permanent subsoil drains upstream of the new houses may also be required. The correct installation of damp proofing must be ensured during construction of houses in these areas.</i>		
III: Founding Conditions		
2. Compressible and potentially collapsible soil		
2.1. Class C1	Site Class designations classified in accordance with 2.5 of Part 1 Section 2 of the NHBRC Home Building Manual	Masonry Houses will require foundation design
<i>Due to the prevalence of large boulders on the site, differential settlement between the boulders are possible. Foundations should therefore be reinforced as described in Section 7.1.2</i>		

Additional factors that are not categorised in Annexure 1 but will affect construction costs and therefore subsidy variation include:

- Generally slopes flatter than 1:10 occur across the site but material classified as Boulder Class B excavation occur for the full depth of trial pits excavated up to 2.7m deep. A wheeled digger loader as used during the trial pitting is not an efficient method of excavation. Larger, tracked excavators will be required to excavate roads and service trenches, the cost of which should be reflected in the costing of the excavations.

- Over-excavation of trenches will be required to ensure the stability of excavated sides. The cost of the extra excavation as well as replacing and compacting of the over-excavation must be included in the costing for the excavations.
- Allowance for over excavations of road layers must be made due to the prevalence of large boulders on the site. The associated backfilling with suitable material must also be allowed for in the costing of the development.
- In situ material will only be suitable as backfill material after extensive material selection to remove all boulders and large stones. The cost of material selection and importing of bedding material as well as spoiling of stones and boulders must be included in the costing for the excavations.
- Material for principal road layerworks will need to be imported from elsewhere.
- The acidic nature of the soil necessitates a concrete compressive strength of at least 25MPa for the foundations.

Soil conditions may vary between trial holes. Consequently, subsidy variations could also vary depending on the ground conditions actually encountered on site.

8 SITE CLASSIFICATION

8.1 NHBC Classification

According to Table 5 in the Generic Specifications and Table 7, Section 2 of the NHBC Home building Manual, Part 1, and based on the assessments given above, the NHBC classifications are as follows and indicated on Figure 7:

Site Class C1-R occurs over the entire area with the exception of the existing dam embankments which are classified as Class P – Uncontrolled Fill.

8.2 Geotechnical Classification for urban Development

Four mapping units have been identified at the site. These units have been classified below using the Geotechnical Classification for Urban Development in Table 3 of the GFSH-2 Generic Specifications, partially reproduced as Table 6 below. The distribution of the geotechnical mapping units is also shown on Figure 7 and the units can be described as follows:

1BDEIFJ 3K: This unit represents the bulk of the proposed area and reflects the absence of a perched water table, low anticipated soil compressibility, low erodibility, difficulty of excavation due to the prevalence of large boulders and the moderate slopes of the site. The site also falls in a zone of periodic natural seismic activity where ground accelerations could exceed 100cm/sec²

1DEIFJ 2B 3K: This unit represents the area immediately downstream of the retention pond embankments and the area immediately adjacent to the inlet stream to the pond. The classification is the same as that described above with the exception that a perched water table may occur occasionally up to 1m below the ground surface.

1DEIFJ 2B 3LK: This area represents the inside of the retention pond. This zone is located inside a known drainage channel. In all other respects it is the same as that for the area immediately downstream of the retention pond embankment.

1DFJ 2BE 3IK: This area represents the retention pond embankments having increased erodability risk and steep slopes. The embankments are predominantly man made fill.

Table 6: Geotechnical Site Classification

CONSTRAINT		Most favourable (1)	Intermediate (2)	Least favourable (3)
A	Collapsible Soil	Any collapsible horizon or consecutive horizons totalling a depth of less than 750mm in thickness	Any collapsible horizon or consecutive horizons with a depth of more than 750mm in thickness	A least favourable situation for this constraint does not occur
B	Seepage	Permanent or perched water table more than 1,5m below ground surface	Permanent or perched water table less than 1,5m below ground surface	Swamps and marshes
C	Active Soil	Low soil-heave potential anticipated	Moderate soil heave potential Anticipated	High soil-heave potential Anticipated
D	Highly compressible Soil	Low soil compressibility anticipated	Moderate soil compressibility Anticipated	High soil compressibility Anticipated
E	Erodability of soil	Low	Intermediate	High
F	Difficulty of excavation to 1,5m depth	Scattered or occasional boulders less than 10% of the total volume	Rock or hardpan pedocretes between 10 and 40% of the total volume	Rock or hardpan pedocretes more than 40% of the total volume
G	Undermined ground	Undermining at a depth greater than 240m below surface (except where total extraction mining has not occurred)	Old undermined areas to a depth of 90-240 m below surface where stope closure has ceased	Mining within less than 90-240m of surface or where total extraction mining has taken place
H	Stability: (Dolomite & Limestone)	Possibly stable. Areas of dolomite overlain by Karoo rocks or intruded by sills. Areas of Black Reef rocks. Anticipated Inherent Risk Class I	Potentially characterised by instability. Anticipated Inherent Risk Classes 2 – 5.	Known sinkholes and dolines. Anticipated Inherent Risk Classes 6 – 8.
I	Steep slopes	Between 2° and 6° (all regions)	Slopes between 6° and 18° and less than 2° (Natal and Western Cape) Slopes between 6° and 12° and less than 2° (all other regions)	More than 18° (Natal and Western Cape) More than 12° (all other regions)
J	Areas of unstable Natural slopes	Low risk	Intermediate risk	High risk (especially in areas subject to seismic activity)
K	Areas subject to seismic activity	10% probability of an event less than 100 cm/s ² within 50 years	Mining-induced seismic activity more 100 cm/s ²	Natural seismic activity more than 100 cm/s ²
L	Areas subject to flooding	A "most favourable" situation for this constraint does not occur	Areas adjacent to a known drainage channel or floodplain with slope < 1%	Areas within a known drainage channel or floodplain

9 FOUNDATION RECOMMENDATIONS AND SOLUTIONS

Based on Part 1, Section 2, Table 7 of the NHBRC Home Building Manual, strip footings with ground pressures not exceeding 50kPa are recommended. The strip footings should be typically founded at a depth of 500mm below ground level and must be provided with nominal reinforcement to eliminate differential settlement due to the high prevalence of boulders in the soil matrix.

Good drainage around the houses is essential, and stormwater from roofs should be channelled away from the houses.

In areas with perched water tables special care must be taken during construction with the installation of damp proof membranes in walls and under floors. The installation of subsoil drainage may also be considered.

10 DRAINAGE

The gentle natural slope of the ground should ensure good drainage.

Subsurface drainage next to roads and houses are not envisaged over most of the site. In the area immediately below the existing dam and adjacent to the stream bisecting the site the water table may rise to approximately 1,0m below the ground surface. Placement of subsurface drainage in these areas may be considered.

Dewatering of trenches may be required during construction.

11 SITE CLEARANCE AND PREPARATION AND EARTHWORKS

Site clearance of the site will consist of the removal of mostly alien vegetation comprising wattles and kikuyu grass. Dumped builders rubble and residential waste will also require removal.

The inside and embankments of the existing retention pond must be cleared of trees and shrubs, including roots. This clearing may result in local instabilities on the embankments which will require backfilling and compaction.

The existing drainage channels north and west of the proposed site will require minor vegetation and dumped rubble clearing. Levels and alignment of the channels will need to be confirmed, but they seem to be operating satisfactory at present.

The soils of the site consists of coarse grained sands with a numerous boulders present in the matrix. The sands will be suitable as bedding and road subgrade material after extensive material selection to remove the boulders and large stones. The soil matrix is generally loose/very loose when disturbed and over excavation will be required for services trenches and roadworks.

Unsuitable material and stones and boulders will need to be spoiled.

12 USE OF ON-SITE MATERIALS FOR CONSTRUCTION PURPOSES

The coarse grained sand of the site can be used as bedding and backfill material for services trenches if adequate material selection is performed to remove large stones and boulders. It is recommended that bedding material be imported from other sources and that the in-situ material be screened and used as backfill.

Material for the principal road layers will need to be imported.

13 ROAD CONSTRUCTION

Site preparation for the roads would include excavation of the road bed, and possibly removal of limited vegetation if it was not removed during the site preparation and clearance of the general site. The subgrade will

comprise coarse grained soils with numerous boulders. Over excavation of the road layers will be required as a result of the boulder presence in the soil matrix.

The sand on the site is classified as a G6/G7 material according to COLTO. The material could therefore be used as Subbase layers, provided they are compacted to at least 93% Mod AASHTO maximum density. Extensive material selection will also be required to remove boulders and large stones. In areas where a perched water table may occur, the installation of subsoil drainage will have to be considered.

14 SPECIAL PRECAUTIONARY MEASURES

Special precautionary measures should include the following:

- Inspection of all foundation trenches to ensure that the structural design is in accordance with the ground conditions actually encountered. All house foundations must be provided with nominal reinforcement.
- Measures should be instituted to safeguard workers in service trenches from collapse of the sidewalls of the trenches.
- Subsurface services should be located in such a manner that their backfilled trenches do not interfere with the foundations for houses and other structures.
- The trial pit positions should be identified during the initial phases of development. Where the trial pits coincide with house foundations or road layers, the pits will require excavation and compaction to prevent settlement.
- The areas immediately below the retention pond embankment and adjacent to the inlet stream may require the installation of subsurface drainage. In these areas the correct installation of damp proof membranes under floors and in walls must be ensured during construction.

15 CONCLUSIONS

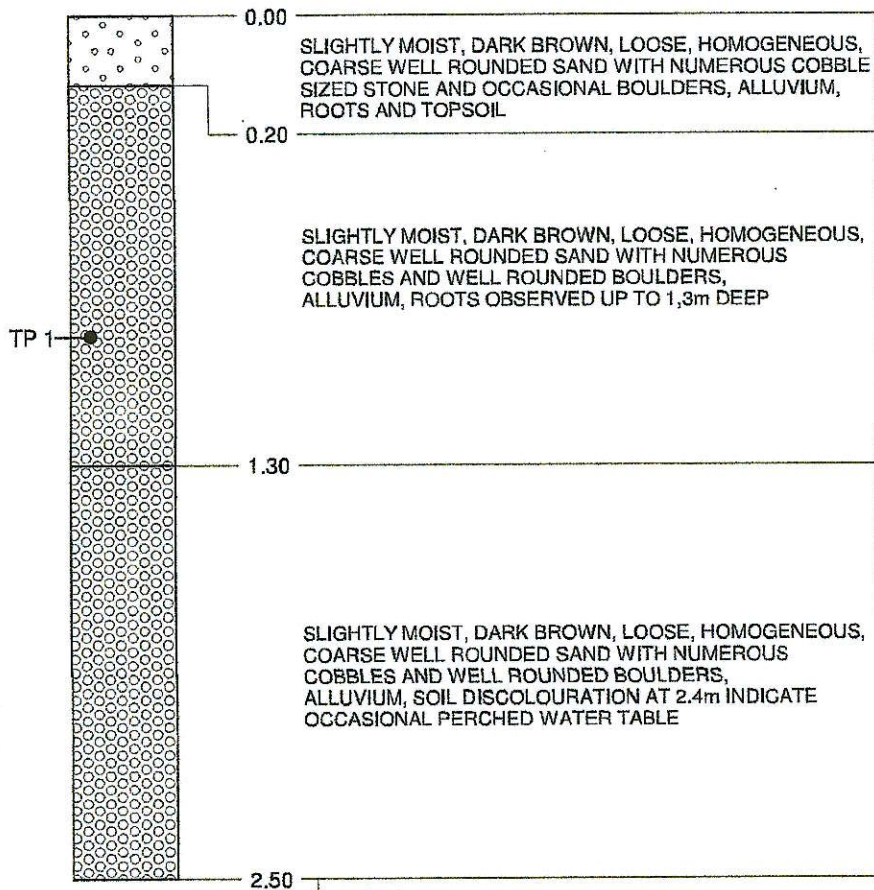
1. The proposed site has gentle natural slopes and no areas of natural soil instability due to steep slopes are evident on the site
2. The gentle slopes of the site will ensure good stormwater drainage with low risk of erosion. The relatively high permeability of the soils will help prevent ponding of surface water
3. The existing retention pond and drainage channels north and west of the site is part of the existing Kylemore stormwater management system. These feature can not be removed and require minor vegetation clearing.
4. Perched water tables occur in the area immediately downstream of the retention pond and adjacent to the inlet stream. The water table may rise up to 1m below the surface for short periods of time. Dewatering of service trenches may be required during construction and the correct installation of damp proof membranes under floors and in walls of houses must be ensured. In addition the installation of subsurface drainage in these areas should be considered.
5. The soils of the site are coarse grained alluvium in a matrix of stones and numerous large sandstone boulders. This soil matrix is present across the entire site.
6. The soils of the area are cohesionless and have a very low potential for expansiveness and collapse.

7. The NHBRC classification for the area is predominantly C1-R, with the exception of the retention pond embankments which are classified as P – Uncontrolled Fill. The geotechnical classification for the bulk of the site is 1BDEIFJ 3K, representing a general favourable classification. The area immediately below the retention pond embankment and adjacent to the inlet stream is classified as 1DEIFJ 2B 3K, representing generally favourable classification with an occasional perched water table up to 1m below ground level. The areas along the embankments of the retention pond and inside the retention pond are not suitable for housing, as is reflected in the classifications of 1DFJ 2BE 3IK and 1DEIFJ 2B 3LK respectively, indicating occasional flooding and possible unstable and steep slopes.
8. The soils in the area are suitable for Subbase layers in roads provided that adequate material selection is carried out to remove large stones and boulders. The material must be compacted to at least 93% Mod AASHTO maximum density. Material for the principal road layers will need to be imported.
9. Bedding material will need to be imported. The material on site can be used as backfill after removal of large stones and boulders.
10. All house foundations must be provided with nominal reinforcement. In addition the acidity of the soils indicates a increased risk of concrete erosion. As a result a minimum cover of 50mm must be maintained on all reinforcement and concrete for foundations must have a compressive strength of at least 25 MPa.
11. Prior to construction, individual house foundations must be inspected by a competent person to confirm the adequacy of the founding solution.
12. No significant geotechnical constraints were identified in the study area that will be utilised for the proposed subsidy housing. The site is therefore suited for human settlement and subsidy based housing.

WL Vosloo Pr Eng
For SKCM

Annexure A – Trial Pit Profile Descriptions

PROFILE NO.:	TP 1	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE:	33°55.4949'	LONGITUDE:	18°57.4637'	ELEVATION (m)	317
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2500		UNKNOWN		UNKNOWN	

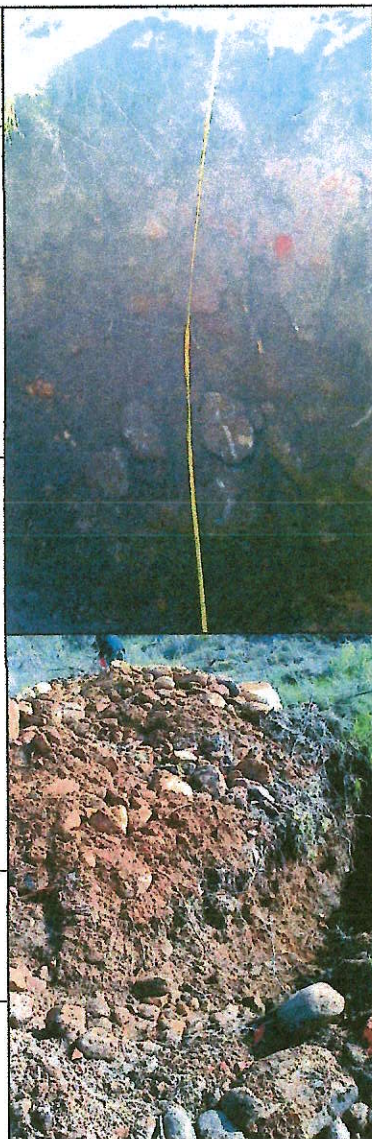


SCALE 1:20

NOTES:

1. NO SEEPAGE OR WATER TABLE ENCOUNTERED
2. DISTURBED SAMPLE TAKEN AT 1.0m

SOIL TEXTURE	
GRAIN SIZE (mm)	CLASIFICATION
<0.5	MEDIUM SAND
0.5 - 2.0	COARSE SAND
2.0 - 6.0	FINE GRAVEL
6.0 - 20.0	MEDIUM GRAVEL
20.0 - 60.0	COARSE GRAVEL
60.0 - 200	COBBLES
>200	BOULDERS



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ERF 64 KYLEMORE

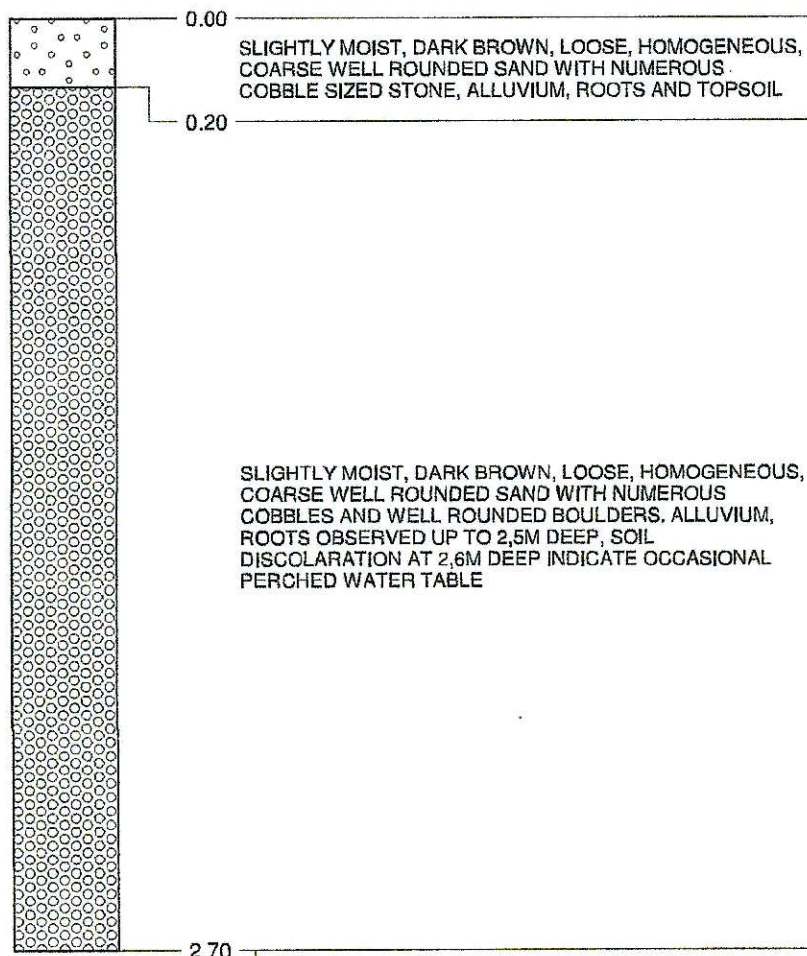
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MUNICIPALITY

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	BY	DATE	CH
DESIGNED	WV	06/09/2011	
DRAWN	JK	09/09/2011	
TRACED			
SCALE:		1:20	
DRAWING NO.:			REVISION:
W1479 TP 1			0

PROFILE NO.:	TP 2	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE:	33°55.5142'	LONGITUDE:	18°57.4381'	ELEVATION (m)	317
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2700		UNKNOWN		UNKNOWN	



SCALE 1:20

NOTES:

1. NO SEEPAGE OR WATER TABLE ENCOUNTERED
2. TRIAL PIT SIDES CAVE IN @ 2.4m
3. NO SAMPLE TAKEN

SOIL TEXTURE	
GRAIN SIZE (mm)	CLASIFICATION
<0.5	MEDIUM SAND
0.5 - 2.0	COARSE SAND
2.0 - 6.0	FINE GRAVEL
6.0 - 20.0	MEDIUM GRAVEL
20.0 - 60.0	COARSE GRAVEL
60.0 - 200	COBBLES
>200	BOULDERS



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TITLE

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CLIENT

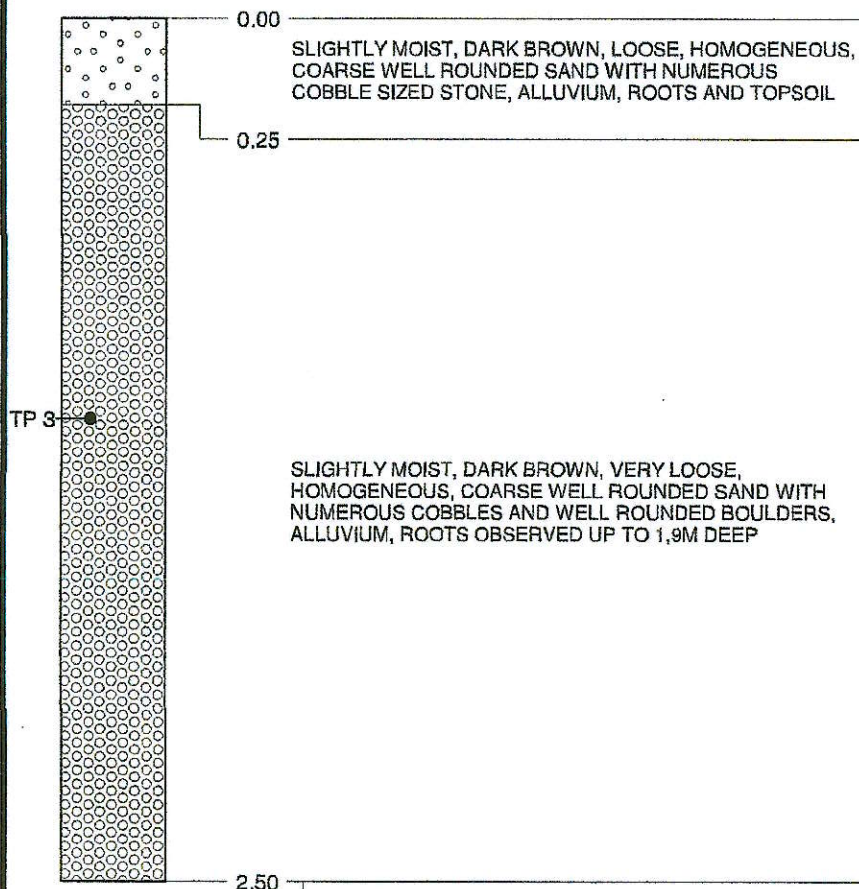
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DRAWN	JK	09/09/2011	
TRACED			
SCALE:		1:20	
DRAWING NO.:		W1479 TP 2	
REVISION:		0	

PROFILE NO.:	TP 3	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE :	33°55.5231'	LONGITUDE :	18°57.3537'	ELEVATION (m)	313
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2500		UNKNOWN		UNKNOWN	

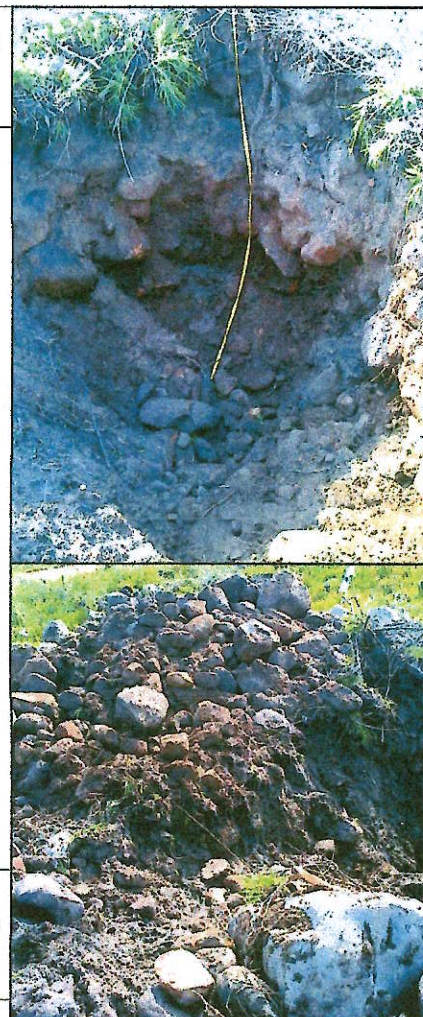


SCALE 1:20

NOTES:

1. NO SEEPAGE OR WATER TABLE ENCOUNTERED
2. DISTURBED SAMPLE TAKEN AT 1.0m

SOIL TEXTURE	
GRAIN SIZE (mm)	CLASIFICATION
<0.5	MEDIUM SAND
0.5 - 2.0	COARSE SAND
2.0 - 6.0	FINE GRAVEL
6.0 - 20.0	MEDIUM GRAVEL
20.0 - 60.0	COARSE GRAVEL
60.0 - 200	COBBLES
>200	BOULDERS



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CLIENT

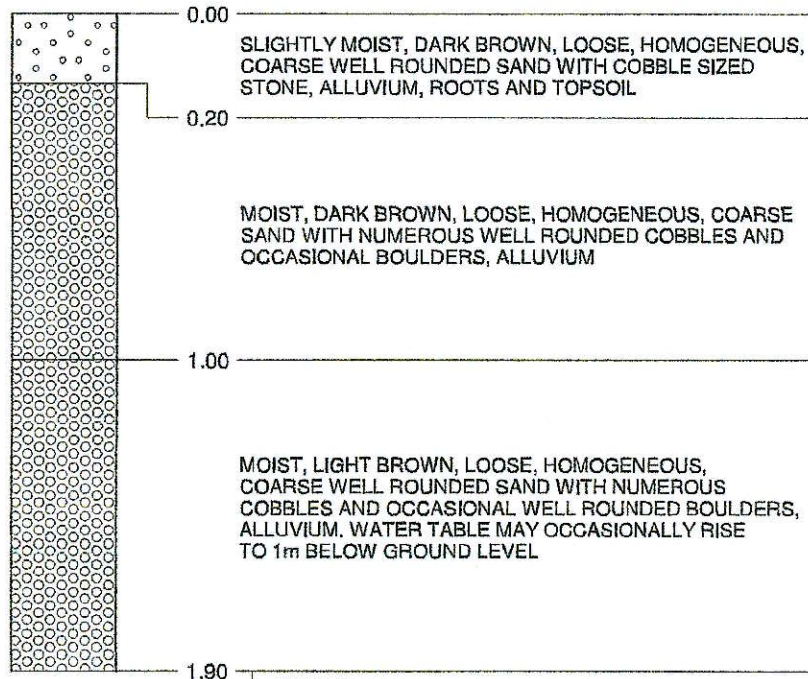
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	BY	DATE	CH
DESIGNED	WV	06/009/201	
DRAWN	JK	06/09/2011	
TRACED			
SCALE : 1:20			
DRAWING NO.: W1479 TP 3			REVISION: 0

PROFILE NO.:	TP 4	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE:	33°55.5490'	LONGITUDE:	18°57.2840'	ELEVATION (m)	310
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2500		UNKNOWN		UNKNOWN	

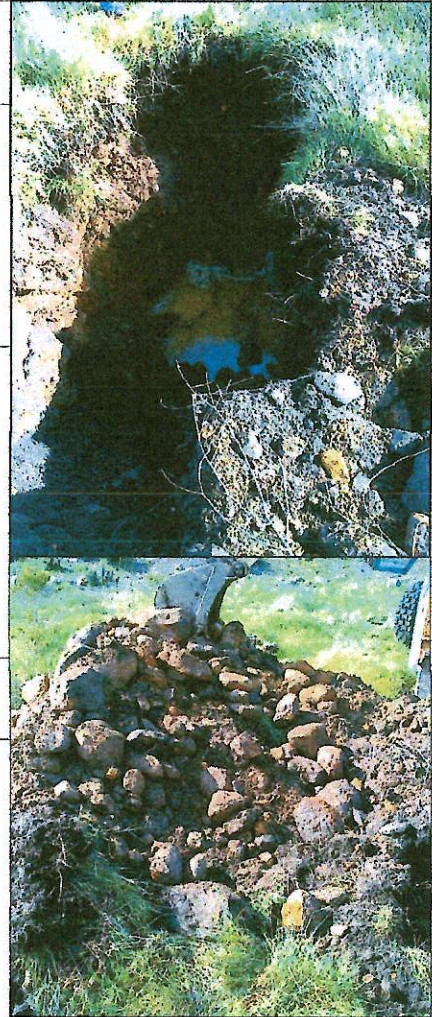


SCALE 1:20

NOTES:

1. WATER TABLE ENCOUNTERED @ 1.9m

SOIL TEXTURE	
GRAIN SIZE (mm)	CLASIFICATION
<0.5	MEDIUM SAND
0.5 - 2.0	COARSE SAND
2.0 - 6.0	FINE GRAVEL
6.0 - 20.0	MEDIUM GRAVEL
20.0 - 60.0	COARSE GRAVEL
60.0 - 200	COBBLES
>200	BOULDERS



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ERF 64 KYLEMORE

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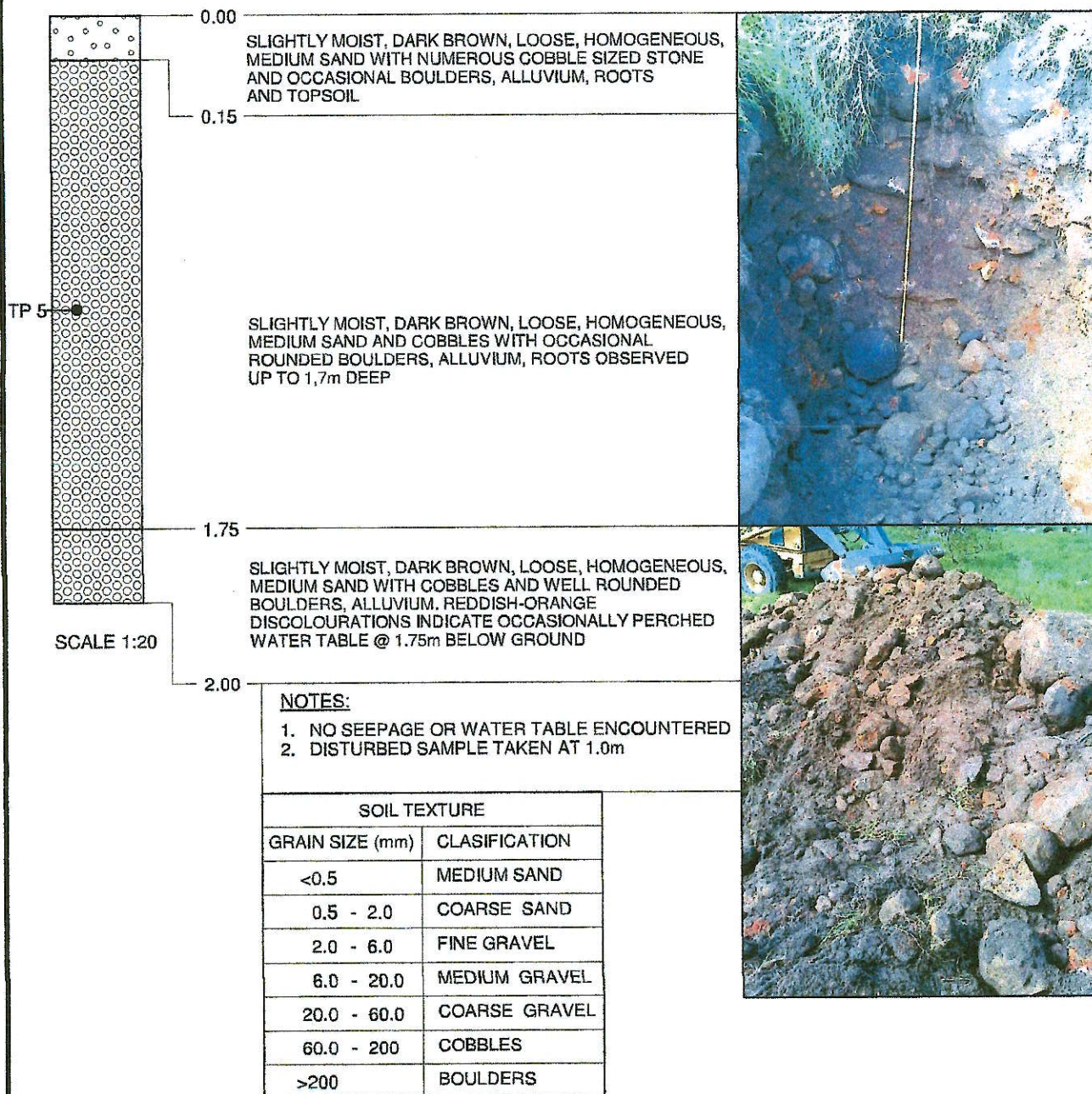
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	BY	DATE	CH
DESIGNED	WV	06/09/2011	
DRAWN	JK	09/09/2011	
TRACED			
SCALE: 1:20			
DRAWING NO.: W1479 TP 4			REVISION: 0

PROFILE NO.:	TP 5	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE:	33°55.5467	LONGITUDE:	18°57.4527'	ELEVATION (m)	321
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2500		UNKNOWN		UNKNOWN	



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CONSULTING ENGINEERS TO BUILD THE NATION

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PO BOX 229
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7620
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FAX: (021) 872 7740

98 CHURCH STREET
P.O. BOX 63
MALMESBURY
7200
TEL: (022) 497 3517
eMail: skcmsouth@skcm.co.za

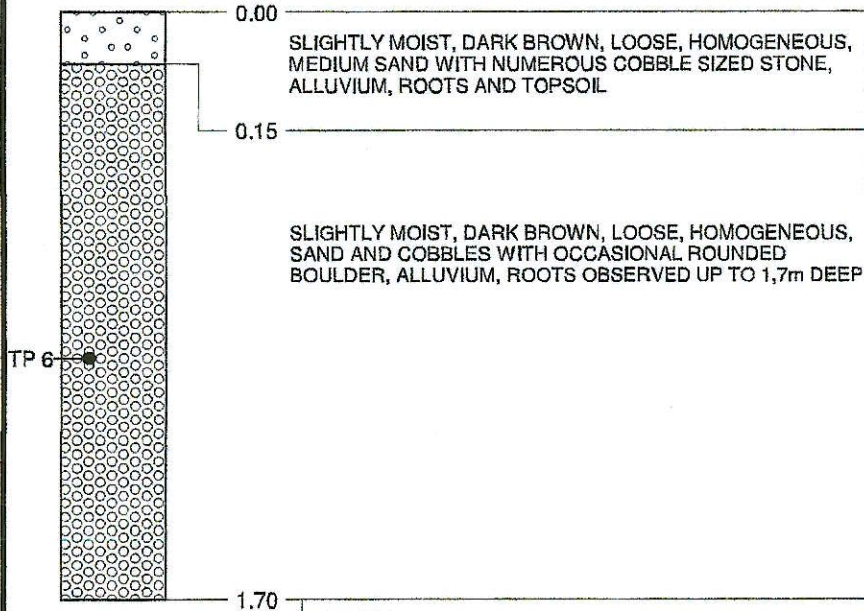
TITLE
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	BY	DATE	CH
DESIGNED	WV	06/09/2011	
DRAWN	JK	09/09/2011	
TRACED			
SCALE: 1:20			
DRAWING NO.: W1479 TP 5			REVISION: 0

PROFILE NO.:	TP 6	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE:	33°55.5732'	LONGITUDE:	18°57.3871'	ELEVATION (m)	317
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2500		UNKNOWN		UNKNOWN	



NOTES:

1. WATER TABLE ENCOUNTERED @ 1.7m
2. DISTURBED SAMPLE TAKEN AT 1.0m

SOIL TEXTURE	
GRAIN SIZE (mm)	CLASIFICATION
<0.5	MEDIUM SAND
0.5 - 2.0	COARSE SAND
2.0 - 6.0	FINE GRAVEL
6.0 - 20.0	MEDIUM GRAVEL
20.0 - 60.0	COARSE GRAVEL
60.0 - 200	COBBLES
>200	BOULDERS



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7330
TEL: (023) 487 3017
eMail: skcmseub@skcm.co.za

TITLE

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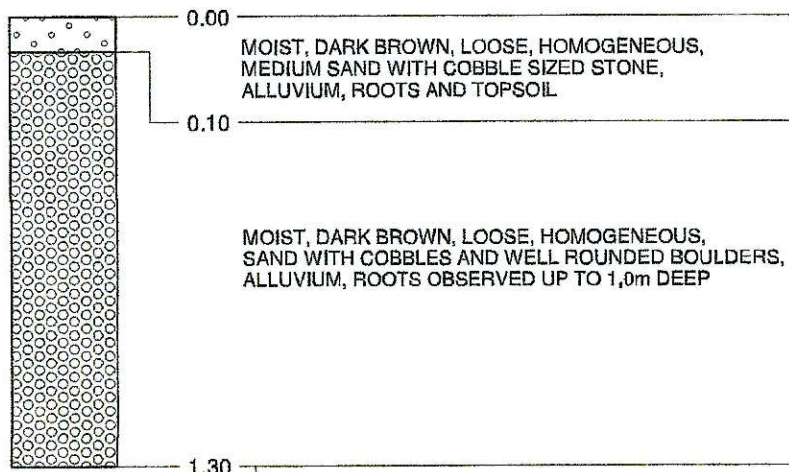
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	BY	DATE	GH
DESIGNED	WV	06/09/2011	
DRAWN	JK	09/09/2011	
TRACED			
SCALE:		1:20	
DRAWING NO.:		W1479 TP 6	REVISION:
			0

PROFILE NO.:	TP 7	DATE	22 AUGUST 2011	PROFILED BY:	WV
LATITUDE :	33°55.5860'	LONGITUDE :	18°57.4010'	ELEVATION (m)	318
DEPTH OF PROFILE PIT		DEPTH OF WATER TABLE		DEPTH TO WEATHERED ROCK	
2500		UNKNOWN		UNKNOWN	



SCALE 1:20

NOTES:

1. WATER TABLE ENCOUNTERED @ 1.3m

SOIL TEXTURE	
GRAIN SIZE (mm)	CLASIFICATION
<0.5	MEDIUM SAND
0.5 - 2.0	COARSE SAND
2.0 - 6.0	FINE GRAVEL
6.0 - 20.0	MEDIUM GRAVEL
20.0 - 60.0	COARSE GRAVEL
60.0 - 200	COBBLES
>200	BOULDERS



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	BY	DATE	CH
DESIGNED	WV	06/09/2011	
DRAWN	JK	09/09/2011	
TRACED			
SCALE : 1:20			
DRAWING NO.:			REVISION:
W1479 TP 7			0

Annexure B – DCP Test Results

(Extracts from Geotechnical report by Messers Nortje and De Villiers)



Figure B1 – Test Hole Positions as used by Messers Nortje and De Villiers

DCP Test results recorded as follows:

TP 1 (at TH 1 from surface)				TP 2 (In TH 1 at 1 m depth)		
Depth mm	DCP mm/blow	CBR	SPT	Depth mm	DCP mm/blow	SPT
0 - 80	20	10	15	0-60	12	25
80 -160	16	13	18	60 – 100	6	50
160 – 240	4	>50	>50	100- 120	4	>50
240 – 250	2	>50	>50	120- 130	1	>50
TP 3 (at TH 2 from surface)				TP 4 (In TH 2 at 1 m depth)		
Depth mm	DCP mm/blow	CBR	SPT	Depth mm	DCP mm/blow	SPT
0 - 90	18	12	16	0-40	16	18
90 -120	6	40	50	40 – 210	12	25
120 – 140	4	>50	>50	210- 250	8	37
140 – 150	2	>50	>50	250- 300	4	>50
TP 5 (at TH 3 from surface)				TP 6 (In TH 3 at 1.2 m depth)		
Depth mm	DCP mm/blow	CBR	SPT	Depth mm	DCP mm/blow	SPT
40 - 110	14	16	21	0-70	14	21
110 -150	8	28	37	70 – 110	4	>50
150 – 170	6	40	50	110- 130	8	>50
170 –230	4	>50	>50	130- 140	1	>50
TP 7 (at TH 4 from surface)				TP 8 (In TH 4 at 1.2 m depth)		
Depth mm	DCP mm/blow	CBR	SPT	Depth mm	DCP mm/blow	SPT
0 - 30	5	14	20	90 - 170	15	20
30 - 70	8	28	37	170 – 190	12	25
70 - 110	4	>50	>50	190- 240	10	30
110 - 120	2	>50	>50	240- 250	2	>50

TP 9 (at TH 5 from surface)				TP 10 (In TH 5 at 1.5 m depth)		
Depth mm	DCP mm/blow	CBR	SPT	Depth mm	DCP mm/blow	SPT
10 - 110	25	8	12	0 - 90	15	20
110 - 140	20	10	15	90 - 130	14	22
140 - 150	4	>50	>50	130 - 140	10	30
150 - 155	2	>50	>50	140 - 150	2	>50
TP 11 (at TH 6 from surface)				TP 12 (In TH 6 at 1.2 m depth)		
Depth mm	DCP mm/blow	CBR	SPT	Depth mm	DCP mm/blow	SPT
0 - 140	70	3	4	0 - 80	15	20
140 - 180	40	5	7	80 - 140	12	25
180 - 210	30	6	10	140 - 180	8	37
210 - 250	8	28	37	180 - 190	4	>50
250 - 280	2	>50	>50			

Annexure C – Laboratory Test Results



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Tel. : 021 9815558
Fax : 021 9816724
Email: info@matrocast.co.za



CLIENT : SKC ENGINEERS

ADDRESS : P.O. BOX 229

PAARL

7620

ATTENTION : MR W. VOSLOO

OUR REF.: 39616.1

YOUR REF.:

DATE : 06.09.2011

PROJECT : ERF 64 - KYLEMORE, STELLENBOSCH

MATROCAST

a SANAS Accredited Testing Laboratory, No. T0245

Tests marked * "Not SANAS Accredited" in this Report are not included in the
SANAS Schedule of Accreditation for the laboratory.

TEST REPORT / RESULTS

Sample/s:

Sampled by : CUSTOMER

Date Received / Sampled : 23.08.2011

Date Tested : 23.08.2011

Sampling method : AS PER CUSTOMER

Section / Position tested identified by : CUSTOMER

Number of pages in this Report : 2

General : pH & CONDUCTIVITY TEST RESULTS
NOT A SANAS ACCREDITABLE TEST METHOD

Opinions and interpretations expressed herein are outside the Scope of SANAS Accreditation.

Results only have bearing on the samples tested.

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TEST RESULTS

SKC ENGINEERS
P.O. BOX 229
PAARL
7620
Attention: Mr. W. Vosloo

Project : ERF 64 - KYLEMORE, STELLENBOSCH

Your Ref :
Our Ref : 39616
Date Reported : 06.09.2011

pH & CONDUCTIVITY - TMH1 (A20 & A21T)

[illegible]

Remarks : NOT A SANAS ACCREDITABLE TEST METHOD

FORM: C1

3.3R (06.10.2010)

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Tel. : 021 9815558
Fax : 021 9816724
Email: info@matrocast.co.za



CLIENT : SKC ENGINEERS
ADDRESS : P.O. BOX 229
PAARL
7620
ATTENTION : MR W. VOSLOO

OUR REF.: 39616

YOUR REF.:

DATE: 01.09.2011

PROJECT: ERF 64 - KYLEMORE, STELLENBOSCH

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SANAS Schedule of Accreditation for the laboratory.

TEST REPORT / RESULTS

Sample/s: Sampled by : CUSTOMER
Date Received / Sampled : 23.08.2011
Date Tested : 23.08.2011

Sampling method : AS PER CUSTOMER

Section / Position tested identified by : CUSTOMER

Number of pages in this Report : 5

General : FOUNDATION INDICATOR RESULTS - SAMPLED AND DELIVERED BY CUSTOMER

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TEST RESULTS

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Attention: MR. W. VOSLOO

Project : ERF 64, KYLEMORE - STELLENBOSCH

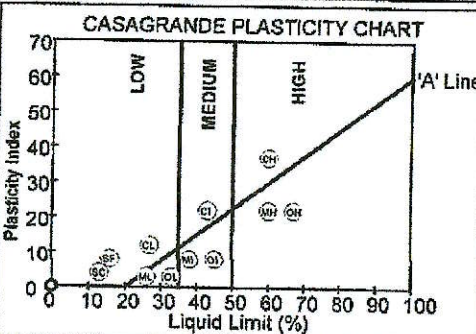
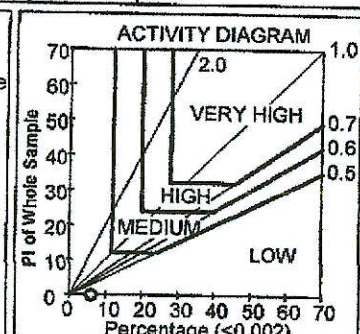
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Our Ref : 39616
Date Reported : 31.08.2011

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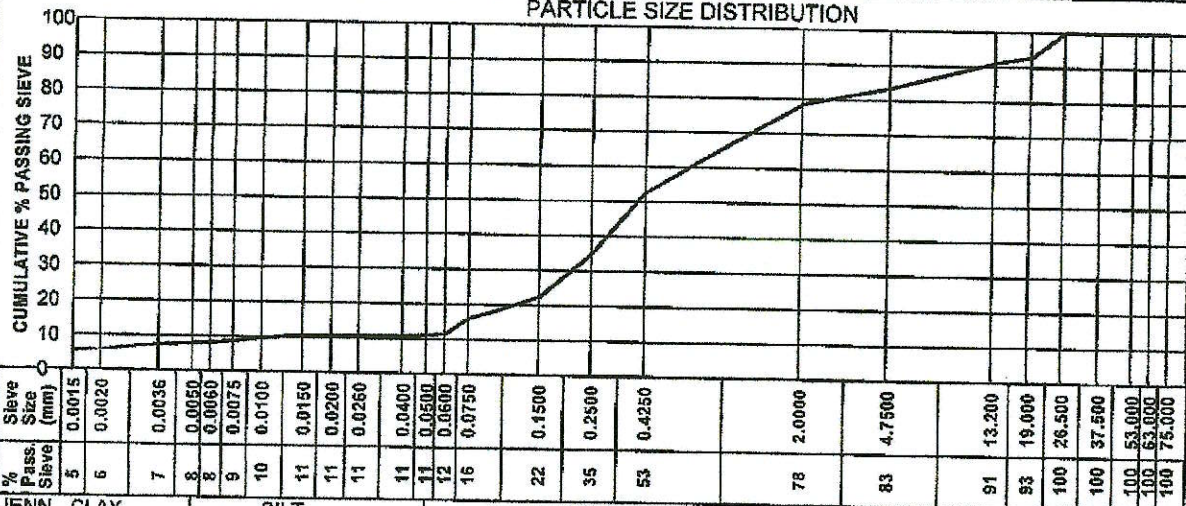
Sample No. : E 0182
Hole No. : TP 6
Depth : -
Liquid Limit (%) : -
Plasticity index : SP
Linear Shrinkage (%) : 0.5
Pl of Whole Sample : 0
P.R.A. Classification : A-2-4(0)
Unified Soil Classification: SC
Activity : 0.00
Heave Classification : LOW
Grading Modulus : 1.53
Percentage (<0.002) : 6.0
Moisture Content (%) : 13.4

Material Description : D/BR SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	7.9	3.2	67.4	21.5	SAND
Astm	7.9	7.9	67.6	16.6	SAND
British Standard	5.8	5.7	67.0	21.5	SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	0.0015	0.0020	0.0036	0.0050	0.0060	0.0075	0.0100	0.0150	0.0200	0.0260	0.0400	0.0500	0.0600	0.0750	0.1500	0.2500	0.4250	2.0000	4.7500	13.200	19.000	26.500	37.500	53.000	63.000	75.000
% Pass. Sieve	5	6	7	8	8	9	10	11	11	11	11	11	12	16	22	35	53	78	83	91	93	100	100	100	100	100
JENN CLAY							SILT				SAND										GRAVEL					
ASTM CLAY							SILT				FINE SAND				MEDIUM SAND		COARSE SAND		GRAVEL							
BS CLAY	FINE SILT		MEDIUM SILT		COARSE SILT		FINE SAND		MEDIUM SAND		COARSE SAND		FINE GRAVEL		MEDIUM GRAVEL		COARSE GRAVEL									

Remarks :

FORM: A6

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TEST RESULTS

SKC ENGINEERS
P.O. BOX 229
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7620
Attention: MR. W. VOSLOO

Project : ERF 64, KYLEMORE - STELLENBOSCH

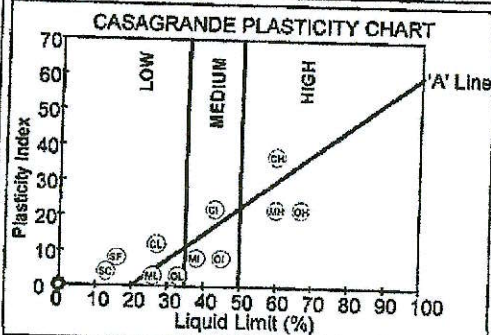
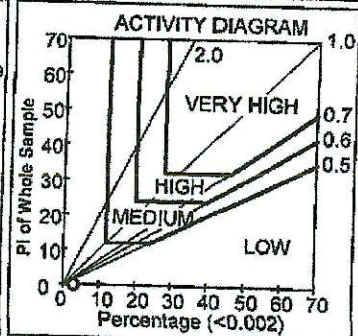
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Our Ref : 39616
Date Reported : 31.08.2011

FOUNDATION INDICATOR (ASTM: D422)

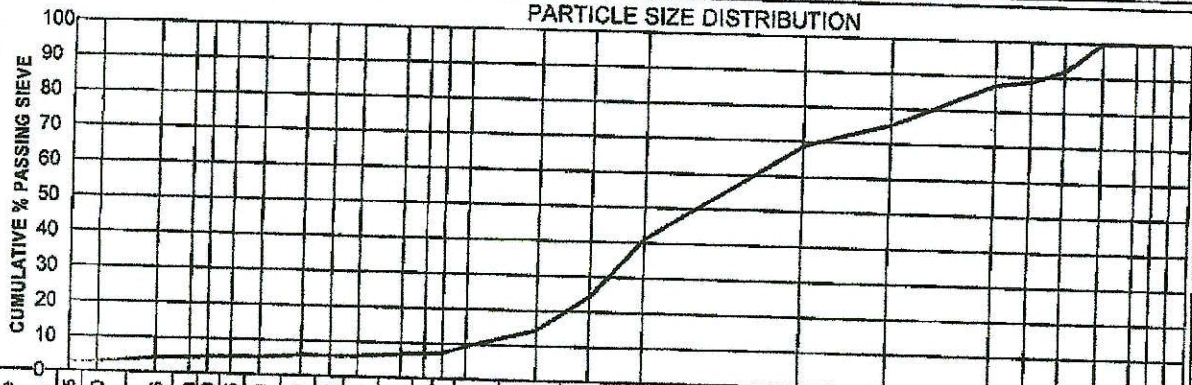
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Hole No. : TP 1
Depth : -
Liquid Limit (%) : -
Plasticity Index : NP
Linear Shrinkage (%) : 0.0
PI of Whole Sample : 0
P.R.A. Classification : A-1-b(0)
Unified Soil Classification: SW-SC
Activity : 0.00
Heave Classification : LOW
Grading Modulus : 1.81
Percentage (<0.002) : 3.0
Moisture Content (%) : 11.8

Material Description : D/BR SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	4.5	2.5	61.8	31.3	SAND
Astm	4.5	4.9	65.9	24.7	SAND
British Standard	2.8	4.4	61.5	31.3	SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	0.0015	0.0020	0.0036	0.0050	0.0060	0.0075	0.0100	0.0150	0.0200	0.0250	0.0400	0.0500	0.0600	0.0750	0.1500	0.2500	0.4250	2.0000	4.7500	13.200	19.000	26.500	37.500	53.000	63.000	75.000
% Pass	3	3	4	4	5	5	5	6	6	7	7	7	9	14	24	41	69	75	87	89	92	100	100	100	100	100
JENN CLAY																										
ASTM CLAY																										
BS CLAY																										

Remarks :

FORM: A6

3.3R (06.10.2010)

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TEST RESULTS

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Attention: MR. W. VOSLOO

Project : ERF 64, KYLEMORE - STELLENBOSCH

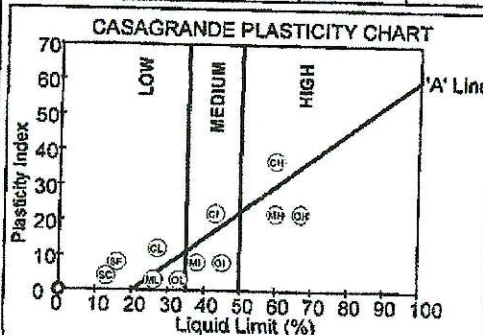
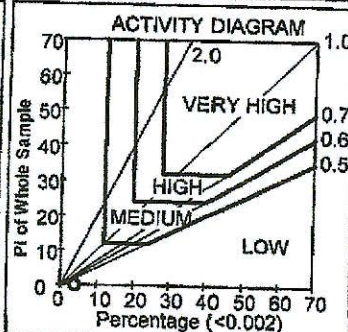
Your Ref :
Our Ref : 39616
Date Reported : 31.08.2011

FOUNDATION INDICATOR (ASTM: D422)

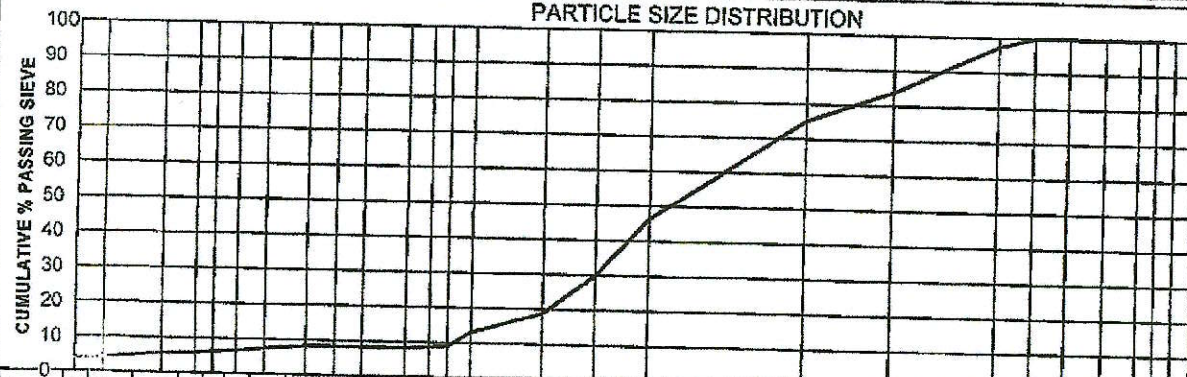
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Hole No. : TP 5
Depth : -
Liquid Limit (%) : -
Plasticity Index : NP
Linear Shrinkage (%) : 0.0
PI of Whole Sample : 0
P.R.A. Classification : A-1-b(0)
Unified Soil Classification: SC
Activity : 0.00
Heave Classification : LOW
Grading Modulus : 1.66
Percentage (<0.002) : 4.0
Moisture Content (%) : 12.9

Material Description : D/BR SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	5.9	2.8	66.5	24.7	SAND
Astm	5.9	7.1	70.8	16.1	SAND
British Standard	4.1	4.9	66.2	24.7	SAND



PARTICLE SIZE DISTRIBUTION



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FORM: A6

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P.O. BOX 229
PAARL
7620
Attention: MR. W. VOSLOO

Project : ERF 64, KYLEMORE - STELLENBOSCH

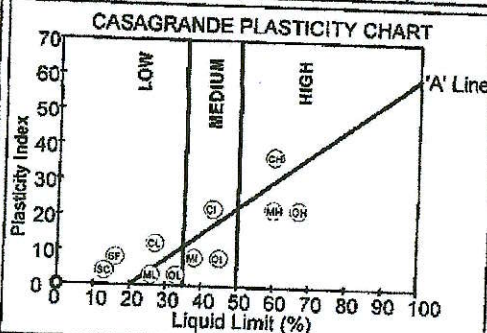
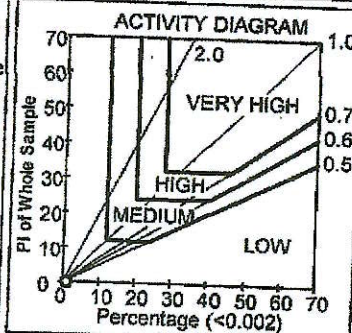
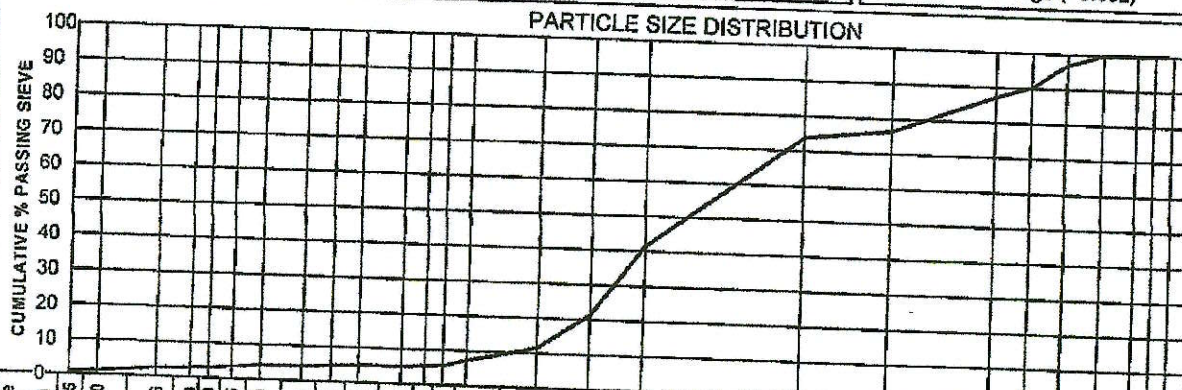
Your Ref :
Our Ref : 39616
Date Reported : 31.08.2011

FOUNDATION INDICATOR (ASTM: D422)

Sample No. : E 0223
Hole No. : TP 3
Depth : -
Liquid Limit (%) : -
Plasticity Index : NP
Linear Shrinkage (%) : 0.0
PI of Whole Sample : 0
P.R.A. Classification : A-1-b(0)
Unified Soil Classification: SW-SC
Activity : 0.00
Heave Classification : LOW
Grading Modulus : 1.78
Percentage (<0.002) : 1.0
Moisture Content (%) : 11.3

Material Description : D/BR SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	2.8	2.5	68.7	26.1	SAND
Astm	2.8	4.5	69.3	23.4	SAND
British Standard	1.2	4.4	68.4	26.1	SAND



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Remarks :

FORM: A6

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ADDRESS : P.O. BOX 229
PAARL
7620
ATTENTION : MR W. VOSLOO

OUR REF.: 39616.2

YOUR REF.:

DATE : 07.09.2011

PROJECT : ERF 64 - KYLEMORE, STELLENBOSCH

MATROCAST LABORATORY

TEST REPORT / RESULTS

Sample/s: Sampled by : CUSTOMER
Date Received / Sampled : 23.08.2011
Date Tested : 02.09.2011

Sampling method : AS PER CUSTOMER

Section / Position tested identified by : CUSTOMER

Number of pages in this Report : 3

General : GRADING / CBR TEST RESULTS

Results only have bearing on the samples tested.
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TEST RESULTS

SKC ENGINEERS
P.O. BOX 229
PAARL
7620
Attention: MR. W. VOSLOO

Project : ERF 64 - KYLEMORE, STELLENBOSCH

Your Ref :
Our Ref : 39616
Date Reported : 07.09.2011

SIEVE ANALYSIS, ATTERBERG LIMITS, CBR, UCS(TMH1:A1-A5,A7,A8)

SAMPLE NO.	E 0182	E 0221	E 0222	E 0223
HOLE NO.	6	1	5	3
ROAD NO.	ERF 64	ERF 64	ERF 64	ERF 64
DEPTH	-	-	-	-
CHAINAGE	N/A	N/A	N/A	N/A
LAYER TYPE	-	-	-	-
STABILISED WITH	NEAT	NEAT	NEAT	NEAT
SUPPLIER	-	-	-	-
CURING METHOD	N/A	N/A	N/A	N/A
DESCRIPTION	D/Br Sand + Stones	D/Br Sand + Stones	D/Br Sand + Stones	D/Br Sand + Stones

SIEVE ANALYSIS (% PASSING)

75 mm				
63 mm				
53 mm	100		100	
37.5 mm	96	100	92	100
26.5 mm	96	92	90	97
19.0 mm	93	89	90	90
13.2 mm	91	88	88	87
4.75 mm	84	76	75	76
2.0 mm	79	69	68	74
0.425 mm	53	41	42	41
0.075 mm	16	9	12	7

SOIL MORTAR

COARSE SAND <2.000mm >0.425mm	33	41	38	45
FINE SAND <0.425mm >0.075mm	47	46	44	46
MATERIAL <0.075mm	20	13	18	9

CONSTANTS

GRADING MODULUS	1.52	1.81	1.78	1.78
PRA CLASSIFICATION	A-2-4(0)	A-1-b(0)	A-1-b(0)	A-1-b(0)
UNIFIED SOIL CLAS.	SC	SW-SC	SW-SC	SW-SC
COLTO CLASSIFICATION	G6	G7	G6	G7
TRH CLASSIFICATION	G5	G7	G6	G7
LIQUID LIMIT (%)	-	-	-	-
PLASTICITY INDEX (0.425mm)	SP	NP	NP	NP
LINEAR SHRINKAGE (%)	0.5	0.0	0.0	0.0

MOD AASHTO

MAXIMUM DRY DENSITY (kg/m ³)	2038	1966	2067	1908
OPTIMUM MOISTURE CONTENT (%)	9.0	4.9	6.7	7.6
MOULDING MOISTURE (%)	9.1	4.8	6.9	7.7

TYPE OF TEST	CBR	CBR	CBR	CBR
CBR-UCS @ 100% MOD AASHTO	71	42	57	46
CBR-UCS @ 98% MOD AASHTO	63	27	53	33
CBR-UCS @ 97% MOD AASHTO	58	21	51	28
CBR-UCS @ 95% MOD AASHTO	47	17	43	23
CBR-UCS @ 93% MOD AASHTO	38	16	31	20
CBR-UCS @ 90% MOD AASHTO	28	14	19	16

CBR-UCS @ % MOD AASHTO derived from calculation.

% SWELL AT [MOD][NRB][PROC]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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Remarks : SAMPLED AND DELIVERED BY CUSTOMER
SAMPLES IN A GOOD CONDITION

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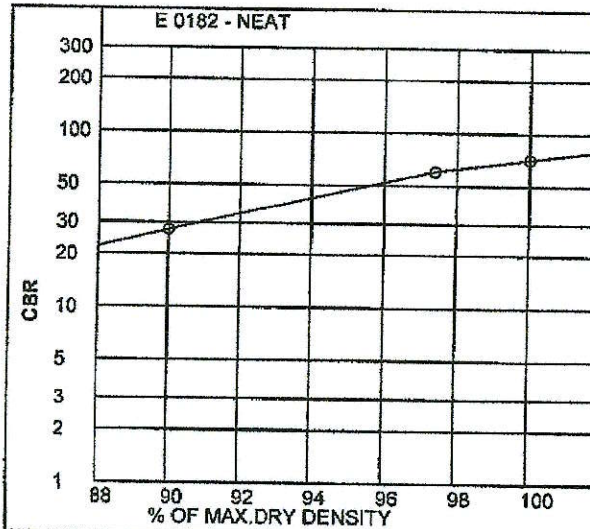
TEST RESULTS

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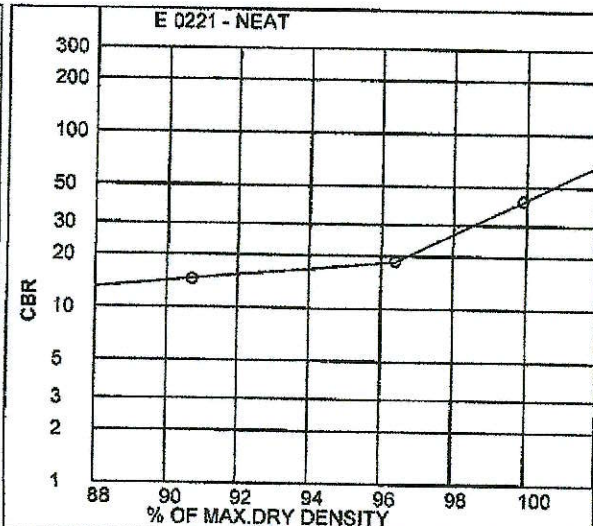
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Date Reported : 07.09.2011

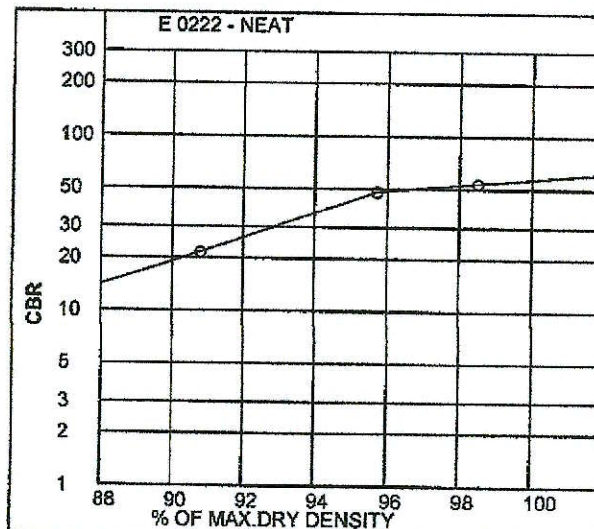
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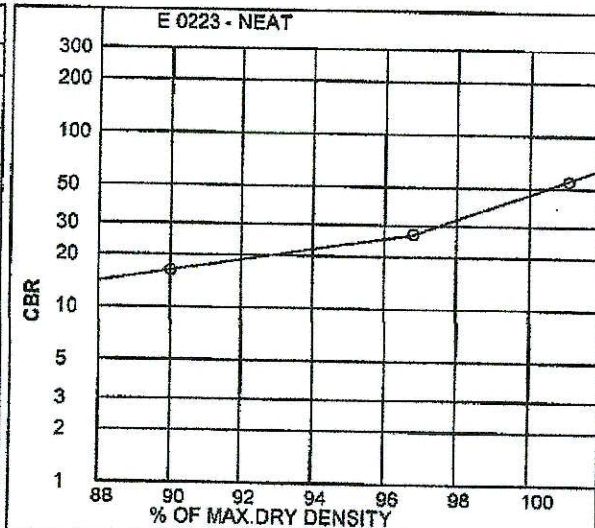
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CBR	28	61	71



	PROC	NRB	MOD
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CBR	15	19	41



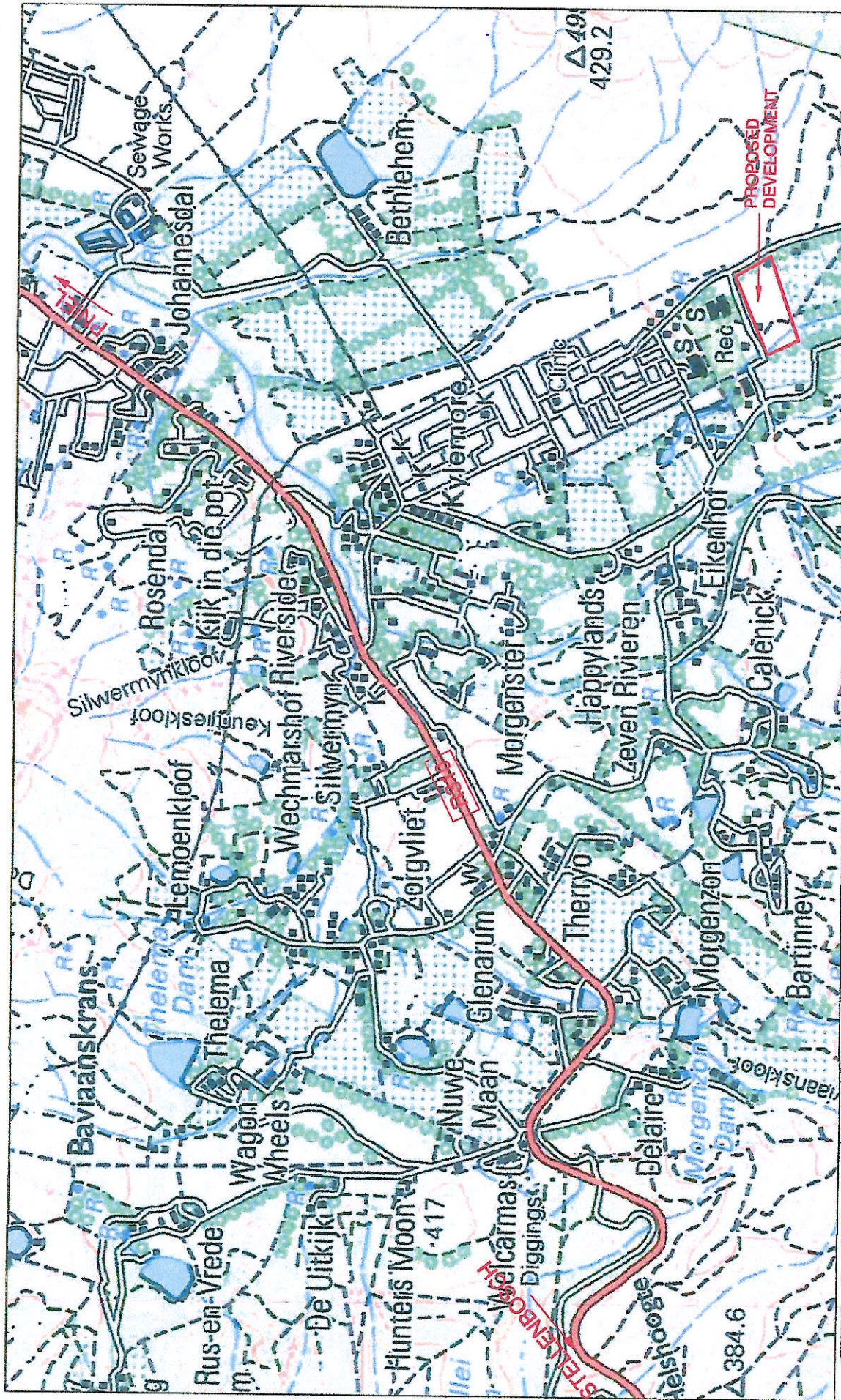
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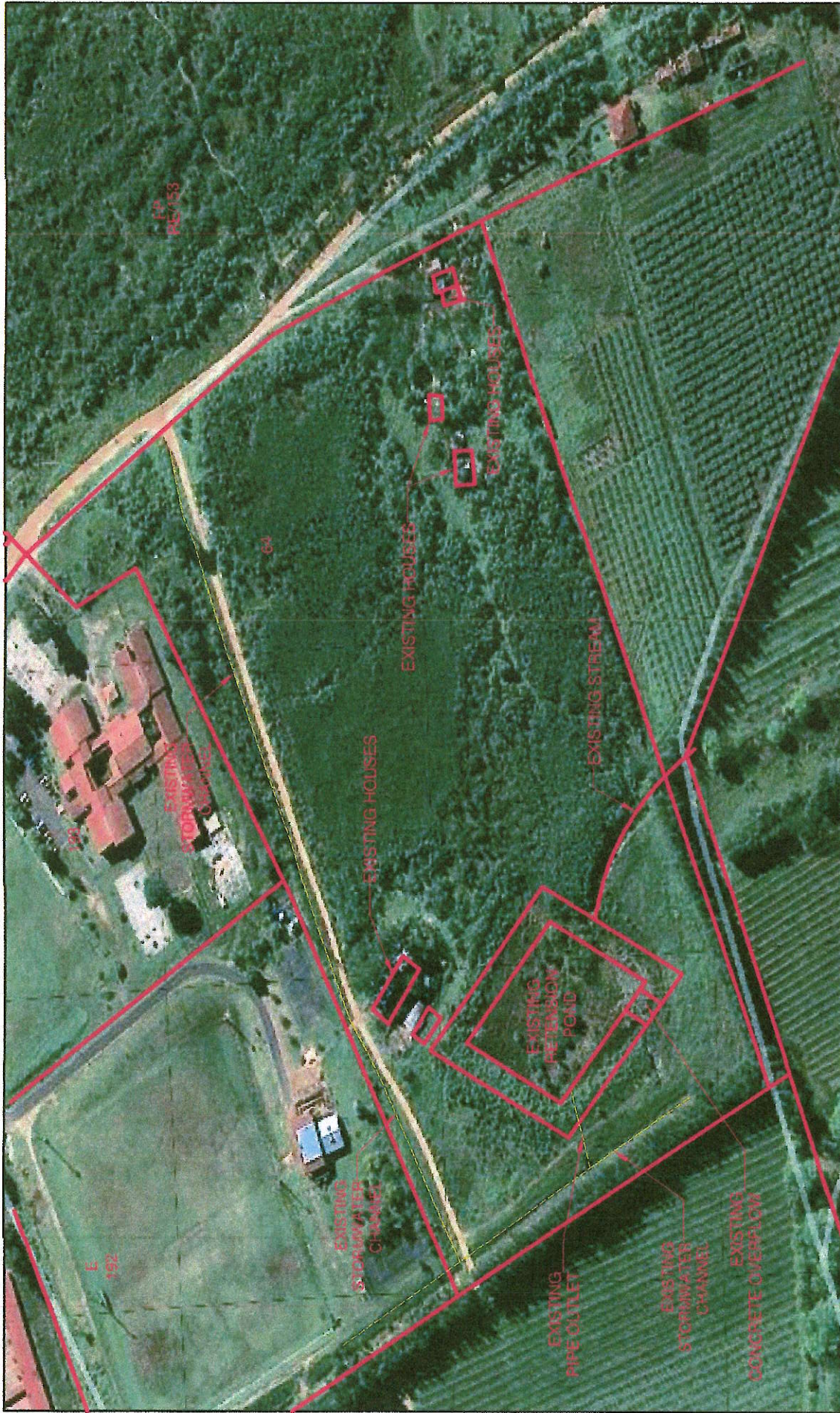
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Figures



SKCN SKCMasakhizwe Engineers (Pty) Ltd CONSULTING ENGINEERS TO BUILD THE NATION 35 PASTORIE AVENUE 7620 PAARL TEL: (021) 671 142/23 FAX: (021) 671 1746 EMAIL: skcn@skcn.co.za	PROJECT ERF 64 KYLEMORE PROPOSED LOW COST HOUSING DEVELOPMENT	TITLE LOCALITY PLAN	DATE 12/09/11	REPORT REFERENCE GA	DESIGNED DRAWN TRACED	BY DATE CH	SCALE 1: 12 500	DRAWING NO. FIGURE2	REVISION 1

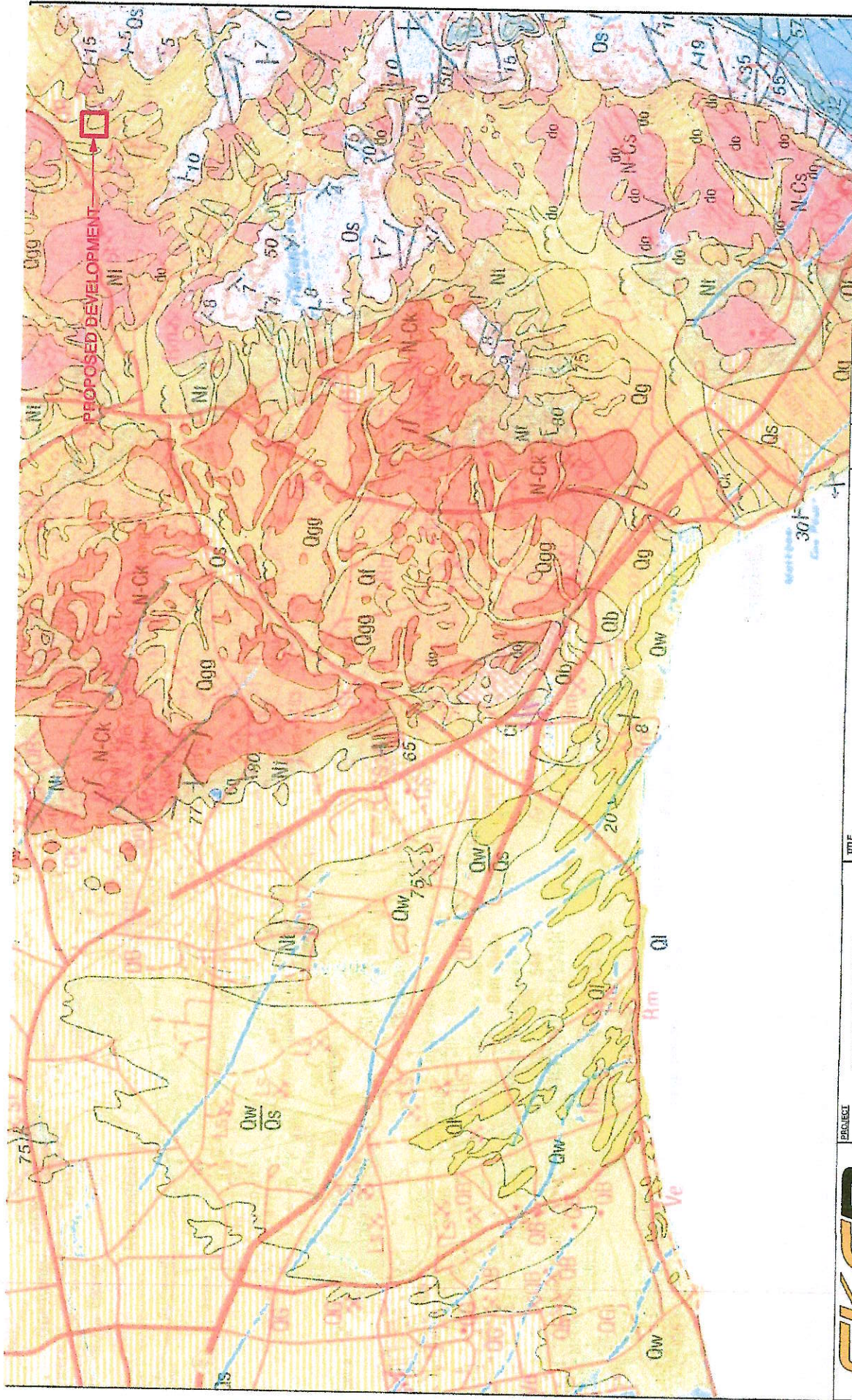
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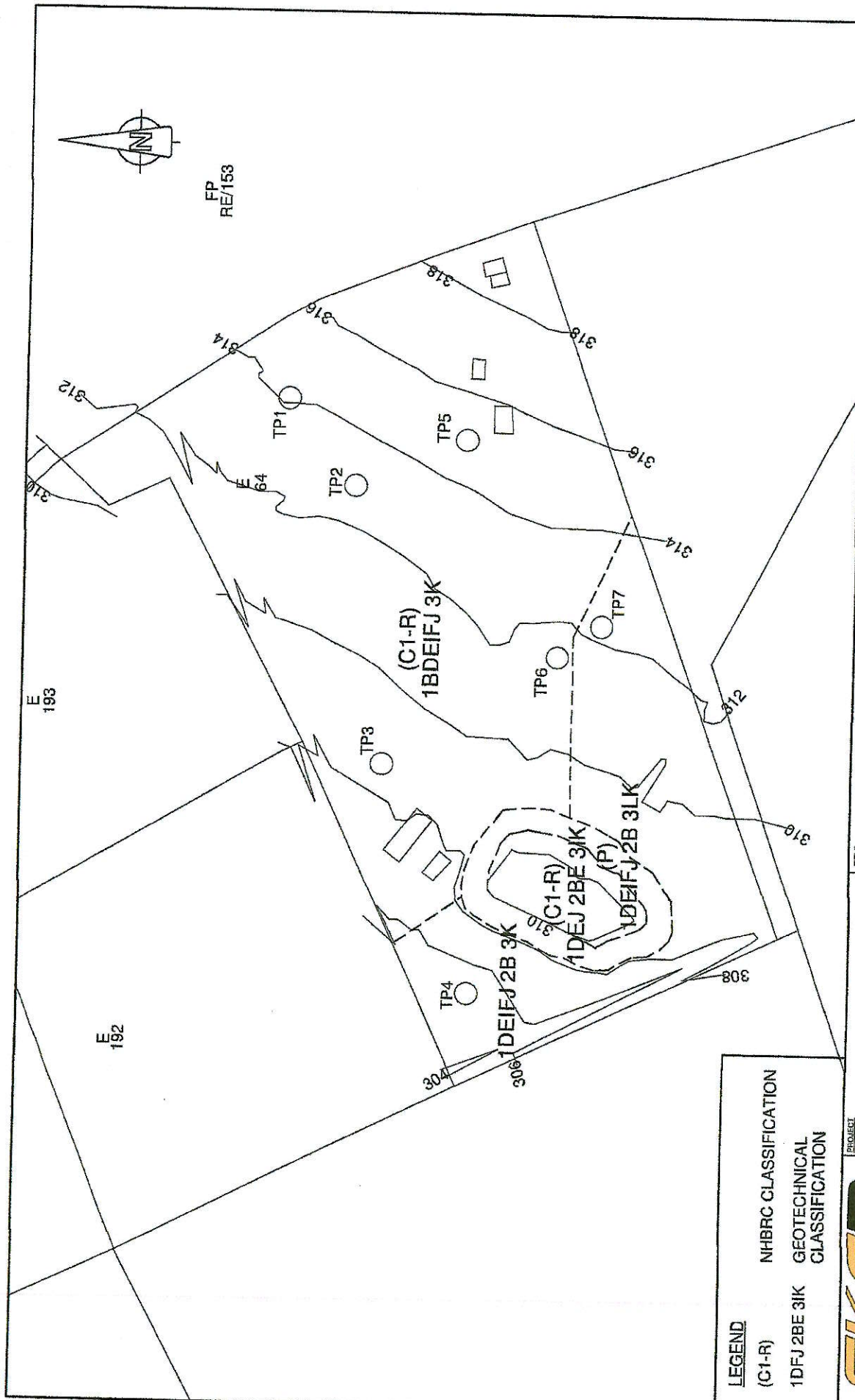
SKCM SKCMasakhizwe Engineers (Pty) Ltd CONSULTING ENGINEERS TO BUILD THE NATION 13 PASTORE AVENUE P.O. BOX 239 7000 MARLBOROUGH TEL: (021) 871 142/3 FAX: (021) 878 7740 eMail: skcm@skcm.co.za		PROJECT ERF 64 KYLEMORE PROPOSED LOW COST HOUSING DEVELOPMENT		TITLE EXISTING STORMWATER RETENTION POND AND DRAINAGE CHANNELS		BY GA DATE 09/09/11		CH WV	
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PROJECT

ERF 64 KYLEMORE
PROPOSED LOW COST
HOUSING DEVELOPMENT

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ANNEXURE 12: TRAFFIC IMPACT ASSESSMENT REPORT

**DESKTOP
TRAFFIC IMPACT ASSESSMENT

FOR PROPOSED DEVELOPMENT
OF

INTERGRATED HUMAN SETTLEMENT

ON
ERF 64
KYLEMORE

WITHIN
STELLENBOSCH LOCAL MUNICIPALITY**

**SEPTEMBER 2024
(Version 1.0)**

PREPARED FOR:



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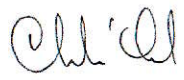
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Amendments made by		
Version 1.1	Date	
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Note this is a desktop TIA, as requested by the client, and does not include site inspection and traffic counts. However, latest google images were used to determine on-site conditions. Further normal trip generation was used to determine estimated traffic flows.

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LIST OF ABBREVIATIONS

CBD	Central Business District
GLA	Gross Leasable Area
HCM	Highway Capacity Manual
LSDF	Local Spatial Development Framework
LOS	Level of Service (as defined by Highway Capacity Manual)
NA	Not Analysed
SAT	Saturday
SIDRA	Software for the design and evaluation of traffic/ pedestrian intersections
SLM	Stellenbosch Local Municipality
TIA	Traffic Impact Assessment
veh/h	vehicles per hour

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

Emonti Consulting Engineers CC was approached to prepare a “desktop” Traffic Impact Assessment (TIA) for the proposed rezoning and subdivision of the following property: Erf 64 Kylemore – situated within the Stellenbosch Local Municipality (SLM) area.

Note that this is only a desktop TIA and neither an on-site inspection nor traffic counts were undertaken. On-site conditions were obtained from google imaging and normal trip generation was used to determine estimated traffic flows.

Following the investigation and study, recommendations regarding site access from the public road network, road network improvements, internal site layout, traffic safety, on-site circulation, parking and any loading facilities, etc., is made.

The approach and methodology followed in conducting this study were in terms of the references included in Chapter Ten.

1.2 Proposed development

The site is located in Kylemore, a suburb situated within the SLM area. A site locality map can be seen in Figure 1.1.

The current use of the site, coupled with the existing structures found thereon, generate limited trips during the peak hours.

The proposed development comprises residential (single units and flats), business, place of worship, community facility, creche, water depot, public transport facility, community park, public open space and roadway, and will commonly be referred to hereafter as “the site” and/or “the development”.

The proposed land uses of the property in question are given in Table C.1 in Appendix C. The proposed site layout is illustrated in Figure 1.2.

2. EXISTING OPERATING CONDITIONS

2.1 Intersection control

Control strategies at the existing intersections relevant to this study are presented in Table 2.1.

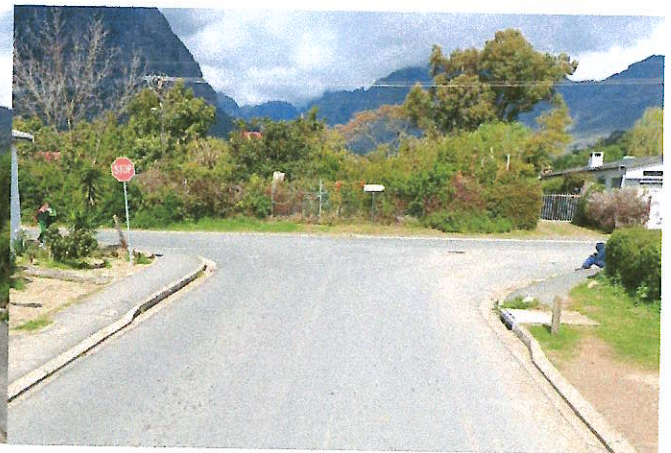
Table 2.1: Control strategies

No.	Intersection	Control
1	Skool Street/Brandt Street	All-way stop
2	Brandt Street/Swart Street (DR01079)	Priority /stop
3	Swart Street/R310 (MR00172)	

The following google street view images reveal a number of intersections that will be utilised by traffic generated by the development.



Skool Street/Brandt Street intersection



Brandt Street/Swart Street (DR01079) intersection



Swart Street/R310 (MR00172) intersection

2.2 Capacity along access roads

The R310, also referred to as the MR00172, is a higher order road and provides access to Stellenbosch in the west and the R45 in the east. The Skool Street, Brandt Street and Swart Street route combination links the proposed development to the R310.

From on-site observations sufficient spare capacity appears to exist along the road network to cater for the medium to long term future regarding anticipated traffic growth, including future trips relating to this development. This will however be analysed and commented on later in this report.

2.3 Traffic calming

Traffic calming exists along the adjacent road network in the form of speed humps and rumble strips. Due to the spacing and location of the numerous speed humps, the vehicular speeds should be restricted to within the posted speed limit.

The locations of the traffic calming are illustrated in Figure 2.1.

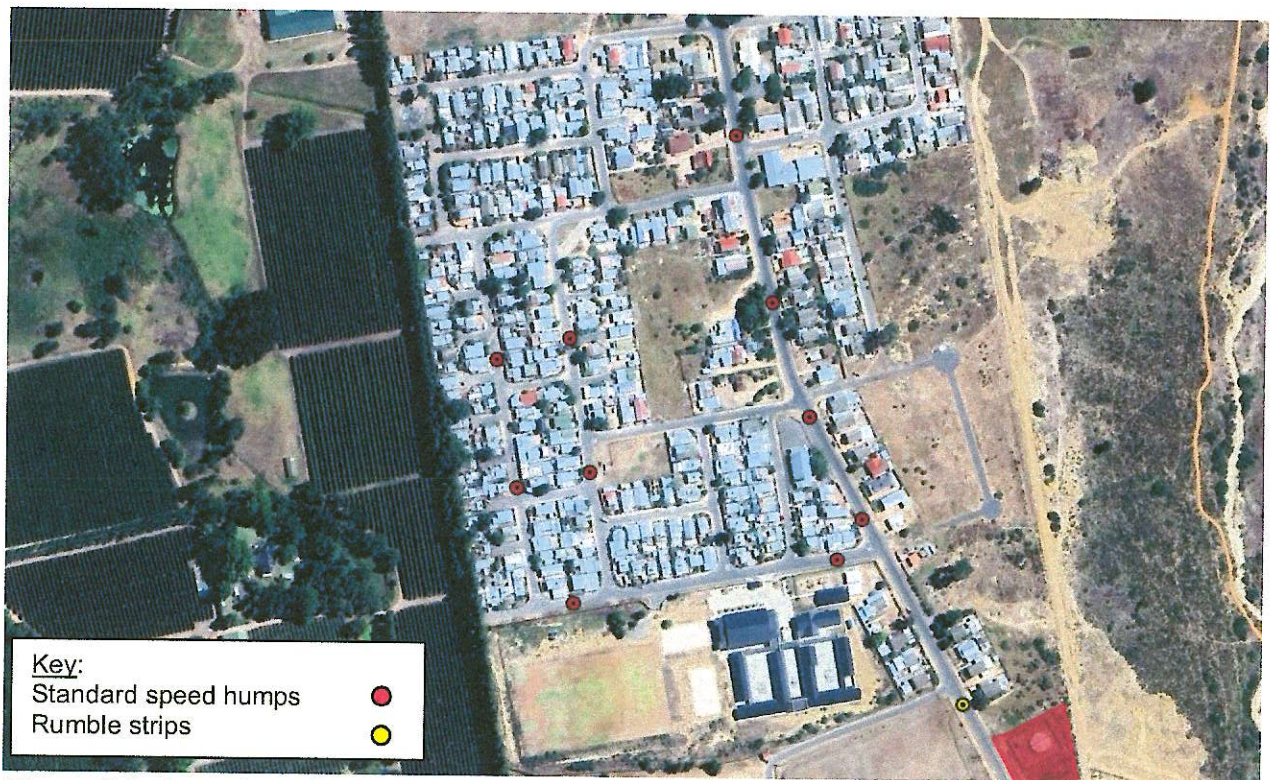


Figure 2.1: Location of existing nearby traffic calming

The following google street view images depict the traffic calming measures discussed.



Speed hump along Skool Street

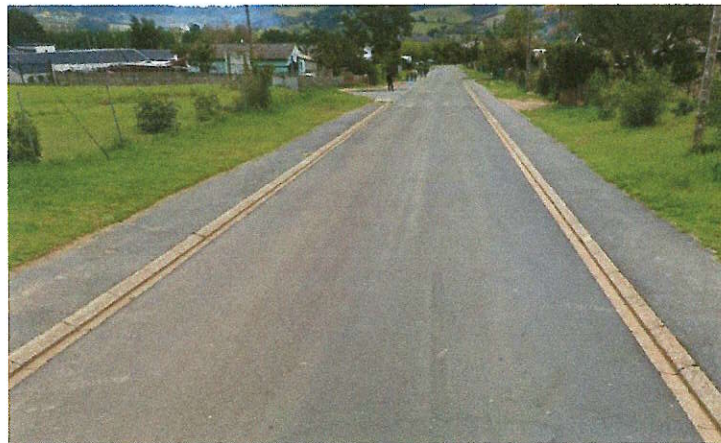


Rumble strips along Skool Street

2.4 Pedestrian and cycle facilities

No formalised cycle facilities are currently available on the surrounding road network.

Formalised pedestrian facilities, in the form of surfaced sidewalks along both sides of Skool Street north of the existing access to Kylemore Secondary School are available (see google street view image below).



Sidewalks along both sides of Skool Street

2.5 Public transport facilities

No formalised public transport facilities are currently available on the surrounding road network.

3. EXISTING TRAFFIC VOLUMES

In order to establish the current traffic conditions at the accesses to the development relevant traffic count information is usually required. As the development is located on relatively lower order roads, which carry low volumes of traffic, no traffic counts were undertaken. However, what was used was standard trip generation rates to determine the likely traffic volumes generated for the existing developed erven that obtains access through the Skool Street/Brandt Street intersection. This is reflected in Table C.2.

The analysis of the current traffic performance is based on the estimated traffic volumes. The traffic volumes are displayed as network diagrams in Figures 4.1 to 4.5.

4. FUTURE TRAFFIC VOLUMES

For purposes of this study, it was assumed that the development will be functional in 2025 and therefore a design horizon of five years (i.e., 2030) was used for the future operational LOS analysis.

The recommended critical peak hours for analysing retail developments are weekday PM and SAT peak hours and weekday AM and PM peak hours for most other land uses. In this study the analyses were made for both the future weekday AM and PM peaks to address anticipated capacity problems in the peak hours most relevant to the development.

It is acceptable to project future traffic volumes by taking the recorded growth history of traffic counts into consideration. The generally accepted growth rate is around 2.5% per annum. However, in this case an annual growth of 4% was used due to the development potential in the study area. Applying the assumed growth rate of 4% from the base year to the design horizon year the growth factor would be 1.22, meaning an increase in background traffic volume of 22% over the five-year design horizon.

According to Table 4.1 (Reference Five), this can be regarded as *“average to above average growth areas”*.

Table 4.1: Typical traffic growth rates

Development Area	Growth rate
Low growth areas	0 - 3%
Average growth areas	3 - 4%
Above average growth areas	4 - 6%
Fast growing areas	6 - 8%
Exceptionally high growth areas	> 8%

For the future scenario analysis, the current estimated traffic volumes were maintained as background traffic and increased by an annual growth factor. New trips relating to the proposed development were added to obtain the future estimated traffic volumes for 2030.

4.1 Traffic generation

The recommended vehicle trip generation rates (as per References One and Four) for the land uses listed in Table C.1 were used to calculate the estimated number of trips for the various peak hours in order to determine the critical peak hour. Note the values used are based on Reference Four.

The recommended vehicle trip generation rates were then adjusted to take into account site specifics. The following factors, amongst others, were considered when making the trip generation adjustments:

- i. public transport,
- ii. predicted car ownership, and
- iii. land use mix.

The following is a motivation as to the use of the trip generation adjustment/reduction factors.

Vehicle ownership and transit availability

The trip generation rates provided in TMH 17 (Tables 3.1 and 3.3) are applicable to areas with high vehicle ownership and where a low level of transit (public transport) service is provided. For other areas, a lower trip generation rate can be expected. Trip reduction factors that can be used for such developments or areas are provided in TMH 17 (Table 3.2). These factors can be applied to reduce the trip generation rates.

Typically, the vehicle ownership in areas with high levels of vehicle ownership varies between one to two vehicles per household. In areas with a low level of vehicle ownership, the majority of households (more than 50%) do not own a vehicle and rely on public transport. *This is the expected case for this settlement.* In areas with very low level of vehicle ownership, nearly all households (i.e., more than 90%) do not own a vehicle and rely on public transportation.

Although it would be ideal for car ownership to increase in these areas, it is extremely unlikely that the car ownership will be more than 50%. It is therefore considered that this area will be a low level of vehicle ownership area.

The reduction factors provided in the table are those that are considered reasonable for low vehicle ownership areas and areas with a high level of transit services. The factors have been established considering current trip generation rates in the different areas. It is unlikely that the trip generation rates will remain at current low levels, but at the same time it is also unlikely that the rates will grow to those in high vehicle ownership areas. The reduction factors in the table provide for some reduction in trip rates, but not to the levels currently being experienced (i.e., the author of the TMH 17 is being conservative).

The transit reduction factors provided in Table 3.2 (TMH 17) are applicable to developments that are located within a reasonable walking distance from a major transit node or stop on a major transit corridor. For this settlement, it is considered that Skool Street, which will give access to the settlement, is a public transport route that carries sufficient public transport to qualify for this reduction. It should therefore be considered as a transit corridor.

Mixed-use development

Mixed-use developments are defined as developments in an area that consist of two or more single-use developments between which trips can be made by means of non-motorised modes of transport (such as walking). This has the net effect of reducing the vehicle trip generation in the area.

The mixed-use reduction factors provided in TMH 17 (Table 3.2) may be applied, subject to the following two conditions:

- a) the mixed-use developments must be located within a reasonable walking distance from each other, and
- b) the mixed-use reduction for a development may not exceed the available multiuse trips generated at the other adjacent or nearby developments.

This settlement is a multi-use development and therefore this reduction applies to this development.

Based on these factors trip reductions, as illustrated in Table C.1, were assumed. The recommended in/out split for the peak hours can be seen in Table C.1 which also shows details of trip generation calculations for the various peak hours.

From Table C.1 it can be seen that the PM peak hour, in terms of new trips generated, is slightly less than the AM peak hour for a regular week day. When the projected future traffic volumes and predicted traffic generated are added together, the combined effect does not change the critical peak period which remains the AM peak hour.

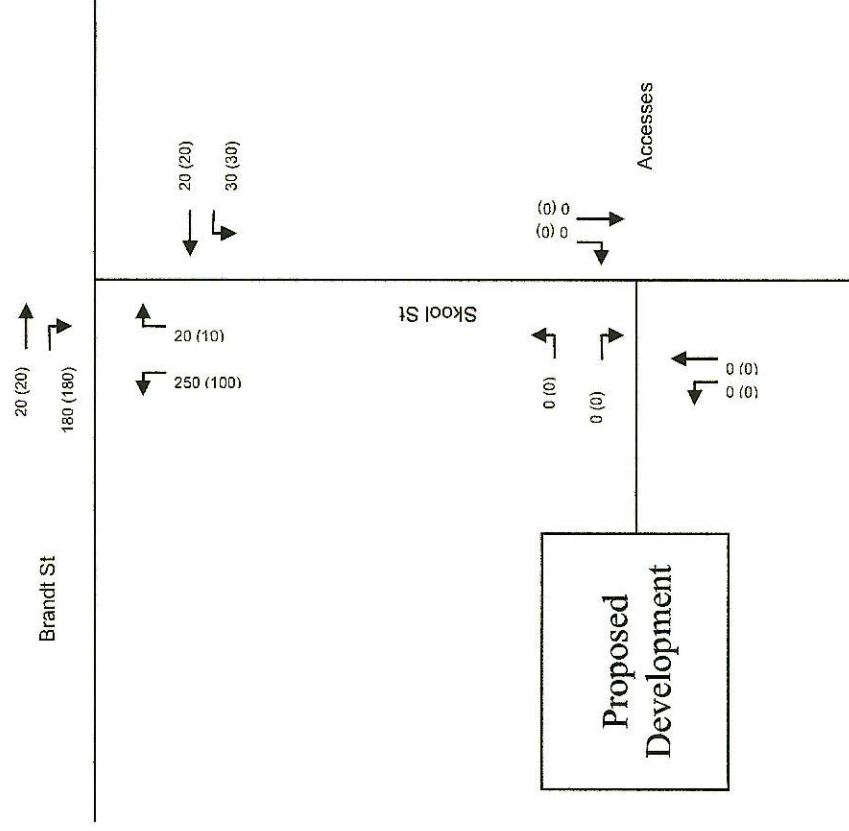
The following are the scenarios that were analysed, where necessary:

- i. existing 2025 critical peak hour traffic,
- ii. existing 2025 critical peak hour traffic **with development** traffic,
- iii. projected 2030 critical peak hour **without development** traffic, and
- iv. projected 2030 critical peak hour **with development** traffic.

4.2 Trip assignment/distribution

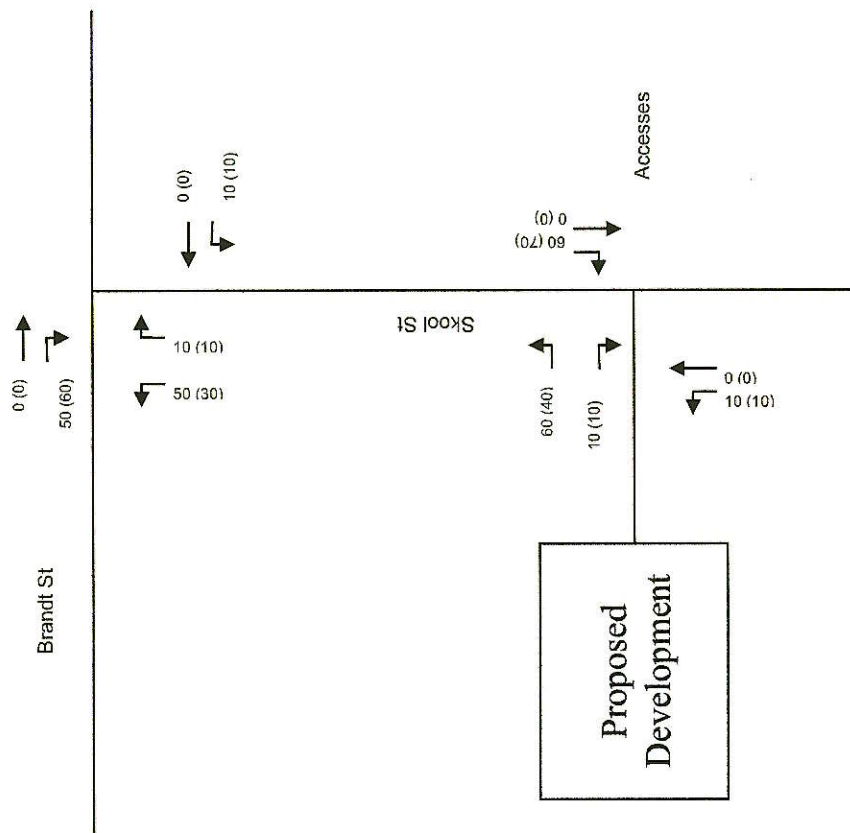
The generated trips, as identified in Section 4.1, have been distributed to the road network manually, based on the principles of the gravity model and taking into account knowledge of local conditions, Reference Five.

The resultant trip assignments are illustrated as network diagrams in Figures 4.1 to 4.5 for the various scenarios and time horizons tested.



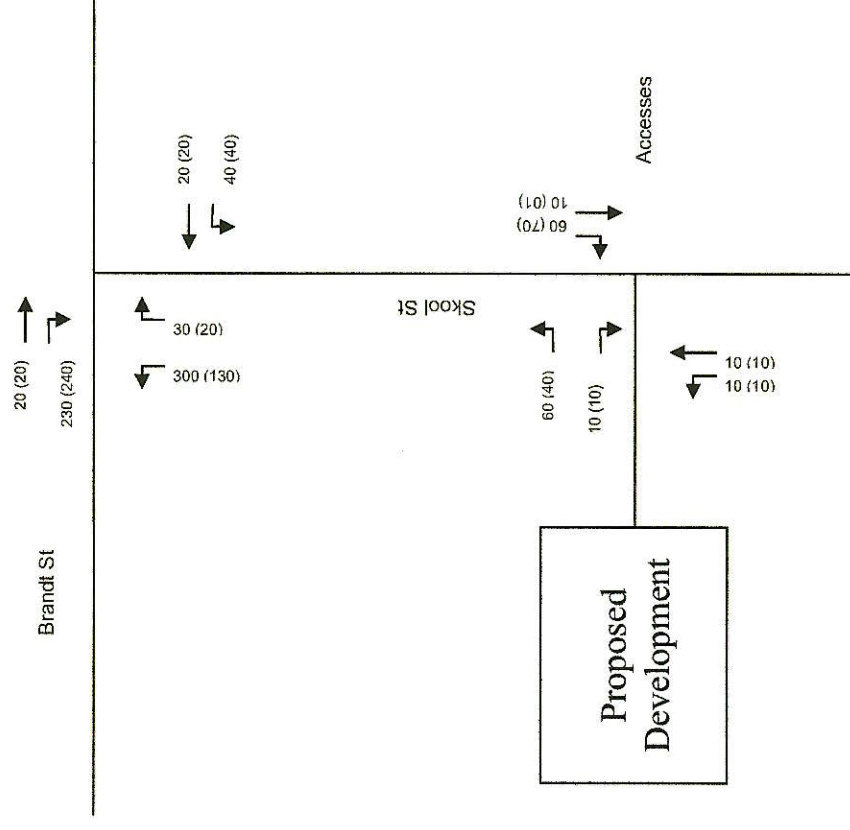
Traffic Volume key:
 AM (PM) = 1234 (1234) veh/h

Figure 4.1: AM and PM 2025, without development trips.



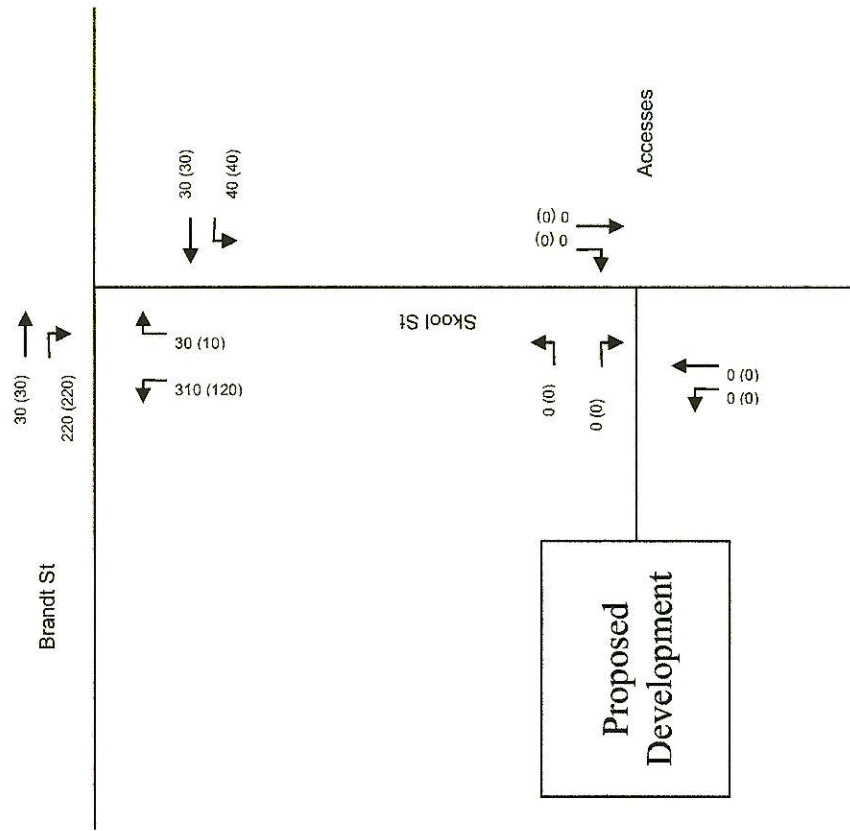
Traffic Volume key:
AM (PM) = 1234 (1234) veh/h

Figure 4.2: AM and PM with development trips.



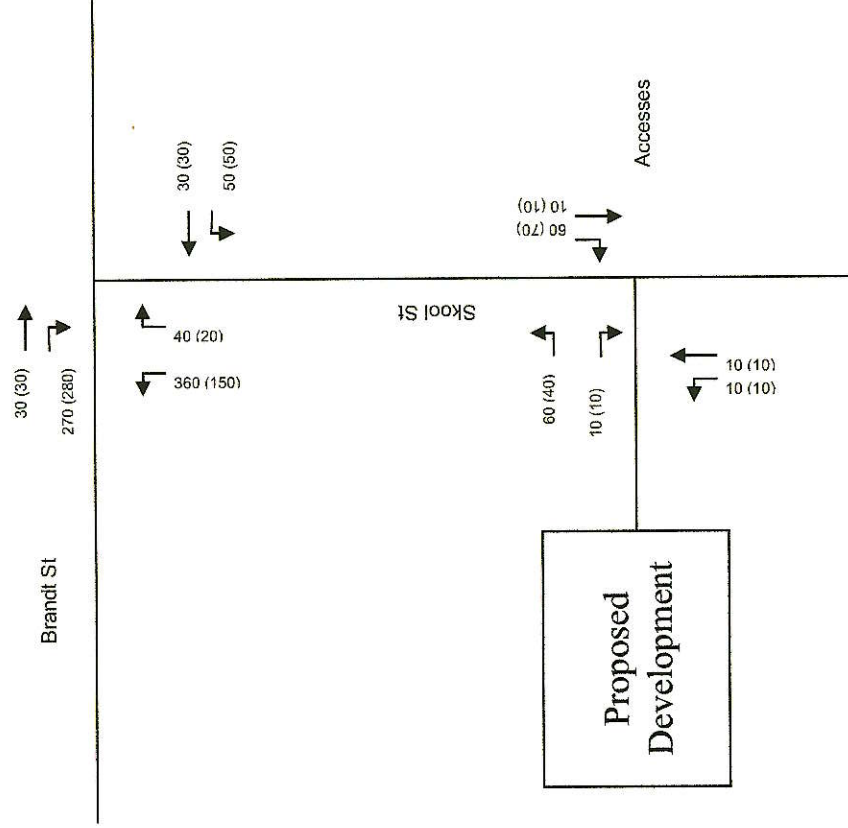
Traffic Volume key:
 AM (PM) = 1234 (1234) veh/h

Figure 4.3: AM and PM 2025, with development trips.



Traffic Volume key:
AM (PM) = 1234 (1234) veh/h

Figure 4.4: AM and PM 2030, without development trips.



Traffic Volume key:
AM (PM) = 1234 (1234) veh/h

Figure 4.5: AM and PM 2030, with development trips.

5. INTERNAL CIRCULATION AND PARKING

5.1 Internal circulation

a. Proposed changes

The internal circulating network proposed is shown in Figure 1.2 and the recommended layout in Figure 5.1. Minor changes to improve the overall efficiency of the development, as listed below, have been included in Figure 5.1.

- i. traffic calming,
- ii. pedestrian facilities, and
- iii. control strategy.

It would be advisable for the Developer to plan, design and build the internal layout to a standard acceptable by the municipality in order to allow for accessibility of service and emergency vehicles, etc. The layout, as recommended in Figure 5.1, should meet these requirements and provides acceptable internal circulation.

Traffic calming

With regards to roads, this project will include the surfacing of all internal roads to hard surfaced so as to match the adjacent road network, i.e., asphalt or similar. Note that with a hard surface, motorists tend to travel at higher speeds. To counter the anticipated higher speeds, it is proposed to install strategically located traffic calming measures in the form of speed humps and raised pedestrian tables throughout the development as illustrated in Figure 5.1.

Pedestrian facilities

In addition, most of the expected trips along the internal roads and approaching access road (Skool Street) will be on foot (i.e., pedestrians). In order to cater for this significant mode of transport, it would be beneficial to install a surfaced sidewalk as follows:

- i. on at least one side of the roads with a 10m wide road reserve within the development,
- ii. on both sides of the roads with a 13m wide road reserve within the development, and
- iii. on both sides of the 16m wide access road (i.e., Skool Street).

Control strategy

It is important to ensure that the safety of all road users is addressed. This is particularly important on the approaches to intersections. It is therefore recommended to introduce stop signs and associated road markings as illustrated in Figure 5.1.

b. Traffic engineering items already addresses in proposed layout

Public transport

Due to the expected continual low car ownership within the development, the use of public transport will remain into the foreseeable future. It is therefore important to ensure that a public transport facility be introduced. A site for such purposes has been provided on site 140 as illustrated in Figure 5.1. Note that this site is currently being used as a “parking” area for the adjacent Kylemore Secondary School.

Road reserves

The road reserve widths have been determined taking into account the existing road reserve widths of the adjacent road network, i.e.,

- i. 10m wide road reserves for minor internal roads,
- ii. 13m wide road reserves for internal public transport roads, and
- iii. 16m wide main access road (Skool Street).

Turning heads not required

Figure 5.1 indicates four cul-de-sacs, two of which are to provide future access to adjacent land, one to provide access to the south-eastern side of the Kylemore Rugby Club, and one to provide access to sites 3-8. Due to the short length of these road sections, no turning facilities are required.

5.2 Parking and loading facilities

Refuse loading will take place throughout the development from the internal roads as the internal roads are public roadways.

In terms of the Stellenbosch Municipality: Zoning Scheme By-law, 2019, Amended 2023, (Reference Seven), the required minimum parking and loading bays are as set out in Table C.1. The parking and loading section of Reference Seven is included in Appendix D for ease of reference.

Details of parking bays at the individual sites should be finalised at the design stage/building plan approval stage for the individual sites.

6. ACCESS PROPOSALS

6.1 Vehicular access

Direct property access is proposed for all the erven adjacent to the surrounding road network. This is in line with the surrounding properties access arrangement. The internal erven will gain access to the surrounding road network via three intersections, the locations of which are illustrated in Figure 5.1.

The intersection sight distance for turning manoeuvres associated with the specific posted speed limit of 60 km/h and the site gradients experienced are approximately 150m. Both approaches on the surrounding road network at the proposed accesses meet this minimum requirement. Note that the proposed raised pedestrian table just south of the Kylemore Secondary School access along Skool Street should further improve the sight distance resulting from the location of the horizontal curve further south along Skool Street.

6.2 Pedestrian and bicycle access

Pedestrian and bicycle access to the site is via the proposed accesses.

Due to the location and nature of the development it is expected to generate local pedestrian traffic and the appropriate pedestrian facilities have been recommended as illustrated in Figure 5.1 and listed below:

- i. surfaced sidewalks on at least one side of the roads with a 10m wide road reserve within the development,
- ii. surfaced sidewalks on both sides of the roads with a 13m wide road reserve within the development,
- iii. surfaced sidewalks on both sides of the 16m wide access road (i.e., Skool Street), and
- iv. strategically located raised pedestrian tables near the proposed place of worship, creche, community facility and business site, as well as at the existing rumble strips and proposed public transport facility along Skool Street.

6.3 Access control

The development indicates that the internal roads will be zoned public roadway. As a result, no access control will be permitted. However, if access control is to be utilised for individual sites, then it must be placed at the appropriate distance back from the property boundary taking into account the requirements of Reference Five. This will cater for most queues that may be expected from visitors, tenants, etc. that enter the respective properties.

7. ANALYSIS RESULTS

Tables 7.3.1 to 7.3.3 contain a summary of the SIDRA analysis results. More detail may be viewed in Appendix B. This includes all aspects of the input data used in the analyses including items such as lane configuration, control strategy, etc. The colour coding used in the graphic representations found in Appendix B is explained in Table 7.1.

Table 7.1: SIDRA LOS colour codes

Colour	Rating	Level of Service
Used in displays		Control delay, LOS
Green	Excellent	LOS A
Light blue	Very good	LOS B
Dark blue	Good	LOS C
Magenta	Acceptable	LOS D
Orange	Poor	LOS E
Red	Very poor	LOS F

The presented Level of Service (LOS) results are based on control delay and are illustrated in Table 7.2.

Table 7.2: Level of service definitions - HCM Method

Level of Service	Control delay per vehicle in seconds (d) (including geometric delay)	
	Signals and roundabouts	Stop and yield
A	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$25 < d \leq 35$
E	$55 < d \leq 80$	$35 < d \leq 50$
F	$80 < d$	$50 < d$

Note: Above Tables 7.1 and 7.2 and explanation courtesy of Reference Three.

Tables 7.3.1 to 7.3.2 contain a summary of the SIDRA analysis results as undertaken at the various intersections, where Table 7.3.3 shows the control types assumed for the analysis for the various scenarios.

From the results it is clear that while the two peak periods test similarly, the current critical peak hour is the AM peak hour. On completion of the development the AM peak hour remains the more critical in terms of volume and LOS at intersections.

The anticipated impact of the proposed development varies depending on the road segment under review. From the SIDRA analyses results, together with on-site observations, the following road segments require mentioning.

Table 7.3.1: Intersection Level of Service (AM) peak

		KEY A-C D E F NA									
No.	Intersections	Level of Service									
		2025 AM <small>status quo</small>		2025 AM <small>develop.</small>		2025 AM <small>improved</small>		2030 AM <small>option 1</small>		2030 AM <small>option 2</small>	
		APPR.	INTERS.	APPR.	INTERS.	APPR.	INTERS.	APPR.	INTERS.	APPR.	INTERS.
1	Skool Street/Accesses	NA	NA	NA	NA	NA	NA	A	A	NA	NA
2	Brandt Street/Skool Street	NA	NA	NA	NA	NA	NA	D	C	NA	NA

Table 7.3.2: Intersection Level of Service (PM peak)

		KEY A-C D E F NA									
No.	Intersections	Level of Service									
		2025 PM <small>status quo</small>		2025 PM <small>develop.</small>		2025 PM <small>improved</small>		2030 PM <small>option 1</small>		2030 PM <small>option 2</small>	
		APPR.	INTERS.	APPR.	INTERS.	APPR.	INTERS.	APPR.	INTERS.	APPR.	INTERS.
1	Skool Street/Accesses	NA	NA	NA	NA	NA	NA	A	A	NA	NA
2	Brandt Street/Skool Street	NA	NA	NA	NA	NA	NA	D	C	NA	NA

Table 7.3.3: Intersection control type

No.	Intersections	Intersection control type				
		2025 <small>status quo</small>	2025 <small>develop.</small>	2025 <small>improved</small>	2030 <small>option 1</small>	2030 <small>option 2</small>
1	Skool Street/Accesses	NA	NA	NA	Priority/stop	NA
2	Brandt Street/Skool Street	NA	NA	NA	All-way stop	NA

Note: LOS is indicated per approach and per intersection. Movement LOS are reflected in Appendix B.

Brandt Street/Skool Street intersection

Based on traffic volumes this intersection does not require any upgrading.

Skool Street/Access intersections

Based on traffic volumes these intersections will operate exceptionally well as standard priority/stop-controlled intersections.

Traffic calming

Traffic calming, in the form of speed humps and a raised pedestrian table, is to be introduced as illustrated in Figure 5.1.

Internal roads

All the internal roads will need to be constructed to acceptable municipal standards.

8. CONCLUSIONS

Following the investigation and analysis it is concluded that:

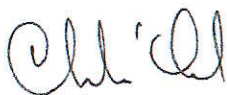
- i. The current operating conditions on the road network within the study area are found to be acceptable with no LOS or capacity failures.
- ii. The posted speed limit of 60 km/h along the surrounding road network, in the vicinity of the site accesses, is appropriate for the current and expected future traffic conditions.
- iii. The existing critical peak, in terms of traffic volumes, was found to be the AM peak hour while the PM peak hour tested similarly but with marginally lower demands.
- iv. Once developed and fully occupied, the proposed development may be expected to generate in the order of 130 and 110 new vehicle trips in the AM and PM commuter peak hours respectively.
- v. The combined critical peak hour of existing and development trips is found to be the AM peak hour.
- vi. The network is not overloaded when development trips are assigned for any of the given tested peak hours, subject to the recommended road network improvements being undertaken.
- vii. The proposed changes to the layout and road network, as shown in Figure 5.1, adequately serve the proposed development.

9. RECOMMENDATIONS

Based on the investigation and conclusions it is recommended that:

- i. This desktop Traffic Impact Assessment (TIA) being submitted to the Stellenbosch Local Municipality (SLM) for their perusal with the complete development proposal.
- ii. The development proposal, that is the proposed rezoning and subdivision of the following property: Erf 64 Kylemore, as submitted and reflected herein, being approved in principle from a traffic impact perspective by the SLM.
- iii. The site layout changes, as shown in Figure 5.1, being made a condition of approval. The required internal road network improvements to be made by the development are as follows:
 - a. traffic calming,
 - b. pedestrian facilities, and
 - c. control strategy.
- iii. The road network improvements, as listed below and shown in Figure 5.1, to being made a condition of approval. Note that these improvements may change subject to subsequent investigations in consultation with the road authority. The required public road network improvements to be made to accommodate the development are as follows:
 - a. The construction of the internal roads to acceptable standards with hard surfacing to match adjacent roads, i.e., asphalt or similar.
 - b. Construction of surfaced sidewalks on at least one side of the roads with a 10m wide road reserve within the development.
 - c. Construction of surfaced sidewalks on both sides of the roads with a 13m wide road reserve within the development.
 - d. Construction of surfaced sidewalks on both sides of the 16m wide access road (i.e., Skool Street).
 - e. Construction of strategically located raised pedestrian tables near the proposed place of worship, creche, community facility and business site, as well as at the existing rumble strips and proposed public transport facility along Skool Street.
 - f. Construction of strategically located speed humps.
- iv. Parking and loading bays for the development being provided as per Table C.1.
- v. Road reserves width, taking into account the existing road reserve widths of the adjacent road network, being implemented, i.e.:
 - a. 10m wide road reserves for minor internal roads,
 - b. 13m wide road reserves for internal public transport roads, and
 - c. 16m wide main access road (Skool Street).
- vi. All costs associated with the internal and external roads, as indicated in Figure 5.1, being solely to the Developer's account.

Note that all figures represented in this desktop Traffic Impact Assessment are concept drawings only and are not to be used for construction purposes. These concept drawings are to be developed into engineering drawings by the Developer's appointed civil engineer. The engineering drawings are then to be approved by the relevant road authority officials prior to construction.



D M McQUIRK Pr. Eng.

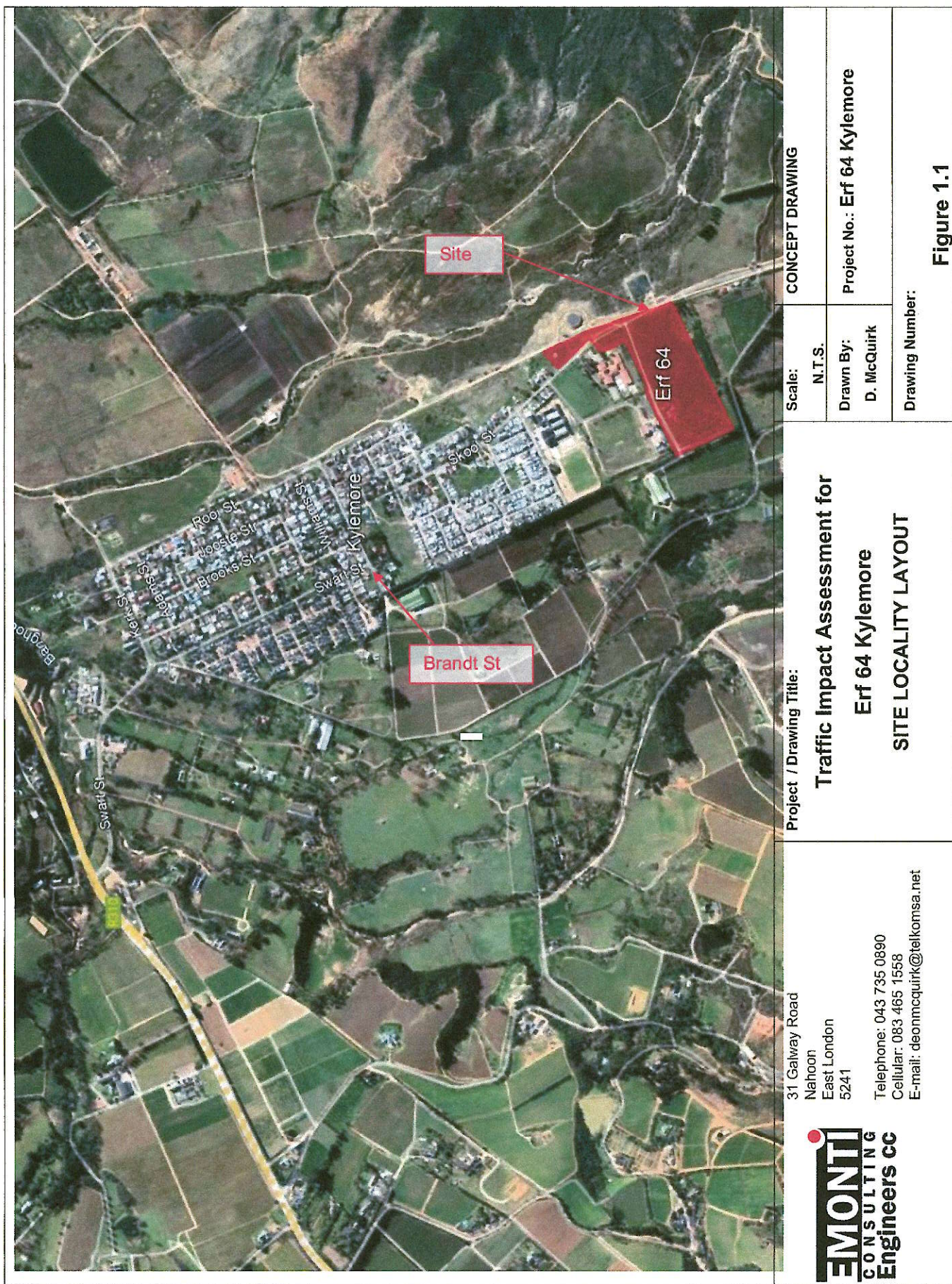
MSc. Transportation & Traffic Eng., BSc Civil Eng, Dipl Traffic Safety Management
Registered with ECSA 970660, member of IMESA

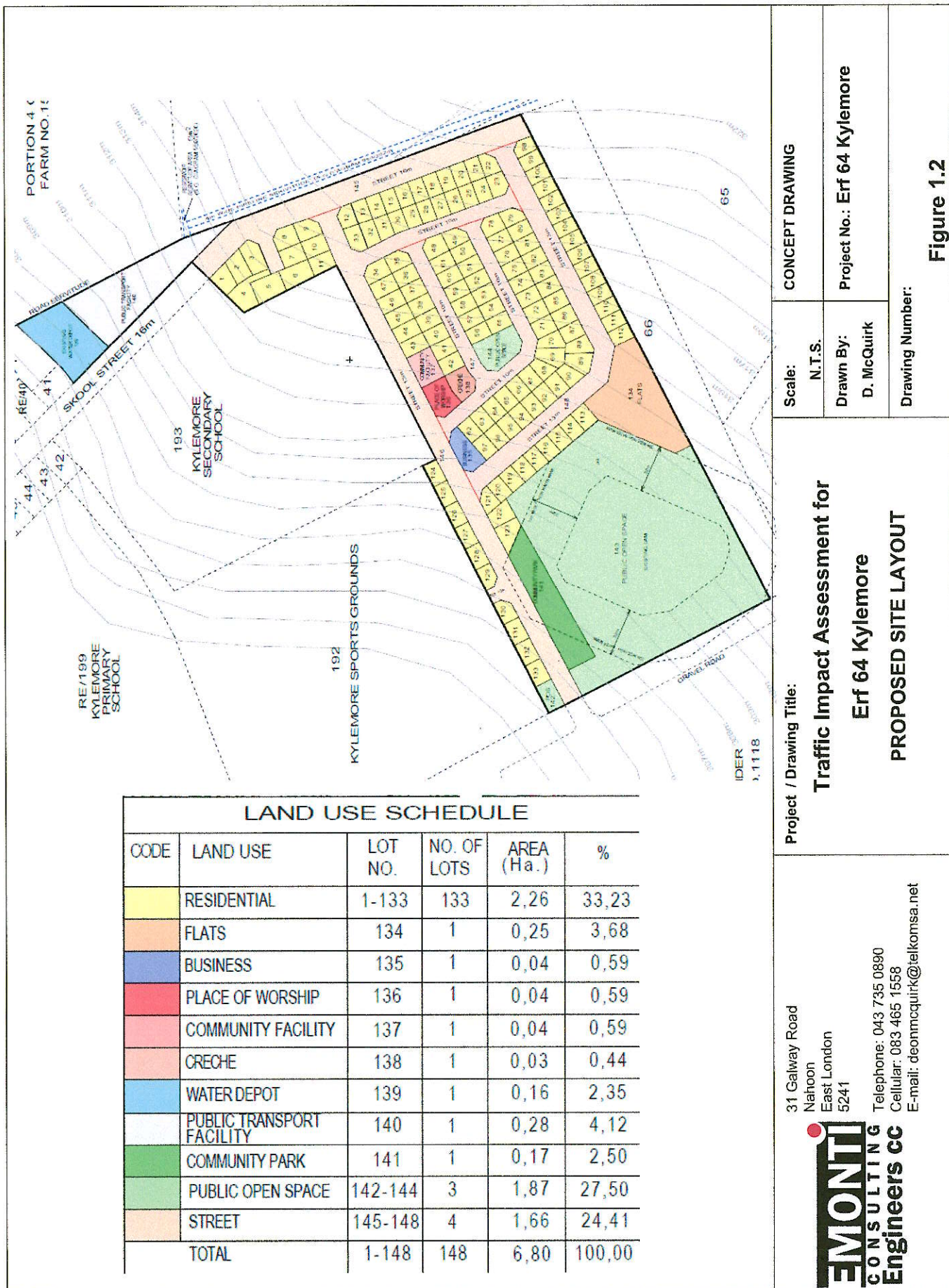
10. REFERENCES

- | | |
|-------------|---|
| Reference 1 | South African Trip Generation Rates. 2 nd Edition, June 1995. |
| Reference 2 | Manual for Traffic Impact Studies RR93/635, October 1995. |
| Reference 3 | SIDRA operators manual. |
| Reference 4 | South African Traffic Impact and Site Traffic Assessment Manual, Volumes 1 and 2 (TMH16) August 2012. |
| Reference 5 | South African Trip Data Manual, Volume 1 (TMH 17), September 2012. |
| Reference 6 | Department of Transport Parking Standards, November 1985. |
| Reference 7 | Stellenbosch Municipality: Zoning Scheme By-law, 2019 (Amended 2023). |

APPENDIX A

FIGURES





APPENDIX B

SIDRA INTERSECTION LOS RESULTS

Figure B.1.A: Level of Service (LOS)

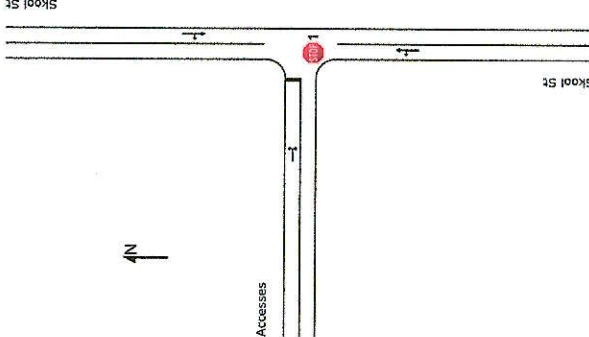
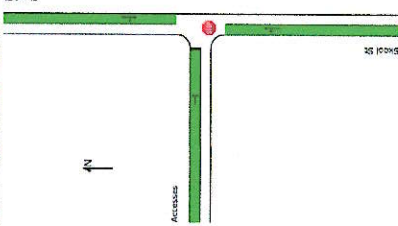
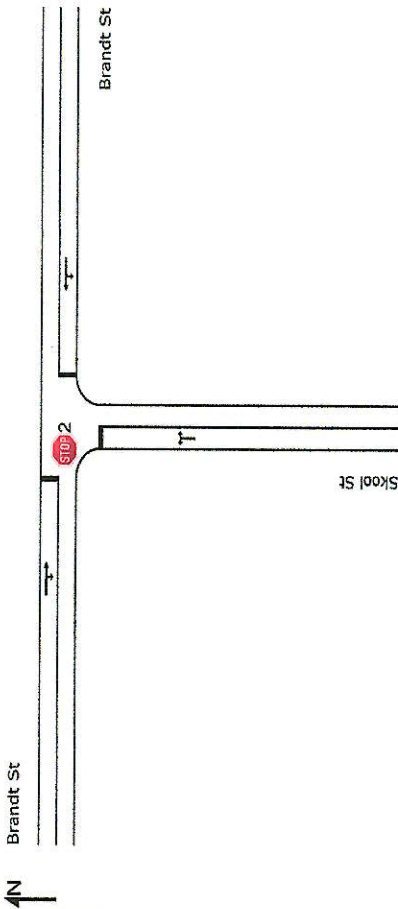
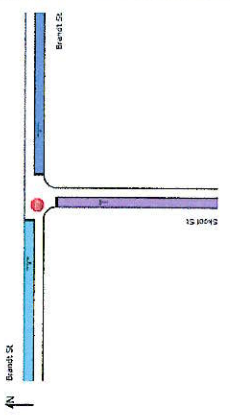
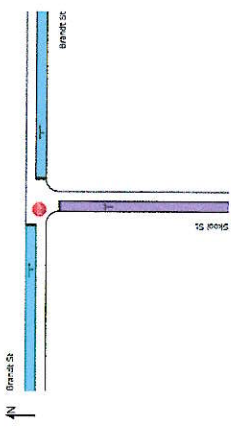
Intersection: Skool Street/Access		Design year		Peak	
Without improvements		2025	2030		
	AM (with development trips)	NA		AM (without development trips)	NA
		NA		PM (without development trips)	NA
	AM (with development trips)	NA		PM (with development trips)	NA

Figure B.2.A: Level of Service (LOS)

Intersection: Brandt Street/Skool Street		Design year		Peak	
Without improvements		2025	2030		
	AM (with development trips)	NA	NA	AM (without development trips)	NA
	PM (without development trips)	NA	NA	PM (without development trips)	NA
	AM (with development trips)	NA	NA	PM (with development trips)	
		2025	2030		

APPENDIX C

LAND USE, TRIP GENERATION, PARKING AND LOADING

Table C.1: Land use, trip generation, parking and loading (proposed development)

Land use				Trip generation										Parking										Loading																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Land use	Size	Size units	Units	Trip rates		Split (%)		Percentage reduction for developments in areas with, P _C **			Trip factor	Trips				Parking bay reduction for								Loading bays																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
				AM peak	PM peak	In	Out	AM peak	PM peak	In		Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In

Table C.2 Land use and trip generation (existing adjacent development)

Land use				Trip generation																	
Land use	Size	Size units	Units	Trip rates		Split (%)		Percentage reduction for developments in areas with, P _C **			Trips										
				AM peak	PM peak	AM peak	In	Out	PM peak	In	Out	AM peak	In	Out	PM peak						
				AM peak	PM peak					Mixed use developments, P _m	Low vehicle Ownership, P _v	Public transport nodes or corridors, P _t	Trip factor								
Single residential	375	1	D/Unit	1,00	1,00	25	75	70	30	10%	40%	15%	0,46	43	129	120	52				
Sport Stadium	500	1000	Seat		150			90	10	5%	30%	15%	0,57	0	0	38	4				
Public Primary School	500	1	Student	0,85		50	50	50	50	30%	50%	15%	0,30	63	63	22	22				
Public Secondary School	500	1	Student	0,75		50	50	50	50	30%	50%	15%	0,30	56	56	19	19				
Pre-School (Day Care Centre)	50	1	Student	1,00		50	50	50	50	5%	50%	15%	0,40	10	10	8	8				
Medical Clinic	250	100	m ² GLA	6,00		60	40	40	60	0%	0%	15%	0,85	8	5	5	8				
Community centre	100	1	Seat	0,50		90	10			10%	20%	10%	0,65	29	3	0	0				
				Total										475		325					
				Total split										209		213		113			
				Percentage split (%)										44		56		65		35	

Note *

Size adjustment factor already applied.

**

Values in *italics* are estimated.

Note * Size adjustment factor already applied.

** Values in *italics* are estimated.

APPENDIX D

**STELLENBOSCH MUNICIPALITY: ZONING SCHEME BY-LAW, 2019
(AMENDED 2023)**

31. Outdoor storage of vehicles and other goods

- (1) The following provisions shall apply in all zones for the outdoor storage of vehicles:
 - (a) motor vehicles, such as bakkies, taxis and mini-bus taxis, owned by the occupant of a dwelling unit, and used for commercial activities conducted away from the dwelling unit, may be parked on the land unit concerned, provided that:
 - (i) no more than one commercial vehicle per residential land unit shall be parked on the land unit.
 - (ii) the gross weight of any such commercial vehicle shall not exceed 3500kg.
 - (iii) no goods or passengers may be loaded or offloaded at the residential property on a regular basis.
 - (b) no area visible from a public road shall be used for the outdoor storage of inoperable vehicles.
- (2) The following provisions shall apply in all zones for the outdoor storage goods:
 - (a) no area visible from a public road shall be used for the outdoor storage of building material, appliances, boats, rubbish, rubble, garden refuse or similar items except:
 - (i) when being temporarily stored for the purpose of construction in accordance with a valid building plan approval; or
 - (ii) in conjunction with a yard or garage sale with a duration of not more than two consecutive days; or
 - (iii) with the Municipality's permission in terms of the Scheme.

32. Panhandle properties

- (1) No buildings shall be constructed on the panhandle portion of a land unit, except with the permission of the Municipality in terms of the Scheme, taking into consideration that the panhandle shall provide vehicular and/or pedestrian access to a land unit.
- (2) Common boundary building lines apply to the portion of the land unit which does not form part of the panhandle.
- (3) The panhandle portion of a panhandle property shall be:
 - (a) not less than 3,5 meters wide for its entire length.
 - (b) disregarded for the purposes of calculating coverage.

33. Parking

- (1) Off-street parking requirements for any new development are set out in Table A and shall apply to all new development approved after the commencement of this Scheme.
- (2) The parking standard in Table A applies to the land use as indicated in the table, notwithstanding the base zone, unless otherwise indicated.
- (3) Off-street parking shall be provided:
 - (a) on the same land unit where the land use is located for which the parking is required; or
 - (b) in a public parking facility to be provided by the developer near the site, subject to the Municipality's approval and subject further to any conditions it may impose together with such approval; or
 - (c) on another land unit, in which case the land on which such parking is provided shall be notariably tied with the subject land unit in accordance with this Scheme.

TABLE A: OFF-STREET PARKING REQUIREMENTS		
Land Use Category	Normal parking	Additional parking reserved for visitors
Residential		
Bed- and breakfast (additional to dwelling)	1 bay/guest bedroom	
Commune	1 bay/bedroom	
Community Residential building: orphanage and old age home	0,3 bay/bedroom	
Dwelling house in all zones except LFR:		
1 bedroom	1 bay/dwelling house	
2 or more bedrooms	2 bays/dwelling house	
Dwelling house in LFR Zone	1 bay/dwelling house	
Flats in all zones except LFR:		
1- & 2-bedroom units	1 bay/dwelling unit	0,5 bay/dwelling unit
3-bedroom units	1,25 bays/dwelling unit	0,5 bay/dwelling unit
4 or more bedroom units	1,5 bays/dwelling unit	0,5 bay/dwelling unit
Flats in LFR Zone:	1 bay/dwelling unit	0,25 bay/unit
Group house:	1 bay/group house	1 bay/unit
Guest house	1 bay/bedroom or suite	
Home lodging (additional to dwelling unit)	1 bay/boarder bedroom	
Hostel	1 bay/bedroom for private hostels; 0,5 bay per bedroom for tertiary institution; nil for schools	
Hotel	0,7 bay/bedroom or suite plus, additional parking for additional facilities accessed by non-guests at the corresponding ratio for the particular land use as set out in this table.	
Backpackers	To be determined by Council based on occupancy and location	
Second dwelling house: all zones except LFR	1 bay/second dwelling	
Second dwelling house in LFR zone	nil	
Tourist accommodation establishment	To Municipality's satisfaction between 0,7 bays per bedroom and 1 bay per self-catering unit	
Business and office		
Business premises: including liquor store, funeral parlour, adult entertainment and similar	4 bays/100m ² gross leasable area	
Commercial gymnasium	6 bays/100m ² gross leasable area	
Conference facility	0,25 bay/seat	
Filling Station	4 bays/100m ² gross leasable area	
Motor showroom: Light Vehicles	3 bays/100m ² gross leasable area	
Motor showroom: Medium and Heavy Vehicles	1 bay/100m ² gross leasable area with a min of 5 bays plus 1/bay/800m ² gross leasable area for heavy vehicles (min 1 bay)	
Motor vehicle fitment Centre, repair Centre	4 bays per service bay plus 4 bays/100m ² gross leasable area: Min 8 bays	
Offices	4 bays/100m ² gross leasable area	
Place of entertainment -general	4 bays/100m ² gross leasable area	
Cinemas and theatres -in shopping Centre	0,1 bay/seat	
-stand-alone	0,25 bay/seat	
Plant nursery	1 bay/100m ² gross leasable area (total indoor and outdoor sales area)	
Restaurant	4 bays/100m ² gross leasable area	
Service station	4 bays /service bay plus 2 bays/100m ² gross leasable area	
Shops (including supermarkets and centres):		
up to and including 1000m ²	4 bays/100m ² gross leasable area	
>1000m ²	6 bays/100m ² gross leasable area	
Industrial		
Industry	1,5 bays/100m ² gross leasable area	
Warehouse, abattoir, brickworks, builders' yard	1 bay/100m ² gross leasable area	
Scrap yard	1 bay/100m ² gross leasable area	
Community facilities and medical		
Medical consulting rooms	6 bays/100m ² gross leasable area	
Clinics and Hospitals	1 bay/bed plus 3 bays/consulting room	
Day care centre	1 bay/classroom or office	
Extramural facility	1 bay/4 students	
Place of Education	1 bay/classroom	

TABLE A: OFF-STREET PARKING REQUIREMENTS

<u>Land Use Category</u>	<u>Normal parking</u>	<u>Additional parking reserved for visitors</u>
Tertiary educational institution colleges university	1 bay/lecture room 1 bay/lecture room	0,25 bay/student 0,4 bay /student
Place of worship Church Mosque	0,4 bay/seat or 40 bays/100m ² of seating and aisle area 25 bays/100m ² of net prayer area	
Place of assembly; indoor sport	0,25 bay/seat or 20 bays/100m ² gross leasable area	
Outdoor sport	0,25 bay/seat, player, or occupant	
Public institution (e.g., library, museum)	2 bays/100m ² gross leasable area	
Welfare institution, libraries, and museums	2 bays/100m ² gross leasable area	

- (4) Where an addition is made to an existing building, or where an existing building or its use is altered to require additional parking or loading, only the additional parking required by that particular addition or altered land use shall be required to be provided.
- (5) Should the Municipality approve a departure from minimum parking requirement in terms of this Scheme, it may impose a condition which requires payment of a levy in lieu of the shortfall of the number of bays, on the basis that public parking or roads may be utilized for parking of vehicles connected to the activity. The Municipality shall adopt a policy in this regard, setting out the circumstances under which such levy may be charged, as well as the method of calculation, and a levy may only be charged in accordance with said approved policy.
- (6) Parking on a land unit shall only be for land uses which are lawfully permitted on the land unit or part thereof. Apart from the provision in section 31(1)(a), no business vehicles may be parked on land which is not zoned in a manner which permits, with technical approval or consent use, if required that specific land use.
- (7) The size and layout of all parking bays, parking areas and circulation space shall be to the Municipality's satisfaction and shall be dimensioned on a site development plan or building plan.
- (8) Except in the case of dwelling houses, tandem parking bays count as one bay.
- (9) Parking areas shall be constructed, adequately signposted, demarcated and maintained to the municipality's satisfaction
- (10) Parking layout, circulation and dimensions shall be to the Municipality's satisfaction. Minimum parking bay dimensions are 2,5 meters wide by 5-meter-long unless otherwise approved by the Municipality. The Municipality may require that bays are wider to ensure they are accessible especially in cases where they are adjacent to solid walls and support columns or where narrow aisle widths require wider bays.
- (11) All parking bays shall remain accessible for use as parking and may not be otherwise used or encroached upon.
- (12) When approving a rezoning, consent use or departure application in terms of the Planning By-law, the Municipality may impose conditions which require more parking than stipulated in this section and may also impose parking requirements for land uses not stipulated in Table A.
- (13) Where two or more land uses on the same land unit combine to share a common parking area, parking requirements may be reduced with the Municipality's technical approval and an applicant for a building plan may submit a motivation prepared by a suitably qualified person in support of shared parking together with such building plan. Approval of reduced parking on this basis is solely at the Municipality's discretion
- (14) Shared parking may never be allocated or rented to specific users or tenants and shall at all times be available on a first come-first-serve basis.

34. Parking: disabled and universal access

- (1) A site development plan or building plan shall incorporate and be consistent with the requirements of the National Building Regulations and any Municipal policy applicable at the time in relation to the provision of parking that is capable of use by physically disabled persons and universal access, and it remains the owner's responsibility to ensure compliance with these regulations and the Municipality's policy

35. Parking: visitors

- (1) The following parameters shall apply to visitors' parking required in terms of this Scheme:
- (a) Visitors parking as required by this Scheme shall be clearly demarcated, readily visible, and accessible to visitors with suitable signage to direct visitors to such parking
 - (b) Visitors' parking shall not be sold via sectional title for exclusive use, nor shall it be leased or allocated for the for the exclusive use of particular persons, other than occasional visitors.

36. Parking: motorcycle, bicycle, and other non-motorized transport provision

- (1) The Municipality may adopt a policy to compel landowners to provide for non-motorized transport parking.
- (2) The dimensions, position and layout of these parking bays shall be to the Municipality's satisfaction
- (3) An owner may of their own accord provide unlimited bicycle and/or motorcycle bays over and above the normal vehicle parking bay requirement set out in section 33 Table A (page 42). The Municipality may agree that an owner may provide bicycle and/or motorcycle bays in lieu of parking bays in which case the Municipality shall determine the maximum number of parking bays which may be replaced by bicycle and/or motorcycle bays and all such parking shall be to the Municipality's satisfaction
- (4) Should motorcycle or bicycle parking be provided in lieu of normal parking, the following shall apply:
 - (a) four motorcycle spaces shall count towards one parking bay: or
 - (b) six bicycle spaces shall count towards one parking bay.
- (5) These bays shall be clearly marked, easily accessible to users and allow bicycles to be locked.
- (6) Should an owner not provide the required bicycle and/or motorcycle bays or cease to make such facilities available to users as required by the Municipality, the normal parking requirements applicable to the development shall be complied with.
- (7) The Municipality may request that an owner provide for bicycle routes or pedestrian pavements adjacent To a development at his cost as part of the developer's responsibility when a land unit is redeveloped.

37. Parking: loading bays

- (1) Loading bays shall be provided on-site at the following ratio:
- (a) for shops, supermarkets, and shopping centres 1 loading bay/500m² gross leasable area.
 - (b) in the Industrial zone, all loading of goods shall take place on the premises and the owner shall supply enough loading space to ensure this requirement is met. The minimum requirement for loading shall be 1 bay per 250m² gross leasable area, plus 1 bay for every 1000m² gross leasable area thereafter.

ANNEXURE 13: CONVEYANCER'S CERTIFICATE

CONVEYANCER'S CERTIFICATE

I, the undersigned,

BRIAN HENRY VON DER DECKEN

a Conveyancer of King William's Town, do certify, from an investigation of the records at the Office of the Registrar of Deeds: Western Cape at Cape Town, that :

1. **REMAING EXTENT** of **ERF 64 KYLEMORE**, Stellenbosch Local Municipality, Division of Stellenbosch, Province of the Western Cape, measuring 15,5245 (Fifteen comma five two four five) hectares was registered in the name of **REPUBLIC OF SOUTH AFRICA**, under Deed of Transfer No T6822/1949;
2. The above property is subject to servitudes of right of way (1) indicated by the line b g h j k l b on Diagram SG No 5927/1945 and created in Deed of Transfer No T6821/1949, (2) indicated by the figure ABCDEF on Diagram SG No 7907/1979 and created in Notarial Deed of Servitude No K739/1980S and (3) indicated by the line ab on Diagram SG No 3262/1999 and created in Notarial Deed of Servitude No K983/2002S.
3. Apart from the above, there are no conditions in Deed of Transfer No T6822/1949 or any prior deeds that affect the owner's use and development of the above property and none that should be removed.

DATED at QONCE this 27th day of MAY 2025.

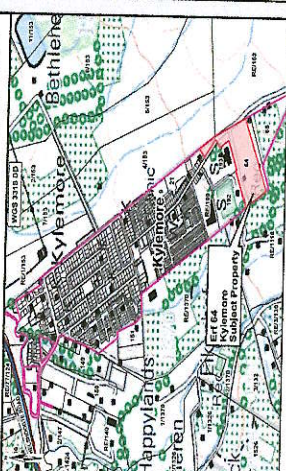

BRIAN HENRY VON DER DECKEN
B.Proc.LLB / LPCM No 80120
Smith Tabata Incorporated
Sutton Square, Queens Road
Qonce

ANNEXURE 14: LAYOUTS AND THE OPTIONS A , B & C

LAYOUT PLAN OF THE SUBDIVISIONS OF

ERF 64 KYLEMORE TO DEVELOP INTEGRATED HUMAN SETTLEMENTS SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE PROVINCE OF THE WESTERN CAPE

SCALE: 1: 1250 (A2) CONTOUR INTERVAL: 1m



ZONING SCHEDULE

CODE	LAND USE	LOT NO.	NO. OF LOTS	AREA (Ha.)	%
1	CONVENTIONAL RESIDENTIAL ZONE	1-418	418	3.47	51.03
2	LOCAL BUSINESS ZONE	419	1	0.02	0.29
3	EDUCATION ZONE	420	1	0.06	0.89
4	UTILITY SERVICES ZONE	421	1	0.16	2.35
5	TRANSPORT FACILITY ZONE	422-423	2	0.36	5.29
6	PUBLIC OPEN SPACE ZONE	424-426	3	0.46	6.77
7	PUBLIC AREAS AND PARKING ZONE	427-432	6	2.27	33.38
TOTAL		1-432	432	6.80	100.00

NOTES

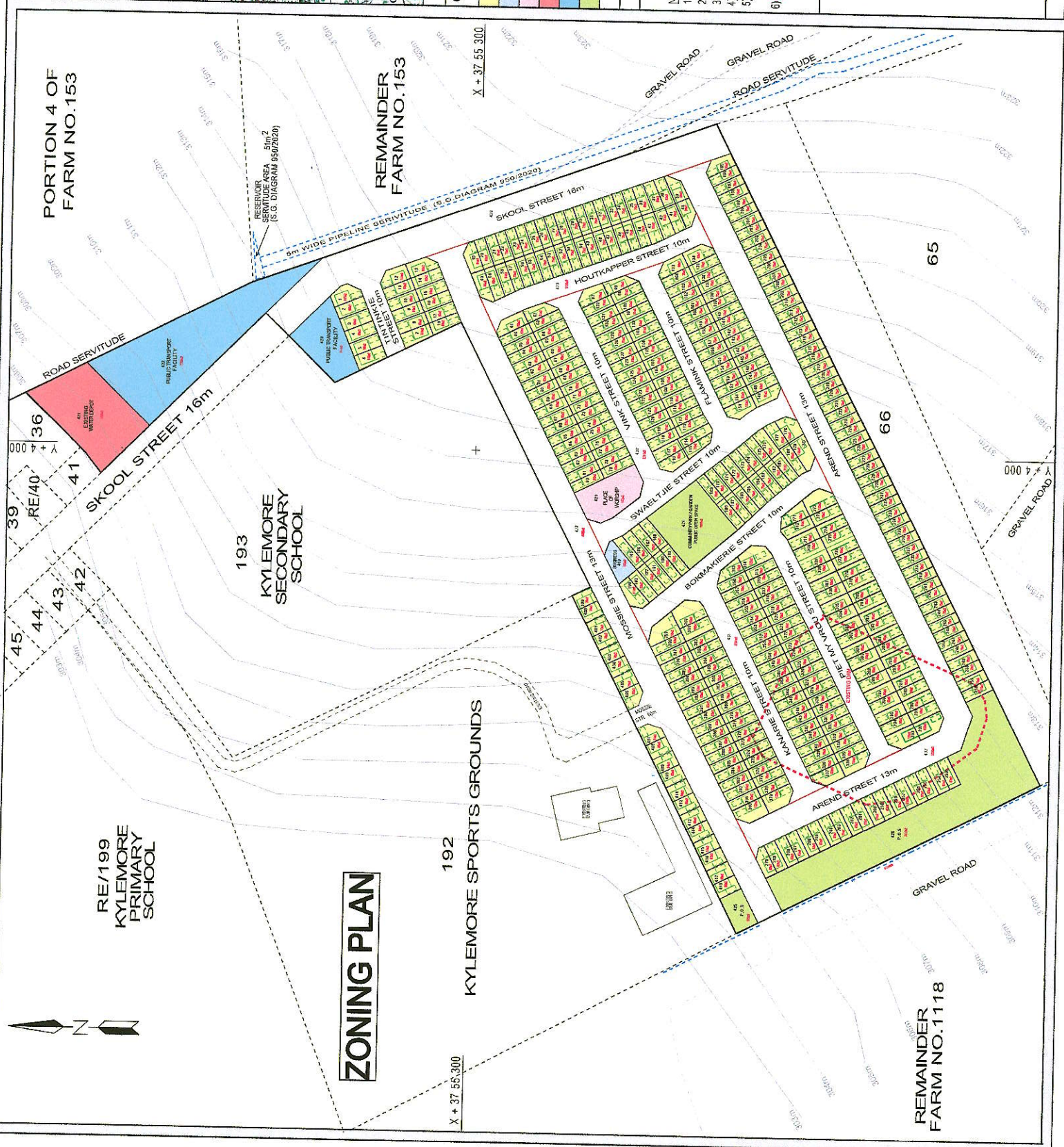
- 1) ALL SPLAYS ARE 5m x 5m.
- 2) SMALLEST PLOT SIZE IS 75m², i.e. 5m x 15m.
- 3) 5m WIDE WATER SERVITUDE (SG DIAGRAM 950/2020) AS SHOWN.
- 4) RESERVOIR SERVITUDE AREA (SG DIAGRAM 950/2020) AS SHOWN.
- 5) AREA NOTED IN RED IN THE LOT IS THE APPROXIMATE AREA OF THE FULL LOT.
- 6) [Red dashed line symbol] AREA DETECTING EXISTING DAM THAT MAY NEED ENVIRONMENTAL AUTHORISATION.

PREPARED BY:-



**Thoba Mkangisa
and associates**
7 Tyrell Road, Berea, East London
Phone: 043 422 0534

FILE NO. 2023/3 DATE: 21/01/2025

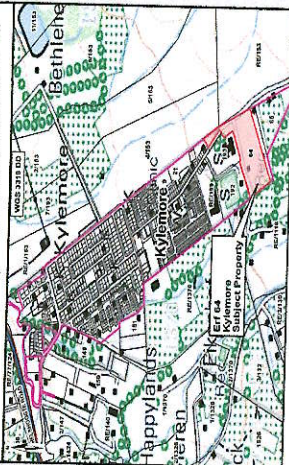


OF THE SUBDIVISIONS OF

ERF 64 KYLEMORE

TO DEVELOP INTEGRATED HUMAN SETTLEMENTS
SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY
IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE
PROVINCE OF THE WESTERN CAPE

SCALE: 1: 1250 (A2) CONTOUR INTERVAL: 1m



LAND USE PLAN SCHEDULE

CODE	LAND USE	LOT NO.	NO. OF LOTS	AREA (Ha.)	%
	RESIDENTIAL	1-418	418	3.47	51.03
	BUSINESS	419	1	0.02	0.29
	PLACE OF WORSHIP	420	1	0.06	0.89
	WATERBODY	421	1	0.16	2.35
	PUBLIC TRANSPORT FACILITY	422-423	2	0.36	5.29
	PUBLIC OPEN SPACE	424-426	3	0.46	6.77
	ROADS	427-432	6	2.27	33.38
	TOTAL	1-432	432	6.80	100.00

NOTES

- 1) ALL SPLAYS ARE 5m x 5m.
- 2) SMALLEST PLOT SIZE IS 7.5m² . ie. 5m x 15m.
- 3) 5m WIDE WATER SERVITUDE LIE (SG DIAGRAM 560/2020) AS SHOWN.
- 4) RESERVOUR SERVITUDE AREA (SG DIAGRAM 560/2020) AS SHOWN.
- 5) AREA NOTED IN RED IN THE LOT IS THE APPROXIMATE AREA OF THE FULL LOT.
- 6) AREA DETECTING EXISTING DAM THAT MAY NEED ENVIRONMENTAL AUTHORISATION.

PREPARED BY:-



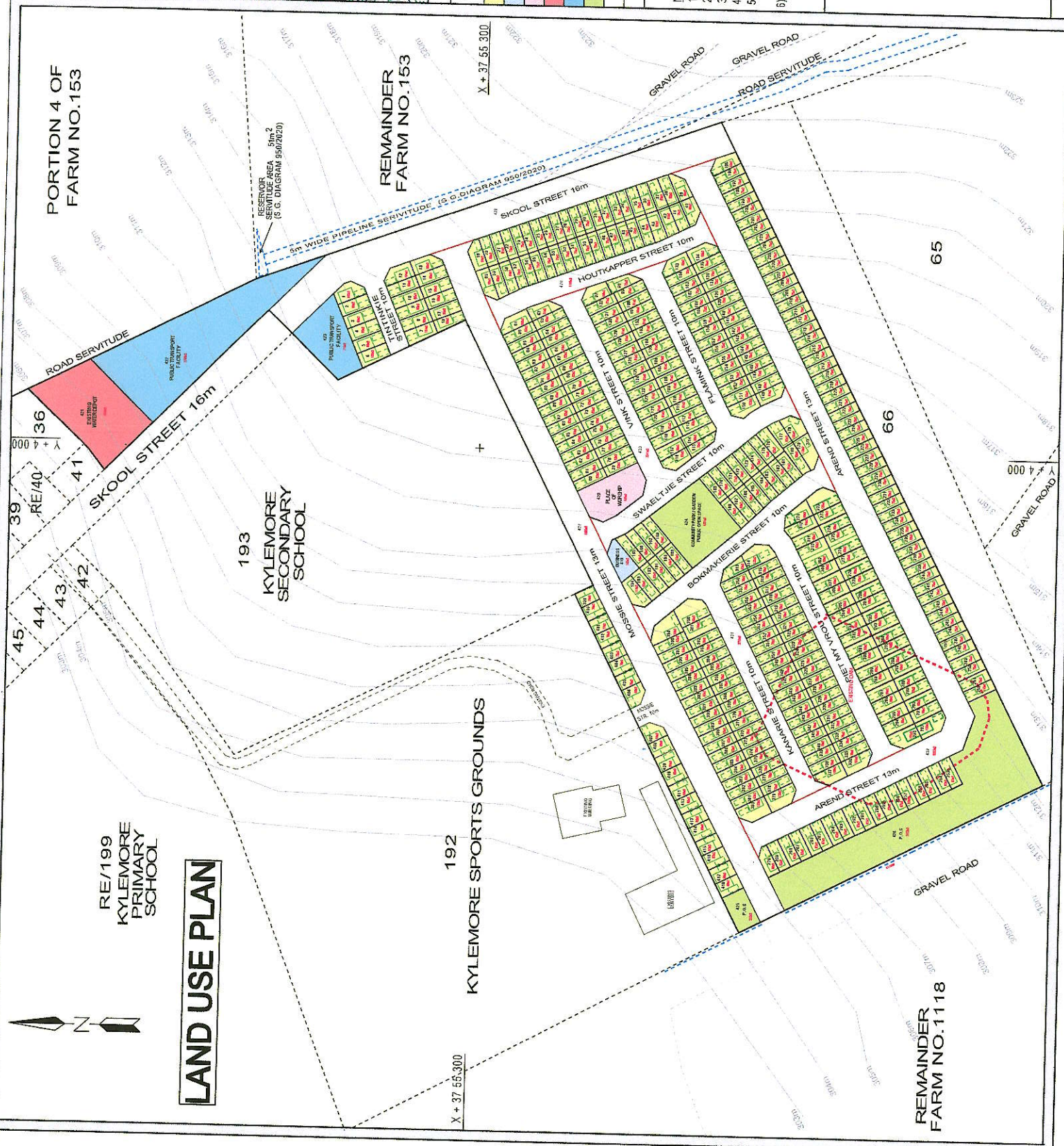
Thoba Mkgisa
and associates

7 Tyrell Road, Berea, East London

Phone: 043 422 0534

FILE NO. 2023/3

DATE: 21/01/2025



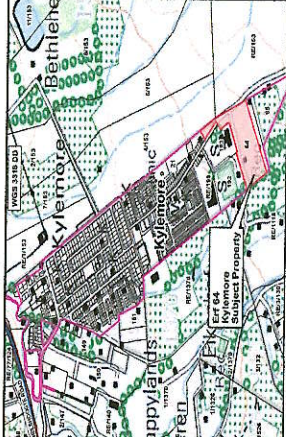
LAYOUT PLAN

OF THE SUBDIVISIONS OF

ERF 64 KYLEMORE

TO DEVELOP INTEGRATED HUMAN SETTLEMENTS
SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY
IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE
PROVINCE OF THE WESTERN CAPE

SCALE: 1: 1250 (A2) CONTOUR INTERVAL: 1m



LAND USE PLAN SCHEDULE				
CODE	LAND USE	LOT NO.	NO. OF LOTS	%
RESIDENTIAL		1-418	418	51,03
BUSINESS		419	1	0,02
PLACE OF WORSHIP		420	1	0,06
WATER DEPOT		421	1	0,16
PUBLIC TRANSPORT FACILITY		422-423	2	0,36
PUBLIC OPEN SPACE		424-426	3	0,46
PODS		427-432	6	2,27
TOTAL		1-432	432	6,80
				100,00

- NOTES
- 1) ALL SPLAYS ARE 5m x 5m.
 - 2) SMALLEST PLOT SIZE IS 75m², ie. 5m x 15m.
 - 3) 5m WIDE WATER SERVITUDE (SG DIAGRAM 950/2020) AS SHOWN.
 - 4) RESERVOIR SERVITUDE AREA (SG DIAGRAM 950/2020) AS SHOWN.
 - 5) AREA NOTED IN RED IN THE LOT IS THE APPROXIMATE AREA OF THE FULL LOT.
 - 6) AREA DETECTING EXISTING DAM THAT MAY NEED ENVIRONMENTAL AUTHORISATION.

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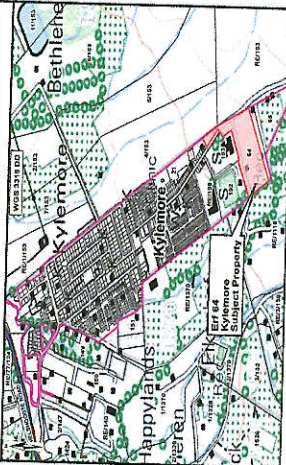


LAYOUT PLAN OF THE SUBDIVISIONS OF

ERF 64 KYLEMORE

TO DEVELOP INTEGRATED HUMAN SETTLEMENTS
SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY
IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE
PROVINCE OF THE WESTERN CAPE

SCALE: 1: 1250 (A2) CONTOUR INTERVAL: 1m



ZONING SCHEDULE

CODE	LAND USE	LOT NO.	NO. OF LOTS	AREA (Ha.)	%
1	CONVENTIONAL RESIDENTIAL ZONE	1-418	418	3,47	51,03
2	LOCAL BUSINESS ZONE	419	1	0,02	0,29
3	EDUCATION ZONE	420	1	0,06	0,89
4	UTILITY SERVICES ZONE	421	1	0,16	2,35
5	TRANSPORT FACILITY ZONE	422-423	2	0,36	5,29
6	PUBLIC OPEN SPACE ZONE	424-426	3	0,46	6,77
7	PUBLIC OPEN SPACE ZONE	427-432	6	2,27	33,38
TOTAL		1-432	432	6,80	100,00

NOTES

- 1) ALL SPLAYS ARE 5m x 5m.
- 2) SMALLEST PLOT SIZE IS 75m² ie. 5m x 15m.
- 3) 5m WIDE WATER SERVITUDE (SG DIAGRAM 950/2020) AS SHOWN.
- 4) RESERVOIR SERVITUDE AREA (SG DIAGRAM 950/2020) AS SHOWN.
- 5) AREA NOTED IN RED IN THE LOT IS THE APPROXIMATE AREA OF THE FULL LOT.
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PREPARED BY:-



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and associates

7 Tyrell Road, Berea, East London
Phone: 043 422 0534

FILE NO. 2023/3 DATE: 21/01/2025

PORTION 4 OF
FARM NO.153

REMAINDER
FARM NO.153

X + 37 55 300

KYLEMORE SPORTS GROUNDS

192

X + 37 55 300

RE/199
KYLEMORE
PRIMARY
SCHOOL

CHOICE A

193
KYLEMORE
SECONDARY
SCHOOL

RESERVOIR
SERVITUDE AREA
(S.G. DIAGRAM 950/2020)

5m WIDE PIPELINE SERVITUDE (S.G. DIAGRAM 950/2020)

ROAD SERVITUDE

SKOOL STREET 16m

RE/40

39

44

43

42

41

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34

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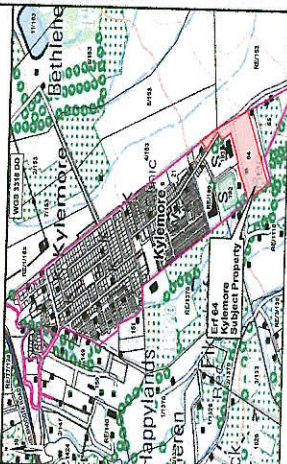
LAYOUT PLAN

OF THE SUBDIVISIONS OF

ERF 64 KYLEMORE

TO DEVELOP INTEGRATED HUMAN SETTLEMENTS
SITUATED IN STELLENBOSCH LOCAL MUNICIPALITY
IN THE ADMINISTRATIVE DISTRICT OF KYLEMORE
PROVINCE OF THE WESTERN CAPE

SCALE: 1: 1250 (A2) CONTOUR INTERVAL: 1m



ZONING SCHEDULE

CODE	LAND USE	LOT NO.	NO. OF LOTS	AREA (Ha.)	%
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2	LOCAL BUSINESS ZONE	419	1	0,02	0,29
3	EDUCATION ZONE	420	1	0,06	0,89
4	UTILITY SERVICES ZONE	421	1	0,16	2,35
5	TRANSPORT FACILITY ZONE	422-423	2	0,36	5,29
6	PUBLIC OPEN SPACE ZONE	424-426	3	0,46	6,77
7	PUBLIC ROADS AND PARKING ZONE	427-432	6	2,27	33,38
	TOTAL	1-432	432	6,80	100,00

NOTES

- 1) ALL SPLAYS ARE 5m x 5m.
- 2) SMALLEST PLOT SIZE IS 75m² ie 5m x 15m.
- 3) 5m WIDE WATER SERVITUDE (SG DIAGRAM 950/2020) AS SHOWN.
- 4) RESERVOIR SERVITUDE AREA (SG DIAGRAM 950/2020) AS SHOWN.
- 5) AREA NOTED IN RED IN THE LOT IS THE APPROXIMATE AREA OF THE FULL LOT.
- 6) AREA DETECTING EXISTING DAM THAT MAY NEED ENVIRONMENTAL AUTHORISATION.

PREPARED BY:-



Thoba Mkangisa
and associates

7 Tyrell Road, Berea, East London
Phone: 043 422 0534

FILE NO. 2023/3 DATE: 21/01/2025

PORTION 4 OF
FARM NO.153

REMAINDER
FARM NO.153

65

SKOOL STREET 16m

KYLEMORE
SECONDARY
SCHOOL

193

RE/199
KYLEMORE
PRIMARY
SCHOOL

CHOICE C

KYLEMORE SPORTS GROUNDS

192

REMAINDER
FARM NO.1118

66

GRAVEL ROAD

WALNUT STREET 13m

BECH STREET 10m

FIR STREET 10m

WILLOW STREET 10m

OAK STREET 10m

LINE STREET 10m

SKOOL STREET 16m

GRAVEL ROAD

GRAVEL ROAD

ROAD SERVITUDE

RESERVOIR SERVITUDE AREA 5m 2 (S.G. DIAGRAM 950/2020)

5m WIDE PIPELINE SERVITUDE (S.G. DIAGRAM 950/2020)

Public Transport Facility

Public Transport Facility

Public Transport Facility



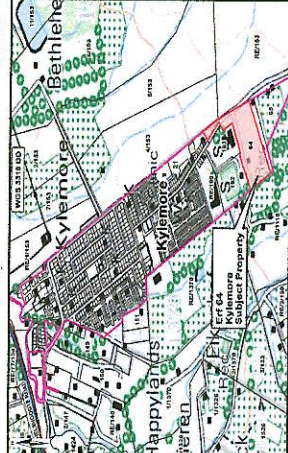
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KYLEMORE SPORTS GROUNDS

REMAINDER
FARM NO.1118

65

66

CHOICE B

