

NOTICE OF LAND DEVELOPMENT APPLICATION

Sir/Madam

APPLICATION FOR REZONING, SUBDIVISION, DEPARTURE & REGISTRATION OF ACCESS SERVITUDE ON FARM 716/5, PAARL

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

Application Property Address: R44 KLAPMUTS

Application Property Number: Portion 5 of Farm 716, Paarl

Applicant: Theo Steyn, NuPlan Africa, theo@nuplanafrica.co.za 0824404893

Owner: GOLDEN GLAZE INVESTMENTS (PTY) LTD.

Application Reference: LU/16263(TP491/2023)

Description of land development proposal:

1. Application in terms of Sec 15(2)(a) of the Stellenbosch Municipal Land Use Planning By-Law (2023), for the rezoning of Portion 5 of Farm 716, Klapmuts, from Agricultural and Rural Zone to Subdivisional Area to create 110 portions Multi Residential Zone (Group Housing and Duplex Erven), 4 portions Private Open Space Zone, 1 portion for Natural Environment Zone and 5 portions Multi Residential Zone (Private Road purposes).
2. Application in terms of Sec 15(2)(d) of the Stellenbosch Municipal Land Use Planning By-Law (2023), for the subdivision of Portion 5 of Farm 716, Klapmuts for 110 portions Multi Residential Zone (Group Housing and Duplex Erven), 4 portions Private Open Space Zone, 1 portion for Natural Environment Zone and 5 portions Multi Residential Zone (Private Road purposes).
3. Application in terms of Sec 15(2)(b) of the Stellenbosch Municipal Land Use Planning By-Law (2023), for a Departure to permit 3 storey dwelling units in lieu of two storey dwelling units on the unregistered portions 47-62 of portion 5 of Farm 716, Klapmuts.
4. Registration of an access servitude in favour of portion 5 of Farm 716, Klapmuts in terms of Sec 24(1) of the Stellenbosch Municipal Land Use Planning By-Law (2023).

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: theo@nuplanafrika.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 29 April 2024.

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 082 4404 893 during normal office hours.

Yours faithfully,
T L Steyn
NuPlan Africa

KENNISGEWING VAN GRONDONTWIKKELINGS AANSOEK

Meneer/Me

AANSOEK VIR HERSONERING, ONDERVERDELING, AFWYKING VAN DIE SKEMA EN DIE REGISTRASIE VAN 'N REG VAN WEG SERWITUUT OP GED 5 VAN PLAAS 716, PAARL.

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

Adres van aansoek eiendom: R44 KLAPMUTS

Aansoek eiendom beskrywing: GED 5 VAN PLAAS 716, PAARL

Aansoeker: T L STEYN, NUPLAN AFRICA theo@nuplanfrica.co.za 0824404893

Eienaar: GOLDEN GLAZE INVESTMENTS (PTY) LTD.

Aansoek Verwysing: LU/16263 (TP491/2023)

Besonderhede van die grondgebruiksaansoek:

1. Aansoek in terme van Klousule 15(2)(a) van Stellenbosch se Verordeninge op Grondgebruikbeplanning (2023), vir die hersonering van Ged 5 van plaas 716, Klapmuts, vanaf Landbou en Landelik na Onderverdelingsgebied om die volgende gedeeltes te skep: 110 gedeeltes Multi Residensiële Sone (Groephuise and Duplex Erwe), 4 gedeeltes Privaat Oop Ruimte Sone, 1 gedeelte vir Natuurlike Omgewing Sone en 5 gedeeltes vir Multi Residensiële Sone (privaat straat doeleindes).
2. Aansoek in terme van Klousule 15(2)(d) van Stellenbosch se Verordeninge op Grondgebruikbeplanning (2023), vir die onderverdeling van Ged 5 van plaas 716, Klapmuts, om die volgende gedeeltes te skep: 110 gedeeltes Multi Residensiële Sone (Groephuise and Duplex Erwe), 4 gedeeltes Privaat Oop Ruimte Sone, 1 gedeelte vir Natuurlike Omgewing Sone en 5 gedeeltes vir Multi Residensiële Sone (privaat straat doeleindes).
3. Aansoek in terme van Klousule 15(2)(b) van Stellenbosch se Verordeninge op Grondgebruikbeplanning (2023), vir 'n Afwyking om 3-verdieping wooneenhede toe te laat in stede van 2-verdieping eenhede op ongeregistreerde gedeeltes 47-62 van gedeelte 5 van plaas 716, Klapmuts
4. Registrasie van 'n toegang serwituut ten gunste van gedeelte 5 van plaas 716, Klapmuts in terme van Kl 24(1) van Stellenbosch se Verordeninge op Grondgebruikbeplanning (2023).

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 tydsduur van die publieke deelname proses by die volgende adres:

<https://www.stellenbosch.gov.za/planning/documents/planning-notice/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: theo@nuplanafrika.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 29 April 2024.

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 voorsiening gemaak is nie, kan die Aansoeker geskakel word vir bystand by die vermelde elektroniese pos adres of telefonies by 0824404893 gedurende normale kantoor ure.

Die uwe

T L STEYN
NUPLAN AFRICA

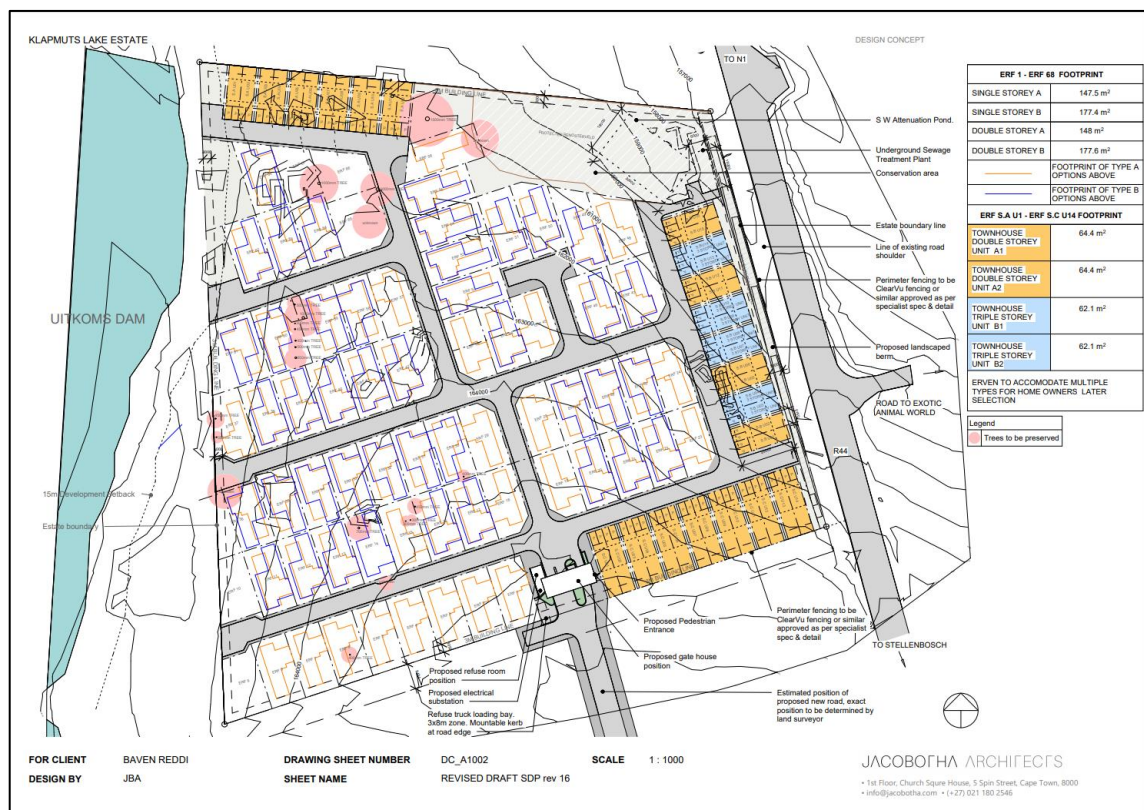
EXECUTIVE SUMMARY OF THE DETAIL AND MOTIVATION FOR THE APPLICATION

PROPOSED DEVELOPMENT

NATURE OF THE ACTIVITY

The proposal is to develop a residential estate on the property consisting of free-hold single, two and three storey group houses and town houses with a common architectural theme and that will be access controlled. A gatehouse with refuse collection facility, guard house and sub-station will be provided at the access to the development.

The proposed SDP is depicted below.

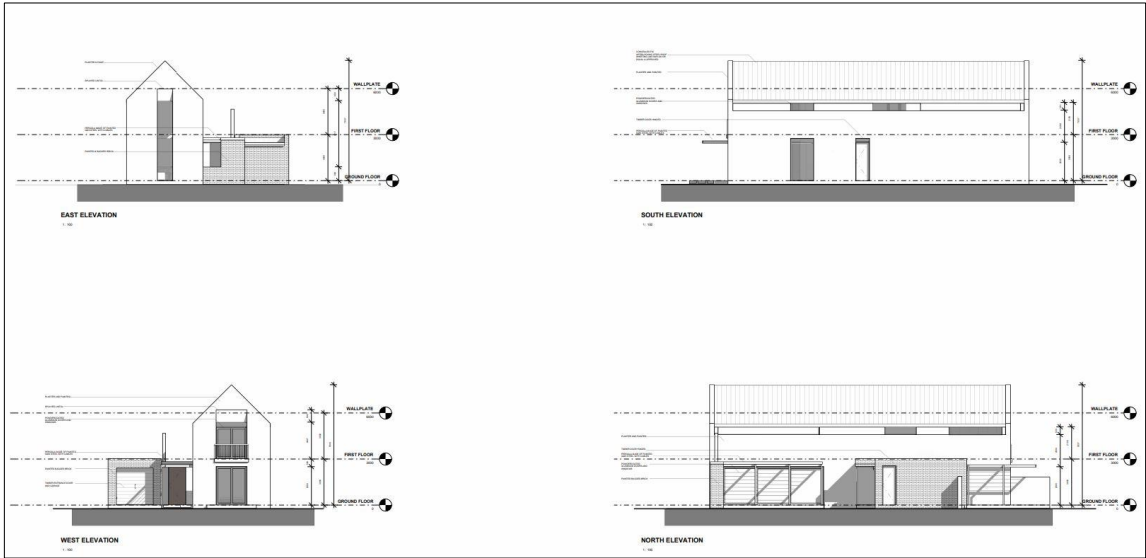


The proposed development will consist of the following unit types:

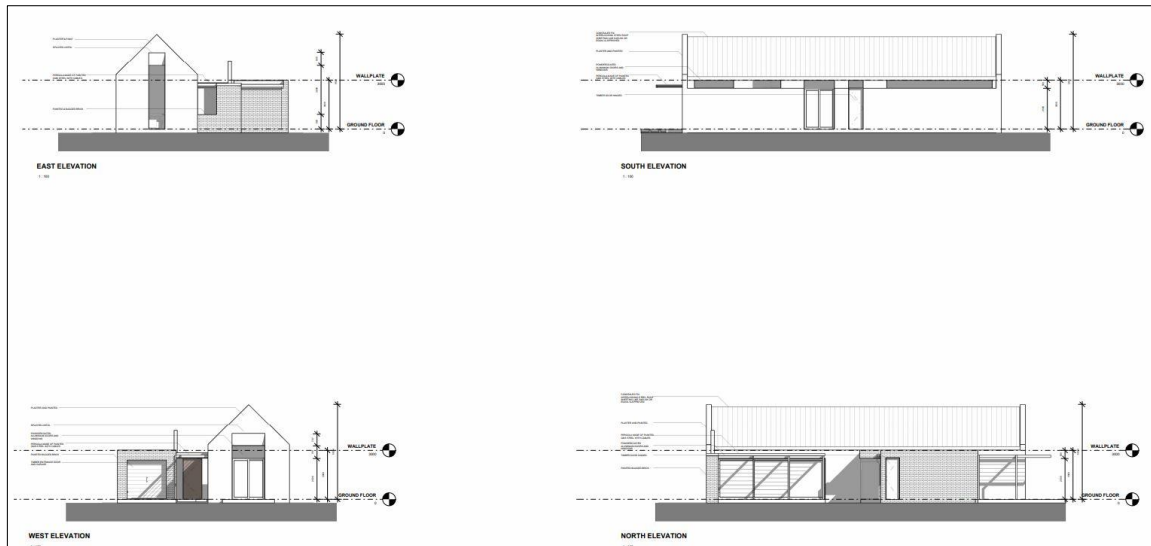
Table 3: Proposed unit types and sizes

ERF 1 - ERF 68 FOOTPRINT	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
	FOOTPRINT OF TYPE A OPTIONS ABOVE
	FOOTPRINT OF TYPE B OPTIONS ABOVE
ERF S.A U1 - ERF S.C U14 FOOTPRINT	
TOWNHOUSE DOUBLE STOREY UNIT A1	64.4 m ²
TOWNHOUSE DOUBLE STOREY UNIT A2	64.4 m ²
TOWNHOUSE TRIPLE STOREY UNIT B1	62.1 m ²
TOWNHOUSE TRIPLE STOREY UNIT B2	62.1 m ²
ERVEN TO ACCOMMODATE MULTIPLE TYPES FOR HOME OWNERS LATER SELECTION	

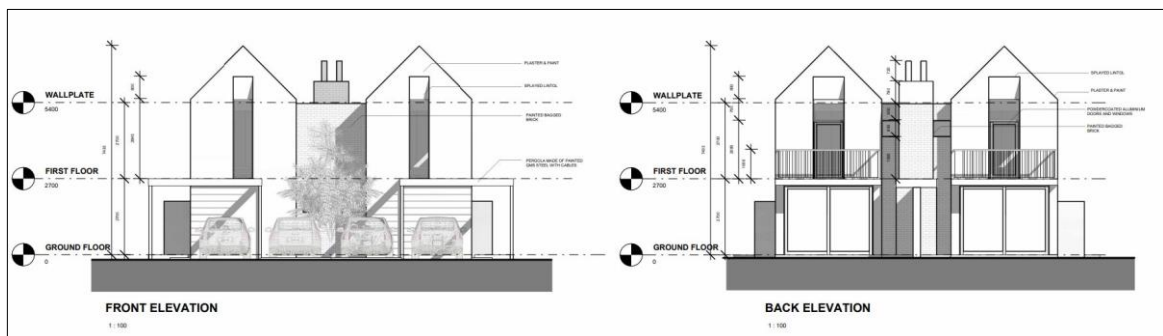
The following depicts a few typical unit elevations to illustrate the architectural theme:



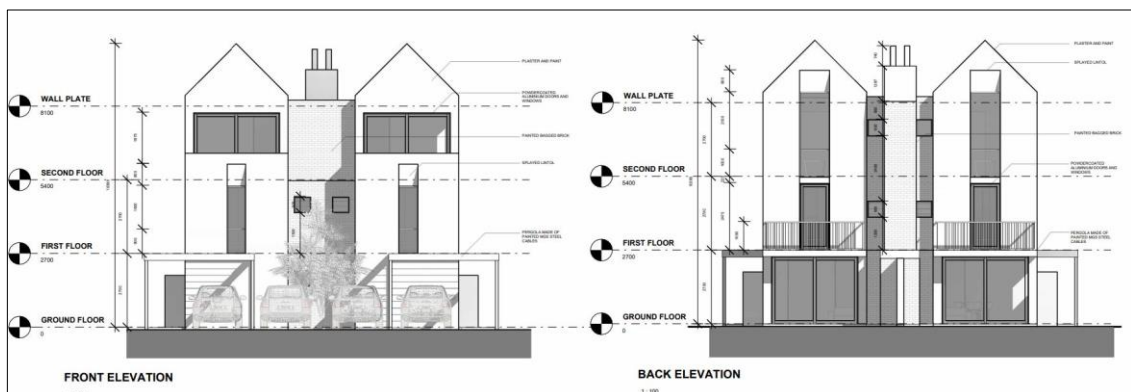
DOUBLE STOREY GROUP HOUSE



SINGLE STOREY GROUP HOUSE



DOUBLE STOREY TOWNHOUSE



THREE STOREY TOWNHOUSE

The following depicts a street elevation from the R44. Care has been taken to avoid a monolithic facade from the R44 by alternating pitched and flat roofs and by stacking the units downhill.



R44 ELEVATION

The following depicts the elevation of the Gate House.



PROPOSED GATEHOUSE ELEVATION

The development will comprise of 68 single and double storey group house units and 42 double and triple storey duplex units with a density factor of 27units/ha.

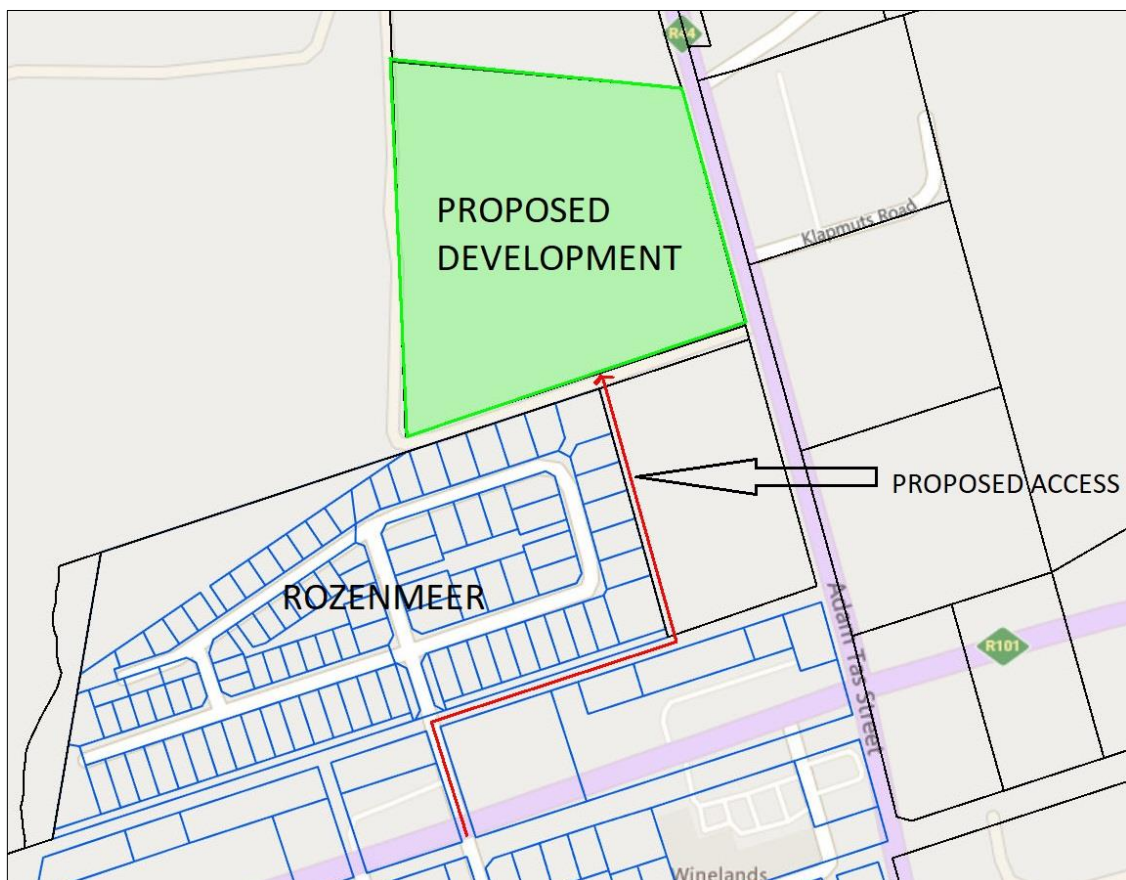
ACCESS AND CIRCULATION

Access to the site is possible from the R44 as a left-in only, leaving the site land locked in egress. Discussions with the municipality indicated that access would have to be taken over the adjoining property (Ptn. 27 of Farm 716) and along the yet to be constructed Heaford Street.

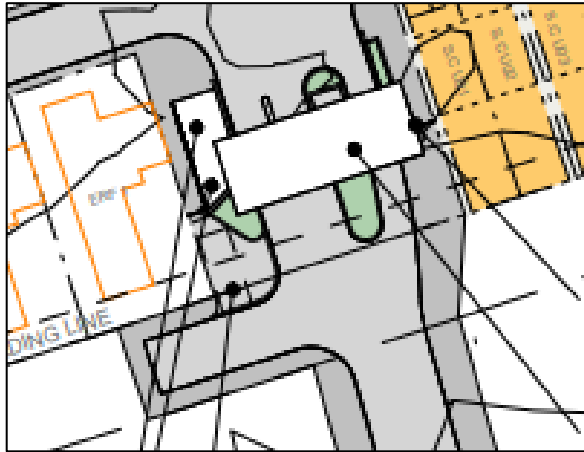
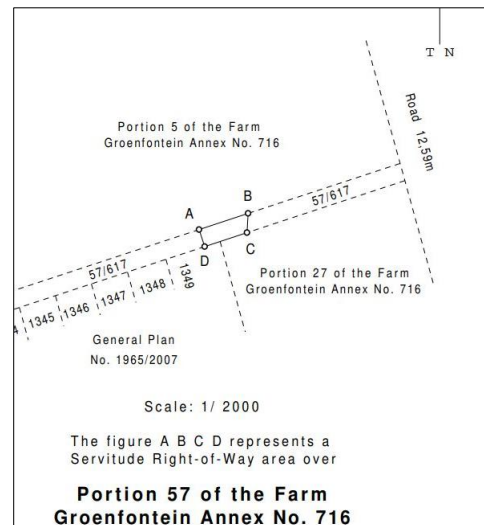
The owner of 27/716 submitted an application for a housing development in terms of which a 15m public road is provided to allow access to the subject property, as per their SDP below:



SDP FOR PTN 27 OF FARM 716



The proposed access, however, crosses the panhandle of Portion 57 of farm 716 and a servitude right of way must be registered over the required section of the panhandle.



The proposed gated entrance will consist of a guard house, electricity sub-station, refuse collection yard and refuse pick-up bay. The access control is required to prevent the development from becoming a thoroughfare for pedestrians between the N1 and Klappmuts CBD and also for security in our crime ridden country.

PARKING

In terms of the Stellenbosch Zoning Scheme By-Law, parking should be provided at 1 bay for each residential unit as well as 1 bay/unit for visitors. All units in the proposed development make provision for 2 bays/unit to comply with the zoning scheme requirements.

OPEN SPACE

The Botanical Specialist identified an area at the northeastern corner of the property that must be conserved due to the occurrence of conservation worthy Renosterveld. The said area is accommodated in the layout design of the SDP in a nature area to be managed by the Homeowners Association. The area is also at the lowest point of the site and must accommodate a stormwater attenuation dam and the proposed underground sewerage package plant.



FIGURE 9: LANDSCAPING PROPOSAL

The landscaping plan incorporates the berm along the R44 with suitable planting as well as trees along the southern boundaries of the streets. It also incorporates rehabilitation of the Conservation area as well as suitable planting for the proposed retention dam. A Botanist identified all trees that must be retained and same have been incorporated on the landscaping plan.

ARCHITECTURAL LANGUAGE

The proposed development is envisioned as a modern Winelands village with an architectural language which is inspired by Cape Vernacular architecture and Modern Regionalism.

The village character is reinforced through intimate streetscapes where the 'village wall' carefully defines street spaces through closely spaced buildings. Street widths are a function of building heights to achieve a comfortable level of enclosure – in a way that streets will have a pedestrian bias and so become an extension of the home and encouraging social interaction.

The development massing is fine-grained with buildings deliberately broken up to achieve a more human scaled environment. Barns are linked with low unassuming clip-on structures which not only assist in breaking down the apparent massing of the development, but also sets up visual interest and variety.

The buildings follow the principle of a simple barn style typology with strong pronounced gable ends. Gable ends are treated in a classic manner with centralised and vertically proportioned apertures. Following the vernacular, the building envelopes are predominantly heavy with apertures being secondary and smaller. In places where an inside-outside connection is required, a modern approach has been taken to link garden and interior spaces. The building

arrangements are set up in a way that gardens are framed in a court like manner, with sufficient space to let light into the interiors.

Pergolas and lightweight screening devices form an integral part of the Cape Vernacular architectural language. It is proposed to make extensive use of timber pergolas to create shading, but also to create layering to private and public spaces while assisting in creating a human scaled environment.

Where possible, walls have been designed to create the impression of being thicker than they are. Usually by setting joinery into walls or increasing the thickness of gables ends. This echoes the massing embedded in some of the older Cape Vernacular buildings, which were constructed from stone, clay and lime.

It is anticipated to make extensive use of trees and landscaping to nestle the development into its natural setting. Planted berms are anticipated on the outer edges to create privacy and to provide some degree of noise attenuation along those edges. A careful balance of landscape and building will provide for an estate which is sensitive to its context, and which should provide for a comfortable and relaxing environment to its future residents.

MANAGEMENT OF THE ESTATE

The Estate will be called Mount Vista Estate and will be managed by a Homeowners Association. The constitution of the HOA will be submitted for approval after approval of this application. The HOA will be responsible for management of the Estate and will also be responsible for the maintenance and upkeep of internal services, open spaces, the Entrance Gate and perimeter fencing. The HOA documentation to be submitted will also incorporate Architectural Guidelines.

INCLUSIONARY HOUSING

During the pre-app meeting, applicant was told that the Council adopted an inclusionary housing policy, but that there is at this stage no obligation on us to include inclusionary housing. We were also told that we can however offer to voluntarily include inclusionary housing in the application. (See annexure 1 in the application).

Due to the fact that there are a variety of options mentioned in the Policy, of which the final outcome is unknown at this stage, we stated in our application that this will be discussed with the municipality. (see last row in the 2nd table in section 9.1 of this report).

So we acknowledged the policy and stated our intention to address it with further discussions with the municipality. As we understand the policy, this is something that will be finally formulated in an agreement with the municipality and in conditions of approval.

Obviously, we cannot at this stage assess the options available to us in the Policy, as we do not know the final viability of the project due to unknowns such as:

- The final sewer requirements as the Municipality are not able to accommodate the sewer at the treatment works; do we have to install network upgrades, only a temporary package plant, or both?

- The cost of the above and impact on the viability of the project.
- If we do bulk upgrades, how will it be off-set against DC's and what amounts?
- The final DC calculation is not available at this stage.
- Will we be liable for the land cost of the public access road over the adjoining property?
- Will we be proportionally held responsible for the construction of the access road?
- What will be the final cost of our proportion, etc.

The list goes on but suffice to say that it is way too early in the process to assess the options offered in the policy.

Our suggestion is that we follow the following process:

1. The applicant to make an appointment with the relevant officials at the municipality (Chantelle Hauptfleisch?), to get a better understanding of the options available in the Policy.
2. The application gets processed and as soon as the comments regarding civil services, road access and DC calculations are available, we enter into discussions with the relevant role players at the municipality to get the alternatives on the table and get to an agreement which can then be fed into the processing and conditions of approval.

THE APPLICATION

The application entails four components:

- Application for rezoning to subdivisational area and subdivision.
- Departure from the height restriction.
- Registration of a servitude right of way
- Approval of street names and numbering

APPLICATION FOR REZONING AND SUBDIVISION



The proposed layout comprises of 68 group house erven of 325m² with general dimensions of 13m x 25m and 72 duplex erven of 55m² with general dimensions of 5,75m x 20m. The total number of erven for residential units is 110 with a density of 27u/ha. The erven are accessed by 8m road reserves with 6m wide blacktop and 1m sidewalks on both sides. An area in the northeast corner of the site worth conserving was identified by the botanist specialist and is proposed to be zoned Private Open Space Zone Natural Environment. A Private open space along the R44 has been provided for extensive landscaping and a berm. The internal road will be a private road and will be maintained by the Homeowners Association to be formed.

The development will be developed in 5 phases as identified on the subdivision plan.

DEPARTURE FROM THE ZONING SCHEME BY-LAW: HEIGHT

The Stellenbosch Zoning Scheme By-Law restricts the height of Group housing units to 2 storeys whereas the proposed duplex units consist of a mix between two and three storey units. This was deliberately done to achieve an articulated roofscape to create a more pleasing streetscape, rather than same height units that would form a “wall of buildings” along the R44. It is believed that this approach, as well as the building set-back of approximately 10m from the R44 warrant a departure from the height restriction.

REGISTRATION OF AN ACCESS SERVITUDE

An access servitude is required from the owner of Ptn. 57 of Farm 716. The consent from the said owner was obtained.

STREETNAMES PLAN AND NUMBERING

The proposed street names and numbering is depicted on the plan below.



SERVICES

CIVIL SERVICES

A GLS Report has been commissioned and a Civil Services Report was done.

Water

In terms of the latter report the closest water reticulation network is a 150mm pipe located in Old Paarl Road. It is thus proposed that link services SKW1.20 (60m x 200mm supply line) and SKW 1.28 (215m x 160mm supply line) be constructed to provide water to the site.

It is furthermore proposed that bulk upgrades SKW 1.19 (380m x 200mm supply line and connectors) and SKW 1.18 (225m x 200mm supply pipe and connectors) be implemented to improve network conveyance.

Sewer

Currently there are no existing services in proximity to the site. In order to service the proposed development a number of link and bulk network upgrades are required; these include the following:

- 80m of a 160mm outfall sewer (link)
- 70m of a 150mm gravity sewer line (link)
- New 50l/s pump station (bulk)

- 1380m of a 250mm rising main (bulk)

Apart from the network upgrades, there is currently capacity constraints at the Klapmuts WWTW. Due to the constraints at the WWTW, accommodating the development temporarily by means of a conservancy tank, will not be a possibility.

It is therefore proposed that the development is serviced by means of a package plant, until such time that capacity becomes available and the required bulk upgrades are constructed. As a minimum it is recommended that the link services (item 1 and SKS 1.12a) are fully constructed along with the construction of the internal network for the proposed development.

Stormwater

In order to achieve the calculated treatment volume of 541,98 cubic meter, it is proposed that an attenuation pond be constructed on site.

An overland escape will be provided to the stormwater channel alongside the R44 for storm events larger than 1:50 year occurrence.

In addition to the stormwater attenuation pond that will be constructed, runoff from the southeastern part of the site will discharge into the existing Uitkoms Dam.

ELECTRICAL SERVICES

An Electrical Services Report was done.

In terms of the report, the site is currently served by means of a low voltage connection from a 50kVA pole transformer on the erf. The transformer is owned and maintained by Eskom.

An Eskom powerline runs across the intended build site. A 3m servitude area (1.5m on both sides of the line) will have to be provided.

The After Diversity Maximum Demand (ADMD) is calculated to be 500kVA for the development and it is recommended that the electrical requirements of the site not be increased beyond the scope of these calculations as this may cause the site to require a connection larger than 500kVA, which will result in the site requiring additional electrical equipment such as a Ring Main Unit (RMU).

The external network up to the site boundary is medium voltage by means of a overhead network.

Eskom will supply and install a 500kVA miniature sub-station on the property boundary to accommodate the supply required.

The internal network will be as per the services report.

TRAFFIC IMPACT ASSESSMENT

A Traffic Statement Report was done.

The following can be concluded from the report:

- 1) That this TIS accompanies the application for rezoning and subdivision of Farm 716/5, bordered by the R44 (MR 27) to the east, and situated approximately halfway between Old Paarl Road (MR 189) and the N1, Klapmuts.
- 2) That the proposed development consists of 110 townhouse-type erven, with access to be obtained via the neighbouring Farm 716/27, Heaford Street and Brounger Street to Old Paarl Road as per the AMP for the R44 (MR 27) as per WCG planning.
- 3) That according to information, an application for the neighbouring Farm 716/27 was submitted for 40 townhouses, which included provision for the 15-metre-wide public street reserve along the Rozenmeer-boundary via which access to the proposed development will be obtained.
- 4) That the proposed development will have the potential to generate 93 peak hour trips (23 in, 70 out during the AM peak hour and 65 in, 28 out during the PM peak hour).
- 5) That to accommodate background traffic:
 - a) At the R44/Old Paarl Road intersection, dedicated left-turn lanes are suggested on the western Old Paarl Road- and southern R44-approaches.
 - b) At the Old Paarl Road/Brounger Street intersection, the Brounger Street-approach be provided with a dedicated right-turn lane (by way of painted road markings).
- 6) That no external road upgrades are considered necessary as result of the proposed development.
- 7) That the public street within its 15-metre road reserve is suggested to be provided with a 7,4-metre blacktop width, and sidewalk along at least one side thereof.
- 8) That Heaford Street currently consists of a 9,45-metre reserve with an additional 5,5 metres subdivided from the Rozenmeer parent property in order to provide Heaford Street with a 15-metre road reserve.
 - a) That according to information the said subdivided strip has not yet been rezoned and transferred as per the development's conditions of approval – this is to be addressed by the Municipality.
 - b) And that similarly, the illegal structures currently encroaching into the Heaford Street reserve is also to be addressed by the Municipality.
- 9) That permission has been obtained from the neighbouring 'panhandle property' for the proposed development to obtain access across a section thereof and that a servitude right-of-way will be registered accordingly.

10) That the security-controlled access will consist of two inbound lanes and one outbound lane, with a 4,0-metre horizontal clearance to accommodate emergency vehicles, and security booms setback approximately two vehicle lengths from the property boundary, with a refuse room and turning space for Municipal refuse trucks to the outside of the security controls.

11) That internal circulation will be via internal streets (8 metre road reserves, with 5,5 to 6,0 metre streets).

12) That 2 parking bays per residential unit will be provided in line with the requirements of the Municipality, and that parking bay dimensions will be in line with normal parking standards, with available isle widths slightly substandard but expected to accommodate passenger vehicles manoeuvring in/out of their parking spaces within the residential estate; and

13) That a sidewalk will be provided along at least one side of the public street providing access to the proposed development, that a pedestrian gate is proposed at the security-controlled access, and that no additional public- or non-motorised transport facilities are considered necessary as result of the proposed development.

From the above, it is recommended that the proposed residential development on Farm 716/5, Klapmuts, be considered for approval from a traffic flow point of view.

It is further recommended that the DCs payable for the proposed development be contributed to either the construction of the public street required to access the subject property via Old Paarl Road, or alternatively, that it be contributed towards the background upgrades suggested to the R44/Old Paarl Road intersection.

ENVIRONMENTAL

A Basic Assessment application is required and being drafted by GNEC Environmental Consultants. As part of the application a Botanist as well as a Freshwater Specialist was appointed. The Botanist identified a conservation worthy patch of Renosterveld as well as all the trees on site that must be retained. The Freshwater specialist determined the development setback line from the dam. All recommendations of the Botanist and Freshwater specialist were incorporated in the SDP design.

HERITAGE SECTION 38 APPLICATION

A Notice of Intent was submitted to Heritage Western Cape and the consent to proceed without any further Heritage studies was received.

MOTIVATION

LAND USE PLANNING PRINCIPLES

The following Development Principles per Section 7 of SPLUMA and Section 59 of LUPA is relevant:

N	PRINCIPLE	CONSISTENCY
a	Spatial Justice	The development proposal is accessible to all communities of South Africa, offer job opportunities during the construction phase to all communities and does not result in segregation of communities
b	Spatial sustainability	The proposed development is privately funded, developed and managed; is environmentally friendly; make optimal use of the characteristics of the land and existing services; does not load any future financial liability on infra structure or social services and does not cause urban sprawl and is thus spatially sustainable.
c	Efficiency	The proposal makes optimal use of the natural attributes of the site; will make use of existing services and infra structure; does not have any negative environmental, social, or economic impacts, but rather a positive social, economic, and environmental impact by providing a controlled, safe and privately funded residential opportunity that contributes to economic growth
d	Spatial Resilience	The proposed development is located in an area with similar land uses, make use of existing infra-structure, and entails a multi-million-rand private investment, thus ensuring spatial resilience.
e	Good Administration	The proposed development will be managed by a Homeowners Association.

The land use application is further motivated on the following grounds:

- The proposed development is located in an existing town identified as a growth area in the MSDF.
- The proposed development is furthermore located inside the Urban Edge of Klapmuts.
- The MSDF designated the land for “Urban Development”.
- Klapmuts is located on a primary development axis in the MSDF.
- The proposed development will enhance the Urban Form and complement the existing Rozenmeer development.
- Services can be provided in a feasible and sustainable manner.

The following table provides a summary of the motivation in terms of the statutory context and indicates if the application is in line or not in line with the relevant policies.

POLICY	IN LINE / NOT IN LINE	SUMMARISED MOTIVATION
MSDF, 2023	In line	<p>The proposed development is located in the Urban Edge of Klapmuts.</p> <p>The land is designated for urban development in the MSDF.</p> <p>Klapmuts is identified as a growth area in the MSDF.</p> <p>Klapmuts is located on the primary development axis as identified in the MSDF.</p> <p>It is a high-density development in Klapmuts South.</p>
Inclusionary Housing Policy	In line	To be further discussed with Council.

DESIRABILITY CRITERIA

The desirability of this development proposal is further illustrated by the following desirability parameters:

CRITERIA	MOTIVATION
Economic Impact	The economic impact of the proposed development is positive as it represents a R1.2 million investment from an upcountry company in the Western Cape. At

	the same time job opportunities are created during the construction phase of the project as well as some jobs on a permanent basis.
Social Impact	<p>The social impact of the proposed development will also be positive.</p> <p>The creation of job opportunities will alleviate the poverty cycle and the resultant relieve on poverty crimes like house break, theft, gender violence, substance abuse and violence against children.</p>
Scale Of Capital Investment	The scale of capital investment will be substantial for the Western Cape.
Compatibility With Surrounding Uses	The proposed rezoning is compatible with the surrounding uses as it is located adjacent to the existing Rozenmeer development and also adjacent to the proposed residential development on Ptn 7 of Farm 716.
External Engineering Services	The scale of the proposed rezoning will not have a negative impact on the external engineering services as the sewerage modular plant is on-site, bulk electricity and water is available, and storm water is cleaned and attenuate on site.
Safety, Health, and wellbeing Of Surrounding Community	The proposed rezoning will not have a negative impact on the safety, health or wellbeing of the surrounding community as it is complementary to the existing residential fabric of the area.
Heritage	The proposal was submitted to Western Cape Heritage which gave their support for the proposed development as per Annexure 18 .
Biophysical Environment	The application does not have any impact on the biophysical environment as the SDP design took into account all specialist input.
Traffic Impact, Parking, Access, and Related transport Considerations	The proposed rezoning will require no bulk upgrades to the road infra-structure as per the attached TIS.
Mitigating Issues	No adverse impacts are foreseen and therefore no mitigation measures are required.

CONCLUSION

The proposed development is not restrained by any conservation worthy elements, environmental issues, title deed restrictions or any other restraints, is mostly consistent with the Zoning Scheme and Council Spatial Policies. As such, it is therefore recommended that the application for

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS IN TERMS OF SEC 15 (2)(A) OF THE MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS IN TERMS OF SEC 15(2)(D) OF THE MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION IN TERMS OF SEC 15(2)(B) OF THE MPBL
- REGISTRATION OF SERVITUDES IN TERMS OF SEC 15(2)(D) OF THE MPBL,

be approved in order to enable this project to proceed.

TAX INVOICE



STELLENBOSCH
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MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

PO BOX 17, STELLENBOSCH, 7599

PLANNING & ECONOMIC DEVELOPMENT: PLANNING

DATE:	2023-10-12	DOCUMENT NO:	757459
ERF / FARM NO:	716/5	CREATED BY:	Bulelwa Mdoda
LOCALITY:	Groenefontein, R44, PAARL FARMS	APPLICATION NO:	LU/16263
OWNER'S NAME:	Golden Glaze Investments (Pty) Ltd	APPLICATION VAT NO:	4520216625
ADDRESS:	PO Box 165 WELLINGTON 7654	VAT NO:	4700102181
		APPLICANT:	Theunis Lodewyk Steyn
		TEL NO:	0824404893

FEE DESCRIPTION	AMOUNT PER UNIT (R)	NUMBER OF UNITS	VOTE NUMBER	AMOUNT (R)
REZONING & DETERMINATION OF A ZONING - Rezoning, inclusive of a determination of a zoning submitted in Urban and Rural Areas, Per application per property	10300.00	1	2022063008138	10300.00
SUBDIVISION AND CONSOLIDATION - Subdivision, Consolidation, and Amendment or Cancellation of an approved subdivision plan (or part thereof), including a general plan or diagram, Per Application	5200.00	1	20220630081406	5200.00
PERMANENT DEPARTURE - Departure applications including but not limited to building lines, coverage, height, bulk, parking, Per applications per property	2600.00	1	20220630081392	2600.00
EXEMPTION CERTIFICATES (SUBD & CONS) - Exemption Certificate for Subdivision or Consolidation, Per request	1050.00	1	20220630081406	1050.00
	0.00	1		0.00
	0.00	1		0.00
	0.00	1		0.00
	0.00	1		0.00
	0.00	1		0.00
	0.00	1		0.00
	0.00	1		0.00
	0.00	1		0.00

TOTAL AMOUNT PAYABLE 19150.00

NEW TARIFFS IMPLEMENTED ON 1 JULY ANNUALLY

CALCULATED BY

NAME:

SIGNATURE

[Signature]

DATE: 12/10/2023

PAYMENTS MUST BE MADE AT THE APPLICABLE DISTRICT OFFICE
CHEQUES TO BE MADE PAYABLE TO STELLENBOSCH
MUNICIPALITY

APPLICANT TO RETURN THIS FORM TO THE ADVICE CENTRE FOR
DIRECTOR: PLANNING & ECONOMIC DEVELOPMENT

FILE NR: E 716/5 P

SCAN NR: _____

COLLABORATOR NR: _____

VERIFIED BY _____

NAME: _____

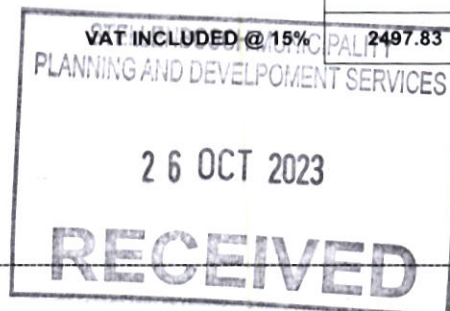
SIGNATURE

DATE:

BANKING DETAILS FOR EFT PAYMENT:

ACCOUNT HOLDER: Stellenbosch Municipality
BANK: First National Bank (FNB)
ACCOUNT NUMBER: 62869253684
BRANCH CODE: 210554
REFERENCE: LU/_____ and ERF/FARM _____

Please use both the Land Use Application number and the Erf/Farm number indicated on this invoice as a reference when making EFT payment.



0.00

0

From: Sharise De Klerk
Sent: Wednesday, 25 October 2023 09:38
To: Bulelwa Mdoda; Nolusindiso Momoti; Nicole Katts

10/2023 20 19150.00 DIR1 1000240004 07863 FNB APP PAYMENT FROM TP491/2023 SM TOWN
P TP491/2023 SM TOWN P



Kind regards,

Sharise De Klerk

Electronic Payments

Income/Finance Department

T: +27 21 808 8547 | F: +27 8867318

Plein Street, Stellenbosch, 7600

www.stellenbosch.gov.za



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http://www.stellenbosch.gov.za/main_pages/disclaimerpage.htm



Enquiries	Phone Number	E-mail
Bulelwa Mdoda	0218088111	bulelwa.mdoda@stellenbosch.gov.za

BTW/VAT Invoice No: 14580

Invoice VAT Reference: 4700102181

Name: Golden Glaze Investments (Pty) Ltd

Invoice Date: 2023/10/11

Reference No: TP491/2023

Payment Due Date: 2023/11/10

Client Street address: 2 Clarendon Drive Durban North
Durban North KwaZulu-Natal South Africa 4051

Municipality street address: PLEIN STREET
STELLENBOSCH STELLENBOSCH Western Cape 7600

Client Postal address: 2 Clarendon Drive Durban North
Durban North KwaZulu-Natal South Africa 4051

Municipality postal address: PLEIN STREET
STELLENBOSCH STELLENBOSCH Western Cape 7600

Client VAT No: 4520216625

Town Planning Application Fees

Vote No	Description	Qty	Rate	UoM	Amount (Incl VAT)
20220630081392	Rezoning, inclusive of a determination of a zoning	1	10 300.00	Per application	10 300.00
20220630081406	Subdivision, Consolidation and Amendment or Cancellation of an approved subdivision plan (or part thereof), including a general plan or diagram	1	5 200.00	Per application	5 200.00
20220630081392	Departure applications including but not limited to building lines, coverage, height, bulk, parking.	1	2 600.00	Per application per property	2 600.00
20220630081406	Exemption Certificates for Subdivision or Consolidation	1	1 050.00	Per request	1 050.00
Total Excl VAT					16 652.17
VAT					2 497.83
Invoice Total					19 150.00

*VAT Exempt



Created By: Mdoda, Bulelwa

Signature: _____

Verified By: Mdoda, Bulelwa

Signature: _____

Please note that application fees that are paid to the municipality are non-refundable and proof of payment must accompany the application. It is the responsibility of the applicant to ensure that the payment is made into the correct account.

Bank Details: First National Bank Acc# 62869253684 Branch Code 250655

Please use the following as reference number: TP491/2023

To expedite the application, please send proof of payment by e-mail or fax as per the detail above.



STELLENBOSCH

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March 2022

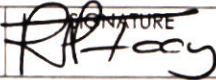
TP491/2023

DIRECTORATE: PLANNING & ECONOMIC DEVELOPMENT

LAND USE APPLICATION COMPLIANCE CHECKLIST ITO S38 OF THE LAND USE PLANNING BYLAW, 2015				Date of Submission of Application	07-09-2023	
Erf No		Town		Suburb		
Farm No	716	Farm Portion	5	Nearest Town	PAARL	
Owner / Applicant	THEUNIS LODEWYK STEYN		Contact number	084404893		
Email address	theo@nuplanafrica.com					
INDICATE WHICH OF THE FOLLOWING FORM PART OF THE DOCUMENTATION				ADMIN TO VERIFY ¹		PLANNER TO EVALUATE ²
				YES	NO	
1. Completed application form that is signed				✓		✓
2. Power of Attorney / Owners' Consent if the applicant is an agent and Company Resolution				✓		✓
3. Bondholders' consent						
4. Proof that applicant is authorized to act on behalf of an entity						
5. Proof of ownership or rights held in land						
6. Motivation based on criteria in s65				✓		✓
7. SG diagram or General Plan				✓		✓
8. Locality plan				✓		✓
9. Site development plan or plan showing the land development				✓		✓
10. Subdivision plan				✓		✓
11. Permission for required servitude						
12. Title Deed				✓		✓
13. Conveyancer's certificate				✓		✓
14. Feedback on Pre-application scrutiny						

¹ Verification by Admin only of the documentation attached and completeness of application and not the correctness thereof.

² Technical evaluation by Planner of the documentation attached for completeness and correctness thereof.

15. Minutes of Pre-consultation Meeting											
16. Consolidation plan											
17. Street name and numbering plan	✓		✓								
INDICATE WHICH OF THE FOLLOWING FORM PART OF THE DOCUMENTATION	ADMIN TO VERIFY	PLANNER TO EVALUATE									
18. Land use plan / zoning plan											
19. Landscaping / tree plan											
20. Flood line plan											
21. Neighbours' consent											
22. HOA / Body Corporate consent											
23. Assessments: EIA, HIA, TIA, TIS, MHIA, EA/ROD	✓		✓								
24. Services report (Engineers report)	✓		✓								
25. Previous approvals											
26. Proof of failure of HOA											
27. Proof of lawful use right / zoning certificate											
28. Other documents Specify:	✓		✓								
VERIFIED & SIGNED BY ADMIN	NAME Bulelwa	SIGNATURE 	DATE 07/09/2023								
Outstanding information (to be completed by Planner): Applicant to include a section on how a component of the development will comply with the inclusionary housing policy that has been approved by Council.											
Applications to be invoiced (to be completed by Planner): <table> <tr> <td>Application for Rezoning</td> <td>R 10300-00</td> </tr> <tr> <td>Application for Subdivision</td> <td>R5200-00</td> </tr> <tr> <td>Application for Departure</td> <td>R 2600-00</td> </tr> <tr> <td>Exemption for Servitude</td> <td>R1050-00</td> </tr> </table>				Application for Rezoning	R 10300-00	Application for Subdivision	R5200-00	Application for Departure	R 2600-00	Exemption for Servitude	R1050-00
Application for Rezoning	R 10300-00										
Application for Subdivision	R5200-00										
Application for Departure	R 2600-00										
Exemption for Servitude	R1050-00										
EVALUATED & SIGNED BY PLANNER	NAME Robert	SIGNATURE 	DATE 12/09/2023								
NOTES: 1. The documentation is not considered as a registered application until such time as it has been scrutinized, all outstanding information (if any) has been submitted and payment is reflected in Council's bank account, after Applicant has been requested by Admin to make payment. 2. Should it be found that the application is not complete, the Applicant will be notified of outstanding information [s41(1)(c)(ii)]. 3. Once payment has been confirmed and the application has been registered, the Applicant will be notified of the complete application [s41(1)(c)(i)] and will receive instructions to advertise [s48(4)]. 4. Should the outstanding information and/or payment of fees not be received, the applicant will be notified that the application will not proceed due to failure to submit required information [s41(4)].											

Bulelwa Mdoda

From: Theo Steyn <theo@nuplanafrica.co.za>
Sent: Monday, 18 September 2023 11:51
To: Bulelwa Mdoda
Cc: Robert Fooy; Chrizelle Kriel
Subject: [EX] RE: TP491/2023 (FARM 716/5 PAARL)

Dear Bulelwa,

Thank you for your quick response to our application.

During the pre-app meeting, we were told that the Council adopted an inclusionary housing policy, but that there is at this stage no obligation on us to include inclusionary housing. We were also told that we can however offer to voluntarily include inclusionary housing in the application. (See annexure 1 in the application).

Due to the fact that there are a variety of options mentioned in the Policy, of which the final outcome is unknown at this stage, we stated in our application that this will be discussed with the municipality. (see last row in the 2nd table in section 9.1 of our report).

So we did acknowledge the policy and stated our intention to address it with further discussions with the municipality. As we understand the policy, this is something that will be finally formulated in an agreement with the municipality and in conditions of approval.

Obviously we cannot at this stage assess the options available to us in the Policy, as we do not know the final viability of the project due to unknowns such as:

- The final sewer requirements as the Municipality are not able to accommodate the sewer at the treatment works; do we have to install network upgrades, only a temporary package plant, or both?
- The cost of the above and impact on the viability of the project.
- If we do bulk upgrades, how will it be off-set against DC's and what amounts?
- The final DC calculation is not available at this stage.
- Will we be liable for the land cost of the public access road over the adjoining property?
- Will we be proportionally held responsible for the construction of the access road?
- What will be the final cost of our proportion, etc.

The list goes on, but suffice to say that it is way too early in the process to assess the options offered in the policy.

Our suggestion is that we follow the following process:

1. The applicant to make an appointment with the relevant officials at the municipality (Chantelle Hauptfleisch?), to get a better understanding of the options available in the Policy.
2. The application gets processed and as soon as the comments regarding civil services, road access and DC calculations are available, we enter into discussions with the relevant role players at the municipality to get the alternatives on the table and get to an agreement which can then be fed into the processing and conditions of approval.

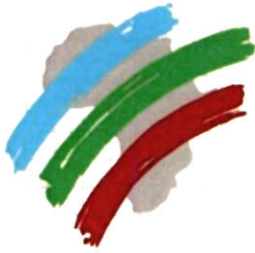
If you are in agreement with the above, I can include it as a section in our application report and send you the revised report.

Please let me have your take on this, so that I can inform my client accordingly. As soon as I have your response, and have discussed it with my client, I can then formally respond within 14 days to your letter received on 14 September 2023.

Kind Regards

Theo Steyn

BA MTPP P/Pr Reg No. 306



NuPLAN AFRICA

TOWN AND COUNTRY PLANNERS

Stellenbosch Pty Ltd (2015/454502/07) T/A NuPlan Africa

Flowerplaat, Lady Loch Rd

PO Box 105

Wellington

7654

Cell: 082 440 4893 / Tel: 021 300 1192 / theo@nuplanfrica.co.za

From: Bulelwa Mdoda <Bulelwa.Mdoda@ Stellenbosch.gov.za>

Sent: Tuesday, September 12, 2023 3:22 PM

To: Theo Steyn <theo@nuplanfrica.co.za>

Subject: RE: TP491/2023 (FARM 716/5 PAARL)

Dear Theo;

Your application in the above regard, refers.

Your application has been duly scrutinized for compliance to the requirements of the Stellenbosch Land Use Planning Bylaw, 2015.

The following matter needs to be addressed in order to proceed with the processing of the subject application:

- Applicant to include a Section on how a component of the development will comply with the inclusionary housing policy that has been approved by Council.



Kind regards,

Bulelwa Mdoda

Land Use Management

Planning & Economic Development

T: +27 21 808 8690

1st Floor, NPK Building

Cnr Plein and Ryneveld Street

Stellenbosch

7600

www.stellenbosch.gov.za



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http://www.stellenbosch.gov.za/main_pages/disclaimerpage.htm

STELLENBOSCH MUNICIPALITY

PORTION 5 OF FARM 716 KLAPMUTS

MOUNT VISTA ESTATE

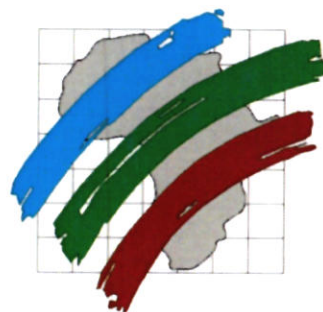
APPLICATION FOR REZONING TO SUBDIVISIONAL AREA,
SUBDIVISION, PERMANENT REGULATION DEPARTURE, SDP
APPROVAL AND REGISTRATION OF SERVITUDES

REVISION 1

APPLICANT

NuPLAN AFRICA

INNOVATIVE PLANNING SOLUTIONS



PROJECT DETAIL

REGISTERED OWNER: GOLDEN GLAZE INVESTMENTS (PTY) LTD.

DEVELOPER: GOLDEN GLAZE INVESTMENTS (Pty) Ltd
Mr Baven Reddi
Mobile: 072 699 1839
E-Mail: baven@reddevelopments.co.za

APPLICANT DETAILS: NuPLAN AFRICA

Rivierplaas
Lady Loch Road
Wellington

Tel: (021) 300 1192
Mobile: 082 440 4893

CONTACT PERSON: THEO STEYN
theo@nuplanafrika.co.za

PROJECT REFERENCE: B0027

DATE: SEPTEMBER 2023

APPLICATION PARTICULARS

APPLICATION FOR:

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15 (2)(a) of the MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15(2)(d) of the MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION in terms of Sec 15(2)(b) of the MPBL
- REGISTRATION OF SERVITUDES in terms of Sec 15(2)(d) of the MPBL.

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1. INTRODUCTION

1.1 THE ASSIGNMENT

Nuplan Africa Town Planners has been appointed by GOLDEN GLAZE INVESTMENTS (PTY) LTD to lodge a land use application to the Stellenbosch Municipality on their behalf to enable the development of a Group Housing Estate on the subject property.

A pre-submission consultation was held with the municipality on 19 May 2022 and again on 26 June 2023, the minutes of the latter which are attached as **ANNEXURE 1**.

1.2 THE APPLICATION

Application is made for:

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15 (2)(a) of the MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15(2)(d) of the MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION in terms of Sec 15(2)(b) of the MPBL
- REGISTRATION OF SERVITUDES in terms of Sec 15(2)(d) of the MPBL

2. PROPERTY DETAILS

2.1 LOCALITY

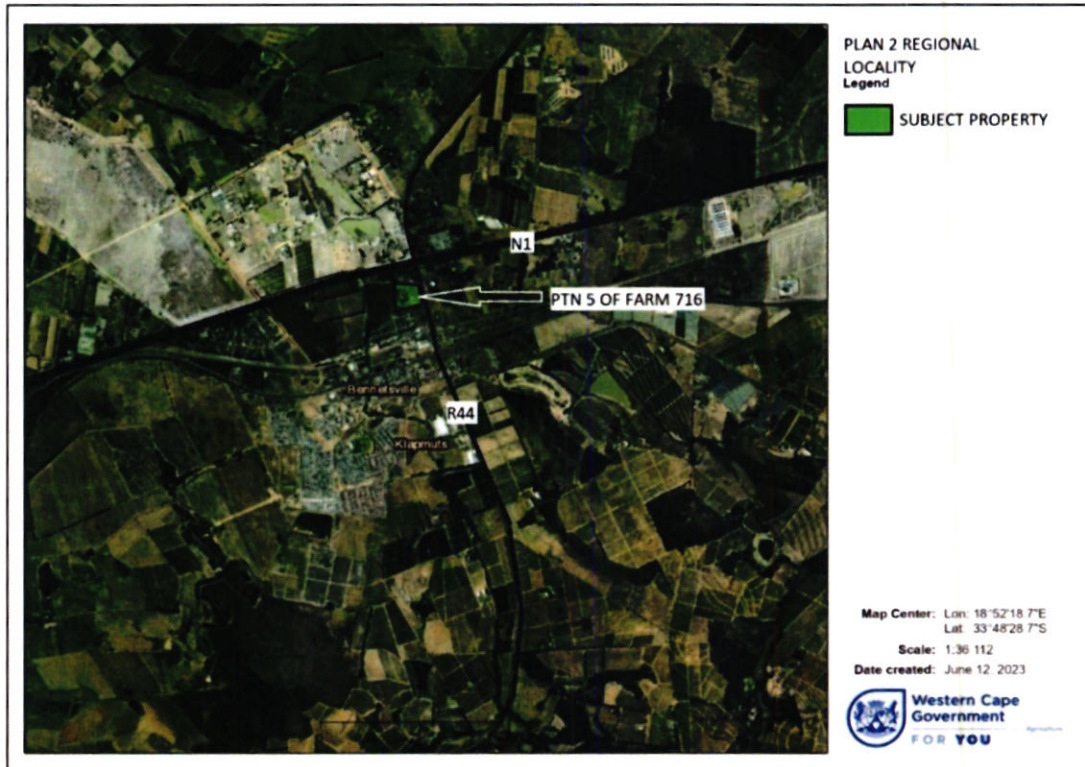
The subject property is located along the R44 in Klapmuts, opposite Butterfly World and in close proximity to the R44/N1 interchange. The location of the property is depicted on **PLAN 1**.

The location of the property in the bigger Klapmuts area is depicted on attached **PLAN 2**.

On the western side of the property is the Uitkamp Dam, the northern boundary is formed by vacant

SANRAL land, and the southern boundary is bordered by the Rosenmeer Housing Estate and the vacant portion 27 of Farm 617.





REGIONAL LOCALITY: PTN 5 OF FARM 716 KLAPMUTS

2.2 PROPERTY DESCRIPTION

The subject properties are depicted in table 1 below:

TABLE 1: PROPERTY DESCRIPTION

PROPERTY	TITLE DEED NUMBER AND DATE	REGISTERED OWNER	SIZE
PTN 7 OF FARM 716, DIVISION PAARL IN STELLENBOSCH MUNICIPALITY	T230172023	GOLDEN GLAZE INVESTMENTS (PTY) LTD. Reg no:2020/652147/07.	4.4104HA

A Company Resolution from GOLDEN GLAZE INVESTMENTS in favour of NUPLAN AFRICA to act on their behalf in this land use application is attached as **ANNEXURE 2**.

A Power of Attorney from GOLDEN GLAZE INVESTMENTS to NUPLAN AFRICA is attached as **ANNEXURE 3**.

A Copy of the Title Deed is attached as **ANNEXURE 4**. A Conveyance certificate, attached as **ANNEXURE 5**, confirm that there are no restrictive title conditions that could negatively affect the application.

No Bonds are registered over the property.

The property zoning and land use details are depicted in **Table 2** below.

TABLE 2: PROPERTY DESCRIPTION, LAND USE RIGHTS AND TOPOGRAPHICAL FEATURES

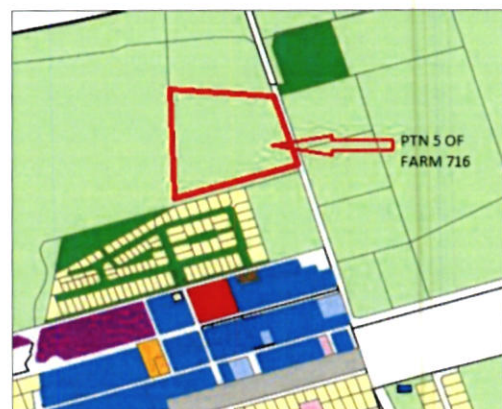
PROPERTY: PTN 5 OF FARM 716, DIVISION PAARL, STELLENBOSCH MUNICIPALITY	
CURRENT ZONING	AGRICULTURAL ZONE 1 – NOT FARMED
CURRENT LAND USE	RESIDENTIAL MAIN HOUSE, OUTBUILDINGS AND LABOURERS' COTTAGES
TOPOGRAPHICAL FEATURES	WATERSHED IN SOUTH TO NORTH DIRECTION, GENTLE SLOPES BOTH EASTWARDS AND WESTWARDS

A topographical survey with 0,5m contours, all trees, fences, and services are depicted below:



2.3 SURROUNDING LAND USE AND ZONING

The surrounding zonings are depicted below. This indicates that the area in which the subject property is situated is mainly zoned for agricultural and rural purposes to the west, north and east of the property. To the south is the residential zoning for the Rosenmeer Housing Estate and further to the south the business zonings of the Klapmuts CBD.





The image above depicts the surrounding land uses. The property is surrounded by agricultural land, tourist facilities, vacant land, and a housing estate.

3. STATUTORY CONTEXT

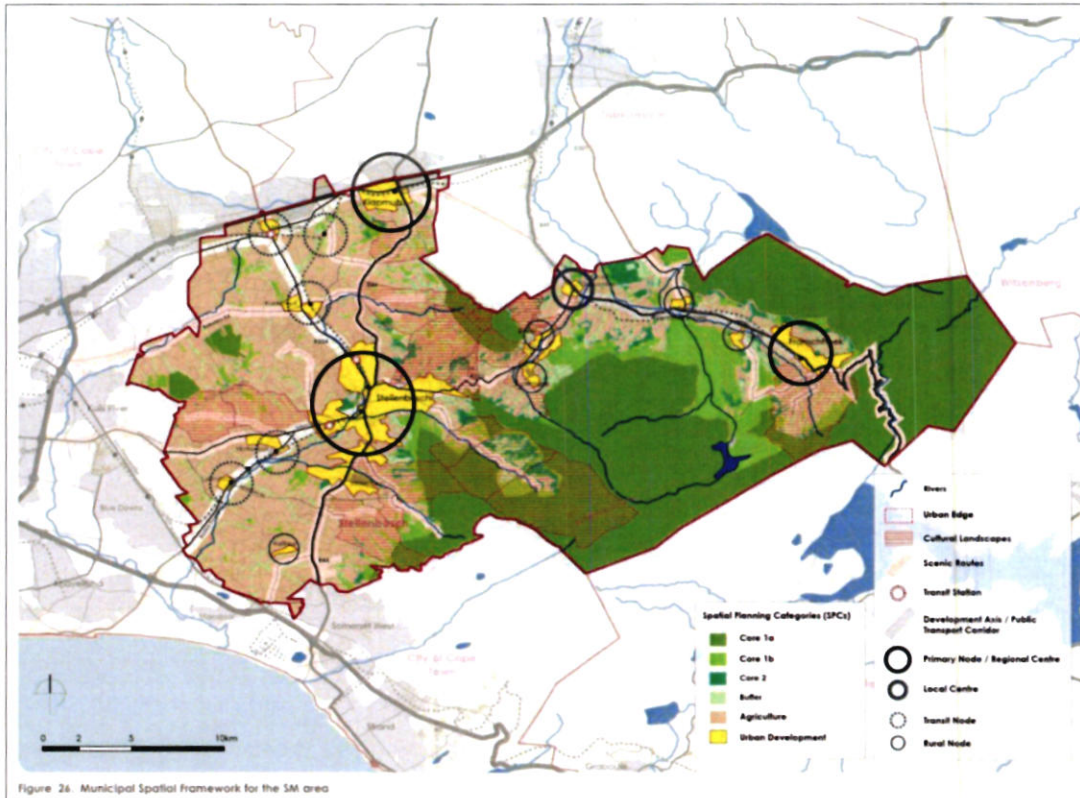
3.1 LAND USE MANAGEMENT SCHEME

According to the Stellenbosch Municipality Zoning Scheme By-Law (2019) Maps, the subject property is zoned for Agricultural and Rural purposes.

3.2 STELLENBOSCH METROPOLITAN SPATIAL DEVELOPMENT FRAMEWORK (MSDF) MARCH 2023 DRAFT

3.2.1 Spatial Strategies

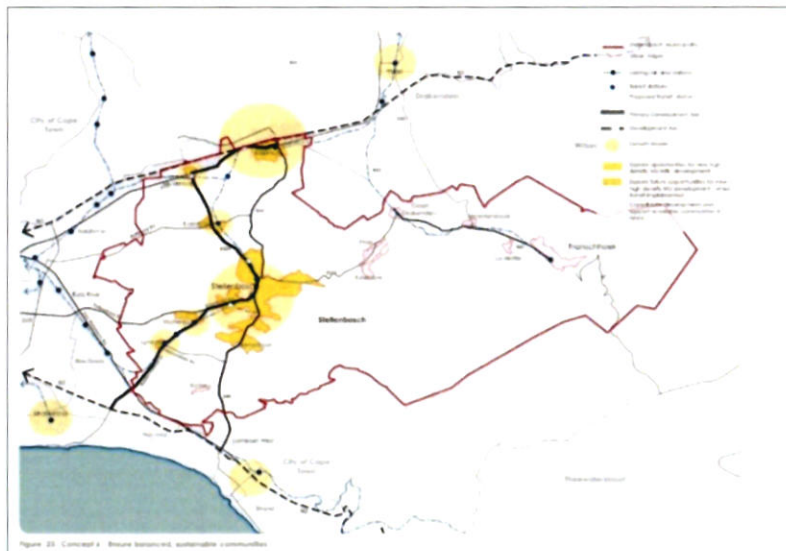
The MSDF is the applicable spatial policy document guiding spatial development in the Stellenbosch Municipal Area.



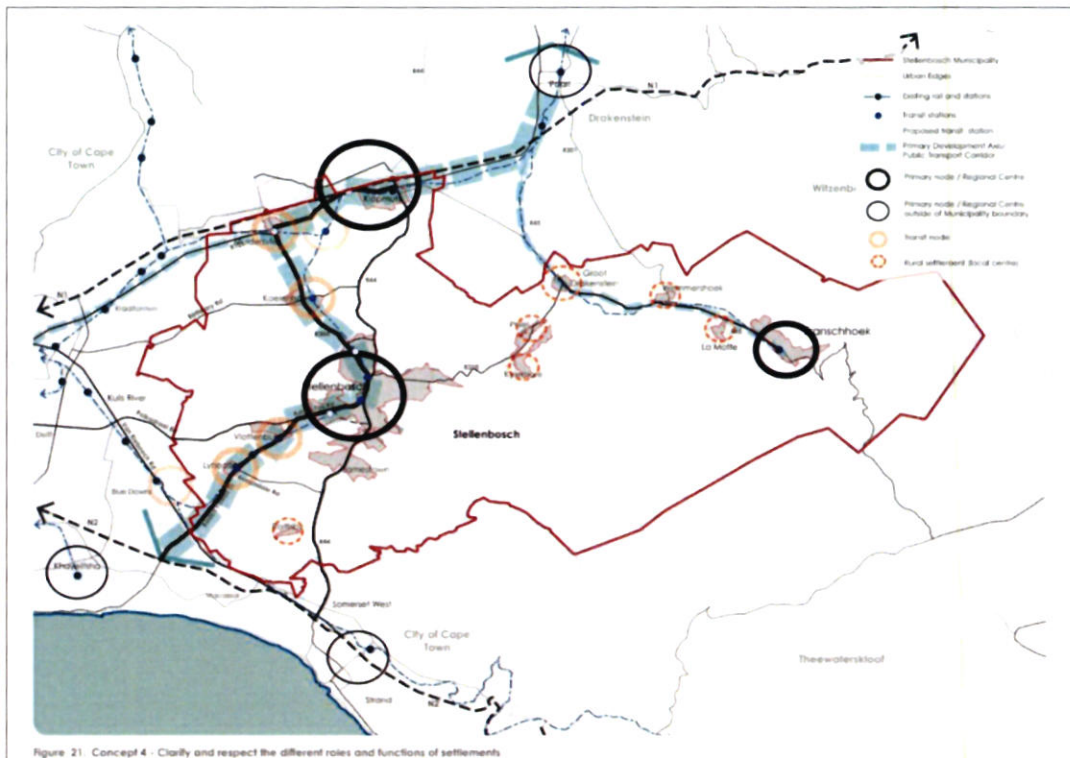
3.2.2 Land Use Designation

The subject property is located within the Klapmuts Urban Edge and is designated for “urban development” on the consolidated SDF Map in the MSDF.

For Klapmuts specifically, the MSDF included Klapmuts as a Growth Area as depicted in the plan below:



Klapmuts is also located on a primary development axis in the MSDF as per the plan below:



Spatial proposals for Klapmuts includes the following elements relevant to the proposed development:

- As a General Principle, contain the footprint of Klapmuts as far as possible within the existing Urban Edge.
- Pro-actively support higher density infill residential opportunity in Klapmuts South.
- Ensure that housing in Klapmuts South provide for a range of income groups.

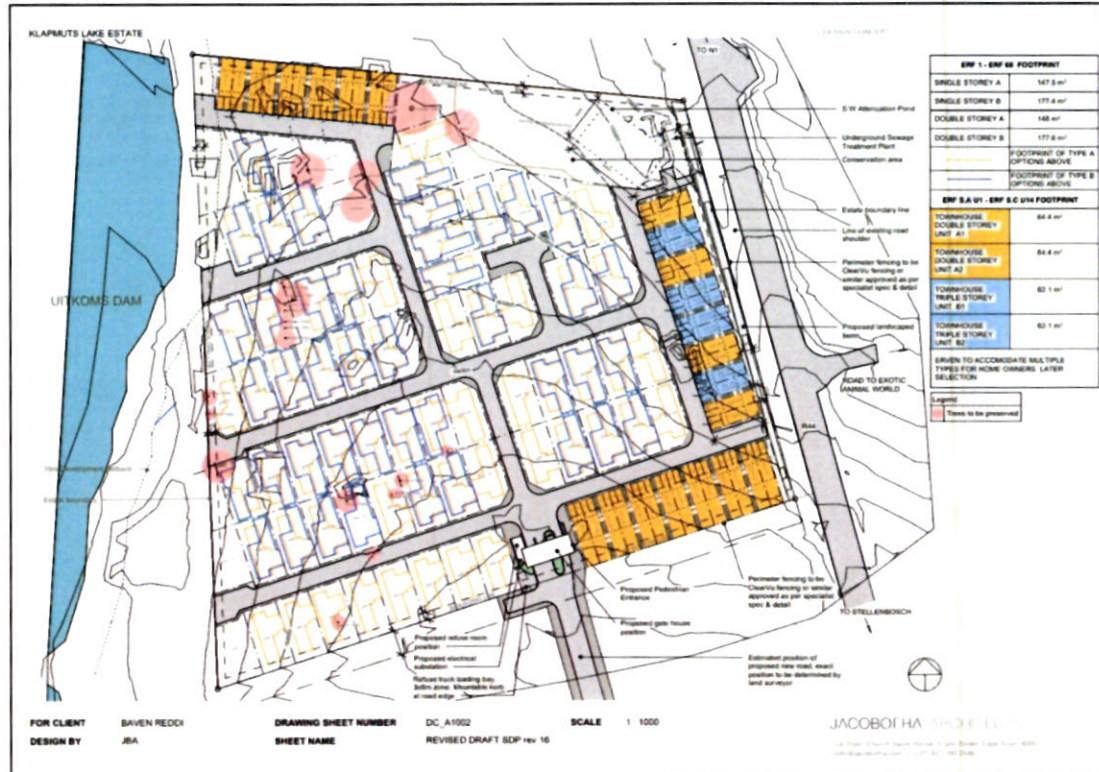
From the above it is clear that the proposed development is consistent with the Stellenbosch MSDF.

4. PROPOSED DEVELOPMENT

4.1 NATURE OF THE ACTIVITY

The proposal is to develop a residential estate on the property consisting of free-hold single, two and three storey group houses and town houses with a common architectural theme and that will be access controlled. A gatehouse with refuse collection facility, guard house and sub-station will be provided at the access to the development.

The proposed SDP is depicted below and also attached as **ANNEXURE 6**.



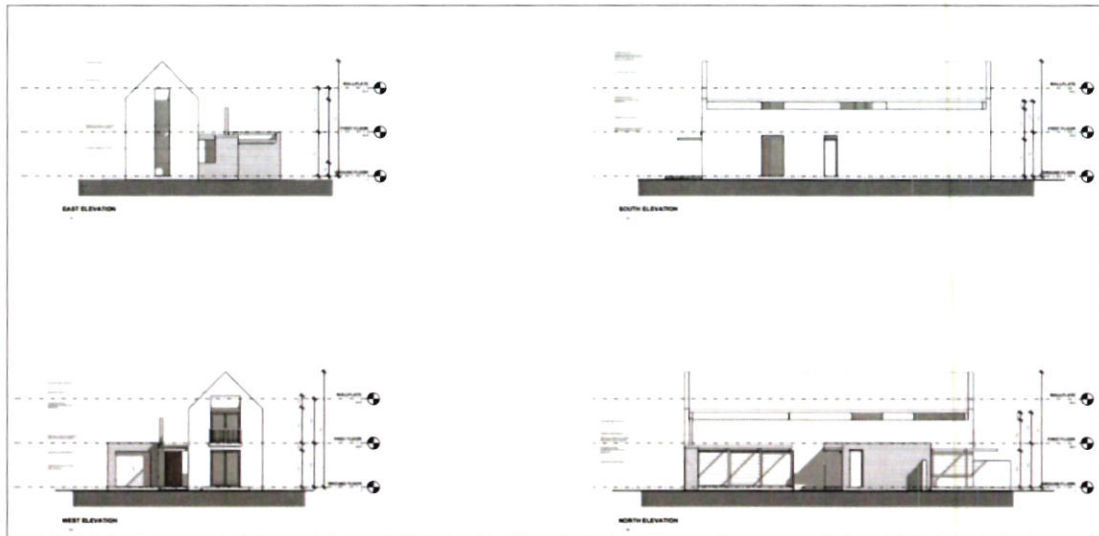
The proposed development will consist of the following unit types:

Table 3: Proposed unit types and sizes

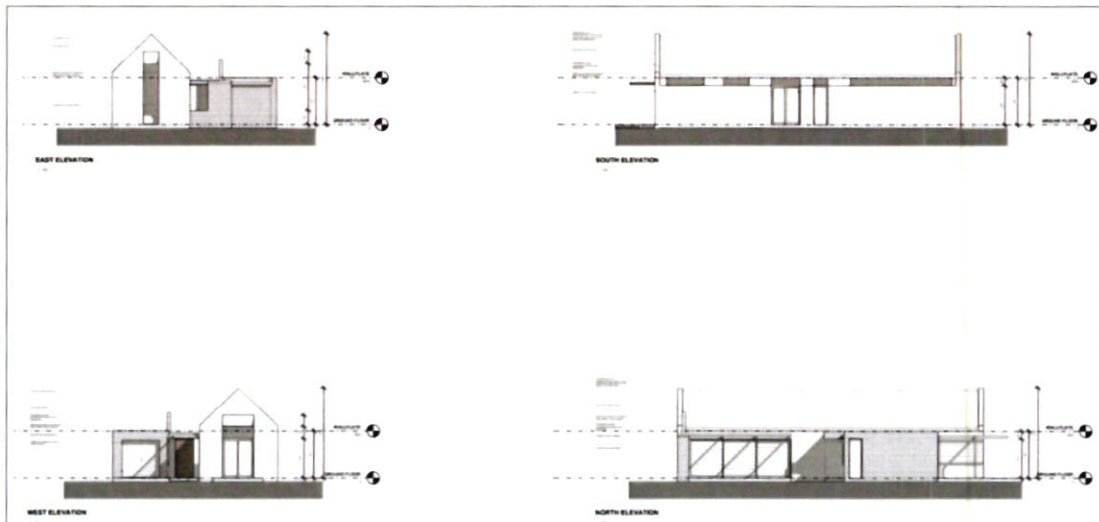
ERF 1 - ERF 68 FOOTPRINT	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
	FOOTPRINT OF TYPE A OPTIONS ABOVE
	FOOTPRINT OF TYPE B OPTIONS ABOVE
ERF S.A U1 - ERF S.C U14 FOOTPRINT	
TOWNHOUSE DOUBLE STOREY UNIT A1	64.4 m ²
TOWNHOUSE DOUBLE STOREY UNIT A2	64.4 m ²
TOWNHOUSE TRIPLE STOREY UNIT B1	62.1 m ²
TOWNHOUSE TRIPLE STOREY UNIT B2	62.1 m ²
ERVEN TO ACCOMMODATE MULTIPLE TYPES FOR HOME OWNERS LATER SELECTION	

The floor plans and elevations for all the units are attached as **ANNEXURE 7**.

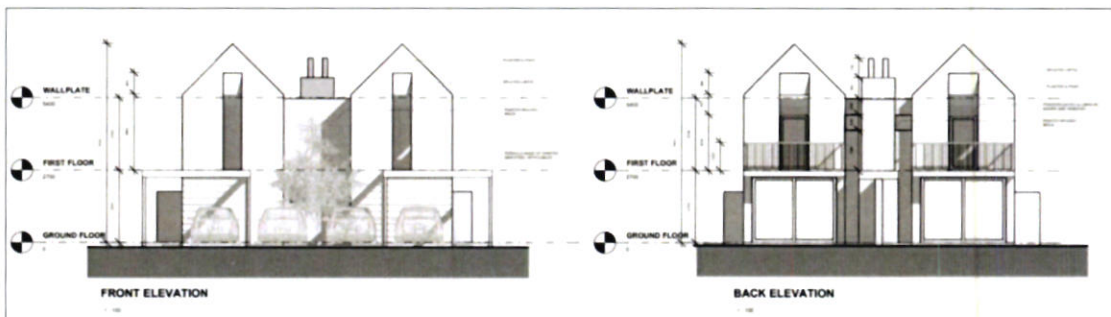
The following depicts a few typical unit elevations to illustrate the architectural theme:



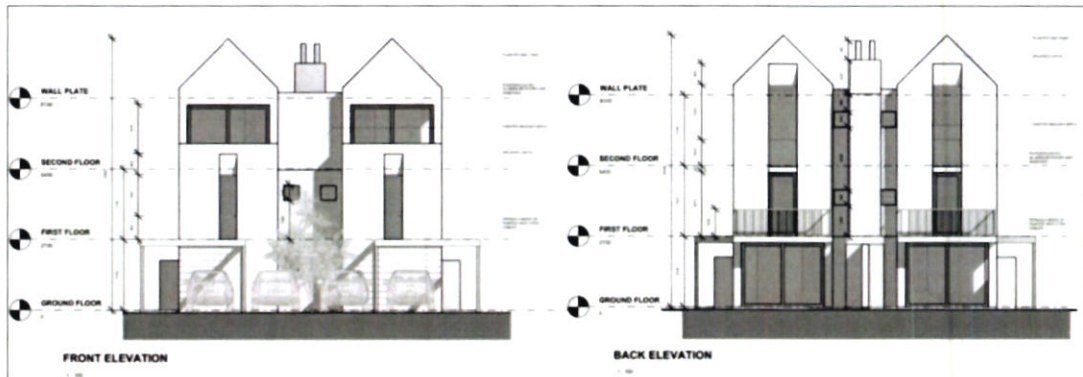
DOUBLE STOREY GROUP HOUSE



SINGLE STOREY GROUP HOUSE

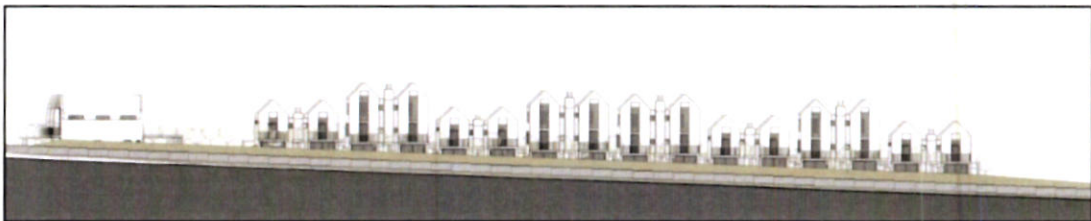


DOUBLE STOREY TOWNHOUSE



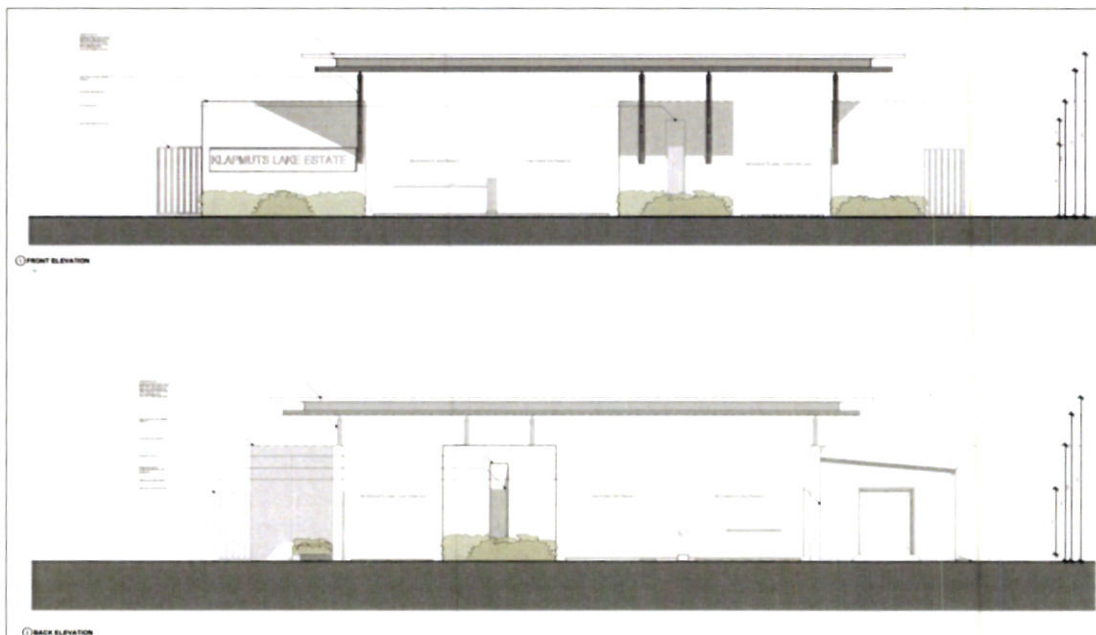
THREE STOREY TOWNHOUSE

The following depicts a street elevation from the R44. Care has been taken to avoid a monolithic facade from the R44 by alternating pitched and flat roofs and by stacking the units downhill.



R44 ELEVATION

The following depicts the elevation of the Gate House. The Gatehouse drawing is attached as ANNEXURE 8.



PROPOSED GATEHOUSE ELEVATION

The development will comprise of 68 single and double storey group house units and 42 double and triple storey duplex units with a density factor of 27units/ha.

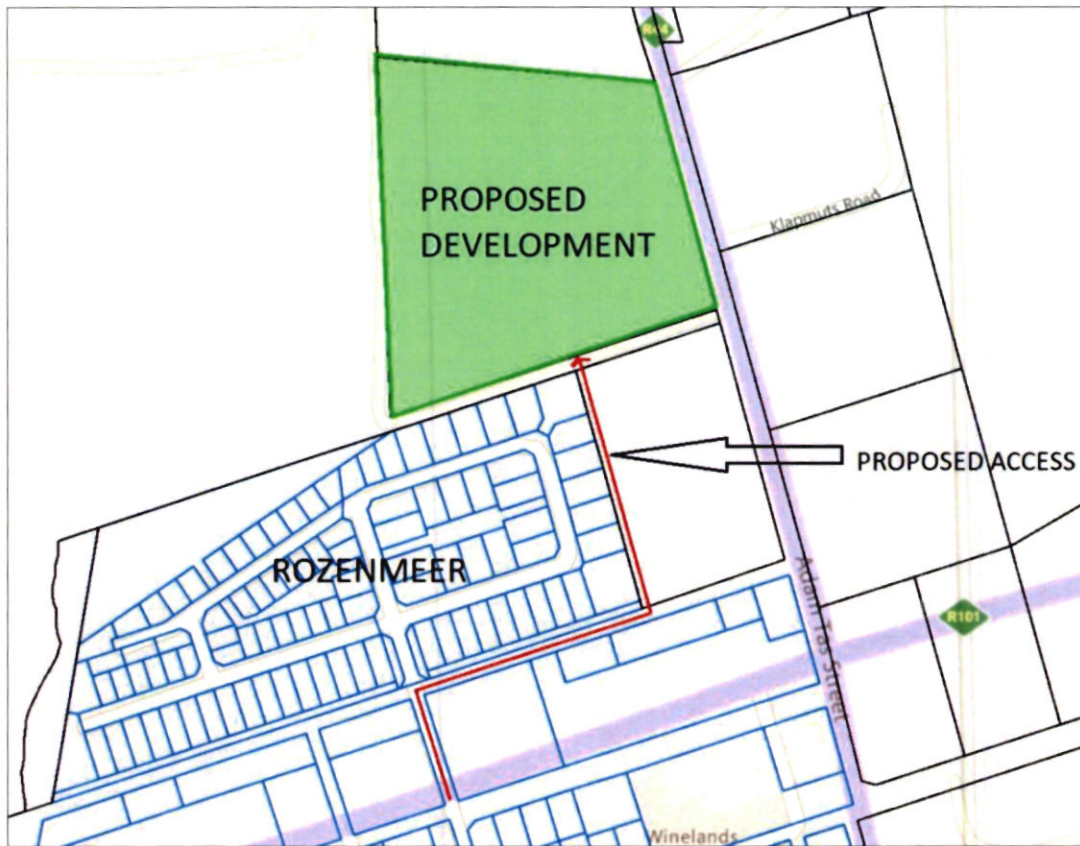
4.2 ACCESS AND CIRCULATION

Access to the site is possible from the R44 as a left-in only, leaving the site land locked in egress. Discussions with the municipality indicated that access would have to be taken over the adjoining property (Ptn. 27 of Farm 716) and along the yet to be constructed Heaford Street.

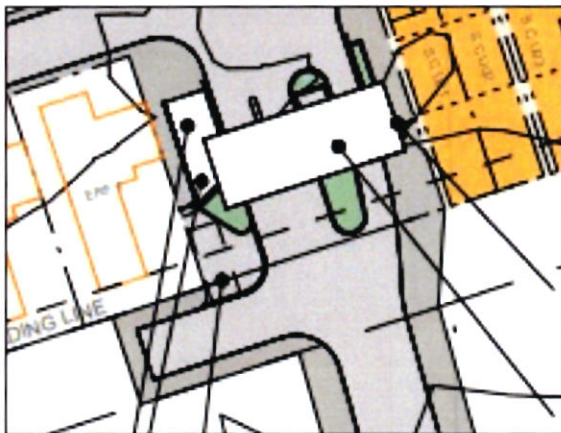
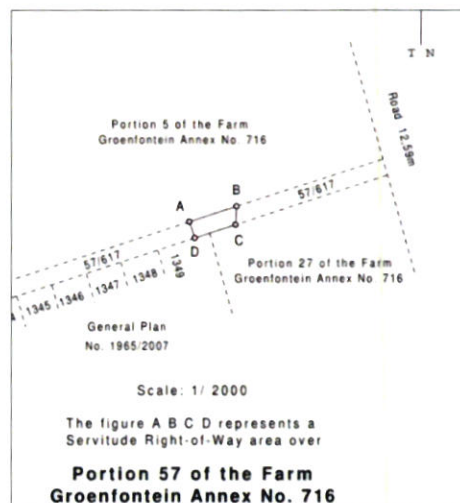
The owner of 27/716 submitted an application for a housing development in terms of which a 15m public road is provided to allow access to the subject property, as per their SDP below:



SDP FOR PTN 27 OF FARM 716



The proposed access, however, crosses the panhandle of Portion 57 of farm 716 and a servitude right of way must be registered over the required section of the panhandle.



The consent from the owner of Portion 57 of Farm 716 is attached as **ANNEXURE 9** and the proposed servitude diagram as **ANNEXURE 10**.

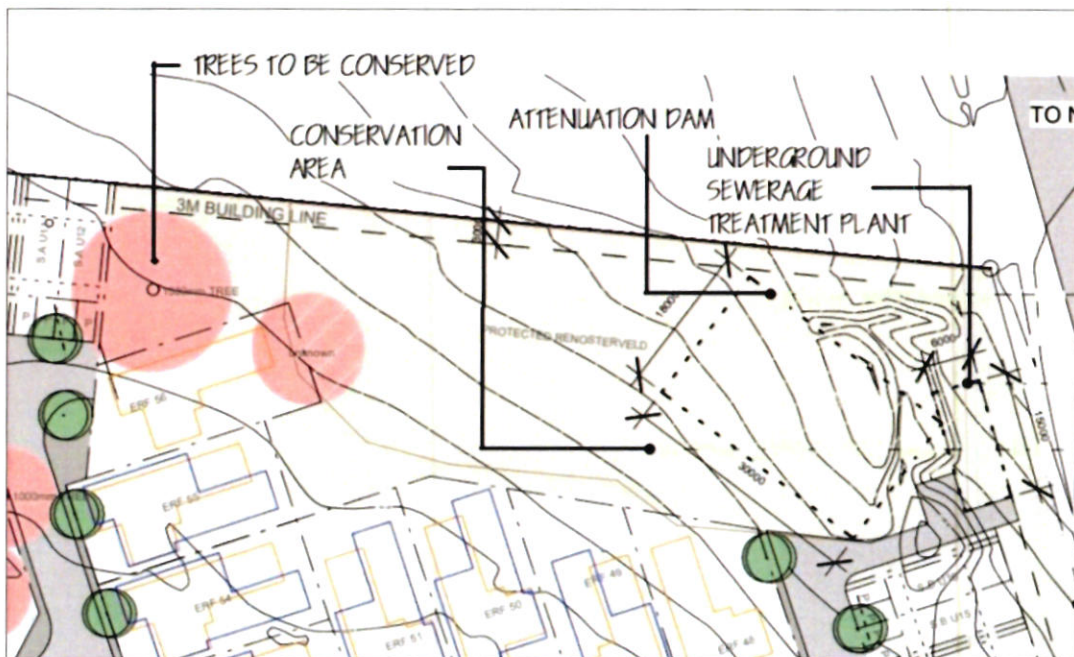
The proposed gated entrance will consist of a guard house, electricity sub-station, refuse collection yard and refuse pick-up bay. The access control is required to prevent the development from becoming a thoroughfare for pedestrians between the N1 and Klapmuts CBD and also for security in our crime ridden country.

4.3 PARKING

In terms of the Stellenbosch Zoning Scheme By-Law, parking should be provided at 1 bay for each residential unit as well as 1 bay/unit for visitors. All units in the proposed development make provision for 2 bays/unit to comply with the zoning scheme requirements.

4.4 OPEN SPACE

The Botanical Specialist identified an area at the northeastern corner of the property that must be conserved due to the occurrence of conservation worthy Renosterveld. The said area is accommodated in the layout design of the SDP in a nature area to be managed by the Homeowners Association. The area is also at the lowest point of the site and must accommodate a stormwater attenuation dam and the proposed underground sewerage treatment plant.



4.5 SCENIC ROUTE

As the R44 was declared as a scenic route, it is essential to treat the interface between the R44 and the proposed development with care. To mitigate the impact of the development on the scenic integrity of the R44 it is proposed that:

- A 5m plus open space strip be provided between the R44 and the residential units to provide a set-back from the R44 reserve to the first structure of more than 10m.
- A berm be constructed on the open space to screen visual and sound impact of the R44
- The berm be extensively landscaped.
- The proposed units along the R44 be semi-detached to have the effect of one structure.
- The proposed units vary between two and three storey units.

which not only assist in breaking down the apparent massing of the development, but also sets up visual interest and variety.

The buildings follow the principle of a simple barn style typology with strong pronounced gable ends. Gable ends are treated in a classic manner with centralised and vertically proportioned apertures. Following the vernacular, the building envelopes are predominantly heavy with apertures being secondary and smaller. In places where an inside-outside connection is required, a modern approach has been taken to link garden and interior spaces. The building arrangements are set up in a way that gardens are framed in a court like manner, with sufficient space to let light into the interiors.

Pergolas and lightweight screening devices form an integral part of the Cape Vernacular architectural language. It is proposed to make extensive use of timber pergolas to create shading, but also to create layering to private and public spaces while assisting in creating a human scaled environment.

Where possible, walls have been designed to create the impression of being thicker than they are. Usually by setting joinery into walls or increasing the thickness of gable ends. This echoes the massing embedded in some of the older Cape Vernacular buildings, which were constructed from stone, clay and lime.

It is anticipated to make extensive use of trees and landscaping to nestle the development into its natural setting. Planted berms are anticipated on the outer edges to create privacy and to provide some degree of noise attenuation along those edges. A careful balance of landscape and building will provide for an estate which is sensitive to its context, and which should provide for a comfortable and relaxing environment to its future residents.

4.8 MANAGEMENT OF THE ESTATE

The Estate will be called Mount Vista Estate and will be managed by a Homeowners Association. The constitution of the HOA will be submitted for approval after approval of this application. The HOA will be responsible for management of the Estate and will also be responsible for the maintenance and upkeep of internal services, open spaces, the Entrance Gate and perimeter fencing. The HOA documentation to be submitted will also incorporate Architectural Guidelines.

4.9 INCLUSIONARY HOUSING

During the pre-app meeting, applicant was told that the Council adopted an inclusionary housing policy, but that there is at this stage no obligation on us to include inclusionary housing. We were also told that we can however offer to voluntarily include inclusionary housing in the application. (See annexure 1 in the application).

Due to the fact that there are a variety of options mentioned in the Policy, of which the final outcome is unknown at this stage, we stated in our application that this will be discussed with the municipality. (see last row in the 2nd table in section 9.1 of this report).

So we acknowledged the policy and stated our intention to address it with further discussions with the municipality. As we understand the policy, this is something that will be finally formulated in an agreement with the municipality and in conditions of approval.

Obviously, we cannot at this stage assess the options available to us in the Policy, as we do not know the final viability of the project due to unknowns such as:

- The final sewer requirements as the Municipality are not able to accommodate the sewer at the treatment works; do we have to install network upgrades, only a temporary package plant, or both?
- The cost of the above and impact on the viability of the project.
- If we do bulk upgrades, how will it be off-set against DC's and what amounts?
- The final DC calculation is not available at this stage.
- Will we be liable for the land cost of the public access road over the adjoining property?
- Will we be proportionally held responsible for the construction of the access road?
- What will be the final cost of our proportion, etc.

The list goes on but suffice to say that it is way too early in the process to assess the options offered in the policy.

Our suggestion is that we follow the following process:

1. The applicant to make an appointment with the relevant officials at the municipality (Chantelle Hauptfleisch?), to get a better understanding of the options available in the Policy.
2. The application gets processed and as soon as the comments regarding civil services, road access and DC calculations are available, we enter into discussions with the relevant role players at the municipality to get the alternatives on the table and get to an agreement which can then be fed into the processing and conditions of approval.

5. THE APPLICATION

The application entails four components:

- Application for rezoning to subdivisional area and subdivision.
- Departure from the height restriction.
- Registration of a servitude right of way
- Approval of street names and numbering

5.1 APPLICATION FOR REZONING AND SUBDIVISION

The subdivision plan for the erven is attached hereto as **PLAN 3**.





PROPOSED SUBDIVISION

The proposed layout comprises of 68 group house erven of 325m² with general dimensions of 13m x 25m and 72 duplex erven of 55m² with general dimensions of 5,75m x 20m. The total number of erven for residential units is 110 with a density of 27u/ha. The erven are accessed by 8m road reserves with 6m wide blacktop and 1m sidewalks on both sides. An area in the northeast corner of the site worth conserving was identified by the botanist specialist and is proposed to be zoned Private Open Space Zone Natural Environment. A Private open space along the R44 has been provided for extensive landscaping and a berm. The internal road will be a private road and will be maintained by the Homeowners Association to be formed.

The development will be developed in 5 phases as identified on the subdivision plan.

5.2 DEPARTURE FROM THE ZONING SCHEME BY-LAW: HEIGHT

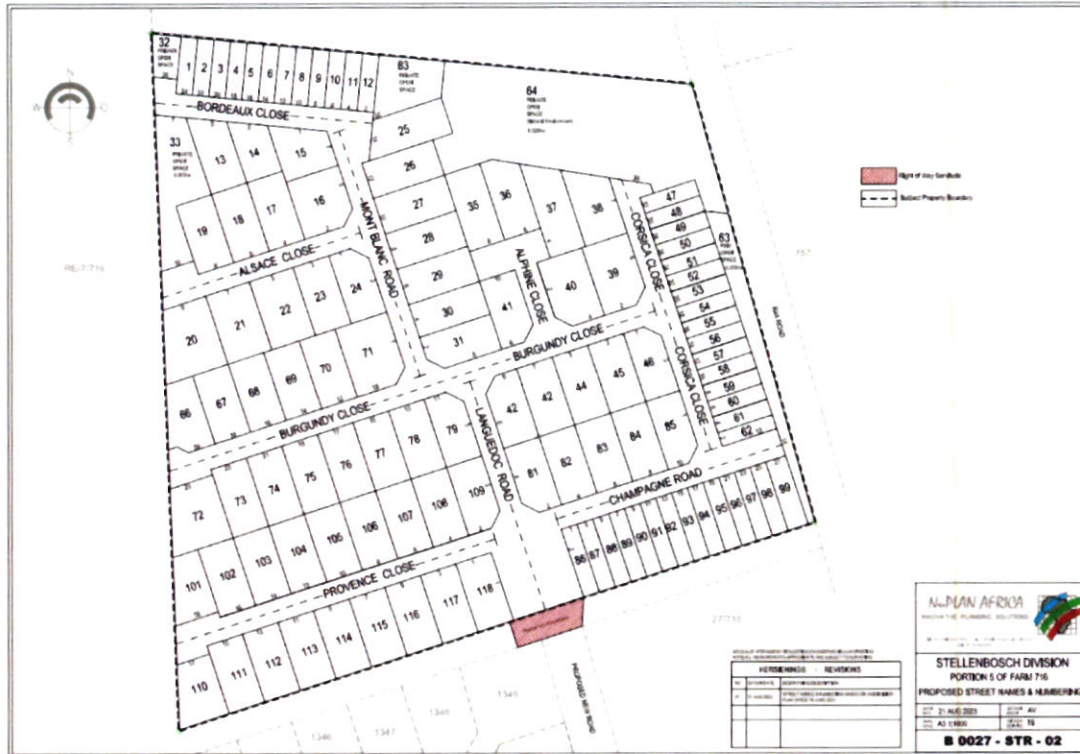
The Stellenbosch Zoning Scheme By-Law restricts the height of Group housing units to 2 storeys whereas the proposed duplex units consist of a mix between two and three storey units. This was deliberately done to achieve an articulated roofscape to create a more pleasing streetscape, rather than same height units that would form a "wall of buildings" along the R44. It is believed that this approach, as well as the building set-back of approximately 10m from the R44 warrant a departure from the height restriction.

5.3 REGISTRATION OF AN ACCESS SERVITUDE

As per paragraph 4.2, an access servitude is required from the owner of Ptn. 57 of Farm 716. The consent from the said owner is attached as **ANNEXURE 9**. The proposed servitude diagram is attached as **ANNEXURE 10**.

5.4 STREETNAMES PLAN AND NUMBERING

The proposed street names and numbering is depicted on the plan below and is also attached as **PLAN 4**.



6. SERVICES

6.1 CIVIL SERVICES

A GLS Report has been commissioned and is attached as **ANNEXURE 12**.

Refer to **ANNEXURE 13** for the Civil and Storm Water Engineering Services Report.

Water

In terms of the report the closest water reticulation network is a 150mm pipe located in Old Paarl Road. It is thus proposed that link services SKW1.20 (60m x 200mm supply line) and SKW 1.28 (215m x 160mm supply line) be constructed to provide water to the site.

It is furthermore proposed that bulk upgrades SKW 1.19 (380m x 200mm supply line and connectors) and SKW 1.18 (225m x 200mm supply pipe and connectors) be implemented to improve network conveyance.

Sewer

Currently there are no existing services in proximity to the site. In order to service the proposed development a number of link and bulk network upgrades are required; these include the following:

- 80m of a 160mm outfall sewer (link)
- 70m of a 150mm gravity sewer line (link)
- New 50l/s pump station (bulk)
- 1380m of a 250mm rising main (bulk)

Apart from the network upgrades, there is currently capacity constraints at the Klapmuts WWTW. Due to the constraints at the WWTW, accommodating the development temporarily by means of a conservancy tank, will not be a possibility.

It is therefore proposed that the development is serviced by means of a package plant, until such time that capacity becomes available and the required bulk upgrades are constructed. As a minimum it is recommended that the link services (item 1 and SKS 1.12a) are fully constructed along with the construction of the internal network for the proposed development.

Stormwater

In order to achieve the calculated treatment volume of 541,98 cubic meter, it is proposed that an attenuation pond be constructed on site.

An overland escape will be provided to the stormwater channel alongside the R44 for storm events larger than 1:50 year occurrence.

In addition to the stormwater attenuation pond that will be constructed, runoff from the southeastern part of the site will discharge into the existing Uitkoms Dam.

6.2 ELECTRICAL SERVICES

Refer to **ANNEXURE 14** for the Electrical Services Report.

In terms of the report, the site is currently served by means of a low voltage connection from a 50kVA pole transformer on the erf. The transformer is owned and maintained by Eskom.

An Eskom powerline runs across the intended build site. A 3m servitude area (1.5m on both sides of the line) will have to be provided.

The After Diversity Maximum Demand (ADMD) is calculated to be 500kVA for the development and it is recommended that the electrical requirements of the site not be increased beyond the scope of these calculations as this may cause the site to require a connection larger than 500kVA, which will result in the site requiring additional electrical equipment such as a Ring Main Unit (RMU).

The external network up to the site boundary is medium voltage by means of a overhead network.

Eskom will supply and install a 500kVA miniature sub-station on the property boundary to accommodate the supply required.

The internal network will be as per the services report.

7. TRAFFIC IMPACT ASSESSMENT

A Statement to this effect from the Traffic Engineer is attached as **ANNEXURE 15**.

The following can be concluded from the report:

- 1) That this TIS accompanies the application for rezoning and subdivision of Farm 716/5, bordered by the R44 (MR 27) to the east, and situated approximately halfway between Old Paarl Road (MR 189) and the N1, Klapmuts.
- 2) That the proposed development consists of 110 townhouse-type erven, with access to be obtained via the neighbouring Farm 716/27, Heaford Street and Brounger Street to Old Paarl Road as per the AMP for the R44 (MR 27) as per WCG planning.
- 3) That according to information, an application for the neighbouring Farm 716/27 was submitted for 40 townhouses, which included provision for the 15-metre-wide public street reserve along the Rozenmeer-boundary via which access to the proposed development will be obtained.
- 4) That the proposed development will have the potential to generate 93 peak hour trips (23 in, 70 out during the AM peak hour and 65 in, 28 out during the PM peak hour).
- 5) That to accommodate background traffic:
 - a) At the R44/Old Paarl Road intersection, dedicated left-turn lanes are suggested on the western Old Paarl Road- and southern R44-approaches.
 - b) At the Old Paarl Road/Brounger Street intersection, the Brounger Street-approach be provided with a dedicated right-turn lane (by way of painted road markings).
- 6) That no external road upgrades are considered necessary as result of the proposed development.
- 7) That the public street within its 15-metre road reserve is suggested to be provided with a 7,4-metre blacktop width, and sidewalk along at least one side thereof.
- 8) That Heaford Street currently consists of a 9,45-metre reserve with an additional 5,5 metres subdivided from the Rozenmeer parent property in order to provide Heaford Street with a 15-metre road reserve.
 - a) That according to information the said subdivided strip has not yet been rezoned and transferred as per the development's conditions of approval – this is to be addressed by the Municipality.

- b) And that similarly, the illegal structures currently encroaching into the Heaford Street reserve is also to be addressed by the Municipality.
- 9) That permission has been obtained from the neighbouring 'panhandle property' for the proposed development to obtain access across a section thereof and that a servitude right-of-way will be registered accordingly.
- 10) That the security-controlled access will consist of two inbound lanes and one outbound lane, with a 4,0-metre horizontal clearance to accommodate emergency vehicles, and security booms setback approximately two vehicle lengths from the property boundary, with a refuse room and turning space for Municipal refuse trucks to the outside of the security controls.
- 11) That internal circulation will be via internal streets (8 metre road reserves, with 5,5 to 6,0 metre streets).
- 12) That 2 parking bays per residential unit will be provided in line with the requirements of the Municipality, and that parking bay dimensions will be in line with normal parking standards, with available isle widths slightly substandard but expected to accommodate passenger vehicles manoeuvring in/out of their parking spaces within the residential estate; and
- 13) That a sidewalk will be provided along at least one side of the public street providing access to the proposed development, that a pedestrian gate is proposed at the security-controlled access, and that no additional public- or non-motorised transport facilities are considered necessary as result of the proposed development.

From the above, it is recommended that the proposed residential development on Farm 716/5, Klapmuts, be considered for approval from a traffic flow point of view.

It is further recommended that the DCs payable for the proposed development be contributed to either the construction of the public street required to access the subject property via Old Paarl Road, or alternatively, that it be contributed towards the background upgrades suggested to the R44/Old Paarl Road intersection.

8. ENVIRONMENTAL

A Basic Assessment application is required and being drafted by GNEC Environmental Consultants. As part of the application a Botanist as well as a Freshwater Specialist was appointed. The report of the Botanist is attached as **ANNEXURE 16** and the report of the Freshwater Specialist as **ANNEXURE 17**. The Botanist identified a conservation worthy patch of Renosterveld as well as all the trees on site that must be retained. The Freshwater specialist determined the development setback line from the dam. All recommendations of the Botanist and Freshwater specialist were incorporated in the SDP design.

8.1 HERITAGE SECTION 38 APPLICATION

A Notice of Intent was submitted to Heritage Western Cape and the consent to proceed without any further Heritage studies was received and is attached hereto as **ANNEXURE 18**.

9. MOTIVATION

9.1 LAND USE PLANNING PRINCIPLES

The following Development Principles per Section 7 of SPLUMA and Section 59 of LUPA is relevant:

N	PRINCIPLE	CONSISTENCY
a	Spatial Justice	The development proposal is accessible to all communities of South Africa, offer job opportunities during the construction phase to all communities and does not result in segregation of communities
b	Spatial sustainability	The proposed development is privately funded, developed and managed; is environmentally friendly; make optimal use of the characteristics of the land and existing services; does not load any future financial liability on infra structure or social services and does not cause urban sprawl and is thus spatially sustainable.
c	Efficiency	The proposal makes optimal use of the natural attributes of the site; will make use of existing services and infra structure; does not have any negative environmental, social, or economic impacts, but rather a positive social, economic, and environmental impact by providing a controlled, safe and privately funded residential opportunity that contributes to economic growth
d	Spatial Resilience	The proposed development is located in an area with similar land uses, make use of existing infra-structure, and entails a multi-million-rand private investment, thus ensuring spatial resilience.
e	Good Administration	The proposed development will be managed by a Homeowners Association.

The land use application is further motivated on the following grounds:

- The proposed development is located in an existing town identified as a growth area in the MSDF.

- The proposed development is furthermore located inside the Urban Edge of Klapmuts.
- The MSDF designated the land for “Urban Development”.
- Klapmuts is located on a primary development axis in the MSDF.
- The proposed development will enhance the Urban Form and complement the existing Rozenmeer development.
- Services can be provided in a feasible and sustainable manner.

The following table provides a summary of the motivation in terms of the statutory context and indicates if the application is in line or not in line with the relevant policies.

POLICY	IN LINE / NOT IN LINE	SUMMARISED MOTIVATION
MSDF, 2023	In line	<ul style="list-style-type: none"> • The proposed development is located in the Urban Edge of Klapmuts. • The land is designated for urban development in the MSDF. • Klapmuts is identified as a growth area in the MSDF. • Klapmuts is located on the primary development axis as identified in the MSDF. • It is a high-density development in Klapmuts South.
Inclusionary Housing Policy	In line	<ul style="list-style-type: none"> • To be further discussed with Council.

10. DESIRABILITY CRITERIA

The desirability of this development proposal is further illustrated by the following desirability parameters:

CRITERIA	MOTIVATION
Economic Impact	The economic impact of the proposed development is positive as it represents a R1.2 million investment from an upcountry company in the Western Cape. At the same time job opportunities are created during the construction phase of the project as well as some jobs on a permanent basis.
Social Impact	The social impact of the proposed development will also be positive. The creation of job opportunities will alleviate the poverty cycle and the resultant relieve on poverty crimes like house break, theft, gender violence,

	substance abuse and violence against children.
Scale Of Capital Investment	The scale of capital investment will be substantial for the Western Cape.
Compatibility With Surrounding Uses	The proposed rezoning is compatible with the surrounding uses as it is located adjacent to the existing Rozenmeer development and also adjacent to the proposed residential development on Ptn 7 of Farm 716.
External Engineering Services	The scale of the proposed rezoning will not have a negative impact on the external engineering services as the sewerage modular plant is on-site, bulk electricity and water is available, and storm water is cleaned and attenuate on site.
Safety, Health, and wellbeing Of Surrounding Community	The proposed rezoning will not have a negative impact on the safety, health or wellbeing of the surrounding community as it is complementary to the existing residential fabric of the area.
Heritage	The proposal was submitted to Western Cape Heritage which gave their support for the proposed development as per Annexure 18 .
Biophysical Environment	The application does not have any impact on the biophysical environment as the SDP design took into account all specialist input.
Traffic Impact, Parking, Access, and Related transport Considerations	The proposed rezoning will require no bulk upgrades to the road infra-structure as per the attached TIS.
Mitigating Issues	No adverse impacts are foreseen and therefore no mitigation measures are required.

11. CONCLUSION

The proposed development is not restrained by any conservation worthy elements, environmental issues, title deed restrictions or any other restraints, is mostly consistent with the Zoning Scheme and Council Spatial Policies. As such, it is therefore recommended that the application for

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS IN TERMS OF SEC 15 (2)(A) OF THE MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS IN TERMS OF SEC 15(2)(D) OF THE MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION IN TERMS OF SEC 15(2)(B) OF THE MPBL
- REGISTRATION OF SERVITUDES IN TERMS OF SEC 15(2)(D) OF THE MPBL

be approved in order to enable this project to proceed.



STELLENBOSCH MUNICIPALITY

PORTION 5 OF FARM 716 KLAPMUTS

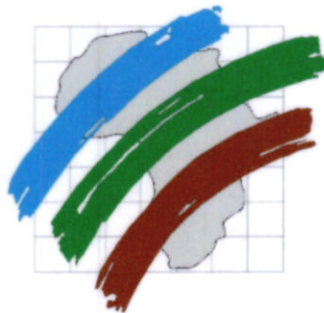
MOUNT VISTA ESTATE

APPLICATION FOR REZONING TO SUBDIVISIONAL AREA,
SUBDIVISION, PERMANENT REGULATION DEPARTURE, SDP
APPROVAL AND REGISTRATION OF SERVITUDES

APPLICANT

NuPLAN AFRICA

INNOVATIVE PLANNING SOLUTIONS



PROJECT DETAIL

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PROJECT REFERENCE: B0027

DATE: AUGUST 2023



APPLICATION PARTICULARS

APPLICATION FOR:

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15 (2)(a) of the MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15(2)(d) of the MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION in terms of Sec 15(2)(b) of the MPBL
- REGISTRATION OF SERVITUDES in terms of Sec 15(2)(d) of the MPBL.



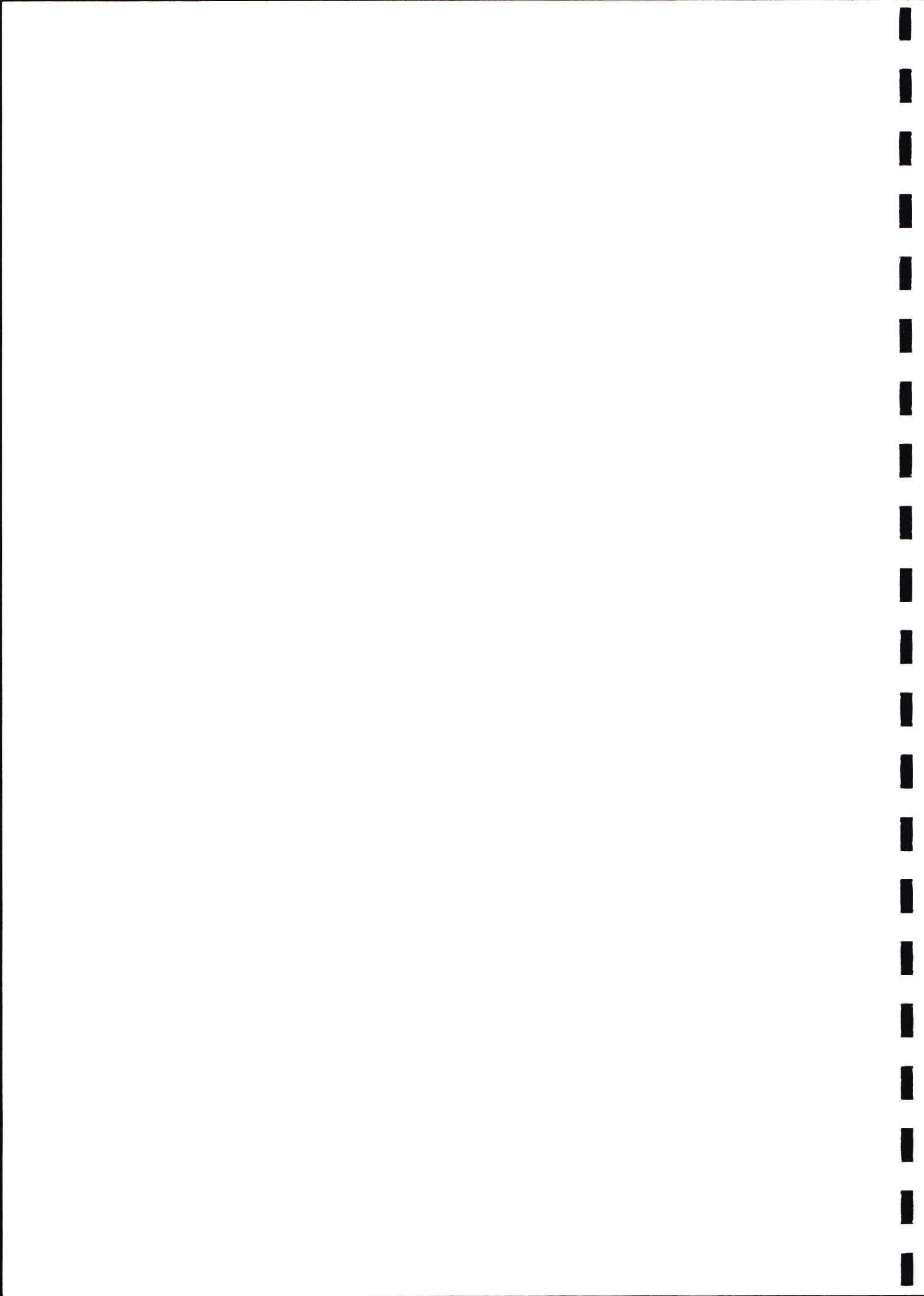


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1. INTRODUCTION

1.1 THE ASSIGNMENT

Nuplan Africa Town Planners has been appointed by GOLDEN GLAZE INVESTMENTS (PTY) LTD to lodge a land use application to the Stellenbosch Municipality on their behalf to enable the development of a Group Housing Estate on the subject property.

A pre-submission consultation was held with the municipality on 19 May 2022 and again on 26 June 2023, the minutes of the latter which are attached as **ANNEXURE 1**.

1.2 THE APPLICATION

Application is made for:

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15 (2)(a) of the MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS in terms of Sec 15(2)(d) of the MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION in terms of Sec 15(2)(b) of the MPBL
- REGISTRATION OF SERVITUDES in terms of Sec 15(2)(d) of the MPBL

2. PROPERTY DETAILS

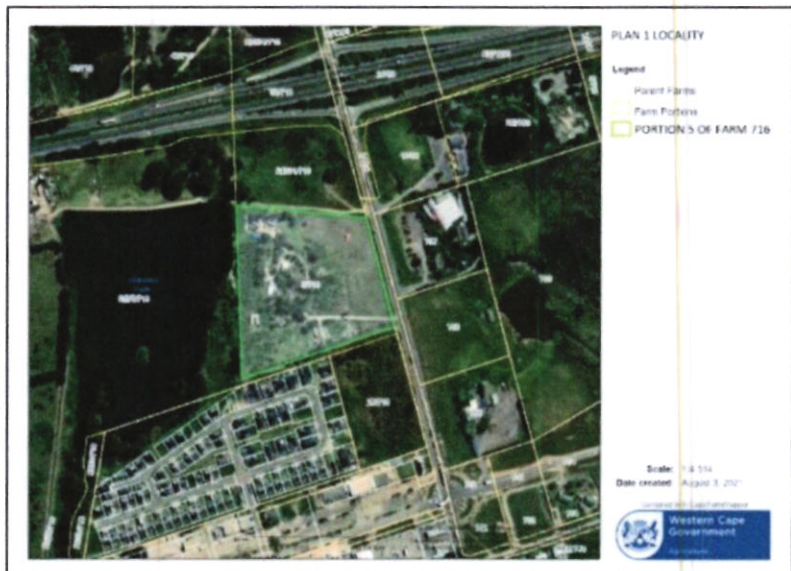
2.1 LOCALITY

The subject property is located along the R44 in Klapmuts, opposite Butterfly World and in close proximity to the R44/N1 interchange. The location of the property is depicted on **PLAN 1**.

The location of the property in the bigger Klapmuts area is depicted on attached **PLAN 2**.

On the western side of the property is the Uitkamp Dam, the northern boundary is formed by vacant

SANRAL land, and the southern boundary is bordered by the Rosenmeer Housing Estate and the vacant portion 27 of Farm 617.





REGIONAL LOCALITY: PTN 5 OF FARM 716 KLAPMUTS

2.2 PROPERTY DESCRIPTION

The subject properties are depicted in table 1 below:

TABLE 1: PROPERTY DESCRIPTION

PROPERTY	TITLE DEED NUMBER AND DATE	REGISTERED OWNER	SIZE
PTN 7 OF FARM 716, DIVISION PAARL IN STELLENBOSCH MUNICIPALITY	T230172023	GOLDEN GLAZE INVESTMENTS (PTY) LTD. Reg no:2020/652147/07.	4.4104HA

A Company Resolution from GOLDEN GLAZE INVESTMENTS in favour of NUPLAN AFRICA to act on their behalf in this land use application is attached as **ANNEXURE 2**.

A Power of Attorney from GOLDEN GLAZE INVESTMENTS to NUPLAN AFRICA is attached as **ANNEXURE 3**.

A Copy of the Title Deed is attached as **ANNEXURE 4**. A Conveyance certificate, attached as **ANNEXURE 5**, confirm that there are no restrictive title conditions that could negatively affect the application.

No Bonds are registered over the property.

The property zoning and land use details are depicted in **Table 2** below.

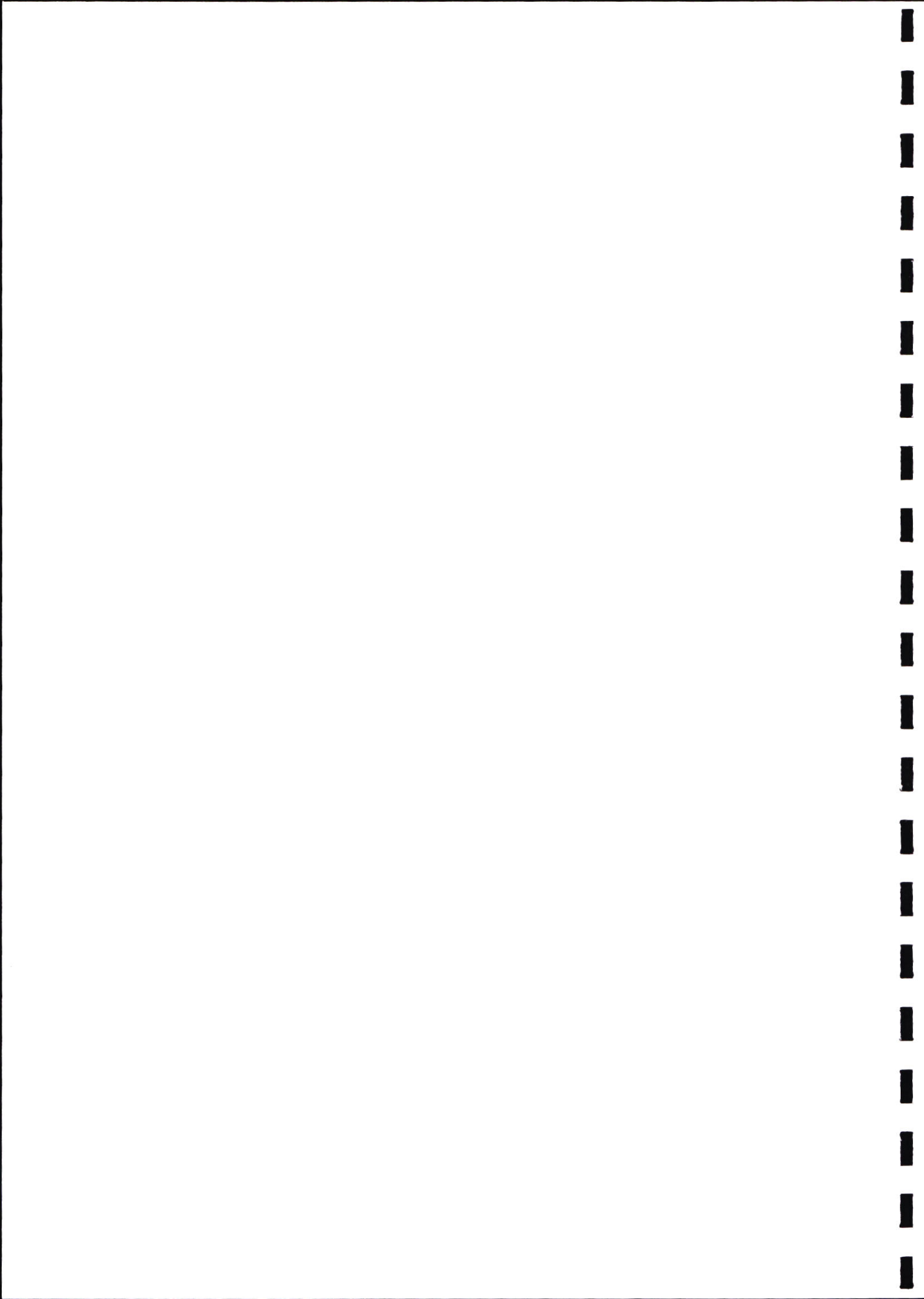
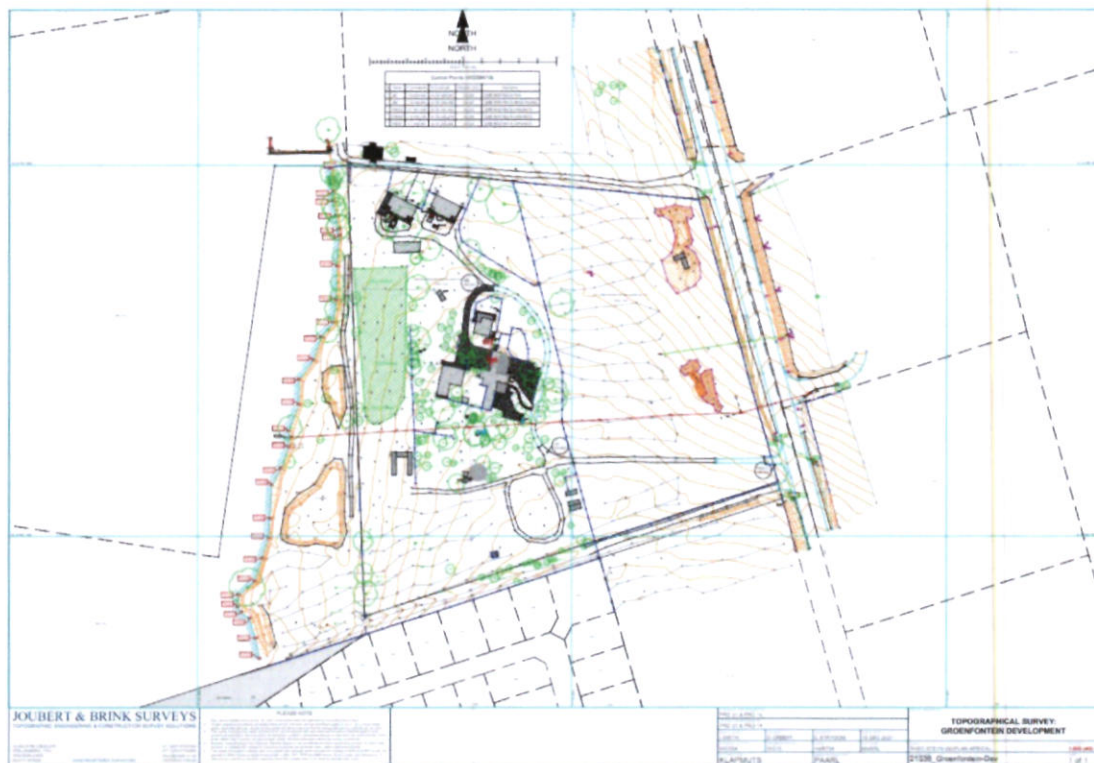


TABLE 2: PROPERTY DESCRIPTION, LAND USE RIGHTS AND TOPOGRAPHICAL FEATURES

PROPERTY: PTN 5 OF FARM 716, DIVISION PAARL, STELLENBOSCH MUNICIPALITY	
CURRENT ZONING	AGRICULTURAL ZONE 1 – NOT FARMED
CURRENT LAND USE	RESIDENTIAL MAIN HOUSE, OUTBUILDINGS AND LABOURERS' COTTAGES
TOPOGRAPHICAL FEATURES	WATERSHED IN SOUTH TO NORTH DIRECTION, GENTLE SLOPES BOTH EASTWARDS AND WESTWARDS

A topographical survey with 0,5m contours, all trees, fences, and services are depicted below:



2.3 SURROUNDING LAND USE AND ZONING

The surrounding zonings are depicted below. This indicates that the area in which the subject property is situated is mainly zoned for agricultural and rural purposes to the west, north and east of the property. To the south is the residential zoning for the Rosenmeer Housing Estate and further to the south the business zonings of the Klapmuts CBD.







The image above depicts the surrounding land uses. The property is surrounded by agricultural land, tourist facilities, vacant land, and a housing estate.

3. STATUTORY CONTEXT

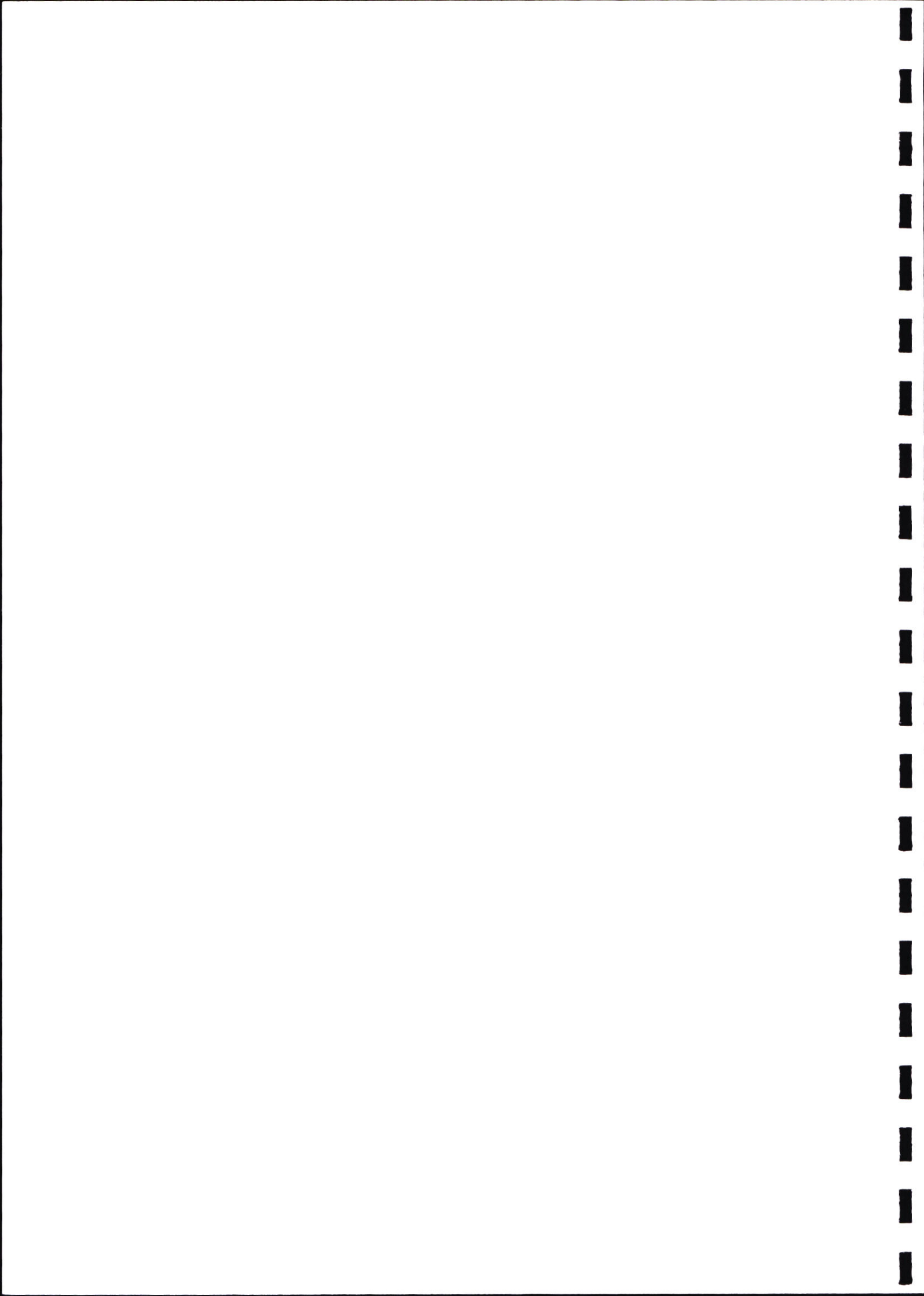
3.1 LAND USE MANAGEMENT SCHEME

According to the Stellenbosch Municipality Zoning Scheme By-Law (2019) Maps, the subject property is zoned for Agricultural and Rural purposes.

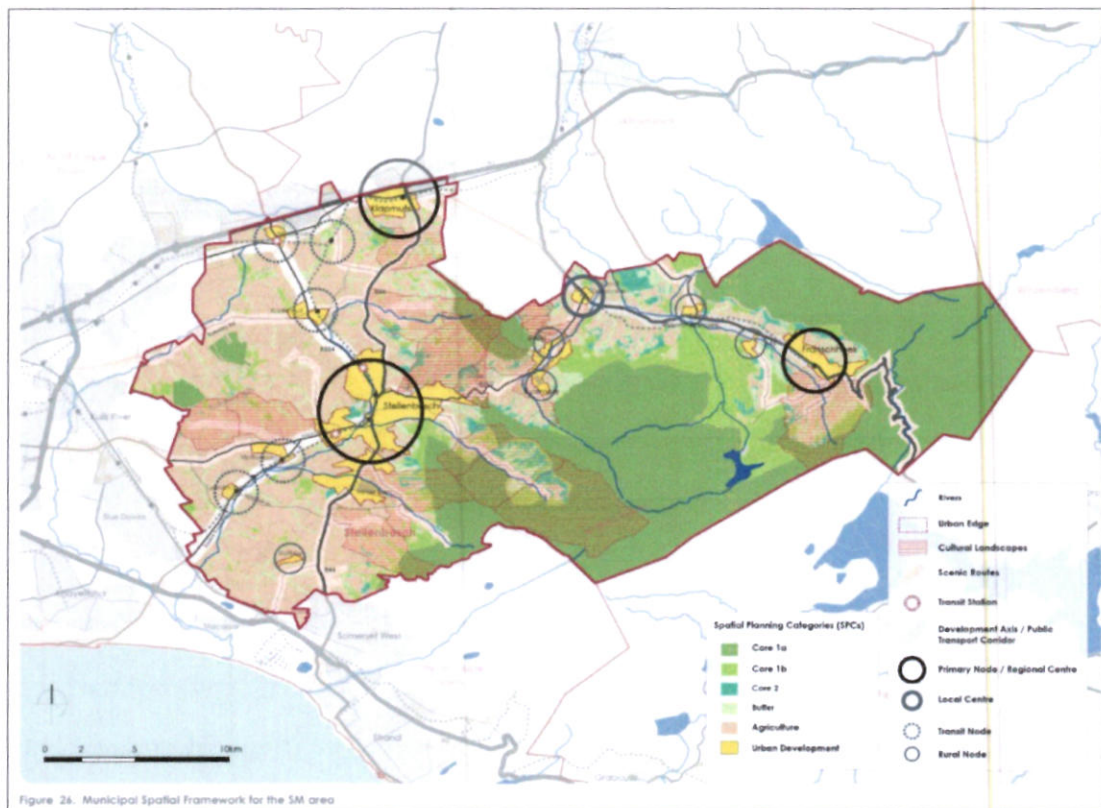
3.2 STELLENBOSCH METROPOLITAN SPATIAL DEVELOPMENT FRAMEWORK (MSDF) MARCH 2023 DRAFT

3.2.1 Spatial Strategies





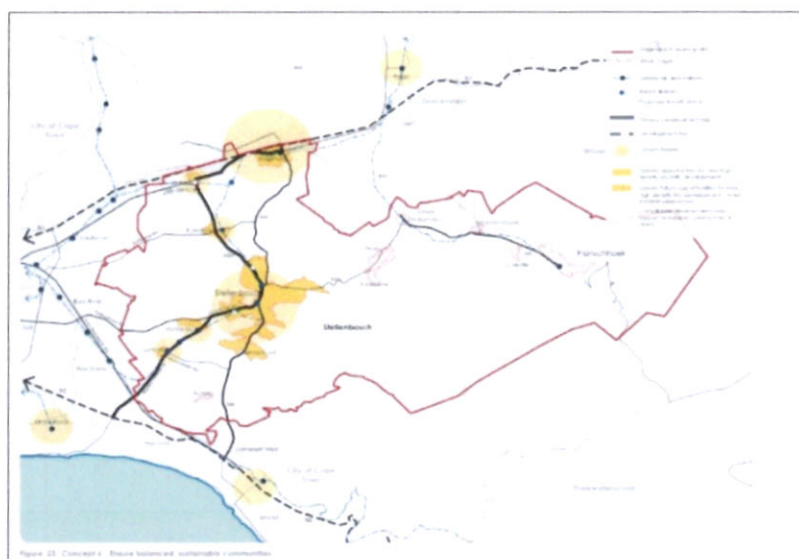
The MSDF is the applicable spatial policy document guiding spatial development in the Stellenbosch Municipal Area.



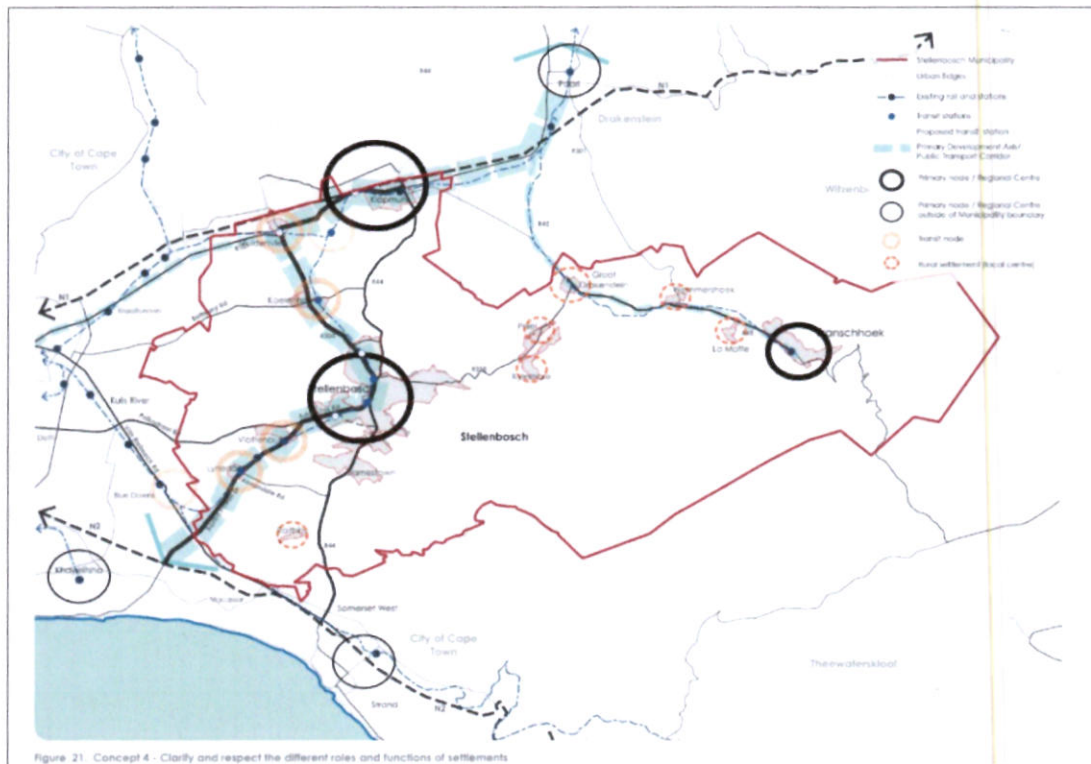
3.2.2 Land Use Designation

The subject property is located within the Klapmuts Urban Edge and is designated for “urban development” on the consolidated SDF Map in the MSDF.

For Klapmuts specifically, the MSDF included Klapmuts as a Growth Area as depicted in the plan below:



Klapmuts is also located on a primary development axis in the MSDF as per the plan below:



Spatial proposals for Klapmuts includes the following elements relevant to the proposed development:

- As a General Principle, contain the footprint of Klapmuts as far as possible within the existing Urban Edge.
- Pro-actively support higher density infill residential opportunity in Klapmuts South.
- Ensure that housing in Klapmuts South provide for a range of income groups.

From the above it is clear that the proposed development is consistent with the Stellenbosch MSDF.

4. PROPOSED DEVELOPMENT

4.1 NATURE OF THE ACTIVITY

The proposal is to develop a residential estate on the property consisting of free-hold single, two and three storey group houses and town houses with a common architectural theme and that will be access controlled. A gatehouse with refuse collection facility, guard house and sub-station will be provided at the access to the development.

The proposed SDP is depicted below and also attached as **ANNEXURE 6**.



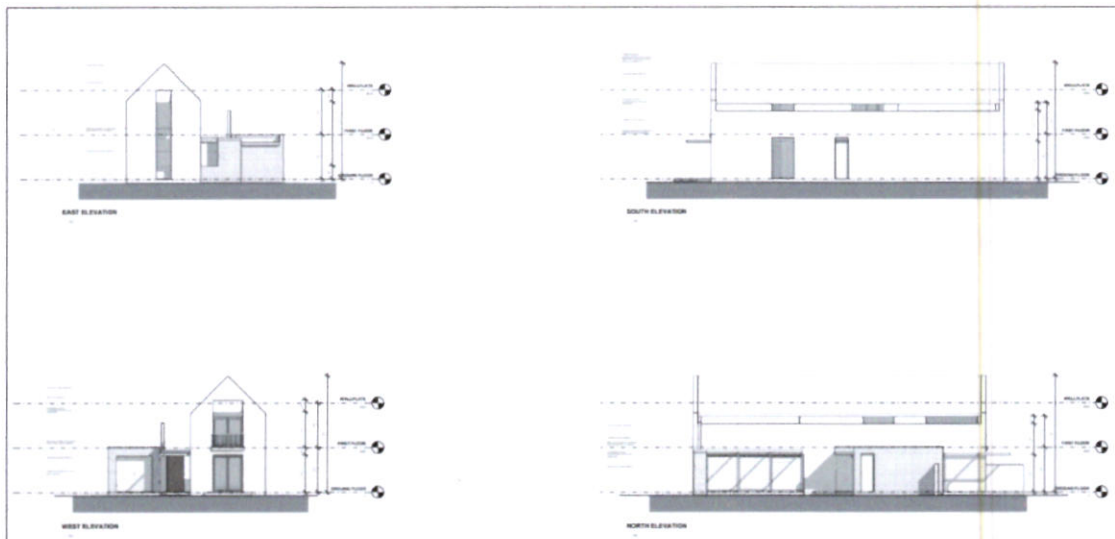
Table 3: Proposed unit types and sizes

ERF 1 - ERF 68 FOOTPRINT	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
	FOOTPRINT OF TYPE A OPTIONS ABOVE
	FOOTPRINT OF TYPE B OPTIONS ABOVE
ERF S.A U1 - ERF S.C U14 FOOTPRINT	
TOWNHOUSE DOUBLE STOREY UNIT A1	64.4 m ²
TOWNHOUSE DOUBLE STOREY UNIT A2	64.4 m ²
TOWNHOUSE TRIPLE STOREY UNIT B1	62.1 m ²
TOWNHOUSE TRIPLE STOREY UNIT B2	62.1 m ²
ERVEN TO ACCOMMODATE MULTIPLE TYPES FOR HOME OWNERS. LATER SELECTION	

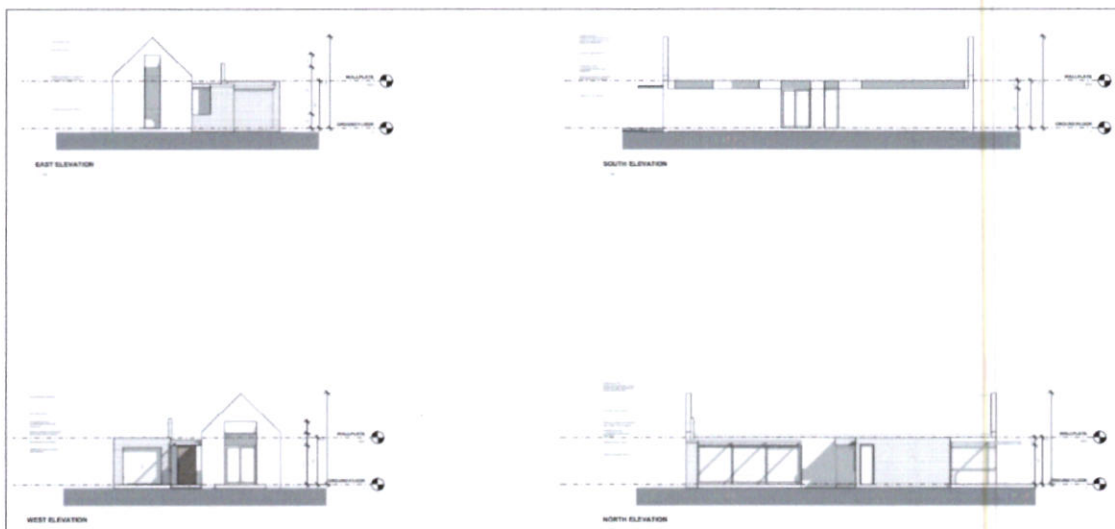


The floor plans and elevations for all the units are attached as **ANNEXURE 7**.

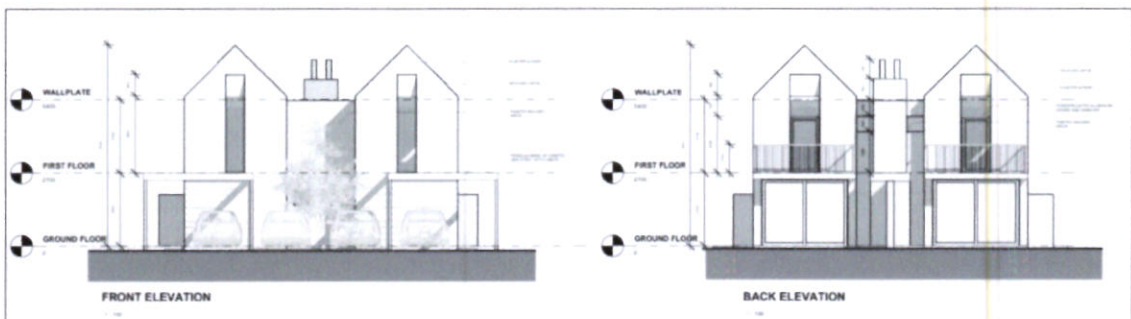
The following depicts a few typical unit elevations to illustrate the architectural theme:



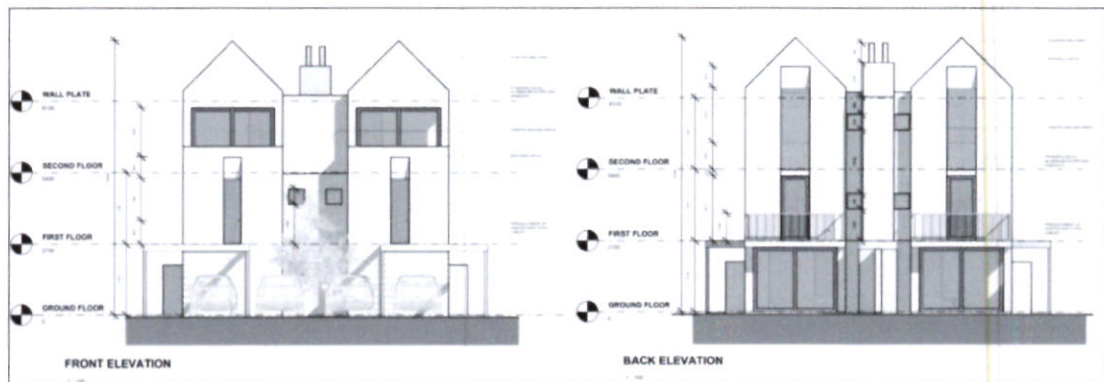
DOUBLE STOREY GROUP HOUSE



SINGLE STOREY GROUP HOUSE



DOUBLE STOREY TOWNHOUSE



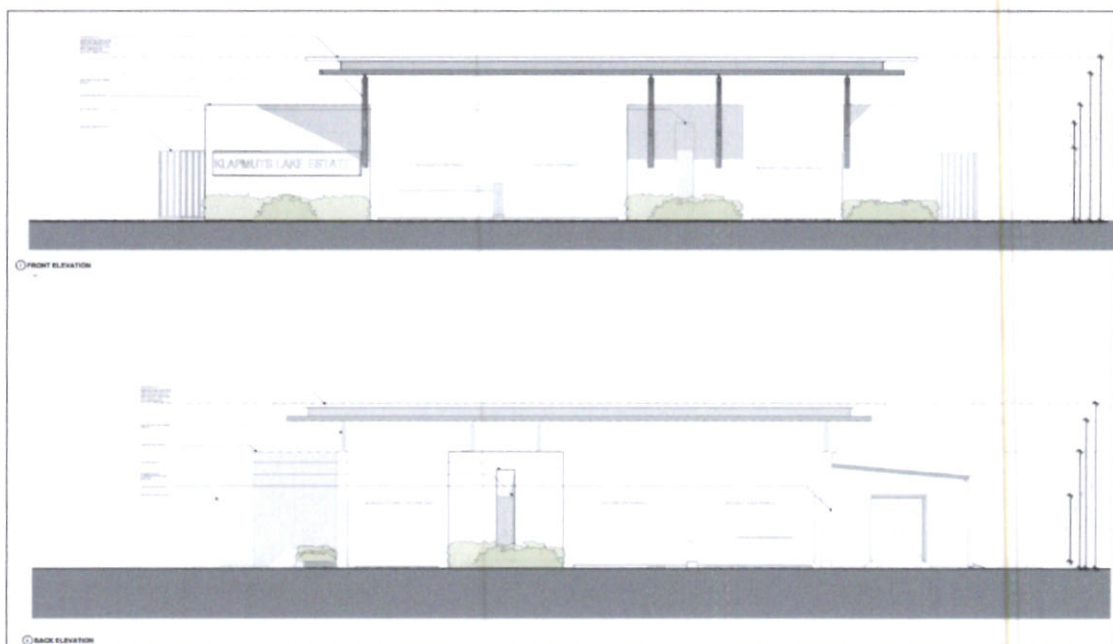
THREE STOREY TOWNHOUSE

The following depicts a street elevation from the R44. Care has been taken to avoid a monolithic facade from the R44 by alternating pitched and flat roofs and by stacking the units downhill.



R44 ELEVATION

The following depicts the elevation of the Gate House. The Gatehouse drawing is attached as **ANNEXURE 8**.



PROPOSED GATEHOUSE ELEVATION

The development will comprise of 68 single and double storey group house units and 42 double and triple storey duplex units with a density factor of 27units/ha.

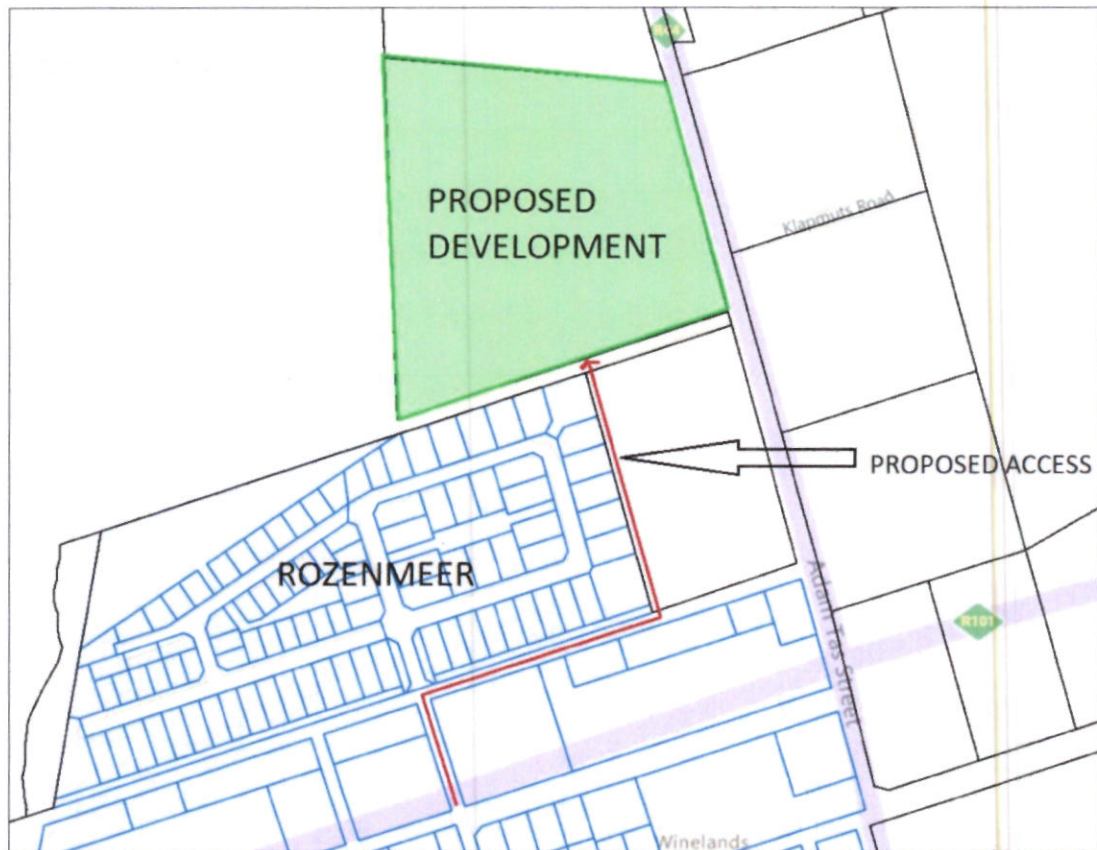
4.2 ACCESS AND CIRCULATION

Access to the site is possible from the R44 as a left-in only, leaving the site land locked in egress. Discussions with the municipality indicated that access would have to be taken over the adjoining property (Ptn. 27 of Farm 716) and along the yet to be constructed Heaford Street.

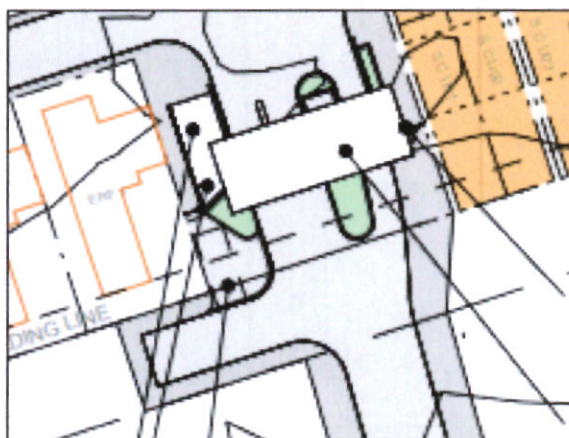
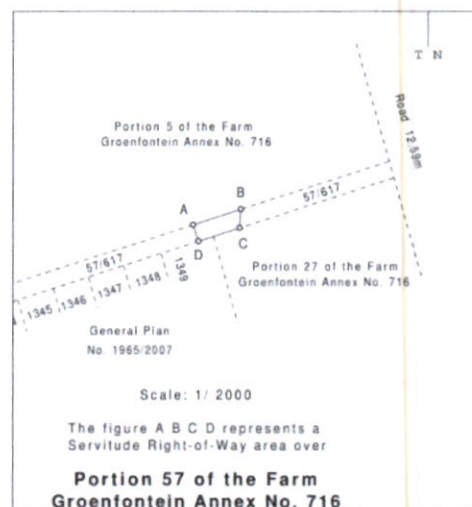
The owner of 27/716 submitted an application for a housing development in terms of which a 15m public road is provided to allow access to the subject property, as per their SDP below:



SDP FOR PTN 27 OF FARM 716



The proposed access, however, crosses the panhandle of Portion 57 of farm 716 and a servitude right of way must be registered over the required section of the panhandle.



The consent from the owner of Portion 57 of Farm 716 is attached as **ANNEXURE 9** and the proposed servitude diagram as **ANNEXURE 10**.

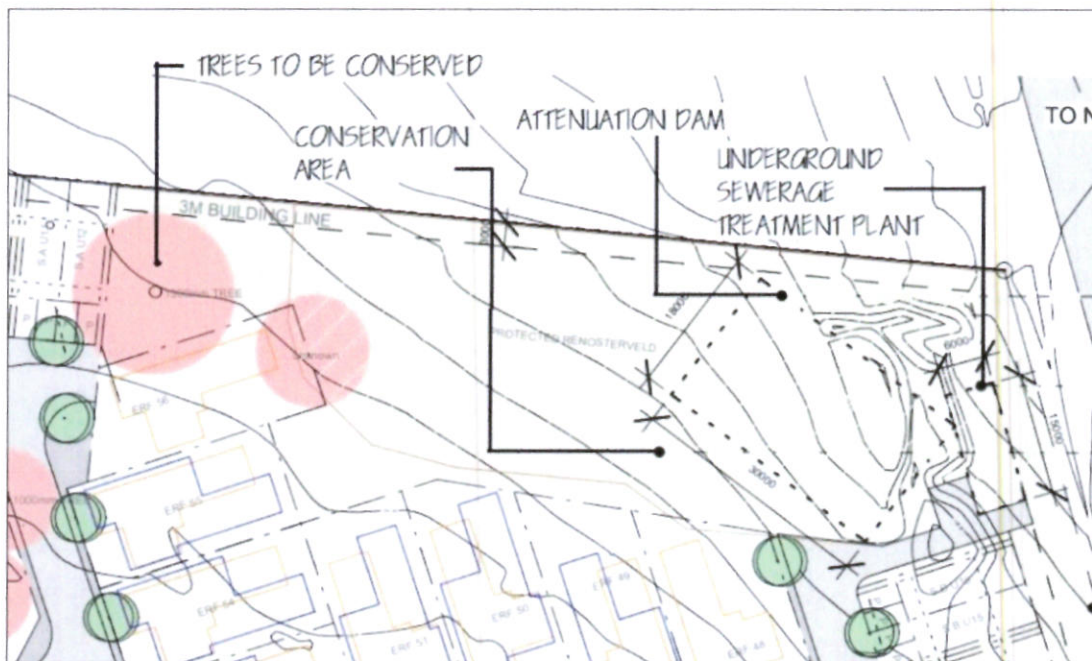
The proposed gated entrance will consist of a guard house, electricity sub-station, refuse collection yard and refuse pick-up bay. The access control is required to prevent the development from becoming a thoroughfare for pedestrians between the N1 and Klapmuts CBD and also for security in our crime ridden country.

4.3 PARKING

In terms of the Stellenbosch Zoning Scheme By-Law, parking should be provided at 1 bay for each residential unit as well as 1 bay/unit for visitors. All units in the proposed development make provision for 2 bays/unit to comply with the zoning scheme requirements.

4.4 OPEN SPACE

The Botanical Specialist identified an area at the northeastern corner of the property that must be conserved due to the occurrence of conservation worthy Renosterveld. The said area is accommodated in the layout design of the SDP in a nature area to be managed by the Homeowners Association. The area is also at the lowest point of the site and must accommodate a stormwater attenuation dam and the proposed underground sewerage treatment plant.

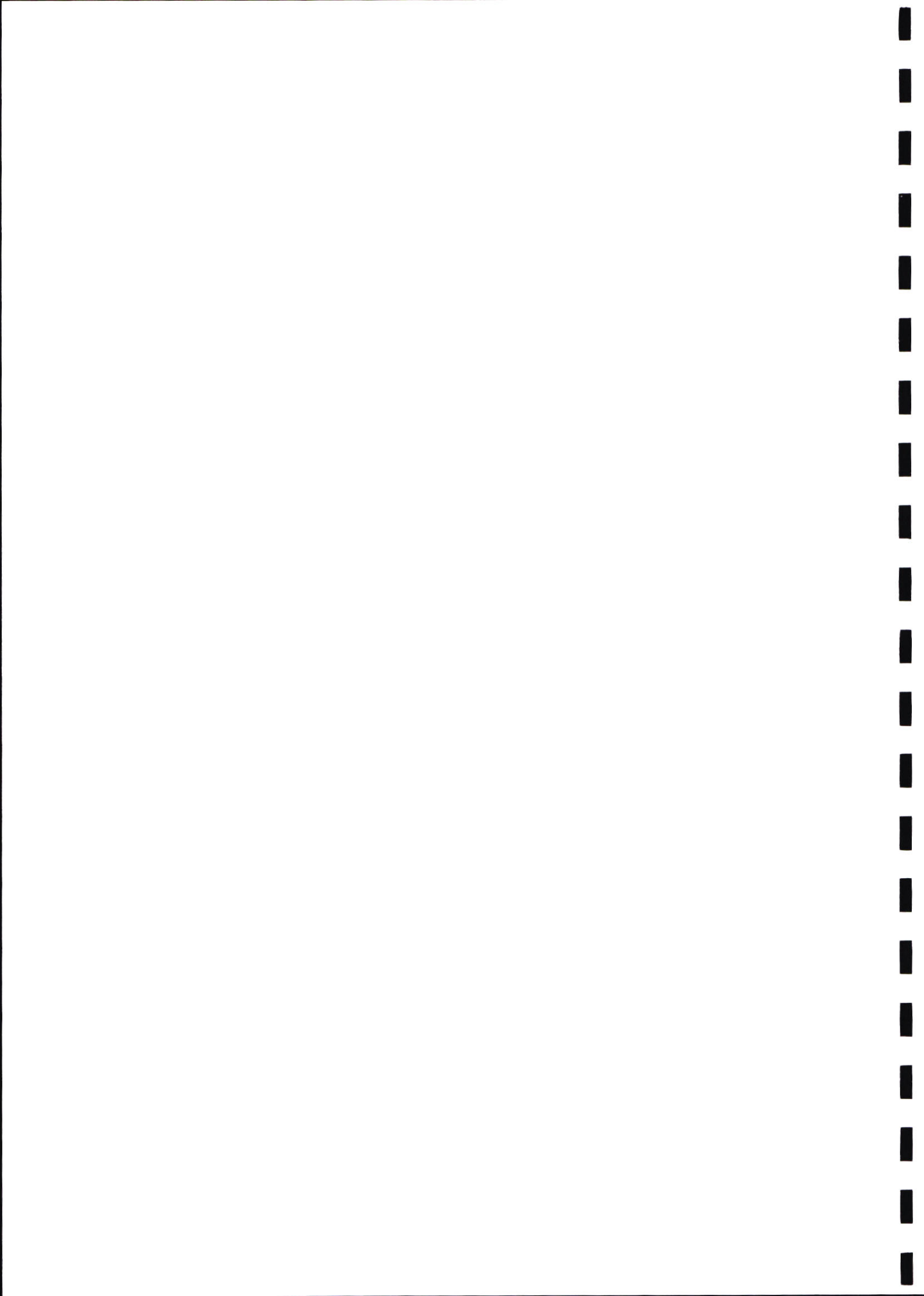


4.5 SCENIC ROUTE

As the R44 was declared as a scenic route, it is essential to treat the interface between the R44 and the proposed development with care. To mitigate the impact of the development on the scenic integrity of the R44 it is proposed that:

- A 5m plus open space strip be provided between the R44 and the residential units to provide a set-back from the R44 reserve to the first structure of more than 10m.
- A berm be constructed on the open space to screen visual and sound impact of the R44
- The berm be extensively landscaped.
- The proposed units along the R44 be semi-detached to have the effect of one structure.
- The proposed units vary between two and three storey units.





4.6 LANDSCAPING

A Landscape Plan was developed by Antoinette de Beer from ARLA Consultancy and is attached hereto as **ANNEXURE 11**.

Figure 9 below depicts the landscaping plan proposals.



FIGURE 9: LANDSCAPING PROPOSAL

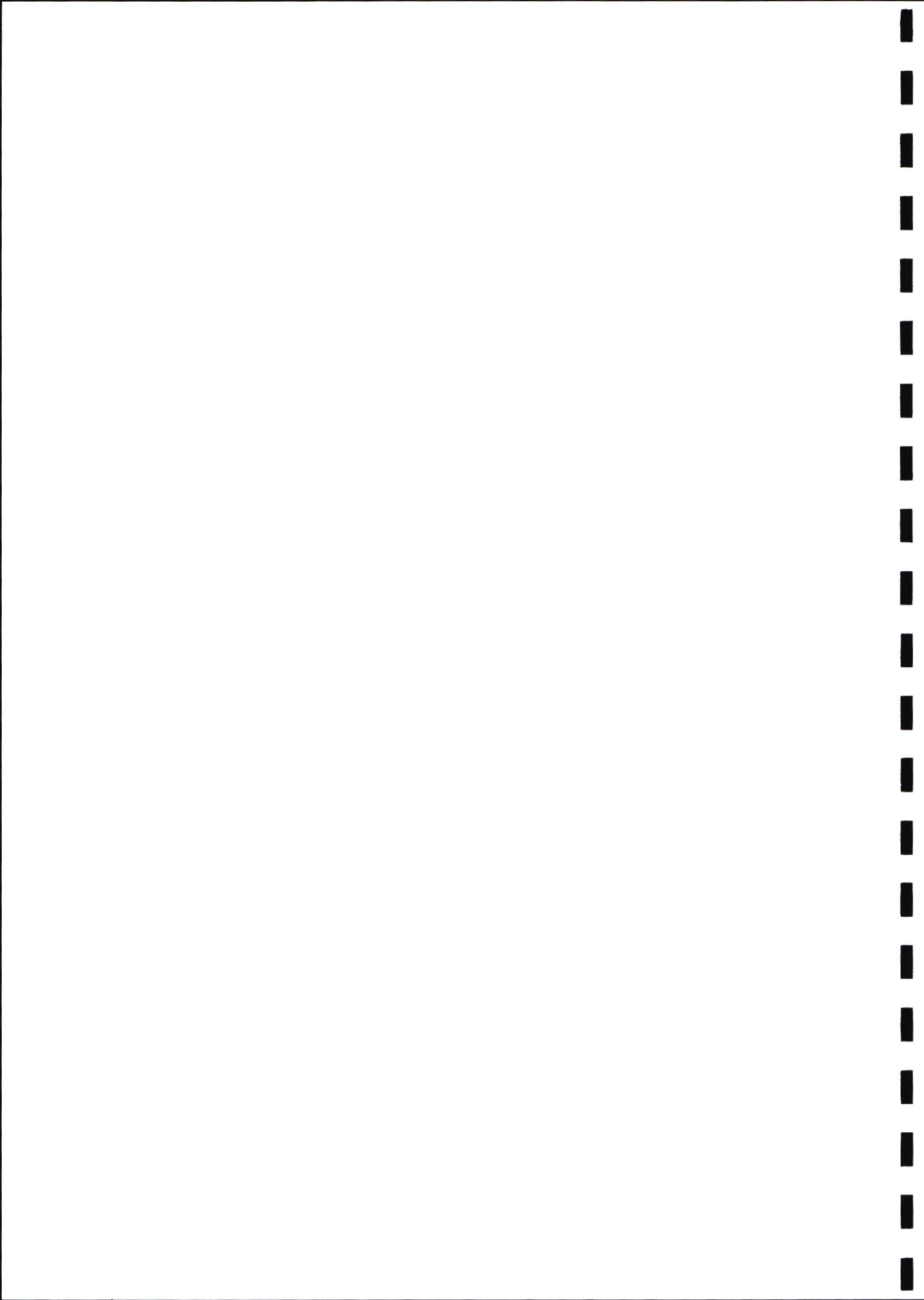
The landscaping plan incorporates the berm along the R44 with suitable planting as well as trees along the southern boundaries of the streets. It also incorporates rehabilitation of the Conservation area as well as suitable planting for the proposed retention dam. A Botanist identified all trees that must be retained and same have been incorporated on the landscaping plan.

4.7 ARCHITECTURAL LANGUAGE

The proposed development is envisioned as a modern Winelands village with an architectural language which is inspired by Cape Vernacular architecture and Modern Regionalism.

The village character is reinforced through intimate streetscapes where the 'village wall' carefully defines street spaces through closely spaced buildings. Street widths are a function of building heights to achieve a comfortable level of enclosure – in a way that streets will have a pedestrian bias and so become an extension of the home and encouraging social interaction.

The development massing is fine-grained with buildings deliberately broken up to achieve a more human scaled environment. Barns are linked with low unassuming clip-on structures



which not only assist in breaking down the apparent massing of the development, but also sets up visual interest and variety.

The buildings follow the principle of a simple barn style typology with strong pronounced gable ends. Gable ends are treated in a classic manner with centralised and vertically proportioned apertures. Following the vernacular, the building envelopes are predominantly heavy with apertures being secondary and smaller. In places where an inside-outside connection is required, a modern approach has been taken to link garden and interior spaces. The building arrangements are set up in a way that gardens are framed in a court like manner, with sufficient space to let light into the interiors.

Pergolas and lightweight screening devices form an integral part of the Cape Vernacular architectural language. It is proposed to make extensive use of timber pergolas to create shading, but also to create layering to private and public spaces while assisting in creating a human scaled environment.

Where possible, walls have been designed to create the impression of being thicker than they are. Usually by setting joinery into walls or increasing the thickness of gable ends. This echoes the massing embedded in some of the older Cape Vernacular buildings, which were constructed from stone, clay and lime.

It is anticipated to make extensive use of trees and landscaping to nestle the development into its natural setting. Planted berms are anticipated on the outer edges to create privacy and to provide some degree of noise attenuation along those edges. A careful balance of landscape and building will provide for an estate which is sensitive to its context, and which should provide for a comfortable and relaxing environment to its future residents.

4.8 MANAGEMENT OF THE ESTATE

The Estate will be called Mount Vista Estate and will be managed by a Homeowners Association. The constitution of the HOA will be submitted for approval after approval of this application. The HOA will be responsible for management of the Estate and will also be responsible for the maintenance and upkeep of internal services, open spaces, the Entrance Gate and perimeter fencing. The HOA documentation to be submitted will also incorporate Architectural Guidelines.

5. THE APPLICATION

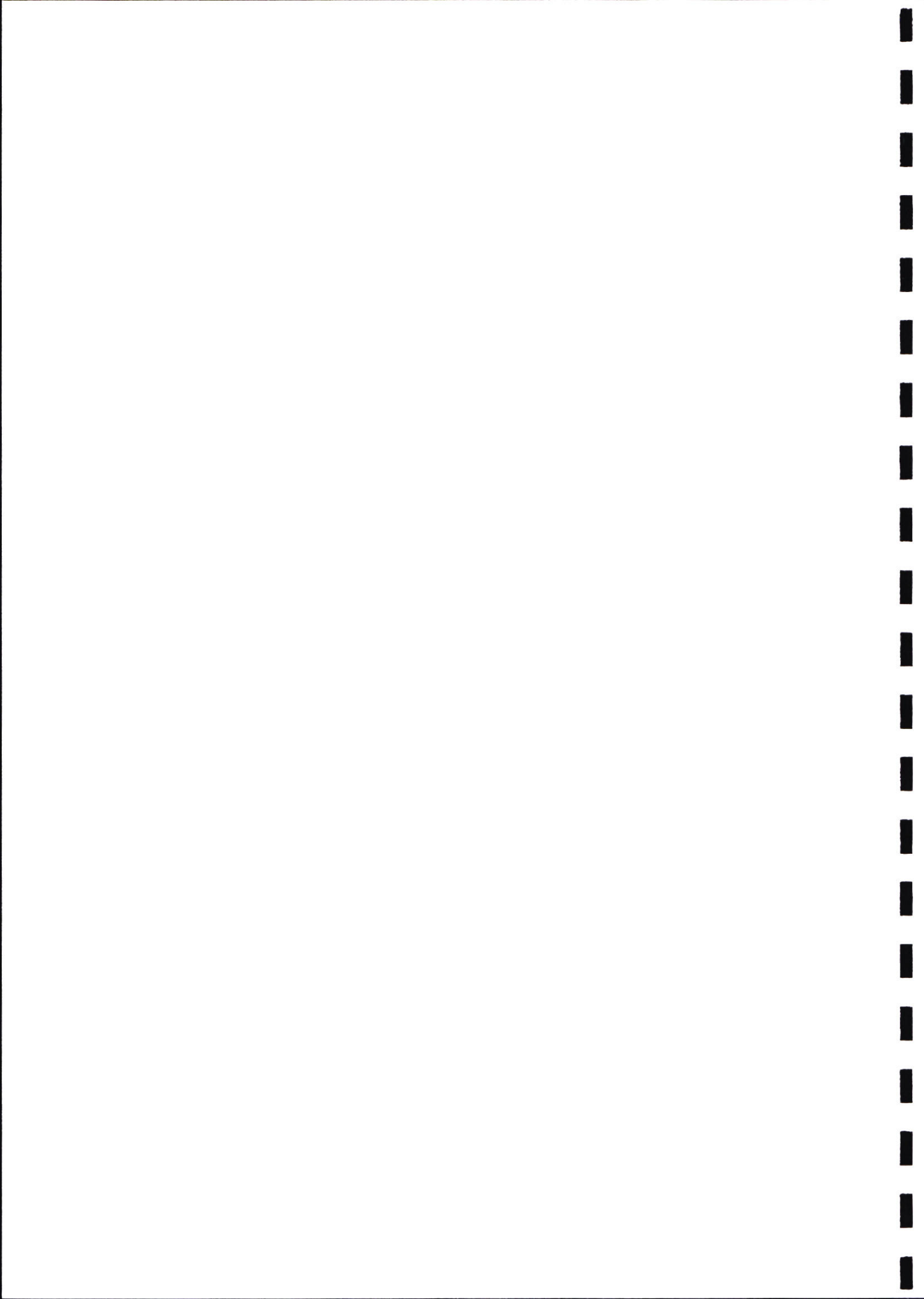
The application entails four components:

- Application for rezoning to subdivisional area and subdivision.
- Departure from the height restriction.
- Registration of a servitude right of way
- Approval of street names and numbering

5.1 APPLICATION FOR REZONING AND SUBDIVISION

The subdivision plan for the erven is attached hereto as **PLAN 3**.







PROPOSED SUBDIVISION

The proposed layout comprises of 68 group house erven of 325m² with general dimensions of 13m x 25m and 72 duplex erven of 55m² with general dimensions of 5,75m x 20m. The total number of erven for residential units is 110 with a density of 27u/ha. The erven are accessed by 8m road reserves with 6m wide blacktop and 1m sidewalks on both sides. An area in the northeast corner of the site worth conserving was identified by the botanist specialist and is proposed to be zoned Private Open Space Zone Natural Environment. A Private open space along the R44 has been provided for extensive landscaping and a berm. The internal road will be a private road and will be maintained by the Homeowners Association to be formed.

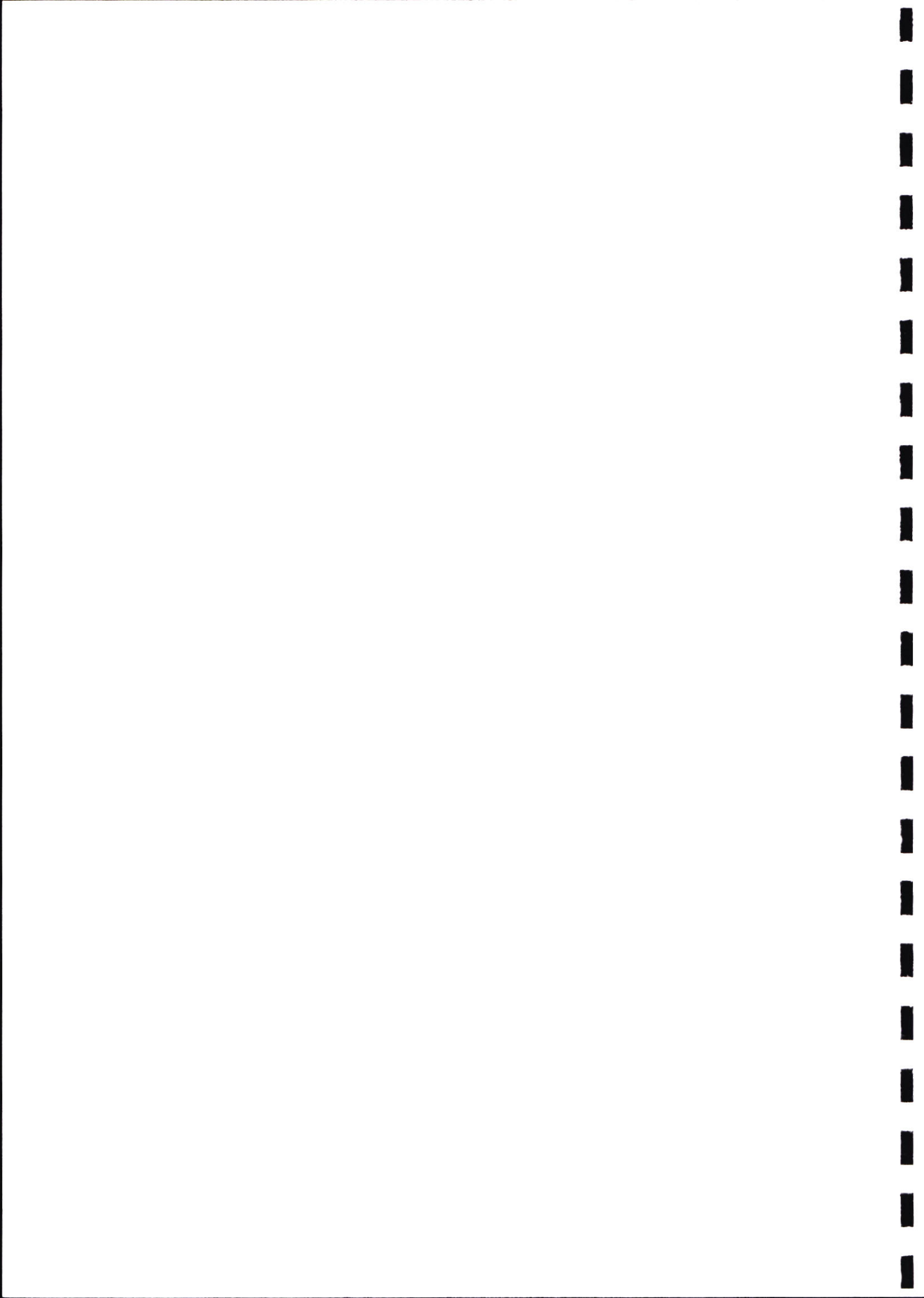
The development will be developed in 5 phases as identified on the subdivision plan.

5.2 DEPARTURE FROM THE ZONING SCHEME BY-LAW: HEIGHT

The Stellenbosch Zoning Scheme By-Law restricts the height of Group housing units to 2 storeys whereas the proposed duplex units consist of a mix between two and three storey units. This was deliberately done to achieve an articulated roofscape to create a more pleasing streetscape, rather than same height units that would form a "wall of buildings" along the R44. It is believed that this approach, as well as the building set-back of approximately 10m from the R44 warrant a departure from the height restriction.

5.3 REGISTRATION OF AN ACCESS SERVITUDE

As per paragraph 4.2, an access servitude is required from the owner of Ptn. 57 of Farm 716. The consent from the said owner is attached as **ANNEXURE 9**. The proposed servitude diagram is attached as **ANNEXURE 10**.



5.4 STREETNAMES PLAN AND NUMBERING

The proposed street names and numbering is depicted on the plan below and is also attached as **PLAN 4**.



6. SERVICES

6.1 CIVIL SERVICES

A GLS Report has been commissioned and is attached as **ANNEXURE 12**.

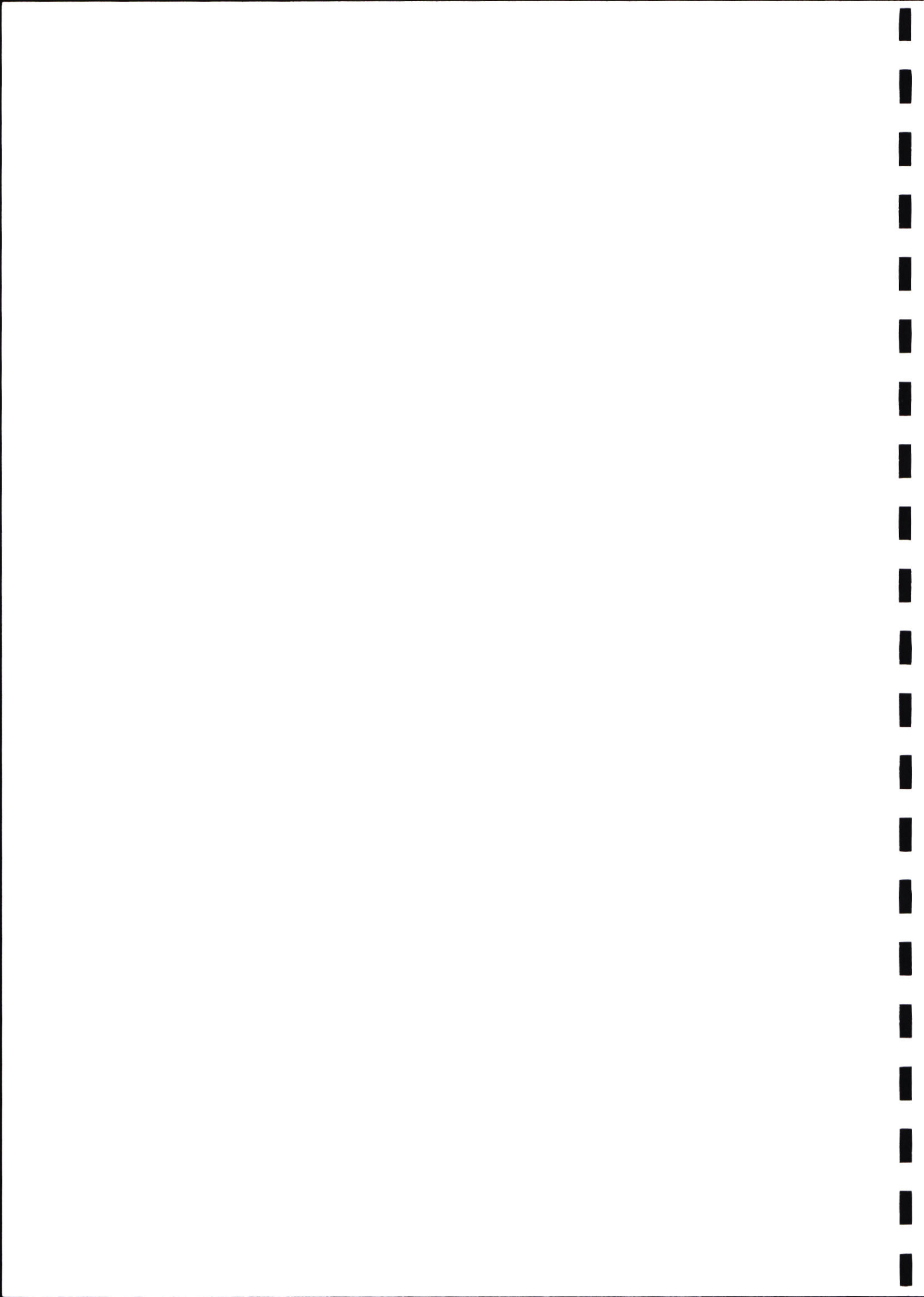
Refer to **ANNEXURE 13** for the Civil and Storm Water Engineering Services Report.

Water

In terms of the report the closest water reticulation network is a 150mm pipe located in Old Paarl Road. It is thus proposed that link services SKW1.20 (60m x 200mm supply line) and SKW 1.28 (215m x 160mm supply line) be constructed to provide water to the site.

It is furthermore proposed that bulk upgrades SKW 1.19 (380m x 200mm supply line and connectors) and SKW 1.18 (225m x 200mm supply pipe and connectors) be implemented to improve network conveyance.





Sewer

Currently there are no existing services in proximity to the site. In order to service the proposed development a number of link and bulk network upgrades are required; these include the following:

- 80m of a 160mm outfall sewer (link)
- 70m of a 150mm gravity sewer line (link)
- New 50l/s pump station (bulk)
- 1380m of a 250mm rising main (bulk)

Apart from the network upgrades, there is currently capacity constraints at the Klapmuts WWTW. Due to the constraints at the WWTW, accommodating the development temporarily by means of a conservancy tank, will not be a possibility.

It is therefore proposed that the development is serviced by means of a package plant, until such time that capacity becomes available and the required bulk upgrades are constructed. As a minimum it is recommended that the link services (item 1 and SKS 1.12a) are fully constructed along with the construction of the internal network for the proposed development.

Stormwater

In order to achieve the calculated treatment volume of 541,98 cubic meter, it is proposed that an attenuation pond be constructed on site.

An overland escape will be provided to the stormwater channel alongside the R44 for storm events larger than 1:50 year occurrence.

In addition to the stormwater attenuation pond that will be constructed, runoff from the southeastern part of the site will discharge into the existing Uitkoms Dam.

6.2 ELECTRICAL SERVICES

Refer to **ANNEXURE 14** for the Electrical Services Report.

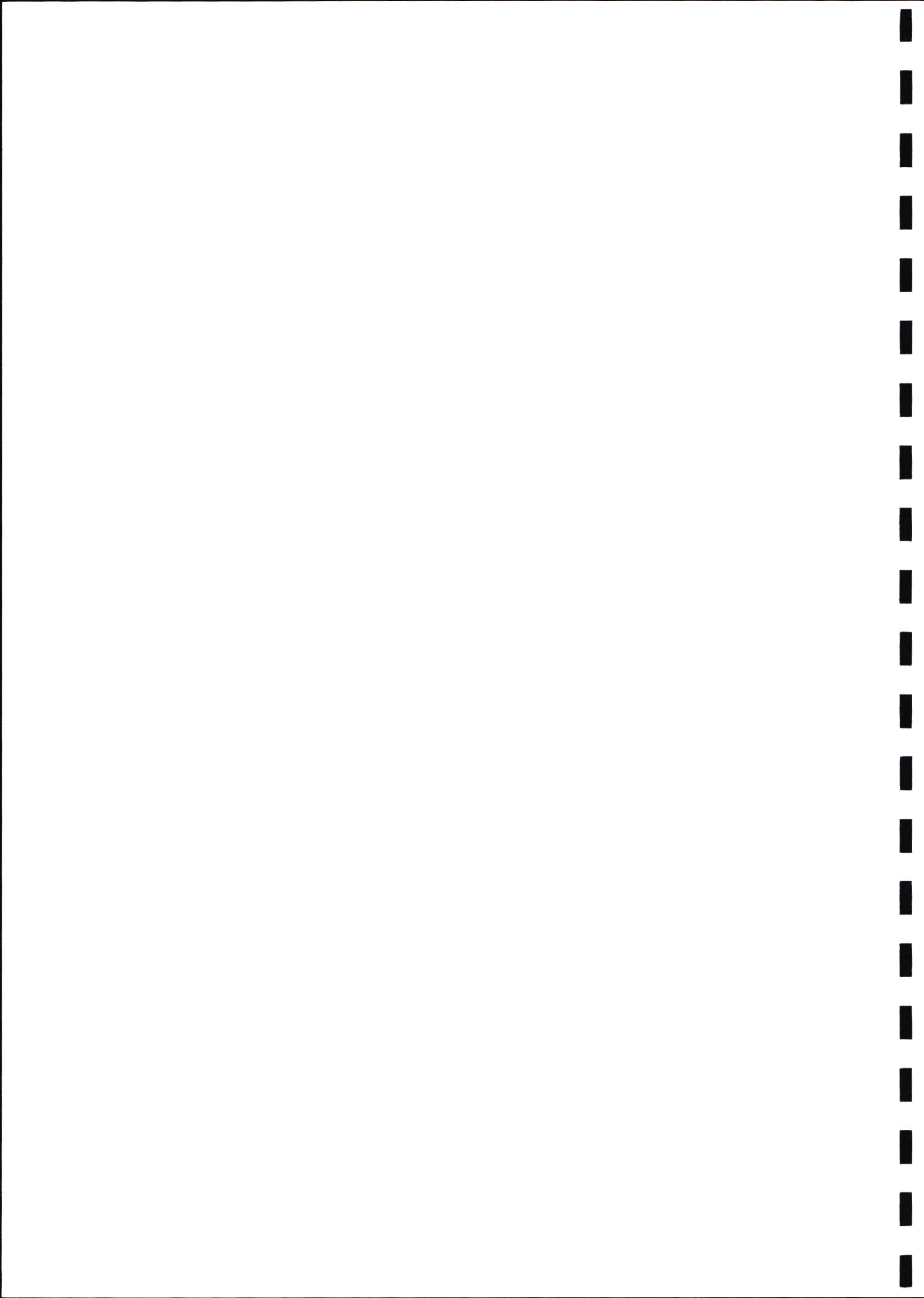
In terms of the report, the site is currently served by means of a low voltage connection from a 50kVA pole transformer on the erf. The transformer is owned and maintained by Eskom.

An Eskom powerline runs across the intended build site. A 3m servitude area (1.5m on both sides of the line) will have to be provided.

The After Diversity Maximum Demand (ADMD) is calculated to be 500kVA for the development and it is recommended that the electrical requirements of the site not be increased beyond the scope of these calculations as this may cause the site to require a connection larger than 500kVA, which will result in the site requiring additional electrical equipment such as a Ring Main Unit (RMU).

The external network up to the site boundary is medium voltage by means of a overhead network.





Eskom will supply and install a 500kVA miniature sub-station on the property boundary to accommodate the supply required.

The internal network will be as per the services report.

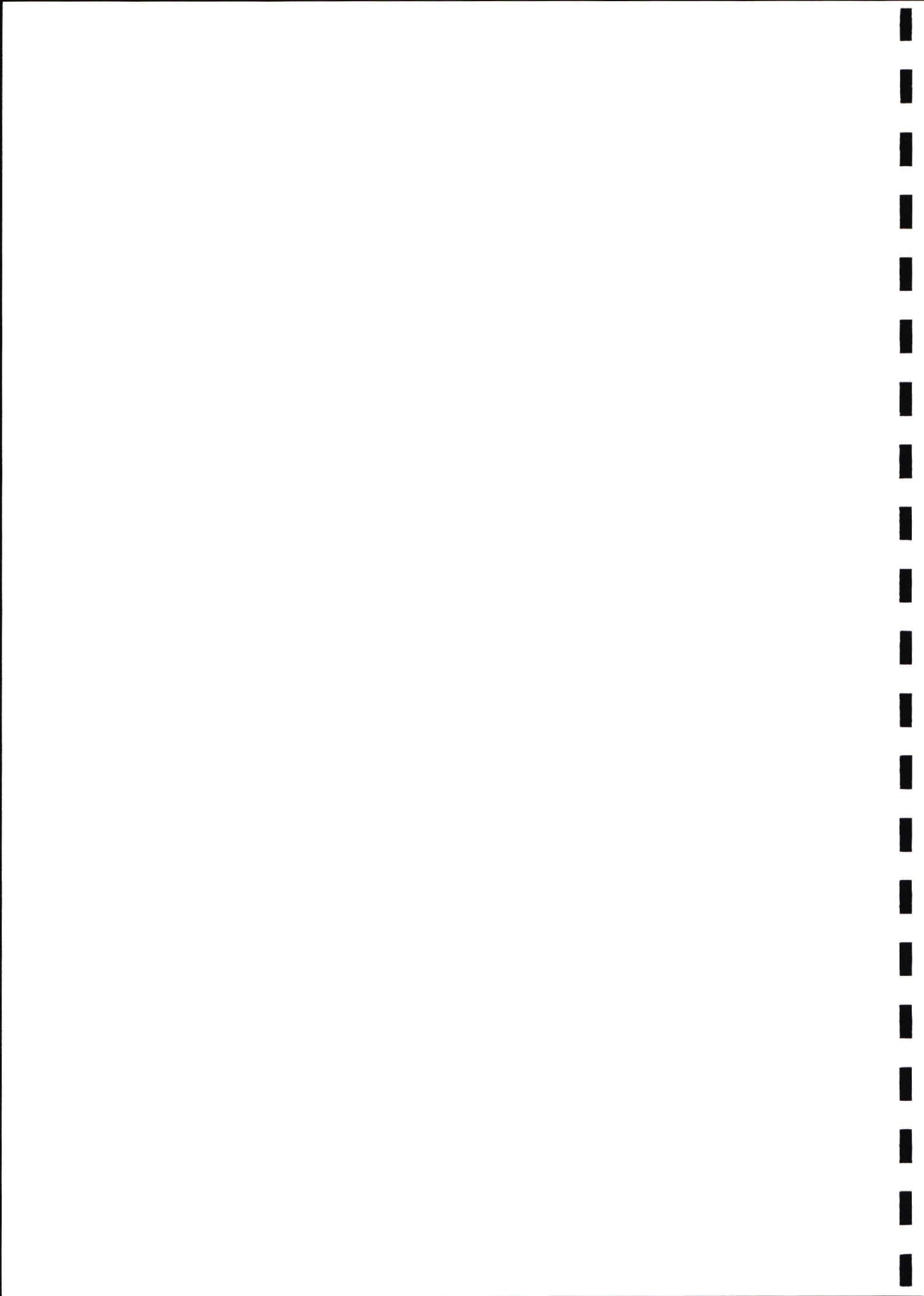
7. TRAFFIC IMPACT ASSESSMENT

A Statement to this effect from the Traffic Engineer is attached as **ANNEXURE 15**.

The following can be concluded from the report:

- 1) That this TIS accompanies the application for rezoning and subdivision of Farm 716/5, bordered by the R44 (MR 27) to the east, and situated approximately halfway between Old Paarl Road (MR 189) and the N1, Klapmuts.
- 2) That the proposed development consists of 110 townhouse-type erven, with access to be obtained via the neighbouring Farm 716/27, Heaford Street and Brounger Street to Old Paarl Road as per the AMP for the R44 (MR 27) as per WCG planning.
- 3) That according to information, an application for the neighbouring Farm 716/27 was submitted for 40 townhouses, which included provision for the 15-metre-wide public street reserve along the Rozenmeer-boundary via which access to the proposed development will be obtained.
- 4) That the proposed development will have the potential to generate 93 peak hour trips (23 in, 70 out during the AM peak hour and 65 in, 28 out during the PM peak hour).
- 5) That to accommodate background traffic:
 - a) At the R44/Old Paarl Road intersection, dedicated left-turn lanes are suggested on the western Old Paarl Road- and southern R44-approaches.
 - b) At the Old Paarl Road/Brounger Street intersection, the Brounger Street-approach be provided with a dedicated right-turn lane (by way of painted road markings).
- 6) That no external road upgrades are considered necessary as result of the proposed development.
- 7) That the public street within its 15-metre road reserve is suggested to be provided with a 7,4-metre blacktop width, and sidewalk along at least one side thereof.
- 8) That Heaford Street currently consists of a 9,45-metre reserve with an additional 5,5 metres subdivided from the Rozenmeer parent property in order to provide Heaford Street with a 15-metre road reserve.
 - a) That according to information the said subdivided strip has not yet been rezoned and transferred as per the development's conditions of approval – this is to be addressed by the Municipality.





- b) And that similarly, the illegal structures currently encroaching into the Heaford Street reserve is also to be addressed by the Municipality.
- 9) That permission has been obtained from the neighbouring 'panhandle property' for the proposed development to obtain access across a section thereof and that a servitude right-of-way will be registered accordingly.
- 10) That the security-controlled access will consist of two inbound lanes and one outbound lane, with a 4,0-metre horizontal clearance to accommodate emergency vehicles, and security booms setback approximately two vehicle lengths from the property boundary, with a refuse room and turning space for Municipal refuse trucks to the outside of the security controls.
- 11) That internal circulation will be via internal streets (8 metre road reserves, with 5,5 to 6,0 metre streets).
- 12) That 2 parking bays per residential unit will be provided in line with the requirements of the Municipality, and that parking bay dimensions will be in line with normal parking standards, with available isle widths slightly substandard but expected to accommodate passenger vehicles manoeuvring in/out of their parking spaces within the residential estate; and
- 13) That a sidewalk will be provided along at least one side of the public street providing access to the proposed development, that a pedestrian gate is proposed at the security-controlled access, and that no additional public- or non-motorised transport facilities are considered necessary as result of the proposed development.

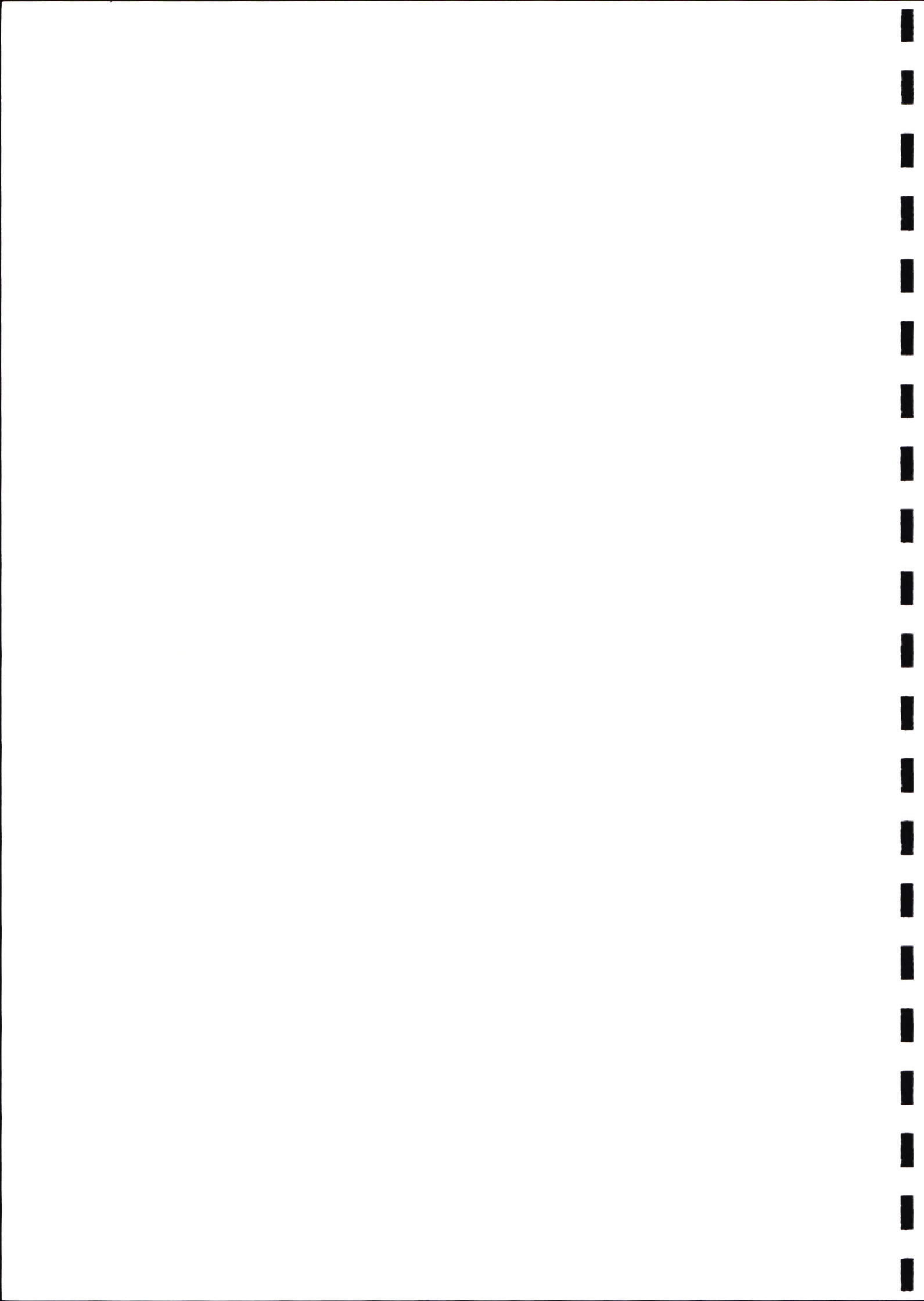
From the above, it is recommended that the proposed residential development on Farm 716/5, Klapmuts, be considered for approval from a traffic flow point of view.

It is further recommended that the DCs payable for the proposed development be contributed to either the construction of the public street required to access the subject property via Old Paarl Road, or alternatively, that it be contributed towards the background upgrades suggested to the R44/Old Paarl Road intersection.

8. ENVIRONMENTAL

A Basic Assessment application is required and being drafted by GNEC Environmental Consultants. As part of the application a Botanist as well as a Freshwater Specialist was appointed. The report of the Botanist is attached as **ANNEXURE 16** and the report of the Freshwater Specialist as **ANNEXURE 17**. The Botanist identified a conservation worthy patch of Renosterveld as well as all the trees on site that must be retained. The Freshwater specialist determined the development setback line from the dam. All recommendations of the Botanist and Freshwater specialist were incorporated in the SDP design.





8.1 HERITAGE SECTION 38 APPLICATION

A Notice of Intent was submitted to Heritage Western Cape and the consent to proceed without any further Heritage studies was received and is attached hereto as **ANNEXURE 18**.

9. MOTIVATION

9.1 LAND USE PLANNING PRINCIPLES

The following Development Principles per Section 7 of SPLUMA and Section 59 of LUPA is relevant:

N	PRINCIPLE	CONSISTENCY
a	Spatial Justice	The development proposal is accessible to all communities of South Africa, offer job opportunities during the construction phase to all communities and does not result in segregation of communities
b	Spatial sustainability	The proposed development is privately funded, developed and managed; is environmentally friendly; make optimal use of the characteristics of the land and existing services; does not load any future financial liability on infra structure or social services and does not cause urban sprawl and is thus spatially sustainable.
c	Efficiency	The proposal makes optimal use of the natural attributes of the site; will make use of existing services and infra structure; does not have any negative environmental, social, or economic impacts, but rather a positive social, economic, and environmental impact by providing a controlled, safe and privately funded residential opportunity that contributes to economic growth
d	Spatial Resilience	The proposed development is located in an area with similar land uses, make use of existing infra-structure, and entails a multi-million-rand private investment, thus ensuring spatial resilience.
e	Good Administration	The proposed development will be managed by a Homeowners Association.

The land use application is further motivated on the following grounds:

- The proposed development is located in an existing town identified as a growth area in the MSDF.



- The proposed development is furthermore located inside the Urban Edge of Klapmuts.
- The MSDF designated the land for “Urban Development”.
- Klapmuts is located on a primary development axis in the MSDF.
- The proposed development will enhance the Urban Form and complement the existing Rozenmeer development.
- Services can be provided in a feasible and sustainable manner.

The following table provides a summary of the motivation in terms of the statutory context and indicates if the application is in line or not in line with the relevant policies.

POLICY	IN LINE / NOT IN LINE	SUMMARISED MOTIVATION
MSDF, 2023	In line	<ul style="list-style-type: none"> • The proposed development is located in the Urban Edge of Klapmuts. • The land is designated for urban development in the MSDF. • Klapmuts is identified as a growth area in the MSDF. • Klapmuts is located on the primary development axis as identified in the MSDF. • It is a high-density development in Klapmuts South.
Inclusionary Housing Policy	In line	<ul style="list-style-type: none"> • To be further discussed with Council.

10. DESIRABILITY CRITERIA

The desirability of this development proposal is further illustrated by the following desirability parameters:

CRITERIA	MOTIVATION
Economic Impact	The economic impact of the proposed development is positive as it represents a R1.2 million investment from an upcountry company in the Western Cape. At the same time job opportunities are created during the construction phase of the project as well as some jobs on a permanent basis.
Social Impact	The social impact of the proposed development will also be positive. The creation of job opportunities will alleviate the poverty cycle and the resultant relieve on poverty crimes like house break, theft, gender violence,



	substance abuse and violence against children.
Scale Of Capital Investment	The scale of capital investment will be substantial for the Western Cape.
Compatibility With Surrounding Uses	The proposed rezoning is compatible with the surrounding uses as it is located adjacent to the existing Rozenmeer development and also adjacent to the proposed residential development on Ptn 7 of Farm 716.
External Engineering Services	The scale of the proposed rezoning will not have a negative impact on the external engineering services as the sewerage modular plant is on-site, bulk electricity and water is available, and storm water is cleaned and attenuate on site.
Safety, Health, and wellbeing Of Surrounding Community	The proposed rezoning will not have a negative impact on the safety, health or wellbeing of the surrounding community as it is complementary to the existing residential fabric of the area.
Heritage	The proposal was submitted to Western Cape Heritage which gave their support for the proposed development as per Annexure 18 .
Biophysical Environment	The application does not have any impact on the biophysical environment as the SDP design took into account all specialist input.
Traffic Impact, Parking, Access, and Related transport Considerations	The proposed rezoning will require no bulk upgrades to the road infra-structure as per the attached TIS.
Mitigating Issues	No adverse impacts are foreseen and therefore no mitigation measures are required.

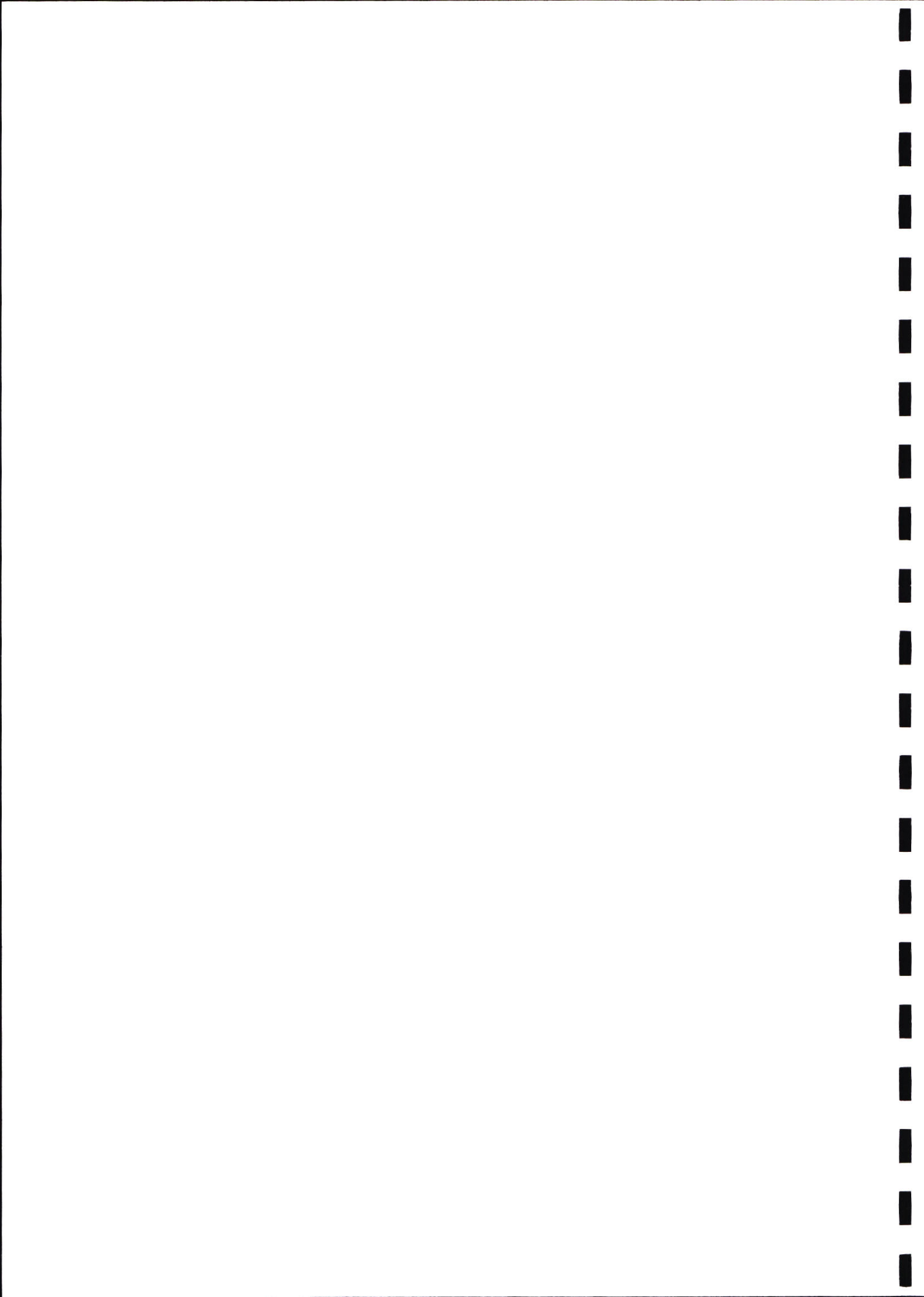
11. CONCLUSION

The proposed development is not restrained by any conservation worthy elements, environmental issues, title deed restrictions or any other restraints, is mostly consistent with the Zoning Scheme and Council Spatial Policies. As such, it is therefore recommended that the application for

- REZONING TO SUBDIVISIONAL AREA OF PORTION 5 OF FARM 716 KLAPMUTS IN TERMS OF SEC 15 (2)(A) OF THE MPBL
- SUBDIVISION OF PORTION 5 OF FARM 716 KLAPMUTS IN TERMS OF SEC 15(2)(D) OF THE MPBL
- DEPARTURE FROM THE HEIGHT RESTRICTION IN TERMS OF SEC 15(2)(B) OF THE MPBL
- REGISTRATION OF SERVITUDES IN TERMS OF SEC 15(2)(D) OF THE MPBL

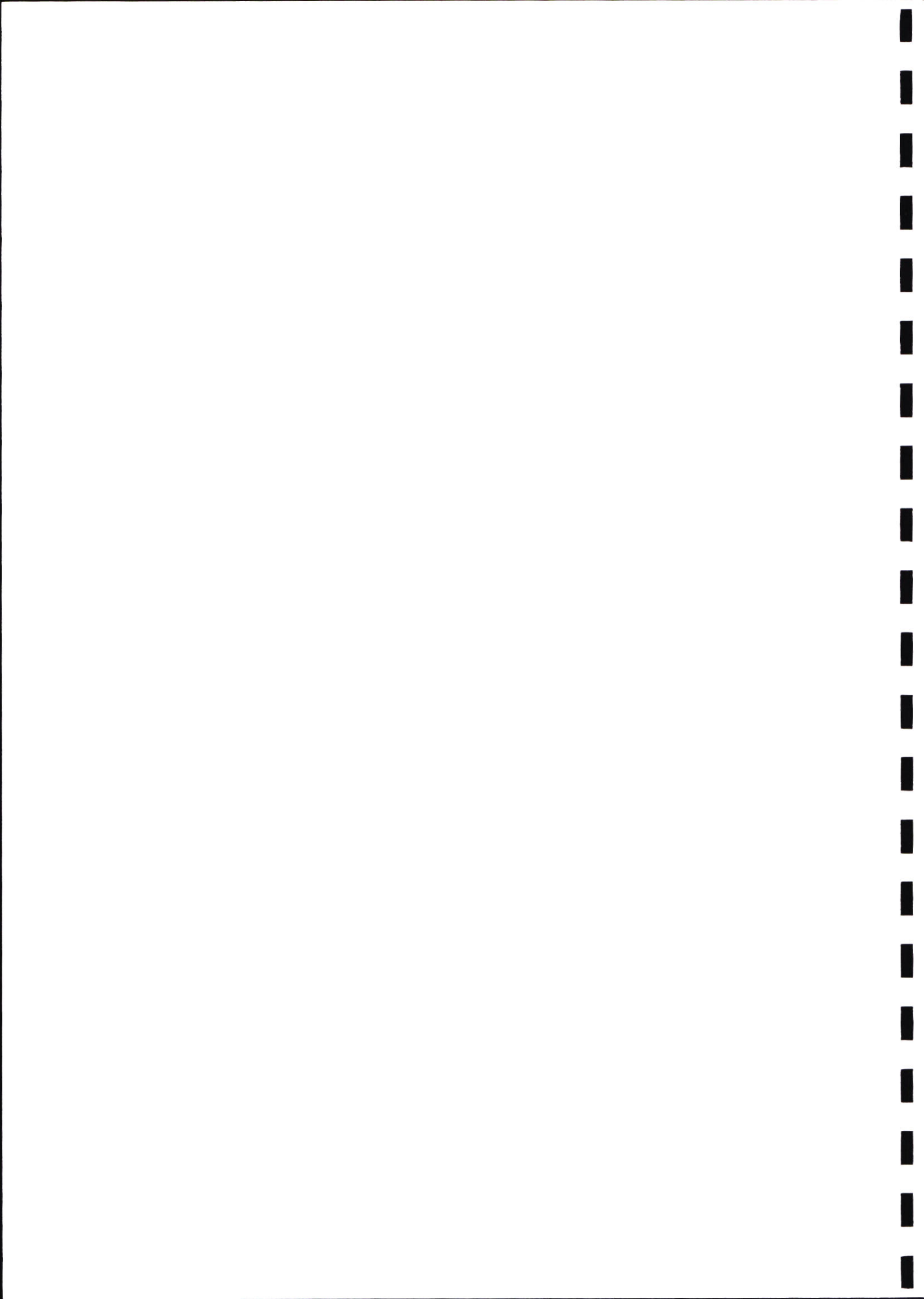
be approved in order to enable this project to proceed.





ANNEXURE 1: PRE-APPLICATION CONSULTATION NOTES





STELLENBOSCH MUNISIPALITEIT

VOOR-INDIENING VERGADERING: GED 5 OF PLAAS 716 IN KLAPMUTS

DATUM: 26 JUNE 2023

TEENWOORDIG:	Chrizelle Kriel	-	Stellenbosch Municipality
	Stiaan Carstens	-	Stellenbosch Municipality
	Robert Foey	-	Stellenbosch Municipality
	Nigel Winter	-	Stellenbosch Municipality
	Tyrone King	-	Stellenbosch Municipality
	Leandro Hendriks	-	Stellenbosch Municipality
	Theo Steyn	-	NuPlan Africa
	Ruaan Siebritz	-	UDS Africa
	Yolandi Obermeyer	-	UDS Africa

1. DIENSTE

Ten opsigte van riool verduidelik Ruaan dat, vanweë die beperkings by die suiweringswerke, daar gekyk sal moet word na 'n modulêre riool installasie op-perseel. Ruaan noem ook dat hulle steeds wag op die GLS verslag voordat hulle 'n diensteverslag kan finaliseer.

Die munisipaliteit deel egter mee dat voorsiening op die nuwe begroting gemaak is vir opgradering van die suiweringswerke. Hulle kyk na 'n 2 tot 3 jaar horison. Hulle is egter ook bekommerd oor die riool netwerk en noem dat 'n nuwe pompstasie en bulk lyn benodig word. Dit kan moontlik met die Ontwikkelingsbydraes betaal word. 'n Tekort op die Ontwikkelingsbydrae sal deur die ontwikkelaar betaal moet word.

Ten opsigte van water noem Ruaan dat opgraderings aan die netwerk benodig word. Die munisipaliteit noem dat hulle hulle sal laat lei deur die GLS verslag wanneer beskikbaar.

Ten opsigte van stormwater noem Ruaan dat die kwaliteit van die water behandel sal word en voorsiening vir 'n verdragingsdam gemaak sal word.

Ten opsigte van elektrisiteit verduidelik Ruaan dat daar 'n oorhoofse Eskom lyn is wat geskuif sal moet word en waarvoor 'n serwituut geregistraar sal moet word.

2. GRONDGEBRUIK

Theo verduidelik die uitleg van die voorgenome ontwikkeling en lê klem op die hantering van die eenhede langs die R44. Hy verduidelik dat hulle 2 en 3 verdieping eenhede langs die R44 wil plaas om 'n aantreklike straat toneel vanaf die R44 te skep en daarvoor sal hulle 'n afwyking van die hoogte beperking moet verkry. Robert voeg by dat die R44 'n "scenic route" is en dat die sorg met hantering van die eenhede langs die R44 verwelkom word. Hy kwalifiseer egter en sê dat die hoogte afwyking slegs vir die eenhede langs die R44 toegestaan sal word en dat hulle 'n straataansig vanaf die R44 as deel van die aansoek sal wil sien. Theo bevestig dat hulle die straataansig sal insluit en dat die afwyking op slegs die eenhede langs die R44 aanvaarbaar is.

Robert verduidelik ook dat daar 'n voorwaarde van goedkeuring sal wees dat 'n argiteks handleiding en implementeringsplan ingedien sal moet word. Ook dat die indiening en goedkeuring van die Statuut van die huisenaarsvereniging 'n goedkeuringsvoorwaarde sal wees.

Chrizelle meld ook dat ons nou reeds straatname van ons keuse moet toeken solank dit nie 'n betaande straatnaam binne ongeveer 2km dupliseer nie.

Robert versoek ook dat 'n paragraaf ingesluit word om die voorgestelde toegangsbeheer te motiveer.

Chrizelle bevestig dat die aansoek elektronies ingedien moet word en dat sy die link daarvoor aan Theo sal stuur. Ook dat die publieke proses die normale By-Law proses sal wees.

3. TOEGANG

Yolandi verduidelik die toegangs probleem en dat toegang via Haefordstraat geneem sal moet word omdat die plan vir die opgradering van die R44 sleg 'n links-in toelaat. Dit sal ook beteken dat toegang oor die aanliggende eiendom geneem sal moet word.

Theo noem dat die nuutste SDP van die aanliggende eiendom tot sy beskikking daarop dui dat 'n 15 publieke pad voorsien word vir dié doel.

Chrizelle noem dat dit inderdaad so is en dat daardie aansoek baie na aan afgehandel is.

Yolandi verneem na die oorskryding van strukture oor die padreserwe en Stiaan bevestig dat dit die munisipaliteit se verantwoordelikheid is om die oorskrydings te laat verwyder. Hy vermoed dat die proses daarvoor reeds begin het.

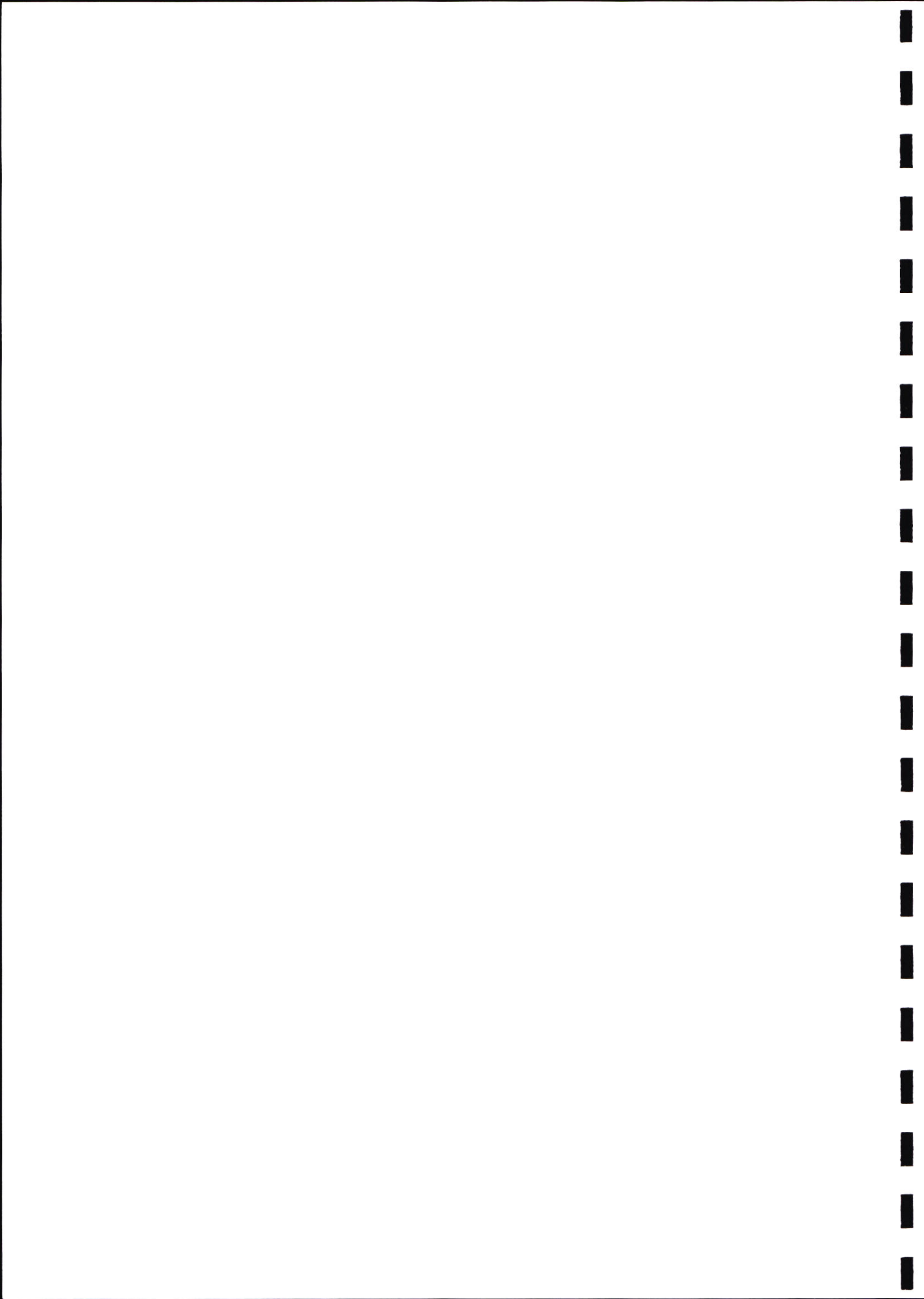
Stiaan verduidelik ook dat die 5,5m strook aan die suidelike grens van Rozenmeer by die padreserwe van Haefordstraat gevoeg word en dat dit 'n goedkeuringsvoorwaarde was dat Rozenmeer die strook afgee vir die verbreding van Haefordstraat. Die Munisipaliteit dryf daardie proses.

4. VULLISVERWYDERING

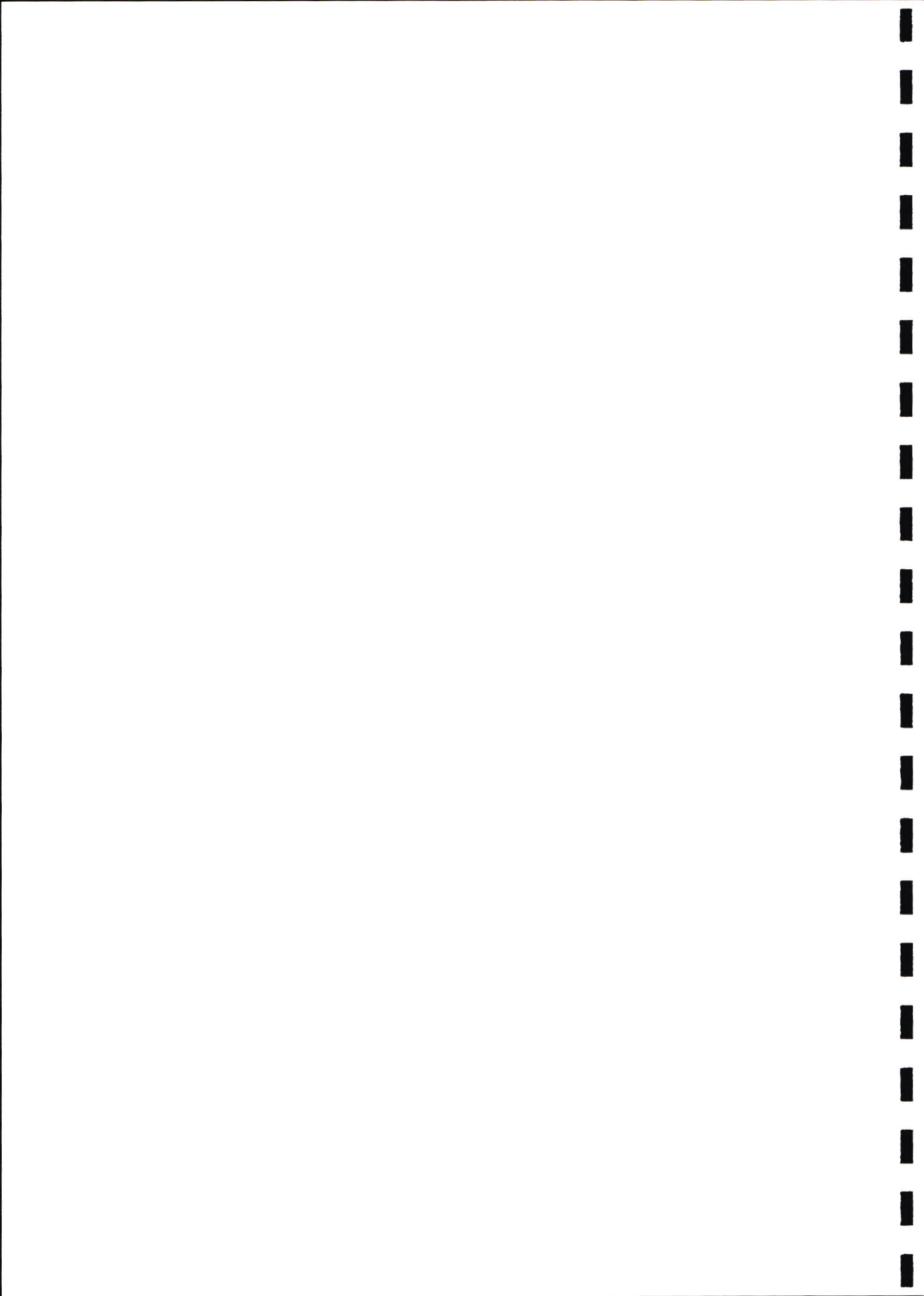
Die munisipaliteit besorg oor die huidige vullisverwyderingsvoorstel en versoek dat ons dit ondersoek en moontlik moet wysig.

5. INCLUSIONARY HOUSING

Theo verneem of die Munisipaliteit 'n "inclusionary housing" beleid het. Hulle bevestig dat die Raad einde Mei 'n beleid goedgekeur het, maar dat daar nie nou enige vereiste aan die aansoeker gestel word nie. Die aansoeker is egter vry om inclusionary housing in sy aansoek in te sluit sou hy wou.



ANNEXURE 2: COMPANY RESOLUTION



COMPANY RESOLUTION

MEETING OF THE DIRECTORS OF GOLDEN GLAZE INVESTMENTS (PTY) LTD. REGISTRATION NO. 2002/652147/07

DATE: 18 AUGUST 2023

PLACE: DURBAN

Resolved:

1. That the Company submit a land use application to the Stellenbosch Municipality in respect of portion 5 of farm 716, Division Paarl.
2. That Bawencha Reddi be authorized to sign a Power of Attorney in favour of Theunis Lodewyk Steyn of NuPlan Africa Town Planners to act herein on behalf of the Company.



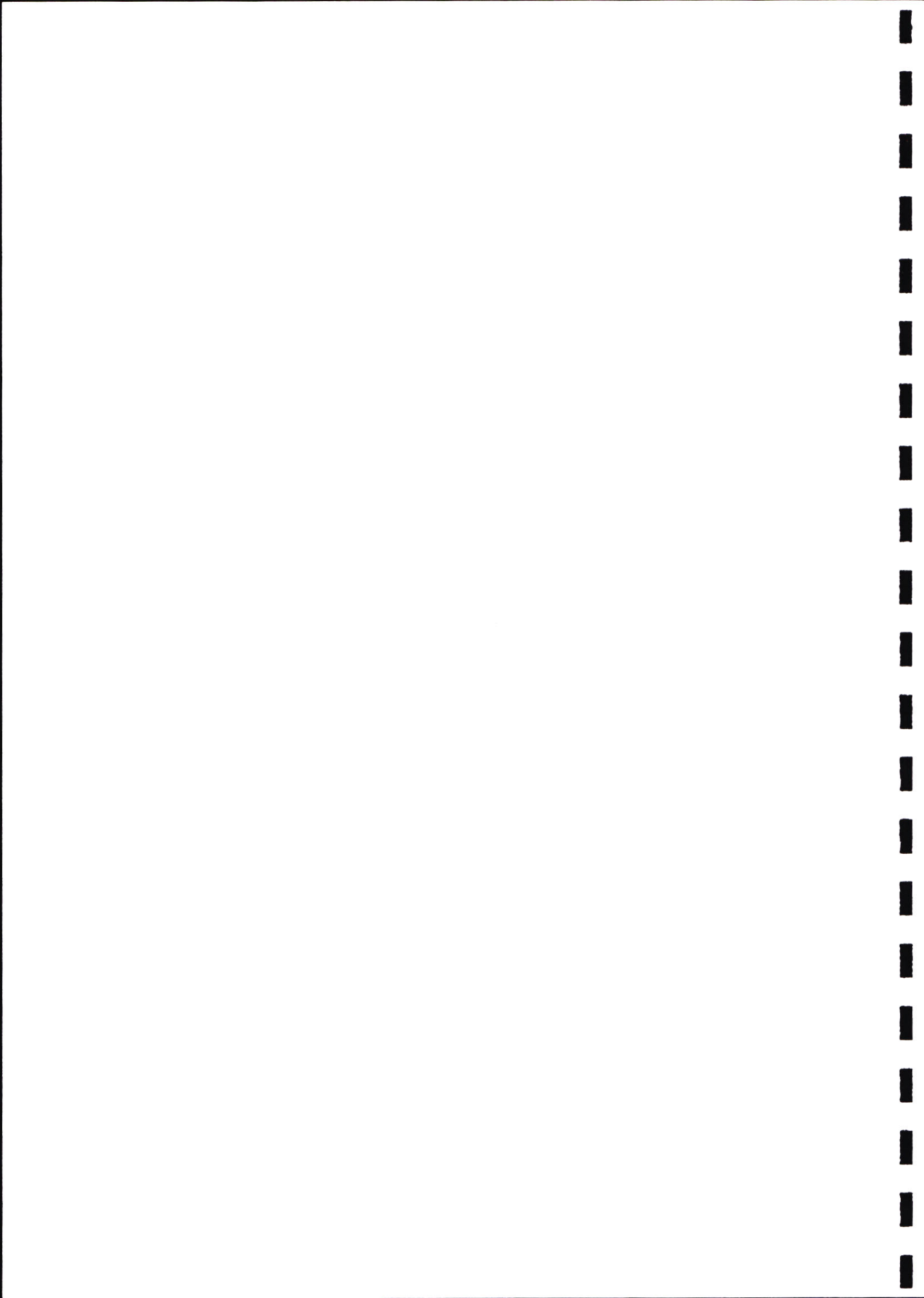
DIRECTOR

Date: 18/08/2023

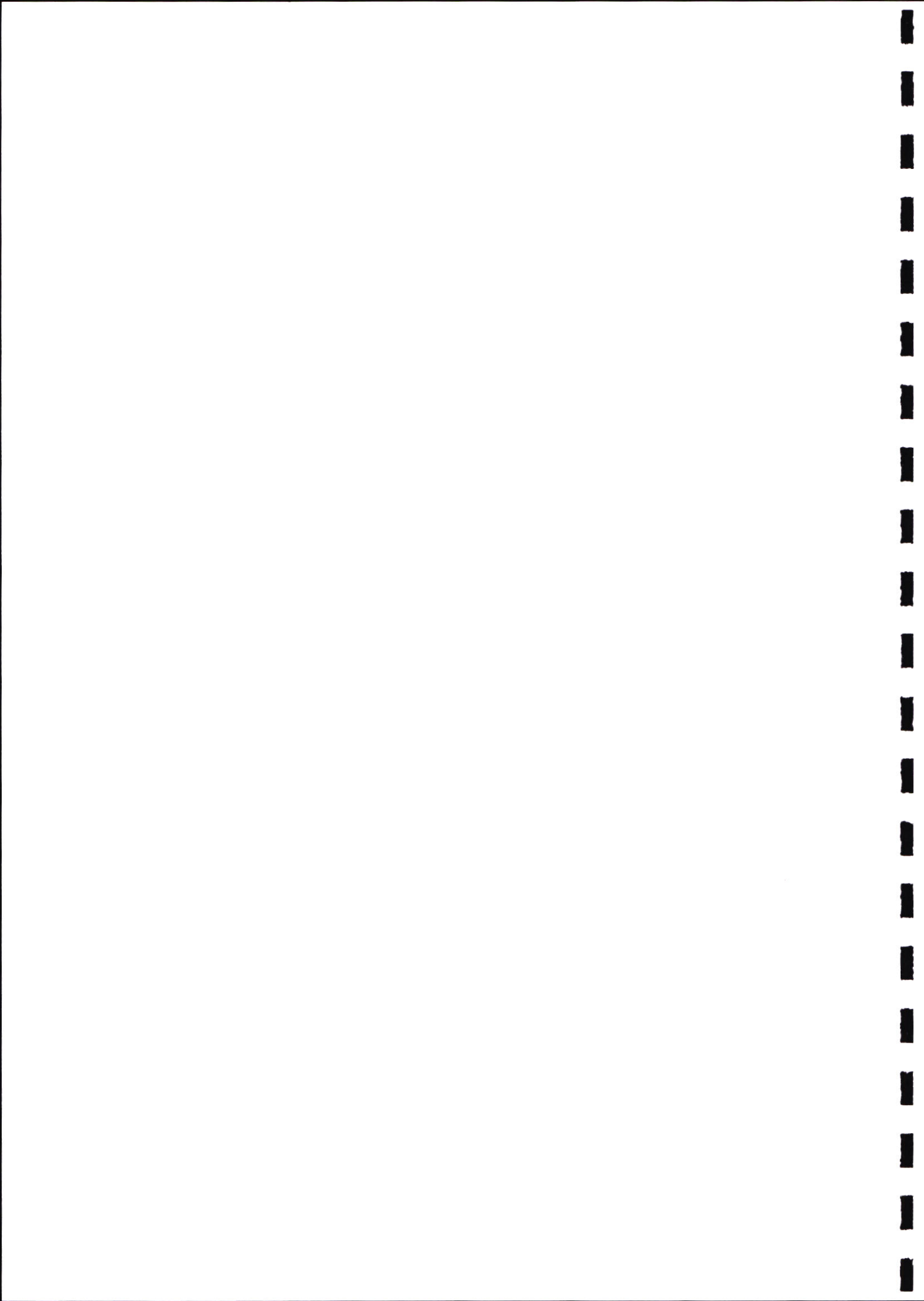


DIRECTOR

Date: 18/08/2023



ANNEXURE 3: POWER OF ATTORNEY



SPECIAL POWER OF ATTORNEY

I, BAVENDHRA REDDY

the undersigned, duly authorized by **GOLDEN GLAZE INVESTMENTS (PTY) LTD**, REGISTRATION NO. 2002/652147/07 being the registered owners of:

**PORTION 5 OF FARM 716 DIVISION PAARL IN THE STELLENBOSCH MUNICIPALITY, WESTERN CAPE PROVINCE
HELD BY TITLE DEED NUMBER T230117/2023**

I/s hereby nominate, constitute, and appoint

THEUNIS LODEWYK STEYN

of Nuplan Africa Town and Urban Planners with power and substitution, to be my/our lawful town and regional planners in my/our name and stead, in order to lodge a land use application to the Stellenbosch Municipality in respect of portion 5 of farm 716, Division Paarl, and generally for effecting the purpose aforesaid, to do or cause to be done, whatsoever shall be requisite, as fully and effectually, for all intents and purposes, as I/we might or could do if personally present and acting herein - hereby ratifying, allowing and confirming and promising and agreeing to ratify, allow and confirm all and whatsoever my/our said town planners shall lawfully do, or cause to be done, by virtue of these present.

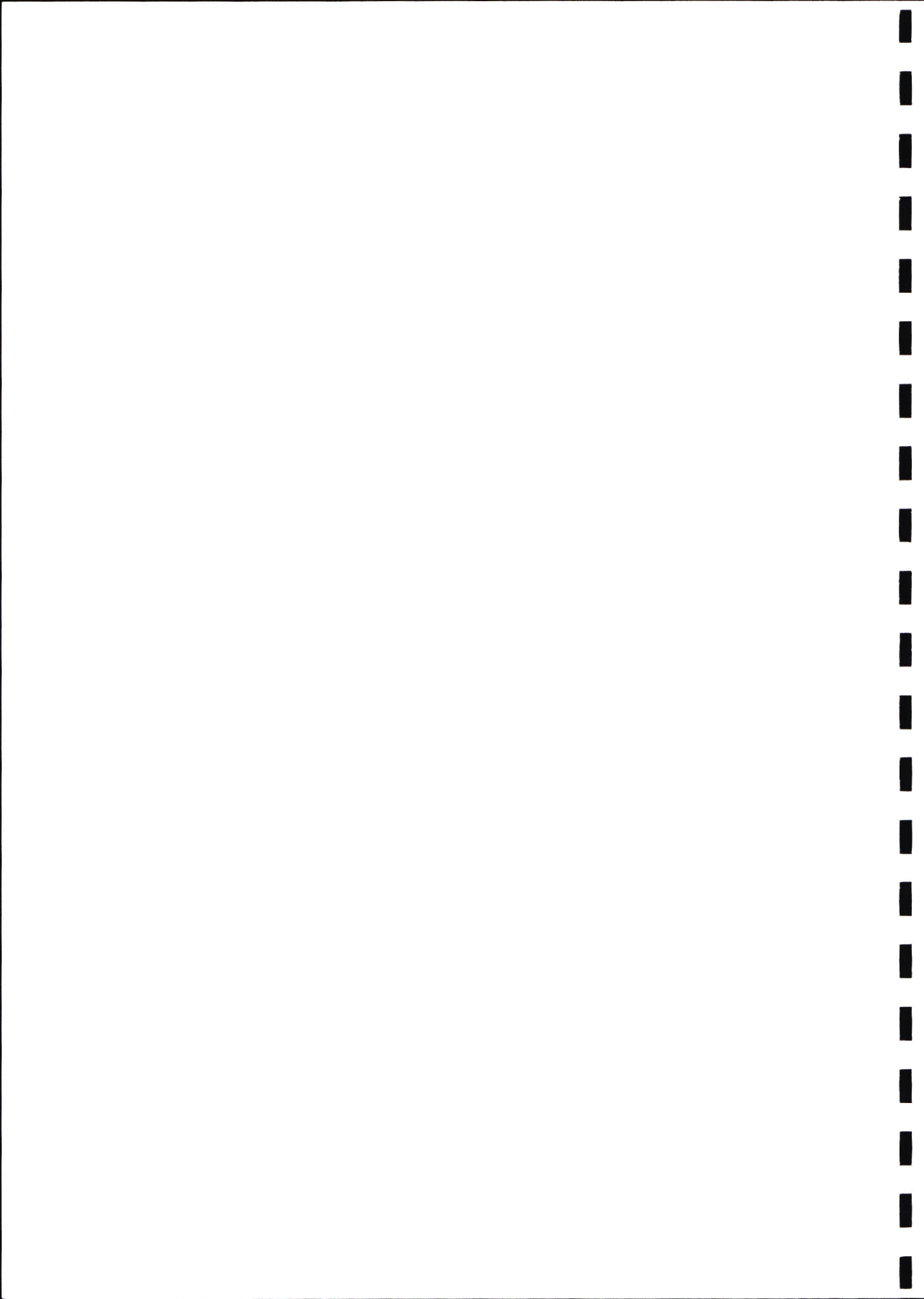
SIGNED AT CHAMAGHRAAL ON THIS 30th DAY OF AUGUST 2023 IN THE PRESENCE OF THE UNDERSIGNED WITNESSES



DIRECTOR

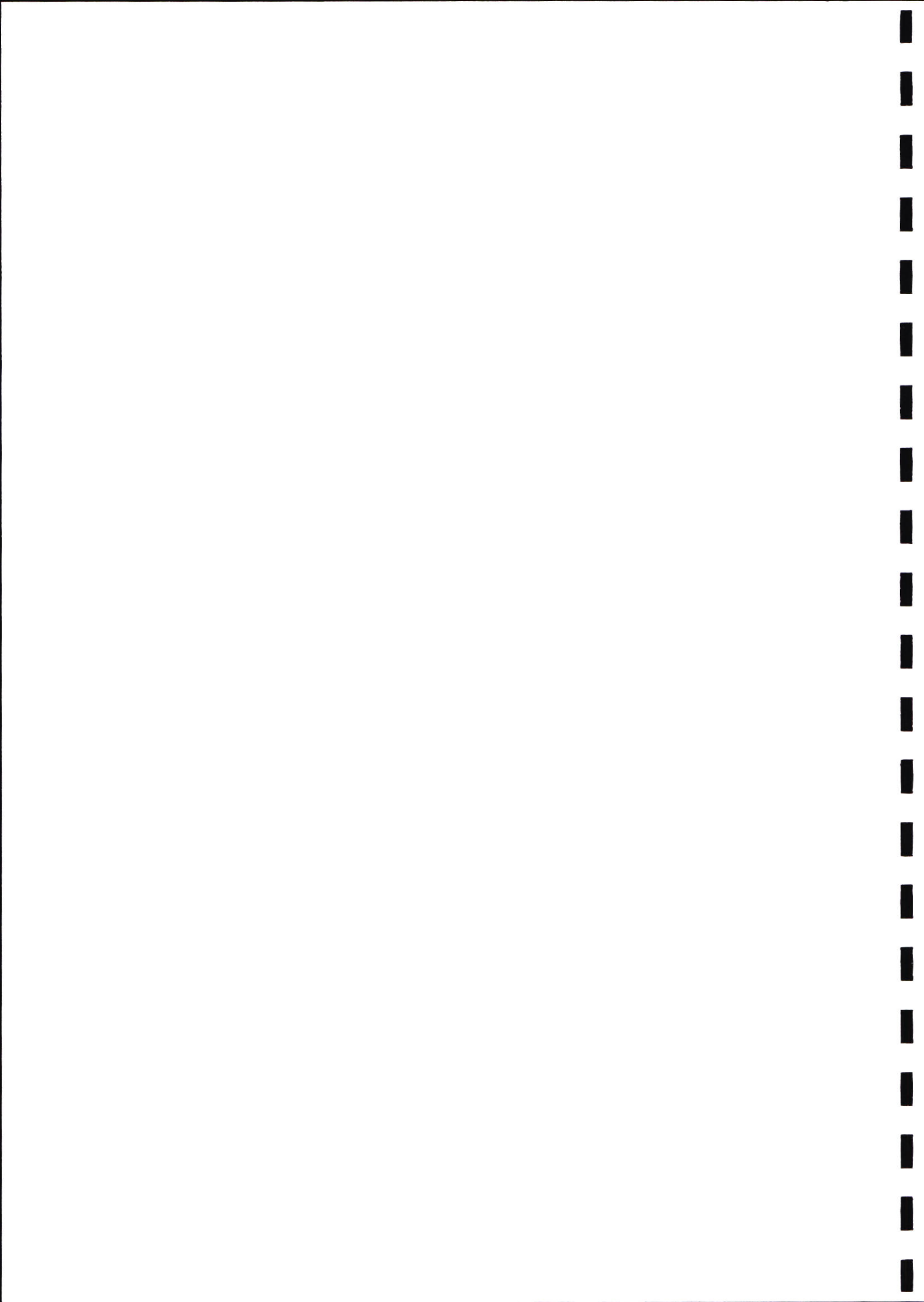
AS WITNESSES:





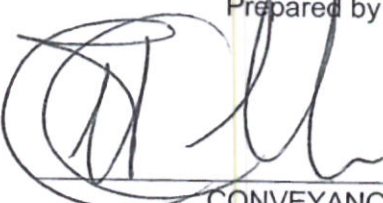
ANNEXURE 4: TITLE DEED





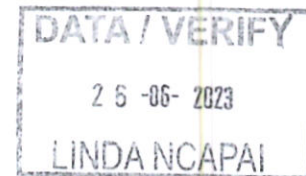
VAN COLLER BLOM INCORPORATED
82 BUFFELDOORN AVE
FLAMWOOD
KLERKSDORP
2571

Prepared by me


CONVEYANCER

RUVEIX HURTER VAN COLLER (M33003)

Deeds Office Registration fees as per Act 47 of 1937		
	Amount	Office Fee
Purchase Price	R. 10 500 000-00	R. 4 048-00
Reason for exemption	Category Exemption.....	Exemption i to. Sec/Reg..... Act/Proc.....



T 000023017 / 2023

DEED OF TRANSFER

BE IT HEREBY MADE KNOWN THAT

~~CHRISTO PHILIP NÖTHNAGEL~~ (85286)

AMBER MEIRING
(LPC NUMBER 95949)

appeared before me, REGISTRAR OF DEEDS at CAPE TOWN, the said appearer being duly authorised thereto by a Power of Attorney granted to him/her by

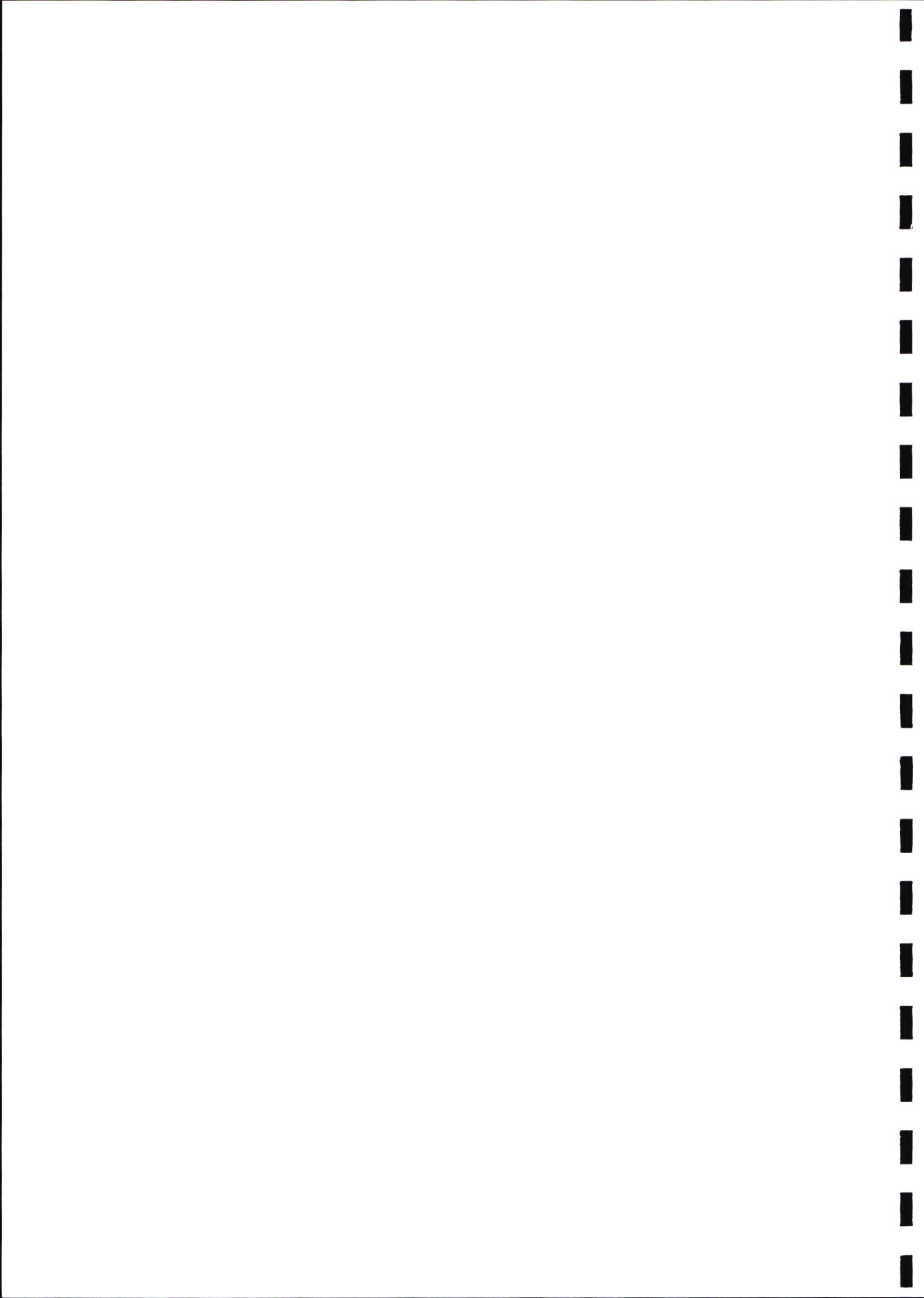
**The Trustees for the time being of
PF & M SLABBERT FAMILY TRUST
Registration Number: IT022454/2014(G)**

which said Power of Attorney was signed at STRAND on 10 March 2023

And the appearer declared that his/her said principal had, on 10 March 2023, truly and legally sold by Private Treaty, and that he/she, the said Appearer, in his/her capacity aforesaid, did, by virtue of these presents, cede and transfer to and on behalf of:

**GOLDEN GLAZE INVESTMENTS (PTY) LTD
Registration Number: 2020/652147/07**





or its Successors in Title or assigns, in full and free property

**REMAINDER PORTION 5 OF THE FARM
GROENFONTEIN ANNEX NUMBER 716
IN THE STELLENBOSCH MUNICIPALITY
DIVISION PAARL
WESTERN CAPE PROVINCE**

IN EXTENT 4,1044 (FOUR COMMA ONE ZERO FOUR FOUR) Hectares

**FIRST TRANSFERRED by Deed of Transfer Number T1337/1949 with
Diagram Number 7550/1948 relating thereto and held by Deed of Transfer
Number T29952/2022**

- A. SUBJECT to such conditions as are referred to in Deed of Transfer Number T1337 dated 17th February 1921.
- B. SUBJECT FURTHER to the terms of an endorsement dated 15th April 1966, on said Deed of Transfer Number T1337/1949, which endorsement reads as follows:

"Endorsement in terms of Section 31(6) of Act No 47 of 1937 (as amended)

A portion of the herein mentioned property meas ± 1.670 morgen has been expropriated by Admin. Of the Cape Province in terms of Sect. 130 of Ord. 15/1952 read with Section 2(3) of Ord. 3/1936. Vice Notice of Expropriation No RN. 17/1095 dd 21/2/66 filed as exprop. Caveat 265/66 plans in filed herewith."

WHEREFORE the said Appearer, renouncing all rights and title which the said

**The Trustees for the time being of PF & M SLABBERT FAMILY TRUST
Registration Number: IT022454/2014(G)**

heretofore had to the premises, did in consequence also acknowledge them to be entirely dispossessed of, and disentitled to the same, and that by virtue of these presents, the said

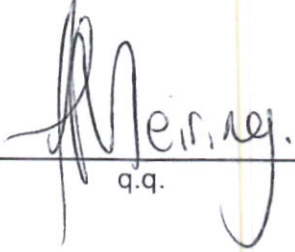
**GOLDEN GLAZE INVESTMENTS (PTY) LTD
Registration Number: 2020/652147/07**

or its Successors in Title or assigns, now is and henceforth shall be entitled thereto, conformably to local custom, the State, however reserving its rights, and finally acknowledging the purchase price to be the sum of **R10 500 000,00 (TEN MILLION FIVE HUNDRED THOUSAND RAND)** excluding VAT in the sum of R0,00 (NIL RAND), total consideration paid by the transferee to the transferor being the amount of R10 500 000,00 (TEN MILLION FIVE HUNDRED THOUSAND RAND).

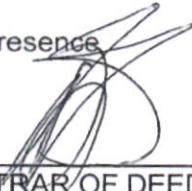
IN WITNESS WHEREOF, I the said Registrar, together with the Appearer, have subscribed to these presents, and have caused the Seal of Office to be affixed thereto.

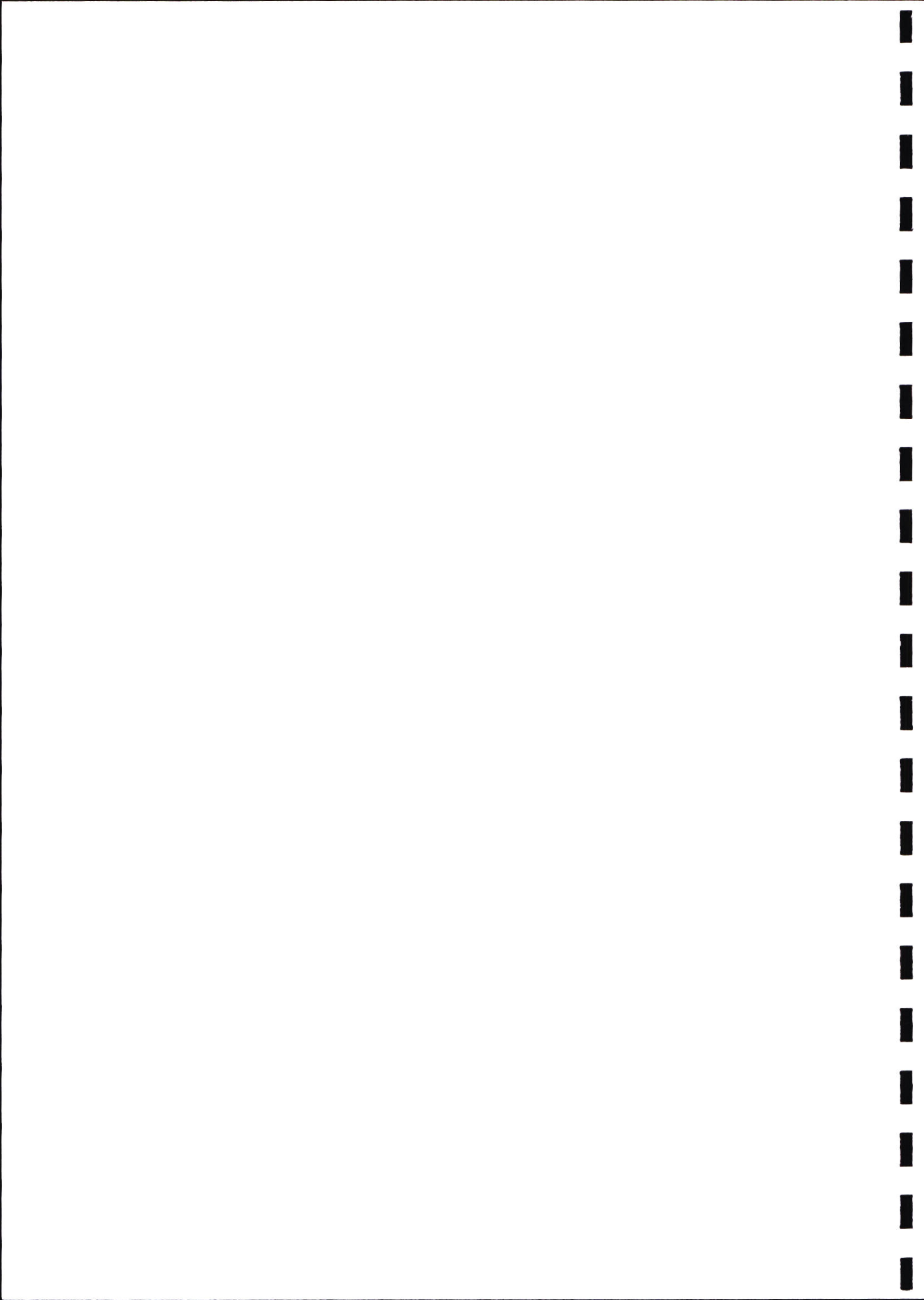
THUS DONE and EXECUTED at the Office of the REGISTRAR OF DEEDS at CAPE TOWN on

09 JUN 2023


q.q.

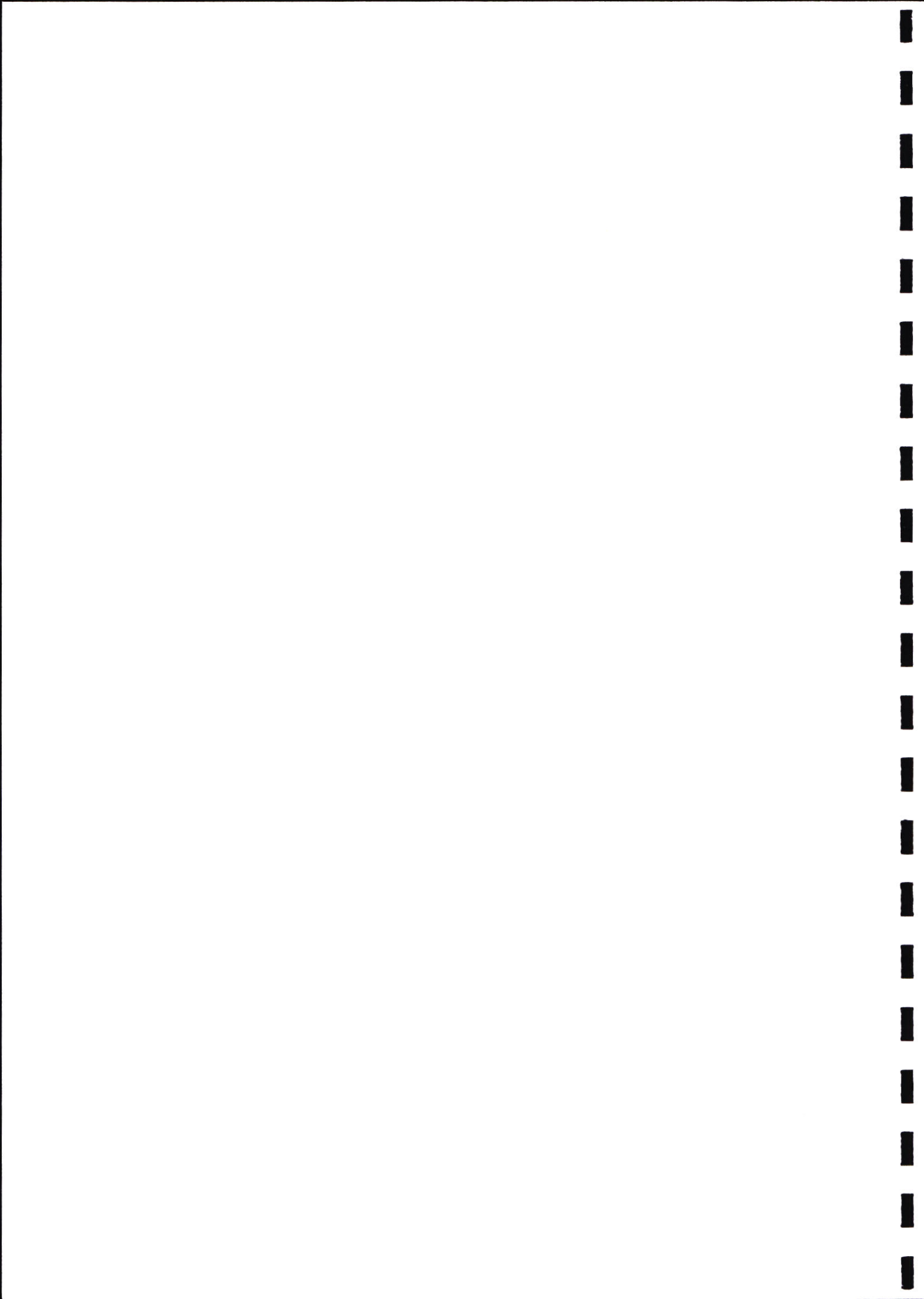
In my presence


REGISTRAR OF DEEDS



ANNEXURE 5: CONVEYANCER CERTIFICATE







CONVEYANCER CERTIFICATE

I/We CARLA GELDENHUYS

(conveyancer, attorney and/or agent)

Practising at:

VAN WYK VAN HEERDEN INC.

situated at 296 MAIN ROAD, PAARL, WESTERN CAPE, 7646

(firm and place of practice)

In respect of:

REMAINDER PORTION 5 OF THE FARM GROENFONTEIN ANNEX NUMBER 716

IN THE STELLENBOSCH MUNICIPALITY, DIVISION PAARL

PROVINCE OF THE WESTERN CAPE

(full description of the property, including the name of the owner, as it appears in the Deeds Registry)

Hereby certify that a search was conducted in the Deeds Registry, regarding the said property (ies) (including both current and earlier title deeds/pivot deeds/deeds of transfer):

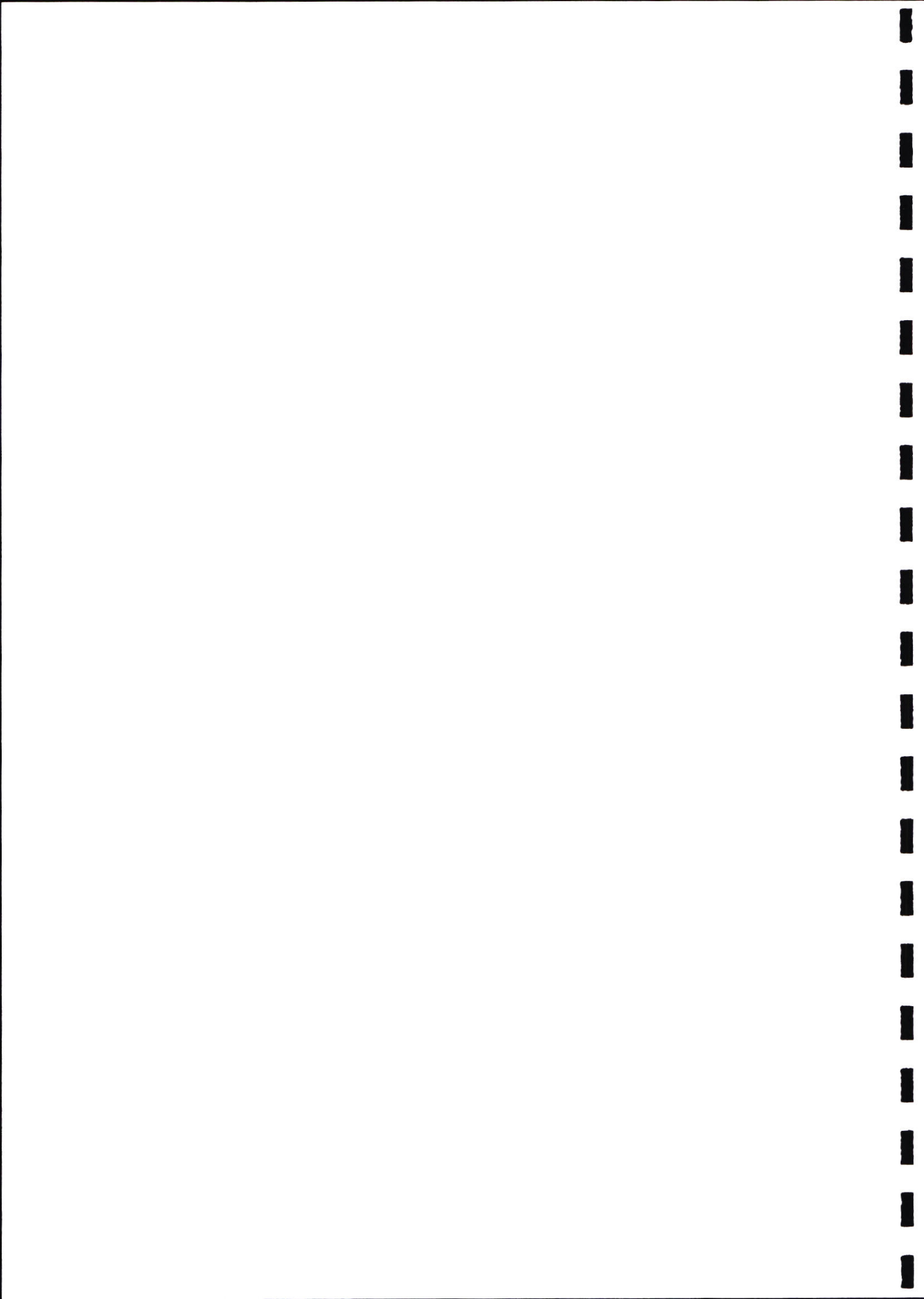
1. Deed of Transfer No T23017/2023
2. Deed of Transfer No T29952/2022
3. Deed of Transfer No T 33540/2015
4. Deed of Transfer No T21389/1968
5. Deed of Transfer No T1337/1949
6. Deed of Transfer No T1337 dated 17th February 1921
7. Deed of Transfer No T1336 dated 17th February 1921
8. Deed of Transfer No 14726 dated 18 October 1920

(For example Deed of Transfer T12345/2019 or Certificate of Registered Sectional Title No 12345/2019 (description of title deed number and date))



A. IDENTIFY RESTRICTIVE TITLE CONDITIONS (if any)

Categories		Are there deed restrictions (indicate below)		Title Deed and Clause number if restrictive conditions are found
1.	Use of land	Y	X	
2.	Building lines	Y	X	
3.	Height	Y	X	
4.	Number of Dwellings	Y	X	
5.	Bulk floor area	Y	X	
6.	Coverage/built upon area	Y	X	
7.	Subdivision	Y	X	
8.	Servitudes that may be registered over or in favour of the property	Y	X	
9.	Other Restrictive Conditions	Y	X	





B. INDICATE AFFECTED PARTIES AS PER TITLE DEED (if any)

In respect of which it was found that there are restrictive conditions, with reference to Section 15(1) of the Land Use Planning By-law (2015), registered against each property, please indicate the affected parties for the following purposes (as elaborated in the accompanying notification):

a.	Organ(s) of State that might have an interest in the restrictive condition	
b.	A person whose rights or legitimate expectations will be affected by the removal/suspension/amendment of a restriction condition.	
c.	All persons mentioned in the deed for whose benefit the restrictive condition applies	

C. PROCESS BY WHICH RELEVANT CONDITIONS WILL BE ADDRESSED

(Please tick appropriate box)

Application in terms of Section 15 of the Stellenbosch Municipal Land Use Planning By-Law (2015)	Notarial Deed of Cancellation (Submit Copy of Signed Agreement)	Action by way of court order (Submit Copy of the Court Order)	If Other, Please Specify	
--	---	---	--------------------------	--

Signed at..... PAARL..... (Place) on this..... 10th..... (Day) July..... (Month) of 2023.....

Full names and Surname: CARLA GELDENHUYS

Signature:

Address:

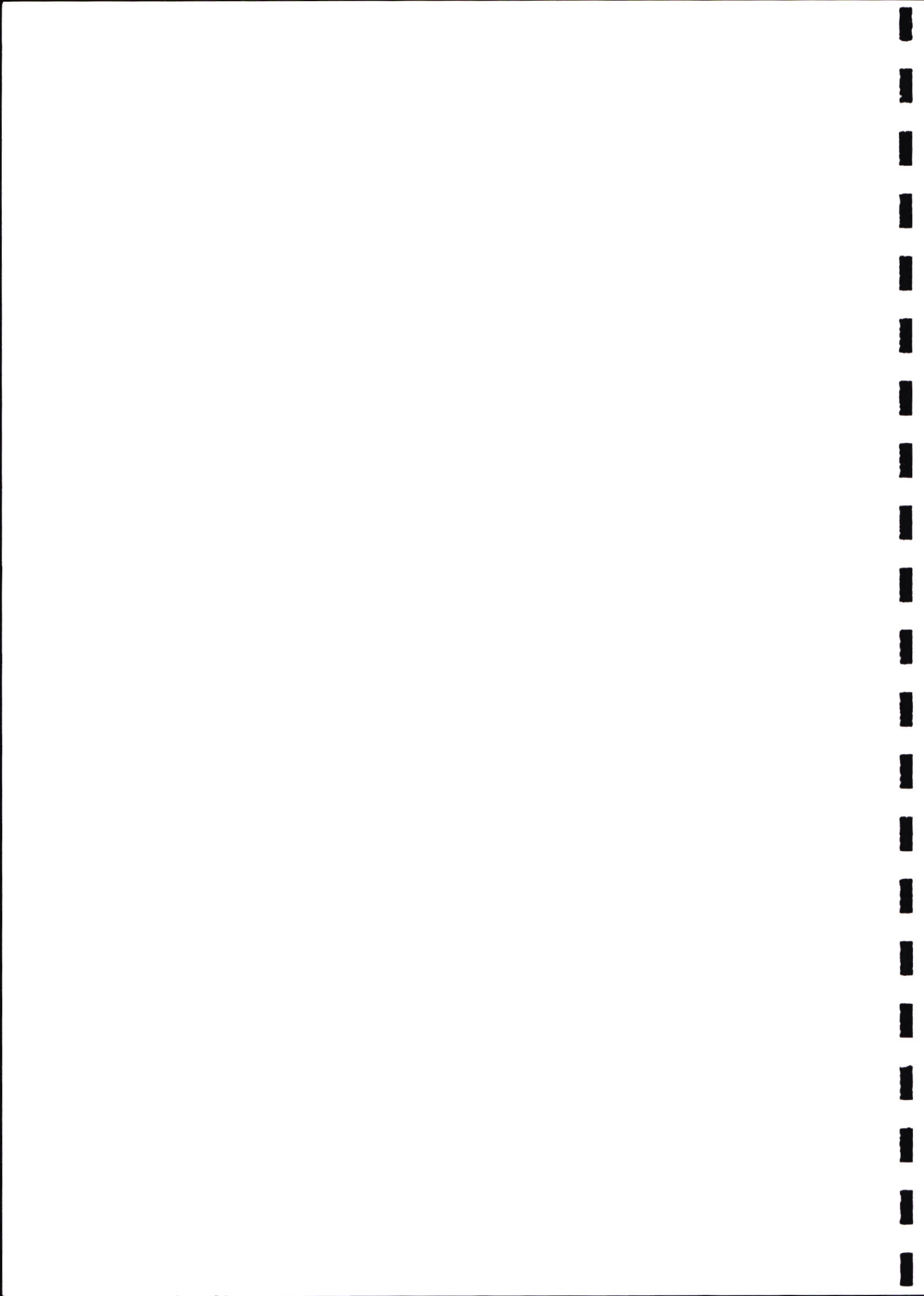
P.O. Box 362, Paarl, 7610

Kindly contact: CARLA GELDENHUYS
KOMMISSARIS VAN EDE
COMMISSIONER OF OATHS
PROKUREUR / ATTORNEY
B4 POLO VILLAGE OFFICES, VAL DIE VIE ESTATE, PAARL

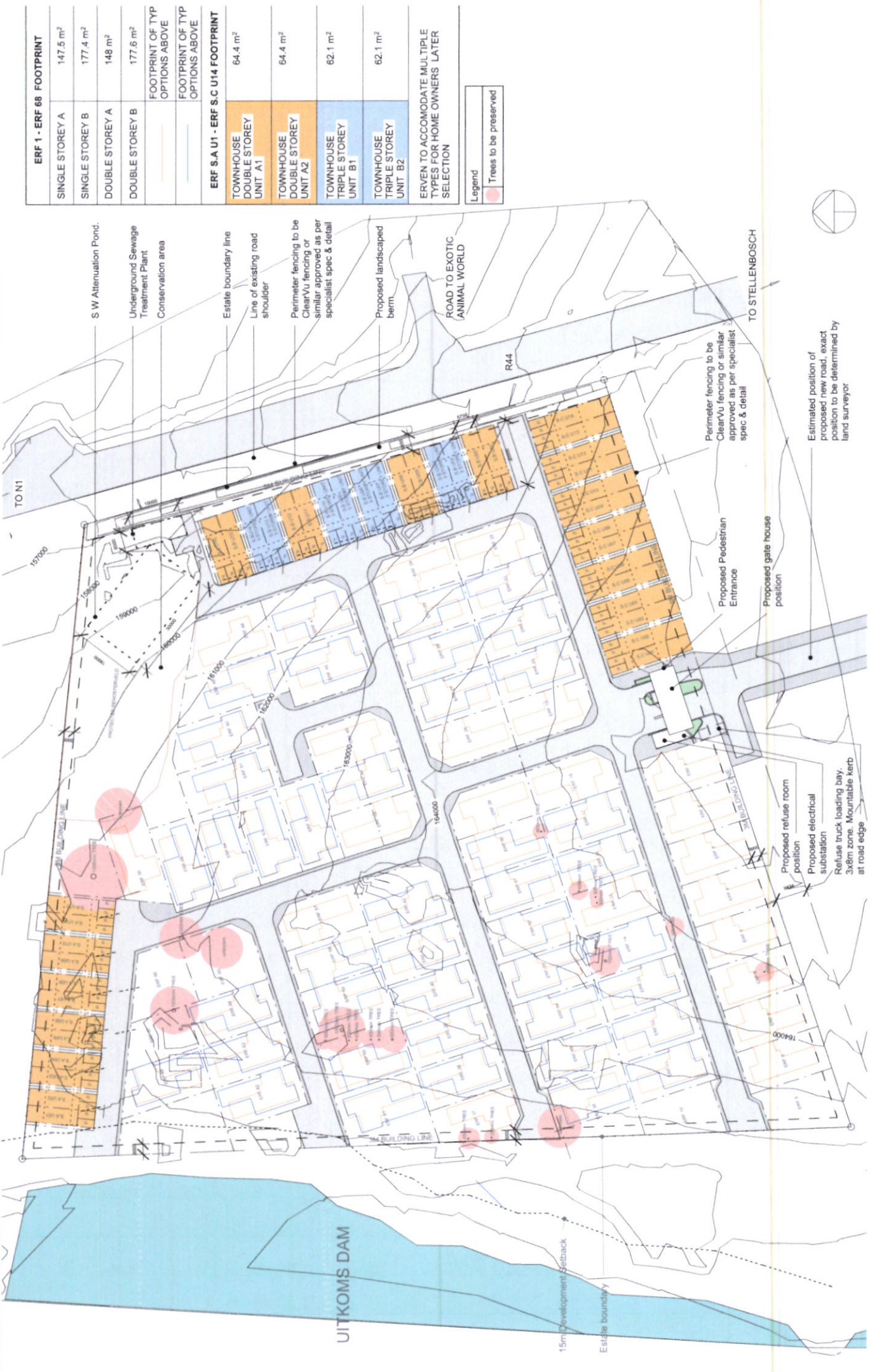
Tel: 021 871 1050

Email: carla@vvh.co.za

Cell: 021 871 1050



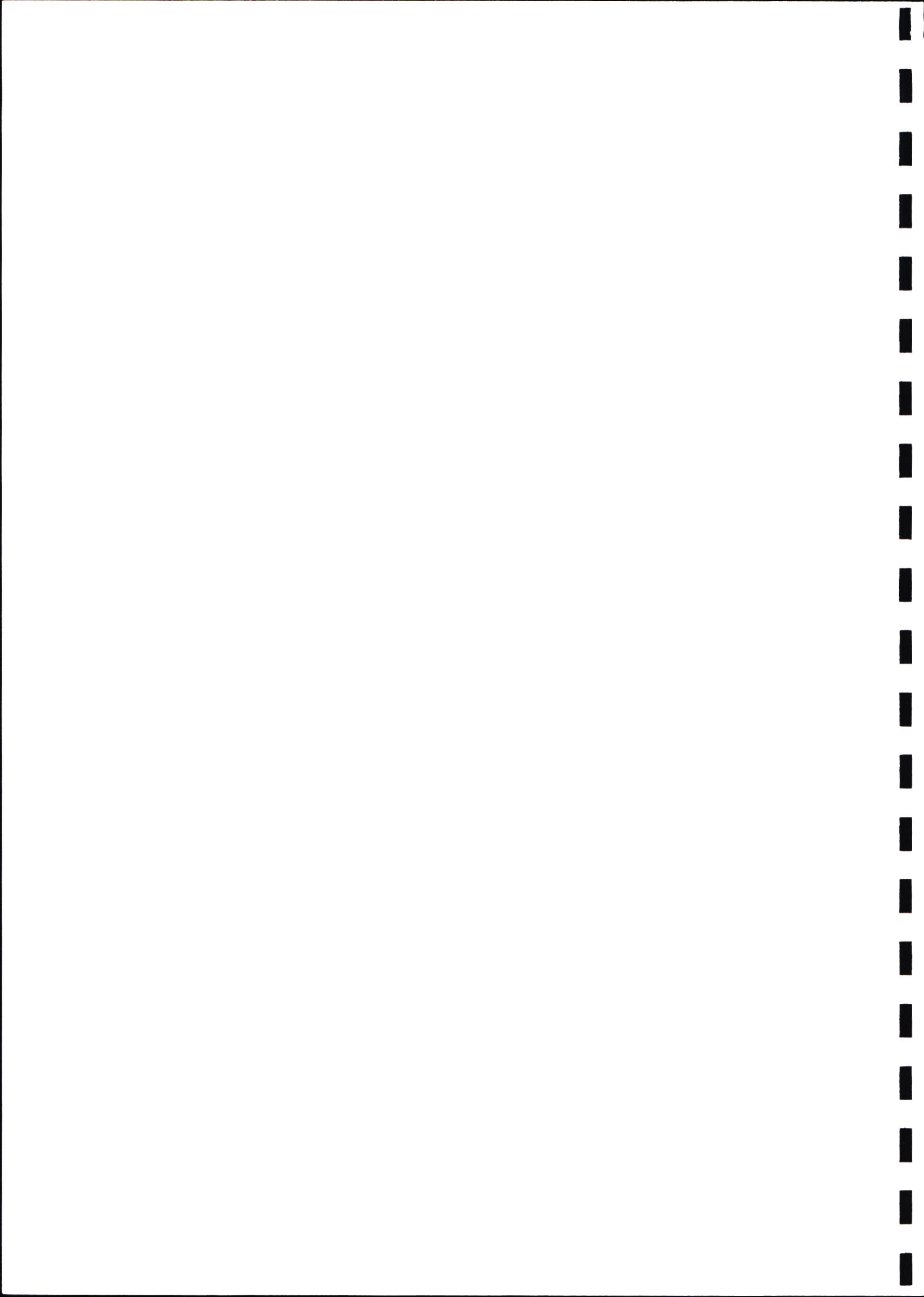
ANNEXURE 6: PROPOSED SDP

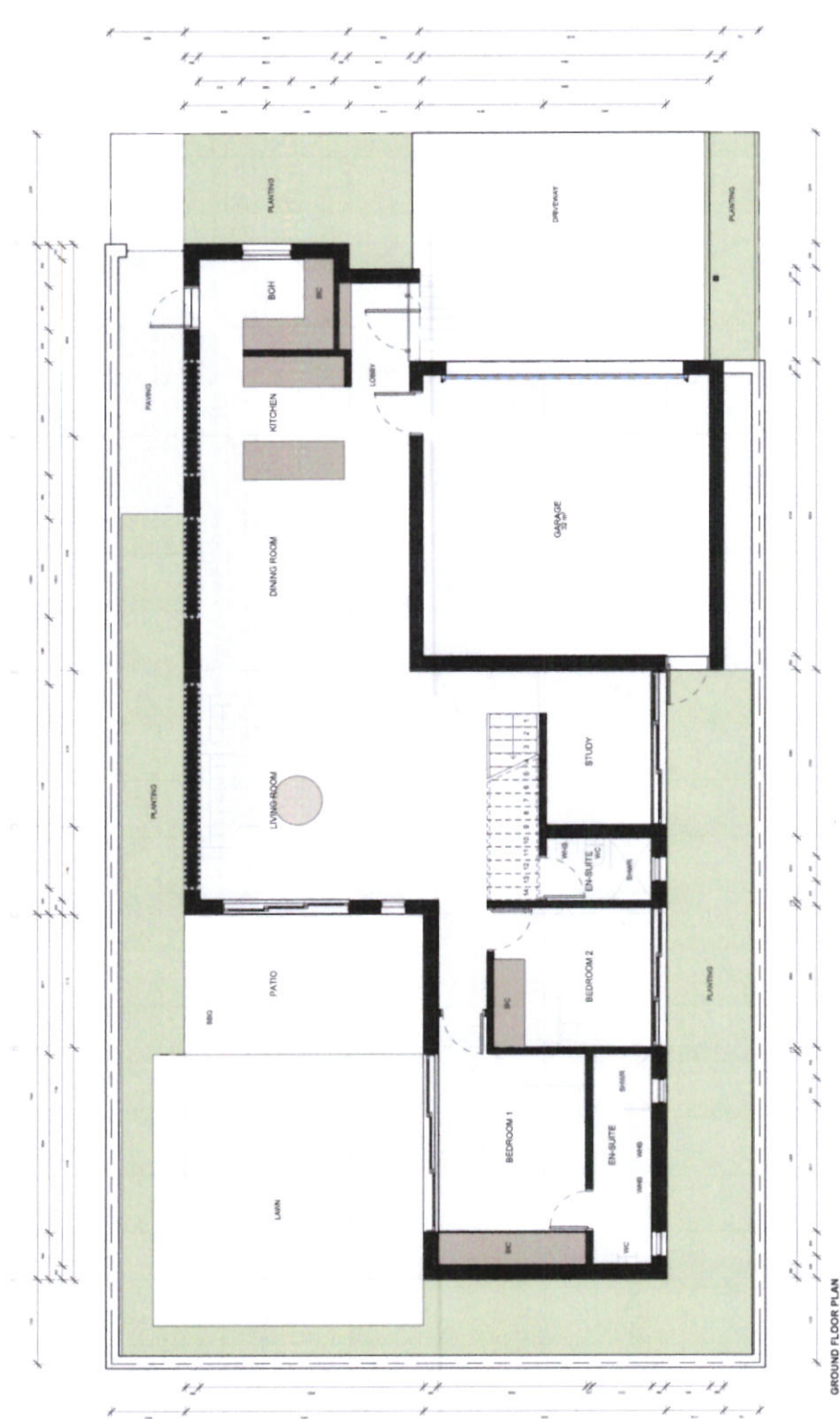


ERF 1 - ERF 68 FOOTPRINT	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
FOOTPRINT OF TYP OPTIONS ABOVE	
FOOTPRINT OF TYP OPTIONS ABOVE	
ERF 5 A U1 - ERF 5 C U14 FOOTPRINT	
TOWNHOUSE DOUBLE STOREY UNIT A1	64.4 m ²
TOWNHOUSE DOUBLE STOREY UNIT A2	64.4 m ²
TOWNHOUSE TRIPLE STOREY UNIT B1	62.1 m ²
TOWNHOUSE TRIPLE STOREY UNIT B2	62.1 m ²
ERVEN TO ACCOMMODATE MULTIPLE TYPES FOR HOME OWNERS LATER SELECTION	
Legend	
●	Trees to be preserved

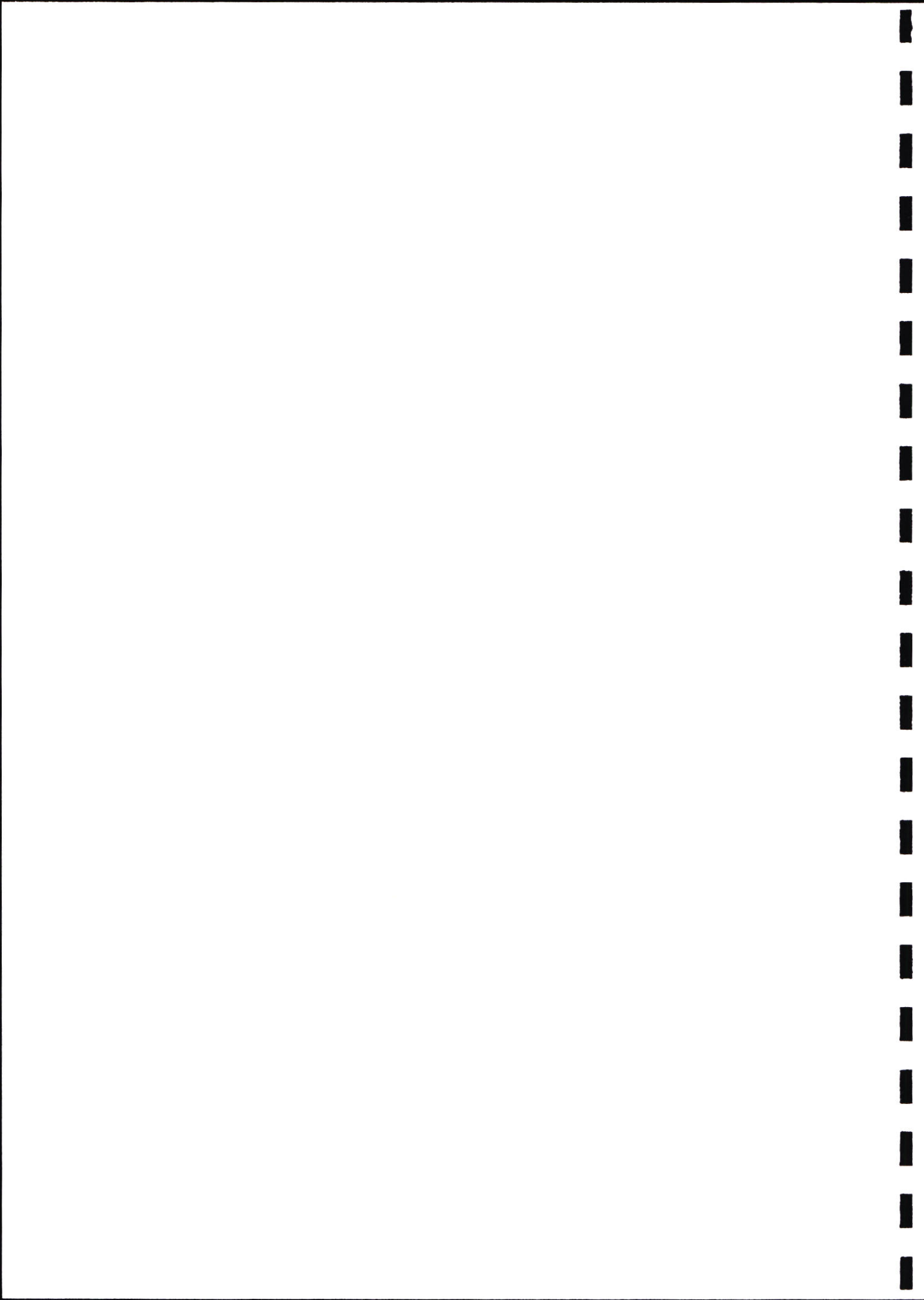
ANNEXURE 7: TYPICAL UNIT FLOOR PLANS AND ELEVATIONS







EXTERNAL GROUND FLOOR BUILDING 163.9 m ²
INTERNAL GROUND FLOOR BUILDING 145.3 m ²
EXTERNAL PATIOS & DECK 13.7 m ²

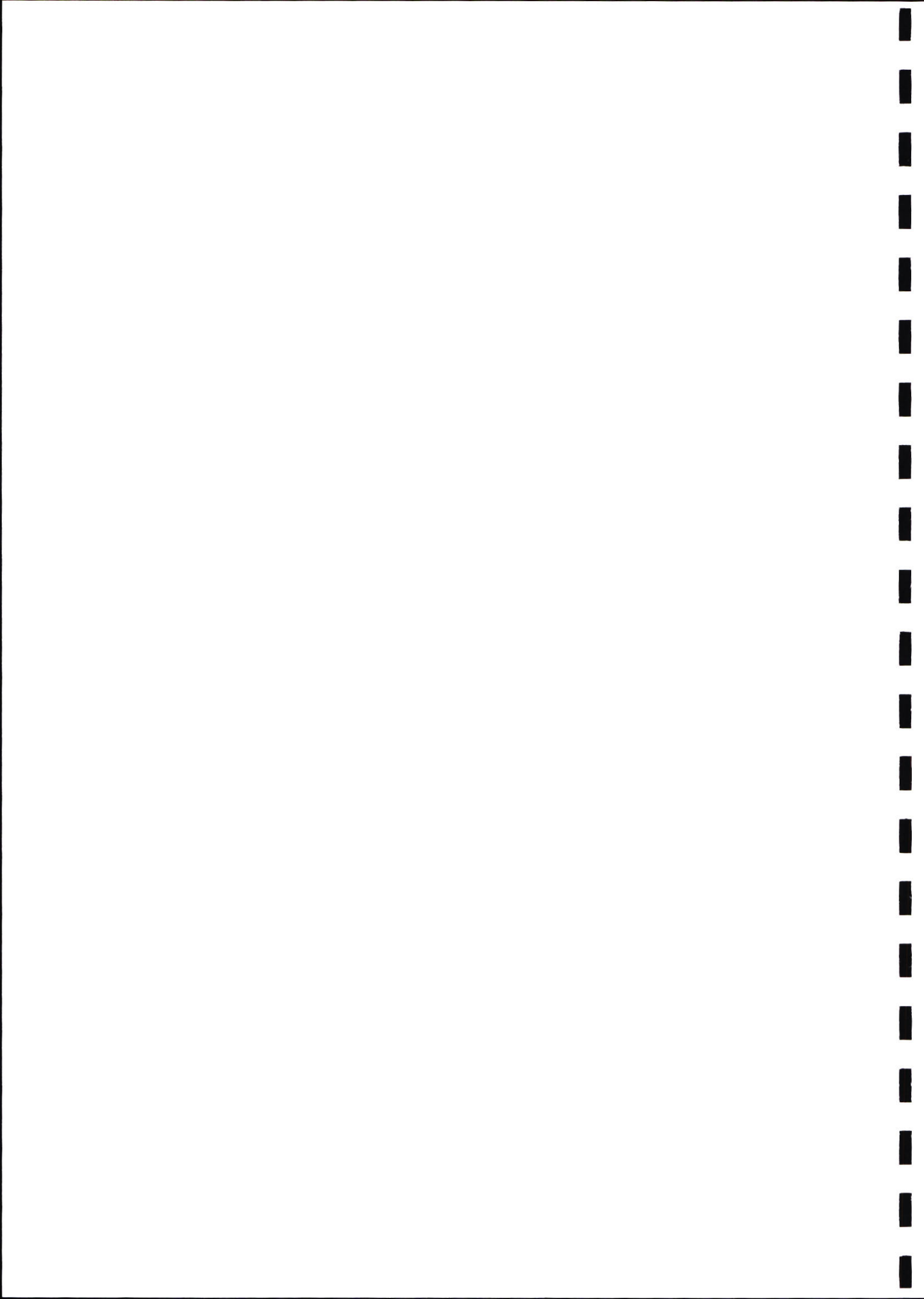


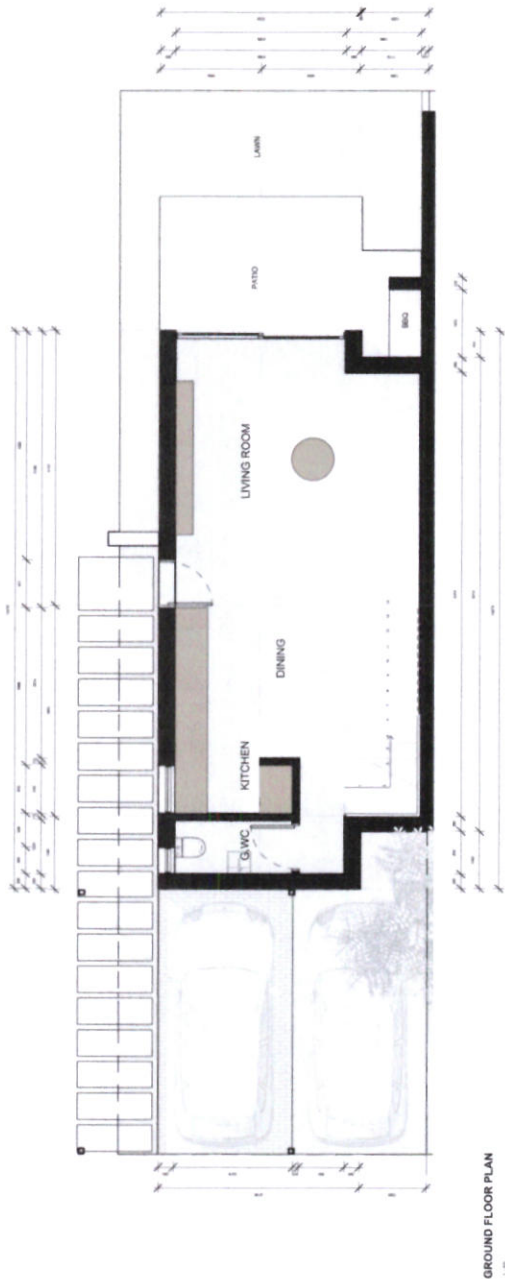
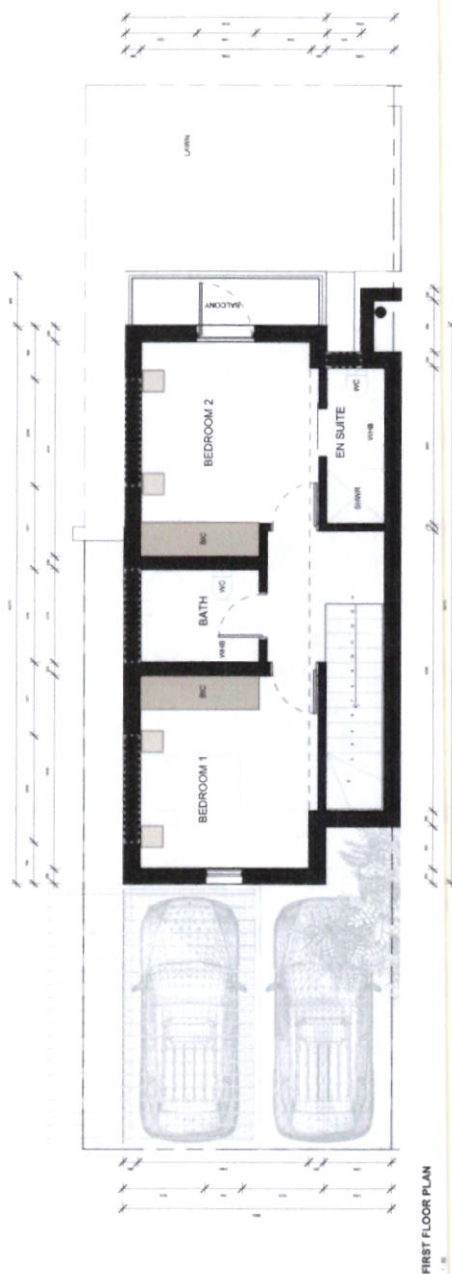


CAROLINE E. COOPER, PH.D.



EXTERNAL GROUND FLOOR BUILDING 163.9 m²
INTERNAL GROUND FLOOR BUILDING 145.3 m²
EXTERNAL PATIO'S & DECK 13.5 m²









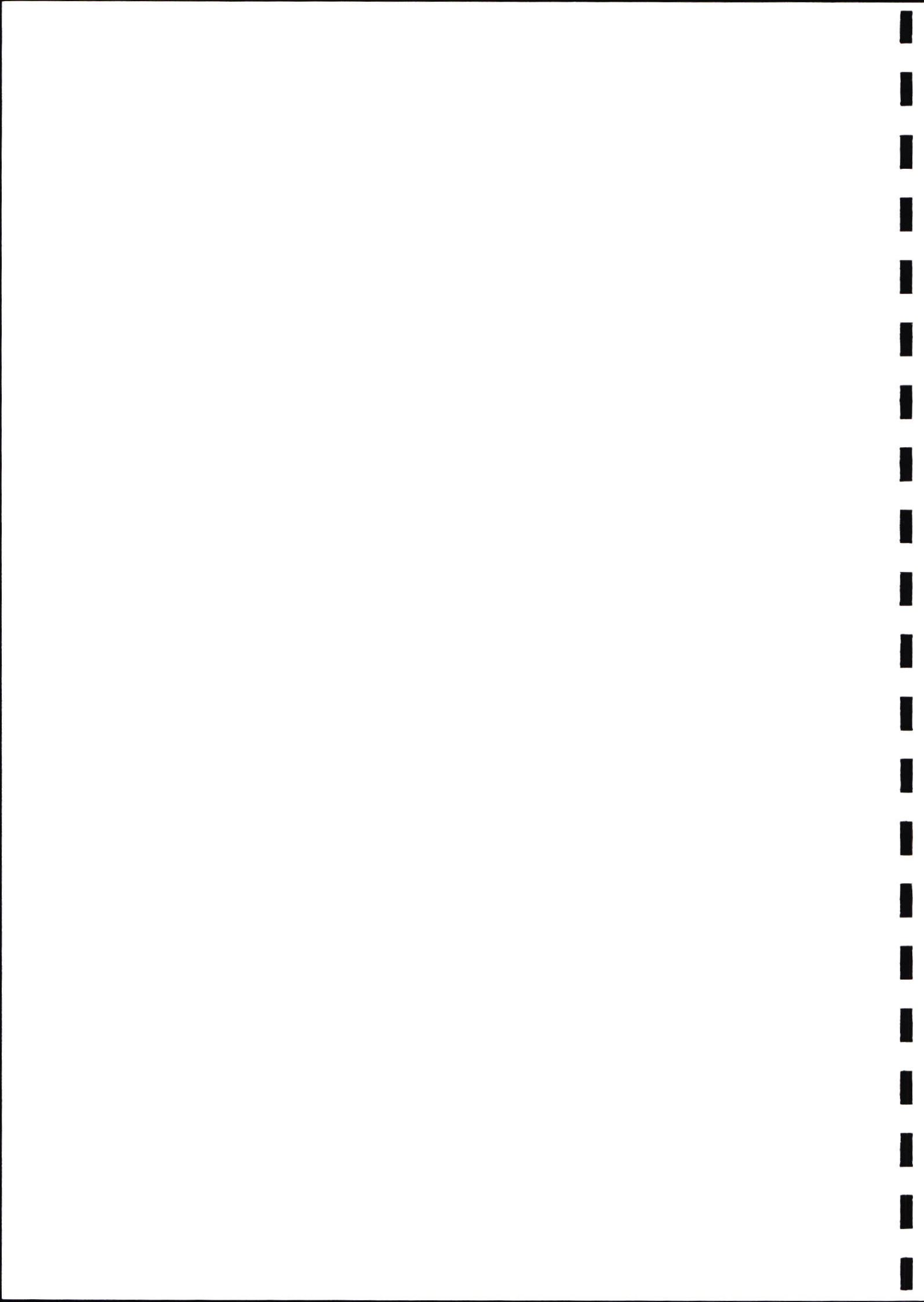
GROUND FLOOR PLAN

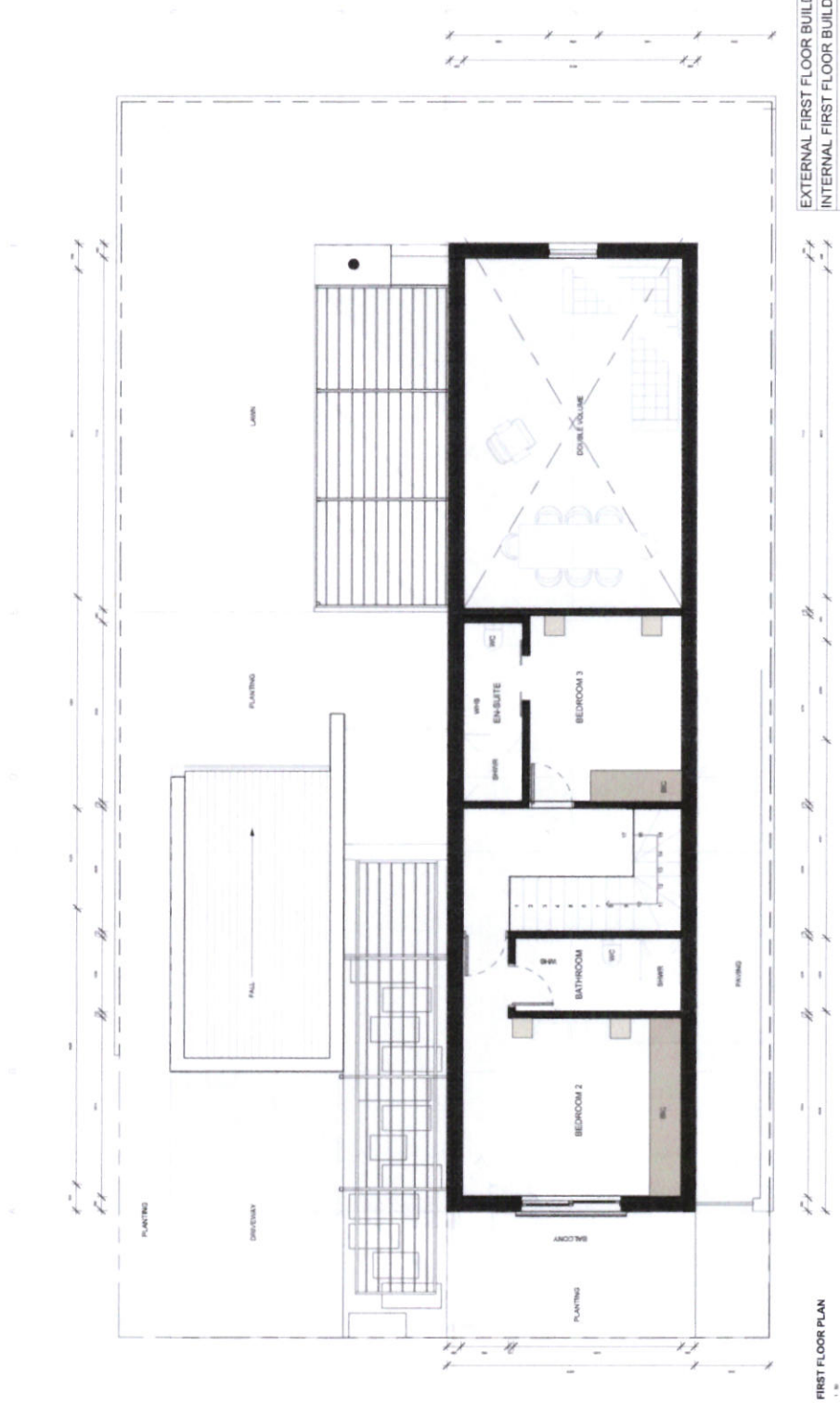


FIRST FLOOR PLAN



SECOND FLOOR PLAN



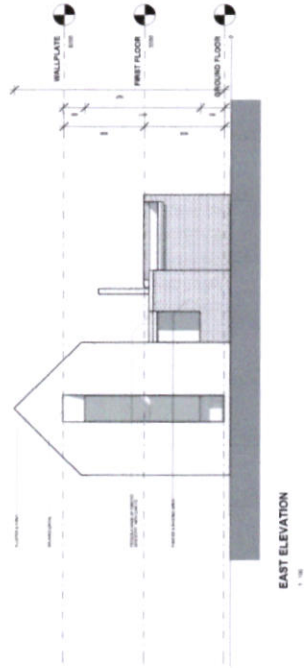
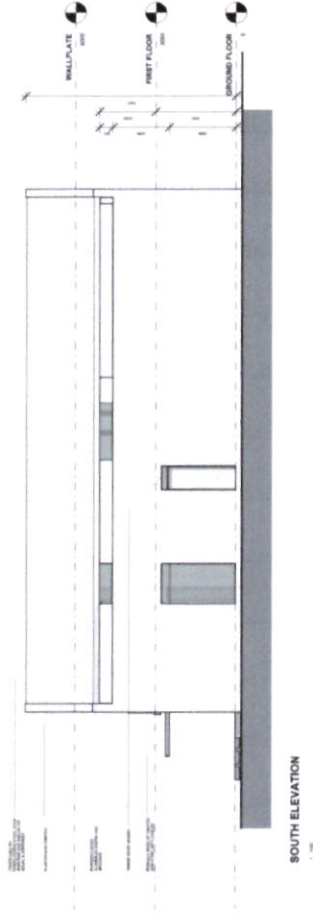
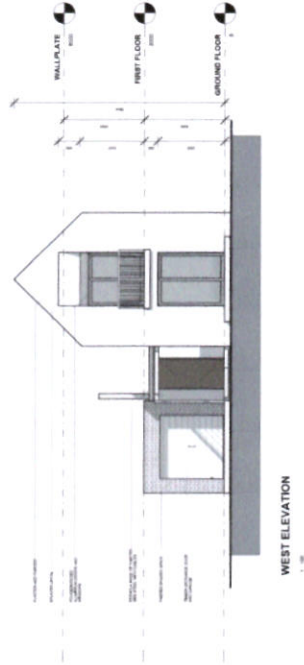
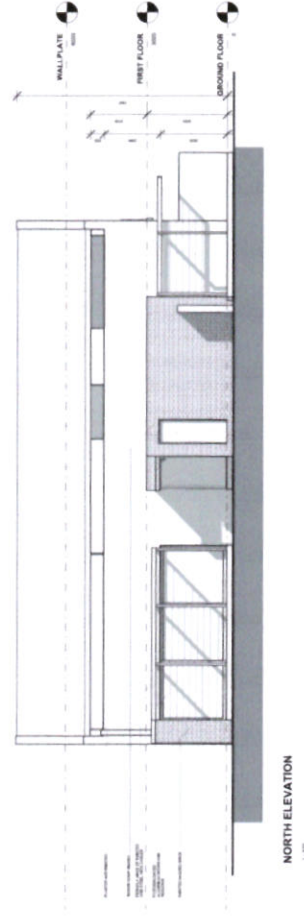


FIRST FLOOR PLAN

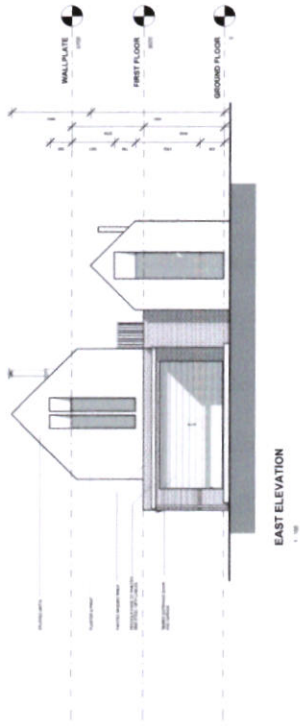
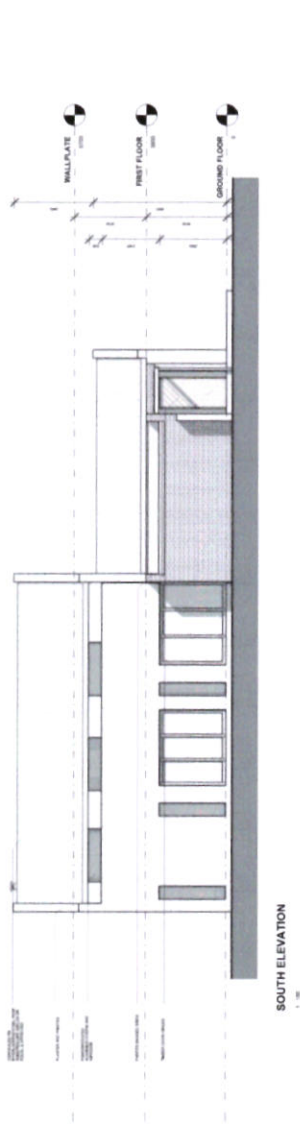
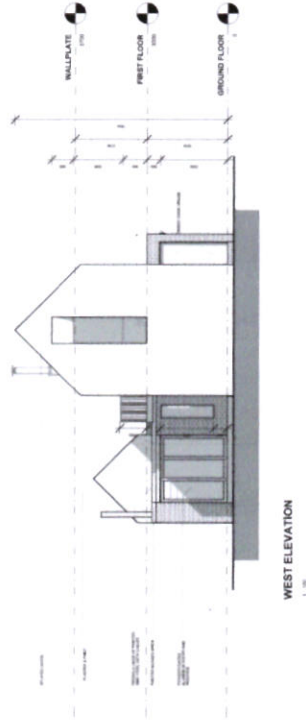
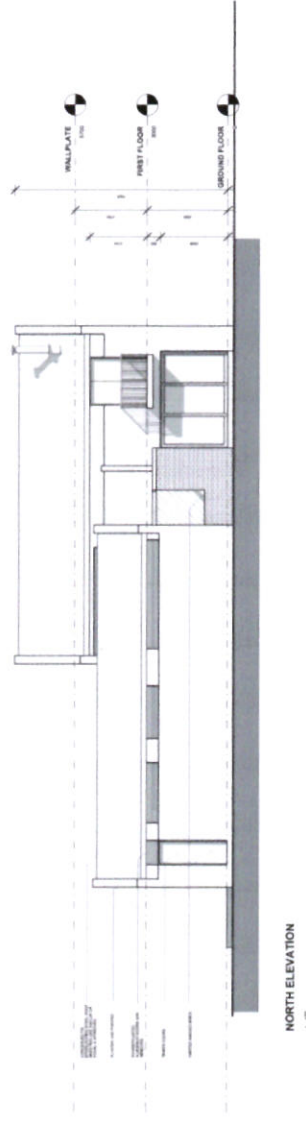
EXTERNAL FIRST FLOOR BUILDING	55.2m ²
INTERNAL FIRST FLOOR BUILDING	46.4m ²
EXTERNAL PATIO'S & DECK	0m ²



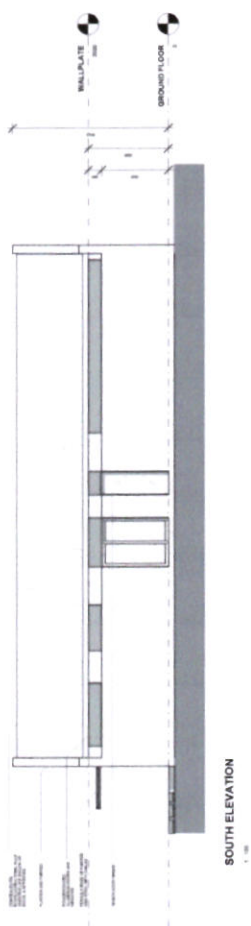
1 200



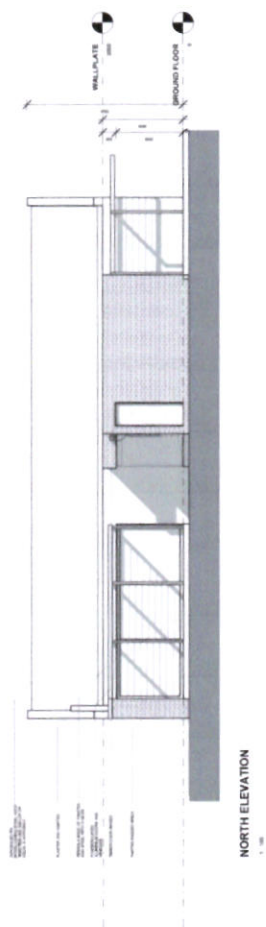




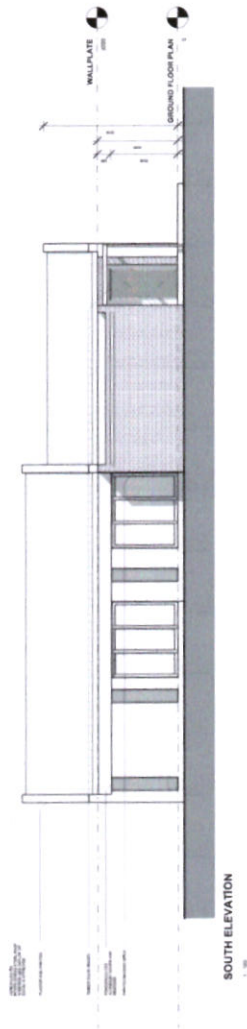
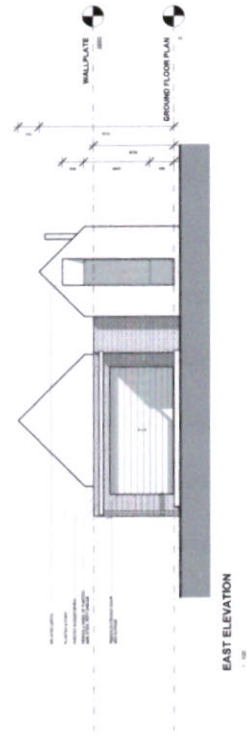
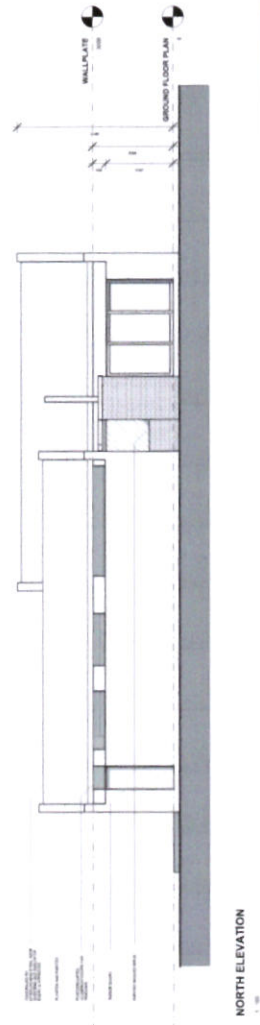
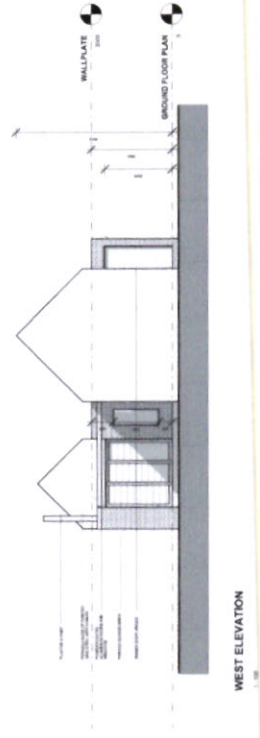


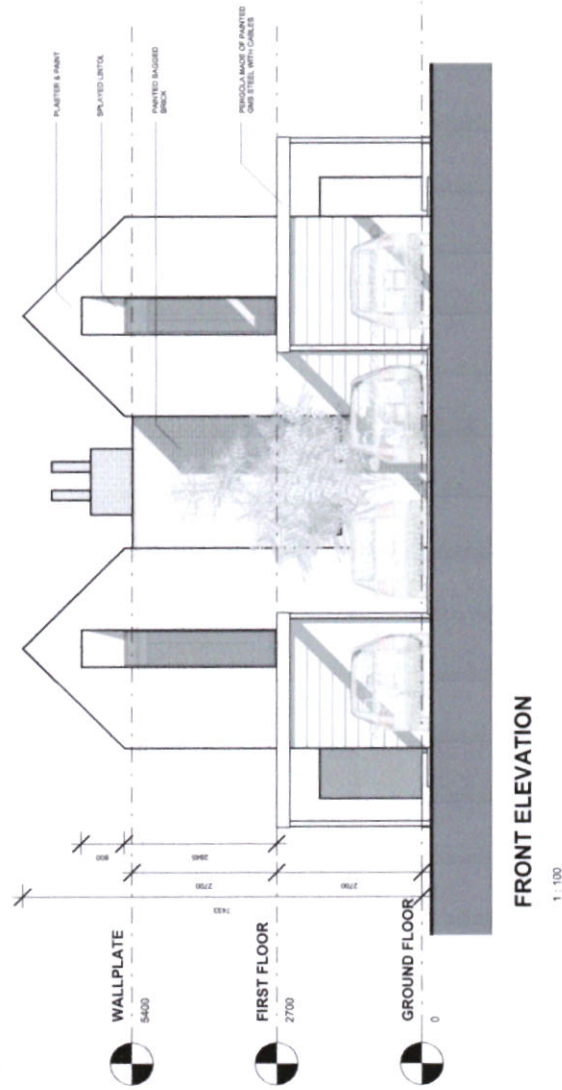


EAST ELEVATION



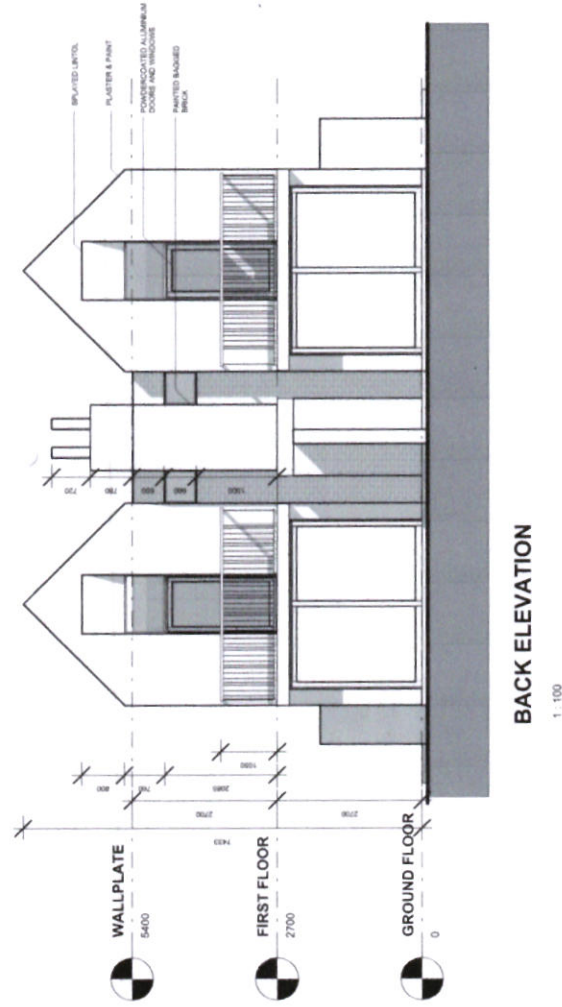
WEST ELEVATION





FRONT ELEVATION

1:100



BACK ELEVATION

1:100

FOR CLIENT

Dean Ferreira

DESIGN BY

DR

DRAWING SHEET NUMBER

DC_A2000

SHEET NAME

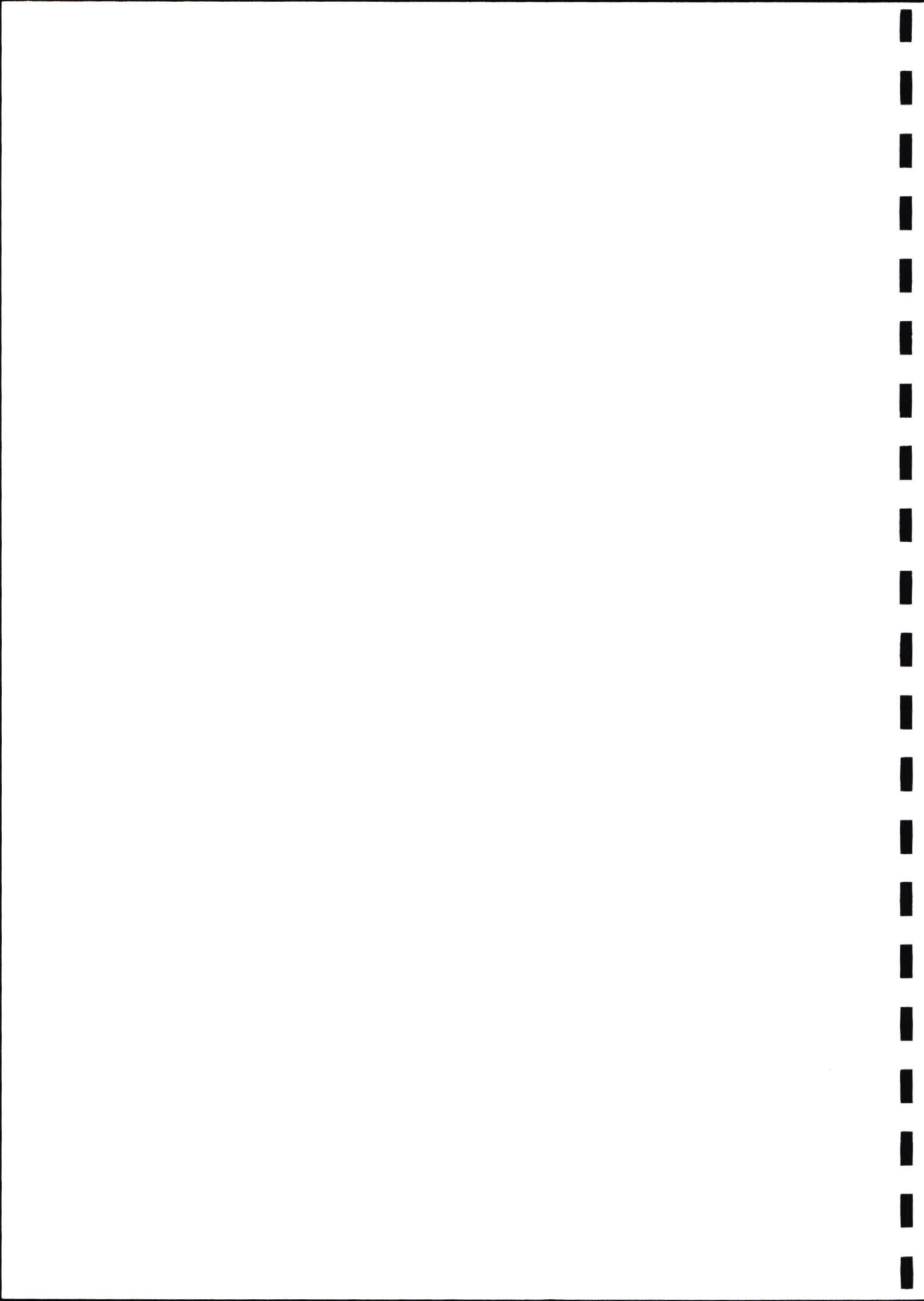
DOUBLE STOREY TOWN
HOUSE A2 ELEVATIONS
PAGE 1

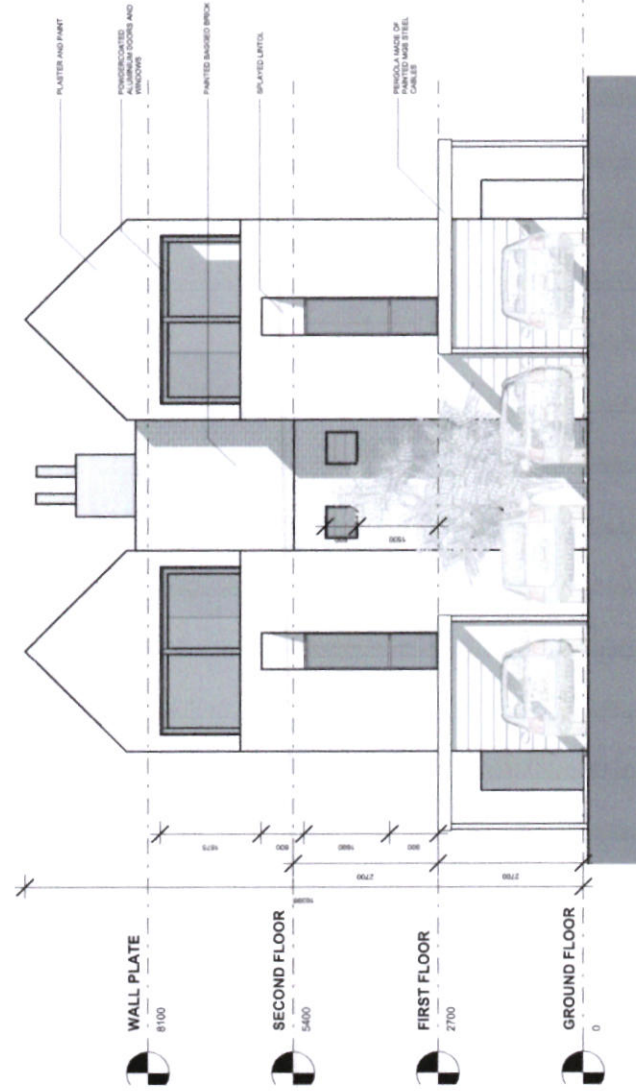
SCALE

1:100

JACOBOTHA ARCHITECTS

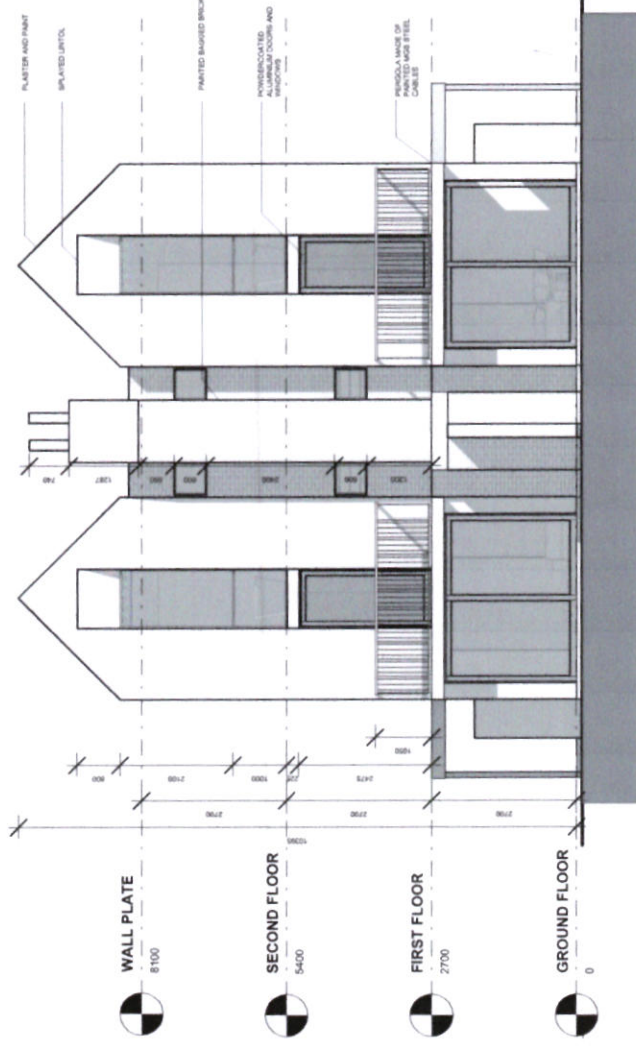
• 1st Floor: Church Square House, 5 Spin Street, Cape Town, 8000
 • info@jacobotha.com • (+27) 021 180 2546





FRONT ELEVATION

1 : 100



BACK ELEVATION

1 : 100

FOR CLIENT
DESIGN BY

Dean Ferreira
Designer

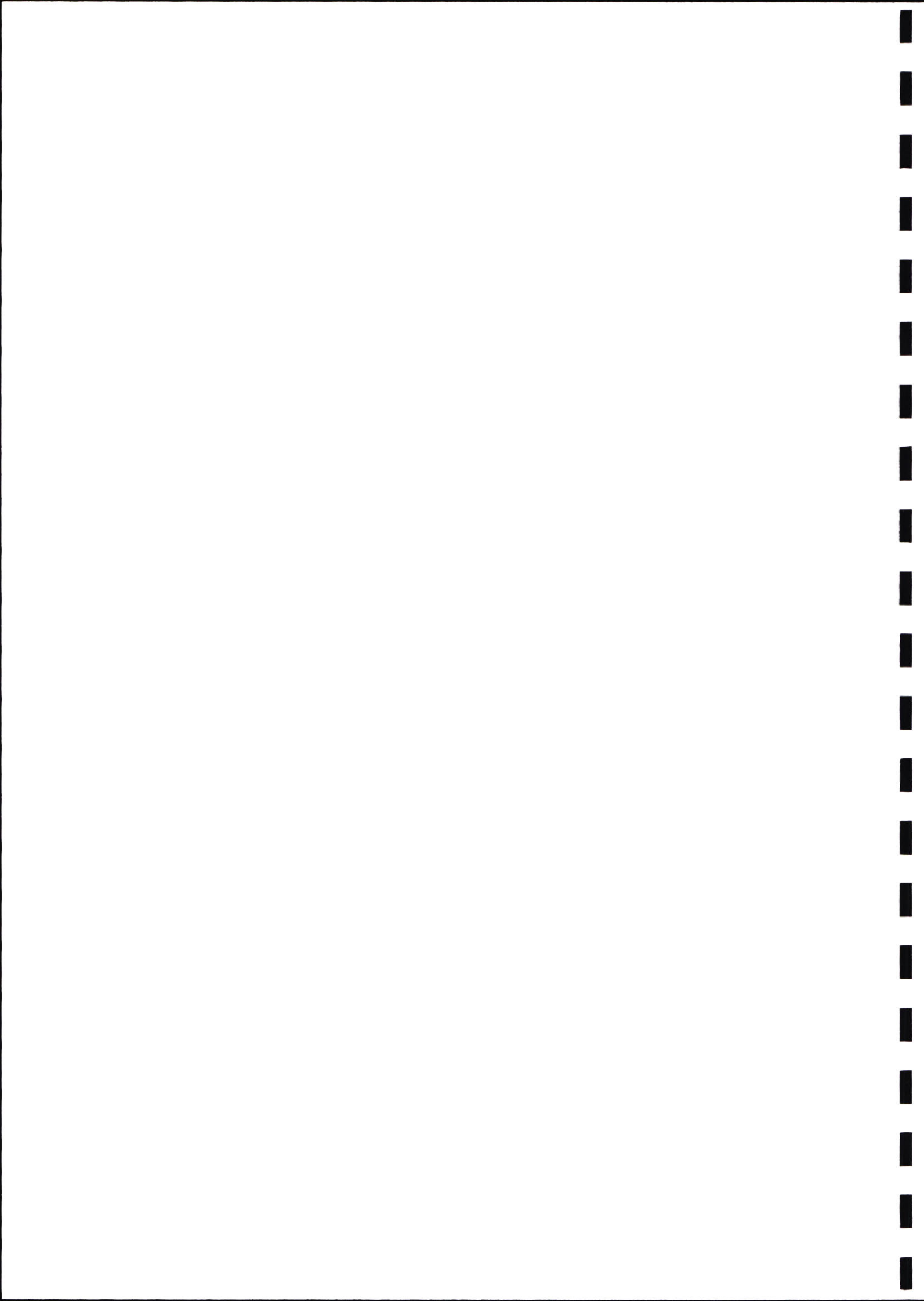
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SHEET NAME

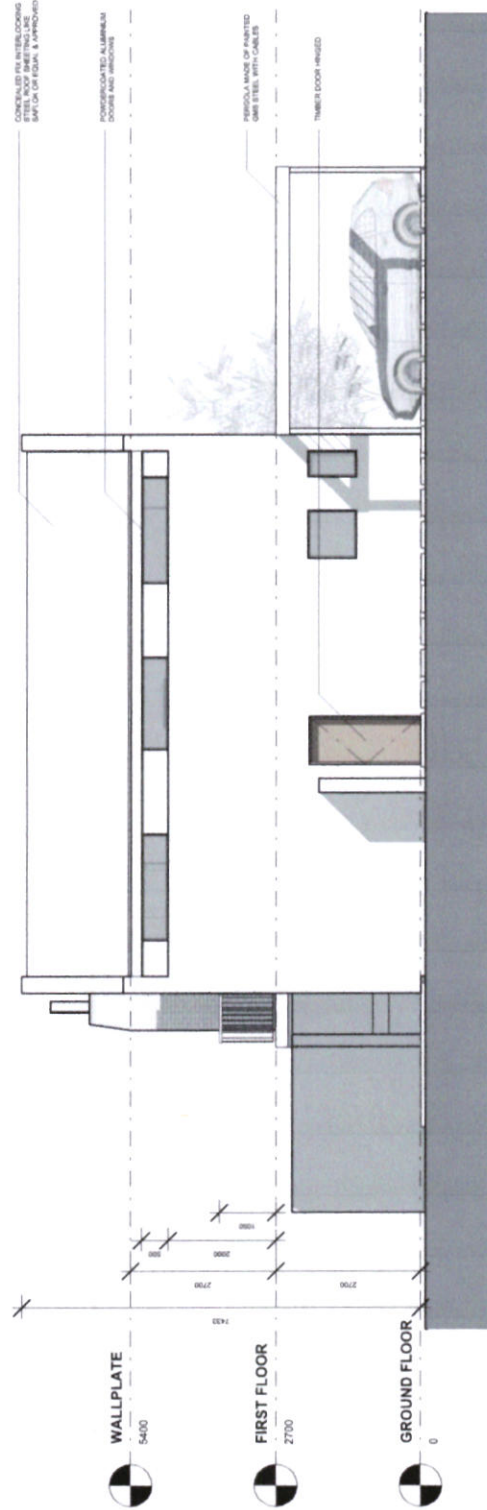
DC_A2000
TRIPLE STOREY TOWN
HOUSE B2 ELEVATIONS
PAGE 1

SCALE 1 : 100

JACOBOTHA ARCHITECTS

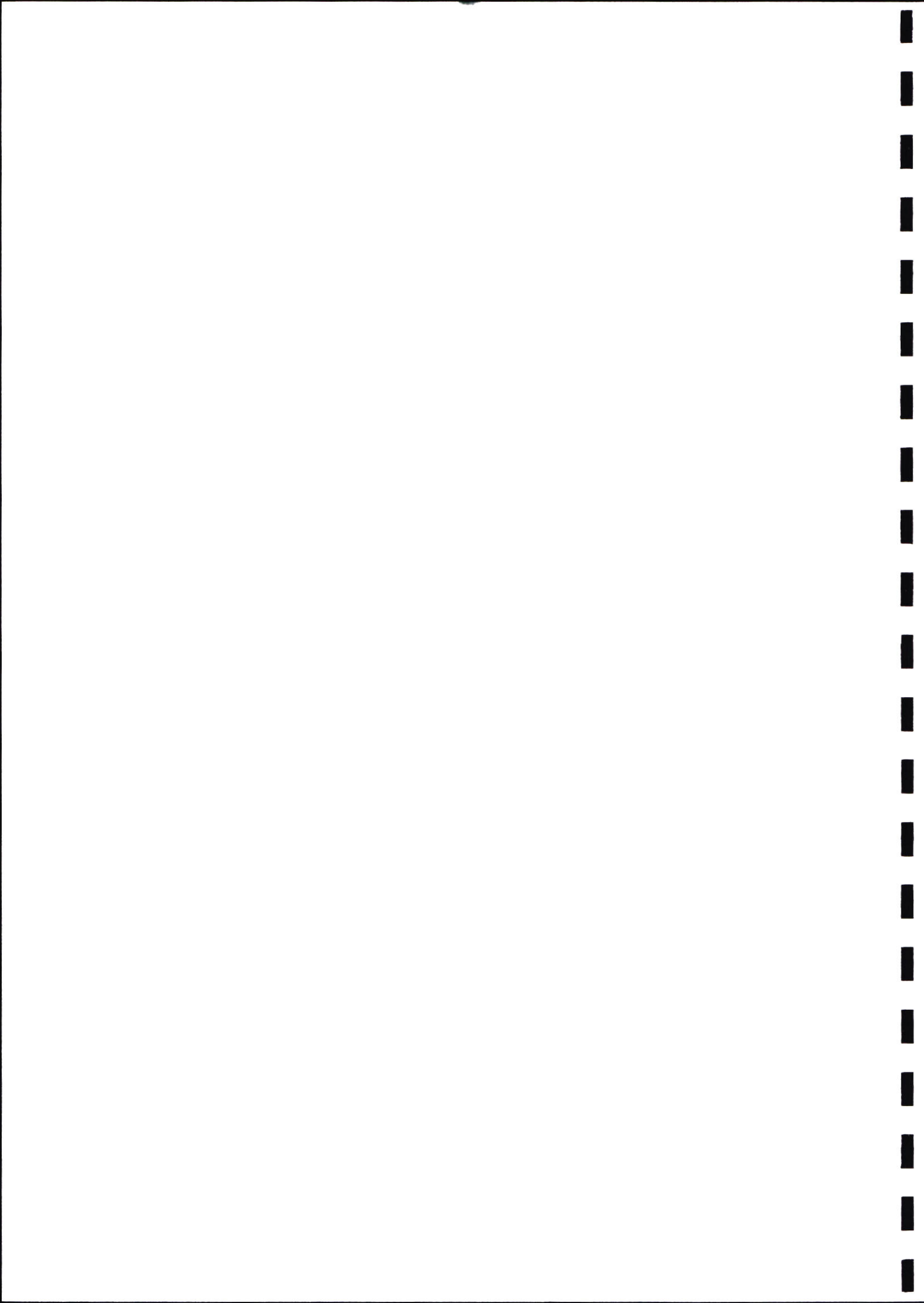
• 1st Floor Church Square House, 5 Spin Street, Cape Town, 8000
• info@jacobotha.com • (+27) 021 180 2546





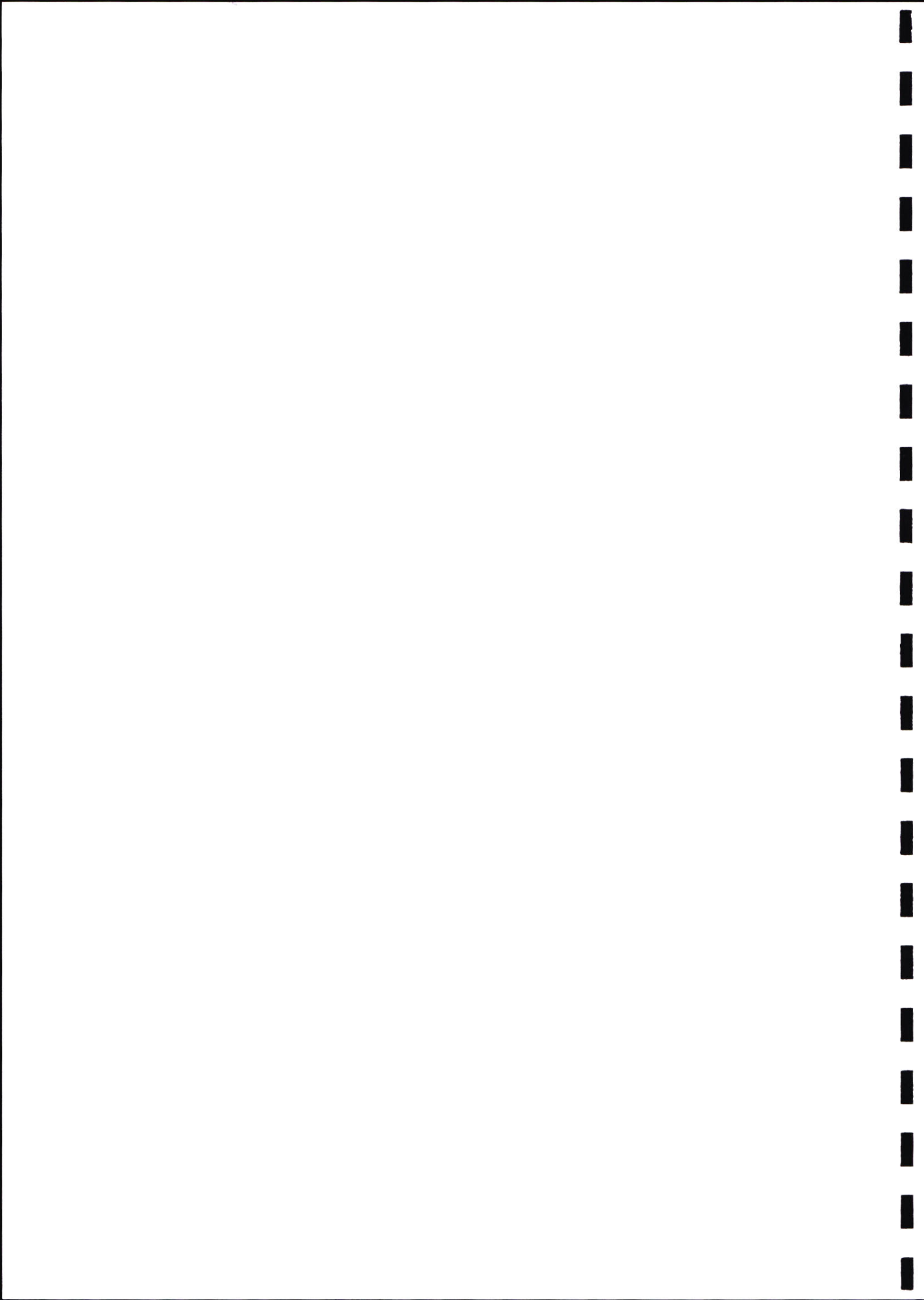
SIDE ELEVATION

1 : 100

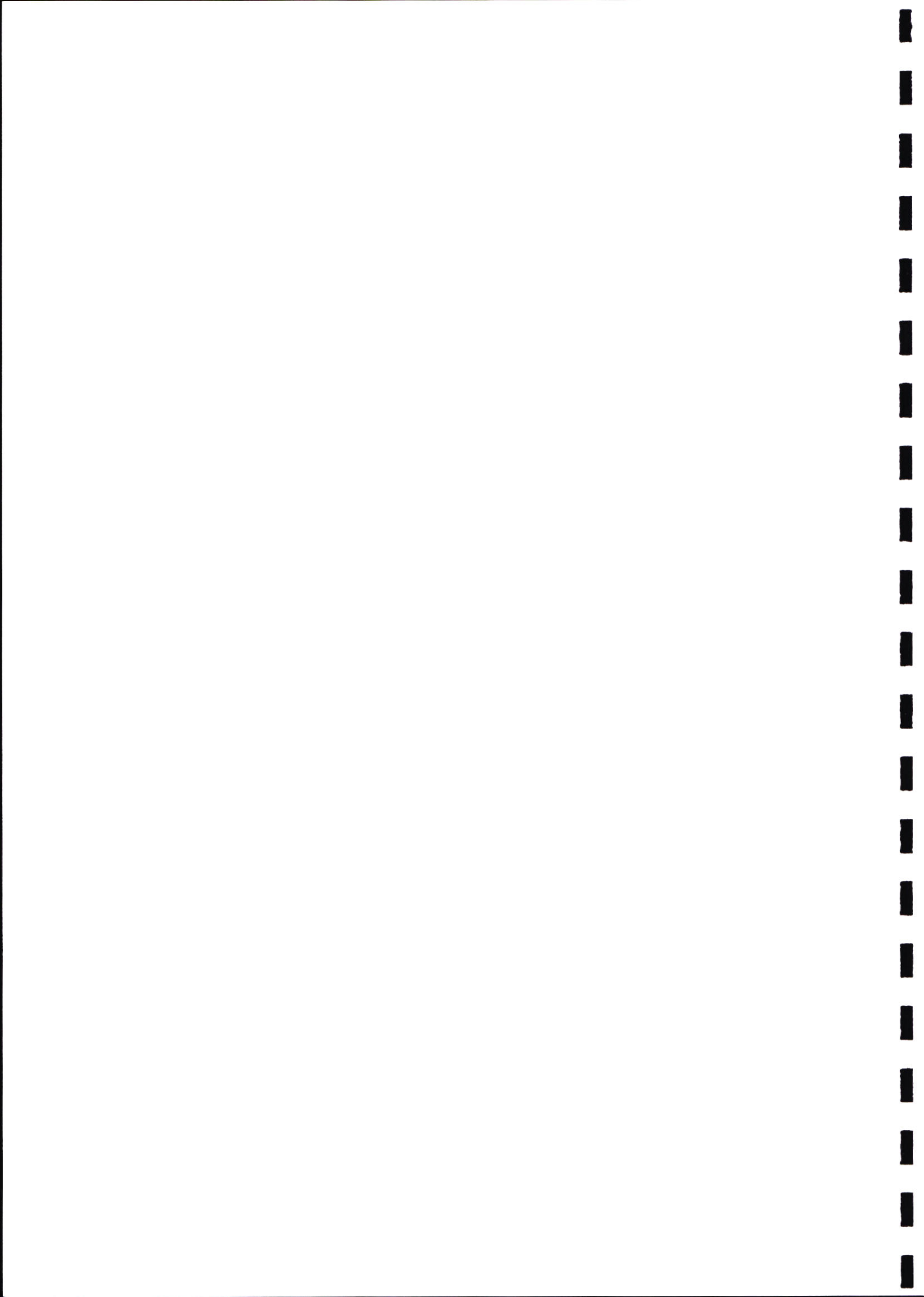


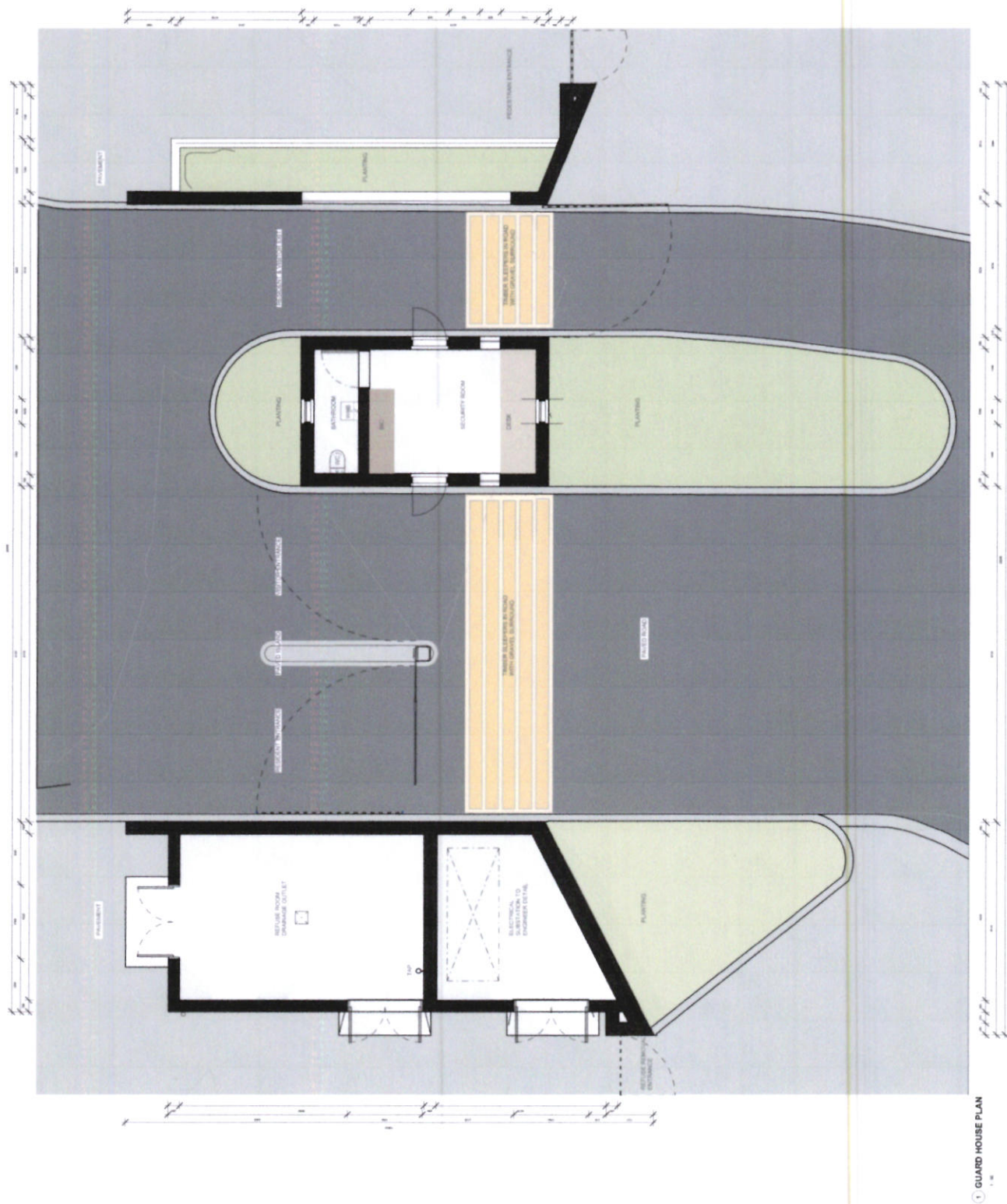


- 1st Floor, Church Square House, 5 Spin Street, Cape Town, 8000
- info@jacobothea.com • (+27) 021 180 2546

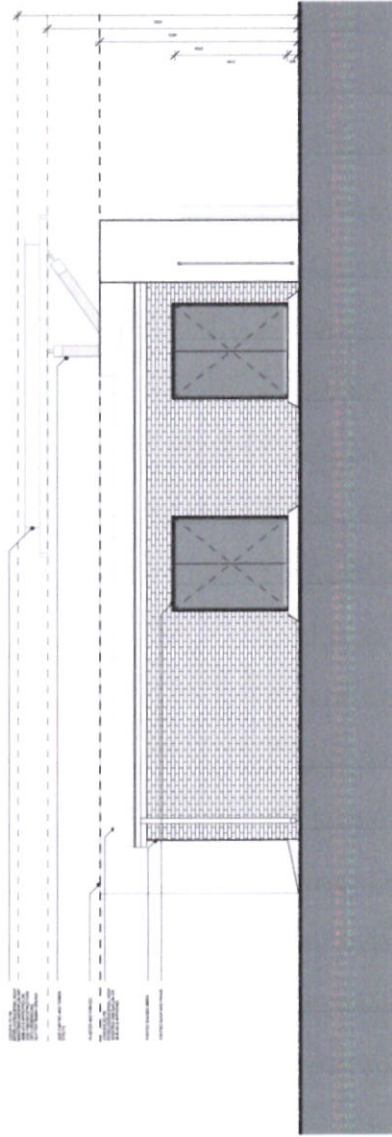


ANNEXURE 8: GATEHOUSE FLOOR PLAN AND ELEVATIONS

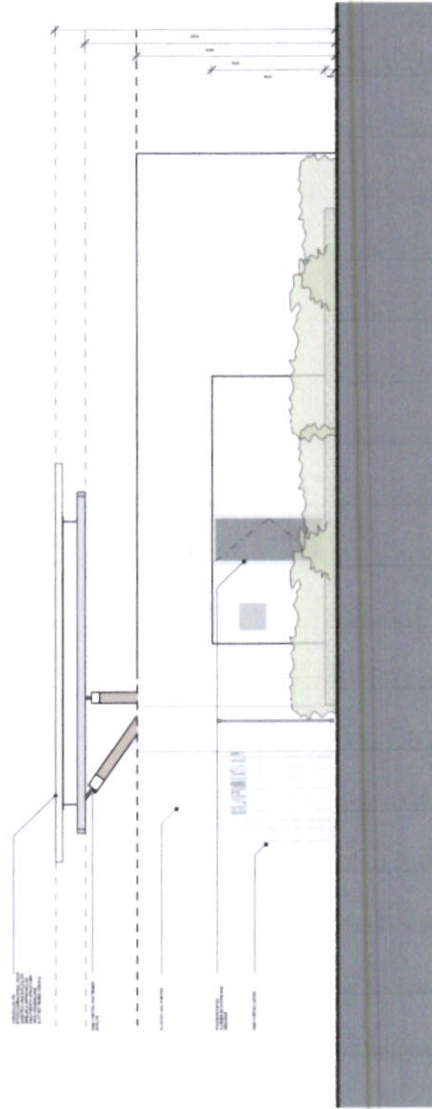




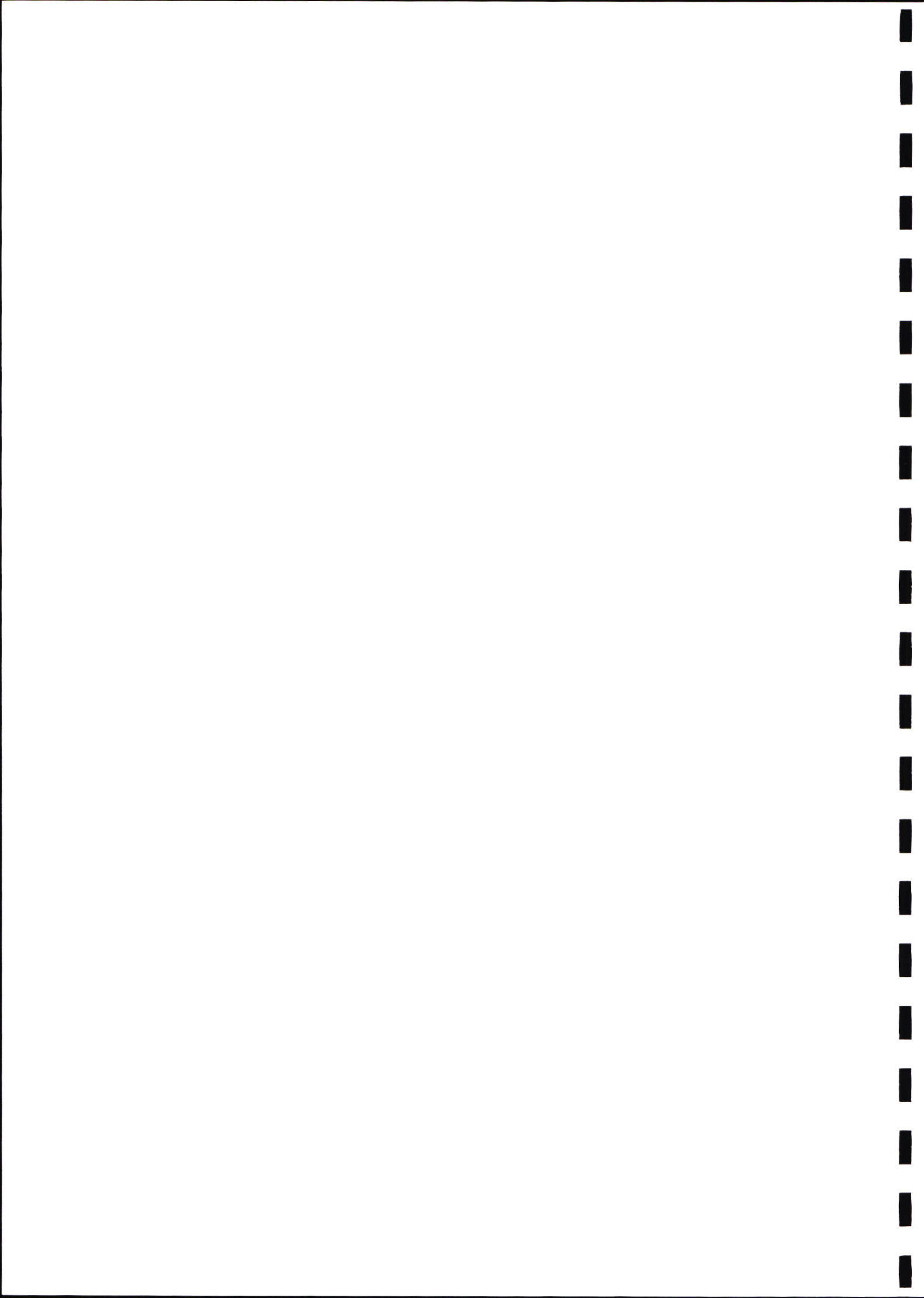
1 GUARD HOUSE PLAN



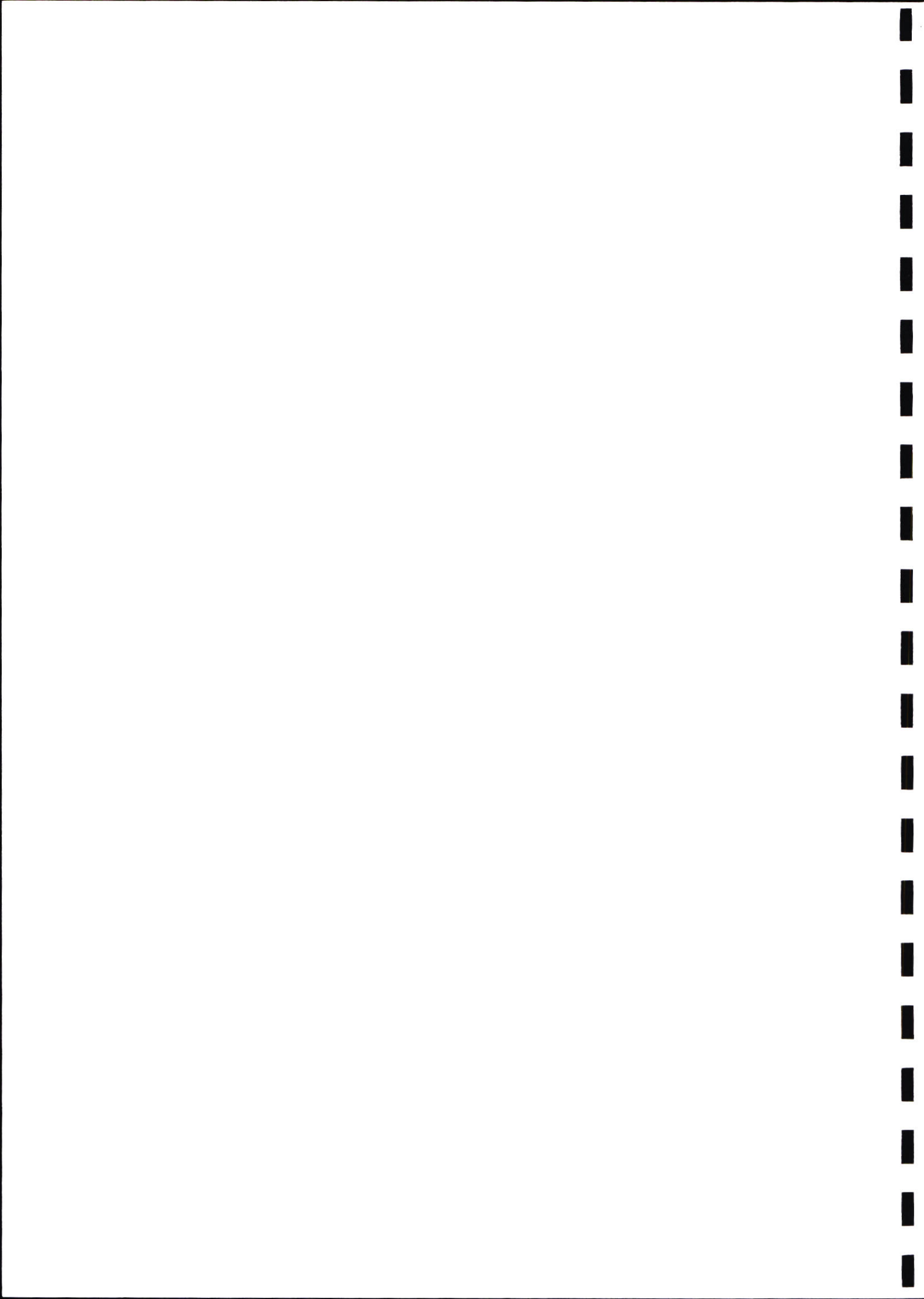
1 REFUSE ROOM SIDE ELEVATION
1:50



4 PEDESTRIAN ENTRANCE SIDE ELEVATION
1:50







ANNEXURE 9: CONSENT FOR RIGHT OF WAY SERVITUDE







FAURE & FAURE

Waarby Ingelyf is Lloyd Fortuin Prokureurs
Incorporating Lloyd Fortuin Attorneys

1880

Our ref/Ons Verw: ZKM/cv/

Your ref/U Verw:

Date/Datum: 28 July 2023

baven@redddevelopments.co.za

Dear Sir

KLAPMUTS PROJECT: LIVINGSTONE-LOUW / GOLDEN GLAZE INVESTMENTS

We refer to the above matter and to previous correspondence.

Our client met with Piet van Blerk and Yolandi Obermeyer of UDS Raadgewende Ingenieurs to ascertain from them whether planned servitude will be limiting for our clients in respect of their ingress and egress. They confirmed that this will not be the case.

On the basis of this confirmation our clients requested us to advise as follows:

- a) our clients give consent for the registration of a servitude over our clients' property for the use as an access road to your proposed development;
- b) this consent is subject thereto that your proposed development will make provision for any future development/s of our clients' property directly next to your proposed development. Consent must be given that any of our clients' future developments will form part of your proposed development should our clients wish to exercise such option. This will include the incorporation of a Home Owners Association, should there be one and also in terms of services connections such as roads, stormwater refuse, water and electricity infrastructure;
- c) it must also be agreed that the access road, which will be constructed within the servitude, will not be limited in terms of movement by our clients on their property. A detailed design will have to be submitted to our client to enable our client to confirm that they are happy with the design;
- d) our clients will not be held liable for any costs involved in the registration of the servitude as well as the costs of any infrastructure with regard to the access road nor the maintenance of same.

We are instructed to do the necessary conveyancing and servitude registration in this regard.

- e) Kindly advise how you would like to proceed with regarding to b), c) and d) above.

Perhaps a meeting will be of assistance, either virtually or in person.

We look forward to hearing from you.

Tel 021 871 1200 | Fax/ Faks 021 872 5800 / 021 872 3752

E-mail / E-pos: reception@faurefaure.co.za

Patriot Pers Building / Gebou, 227 Main Street / Hoofstraat, PAARL 7646

PO Box 20 / Posbus 20, Main Street, PAARL 7620

Docex 7, PAARL

Deeds Office Box / Aktekantoorbus 268

VAT / BTW Reg. No. 4740161247

www.faurefaure.co.za

FAURE & FAURE INCORPORATED / INGELYF • Reg. No. 1996/014845/21

(Incorporating / waarby ingelyf is LLOYD FORTUIN ATTORNEYS / PROKUREURS)

DIRECTORS / DIREKTEURE: L W Fortuin (BA LAW; B.PROC; CERT. SPORTS LAW) (CHAIRPERSON) • C T Viviers (BJURIS; LLB) • Z K Meyer (BA; LLB; DIP TAX PRAC) • M Meintjes (LLB), Conveyancer & Notary

CONSULTANT / KONSULTANT: O G Low (BA; BJURIS; DIP TAX PRAC), Conveyancer & Notary

SENIOR ASSOCIATE / SENIOR ASSOSIAAT: C Coetzee (LLB) • L Styles (LLB)

PROFESSIONAL ASSISTANTS / PROFESSIONELE ASSISTENTE: B Asia (LLB) • D Hock (LLB) and Diploma in Criminology, Law & Society • E Oosthuizen (LLB), Conveyancer

CANDIDATE ATTORNEYS / KANDIDAAT PROKUREURS: S Viljoen (BCOM LLB) • J K de Wet (LLB) • N Pentz (BCOM LLB)

It is inevitable that we may need to email bank details to our clients from time to time. We will however never change our banking details via email. Any emails to that effect should please be ignored. Verifying our banking details remains your responsibility. Kindly contact our offices to do so and speak directly to the person concerned before making any payment(s). Should you make payment based on a fraudulent email, our offices cannot be held responsible for any losses incurred.





FAURE & FAURE

Waarby Ingelyf is Lloyd Fortuin Prokureurs
Incorporating Lloyd Fortuin Attorneys

1 8 8 0

Yours faithfully

ZK MEYER

FAURE & FAURE INC

Tel 021 871 1200 | Fax/ Faks 021 872 5800 / 021 872 3752

E-mail / E-pos: reception@faurefaure.co.za

Patriot Pers Building / Gebou, 227 Main Street / Hoofstraat, PAARL 7646

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CONSULTANT / KONSULTANT: O G Low (BA; BJURIS; DIP TAX PRAC), Conveyancer & Notary

SENIOR ASSOCIATE / SENIOR ASSOSIAAT: C Coetzee (LLB) • L Styles (LLB)

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GOLDEN GLAZE INVESTMENTS (Pty) Ltd T/A RED DEVELOPMENTS

REG. NO. 2009/214918/23

161 Stamford Hill Road

4001

Durban

Tel: 031- 072 0129

Fax: 031-3379443

Cell No: 072 6991839



To: Faure & Faure

Ref: ZKM/cv

Carmenv@faurefaure.co.za

Response to Letter received Date: 28 July 2023

RE:KLAPMUTS PROJECT: LIVINGSTONE-LOUW / GOLDEN GLAZE INVESTMENTS

Your email dated 28 July 2023 is acknowledged with thanks. We are grateful to your Client for consenting to the proposed ROW and for your assistance in this matter.

Regarding Clauses b), c) and d) our responses are as follows:

b) We confirm that our proposed SDP is such that roads may be extended into your Clients adjacent land to facilitate future development thereof when/if so decided by them. Our joint consulting engineers UDS are aware of this possibility and have been advised to design all services for our development such that they may be extended in the future, should such requirement arise. We furthermore confirm that provision will be made in our HOA MOU, that any future dwellings developed between our current boundary and the dam will be incorporated into the residential estate developed by ourselves. Access to those dwellings will be via the gate-house to be developed by ourselves.

c) The roadway construction that will take place in the ROW Servitude, consented to by your Client, will be designed such as not to limit future development of the pan-handle to provide road access to the dam area should that be your Client's choice. This will be achieved by design levels, determined by UDS, being such that our roadway at the entrance will allow for extension east (to R44) and westwards to the dam.

d) This Clause in its entirety is acceptable to ourselves. We would request that you please engage with the Land Surveyor, whose draft ROW Servitude Diagram we have already previously provided for your consideration, to progress the finalization of this item.
Both your and their costs will be met by ourselves.

Please advise whether this response is acceptable to finalize our agreement, or whether you require that a formal Agreement between the parties be entered.

We will await your response.

Your Faithfully

Baven Reddi

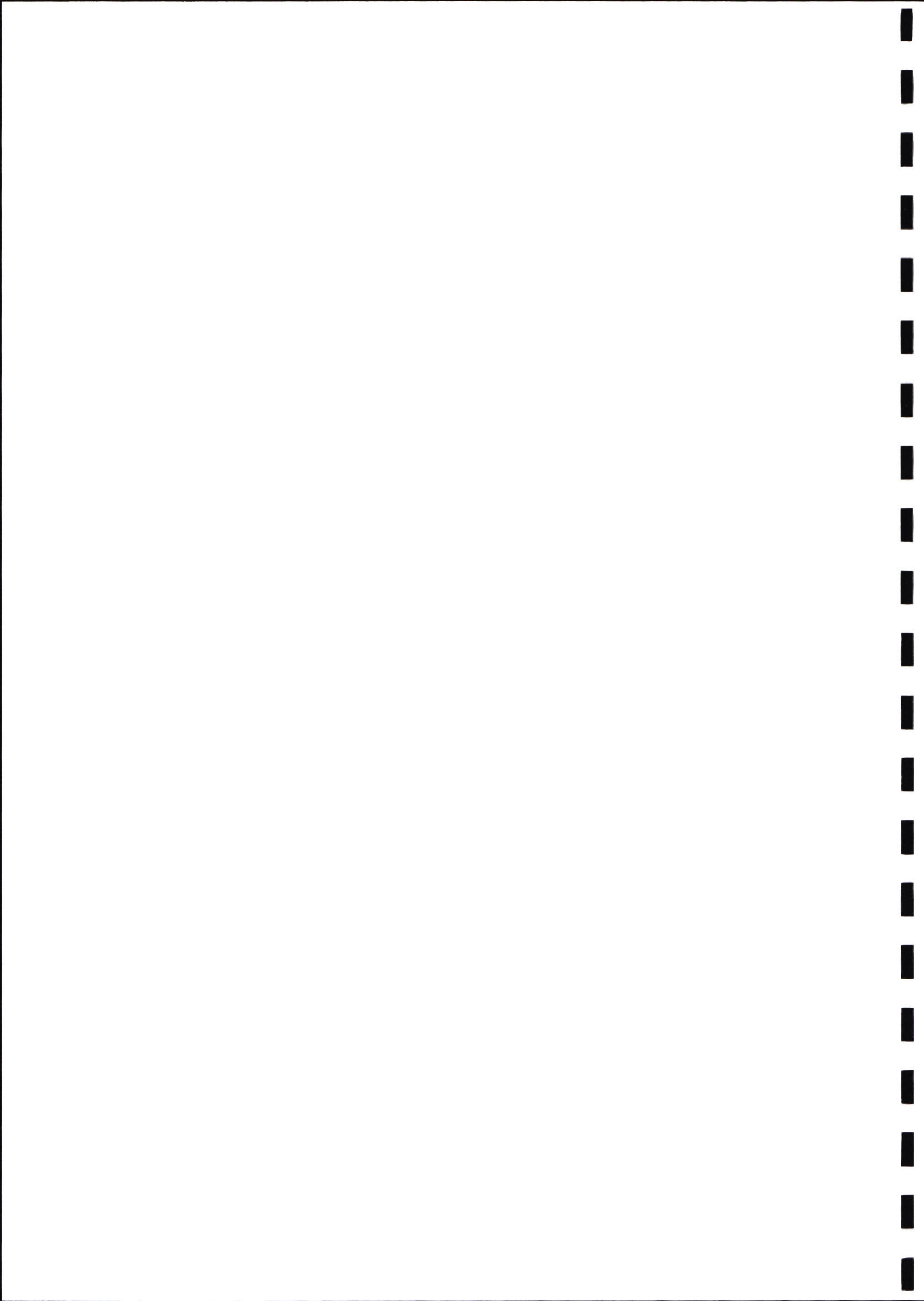
Golden Glaze Investments T/A Red Developments

baven@reddevelopments.co.za

0726991839

ANNEXURE 10: RIGHT OF WAY SERVITUDE DIAGRAM





DRAFT SERVITUDE DIAGRAM

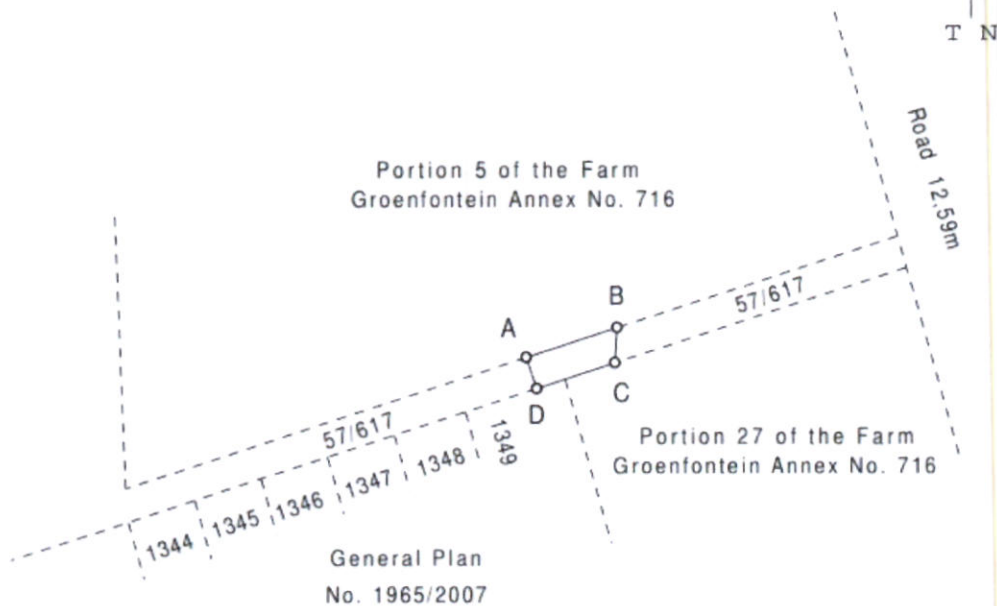
SIDES metres		ANGLES OF DIRECTION	CO-ORDINATES Y System: WG 19° X		S.G. No. approved for SURVEYOR- GENERAL
			Constants	0,00	
A B	27,27	251.50.00	A	+11 996,13	
B C	10,14	3.29.50	B	+11 970,22	
C D	23,52	71.49.10	C	+11 970,84	+41 707,26
D A	9,43	161.49.10	D	+11 993,19	+41 714,60
Trigonometrical Beacons					
Groenfontein (43)				+13 153,85	+38 925,76
Van Wykskop (69)				+11 160,73	+40 287,12

BEACON DESCRIPTIONS

A, B, C, D : Not placed

Notes:

1. This draft diagram is subject to field survey as well as municipal approval. It is not legally binding and can change in future.



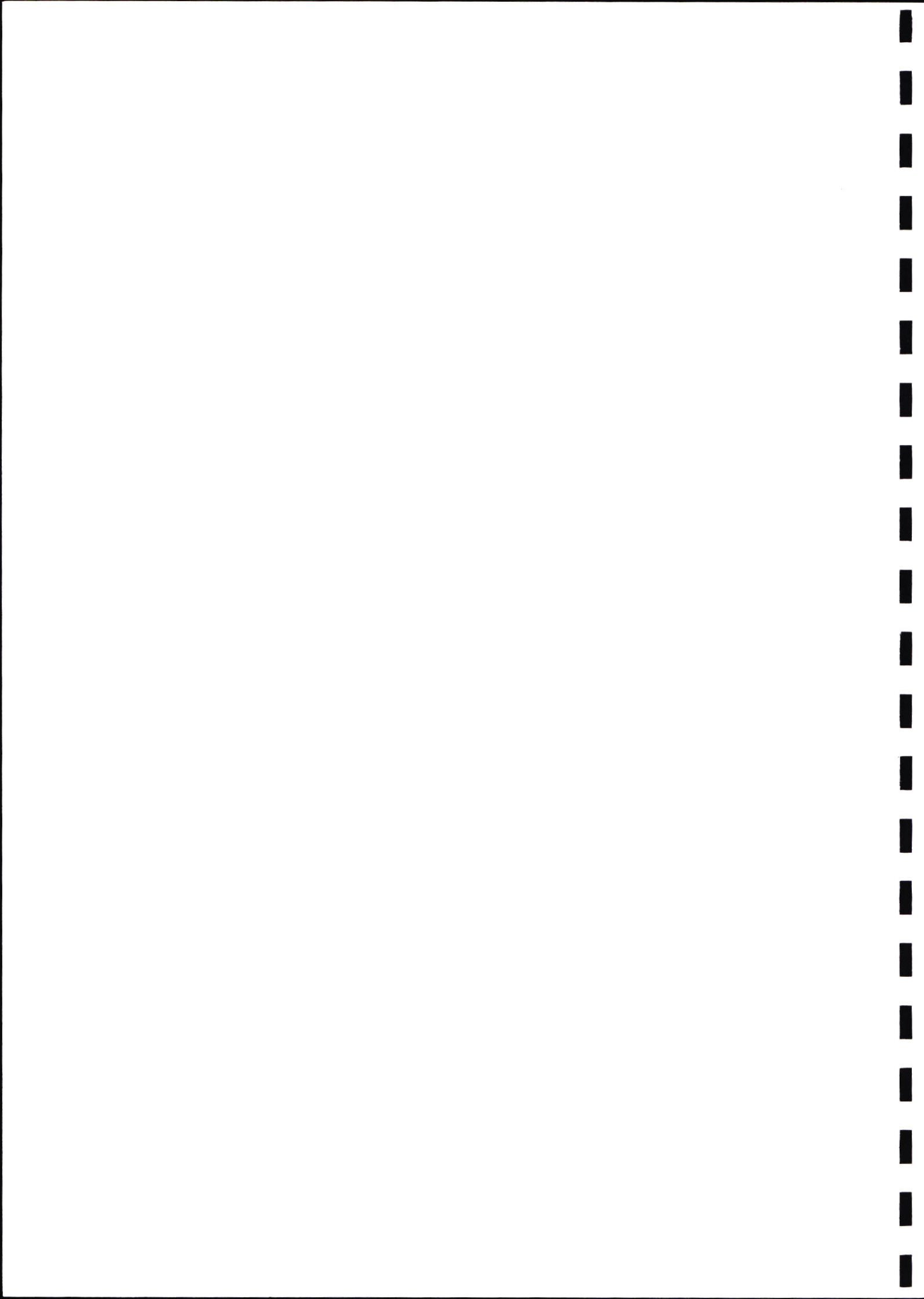
The figure A B C D represents a
Servitude Right-of-Way area over

Portion 57 of the Farm Groenfontein Annex No. 716

Situate in the Drakenstein Municipality
Administrative District of Paarl
Western Cape Province
Compiled In June 2023 by me

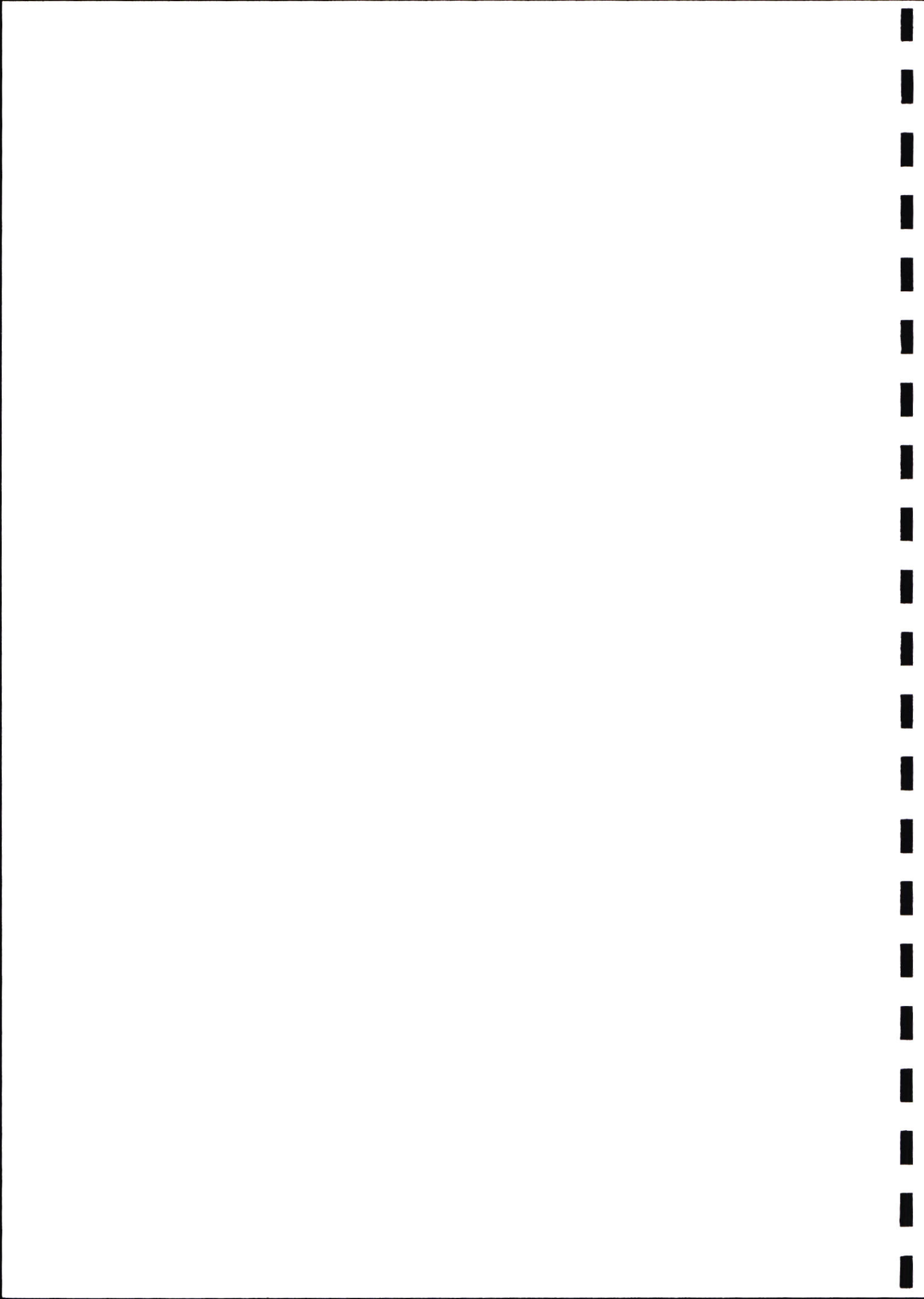
SJ Duncan (PLS1441)
Professional Land Surveyor

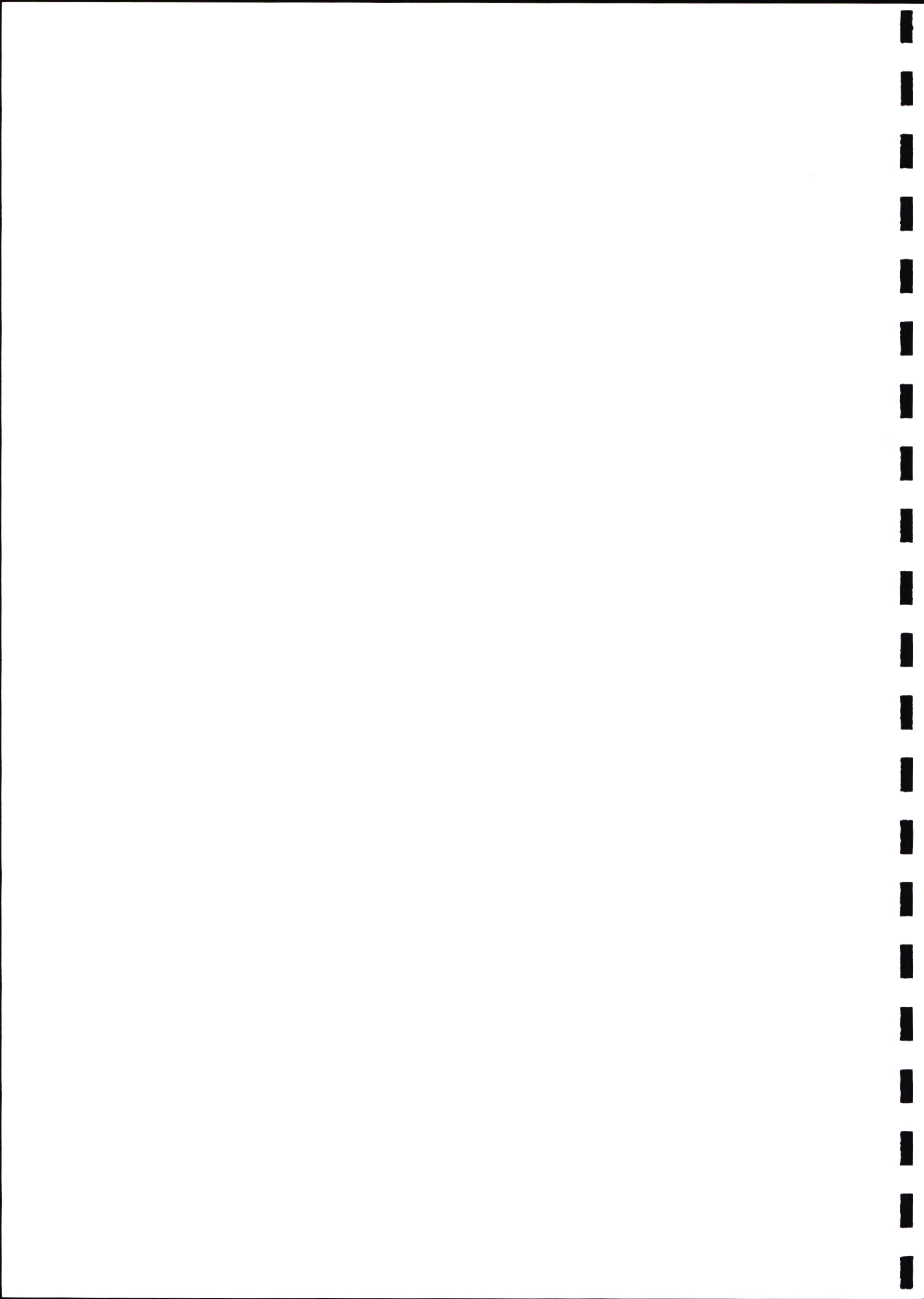
This Diagram is annexed to No.	The original diagram is S.G. No.	File:
Registrar of Deeds	Transfer No	S.R. No.
		Compilation:



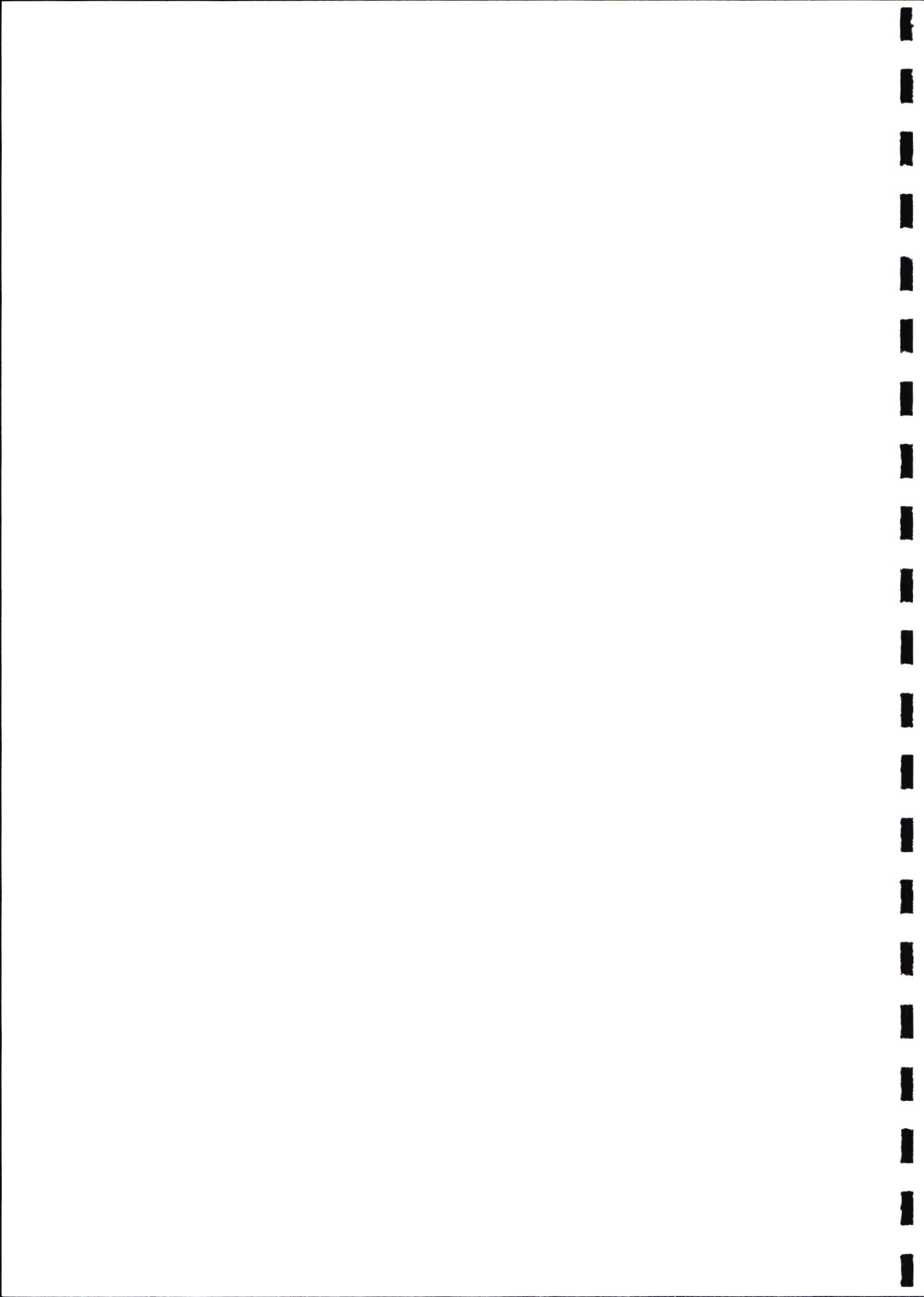
ANNEXURE 11: LANDSCAPING PLAN







ANNEXURE 12: GLS REPORT



6 July 2023

UDS Africa
P.O. Box 50487
V&A Waterfront
Cape Town
8002

Attention: Mr Ruaan Siebrits

Dear Sir

DEVELOPMENT OF PORTION 5 OF FARM 716, KLAPMUTS: CAPACITY ANALYSIS OF THE BULK WATER & SEWER SERVICES

Your request regarding comments on the bulk water and sewer supply to the proposed development (proposed residential development on portion 5 of Farm 716, Klappmuts), refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Stellenbosch Municipality) dated June 2023 and the Sewer Master Plan dated June 2023.

Future development area K13, which includes the proposed development, was conceptually taken into consideration for the recently completed master plans for the water and sewer networks.

1. WATER DISTRIBUTION SYSTEM

1.1 Distribution zone

The master planning indicated that the proposed development area should be accommodated in the existing Klappmuts Lower reservoir water distribution zone. The connection to the existing system should be done on the existing 150 mm diameter pipe in Old Paarl Road, as shown on Figure 1 attached.

The proposed development is situated inside the water priority area.

1.2 Water demand

The original water analysis for the master plan was performed with a total annual average daily demand (AADD) for development (future development area K13 in the June 2023 water master plan) of 114,4 kL/d.

For this re-analysis of the master plan, the total AADD and fire flows for the proposed development were calculated as follows:

- 102 Group housing units @ 0,6 kL/d/unit = 61.2 kL/d
- Fire flow criteria (Low risk) = 15 L/s @ 10 m

GLS Consulting (Pty) Ltd

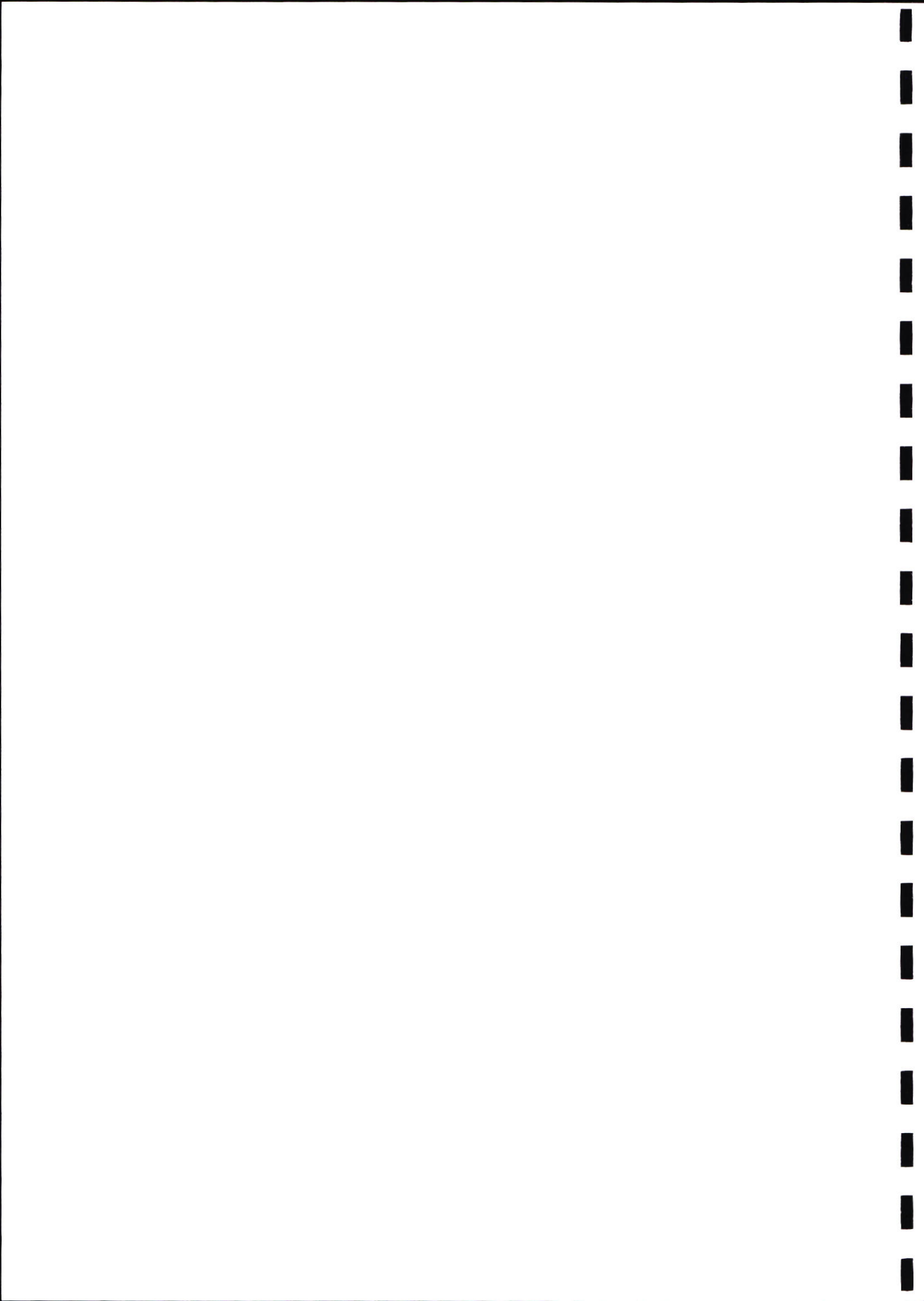
T +27 21 880 0388

Stellenpark, Block D North, Cnr of R44 and School Rd, Jamestown, Stellenbosch, 7600, ZA | PO Box 814, Stellenbosch, 7599, ZA

Reg no: 2007/003039/07

www.gls.co.za

Directors: Rebecca Pole, Marius de la Rey, Garreth Young



1.3. Present situation

1.3.1 Network capacity

Accommodation of the development in the present system will require upgrading of the existing system to comply with the pressure and fire flow criteria as set out in the master plan.

Furthermore, the following link services items will be required to connect the proposed development to the existing system:

Link services

• SKW1.20	: 60 m x 200 mm Ø supply pipe	R	488 000 *
• SKW1.28	: 215 m x 160 mm Ø supply pipe	R	188 000 *
Total		R	676 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 1 attached, but have to be finalised subsequent to detail pipeline route investigations.

1.3.2 Reservoir capacity

The criteria for total reservoir volume used in the Stellenbosch Municipality Water Master Plan is 48 hours of the AADD (of the reservoir supply zone). The existing reservoir volume available at the Klappmuts Lower reservoir is sufficient to accommodate the proposed development.

1.3.3 Bulk supply

The Klappmuts Lower reservoir is supplied with bulk water through a pump station (located at the Old Klappmuts reservoir site) and a 200 mm diameter dedicated supply pipeline. The Old Klappmuts reservoir (which acts as a sump for the pump station) is supplied with bulk water from the City of Cape Town's Wemmershoek bulk system through a dedicated 400 mm pipe (new section) and 200 mm pipe (old section).

The existing bulk system has sufficient capacity to accommodate the proposed development, but it is however proposed in the water master plan for Klappmuts that the old 200 mm diameter bulk pipeline between the Wemmershoek pipeline and the Old Klappmuts reservoir is reinforced with a new 400 mm diameter pipe in the near future.

A new HDPE supply pipeline (500 m x 560 mm diameter section and 300 m x 450 mm diameter section) has recently been constructed between the Klappmuts Lower reservoir site and the Old Klappmuts reservoir site, in order to augment supply to the Klappmuts reticulation network. It is proposed that the old 250 mm diameter supply pipeline (this pipe was previously the main supply pipe from the Klappmuts Lower reservoir to the network) is transferred from the reticulation network to the bulk system in order to improve the capacity of bulk water supply to the Klappmuts Lower reservoir.

1.4 Implementation of the master plan

The following master plan items will be required to reinforce the existing Klappmuts reticulation network in order to accommodate the proposed development together with other future development areas.

Network upgrade

• SKW1.18	: 380 m x 200 mm Ø new supply pipe and connections	R	889 000 *
• SKW1.19	: 225 m x 200 mm Ø new supply pipe and connections (including railway crossing)	R	985 000 *
Total		R	1 874 000 *



Accommodation of the development in the future system (together with other future development areas), will require upgrading of the existing bulk system as set out in the master plan.

Bulk supply: (Phase 1 upgrades)

- SKW.B4a : 800 m x 250 mm Ø utilize old supply pipe as part of the bulk supply system R 300 000 *

Bulk supply: (Phase 2 upgrades)

- SSW.B1a : 500 m x 500 mm Ø replace existing 200 mm Ø pipe R 5 122 000 *
- SKW.B1b : 370 m x 500 mm Ø replace existing 200 mm Ø pipe R 3 933 000 *
- Sub-total R 9 055 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 1 attached, but have to be finalised subsequent to detail pipeline route investigations.

1.5. *Minimum items required*

The minimum requirements to accommodate the proposed development in the existing water system are master plan items SKW1.18 & SKW1.19 to improve network conveyance to the proposed development, and link services items SKW1.20 & SKW1.28 to connect the proposed development to the existing water network.

2. **SEWER NETWORK**

2.1 *Drainage area*

It is proposed in the sewer master plan that sewage from the proposed development area gravitates to the north of Farm 716/5 towards a new Main pumping station (PS) for Klapmuts. Sewage should be pumped from this proposed "Klapmuts Main PS" directly towards the existing Klapmuts Wastewater Treatment Plant (WWTP), as shown on Figure 2 attached.

The development is inside the sewer priority area.

2.2 *Sewer flow*

In the original sewer master plan, the peak day dry weather flow (PDDWF) for the proposed development area (future area K13 in the June 2023 sewer master plan) was calculated at 92.5 kL/d.

For this re-analysis, the PDDWF for the proposed development was calculated as 42.8 kL/d.

2.3 *Present situation*

New bulk sewer infrastructure will be required to accommodate the proposed development in the existing Klapmuts sewer system.

2.4 *Implementation of the master plan*

The accommodation of the proposed development within the Klapmuts sewer system requires the construction of a new main sewer PS, located at the lowest point next to N1 (southern side) and the R44 main Road (western side), as shown on Figure 2 attached.



In the sewer master plan for Klapmuts it is proposed that the existing Klapmuts pumping stations 1, 2 & 3 are decommissioned in the near future and that sewage from their respective drainage areas are then redirected to this proposed Klapmuts Main PS.

The first phase of these bulk sewer upgrades is to decommission the existing Klapmuts PS 1, redirect sewage from the Klapmuts PS 1 drainage area to the proposed Klapmuts Main PS, and construct the Klapmuts Main PS and an accompanying 315 mm rising main.

Bulk sewer upgrades (Phase 1)

• SKS1.8 : 960 m x 400 mm Ø New collector sewer	R 5 265 000 *
• SKS1.13 : New 50 L/s Klapmuts Main PS	R 4 682 000 *
• SKS1.14 : 1 380 m x 315 mm Ø New rising main	R 5 326 000 *
• SKS5.2 : 45 m x 160 mm Ø New diversion sewer	R 217 000 *
• SKS5.3 : Decommission existing Klapmuts PS 1	R 330 000 *
Total	R 15 820 000 *

The following link services item will then be required to connect the proposed development on Farm 716/5 to the new Klapmuts Main PS:

Link services

• Item 1 : 80 m x 160 mm Ø New outfall sewer	R 212 000 *
• SKS1.12a : 70 m x 250 mm Ø New Gravity	R 246 000 *
Total	R 458 000 *

The second phase of the bulk sewer upgrades is to decommission the existing Klapmuts PS 2 and redirect sewage from the Klapmuts PS 2 drainage area to the new Klapmuts Main PS drainage area.

Bulk sewer upgrades (Phase 2)

• SKS1.7 : 210 m x 400 mm Ø New collector sewer	R 1 252 000 *
• SKS6.2 : 40 m x 250 mm Ø New diversion sewer	R 244 000 *
• SKS6.3 : Decommission existing Klapmuts PS 2	R 330 000 *
Total	R 1 826 000 *

The last phase of the bulk sewer upgrades is to decommission the existing Klapmuts PS 3 and redirect sewage from the Klapmuts PS 3 drainage area to the proposed Klapmuts Main PS.

Bulk sewer upgrades (Phase 3)

• SKS1.12b : 850 m x 250 mm Ø New Gravity	R 3 202 000 *
• SKS7.3 : Decommission existing Klapmuts PS 3	R 200 000 *
Total	R 3 402 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed bulk sewer upgrades and position of the proposed sewer pumping station are schematically shown on Figure 2 attached, but have to be finalised subsequent to detail pipeline route and pump station location investigations.

2.5 Minimum items required

The minimum requirements to accommodate the proposed development in the existing sewer system are link services items 1 & SKS1.12a to connect the proposed development to the future Klapmuts Main PS, and master plan items SKS1.13 & SKS1.14 to implement the new Klapmuts PS and accompanying rising main towards the Klapmuts WWTP.



3. CONCLUSION

The developer of portion 5 of Farm 716 in Klapmuts will be liable for the Bulk Services Levy (as calculated by the Stellenbosch Municipality) as a contribution towards water infrastructure and the Bulk Services Levy (as calculated by the Stellenbosch Municipality) as a contribution towards sewer infrastructure.

There is insufficient capacity in the existing water reticulation system to accommodate the proposed development. The existing bulk supply system however has sufficient capacity to accommodate the proposed development.

The minimum requirements to accommodate the proposed development in the existing water system are master plan items SKW1.18 & SKW1.19 to improve network conveyance to the proposed development, and link services items SKW1.20 & SKW1.28 to connect the proposed development to the existing water network.

It is proposed in the sewer master plan that sewage from the proposed development area gravitates to the north of Farm 716/5 towards a new Main PS for Klapmuts, that discharges directly at the Klapmuts WWTP.

The minimum requirements to accommodate the proposed development in the existing sewer system are link services items 1 & SKS1.12a to connect the internal sewer network of the proposed development to the future Klapmuts Main PS, and master plan items SKS1.13 & SKS1.14 to implement the new Klapmuts Main PS and accompanying rising main towards the Klapmuts WWTP.

We trust you find this of value.

Yours sincerely

GLS CONSULTING (PTY) LTD
REG. NO.: 2007/003039/07



Per: PC DU PLESSIS

cc. The Director
Directorate: Infrastructure Services
Stellenbosch Municipality
P. O. Box 17
STELLENBOSCH
7599

Attention: Mr Paul Joubert

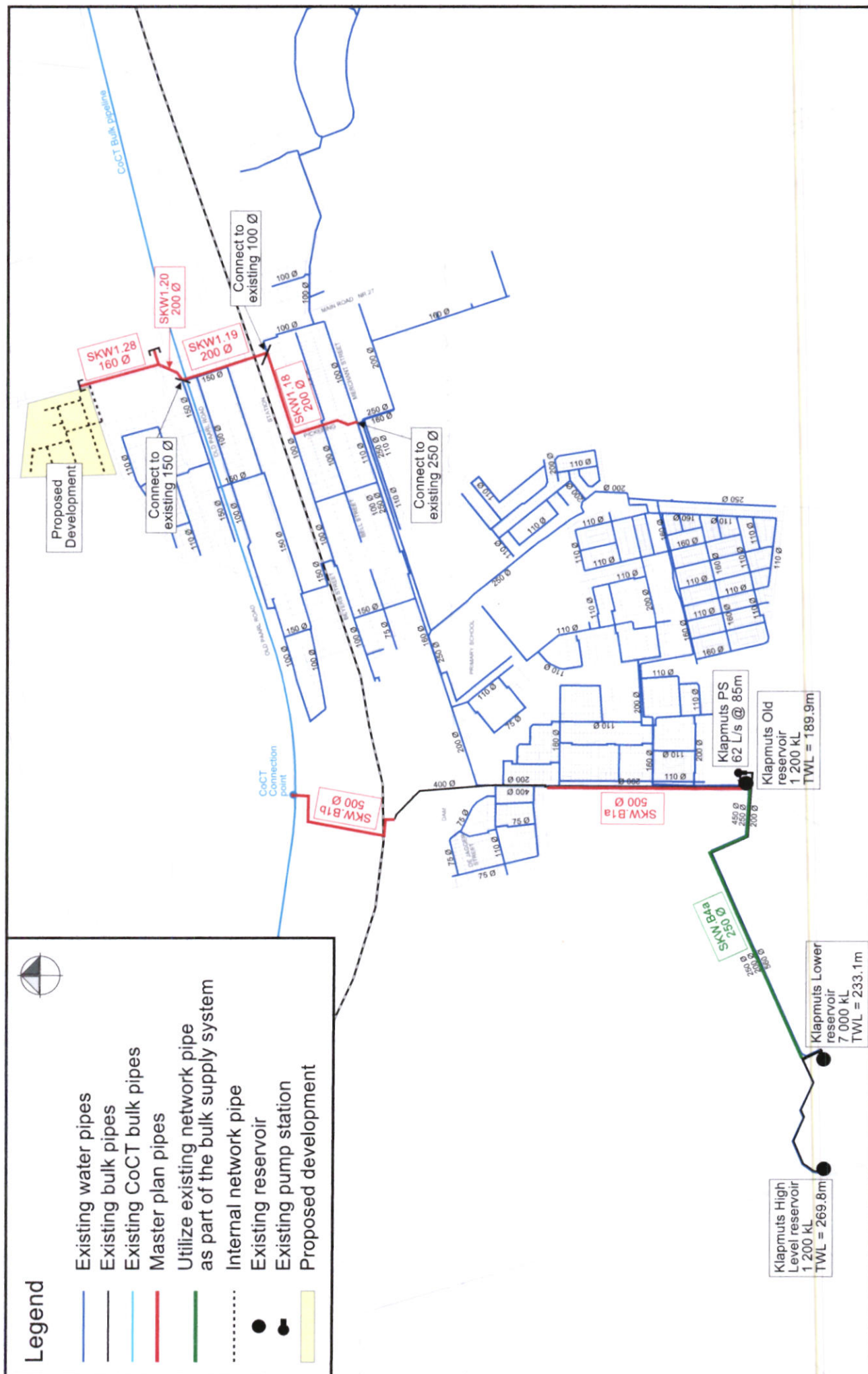
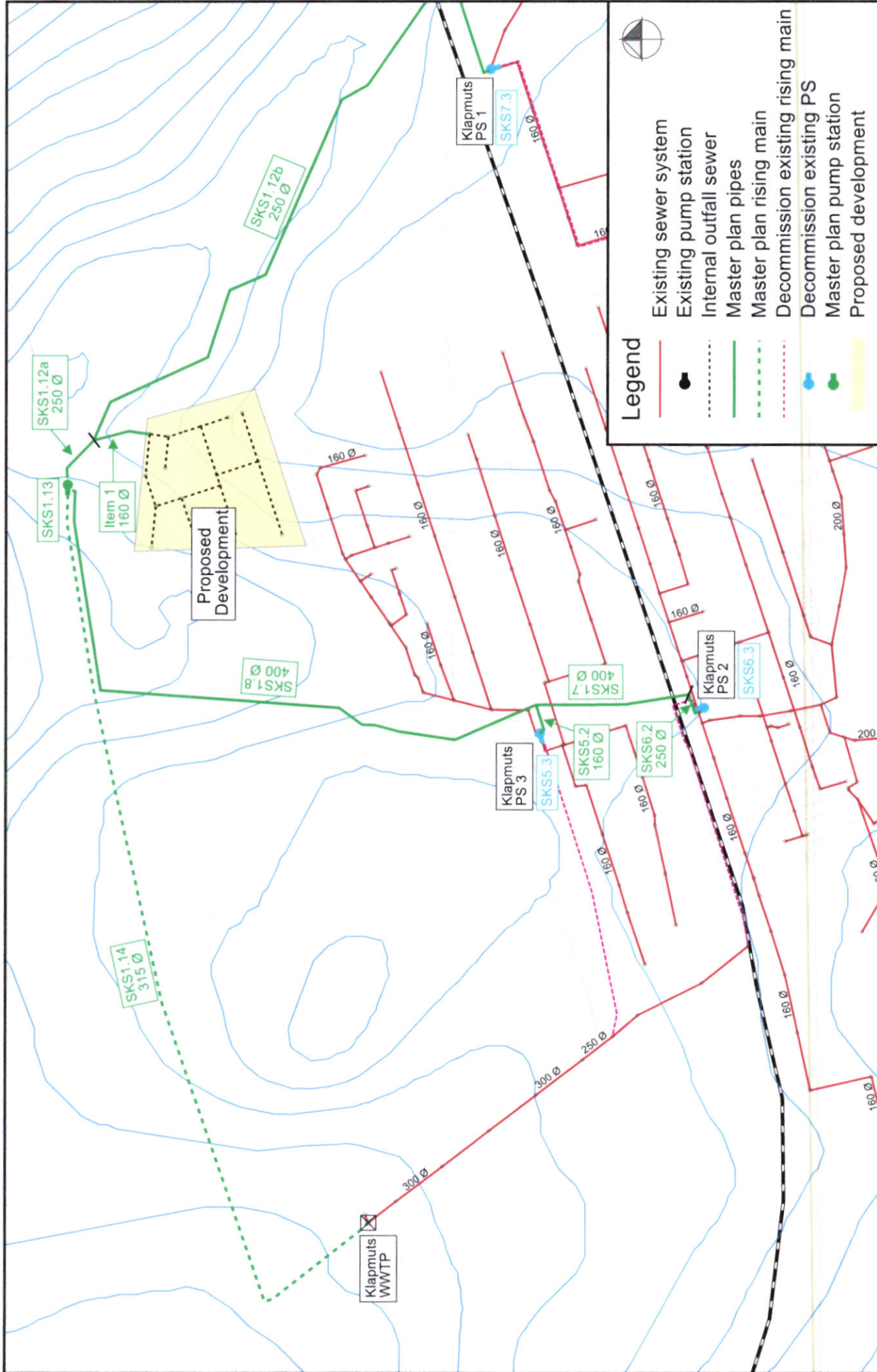


Figure 1
Proposed Development
Portion 5 of Farm 716 - Klappmuts
Water Master Plan



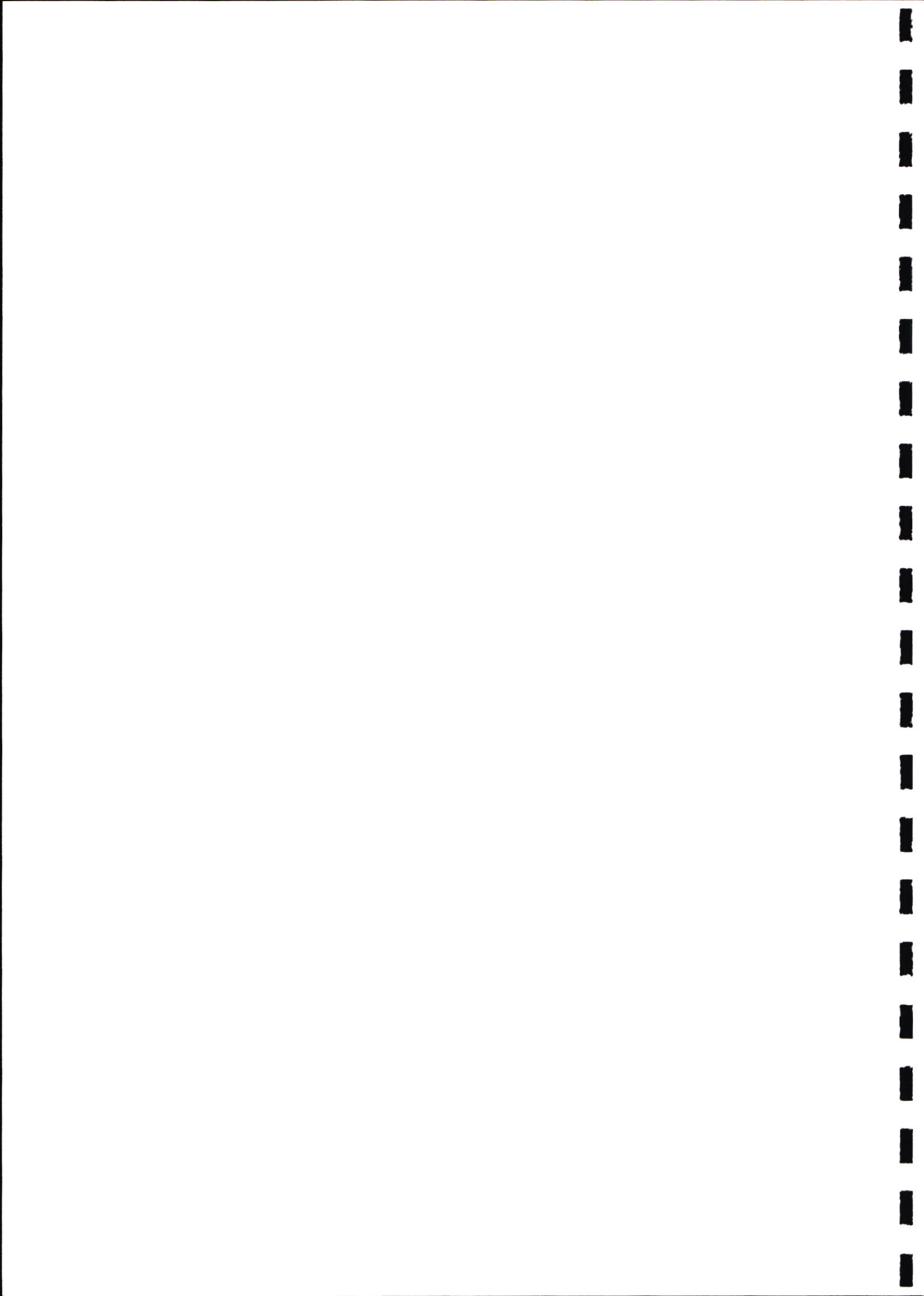


Legend

- Existing sewer system
- Existing pump station
- Internal outfall sewer
- Master plan pipes
- Master plan rising main
- Decommission existing rising main
- Decommission existing PS
- Master plan pump station
- Proposed development

ANNEXURE 13: CIVIL AND STORMWATER SERVICES REPORT





MOUNT VISTA ESTATE

**PORTION 5 OF FARM 716, KLAPMUTS, WITHIN THE STELLENBOSCH MUNICIPAL
AREA, WESTERN CAPE**

ENGINEERING SERVICES REPORT & STORMWATER MANAGEMENT PLAN

REVISION 0

AUGUST 2023

Golden Glaze Investments

2 Clarendon Drive

Durban North

4051

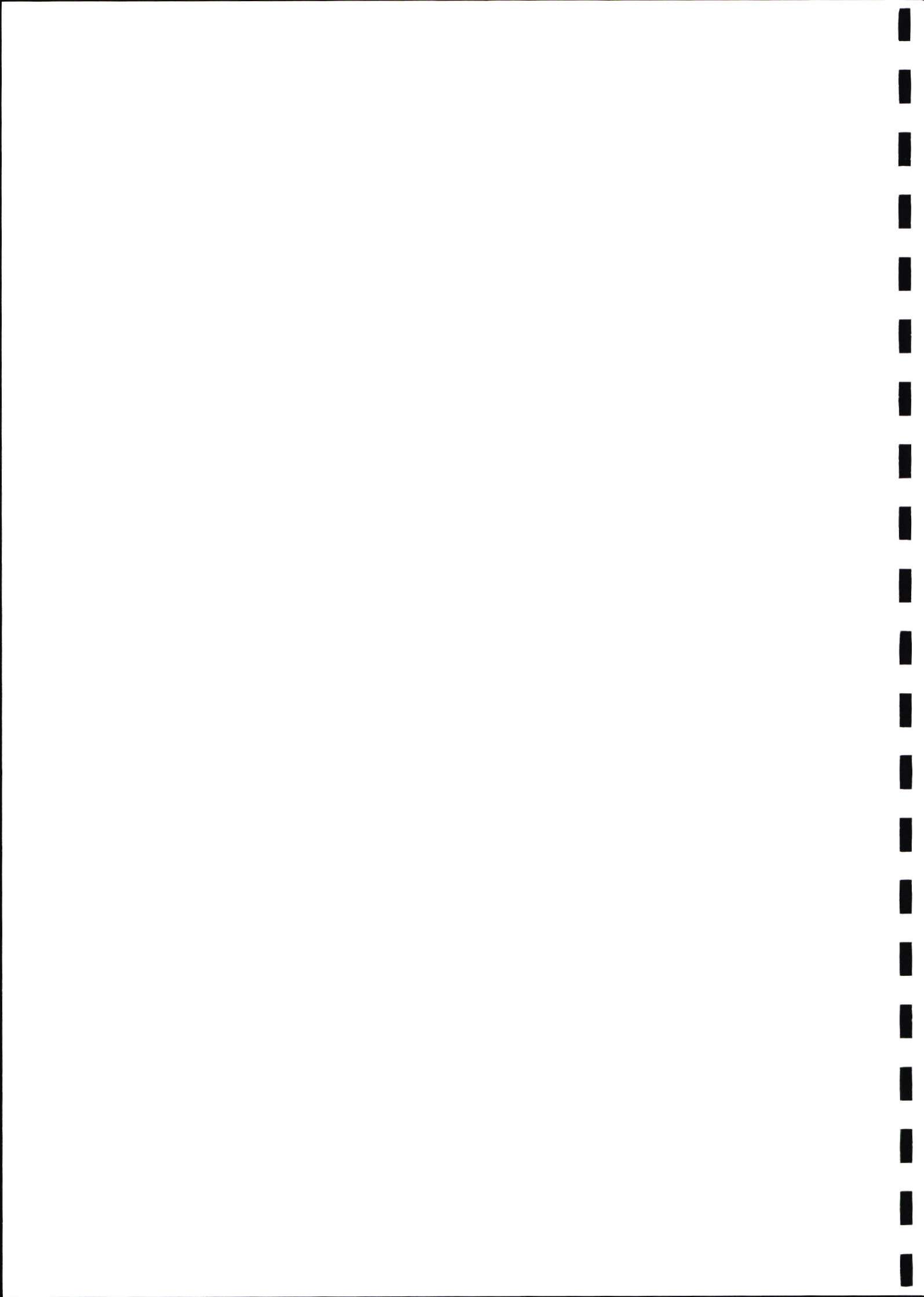


UDS Africa

9 Electron Road

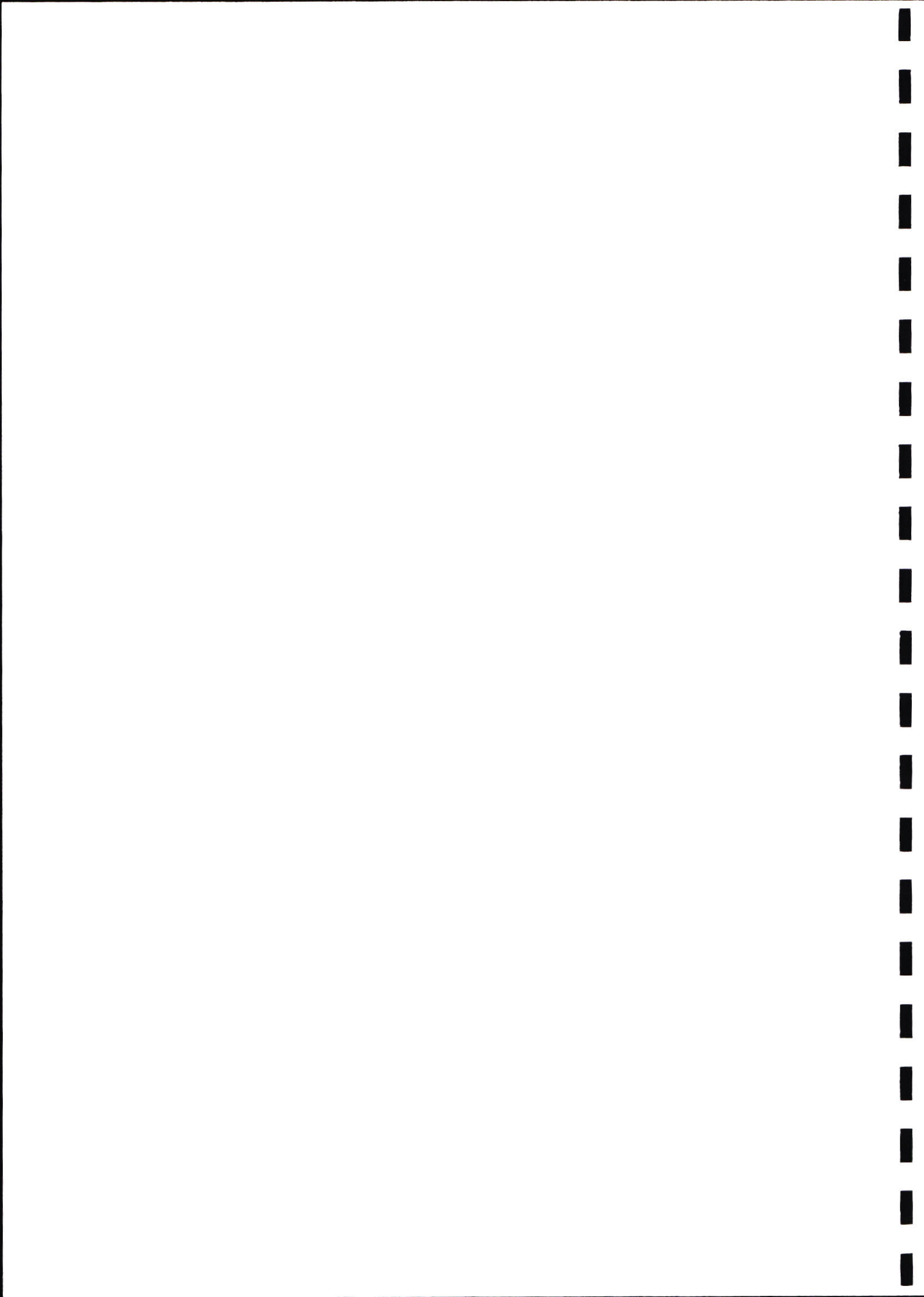
Techno Park

Stellenbosch, 7600



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3. The development	3
4. Water Demand	3
4.1 Water demand for proposed development	3
4.2 Existing services	4
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5.1 Sewer demand for proposed development	5
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6.3 Stormwater treatment requirements	9
6.4 Stormwater treatment methods	9
7. Maintenance	100
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**ENGINEERING SERVICES REPORT & STORMWATER MANAGEMENT PLAN FOR THE
PROPOSED MOUNT VISTA ESTATE, PORTION 5 OF FARM 716, KLAPMUTS, WITHIN THE
STELLENBOSCH MUNICIPAL AREA**

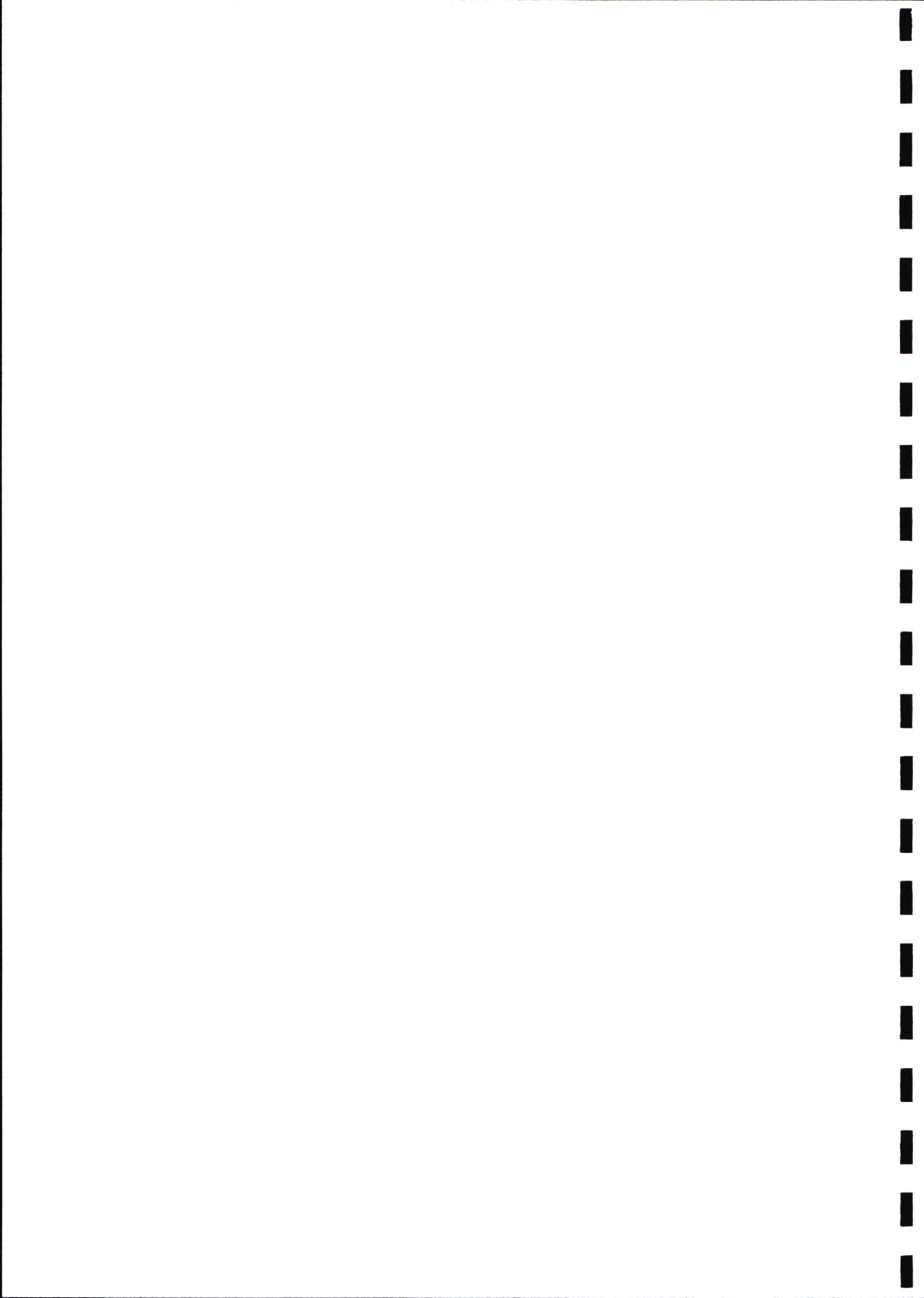
1. Background

UDS Africa was appointed by Golden Glaze Investments to compile a services report and stormwater management plan in support of the development application for the proposed Mount Vista Estate on Portion 5 of Farm 716. The site covers an area of 4.13 ha and is currently undeveloped. The site is zoned for agricultural use.

The purpose of this report is to address the requirements of Stellenbosch Municipality with regard to the provision of engineering services for the proposed development. The infrastructure design of the development is based on the technical requirements and guidelines as stated in the Guidelines for Human Settlements Planning and Design (Red Book: July 2019) and to the requirements and standards of Stellenbosch Municipality.

2. Locality

The site is located Klapmuts, within the Stellenbosch Municipal area. The site is bordered to the north by a SANRAL road reserve, to the east by the R44, to the south by an existing residential development (Rozenmeer) and to the west by Uitkoms dam. Below is a locality plan for reference (outlined in red, area highlighted in yellow).



3. The development

The proposed development will be residential in nature. Please refer to **Annexure A** for a copy of the site development plan produced by Jaco Botha Architects. Below is a summary of the land uses to from part of the proposed development:

USE	UNITS
Residential	110

Table 1: Summary of land uses

A capacity analysis was completed by GLS Consulting (Pty) Ltd for the proposed development in July 2023.

A copy of the report can be found under **Annexure B**.

4. Water Demand

4.1 Water demand for proposed development

The water demand for the proposed development is calculated (in accordance with the Guidelines for Human Settlement Planning and Design) as follows:

WATER DEMAND						
DEVELOPMENT	Units	GLA (m ²)	l/ unit/ day	l/ 100m ²	TOTAL (l/d)	TOTAL (l/s)
Residential	110		600		66 000	0.764
TOTAL					66 000	0.764
Annual Average Daily Demand (AADD)		66 000 l/d 0.764 l/s				
Peak factor		4.00				
Peak demand		264 000 l/d 3.056 l/s				
Fire flow requirement		15 l/s @ 10m				

Table 2: Water demand calculation

The internal water reticulation network of the proposed development to comply with the minimum specifications as indicated in the "Red Book - Guidelines for Human Settlement Planning and Design" and the municipal standards from Stellenbosch Municipality.

4.2 Existing services

The closest water reticulation network is a 150mm pipe located in Old Paarl Road. It is proposed that link services SKW1.20 & SKW1.28 are constructed in order to provide water to the site. Further to this it is proposed that bulk upgrades SKW1.19 & SKW1.18 are implemented to improve network conveyance. The minimum diameter of the internal water network will be 110mm Class 12 uPVC pipes. Erf connections will be 15mm for single connections and 25mm for split connections. Refer to **Figure 2** below, showing the location of the existing, proposed link and bulk network upgrades.

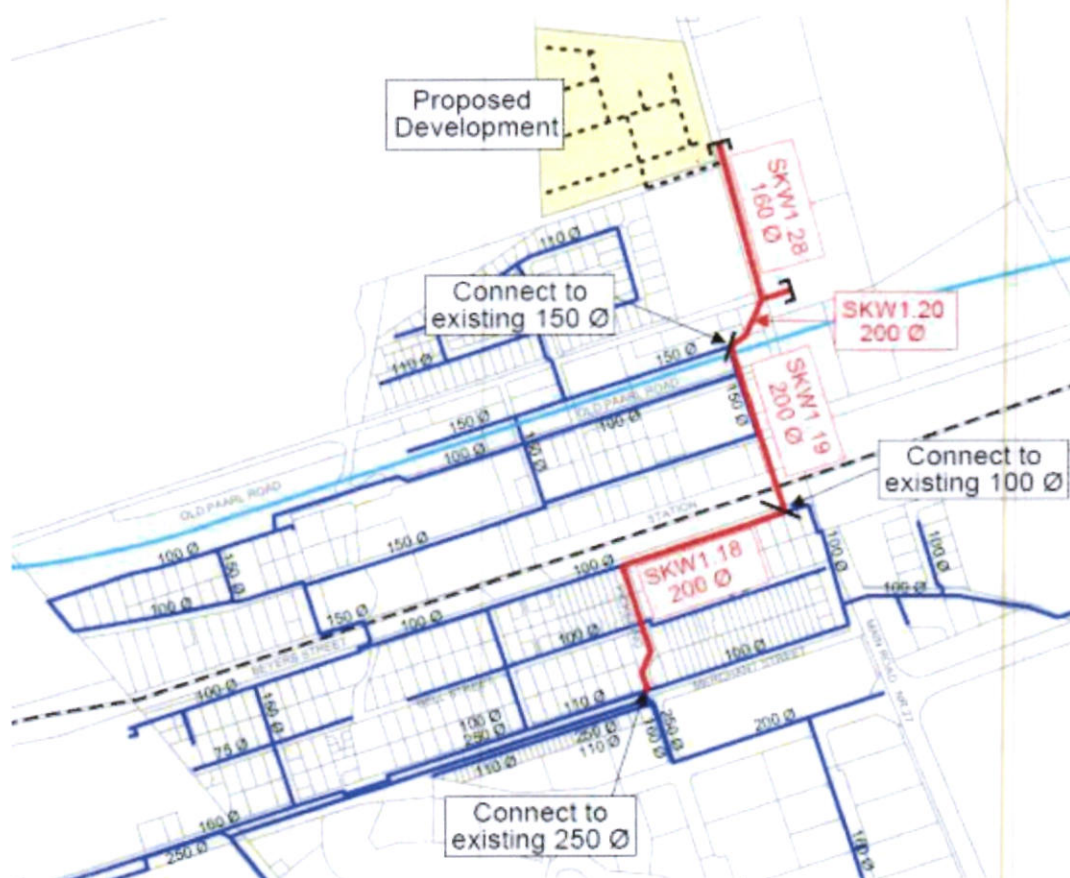
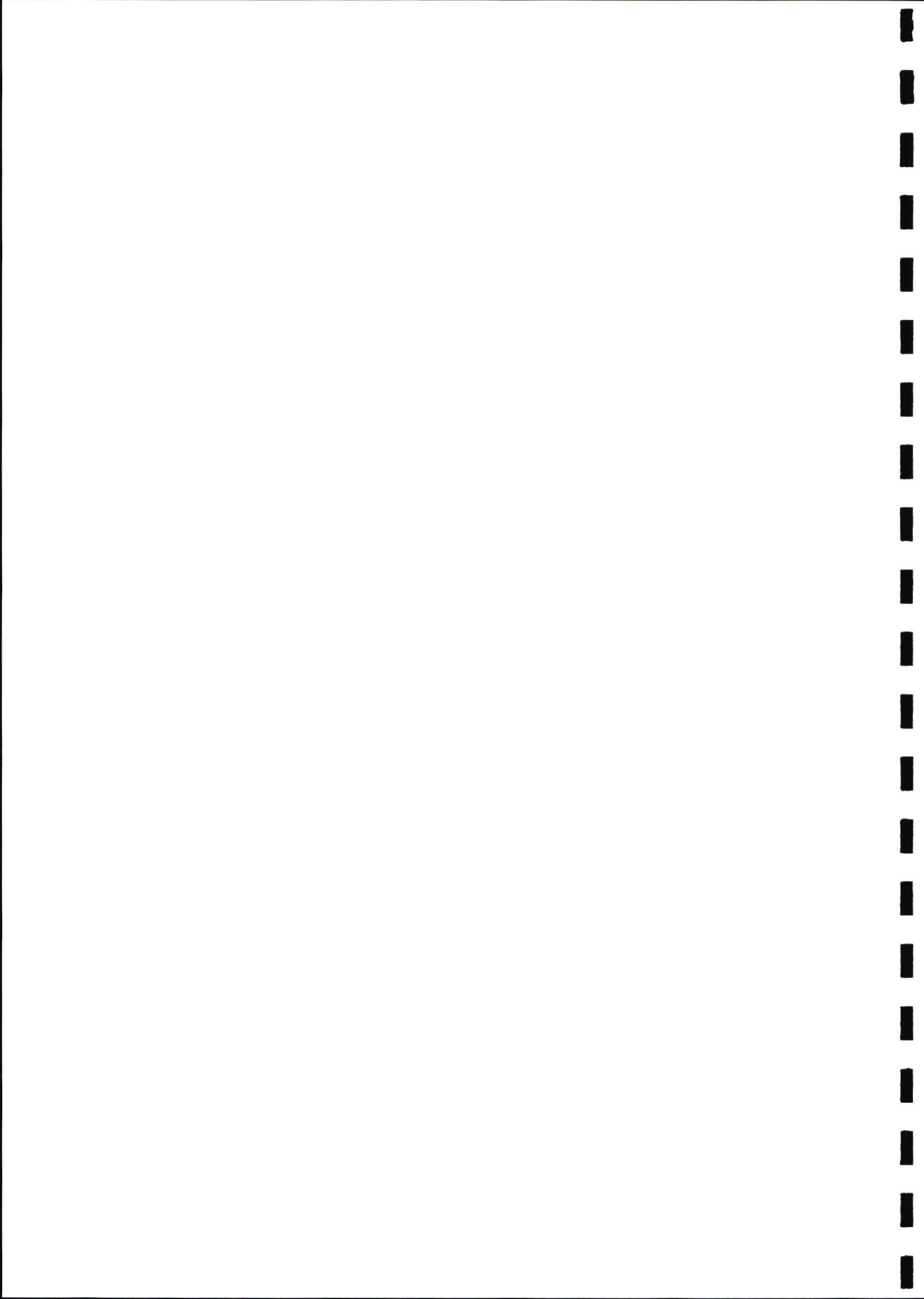


Figure 2: Existing water reticulation services

The cost of the abovementioned link and bulk services amount to R2 550 000 (Excluding VAT, but includes contingencies and fees).



5. Sewerage

5.1 Sewer demand for proposed development

The sewerage flow for the proposed development is calculated (in accordance with the Guidelines for Human Settlement Planning and Design) as follows:

SEWER FLOW	
Average Dry Weather Flow (ADWF) (70% of annual average daily water demand)	46 200 l/d (0.535l/s)
Peak Factor	4.00
Peak Dry Weather Flow (PDWF)	2.14 l/s
Peak Wet Weather Flow (PWWF)	2.46 l/s

Table 3: Sewer demand calculation

The internal sewer reticulation network of the proposed development to comply with the minimum specification as given in the "Red Book - Guidelines for Human Settlement Planning and Design" and the municipal standards from Stellenbosch Municipality.

5.2 Existing services

Currently there are no existing services in proximity to the site. In order to service the proposed development a number of link and bulk network upgrades are required, these include the following:

- 80m of a 160mm outfall sewer (link)
- 70m of a 250mm gravity sewer line (link)
- New 50 l/s pump station (bulk)
- 1 380m of a 250mm rising main (bulk)

The associated costs of the abovementioned upgrades amount to R10 466 000 (Excluding VAT, but includes contingencies and fees). Apart from these network upgrades, there is currently capacity constraints at the Klappmuts WWTW, adding further difficulty in terms of servicing the site from a Municipal perspective.

A pre-consultation meeting was attended with the Stellenbosch Municipality on the 26th of June 2023. At this meeting it was indicated that funding will be made available for the upgrading of the Klappmuts WWTW over the next three financial years, estimating completion of the upgrades at the WWTW by June of 2027.

The map displays the Klamath River and surrounding areas. Key features include:

- Klamaths WWTP:** Located in the bottom left corner, marked with a square icon.
- Proposed Development:** A yellow-shaded area in the center-right, outlined with a dashed line.
- Water Treatment Facilities:** Several green boxes indicate facilities with capacities:
 - SKS113: 250 Q
 - SKS114: 315 Q
 - SKS115: 160 Q
 - SKS116: 400 Q
 - SKS117: 180 Q
 - SKS118: 180 Q
 - SKS119: 180 Q
- Waterways:** The Klamath River is shown in blue, with various tributaries and channels.
- Infrastructure:** A red line with a dashed green line above it runs diagonally across the map, likely representing a pipeline or road.

Figure 3: Proposed sewer reticulation services

Due to the constraints at the Klapmuts WWTW, accommodating the development temporarily by means of a conservancy tank, will not be a possibility.

It is therefore proposed that the development is serviced by means of a package plant, until such time that capacity becomes available and the required bulk upgrades are constructed. As a minimum it is recommended that the link services (Item 1 and SKS1.12a) are fully constructed along with the construction of the internal network for the proposed development and that the development in future connect onto the sewer network once the pump station and rising main has been constructed by the Municipality.

Refer to **Annexure C** for the proposed package plant design.

6. Stormwater

The site is considered to be relatively flat, draining from south in a north easterly direction at an average slope of 4.9%. A topographical survey of the site was completed by Joubert and Brink Surveyors, refer to **Annexure D** for a copy of the site survey.

Currently the stormwater runoff drains towards an open drain located along the R44. In terms of stormwater quantity and quality treatment, the following is proposed:

- To limit the post-development run-off to that of the pre-development run-off for storms with a recurrence interval of up to 50 years
- Providing quality treatment as recommended in The Neighborhood Planning and Design Guide

The catchment area is very small and the rational method is deemed to be a suitable method to calculate flood peaks. For further hydrological calculations a MAP of 700mm was used.

A Geotechnical Investigation was completed by GEOSS South Africa (Pty) Ltd. Refer to **Annexure E** for the complete report.

6.1 Pre-development run-off parameters

Below is a summary table, containing the stormwater runoff calculations for storm events up to the 1: 100 year recurrence interval.

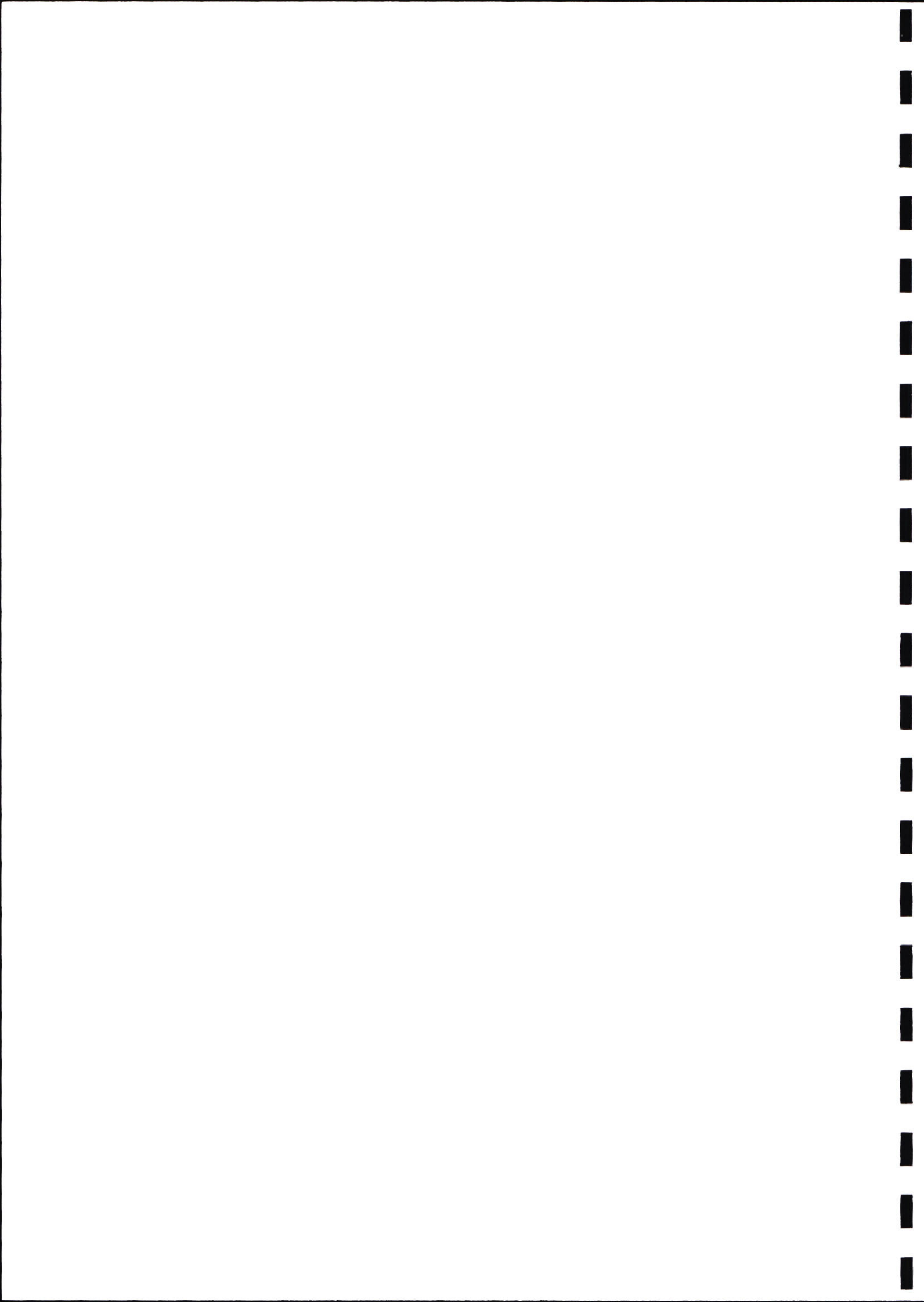
PRE DEVELOPMENT LEVEL									
								Catchment:	5/716
								Calculated:	RS
								Date:	Jul-23
Physical Characteristics									
EXISTING/PRE DEVELOPMENT LEVEL									
Catchment Size	A	0.04106	km ²						
Longest Stream	L	0.18383	km						
Ave Slope of longest stream	s	-0.0490508	km/km						
Area Dolomite	D%	0%	%						
Mean annual rainfall	MAR	770	mm						
				Area Distribution Factors					
				Rural	α	Urban	β	Lakes	γ
				100.0%		0.0%		0.0%	
Rural				Urban					
Surface Slope	%	Factor	Cs	Description	%	Factor	Cs		
Marshes and Pans	0%	0.03	0	Lawns					
Flat areas	100%	0.08	0.08	Sandy, Flat (<2%)		0.1	0		
Mountainous	0%	0.16	0	Sandy, Steep (>7%)		0.2	0		
Steep Areas	0%	0.26	0	Heavy Ground, Flat (<2%)		0.17	0		
Total	100%		0.08	Heavy Ground, Steep (>7%)		0.35	0		
Porosity	%	Factor	Cp	Residential					
Very Permeable	0%	0.04	0	Houses	0%	0.5	0		
Permeable	0%	0.08	0	Flats		0.7	0		
Semi-Permeable	0%	0.16	0	Industrial					
Non-Permeable	100%	0.26	0.26	Light Industry		0.8	0		
Total	100%		0.26	Heavy Industry		0.9	0		
Vegetation	%	Factor	Cv	Business					
Thick Brush and Plantation	0%	0.04	0	CBD		0.95	0		
Light Brush and Plantation	100%	0.11	0.11	Commercial		0.7	0		
Grass	0%	0.21	0	Streets		0.95	0		
No Vegetation	0%	0.28	0	Max Flood		1	0		
Total	100%		0.11	Total (C2)	0%	-	0		
Rainfall (Time of concentration)				Values for r					
T _c Overland = $0.604 \left(\frac{rL}{\sqrt{S}} \right)^{0.487}$				Paved Area 0.02					
T _c Water Course = $\left(\frac{0.87 L^2}{1000 S} \right)^{0.585}$				Clear ground/ Clean comp 0.1					
L = 0.18383 km				Slight Grass, Sparse grass 0.3					
S = 0.0490508 m/m				Moderate Grass, medium 0.4					
0.316 hours 18.933 min				Thick Brush, thick grass 0.8					
L = 0.18383 km									
S = 0.0490508 m/m									
0.057 hours									
Run-off coefficient									
Return period (years), T	2	5	10	20	50	100	Max		
Run-off coefficient, C1	0.45	0.45	0.45	0.45	0.45	0.45	0.45		
Adjusted for dolomite areas, C1D	0.450	0.450	0.450	0.450	0.450	0.450	0.450		
Adjustment factor for initial saturation, Ft	0.75	0.80	0.85	0.90	0.95	1.00	1.000		
Adjusted run-off coefficient, C1T	0.338	0.360	0.383	0.405	0.428	0.450	0.450		
Combined run-off coefficient, Ct	0.338	0.360	0.383	0.405	0.428	0.450	0.450		
Run-off coefficient									
Return period (years), T	2	5	10	20	50	100	Max		
Point rainfall (mm), Pt	13.479	17.744	21.845	26.894	35.403	43.587	43.587		
Point intensity (mm/hour), Pit	42.716302	56.231	69.22846	85.2302	112.2	138.13	138.13		
Area reduction factor (%), ARFt	100%	100%	100%	100%	100%	100%	100%		
Average intensity (mm/hour), It	42.716302	56.231	69.22846	85.2302	112.2	138.13	138.13		
Return period (years), T	2	5	10	20	50	100	Max		
Peak flow (m3/s) $Q = \frac{CIA}{3.6}$	0.164	0.231	0.302	0.394	0.547	0.709	0.709		



6.2 Post-development run-off parameters

Below is a summary table, containing the stormwater runoff calculations for storm events up to the 1: 100 year recurrence interval.

POST DEVELOPMENT LEVEL																			
								Catchment:	5/716										
								Calculated:	RS										
								Date:	Jul-23										
Physical Characteristics EXISTING/PRE DEVELOPMENT LEVEL																			
Catchment Size	A	0.04106	km ²																
Longest Stream	L	0.18383	km																
Ave Slope of longest stream	s	-0.0490508	km/km																
Area Dolomite	D%	0%	%																
Mean annual rainfall	MAR	770	mm																
				Area Distribution Factors															
				Rural	α	Urban	β	Lakes	γ										
				0.0%		100.0%		0.0%											
Rural				Urban															
Surface Slope	0%	Factor	Cs	Description	%	Factor	Cs												
Marshes and Pans	0%	0.03	0	Lawns															
Flat areas	0%	0.08	0	Sandy, Flat (<2%)		0.1	0												
Mountainous	0%	0.16	0	Sandy, Steep (>7%)		0.2	0												
Steep Areas	0%	0.26	0	Heavy Ground, Flat (<2%)	12.20%	0.17	0.021												
Total	0%		0	Heavy Ground, Steep (>7%)		0.35	0												
Porosity	%	Factor	Cp	Residential															
Very Permeable	0%	0.04	0	Houses	68.40%	0.4	0.274												
Permeable	0%	0.08	0	Flats		0.7	0												
Semi-Permeable	0%	0.16	0	Industrial															
Non-Permeable	0%	0.26	0	Light Industry		0.8	0												
Total	0%		0	Heavy Industry		0.9	0												
Vegetation	%	Factor	Cv	Business															
Thick Brush and Plantation	0%	0.04	0	CBD		0.95	0												
Light Brush and Plantation	0%	0.11	0	Commercial		0.7	0												
Grass	0%	0.21	0	Streets	19.40%	0.95	0.184												
No Vegetation	0%	0.28	0	Max Flood		1	0												
Total	0%		0	Total (C2)	100.00%	-	0.479												
Rainfall (Time of concentration)																			
$T_C \text{ Overland} = 0.604 \left(\frac{rL}{\sqrt{S}} \right)^{0.847}$				$L = 0.18383 \text{ km}$ $S = 0.0490508 \text{ m/m}$ $0.089 \text{ hours} \quad 5.34547 \text{ min}$															
$T_C \text{ Water Course} = \left(\frac{0.87 L^2}{1000 S} \right)^{0.385}$				$L = \text{ km}$ $S = \text{ m/m}$ hours															
				Values for r															
				$r = 0.02$															
				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Paved Area</td><td>0.02</td></tr> <tr><td>Clear ground/ Clean compacte</td><td>0.1</td></tr> <tr><td>Slight Grass, Sparse grass cov</td><td>0.3</td></tr> <tr><td>Moderate Grass, medium gras</td><td>0.4</td></tr> <tr><td>Thick Brush, thick grass cover</td><td>0.8</td></tr> </table>						Paved Area	0.02	Clear ground/ Clean compacte	0.1	Slight Grass, Sparse grass cov	0.3	Moderate Grass, medium gras	0.4	Thick Brush, thick grass cover	0.8
Paved Area	0.02																		
Clear ground/ Clean compacte	0.1																		
Slight Grass, Sparse grass cov	0.3																		
Moderate Grass, medium gras	0.4																		
Thick Brush, thick grass cover	0.8																		
Run-off coefficient																			
Return period (years), T	2	5	10	20	50	100	Max												
Run-off coefficient, C1	0.47864	0.47864	0.47864	0.47864	0.4786	0.47864	0.4786												
Adjusted for dolomite areas, C1D	0.479	0.479	0.479	0.479	0.479	0.479	0.479												
Adjustment factor for initial saturation, Ft	0.75	0.80	0.85	0.90	0.95	1.00	1.000												
Adjusted run-off coefficient, C1T	0.359	0.383	0.407	0.431	0.455	0.479	0.479												
Combined run-off coefficient, Ct	0.479	0.479	0.479	0.479	0.479	0.479	0.479												
Run-off coefficient																			
Return period (years), T	2	5	10	20	50	100	Max												
Point rainfall (mm), Pt	5.873	7.731	9.518	11.718	15.425	18.991	18.991												
Point intensity (mm/hour), Pit	65.920595	86.7767	106.8346	131.529	173.14	213.163145	213.16												
Area reduction factor (%), ARFt	100%	100%	100%	100%	100%	100%	100%												
Average intensity (mm/hour), It	65.920595	86.7767	106.8346	131.529	173.14	213.163145	213.16												
Return period (years), T	2	5	10	20	50	100	Max												
Peak flow (m3/s) $Q = \frac{CIA}{3.6}$	0.360	0.474	0.583	0.718	0.945	1.164	1.164												



6.3 Stormwater treatment requirements

The water quality volume is calculated by using the following formula as recommended in The Neighborhood Planning and Design Guide, Section L4.1.2:

$$WQV = P \times C \times A \times 10 \quad \text{where}$$

WQV = water quality volume in (m³)

P = total rainfall depth in (mm)

C = the runoff coefficient

A = drainage area in (ha)

$$V = 25 \times 0.479 \times 4.106 \times 10 = 491.69\text{m}^3$$

Regarding compliance with the requirement to limit the post-development run-offs to that of the pre-development run-offs for storms with a recurrence interval of up to 50 years, the following storage volume is calculated by using the Abt and Grigg Method, and is calculated by using this formula:

$$V = Q_p \cdot t_c (1 - \alpha)^2, \text{ where}$$

V = storage volume in (m³)

Q_p = the post-development peak discharge in (m³/s)

t_c = time of concentration in (seconds)

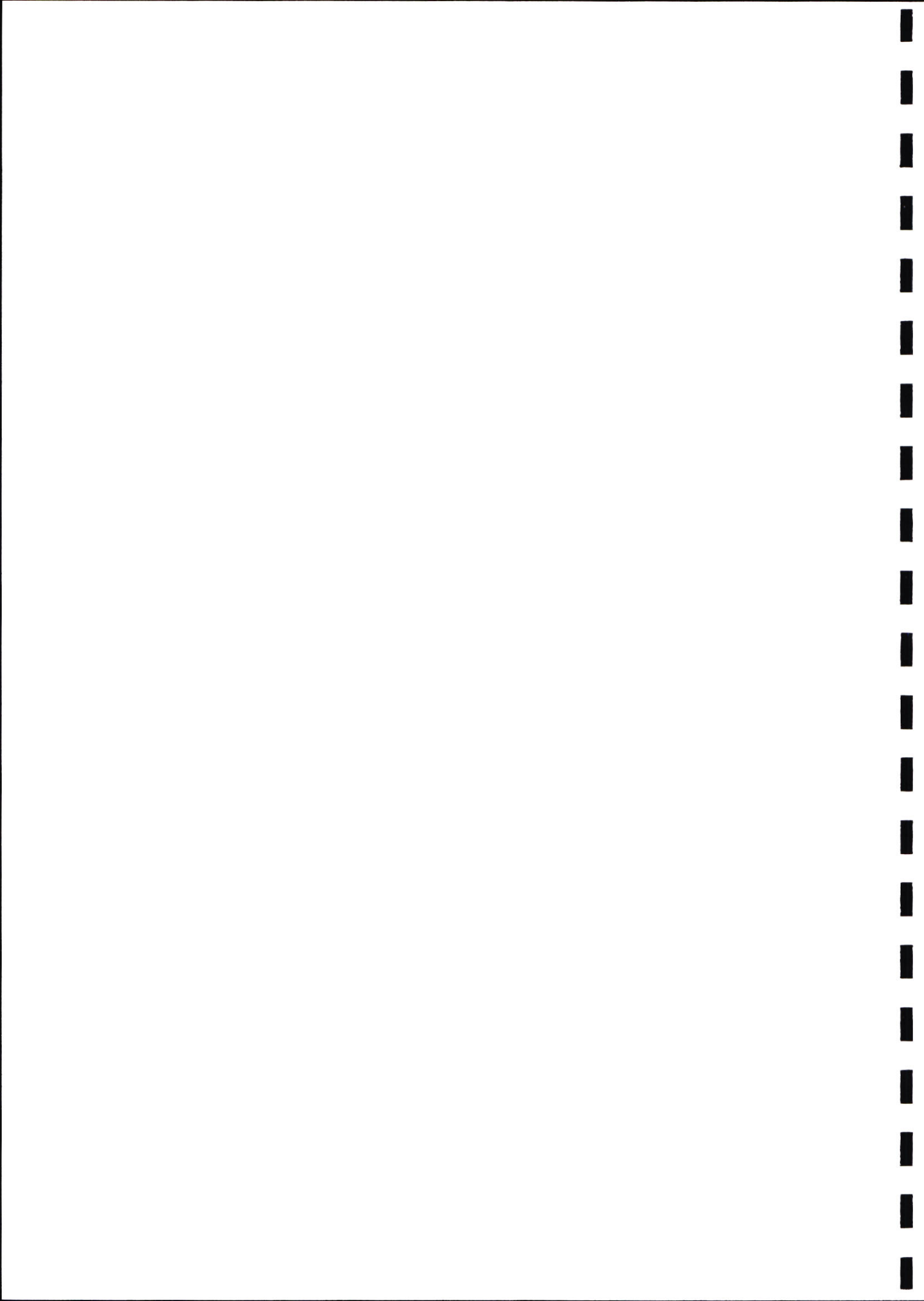
α = pre-development / post-development discharge ratio

$$V = 0.945 \times 300 \times (1 - 0.58)^2 = 50.29 \text{ m}^3$$

A total treatment (quantity and quality) capacity of 541.98m³ will therefore be required.

6.4 Stormwater treatment methods

In order to achieve the calculated treatment volume of 541.98m³ it is proposed that an attenuation pond is constructed on site.



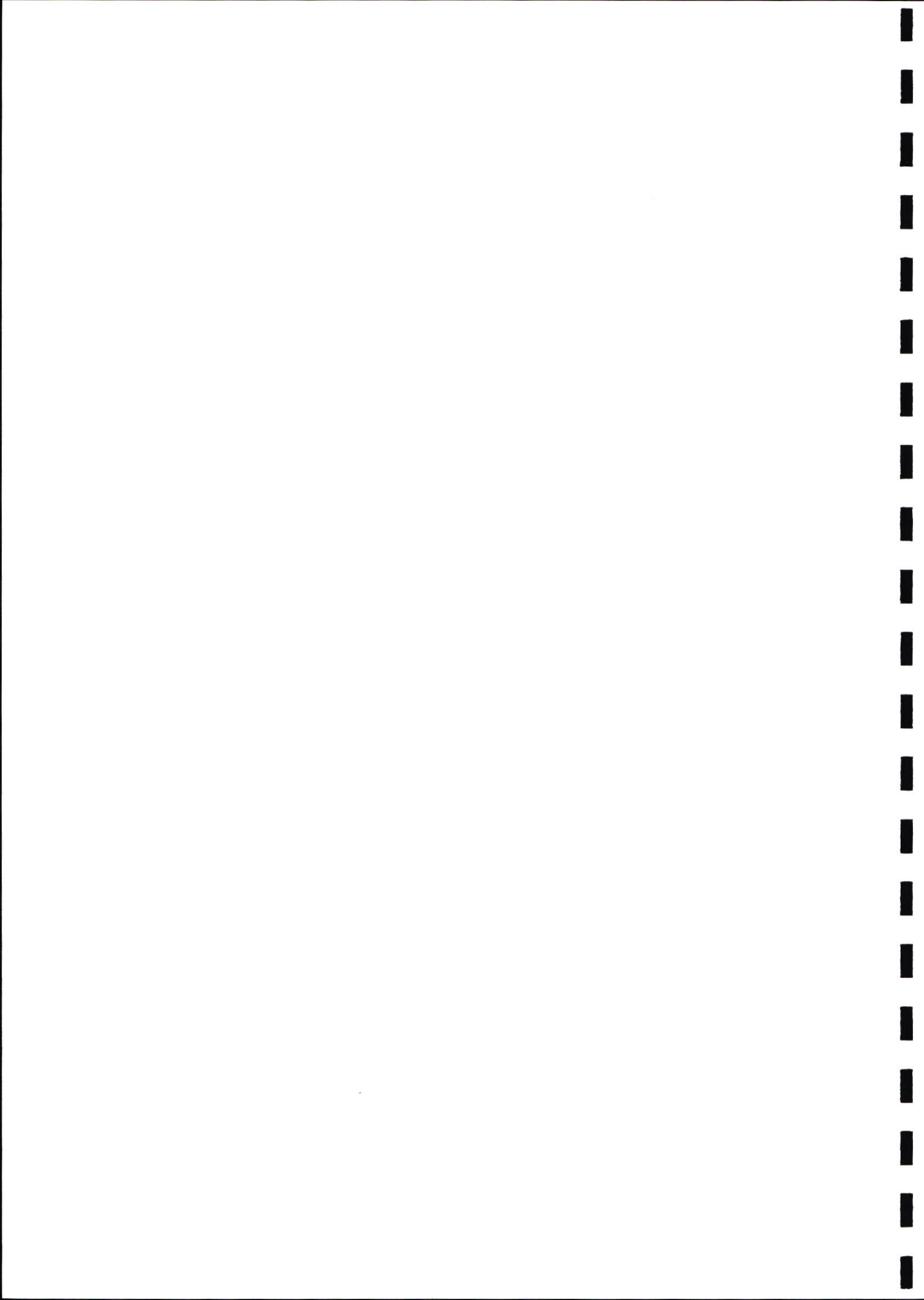
In addition to the stormwater attenuation pond that will be constructed, runoff from the south western part of the site will discharge into the existing Uitkoms Dam. Refer to **Annexure F** for a drawing showing the preliminary services layout.

An overland escape will be provided to the stormwater channel alongside the R44 for storm events larger than 1:50 year recurrence interval.

7. Maintenance

The body corporate will be responsible for the following maintenance procedures on the associated stormwater infrastructure:

Description of infrastructure	Description of activities to be carried out	Timeline for implementation
Inlet structures and manholes	<ul style="list-style-type: none"> • Clean and remove litter • Clean and remove sand and silt • Inspect for damages and implement remedial action 	6 month basis (at least once before winter)
Pipework	<ul style="list-style-type: none"> • Clean and remove litter • Clean and remove sand and silt • Inspect for damages and implement remedial action 	6 month basis (at least once before winter)
Head wall and gabion structures	<ul style="list-style-type: none"> • Clean and remove litter • Clean and remove sand and silt • Inspect for damages and implement remedial action 	6 month basis (at least once before winter)
Attenuation facilities	<ul style="list-style-type: none"> • Clean and remove litter • Clean and remove sand and silt • Inspect for damages and implement remedial action • Inspect inlet and outlet structures for blockages – remove blockages 	Continuous, but not less than once per month



Vegetated channels	<ul style="list-style-type: none"> • Clean and remove litter • Maintain grass to a height of below 50mm • Remove sediment from channel as required 	Continuous, but not less than once per month
Embankments of vegetated channels, swales and attenuation ponds	<ul style="list-style-type: none"> • Inspect embankment for signs of erosion • Implement remedial action as required 	6 month basis
Plant species	<ul style="list-style-type: none"> • Inspect plant species for successful establishment. If unsuccessful plant new/ different species. 	6 month basis

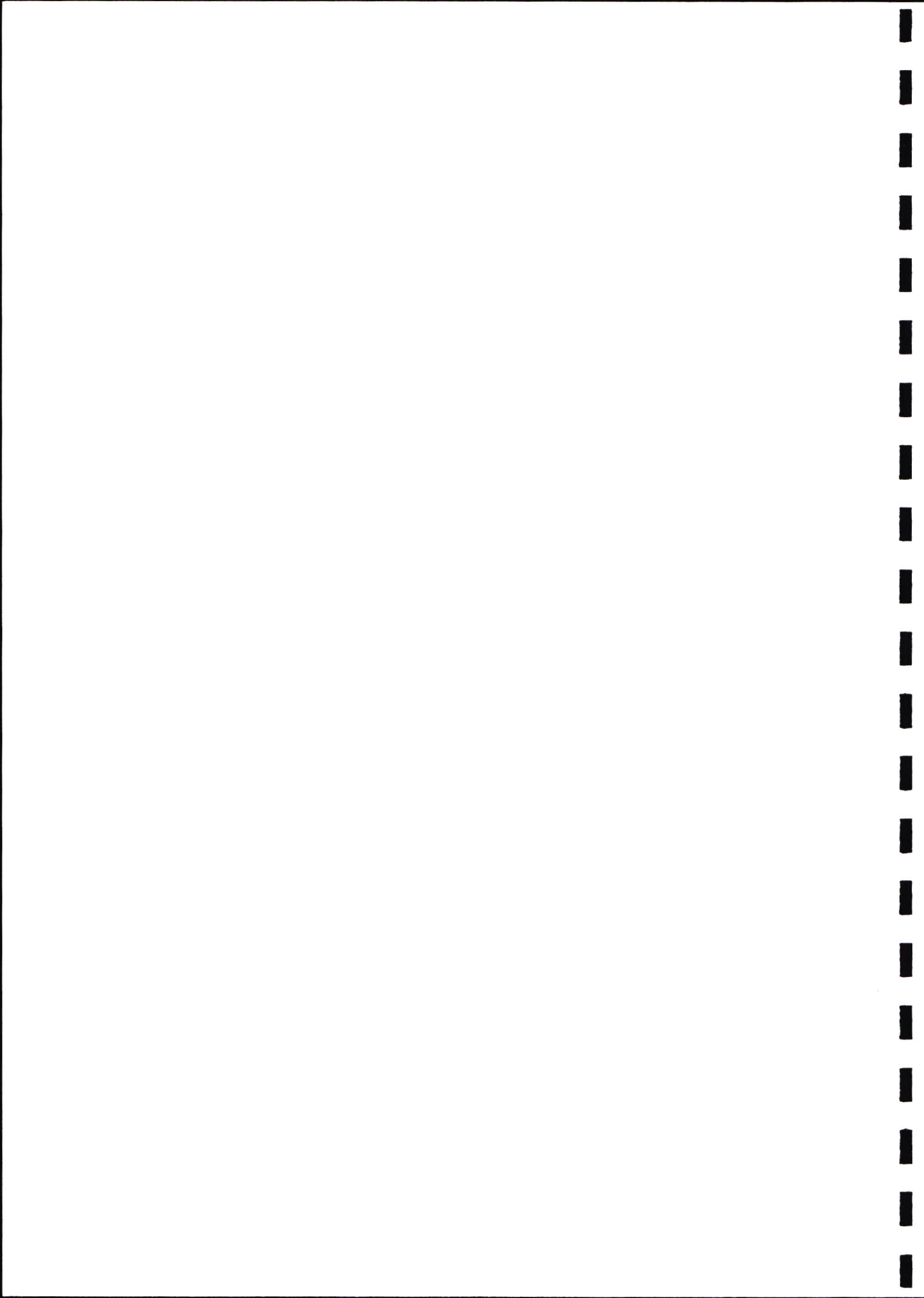
Table 4: Maintenance Schedule

8. Road Network

A full traffic impact assessment was completed by UDS Africa to model the impact of the development on the existing road network. This will be submitted as a separate report.

9. Solid waste

Refuse removal will occur at the front of the gate house through the Solid Waste Department of Stellenbosch Municipality. Accommodation for their vehicles will have to be ensured and be in line with their relevant requirements.



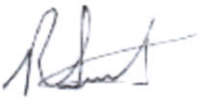
10. Conclusion

From the abovementioned information provided, it is concluded that the site can be serviced from an engineering perspective. We trust that the information provided will be sufficient for the purposes of the application.

All aspects of this report will be confirmed in the detail design stage of the project.

Please do not hesitate to contact the undersigned should you require any additional information.

Yours faithfully,

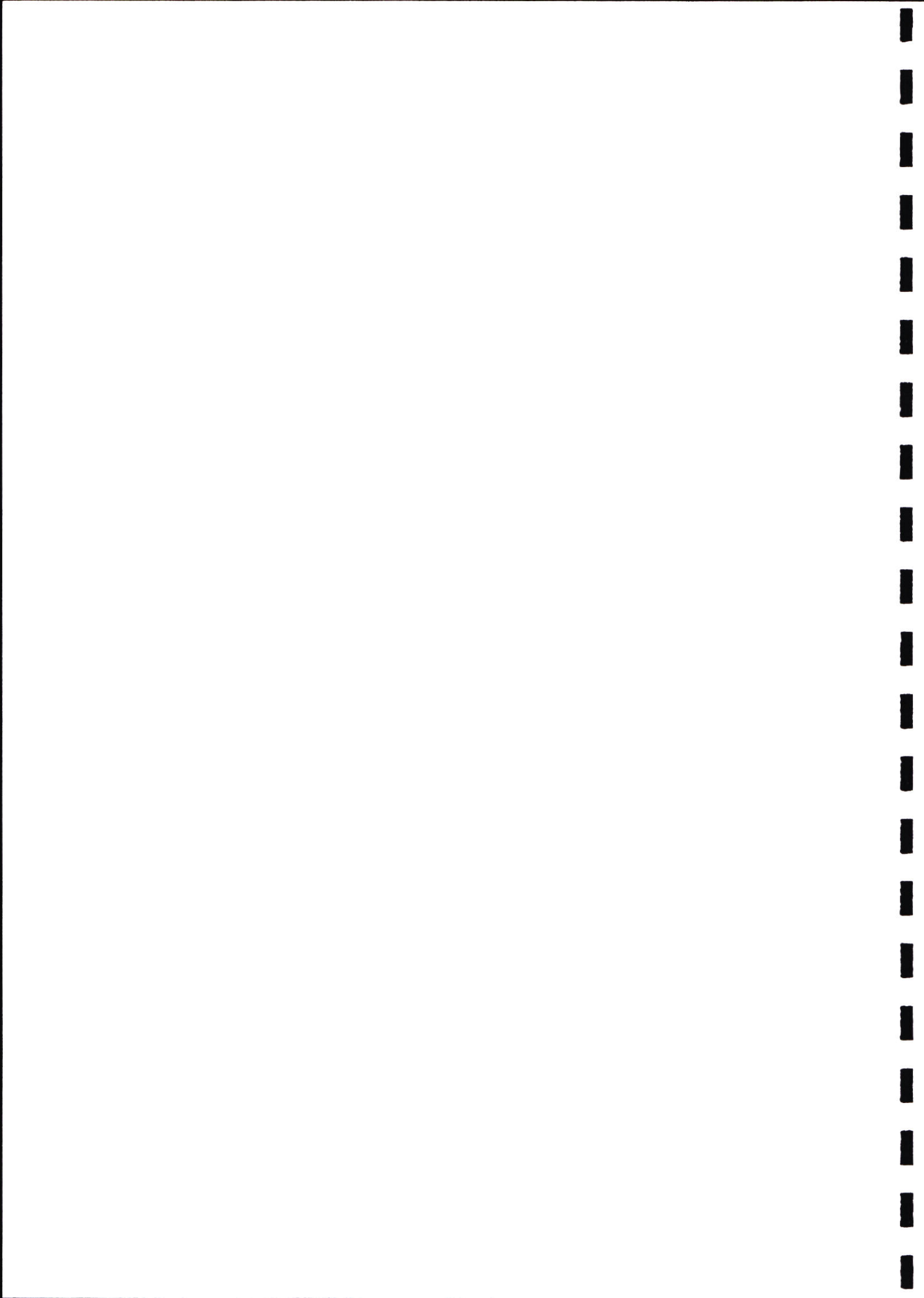


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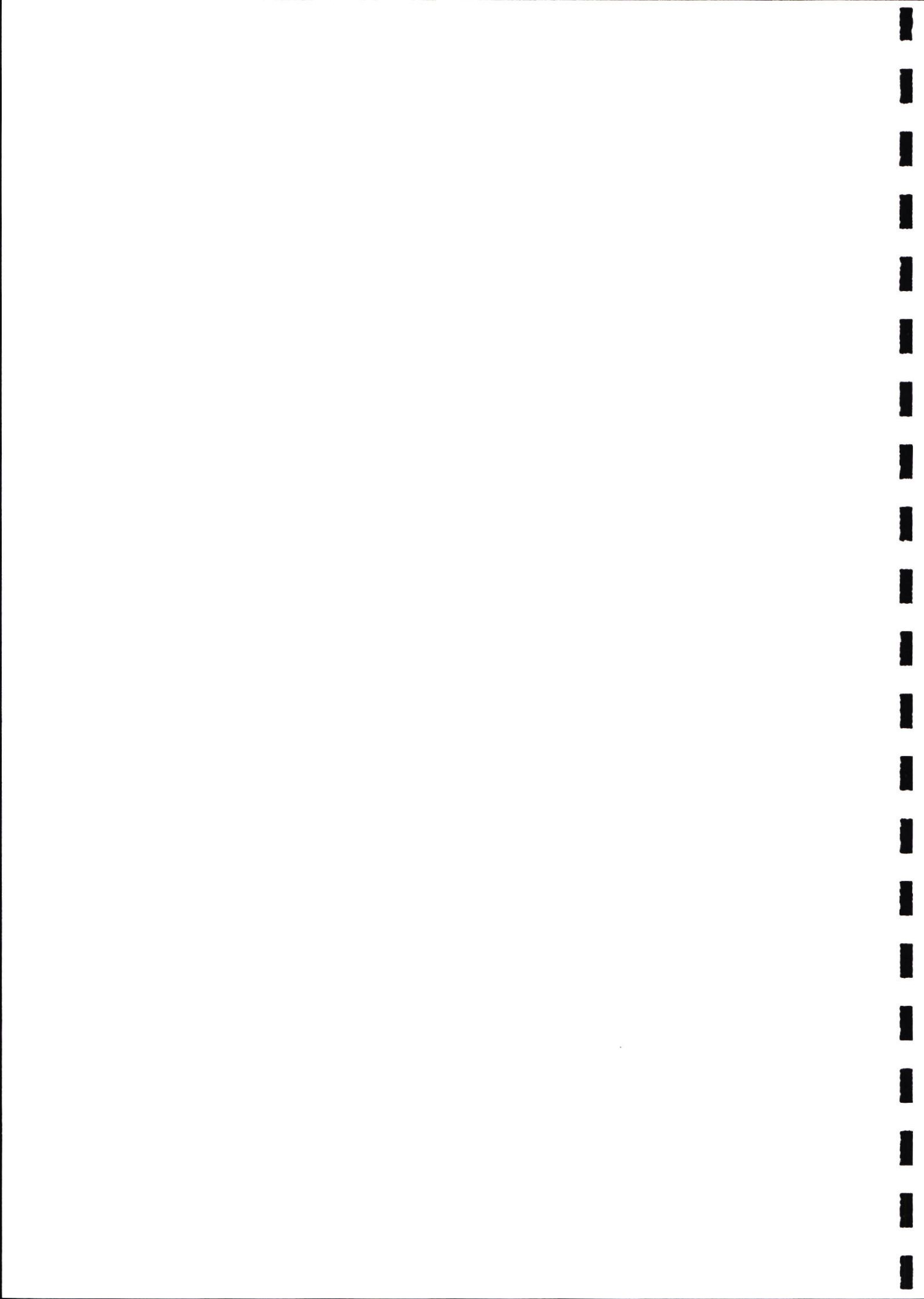
Ruaan Siebrits (Pr Tech Eng)

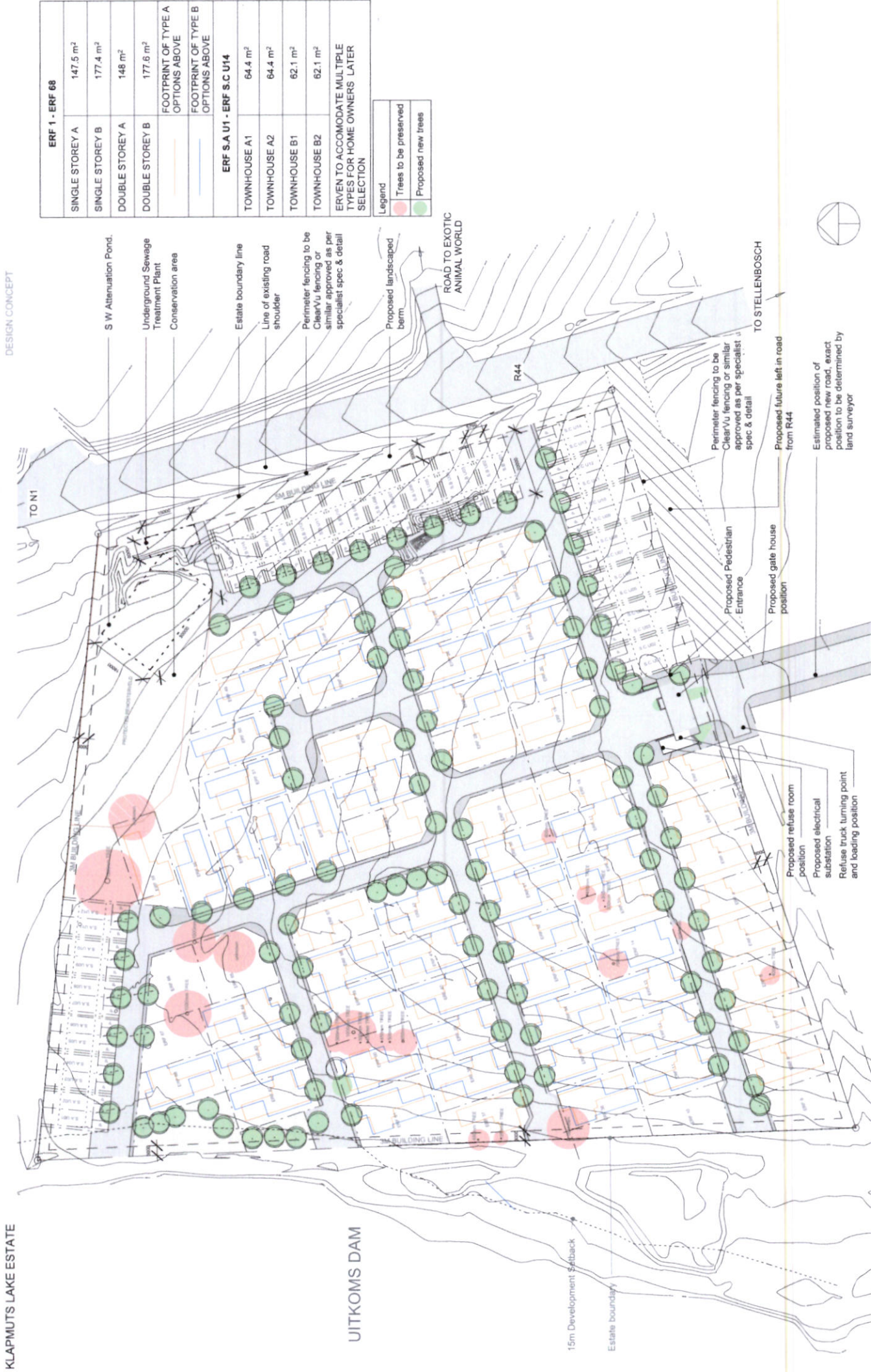
Attachments:

Annexure A – Site development plan
Annexure B – GLS Report
Annexure C – Package Plant Design
Annexure D – Topographical survey
Annexure E – Geotechnical report
Annexure F – Proposed services layout



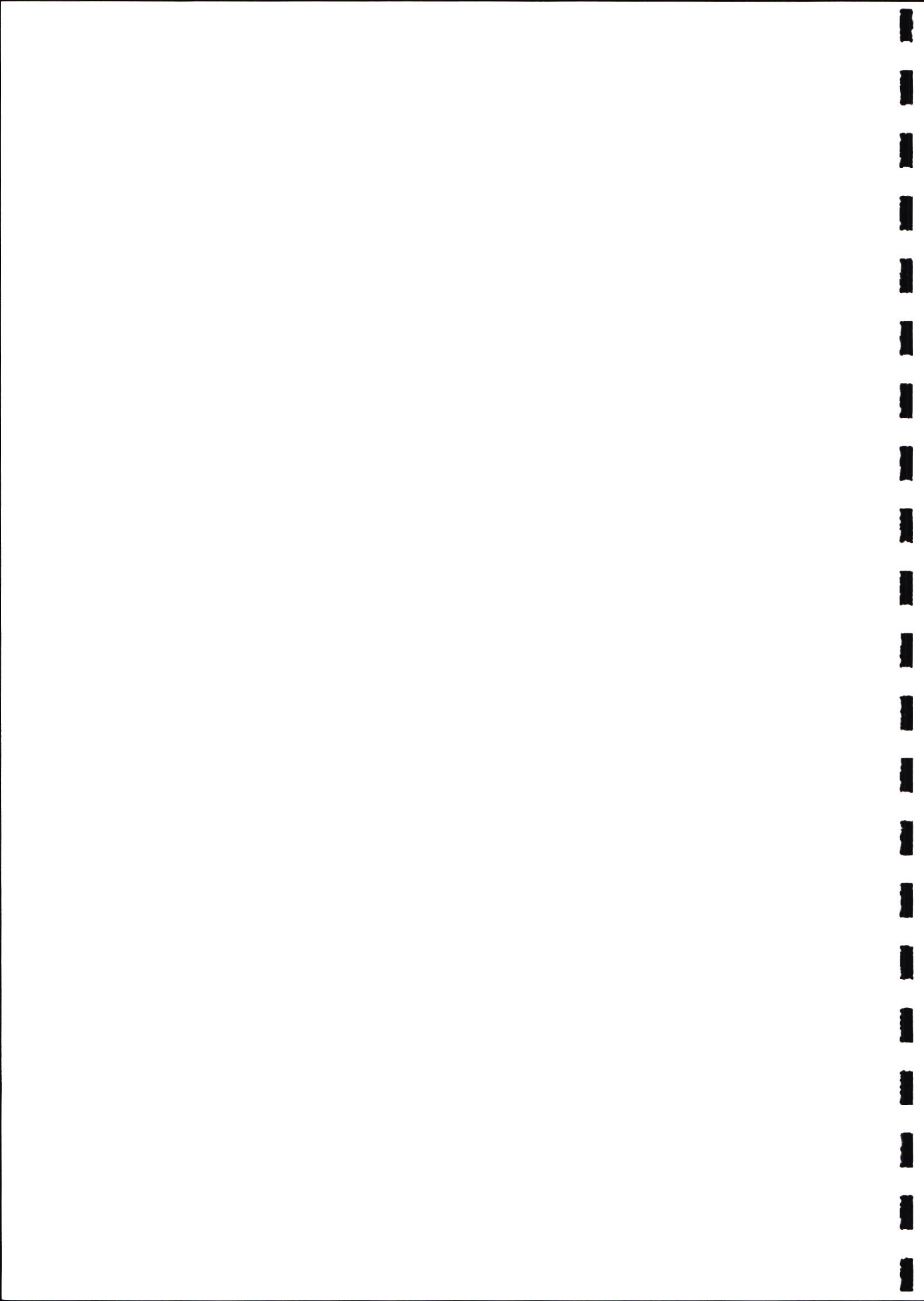
ANNEXURE A





ERF 1 - ERF 68	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
FOOTPRINT OF TYPE A OPTIONS ABOVE	
FOOTPRINT OF TYPE B OPTIONS ABOVE	
ERF S.A U1 - ERF S.C U14	
TOWNHOUSE A1	64.4 m ²
TOWNHOUSE A2	64.4 m ²
TOWNHOUSE B1	62.1 m ²
TOWNHOUSE B2	62.1 m ²
ERVEN TO ACCOMMODATE MULTIPLE TYPES FOR HOME OWNERS LATER SELECTION	

Legend	
●	Trees to be preserved
●	Proposed new trees



ANNEXURE B

6 July 2023

UDS Africa
P.O. Box 50487
V&A Waterfront
Cape Town
8002

Attention: Mr Ruaan Siebrits

Dear Sir

DEVELOPMENT OF PORTION 5 OF FARM 716, KLAPMUTS: CAPACITY ANALYSIS OF THE BULK WATER & SEWER SERVICES

Your request regarding comments on the bulk water and sewer supply to the proposed development (proposed residential development on portion 5 of Farm 716, Klappmuts), refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Stellenbosch Municipality) dated June 2023 and the Sewer Master Plan dated June 2023.

Future development area K13, which includes the proposed development, was conceptually taken into consideration for the recently completed master plans for the water and sewer networks.

1. WATER DISTRIBUTION SYSTEM

1.1 Distribution zone

The master planning indicated that the proposed development area should be accommodated in the existing Klappmuts Lower reservoir water distribution zone. The connection to the existing system should be done on the existing 150 mm diameter pipe in Old Paarl Road, as shown on Figure 1 attached.

The proposed development is situated inside the water priority area.

1.2 Water demand

The original water analysis for the master plan was performed with a total annual average daily demand (AADD) for development (future development area K13 in the June 2023 water master plan) of 114,4 kL/d.

For this re-analysis of the master plan, the total AADD and fire flows for the proposed development were calculated as follows:

- 102 Group housing units @ 0,6 kL/d/unit = 61.2 kL/d
- Fire flow criteria (Low risk) = 15 L/s @ 10 m

GLS Consulting (Pty) Ltd

T +27 21 880 0388

Stellenpark, Block D North, Cnr of R44 and School Rd, Jamestown, Stellenbosch, 7600, ZA | PO Box 814, Stellenbosch, 7599, ZA

Reg no: 2007/003039/07

www.gls.co.za

Directors: Rebecca Pole, Marius de la Rey, Garreth Young



1.3. Present situation

1.3.1 Network capacity

Accommodation of the development in the present system will require upgrading of the existing system to comply with the pressure and fire flow criteria as set out in the master plan.

Furthermore, the following link services items will be required to connect the proposed development to the existing system:

Link services

• SKW1.20	: 60 m x 200 mm Ø supply pipe	R	488 000 *
• SKW1.28	: 215 m x 160 mm Ø supply pipe	R	188 000 *
Total		R	676 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 1 attached, but have to be finalised subsequent to detail pipeline route investigations.

1.3.2 Reservoir capacity

The criteria for total reservoir volume used in the Stellenbosch Municipality Water Master Plan is 48 hours of the AADD (of the reservoir supply zone). The existing reservoir volume available at the Klapmuts Lower reservoir is sufficient to accommodate the proposed development.

1.3.3 Bulk supply

The Klapmuts Lower reservoir is supplied with bulk water through a pump station (located at the Old Klapmuts reservoir site) and a 200 mm diameter dedicated supply pipeline. The Old Klapmuts reservoir (which acts as a sump for the pump station) is supplied with bulk water from the City of Cape Town's Wemmershoek bulk system through a dedicated 400 mm pipe (new section) and 200 mm pipe (old section).

The existing bulk system has sufficient capacity to accommodate the proposed development, but it is however proposed in the water master plan for Klapmuts that the old 200 mm diameter bulk pipeline between the Wemmershoek pipeline and the Old Klapmuts reservoir is reinforced with a new 400 mm diameter pipe in the near future.

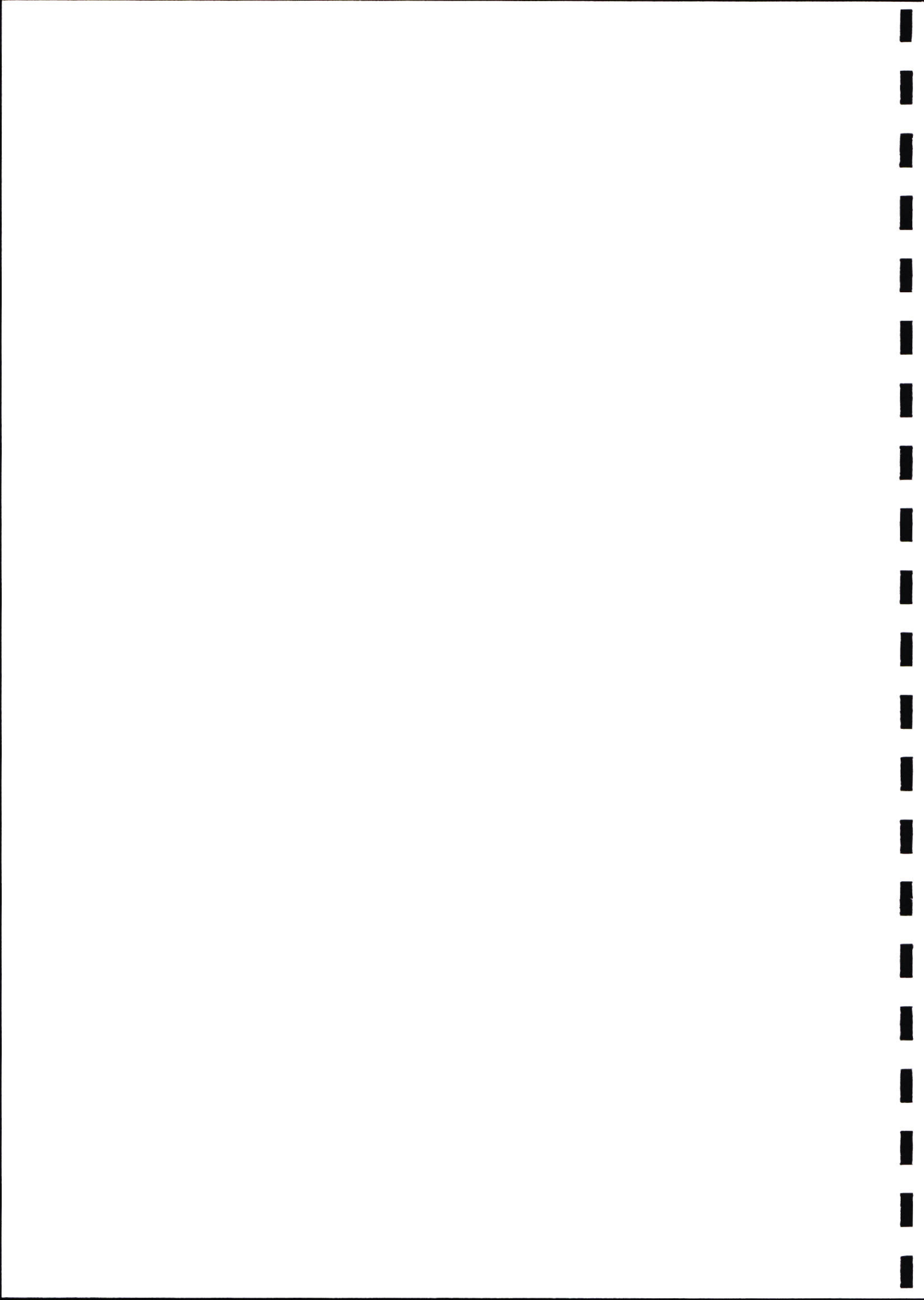
A new HDPE supply pipeline (500 m x 560 mm diameter section and 300 m x 450 mm diameter section) has recently been constructed between the Klapmuts Lower reservoir site and the Old Klapmuts reservoir site, in order to augment supply to the Klapmuts reticulation network. It is proposed that the old 250 mm diameter supply pipeline (this pipe was previously the main supply pipe from the Klapmuts Lower reservoir to the network) is transferred from the reticulation network to the bulk system in order to improve the capacity of bulk water supply to the Klapmuts Lower reservoir.

1.4 Implementation of the master plan

The following master plan items will be required to reinforce the existing Klapmuts reticulation network in order to accommodate the proposed development together with other future development areas.

Network upgrade

• SKW1.18	: 380 m x 200 mm Ø new supply pipe and connections	R	889 000 *
• SKW1.19	: 225 m x 200 mm Ø new supply pipe and connections (including railway crossing)	R	985 000 *
Total		R	1 874 000 *



Accommodation of the development in the future system (together with other future development areas), will require upgrading of the existing bulk system as set out in the master plan.

Bulk supply: (Phase 1 upgrades)

- SKW.B4a : 800 m x 250 mm Ø utilize old supply pipe as part of the bulk supply system R 300 000 *

Bulk supply: (Phase 2 upgrades)

- SSW.B1a : 500 m x 500 mm Ø replace existing 200 mm Ø pipe R 5 122 000 *
- SKW.B1b : 370 m x 500 mm Ø replace existing 200 mm Ø pipe R 3 933 000 *
- Sub-total R 9 055 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 1 attached, but have to be finalised subsequent to detail pipeline route investigations.

1.5. *Minimum items required*

The minimum requirements to accommodate the proposed development in the existing water system are master plan items SKW1.18 & SKW1.19 to improve network conveyance to the proposed development, and link services items SKW1.20 & SKW1.28 to connect the proposed development to the existing water network.

2. **SEWER NETWORK**

2.1 *Drainage area*

It is proposed in the sewer master plan that sewage from the proposed development area gravitates to the north of Farm 716/5 towards a new Main pumping station (PS) for Klapmuts. Sewage should be pumped from this proposed "Klapmuts Main PS" directly towards the existing Klapmuts Wastewater Treatment Plant (WWTP), as shown on Figure 2 attached.

The development is inside the sewer priority area.

2.2 *Sewer flow*

In the original sewer master plan, the peak day dry weather flow (PDDWF) for the proposed development area (future area K13 in the June 2023 sewer master plan) was calculated at 92.5 kL/d.

For this re-analysis, the PDDWF for the proposed development was calculated as 42.8 kL/d.

2.3 *Present situation*

New bulk sewer infrastructure will be required to accommodate the proposed development in the existing Klapmuts sewer system.

2.4 *Implementation of the master plan*

The accommodation of the proposed development within the Klapmuts sewer system requires the construction of a new main sewer PS, located at the lowest point next to N1 (southern side) and the R44 main Road (western side), as shown on Figure 2 attached.

In the sewer master plan for Klapmuts it is proposed that the existing Klapmuts pumping stations 1, 2 & 3 are decommissioned in the near future and that sewage from their respective drainage areas are then redirected to this proposed Klapmuts Main PS.

The first phase of these bulk sewer upgrades is to decommission the existing Klapmuts PS 1, redirect sewage from the Klapmuts PS 1 drainage area to the proposed Klapmuts Main PS, and construct the Klapmuts Main PS and an accompanying 315 mm rising main.

Bulk sewer upgrades (Phase 1)

•	SKS1.8 : 960 m x 400 mm Ø New collector sewer	R 5 265 000 *
•	SKS1.13 : New 50 L/s Klapmuts Main PS	R 4 682 000 *
•	SKS1.14 : 1 380 m x 315 mm Ø New rising main	R 5 326 000 *
•	SKS5.2 : 45 m x 160 mm Ø New diversion sewer	R 217 000 *
•	SKS5.3 : Decommission existing Klapmuts PS 1	R 330 000 *
	Total	R 15 820 000 *

The following link services item will then be required to connect the proposed development on Farm 716/5 to the new Klapmuts Main PS:

Link services

•	Item 1 : 80 m x 160 mm Ø New outfall sewer	R 212 000 *
•	SKS1.12a : 70 m x 250 mm Ø New Gravity	R 246 000 *
	Total	R 458 000 *

The second phase of the bulk sewer upgrades is to decommission the existing Klapmuts PS 2 and redirect sewage from the Klapmuts PS 2 drainage area to the new Klapmuts Main PS drainage area.

Bulk sewer upgrades (Phase 2)

•	SKS1.7 : 210 m x 400 mm Ø New collector sewer	R 1 252 000 *
•	SKS6.2 : 40 m x 250 mm Ø New diversion sewer	R 244 000 *
•	SKS6.3 : Decommission existing Klapmuts PS 2	R 330 000 *
	Total	R 1 826 000 *

The last phase of the bulk sewer upgrades is to decommission the existing Klapmuts PS 3 and redirect sewage from the Klapmuts PS 3 drainage area to the proposed Klapmuts Main PS.

Bulk sewer upgrades (Phase 3)

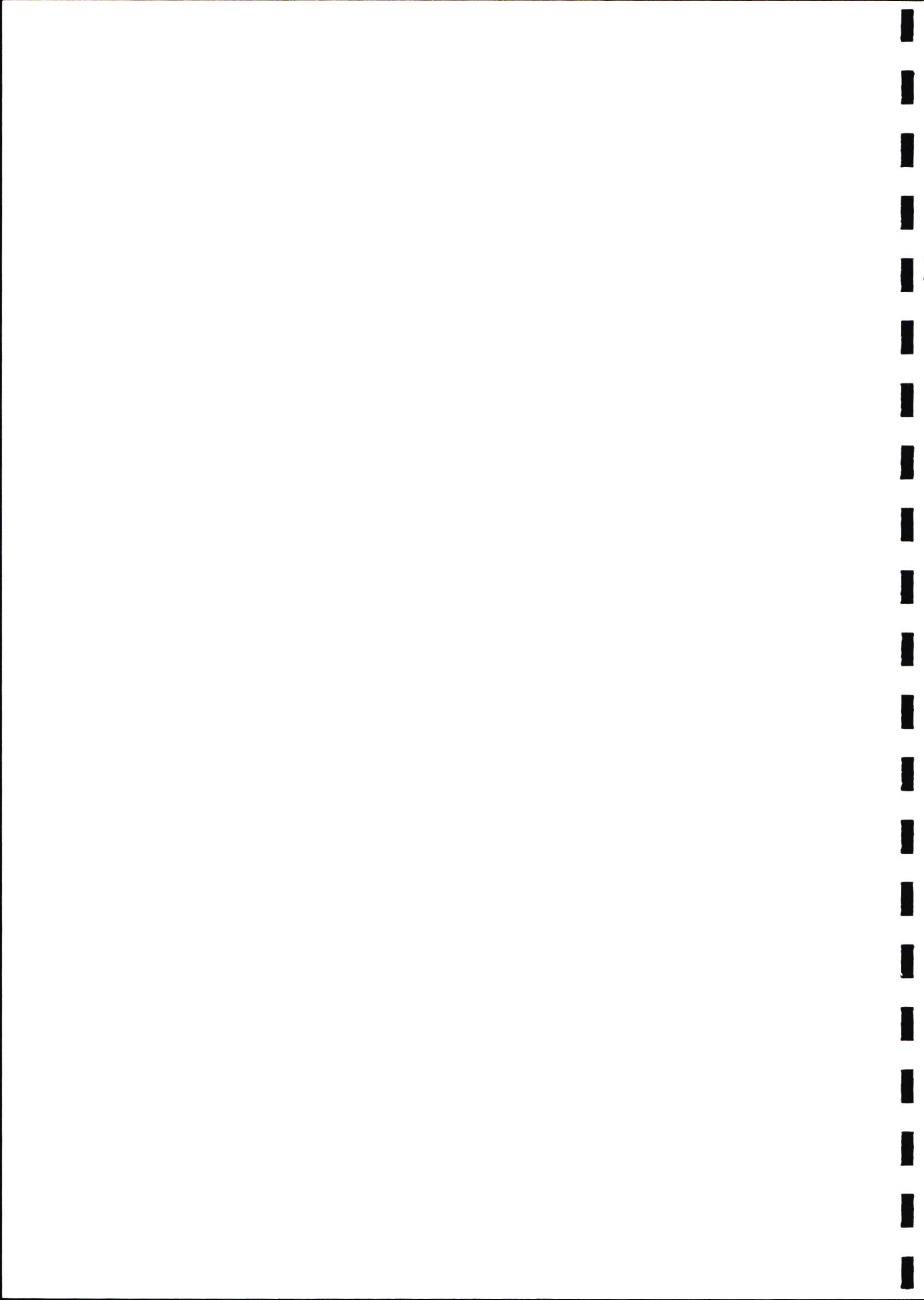
•	SKS1.12b : 850 m x 250 mm Ø New Gravity	R 3 202 000 *
•	SKS7.3 : Decommission existing Klapmuts PS 3	R 200 000 *
	Total	R 3 402 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed bulk sewer upgrades and position of the proposed sewer pumping station are schematically shown on Figure 2 attached, but have to be finalised subsequent to detail pipeline route and pump station location investigations.

2.5 Minimum items required

The minimum requirements to accommodate the proposed development in the existing sewer system are link services items 1 & SKS1.12a to connect the proposed development to the future Klapmuts Main PS, and master plan items SKS1.13 & SKS1.14 to implement the new Klapmuts PS and accompanying rising main towards the Klapmuts WWTP.



3. CONCLUSION

The developer of portion 5 of Farm 716 in Klapmuts will be liable for the Bulk Services Levy (as calculated by the Stellenbosch Municipality) as a contribution towards water infrastructure and the Bulk Services Levy (as calculated by the Stellenbosch Municipality) as a contribution towards sewer infrastructure.

There is insufficient capacity in the existing water reticulation system to accommodate the proposed development. The existing bulk supply system however has sufficient capacity to accommodate the proposed development.

The minimum requirements to accommodate the proposed development in the existing water system are master plan items SKW1.18 & SKW1.19 to improve network conveyance to the proposed development, and link services items SKW1.20 & SKW1.28 to connect the proposed development to the existing water network.

It is proposed in the sewer master plan that sewage from the proposed development area gravitates to the north of Farm 716/5 towards a new Main PS for Klapmuts, that discharges directly at the Klapmuts WWTP.

The minimum requirements to accommodate the proposed development in the existing sewer system are link services items 1 & SKS1.12a to connect the internal sewer network of the proposed development to the future Klapmuts Main PS, and master plan items SKS1.13 & SKS1.14 to implement the new Klapmuts Main PS and accompanying rising main towards the Klapmuts WWTP.

We trust you find this of value.

Yours sincerely

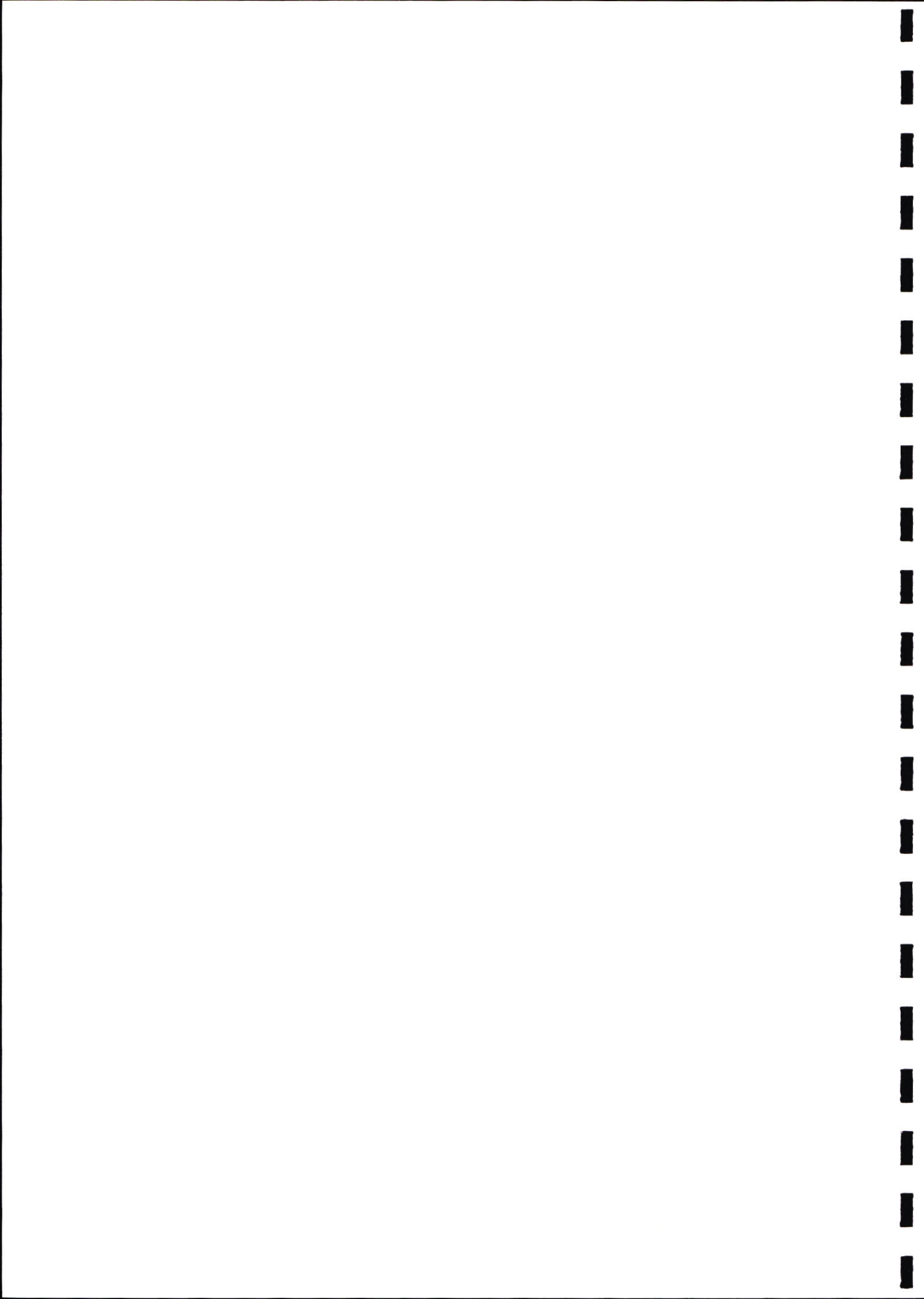
GLS CONSULTING (PTY) LTD
REG. NO.: 2007/003039/07



Per: PC DU PLESSIS

cc. The Director
Directorate: Infrastructure Services
Stellenbosch Municipality
P. O. Box 17
STELLENBOSCH
7599

Attention: Mr Paul Joubert



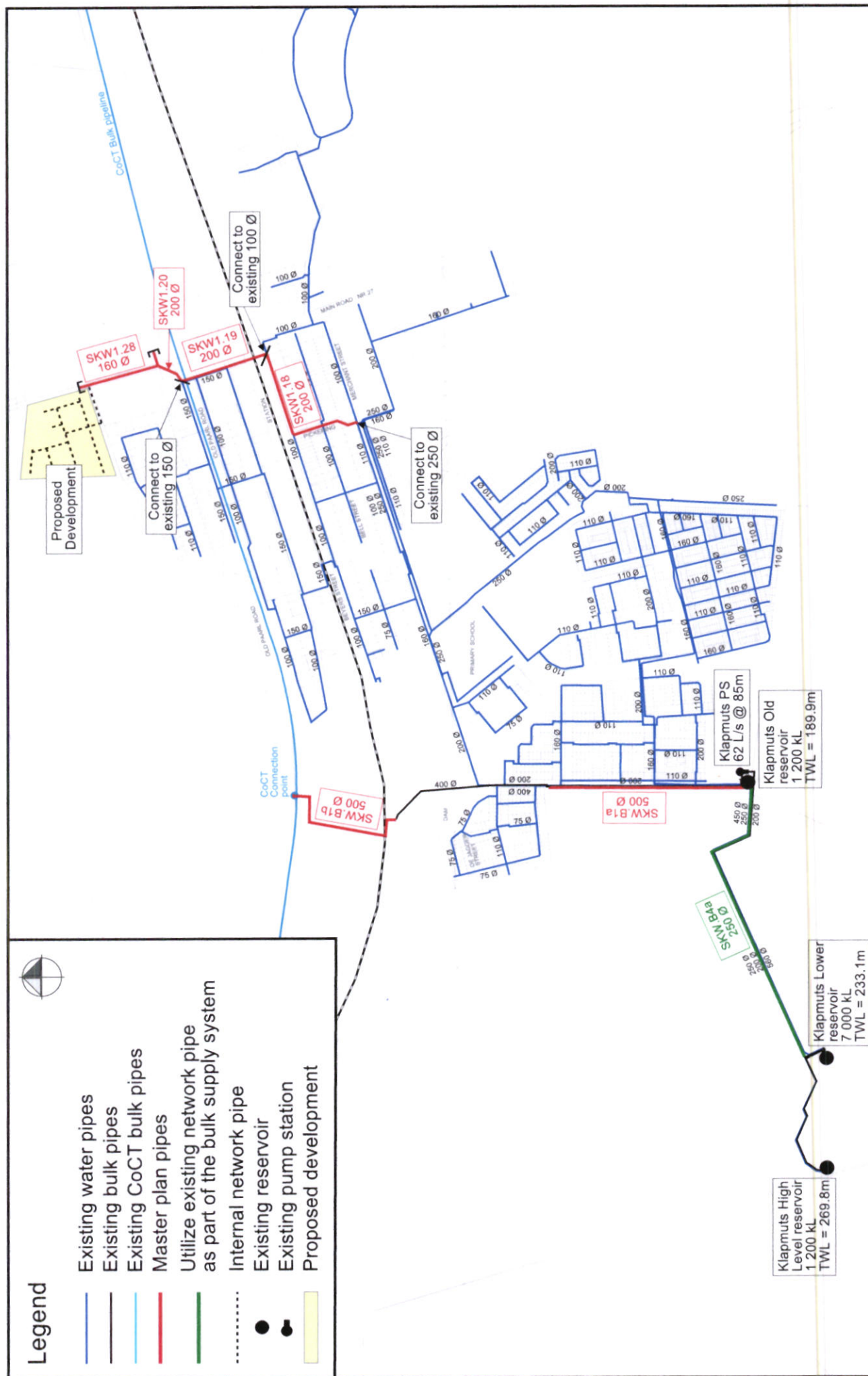
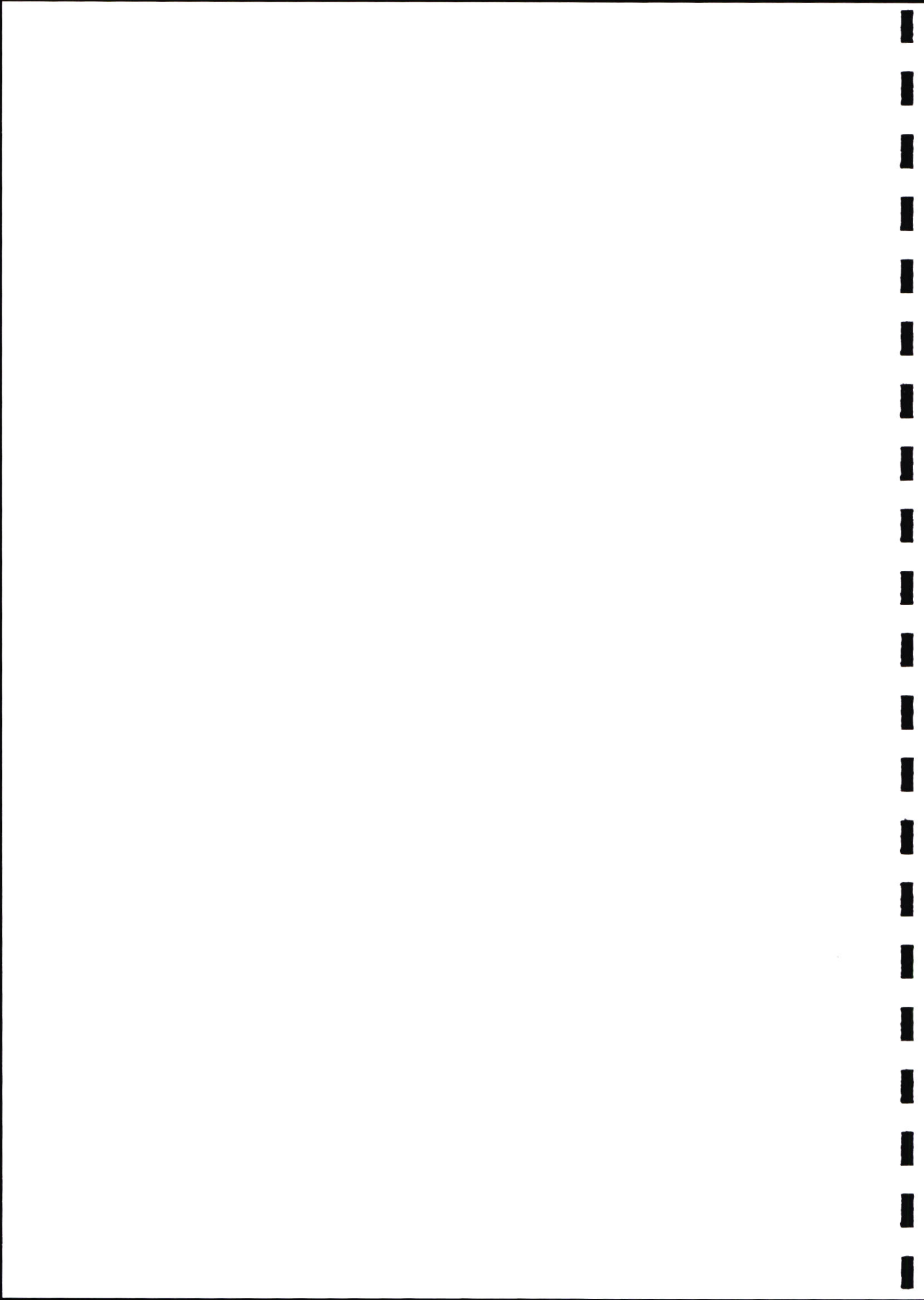
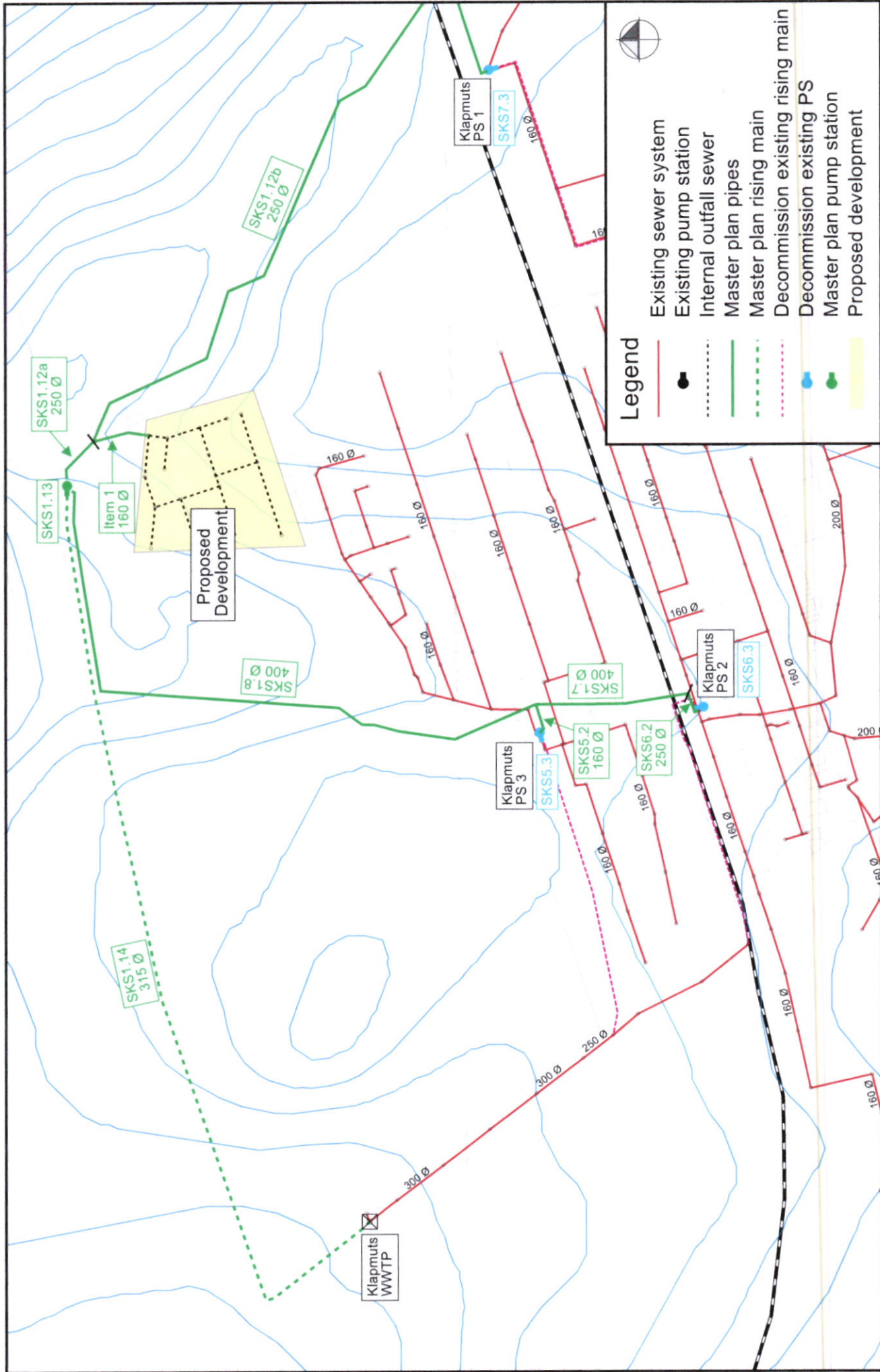
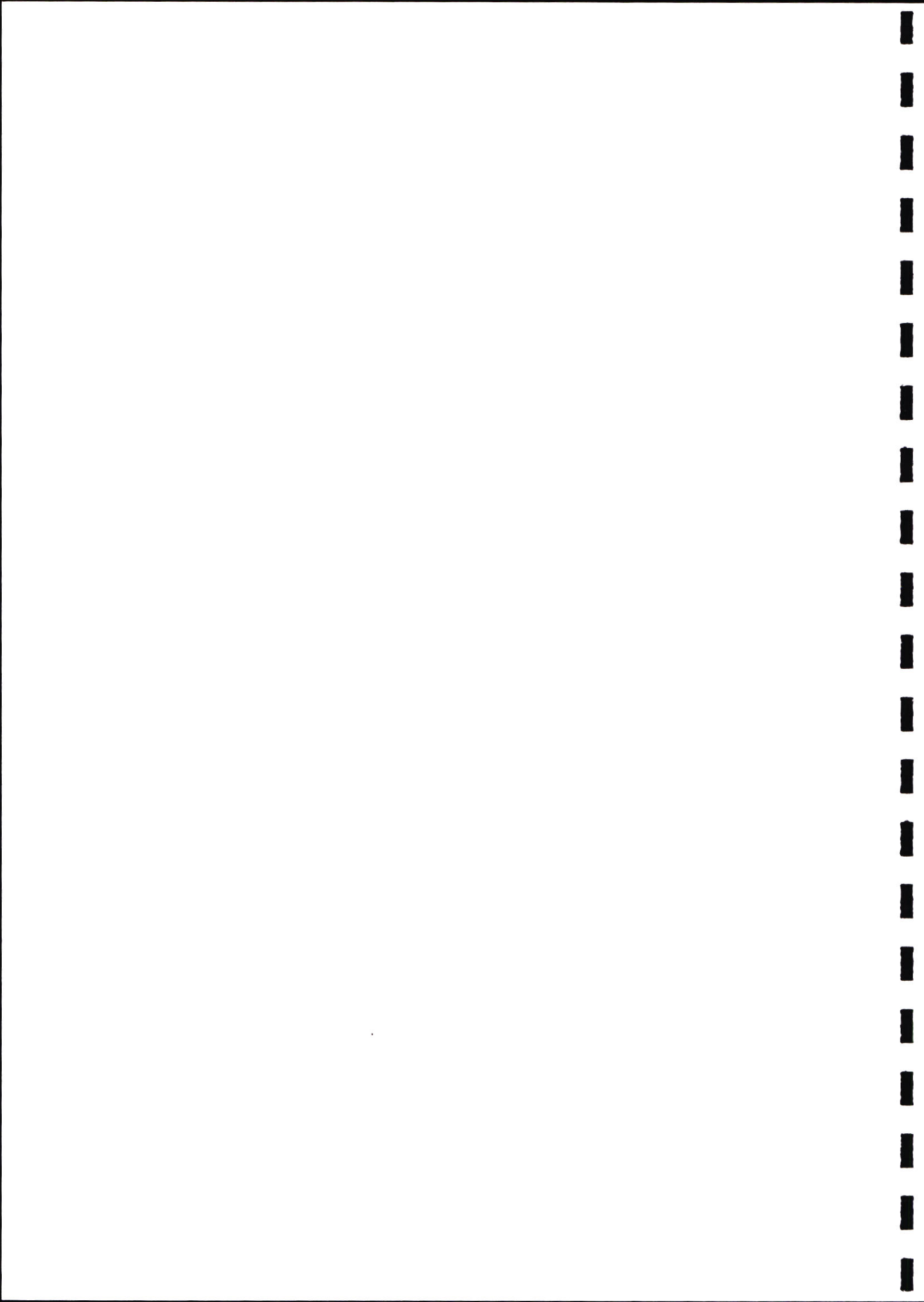


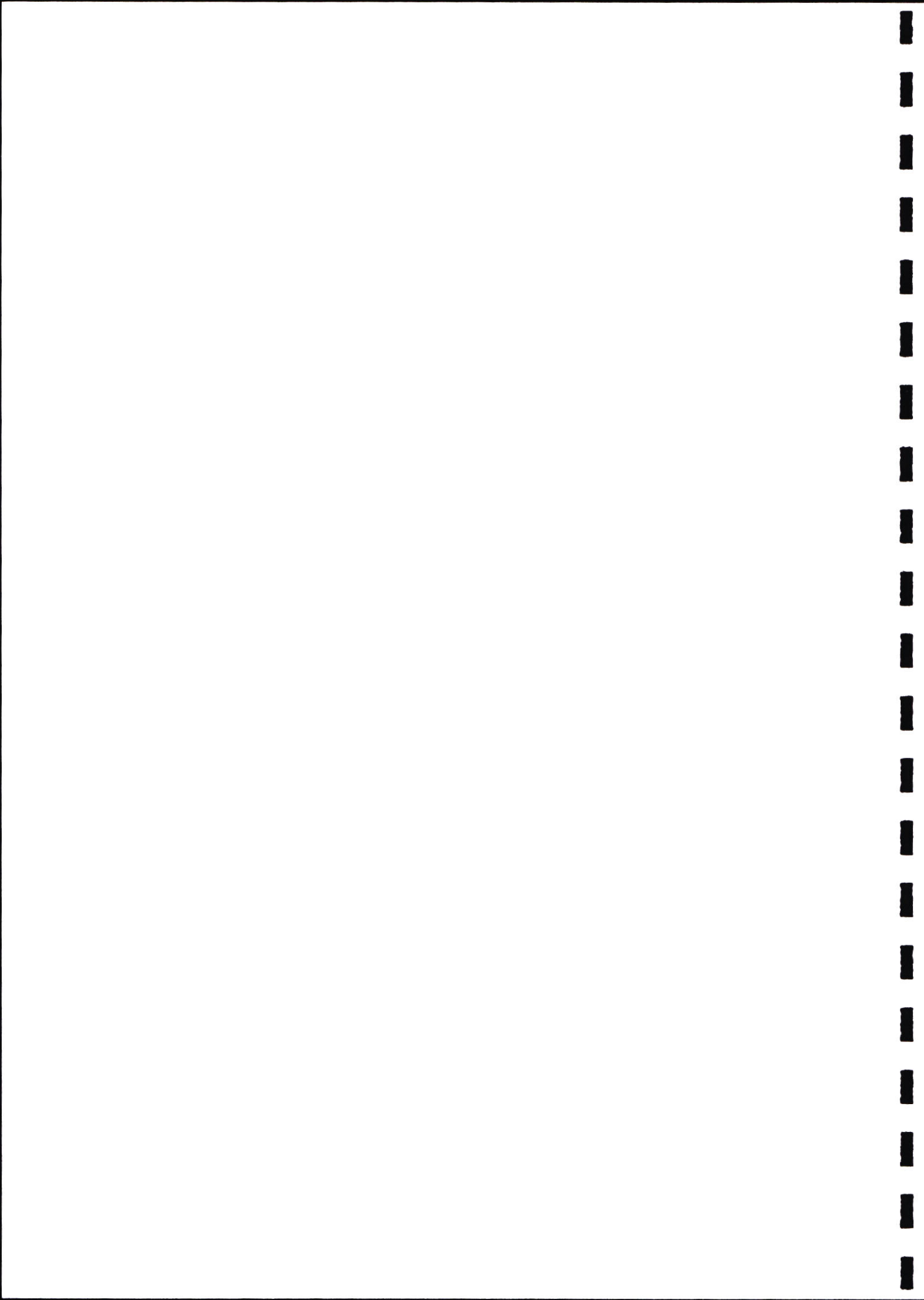
Figure 1
Proposed Development
Portion 5 of Farm 716 - Klapmuts
Water Master Plan

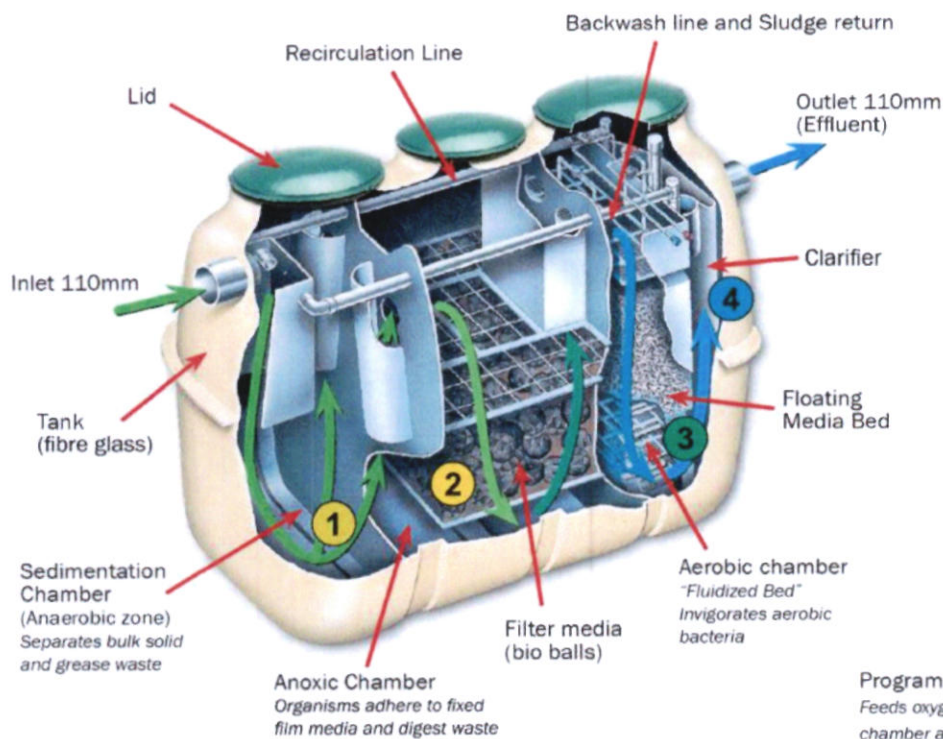






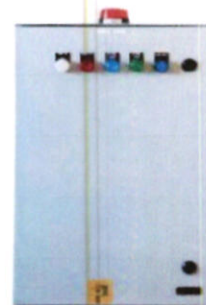
ANNEXURE C





Electrical Panel

- Monitors the system 24/7
- Warning light and siren will notify user if a problem occurs
- Power supply to Blower and UV (disinfection).
- IP65 enclosure



- Indicator lights on front of panel for each alarm condition
- Optional: Dosing pump and effluent pump outputs, GSM module

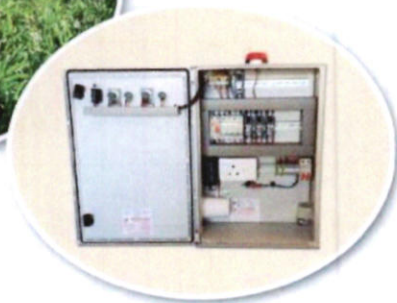
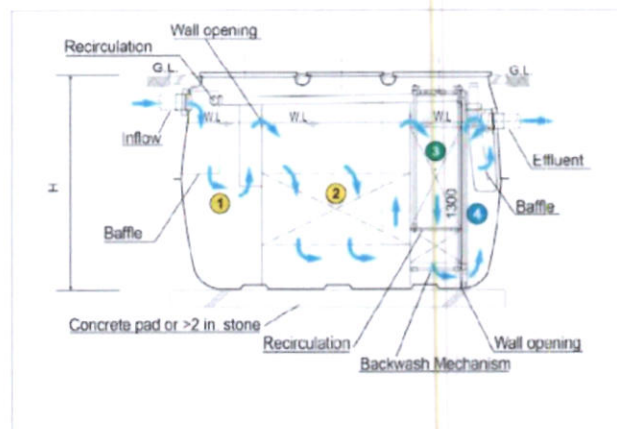
Programmable Blower

Feeds oxygen to aeration chamber and powers recirculation/sludge return



- **Low power consumption**
- **Single tank construction**
- **Tank installed completely underground**
- **Low noise factor**
- **Easy installation**
- **Low maintenance**
- **Small Footprint**
- **Solar options available**
- **Effluent meets South African DWA General Standard**
- **Full nitrification / de-nitrification cycle**
- **No downtime during service / maintenance**

Financing Available



Application:

- Residential sewer.
- Commercial wastewater secondary treatment
Waste strength reduction:

<75 mg/l	COD
<25 mg/l	TSS
- Commercial wastewater pre-treatment before discharging to municipal sewer network (COD reduction).

Material:

- All materials are noncorrosive in the septic environment.

Easy to install or retrofit:

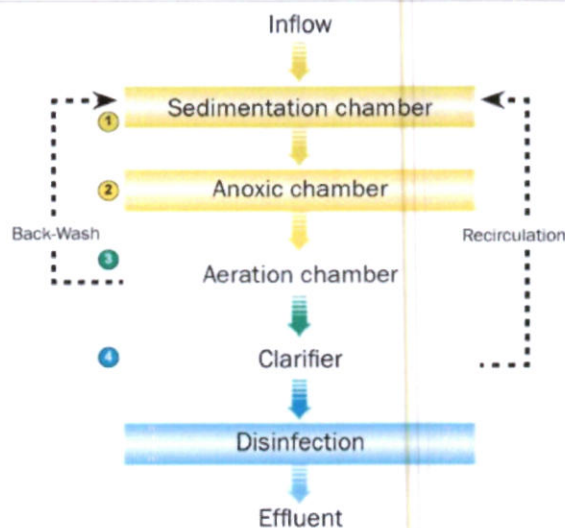
- Treatment Systems are compact, efficient, and designed to be installed in a typical residential/commercial environment.
- Retrofit for septic tanks, conservancy tanks, other systems.

Maintenance:

- System will be provided with maintenance contract.
- Maintenance provider is dependent upon geographical location.
- 6 Monthly service required.
- No check-ups needed between service intervals.

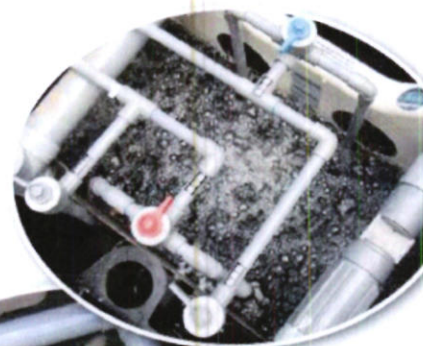
Disinfection:

- Chlorine / UV / Ozone.

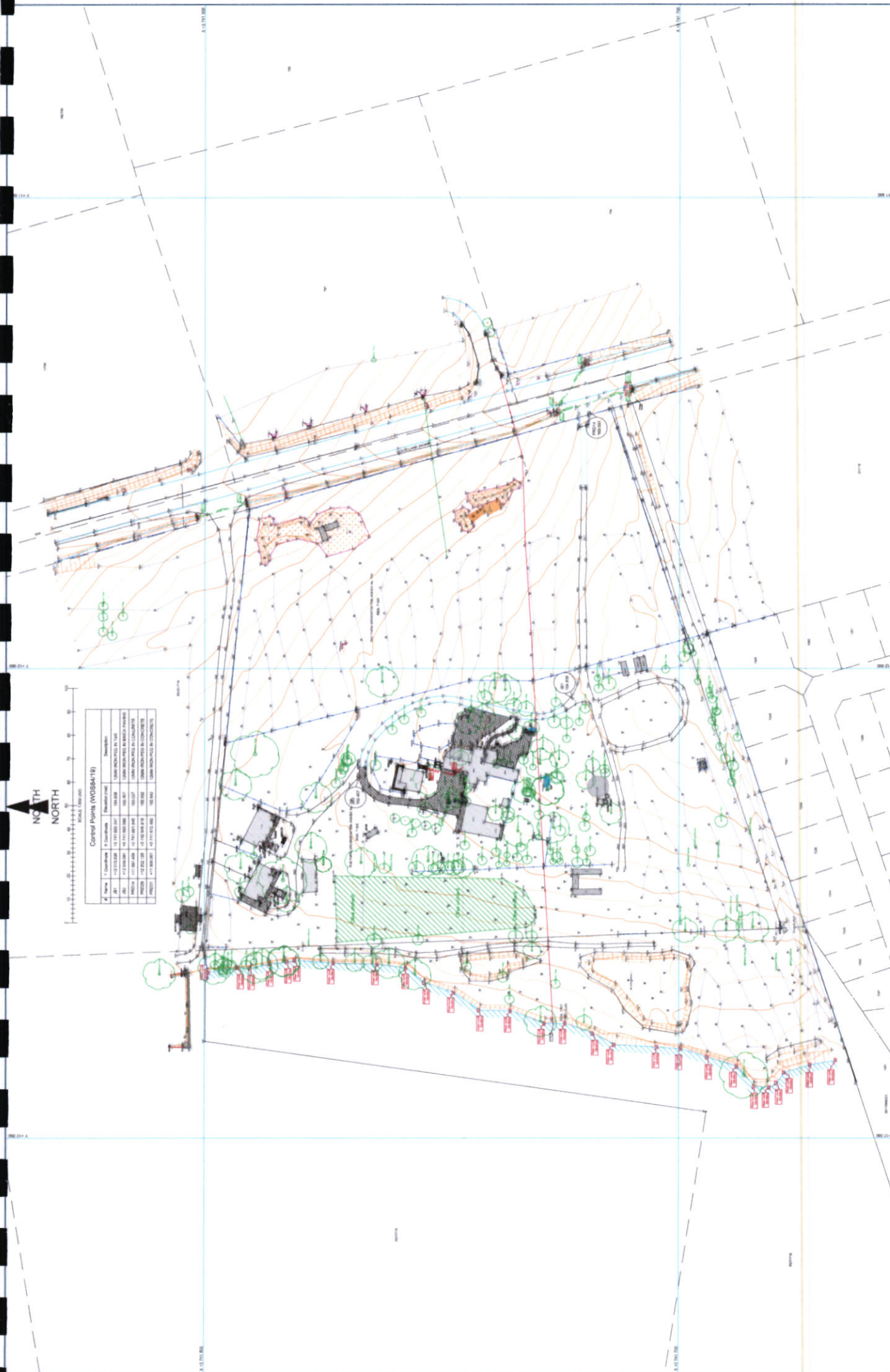


Available models

Litres per day Black & Grey Water Combined	Number of people (based on 200 litres per person per day)	Length (mm)	Width (mm)	Height (mm)	Power consumption (Watts) <small>Excluding disinfection</small>
1700	8	2000	1100	1600	60
3000	15	2500	1450	1850	60
4200	21	3600	1650	1950	120
5400	27	3750	1800	1950	124
7500	37	4150	1950	2200	160
9000	45	4200	2150	2120	261
12000	60	4800	2250	2400	285
15000	75	4750	2450	2550	336



ANNEXURE D

[illegible]

JOUBERT & BRINK SURVEYS
TOPOGRAPHIC, ENGINEERING & CONSTRUCTION SURVEY SOLUTIONS

[illegible][illegible]

**TOPOGRAPHICAL SURVEY:
GROENFONTEIN DEVELOPMENT**

THEO STEYN (NUPLAN AFRICA) 1 500 (A9) 1 of 1



ANNEXURE E



Geotechnical Assessment for Farm 5/716 Groenfontein, Klapmuts, Western Cape

REPORT:

GEOSS Report No: 2023/06-15

PREPARED FOR:

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11 July 2023



EXECUTIVE SUMMARY

Jolene Govender of Red Developments approached GEOSS South Africa (Pty) Ltd to complete a geotechnical investigation to determine the geotechnical properties and subsurface conditions of the Groenfontein Annex, near Klapmuts, Western Cape. The investigation aimed to determine whether the geotechnical conditions underlying the site pose a threat to the proposed structure(s).

During this investigation five (5) trial pits were excavated and five (5) samples were sent to a commercial laboratory for analysis to classify the respective horizons in terms of their engineering properties.

The following points are a summary of the findings of the investigation:

1. Several structures were present on the site, which did not show any notable structural fractures.
2. The materials encountered on site in all five (5) trial holes are classed as easy excavation (SANS 1200D) for the first 2.5 meters, after several trial pits presented some resistance to mechanical excavation by TLB.
3. The intrusive data collected on-site generally confirmed the anticipated geology. The encountered materials are summarised as follows:

Depth (mbgl)	Generalised Soil Profile
0.0 to 0.9/3.0	Moist, black, loose, non-cemented silty SAND. Likely uncontrolled fill material.
0.9/1.6 to 1.7/3.0	Moist, orange, soft, weakly cemented pebbly CLAYEY SILT to FINE SAND. Likely reworked granitic colluvium.
1.7 to 3.2 (End of hole)	Moist, off-white with reddish stains, firm, weakly cemented gravel-rich CLAY. Likely deeply weathered granite

4. Groundwater seepage was encountered at three of the five trial pits, suggesting an elevated water table at these locations
5. The investigation has revealed that the site is classed as 'S2' according to the NHBRC site class classification categories.
6. Differential settlement of more than 10 mm may occur where occurrences of thick (deep) and thin (shallow) weathered granitic soils lie directly adjacent to one another.

Based on these findings, the following recommendations are made.

1. A bearing capacity of 150 kPa should be assumed for the soils at a founding depth of 0.5 to 1 mbgl on condition that founding does not take place on top of the uncontrolled fill layer.
2. Suitable drainage measures must be installed beneath and across the site to control surface and subsurface water (where applicable).
3. Construction should ideally be scheduled to take place during the summer months.
4. An appropriately qualified professional should be appointed to inspect and approve the founding conditions prior to casting.
5. GEOSS has endeavoured to highlight and characterise the subsoils present at the property. However, due to the anisotropic (variable) nature of earth materials, each point on the site will present results that differ. For this reason, it is considered of the utmost importance that remedial works be supervised/inspected by an appropriately qualified professional.

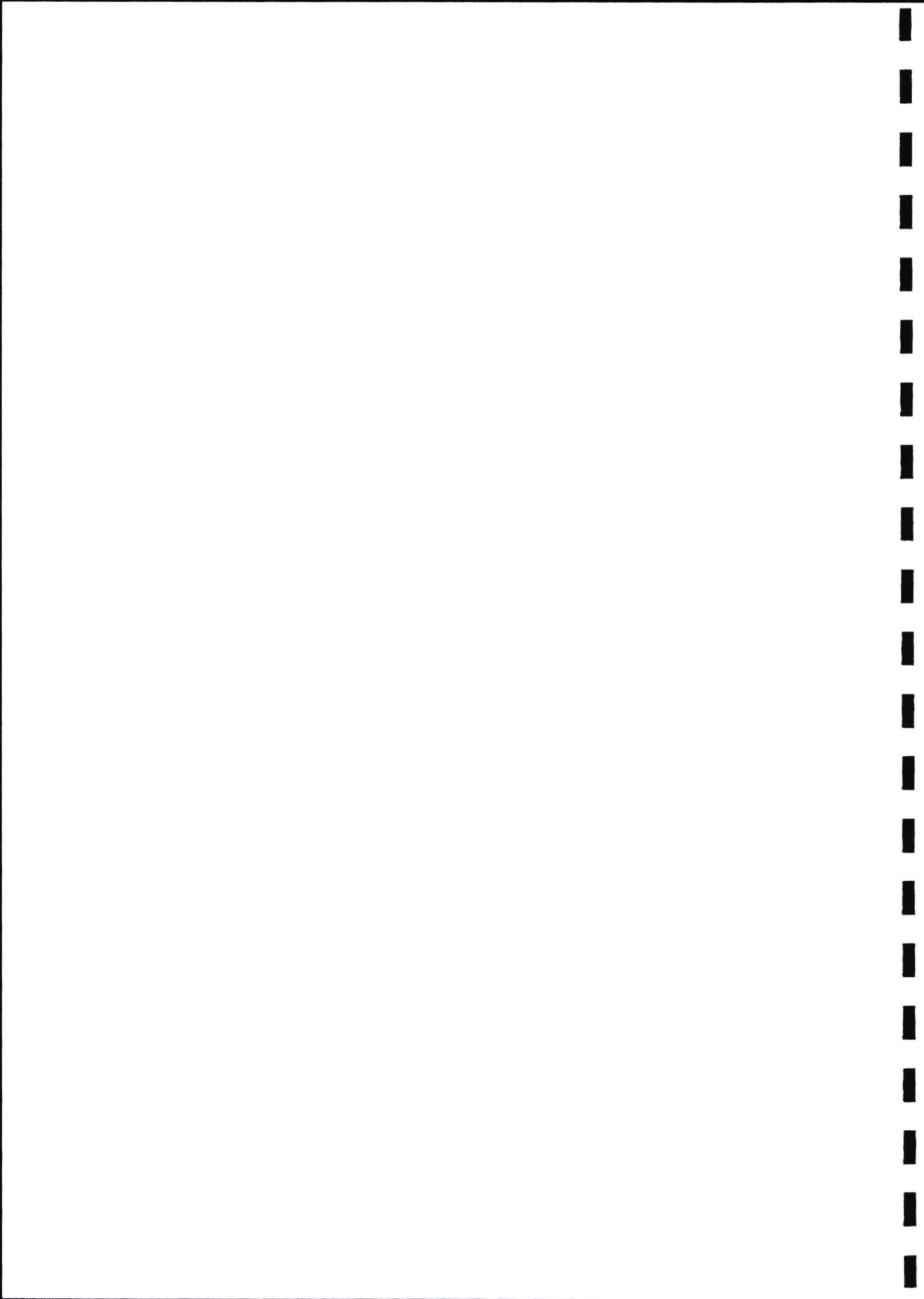


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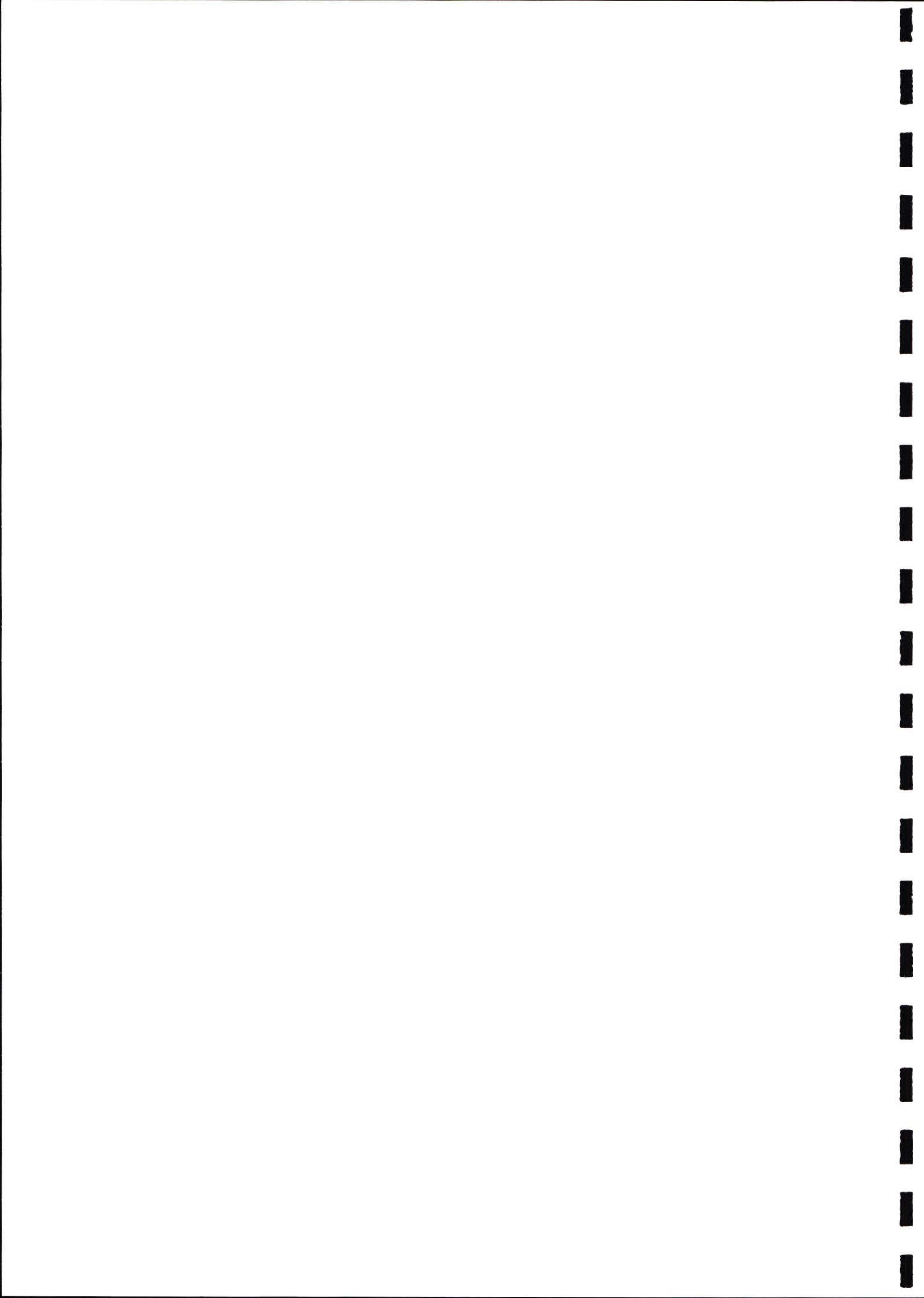
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ABBREVIATIONS

BH	Borehole
CBR	California bearing ratio
CGS	Council for Geoscience
DWS	Department of Water Affairs and Sanitation
EC	electrical conductivity
LL	Liquid Limit
LS	Linear Shrinkage
L/s	litres per second
m	metres
MDD	Maximum Dry Density
mm	millimetre
MOD	Modified AASHTO
mS/m	milli-Siemens per metre
NGA	National Groundwater Archive
NHBRC	National Home Builders Registration Council
OMC	Optimum moisture content
PI	Plasticity index
TLB	Tractor loader backhoe
FOS	Factor of Safety



GLOSSARY OF TERMS

Aquifer: a geological formation, which has structures or textures that hold water or permit appreciable water movement through them [from National Water Act (Act No. 36 of 1998)].

Borehole: includes a well, excavation, or any other artificially constructed or improved groundwater cavity which can be used for the purpose of intercepting, collecting or storing water from an aquifer; observing or collecting data and information on water in an aquifer; or recharging an aquifer [from National Water Act (Act No. 36 of 1998)].

Factor of Safety: a measure used in engineering design to represent how much greater the resisting capacity of structure or component is relative to an assumed load. With respect to slope stability, factor of safety is the ratio of shear resistance to driving force along a potential failure plain (Herza et al., 2017).

Groundwater: Water found in the subsurface in the saturated zone below the water table or piezometric surface i.e. the water table marks the upper surface of groundwater systems.



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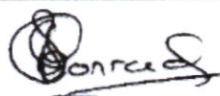
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Photo taken during site visit.

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1. INTRODUCTION

GEOSS South Africa (Pty) Ltd was approached by Jolene Govender of Red Developments to complete a combined geotechnical investigation on the farm Groenfontein ERF 5/716 to identify potential geotechnical risks in preparation for a housing development on the site.

A total of five trial pits were excavated according to positions proposed by the structural engineer into the subsurface to determine soil characteristics, presence of groundwater and at what depth it occurs.

2. SCOPE OF WORKS

A geotechnical assessment has been undertaken to assess and characterise the properties of soils underlying the site. This investigation was also aimed to identify any potential geotechnical risks or 'problem soils' that may be locally present, e.g. potentially compressible/collapsible materials and large, unweathered granitic core stones.

This report includes a description and evaluation of the founding conditions to aid in the design of the foundations for the structures (e.g., bearing capacity and settlement characteristics).

The following aspects are included in this report:

- Determine and describe the general geology of the site and surrounds with respect to regional and local geology, including a description of topography and surface drainage systems through both a desktop level study, followed by physical observations of on-site conditions and surrounds.
- Site and excavate a minimum of 5 trial pits to a suitable depth (preferably bedrock or refusal of a back actor). Describe the soil profiles exposed in terms of standard descriptors, namely moisture content, colour, consistency, structure, soil type and origin (MCCSSO). A representative photograph of each trial pit will be supplied.
- Identify and comment upon the presence (or absence) of water or seepage within each of the trial pits.
- Take representative bulk samples of the different soil types, mark and seal each sample and transport to a geotechnical laboratory to undertake the following laboratory tests:
 - Foundation Indicators (Grading, Hydrometer Analysis, Atterberg Limits);
 - Moisture/Density relationship (Mod. AASHTO)
 - California Bearing Ratio
- Present a comprehensive report summarizing the above investigations, tests and recommendations.

2.1 Information Available

During the planning, desk study and compilation of the report, the following documents were made available and consulted.

- Topographical Survey map drawn by Joubert & Brink Surveys
- Topographical Design Concept map drawn by JACOBOTHA ARCHITECTS

3. METHODOLOGY

3.1 Desktop Study

The procedure adopted for this study involved a desktop study followed by site work. The initial desktop study involved obtaining and reviewing all relevant data to the project. This included analysing data from geological, geotechnical and hydrogeological sources, which included the following:

- The 1: 50 000 geological series map – Sheet 3318DD, Stellenbosch.
- The 1: 50 000 geotechnical series map – Sheet 3318DC, Bellville.
- The 1: 10 000 topocadastral map – Sheet 3318DD, Stellenbosch.
- The 1: 500 000 hydrogeological map – Sheet 3126, Cape Town.

3.2 Intrusive Investigation

A site visit was then conducted to verify as much of this data as possible, make on-site observations, and collect relevant soil samples from the trial pits to be sent for laboratory analysis. Specifically, this included:

- Five (5) trial pits were excavated using a tractor loader backhoe (TLB) (**Appendix C**).
- Bulk samples of materials encountered on site were collected where possible and practical. The samples were collected to best represent the materials encountered on-site. Samples of the horizons were submitted to undertake the following laboratory tests:
 - Foundation Indicators (Grading analysis, Hydrometer Analysis, Atterberg Limits);
 - Moisture density tests;
 - California Bearing Ratio (CBR) tests;

The trial pit locations were set documented using the Rocklogger App

The soil profiles were documented according to standard terminology as recommended by Jennings et al. (1973) and SAIEG (2001). A representative photograph of selected trial pits has been supplied, and the trial logs have been captured using a commercially available hatching software dotPLOT (**Appendix A**).

4. SETTING

4.1 Site Location and Description

The site is located on a gentle east facing slope on next to Adam Tas street. north of Klapmuts. The large property is mostly underdeveloped, with the only current structures present on the western half of the property. Current structures consist of several single storey dwellings along with

a small orchard. The property is bordered by undeveloped land to the north and to the southeast. On the southwest the property is bordered by a well-developed housing estate. Finally, a large dam lies directly to the west of the property.

4.1 Topography, Existing Infrastructure, and Site History

Topographically the site lies on a slope of approximately 5 degrees to the east with no terraces or retaining structures present. The site is generally free of natural fynbos vegetation endemic to the area and is predominately covered by shallow grasses.

Several underground services exist on the property; however their exact locations were not made known during the course of this study. Based on historical Google Earth Imagery, the structures presently on the site were likely constructed prior to 2005.

4.2 Climate

The Klapmuts area experiences a Mediterranean climate with mild, wet winters and warm dry summers. **Figure 1** shows the monthly average air temperature distribution and **Figure 2** shows the monthly median rainfall and evaporation distribution for the area (Schulze, 2009). The long-term (1950 – 2000) mean annual evaporation value of 1 291 mm/a for the study area exceeds the long-term (1950 – 2000) mean annual precipitation value of 612 mm/a for the same area. The rainfall is greater than evaporation in the winter months (May to August). The winter rain leads to peak groundwater recharge during that period.

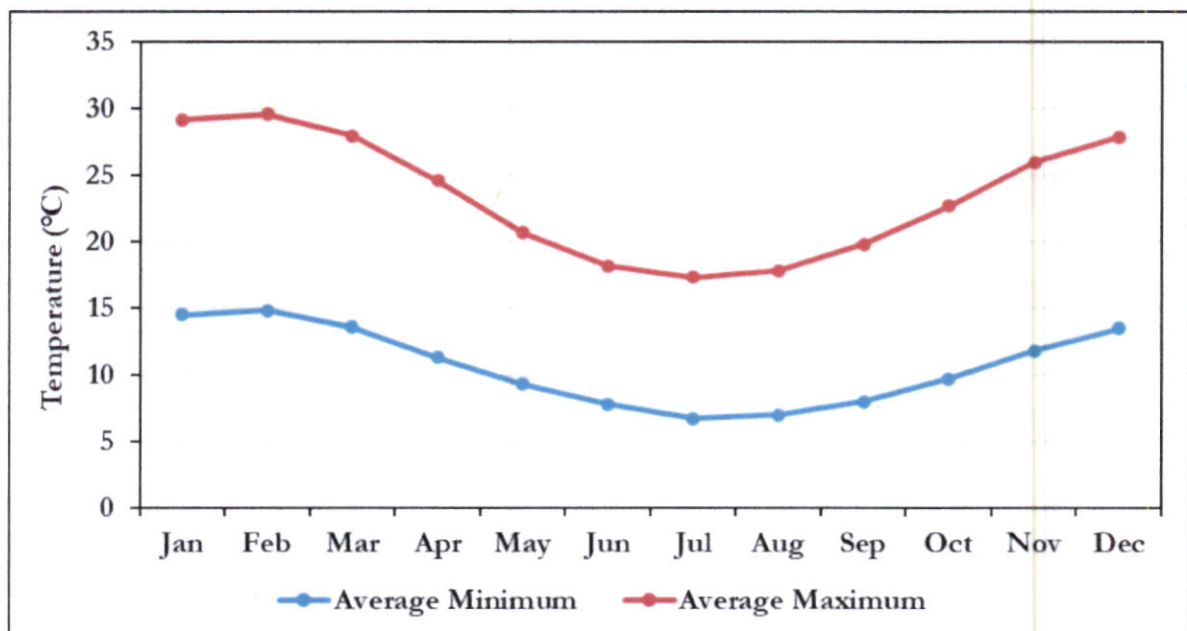


Figure 1: Monthly average air temperature distribution for Klapmuts (Schulze, 2009).

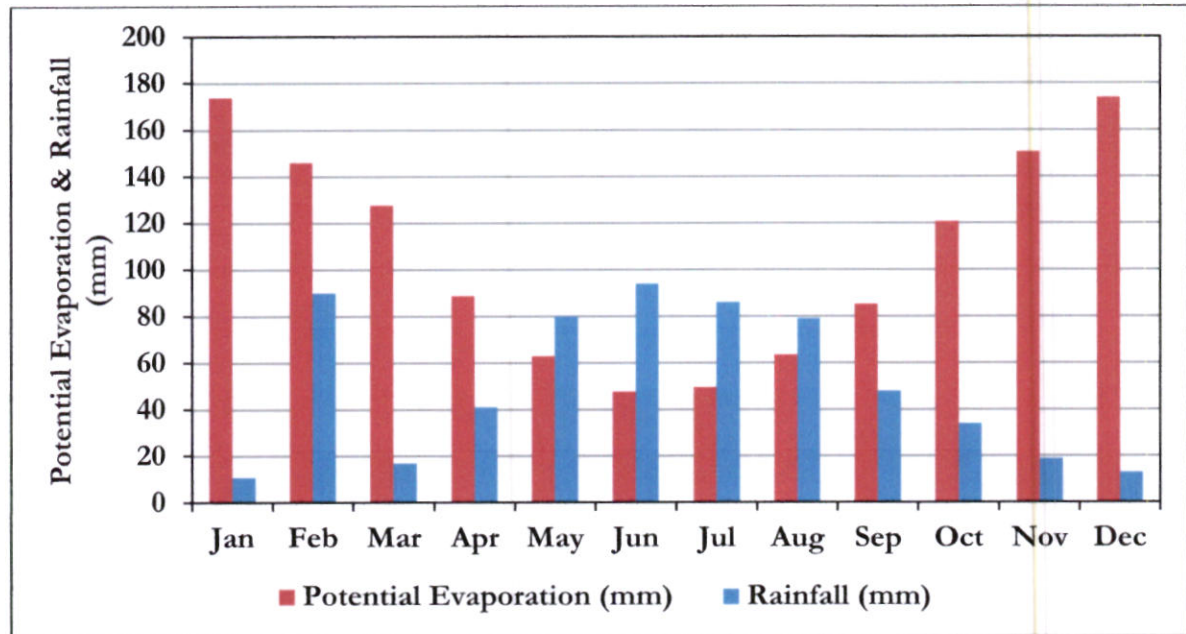


Figure 2: Monthly average rainfall and evaporation distribution for Klapmuts (Schulze, 2009).

4.1 Weinert 'N' Value

The present and past climate is a helpful indicator of the typical soil conditions encountered on a particular site (Weinert, 1975). Weinert (1975) developed a general model to categorise the climate of southern Africa based on what he termed the 'N'-value **Figure 3**. The Weinert 'N'-value for the project area is less than 5 (Brink, 1983). Weinert (1975) showed that where 'N'-values are less than 5, chemical decomposition is the dominant mode of rock weathering and relatively thin transported soil cover can be expected with deep residual profiles, and rocks present are typically deeply weathered; and where pedocretes are developed they are generally ferricrete (Brink, 1983).

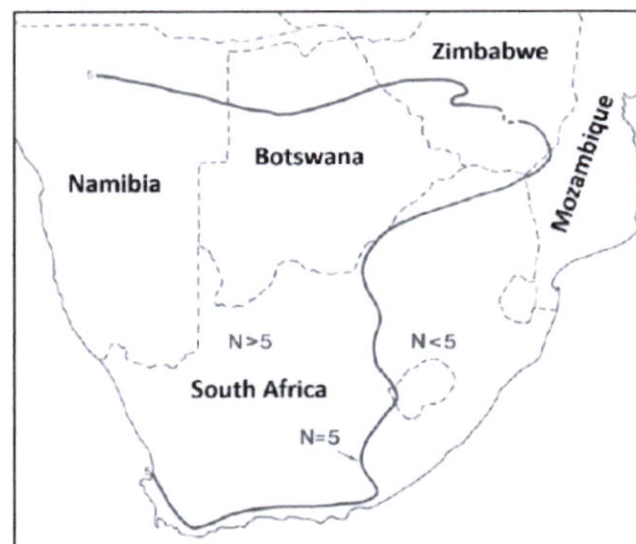


Figure 3: Climatic 'N' value = 5 plotted for southern Africa (after Weinert, 1967).



4.2 Geology

The Council for Geoscience (CGS) has mapped the area at 1:50 000 scale (3318DD Stellenbosch). The geological setting is shown in **Map 1** and the main lithologies of the area are listed in **Table 1**.

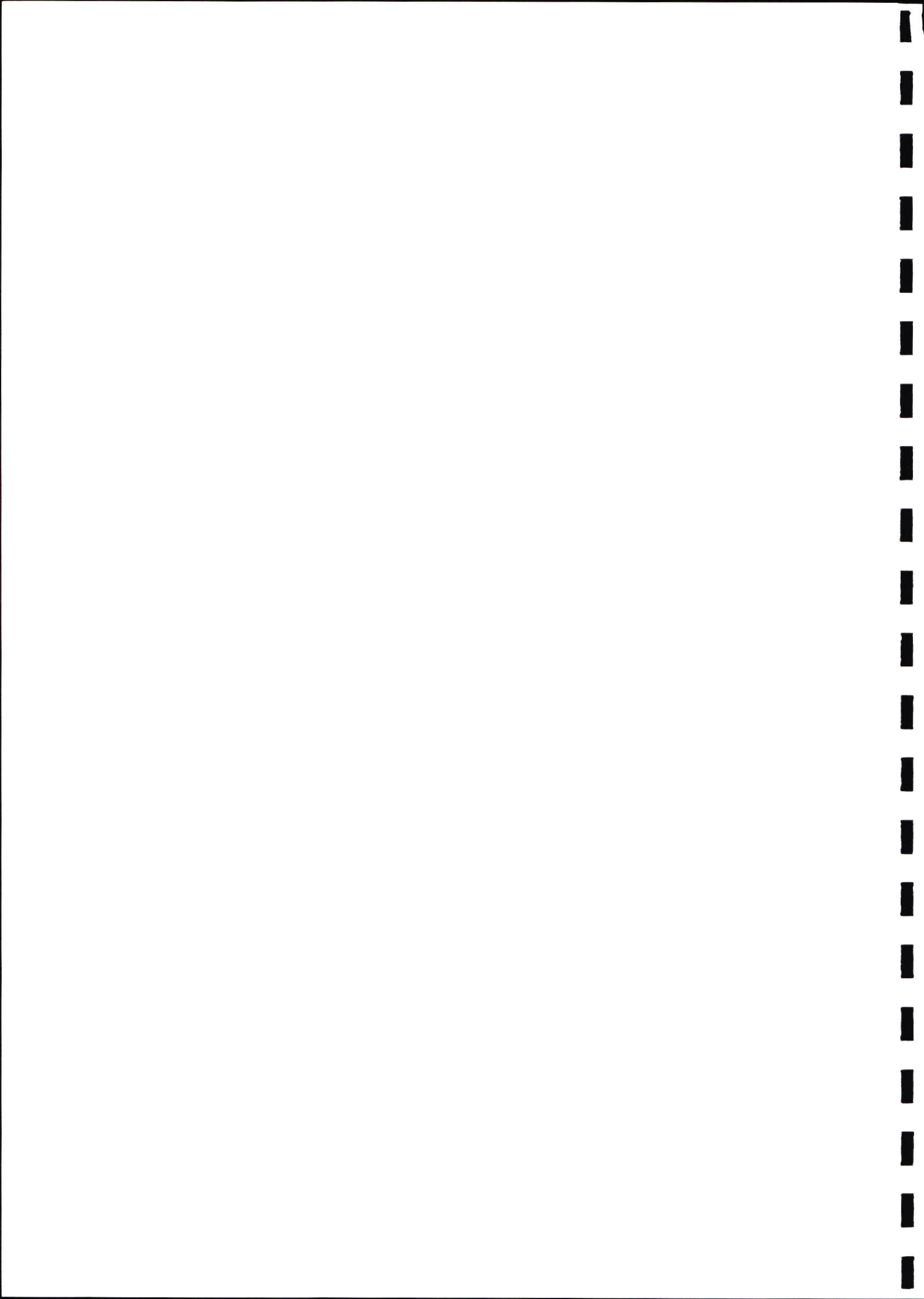
Table 1: Geological formations within the study area

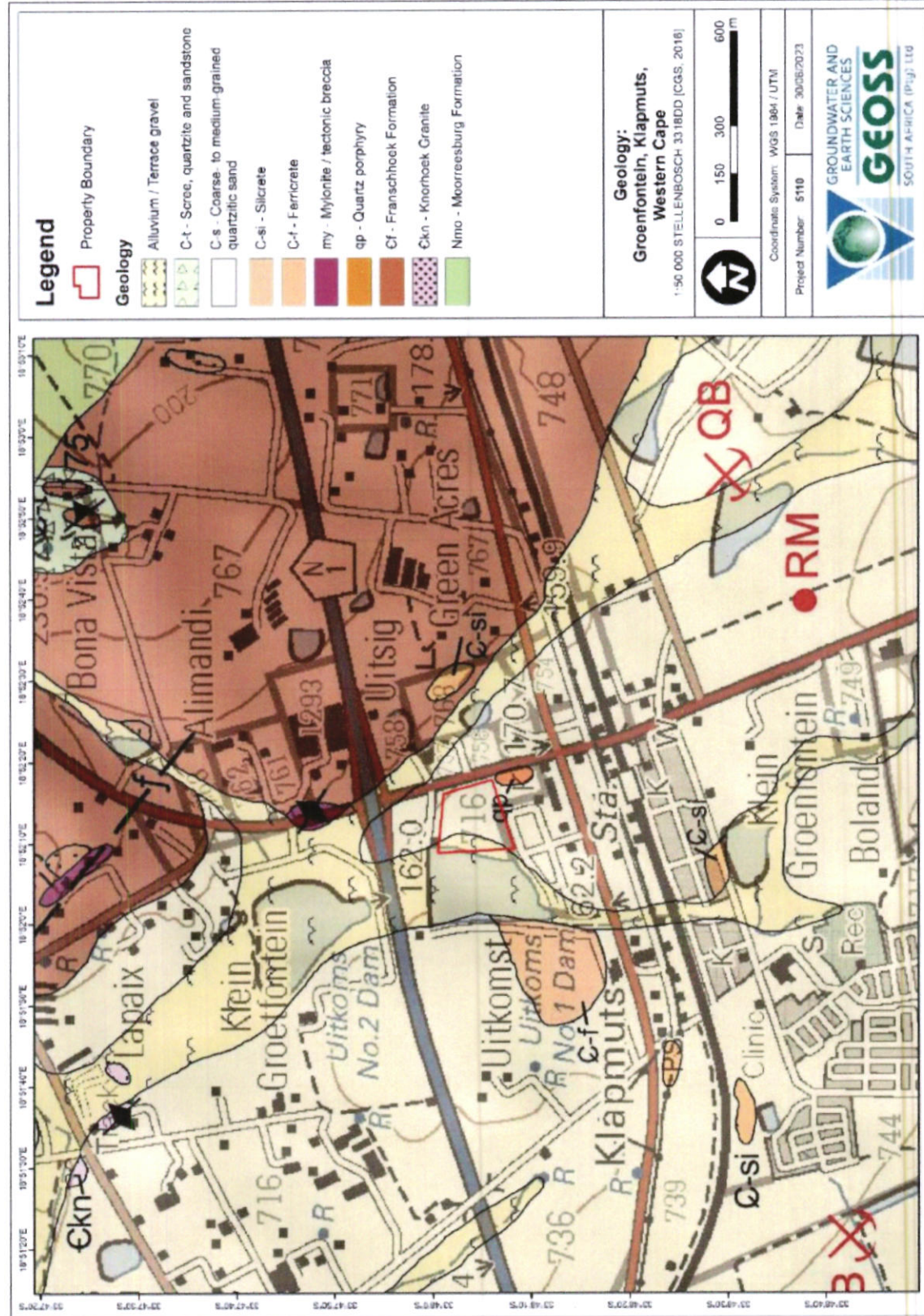
Code	Formation/Pluton	Group/Suite	Description
	n/a – Quaternary Age		Alluvium
C-t			Scree, quartzite to sandstone
C-s			Coarse to medium-grained quartzite sand
C-si			Silcrete
C-f			Ferricrete
€f	Franschhoek Formation	Malmesbury	Quartzite, conglomerate, and slate
€kn	Knorhoek Granite	Cape Granite Suite	Mainly coarse-grained porphyritic granite
Nmo	Moorreesburg Formation	Malmesbury	Greywacke and phyllite with beds and lenses of quartz schist, limestone and grit

There are several geological units indicated on the geological maps with the oldest units represented by the Moorreesburg (Nm) and Franschhoek (Npo) formations of the Malmesbury Group. These formations consist of alternating beds of wacke (a muddy sandstone), siltstone, mudstone, quartzite, grit and conglomerates. The Moorreesburg and Franschhoek formations form the uppermost units of the Swartland Subgroup, which make up part of the Neoproterozoic to the early Cambrian (575 – 540 Ma) aged Saldania Belt.

The Malmesbury Group is intruded by late Precambrian aged granitic plutons of the Cape Granite Suite. These plutons typically occur as rounded hills forming localised topographic highs in the region. One of these plutons occur to the south of Klapmuts, resulting in the slight topographic rise. The intrusion of these granites also likely resulted in thermal and contact metamorphism of the Malmesbury Group shales into much harder hornfels.

This site itself is generally underlain by Quaternary aged quartzitic sands sourced from the surrounding topographic highs. Considering the proximity of these units, it is likely that the quartzitic sands overly units of either the Franschhoek Formation, or Knorhoek Granite.





Map 1: Geological setting of the area (3318DD Stellenbosch, GCS 2019).

4.3 Engineering Geology

Stapelberg (2008) noted that in certain areas, granites of the Cape Granite Suite are extensively weathered and can produce colluvium deposits of weathered granitic material proximal to granite outcrops. Furthermore, he indicates that colluvium soil horizons from granites as well as residual granites possess low potential expansiveness. These materials also indicated a low to moderate compressibility (Stapelberg, 2008). Although previously overlooked, Fouché and Asante (2019) found that many soils derived from granitic colluvium and residual granites in the Stellenbosch region show a collapsible character. Finally, residual granitic material is seen to be strongly acidic, but non corrosive (Stapelberg, 2008).

5. SAMPLE COLLECTION AND ANALYSIS

5.1 Field Work and Trial Pit Information

The geotechnical site investigation involved a site walk over, the excavation of three trial pits and inspection of existing structures on neighbouring properties.

The trial pits were excavated using a tractor loader backhoe (TLB) to a maximum depth of 3.2 m. Following the excavation, each trial pit was logged and photographed (**Appendix A**). A site walk-over sought to identify and confirm geotechnical, hydrological and hydrogeological features of interest. Details of the five trial pits are summarized and presented in **Table 2**. The location of the trial pits is presented in **Map 2** while **Map 3** indicates the proposed positions of trial pits overlying the Site Development Plan and locations of trial pits excavated during the investigation.

Table 2: Summary of trial pits.

Label	Latitude (DD, WGS84)	Longitude (DD, WGS84)	Elevation (mamsl)	TP EOH* [mbgl]	Sample # (mbgl)
TP01	-33.801057	18.871076	167	2.70	TP01-
TP02	-33.801667	18.870613	172	2.20	TP02
TP03	-33.801251	18.870430	170	2.80	TP03
TP04	-33.800323	18.869189	165	2.50	TP04
TP05	-33.801878	18.869640	169	2.40	TP05

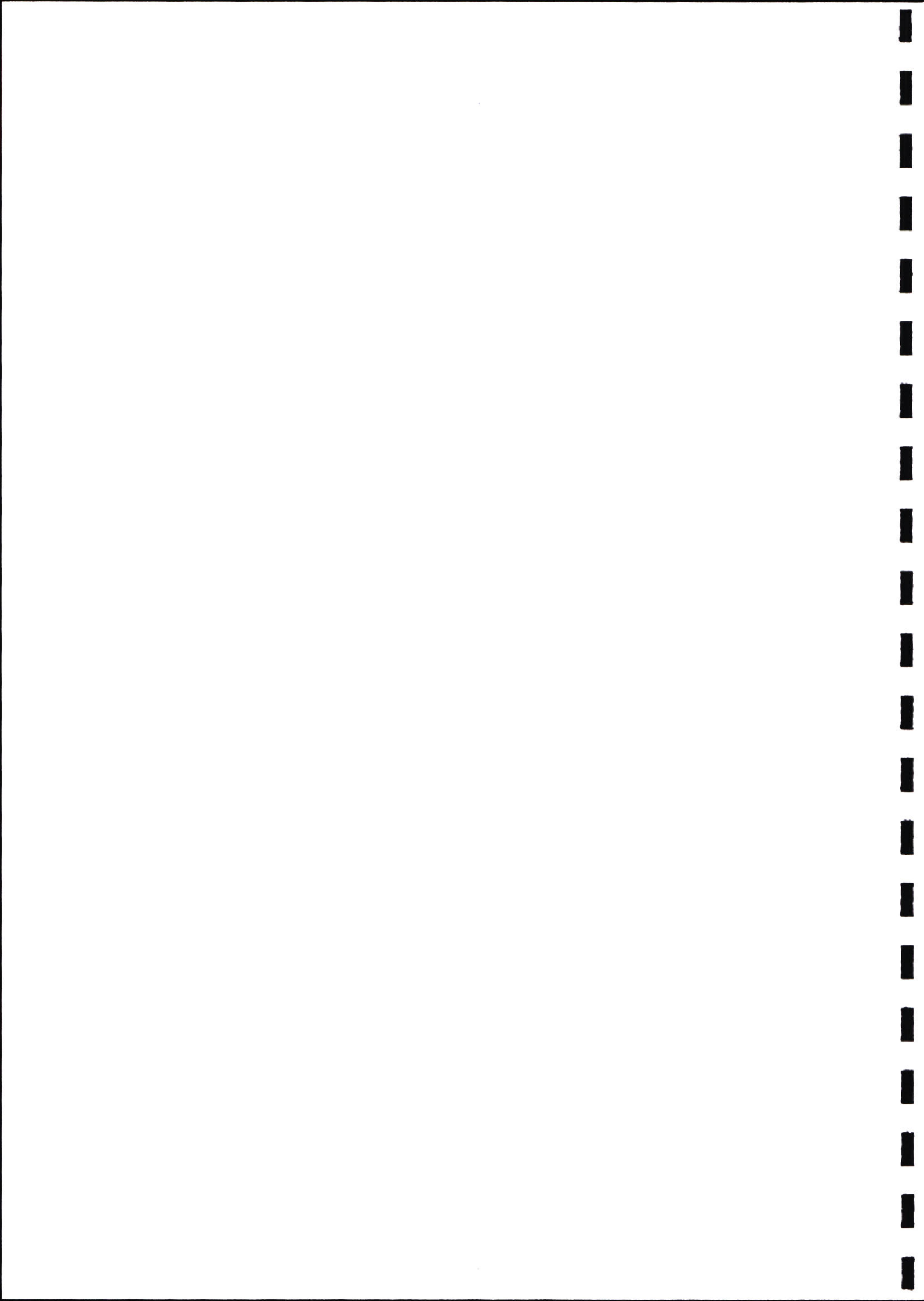
* EOH – End of Hole

Using the observations and data collected during the field work a typical soil profile was developed and is summarised in **Table 3**. The soil profiles for each individual trial pit can be found in **Appendix A Figure 6 - Figure 11**.



Table 3: Generalised soil profile.

Depth (mbgl)	Generalised Soil Profile
0.0 to 0.9/3.0	Moist, black, loose, non-cemented silty SAND. Likely uncontrolled fill Note: Sporadically contains building rubble
0.9/1.6 to 1.7/3.0	Moist, orange, soft, weakly cemented pebbly CLAYEY SILT to SILTY FINE SAND. Likely reworked colluvium.
1.7 to 3.2 (End of hole)	Moist, off white with reddish stains, firm, weakly cemented gravel rich CLAY. Likely deeply weathered granite





Map 2: Aerial map showing trial pit locations



Map 3 Locations of trial pits overlying the Site Development Plan and proposed trial pit locations



5.2 DCP Testing

A total of five dynamic cone penetrometer (DCP) tests were conducted outside and within trial pits, reaching depths of 3.6 meters below ground level (mbgl), **Figure 4** and **Appendix B**). The only exception was at Trial Pit 4 (TP 04) where one DCP test was conducted inside of the pit due to the highly contaminated topmost soil overburden **Figure 9** and **Figure 18**. To assess the overall characteristics of the underlying materials at the site, the third quartile (Q3) of the DCP data was plotted at depth intervals of 0.3 mbgl (300 mm below ground level), 600 mbgl, 900 mbgl, and so on (see **Figure 4**). These data demonstrate that, on average, 75% of the data points for the same units exhibit a range of consistencies, as indicated below. The figure displays the boundaries of consistencies in brackets):

- 0.0 m to 0.6 m: Very stiff
- 0.6 m to 1.6 m: Very stiff to firm
- 2.4 m to 3.3 m: Very stiff
- 3.3 m to 3.6 m: Very stiff to firm

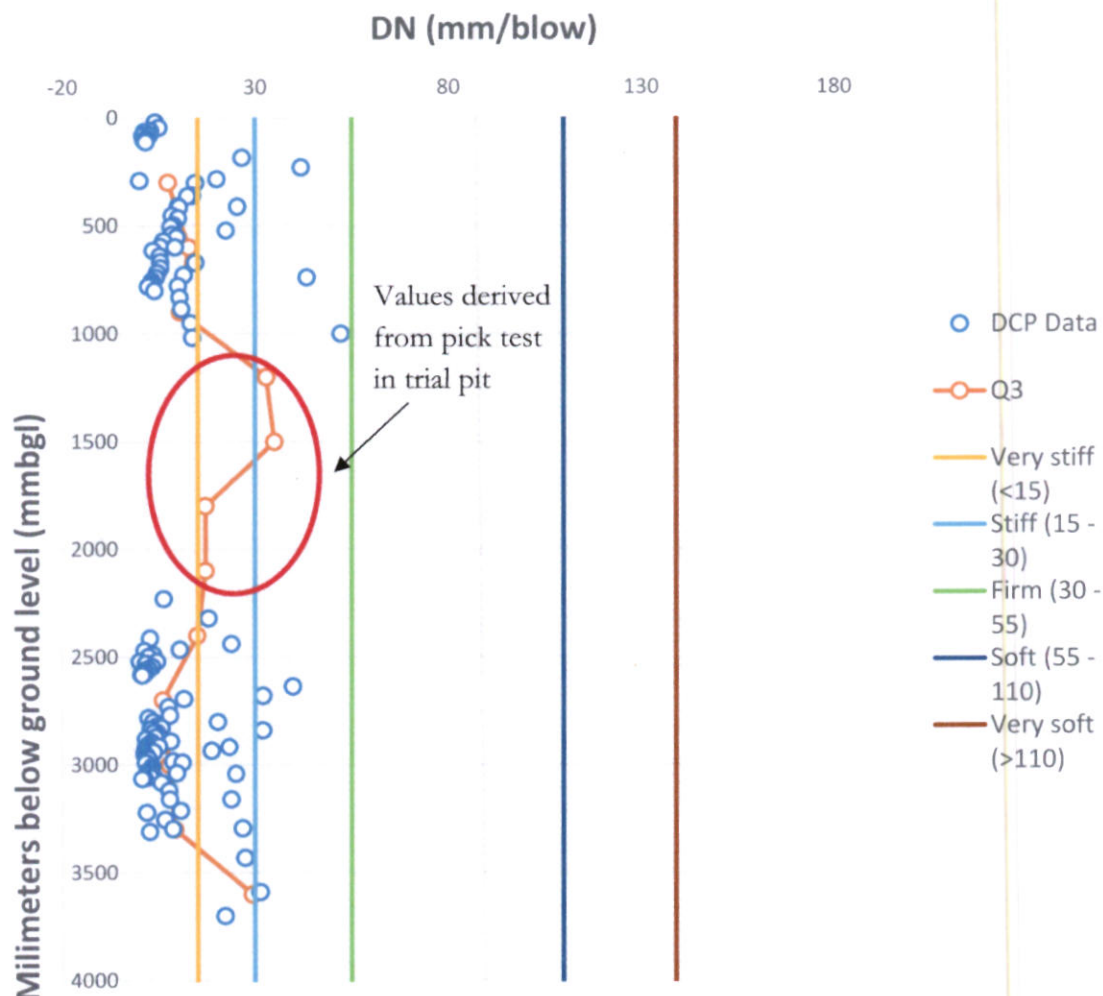


Figure 4: DCP Test results plotted with the third quartile (Q3) of all tests undertaken; cohesive material interpretation boundaries shown.

5.3 Laboratory Testing

Five (5) bulk disturbed soil samples (28368/1 to 28368/5) and one (1) were procured and sent for laboratory analysis. These samples were collected to confirm and characterise the weathered granite and weathered colluvium of the upper soil horizons.

- Samples 28368/1 to 28368/5 were individually analysed for foundation indicators, CBR and MOD

Summarised results of the respective laboratory tests are included in the following tables:

- **Table 4** presents a summary of the results for the foundation indicator and plasticity index test results, including their calculated potential expansiveness.
- **Table 5** indicates the results of the CBR test results, including the density/density results, i.e. MDD and OMC.

Table 4: Summary of grading analysis.

Sample No. (TP##)	Depth (m)	Soil Type	Grading Analysis				PI %	Pot. Exp.
			Clay %	Silt %	Sand %	Gravel %		
28368/1 (TP01)	2.0-2.5	Sandy CLAY	13	36	50	1	12.7	Low
28368/2 (TP02)	1.5-2.0	Silty gravelly fine SAND	6	14	77	4	N.P	Low
28368/3 (TP03)	1.4-1.7	Sandy to gravelly CLAY	28	14	53	5	16.3	Low
28368/4 (TP04)	1.4-1.8	Silty gravelly fine SAND	12	10	69	9	6.9	Low
28368/5 (TP05)	1.3-1.7	Silty gravelly fine SAND	12	11	69	8	9.4	Low

- PI – Plasticity index NP – Non-plastic

Table 5: Summary of CBR analysis.

Sample Label	Trial Pit	Sample depth (mbgl)	Soil Type	CBR @					PI %	MDD kg/m ³	OMC %
				100%	98%	95%	93%	90%			
28368/1	TP01	2.0-2.5	Sandy CLAY	3	3	2	1	1	12.7	1740	16.2
28368/2	TP02	1.5-2.0	Silty gravely fine SAND	5	4	2	2	1	N.P	2046	9.5
28368/3	TP03	1.4-1.7	Sandy to gravely CLAY	4	3	1	1	1	16.3	1889	14.3
28368/4	TP04	1.4-1.8	Silty gravely fine SAND	7	6	4	3	2	6.9	1988	12.2
28368/5	TP05	1.3-1.7	Silty gravely fine SAND	9	8	6	5	4	9.4	2017	12.2

- CBR – California bearing ratio
- OMC – Optimum moisture content

PI – Plasticity Index

MDD – Maximum Dry

Density

NP – Non-plastic

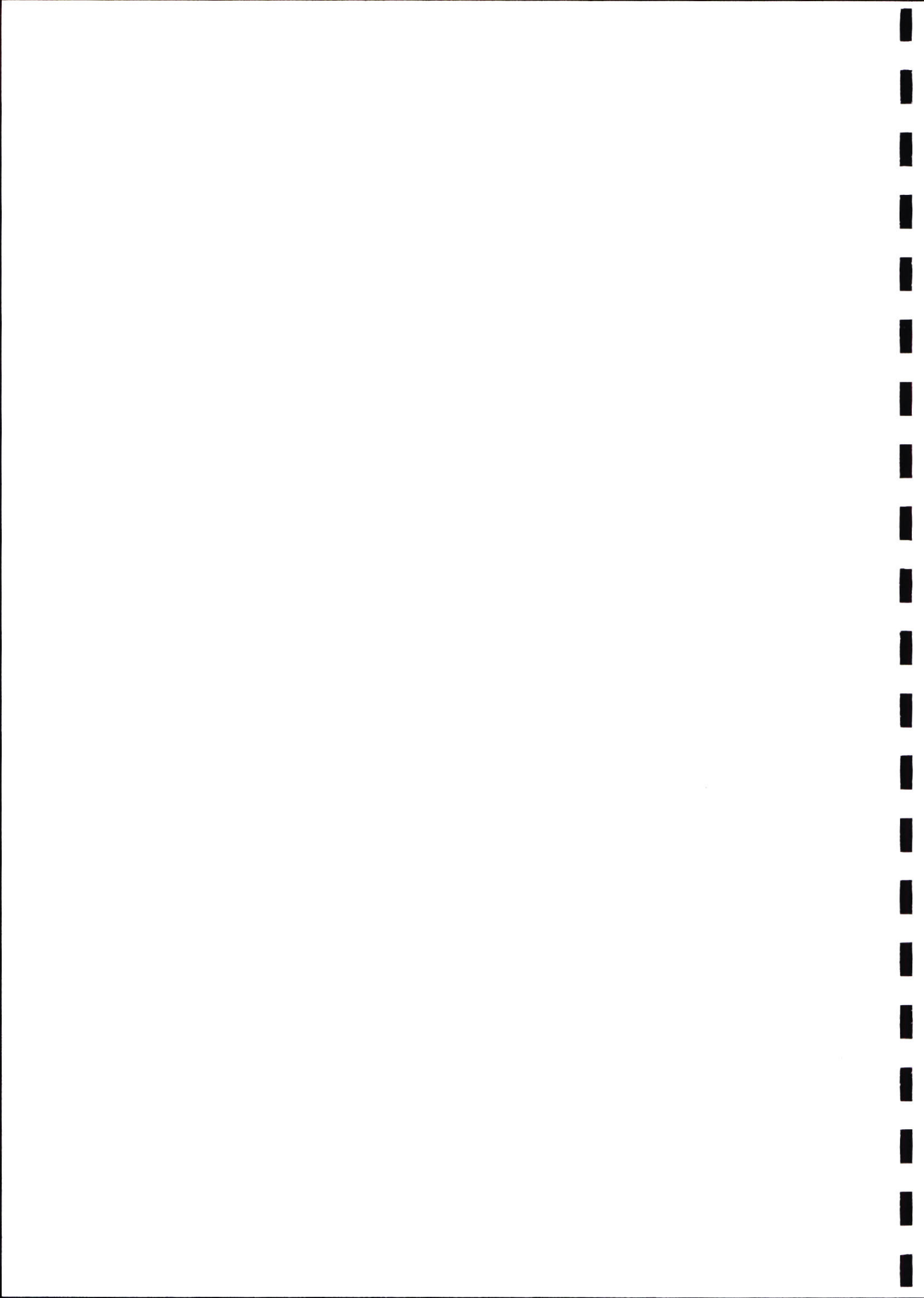
6. GEOTECHNICAL EVALUATION

6.1 Excavation conditions

During excavation of the trial pits the general depths and anticipated excavation classes of the encountered substratum were assessed. All horizons encountered in the trial pits could be removed using light earthmoving equipment and would, therefore, classify as 'soft excavation' material according to SANS 1200D. The 'soft excavation' material extends to depths of at least the maximum reach of a TLB (i.e. 3.0 mbgl). The depth to 'intermediate excavation' or 'hard excavation' material was not confirmed during the present investigation.

6.2 Bearing Capacity

Based on observations made in the trial pits and preliminary modelling, the maximum bearing capacities have been calculated based on Meyerhoff's method (Braja, 2017). Following this, for the proposed structure an allowable bearing capacity of 150 kPa should be used for foundation design.



Granting information available of the proposed structures, the following recommendations should be considered:

- Lighter structures that are to be founded a near existing ground level should be founded at a depth of 0.5 to 0.7 mbgl. Compact soils beneath the footings to a depth of 1.5 times footing width to 97% Mod AASTHO density, potentially creating presumed bearing capacity values of 150 kN/m².
- A footing width of 700 mm should potentially be adopted.
- Where heavily loaded structures are required, footings should be excavated 1.5 times the footing width below the recommended founding level replacing suitable material in compacted layers of 150 mm at 97% MOD AASTHO or piled foundation systems should be considered. This would be subject to further detailed geotechnical investigations.

If the desired densities beneath the footings cannot be achieved, consideration should be given to a ring-beam in conjunction with micropiles. This would also be subject to further detailed geotechnical investigations.

6.3 Settlement

It must be noted that in areas where occurrences of thick (deep) and thin (shallow) weathered granitic soils lie directly adjacent to one another differential settlement may exceed 10 mm.

6.4 Reuse of in-situ Soil

Excavated material from foundation trenches will consist of clay-rich gravelly SAND and gravelly clays. This material is not suited for use in construction due to the high fines content and should be spoiled off site and/or sent to waste. Alternatively, the clay materials excavated from the site may be incorporated in landscaping operations.

6.5 Groundwater and subsurface drainage

Groundwater was intersected at three of the five trial pits. Considering the regional geology, it is evident that a variably perched water table can likely form in the Groenfontein region during winter with seepage localised below the ferruginised pebble layer at the weathered colluvium - residual granite interface. The perched water table is especially evident near the western border of the property, with the water table level likely matching the water level of the adjacent dam feature.

Sub-surface drainage will need to be appropriately designed and deep excavations should take into account the possibility for active dewatering during construction.

6.6 Slope stability and bracing

The topmost soil exposed during the main excavation would typically comprise sandy fill (comprising various clasts of variable sizes) overlying slightly humified and humified sand. These soils are mostly cohesionless. Cut faces should be battered back to suitable slope angles. We



recommend that the topmost silty sand soils (0.5 to 1.0 m) are battered back at an angle of least 1:1.5 in the short and long term.

Excavations left open for extended periods of time with shallow water tables, e.g. during periods of winter rain will induce sidewall failures. Therefore, construction should ideally be planned to allow for construction during the summer months. If excavations are required to remain open for long durations of time, permanent or temporary lateral earth support system should be considered.

6.7 Preliminary NHBRC Classification

This site has been preliminarily designated as 'S2' in accordance with the NHBRC classification system (GFSH-2). This classification has been assigned based on the presence of potentially compressible clays which underlie the site at variable depths and thicknesses.

The following foundation solutions are recommended by NHBRC guidelines and could be considered during the design phase of the project:

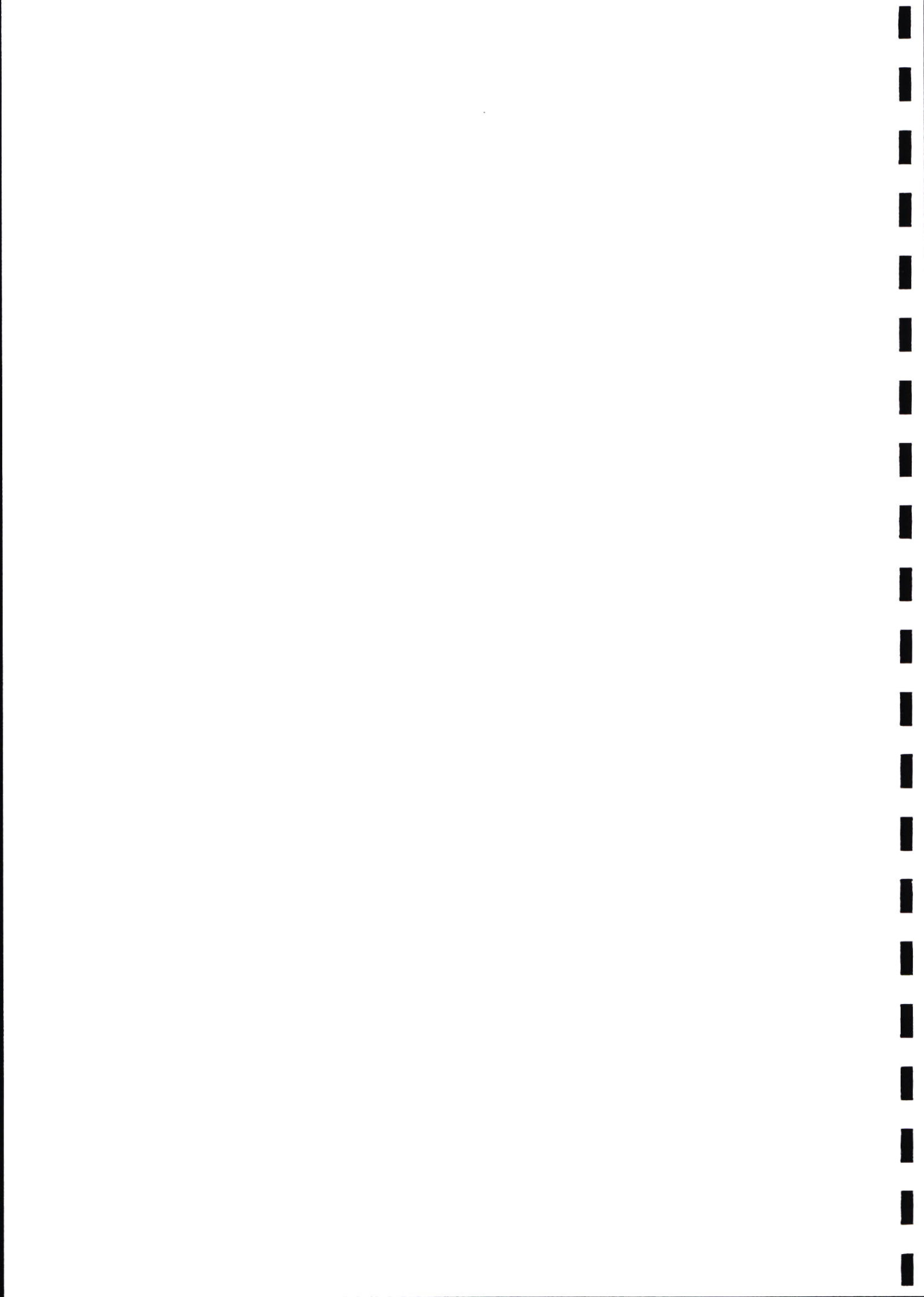
- Stiffened strip footings.
- Stiffened or cellular rafts.
- Deep strip foundations.
- Compaction of soils below individual footings.
- Piled or pier foundations.
- Soil rafts.

6.8 Access road and parking area

Reuse of excavated material for pavement construction should be at the site engineers' discretion and will only be potentially suitable for Roadbed. The following generalised layer works are recommended:

• Seal	Cape Seal	13/19 mm	to be specified by engineer
• Base	Imported G4	150 mm	100% MMD
• Sub-base	Imported G7	150 mm	95% MDD
• Roadbed	In situ G10	150 mm	93% MDD

Appropriate drainage precaution should be taken surrounding the constructed/upgraded roads, parking lots and paved areas.



7. RECOMMENDATIONS

Assessment of the trial pits and soils parameters indicate a generally continuous soil profile with key localised variations, such as depth of weathered in-situ granite, presence of large quartzitic boulders, and the variable presence of a perched aquifer. These observations indicate variation in the thickness of the weathered horizon, which contains high amounts of clay and silt. As a result, the magnitude of consolidation over time will also vary and differential settlement is expected where shallow basement is adjacent to deeper granite basement.

Based on this information, the foundation design should comprise one of the following features:

- Stiffened strip footings.
- Stiffened or cellular rafts.
- Deep strip foundations.
- Compaction of soils below individual footings.
- Piled or pier foundations.
- Soil rafts.

It is also recommended that the topmost soil layers on the slope are tapered at 30 to 40°.

Due to the potential for the development of a perched groundwater table a subsurface drain system may be required on all foundations. This should include vertical drains on the perimeter of the ground floor structures..

Any concentrated run-off during periods of high rainfall would have to be diverted away from foundation walls by means of a formal drainage system and discharged at an appropriate location. Consideration may be given to grading of slopes that surround the building (particularly around foundation walls), this may aid in the diversion of water away from potentially compressible horizons upon which the proposed dwellings are to be erected.

8. CONCLUSIONS

A geotechnical study has been completed to determine and classify the engineering properties on-site and to preliminarily inform the design of a proposed housing development in addition to identifying any potential risks associated with the development of the area.

The site is mostly underlain by colluvial sediments and silty to clayey residual granite materials; however, the possibility of encountering the less weathered granitic basement during excavation is, though not likely, still possible given the variability of the subsoil encountered.

The materials encountered in the trial pits are easily excavatable by a TLB, with the only hard excavation conditions likely occurring in the central northern portions of the property.

The subsoil conditions are favourable for the development of a perched water table; for this reason, drainage would have to be adequately addressed during the detailed structural design of the structure. This should include design of a dewatering system where required.

The results of the geotechnical investigation have revealed that the site may be classified as 'S2' according to the NHBRC site class classification system (GFSH-2, 2002). Furthermore, the results have indicated that development on the site may proceed, provided that the geotechnical aspects addressed in this report are considered and adhered to.

GEOSS has endeavoured to highlight and characterise the geotechnical conditions present at the property. However, due to the anisotropic (variable) nature of earth materials, each point on the site will present results that differ. For this reason, it is considered of the utmost importance that construction works be supervised/inspected by an appropriately qualified professional

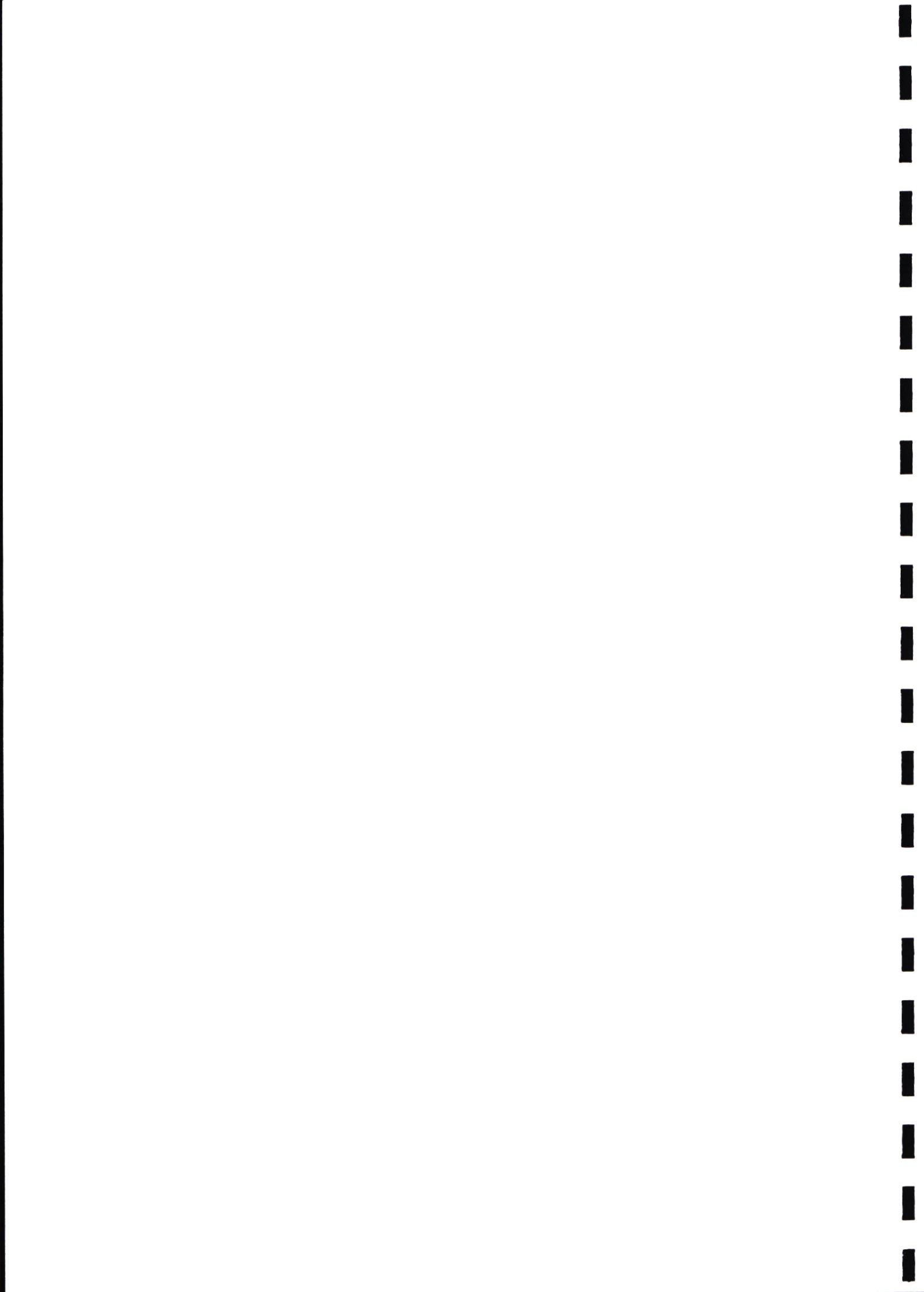
9. ASSUMPTIONS AND LIMITATIONS

A detailed services layout was not provided. Before excavation and/or on the site is to take place, it is recommended that either a buried services survey is undertaken, or that a detailed layout of the existing services is provided to the relevant contractor.

Although this study endeavoured to assess the physical characteristics of the soils encountered on Erf 571, it may not contain all the information that is necessary to carry out the detailed geotechnical design, particularly the retaining structures and structure settlements. Local variations in the depths and thicknesses of the respective horizons encountered on-site may exist. This would have to be inspected, confirmed and approved by a geotechnical practitioner.

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- SAIEG [South African Institute of Engineering Geologists]. 2001. Guidelines for Soil and Rock Logging in South Africa, 2nd Impression 2001, eds. A.B.A. Brink and R.M.H. Bruin, Proceedings, Geoterminology Workshop organised by AEG, SAICE and SAIEG, 1990.
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- Stapelberg, D. J., (2009). The Engineering Geology of Bellville and Environs Western Cape, South Africa. Council for Geoscience, Pretoria. ISBN: 978-1-920226-19-0.

11. APPENDIX A TRIAL PIT PHOTOS AND LOGS





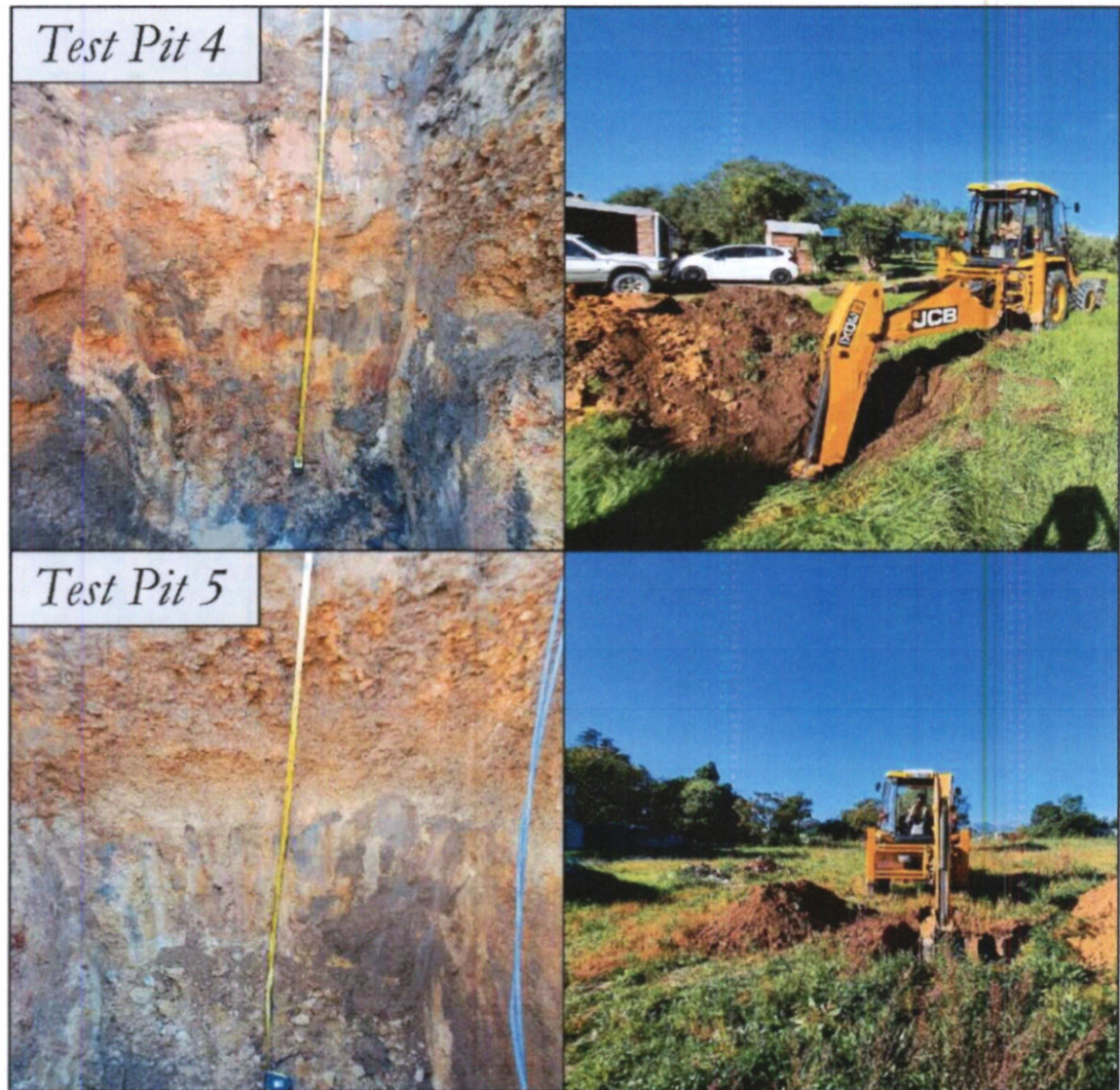


Figure 5: Images showing tests pits across the site.



Red Development
Groenfontein

HOLE No: TP 01
Sheet 1 of 1

JOB NUMBER: 5110

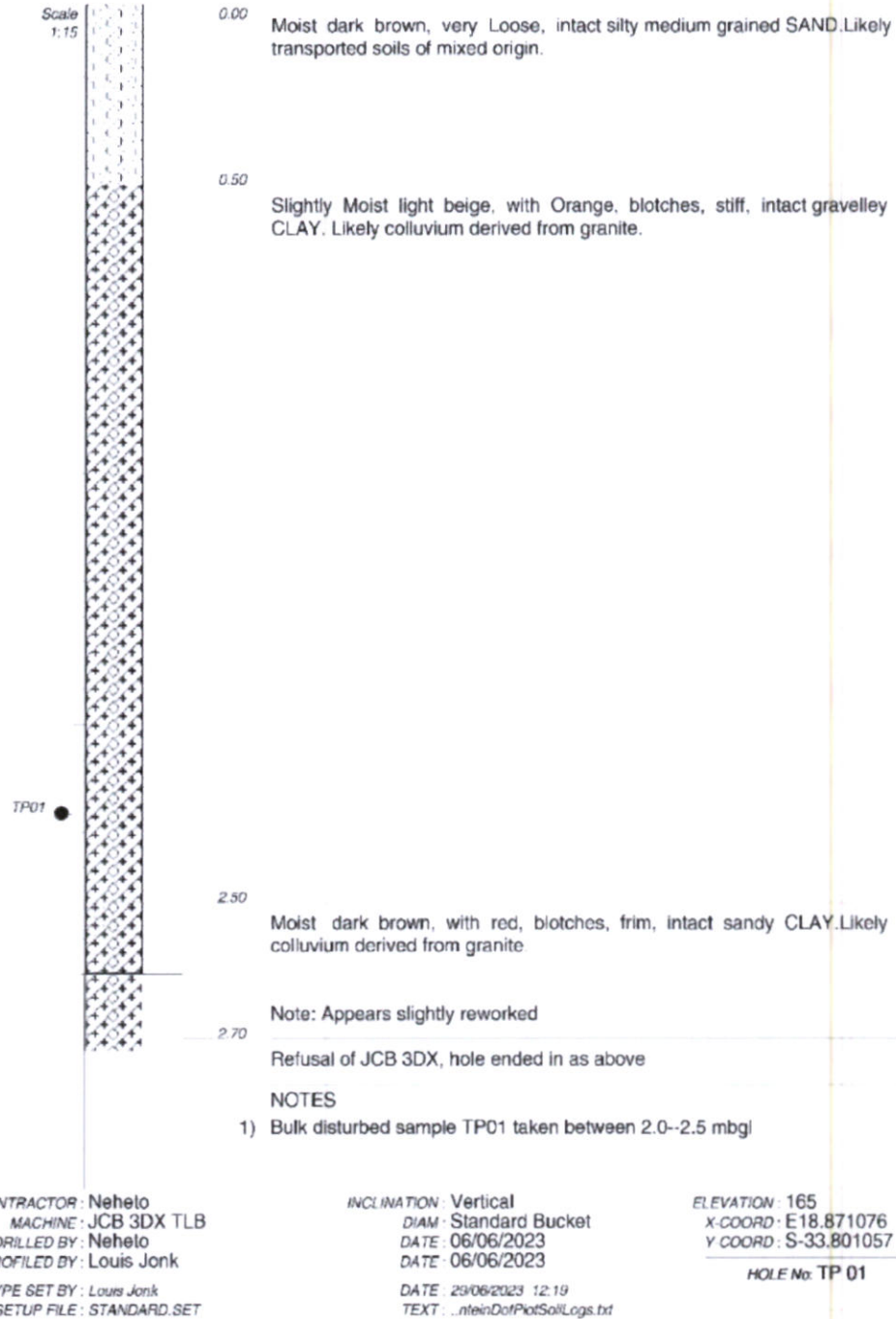
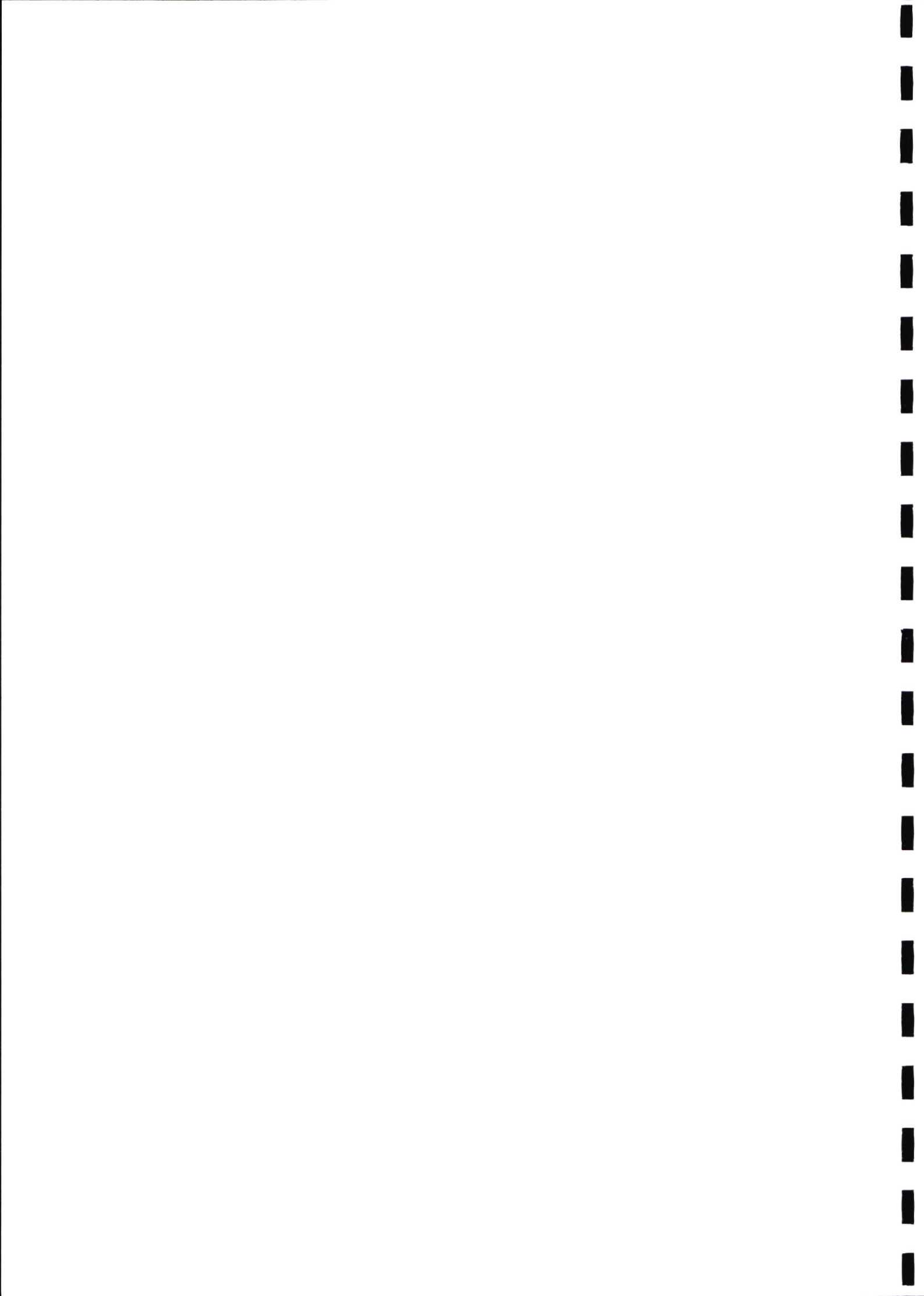


Figure 6: Trial Pit 1 (TP 01) soil log.

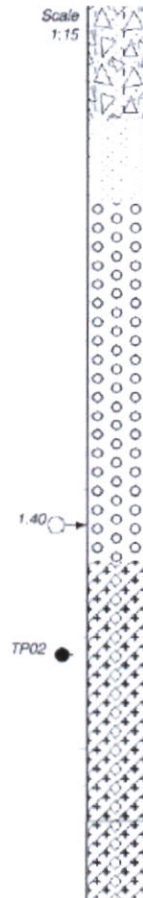




Red Development
Groenfontein

HOLE No: TP 02
Sheet 1 of 1

JOB NUMBER: 5110



0.00 Moist dark black, loose, intact, silty medium grained SAND. Likely transported soils of mixed origin.

Note: Building rubble and other contaminants present here

0.30 Moist medium beige, medium dense, intact, gravelly fine grained SAND. Likely hillwash (fine colluvium).

0.53 Moist medium brown with orange blotches, stiff, weakly cemented, intact, claye medium grained GRAVEL. Likely hillwash (fine colluvium).

1.12 Wet medium beige, loose, intact, claye medium grained GRAVEL. Likely alluvium.

1.50 Moist light white with red blotches, stiff, intact, gravelley CLAY. Likely residual granite.

2.20 Maximum reach of JCB 3DX, hole ended in as above

NOTES

- 1) Notable water seepage occurred at 1.40 m bgl
- 2) Bulk disturbed sample TP02 taken between 1.5--2.0 m bgl

CONTRACTOR: Nehelo
MACHINE: JCB 3DX TLB
DRILLED BY: Nehelo
PROFILED BY: Louis Jonk
TYPE SET BY: Louis Jonk
SETUP FILE: STANDARD.SET

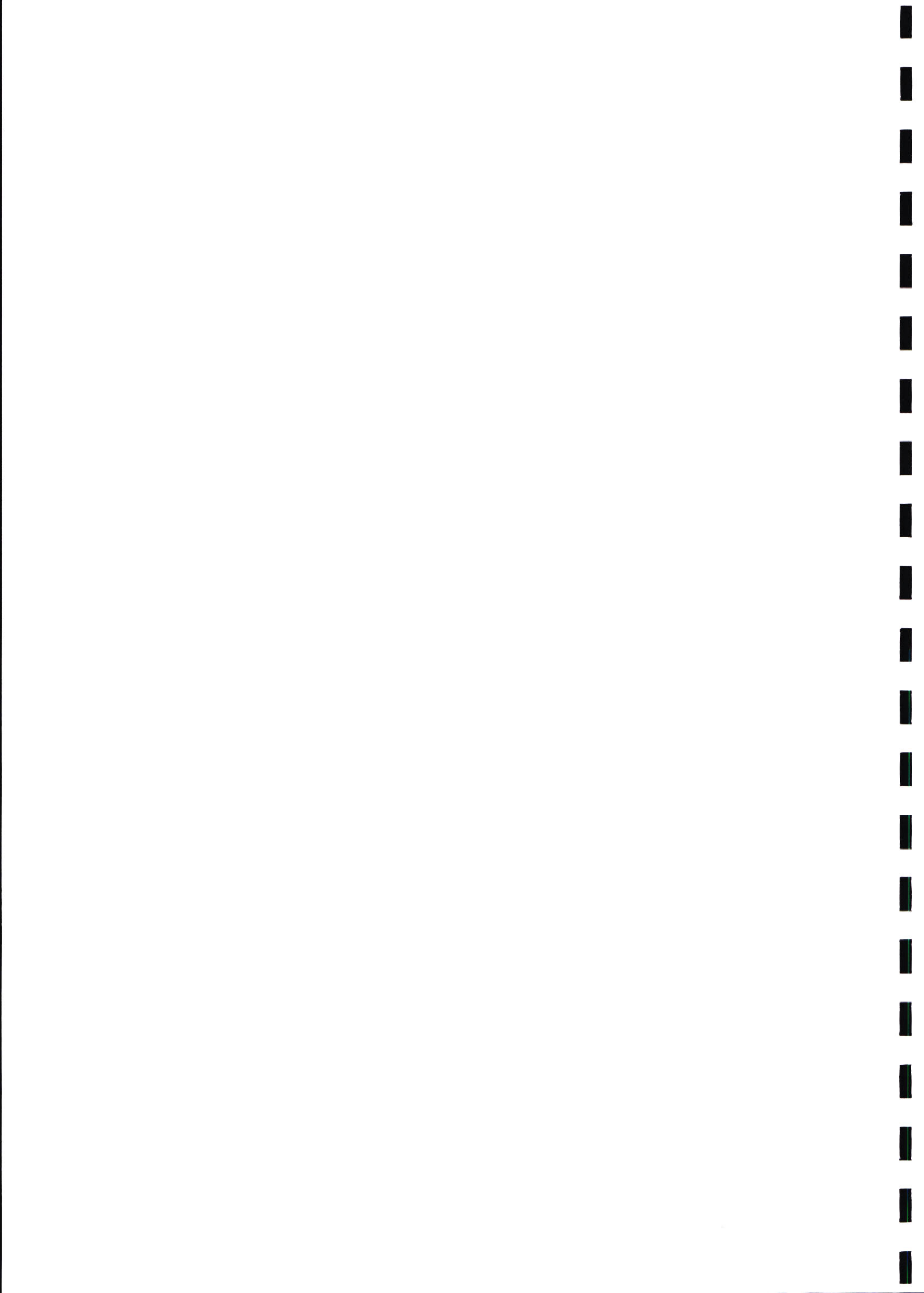
INCLINATION: Vertical
DIAM: Standard Bucket
DATE: 06/06/2023
DATE: 06/06/2023
DATE: 23/06/2023 12:19
TEXT: ...nleinDotPlotSoilLogs.txt

ELEVATION: 172
X-COORD: E18.8870613
Y-COORD: S-33.801667

HOLE No: TP 02

dotPLOT 7022

Figure 7: Trial Pit 2 (TP 02) soil log.

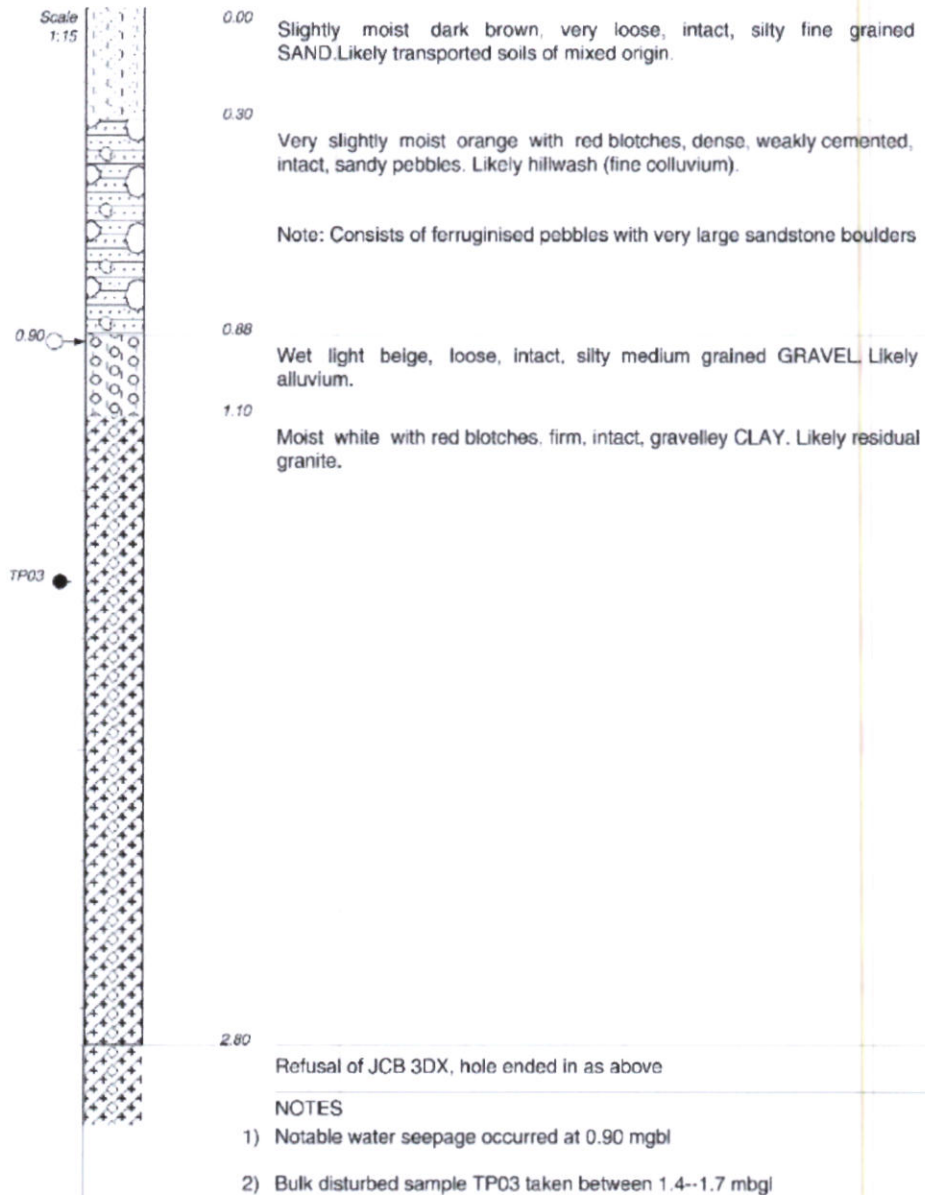




Red Development
Groenfontein

HOLE No: TP 03
Sheet 1 of 1

JOB NUMBER: 5110



CONTRACTOR: Nehelo
MACHINE: JCB 3DX TLB
DRILLED BY: Nehelo
PROFIED BY: Louis Jonk
TYPE SET BY: Louis Jonk
SETUP FILE: STANDARD.SET

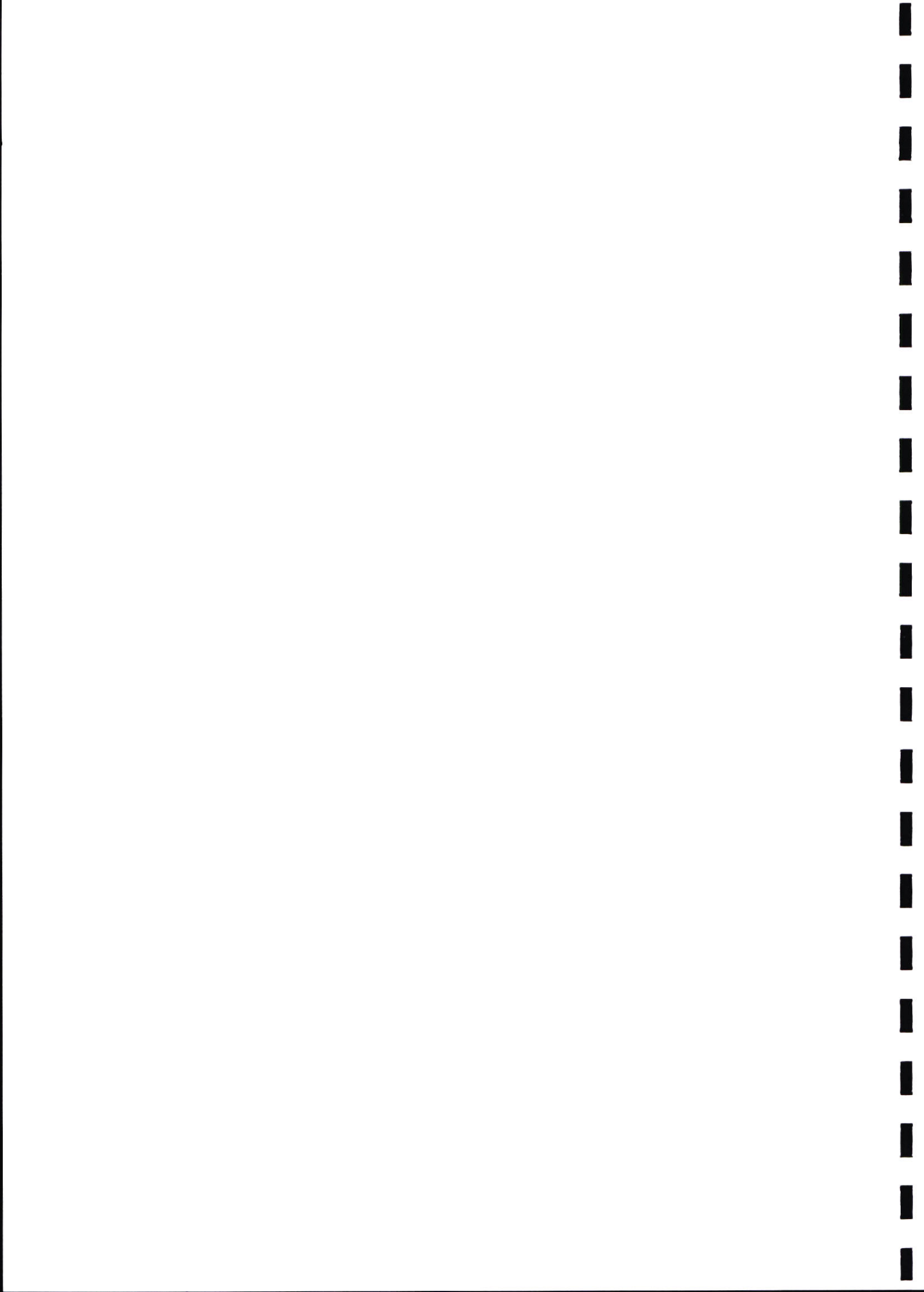
INCLINATION: Vertical
DIAM: Standard Bucket
DATE: 06/06/2023
DATE: 06/06/2023
DATE: 23/06/2023 12:19
TEXT: ..nreinDotPlotSoilLogs.txt

ELEVATION: 171
X-COORD: E18.87043
Y COORD: S-33.801251

HOLE No: TP 03

dotPLOT 7022

Figure 8: Trial Pit 3 (TP 03) soil log.

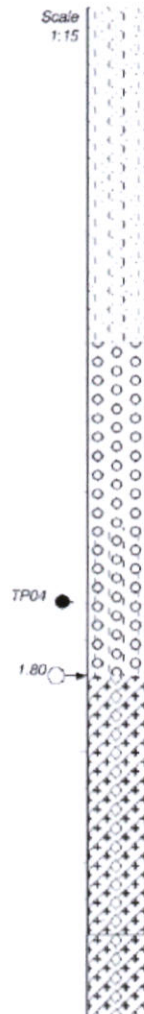




Red Development
Groenfontein

HOLE No: TP 04
Sheet 1 of 1

JOB NUMBER: 5110



0.00 Slightly moist dark brown, medium dense, intact, silty fine grained SAND. Likely transported soils of mixed origin.

Note: Very contaminated. Old landfill site. Becomes light brown at 70 cm depth

0.90 Moist light brown with orange blotches, medium dense, intact, claye coarse grained GRAVEL. Likely hillwash (fine colluvium).

1.40 Wet light beige, loose, intact, silty medium grained GRAVEL. Likely alluvium.

1.80 Very moist beige with orange blotches, stiff, intact, gravelley CLAY. Likely residual granite.

2.50 Maximum reach of JCB 3DX, hole ended in as above

NOTES

- 1) Notable water seepage occurred at 1.80 m bgl
- 2) Bulk disturbed sample TP04 taken between 1.4--1.8 m bgl

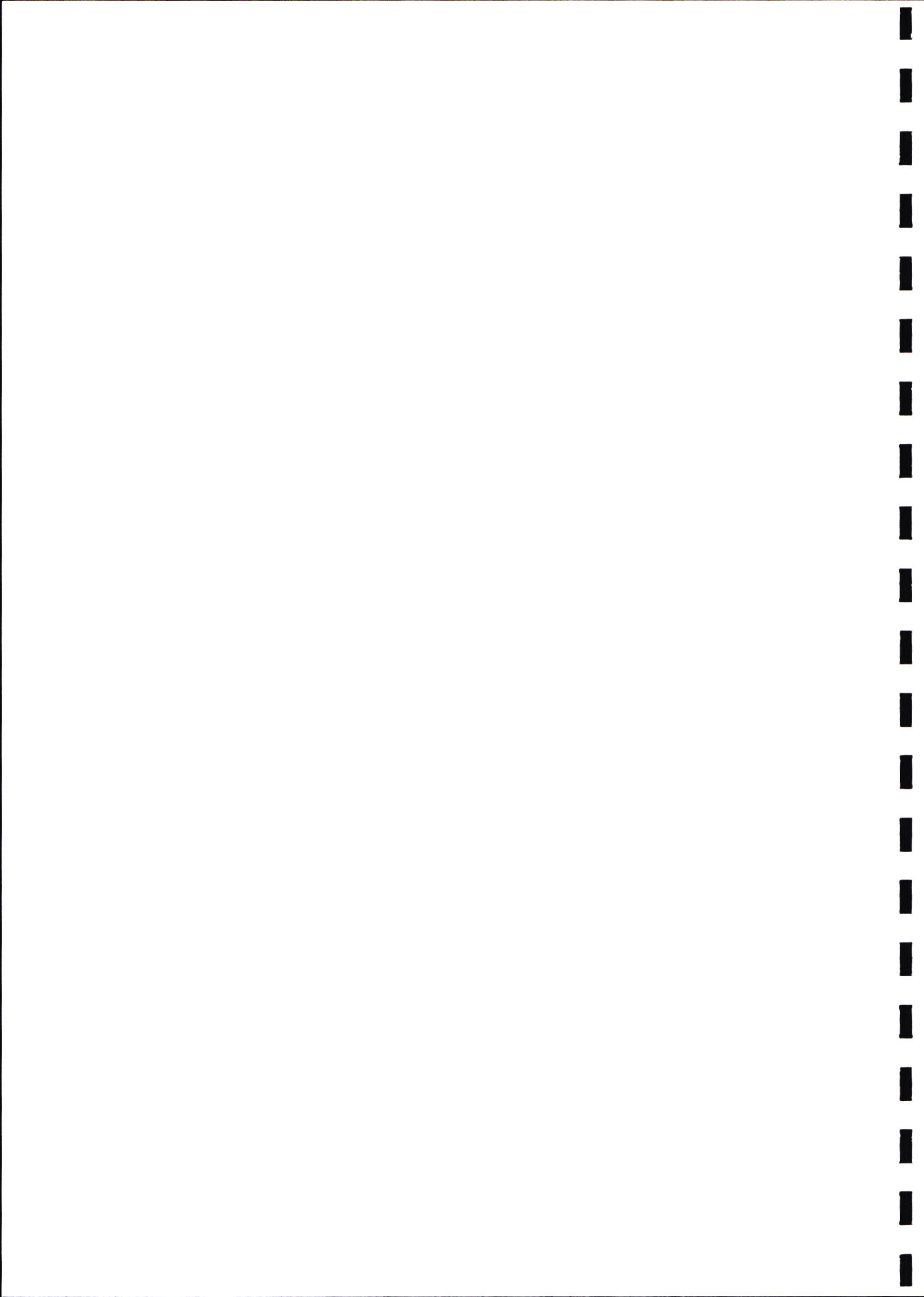
CONTRACTOR: Nehelo
MACHINE: JCB 3DX TLB
DRILLED BY: Nehelo
PROFIED BY: Louis Jonk
TYPE SET BY: Louis Jonk
SETUP FILE: STANDARD.SET

INCLINATION: Vertical
DIAM: Standard Bucket
DATE: 06/06/2023
DATE: 06/06/2023
DATE: 29/06/2023 12:19
TEXT: ..nteinDotPlotSoilLogs.txt

ELEVATION: 165
X-COORD: E18.869189
Y COORD: S-33.8003323
HOLE No: TP 04

dotPLOT 7022

Figure 9: Trial Pit 4 (TP 04) soil log.

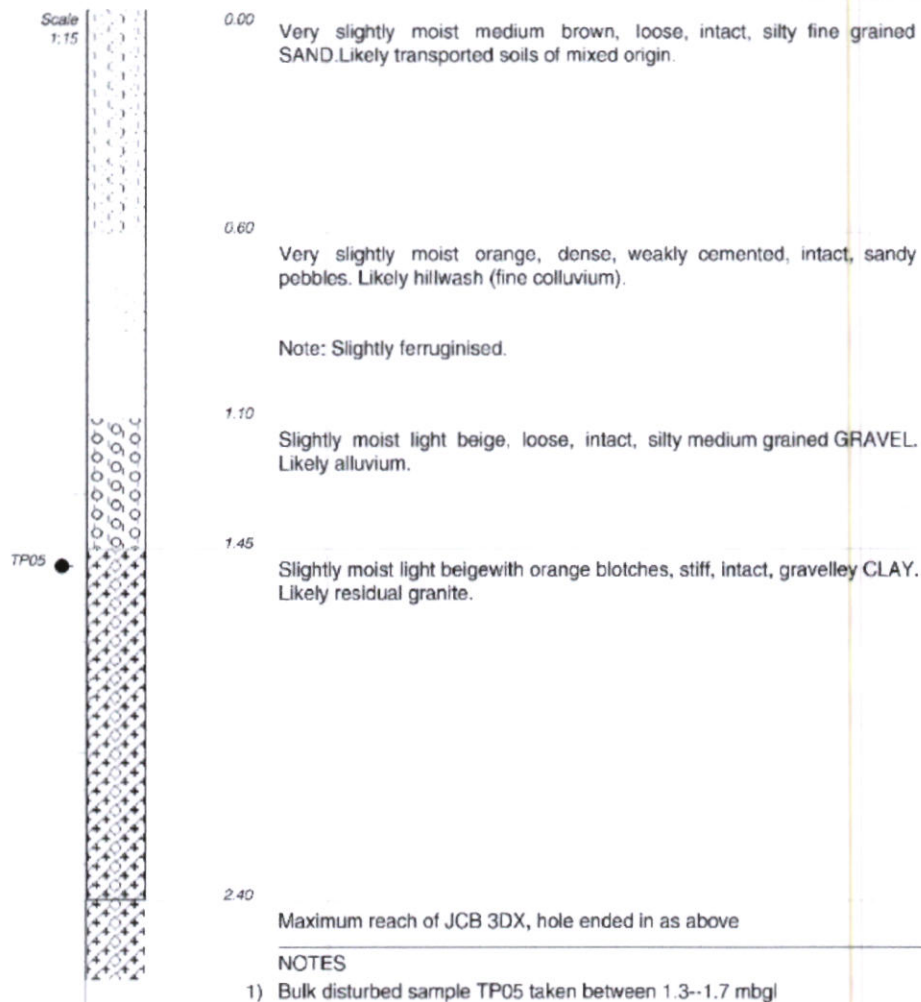




Red Development
Groenfontein

HOLE No: TP 05
Sheet 1 of 1

JOB NUMBER: 5110



CONTRACTOR: Nehelo
MACHINE: JCB 3DX TLB
DRILLED BY: Nehelo
PROFIED BY: Louis Jonk
TYPE SET BY: Louis Jonk
SETUP FILE: STANDARD.SET

INCLINATION: Vertical
DIAM: Standard Bucket
DATE: 06/06/2023
DATE: 06/06/2023
DATE: 29/06/2023 12:19
TEXT: ...nteinDotPlotSoliLogs.txt

ELEVATION: 169
X-COORD: E18.86964
Y-COORD: S-33.801878

HOLE No: TP 05

dotPLOT 7022

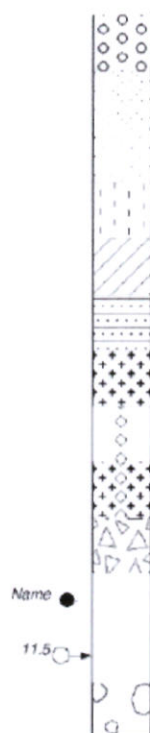
Figure 10: Trial Pit 5 (TP 05) soil log.



Red Development
Groenfontein

LEGEND
Sheet 1 of 1

JOB NUMBER: 5110



GRAVEL	{SA02}
SAND	{SA04}
SANDY	{SA05}
SILTY	{SA07}
CLAY	{SA08}
SANDSTONE	{SA11}
PLUTONIC/norite/syenite	{SA17}
FREE QUARTZ/visible quartz	{SA44}
GRANITE	{SA17}{SA44}
RUBBLE	{SA31}
DISTURBED SAMPLE	{SA38}
WATER SEEPAGE/water strike	{CH50}
COBBLES	{SA58}

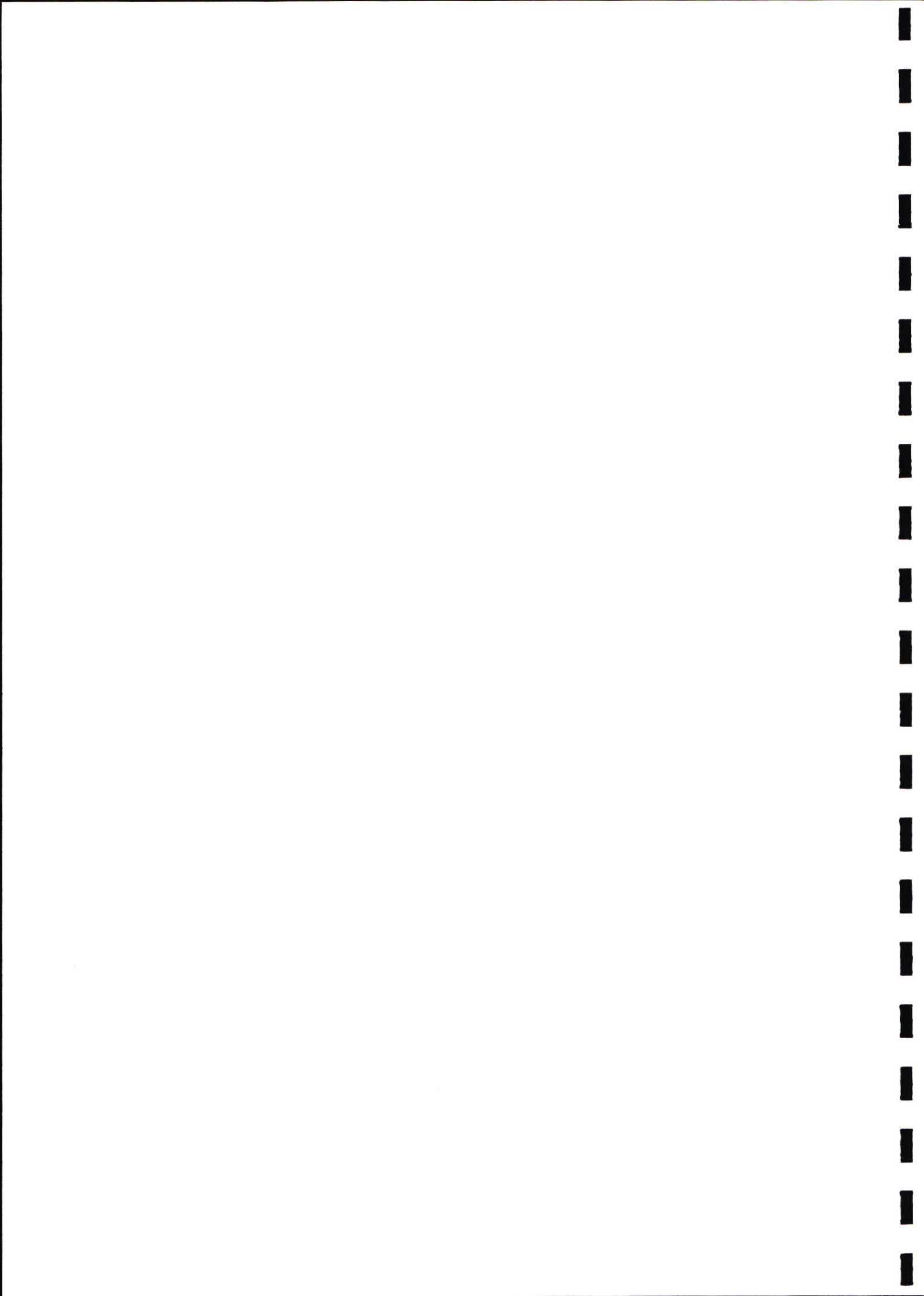
CONTRACTOR:
MACHINE:
DRILLED BY:
PROFILED BY:
TYPE SET BY: Louis Jonk
SETUP FILE: STANDARD.SET

INCLINATION:
DIAM:
DATE:
DATE:
DATE: 29/08/2023 12:19
TEXT: ...nteinDotPlotSoilLogs.txt

ELEVATION:
X-COORD:
Y COORD:

LEGEND
SUMMARY OF SYMBOLS
dotPLOT 7022

Figure 11: Trial holes legend.



12. APPENDIX B: DCP TESTING LOGS

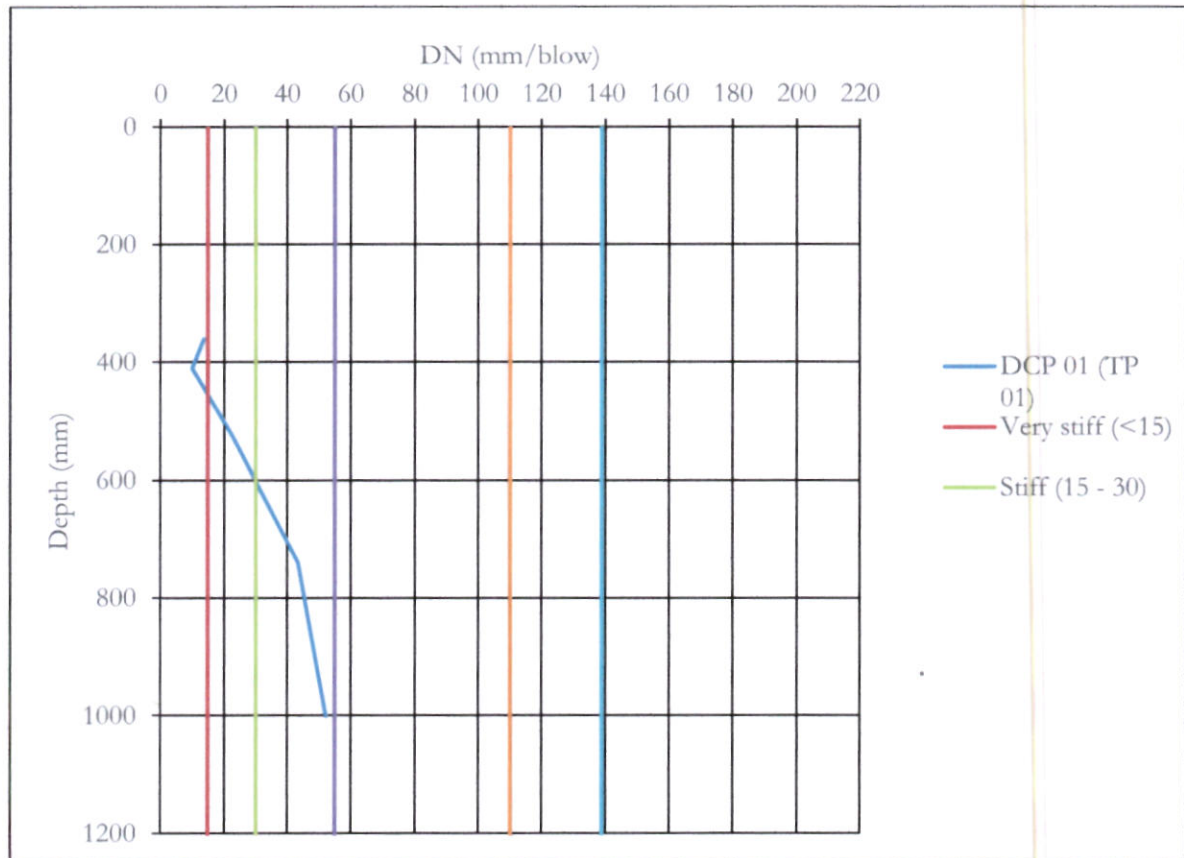


Figure 12: DCP_1.

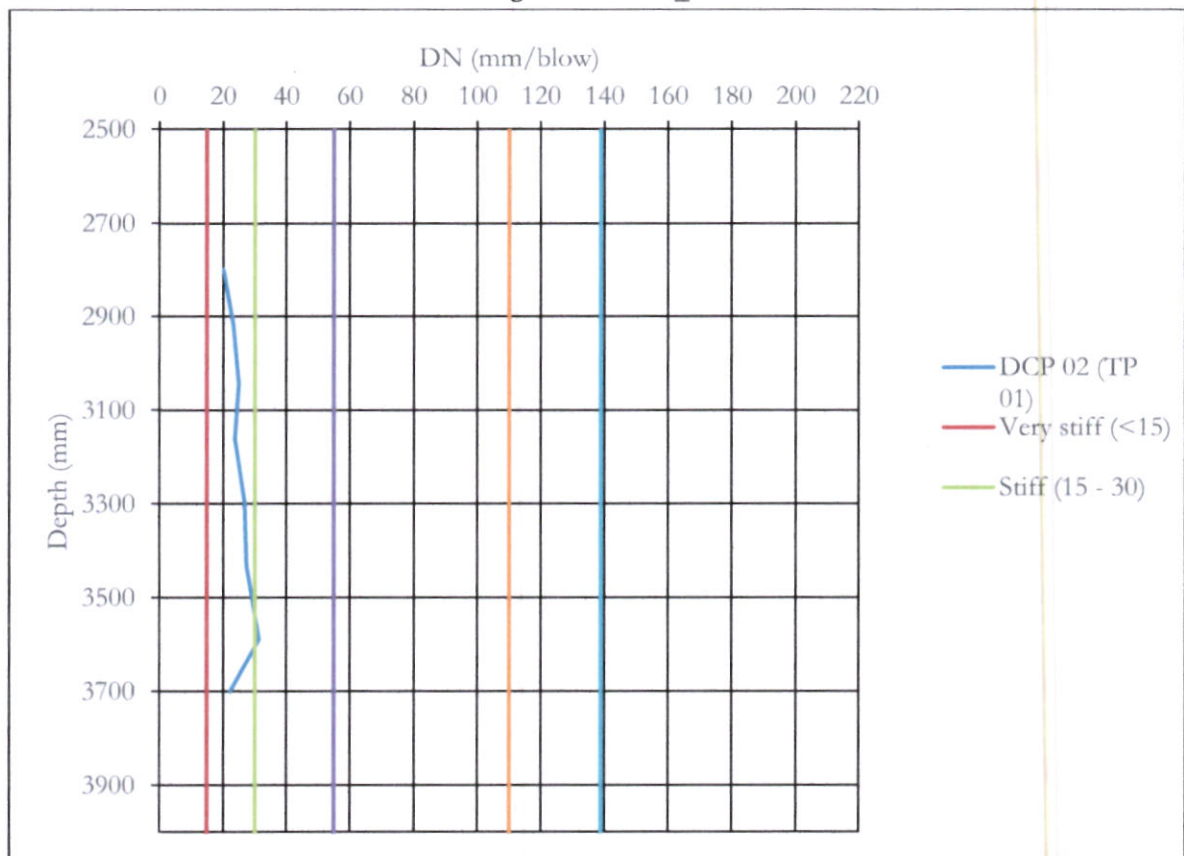


Figure 13: DCP_2.

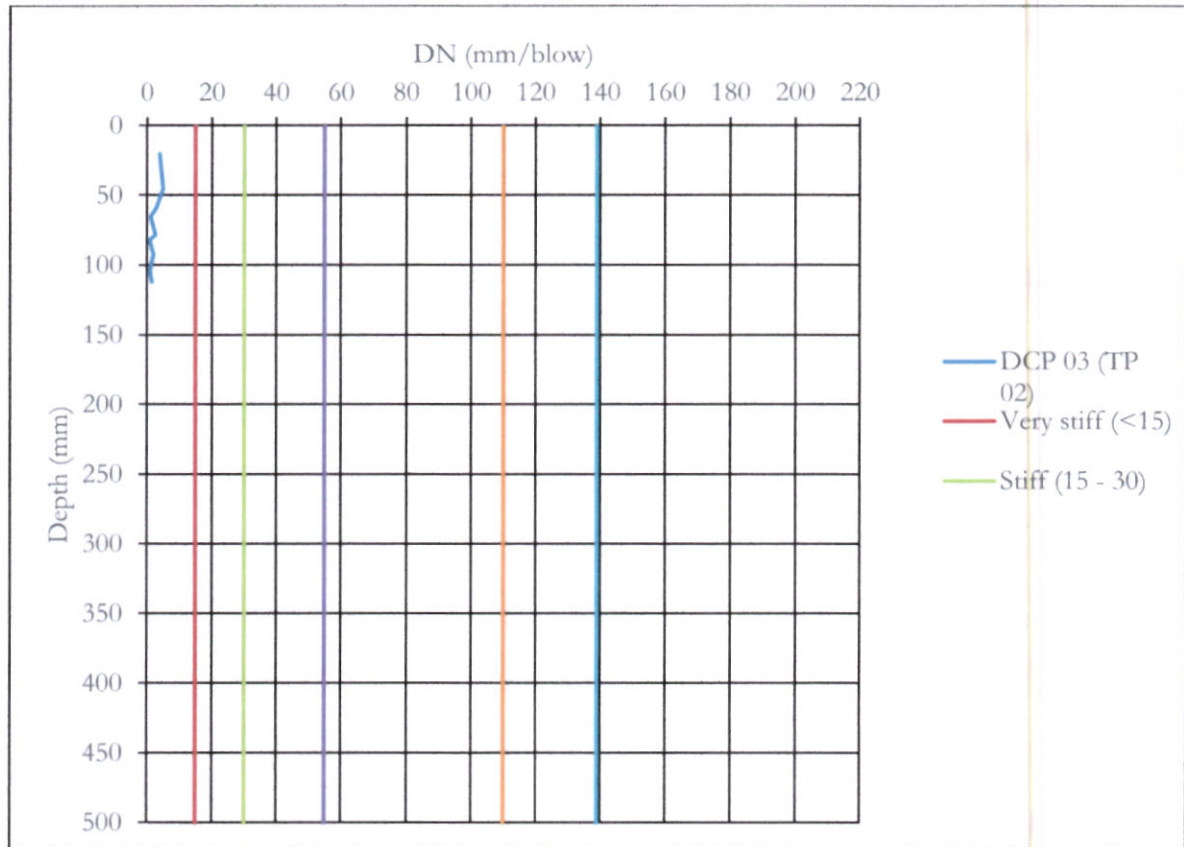


Figure 14: DCP_3

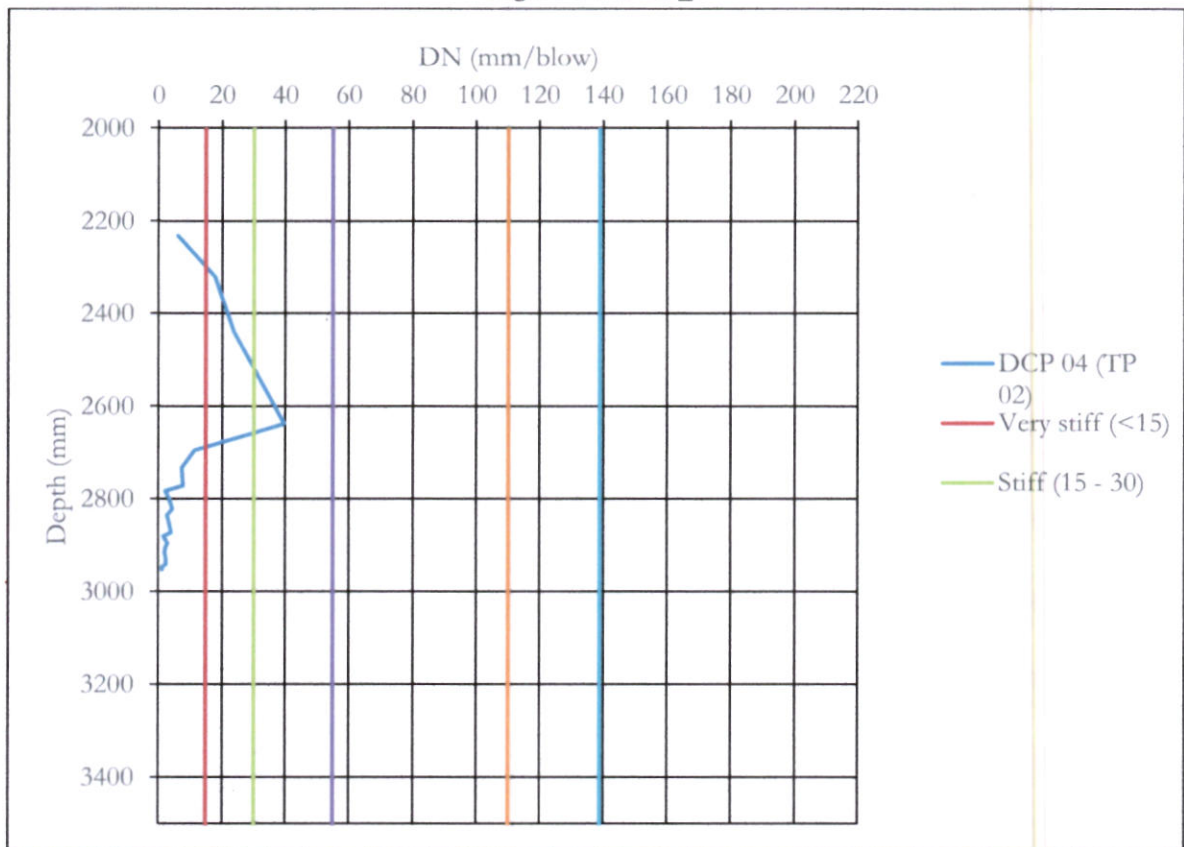


Figure 15: DCP_4.

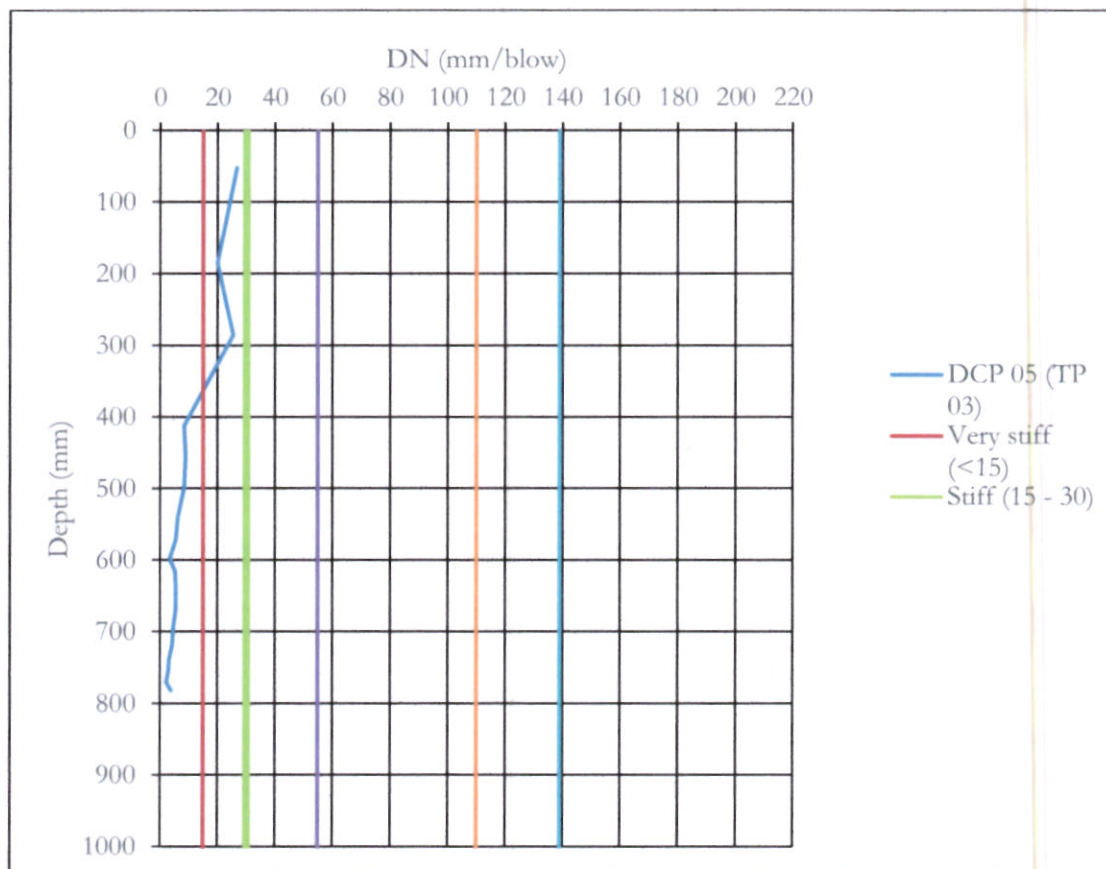


Figure 16: DCP_5

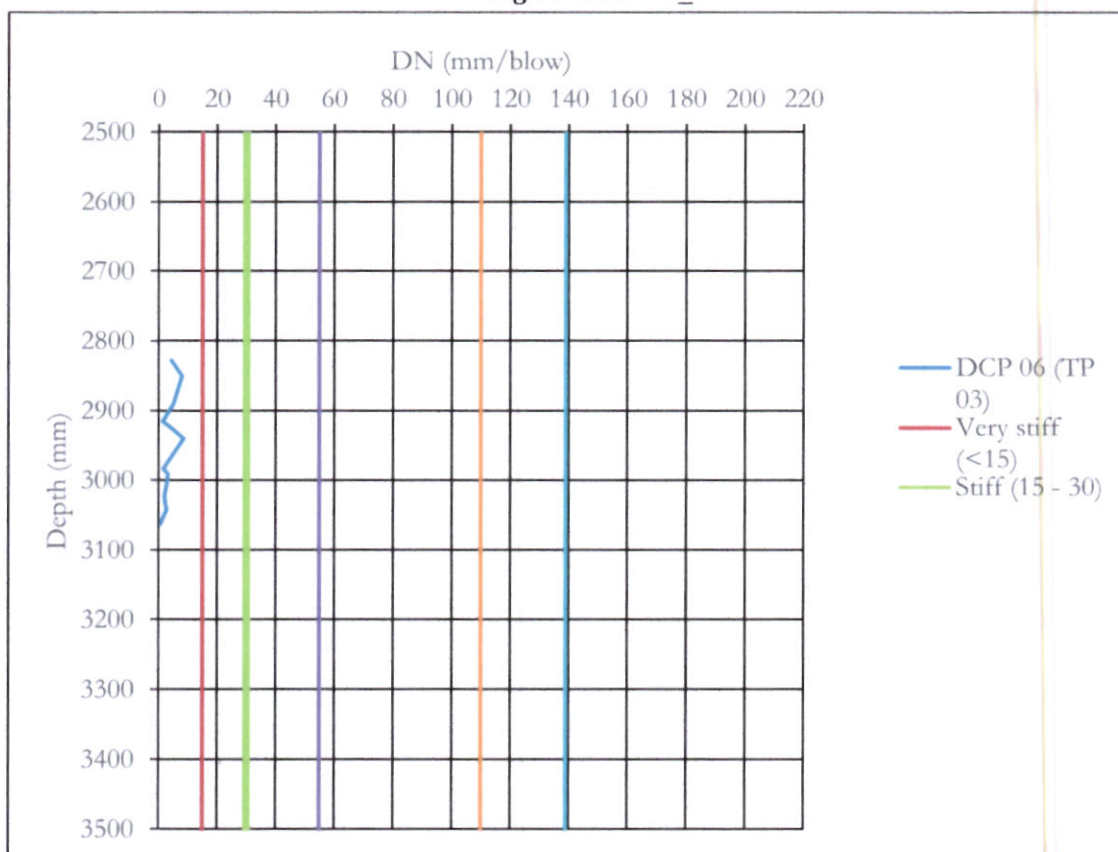


Figure 17: DCP_6.

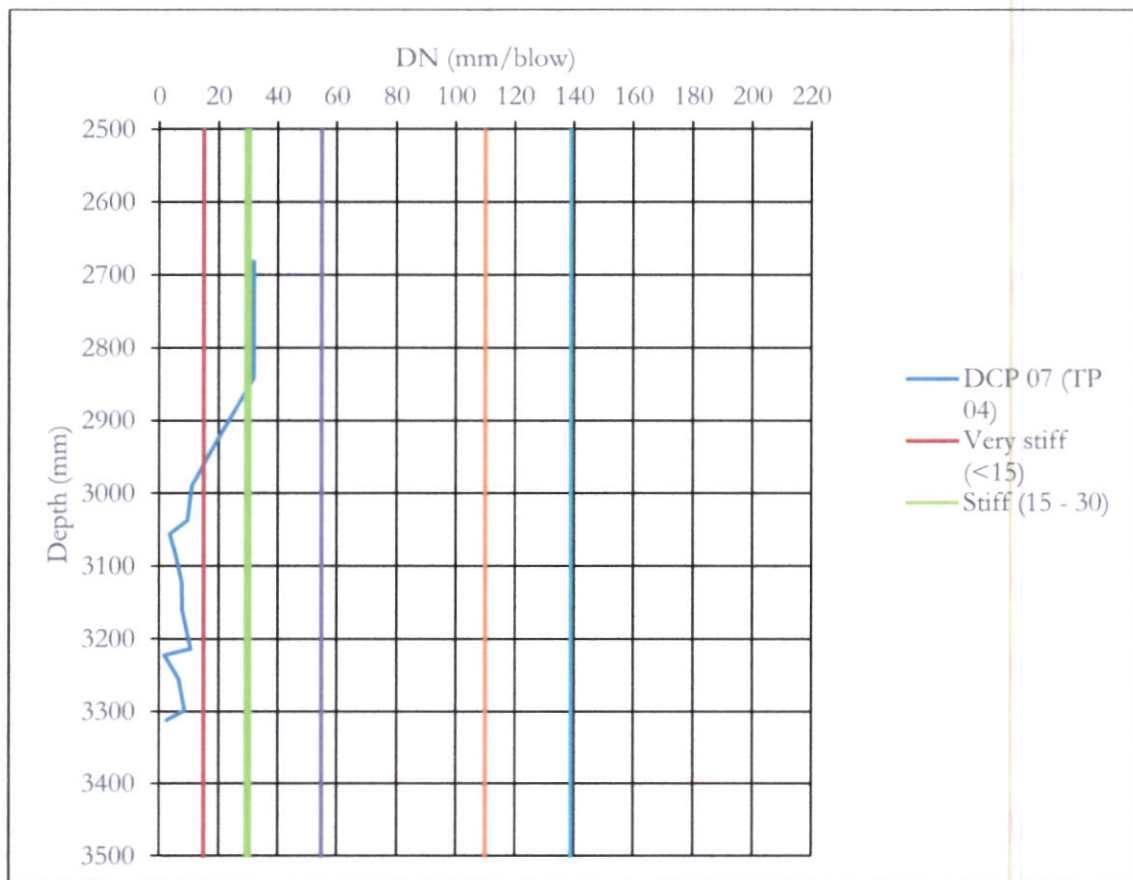


Figure 18: DCP_7.

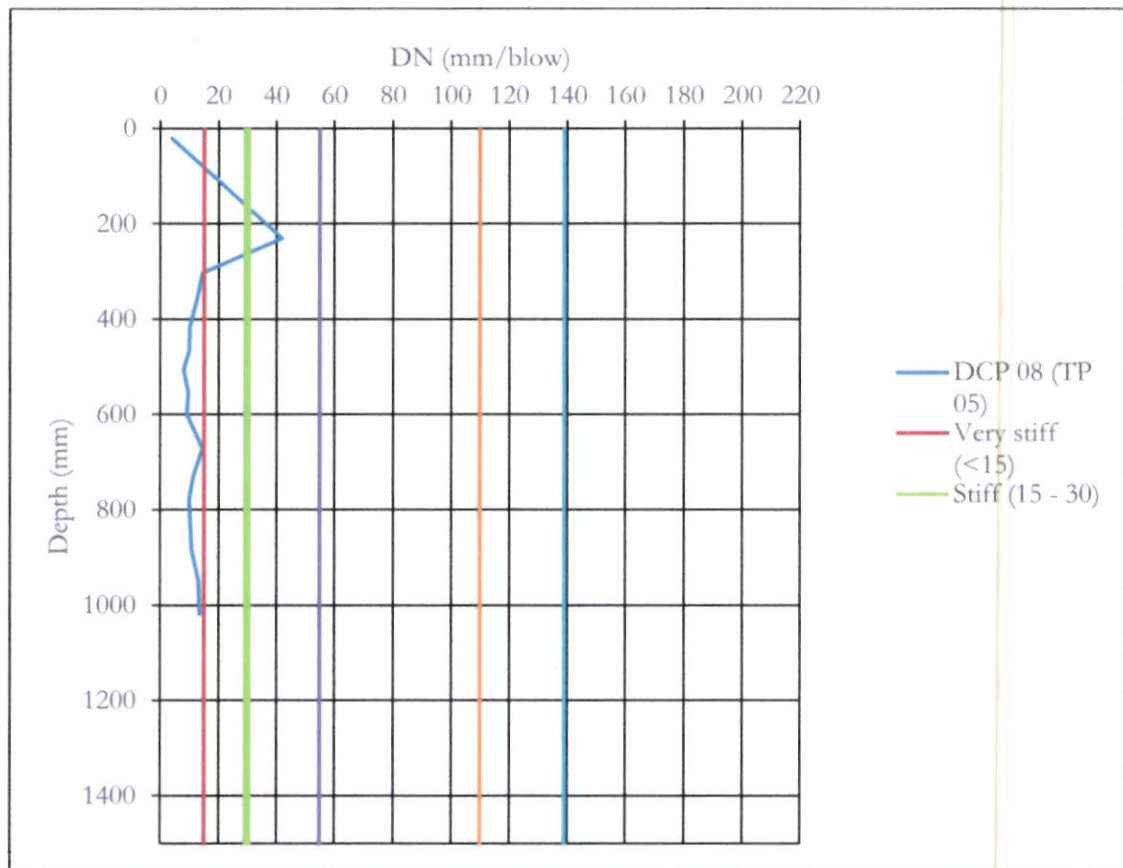


Figure 19: DCP_8

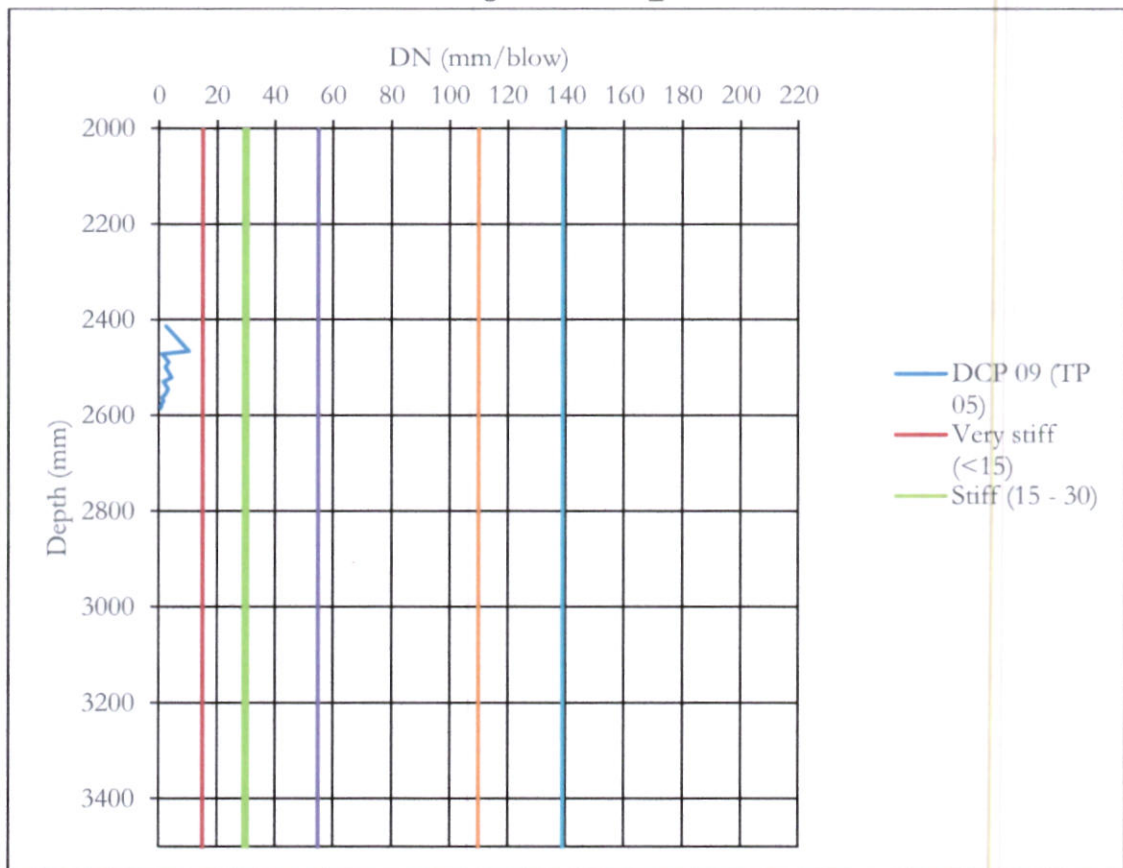


Figure 20: DCP_9.

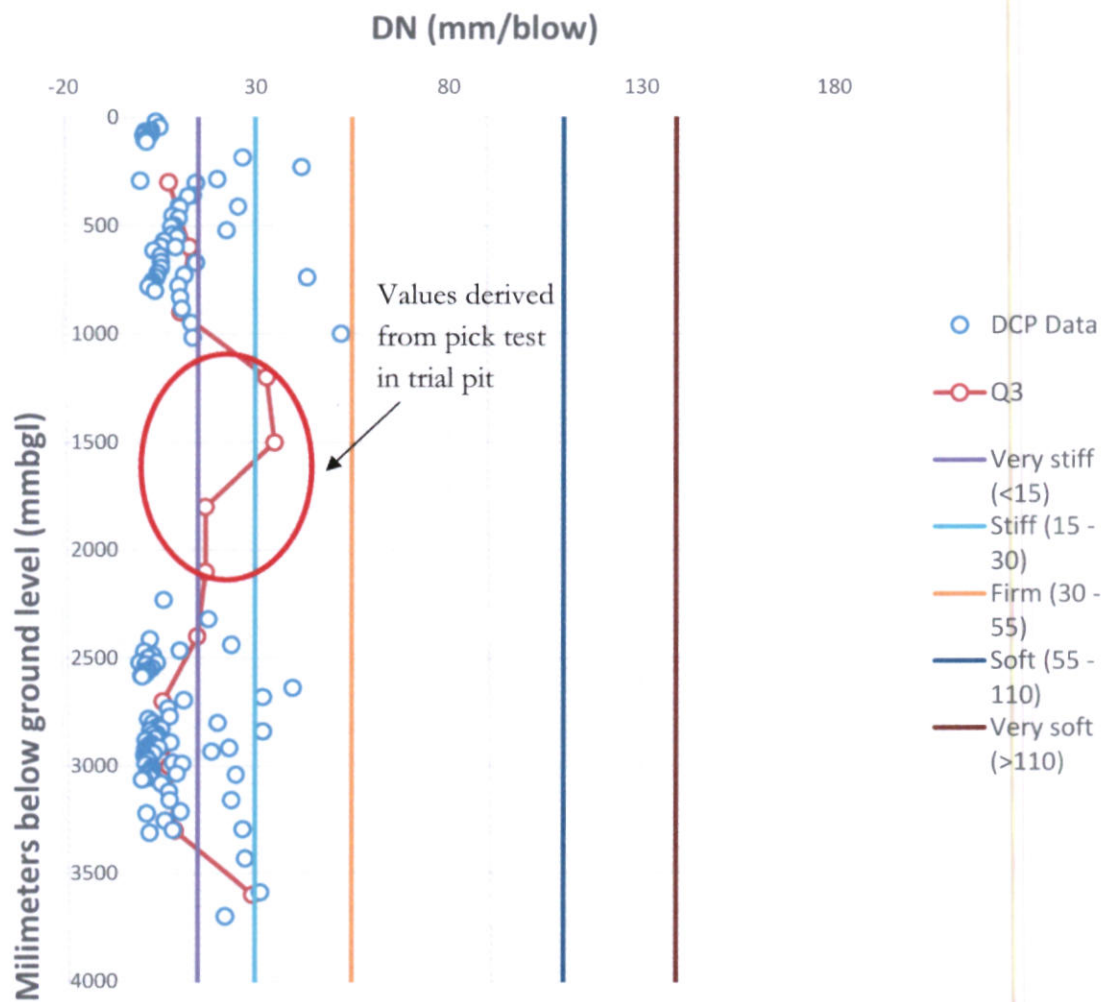
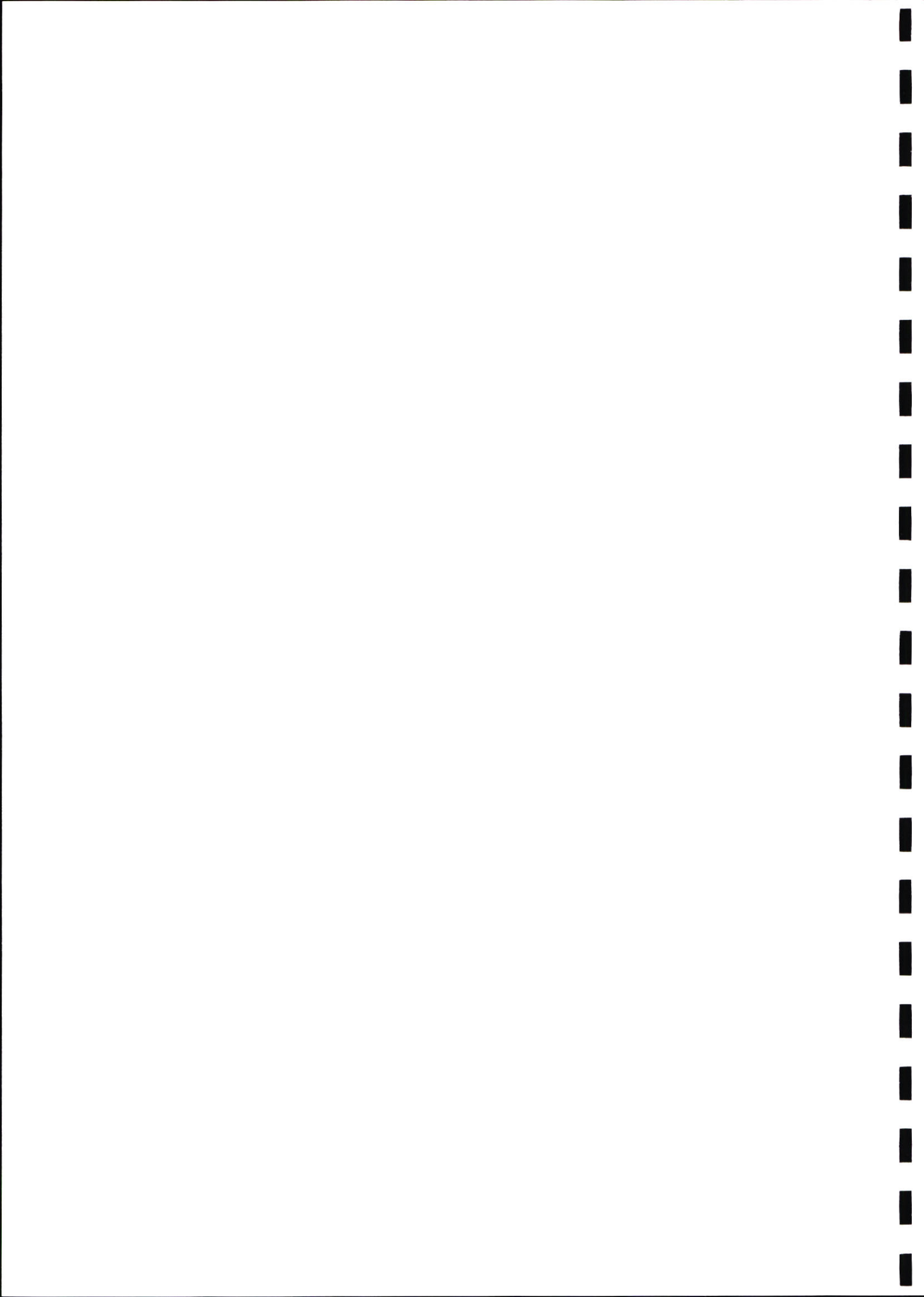
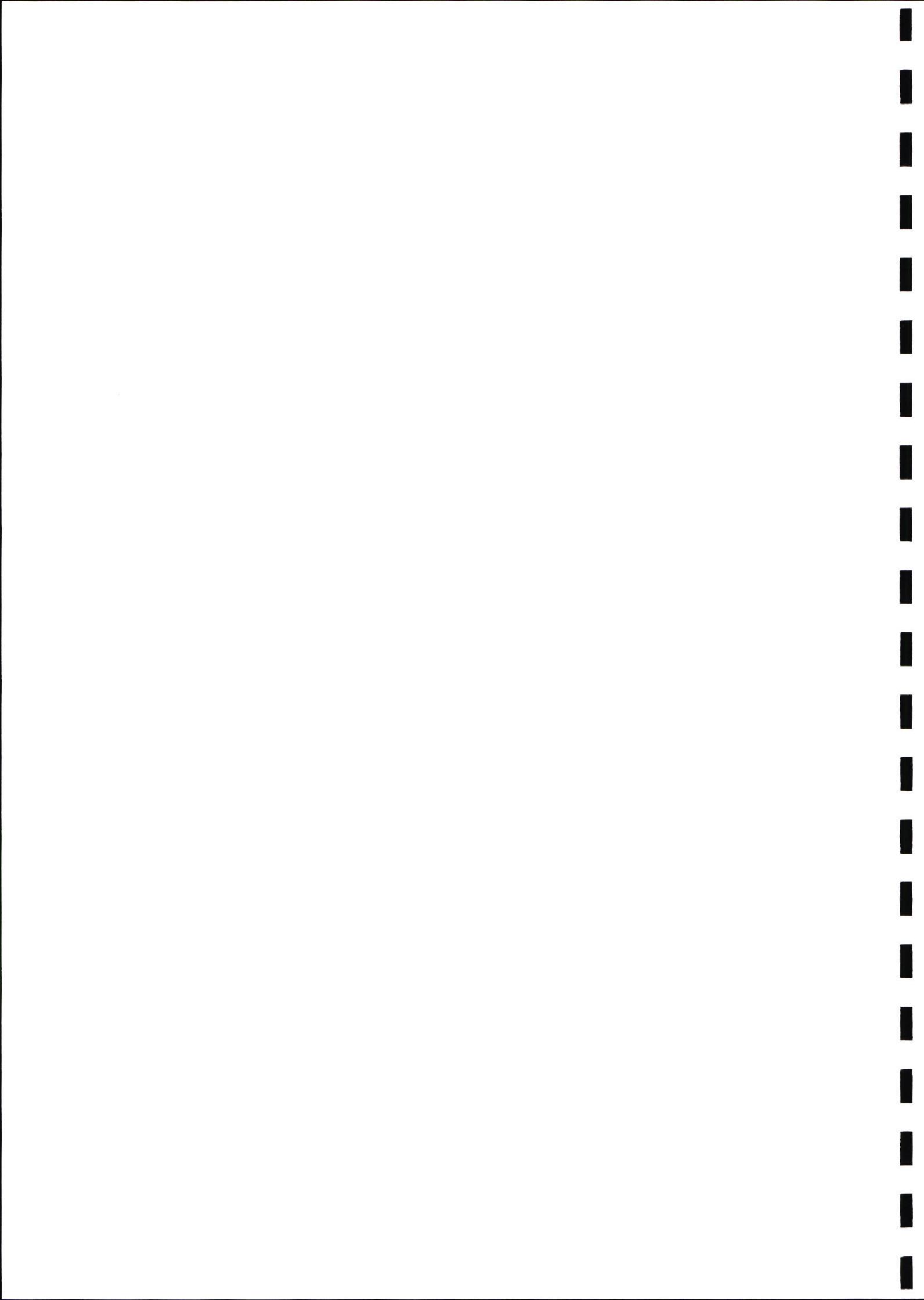


Figure 21: Combined DCP data from the current study



13. APPENDIX C: LABORATORY ANALYSIS





STEYN-WILSON
LABORATORIES

CIVIL ENGINEERING TESTING LABORATORIES



11 Gooderson Road Blackheath
PO Box 58 Blackheath 7581
Tel: 021 905 0435
Fax: 086 499 9482
Email: info@steyn-wilson.co.za
Web: www.steyn-wilson.co.za

Client: **GEOSS South Africa**
Project: **5110 Groenfontein**
Attention: **Mr L Jonk**
Your Ref. No: **-**
Date Reported: **19/06/2023**

TEST REPORT REFERENCE NUMBER / JOB NUMBER :

SWL28368

Dear Sir / Madam

Herewith please find the original reports pertaining to the above mentioned project.

Test Requested

4 x MOD / CBR / FOUNDATION INDICATOR

Site Sampling and Materials Information

Sampling Method: Specimens delivered to Steyn Wilson Laboratory

Environmental Condition: Cold & Rainy

Deviation from the prescribed test method: No deviation from standard test method.

Responsibility of information disclaimer: The sample information was received from the customer. Results apply to the sample as received from the Customer.

FINAL REPORT

We would like to take this opportunity to thank you for your valued support. Should you have any further enquiries please don't hesitate to contact me.

Yours Faithfully

STEYN-WILSON LABORATORIES (PTY) LTD

Remarks:

- Information contained herein is confidential to STEYN-WILSON PTY LTD and the addressee.
- Opinions & Interpretations are not included in our schedule of Accreditation.
- The samples were subjected and analysed according to ASTM.
- The results reported relate only to the sample tested. Further use of the attached information is not the responsibility or liability of STEYN-WILSON LABORATORIES (PTY) LTD.
- This document is the correct record of all measurements made, and may not be reproduced other than with full written approval from a director of STEYN-WILSON LABORATORIES (PTY) LTD.
- Measuring equipment is traceable to national standards (Where applicable).
- Should there be any deviation from the prescribed test method comments will be made thereof, pertaining to the test on the relevant materials report.
- Uncertainty of measurement is calculated and corresponds to a coverage probability of approximately 95%. Available on request.
- The decision rule states that the measurement of uncertainty can be applied by the customer to the test results, on request. It is not the responsibility or liability of STEYN-WILSON LABORATORIES (PTY) LTD.

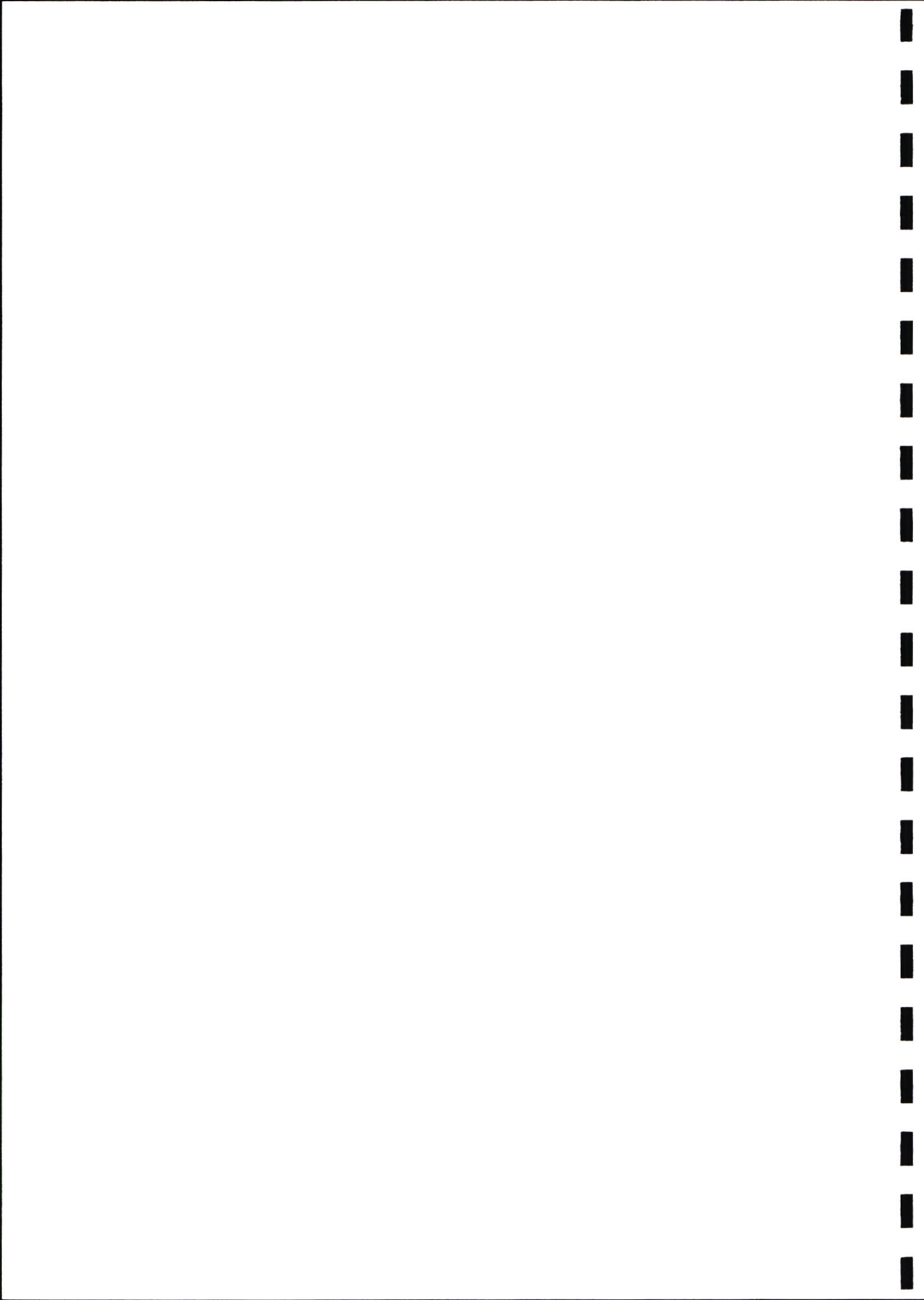
Mr. J. Steyn
Technical Signatory

DIRECTORS: **Mr. J. Steyn ND-Civil (Managing) | Mr. R. Wilson B-Tech Civil (Operations)**

Computer by: M. Jonk

Approved by: J. Steyn / R. Wilson

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04 March 2022

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 Web: www.steynwilson.co.za

Customer: **GEOSS South Africa**
 9 Quantum Street, Techno Park, Unit 12 Technostell Building
 Stellenbosch
 7600
 Attention: **Mr L Jonk**

Project: **5110 Groenfontein**
 Date Received: **07/06/2023**
 Date Reported: **19/06/2023**
 Req Number: **-**

MOD / CBR / FOUNDATION INDICATOR - ASTM D422 / SANS 3001 GR10 / SANS 3001 GR12 / SANS 3001 GR20 / SANS 3001 GR40 / TMH1 A1* / TMH1 A12T*

Material Description: **Light Yellowish Orange Silty Soil** Sample Number: **28368/1**
 Position: **TP1** Liquid Limit: **49** Linear Shrinkage: **6,4**
 Depth: **N/A** Plasticity Index: **12,7** In situ M/C%: **18,2**

 pH
 (TMH1 A20)

 Conductivity s.m.⁻¹
 (TMH1 A21T)

 SG
 (TMH1 A12T)*

2,437

SIEVE ANALYSIS (TMH1 A1a)*

100	75	63	53	37,5	25,0	19,0	13,2	9,5	6,7	4,75	2,36	1,18	0,60	0,425	0,300	0,150	0,075	0,063	0,045	0,025	0,020	0,005	0,004	0,003	0,001
100	100	100	100	100	100	100	100	100	99	99	94	83	73	66	61	53	50,1	45,1	43,2	33,2	23,2	16,3	14,9	13,3	8,3

HYDROMETER ASTM D422

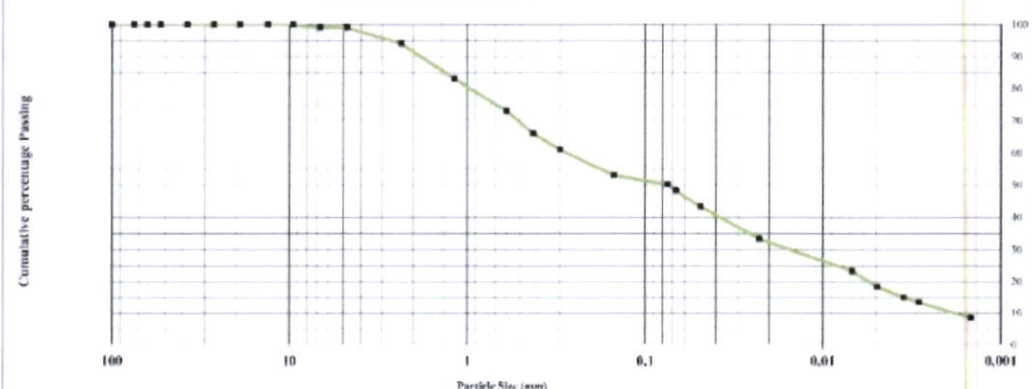
% Passing

MOD AASHTO SANS 3001 GR30

CBR SANS 3001 GR40

OMC%	16,2	COMP MC	% SWELL	100%	98%	97%	95%	93%	90%
MDD(KG/M ³)	1740	16,2	2,4	3	3	2	2	1	1

Particle Size Distribution



% Gravel

1

% Sand

80

% Silt

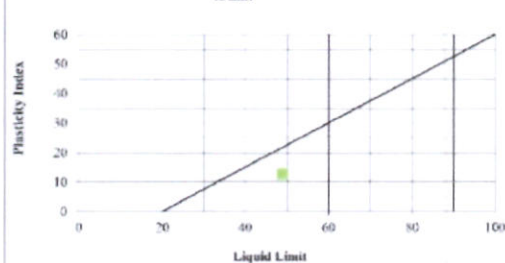
36

% Clay

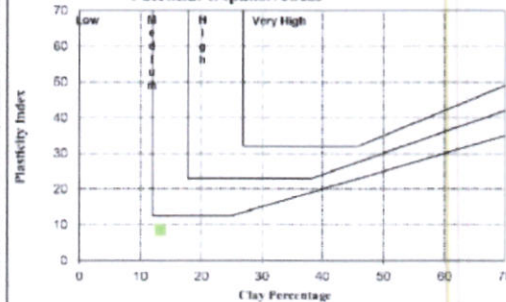
13

Plasticity Chart

A Line



Potential Expansiveness

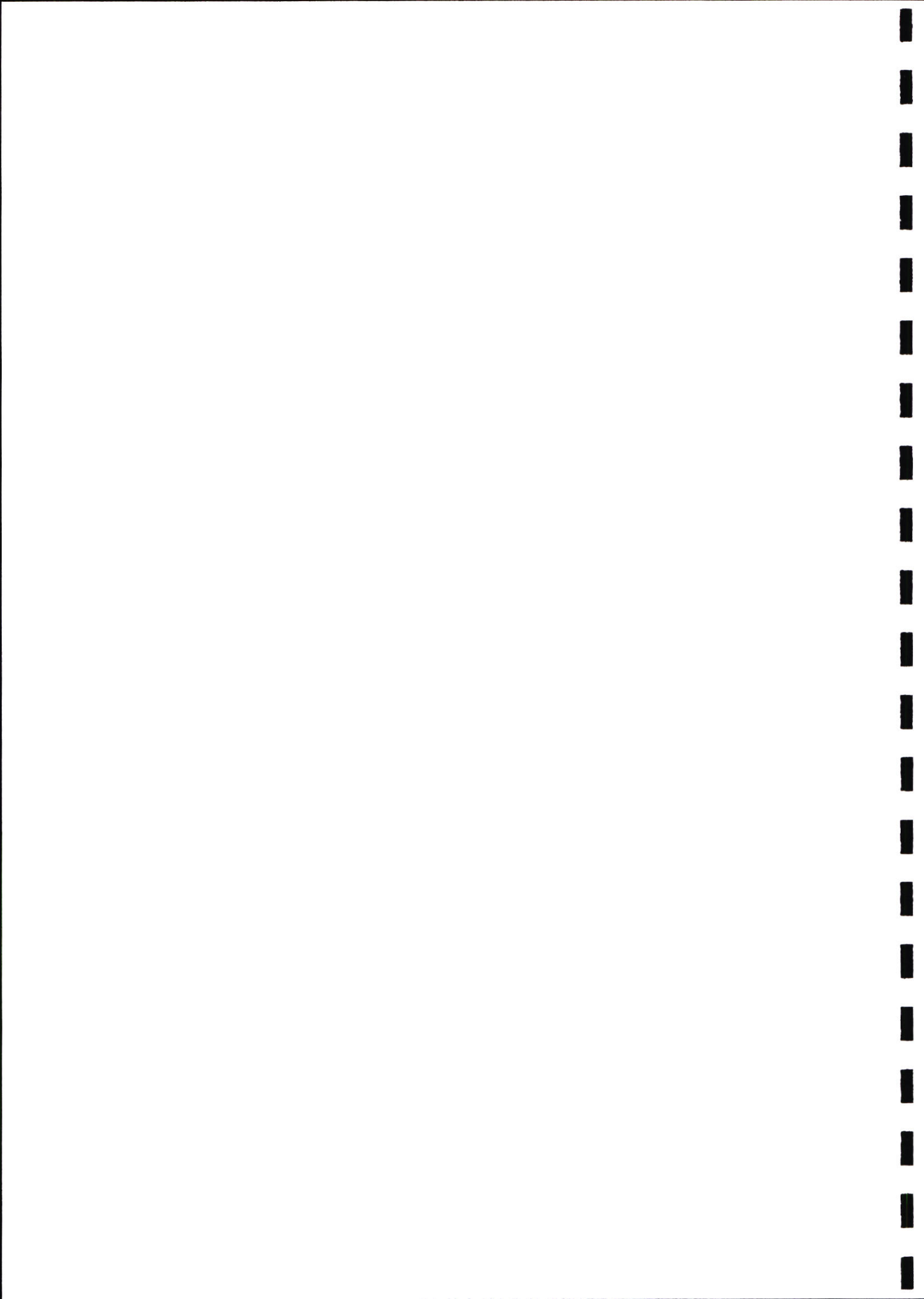


NOTE: All tests marked with (*) means that those test methods are not accredited.

Compiled by: M.Steyn

Approved By: J.Steyn / R. Wilson

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Customer: **GEOSS South Africa**
 9 Quantum Street, Techno Park, Unit 12 Technostell Building
 Stellenbosch
 7600

Project: 5110 Groenfontein
 Date Received: 07/06/2023
 Date Reported: 19/06/2023
 Req Number: -

Attention: Mr L Jonk

MOD / CBR / FOUNDATION INDICATOR - ASTM D422 / SANS 3001 GR10 / SANS 3001 GR12 / SANS 3001 GR30 / SANS 3001 GR40 / TMH1 A1* / TMH1 A12*

Material Description: Dark Brown Silty Soil
 Position: TP2
 Depth: N/A

Sample Number: 28368/1
 Liquid Limit: N.P.
 Plasticity Index: N.P.

Linear Shrinkage: 0,0
 In situ M/C%: 10,6

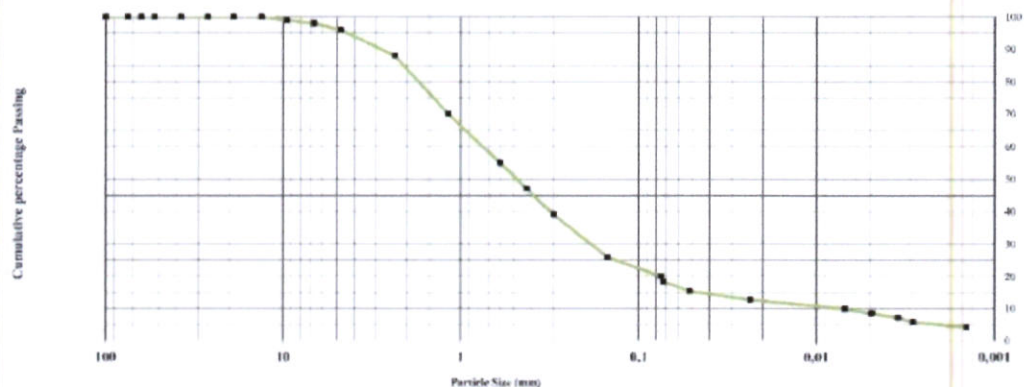
 pH
 (TMH1 A20)

 Conductivity s.m.⁻¹
 (TMH1 A21T)

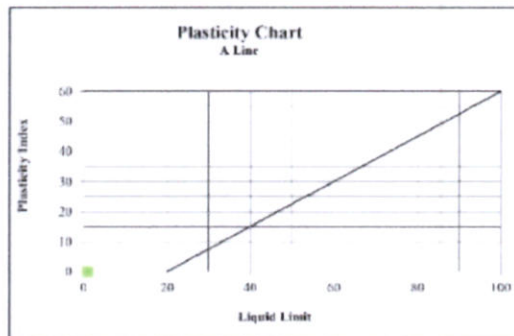
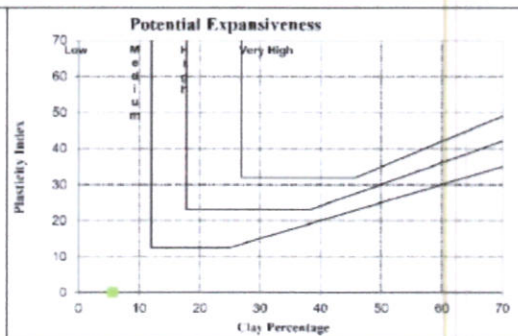
 SG
 (TMH1 A12T)* 2,546

SIEVE ANALYSIS (TMH1 A1a)*													HYDROMETER ASTM D422									
100	75	63	53	37,5	25,0	19,0	15,0	12,5	10,6	9,0	7,5	6,0	0,075	0,060	0,050	0,040	0,030	0,025	0,020	0,015	0,012	0,0075
100	100	100	100	100	100	100	100	99	96	96	88	70	55	47	39	26	20	18,2	15,4	12,8	8,4	7,0
% Passing																						
MOD AASHTO SANS 3001 GR30										CBR SANS 3001 GR40												
OMC%	9,5									COMP MC	% SWELL	100%	98%	97%	95%	93%	90%					
MDD(KG/M ³)	2046									9,4	0,2	5	4	3	2	2	1					

Particle Size Distribution



% Gravel	4	% Sand	77	% Silt	14	% Clay	6
----------	---	--------	----	--------	----	--------	---

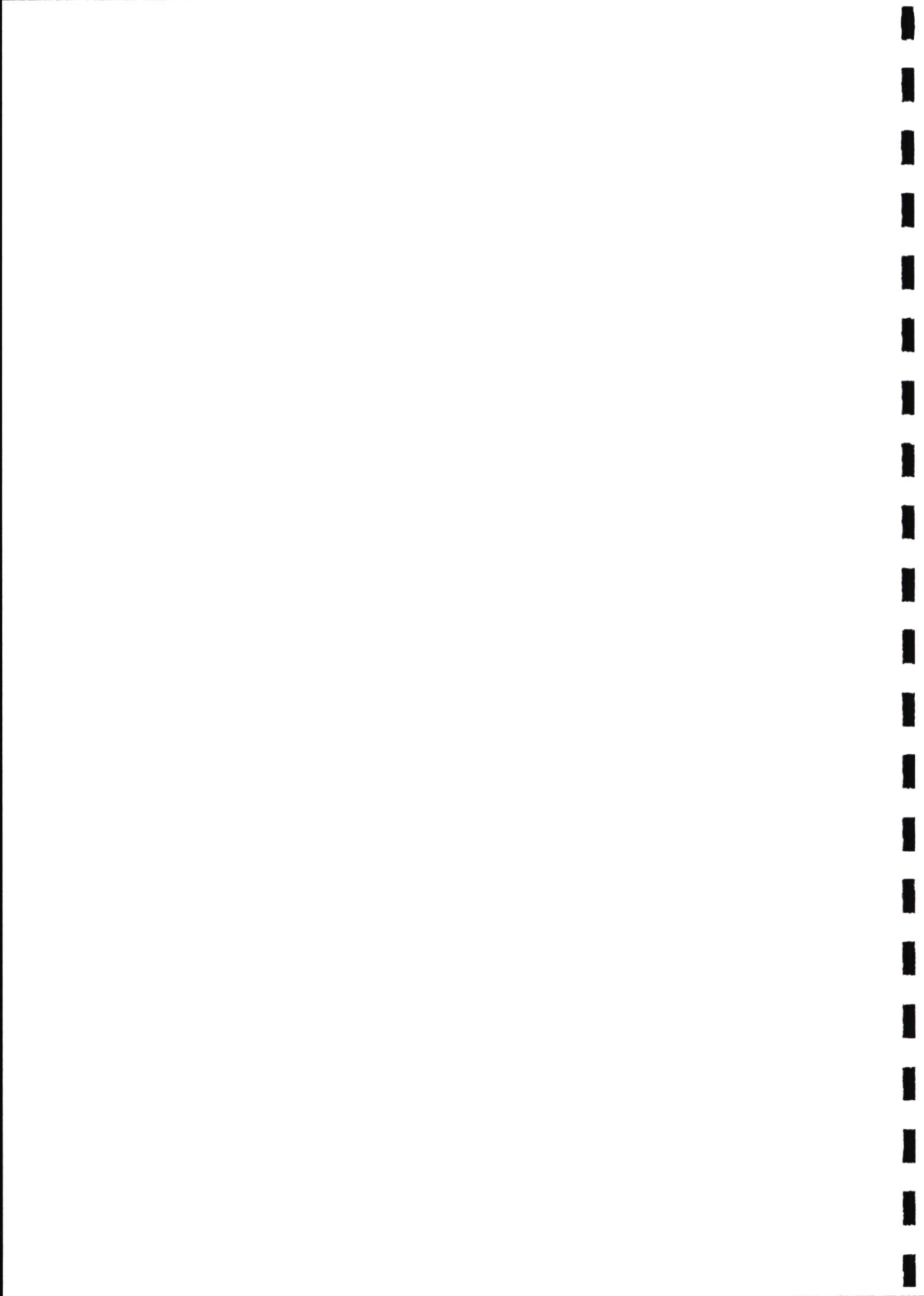


NOTE: All tests marked with (*) means that those test methods are not accredited.

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Approved By: J.Steyn / R. Wilson

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CIVIL ENGINEERING TESTING LABORATORIES


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 Email: info@steyn-wilson.co.za
 Web: www.steyn-wilson.co.za

Customer: GEOSS South Africa	Project: 5110 Groenfontein
9 Quantum Street, Techno Park, Unit 12 Technostell Building	Date Received: 07/06/2023
Stellenbosch	Date Reported: 19/06/2023
7600	Req Number: -
Attention: Mr L. Jonk	

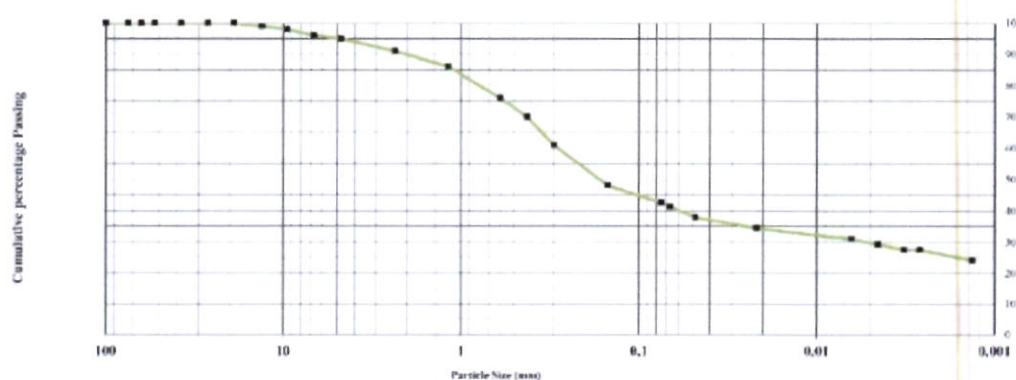
MOD / CBR / FOUNDATION INDICATOR - ASTM D422 / SANS 3001 GR10 / SANS 3001 GR12 / SANS 3001 GR30 / SANS 3001 GR40 / TMH1 A1* / TMH1 A12*

Material Description: Dark Reddish Orange Silty Clay	Sample Number: 28368/3
Position: TP3	Liquid Limit: 35
Depth: N/A	Plasticity Index: 16,3
	Linear Shrinkage: 8,1
	In situ M/C%: 12

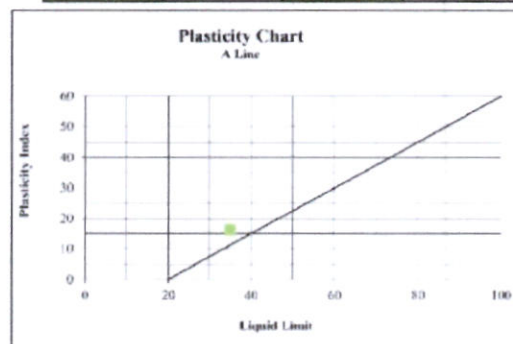
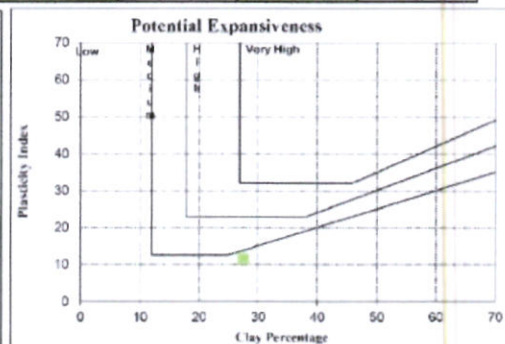
pH (TMH1 A20): -	Conductivity $\mu\text{S cm}^{-1}$ (TMH1 A21T): -	SG (TMH1 A12T)*: 2,667
------------------	---	------------------------

SIEVE ANALYSIS (TMH1 A1a)*														
100	75	63	53	37,5	25,0	19,0	13,2	9,5	6,7	4,75	2,36	1,18	0,60	0,425
0,300	0,150	0,075	0,067	0,048	0,022	0,008	0,005	0,003	0,001					
100	100	100	100	100	100	99	98	96	94	91	86	76	70	61
48	42,5	41,3	37,8	34,4	31,0	29,2	27,5	27,5	24,1					
% Passing														
MOD AASHTO SANS 3001 GR30							CBR SANS 3001 GR40							
OMC%	14,3						COMP MC	% SWELL	100%	98%	97%	95%	93%	90%
MDD(KG/M ³)	1589						14	2,8	4	3	2	1	1	1

Particle Size Distribution



% Gravel	5	% Sand	53	% Silt	14	% Clay	28
----------	---	--------	----	--------	----	--------	----



NOTE: All tests marked with (*) means that those test methods are not accredited.

Compiled by: M. Steyn

Approved By: J. Steyn / R. Wilson

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Rev03

TR - SW0036


STEYN-WILSON
LABORATORIES

CIVIL ENGINEERING TESTING LABORATORIES


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 Fax: 085 495 9482
 Email: info@steyn-wilson.co.za
 Web: www.steyn-wilson.co.za

Customer: **GEOS South Africa**
 9 Quantum Street, Techno Park, Unit 12 Technostell Building
 Stellenbosch
 7600
 Attention: **Mr L. Jonk**

Project: **5110 Groenfontein**
 Date Received: **07/06/2023**
 Date Reported: **19/06/2023**
 Req Number: **-**

MOD / CBR / FOUNDATION INDICATOR - ASTM D422 / SANS 3001 GR10 / SANS 3001 GR12 / SANS 3001 GR30 / SANS 3001 GR40 / TMH1 A1* / TMH1 A12*

Material Description: **Dark Brown Orange Silty Soil**
 Position: **TP4**
 Depth: **N/A**

Sample Number: **28368/4**
 Liquid Limit: **30,4**
 Plasticity Index: **6,9**
 Linear Shrinkage: **3,4**
 Insitu M/C%: **12**

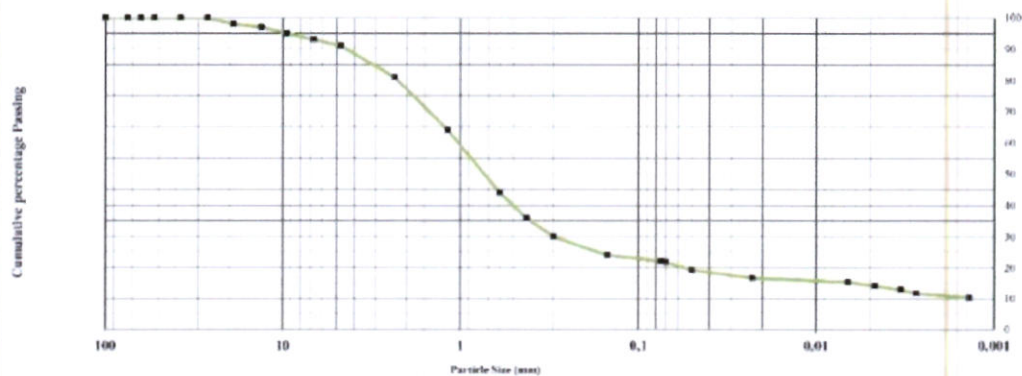
pH
(TMH1 A20)

Conductivity s.m.⁻¹
(TMH1 A21T)

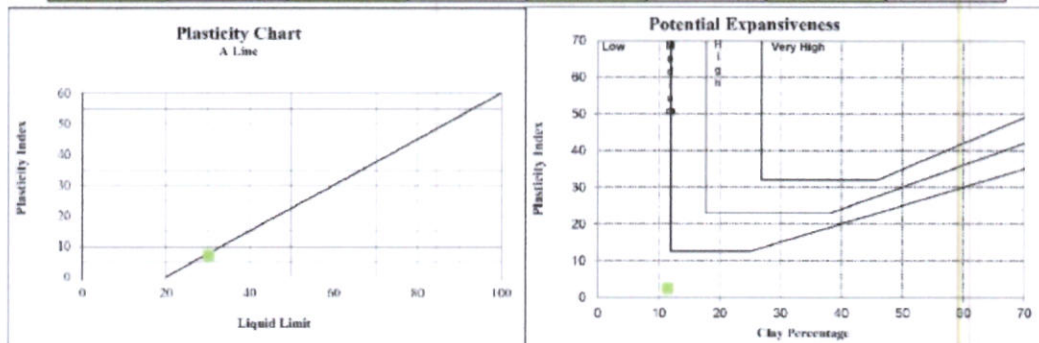
SG
(TMH1 A12T)*

SIEVE ANALYSIS (TMH 1 A1a)*															HYDROMETER ASTM D422														
100	75	63	53	37.5	25.0	19.0	13.2	9.5	6.7	4.75	2.36	1.18	0.60	0.425	0.300	0.150	0.075	0.070	0.050	0.025	0.007	0.005	0.003	0.001					
100	100	100	100	100	100	98	97	95	93	91	81	64	44	36	30	24	22.1	21.8	19.2	16.8	15.4	14.1	12.8	11.5	10.2				
% Passing																													
MOD AASHTO SANS 3001 GR30												CBR SANS 3001 GR40																	
OMC%	12.2											COMP MC	% SWELL	100%	98%	97%	95%	93%	90%										
MDD(KG/M³)	1988											12	2.8	7	6	5	4	3	2										

Particle Size Distribution



% Gravel	9	% Sand	69	% Silt	10	% Clay	12
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NOTE: All tests marked with (*) means that those test methods are not accredited.

Compiled by: M.Steyn

Approved By: J.Steyn / R. Wilson

Page 5 of 5


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Email: info@steynwilson.co.zaWeb: www.steynwilson.co.zaClient: **GEOSS South Africa**Project: **5110 Groenfontein**Attention: **Mr L Jonk**Your Ref. No: **-**Date Reported: **19/06/2023****TEST REPORT REFERENCE NUMBER / JOB NUMBER :****SWL28368**

Dear Sir / Madam

Herewith please find the original reports pertaining to the above mentioned project.

Test Requested1 x **MOD / CBR / FOUNDATION INDICATOR**Site Sampling and Materials InformationSampling Method: **Specimens delivered to Steyn Wilson Laboratory**Environmental Condition: **Cold & Rainy**Deviation from the prescribed test method: **No deviation from standard test method.**Responsibility of information disclaimer: **The sample information was received from the customer. Results apply to the sample as received from the Customer.** **FINAL REPORT**

We would like to take this opportunity to thank you for your valued support.
Should you have any further enquiries please don't hesitate to contact me.

Yours Faithfully

STEYN WILSON LABORATORIES (PTY) LTD

Remarks:

- Information contained herein is confidential to STEYN WILSON PTY LTD and the addressee.
- Opinions & Interpretations are not included in our schedule of Accreditation.
- The samples were subjected and analysed according to ASTM.
- The results reported relate only to the sample tested. Further use of the attached information is not the responsibility or liability of STEYN WILSON LABORATORIES (PTY) LTD.
- This document is the correct record of all measurements made, and may not be reproduced other than with full written approval from a director of STEYN WILSON LABORATORIES (PTY) LTD.
- Measuring equipment is traceable to national standards (Where applicable).
- Should there be any deviation from the prescribed test method comments will be made thereof, pertaining to the test on the relevant materials report.
- Uncertainty of measurement is calculated and corresponds to a coverage probability of approximately 95%. Available on request.
- The decision rule states that the measurement of uncertainty can be applied by the customer to the test results, on request. It is not the responsibility or liability of STEYN WILSON LABORATORIES (PTY) LTD.

Mr. J. Steyn
Technical Signatory

DIRECTORS: **Mr. J. Steyn ND-Civil (Managing) | Mr. R. Wilson B-Tech Civil (Operations)**

Compared by: M. Steyn

Approved by: J. Steyn (M. Steyn)

Page 1 of 2

04 March 2022

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CIVIL ENGINEERING TESTING LABORATORIES

Customer:	GEOS South Africa	Project:	5110 Groenfontein
	9 Quantum Street, Techno Park, Unit 12 Technostell Building	Date Received:	07/06/2023
	Stellenbosch	Date Reported:	19/06/2023
	7600	Req. Number:	-
Attention:	Mr L. Jonk		

MOD / CBR / FOUNDATION INDICATOR - ASTM D422 / SANS 3001 GR10 / SANS 3001 GR12 / SANS 3001 GR30 / SANS 3001 GR40 / TMH1 A11 / TMH1 A121

Material Description:	Dark Brown Orange Silty Clay	Sample Number:	283685
Position:	TP5	Liquid Limit:	27,8
Depth:	N/A	Plasticity Index:	9,4
		Linear Shrinkage:	4,7
		In situ M/C%:	8,9

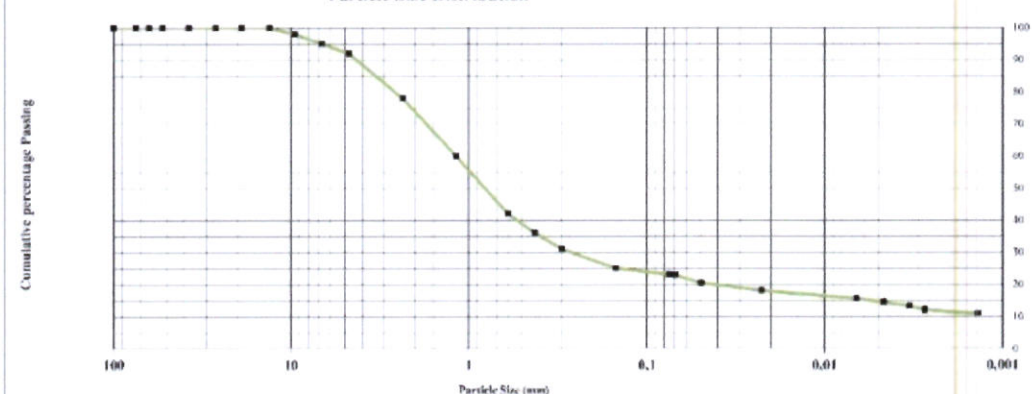
 pH
 (TMH1 A20)

 Conductivity s.m⁻¹
 (TMH1 A21T)

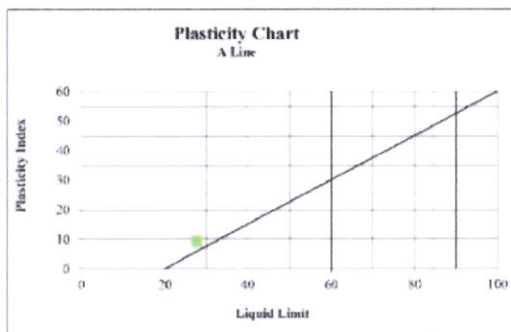
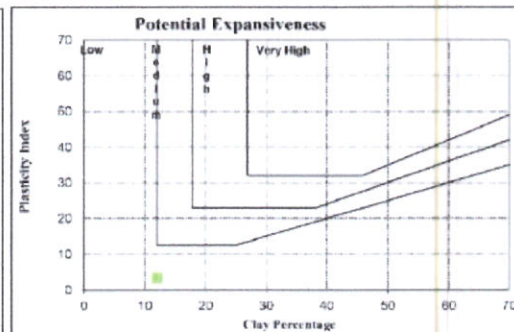
 SG
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SIEVE ANALYSIS (TMH 1 A1a)*															HYDROMETER ASTM D422											
100	75	63	53	37,5	25,0	19,0	15,0	9,5	6,7	4,75	2,36	1,18	0,60	0,425	0,300	0,150	0,075	0,060	0,048	0,022	0,017	0,006	0,003	0,003	0,001	
100	100	100	100	100	100	100	100	98	95	92	78	60	42	36	31	25	23	22,8	20,4	16	15,6	14,4	13,2	12	10,8	
% Passing																										
MOD AASHTO SANS 3001 GR30										CBR SANS 3001 GR40																
OMC%	12,2										COMP MC	% SWELL	100%	98%	97%	95%	93%	90%								
MDD(KG/M ³)	2017										12,3	0,1	9	8	7	6	5	4								

Particle Size Distribution



% Gravel	8	% Sand	69	% Silt	11	% Clay	12
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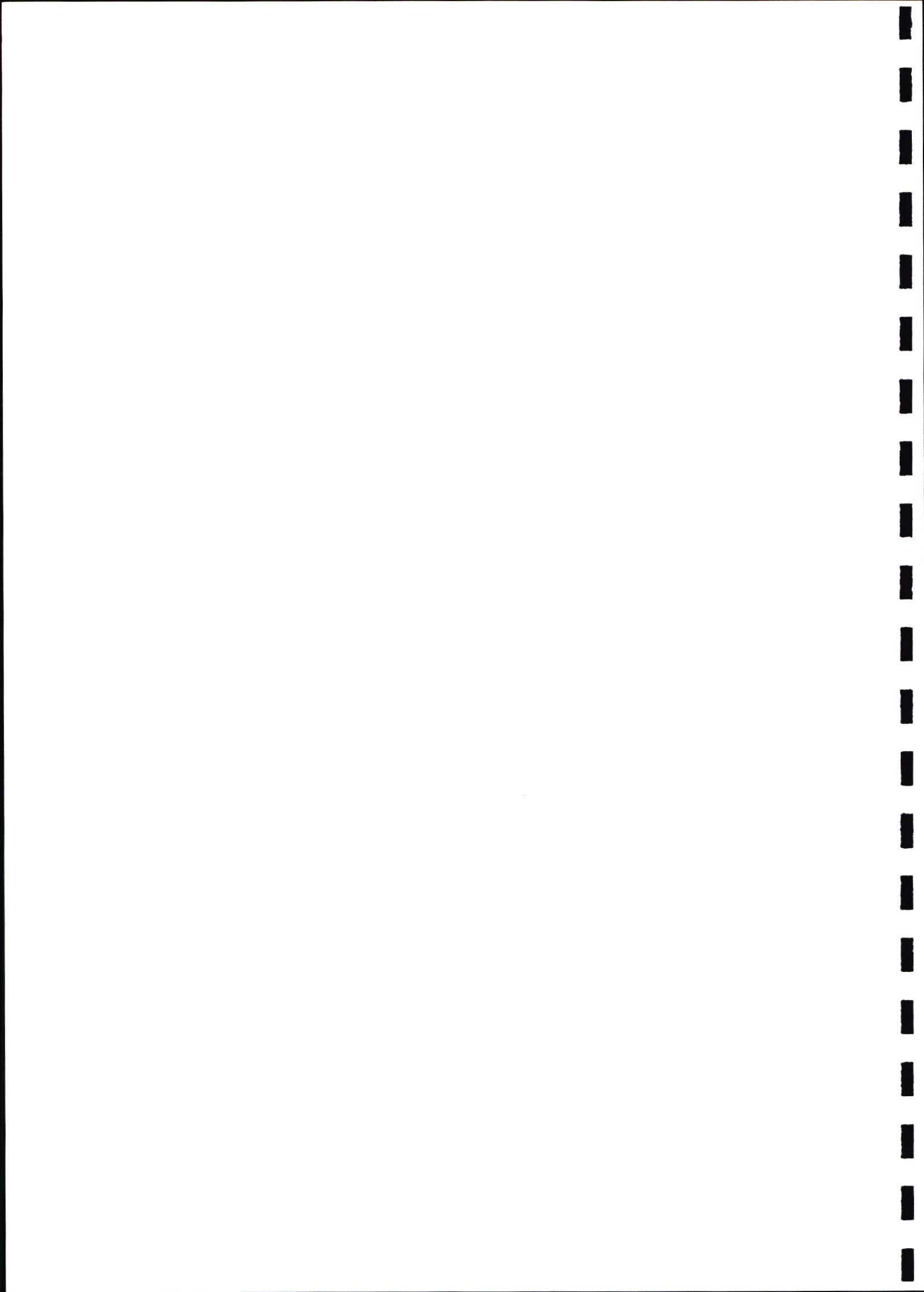
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14. APPENDIX D SITE PHOTOS



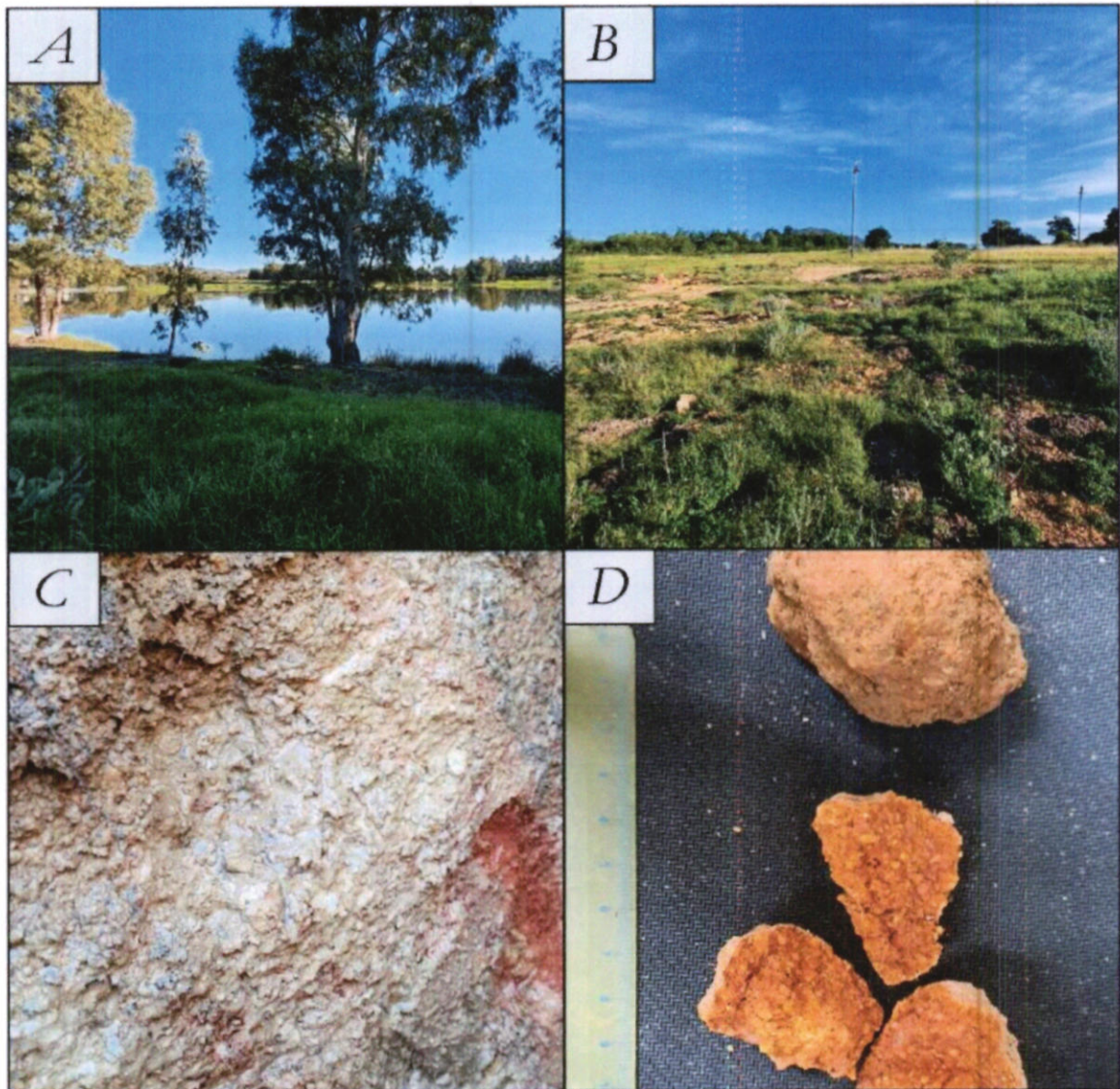


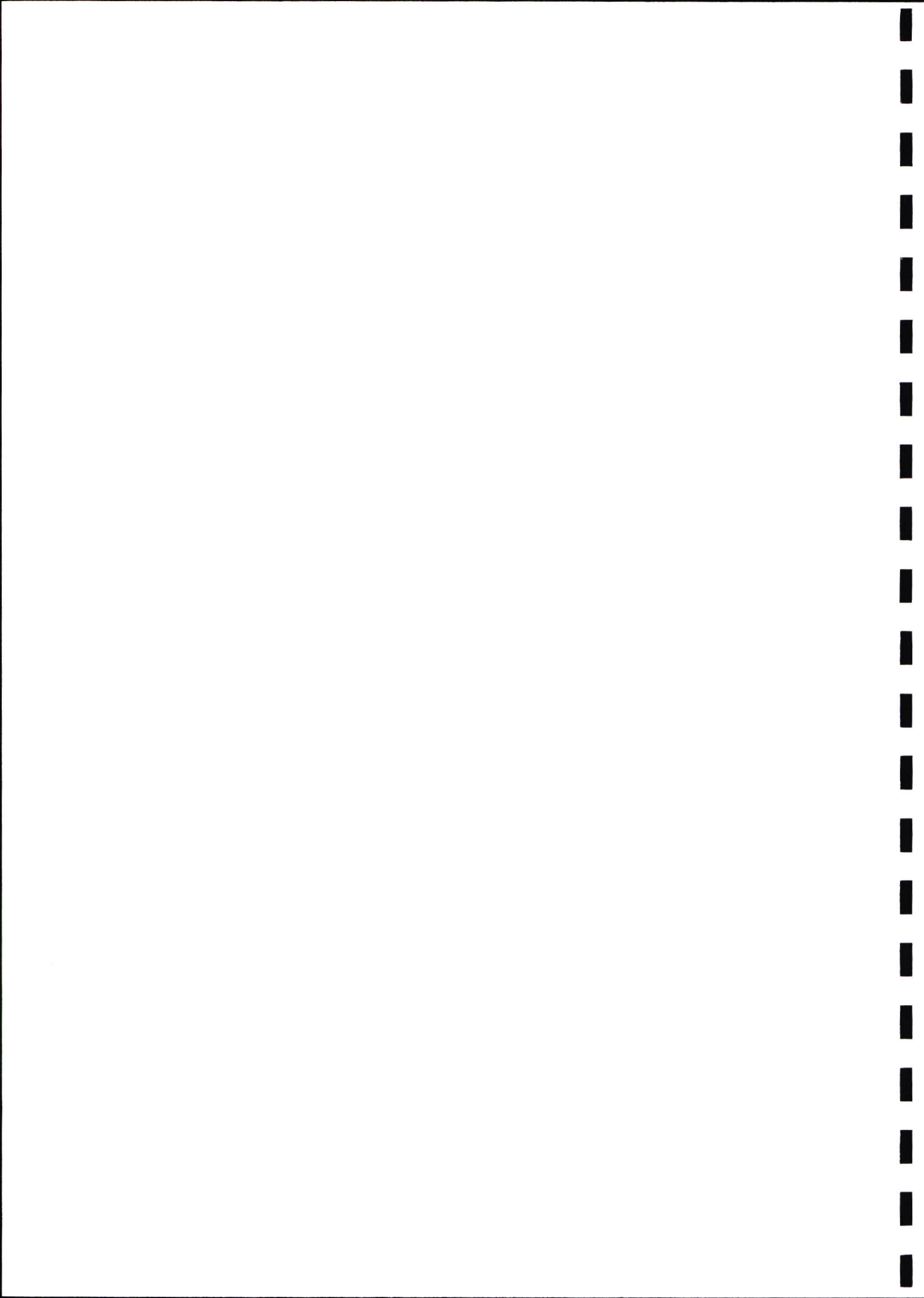
Figure 22: A) shows the large water body directly bordering the site to the west. B) shows the overall flat lying nature of the site with a slight slope to the east. C) shows medium grained gravel layer which represents the main source of water seepage. D) shows ferruginous nodules encountered in some of the trial pits.

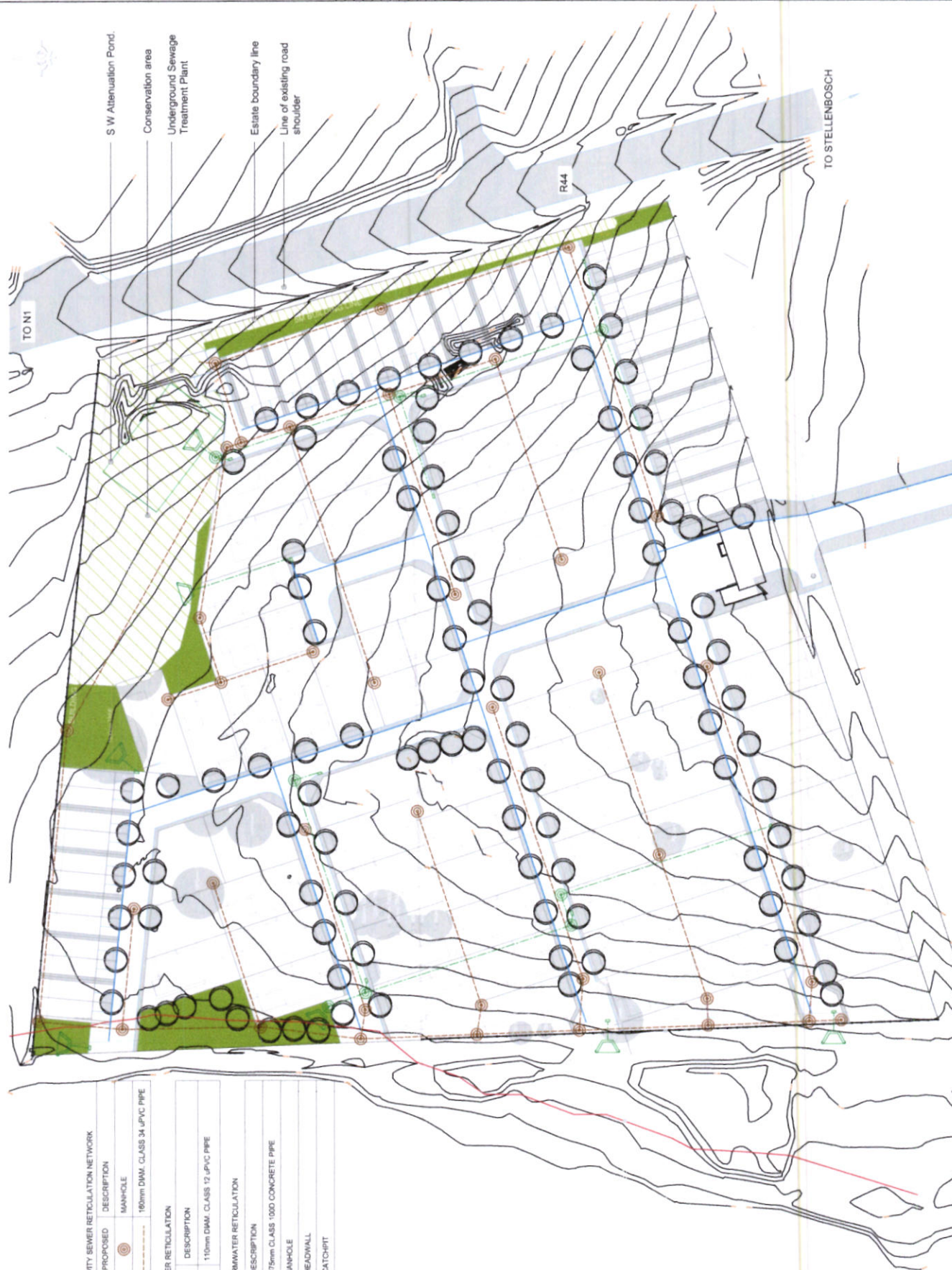


Last Page



ANNEXURE F





LEGEND FOR GRAVITY SEWER RETICULATION NETWORK		
EXISTING	PROPOSED	DESCRIPTION
		MANHOLE
		100mm DWM, CLASS 34 uPVC PIPE

LEGEND FOR WATER RETICULATION	
PROPOSED	DESCRIPTION
	110mm DWM, CLASS 12 uPVC PIPE

LEGEND FOR STORMWATER RETICULATION	
PROPOSED	DESCRIPTION
	375mm CLASS 1000 CONCRETE PIPE
	MANHOLE
	HEADWALL
	CATCHPIST

[illegible]

GOLDEN GLAZE INVESTMENTS

KLAPMUTS LAKE ESTATE,
PORTION 5 OF FARM 716

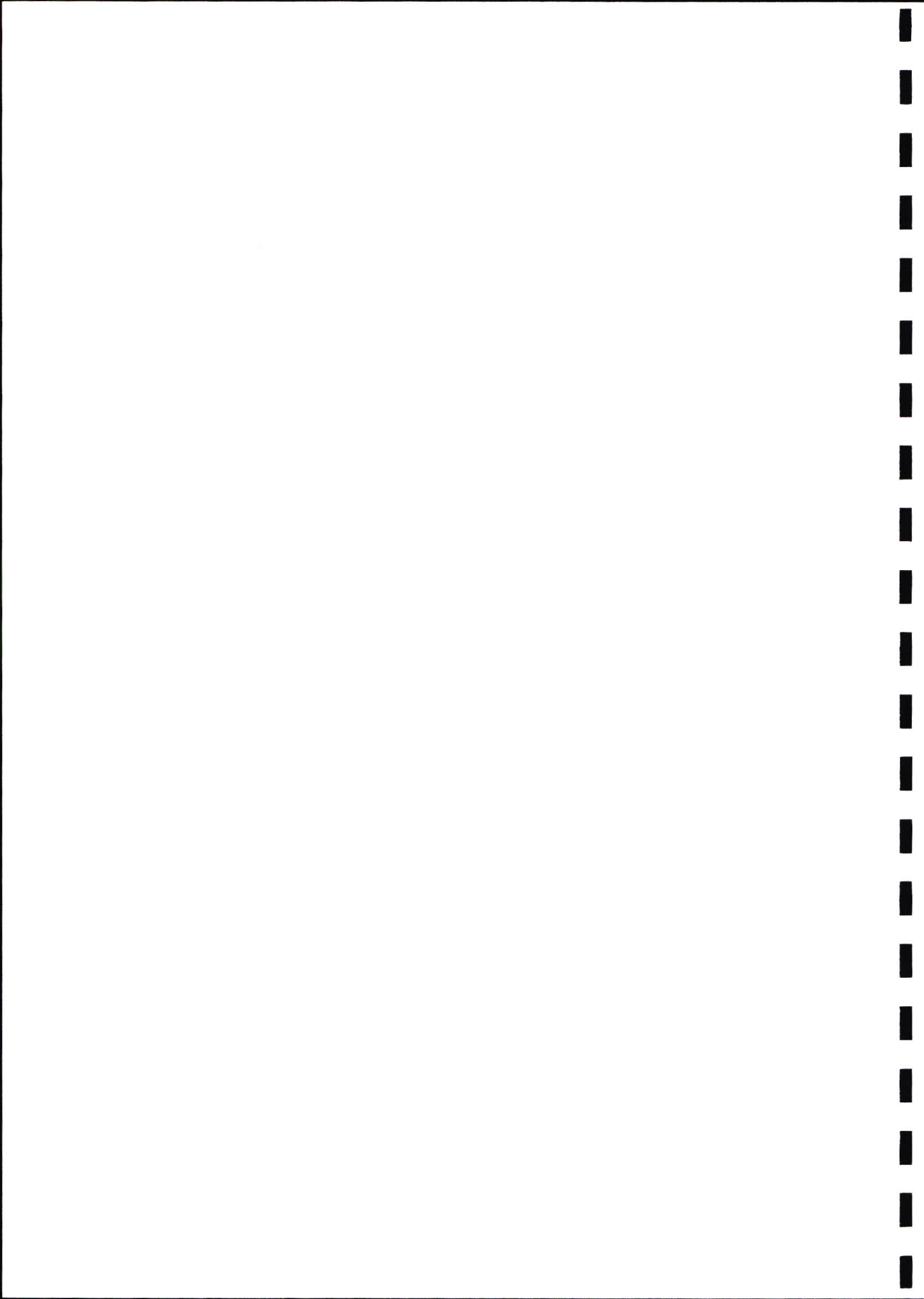
PRELIMINARY SERVICES
LAYOUT

1: 500 (A1)

JULY 2023

UDS 442/C/01

Występy
Akwizycyjne



ANNEXURE 14: ELECTRICAL SERVICES REPORT



RE-DEVELOPMENT

***GROENFONTEIN DEVELOPMENT
PORTION 5 OF FARM 716; ADAM TAS RD (R44)***

ELECTRICAL INFRASTRUCTURE REPORT

JULY 2023

Report By:

DM Consulting Engineers Cape

For:

UDS Africa



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1. Abbreviations

ADMD	:	After diversity maximum demand
BDMD	:	Before diversity maximum demand
c/kWh	:	cent per kilo-watt-per hour
CEL	:	Cost Estimate Letter
CNC	:	Customer Network Centre
DMCE	:	DM Consulting Engineers Cape (Pty) Ltd
DMS	:	Department of Water and Sanitation
EMP	:	Environmental Management Plan
HV	:	High voltage
kV	:	kilovolt
kVA	:	kilo-volt-ampere
kW	:	kilowatt
kWh	:	kilo-watt-per hour
kWp	:	kilowatt-peak
LV	:	Low voltage
MD	:	Maximum Demand
MSub	:	Miniature substation
MV	:	Medium voltage
NE	:	Northeast
NMD	:	Notified Maximum Demand
NW	:	Northwest
POC	:	Point of consumption
POS	:	Point of supply
PV	:	Photovoltaic
SANS	:	South African National Standards
SDP	:	Site development plan
SE	:	Southeast
SOC	:	State owned company
SW	:	Southwest



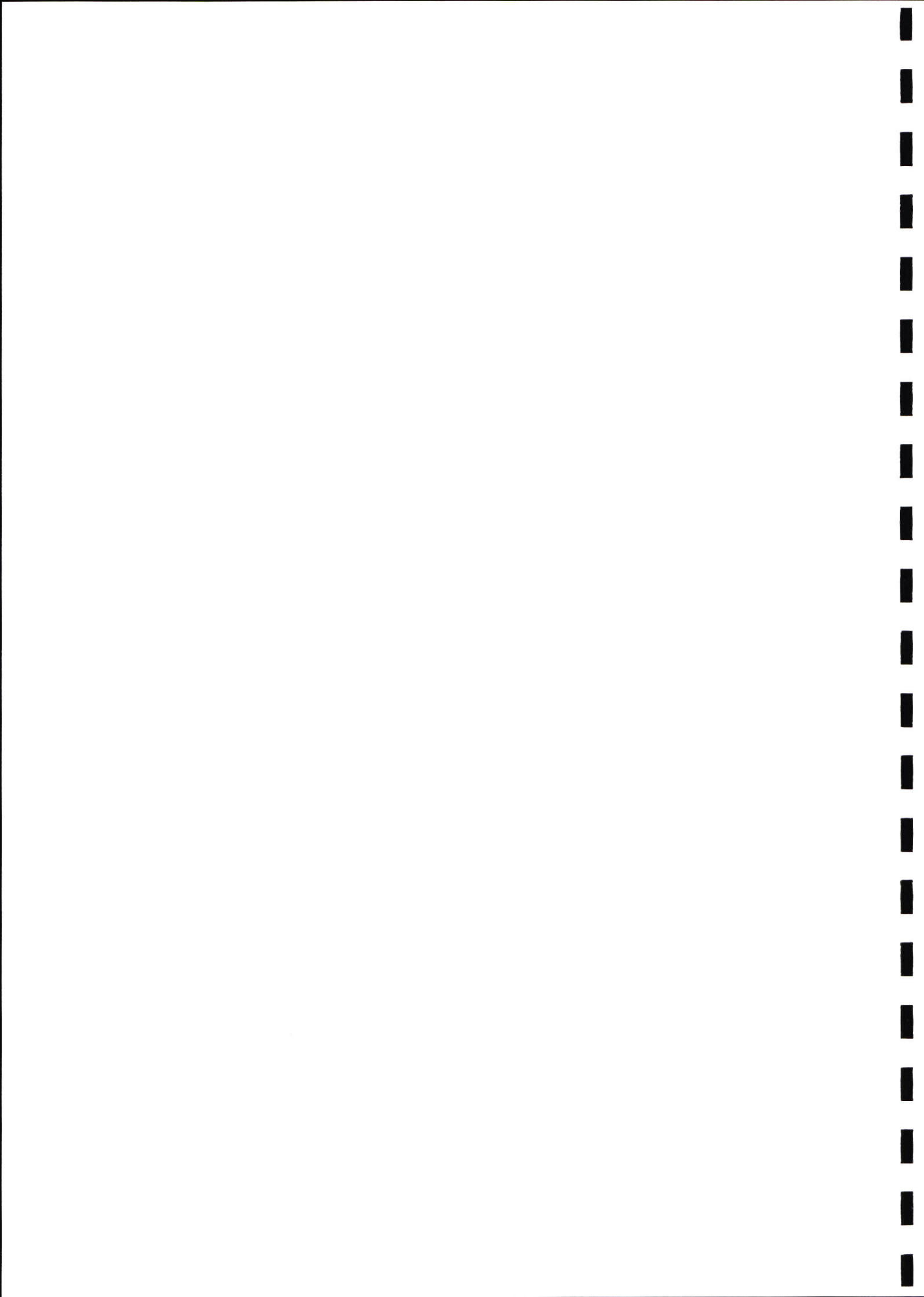
2. Tables

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4. INTRODUCTION

4.1 General

DMCE has been commissioned by **UDS AFRICA** to report on the Electrical Infrastructure on **PORTION 5 OF FARM 716, ADAM TAS ROAD (R44)**.

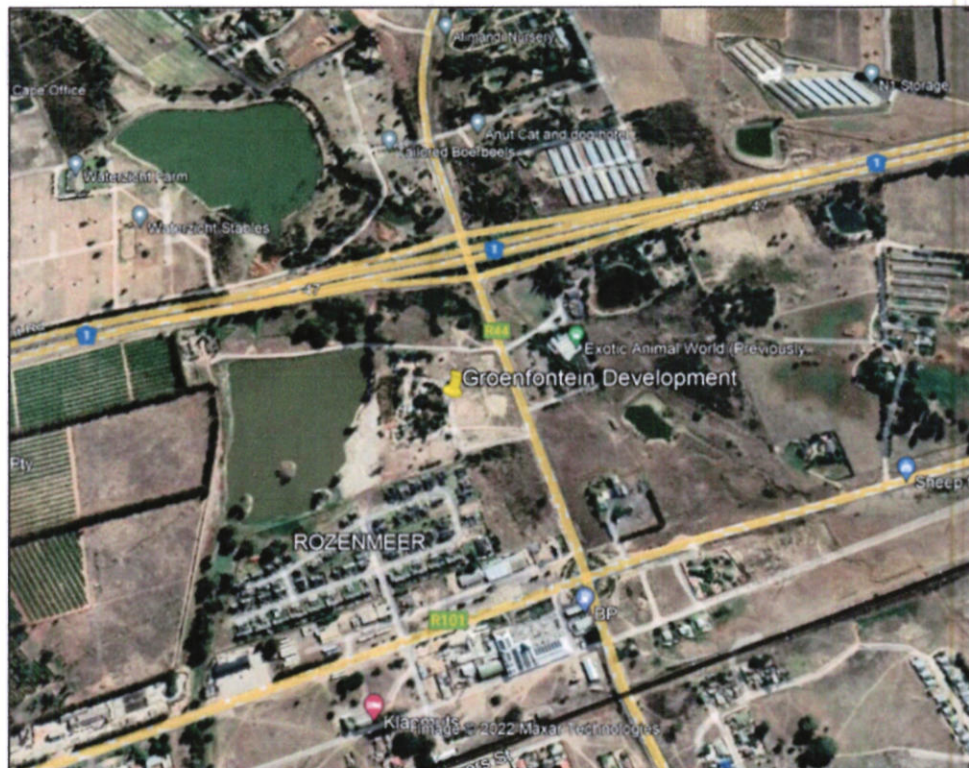
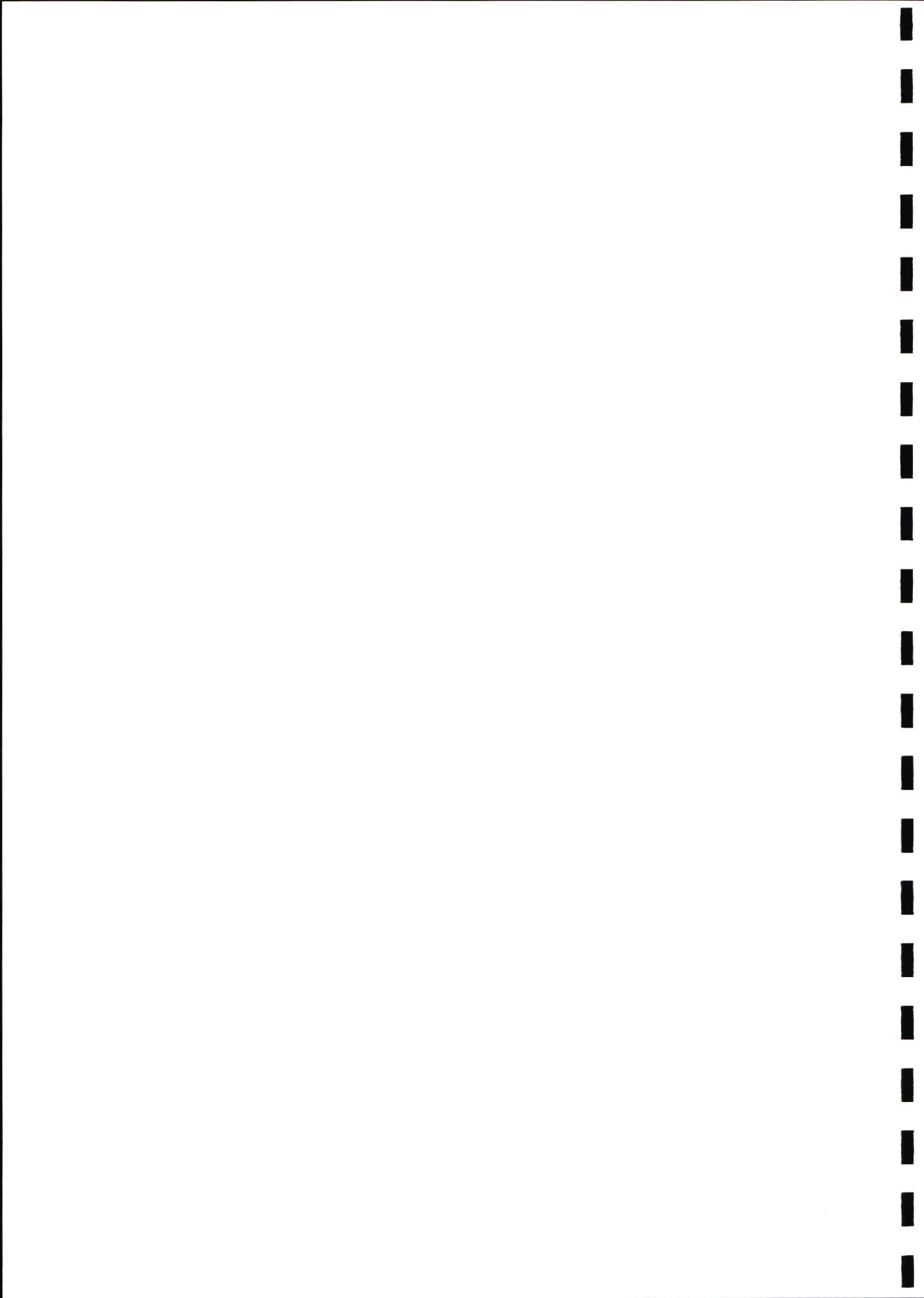


Figure 1 – Location of site

4.2 Comments on Terms of Reference (T.O.R)

The T.O.R refers specifically for a report on the electrical infrastructure for developing:

- PORTION 5 OF FARM 716, ADAM TAS ROAD (R44)
- Bulk Incoming Electrical Supply-, the point of supply from Eskom



4.3 Project Team

- Mr. Derek Muller
- Mr. Jaco van Rooyen

5. BULK SERVICES – EXTERNAL

5.1 General

Incoming Electrical Supply- Authority: Eskom

Based on the size of the erf, the site is most likely fed by means of a Low Voltage connection from a 50kVA pole top transformer on the erf. Representatives of DMCE was unable to enter the property to confirm. The transformer is owned and maintained by Eskom.



Figure 3 - Eskom Electrical Pole

The Notified Maximum Demand for the property is currently accepted to be 50kVA.



Buildings not part of the power line may not encroach 3m from the outer conductor of the powerline. See figure 3, which depicts the power line's span across the site. The power line runs until the dam, after which it is suspended across the dam.

Annex A – Electrical machinery regulations

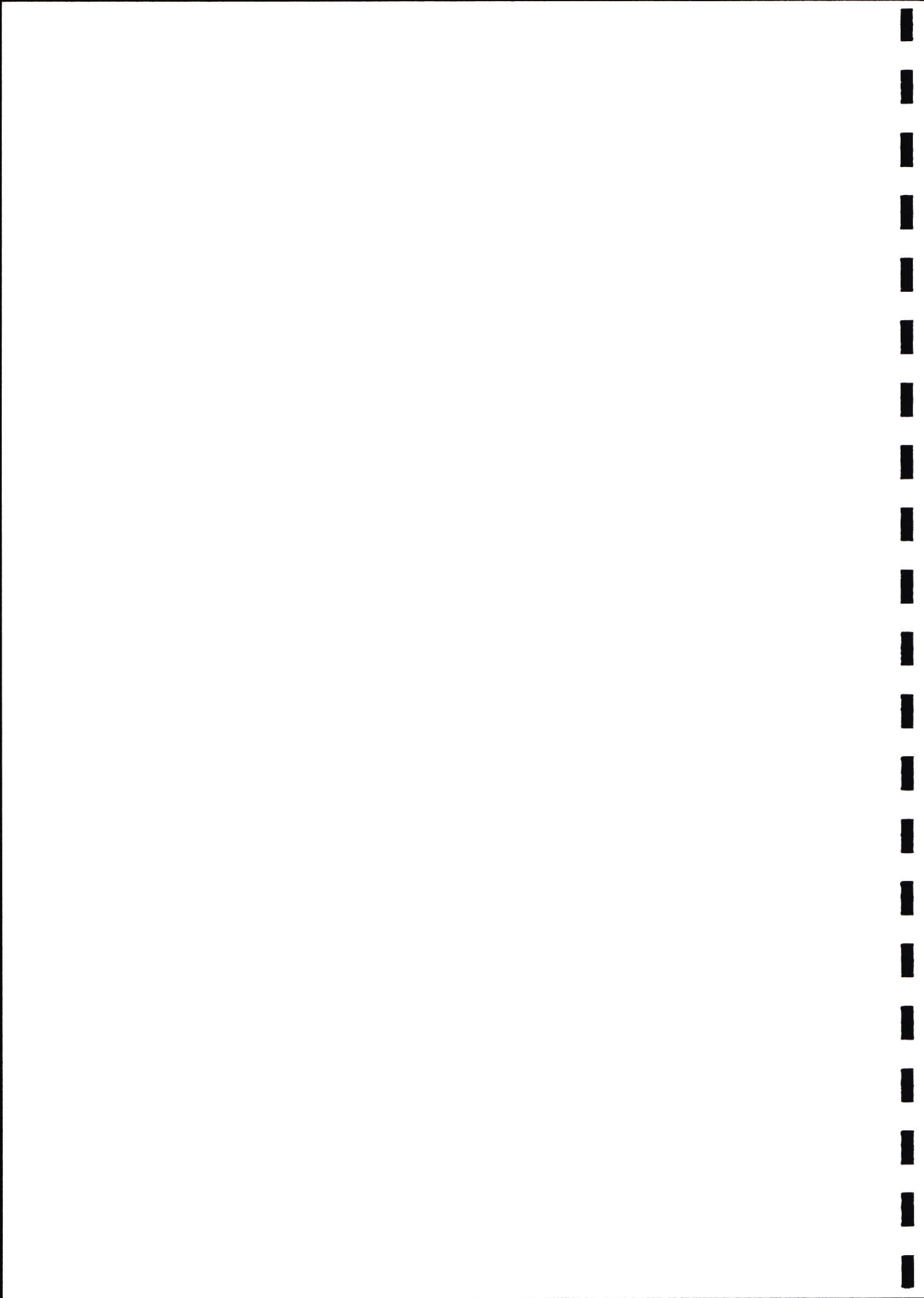
(Informative)

Maximum voltage for which insulation is designed, kV rms phase-phase	Minimum safety clearance	Minimum clearance in metres				
		Above ground outside townships	Above ground in townships	Above roads in townships, proclaimed roads outside townships and tramways	To telecommunication lines or between power lines and cradles	To buildings, poles and structures not forming part of power lines
1.1 or less.....	—	4.9	5.5	6.1	0.6	3.0
7.2.....	0.15	5.0	5.5	6.2	0.7	3.0
12.....	0.20	5.1	5.5	6.3	0.8	3.0
24.....	0.32	5.2	5.5	6.4	0.9	3.0
36.....	0.43	5.3	5.5	6.5	1.0	3.0
48.....	0.54	5.4	5.5	6.6	1.1	3.0
72.....	0.77	5.7	5.7	6.9	1.4	3.2
100.....	1.00	5.9	5.9	7.1	1.6	3.4
145.....	1.45	6.3	6.3	7.5	2.0	3.8
245.....	1.85	6.7	6.7	7.9	2.4	4.2
300.....	2.35	7.2	7.2	8.4	2.9	4.7
362.....	2.90	7.8	7.8	9.0	3.5	5.3
420.....	3.20	8.1	8.1	9.3	3.8	5.6
800.....	5.50	10.4	10.4	11.6	6.1	8.5
533kV d.c.*.....	3.70	8.6	8.6	9.8	4.3	6.1

Table 1 – Eskom Power Line clearances



Figure 4 – Eskom Power Line across Site



5.2 After Diverse Maximum Demand of Development

The After Diversity Maximum Demand (ADMD) is calculated to be 500kVA for the Development. The calculations are based on Typical Design Load Parameters for Domestic Consumers table as published by Eskom (NRS 034-1 Table 3a).

See calculations below:

A RESIDENTIAL ESTATE SITE LIGHTING LOAD ESTIMATE					
Item	Size - m ²	Description	kVA/sqm	sqm	Total kVA
A.1	17197	Site Lighting	0,0003	17197,00	5,16
B RESIDENTIAL ESTATE HOUSING LOAD ESTIMATE					
Item	Size - m ²	Unit Description	kVA/UNIT	Quantity	Total kVA
B.1	>250	Urban Upmarket I	4,7	60	282,00
B.2	<250	Urban Multi-Storey / Estate	5,3	50	265,00
				MD SUM	552,16
				ADMD (90% Diversity)	496,94

Table 2 – Load estimation

The required Notified Maximum Demand (NMD) for the new development is 500kVA.

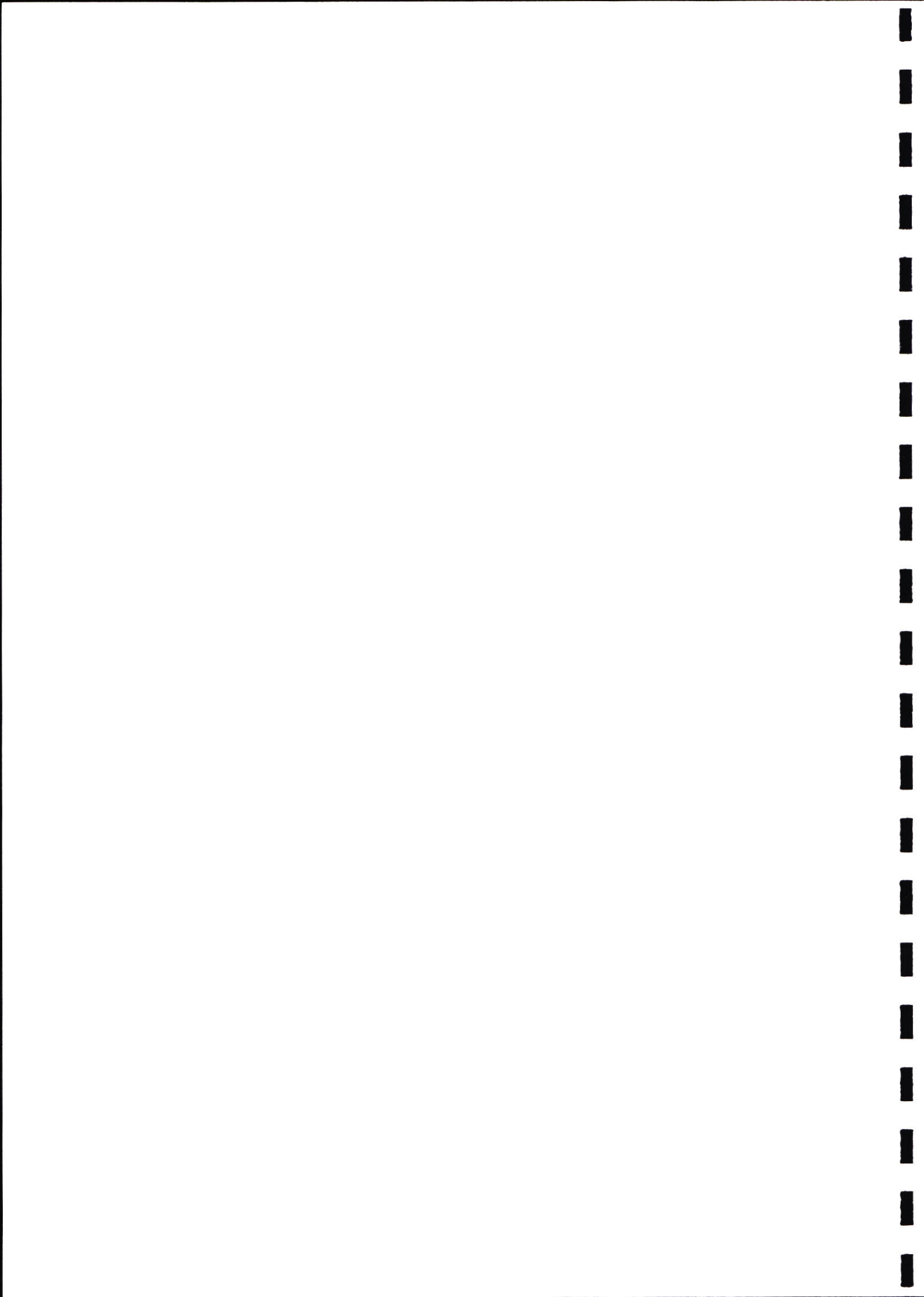
5.3 Bulk Infrastructure: Scope of Works

The external network up to the site boundary is medium voltage by means of an overhead network, owned, maintained, and operated by Eskom. The current electrical connection to the site must be upgraded to 500kVA for the new development.

Eskom will supply and install a 500kVA miniature substitution on the property boundary to accommodate the supply required. The installation must comply with the latest Eskom specifications.

The scope of works for internal reticulation such as low voltage reticulation to each individual erven will be to Eskom specification and approval.





6. DESIGN DEVELOPMENT – INTERNAL

6.1 Scope of work

The project is intended to issue full title deeds and will thus comply with THE LATEST REVISION OF THE ESKOM DISTRIBUTION STANDARDS.

The term “**supply**” means the manufacture, transportation to site, delivery, off-loading and the storing of all the material necessary to complete the project.

The term “**installation**” means the installation, commissioning, testing, and handing over of the completed project.

The work to be carried out on the project comprises of the supply, installation, testing and commissioning of the following:

- Low voltage reticulation from miniature substation/transformer point(s) to the individual erven low voltage POC.

6.2 LV Network

The LV networks shall comprise of a three-phase (four-core) SWA Cu cable installed directly in the ground.

Sleeves will be installed if a road must be crossed with LV cables.

Distribution/Metering Kiosks will be used to distribute power to different buildings or properties. The kiosk must comply to the standards set out by SANS 10142-1.

Standard Sizes:	6-Way, 9-Way, 12-Way
Arrangement:	Double Door (Front and Back)
Material:	3CR12, 2mm thick
Ingress Protection Overall:	IP44





Figure 4 - Distribution/Metering Kiosk

6.3 LV Conductor Types

LV PVC Steel Wired armoured Cables (Under Ground)

The low voltage PVC SWA cables shall conform to SANS 1507-3. The following conductor sizes will be used:

- 16 mm² PVC SWA 600/1000V Cu Cable
- 25 mm² PVC SWA 600/1000V Cu Cable
- 35 mm² PVC SWA 600/1000V Cu Cable
- 50 mm² PVC SWA 600/1000V Cu Cable
- 70 mm² PVC SWA 600/1000V Cu Cable
- 95 mm² PVC SWA 600/1000V Cu Cable
- 120 mm² PVC SWA 600/1000V Cu Cable

6.4 Installation of Cables

Medium Voltage (HT) and Low Voltage (LT) cables shall be installed at the following depths:

Medium Voltage Cables:	1000mm
Low Voltage Cables:	700mm

Minimum spacing between other services:

HT-HT:	300mm
HT-LV:	150mm
LV-LV:	150mm
Telkom services:	300mm

Preferred position in road reserve: 900mm from erf boundaries

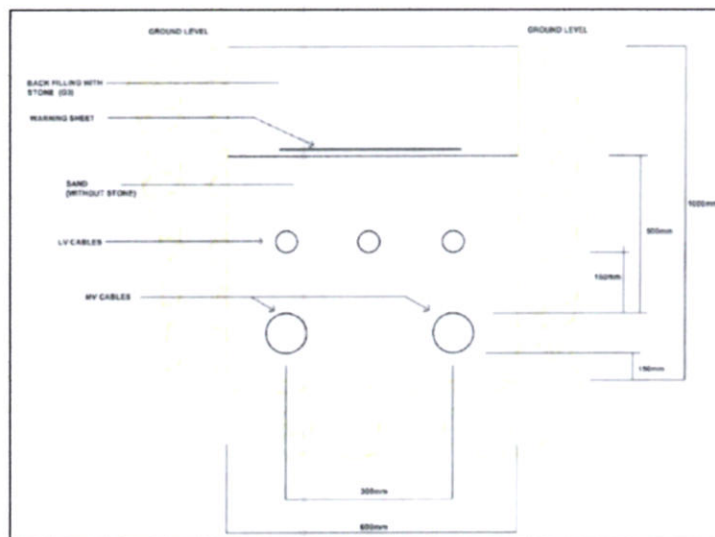


Figure 5 - Typical Trench Detail for MV and LV services

6.5 Streetlighting/Parking lighting

The streetlights/parking lighting will be of LED type technology. Several mounted heights and luminaire options is available and shall approved by the Architect and Client.

Pole Finish:	Galvanised steel
Standard pole lengths:	4.2m, 5.7m, 7.2m, 10m & 11.5m

In the case of a streetlight pole an overhang the preferred fittings are a Beka LEDlume Mini or Maxi.

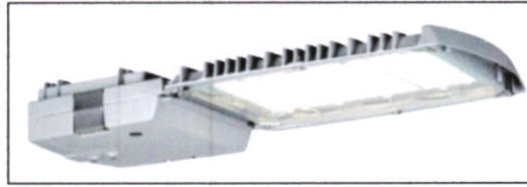


Figure 6 - Beka LEDlume

The Beka Zela Post top is approved and recommended in gated areas.



Figure 7 - Beka Zela Post Top

The layout and design will be done at a later stage in collaboration with the Architect and Client.

Below is the recommended Lighting values Group B and C streets and Foot Ways according to SANS 10098-1

Lighting category	Type of street	Minimum average horizontal illuminance E	Minimum horizontal illuminance E	Minimum semi-cylindrical illuminance E
B1	Residential streets with medium to high volume traffic	5 lux	1 lux	2 lux
B2	Residential streets with medium volume traffic	3 lux	0,6 lux	1 lux
B3	Residential streets with low volume traffic	2 lux	0,4 lux	0,6 lux
C1	Wholly pedestrian in city centre	10 lux	3 lux	7,5 lux
C2	Wholly pedestrian in local shopping malls	7,5 lux	1,5 lux	3 lux

Note:
a) Horizontal illuminance values apply across the carriageway on footpaths up to 2 m from the edge of the carriageway.
b) For areas requiring higher security, semi-cylindrical illuminance values as stated can be used as a supplementary criterion. They apply on the footways parallel to the kerbs in both directions.

Table 3 - Lighting values Group B and C

6.6 Certificate of Compliance

The Contractor shall, in terms of the SANS 10142 - Part 1 issue and handover to the consumer the Certificate of Compliance for the installation after testing and commissioning the installation. A copy of the Certificate of Compliance shall be handed to the Engineer within seven days of the issue thereof. A copy of the installation COC will be submitted to Eskom prior to commissioning.

6.7 Earthing

The earthing shall comply with SCSASAAC 9 of the EARTHING STANDARD.

Standard earth electrode configurations shall comply with Table 3 of the earthing standards for the applicable soil resistivity range. The Contractor shall undertake the necessary soil resistivity tests prior to the installation of the earth electrode. The soil resistivity results together with the Contractor's proposal for the electrode type shall be submitted to the Engineer for approval prior to the commencement of the installation.

The following are the maximum allowable electrode resistances:

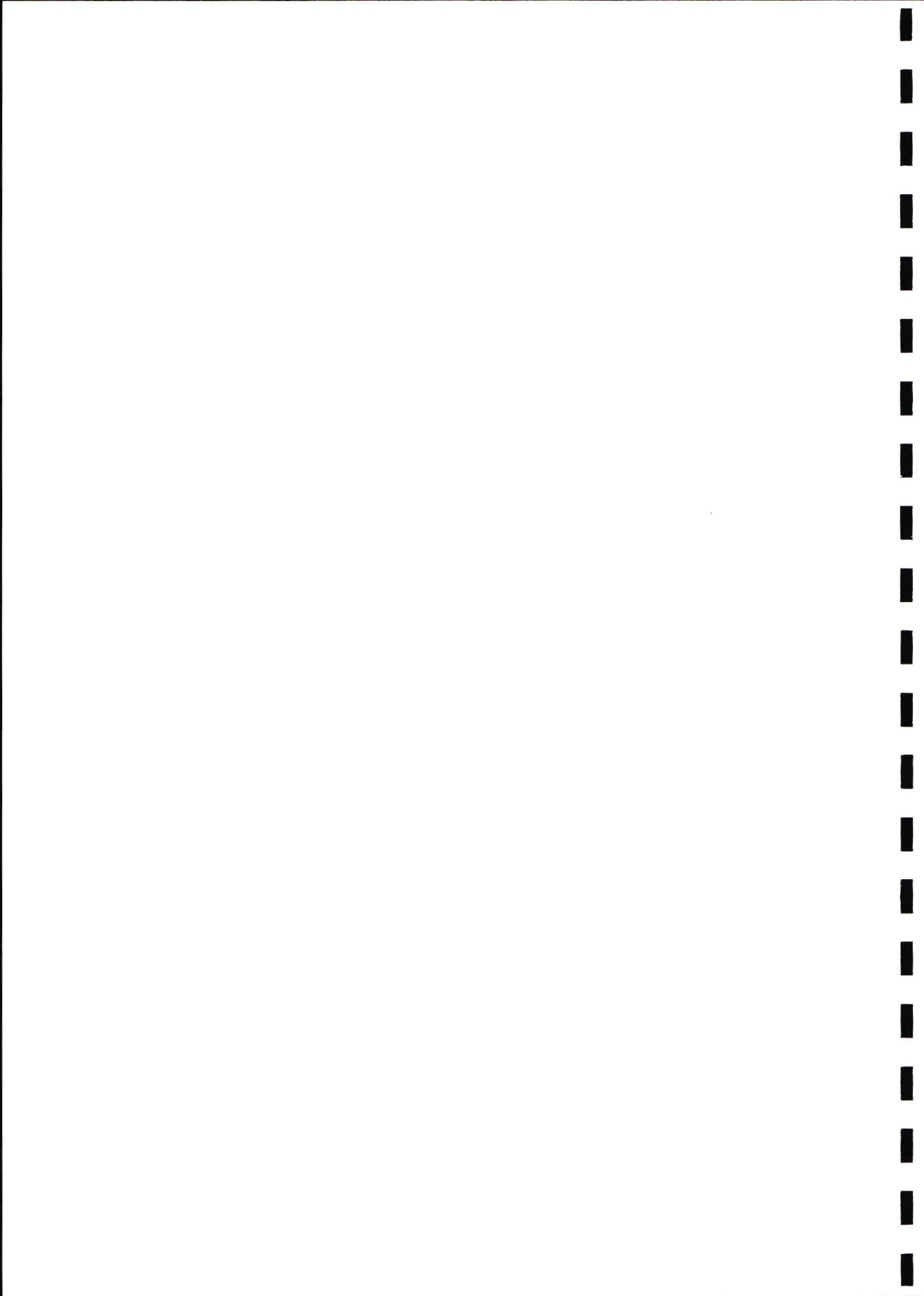
MV electrode resistance	: 30 ohms
LV electrode resistance	: 20 ohms

The earthing of the transformers shall comply with the requirements of the Earthing Standards.

6.8 Connection to the existing network

The Contractor shall liaise with Eskom for the connection of the LV feeders to the new miniature substation. The Contractor shall be responsible for all scheduling.





6.10 Proposals

The existing overhead line is proposed to be relocated as indicated in Figure 9. The route will be reviewed and approved by Eskom. The construction of the new proposal and decommissioning of the existing powerline can be done by either Eskom or by means of a Selfbuild project.



Figure 9: Proposed new route.

6.10.1. Expected Scope of Works

The existing drop out fuse set on structure "38M7481" (See Figure 10) will be required to move one span structure down the radial feed towards Klapmuts. The existing intermediate structures will be required to be changed to an inline strain A-Frame and the existing drop out fuse set applied for protection of the existing transformer onwards at Klapmuts (38M7481).

The inline strain direction at structure 38M7481 will be redirected to operated along the R44. The existing steel cross arm will be shifted to feed across the R44 towards Paarl. The existing structure, 38M7481 will serve as the location from which the new proposed feed route will run (position A) around the development and terminate at the dam on the opposite side of the development (position B).

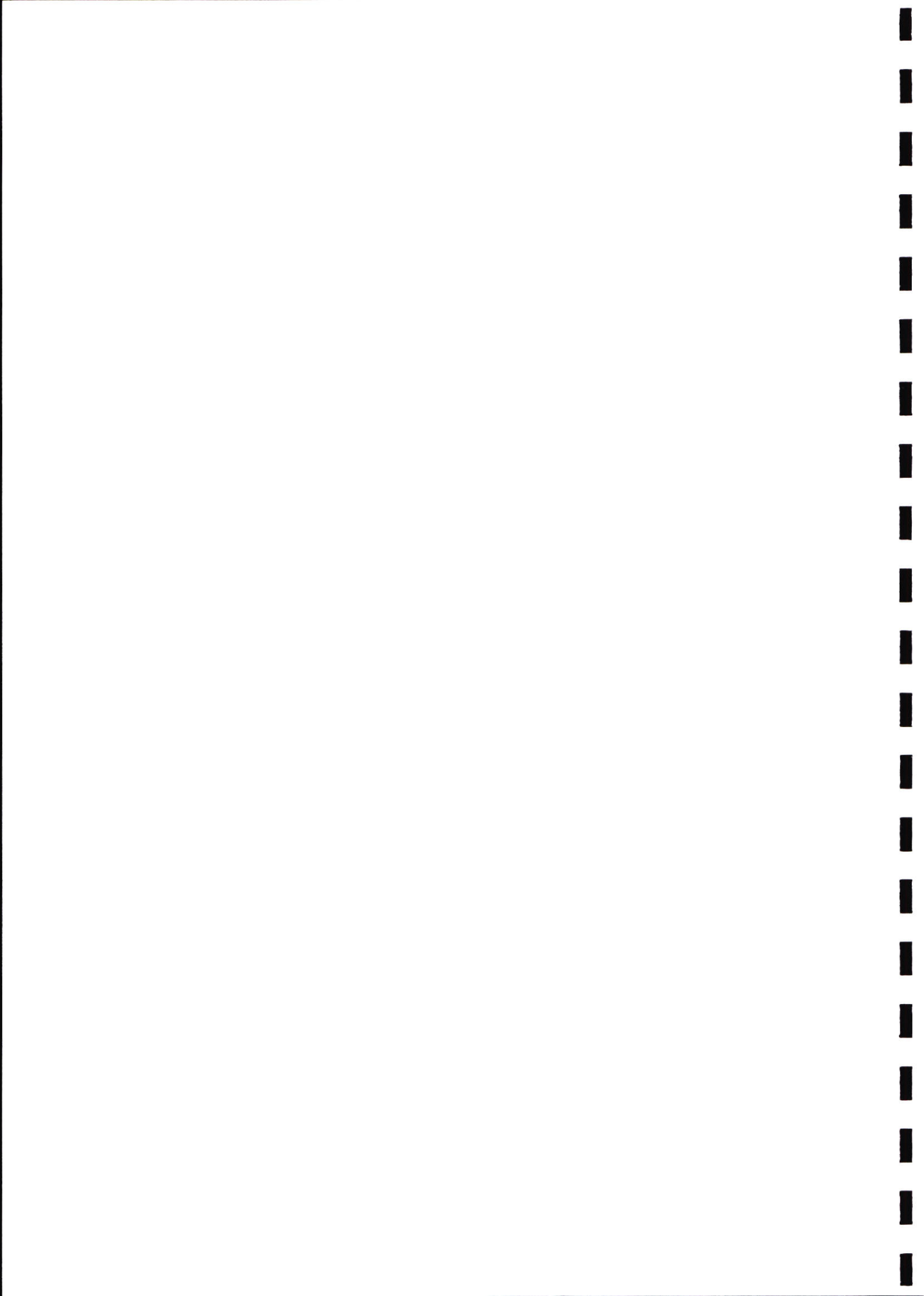




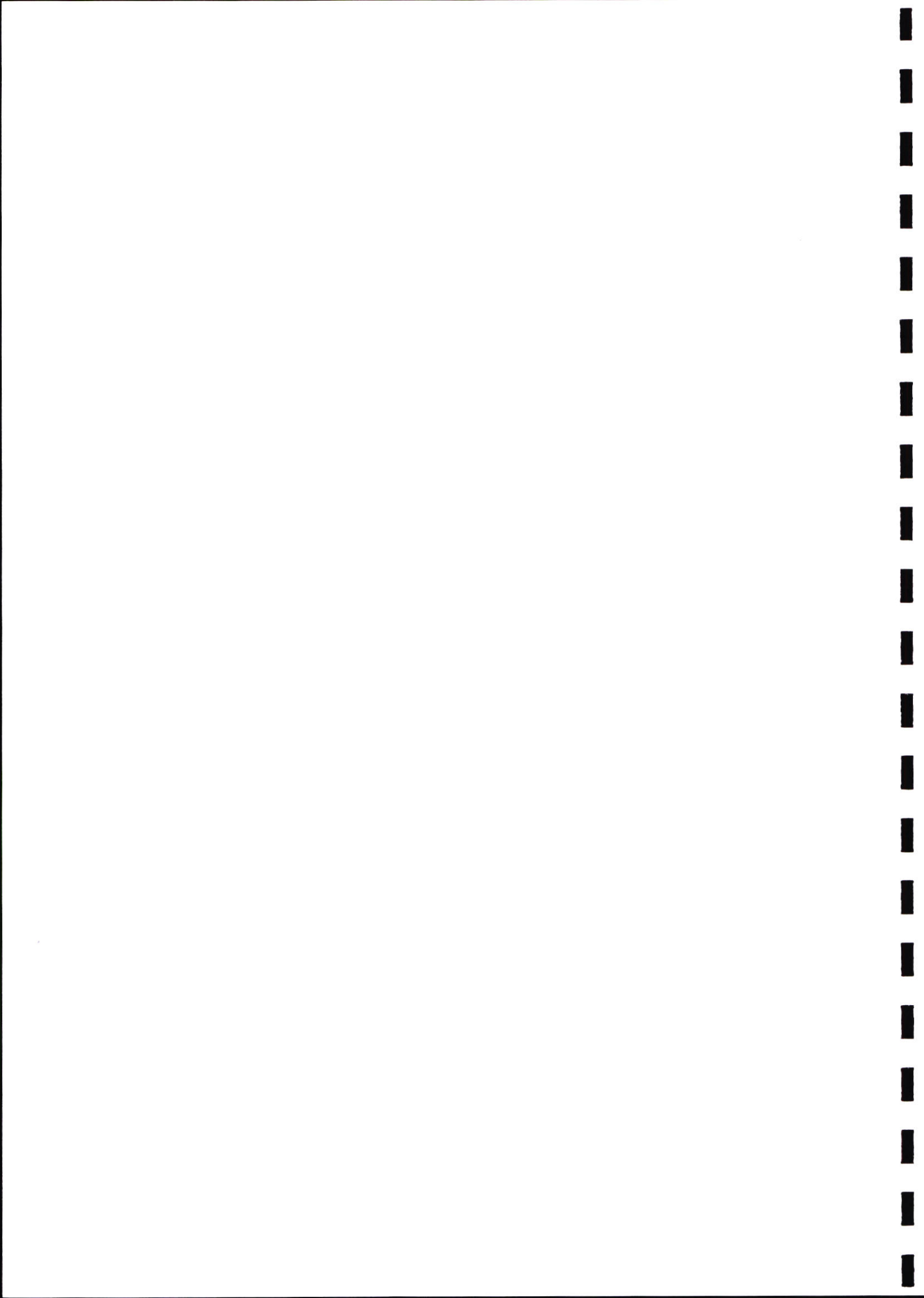
Figure 10: Existing structure 38M7481

The following options are presented for review.

6.10.2. Option 1: Overhead line

Project description

Construct an overhead powerline, ACSR-Fox conductor (Eskom to confirm) on Cape A-frame wooden pole structures along the proposed alternative route (See figure 9). Length of the overhead powerline will be 0.9km. The existing overhead line structure will be decommissioned by and Eskom approved contractor and material deposit to Eskom magazine/ local CNC yard.



Expected Eskom process:

	Action	Estimated timeline
1	Submit application to Eskom (incl.) ✓ Application for NMD upgrade point. ✓ Application for decommissioning of existing overhead line structure. ✓ Application for relocation of existing line	1-3 weeks
2	Quotation Letter from Eskom	3-4 months
3	Eskom internal process	10-14 months
4	Surveyor profile and pegging (incl.) ✓ Wayleave approvals ✓ Road crossing approvals ✓ Eskom to approve the route. ✓ Post office / Telkom / fibre approvals	1-4 months
5	EMP (incl.) ✓ EIA ✓ Heritage investigation ✓ DWS approval ✓ Health and Safety	1-3 months
6	Appoint Eskom approved contractor	1-3 months
7	Delivery of material + construction (incl.) ✓ Decommissioning of exiting overhead line ✓ New overhead power line ✓ New miniature substation	1-2 months
8	Testing and Commissioning (Hand-Over)	1 month

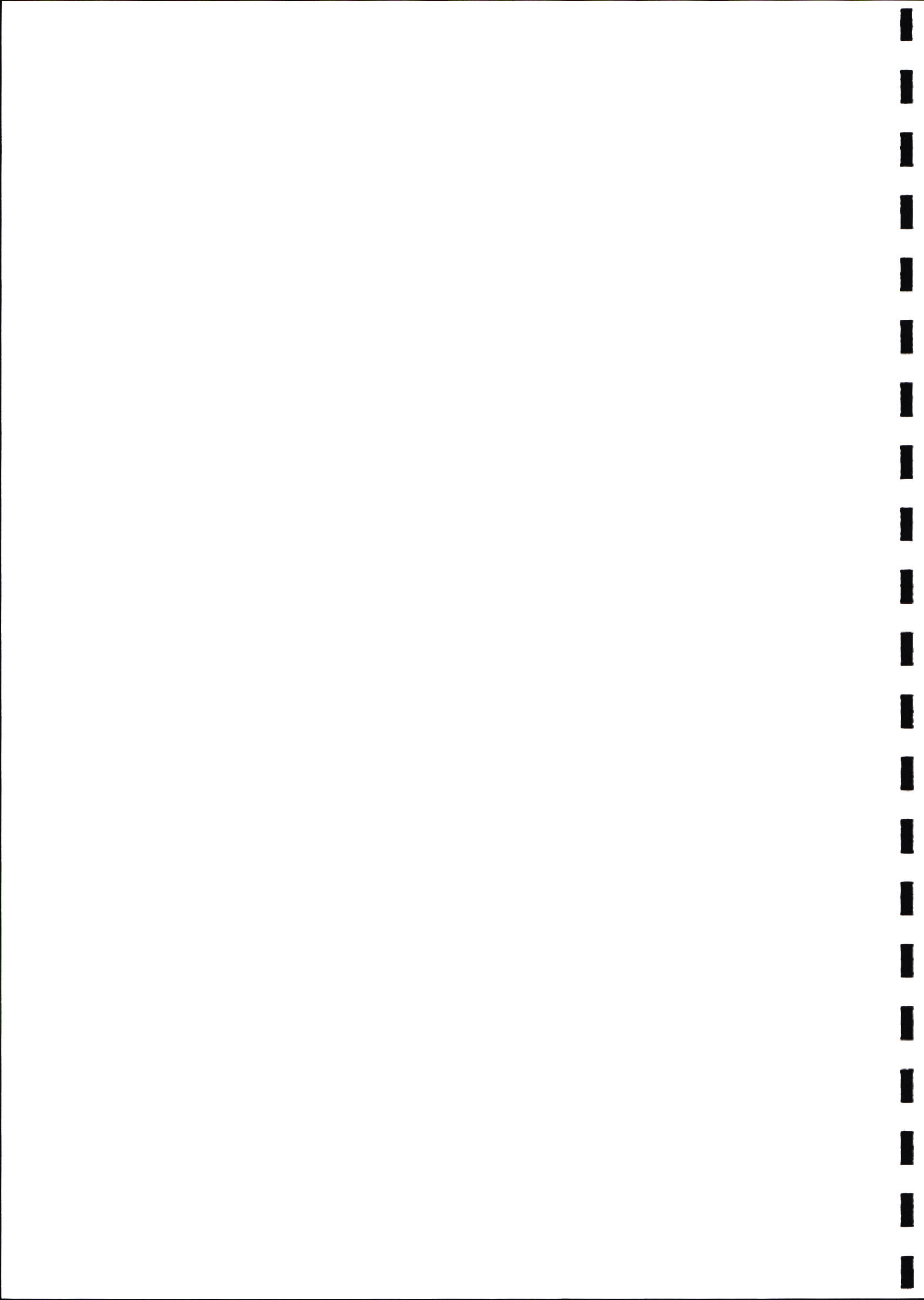
Table 4: Option 1 process

6.10.3. Option 2: Underground cable

Project description

Lay an HV armoured underground cable, 1000mm below final ground level along the proposed alternative route (See figure 9). Route and depth to be approved by Eskom. Length of the underground cable will be 0.93km. Areal pole terminations will be required at both position A and B, respectively. The existing overhead line structure will be decommissioned by and Eskom approved contractor and material deposit to Eskom magazine/ local CNC yard.





Expected Eskom process:

	Action	Estimated timeline
1	Submit application to Eskom (incl.) ✓ Application for NMD upgrade point. ✓ Application for decommissioning of existing overhead line structure. ✓ Application for relocation of existing line	1-3 weeks
2	Quotation Letter from Eskom	3-4 months
3	Eskom internal process	10-14 months
4	Surveyor profile (incl.) ✓ Wayleave approvals ✓ Road crossing approvals ✓ Eskom to approve the route. ✓ Post office / Telkom / fibre approvals	1-4 months
5	EMP (incl.) ✓ EIA ✓ Heritage investigation ✓ DWS approval ✓ Health and Safety	1-3 months
6	Appoint Eskom approved contractor	1-3 months
7	Delivery of material + construction (incl.) ✓ Decommissioning of exiting overhead line ✓ New underground cable ✓ New miniature substation	4-7 months
8	Testing and Commissioning (Hand Over)	1 month

Table 5: Option 2 process

This is a high-level time estimation. Correspondence and approvals are still required from Eskom for both options. Once route preference has been approved by Eskom, more accurate timeline estimation can be applied.



7. BULK CONTRIBUTION - COST ESTIMATE

7.1 Bulk Contribution

The total bulk contribution estimation payable to the Eskom is: R1 800 000,00 (excl. VAT). That includes the credit for the existing connection. The costs are only valid until the end of March 2023.

1	BULK CONNECTION - NOTIFIED MAXIMUM DEMAND	500 kVA	
2	BULK CONNECTION - CONNECTED LOAD	500 kVA	
3	BULK CONNECTION - AFTER DIVERSITY MAXIMUM DEMAND AT SUBSTATION LEVEL	497 kVA	
No.	Description	Amount	Reference
1,1	SHARED NETWORK CHARGES PAYABLE TO SUPPLY AUTHORITY (R4000/kVA)	R2 000 000,00	Estimate
1,2	CREDIT FOR EXISTING CAPACITY (50KVA)	-R200 000,00	Estimate
	TOTAL PAYABLE FOR UPGRADE OF SUPPLY	R1 800 000,00	Incl. 15% VAT
Payable by Client			

All cost must be confirmed by Eskom in writing.

7.2 Line Relocation: Option 1

The new proposed relocated line by means of an overhead powerline may be calculated as follow:

	Description	Amount
1	Construction of new 11kV overhead line	R375 000.00
2	Decommissioning of existing line.	R49 350.00
3	Installations of new supply point	R250 000.00
4	Surveyor	R40 000.00
5	OHS	R38 500.00
6	Preliminary and Generals	R75 285.00
7	Statutory requirements	R45 000.00
	Total (excl. VAT)	R873 135.00

Table 6: Line relocation estimation: Option 1





7.3 Line Relocation: Option 2

The new proposed relocated line by means of an armoured underground cable may be calculated as follow:

	Description	Amount
1	Underground armoured cable	R1 520 000.00
2	Trenching	R1 232 250.00
3	Terminations	R120 000.00
4	Installations	R208 000.00
5	Decommissioning of existing line.	R49 350.00
6	Installations of new supply point	R250 000.00
7	Surveyor	R40 000.00
8	OHS	R38 500.00
9	Preliminary and Generals	R103 743.00
10	Statutory requirements	R45 000.00
	Total (excl. VAT)	R3 606 843.00

Table 7: Line relocation estimation: Option 2

This is a high-level cost estimation. Correspondence and approvals are still required from Eskom for both options. Once route preference has been approved by Eskom, more accurate timeline estimation can be applied.



8. CONCLUSION AND RECOMMENDATION

The following conclusions/recommendations are presented:

1. A NMD of 500kVA for the new development is recommended.
2. The existing NMD of 50kVA must be upgraded to 500kVA.
3. A formal application must be submitted to Eskom for the process to begin.
4. The estimated total bulk contribution payable is R1 800 000,00 (incl. VAT) for a NMD of 500KVA. It includes the credit for the existing connection. This amount will be confirmed by Eskom.
5. It is our recommendation that the electrical requirements of the site should not be increased beyond the scope of the above calculations, as this may cause the site to require a connection larger than 500kVA.
6. The existing overhead line located through the proposed development site is recommended to be relocated around the development. Eskom to approve the proposed route and construction preference.
7. An overhead powerline is less expensive and more time efficient to construct than laying of an underground cable.

Compiled by:



G.J. VAN ROOYEN
Pr Techni.

Approved by:



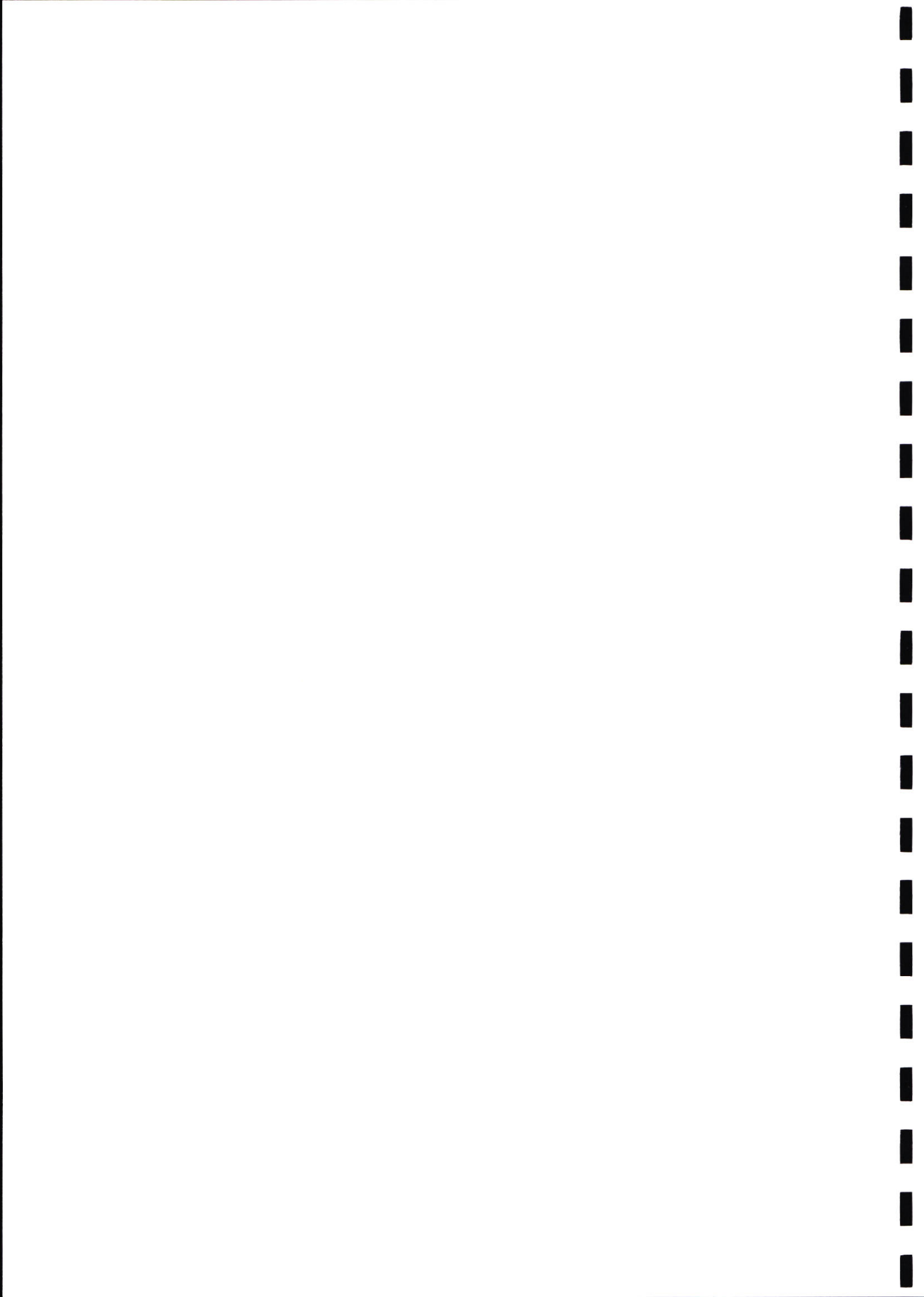
D. R. MÜLLER
Pr Eng

DM CONSULTING ENGINEERS CAPE (PTY) LTD



ANNEXURE 15: TRAFFIC IMPACT REPORT







Urban Development Solutions
Reg no. 2003/043709/23

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Civil Engineering
(Water, Sewer, Stormwater)
Roads and Transport
Traffic Engineering
Project Management

Offices

Stellenbosch, Piketberg, Somerset
West, Clanwilliam



A Level 1 Contributor to B-BBEE

Date: 17 July 2023

Our Ref: UDS442/Reports/TIS

NuPlan Africa Town and Urban Planners

P.O. Box 165

WELLINGTON

7654

ATTENTION: Mr Theo Steyn

Dear Sir,

**APPLICATION FOR SUBDIVISION AND REZONING OF PORTION 5 OF FARM 716, KLAPMUTS
(STELLENBOSCH): TRAFFIC IMPACT STATEMENT**

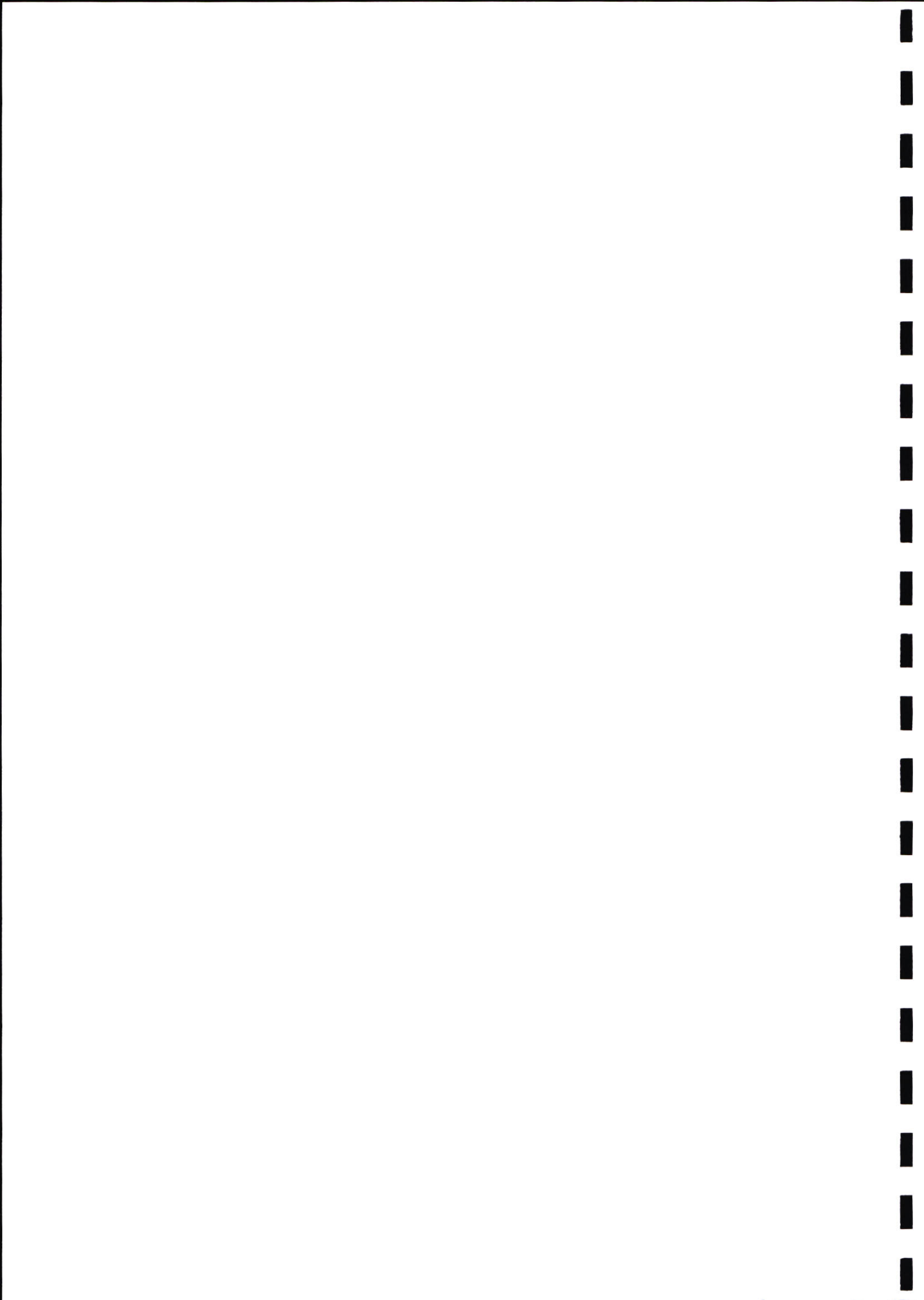
This company was appointed by *NuPlan Africa* to prepare a Traffic Impact Statement (TIS) for the proposed development of Farm 716/5, Klappmuts.

1. BACKGROUND AND LOCALITY

The subject property is bordered by the R44 (MR 27) to the east, and situated approximately halfway between Old Paarl Road (MR 189) and the N1, Klappmuts. See the **Locality Plan** attached.

The property is currently zoned for agricultural use, with direct access to the R44 to opposite (staggered) the existing 'Butterfly World'-access.

This TIS accompanies the Application for Rezoning and Subdivision of Farm 716/5, Klappmuts.



2. PROPOSED DEVELOPMENT

2.1 Proposed Development

The proposed development is that of a gated residential estate, consisting of 110 townhouse-type erven. Access to the individual erven will be via private streets, which is accessed via security controls at a guardhouse.

The proposed layout is indicated on the attached **Revised Draft SDP rev 14** prepared by *Jaco Botha Architects*.

2.2 Access to the Property

As briefly mentioned above, access to the subject property is currently obtained from the R44 – see **Diagram 1** below. According to the available *Arterial Management Plan (AMP)* for the R44, access to the properties within this node are to be provided from Old Paarl Road, and access to the R44 will only be allowed via a future left-in as can be seen below. The Old Paarl Road-access will be via the position of the existing *Rozenmeer* development, i.e. Brounger Street. Detail on possible access will be further discussed in *paragraph 4* below.

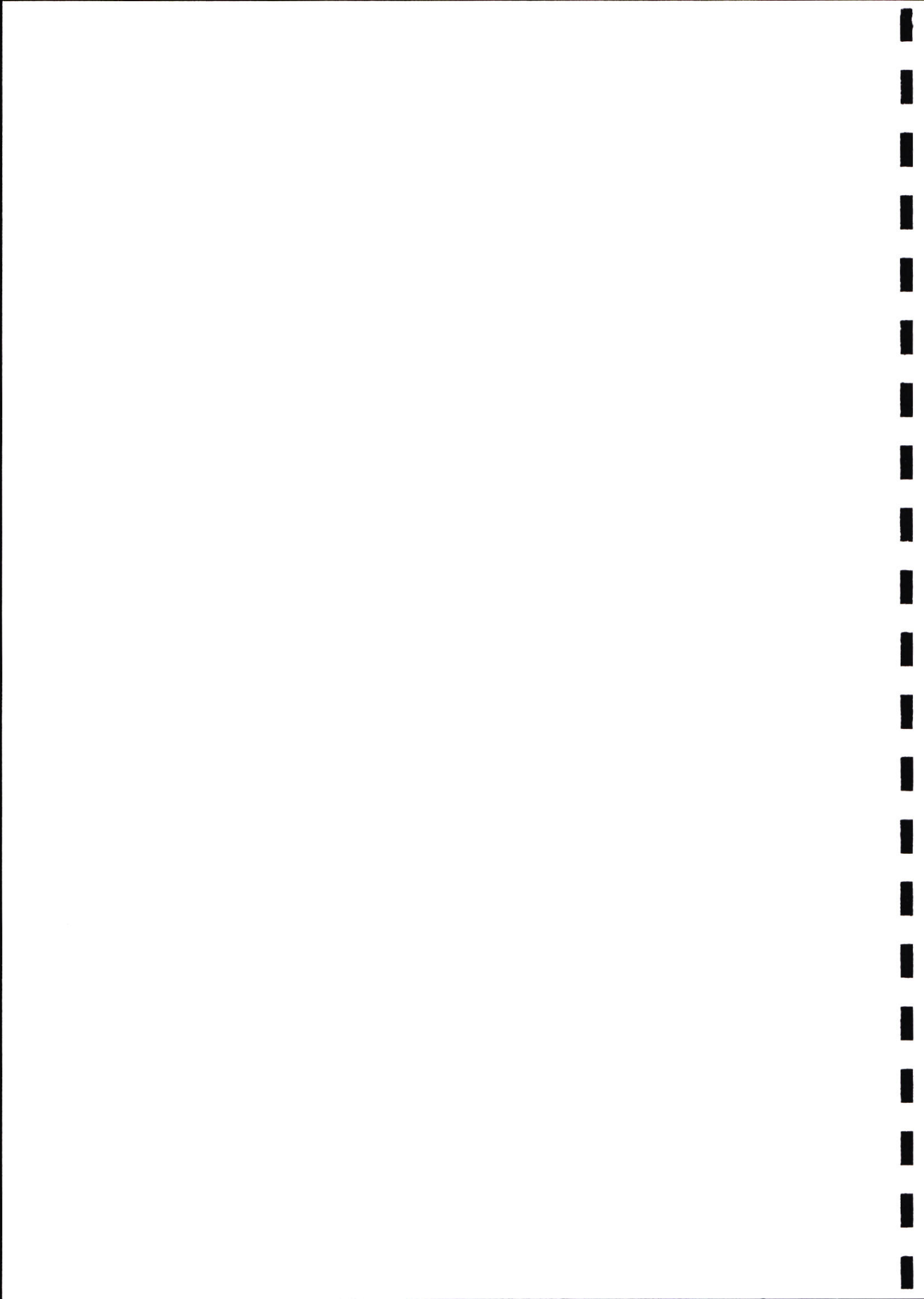


Diagram 1 : Access to subject property and proposed development

3. TRAFFIC

3.1 Available Traffic

Available traffic volumes were obtained from counts previously conducted in 2021 at the R44/Old Main Road intersection and the two terminal points of the N1/R44-interchange. The peak hour volumes derived from the said counts are indicated in **Figure 1** below.



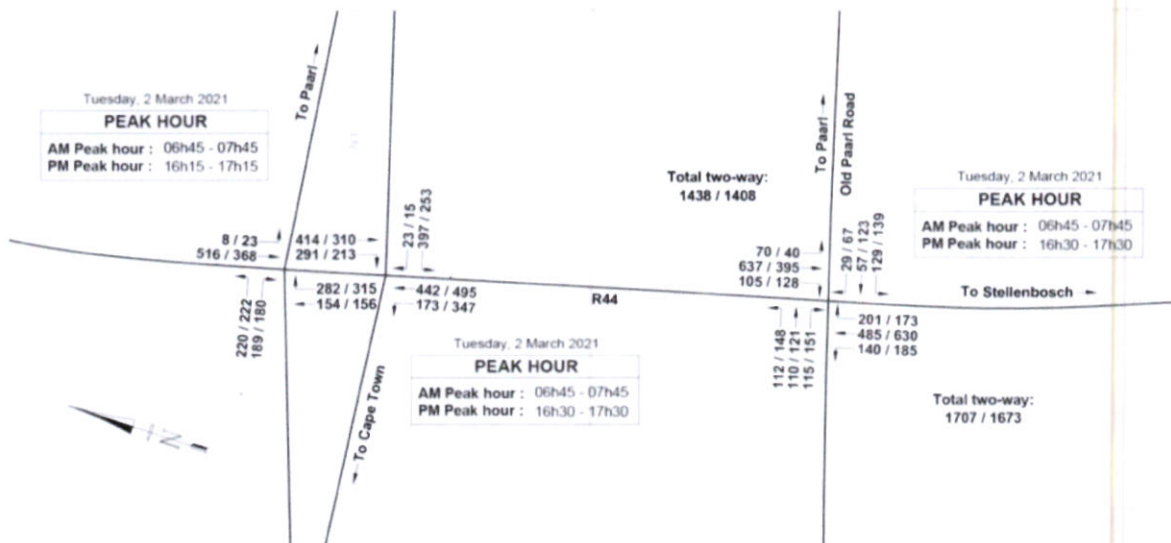


Figure 1 : Available 2021 AM/PM Peak Hour Traffic Volumes

3.2 Traffic Growth

To assess a future scenario (five-year-horison from date of report), the abovementioned peak hour volumes were increased for seven (7) years to obtain estimated 2028 volumes.

In the past few years, a number of development applications in the Klappmuts area were submitted, and some approved. A number of development applications are also currently being prepared along Old Paarl Road on the Drakenstein Municipality side of the Municipal Boundary (which is situated approximately 2,5 km from the R44). The most significant development in the Klappmuts area is the Stellenbosch Bridge development, for which certain Framework Approvals have been granted, on condition that details be confirmed during Site Development Plan (SDP) applications per pocket as they are intended to be implemented. At this stage, such detailed applications have not yet been submitted, however, construction of the first access-link to the said development will soon commence.

For the purpose of this report and to methodically provide for development roll-out, a slightly above average 4% per annum growth rate will be applied to account for general background growth, as well as additional development. This is in line with the TMH17 recommended growth rates for average-(3-4%) to above average (4-6%) growth areas.

According to information, approval of the development application on the neighbouring property (Farm 716/27) is imminent. The said development consists of 40 townhouses, and will obtain access via the same route as the proposed development on the subject property. Therefore, the potential peak hour trip generation of the said neighbouring property was added to the abovementioned increased volumes (i.e. in addition to the annual traffic growth applied).

The future background peak hour volumes (estimated 2028) are indicated in **Figure 2** below.

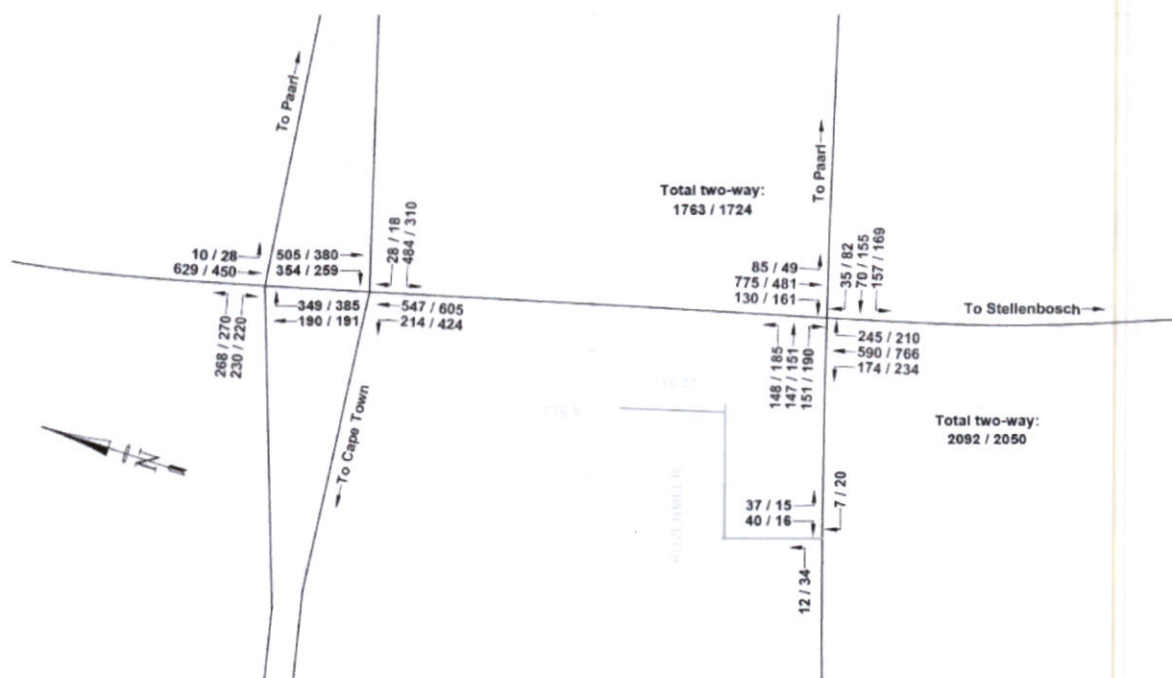


Figure 2 : Estimated 2028 AM/PM Peak Hour Traffic Volumes

3.3 Trip Generation

Trip generation rates as contained in the TMH17 *South African Trip Data Manual* were consulted to calculate the potential peak hour traffic that can be generated by the proposed development. The TMH17 suggests 0,85 trips per unit for townhouses, with a 25/75 in/out split during the AM peak hour and 70/30 during the PM peak hour.

Based on the above, the proposed development would thus have the potential to generate 93 peak hours trips (23 in, 70 out during the AM peak hour and 65 in, 28 out during the PM peak hour).

3.4 Trip Distribution

As briefly mentioned above, access to Old Paarl Road will be via the position of the existing *Rozenmeer* development-access, i.e. Brounger Street. From the Old Paarl Road/Brounger Street intersection, trips were distributed along Old Paarl Road in accordance with the existing directional split in peak hour traffic, and similarly also at the R44-intersections.

The said distribution is indicated in **Figure 3** below, whilst the distributed trips added to the background traffic is indicated in **Figure 4**.

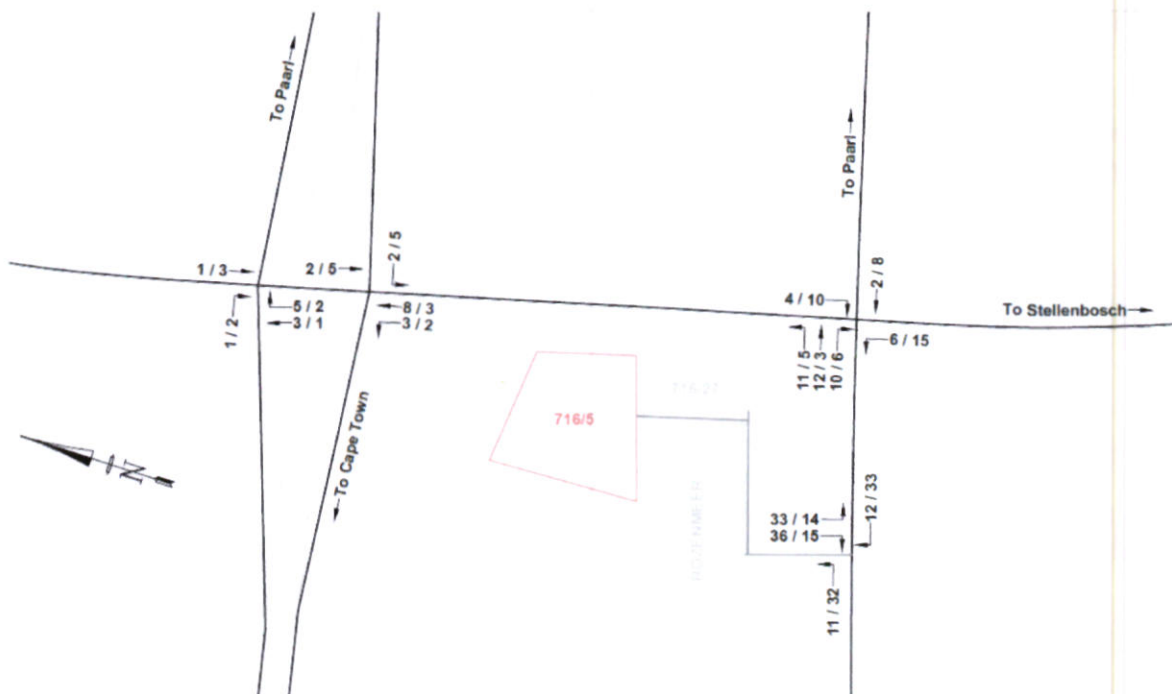


Figure 3 : Distribution of Trips Potentially Generated by Proposed Development

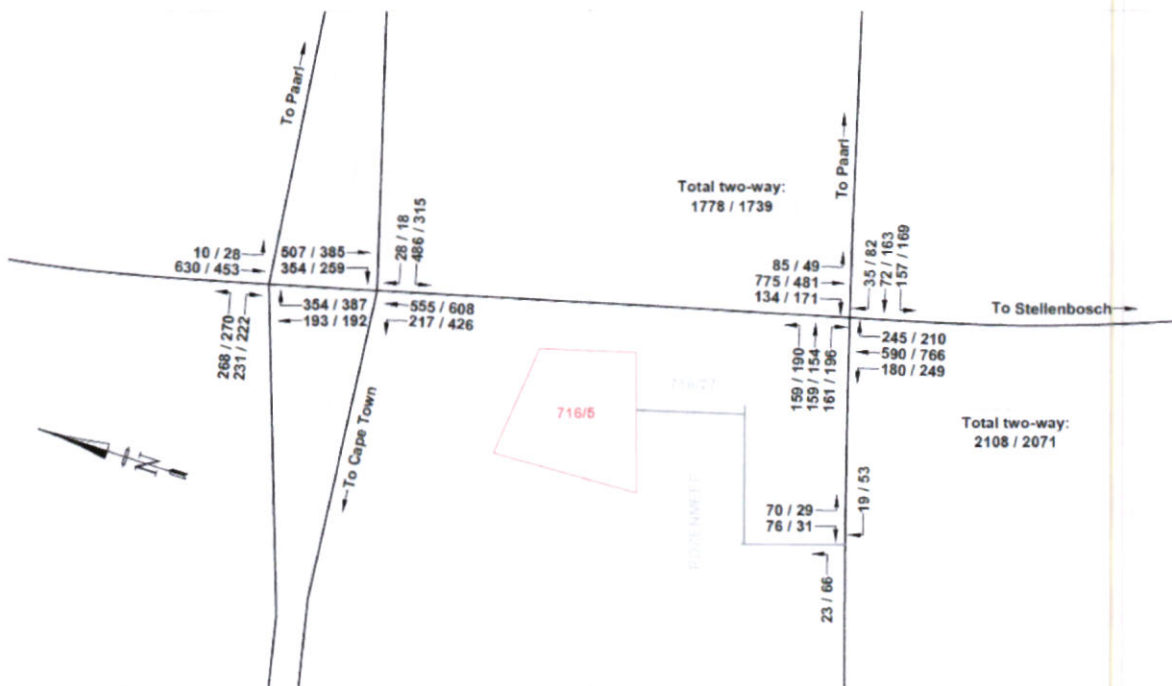


Figure 4 : Expected 2028 AM/PM Peak Hour Traffic Volumes

3.5 Traffic Analysis

Traffic analyses of the intersections were done by means of the Sidra Intersection 9.0 software. Service levels A to D are considered acceptable, with D the critical. In congested areas, service level E can in some cases also be considered as the critical for the time being.

The intersections analysed consist of layouts as follows:

R44/Old Paarl Road intersection:

This intersection is currently signalised with dedicated right-turn lanes on all approaches, and dedicated left-turn lanes on the eastern Old Paarl Road- and northern R44-approaches. See **Diagram 2** below.



Diagram 2 : Existing R44/Old Paarl Road intersection lane layout

N1/R44 interchange:

The two terminal points along the R44 is currently stop-controlled on the off-ramp-approaches, with free-flow conditions along the R44. No turning lanes exist at these two intersections, however, the wider off-ramp-approaches allow left-turning vehicles to pass right-turning vehicles waiting to enter the R44. See **Diagram 3** below.



Diagram 3 : Existing N1/R44 interchange lane layout



Old Paarl Road/Brounger Street intersection:

This intersection is currently stop-controlled on the Brounger Street-approach, with free-flow conditions along Old Paarl Road. A fourth leg exists to opposite Brounger Street which accommodates delivery vehicles from the retail centre on the corner of the R44 and Old Paarl Road, and also provides access to the railway station. Dedicated turning lanes do not exist at the intersection, however, the Brounger Street-approach is relatively wide, and thus able to accommodate left-turning vehicles to pass right-turning vehicles awaiting to enter Old Paarl Road. See **Diagram 4** below.



Diagram 4 : Existing Old Paarl Road/Brounger Street intersection lane layout

3.5.1 Analysis of Available and Estimated Peak Hour Volumes (excluding proposed development)

Link Volumes:

As can be seen in **Figure 1** and **Figure 2** above, the link volumes (total two-way traffic) along the R44 to the north and south of its intersection with Old Paarl Road starts to reach a point during the peak hours where the dualling thereof becomes required in the short term. This is a background issue that would have to be attended to by the Roads Authorities. According to available information, the Environmental Authorisation for the dualling of the R44 through Klapmuts is valid until the year 2031.

The link volumes along Old Paarl Road are expected in the order of approximately 820 and 1 070 during the future background AM and PM peak hours, which are still within the capacity of the existing single carriageway.

R44/Old Paarl Road intersection:

According to the Sidra analyses, service levels D and above are experienced on all movements during the available peak hours.

To accommodate growth in traffic at this intersection, it is suggested that dedicated left-turn lanes be provided on the two approaches where a shared through-left lane currently exists (i.e. western Old Paarl Road- and southern R44-approaches). With these lanes in place, service level D can be expected on most movements during the estimated 2028 peak hours.

It can thus be concluded that to accommodate the background traffic at the R44/Old Paarl Road intersection, dedicated left-turn lanes are suggested on the western Old Paarl Road- and southern R44-approaches.

N1/R44 interchange:

During the available peak hours, the Sidra analyses show service levels D and E on the right-turn movements of the southern- and northern-off-ramps, respectively. During the estimated 2028 peak hours, these can be expected to worsen to service level F.

According to information, the consultants of the *Distell*-project to the north of the N1 are busy with designs for the possible upgrade of this interchange (to a pinched teardrop-interchange). The upgrade of the interchange forms part of the said *Distell*-project's approval, as well as the *Stellenbosch Bridge* Framework approval.

It can thus be concluded that the upgrading of the N1/R44 interchange is required to accommodate the background traffic, and that it is being dealt with by the larger surrounding developments.

Old Paarl Road/Brounger Street intersection:

According to the Sidra analyses, this intersection can be expected to operate acceptably during the estimated 2028 peak hours. The Brounger Street-approach seems to be wide enough to accommodate separate turning lanes – it would thus be suggested that a right-turn lane be painted on the said approach to assist left-turning vehicles to pass whilst right-turners are waiting to enter Old Paarl Road.

It can thus be concluded that to accommodate the background traffic, the Brounger Street-approach to its intersection with Old Paarl Road be provided with a dedicated right-turn lane (by way of painted road markings).

3.5.2 Analysis of Expected Peak Hour Volumes (including proposed development)

Link Volumes:

The increase in total two-way traffic along the sections discussed above are not considered significant enough that additional upgrades would be required as result of the proposed development-traffic.

Intersections:

With the addition of the proposed development traffic, the conditions as discussed above can be expected to remain, with marginal increase in delays.

It can thus be concluded that no external road upgrades are considered necessary as result of the proposed development.

4. GEOMETRY

As previously mentioned, access will be obtained from Old Paarl Road via Brounger Street. According to the Stellenbosch Municipality's *Road Master Plan* (2018), Old Paarl Road is classified as a Class 3-road, whilst Brounger Street is indicated as a Class 5.

The access configuration via Brounger Street is based on the proposal as contained in the *R44 AMP* of Aecom (then BKS) prepared for WCG – see an extract in **Diagram 5** below. According to the said plan, the existing R44-access is to be closed, and the access-route to traverse the neighbouring Farm 716/27 along its shared boundary with *Rozenmeer*, to continue into "Heaford Street" which intersects Brounger Street between the *Rozenmeer*-access (± 25 metres) and Old Paarl Road (± 45 meters). The limited spacing of these intersections along Brounger Street was raised as concern during discussions with WCG regarding proposed improved access to this node from the R44 in the form of a left-in/left-out access with partial right-turn (along R44 towards developments/inbound). However, it was the opinion of WCG that the AMP-access configuration be adhered to.

A panhandle currently providing access to Farm 716/7 (west of the subject property) from the R44 for its existing zoning/rights is situated between the subject property and the abovementioned public street. According to the project team, permission has been obtained from the property owners of the panhandle to obtain access across a section thereof and a servitude right-of-way will be registered accordingly. Based on the position and width of the panhandle in relation to the rest of the said neighbouring property (i.e. position of existing dam, etc.) it is not expected that access via the panhandle will remain with the development thereof, especially in light of the access via the R44 possibly becoming a left-in only in future.

The access to the proposed development will be security controlled, with two lanes inbound and one outbound. A horizontal clearance of 4,0 metres will be available for emergency vehicles, with the security booms set back approximately two vehicle lengths from the property boundary.

Internal circulation will be via private residential streets, consisting of 8 metre road reserves and 5,5 to 6,0 metre surfaced widths. The remaining space within the road reserve will be available for pedestrians within the residential estate.

A refuse room is proposed at the security controlled access with space for refuse trucks to turn around. Municipal refuse removal will thus be possible from the outside of the access controls. The turning space provided is situated within the previously mentioned servitude right-of-way across a section of the neighbouring Farm 716/7-panhandle. As noted above, it is not expected that the said neighbouring property would utilise the panhandle with possible future development of the property due to the limited width and limited access to the R44 (possible left-in only in future). However, should the panhandle be utilised by the parent property, the occasional turning of the trucks (most likely only once a week), and the frequency of vehicles traveling via the panhandle from a possible future left-in from the R44 to Farm 716/7 is not expected to be an issue.

5. PARKING

The *Stellenbosch Zoning Scheme* parking requirements for grouphousing are 1 bay per unit plus 1 bay per unit for visitors, i.e. 2 bays per unit. The 110 units will thus require 220 parking bays.

Parking is planned to be provided on the individual erven in the form of garages/driveways at a rate of 2 bays per unit, as per the abovementioned requirements.

The dimensions of parking spaces will be in line with normal parking standards, i.e. 2,5 by 5,0 metre bays. As mentioned above, the road reserves of internal streets are 8 metres, with streets measuring between 5,5 and 6,0 metres wide. This would result in available isle widths of between 6,75 and 7,0 metres from the individual property boundary to the opposite edge of the street. Although slightly substandard, this would be expected to accommodate passenger vehicles manoeuvring in/out of their parking spaces within the residential estate.

6. PUBLIC- AND NON-MOTORISED TRANSPORT

Formal public transport facilities do not exist in the immediate vicinity of the subject property, but it is also not expected that formal facilities would be required for the proposed development.

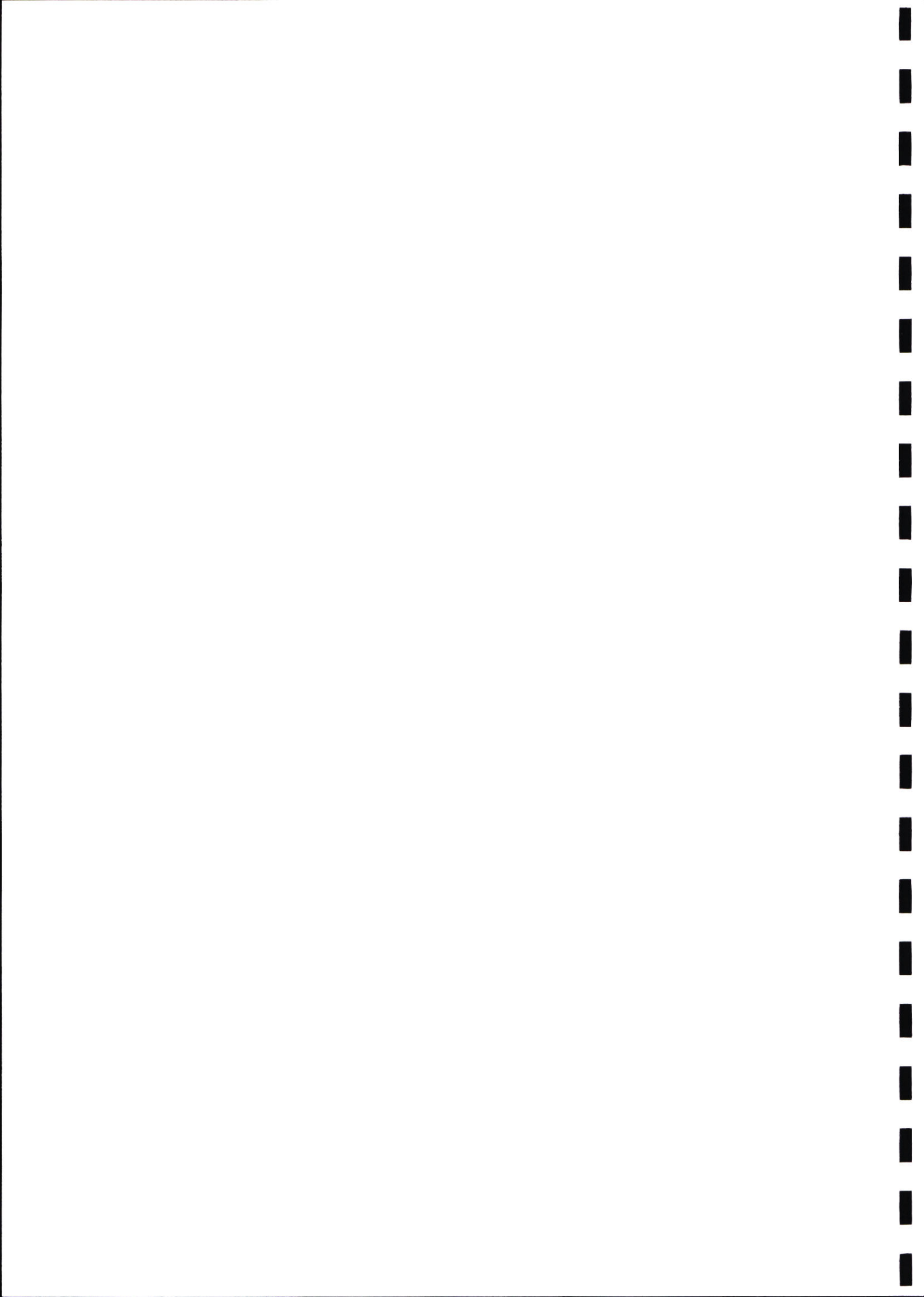
Pedestrian accommodation will be provided along at least one side of the public access street between Old Paarl Road and the proposed development access, with a pedestrian gate at the security controlled access.

It is not considered necessary to provide additional public- or non-motorised transport facilities as result of the proposed development.

7. CONCLUSIONS

The following can be concluded from the report:

- 1) That this TIS accompanies the application for rezoning and subdivision of Farm 716/5, bordered by the R44 (MR 27) to the east, and situated approximately halfway between Old Paarl Road (MR 189) and the N1, Klapmuts;
- 2) That the proposed development consists of 110 townhouse-type erven, with access to be obtained via the neighbouring Farm 716/27, Heaford Street and Brounger Street to Old Paarl Road as per the AMP for the R44 (MR 27) as per WCG planning;
- 3) That according to information, an application for the neighbouring Farm 716/27 was submitted for 40 townhouses, which included provision for the 15 metre wide public street reserve along the Rozenmeer-boundary via which access to the proposed development will be obtained;
- 4) That the proposed development will have the potential to generate 93 peak hour trips (23 in, 70 out during the AM peak hour and 65 in, 28 out during the PM peak hour);
- 5) That to accommodate background traffic:
 - a) At the R44/Old Paarl Road intersection, dedicated left-turn lanes are suggested on the western Old Paarl Road- and southern R44-approaches;
 - b) At the Old Paarl Road/Brounger Street intersection, the Brounger Street-approach be provided with a dedicated right-turn lane (by way of painted road markings);
- 6) That no external road upgrades are considered necessary as result of the proposed development;
- 7) That the public street within its 15 metre road reserve is suggested to be provided with a 7,4 metre blacktop width, and sidewalk along at least one side thereof;
- 8) That Heaford Street currently consists of a 9,45 metre reserve with an additional 5,5 metres subdivided from the Rozenmeer parent property in order to provide Heaford Street with a 15 metre road reserve:
 - a) That according to information the said subdivided strip has not yet been rezoned and transferred as per the development's conditions of approval – this is to be addressed by the Municipality;
 - b) And that similarly, the illegal structures currently encroaching into the Heaford Street reserve is also to be addressed by the Municipality;
- 9) That permission has been obtained from the neighbouring 'panhandle property' for the proposed development to obtain access across a section thereof and that a servitude right-of-way will be registered accordingly;
- 10) That the security controlled access will consist of two inbound lanes and one outbound lane, with a 4,0 metre horizontal clearance to accommodate emergency vehicles, and security booms setback approximately two vehicle lengths from the property boundary, with a refuse room and turning space for Municipal refuse trucks to the outside of the security controls;
- 11) That internal circulation will be via internal streets (8 metre road reserves, with 5,5 to 6,0 metre streets);
- 12) That 2 parking bays per residential unit will be provided in line with the requirements of the Municipality, and that parking bay dimensions will be in line with normal parking standards, with available isle widths slightly substandard but expected to accommodate passenger vehicles manoeuvring in/out of their parking spaces within the residential estate; and
- 13) That a sidewalk will be provided along at least one side of the public street providing access to the proposed development, that a pedestrian gate is proposed at the security controlled access, and that no additional public- or non-motorised transport facilities are considered necessary as result of the proposed development.



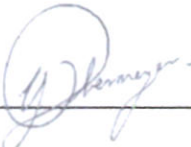
8. RECOMMENDATIONS

From the above, it is recommended that the proposed residential development on Farm 716/5, Klapmuts, be considered for approval from a traffic flow point of view.

It is further recommended that the DCs payable for the proposed development be contributed to either the construction of the public street required to access the subject property via Old Paarl Road, or alternatively, that it be contributed towards the background upgrades suggested to the R44/Old Paarl Road intersection.

We trust that the Traffic Impact Statement will be to your satisfaction and will gladly provide any additional information required on request.

Yours faithfully,



Compiled by: Yolandi Obermeyer (B Eng)

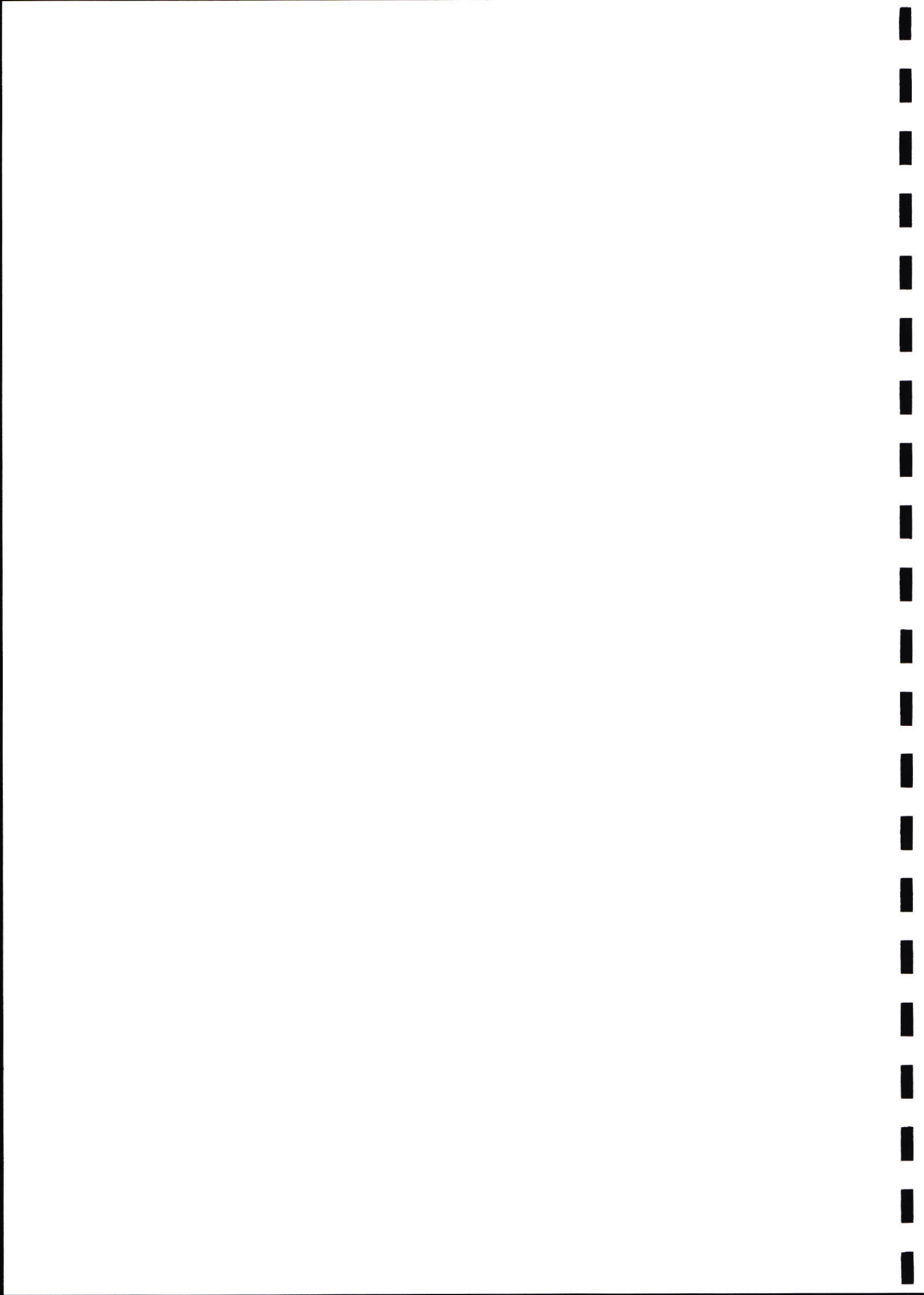
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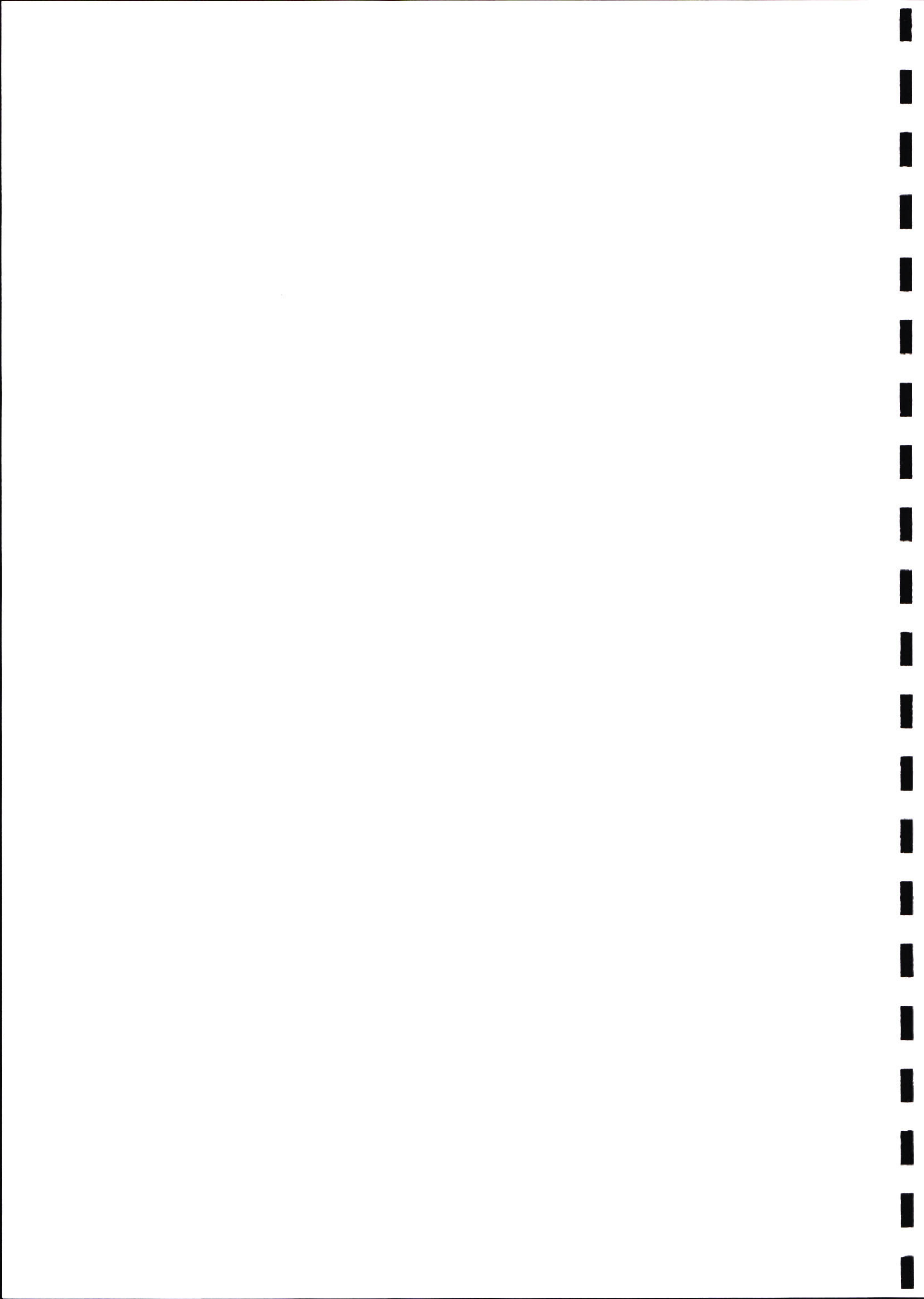


Attachments:

Locality Plan

Revised Draft SDP rev 14 (*Jaco Botha Architects*)





UITKOMS DAM

15m Development Setback

Estate boundary



ERF 1 - ERF 68	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
FOOTPRINT OF TYPE A OPTIONS ABOVE	
FOOTPRINT OF TYPE B OPTIONS ABOVE	
ERF S.A U1 - ERF S.C U14	
TOWNHOUSE A1	64.4 m ²
TOWNHOUSE A2	64.4 m ²
TOWNHOUSE B1	62.1 m ²
TOWNHOUSE B2	62.1 m ²
EVEN TO ACCOMMODATE MULTIPLE TYPES FOR HOME OWNERS LATER SELECTION	

Legend	
●	Trees to be preserved
●	Proposed new trees

S W Attenuation Pond.

Underground Sewage
Treatment Plant
Conservation area

Estate boundary line

Line of existing road
shoulder

Perimeter fencing to be
ClearVu fencing or
similar approved as per
specialist spec & detail

Proposed landscaped
berm

ROAD TO EXOTIC
ANIMAL WORLD

R44

TO STELLENBOSCH

Perimeter fencing to be
ClearVu fencing or similar
approved as per specialist
spec & detail

Proposed future left in road
from R44

Estimated position of
proposed new road, exact
position to be determined by
land surveyor

Proposed Pedestrian
Entrance

Proposed gate house
position

Proposed refuse room
position

Proposed electrical
substation

Refuse truck turning point
and loading position

FOR CLIENT

BAVEN REDDI

DESIGN BY

JBA

DRAWING SHEET NUMBER

DC_A1002

SHEET NAME

REVISED DRAFT SDP rev 14

SCALE

1 : 1000

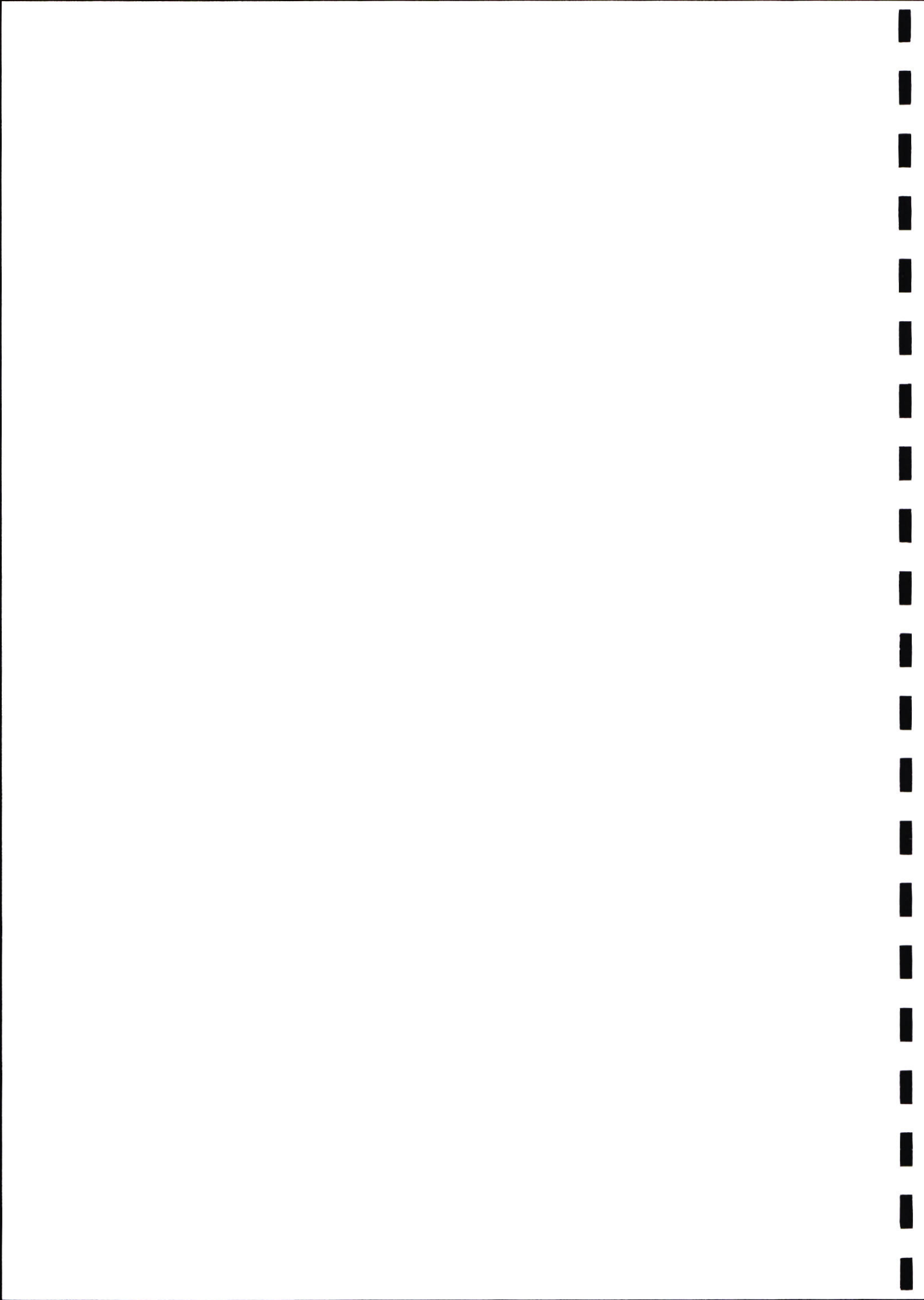
JACOBOTHA ARCHITECTS

• 1st Floor, Church Square House, 5 Spin Street, Cape Town, 8000

• info@jacobotha.com • (+27) 021 180 2546

ANNEXURE 16: BOTANICAL REPORT





**BOTANICAL CONSTRAINTS
ANALYSIS FOR
GROENFONTEIN, PORTION 5 OF
RE/ 716, KLAPMUTS,
STELLENBOSCH MUNICIPALITY,
WESTERN CAPE**

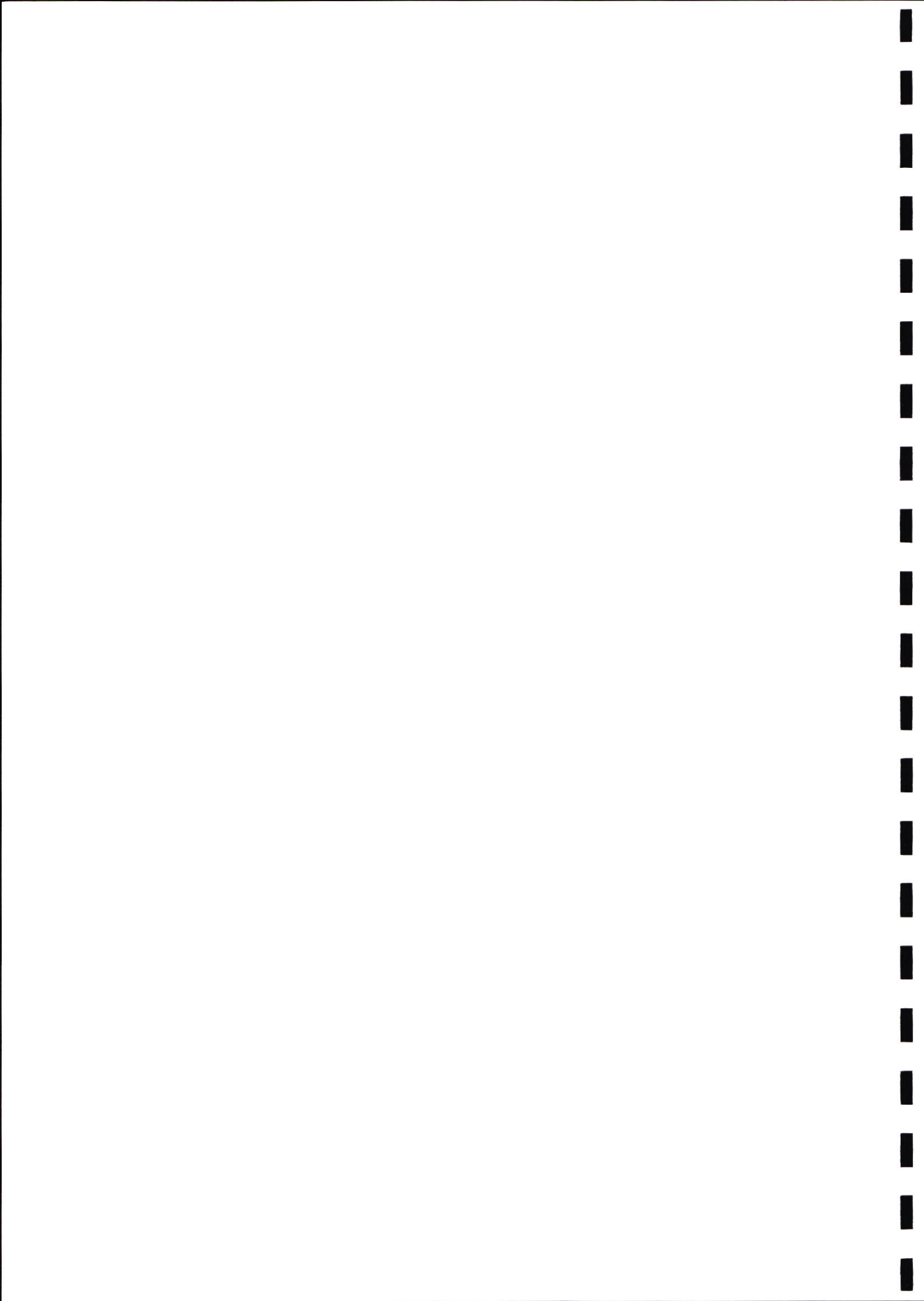


CAPENSIS

in association with
STUART HALL

MAY 2022

REPORT PREPARED FOR
GUILLAUME NEL ENVIRONMENTAL CONSULTANTS



THE SPECIALIST

I, Alexander Stuart Warren Hall, as the appointed specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I:

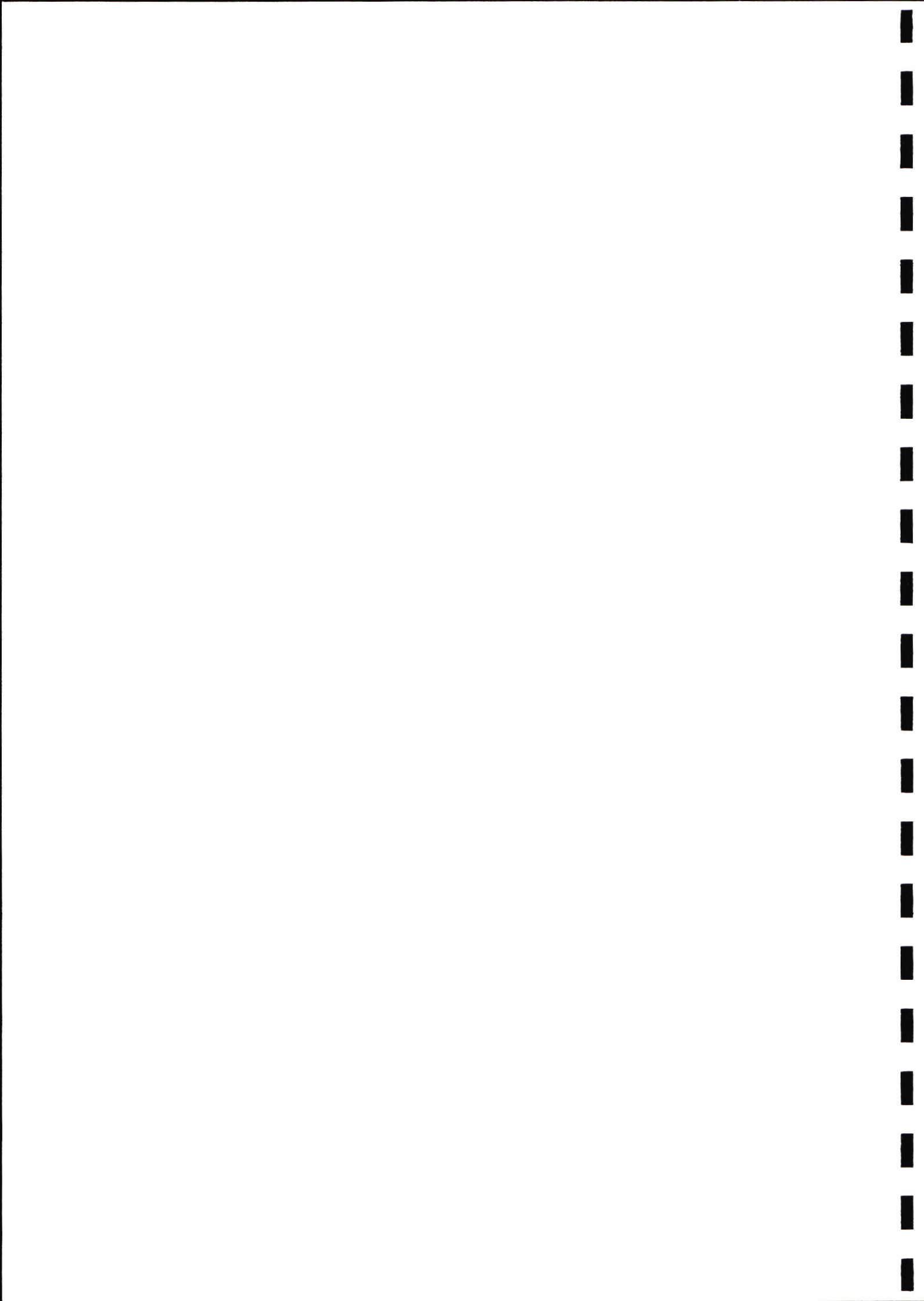
- in terms of the general requirement to be independent:
 - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
- in terms of the remainder of the general requirements for a specialist, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- have disclosed/will disclose, to the applicant all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application;
- have ensured/will ensure that information containing all relevant facts in respect of the application was/will be distributed or was/will be made available to interested and affected parties and the public and that participation by interested and affected parties was/will be facilitated in such a manner that all interested and affected parties were/will be provided with a reasonable opportunity to participate and to provide comments;
- have ensured/will ensure that the comments of all interested and affected parties were/will be considered, recorded and submitted to the Department in respect of the application;
- have ensured/will ensure the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- have kept/will keep a register of all interested and affected parties that participate/d in the public participation process; and
- am aware that a false declaration is an offence in terms of regulation 48 of the 2014 NEMA EIA Regulations.

Note: The terms of reference of the review specialist must be attached.

Signature of the specialist:



Date: 30th May 2022



NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a 'specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014, as amended.

APPOINTMENT OF SPECIALIST

Capensis Ecological Consulting (Pty) Ltd (Capensis) was appointed by Guillaume Nel Environmental Consultants to provide specialist botanical consulting services for proposed development of Groenfontein, portion 5 of RE/716 Klapmuts, Stellenbosch Municipality, Western Cape Province.

CONDITIONS RELATING TO THIS REPORT

The content of this report is based on the authors best scientific and professional knowledge as well as available information. Capensis Ecological Consulting (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the authors. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

DETAILS OF THE SPECIALIST

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Mobile: 063-831-9428
e-mail: ecostu@gmail.com

Expertise

- Qualifications: BSc. Hons. (Botany), PhD (Conservation Ecology)
- Botanist with 4 years' experience in the field of Botanical Surveys
- Has experience in Botanical exploration in South Africa and Malawi
- Has conducted over 20 botanical assessments for the EIA process

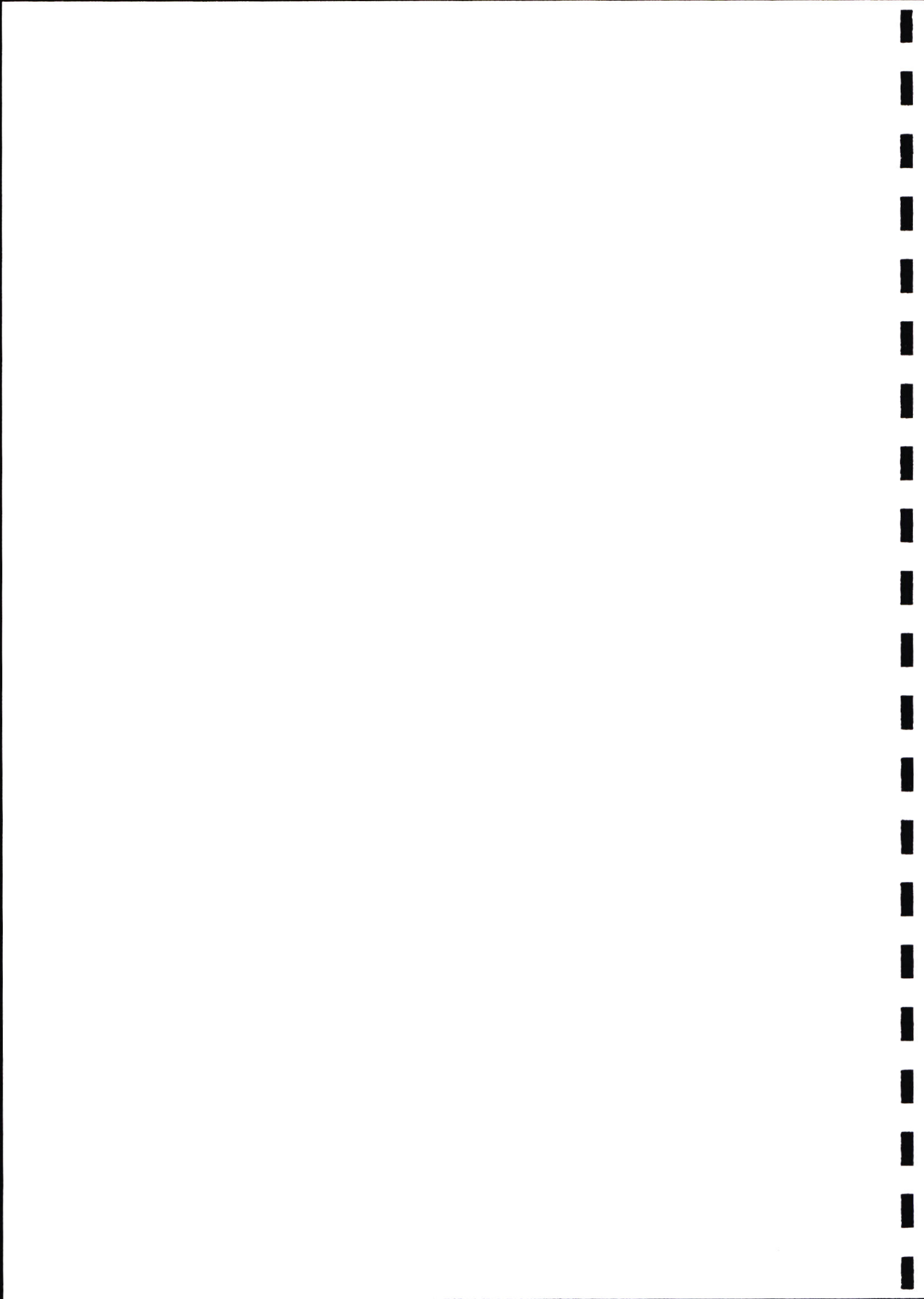


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1. INTRODUCTION

A proposal is underway for development of Groenfontein, Portion 7 of the remainder of Erf 716 in Klapmuts, Stellenbosch Municipality in the Western Cape. Capensis Ecological Consulting Pty (Ltd) (Capensis) was appointed by GNEC to undertake a botanical assessment for the proposed development. The purpose of this study is to determine the development potential (Constraints Analysis) of the proposed project based on the botanical attributes of the study area.

2. PROTOCOL FOR DETERMINING LEVEL OF REPORTING

The new Protocols of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA) prescribe general requirements for undertaking an initial site sensitivity verification and the protocols for the assessment and minimum reporting requirements of environmental impacts (GN 43855 2020). The sensitivity of the site was predetermined using the Department of Environmental Affairs (DEA) screening tool (<https://screening.environment.gov.za/screeningtool/>). The proposed area for development is rated to have very high terrestrial biodiversity sensitivity, but low plant species sensitivity. This project is currently within the constraints analysis phase and therefore if any sensitive vegetation or SCC are found on the site then the relevant report would need to be submitted as part of the application for Environmental Authorization (EA). This report forms part of the input as required in the Protocol for the assessment and reporting of environmental impacts on terrestrial biodiversity (Government Gazette 2020).

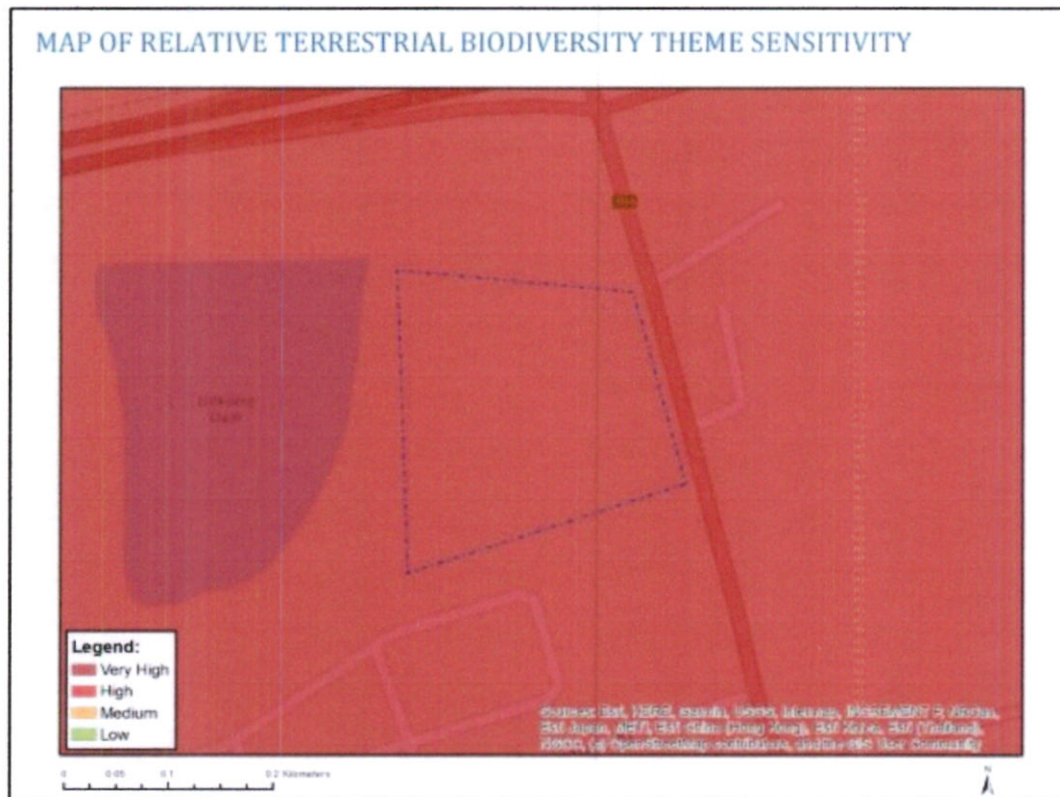


Figure 1. Map of relative terrestrial biodiversity theme sensitivity generated from the DEA Screening Tool (<https://screening.environment.gov.za>).

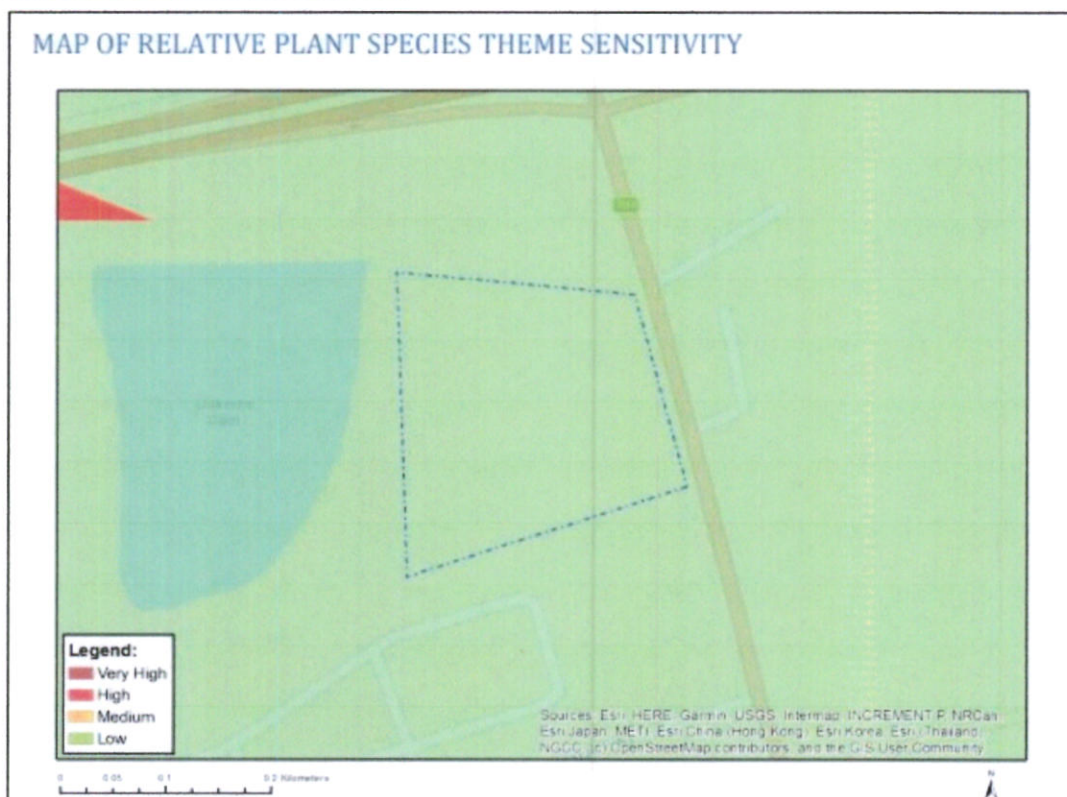
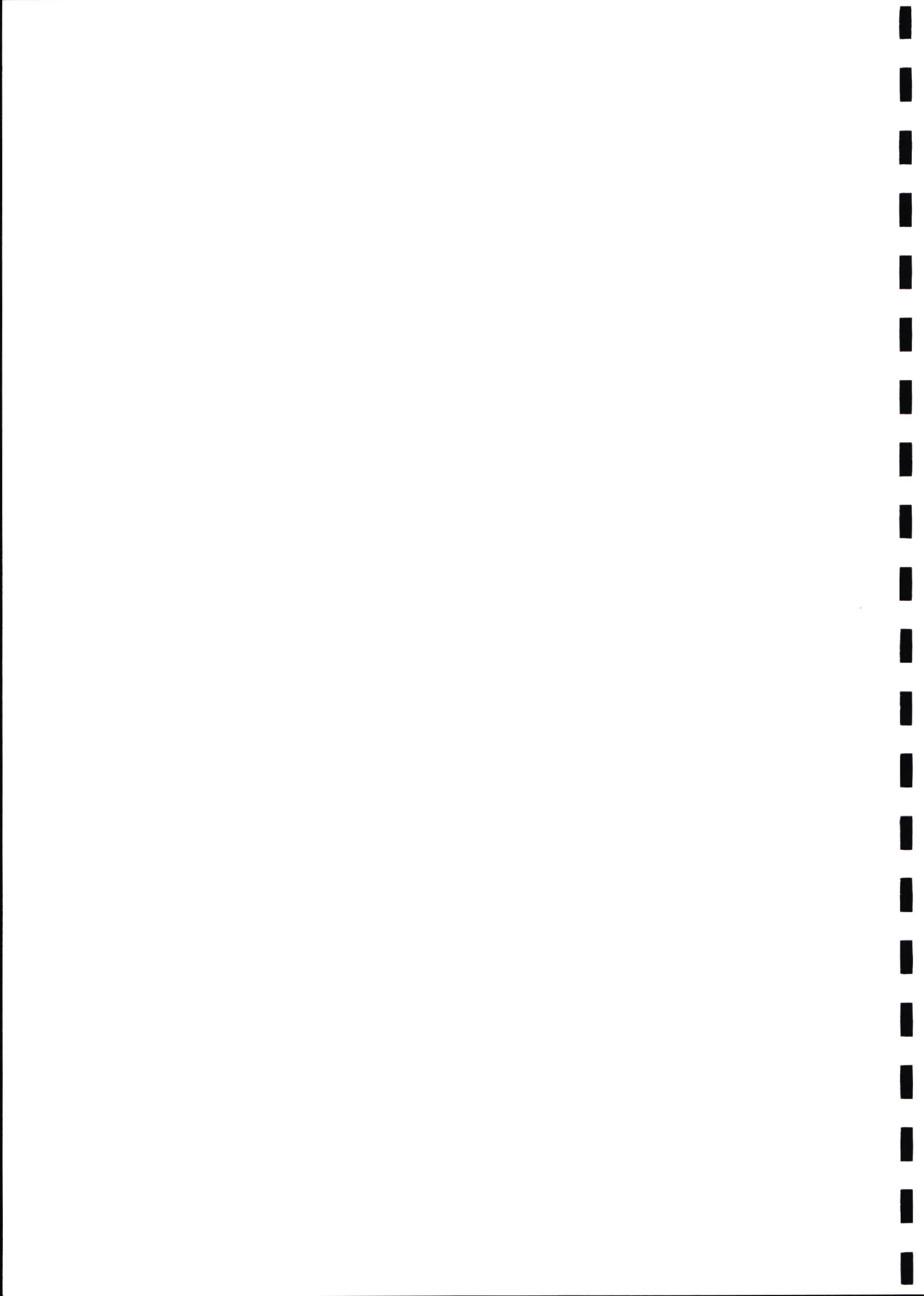


Figure 2. Map of relative plant species theme sensitivity generated from the DEA Screening Tool (<https://screening.environment.gov.za>).



3. TERMS OF REFERENCE FOR IMPACT ASSESSMENTS

3.1. General

Botanical assessments must follow guidelines set out in the following documents:

- Department of Environmental Affairs and Development Planning (DEA&DP) Guidelines for Involving Biodiversity Specialists in the EIA Process (Brownlie, 2005).
- Ecosystem Guidelines for Environmental Assessment in the Western Cape (Cadman et al., 2016).
- The requirements of CapeNature for providing comments on agricultural, environmental, mine planning and water-use related applications (Turner, 2013).
- Procedures for the assessment and minimum criteria for reporting on Identified Environmental Themes in terms of Sections 24(5)(a) and 44 of the National Environmental Management Act (Government Gazette, 2020).

3.2. Specific

The specific terms of reference followed for this assessment are as follows:

Undertake a site visit and compile a **Constraints Analysis Report** that addresses the following:

- Identify and describe biodiversity patterns at community and ecosystem level (main vegetation type, plant communities in the vicinity and threatened/vulnerable ecosystems), at species level (threatened Red List species, established indigenous trees, presence of alien species) and in terms of significant landscape features;
- Assess the local and regional importance of the vegetation communities and plant species within the affected areas based on the relevant biodiversity plans, bioregional planning documents and Environmental Management Frameworks etc.;
- Describe the sensitivity of the site and its environs and map these resources;
- Identify any areas not suitable for development or related activities (No-Go Areas) and related buffers that should be observed;
- Include any rehabilitation or monitoring measures that may be required.

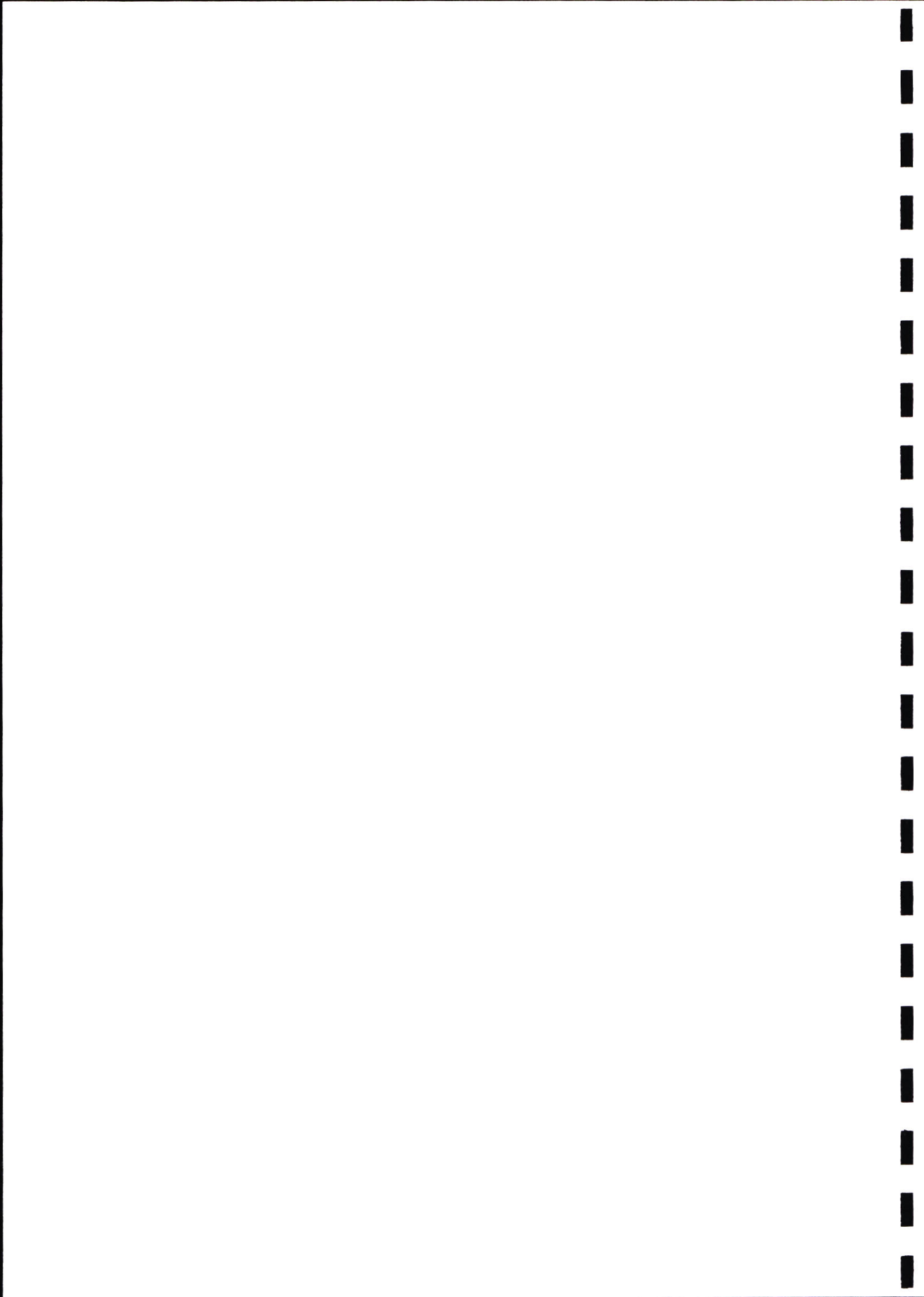
4. METHODOLOGY, LIMITATIONS AND ASSUMPTIONS

The study area was visited on the 5th of May 2022. The site was surveyed on foot. Sample waypoint positions were obtained using a Garmin GPS map 60C. Photographs were taken and georeferenced by recording a corresponding GPS point using the Garmin GPS.

The following sources have been used to inform this study:

- *Site boundaries*: The property boundaries have been downloaded from the Cape Farm Mapper Website (<https://gis.elsenburg.com/apps/cfm/>).
- *Vegetation Types*: Based on *The Vegetation of South Africa, Lesotho and Swaziland* (VEGMAP)(Mucina & Rutherford, 2006). The South African National Biodiversity Institute (SANBI) has updated the mapping for the VEGMAP (2018) and these latest shapefiles have been used.
- *Ecosystem threat status*: Informed by (1) The National List of Ecosystems that are Threatened and in Need of Protection (Government Gazette, 2011), (2) The Western Cape State of Biodiversity 2017 Report (Turner, 2017), (3) The National Biodiversity Assessment 2018 (SANBI, 2019).
- *Biodiversity planning*: The Western Cape Biodiversity Spatial Plan (WCBSP) for Stellenbosch Municipality (CapeNature, 2017) is essential to determine the conservation importance of the affected habitats. Ground-truthing is an essential component in terms of determining the habitat condition.
- *Important species*: The presence or absence of threatened (i.e. species of conservation concern) and ecologically important species informs the ecological condition and sensitivity of the site. The latest conservation status of species is checked on the Red List of South African Plants (Raimondo *et al.* 2009) via the website (www.redlist.sanbi.org).
- *Previous studies*: Previous botanical studies in the region of the study area provide additional information that can support the findings of the once-off nature of a typical impact assessment report.

The site visit was carried out during late autumn. The peak flowering time in this region is spring, which occurs from August to October. The timing of the survey is therefore regarded as suboptimal in terms of accurately assessing the flora of the site. Many species, especially geophytes, are cryptic when not in flower, and it is highly likely that several species may have gone undetected and/or were not identifiable at the time of the survey. A number of species typical of the habitat potentially present within the site are perennial shrubs and these would still



be detectable at the time of the survey. The condition and likely sensitivity of the vegetation can therefore be determined with a moderate degree of confidence, but a spring survey is necessary to provide more accurate data.

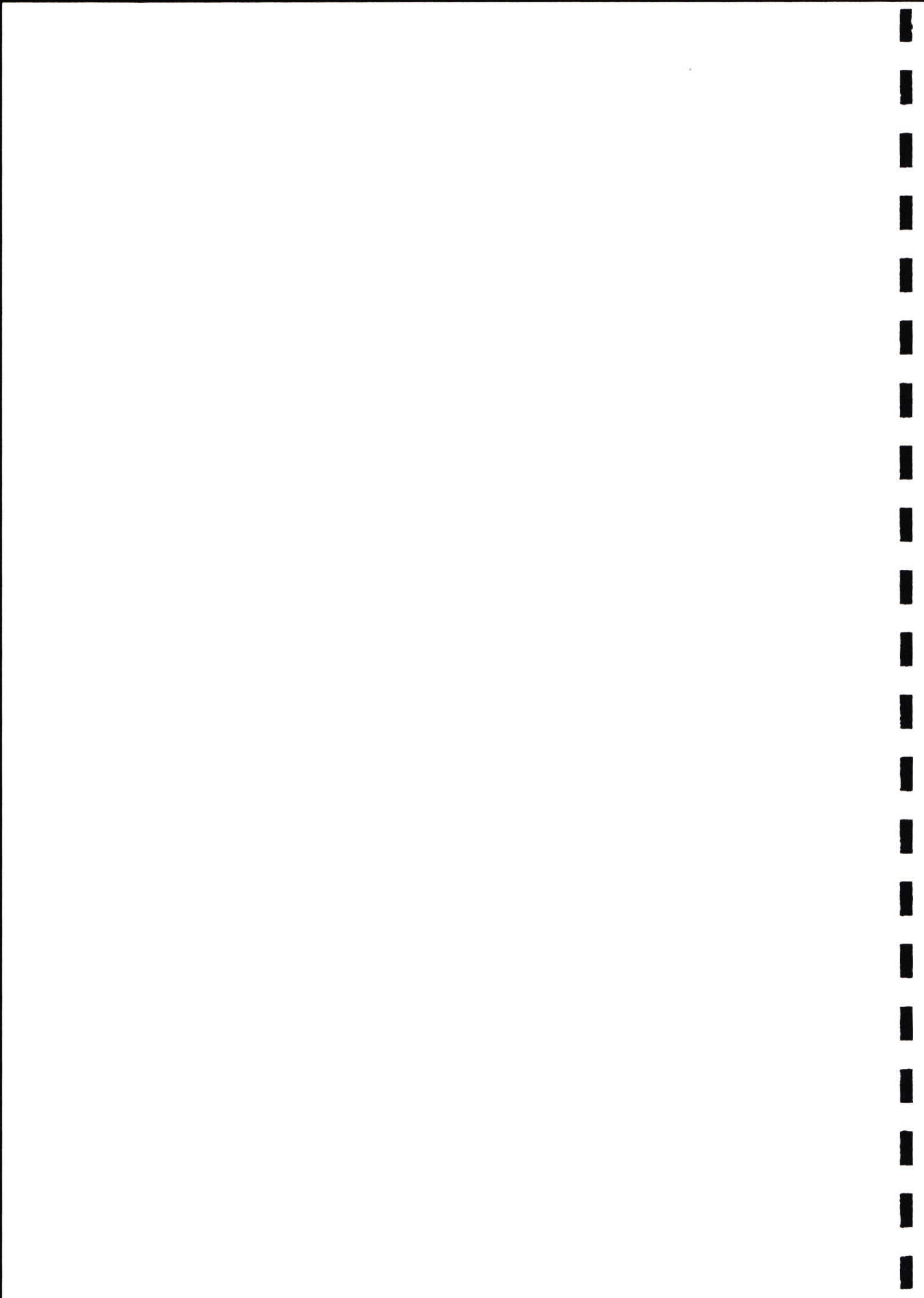
5. STUDY AREA

5.1. LOCALITY

The study site, Portion 5 of Remainder of Erf 716 Groenfontein, is located on the northern edge of Klapmuts, within the Stellenbosch Municipality in the Western Cape (Figure 3). The R44, Adam Tas Street, follows the eastern boundary of the site (Figure 4). The site is surrounded on the south by residential development, on the west by Uitkoms Dam, and on the north side is the N1 Highway.

5.2. LANDSCAPE AND GEOLOGY

The study site comprises undeveloped land on the eastern portion, consisting of a gentle north-east facing slope. Some previous agricultural activity has taken place on the southern part of this site and rubble has been dumped on parts of the site more recently. The western portion contains some existing houses and agricultural buildings, as well as an olive orchard on the western side of the site, and consists of a flat to gently west-facing slope running downhill to the edge of the Uitkoms Dam. The soils across the site consist mostly of gritty sandy soils most likely alluvial but derived from Cape Granites. These soils contain predominantly prisma-cutanic and pedocutanic diagnostic horizons (Rebello *et al.* 2006 in Mucina & Rutherford 2006).



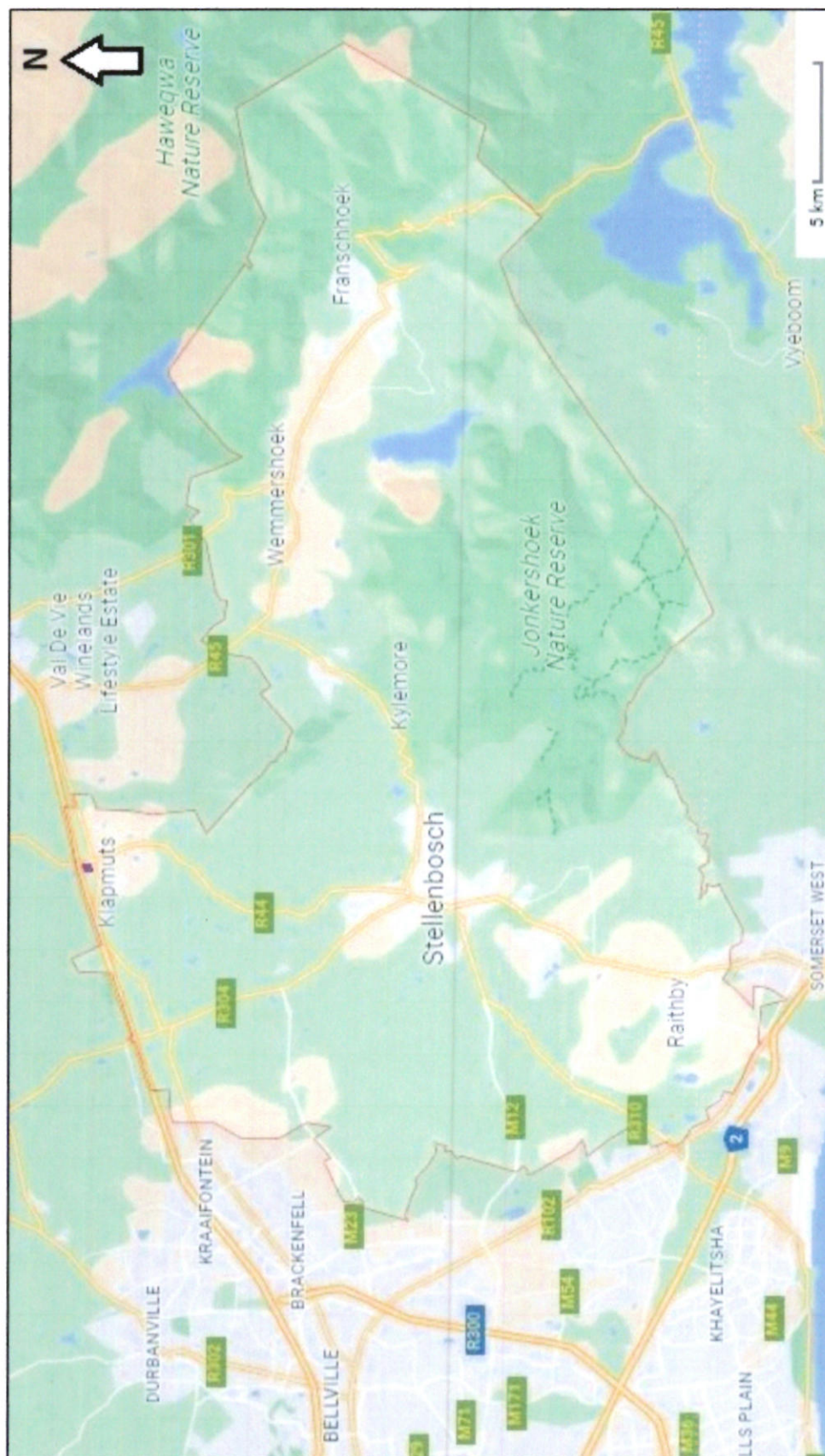


Figure 3. The location of the study site (marked in purple) within the context of the Stellenbosch Municipality, overlaid on a Google Maps™ image.

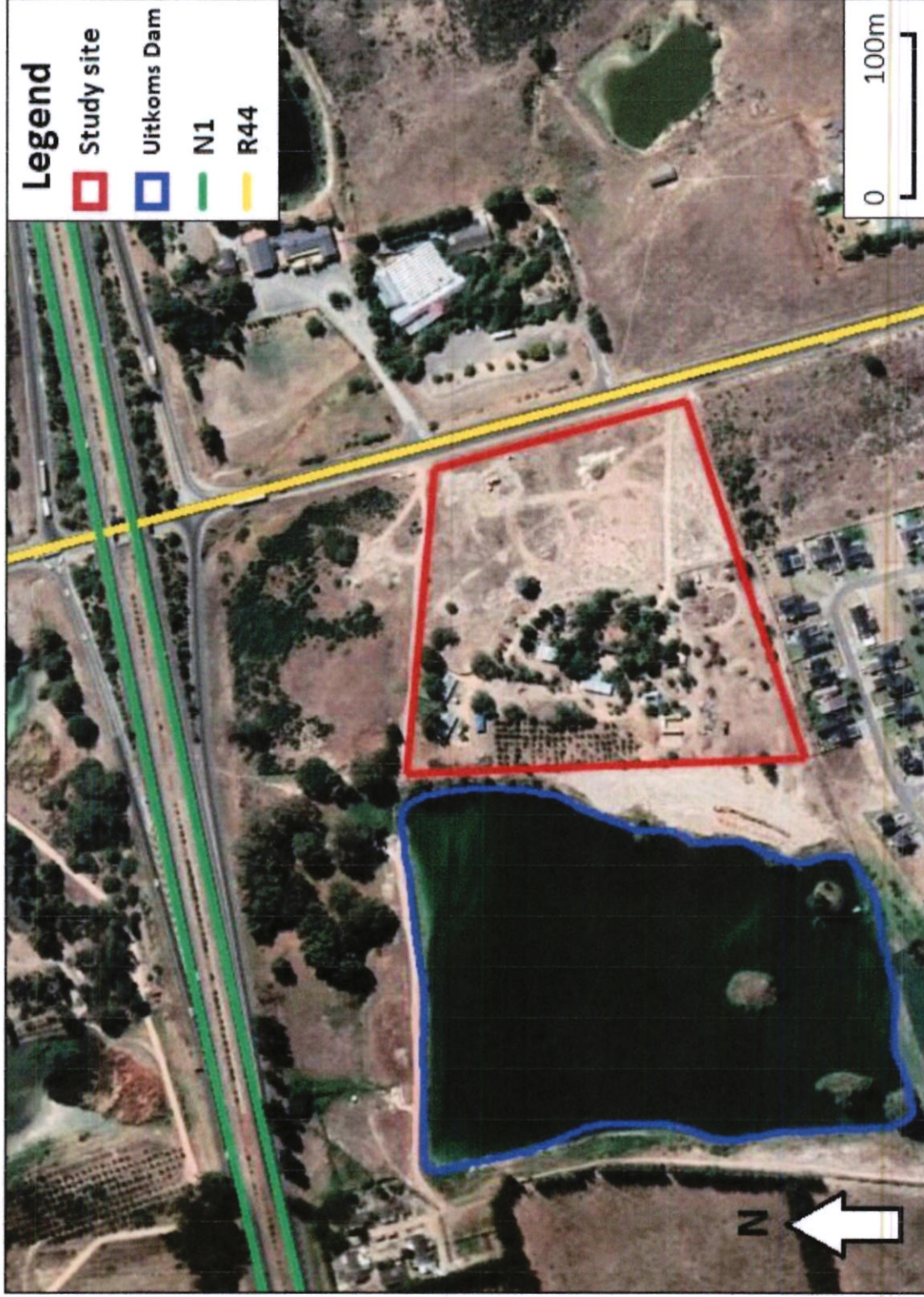
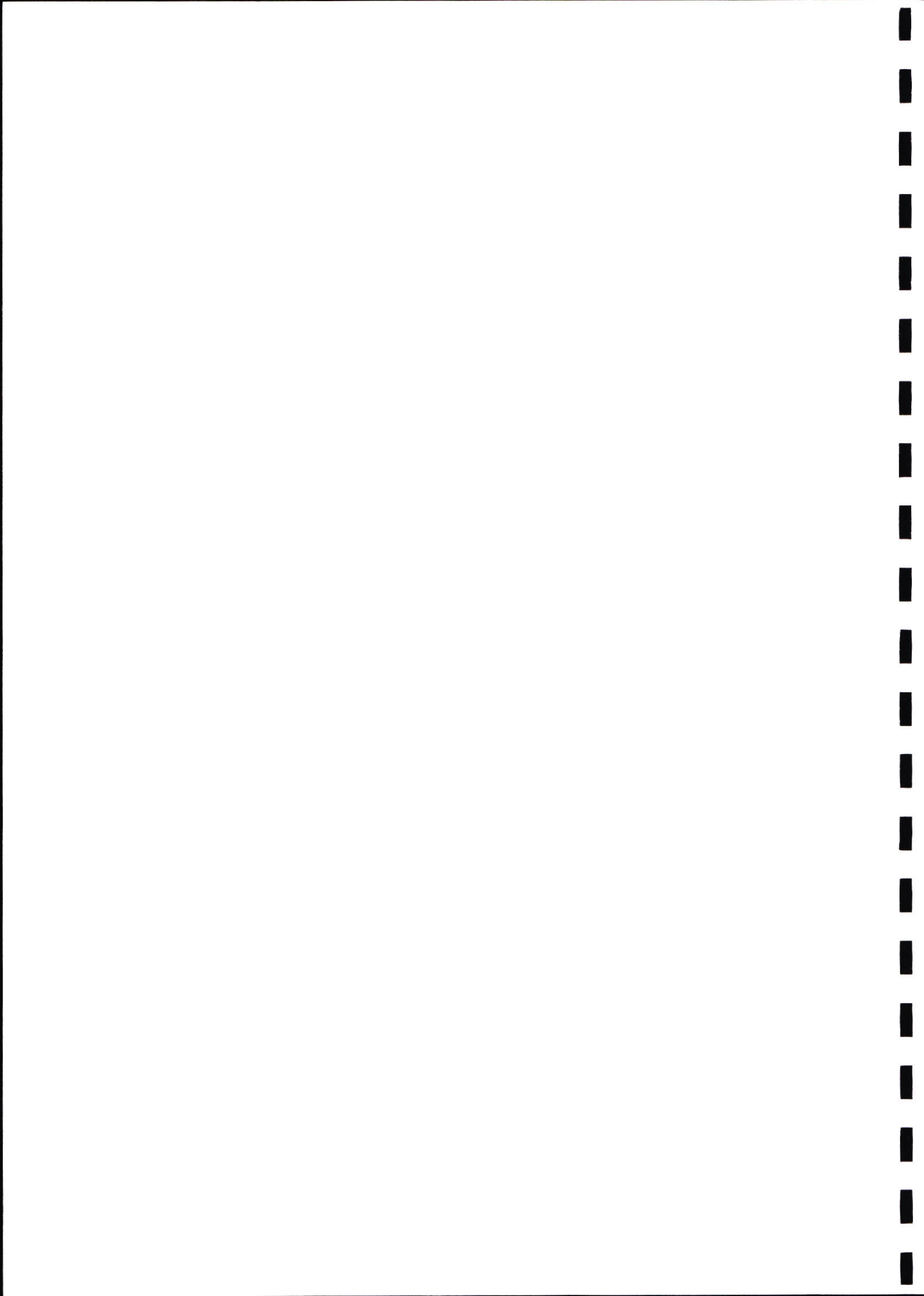


Figure 4. The location of the study site in relation to surrounding landscape features, overlaid on a Google Maps™ image.



6. OVERVIEW OF VEGETATION AND CONSERVATION PLANS

6.1. National vegetation type and ecosystem threat status

According to the Vegetation Map of South Africa, Lesotho and Swaziland (SANBI, 2018) (VEGMAP), the vegetation type occurring in the study area is Swartland Granite Renosterveld (Figure 5).

The landscape and vegetation of Swartland Granite Renosterveld is described by Rebelo et al. (in Mucina and Rutherford, 2006):

“Moderate foot slopes and undulating plains supporting a mosaic of grasslands/herblands and medium dense, microphyllous shrublands dominated by renosterbos. Groups of small trees and tall shrubs are associated with heuweltjies and rock outcrops. The boundary with Boland Granite Fynbos is diffuse and patchy.”

This is a Critically Endangered vegetation type since between 79.5% (SANBI 2019) and 85% (Government Gazette, 2011) of the historical extent has been transformed mostly by cultivation and almost none is protected in formal conservation areas (Government Gazette, 2011). This is explained in the NBA: *“The ongoing decline in natural area in Swartland Granite Renosterveld, having declined to 21 % (19 800 ha)(2014) of its original extent, has been driven primarily by agriculture, with 62 367 ha (65 %)(2014) of the ecosystem consisting of croplands especially vineyards, olive orchards and pastures, and a further 9150 ha (10 %)(2014) consisting of old fields (HABMOD 2018). Artificial water bodies have also transformed 1081 ha (1 %)(2014) of Swartland Granite Renosterveld (HBMOD 2018). Additionally, the ecosystem is degraded by erosion and alien invasions by *Lolium multiflorum*, *Avena fatua*, *Bromus diandrus*, *Acacia saligna*, *Pinus pinaster* as well as various species of *Eucalyptus*, although alien grasses are particularly pervasive (Rebelo et al. 2006). Consequently, 177 plant species are threatened mainly as a result of alien species (166 species) and overgrazing (115 species), but also by altered fire regimes (88 species) and pollution (66 species)(Red List of Species 2018).”* (NSBA, 2018; metadata supplied by SANBI).

Ecosystem threat status is derived from three sources. These include the following:

1. The National List of Threatened Terrestrial Ecosystems (NLTTE) (Government Gazette, 2011).
2. The Western Cape State of Biodiversity (WCSB) Report (Turner, 2017).
3. The National Biodiversity Assessment (NBA) (2018).

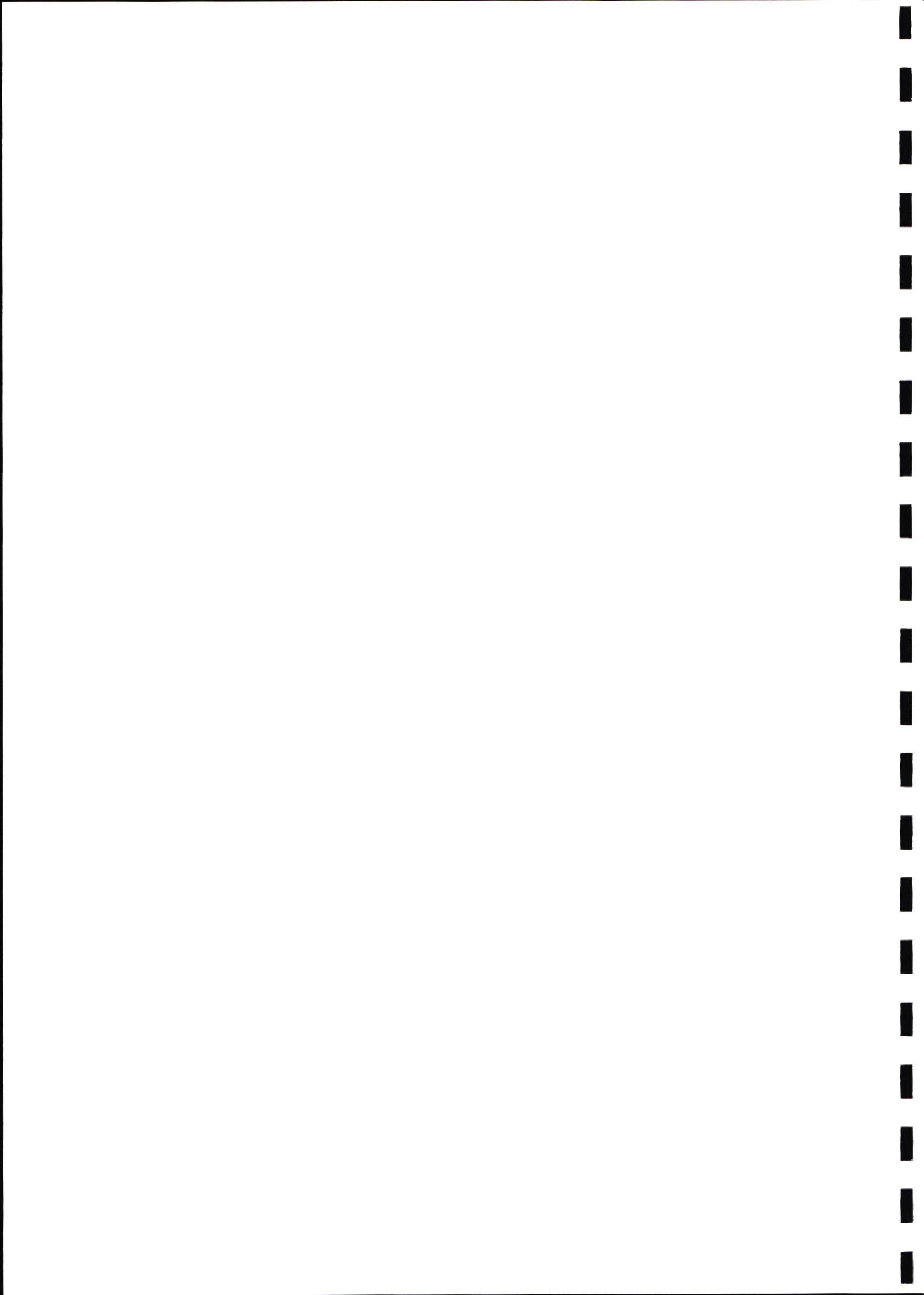


Table 1. Ecosystem threat status according derived from available information sources

Ecosystem status	threat	The National List of Threatened Terrestrial Ecosystems	The Western Cape State of Biodiversity	The National Biodiversity Assessment
Swartland Renosterveld	Granite	CRITICALLY ENDANGERED (A1 & D1)	CRITICALLY ENDANGERED (A1 & D1)	ENDANGERED
Reason		Irreversible loss of natural habitat; Threatened plant species associations.	Irreversible loss of natural habitat; Threatened plant species associations.	Irreversible loss of natural habitat; Invasive species; Overgrazing; Altered fire regime.
Remaining % of ecosystem		15%		20.5%
Conservation target				26% (shortfall = 5.5%)
Species of special concern		123 Threatened species and 27 endemic species.		177 Threatened species

Ecological drivers

According to Cadman et al. (2016) the key ecological drivers in renosterveld ecosystems include (1) fire and grazing patterns, (2) variations in edaphic conditions and water availability, (3) edaphic boundaries, (4) underlying geology, (5) specialized plant-pollination interactions, (6) plant-plant interactions and (7) living (biogenic) soil crust.

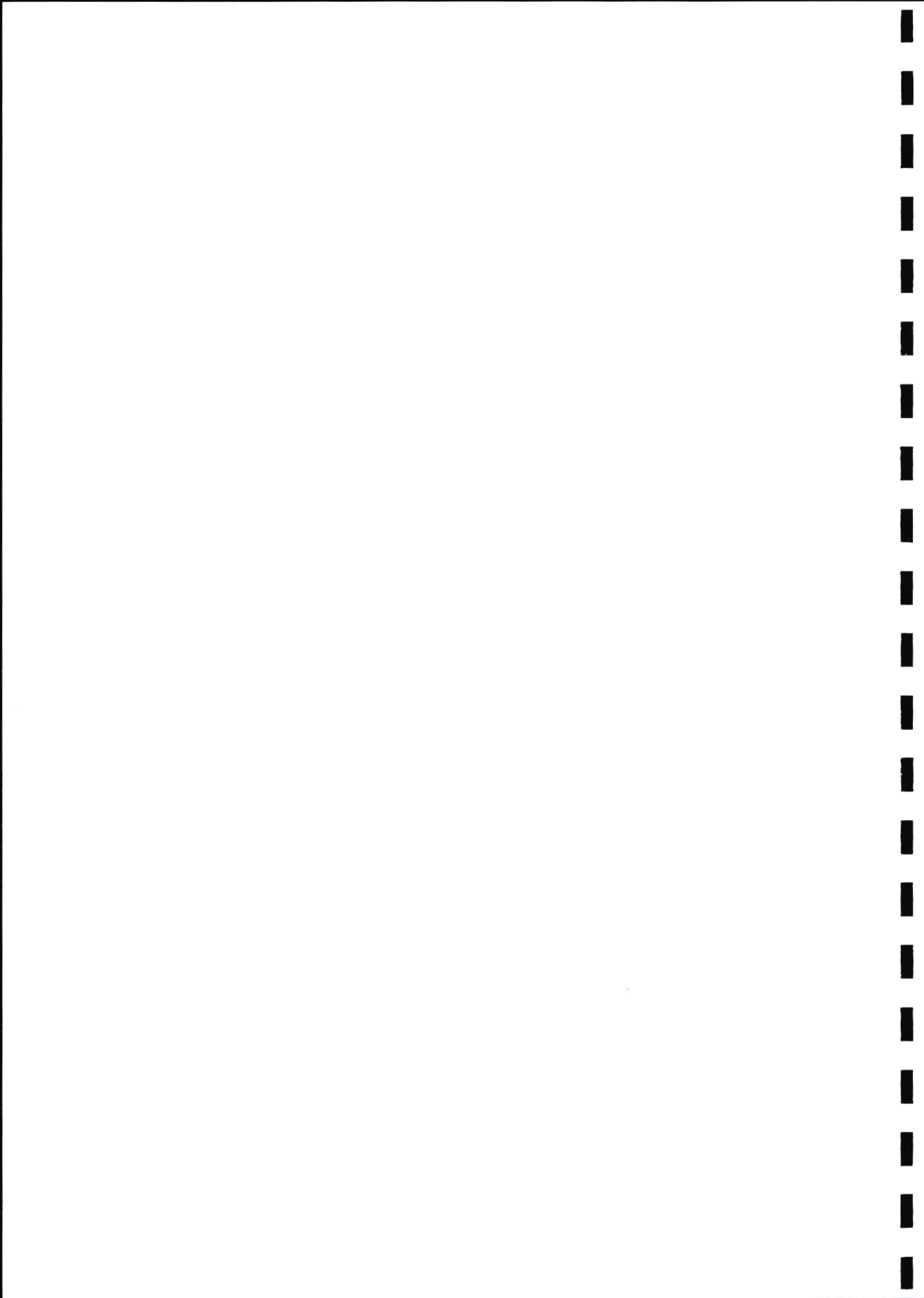




Figure 5. VEGETATION MAP: Distribution of vegetation types in relation to the study area, superimposed on a portion of *The Vegetation Map of South Africa, Lesotho and Swaziland* (SANBI, 2018) accessed on Cape Farm Mapper.

6.2 Biodiversity plans

The 2017 WCBSP Handbook (Pool-Stanvliet *et al.*, 2017) distinguishes between the various conservation planning categories. Critical Biodiversity Areas are habitats with high biodiversity and ecological value. Such areas include those that are likely to be in a natural condition (CBA 1) and those that are potentially degraded or represent secondary vegetation (CBA 2). Ecological Support Areas are essential for meeting biodiversity targets. They play an important role in supporting the functioning of Protected Areas or CBAs and are often vital for delivering ecosystem services. A distinction is made between ESAs that are still likely to be functional (i.e. in a natural, near-natural or moderately degraded condition; (ESA 1) and Ecological Support Areas that are severely degraded, or have no natural cover remaining, and therefore require restoration (ESA 2). Other Natural Area (ONA) sites are not currently identified as a priority, but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Although not prioritized, they are still an important part of the natural ecosystem. Ground-truthing of the assigned CBA sites are described in the vegetation and sensitivity sections below (Sections 7 and 8). The distribution of these sites is shown in Figure 6.

The 2017 WCBSP conservation planning categories occupy the following proportions of the study area:

CBA1: 0.34 ha (8.2 % of the study area). Reasons: Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.

CBA2: 0.44 ha (10.6 % of the study area). Reasons: Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.

ESA2: 0.04 ha (1 % of the study area). Reasons: Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.



Figure 6. CONSERVATION PLANNING MAP: The study area in relation to the Western Cape Biodiversity Spatial Plan (CapeNature 2017) overlaid on a Google Maps™ aerial image.

7. THE VEGETATION OF THE STUDY AREA

The description of the vegetation and different habitats found within the study area is detailed below (Sections 7.1 – 7.4). A description of the various habitat condition classes appears in Table 2. The habitat map appears in Figure 8. Whereas the vegetation across the whole site is mapped as Swartland Granite Renosterveld, the site visit determined that much of the site is Highly Degraded to Transformed, with none to very little indigenous vegetation present within these areas. Some very old and established trees associated with this vegetation type were however recorded across the western part of the site. On the north-east side of the site was however some representative Swartland Granite Renosterveld present, although in a degraded state and furthermore with a lot of recent disturbance evident. Aerial imagery from 2019 shows this area to have been in an apparently more intact state (Figure 9). This imagery also shows the south-west side of the site to have been less disturbed than it was at the time of the current survey.

Table 2. The habitat condition descriptions used to describe the vegetation on the site.

Habitat condition	Description
Intact vegetation	A true representation of the original vegetation type in terms of structure and species makeup. Minimal soil disturbance. Unlikely to have ever been ploughed. Disturbance may be evident.
Semi-intact	Closely resembles the original vegetation type in terms of structure and species makeup but has undergone some form of current or historical disturbance. Restoration potential is high.
Degraded	Only a few species representative of the original vegetation type are present. The vegetation has undergone heavy disturbance. Restoration potential is either low or moderate.
Highly degraded	The original vegetation is usually absent and has been removed in the past. Only a few remnant or pioneer species are present. Soils usually ploughed in the past. Restoration potential is very low.
Transformed	No remnant species exist anymore. The landscape is altered irreversibly with no restoration potential. Examples include cultivated farmland and the built environment.

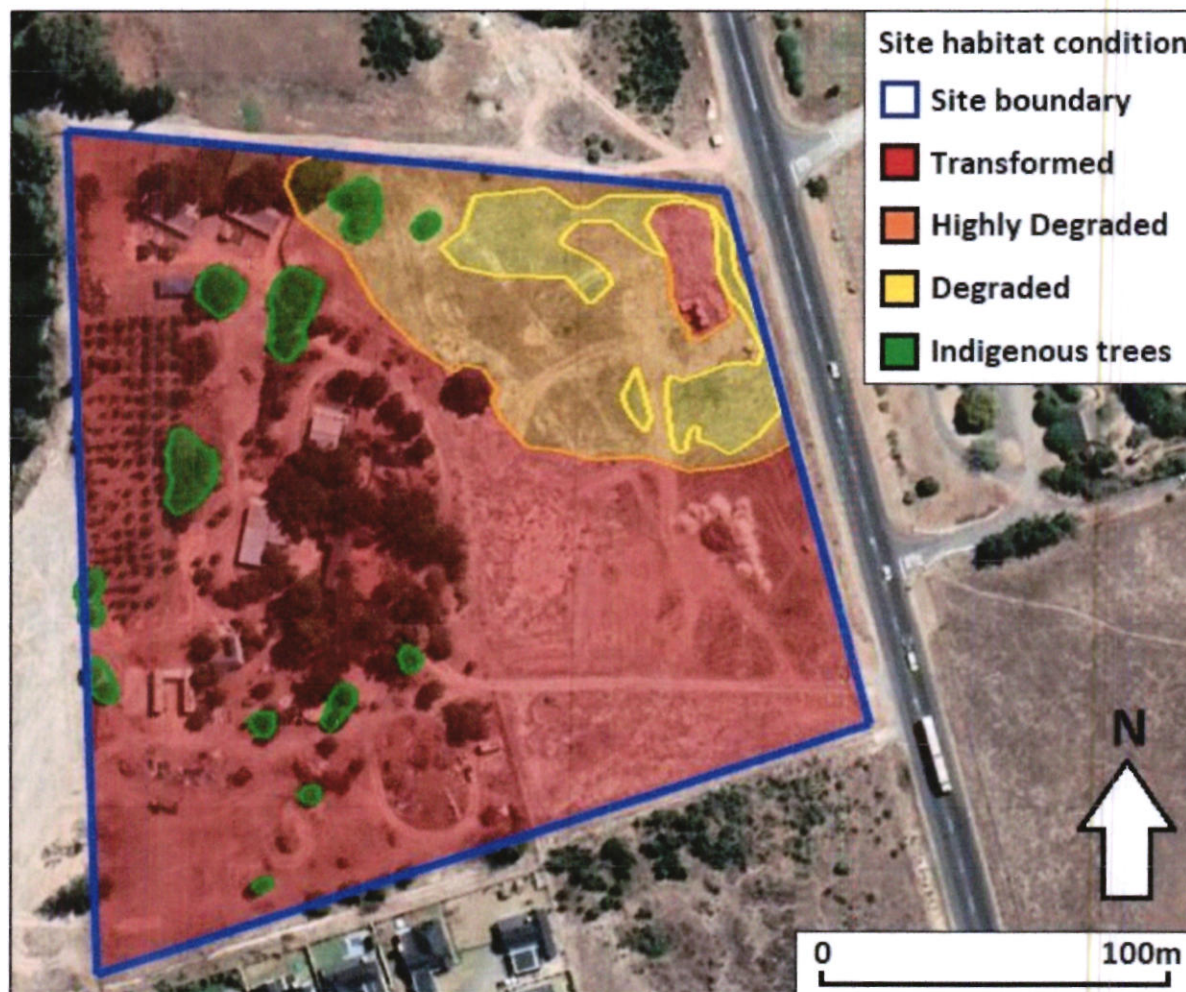


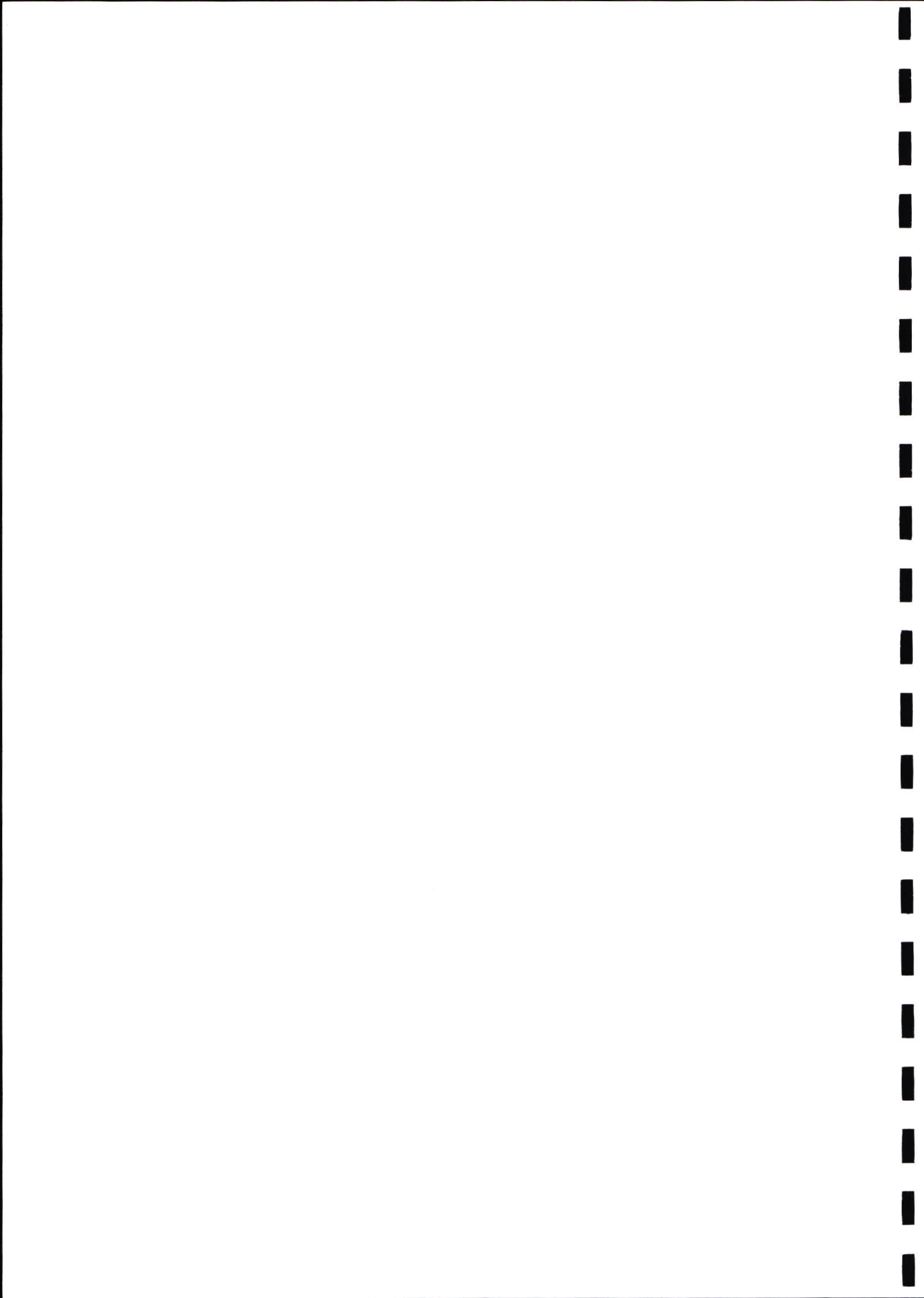
Figure 8. HABITAT MAP: The habitats identified on the site overlaid on a Google TM aerial image.



Figure 9. Google Maps TM aerial imagery from 2019 showing the extent of Swartland Granite Renosterveld prior to brushcutting and dumping within the site, as well as the area partially mapped as CBA which was recently bulldozed.

7.1 Transformed habitat

The majority of the site was found to contain almost no indigenous cover and diversity to the point of being considered to be a transformed ecosystem, apparently mostly as a result of a long history of agriculture taking place on the site. However, much of the south and west side of the site had very recently been bulldozed clear of any vegetation, and this makes it impossible to determine whether there was any natural vegetation before this disturbance took place. Some very small patches of natural vegetation were encountered on the western side of the site next to where bulldozing took place, which



included Dune Tortoisetea *Leysera gnaphaloides*, Dune Curranthrus *Searsia laevigata* and Wild Asparagus *Asparagus capensis*. It is moderately likely that some geophytes may be present in these areas also, but would not have been apparent at the time of surveying the site. Other than these, there were some established Wild Olive Trees *Olea europaea ssp. cuspidata* of varying age but most likely not planted, as well as one very large and ancient Candlewood *Pterocelastrus tricuspidatus*, which even included some large Cape Mistletoe *Viscum capensis* growing on its branches. Scattered buildings are present around the north to central part of the site, with some garden areas, and a cultivated olive grove on the west side. East of the buildings is highly disturbed and with some cultivated species present, including both indigenous but not locally occurring – *Pelargonium* hybrids, Greyleaf True-Eye *Euryops cf. pectinatus*, Cape Honeysuckle *Tecomaria capensis*, Nightshades *Solanum sp.*, Giant Honeyflower *Melianthus major*, Orchid Tree *Bauhinia sp.* - and exotic species Spanish Broom *Spartium junceum*. Scattered Black Wattle *Acacia mearnsii* is present in places. Kweek Grass *Cynodon dactylon* is otherwise dominant across much of the site.

In the middle of the eastern side there was recently (between August and December 2021) a large area filled with dumped material (mostly gravelly clay) and spread, although it appears this was most likely Kweek-dominated transformed habitat before. Near the north-east corner of the site, there is also a pile of recently (between August and December 2021) dumped material (mostly building rubble), although this is surrounded by degraded to highly degraded but representative Swartland Granite Renosterveld vegetation. Aerial imagery from 2019 (Figure 9) shows this area to have been a continuous patch of natural vegetation, although the vegetation across the site appears to have been brushcut after that time, and has slowly recovered over the subsequent three years. The natural vegetation integrity and diversity was likely higher, based on the old aerial imagery as well as anecdotal records by the author. Therefore, this patch of transformed habitat may still possess some restoration potential from the soil seedbank if the rubble is removed and the underlying soil exposed to the surface.

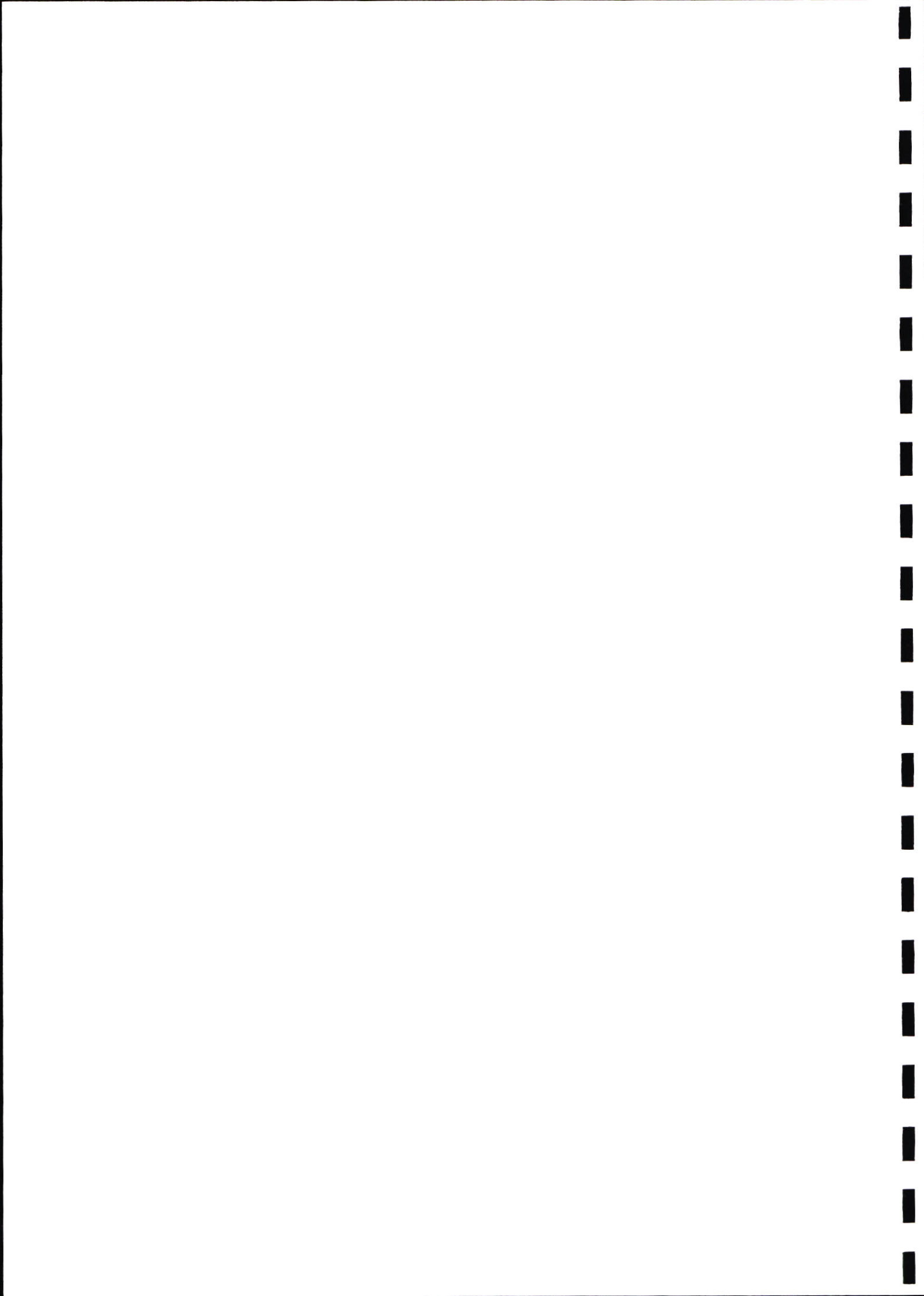




Figure 9. Kweek grass dominated area on the south east side of the site, with dumped and spread material in the background to the north.



Figure 10. Bulldozed area on the south west side of the site, where previous habitat state cannot be determined. Note the Wild Olive which has been left standing on the right of the above photo.

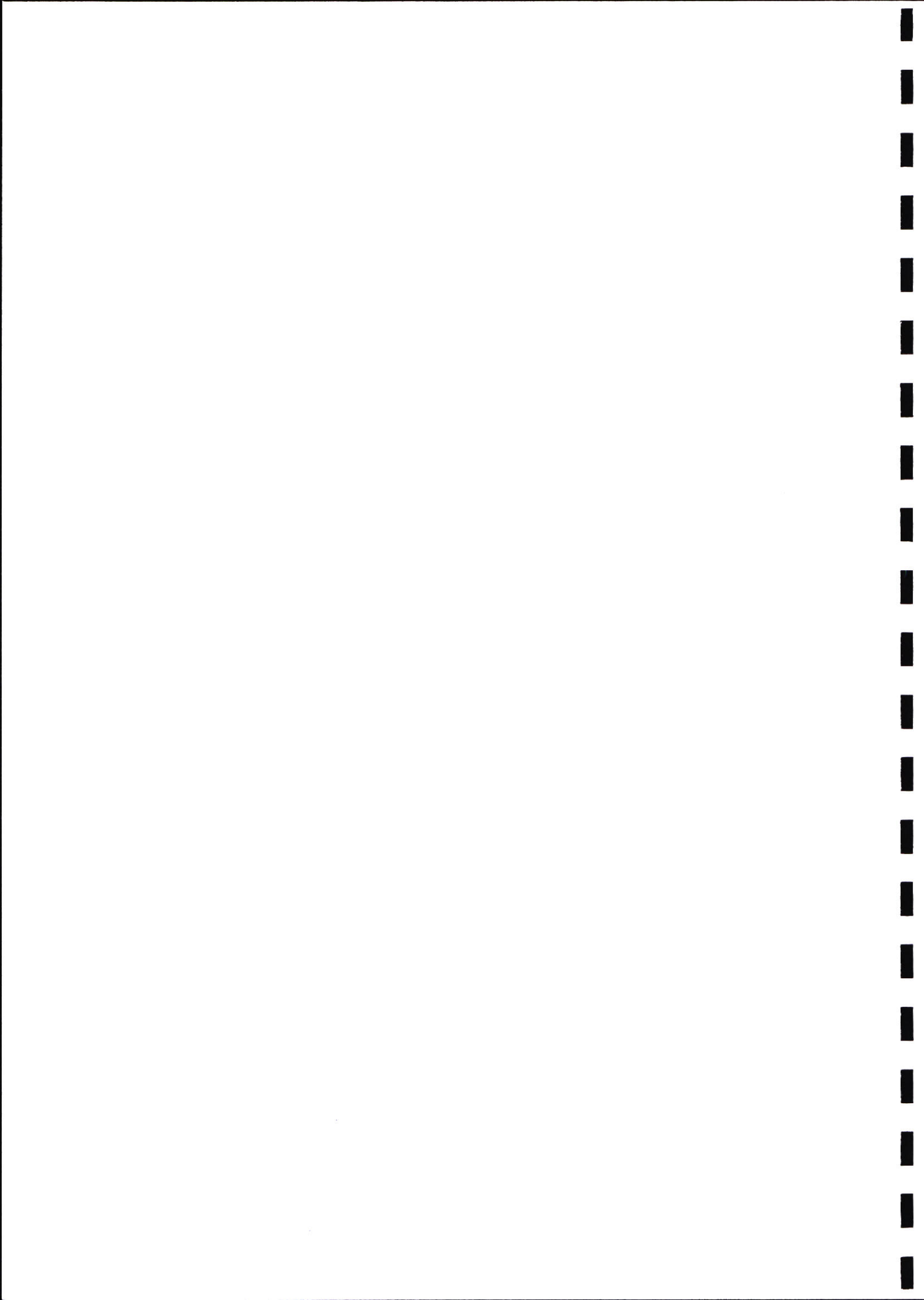




Figure 11. Previously cultivated land with some species of cultivation persisting together with weeds in highly disturbed soils.

7.2 Highly Degraded vegetation

Part of the north-east of the site surrounding the degraded vegetation is mapped as Highly Degraded, since very limited shrub cover and a low diversity of species was found to be present in this area. However, although Kweek and alien annual grasses are dominant along with some Port Jackson *Acacia saligna*, this area still contains some diversity of (mostly opportunistic) indigenous species, including Three-tooth Kanniedood *Athanasia trifurcata*, Juniper Caperose *Cliffortia juniperina*, Dune Tortoisetea *Leysera gnaphaloides* and Ridgestem Ragwort *Senecio pubigerus*. Within this area there appears to have been much soil disturbance in the recent past, especially surrounding the dumped material near the north-east corner. Most of the area mapped as Highly Degraded appears to have been representative Swartland Granite Renosterveld based on aerial imagery from 2019 (Figure 9), as well as anecdotal records by the author, and a more diverse soil seedbank and some diversity of geophytes may still exist than what is present in the standing vegetation.

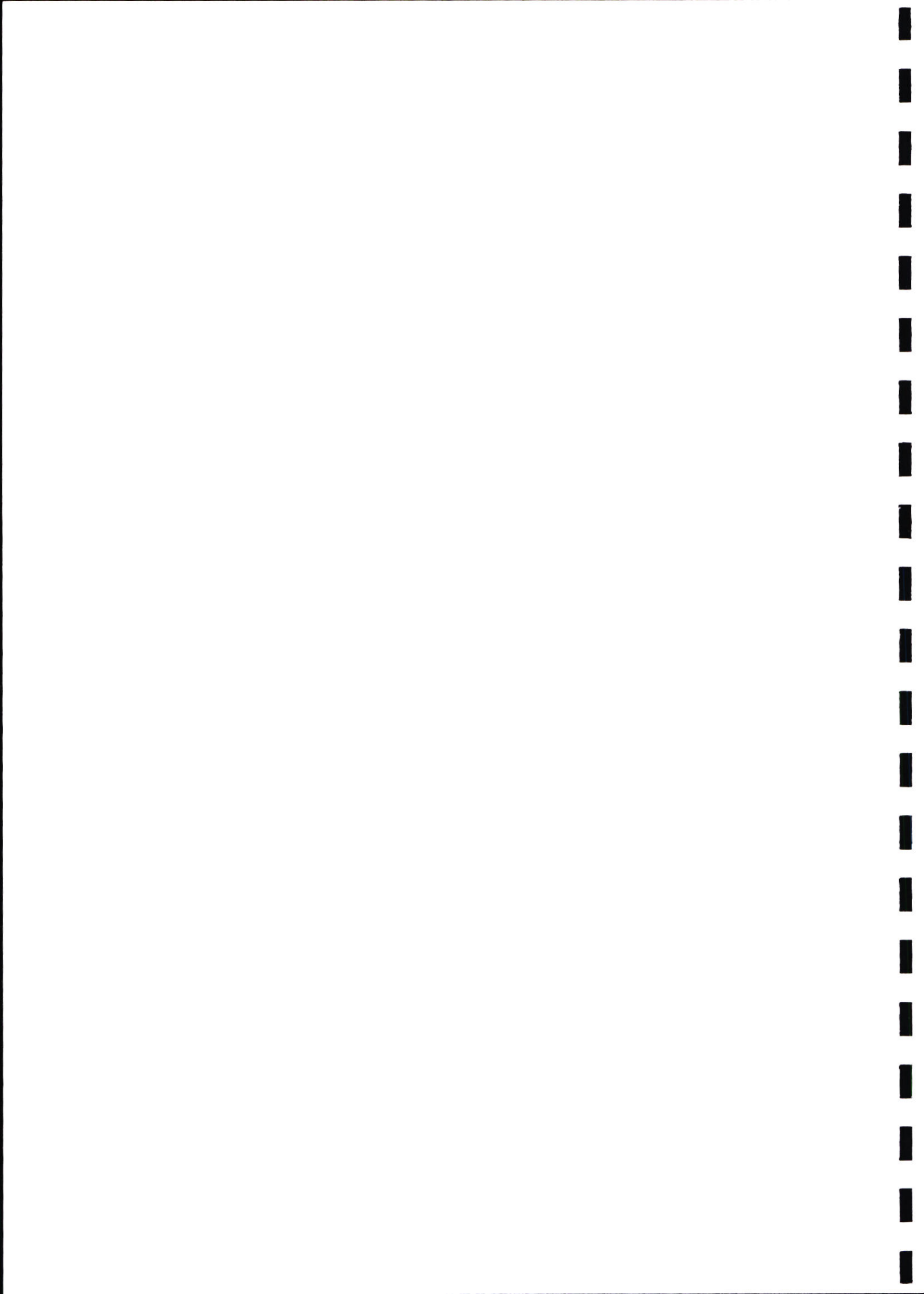




Figure 12. Restionaceae spp. persisting in habitat that has become highly degraded due to disturbance associated with the dumped rubble immediately to the left of the photo.



Figure 13. Highly degraded habitat with a patch of recent soil disturbance, dominated by Kweek and alien grasses, adjacent to more diverse and shrub-dominated degraded vegetation on the right of the photo.

7.3 Degraded Swartland Granite Renosterveld

Patches of degraded vegetation representative of this vegetation type were found scattered throughout the north-east side of the site, surrounding the recently dumped material and extending west and south. This area has all experienced disturbance apparently due to brushcutting but without obvious soil disturbance in 2019 (Shortly after the imagery in Figure 9 was recorded). The vegetation has recovered somewhat since then, although lacking in diversity likely due to certain species sensitive to brushcutting having been lost eg. Burchell's Sugarbush *Protea burchellii* (Vulnerable), which occurs close to the site. Perennial species present in this habitat include Cape Pegreed *Restio cf. capensis*, especially on the south side of the degraded vegetation patch, Athanasia *trifurcata*, Slangbos *Seriphium plumosum*, Eightday Healthbush *Lobostemon fruticosus*, Cliffortia *juniperina*, Climbers Friend *Cliffortia ruscifolia*, Bush Felicia *Felicia fruticosa*, Tall Flowerseed *Anthoerum aethiopicum*, Dark Rootthug *Thesium macrostachyum*, Wild Rosemary *Eriosephalus africanus* and Myrrhleaf Storksbill *Pelargonium myrrhifolium*. Between the shrubs were some indigenous grasses including False Hairgrass *Pentameris airoides* and Hare Grass *Tribolium uniolae*. Some geophytes including African Capeblue *Aristea africana* and Ostrich Threadstar *Moraea cf. lewisiae* were also recorded. Although the diversity of species is lower than what would be expected in more intact Swartland Granite Renosterveld, and no SCC were apparent at the time of surveying, the Critically Endangered conservation status of this vegetation type means that this is still a valuable habitat fragment. There are likely to be a diversity of geophytes present which would have been overlooked during the season of survey, likely including some SCC such as Longbract Viooltjie *Lachenalia longibracteata* and Blackeye Bobbejaantjie *Babiana melanops* (both Vulnerable) which have been recorded in close proximity to the site on iNaturalist. Furthermore, if the site were to burn this may increase the species diversity of the vegetation due to stimulation of the soil seedbank.

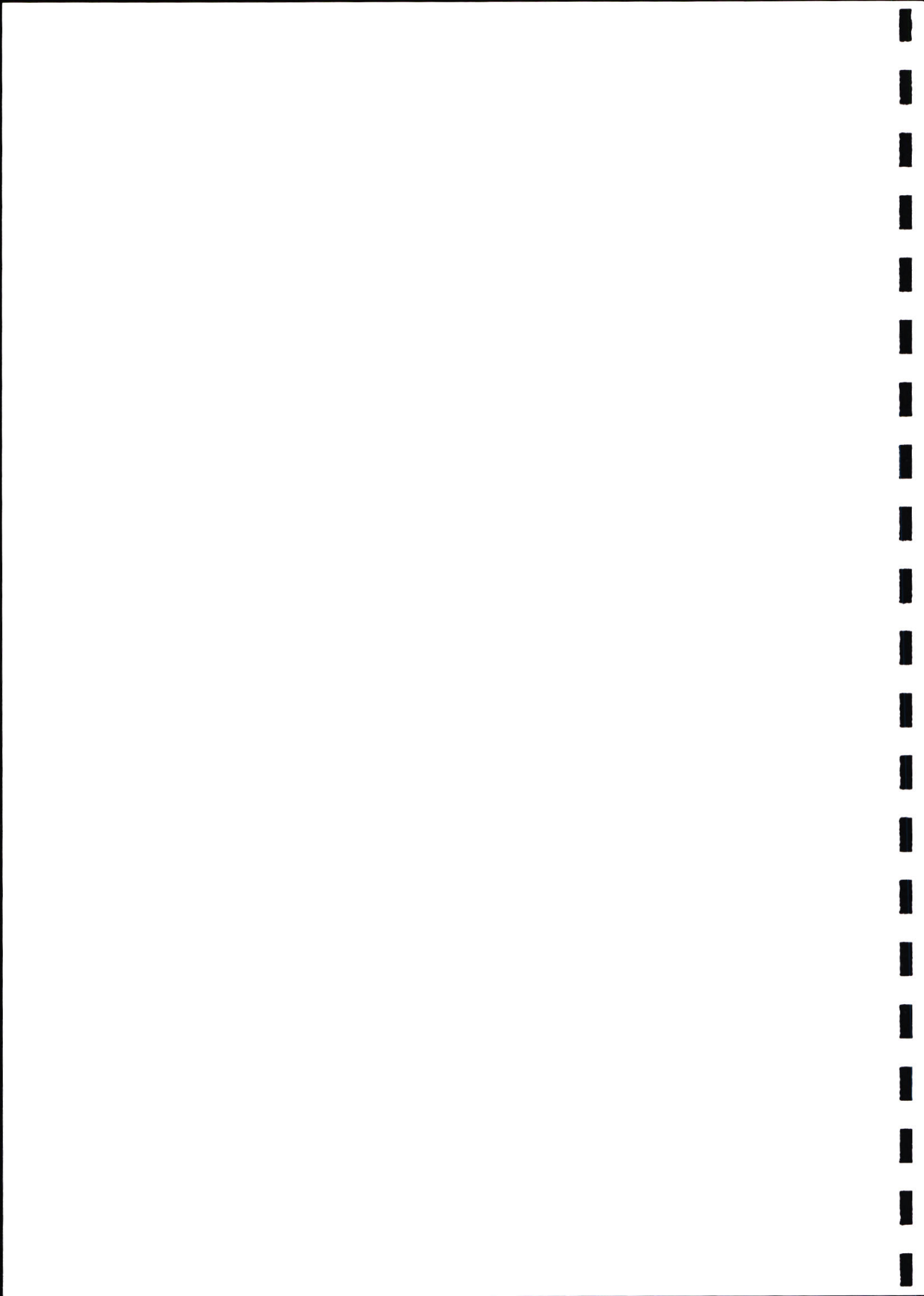




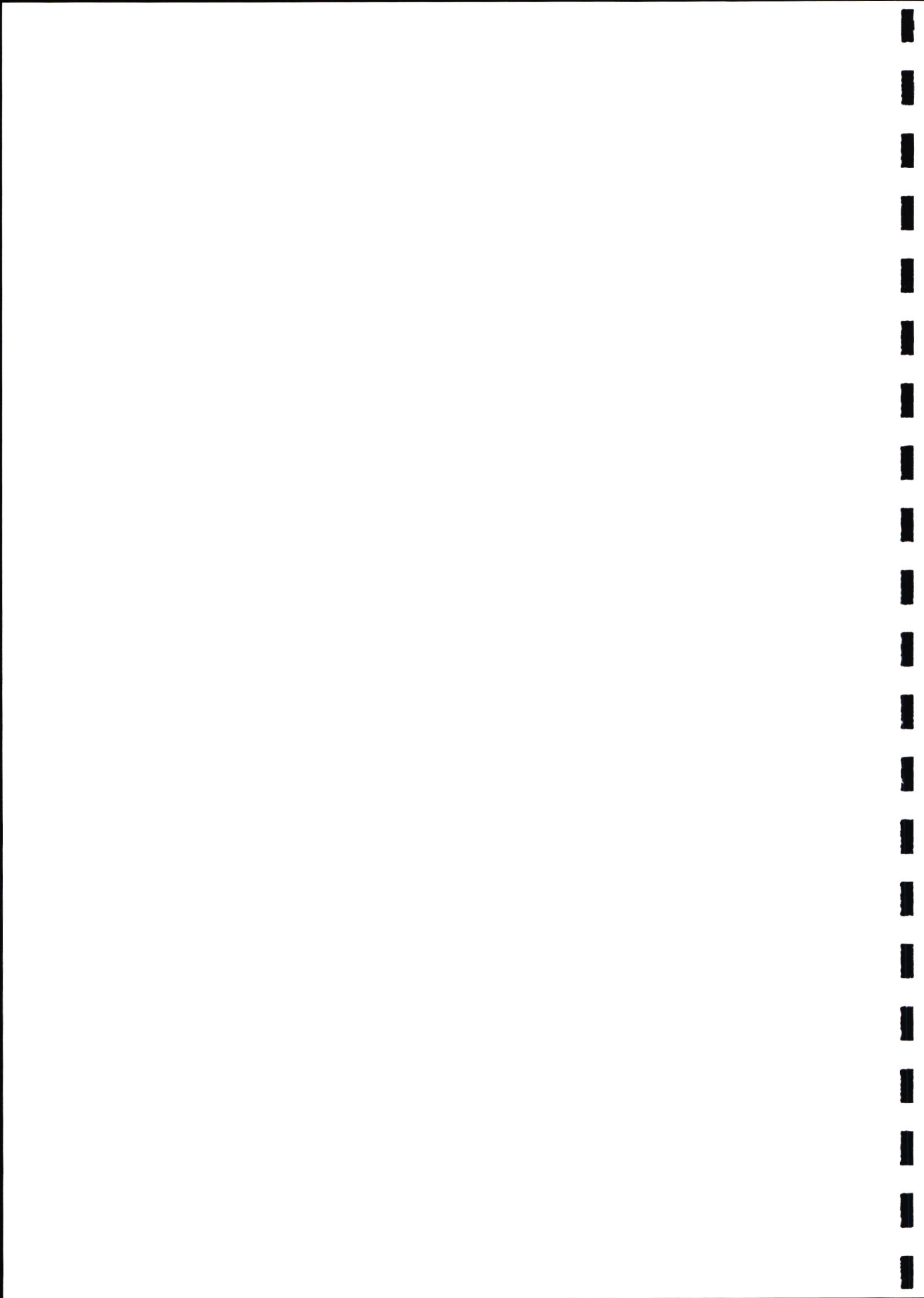
Figure 14. South end of the degraded patch of vegetation dominated by *Restio* cf. *capensis*.



Figure 15. Degraded vegetation with a mix of some diversity of shrubs such as *Anthospermum aethiopicum*, *Athanasia trifurcata*, *Eriocephalus africanus* and *Lobostemon fruticosus*.

7.4 Established indigenous trees – Wild Olive and Candlewood

Scattered throughout the western half of the site but especially towards the north side, some established and potentially very old trees were recorded. Only two species are represented, and neither are SCC, but due to their age and aesthetic value, the locations of all such trees were recorded on GPS. Although



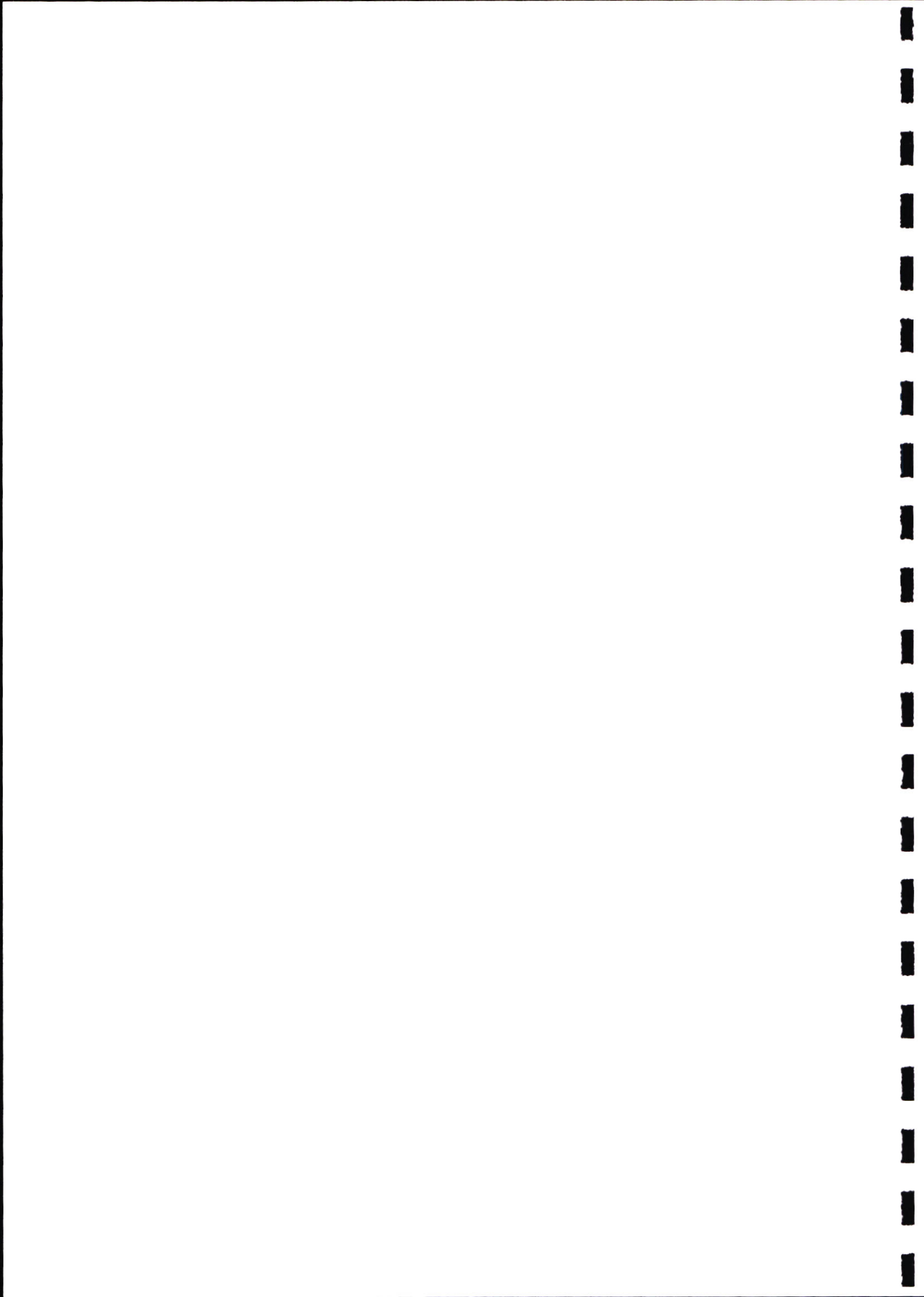
none of these trees were growing within natural habitat, the Candlewood contained some of the parasitic plant Cape Mistletoe *Viscum capense*.



Figure 16. An old and well established Candlewood *Pterocelastrus tricuspidatus* near the north west side of the site.



Figure 17. A large and well established Wild Olive *Olea europaea ssp. cuspidata* near the north west side of the site.



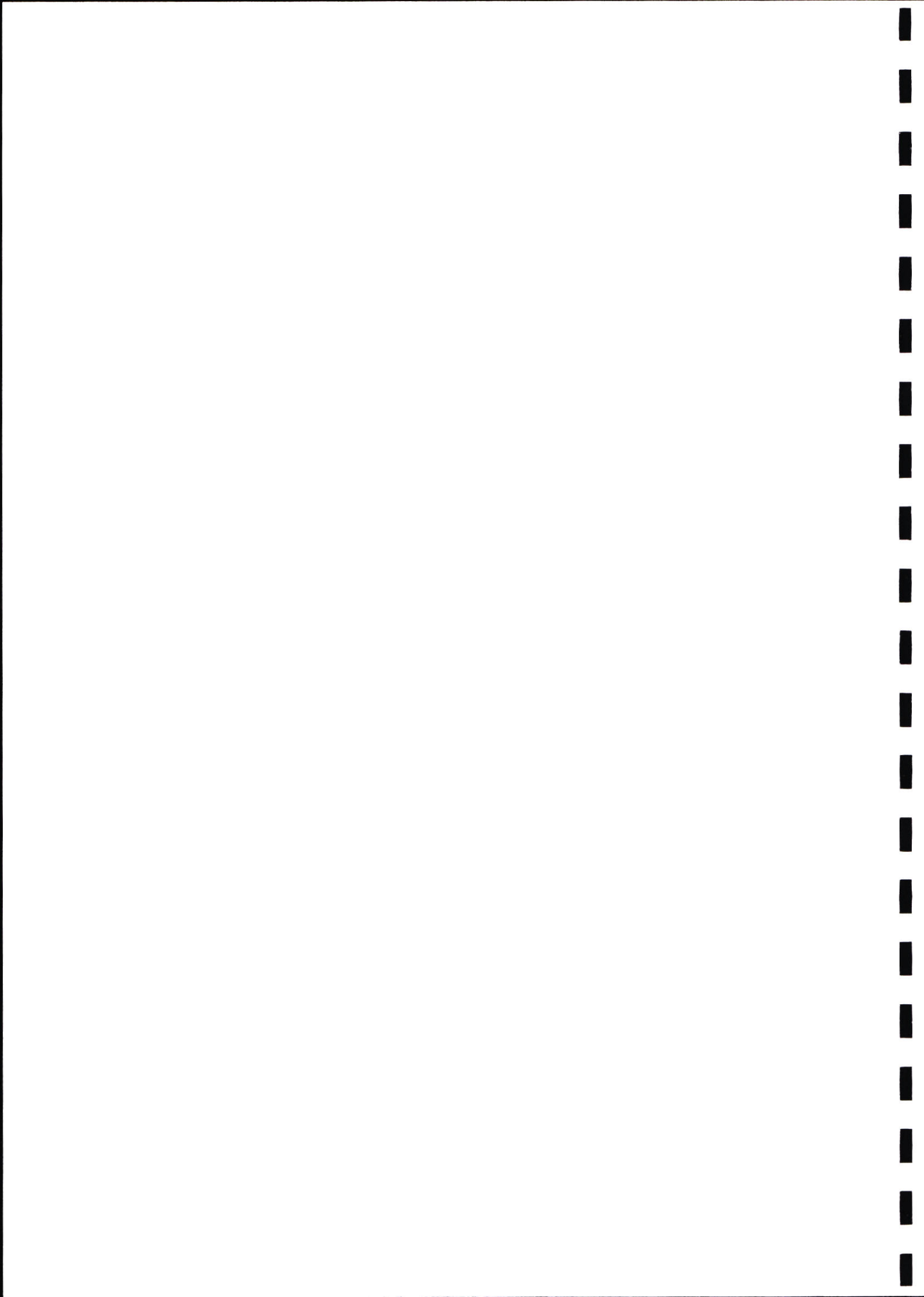
8. SENSITIVITY AND CONSTRAINTS

Sensitivity is defined here as the ‘**conservation value**’ together with the ‘**degree of resilience to disturbance**’. The conservation value relates to the conservation status (including the ecosystem threat status) and other factors including ecological connectivity, habitat condition, persistence of ecological process and the site’s role in supporting biodiversity. The degree of resilience takes into consideration factors such as sensitivity to disturbance and restoration potential.

The categories assigned to the site by the WCBSP 2017 do not correspond with the observed habitat condition, since most of the site mapped as CBA 1 and CBA 2 was found to have been recently bulldozed, and it is therefore impossible to determine the habitat state prior to this impact. The 2019 aerial imagery however suggests that this area was at least not as intact natural vegetation as what was present on the north east side of the site. Only a small area on the north east side is mapped as CBA 1 and CBA 2, but in fact all of the degraded vegetation should at least be mapped as CBA 2.

Table 3. Sensitivity rating coupled with habitat occurrence and reasons (SCC – species of conservation concern)

Sensitivity rating	Habitats	Reasons
Very Low	Transformed habitat	<ol style="list-style-type: none"> 1. Habitat is a completely altered state 2. No representative natural vegetation community remaining, no likely SCC, only some established trees remaining. 3. Low likelihood of persistent soil seedbank remaining.
Low	Highly degraded vegetation highly disturbed in proximity to degraded Swartland Granite Renosterveld.	<ol style="list-style-type: none"> 1. Some opportunistic renosterveld elements present, low indigenous diversity. 2. Likely to harbor more diversity of non-perennial species. 3. Moderate likelihood of persistent soil seedbank remaining. 4. Forms buffer to Swartland Granite Renosterveld.
High	Degraded Swartland Granite Renosterveld, disturbed in patches.	<ol style="list-style-type: none"> 1. Vegetation structure representative of Swartland Granite Renosterveld, although lacking some of the expected diversity, non-perennial SCC likely to occur. 2. Low to Moderate cover of alien species. 3. High likelihood of persistent soil seedbank remaining 4. Partially included in WCBSP 2017 (CBA1, CBA 2). 5. Moderate restoration potential.



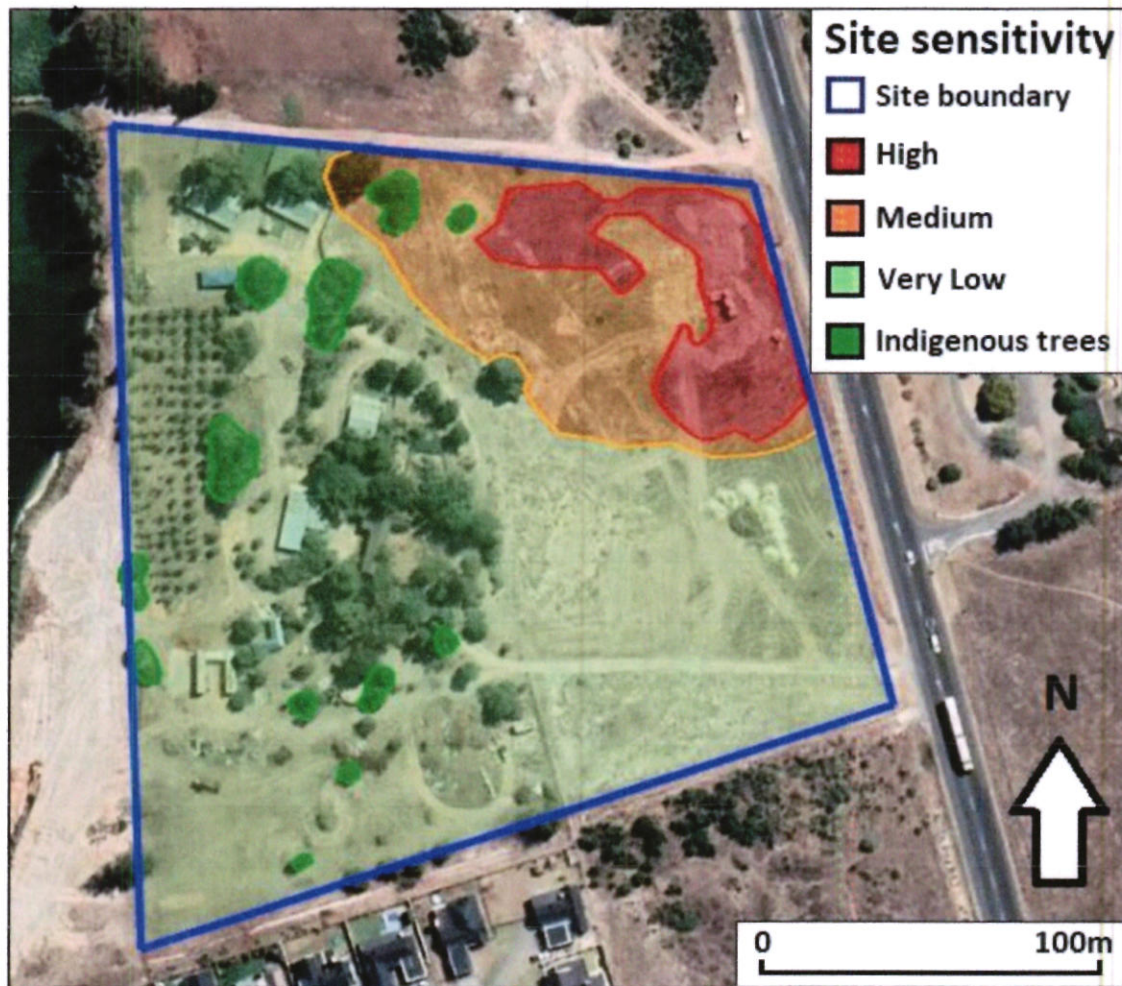


Figure 18. SENSITIVITY MAP: The sensitivity for the proposed development site overlaid on a Google Maps™ image, showing the north east side to be of highest sensitivity, with indigenous trees mostly towards the west side of the site.

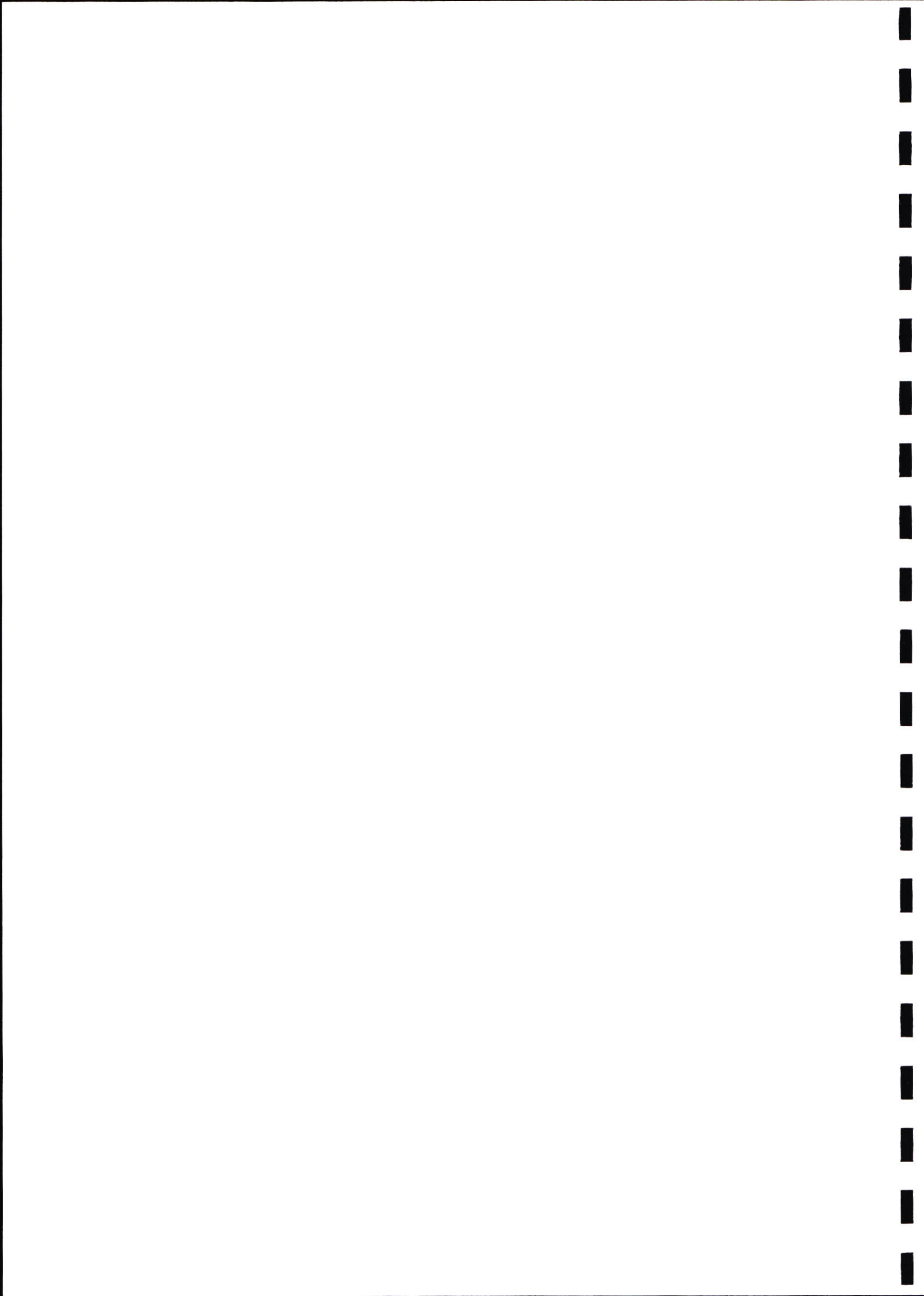
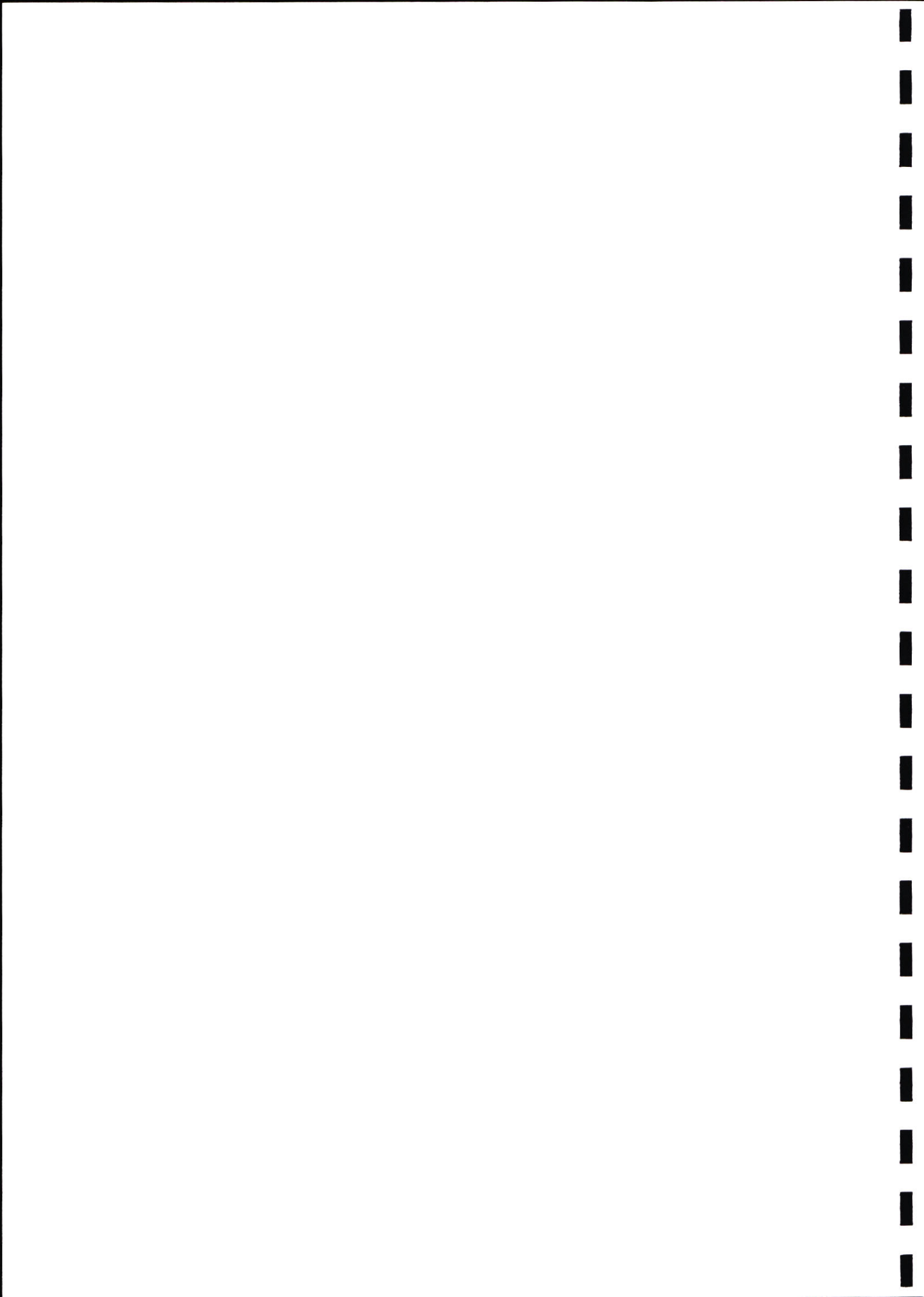


Table 4. The areas on the site and their sensitivity rating, constraints, opportunities and recommended actions from a botanical perspective.

Habitat	Sensitivity/ Constraints	Botanical opportunities and limitations	Recommended actions
Transformed Areas	Very Low	No limitations to development, apart from where established indigenous tree are present	Protect established indigenous trees and leave a buffer of 5 metres from base of trees to limit root disturbance and incorporate within the development.
Highly degraded vegetation	Low	Likely persistent seedbank and/or non-perennial species would add to the diversity of these areas, but these areas currently have low conservation value. Forms a buffer between degraded renosterveld patches and transformed habitat	Minimize loss or disturbance of vegetation in all such areas if the project is approved. Conduct a spring survey of these areas. Conduct an ecological burn, then monitor site for presence of any SCC.
Highly Degraded and Transformed Renosterveld through dumping and associated disturbance	High	This vegetation has been highly disturbed, but likely still has some existing conservation value as it may contain a diverse soil seedbank beneath rubble. This would connect otherwise fragmented patches of renosterveld on either side. This could improve the condition of the vegetation and add to the area of Swartland Granite Renosterveld conserved.	Exclude from development, and remove rubble to expose the original topsoil. Conduct an ecological burn to stimulate germination of soil seed bank, with subsequent monitoring for presence of SCC. Supplement where necessary with species typical of the vegetation type from local sources.
Degraded Renosterveld	High	This vegetation has been disturbed but is still representative of Critically Endangered Swartland Granite Renosterveld. Managing this habitat for conservation and restoring lost species/vegetation structural elements would add to the area of Swartland Granite Renosterveld conserved.	Exclude from development. Prevent any further disturbance within this area. Conduct an ecological burn to stimulate germination of soil seed bank, with subsequent monitoring for presence of SCC. Supplement where necessary with species typical of the vegetation type from local sources.



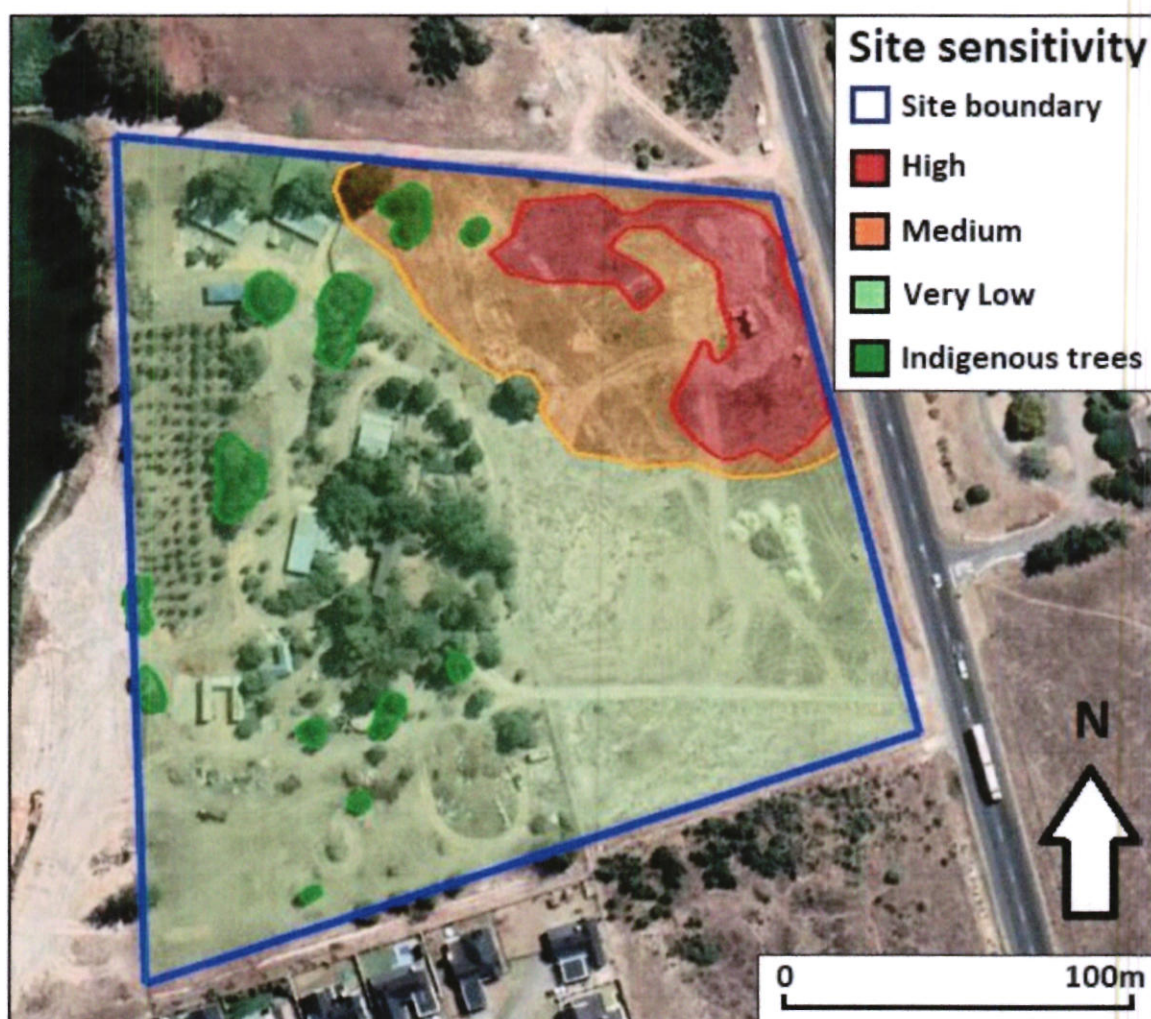


Figure 19. CONSTRAINTS MAP: The constraints rating for the proposed development site based on vegetation integrity and botanical sensitivity overlaid on a Google Maps™ image, showing the north east side to present the only constraints to development of the site.

9. CONCLUSIONS AND RECOMMENDATIONS

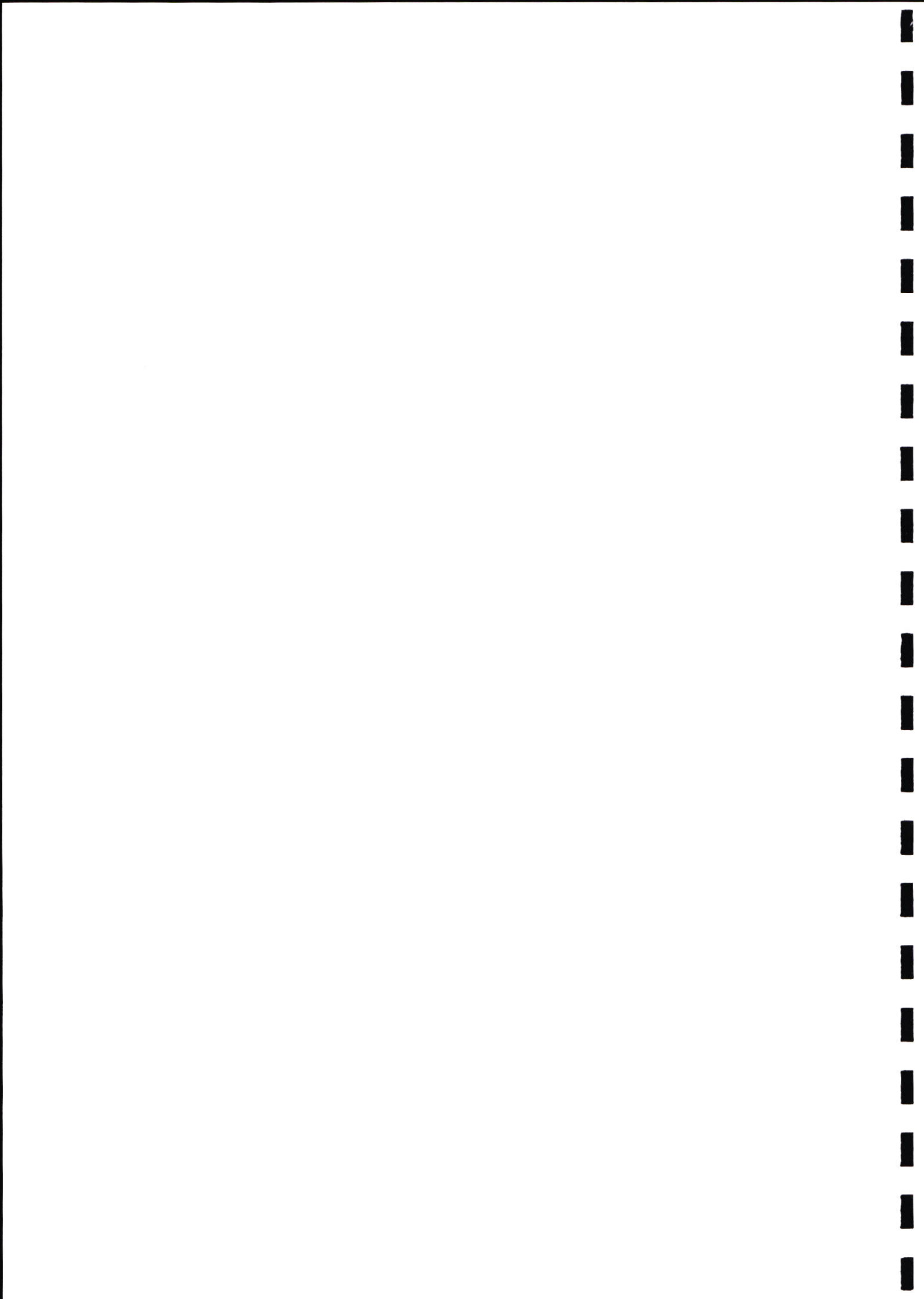
- The study area contains a CRITICALLY ENDANGERED vegetation type Swartland Granite Renosterveld.
- The areas proposed for development vary in condition from transformed to degraded. The majority of the site is transformed (3.32 ha) versus highly degraded (0.59 ha) and degraded (0.2 ha).
- In terms of sensitivity, a much larger part of the site is very low sensitivity (3.32 ha) versus medium (0.34 ha) to high sensitivity (0.3 ha). The Highly Degraded parts of the site are

mapped as Medium sensitivity since it is possible that a persistent soil seed bank exists that would facilitate recovery of natural vegetation if managed effectively.

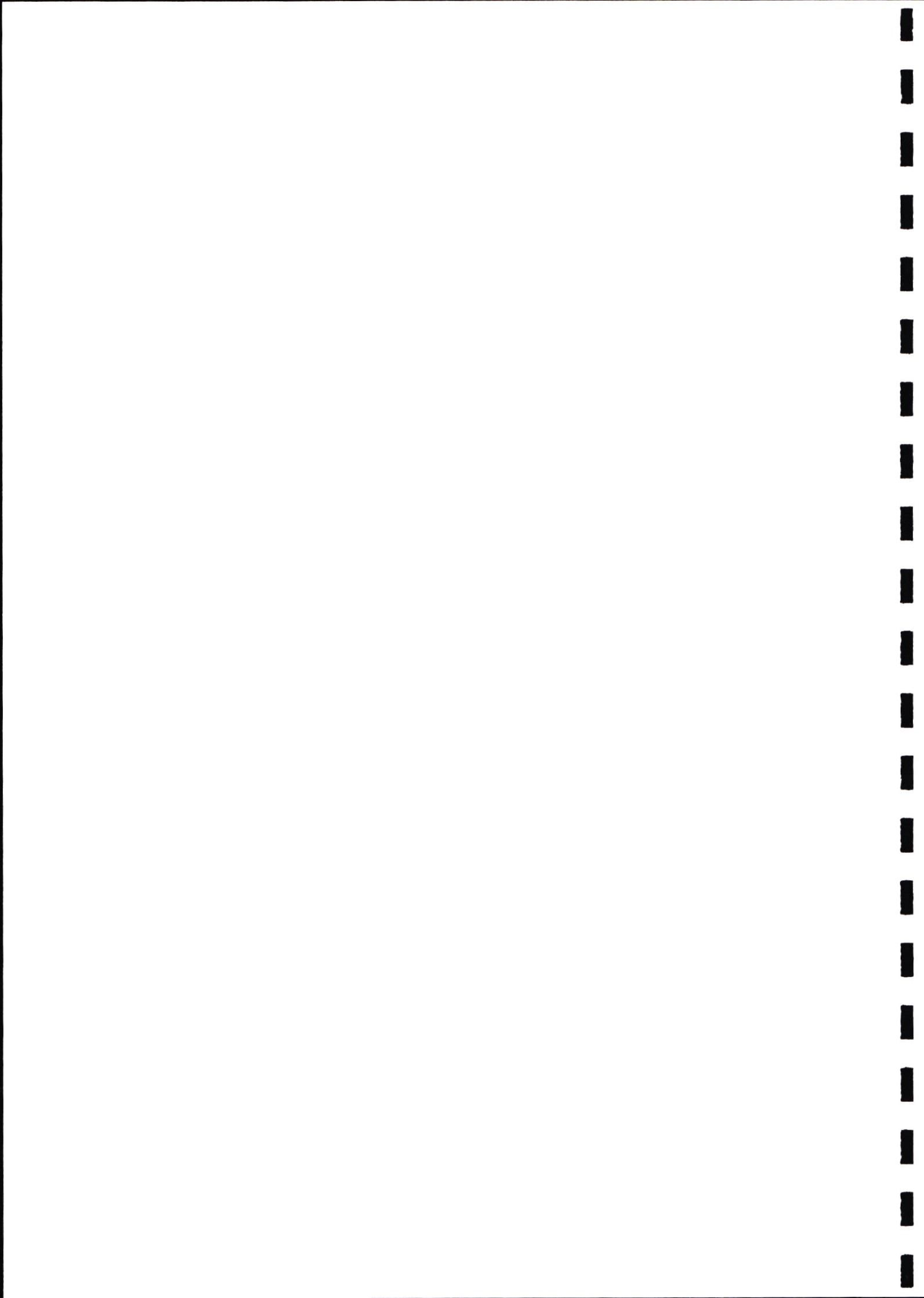
- The study area which incorporates sensitive vegetation is not mapped as a CBA area apart from a very small part, and it would be more appropriate to be mapped as CBA 2 since it is in a degraded state.
- This site presents an opportunity to conserve some degraded but conservation-worthy area of Swartland Granite Renosterveld (if high and medium sensitivity areas are excluded from development).
- Since the optimal time for surveying the vegetation within this site is spring (August to October), it is likely that SSC are present at the site even though none were observed at the time of surveying, and ideally a follow-up survey should be conducted of the highly degraded and degraded habitat to get a more accurate idea of SSC occurrence and habitat quality. It is unlikely that any SSC would be encountered in transformed habitat.
- Even within transformed parts of the site, a number of Wild Olive trees and one Candlewood tree were recorded, and these trees should be protected during and after construction with a buffer of 5 metres from the base of each tree.
- The proposed development of the entire site without mitigation would not be supported from a botanical perspective, but exclusion of High and Medium Sensitivity areas from development would result in negligible impact on biodiversity. This would therefore be acceptable from a botanical perspective.

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APPENDIX 1: MINIMUM CONTENT REQUIREMENTS FOR TERRESTRIAL BIODIVERSITY SPECIALIST REPORTS AS PER PROTOCOL FOR THE SPECIALIST ASSESSMENT OF ENVIRONMENTAL IMPACTS ON TERRESTRIAL BIODIVERSITY (GN 43855 OF 30 OCTOBER 2020)

Protocol ref	Terrestrial Biodiversity Specialist Assessment Report Content	Section Page	/
3.1.1.	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Page 2 & 3 and Appendix 2	
3.1.2.	a signed statement of independence by the specialist;	Page 2	
3.1.3.	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 4	
3.1.4.	a description of the methodology used to undertake the site verification and impact assessment and site inspection, including equipment and modelling used, where relevant;	Section 4	
3.1.5.	a description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations;	Section 4	
3.1.6.	a location of the areas not suitable for development, which are to be avoided during construction and operation (where relevant);	Section 8	
3.1.7.	additional environmental impacts expected from the proposed development;	N/A	
3.1.8.	any direct, indirect and cumulative impacts of the proposed development;	N/A	
3.1.9.	the degree to which impacts and risks can be mitigated;	N/A	
3.1.10.	the degree to which the impacts and risks can be reversed;	N/A	
3.1.11.	the degree to which the impacts and risks can cause loss of irreplaceable resources;	N/A	
3.1.12.	proposed impact management actions and impact management outcomes proposed by the specialist for inclusion in the Environmental Management Programme (EMPr);	N/A	
3.1.13.	a motivation must be provided if there were development footprints identified as per paragraph 2.3.6 above that were identified as having a "low" terrestrial biodiversity sensitivity and that were not considered appropriate;	N/A	
3.1.14.	a substantiated statement, based on the findings of the specialist assessment, regarding the acceptability, or not, of the proposed development, if it should receive approval or not; and	Section 9	
3.1.15.	any conditions to which this statement is subjected.	Section 9	

APPENDIX 2: ABBREVIATED CURRICULUM VITAE: STUART HALL

Experience

- Expertise in field work in the CFR – vegetation surveys, plant identification, plant collection, ecological monitoring
- Restoration of natural habitat following degradation
- PhD thesis entitled *"Restoration potential of alien-invaded Lowland Fynbos"*. Graduation date: March 2018

Career History

- November 2018 – present: Independent botanical specialist
- January 2017 – present: Environmental consultant for Intaka Island Nature Reserve
- March - October 2018: Horticulturist at Stellenbosch University Botanical Garden
- April 2012 – March 2013: Pollination Biology Intern in Department of Botany and Zoology at Stellenbosch University

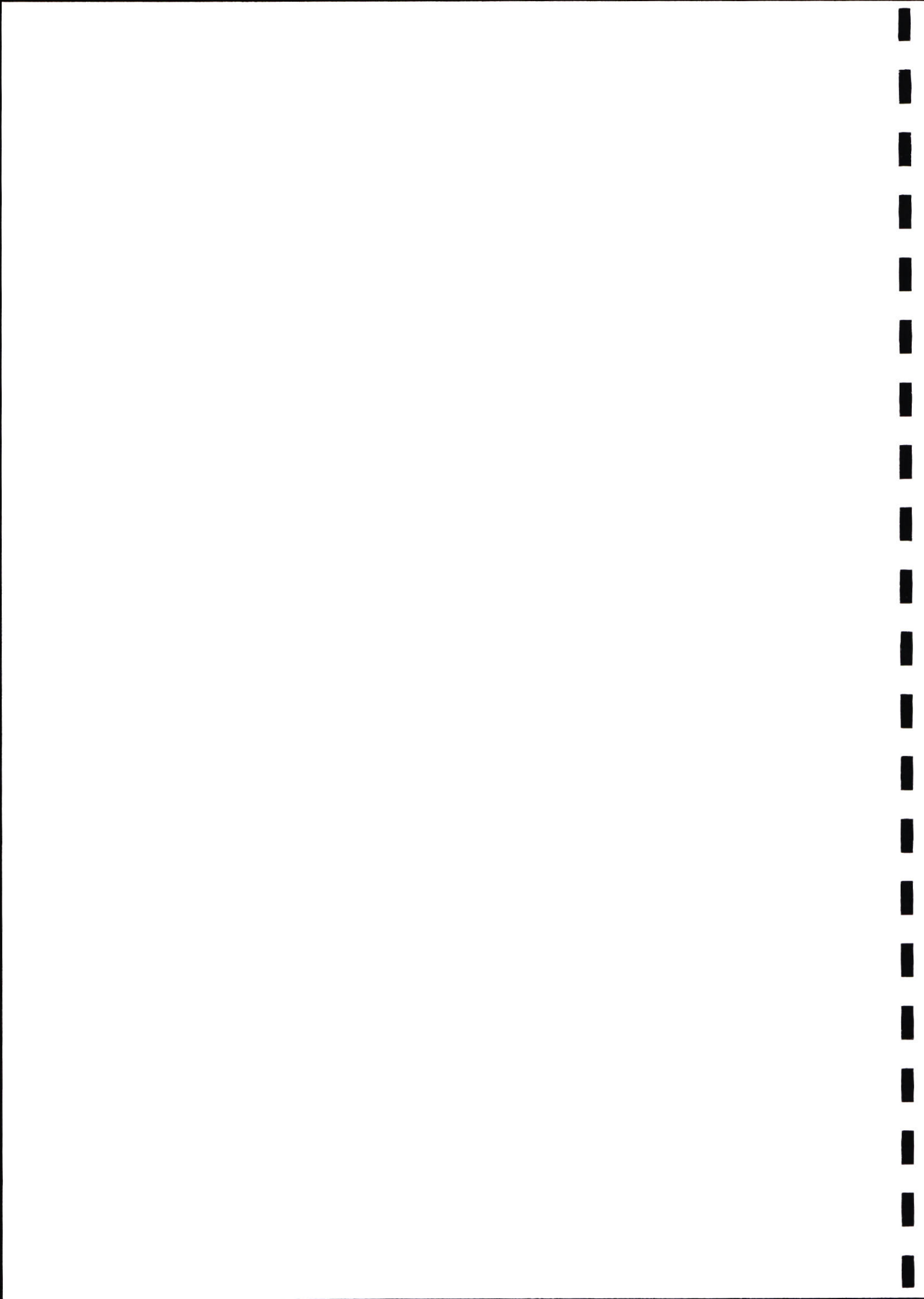
Education and qualifications

- Pr. Nat. Sci. (139074)
- PhD (Conservation Ecology) – Stellenbosch University (2018).
- BSc: Hons (Botany) – University of Cape Town (2010)
- BSc: Ecology - University of Cape Town (2007 – 2009)

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- Marital status – Single
- Dependents – 0

ANNEXURE 17: FRESHWATER REPORT





FEN CONSULTING

FRESHWATER ECOSYSTEM IMPACT VERIFICATION REPORT

**FOR THE PROPOSED RESIDENTIAL AND
COMMERCIAL DEVELOPMENT ON
PORTION 5 OF FARM 716
GROENFONTEIN ANNEX,
KLAPMUTS, WESTERN CAPE PROVINCE**

Prepared for:

Guillaume Nel Environmental
Consultants

Report author:

R. Mathakutha (Cand. Sci. Nat)

Report reviewers:

P. da Cruz (Cert.Sci.Nat)

Report Reference:

FEN 22-5044



Part of the SAS Environmental Group of Companies

Website: <http://www.sasenvironmental.co.za>

Image not representative of site.



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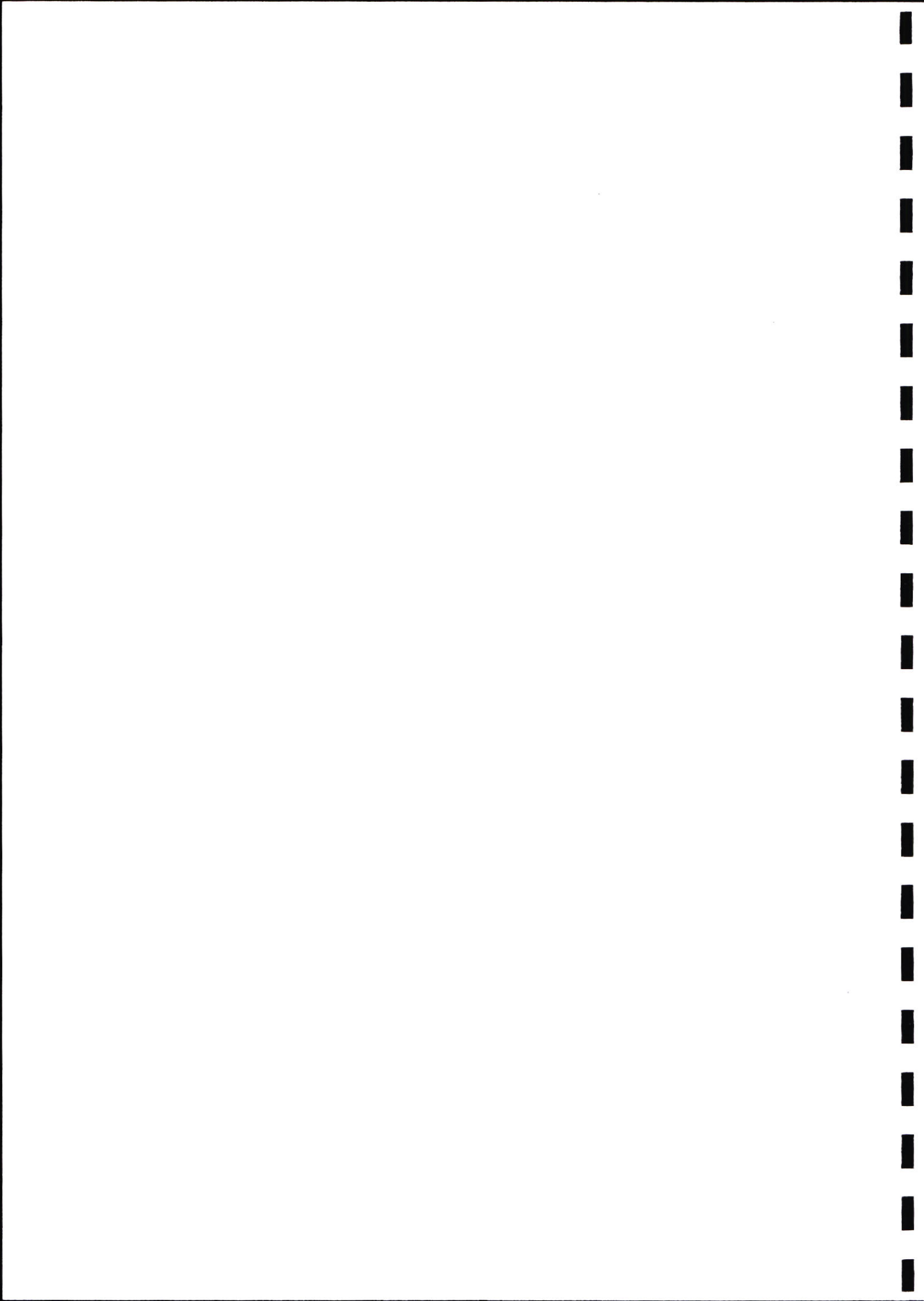
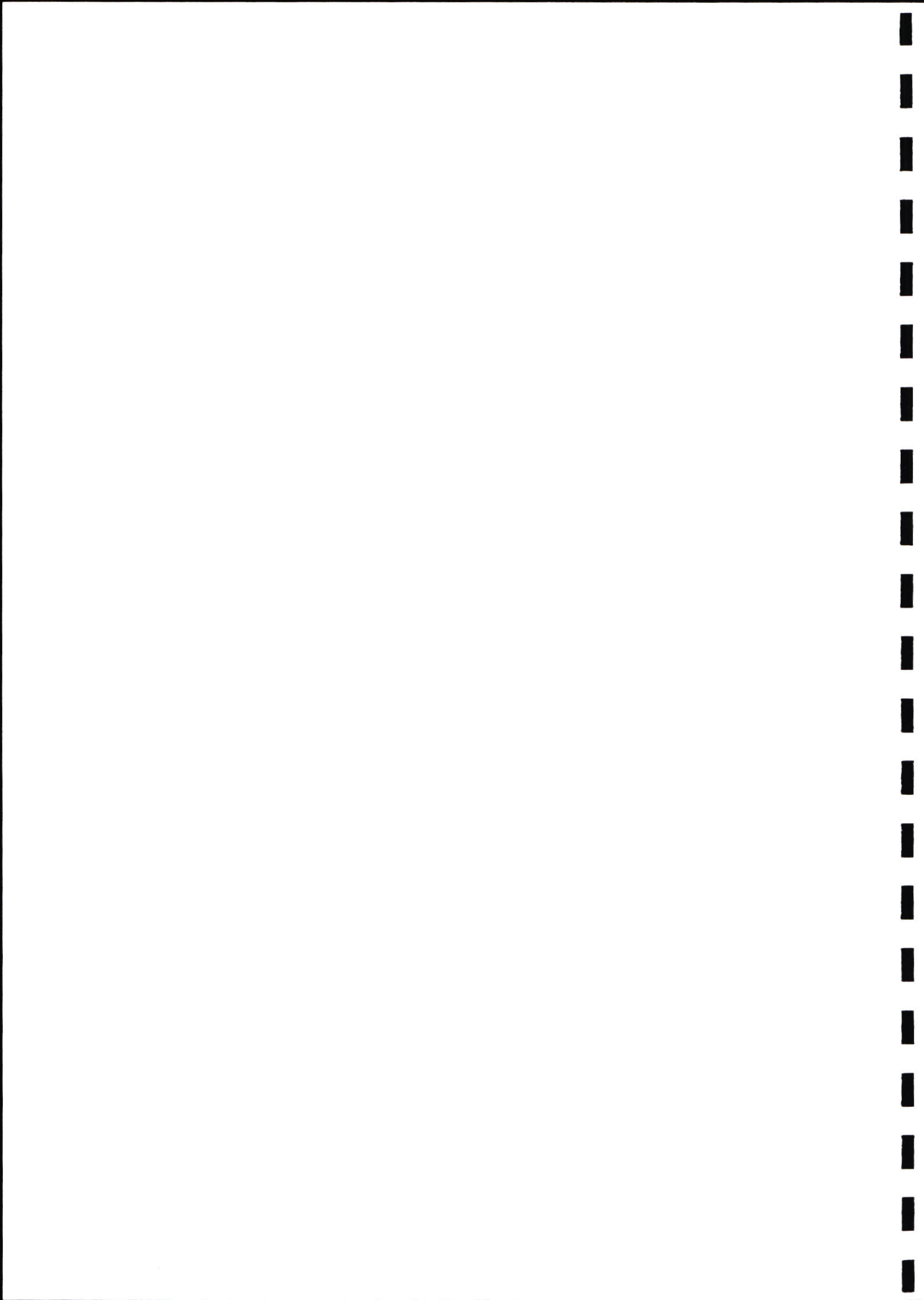


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GLOSSARY OF TERMS

Alien vegetation:	Plants that do not occur naturally within the area but have been introduced either intentionally or unintentionally. Vegetation species that originate from outside of the borders of the biome -usually international in origin.
Biodiversity:	The number and variety of living organisms on earth, the millions of plants, animals and micro-organisms, the genes they contain, the evolutionary history and potential they encompass and the ecosystems, ecological processes and landscape of which they are integral parts.
Buffer:	A strip of land surrounding a wetland or riparian area in which activities are controlled or restricted, in order to reduce the impact of adjacent land uses on the wetland or riparian area.
Catchment:	The area where water is collected by the natural landscape, where all rain and run-off water ultimately flows into a river, wetland, lake, and ocean or contributes to the groundwater system.
Delineation (of a wetland):	To determine the boundary of a wetland based on soil, vegetation, and/or hydrological indicators.
Ecoregion:	An ecoregion is a "recurring pattern of ecosystems associated with characteristic combinations of soil and landform that characterise that region".
Facultative species:	Species usually found in wetlands (76%-99% of occurrences) but occasionally found in non-wetland areas
Gleying:	A soil process resulting from prolonged soil saturation which is manifested by the presence of neutral grey, bluish or greenish colours in the soil matrix.
Hydromorphic soil:	A soil that in its undrained condition is saturated or flooded long enough to develop anaerobic conditions favouring the growth and regeneration of hydrophytic vegetation (vegetation adapted to living in anaerobic soil).
Hydromorphy:	A process of gleying and mottling resulting from the intermittent or permanent presence of excess water in the soil profile.
Indigenous vegetation:	Vegetation occurring naturally within a defined area.
Mottles:	Soil with variegated colour patterns is described as being mottled, with the "background colour" referred to as the matrix and the spots or blotches of colour referred to as mottles.
Obligate species:	Species almost always found in wetlands (>99% of occurrences).
Perennial:	Flows all year round.
RDL (Red Data listed) species:	Organisms that fall into the Extinct in the Wild (EW), critically endangered (CR), Endangered (EN), Vulnerable (VU) categories of ecological status.
Seasonal zone of wetness:	The zone of a wetland that lies between the Temporary and Permanent zones and is characterised by saturation from three to ten months of the year, within 50cm of the surface
Temporary zone of wetness:	The outer zone of a wetland characterised by saturation within 50cm of the surface for less than three months of the year.
Watercourse:	In terms of the definition contained within the National Water Act, 1998 (Act No. 36 of 1998) a watercourse means: <ul style="list-style-type: none"> • A river or spring; • A natural channel which water flows regularly or intermittently; • A wetland, dam or lake into which, or from which, water flows; and • Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse; • and a reference to a watercourse includes, where relevant, its bed and banks.
Wetland Vegetation (WetVeg) type:	Broad groupings of wetland vegetation, reflecting differences in regional context, such as geology, climate, and soil, which may in turn have an influence on the ecological characteristics and functioning of wetlands.



ACRONYMS

°C	Degrees Celsius
BGIS	Biodiversity Geographic Information Systems
CBA	Critical Biodiversity Area
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EC	Ecological Class
EIS	Ecological Importance and Sensitivity
EMC	Ecological Management Class
EMP	Environmental Management Program
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Areas
GIS	Geographic Information System
GN	Government Notice
GPS	Global Positioning System
HGM	Hydrogeomorphic
IHI	Index of Habitat Integrity
m	Meter
MAP	Mean Annual Precipitation
MC	Management Classes
NAEHMP	National Aquatic Ecosystem Health Monitoring Programme
NBA	National Biodiversity Assessment
NEMA	The National Environmental Management Act, 1998 (Act No. 107 of 1998)
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	The National Water Act, 1998 (Act No. 36 of 1998)
NWCS	National Wetland Classification System
PEMC	Present Ecological Management Class
PES	Present Ecological State
REC	Recommended Ecological Category
SACNASP	South African Council for Natural Scientific Professions
SANBI	South African National Biodiversity Institute
subWMA	Sub-Water Management Area
WetVeg Groups	Wetland Vegetation Groups
WMA	Water Management Areas
WRC	Water Research Commission



DOCUMENT GUIDE

The table below provides the specialist report requirements for the assessment and reporting of impacts on areas with a low sensitivity to the aquatic biodiversity in terms of Government Notice 320 as promulgated in Government Gazette 43110 of 20 March 2020 in line with the Department of Environmental Affairs screening tool requirements, as it relates to the National Environmental Management Act, 1998 (Act No. 107 of 1998).

No.	Requirements	Section in Report
3.1	The compliance statement must be prepared by a suitably qualified specialist registered with the SACNASP, with expertise in the field of aquatic sciences.	Appendix D
3.2	The compliance statement must:	-
3.2.1	be applicable to the preferred site and the proposed development footprint;	Sections 1, 2 and 4
3.2.2	confirm that the site is of "low" sensitivity for aquatic biodiversity	Sections 3, 5 and 7
3.2.3	indicate whether or not the proposed development will have an impact on the aquatic features.	Section 7
3.3	The compliance statement must contain, as a minimum, the following information:	-
3.3.1	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Appendix D
3.3.2	a signed statement of independence by the specialist;	Appendix D
3.3.3	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 2.2
3.3.4	a baseline profile description of biodiversity and ecosystems of the site;	Section 4.2
3.3.5	the methodology used to verify the sensitivities of the aquatic biodiversity features on the site including the equipment and modelling used where relevant;	Section 2 and 4.1
3.3.6	in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase;	N/A
3.3.7	where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMP;	Section 7
3.3.8	a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and	Section 1.1
3.3.9	any conditions to which this statement is subjected.	N/A
3.4	A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.	EAP to ensure this requirement is met.



1. INTRODUCTION AND BACKGROUND SETTING

Freshwater Ecologist Network (FEN) Consulting (Pty) Ltd was appointed by Guillaume Nel Environmental Consultants (the Environmental Assessment Practitioner (EAP)) to verify the presence of freshwater ecosystems on Portion 5 of Farm 716 Groenfontein Annex in Klapmuts, Western Cape Province (hereafter referred to as the "study area") (Figures 1 and 2), which could pose a constraint to the proposed mixed-use development. As part of the scope of works, FEN has prepared a freshwater ecosystem impact and compliance statement as part of the Environmental Authorisation (EA) process for the proposed mixed-use development.

The study area is approximately 4.2 hectares (ha) in extent and located in a peri-urban setting with ongoing agricultural activities and expanding urban development within the Stellenbosch Local Municipality. Residential housing is present within the study area, however, the majority of the study area is undeveloped. The proponent is proposing the development of the study area into a residential and commercial development comprising residential erven and various amenities. No layout of the proposed development was available at the time of compiling this report. The proposed development will hereafter be referred to as the 'proposed mixed-use development'.

In order to identify all freshwater features that may potentially be impacted by the proposed mixed-use development, a 500 m "zone of investigation" was implemented around the study area, in accordance with Government Notice (GN) 509 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998) (NWA), in order to assess possible sensitivities of the receiving freshwater environment. This area – i.e., the 500 m zone of investigation around the study area - will henceforth be referred to as the "investigation area".

This study aims to provide information to guide the proposed mixed-use development in the vicinity of freshwater ecosystems within the study area, to ensure the ongoing functioning of the ecosystems, such that local and regional conservation requirements and the provision of ecological services in the local area are supported, while considering the need for sustainable economic development. This report, after consideration of the above, must guide the Environmental Assessment Practitioner (EAP) and proponent on the final layout of the proposed mixed-use development within the study area from a freshwater resource management perspective and indicate any development constraints in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA) and the National Water Act, 1998 (Act No. 36 of 1998) as amended (NWA), that should be considered in line with the principles of sustainable development and Integrated Environmental Management. FEN was required to, if necessary, assess the risk, if any that the proposed mixed-use development may pose to the receiving freshwater environment.

1.1 Assumptions and limitations

The following assumptions and limitations are applicable to this report:

- The ground-truthing and delineation of the watercourse boundaries and the assessment thereof, are confined to a single day site visit undertaken on the 16th of August 2022. All freshwater ecosystems identified within the investigation area were delineated in fulfilment of GN 509 of the National Water Act, 1998 (Act No. 36 of 1998) using various desktop methods including use of topographic maps, historical and current digital satellite imagery and aerial photographs, with limited site verification;
- The delineation of the freshwater ecosystems, as provided in this report, is considered accurate taking into consideration the conditions at the time of assessment (i.e., disturbances to soil and vegetation, changes to the pattern, flow and timing of water within the freshwater ecosystems);
- No Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) assessment of the freshwater ecosystems was undertaken as part of the scope of work of this



report, as this is based on the confirmed presence of freshwater ecosystems in the study area. The objective of this report is to present the locality of the freshwater ecosystems to inform the proposed development layout;

- Global Positioning System (GPS) technology is inherently somewhat inaccurate, and some inaccuracies due to the use of handheld GPS instrumentation may occur; however, the delineations as provided in this report are deemed appropriately accurate to fulfil the authorisation requirements;
- Wetlands and/or riparian zones and terrestrial zones create transitional areas where an ecotone is formed as vegetation species change from terrestrial to obligate/facultative wetland or riparian species. Within this transition zone, some variation of opinion on the freshwater feature boundaries may occur. However, if the Department of Water Affairs and Forestry (DWAF)¹ (2008)² method is followed, all assessors should get largely similar results; and
- With ecology being dynamic and complex, certain aspects (some of which may be important) may have been overlooked. The watercourse delineation as presented in this report is, however, regarded as the best estimate of the boundaries based on the site conditions present at the time of the site visit and are deemed appropriately accurate to guide any future development plans.

¹ The Department of Water Affairs and Forestry (DWAF) was formerly known as the Department of Water Affairs (DWA). At present, the Department is known as the Department of Water and Sanitation (DWS). For the purposes of referencing in this report, the name under which the Department was known during the time of publication of reference material, will be used.

² Although an updated manual is available since 2008 (Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas). This is still considered a draft document currently under review.





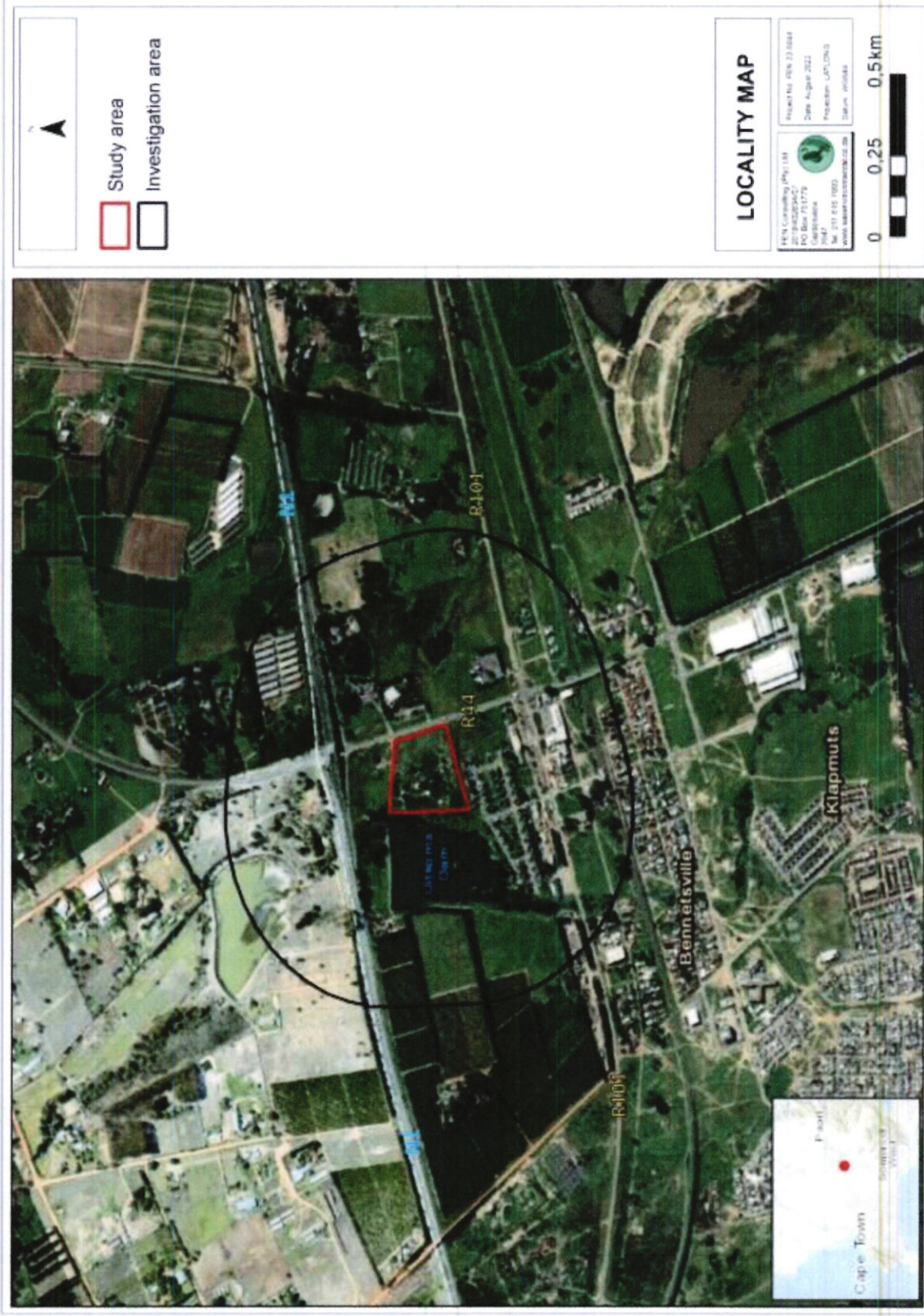
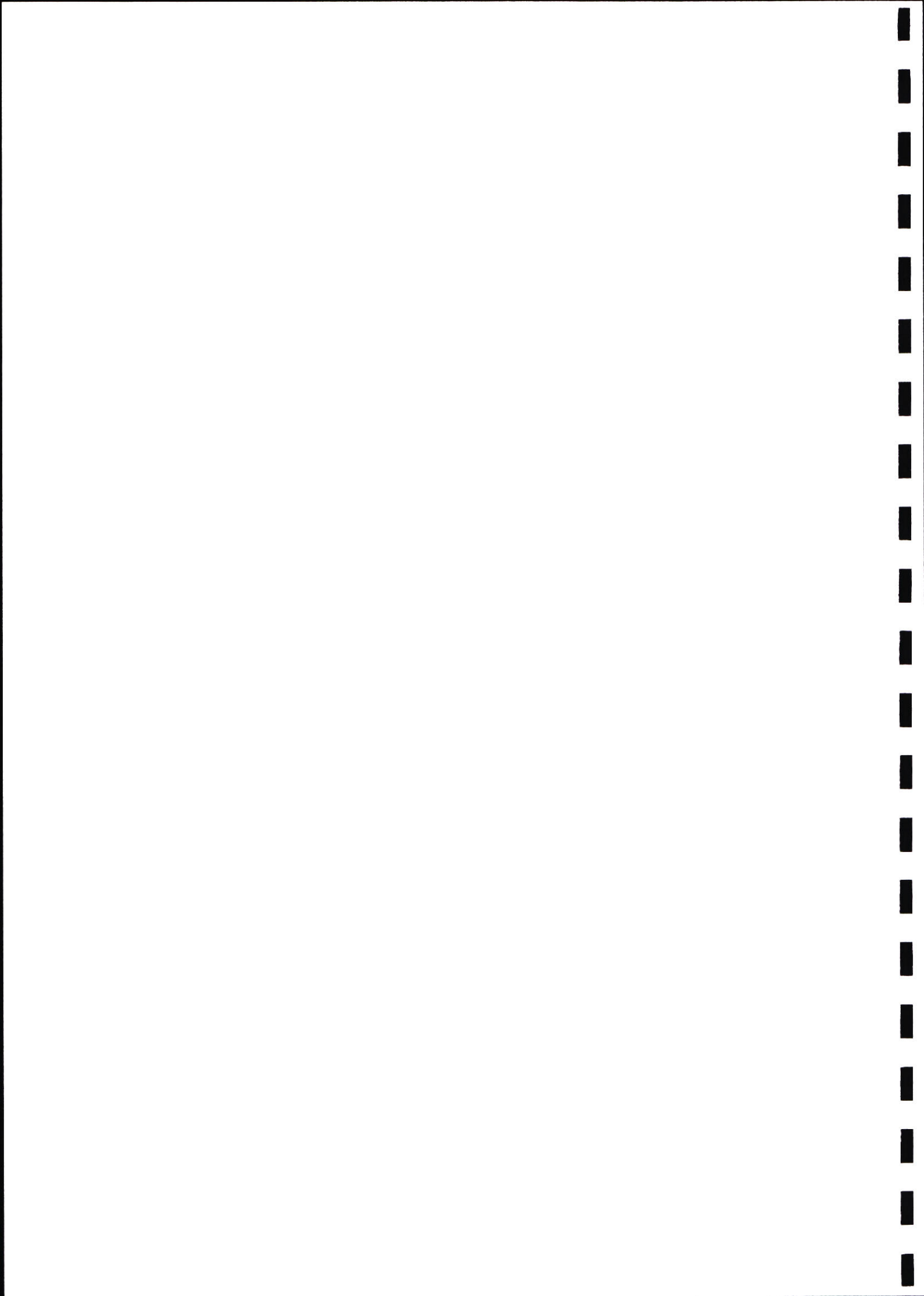


Figure 1: Digital satellite image depicting the location of the study and investigation areas in relation to the surrounding area.





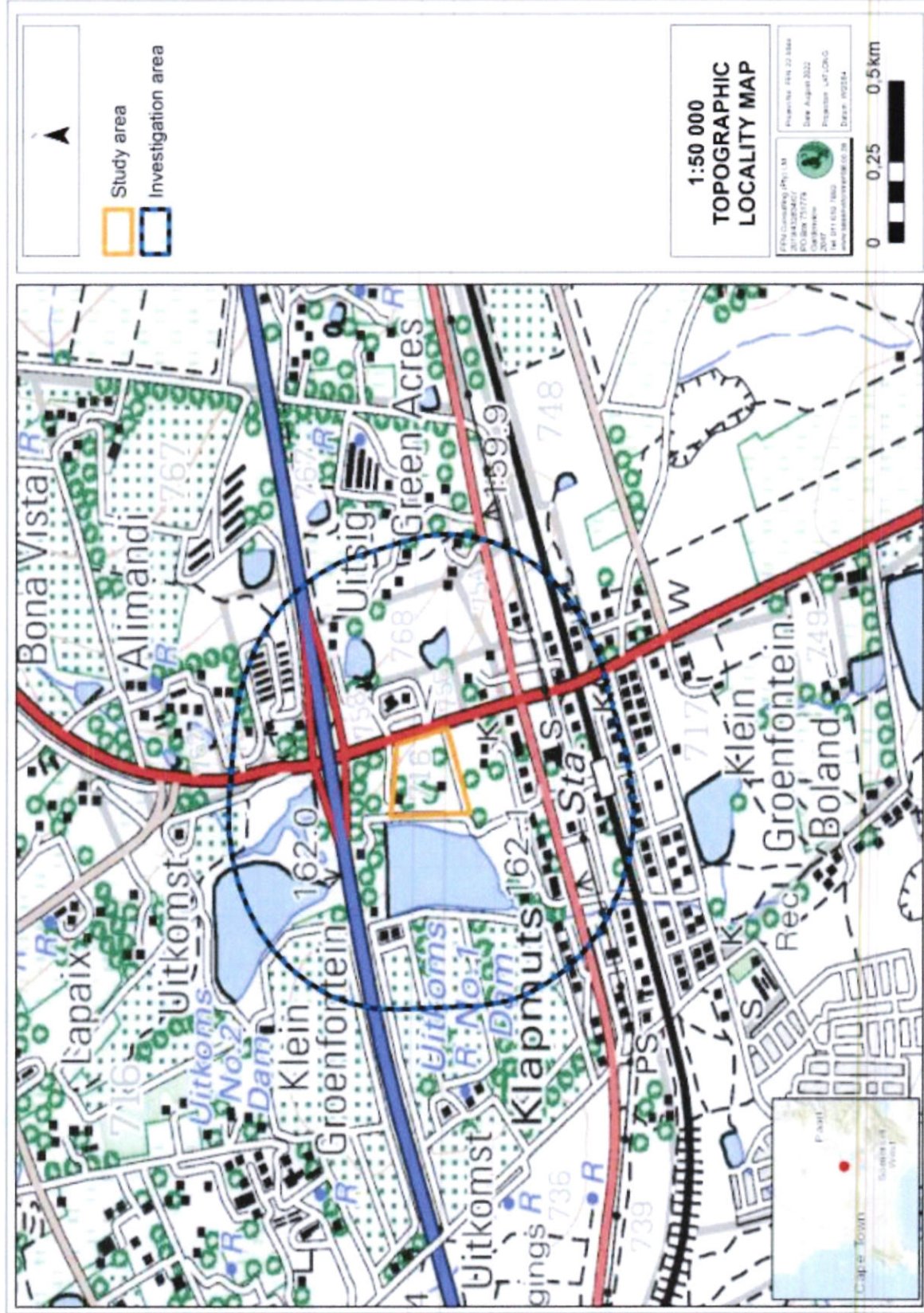
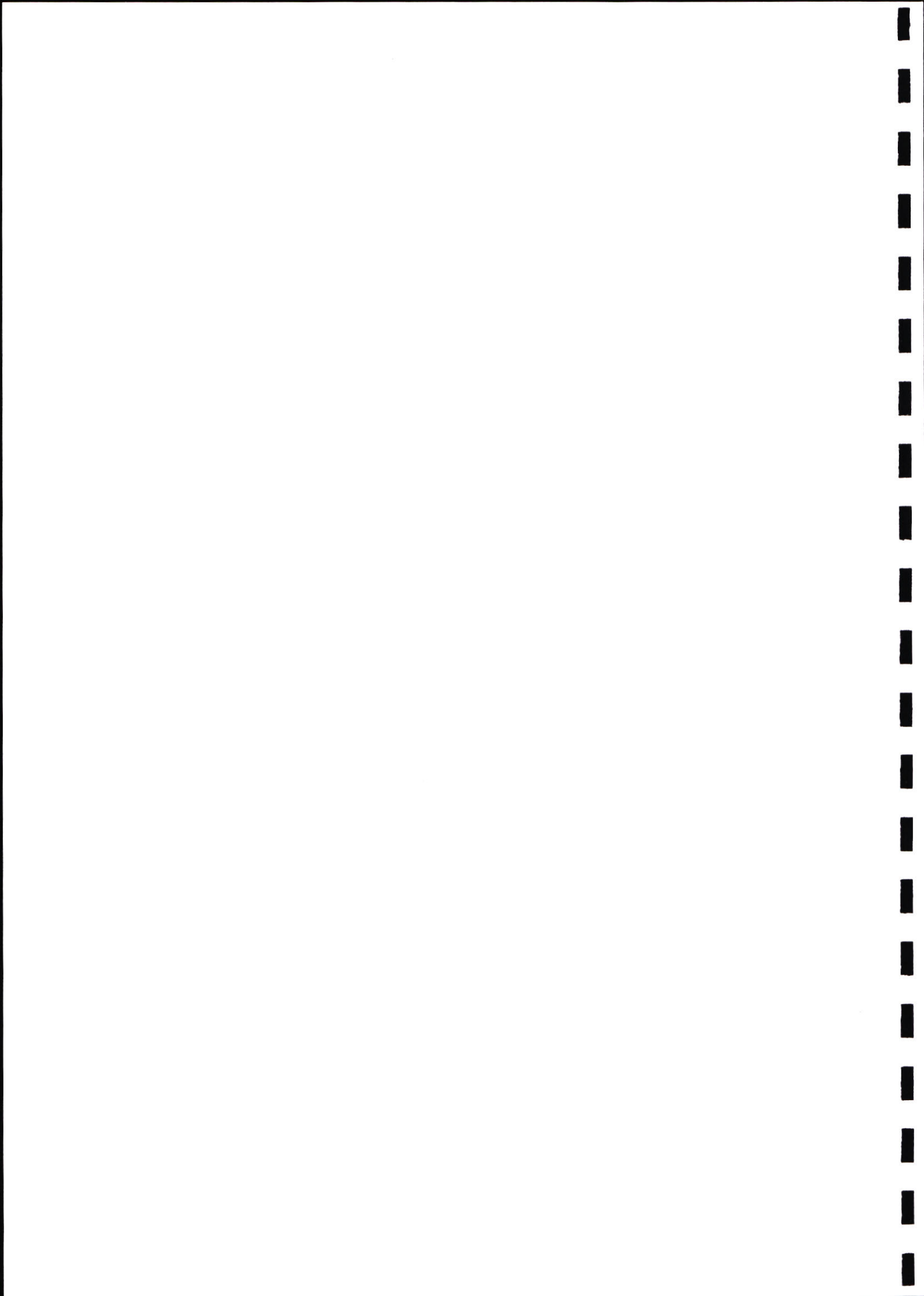


Figure 2: Location of the study and investigation areas depicted on a 1:50 000 topographical map, in relation to surrounding area.





2. ASSESSMENT APPROACH

- The desktop assessment, as presented in Section 4.1 reports on the findings from the relevant national, provincial and municipal datasets (such as the National Freshwater Ecosystem Priority Areas [NFEPA], 2011 database; the National Biodiversity Assessment [NBA], 2018 database; and the Western Cape Biodiversity Spatial Plan database (2017)), were undertaken to aid in identifying any freshwater features;
- The national web based Environmental Screening Tool (DEA, 2020) was utilised to screen the study area for any environmental sensitivity, with specific focus on aquatic sensitivities. The results are presented in Section 4;
- Section 4.2 reports the following:
 - A description and delineation of all freshwater features associated with the study area according to "Department of Water Affairs and Forestry (DWAF) (2008): A practical Guideline Procedure for the Identification and Delineation of Wetlands and Riparian Zones";
 - Delineation of all freshwater features (using desktop methods) within 500 m of the study area in accordance with GN 509 as published in the Government Gazette 40229 of 2016 as it relates to activities as stipulated in Section 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) as amended; and
 - The classification of the freshwater features according to the Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems (Ollis *et al.*, 2013).
- Section 4 provides a summary of the legislative conditions that may be applicable.

2.1 Freshwater Definition

The NWA is aimed at the protection of the country's water resources, defined in the Act as:
"a watercourse, surface water, estuary or aquifer"

According to the NWA a watercourse means:

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, lake or dam into which, or from which, water flows; and
- (d) any collection of water which the Minister may, by notice in the Gazette, declare a watercourse.

It should be noted that in this report "freshwater ecosystem / feature" is used and carries the same meaning as "watercourse" as defined by the NWA.

The NWA further provides definitions of wetland and riparian habitats as follows:

Wetland habitat is "land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."

Another widely used definition of wetlands is the one used under the **Ramsar Convention**; wetlands are defined as:

"areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres"

This determining factor has been utilised in this assessment. Wetland soils can be termed hydric or hydromorphic soils. **Hydric soils** are defined by the United States Department of Agriculture's Natural Resources Conservation Service as being:

"soils that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part".



These anaerobic conditions would typically support the growth of hydrophytic vegetation (vegetation adapted to grow in soils that are saturated and starved of oxygen) and are typified by the presence of redoximorphic features.

Riparian habitat includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterized by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent area.

2.2 Freshwater Ecosystem Site Verification

Verification of potential freshwater ecosystems took place according to the method presented in the "Updated manual for the identification and delineation of wetland and riparian resources" (DWAF, 2008). The foundation of the method is based on the fact that freshwater features have several distinguishing factors including the following:

- Landscape position;
- The presence of water at or near the ground surface;
- Distinctive hydromorphic soils;
- Vegetation adapted to saturated soils; and
- The presence of alluvial soils in stream systems.

A field assessment was undertaken on the 16th of August 2022 (Western Cape wet season)³, during which the presence of any riparian or wetland characteristics as defined by DWAF (2008) and by the NWA, was investigated (please refer to Section 5 of this report).

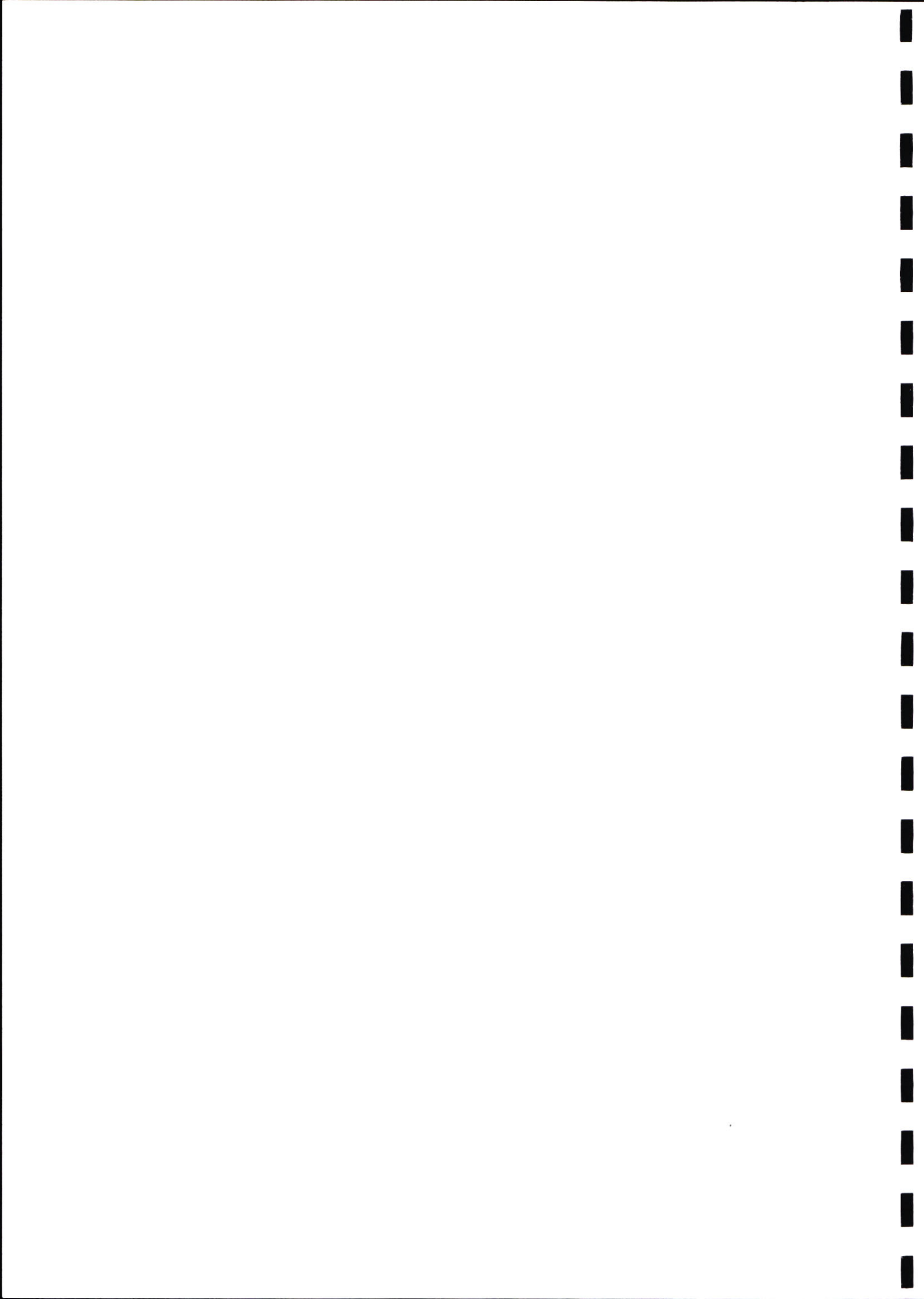
3. APPLICATION OF THE DEPARTMENT OF FORESTRY, FISHERIES AND ENVIRONMENT (DFFE) WEB-BASED SCREENING TOOL.

The protocol for the assessment of freshwater and aquatic biodiversity prepared in support of the Department of Forestry, Fisheries and Environment (DFFE) (previously the Department of Environmental Affairs (DEA)) national web based environmental screening tool (2020), provides the criteria for the assessment and reporting of impacts on aquatic/freshwater biodiversity for activities requiring Environmental Authorisation (EA). For the aquatic/freshwater biodiversity theme, the requirements are for sites which support various levels of biodiversity. The relevant aquatic/freshwater biodiversity theme in the national web based environmental screening tool (2020) has been provided by the South African National Biodiversity Institute (SANBI). Based on the sensitivity rating, a suitably qualified specialist must prepare the relevant report or opinion memorandum which is to be submitted as part of the EA application.

As part of the process of the background information gathering, FEN applied the DFFE screening tool to the study area. According to the guidelines, an applicant intending to undertake an activity on a site identified as being of "very high sensitivity" for an aquatic biodiversity theme must submit an Aquatic Biodiversity Impact Assessment, or if the area is identified as being of "low sensitivity" then an Aquatic Biodiversity Compliance Statement must be compiled and submitted to the competent authority. It is

³ Site surveys are recommended to take place during a seasonal period where the probability of detecting an identifiable life history stage of vegetation species (such as facultative vegetation species) is highest and in the raining period to ensure optimised conditions for the identification of seasonal watercourses, which may otherwise be overlooked. The site conditions at the time of the field assessment are considered acceptable having undertaken the field assessment during the raining season.





noted, however, that during a site survey undertaken by a suitably qualified freshwater ecologist should the sensitivity be determined different from that assigned by the screening tool (i.e., that a high risk to the regional aquatic biodiversity or freshwater ecosystems in the area is likely even though it is assigned as a "low" sensitivity, or if it is assigned a high sensitivity, however, the proposed development risks are deemed low) then the relevant assessment approach must be followed based on the site survey results and not the DFFE screening tool allocation.

According to the national web based environmental screening tool, the majority of the eastern portion of the study area is located within an area of **very high aquatic/ freshwater biodiversity significance**, while the north western corner of the study area is indicated as being of **low aquatic/ freshwater biodiversity significance** (Figure 3).

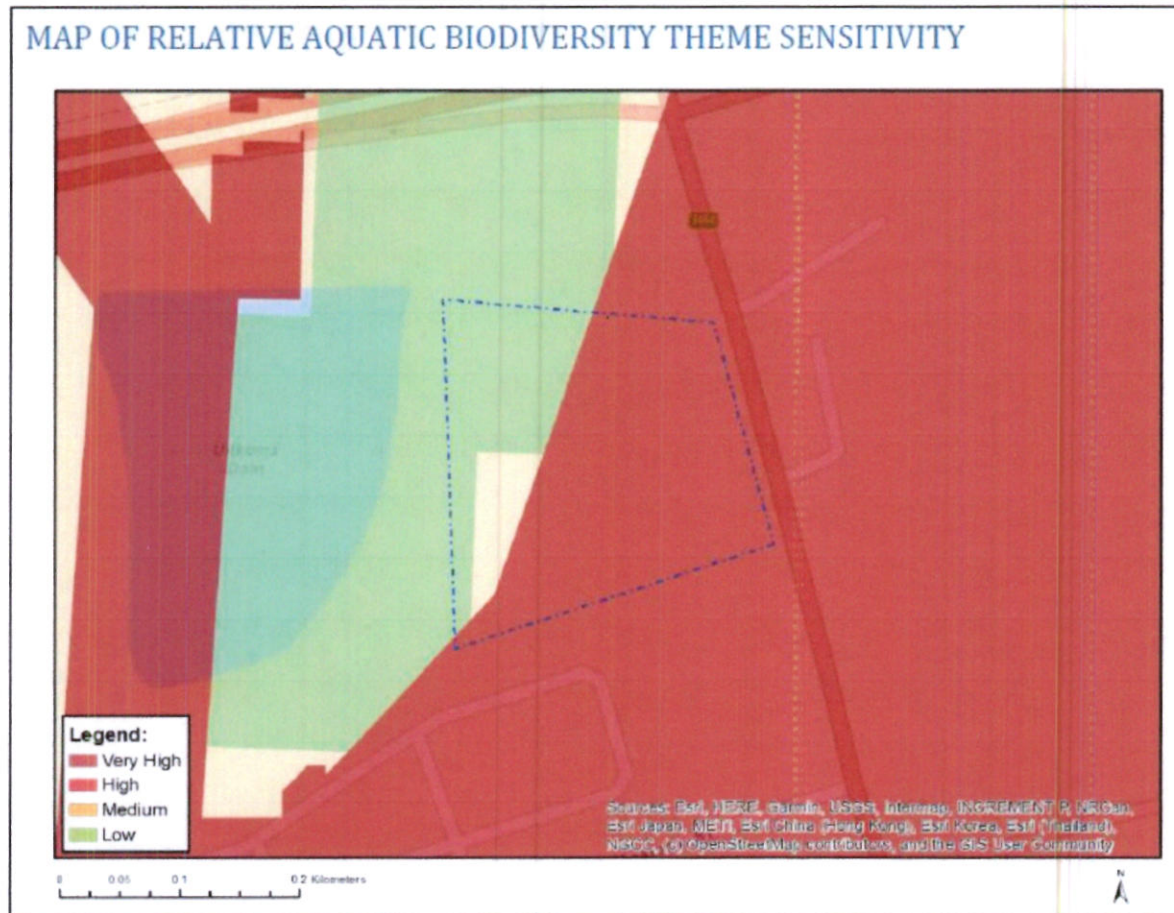


Figure 3: Map of relative aquatic biodiversity according to the DFFE Screening Tool, indicating 'very high' sensitivity within the wider study area, but 'low' sensitivity within the north western portion of the study area.

The national web based environmental screening tool report has assigned the areas of very high aquatic biodiversity sensitivity as being associated with a strategic water source area. According to the Strategic Water Source Area Database (2017), the eastern portion of the study area and area to the west of the study area are situated within the Boland Surface Water Area. The verification site assessment was used to verify the designation of very high sensitivity within the study area and surrounds (see Sections 5 and 6).





4. RESULTS

4.1 Desktop Assessment Findings

4.1.1 Desktop assessment of historical vs. most recent imagery

In preparation for the field assessment, historical aerial photographs, digital satellite imagery and provincial and national watercourse databases were used to identify points of interest in the surrounding area at a desktop level. Signatures may be utilised to identify watercourses on historical photographs or digital satellite imagery, which includes the following:

- Linear features: since water flows/moves through the landscape, watercourses often have a distinct linear element to their signature which makes them discernible on aerial photography or satellite imagery;
- Vegetation associated with watercourses: a distinct increase in density as well as shrub size near flow paths;
- Hue: water flow paths often show as white/grey or black and outcrops or bare soil displaying varying chroma created by varying vegetation cover, geology, and soil conditions. Changes in the hue of vegetation with watercourse vegetation often indicated on black and white images as areas of darker hue (dark grey and black). In colour imagery these areas mostly show up as darker green and olive colours or brighter green colours in relation to adjacent areas where there is less soil moisture or surface water present; and
- Texture: with areas displaying various textures, created by varying vegetation cover and soil conditions.

On review of the available historical photograph from 1953 prior to the construction of the N1 Highway to the north of the study area, digital signatures, as indicated by the blue dashed lines, are visible to the west (in line with the Klappmuts River as indicated by the NFEPA (2011) database (Figure 5)), and to the east of the study area (Figure 4). No digital signatures are visible within the study area. The artificial impoundment associated with the Klappmuts River was already present to the west of the study area (Figure 4). The surrounding landscape is noted to be largely agricultural, with linear infrastructure already present, including the R101, R44 and the railway line (Figure 4).







Figure 4: Historical imagery (1953) of the approximate locality of the study (red outline) and surrounding areas (Job 335, Photograph 5986). Digital signatures representative of potential freshwater features are visible to the west (Klapmuts River) and east of the study area as indicated by the blue dashed lines.

On review of the latest digital satellite imagery from 2022 (Figure 5), the surrounding land uses remain fairly unchanged from that visible in the 1953 photograph, however, the N1 Highway is now visible to the north of the study area, with evidence of urban expansion also visible in terms of more linear and building infrastructure development within the surrounding landscape. The digital signatures representative of freshwater features as identified in the historical photograph are still easily discernible (yellow arrows, Figure 5). No digital signatures are visible within the study area. The artificial impoundment associated with the Klapmuts River is still visible to the west of the study area, however, a channel diversion and the presence of artificial drainage channels are visible downgradient of this artificial impoundment as indicated by the yellow arrow, as well as more artificial impoundments in the general landscape, including the further impoundment of the Klapmuts River to the north of the N1 Highway (Figure 5). Therefore, at present day, the freshwater ecosystems of the local area are subject to growing agricultural and urban land use practices.







Figure 5: Digital satellite image (circa 2022) of the study (red outline) and surrounding areas. Digital signatures representative of potential freshwater features are visible to the west (Klapmuts River) and east of the study area as indicated by the blue dashed lines. The yellow arrows depicts a channel diversion and potentially artificial drainage channels downgradient of the artificial impoundment associated with the Klapmuts River compared to the historical photograph.

As both the historical photograph and digital satellite imagery displayed distinctive signatures presenting potential freshwater features within the vicinity of the study area, these were noted as areas of interest for site verification, where attention would be paid to delineating the extent of these freshwater features adjacent to the study area.

4.1.2 National and Provincial Datasets

The following table contains data accessed as part of the desktop assessment and presented as a “dashboard-style” report below (Table 1). The dashboard report aims to present concise summaries of the data on as few pages as possible in order to allow for integration of results by the reader to take place. Where required, further discussion and interpretation are provided.

It is important to note that although all data sources used provide useful and often verifiable, high-quality data, the various databases used do not always provide an entirely accurate indication of the actual site characteristics at the scale required to inform the applicant of any potential environmental authorisation and/or water use authorisation processes that may be needed. Given these limitations, this information is considered useful as background information to the study and is important in legislative contextualisation of the risks and impacts, and was thus used as a guideline to inform the assessment and to focus on areas and aspects of increased conservation importance during the field survey. It must, however, be noted that site verification of key areas may potentially contradict the information contained in the relevant databases, in which case the site verified information must carry more weight in the decision-making process.



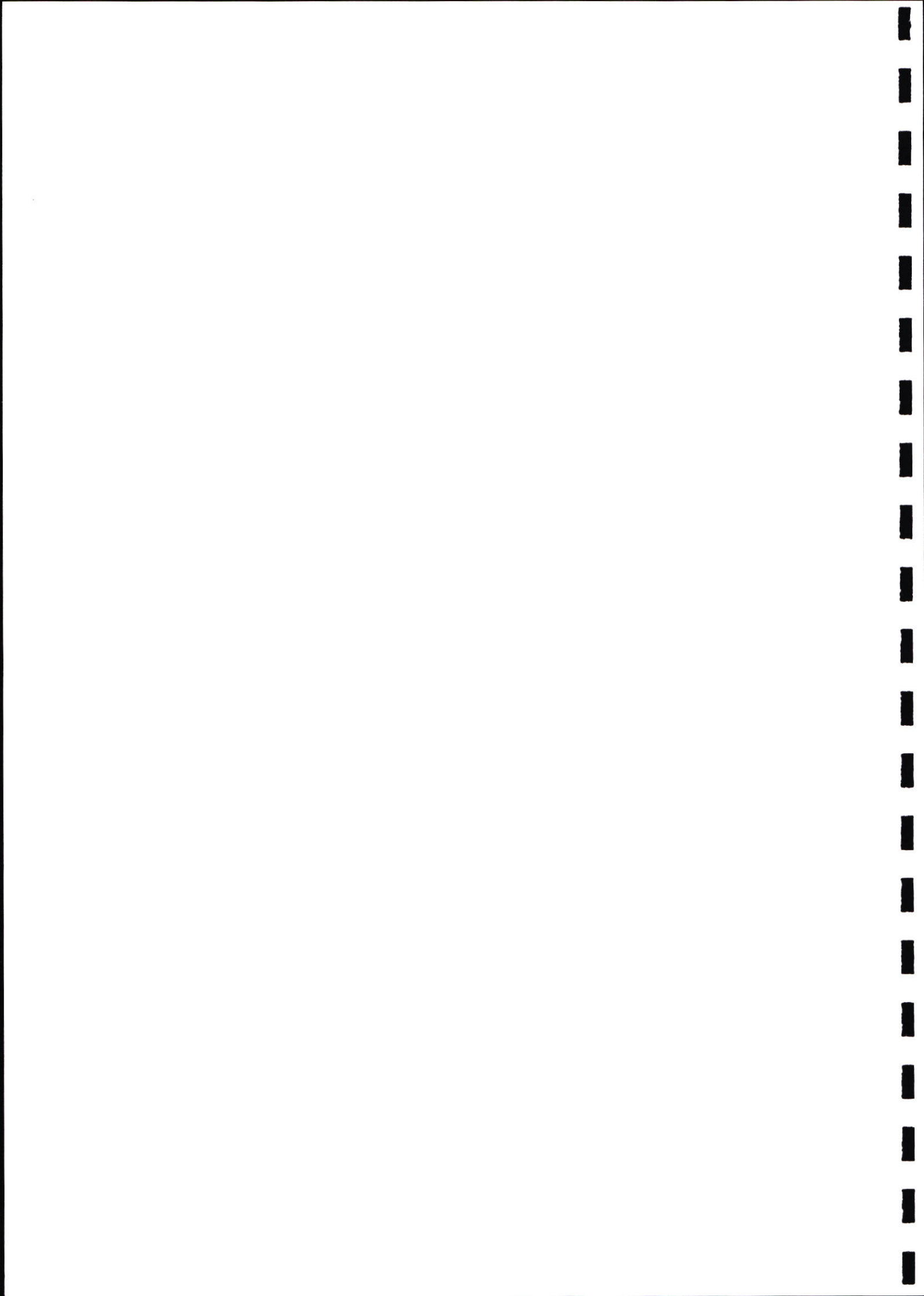


Table 1: Desktop data (from desktop databases only) relating to the characteristics of the freshwater ecosystems / features associated with the study and investigation area.

Aquatic ecoregion and sub-regions in which the study area is located			Detail of the study area in terms of the National Freshwater Ecosystem Priority Area (NFEPA) (2011) database	
Ecoregion	Southern Coastal Belt		River FEPA	The study and investigation areas are located in a sub- quaternary catchment not considered of importance as freshwater ecological priority areas.
Catchment	Berg/Bot/Potberg			
Quaternary Catchment	G21E			
WMA	Berg			
subWMA	Lower Berg			
Dominant characteristics of the Southern Coastal Belt Ecoregion Level II (24.06) (Kleynhans <i>et al.</i> , 2007)			NFEPA Wetlands (Figure 6)	According to the NFEPA database (2011), no natural wetlands are located in the study and investigation areas. Five artificial seep wetlands are indicated within the investigation area. These artificial seep wetlands are indicated to be in a heavily to critically modified ecological condition (Class Z3). These artificial features were verified to be artificial impoundments during the field verification assessment.
Dominant morphology	primary terrain	Moderately Undulating Plains, Hills, Plains		
Dominant primary vegetation types		West Coast Plain Fynbos		
Altitude (m a.m.s.l.)		100 - 1100		
MAP (mm)		500 - 800		
The coefficient of Variation (% of MAP)		<20 - 30		
Rainfall concentration index		30 - 55		
Rainfall seasonality		Winter		
Mean annual temp. (°C)		14 - 18		
Winter temperature (July)		6 - 18		
Summer temperature (Feb)		14 - 28	NFEPA Rivers (Figure 6)	As per the NFEPA database (2011), no rivers are located in the study area. The Klapmuts River is indicated approximately 220 m west of the study area (based on the centre line of the river). According to the NFEPA database (2011), the Klapmuts River is indicated to be in a largely modified ecological condition (Class D).
Median annual simulated runoff (mm)		100 - >250		
National web based environmental screening tool (2020) (Figure 3)			National Biodiversity Assessment (2018): South African Inventory of Inland Aquatic Ecosystems (SAIIAE) (see Figure 6) (National Wetland Map 5 is included in the NBA)	
The screening tool is intended for pre-screening of sensitivities in the landscape to be assessed within the EIA process. This assists with implementing the mitigation hierarchy by allowing developers to adjust their proposed development footprint to avoid sensitive areas.			According to the NBA 2018: SAIIAE, no natural or artificial wetlands are located within the study and investigation areas. The Klapmuts River is indicated approximately 220 m west of the study area (based on the centre line of the river). The Klapmuts River is indicated to be in a largely modified ecological condition (Class D), vulnerable in terms of the Ecosystem Threat Status (ETS), and poorly protected according to the ecosystem protection level (EPL), per the NBA (2018) database.	





Importance of the study area according to the Western Cape Biodiversity Spatial Plan (2017) (Figure 7)

According to the Western Cape Biodiversity Spatial Plan (2017), scattered areas classified as Critical Biodiversity Areas (CBA) 1 and CBA 2 (of terrestrial importance) are located within the western and northern boundaries of the study area. CBAs are areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. CBA 1 are areas likely to be in a natural condition and CBA 2 are those areas that are potentially degraded or represent secondary vegetation.

A large portion of the western and eastern extent of the investigation area is classified as an Ecological Support Area (ESA) 2 (hosting watercourse features). ESAs are important in supporting the functioning of CBAs and are often vital for delivering ecosystem services. A distinction is made between ESAs that are still likely to be functional (ESA 1) or areas that are severely degraded or have no natural cover remaining and therefore require restoration (ESA 2).

CBA = Critical Biodiversity Area; CR = Critically Endangered; EI = Ecological Importance; ES = Ecological Sensitivity; ESA = Ecological Support Area; EN = Endangered; m.a.m.s.l = Metres above mean sea level; MAP = Mean Annual Precipitation; NFEPA = National Freshwater Ecosystem Priority Area; PES = Present Ecological State; WMA = Water Management Area.







Figure 6: Natural and artificial wetlands and NFEPA listed rivers associated with the study and investigation areas as indicated by the NFEPA database (NFEPA, 2011).



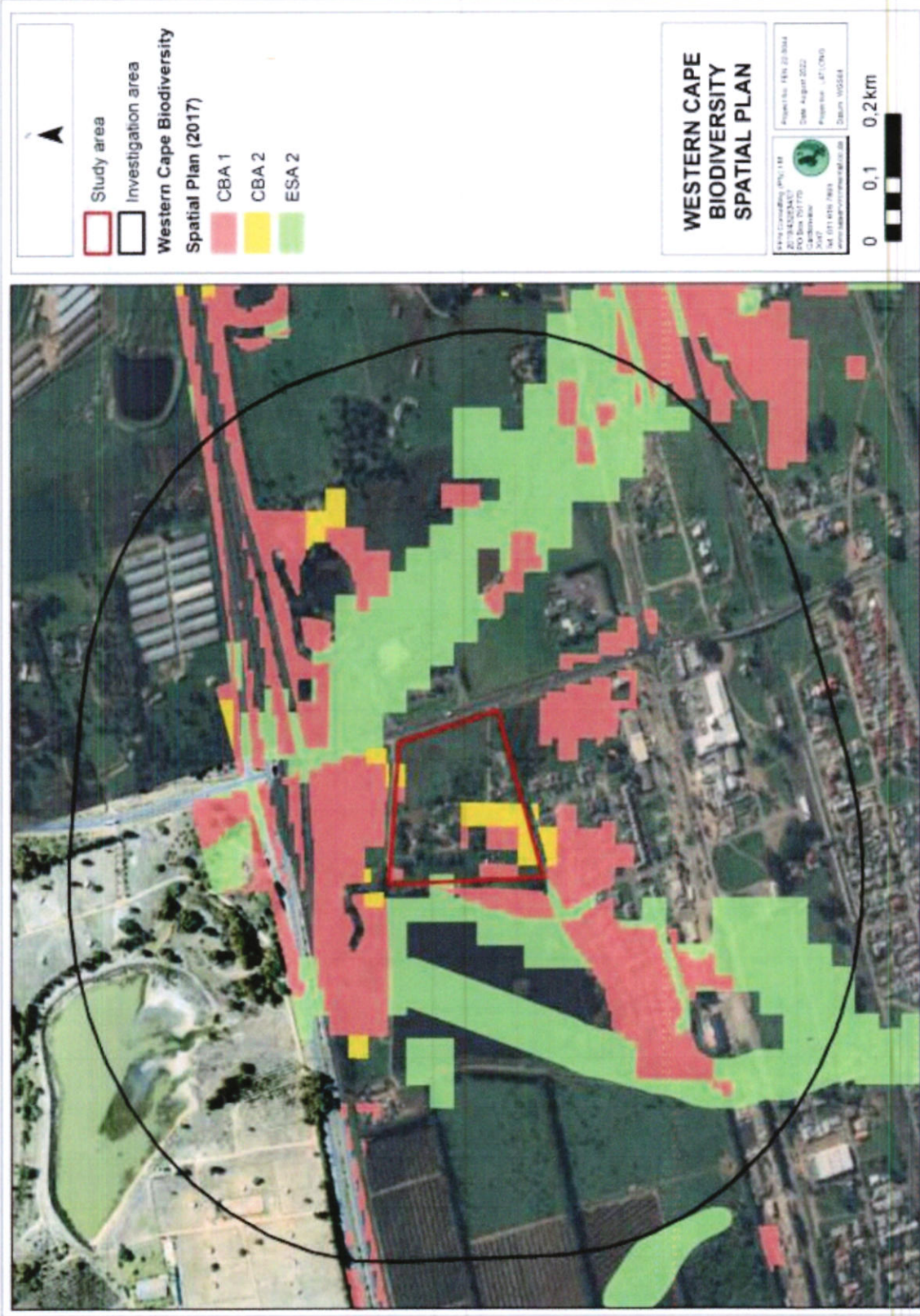
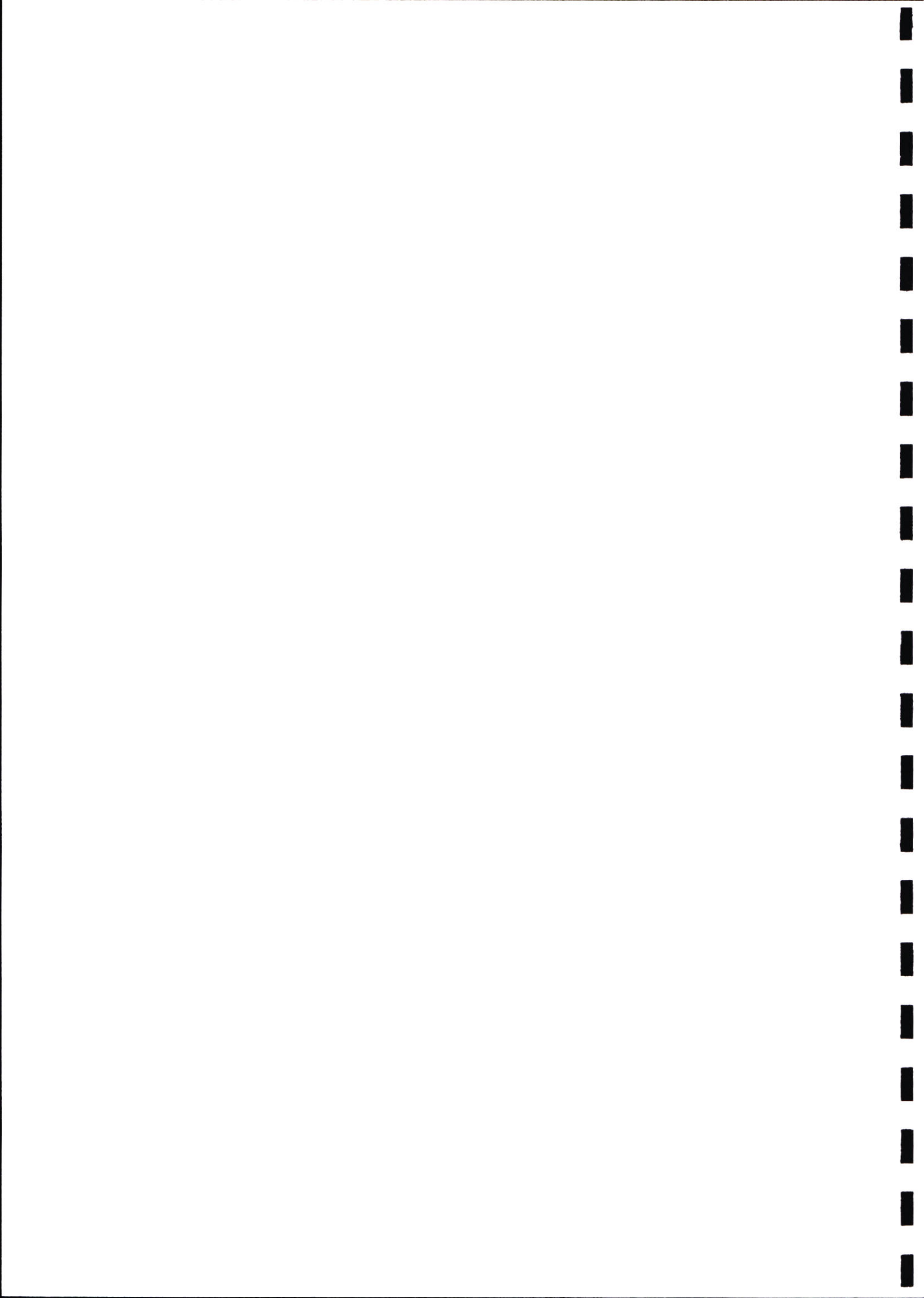


Figure 7: Areas of ecological importance associated with the study and investigation areas as indicated by the Western Cape Biodiversity Spatial Plan (2017).





4.2 Site Verification Results

A site visit of the study area was undertaken on the 16th of August 2022 during the Western Cape wet/winter season, during which the presence of any areas within the study area presenting with wetland or riparian characteristics as defined by the DWAF (2008) or watercourses as defined by the National Water Act, 1998 (Act No. 36 of 1998) were identified.

The following indicators assisted in determining the presence of freshwater features within the study area and immediate surrounds:

- Terrain units are used to determine in which parts of the landscape a watercourse would most likely occur;
- Surface water and/or saturated soil/alluvial soil can be used to determine if there is a permanent zone and to define the outer boundaries (temporary zone) of a wetland/riparian feature;
- Soil form indicators are used to determine the presence of soil that is associated with prolonged and frequent saturation and a fluctuating water table within 50 cm of the land surface; and
- Obligate and facultative vegetation species could be used in conjunction with terrain units as well as the point where a distinct change in the vegetation composition was observed, to determine the boundary of a watercourse.

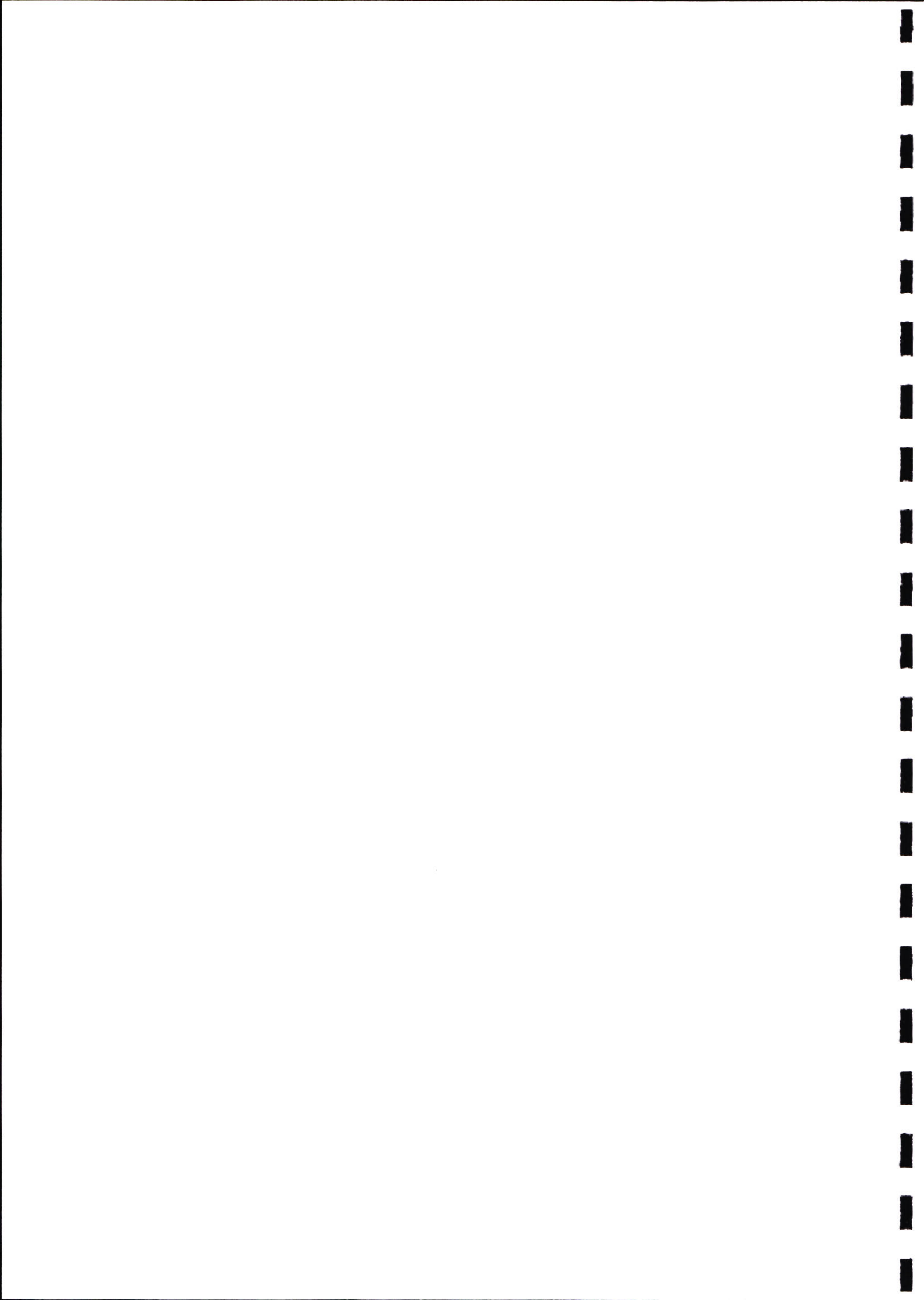
It should be noted that for an area to be identified as a freshwater feature, at least two (2) of the above indicators should be present (Pers Comm Prof. F. Ellery).

As part of the verification assessment, in addition to the study area (Portion 5 of Farm 716 Groenfontein Annex), effort was made to field verify the remaining extent (RE) of Portion 7 of Farm 716 (particularly the portion to the north west of the study area), RE 31 of Farm 716, and Portion 27 of Farm 716 Groenfontein Annex (Figure 8) for any freshwater features/sensitivities at risk from the proposed mixed-use development in the vicinity of the study area.



Figure 8: An indication of the farm portions field verified during the field verification assessment in the vicinity of the study area (red outline). Image obtained from CapeFarmMapper version 2.6.10.





4.2.1 Key observations of the site verification

During the site verification assessment, the following was noted:

- As per the findings of the desktop assessment (NFEPA (2011) and the NBA (2018) databases), no freshwater features were identified within the study area during the site verification. The western portion of the study area contains residential erven and associated open space lawn and garden areas. The majority of the eastern portion of the study area is not developed (Figure 9).



Figure 9: Representative photographs of the study area. (Left) Alien tree species associated with the residential erven present on site; and (Right) view of the study area towards the R44 (eastern portion) hosting ruderal vegetation and no freshwater features.

Freshwater features identified within the investigation area (outside the study area):

- The Klappmuts River, with clearly a defined riparian zone, was identified to the west of the study area, with an instream artificial impoundment (known as the Uitkoms Dam) located directly outside the western boundary of the study area, within the neighbouring property (RE of Portion 7 of Farm 716 Groenfontein Annex, Figure 8). The Klappmuts River flows in a generally northerly direction and has been diverted downstream of the Uitkoms Dam (further discussed in Section below 4.2.1.2);
- A highly modified seep wetland was identified approximately 200 m north west of the study area, downgradient of the Uitkoms Dam associated with the Klappmuts River (Figure 10). This seep wetland supports facultative wetland plant species including *Pennisetum macrourum*, *Zantedeschia aethiopica* and *Typha capensis*, and contains soils displaying hydromorphic indicators (i.e., saturated low chroma soil with slight mottling) (Figure 11). The ongoing seepage from the Uitkoms Dam, including water being actively pumped into an artificial drainage channel located directly downstream of the Uitkoms Dam, and the embankments of the N1 Highway acting as a flow impeding structure, have significantly modified the hydrological and geomorphological characteristics of this seep wetland. Artificial drainage channels, flowing in an easterly direction to confluence with the artificial drainage channel downstream of the Uitkoms Dam, were also identified and are considered to contribute to the surface water inputs into the seep wetland (Figure 10). Consequently, the sediment and water distribution and retention patterns of this seep wetland have been altered as a result of catchment wide land use changes and associated anthropogenic impacts (e.g., artificial impoundments and artificial drainage channels and the construction of the N1 Highway). Nevertheless, this seep wetland still provides habitat for wetland vegetation species and can be considered to have some ecological importance on a local scale;



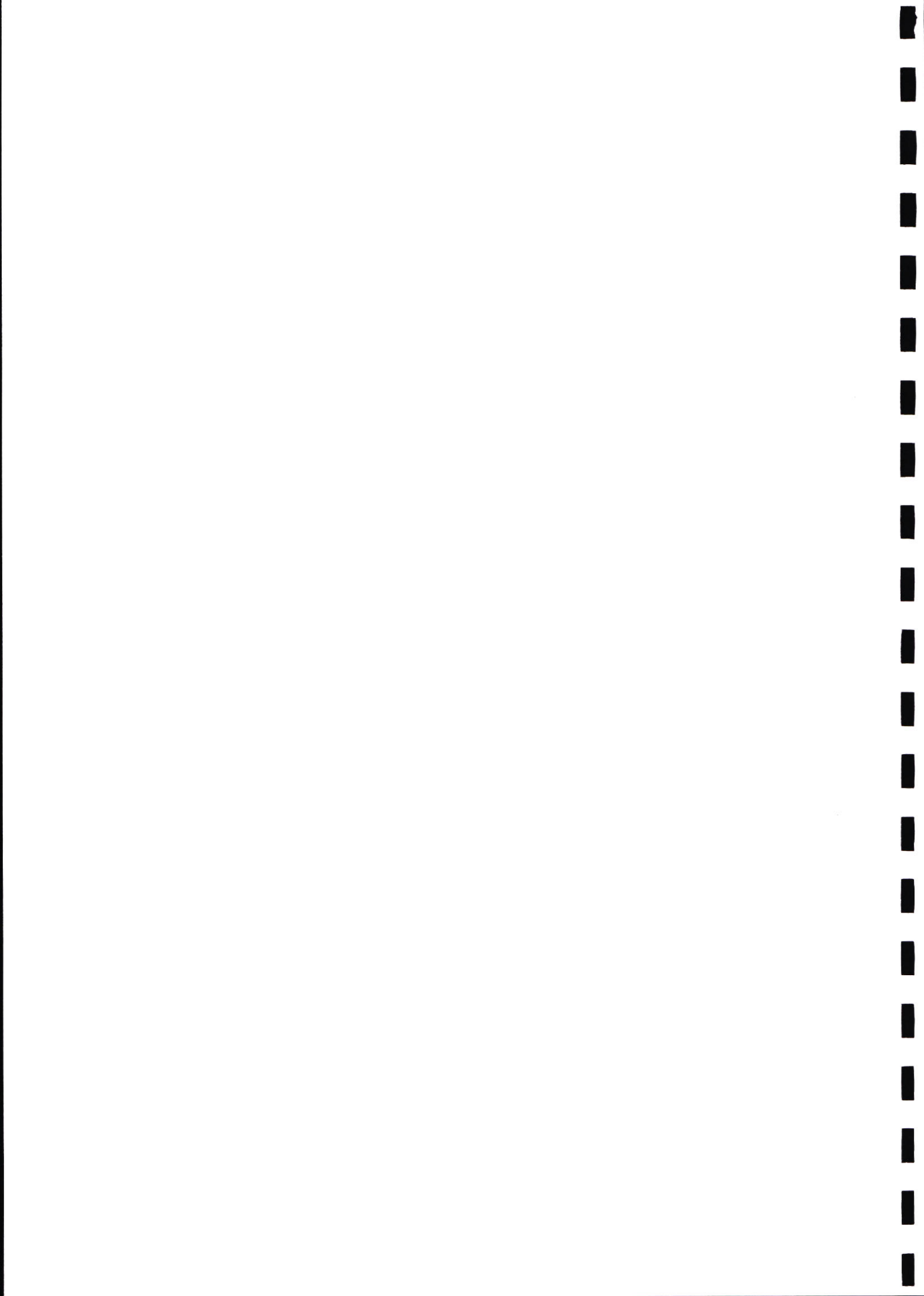
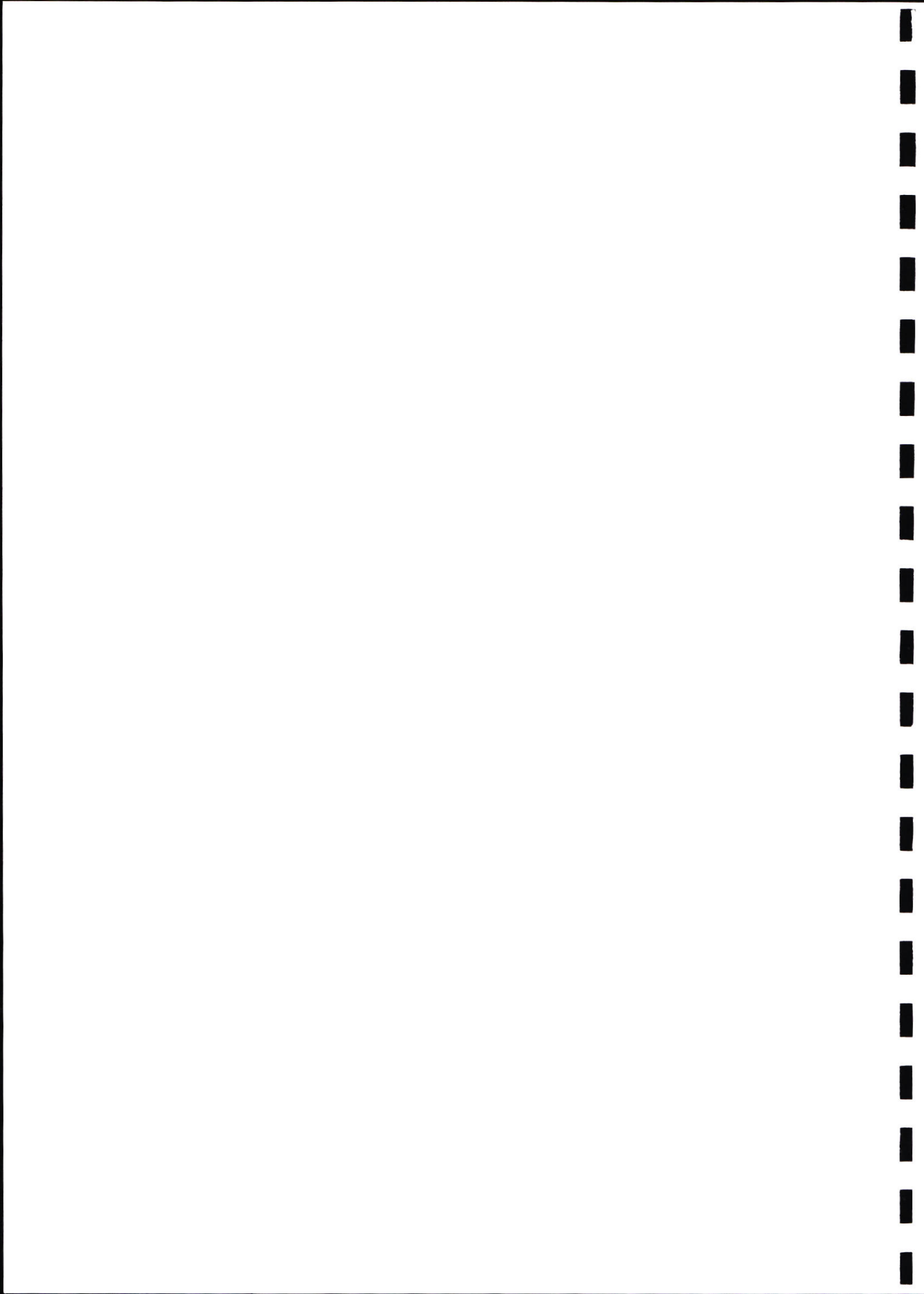




Figure 10: Artificial drainage channels from a) homestead to the north west of the Uitkoms Dam (yellow arrows) and b) downgradient of the Uitkoms Dam (orange arrow), contributing to water inputs into the seep wetland (blue dashed outline). The pink arrow depicts the artificial diversion downgradient of the Uitkoms Dam associated with the Klapmuts River.





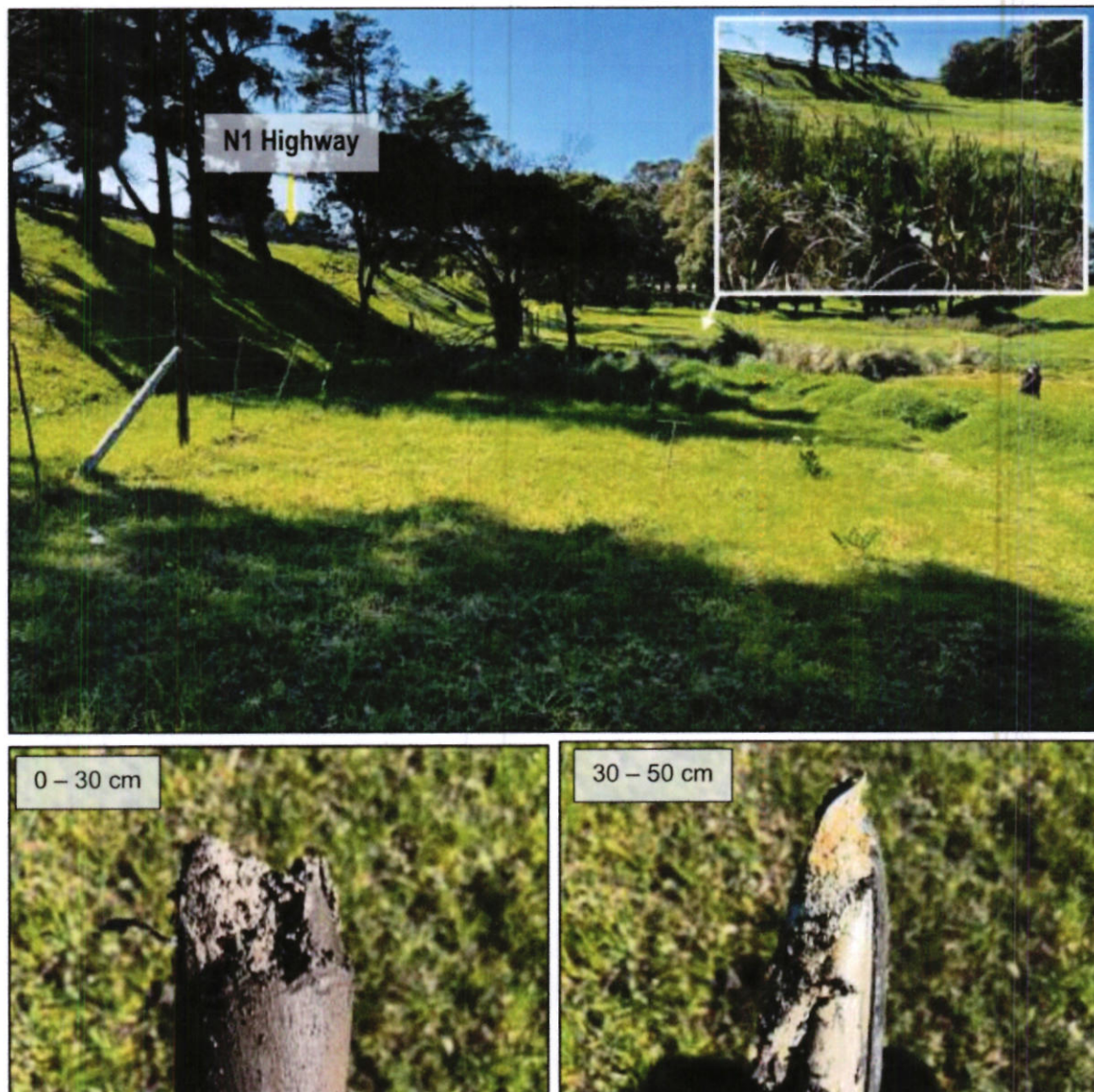


Figure 11: Characteristics of the identified seep wetland. (Top) Facultative wetland plant species within the seep wetland; and (Bottom) Hydromorphic soil indicators (Bottom left) saturated sandy soil over a (Bottom right) clay layer displaying low chroma and slight mottling (orange patches) within the first 50 cm of the soil surface of the soil samples taken within the wetland habitat.

- A natural channelled valley bottom (CVB) wetland was identified approximately 65 m east of the study area. This CVB wetland was noted to be dominated by *Typha capensis* (Figure 12). The CVB wetland flows in a generally north westerly direction and flows underneath the R44 road (along the eastern boundary of study area) via a culvert crossing located to the north east of the study area, and eventually into the downstream reach of the Klapmuts River via the N1 culvert crossing. The CVB wetland was observed to be largely modified as a result of the surrounding urban development, with direct impacts from the linear infrastructure and increased stormwater input from the surrounding hard surfaces (Figure 12).





Figure 12: CVB wetland identified to the east of the study area (red outline) and the R44.

- Several artificial impoundments were also identified in the larger investigation area. Due to the artificial nature of these features, no further details/description are provided.

The delineated extent of the identified natural freshwater features and artificial features within the investigation area is depicted in Figure 13 below.

Considering the topographical setting of the study area and the R44 (to the east thereof) acting as a divide between the study area and the CVB wetland noted to the east, with no obvious stormwater channel along the R44, it is highly likely that the stormwater generated from the proposed mixed-use development will enter the Klappmuts River located to the west and north of the study area, thus placing the Klappmuts River at higher potential risk from the proposed mixed-use development relative to other freshwater features within the investigation area. Therefore, Sections 4.2.1.1 and 4.2.1.2 below provides the classification and summary of the Klappmuts River in terms of the hydrology, geomorphology and vegetation components as a qualitative assessment of the present ecological state and importance and sensitivity of this river at potentially higher risk from the proposed mixed-use development.





Figure 13: Map depicting the delineated extent of the natural freshwater features and artificial impoundments with the investigation area.



4.2.1.1 Freshwater ecosystem classification

Classification of the Klappmuts River identified to the west and north of the study area at potentially higher risk from the proposed mixed-use development was undertaken at Levels 1 - 4 of the Classification System (Ollis *et al*, 2013) as outlined in Appendix C of this report. This system was classified as an Inland System, located within the Southern Coastal Belt Ecoregion. Table 2 below presents the classification from level 3 to 4 of the Classification System (Ollis *et al*, 2013).

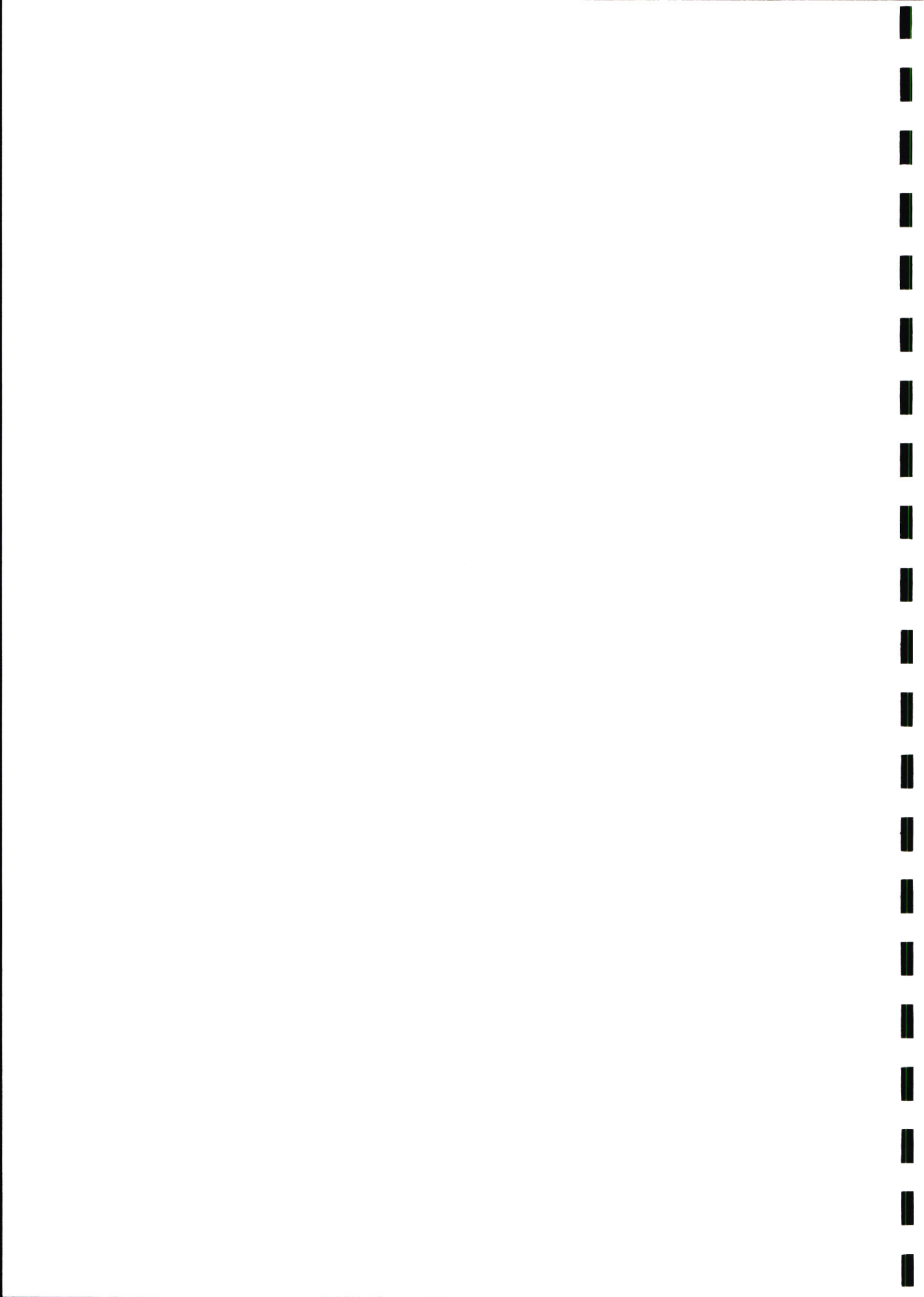
Table 2: Characterisation of the freshwater features associated with the study area.

Freshwater feature	Level 3: Landscape unit	Level 4: Hydrogeomorphic (HGM) Type
Klappmuts River	Valley Floor: the base of a valley, situated between two distinct valley side-slopes, where alluvial or fluvial processes typically dominate.	River: A linear landform with clearly discernible bed and banks, which permanently or periodically carries a concentrated flow of water.

4.2.1.2 Summary of results of the Klappmuts River to the west and north of the study area at higher potential risk from the proposed mixed-use

- a) The Klappmuts River is a tributary of the Mosselbank River, originating from the Hottentots-Holland Mountain Catchment Area located approximately 5 km south of the study area. The Klappmuts River flows in a generally northerly direction across adjoining farm land where it has been purposely diverted into artificial impoundments associated with the ongoing agricultural activities in the catchment, including the instream artificial impoundment (Uitkoms Dam) located directly to the west of the study area;
- b) As a result of the landuse changes in the surrounding landscape and site-specific impacts to the Klappmuts River, predominantly cultivation practices and the development of linear infrastructure (roads and railway lines) through the river, the instream and riparian habitat integrity of the Klappmuts River is considered significantly transformed (Figure 14). Consequently, a large change in ecosystem processes and loss of natural habitat has taken place;
- c) The reach of the Klappmuts River directly to the west and north of the study area has been artificially impounded (Uitkoms Dam), with the active channel straightened and purposely diverted to a culvert located underneath the N1 Highway, approximately 134 m north of the study area (Figure 14);
- d) The riparian zone of the Klappmuts River is dominated by alien and invasive plant species (AIP) including *Acacia saligna* (Port Jackson willow) and *Eucalyptus sp.* (Blue Gum) (Figure 14), contributing to the overall disturbance to the system;
- e) The artificial impoundment associated with the Klappmuts River has a spillway within the north eastern portion. Seepage from this spillway has resulted in a wetness response directly downstream of the spillway (Figure 14). This wetness response is characterised by an isolated patch of facultative wetland species including *Pennisetum macrourum* and *Zantedeschia aethiopica*, a shallow gravel layer over a concrete substrate (potentially lining of the spillway) and is limited in extent (confined by the embankments of the gravel roads on either side). Given the limited extent and lack of hydromorphic soils, this wetness response is not considered a naturalised wetland habitat and was not delineated separately from the riparian habitat of the Klappmuts River;
- f) Based on the site observations and considering the ongoing impacts in the catchment and the impacted state of the Klappmuts River, this river does still provide habitat for vegetation species associated with wetness. The Klappmuts River also plays an important role in maintaining hydrological functioning and connectivity in the landscape (considering its connection to other important freshwater systems downstream, such as the Mosselbank River), and can be considered important for water supply (e.g., the Uitkoms Dam). As such, the Klappmuts River is considered to have an ecological importance on a local scale. In addition, scattered portions of





the Klapmuts River are classified as a CBA 1 per the Western Cape Biodiversity Spatial Plan (2017), while the majority of the Klapmuts River is classified as an ESA 2 (areas important in supporting the functioning of CBAs but are severely degraded or have no natural cover remaining and therefore require restoration). Consequently, the Klapmuts River is not considered highly sensitive to changes in the landscape due to the historical and ongoing impacts which have compromised the ecological service provision and sensitivity of this riparian watercourse. Nevertheless, adequate mitigation measures for any future development associated with the Klapmuts River are still deemed imperative to prevent further significant impacts and to retain the current level of ecological habitat provision and ecosystem services provided by this freshwater ecosystem. In this regard, particular mention must be made of risks from stormwater influxes as a result of the proposed mixed-use development.

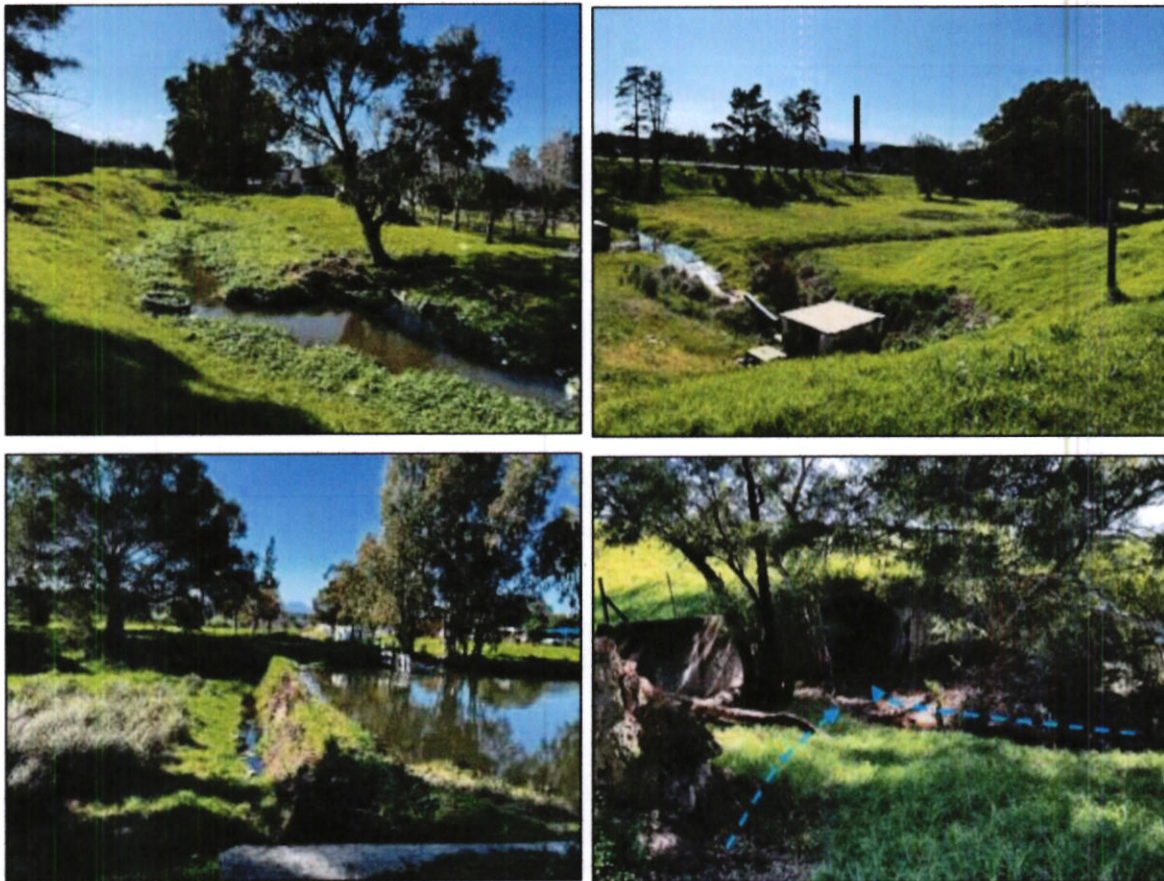


Figure 14: (Top left) Riparian habitat of the upstream reach of the Klapmuts River (upstream of the Uitkoms Dam) hosting sparse alien tree species (*Eucalyptus* sp.); (Top right) Channel diversion (to the east) downstream of the Uitkoms Dam and water actively pumped into an artificial drainage channel; (Bottom left) Spillway of the Uitkoms Dam has resulted in isolated wetland habitat; and (Bottom right) the active channels of the Klapmuts River downstream of the Uitkoms Dam converge (i.e., the diversion channel and channel from the spillway - blue dashed lines) and flow into the culvert crossing underneath the N1 Highway.



5. Freshwater Ecosystem Sensitivity

As described in Section 3, the DFFE Web-based Screening Tool has designated the majority of the study area as being of very high aquatic biodiversity sensitivity due to its location within a strategic water source area, with the exception of the north western corner of the study area, designated as low sensitivity. The absence of wetland or riparian habitat within the study area has been confirmed during the field verification assessment (Figures 13). The assigning of low sensitivity within the north eastern portion of the study area is supported through the findings of this freshwater assessment. However, the assigning of very high sensitivity within the eastern portion of the study area is not supported as the study area was field verified to not host any wetland or riparian features as defined by the DWAF (2008), or watercourses as defined by the National Water Act, 1998 (Act No. 36 of 1998). The eastern portion of the study area is located within a strategic water source area (areas that supply a disproportionate amount of mean annual runoff to a geographical region of interest). However, strategic water source areas are not gazetted under the National Water Act, 1998 (Act No. 36 of 1998) as amended, but are recognised as areas where land use practices must be regulated to minimise impacts on freshwater ecosystems. Therefore, while the eastern portion of the study area is recognised as being part of a much larger strategic water source area, it must be considered of low aquatic biodiversity / freshwater sensitivity due to the field verified absence of freshwater features that may be at risk from the proposed development. Nevertheless, adequate mitigation measures for any future development within a strategic water source area are still deemed imperative.

Under the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity, (GN320 of March 2020), for areas of low aquatic biodiversity sensitivity, an Aquatic Biodiversity Compliance Statement must be produced. Due to the designation of the study area as being of low aquatic biodiversity sensitivity based on the site survey results and not the DFFE screening tool allocation, and due to the proposed development risks deemed low due to no direct impacts to freshwater features (negative indirect impacts, with specific mention of stormwater management, can be reduced to an acceptable level and managed with the implementation of appropriate mitigation measures), the approach of producing such a compliance statement was taken. However, it is acknowledged that the Klapmuts River located directly to the west of the study area (classified as high aquatic biodiversity sensitivity due to its location within a strategic water source area, Figure 3) may be at higher risk from the proposed mixed-use development in terms of additional stormwater influxes. However, the Klapmuts River is classified as an ESA 2 (severely degraded or have no natural cover remaining and therefore require restoration) according to the Western Cape Biodiversity Spatial Plan (2017), and was verified to be not highly sensitive to changes in the landscape due to the historical and ongoing impacts. Therefore, careful planning of the stormwater management within the study area must ensure that stormwater is released in an attenuated manner outside the delineated extent of the Klapmuts River to ensure the hydraulic regime is retained and not impaired by stormwater influxes. Such mitigation measures (detailed in Section 7.2 below), will ensure that the proposed mixed-use development remains a low risk to the receiving freshwater environment.

The confirmation of freshwater features of very high sensitivity would normally require that a Specialist Freshwater Ecological Assessment be undertaken. Due to the low risk profile associated with the proposed mixed-use development (with the implementation of sound mitigation measures), the compilation of a freshwater compliance statement was taken. In addition, the findings and recommendations of this report are meant to inform the proposed development layout to further ensure reduced risks to the receiving freshwater environment. However, it is recommended that, should the extent of the proposed development change (i.e., fall outside the bounds of the study area) or the type of proposed development change from that currently proposed by the applicant that would result in the potential for impacts on freshwater resources not considered in this memo (e.g., irrigation with treated effluent), that a future Specialist Freshwater Ecological Assessment be undertaken. Additionally, Specialist Freshwater Ecological Assessment is likely to be required to be undertaken in future in support of a Water Use Authorisation (WUA), as the study area falls within a (100 m and 500 m) Zone



of Regulation in accordance with the National Water Act, 1998 (Act No. 36 of 1998), as identified in this assessment and as detailed in Section 6 below.

6. LEGISLATIVE REQUIREMENTS AND CONSTRAINTS ANALYSIS

The following legislative requirements were considered during the assessment. A detailed description of these legislative requirements is presented in Appendix B of this report:

- The Constitution of the Republic of South Africa, 1996⁴;
- The National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA);
- The National Water Act, 1998 (Act No. 36 of 1998) as amended (NWA); and
- Government Notice 509 as published in the Government Gazette 40229 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998).

It is important to note that in terms of the definition of a watercourse as per the National Water Act, 1998 (Act No. 36 of 1998) (See Appendix B), all of the natural watercourses (referred to as freshwater features) within the investigation area will be regulated by Section 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) as well as the applicable zones of regulation. All of the natural freshwater features will thus require authorisation from the Department of Water and Sanitation (DWS). This report aids in providing relevant information for the authorisation processes.

According to Macfarlane *et al.* (2015) the definition of a buffer zone is variable, depending on the purpose of the buffer zone, however, in summary, it is considered to be "a strip of land with a use, function or zoning specifically designed to protect one area of land against impacts from another". Buffer zones are considered to be important to provide protection of basic ecosystem processes (in this case, the protection of aquatic and wetland ecological services), reduce impacts on watercourses arising from upstream activities (e.g. by removing or filtering sediment and pollutants), provision of habitat for aquatic and wetland species as well as for certain terrestrial species, and a range of ancillary societal benefits (Macfarlane *et al.*, 2015). It should be noted, however, that buffer zones are not considered to be effective mitigation against impacts such as hydrological changes arising from stream flow reduction, impoundments or abstraction, nor are they considered to be effective in the management of point-source discharges or contamination of groundwater, both of which require site-specific mitigation measures (Macfarlane *et al.*, 2015).

The definition and motivation for a regulated zone of activity for the protection of a watercourse can be summarised as follows:

Table 3: Articles of legislation and the relevant zones of regulation applicable to each article.

Regulatory authorisation required	Zone of applicability
Water Use Authorisation Application in terms of the National Water Act, 1998 (Act No. 36 of 1998). Department of Water and Sanitation (DWS)	<p>Government Notice 509 as published in the Government Gazette 40229 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998)</p> <p>In accordance with GN509 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998), a regulated area of a watercourse in terms of water uses as listed in Section 21c and 21i is defined as:</p> <ul style="list-style-type: none"> • the outer edge of the 1 in 100 year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam;

⁴ Since 1996, the Constitution has been amended by seventeen amendments acts. The Constitution is formally entitled the 'Constitution of the Republic of South Africa, 1996'. It was previously also numbered as if it were an Act of Parliament – Act No. 108 of 1996 – but since the passage of the Citation of Constitutional Laws Act, neither it nor the acts amending it are allocated act numbers.





Regulatory authorisation required	Zone of applicability
	<ul style="list-style-type: none"> in the absence of a determined 1 in 100 year flood line or riparian area the area within 100 m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench; or a 500m radius from the delineated boundary (extent) of any wetland or pan in terms of this regulation.
<p>Listed activities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) EIA Regulations (2014), as amended in 2017.</p> <p>Department of Forestry, Fisheries and the Environment (DFFE)</p>	<p><u>Activities of Listing Notice 1 (GN 327) of the National Environmental Management Act, 1998 (Act No.107 of 1998) EIA regulations, 2014 (as amended)</u></p> <p>Activity 12: <i>The development of—</i> <i>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</i> <i>(ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—;</i> <i>a) within a watercourse;</i> <i>b) in front of a development setback; or</i> <i>c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.</i></p>

In accordance with the above, the following Zones of Regulation (ZoR) are applicable to the identified natural freshwater features watercourses within the investigation area (Figure 15):

- A 32 m ZoR in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998), was assigned to all the watercourses in the investigation area;
- A 100 m ZoR in accordance with the National Water Act, 1998 (Act No. 36 of 1998), was assigned to the Klipmuts River;
- A 500 m ZoR in accordance with the National Water Act, 1998 (Act No. 36 of 1998), was assigned to the CVB wetland and seep wetland within the investigation area; and
- A construction and operational phase buffer was calculated for the freshwater features in the investigation area using the "Preliminary guideline for the determination of buffer zones for rivers, wetlands and estuaries" as developed by Macfarlane *et al.* (2015). The results of the buffer tool considering the type of development proposed (residential and commercial with varying degrees of mix) and the practical, site-specific mitigation measures (as outlined in Section 7.2 below), indicate that a 15 m buffer is applicable for the construction and operational phases of the proposed mixed-use development, particularly to mitigate impacts associated with altered patterns of flows within the surrounding freshwater features due to increased flood peaks, as a result of hardened surfaces typically associated with mixed-use developments.

It must be noted that if the proposed mixed-use development within the study area falls within the 100 m and 500 m ZoR of the delineated watercourses, authorisation in terms of Sections 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) will be required from the Department of Water and Sanitation (DWS). With guidance from the freshwater specialist and the relevant authorisation obtained from the competent authority, development within the ZoR in accordance with GN509 as it relates to the NWA is considered acceptable. The following must however be noted as per the opportunity and constraints analysis map presented in Figure 16:

- The watercourses within the investigation area as well as their associated 15 m construction and operational buffer must be considered 'no-go' areas. Though considered a 'no-go', the crossing of linear infrastructure can be undertaken should appropriate mitigation measures be applied;
- The 32 m ZoR in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998), is considered an area where development is considered 'not preferred'. However, development is allowed in this area with implementation of mitigation measures and given that



environmental authorisation is granted by the Department of Forestry, Fisheries and the Environment (DFFE); and

- All other areas in the study area are considered developable with the proviso of applying for Water Use Authorisation (WUA) as stipulated in terms of Section 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) as development will most likely occur within the GN509 ZoR of the identified watercourses.



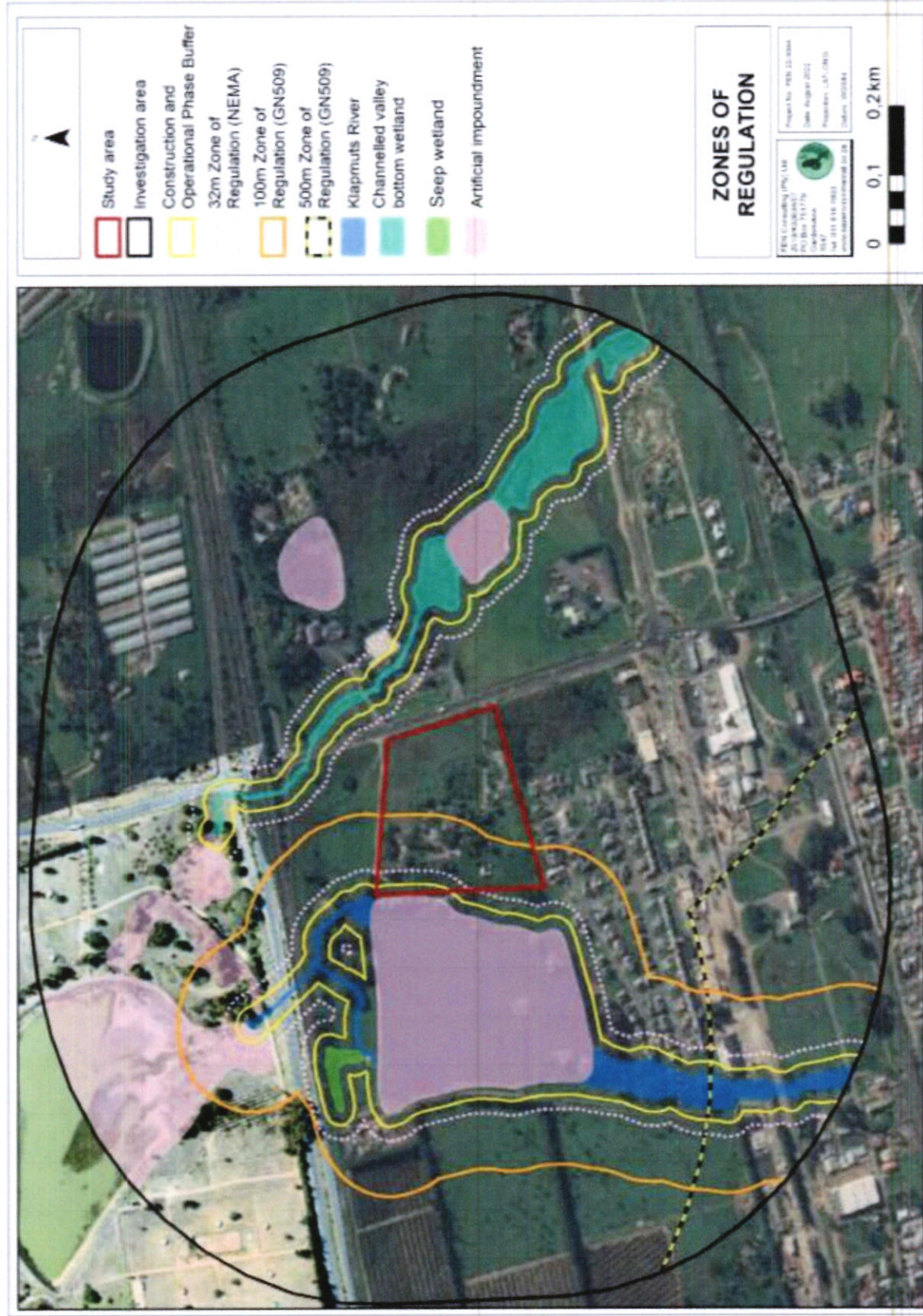


Figure 15: Watercourses/freshwater features associated with the study and investigation areas and the associated zones of regulation in terms of NEMA and GN509 as it relates to the NWA.



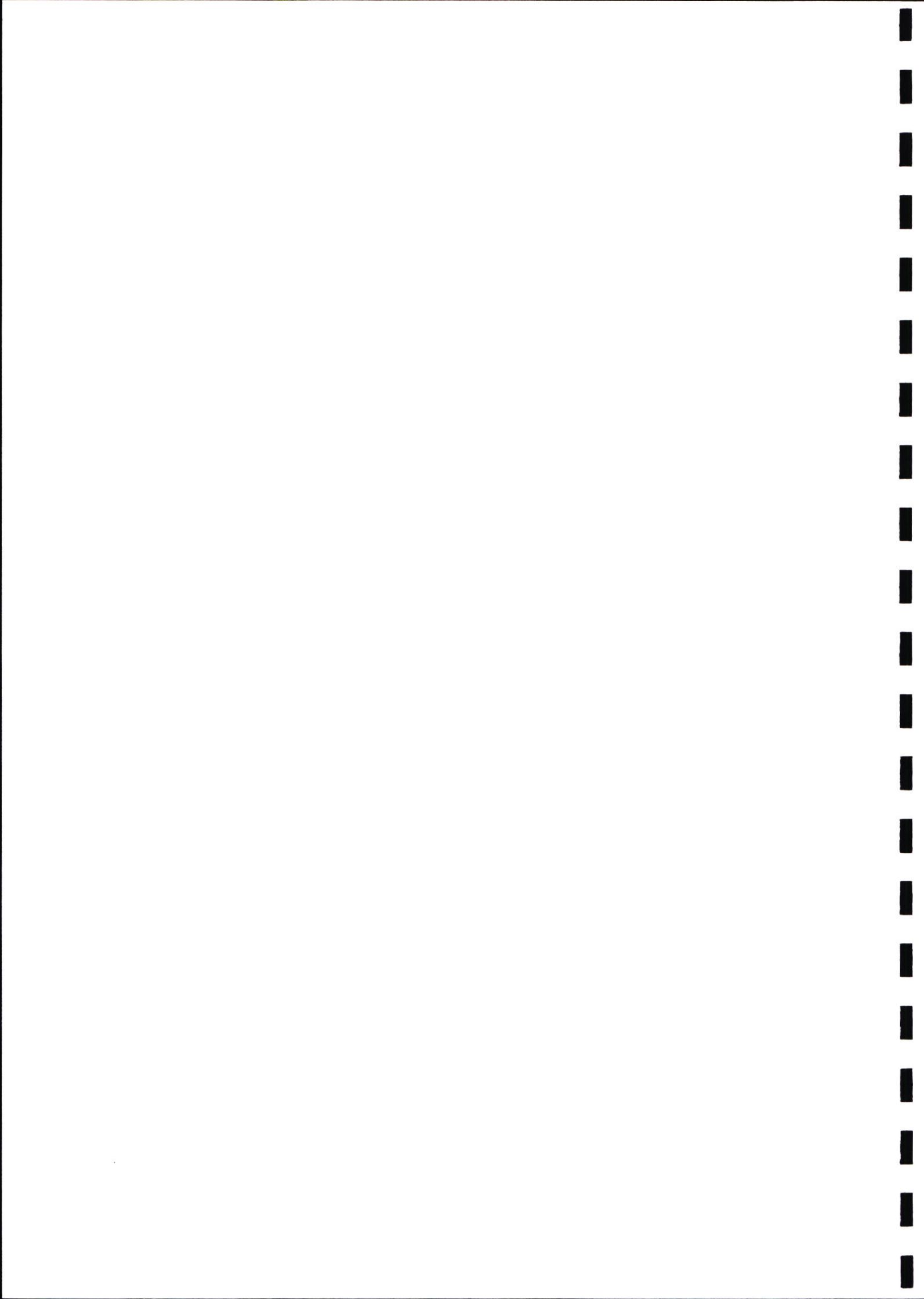




Figure 16: Preliminary opportunity and constraints analysis for the study area from a freshwater ecological perspective.



7. CONCLUSION

7.1 Summary of the Site Verification Outcome/Findings

Based on the site verification undertaken by FEN Consulting (Pty) Ltd and the findings thereof presented in this report, no freshwater features are located within the study area which may pose a development constraint. The Klappmuts River was identified directly adjacent and outside of the western boundary of the study area. A natural CVB wetland was identified approximately 65 m east of the study area. A highly modified seep wetland with wetland characteristics (in terms of the soil characteristics and wetland vegetation) was identified approximately 200 m north west of the study area. These freshwater features outside the study area do not pose a development constraint but should be considered for indirect impacts from the proposed mixed-use development.

The designation of very high aquatic biodiversity / freshwater sensitivity to the majority of the eastern portion of the study area by the DFFE Screening Tool is not supported through the findings of the freshwater assessment which did not identify any freshwater features within the study area. However, it is acknowledged that this assigning of very high aquatic biodiversity / freshwater sensitivity is due to the study area being situated within a strategic water source area and does not necessarily reflect the presence of sensitive freshwater features.

Under the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Aquatic Biodiversity, (GN320 of March 2020), for areas of low aquatic biodiversity sensitivity an Aquatic Biodiversity Compliance Statement must be produced. Due to the designation of the study area as being of low aquatic biodiversity sensitivity based on the site survey results and not the DFFE screening tool allocation, and due to the proposed development risks deemed low due to no direct impacts to freshwater features (negative indirect impacts, with specific mention of stormwater management, can be reduced to an acceptable level and managed with the implementation of appropriate mitigation measures), the approach of producing such a compliance statement was taken. However, these field verified findings that the study area is of low aquatic biodiversity / freshwater sensitivity due to the absence of freshwater features while there are freshwater features present within the investigation area has implications for the type of assessment undertaken discussed in Table 4 below.

Table 4: Outcome of Freshwater Assessment Findings.

Screening Assigned Sensitivity	Tool	Verified Sensitivity	Outcome Statement / Plan of Study	Relevant Section Motivating Verification
Very High (applicable to the eastern portion of the study area located in a strategic water source area (i.e., the Boland Surface Water Area); Remainder of Study Area – Low.		No freshwater features were identified within the study area, therefore the study area is considered to be of low aquatic biodiversity / freshwater sensitivity.	It recommended that careful planning of the stormwater management within the study area is implemented to ensure reduced indirect impacts to the receiving freshwater environment, and in turn, ensuring that the proposed mixed-use development remains a low risk. In addition, it is recommended that a future Specialist Freshwater Ecological Assessment must be undertaken <i>should the extent of the proposed development change (i.e., fall outside the bounds of the study area) or the type of proposed development</i>	Section 5

Screening Assigned Sensitivity	Tool	Verified Sensitivity	Outcome Statement / Plan of Study	Relevant Section Motivating Verification
			<p><i>change from that currently proposed by the applicant that would result in the potential for impacts on freshwater ecosystems not considered in this memo.</i></p> <p>Additionally, a Specialist Freshwater Ecological Assessment is likely to be required to be undertaken in future in support of a WUA, as the study area falls within the (100 m and 500 m) Zone of Regulation, as identified in this assessment and as detailed in Section 6 above.</p>	

7.2 Compliance Statement/Impact Statement

No direct impacts are expected from the proposed mixed-use development to the surrounding freshwater features outside the study area. However, indirect impacts or edge effects from the construction and operation of the proposed mixed-use development are likely and include sediment runoff into the downgradient freshwater features (e.g., the Klappmuts River) during construction, dust generation and potential AIP proliferation which may be transported on windy days into the receiving downgradient freshwater features. Increased impermeable surfaces due to the presence of hardened surfaces during the operational phase, have the potential to result in increased stormwater runoff as and potential contaminants entering the receiving downgradient freshwater features, particularly the Klappmuts River. These activities are likely to impact on the water quality of the impacted freshwater features resulting in decreased surface water quality, altered freshwater habitat and impacts to biota, and altered runoff patterns as a result of increased water inputs, altering the flow regime of the freshwater ecosystem, and eventually resulting in changes to the ecoservice provision of this freshwater ecosystem. The following mitigation measures are therefore, recommended to be implemented in an effort to avoid impacts to the receiving freshwater environment:

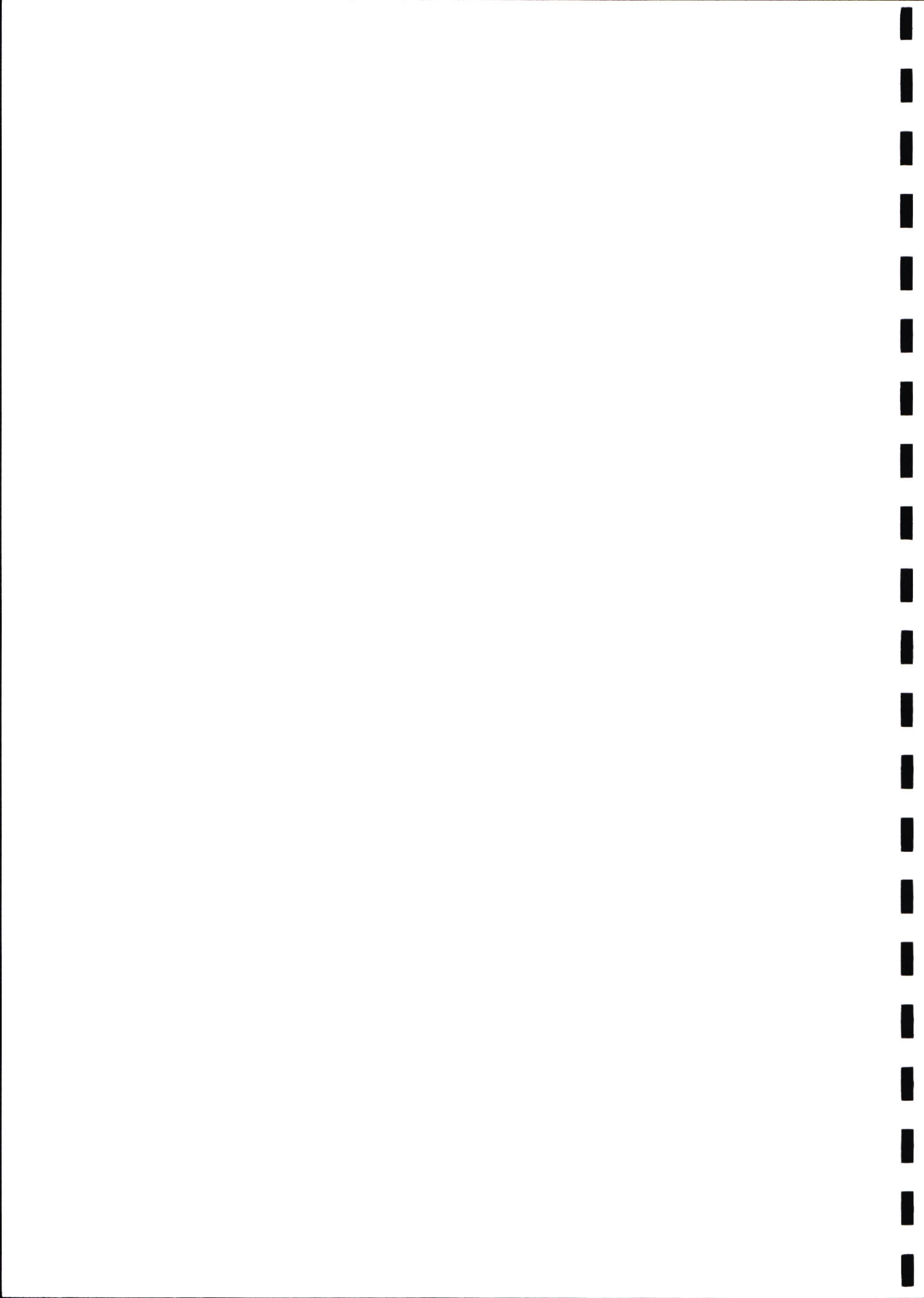
- Suitable dust management practices must be implemented for the duration of construction;
- Sediment control devices (such as geotextile sediment traps) should be installed downgradient of the construction works, to avoid excess sediment entering the receiving freshwater features;
- Proliferation of alien vegetation as a result of the construction and operation related disturbances must be monitored and controlled;
- It is strongly recommended that the proponent ensures that a suitably qualified specialist prepares a stormwater management plan to service the proposed mixed-use development and input from the freshwater ecologist is obtained;
- It is thus recommended that the proposed mixed-use development must consider implementing Sustainable Drainage Systems (SuDS) to effectively manage stormwater generated within the study area and the local catchment and avoid any direct and indirect impacts to the freshwater features within the vicinity of the study area. Careful planning of the stormwater management within the study area will ensure that stormwater is released in an attenuated manner outside the receiving freshwater features. This will ensure that the hydraulic regime of the receiving freshwater environment is retained and not impaired by stormwater peaks; and
- General good housekeeping practices must be implemented during all phases of the proposed mixed-use development, to ensure limited direct, indirect and cumulative impacts to the receiving freshwater environment.



Should the abovementioned control measure be implemented, the proposed mixed-use development is expected to pose a low risk significance to the receiving freshwater environment. However, the risk profile would change if the extent of the proposed development change (i.e., fall outside the bounds of the study area) or the type of proposed development change from that currently proposed by the applicant that would result in the potential for impacts on freshwater ecosystems not considered in this memo.

As per the opportunity and constraint analysis map as provided in Section 6, the study area falls within the 100 m and 500 m ZoR in accordance with the National Water Act, 1998 (Act No. 36 of 1998). As such, it is recommended that the proponent consult with the Department of Water and Sanitation (DWS) as the custodian of water resources in South Africa, to determine the relevant authorisation process that should be followed in terms of the requirements of the National Water Act 1998 (Act No. 36 of 1998). However, it must be noted that if the control measures as listed in this memo are implemented, the proposed mixed-use development is expected to pose a low risk significance to the receiving freshwater features outside the study area, and it is the opinion of the freshwater ecologist that registration by means of confirmation of General Authorization is possible. The majority of the study area is classified as being of very high aquatic biodiversity importance due to being part of a much larger strategic water source area, however due to the field verified absence of freshwater features within the study area and the nature of the proposed development, the study area can be considered of low aquatic biodiversity sensitivity with the condition that careful planning of stormwater management takes place. This compliance statement must be submitted to the relevant competent authority for consideration as part of the EA process.

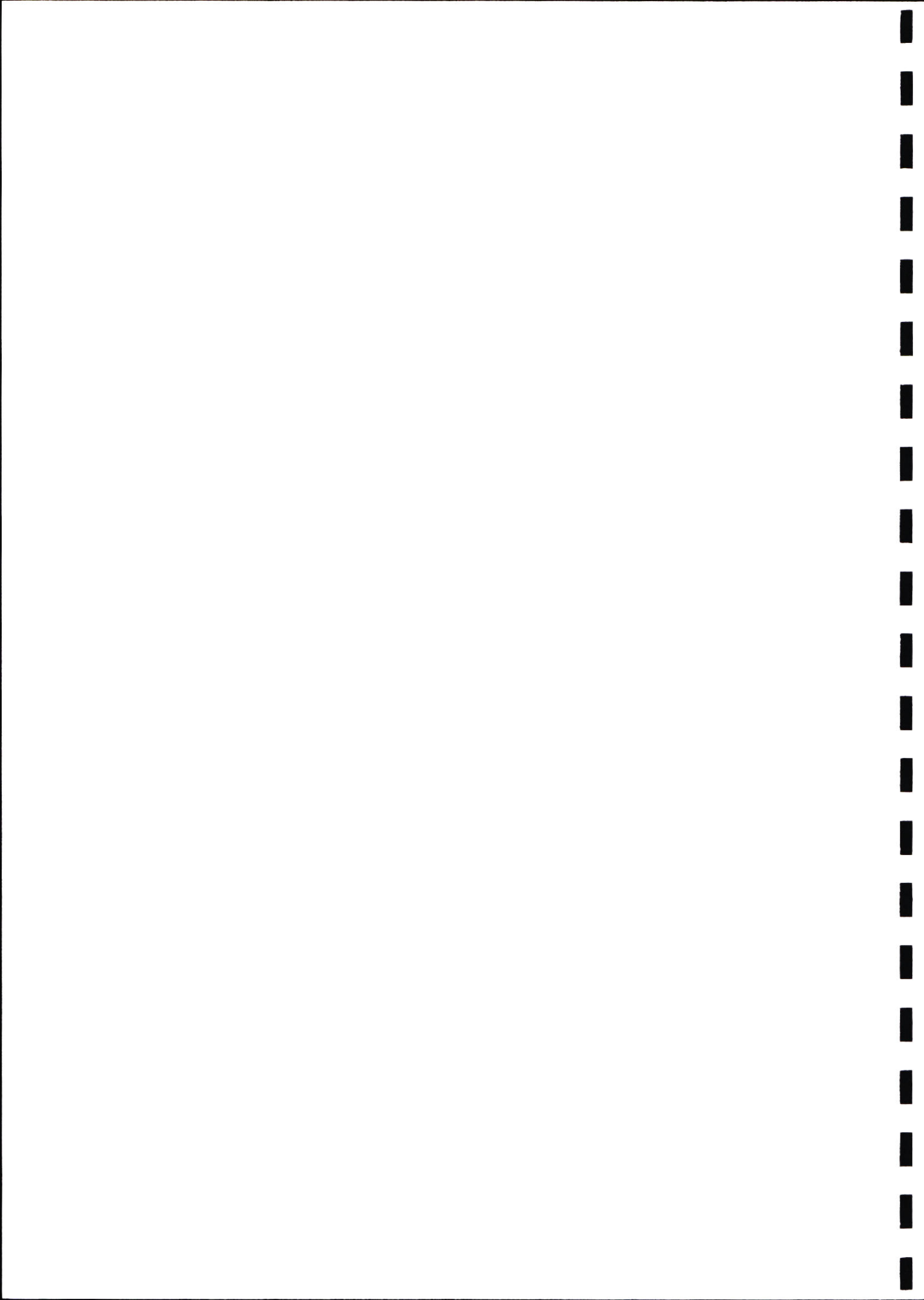




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APPENDIX A: Indemnity and Terms of Use of this Report

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and FEN CC and its staff reserve the right to, at their sole discretion, modify aspects of the report including the recommendations if and when new information may become available from ongoing research or further work in this field or pertaining to this investigation.

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This report must not be altered or added to or used for any other purpose other than that for which it was produced without the prior written consent of the author(s). This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an Appendix or separate section to the main report.



APPENDIX B: Legislative Requirements

<p>The Constitution of the Republic of South Africa, 1996</p>	<p>The environment and the health and well-being of people are safeguarded under the Constitution of the Republic of South Africa, 1996 by way of section 24. Section 24(a) guarantees a right to an environment that is not harmful to human health or well-being and to environmental protection for the benefit of present and future generations. Section 24(b) directs the state to take reasonable legislative and other measures to prevent pollution, promote conservation, and secure the ecologically sustainable development and use of natural resources (including water and mineral resources) while promoting justifiable economic and social development. Section 27 guarantees every person the right of access to sufficient water, and the state is obliged to take reasonable legislative and other measures within its available resources to achieve the progressive normalization of this right. Section 27 is defined as a socio-economic right and not an environmental right. However, read with section 24 it requires of the state to ensure that water is conserved and protected and that sufficient access to the resource is provided. Water regulation in South Africa places a great emphasis on protecting the resource and on providing access to water for everyone.</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998)</p>	<p>The National Environmental Management Act, 1998 (Act No. 107 of 1998) and the associated Regulations as amended in 2017, states that prior to any development taking place within a wetland or riparian area, an environmental authorisation process needs to be followed. This could follow either the Basic Assessment Report (BAR) process or the Environmental Impact Assessment (EIA) process depending on the scale of the impact. Provincial regulations must also be considered.</p>
<p>National Water Act, 1998 (Act No. 36 of 1998)</p>	<p>The National Water Act, 1998 (Act No. 36 of 1998) recognises that the entire ecosystem and not just the water itself in any given water resource constitutes the resource and as such needs to be conserved. No activity may therefore take place within a watercourse unless it is authorised by the Department of Water and Sanitation (DWS). Any area within a wetland or riparian zone is therefore excluded from development unless authorisation is obtained from the DWS in terms of Section 21 (c) & (i).</p> <p>A watercourse is defined as:</p> <ol style="list-style-type: none"> A river or spring; A natural channel in which water flows regularly or intermittently; A wetland, lake or dam into which, or from which water flows; and Any collection of water which the minister may, by notice in the Gazette, declare a watercourse.
<p>Government Notice 509 as published in the Government Gazette 40229 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998)</p>	<p>In accordance with Government Notice (GN)509 of 2016, a regulated area of a watercourse for section 21c and 21i of the NWA, 1998 is defined as:</p> <ul style="list-style-type: none"> ➤ The outer edge of the 1 in 100 year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; ➤ In the absence of a determined 1 in 100 year flood line or riparian area the area within 100 m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench; or ➤ A 500 m radius from the delineated boundary (extent) of any wetland or pan. <p>This notice replaces GN1199 and may be exercised as follows:</p> <ol style="list-style-type: none"> Exercise the water use activities in terms of Section 21(c) and (i) of the Act as set out in the table below, subject to the conditions of this authorisation; Use water in terms of section 21(c) or (i) of the Act if it has a low risk class as determines through the Risk Matrix; Do maintenance with their existing lawful water use in terms of section 21(c) or (i) of the Act that has a LOW risk class as determined through the Risk Matrix; Conduct river and storm water management activities as contained in a river management plan; Conduct rehabilitation of wetlands or rivers where such rehabilitation activities have a LOW risk class as determined through the Risk Matrix; and Conduct emergency work arising from an emergency situation or incident associated with the persons' existing lawful water use, provided that all work is executed and reported in the manner prescribed in the Emergency protocol. <p>A General Authorisation (GA) issued as per this notice will require the proponent to adhere with specific conditions, rehabilitation criteria and monitoring and reporting programme. Furthermore, the water user must ensure that there is a sufficient budget to complete, rehabilitate and maintain the water use as set out in this GA. Upon completion of the registration, the responsible authority will provide a certificate of registration to the water user within 30 working days of the submission. On written receipt of a registration certificate from the Department, the person will be regarded as a registered water user and can commence within the water use as contemplated in the GA.</p>



APPENDIX C: Classification System for Wetlands and other Aquatic Ecosystems in South Africa (2013)

All wetland or riparian features encountered within the investigation area was assessed using the Classification System for Wetlands and other Aquatic Ecosystems in South Africa. User Manual: Inland systems, hereafter referred to as the "Classification System" (Ollis et. al., 2013). A summary on Levels 1 to 4 of the classification system are presented in the tables below.

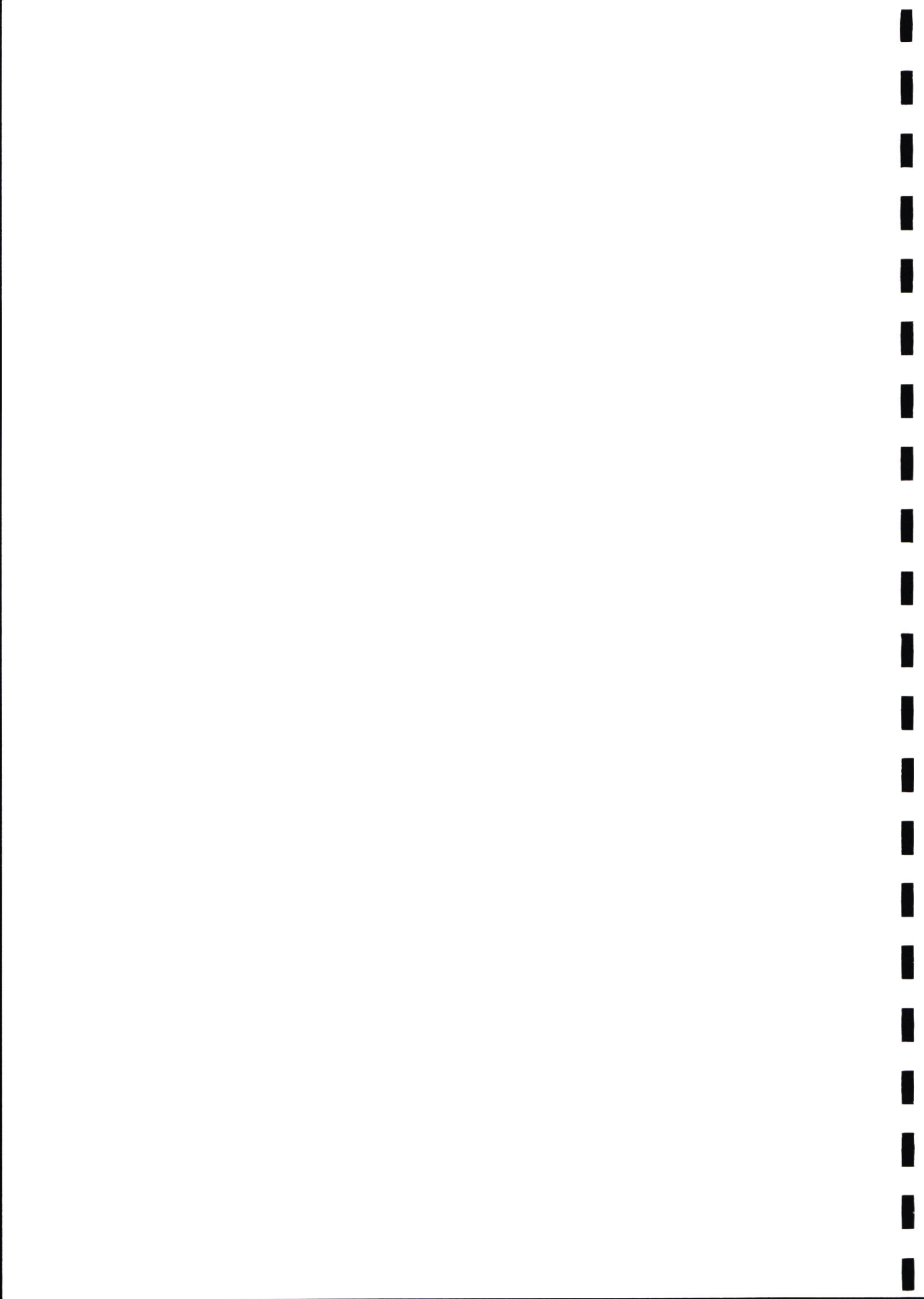
Table C1: Classification System for Inland Systems, up to Level 3.

WETLAND / AQUATIC ECOSYSTEM CONTEXT		
LEVEL 1: SYSTEM	LEVEL 2: REGIONAL SETTING	LEVEL 3: LANDSCAPE UNIT
Inland Systems	DWA Level 1 Ecoregions	Valley Floor
	OR	Slope
	NFEPA WetVeg Groups	Plain
	OR	Bench (Hilltop / Saddle / Shelf)
	Other special framework	

Table C2: Hydrogeomorphic (HGM) Units for the Inland System, showing the primary HGM Types at Level 4A and the subcategories at Level 4B to 4C.

FUNCTIONAL UNIT		
LEVEL 4: HYDROGEOMORPHIC (HGM) UNIT		
HGM type	Longitudinal zonation/ Landform / Outflow drainage	Landform / Inflow drainage
A	B	C
River	Mountain headwater stream	Active channel Riparian zone
	Mountain stream	Active channel Riparian zone
	Transitional	Active channel Riparian zone
	Upper foothills	Active channel Riparian zone
	Lower foothills	Active channel Riparian zone
	Lowland river	Active channel Riparian zone
	Rejuvenated bedrock fall	Active channel Riparian zone
	Rejuvenated foothills	Active channel Riparian zone
	Upland floodplain	Active channel Riparian zone
Channelled valley-bottom wetland	(not applicable)	(not applicable)
Unchannelled valley-bottom wetland	(not applicable)	(not applicable)
Floodplain wetland	Floodplain depression	(not applicable)
	Floodplain flat	(not applicable)
Depression	Exorheic	With channelled inflow Without channelled inflow
		With channelled inflow Without channelled inflow
	Endorheic	With channelled inflow Without channelled inflow
		With channelled inflow Without channelled inflow
	Dammed	With channelled inflow Without channelled inflow
		With channelled inflow Without channelled inflow
Seep	With channelled outflow	(not applicable)
	Without channelled outflow	(not applicable)





FUNCTIONAL UNIT		
LEVEL 4: HYDROGEOMORPHIC (HGM) UNIT		
HGM type	Longitudinal zonation/ Landform / Outflow drainage	Landform / Inflow drainage
A	B	C
Wetland flat	(not applicable)	(not applicable)

Level 1: Inland systems

From the classification system, Inland Systems are defined as **aquatic ecosystems that have no existing connection to the ocean⁵** (i.e. characterised by the complete absence of marine exchange and/or tidal influence) but **which are inundated or saturated with water, either permanently or periodically**. It is important to bear in mind, however, that certain Inland Systems may have had a historical connection to the ocean, which in some cases may have been relatively recent.

Level 2: Ecoregions & NFEPA Wetland Vegetation Groups

For Inland Systems, the regional spatial framework that has been included in Level 2 of the classification system is that of the DWA's Level 1 Ecoregions for aquatic ecosystems (Kleynhans *et al.*, 2005). There is a total of 31 Ecoregions across South Africa, including Lesotho and Swaziland. DWA Ecoregions have most commonly been used to categorise the regional setting for national and regional water resource management applications, especially in relation to rivers.

The Vegetation Map of South Africa, Swaziland and Lesotho (Mucina & Rutherford, 2006) groups' vegetation types across the country, according to Biomes, which are then divided into Bioregions. To categorise the regional setting for the wetland component of the NFEPA project, wetland vegetation groups (referred to as WetVeg Groups) were derived by further splitting Bioregions into smaller groups through expert input (Nel *et al.*, 2011). There are currently 133 NFEPA WetVeg Groups. It is envisaged that these groups could be used as a special framework for the classification of wetlands in national- and regional-scale conservation planning and wetland management initiatives.

Level 3: Landscape Setting

At Level 3 of the classification system for Inland Systems, a distinction is made between four Landscape Units (Table C1) on the basis of the landscape setting (i.e. topographical position) within which an HGM Unit is situated, as follows (Ollis *et al.*, 2013):

- **Slope:** an included stretch of ground that is not part of a valley floor, which is typically located on the side of a mountain, hill or valley;
- **Valley floor:** The base of a valley, situated between two distinct valley side-slopes;
- **Plain:** an extensive area of low relief characterised by relatively level, gently undulating or uniformly sloping land; and
- **Bench (hilltop/saddle/shelf):** an area of mostly level or nearly level high ground (relative to the broad surroundings), including hilltops/crests (areas at the top of a mountain or hill flanked by down-slopes in all directions), saddles (relatively high-lying areas flanked by down-slopes on two sides in one direction and up-slopes on two sides in an approximately perpendicular direction), and shelves/terraces/ledges (relatively high-lying, localised flat areas along a slope, representing a break in slope with an up-slope one side and a down-slope on the other side in the same direction).

Level 4: Hydrogeomorphic Units

Seven primary HGM Types are recognised for Inland Systems at Level 4A of the classification system (Table C2), on the basis of hydrology and geomorphology (Ollis *et al.*, 2013), namely:

⁵ Most rivers are indirectly connected to the ocean via an estuary at the downstream end, but where marine exchange (i.e. the presence of seawater) or tidal fluctuations are detectable in a river channel that is permanently or periodically connected to the ocean, it is defined as part of the estuary.



- **River:** a linear landform with clearly discernible bed and banks, which permanently or periodically carries a concentrated flow of water;
- **Channelled valley-bottom wetland:** a valley-bottom wetland with a river channel running through it;
- **Unchannelled valley-bottom wetland:** a valley-bottom wetland without a river channel running through it;
- **Floodplain wetland:** the mostly flat or gently sloping land adjacent to and formed by an alluvial river channel, under its present climate and sediment load, which is subject to periodic inundation by over-topping of the channel bank;
- **Depression:** a landform with closed elevation contours that increases in depth from the perimeter to a central area of greatest depth, and within which water typically accumulates;
- **Wetland Flat:** a level or near-level wetland area that is not fed by water from a river channel, and which is typically situated on a plain or a bench. Closed elevation contours are not evident around the edge of a wetland flat; and
- **Seep:** a wetland area located on (gently to steeply) sloping land, which is dominated by the colluvial (i.e. gravity-driven), unidirectional movement of material down-slope. Seeps are often located on the side-slopes of a valley, but they do not, typically, extend into a valley floor.

The above terms have been used for the primary HGM Units in the classification system to try and ensure consistency with the wetland classification terms currently in common usage in South Africa. Similar terminology (but excluding categories for “channel”, “flat” and “valleyhead seep”) is used, for example, in the recently developed tools produced as part of the Wetland Management Series including WET-Health (Macfarlane *et. al.*, 2008), WET-IHI (DWAf, 2007) and WET-EcoServices (Kotze *et. al.*, 2009).





APPENDIX D: Details, Expertise and Curriculum Vitae of Specialists

1. (a) (i) Details of the specialist who prepared the report

Rabia Mathakutha MSc Plant Science (University of Pretoria)
P da Cruz BA (Hons) Geography and Environmental Studies (University of the Witwatersrand)

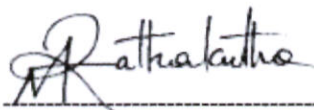
1. (a). (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae

Company of Specialist:	Scientific Aquatic Services (Pty) Ltd		
Name / Contact person:	Rabia Mathakutha		
Postal address:	221 Riverside Lofts, Tygerfalls Boulevard, Bellville,		
Postal code:	7539	Cell:	083 739 2284
Telephone:	011 616 7893	Fax:	086 724 3132
E-mail:	rabia@sasenvgroup.co.za		
Qualifications	MSC Plant Science		
Registration / Associations	Registered Candidate Member of the South African Council for Natural Scientific Professions (SACNASP)		

1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Rabia Mathakutha, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct



Signature of the Specialist



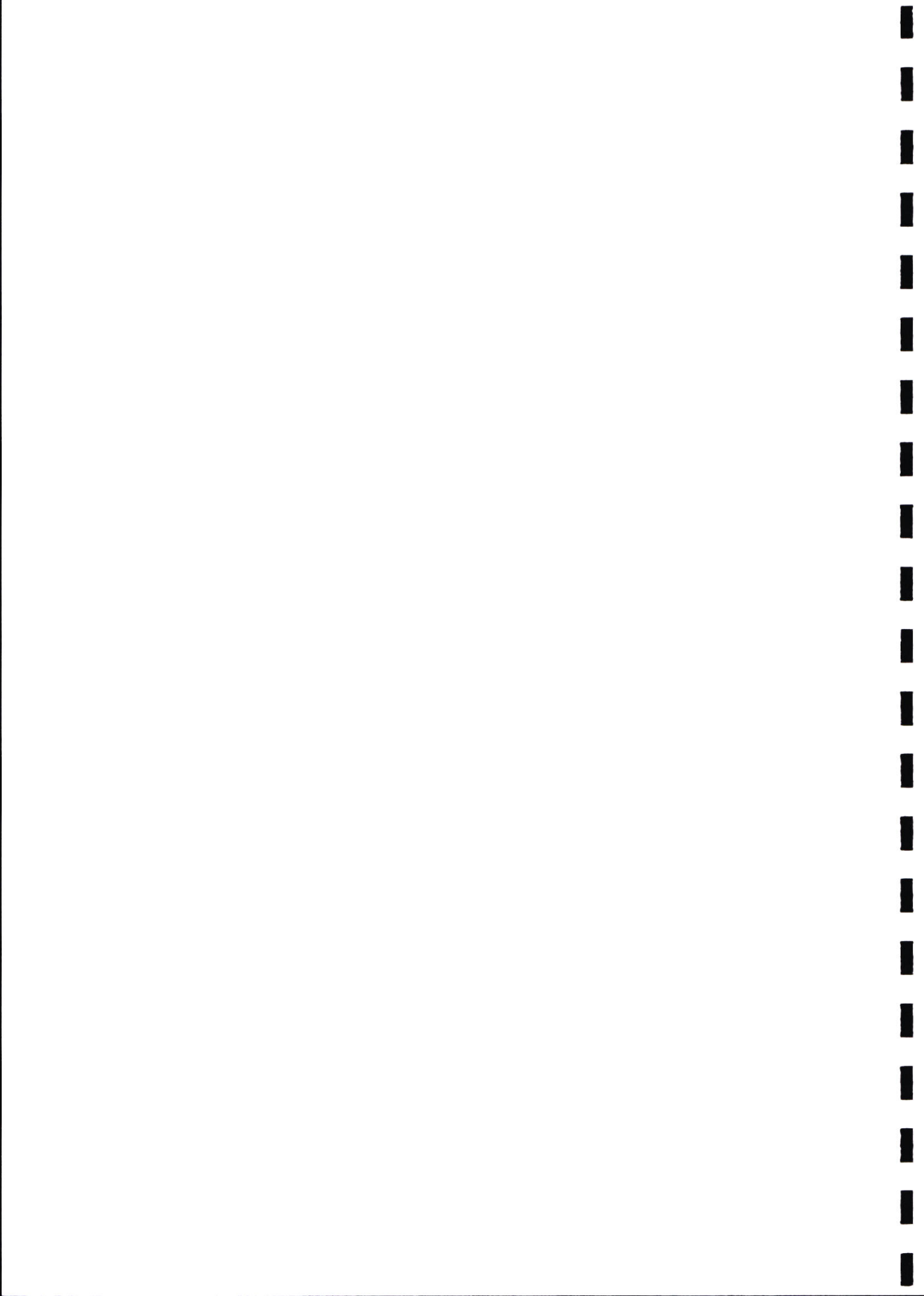


1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Paul da Cruz, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct







SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF RABIA MATHAKUTHA

PERSONAL DETAILS

Position in Company

Field Ecologist
Wetland ecology

Joined SAS Environmental Group of Companies

2020

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Candidate member of the South African Council for Natural Scientific Professions (SACNASP – Reg. No. 120040)

Member of the Western Cape Wetland Forum (WCWF)

South African Association of Botany (SAAB)

EDUCATION

Qualifications

MSc Plant Science (University of Pretoria)

2018

BSc (Hons) Environmental Science (Biogeography) (University of KwaZulu-Natal)

2015

BSc Environmental Science (Life Science stream) (University of KwaZulu-Natal)

2014

Short Courses

Tools for Wetland Assessment (Rhodes University)

2021

Official DWS Section 21 (c) and (i) Water Use Authorisation Course

2018

Basic and Applied Statistics in R

2016

AREAS OF WORK EXPERIENCE

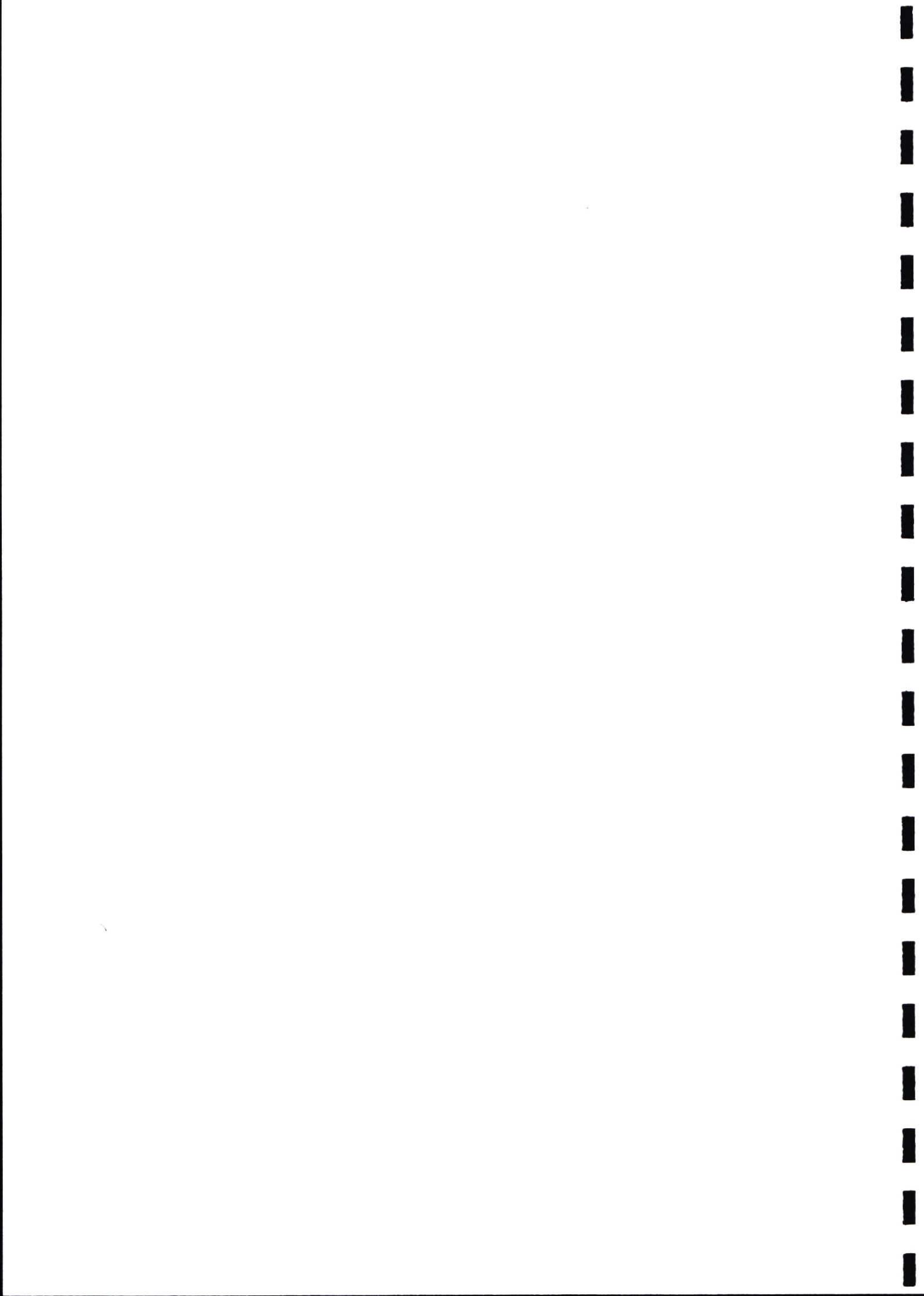
South Africa – Gauteng, Mpumalanga, Western Cape, Northern Cape, Eastern Cape

Africa – Lesotho, Mozambique

Freshwater Assessments

- Desktop Freshwater Delineation
- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant Species Plan







SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF PAUL DA CRUZ

PERSONAL DETAILS

Position in Company	Senior Ecologist
Joined SAS Environmental Group of Companies	2022

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Certificated Scientist at South African Council for Natural Scientific Professions (SACNASP)
 Registered Environmental Assessment Practitioner (EAP) with the Environmental Assessment Practitioners Association of South Africa (EAPASA)
 Member of the South African Wetland Society (SAWS)

EDUCATION

Qualifications

BA (Hons) (Geography and Environmental Studies) (University of the Witwatersrand)	1998
BA (Geography) (University of the Witwatersrand)	1997

Short Courses

Taxonomy of Wetland Plants (Water Research Commission)	2017
Advanced Grass Identification (Frits van Outshoorn)	2010
Grass Identification (Frits van Outshoorn),	2009
Soil Form Classification and Wetland Delineation; (TerraSoil Science)	2008

AREAS OF WORK EXPERIENCE

South Africa – All Provinces
 Southern Africa – Lesotho, Botswana

DEVELOPMENT SECTORS OF EXPERIENCE

1. Renewable energy (Wind and solar)
2. Linear developments (energy transmission, telecommunication, pipelines, roads, border infrastructure)
3. Nature Conservation and Ecotourism Development
4. Commercial development
5. Residential development
6. Environmental and Development Planning and Strategic Assessment
7. Industrial/chemical; Non-renewable power Generation



KEY SPECIALIST DISCIPLINES**Legislative Requirements, Processes and Assessments**

- EIA / BA Applications
- Environmental Authorisation Amendments
- EMPr Compilation
- Environmental Compliance Monitoring (Environmental Auditing)
- Environmental Screening Assessments and Listing Notice 3 Trigger Identification / Mapping
- Strategic Environmental Assessments and Environmental Management Frameworks
- EIA / Specialist Study Peer Review

Freshwater Assessments

- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant Species and Landscape Plans
- Freshwater Assessments in support of Environmental Screening Assessments, Precinct Planning & SEA
- Wetland Construction (Compliance) Monitoring

Biodiversity Assessments

- Avifaunal Assessments
- Strategic Biodiversity Assessment

Visual Impact Assessment

- Visual Impact Assessments

GIS / Spatial Analysis

- GIS Spatial Analysis and Listing Notice 3 mapping



ANNEXURE 18: HERITAGE WESTERN CAPE APPROVAL



Our Ref: HM /CAPE WINELANDS /STELLENBOSCH /KLAPMUTS /GROENFONTEIN /
PTN 5 FARM 716
Case No: 22072609AM0728E
Enquiries: Ayanda Mdludlu
E-mail: ayanda.mdludlu@westerncape.gov.za
Tel: 021 483 5959



Pieter Slabbert
Fslabbert381@gmail.com

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: FINAL
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape
Provincial Gazette 6061, Notice 298 of 2003

NOTIFICATION OF INTENT TO DEVELOP: PROPOSED RESIDENTIAL DEVELOPMENT ON PTN 5 FARM 716
GROENFONTEIN, KLAPMUTS, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE
RESOURCES ACT (ACT 25 OF 1999)

CASE NUMBER: 22072609AM0728E

The matter above has reference.

Heritage Western Cape is in receipt of additional information for the above matter received. This matter was discussed at the Heritage Officers' Meeting held on 16 August 2022.

You are hereby notified that, since there is no reason to believe that the proposed residential development on ptn 5 farm 716 Groenfontein, Klapmuts will impact on heritage resource, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.

However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay.

This letter does not exonerate the applicant from obtaining any necessary approval from any other applicable statutory authority.

HWC reserves the right to request additional information as required.

Should you have any further queries, please contact the official above and quote the case number.

Yours faithfully

.....
Colette Scheermeyer
Deputy Director



Heritage Western Cape
Erfenis Wes-Kaap
ILifa leMveli leNtshona Koloni

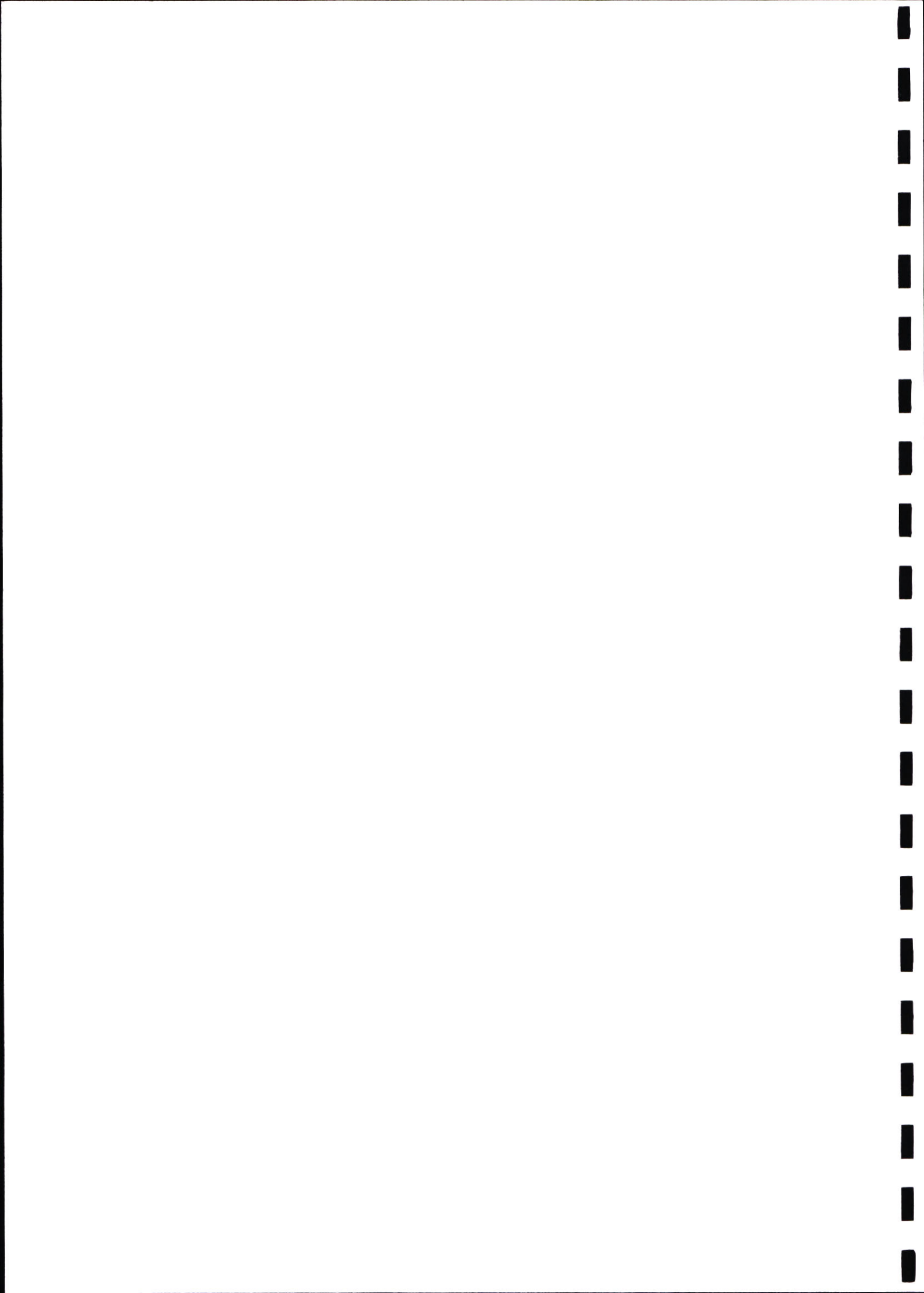
23 August 2022

www.westerncape.gov.za/cas

Street Address: Protea Assurance Building, Green Market Square, Cape Town, 8000 • Postal Address: P.O. Box 1665, Cape Town, 8000
• Tel: +27 (0)21 483 5959 • E-mail: ceoheritage@westerncape.gov.za

Straatadres: Protea Assuransie-gebou, Groentemarkplein, Kaapstad, 8000 • Posadres: Posbus 1665, Kaapstad, 8000
• Tel: +27 (0)21 483 5959 • E-pos: ceoheritage@westerncape.gov.za

Idilesi yendawo: kumgangatho 3, kwisakhiwo iprotea Assurance, Greenmarket Square, eKapa, 8000 • Idilesi yeposi: Inombolo yebhokisi yeposi 1665, eKapa, 8000 • Inombolo zomnxeba: +27 (0)21 483 5959 • Idilesi ye-imeyile: ceoheritage@westerncape.gov.za



ANNEXURE 19: APPLICATION FORM





STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

DIRECTORATE: PLANNING & ECONOMIC DEVELOPMENT

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

FOR ENQUIRIES CONTACT landuse.enquiries@stellenbosch.gov.za or 021- 808 8606

SUBMIT APPLICATION BY UPLOADING COMPLETED FORM AND RELEVANT INFO TO THE

Town Planning Application Management System (TPAMS)

[AFLA Portal \(stellenbosch.gov.za\) /](http://AFLA Portal (stellenbosch.gov.za) /)

<https://citymaps.stellenbosch.gov.za/aflaportal/home>

NOTE: In terms of section 69 of the Bylaw on Municipal Land Use Planning 2023 the Municipality may categorise applications for consideration by either an authorised employee or the Municipal Planning Tribunal (Categorisation Model for Decision-making July 2023). These land use applications are subject to prescribed administrative and public participation processes and depending on the type of application, Land Use Application Form A or Form B must be completed. Land Use Application Form B can be used if the application ONLY comprises of a permanent departure. If any other type of application is also required, Land Use Application Form A must be completed. Land Use Application Form C must be used if the application comprises of an application for permission either in terms of the zoning scheme or in terms of a condition of approval or in terms of the title deed.

LAND USE PLANNING APPLICATION FORM A

Section 15 of the Municipal Bylaw on Land Use Planning 2023 and other relevant legislation

Complete form using BLOCK letters and ticking the appropriate boxes

PART A: APPLICANT DETAILS

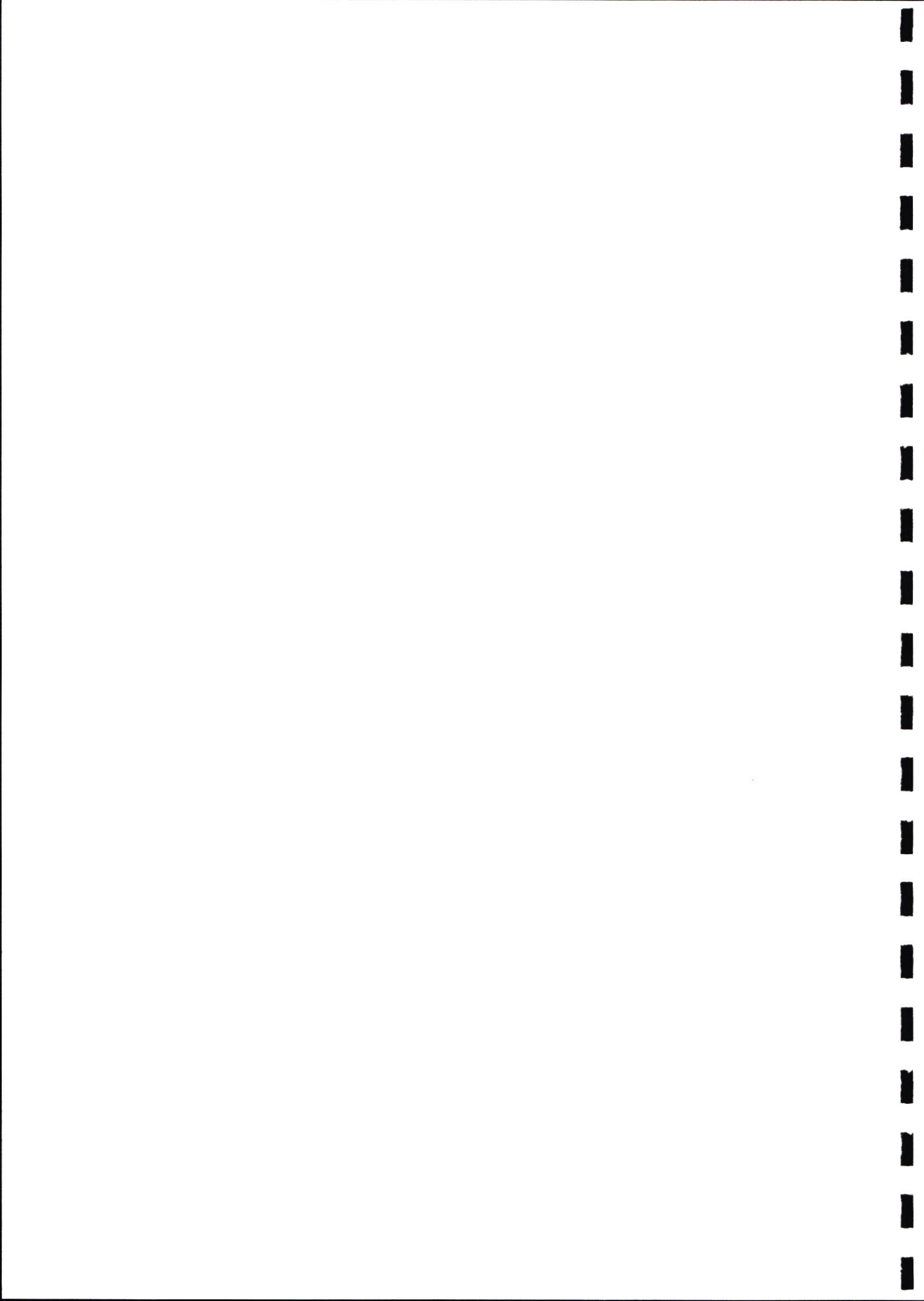
First name(s)	THELWIS LODENYK
Surname	STEYN
Company name (if applicable)	NUPLAN AFRICA
Postal Address	P.O. BOX 165, WELLINGTON 7654
Email Address	theo@nuplanfrica.co.za
Contact Number(s)	082 4404 893

PART B: REGISTERED LANDOWNER(S) DETAILS (If different from applicant)

Registered owner(s) Name	GOLDEN GLAZE INVESTMENTS (PTY) LTD
E-mail Address	bavend@reddevelopments.co.za
Contact Number	072 699 1839

PART C: PROPERTY DETAILS (in accordance with title deed)

Erf No		Suburb		Town	
Farm no	716	Farm Portion	5	Nearest Town	KLAPMUTS



Physical or Street Address	R44, KLAPMUTS		Property / Business / Farm known as	GREENFONTEIN	
Current Zoning	AGRICULTURE				
Additional or Consent Uses	NONE				
Current activities	VACANT, RESIDENCE AND STAFF COTTAGES				
Property Size / Extent	4,4104 r ² / ha		Are there existing buildings?	☒	N
Title Deed number	T 2301/2023				
Any restrictions in the Conveyance's Certificate?	☐	☒	If yes, list condition(s) as per certificate. N/A		
Are the restrictive conditions in favour of a third party?	☐	☒	If yes, list the party(ies). N/A		
Is the property owned by Council?	☐	☒	If yes, attach a power of attorney signed by the Municipal Manager or delegated authority		
Is the building located within the historical core?	☐	☒	Is the building older than 60 years?	☐	☒
				Is the application triggered by the National Heritage Resources Act, 1999 (Act 25 of 1999)?	☒
					If yes, indicate which section are triggered and attach relevant permit. Sec 38
Any existing unauthorized buildings and/or land use on the subject property(ies)?	☐	☒		If yes, is this application to legalise the building / land use?	☐
Are there any pending court case(s) / order(s) relating to the subject property(ies)?	☐	☒		Are there any land claim(s) registered on the subject property(ies)?	☐

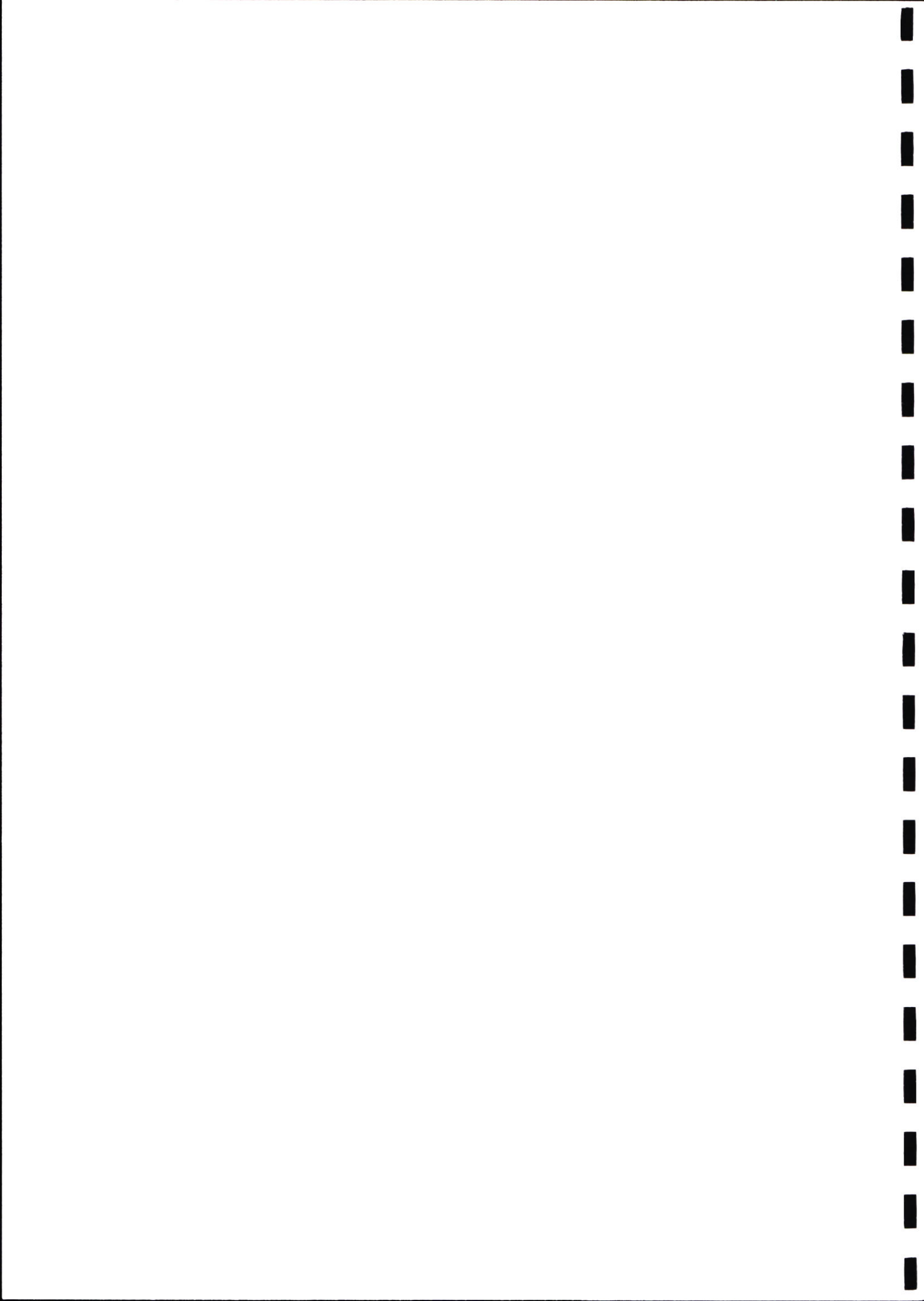
PART D: PRE-APPLICATION CONSULTATION AND OR SCRUTINY

Has there been any pre-application consultation?	☒	If yes, attach the minutes of the pre-application consultation.
Has the pre-application scrutiny form been submitted?	☒	If yes, attach the written feedback received.

The submission of a pre application scrutiny form to Landuse.Applications@ Stellenbosch.gov.za is compulsory for the following type of applications* and written feedback must be attached to the land use planning application form: rezoning, subdivision and consolidation of land, removal, suspension or amendment of restrictive title deed conditions, the amendment, deletion, or imposition of conditions of approval and the cancellation of an approved subdivision plan.

¹ All applications triggered by section 38(1)(a) - (e) in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999) may not be processed without a permit issued by the relevant department

² No application may be submitted to legalize unauthorised building work and or land use on the property if a notice has been served in terms of Section 87(2)(a), and until such time a Section 91 Compliance Certificate have been issued in terms of the Stellenbosch Land Use Planning By-law



PART E: LAND USE PLANNING APPLICATIONS AND PAYMENT OF FEES**APPLICATIONS IN TERMS OF SECTION 15 OF THE MUNICIPAL BYLAW ON LAND USE PLANNING 2023**

Type of application	Tick
15(2)(a) rezoning of land*	✓
15(2)(b) a permanent departure from the development parameters of the zoning scheme	✓
15(2)(c) a departure granted on a temporary basis to utilise land for a purpose not permitted in terms of the primary rights of the zoning applicable to the land	
15(2)(d) a subdivision of land that is not exempted in terms of section 24, including the registration of a servitude or lease agreement*	✓
15(2)(e) a consolidation of land that is not exempted in terms of section 24*	
15(2)(f) a removal, suspension or amendment of restrictive conditions in respect of a land unit*	
15(2)(g) a permission required in terms of the zoning scheme	
15(2)(h) an amendment, deletion or imposition of conditions in respect of an existing approval*	
15(2)(i) an extension of the validity period of an approval	
15(2)(j) an approval of an overlay zone as contemplated in the zoning scheme	
15(2)(k) an amendment or cancellation of an approved subdivision plan or part thereof, including a general plan or diagram*	
15(2)(l) a permission required in terms of a condition of approval	
15(2)(m) a determination of a zoning	
15(2)(n) a closure of a public place or part thereof	
15(2)(o) a consent use contemplated in the zoning scheme	
15(2)(p) to disestablish a homeowners' association	
15(2)(q) to rectify a failure by a homeowners' association to meet its obligations in respect of the control over or maintenance of services	
15(2)(r) a permission required for the reconstruction of an existing building that constitutes a non-conforming use that is destroyed or damaged to the extent that it is necessary to demolish a substantial part of the building	

OTHER APPLICATIONS

Deviation from Council Policies/By-laws	
Consent / Permission required in terms of a title deed (includes where permission is required in terms of the Advertising on Roads and Ribbon Development Act, Act 21 of 1940)	

DETAILS FOR INVOICE

Name & Surname (party responsible for payment)	GOLDEN GLAZE INVESTMENTS (Pty) LTD.
Postal Address	2 CLARENDON DRIVE DURBAN NORTH 4051
Vat Number (where applicable)	4520216625

1. Application fees are per the Council Approved Tariffs. The complete application should first be submitted without the payment of any applicable application fees. Only when satisfied that a complete and accurate application has been submitted, will a proforma invoice be submitted to the applicant with payment instructions. Application fees that are paid to the Municipality are non-refundable as per the Tariff Rules. Once proof of payment is received, the application will be regarded as duly submitted.
2. All indigent residents who are registered as such with the Municipality and with proof submitted together with application will be exempted from applicable fees for Permanent Departure applications including but not limited to building lines, coverage, parking. Contact: Indigent.office@stellenbosch.gov.za or 021 808 8501 or 021 808 8579
3. The applicant is liable for the cost of publishing and serving notice of an application. Additional fees may become applicable, and the applicant will be informed accordingly.

BANKING DETAILS

Account Holder Name: Stellenbosch Municipality
 Bank: FIRST NATIONAL BANK (FNB)
 Branch no.: 210554
 Account no.: 62869253684
 Payment reference: LU/_____ and ERF/FARM _____

Please use both the Land Use Application number and the Erf/Farm number indicated on the invoice as a reference when making EFT payment

PART F: DETAILS OF PROPOSAL (Brief description of intent of development)

REZONING TO SUBDIVISIONAL AREA AND SUBDIVISION, DEPARTURE FROM THE HEIGHT RESTRICTION AND REGISTRATION OF SERVITUDE IN ORDER TO ALLOW THE DEVELOPMENT OF THE LAND FOR A HOUSING ESTATE CONSISTING OF 110 GROUP HOUSE UNITS, A CONSERVATION AREA, PRIVATE OPEN SPACES AND PRIVATE ROADS.

Name and Date of design guidelines (if applicable)

		Adjoining erf number				
Building line encroachment	Street		From	m	To	m
	Street		From	m	To	m
	Side		From	m	To	m
	Side		From	m	To	m
	Aggregate side		From	m	To	m
	Rear		From	m	To	m
Exceeding permissible site coverage / footprint			From	%	To	%
Exceeding maximum permitted bulk / floor factor / habitable rooms			From		To	
Exceeding height restriction	DEPARTURE REQUIRED		From	2 STOREYS m	To	3 STOREYS m
Exceeding maximum storey height			From	m	To	m

PART G: ATTACHMENTS AND SUPPORTING INFORMATION AND DOCUMENTATION FOR LAND USE PLANNING APPLICATION

Complete the following checklist and attach all the information and documentation relevant to the proposal. Failure to submit all information and documentation required will result in the application being deemed incomplete.

Information and documentation required

✓	N		Power of attorney / Owner's consent if applicant is not owner	Y	✓		Proof of any other relevant right held in the land concerned
✓	N		Resolution or other proof that applicant is authorised to act on behalf of a juristic person	Y	✓		S.G. diagram / General plan extract (A4 or A3 only)
✓	N		Written motivation pertaining to the need and desirability of the proposal	✓	N		Site development plan or conceptual layout plan (A4 or A3 only) to scale
✓	N		Locality plan (A4 or A3 only) to scale	✓	N		Proof of agreement or permission for required servitude
✓	N		Proposed subdivision plan (A4 or A3 only) to scale	✓	N		Proof of registered ownership (Full copy of the title deed)
✓	N		Conveyancer's certificate	✓	N		Written feedback of pre-application scrutiny and Minutes of pre-application consultation meeting (if applicable)
Y	N	N/A	Consolidation plan (A4 or A3 only) to scale	Y	N	N/A	Land use plan / Zoning plan (A4 or A3 only) to scale
✓	N	N/A	Street name and numbering plan (A4 or A3 only) to scale				
✓	N	N/A	Landscaping / Tree plan (A4 or A3 only) to scale	Y	N	✓	1: 50 / 1:100 Flood line determination (plan / report) (A4 or A3 only) to scale
Y	N	✓	Abutting owner's consent	Y	N	✓	Owners' Association consent
✓	N	N/A	Copy of Environmental Impact Assessment (EIA) / Heritage Impact Assessment (HIA) / Traffic Impact Assessment (TIA) / Traffic Impact Statement (TIS) / Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD)	✓	N	N/A	Services Report or indication of all municipal services / registered servitudes
Y	N	✓	Copy of original approval and conditions of approval	Y	N	✓	Proof of failure of owner's association
Y	N	✓	Proof of lawful use right	Y	N	✓	Any additional documents or information required as listed in the pre-application consultation form / minutes
✓	N	N/A	Required number of documentation copies	✓	N	N/A	Other (specify): SPECIALISTS REPORTS

PART H: AUTHORISATION(S) SUBJECT TO OR BEING CONSIDERED IN TERMS OF OTHER LEGISLATION

Y ✓	N	If required, has application for EIA / HIA / TIA / TIS / MHIA approval been made? If yes, attach documents / plans / proof of submission etc.	Specific Environmental Management Act(s) (SEMA) (e.g., Environmental Conservation Act, 1989 (Act 73 of 1989):	
			Y	N/A ✓ National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
Y	N/A ✓	Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970)	Y	N/A ✓ National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
Y	N/A ✓	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA)	Y	N/A ✓ National Water Act, 1998 (Act 36 of 1998)
Y	N/A ✓	Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major Hazard Installations Regulations	Y	N/A ✓ Other (specify)
Y	N/A ✓	Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)		
Y	✓	Do you want to follow an integrated application procedure in terms of section 44(1) of the Stellenbosch Municipality Land Use Planning By-Law? If yes, attach motivation.		

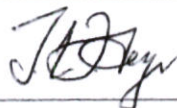
SECTION I: DECLARATION

I hereby wish to confirm the following:

1. That the information contained in this application form and accompanying documentation is complete and correct.
2. I'm aware that it is an offense in terms of section 86(1)(e) of said bylaw to supply particulars, information or answers knowing the particulars, information, or answers to be false, incorrect, or misleading or not believing them to be correct.
3. I am properly authorized to make this application on behalf of the owner and that a copy of the relevant power of attorney or consent is attached hereto.
4. Where an agent is appointed to submit this application on the owner's behalf, it is accepted that correspondence from and notifications by the Municipality in terms of the by-law will be sent only to the agent and that the owner will regularly consult with the agent in this regard.
5. I confirm that the relevant title deed(s) have been read and that there are no restrictive title deed restrictions, which impact on this application, or alternatively an application for removal/suspension or amendment forms part of this submission.
6. I confirm that I have made known all information relating to possible Land / Restitution Claims against the application property.
7. It is the owner's responsibility to ensure that approval is not sought for a building or land use which will conflict with any applicable law.
8. The Municipality assesses an application on the information submitted and declarations made by the owner or on his behalf on the basis that it accepts the information so submitted and declarations so made to be correct, true, and accurate.
9. Approval granted by the Municipality on information or declarations that are incorrect, false, or misleading may be liable to be declared invalid and set aside which may render any building or development pursuant thereto illegal.
10. The Municipality will not be liable to the owner for any economic loss suffered in consequence of approval granted on incorrect, false, or misleading information or declarations being set aside.

11. Information and declarations include any information submitted or declarations made on behalf of the owner by a Competent Person/professional person including such information submitted or declarations made as to his or her qualification as a Competent person and/or registration as a professional.
12. A person who provides any information or certificate required in terms of Regulation A19 of the National Building Regulations and Building Standards Act No 103 of 1977 which he or she knows to be incomplete or false shall be guilty of an offence and shall be prosecuted accordingly.
13. A person who supplies particulars, information, or answers in a land use application in terms of the Stellenbosch Municipality Land Use Planning By-law knowing it to be incorrect, false, or misleading or not believing them to be correct shall be guilty of an offence and shall be prosecuted accordingly.
14. The Municipality will refer a complaint to the professional council or similar body with whom a Competent Person/professional person is registered if it has reason to believe that information submitted, or declaration/s made by such Competent Person/professional person is incorrect, false or misleading.
15. I am aware that by lodging an application, the information in the application and obtained during the process may be made available to the public.

Applicant's signature:



Date:

6/09/23

Full name:

THEUNIS LODEWYK STEYN

Professional capacity:

DIRECTOR NEUMAN AFRICA.

PLAN 1: LOCALITY PLAN – LOCAL CONTEXT



PLAN 1 LOCALITY

Legend

- Parent Farms
- Farm Portions
- PORTION 5 OF FARM 716



Scale: 1:4 514

Date created: August 3, 2021

Compiled with Capel-armMapper



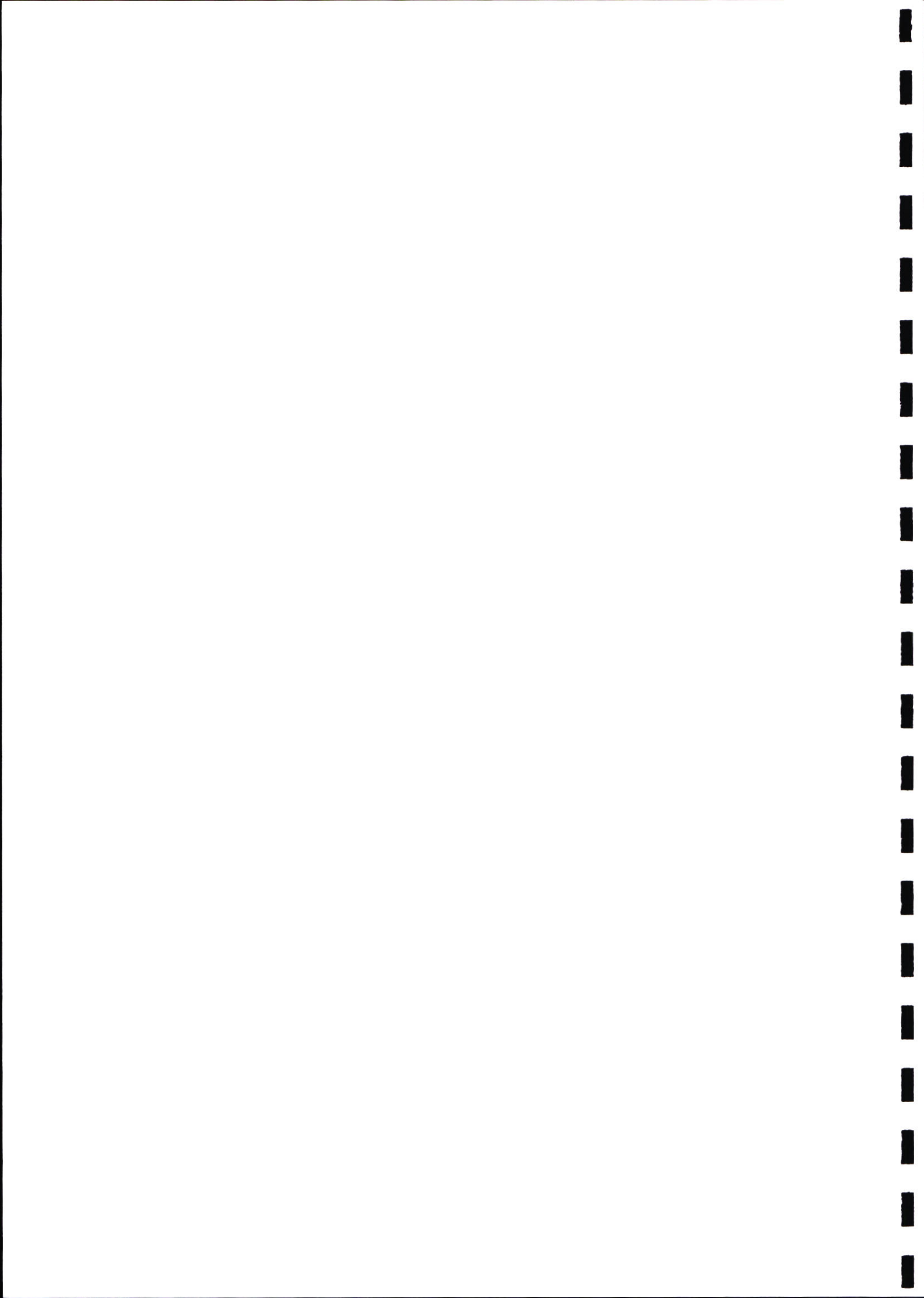
Western Cape
Government

Agriculture



PLAN 2: LOCALITY PLAN – REGIONAL CONTEXT







PLAN 2 REGIONAL

LOCALITY

Legend



SUBJECT PROPERTY

Map Center: Lon: 18°52'18.7"E

Lat: 33°48'28.7"S

Scale: 1:36 112

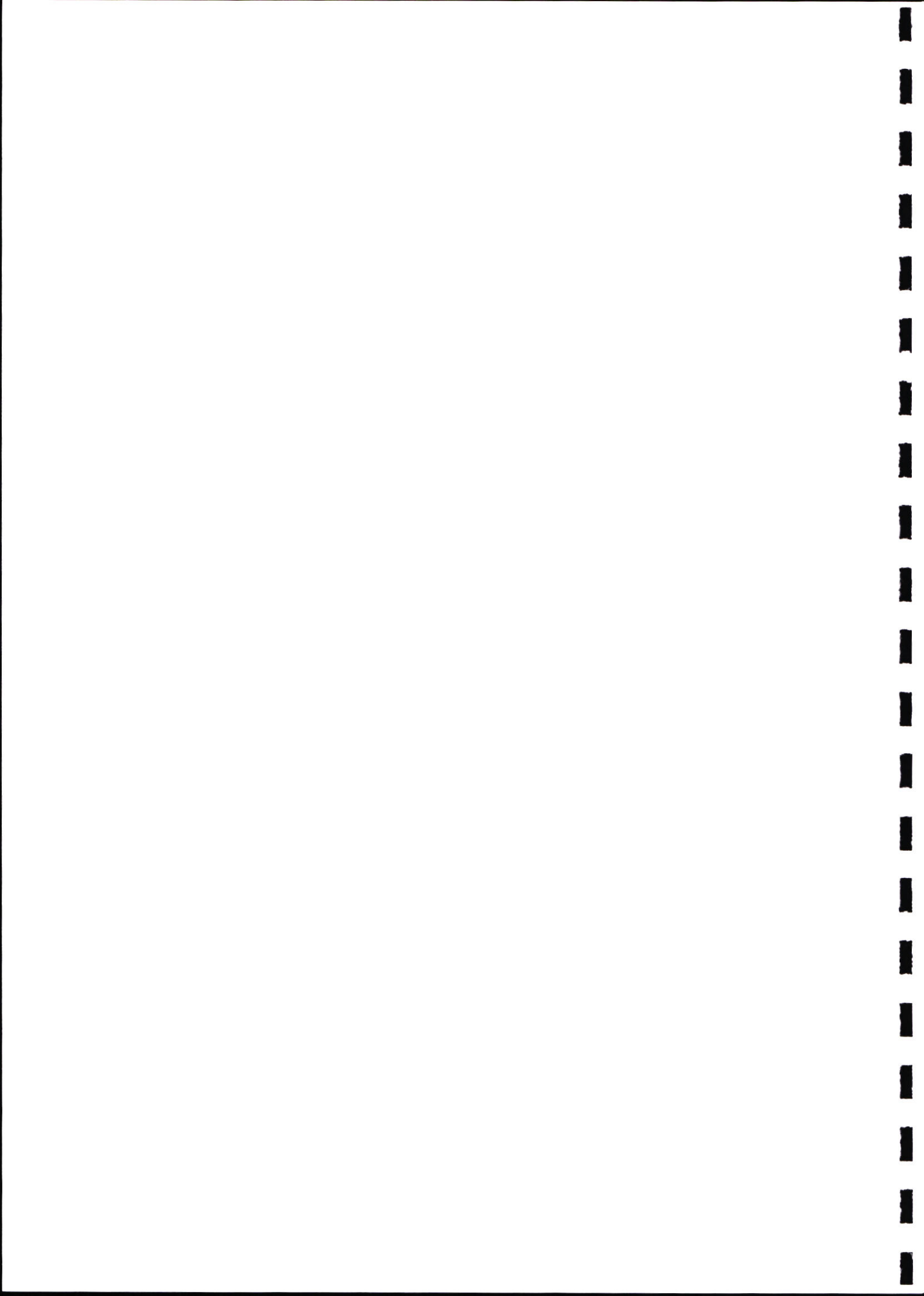
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Western Cape
Government

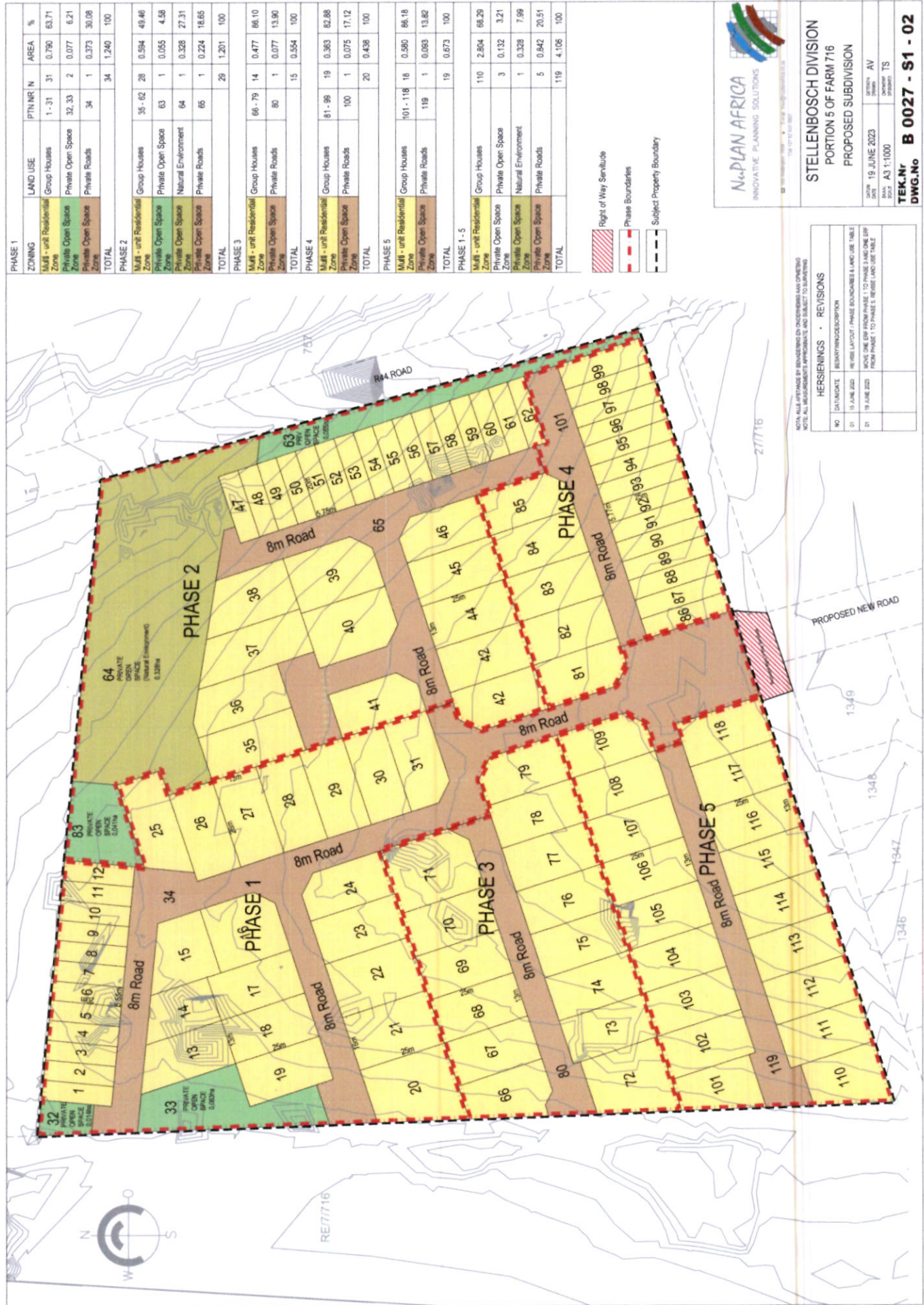
FOR YOU

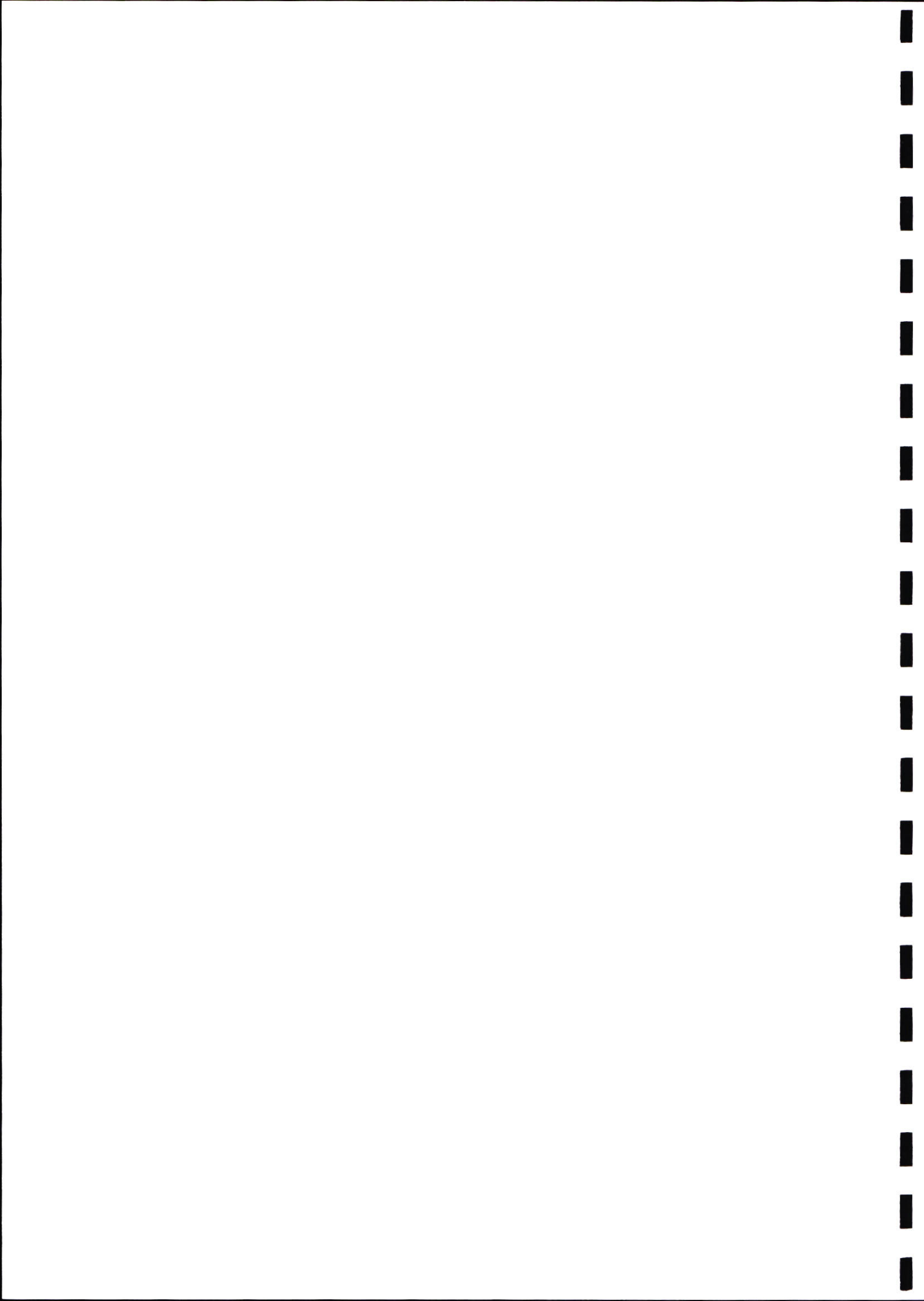
Agriculture



PLAN 3: SUBDIVISION PLAN





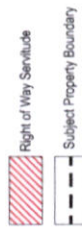
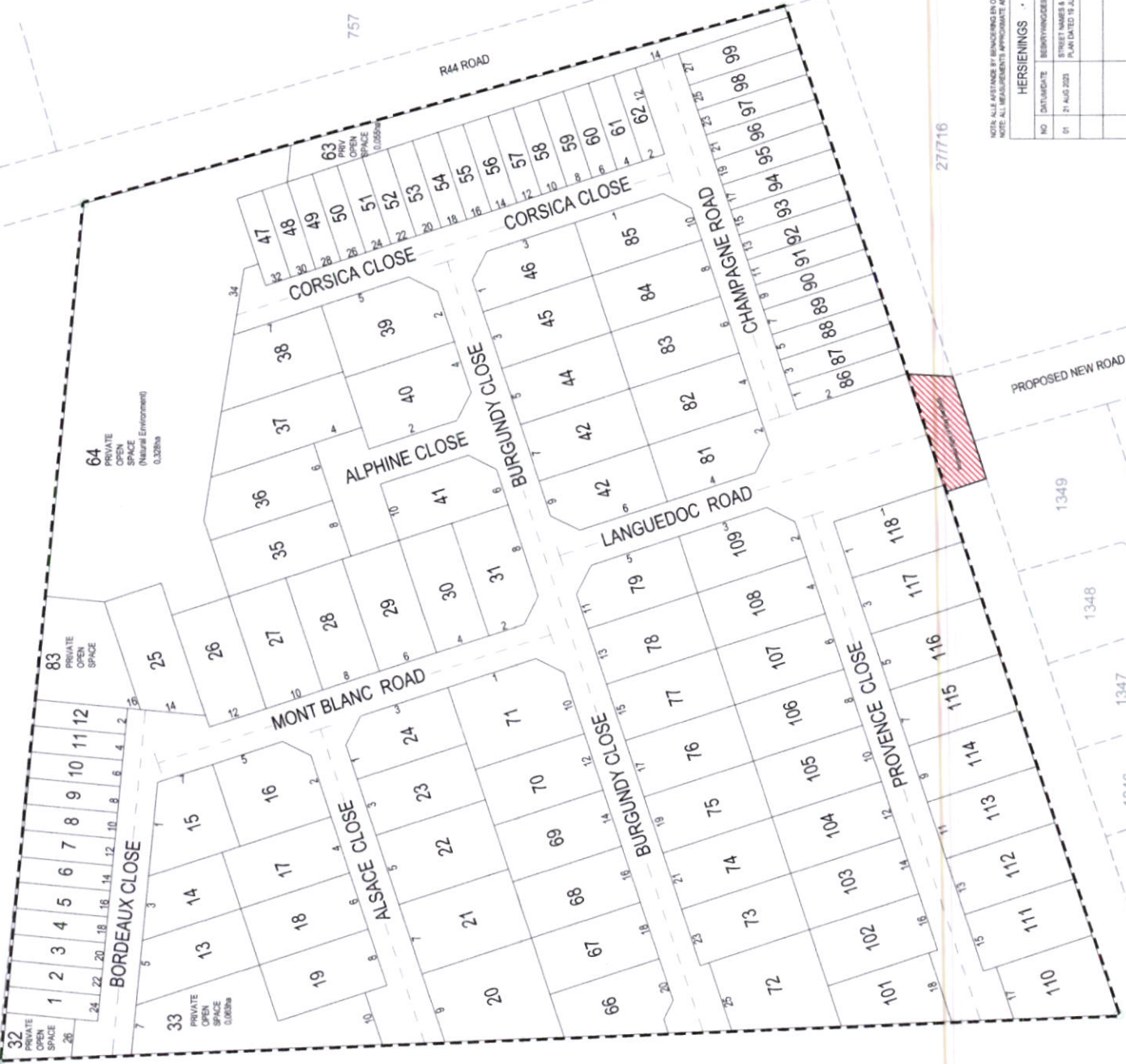
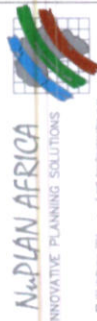


PLAN 4: STREET NAME AND NUMBERING PLAN





RE/17/16



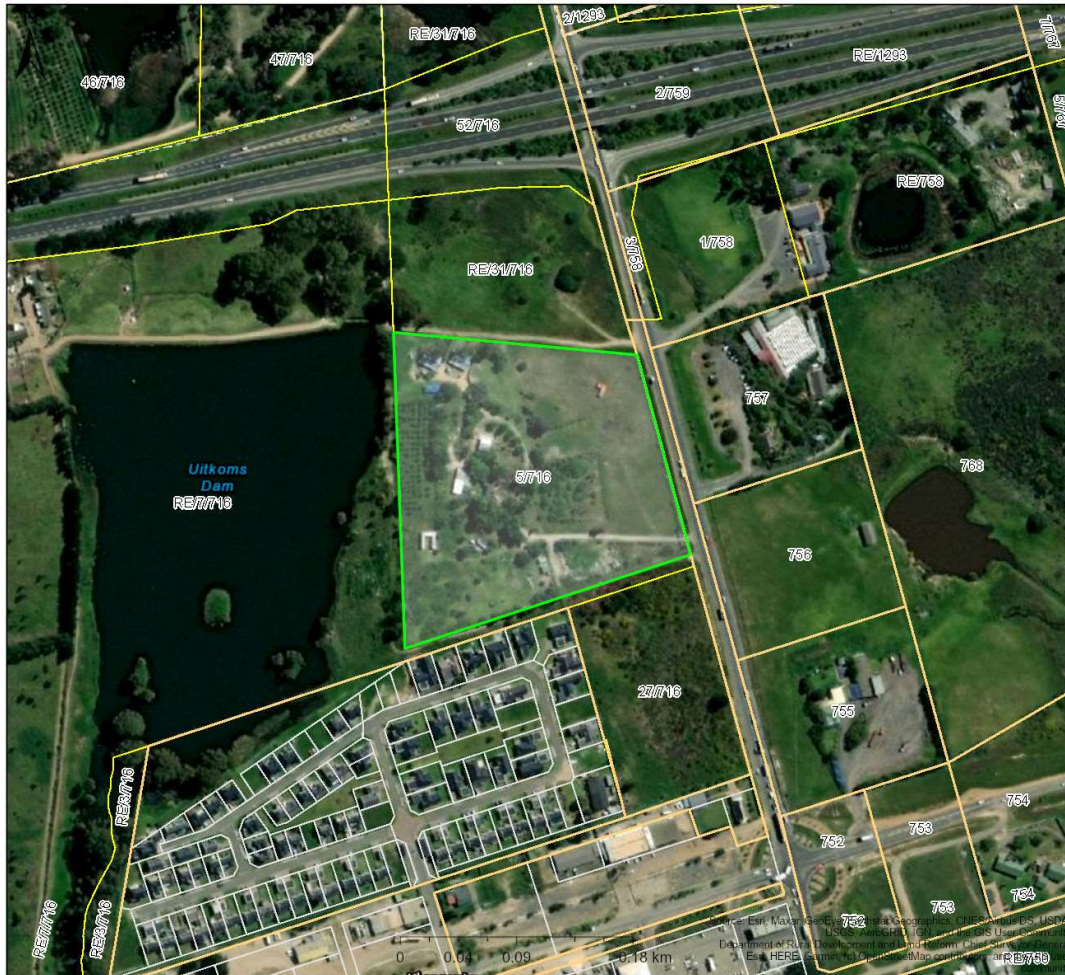
NOTE: ALL DISTANCES BY MEASURING IN ORDERING AND OPENING
NOTE: ALL MEASUREMENTS APPROXIMATE AND SUBJECT TO SURVEYING

REVISIONS	
NO	DATE
01	21 AUG 2023
STREET NAMES & NUMBERING BASED ON SUBMISSION	
PLAN DATED 19 JUNE 2023	

STELLENBOSCH DIVISION
PORTION 5 OF FARM 716
PROPOSED STREET NAMES & NUMBERING

DATE	21 AUG 2023	AV
SCALE	A3 1:1000	TS

B 0027 - STR - 02



PLAN 1 LOCALITY

Legend

- Parent Farms
- Farm Portions
- PORTION 5 OF FARM 716

Scale: 1:4 514
Date created: August 3, 2021

Compiled with CapeFarmMapper



Western Cape Government
Agriculture



ERF 1 - ERF 68 FOOTPRINT	
SINGLE STOREY A	147.5 m ²
SINGLE STOREY B	177.4 m ²
DOUBLE STOREY A	148 m ²
DOUBLE STOREY B	177.6 m ²
	FOOTPRINT OF TYPE A OPTIONS ABOVE
	FOOTPRINT OF TYPE B OPTIONS ABOVE

ERF S.A U1 - ERF S.C U14 FOOTPRINT	
TOWNHOUSE DOUBLE STOREY UNIT A1	64.4 m ²
TOWNHOUSE DOUBLE STOREY UNIT A2	64.4 m ²
TOWNHOUSE TRIPLE STOREY UNIT B1	62.1 m ²
TOWNHOUSE TRIPLE STOREY UNIT B2	62.1 m ²

ERVEN TO ACCOMODATE MULTIPLE TYPES FOR HOME OWNERS LATER SELECTION

Legend	
	Trees to be preserved

