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**ENVIRONMENTAL IMPACT ASSESSMENT
DRAFT BASIC ASSESSMENT REPORT**

for

**POROPOSED CHANGE OF LANDUSE AND CLEARANCE OF INDIGENOUS
VEGETATION**

on

**PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF
KLERKSDORP 424-IP, CITY OF MATLOSANA, NORTH WEST PROVINCE**

(Site coordinates 26°52'03.34"S, 27°37'27.12"E)

SG 21-digit code: T0IP0000000042400603 and T0IP0000000042400604

GN.R. 327, 4 December 2014	27 – The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.
GN.R. 327, 4 December 2014	28(ii) – Residential, mixed, retail, commercial, industrial or institutional development where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development will occur outside an urban area, and where the total land to be developed is bigger than 1 hectare.

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for

LETLOWA LA KHUMO TRADING (PTY) LTD

EXECUTIVE SUMMARY

The EIA BAR for proposed change of landuse and clearance of indigenous vegetation on Portion 603 and Part of Portion 604 of Townlands of Klerksdorp, City of Matlosana deals with an evaluation of the site in both its regional and site specific context.

Aspects investigated include natural (geology, soil, topography, hydrology, climate & microclimate, vegetation, wildlife), physical (location, access, traffic, infrastructure, landuse, safety & security, legal, social, economic, heritage) and sensorial (visual, spirit, smell, sound) characteristics, ecological and environmental processes, environmental policies and the legislative framework, evaluation of the proposed project, as well as public participation.

The environmental impact assessment deals with the following aspects: conservation status, site opportunities and constraints, ecological sensitivity, site development potential, community involvement, formulation of environmental impacts, the significance of impacts, and the mitigation of impacts.

Recommendations include an Environmental Impact Statement, Traffic Impact Assessment, finalization of the layout plans, and an Environmental Management Programme (EMPr).

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1 INTRODUCTION

1.1 Purpose of report

Application for Authorisation for an Environmental Impact Assessment (EIA) Basic Assessment Report (BAR) for the proposed change of landuse from Agriculture to Mixed Use and clearance of indigenous vegetation larger than 1 hectare on Portion 603 and Part of Portion 604 of of the farm Townlands of Klerksdorp 424-IP, City of Matlosana. ecologic AFRIKA was appointed as Environmental Assessment Practitioner (EAP) (Annexure A) for the EIA BAR study and an Application for Authorisation is submitted to North West Province Department of Economic Development, Environment, Conservation & Tourism (DEDECT) with this EIA BAR.

1.2 The property (Drawing 1 and 2)

Portion 603 and Part of Portion 604 is located along and north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp. (coordinates 26°52'03.34"S; 26°37'27.12"E). The properties measure 17,1668ha.

1.3 The project (Drawing 4)

The proposed development will consist of Residential 2 development and Special (taxi rank) on Portion 603 (indicated as Portion A), and Business 1 development on Part of Portion 604 (indicated as Portion B). Only one alternative site has been considered, based upon the purchase of the property specifically for this use.

1.4 Terms of reference

Ecologic Afrika has been appointed for the Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPr) for the proposed development.

This report is concerned with the environmental impact assessment and, as such, input from the landowners, consultants/specialists and authorities have been and will be obtained and integrated into this report.

The activities applied for is listed in Government Notice **327** dated 07 April 2017:

- **Listing 1, Activity 27** – the clearance of an area of 1 hectare or more, but less than 20 hectares, of indigenous vegetation.
- **Listing 1, Activity 28(ii)** – retail, commercial and industrial developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development will

occur outside an urban area, where the total land to be developed is bigger than 1 hectare.

1.5 Methodology

This EIA BAR consists of the following steps:

Site evaluation (natural, physical, sensory)
Legal procedures and legislation (national, provincial, local)
Proposed project evaluation (need & desirability, alternatives, phasing)
Interested & Affected Parties (IAPs) involvement
Environmental impact assessment and mitigation
Environmental impact statement
Environmental Management Programme (EMPr)

2. SITE EVALUATION

2.1 Regional context

The regional context represents a broader overview of the area in which the site is located, in order to understand its function and purpose relating to other facilities and activities in the area.

2.1.1 Natural environment

The site is located on a fairly flat plain along the N12 freeway between the Rio casino and the Shell ultra-city in the west of Klerksdorp. Vegetation in the area is classified as Vaal-Vet Sandy Grassland. Scattered tree species consist primarily of *Vachellia karoo* and *Searsia lancea*. Dominant grass species consist of *Anthepora pubescens*, *Aristida congesta*, *Chloris virgata*, *Cymbopogon caesius* and *Cynodon dactylon*. Geology is mainly underlain by volcanic and sedimentary rocks of the Platberg Group, Ventersdorp Supergroup which contain clastic and chemical sediments as well as felsic to mafic volcanic rock. The climate consists of warm summers and dry winters, with severe frost in winter, and typically with summer afternoon thunderstorms and average rainfall of 530mm annually.

2.1.2 Physical environment

The area is developed and disturbed. Residential, commercial and light industrial development (Meiringspark, Uraniaville) along both north and south of the N12 freeway in the west of Klerksdorp. The N12 freeway runs along the southern boundary of Portion 604, with the Rio casino and Shell ultra-city on either side of the site. Residential development occurs north of the site, and commercial and light industrial development south of the site.

2.1.3 Sensory environment

The character of the area is urban and disturbed, with residential, commercial and light industrial development negating any natural character of the area.

2.2 Natural characteristics (see Dwg 2, Fig 1)

These characteristics are more site specific and deals with the site and its immediate surroundings. These characteristics were also investigated in more detail pertaining to the site and the proposed development thereof.

2.2.1 Geology & geotechnical (see Appendix D3)

Site is underlain by amygdaloidal lavas of the Rietgat Formation, Platberg Group and consist of mostly greenish-grey amygdaloidal andesite to dacite with some interbedded shale, tuff, greywacke and conglomerate. Part of the site was

previously used as a borrow pit and later backfilled and converted to a drive-in theatre, and subsequently abandoned

2.2.2 Soils

Soils appear to be residual soil derived from the in-situ decomposition of the parent rock that has resulted in the formation of fine-grained, clay rich residual soils.

2.2.3 Topography

The site is located on a fairly flat plain. The site slopes northwards at an average slope of 1%. The site elevation is about 1327m above mean sea level.

2.2.4 Hydrology

The average rainfall in the area is 530mm during November to March. The site slopes to the north, with stormwater runoff in the form of sheetwash. No groundwater seepage was detected and no groundwater is anticipated in the near surface ground horizons.

2.2.5 Climate & microclimate

The climate of the area is characterised by warm summers and cold winters, with summer rainfall and dry winters and severe frost in winter. Monthly maximum temperature is 30°C in summer and -3°C in winter. Average rainfall is 530mm per annum. The microclimate of the site is not affected by the topography of the site.

2.2.6 Vegetation

The site is classified as Vaal-Vet Sandy Grassland. Scattered tree species consist primarily of *Vachellia karoo* and *Searsia lancea*. Dominant grass species consist of *Anthepora pubescens*, *Aristida congesta*, *Chloris virgata*, *Cymbopogon caesius* and *Cynodon dactylon*. Part of the site is severely disturbed by an old borrow pit, which was later backfilled and converted to a drive-in theatre. Much dumping of rubble and general littering also occur on the site.

2.2.7 Wildlife

No mammals have been observed on site, although small mammals, reptiles, amphibians and insects may occur. Some birdlife have been observed. The following species have been identified on site: hadeda, doves, widows, bishops and sparrows. No Red Data species have been identified for the site, due to the disturbed nature of the site, the close proximity to development, and lack of suitable habitat.

2.3 Physical characteristics (see Fig 1 and Dwg 2)

These characteristics represent all manmade intrusions on and/or manipulations of the site and the surrounding area.

2.3.1 Location & access (see Appendix D1 and Drawing 1)

The property is located along and north of the N12 freeway, between the Rio casino and Shell ultra-city in the west of Klerksdorp (coordinates 26°52'03.34"S; 26°37'27.12"E). Access is from the existing signalled intersection of the N12 freeway and Benji Oliphant Road to Uraniaville, which will be upgraded in future, as well as Scheepers Street north of the site, and Jan Parlement Street east of the site. The properties measure 17,1668ha.

2.3.2 Traffic (see Appendix D1)

Access to the site has already been discussed under Item 2.3.1 above. A road network will be constructed linking the existing Jan Parlement and Scheepers Streets with internal collector roads and access to the N12 freeway.

2.3.3 Infrastructure (see Appendix D1 and D2)

Water will be supplied by City of Matlosana. Sewerage disposal will be by means of existing City of Matlosana network. Stormwater disposal will be into existing City of Matlosana network. Waste disposal will also be by city of Matlosana. Electricity will be provided by City of Matlosana.

2.3.4 Landuse (see Dwg 2)

The current landuse on the property consists of disturbed veld, partly previously used for a drive-in theatre. Dumping and littering have occurred on the site. The zoning is currently Agriculture. Adjacent landuses consist of The Rio casino west of the site, Meiringspark residential township north of the site, Shell ultra-city east of the site, and Uraniaville light industrial area south of the N12 freeway and the site.

2.3.5 Safety & security

Safety in the area is marginal, as is the general state in the country, especially in the more rural areas. Individual stands will be fenced/walled in, with controlled access.

2.3.6 Legal

No legal constraints have been established for the site. Internal street network to provide access to all stands will form part of the proposed development.

2.3.7 Social

The social profile of the area is primarily middle income, residential, with commercial and light industrial facilities creating employment opportunities.

2.3.8 Economic

Economic activity in the area consists of residential, commercial, and light industrial development, including the adjacent Rio casino and Shell ultra-city. Access to the site is from the N12 freeway, Jan Parlement, and Scheepers Street.

2.3.9 Heritage

No signs of historical significance have been found on the site, due to severe disturbance of the site.

2.4 Sensory characteristics

These characteristics influence the senses (sight, sound, touch, taste) and may be subjective, based upon perceptions, conditioning and personal preferences.

2.4.1 Visual

The visual quality of the site is primarily urban, with existing casino, filling station, residential 1 and 2 development and other commercial and light industrial development around the site. Visual quality of the surrounding area is disturbed urban (residential, commercial, light industrial, dumping, littering) around the site. Views from the site are limited due to flat topography. Visibility to the site is good, especially from the N12 freeway towards the proposed business development on Part of Portion 604.

2.4.2 Spirit & site atmosphere

The character of the site is primarily urban and busy, with dumping and littering detracting somewhat of this experience.

2.4.3 Smell

Odours emanating from the area are limited.

2.4.4 Sound

Noise is audible from especially traffic on the N12 freeway.

2.5 Ecological & environmental processes

These processes represent site and surrounding area characteristics (natural, physical, sensory) combining/interacting to form substantial causes and affects relating to the site.

2.5.1 Biodiversity (see Dwg 3)

Biodiversity represents the variety of plant (trees, shrubs, groundcovers, grasses, aquatics, succulents) and animal (mammals, birds, reptiles, amphibians, fish, insects) species that occur or may occur in the area. The biodiversity/environmental sensitivity is low, due to development and disturbance, and limited natural vegetation.

Although the DFFE screening indicates Very High terrestrial biodiversity sensitivity, the entire site is disturbed (old borrow pit and later drive-in theatre) and surrounded by development (Meiringspark residential township north, Shell ultra-city east, N12 freeway and Uraniaville light industrial township south, and Rio casino west). The biodiversity classification refers to a Critical Biodiversity 2 Area, which cannot be justified due to disturbance of the site.

2.5.2 Sustainability

The agricultural potential of the site is deemed low. The terrestrial biodiversity is deemed very high, although the entire site is disturbed and surrounded by development.

2.5.3 Habitats

Habitats are limited and consist primarily of landscaped gardens around the site. The site itself has been partially disturbed.

2.5.4 Corridors

Corridors for the movement of wildlife are not present on the site.

2.5.5 Pollution

Pollution on the site and surrounding area is average. Sources of pollution in the area consist of traffic noise, dumping and littering, and limited odours from traffic emissions and veld fires. None of these has, however, a direct or detrimental impact on the proposed development of the site.

3. ENVIRONMENTAL POLICIES & LEGISLATIVE FRAMEWORK

Environmental policies guide development in specific areas, whereas the legislative framework governs environmental controls relating to development.

3.1 National Government policies & legislation

3.1.1 Constitution of South Africa

The Constitution (Act 200 of 1993) gives every person the right to an environment that is not harmful to their health and wellbeing. Everyone, thus, has the right to have the environment protected for present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

3.1.2 Spatial Planning and Land Use Management Act (SPLUMA)

The Spatial Planning and Land Use Management Act (Act 16 of 2013) provide a framework for spatial planning and land use management, specify the relationship between spatial planning and other kinds of planning, provide for the inclusive, developmental, equitable, and efficient spatial planning, provide a framework for policies, principles, norms and standards for spatial planning and development, provide a framework for monitoring, coordination and review of spatial planning and land use management, address past spatial and regulatory imbalances, promote greater consistency and uniformity in the application procedures and decision-making by authorities, provide for the establishment, functions and operations of Municipal Planning Tribunals, and provide for the facilitation and enforcement of land use and development measures.

3.1.3 Environmental Conservation Act (ECA)

The Environmental Conservation Act (Act 73 of 1989) requires that likely environmental effects of activities be taken into consideration before decisions in this regard are taken. The objective of such an assessment is to promote sustainable development towards achieving and maintaining an environment that is not harmful to people's health or wellbeing. Sections 21, 22 and 26 of the Act strive to integrate environmental impact management with development activities with the aim to ensure more responsible and environmentally sensitive development.

Buffer zones, although not officially gazetted, for industries, sewage treatment works, landfill sites and mine dumps have been formulated to control development adjacent to the said activities. Criteria against which development applications in close proximity to these listed land uses will be evaluated is

formulated in the policy document *Information layers and buffer zones for industries, sewage treatment plants, landfill sites and mine dumps* (DACEL 2002).

3.1.4 National Water Act (NWA)

The National Water Act (Act 36 of 1998) requires that any water resource, along with the associated natural environment be protected from development that could potentially significantly alter their natural structure and function. Objectives of the Act include the sustainable use of water for the benefit of all users, the protection of the quality of water resources, and the need for integrated management of all aspects of water resources.

3.1.5 National Environmental Management Act (NEMA)

The National Environmental Management Act (Act 107 of 1998) seeks to provide for cooperative environmental governance by establishing principles for decision-making on matters affecting the environment. The Act, furthermore, includes that environmental management must place people and their needs at the forefront of its concern, and to serve their physical, psychological, developmental, cultural and social interests equitably.

3.1.6 National Heritage Resources Act

The National Heritage Resources Act (Act 25 of 1999) aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy for future generations. The national estate may include places, buildings, structures and equipment of cultural significance; landscapes and natural features of cultural significance; archaeological and palaeontological sites; graves and burial grounds.

3.2 Provincial Government policies & legislation

3.2.1 Urban Edge

The proposed development falls inside the Urban Edge.

3.2.2 Buffer Zones

Buffer zones are defined as protection strips between different types of development (ie airports, sewage plants, power plants, mining). No buffer zones are applicable to the site.

3.2.3 Ridges policy

The ridges policy, in general, provides for the protection of ridges due to its prominence, sensitivity, steeper slopes, microclimate variation, and landscape value. No ridges are present on or close to the proposed site.

3.2.4 Red Data species

No Red Data species could be established on the site due to the disturbed nature of the site.

3.2.5 Agricultural Potential

The agricultural potential of the area is deemed low.

3.3 Local Authority policies & legislation

3.3.1 City of Matlosana Draft IDP 2022-23

The area is earmarked for Development, and is adjacent to the N12 freeway and in close proximity to light industrial/commercial development south and around the site, and residential development north of the site.

4. PROPOSED PROJECT EVALUATION

4.1 Need & desirability

The need for the proposed development is based on increased demand for residential development, opportunity for a small shopping centre with taxi rank, current and future growth trends anticipated for the area, combined with investment potential, and availability of land identified by the Applicant.

The desirability of the proposed development can be defined as the provision of housing, convenient shopping facility in the area, close proximity to existing adjacent developments (residential, commercial, light industrial), and the compatibility of the proposed development with other development in the area.

4.2 Alternative sites (see Dwg 4)

Only one site alternative has been evaluated, based upon ownership, location, and specific needs of the Applicant.

This Alternative consists of the development of Residential 2 stands adjacent to the existing Meiringspark residential township to be sold off to developers, as well as a small shopping centre with taxi rank along the N12 freeway and between the existing Rio casino and the filling station.

The proposed development will consist of the development of the whole site, with residential and commercial components, and associated infrastructure/services (roads, parking, water, sewage, electricity, stormwater, waste).

4.3 Alternative uses and technology

Alternative uses within the proposed development that have been considered consist of Residential 1 (individual stands) versus higher density Residential 2 development, and different layouts and combinations of the shopping centre and taxi rank.

Alternative technology will consist of solar panels and rainwater harvesting in lieu of only conventional electricity and municipal water.

The no-go option represents the continued use of the site for dumping, footpaths, vagrant shelter, potential illegal occupation, and derelict and disturbed abandoned drive-in theatre, with no economic benefit.

4.4 Development proposal

The proposed development (see Dwg 4) represents an environmentally integrated layout based on the evaluation and interpretation of existing site

resources, needs and tendencies, layout principles and engineering considerations. The proposed development will consist of Residential 2 stands adjacent to the existing Meiringspark residential township (to be sold off to developers), as well as a small shopping centre with taxi rank along the N12 freeway and between the existing Rio casino and the filling station, with associated infrastructure/services (roads, parking, water, sewage, electricity, stormwater, waste).

4.5 Phasing

The proposed development will consist of 2 phases. Phase one will be the development of shopping centre and taxi rank, and phase 2 will be the development of the remainder of the site (residential). The duration of the implementation of the proposed development is anticipated to be in the order of 10 years, although an operational phase forms part of the development.

5. PUBLIC PARTICIPATION

5.1 Interested & affected parties (see Appendix B1)

Interested & Affected Parties (IAPs) were notified as per guidelines prescribed in the National Environmental Management Act (NEMA), Act 107 of 1998. Adjacent landowners' information was obtained from the Applicant, Deeds office and other enquiries. Ward Councilor and Local Authority information were obtained from City of Matlosana Local Municipality. No other IAPs could be established.

5.2 Legal procedures (see Appendix B1 to B5)

IAPs were notified by registered mail and e-mail on 10 November 2022 (see Appendix B1), with a 30 day period to register as IAPs. The same advertisement was erected on site (see Appendix B2) and published in the Klerksdorp Rekord. This registration period expired on 10 December 2022. No parties registered as IAP (see Annexure B4).

5.3 Information transfer

No IAPs registered. A copy of the Draft EIA BAR was submitted to City of Matlosana simultaneous with this submission to DEDECT. Feedback/comments on the Draft EIA BAR will be included in the Final BAR.

5.4 Significance of key issues

The significance of key issues were determined by the following methodology:

- Environmental standards
- Literature search of available relevant information
- Site evaluation and sensitivity analysis
- Specialist input
- Level of public concern
- Mitigation potential to reduce severity of impacts
- Professional experience and training
- Internal discussions (brainstorming, nominal group technique, workshops)

5.5 Key issues identified

- Use and rehabilitation of disturbed site
- Access and traffic
- Compatibility with adjacent development
- Water, sewer, stormwater and electrical infrastructure
- Layout of proposed buildings (Residential 2 stands, shopping, and taxi rank)

The site is located within a developed area, but is derelict with dumping and littering taking place. The old borrow pit on part of the site was converted to a drive-in theatre, which was later abandoned.

Existing traffic access and safety is currently investigated. The Traffic Impact Study will be presented as part of the Final BAR.

Compatibility with adjacent developments indicated residential and commercial development as appropriate for the site.

Infrastructure (water, sewer, stormwater, electricity, waste) have been investigated. All services will be provided by City of Matlosana (see Appendix D1 and D2).

Layout of the proposed buildings will be finalized by prospective developers of the residential component and current design development around the shopping and taxi components. These layouts will be submitted to City of Matlosana (first Site Development Plans, and then building plans) for approval prior to construction.

6. ENVIRONMENTAL IMPACT ASSESSMENT

6.1 Conservation status

The conservation status of the site is deemed average to low, due to disturbance of the site and the surrounding area, as well as existing development in the area. The visibility of the site from the N12 is good.

6.2 Site opportunities

Site opportunities are those site characteristics presenting a positive contribution/impact towards the development of the site, from both a development and conservation perspective.

- Low agricultural potential.
- Development site disturbed.
- Developable flat slopes.
- Groundwater table deep.
- Access and exposure to N12.
- Expansion of development in the area.
- Proximity to Meiringspark and Uraniaville area.
- Support from City of Matlosana.
- Compatibility with existing and adjacent landuses.

6.3 Site constraints

Site constraints are those site characteristics presenting a neutral to negative impact, thus presenting a challenge towards its meaningful integration into the development of the site. These constraints may be mitigated to some extent, may be converted into an asset/positive impact, or may have to be accommodated as a restrictive or negative impact on the development.

- Traffic and access
- Geotechnical precautions during construction.
- Upgrading of municipal services.
- Financial investment required.

6.4 Ecological sensitivity (see Dwg 3 and Appendix E)

The ecological/environmental sensitivity of the site is deemed low, primarily due to disturbance of site and surrounding development.

Although the DFFE screening indicates Very High terrestrial biodiversity sensitivity, the entire site is disturbed (old borrow pit and later drive-in theatre) and surrounded by development (Meiringspark residential township north, Shell ultra-city east, N12 freeway and Uraniaville light industrial township south, and

Rio casino west). The biodiversity classification refers to a Critical Biodiversity 2 Area, which cannot be justified due to disturbance of the site.

6.5 Community involvement

Community involvement has been extensive, as has been presented under Item 5 in this report. All legal advertising and notifications have been met and exceeded. No IAPs registered.

6.6 Development potential

The site development potential represents the capacity of the site to accommodate the proposed development in an environmentally sensitive and responsible way.

The development potential of the site is considered as good, based upon the above opportunities and constraints, compatibility with other development in the area, low ecological sensitivity, and community involvement (low conservation status, developable slopes, the proximity to existing development, good access, and availability of the land).

6.7 Development alternatives

Only one alternative site has been considered, based upon ownership, locality and Applicant's specific needs.

The no-go option represents the continued use of the site for dumping, footpaths, vagrant shelter, potential illegal occupation, and derelict and disturbed abandoned drive-in theatre, with no economic benefit.

6.8 Environmental impacts

6.8.1 Methodology for assessing environmental issues

The significance of impacts will be determined by the following methodology:

- Environmental standards
- Literature search of available relevant information
- Site evaluation and sensitivity analysis
- Specialist input
- Level of public concern
- Mitigation potential to reduce severity of impacts
- Professional experience and training
- Internal discussions (brainstorming, nominal group technique, workshops)

6.8.2 Environmental impact

This EIA report evaluated all the available and relevant information, combined with the site evaluation (opportunities and constraints), environmental policies and legislative framework, interested & affected parties involvement, and assessment of the proposed development on the site. Environmental impacts and mitigation measures are presented under Item 6.9.2 in this report.

6.8.3 Environmental impact summary

A summary of the environmental impacts is presented for ease of reference. This summary is extracted from the Environmental Impacts and Mitigation presented under Item 6.9.2 in this report, and is based upon the following considerations:

- Geographical considerations
 - flat developable slope
 - geotechnical precautions
 - backfill with suitable compacted material
 - good access from N12
 - good visibility from N12
 - environmental awareness during construction and operations
 - stormwater management during construction and operations
- Physical considerations
 - geotechnical precautions
 - developable, flat slope for development
 - compatibility with adjacent landuses
 - visibility to the site good
 - good access to the development
 - good exposure of the development
 - construction camp to be neat and adequate
 - health and safety guidelines and precautions to be adhered to during construction and operations
 - rehabilitation of construction site, upon completion of construction
- Biological considerations
 - no Red Data wildlife found on site
 - no Red Data vegetation found on site
 - low agricultural potential of the site
- Social considerations
 - employment opportunities
 - IAP liaison comprehensive
- Economic considerations
 - economic upliftment

- Local Authority support and approval of the development
 - investment opportunities
 - economically feasible development
 - development in area
 - waste disposal during construction and operations
 - recycling during construction and operations
- Heritage considerations
 - no elements of historic architecture, graves, or artefacts
 - if any elements of heritage importance found, notify ELO/ECO and Authorities, stop construction work in the area, and investigate
 - Cultural considerations
 - no influence/impact on local culture

6.9 Mitigation

6.9.1 Significance of impacts

Mitigation measures have been formulated to reduce the significance of negative impacts and to increase the significance of positive impacts on the site/environment or the proposed development, towards the optimal utilization of site resources in an environmentally sensitive manner. These measures will be presented as follows:

- Nature of impact – whether the impact is positive, neutral, or negative.
- Probability of impact – The likelihood of the impact occurring
- Duration - The lifetime of the impact
- Extent - Whether the impact is on a local, regional or national scale.
- Intensity – The severity of the impact

6.9.2 Mitigation of impacts

Possible and potential environmental impacts have been identified, and mitigation measures/recommendations to either remove environmental impact, reduce environmental impact or enhance environmental impact have been formulated and is presented in table format for ease of reference.

MITIGATION MEASURES FOR PROPOSED DEVELOPMENT ON PORTION 603 AND 604 OF TOWNSLANDS OF KLERKSDORP 424-IP

DESCRIPTION	NATURE	PROBABILITY	DURATION	EXTENT	INTENSITY	RECOMMENDATIONS
Planning and design	positive	definite	long	regional	medium	In accordance with national, provincial & local legislation & regulations.
Geology & geotechnical aspects	negative	probable	short	local	low	Geotechnical precautions: remove unsuitable fill and backfill with suitable materials.
Blasting	negative	slight	short	local	medium	If blasting is required the community within a 2km radius from the site shall be notified in advance. Blasting shall be done in accordance with the Explosives Act of 1956, at appropriate times. All buildings and structures in the area shall be inspected for damage prior to and after blasting operations, and all damage shall be repaired by the Contractor.
Hydrology - surface water drainage	negative	probable	short	local	low	Stormwater drains to be installed. Cutoff drains to be provided at excavations during construction activities..
Low agricultural potential	negative	definite	long	local	medium	Topsoil to be removed and stockpiled for later use.
Vegetation - exotic invaders	negative	definite	short	local	medium	All invasive exotic vegetation to be removed.
Vegetation - rehabilitation	negative	definite	short	local	medium	All disturbed areas should be revegetated upon completion of construction.
Wildlife - Risk of loss and damage/destruction of habitat.	negative	probable	short	local	low	No wildlife to be harvested for food. No wildlife to be caught or injured. No nesting or roosting sites to be disturbed.
Red Data species	negative	slight	medium	local	low	No rare or endangered species found on site. If specimens of unique character is encountered it should be reported.
Traffic and access	positive	definite	long	local	high	Comply with recommendations in Traffic Impact Study.

DESCRIPTION	NATURE	PROBABILITY	DURATION	EXTENT	INTENSITY	RECOMMENDATIONS
Construction camp	negative	definite	short	local	high	Location of construction camp to be clearly demarcated and to be at least 100m from river. Site facilities to include kitchen and ablution facilities. Chemical toilets shall be provided. Toilets to be serviced once per week, toilet paper to be provided at all times, and daily inspections to be done to ensure proper use and hygiene. Refuse generated shall be collected on a daily basis, placed in a suitable closed container on site, and shall be removed weekly from the site to a licensed commercial disposal facility.
						Potable water shall be sufficient for drinking, cooking, and ablutions and shall be available at all times. Pollution (dust, noise, smoke, spillage) shall be minimised according to Recommendations under POLLUTION in this document. Any pollution of ground or surface water shall be reported to both the Environmental Officer and the Dept of Water & Sanitation (DWS).
Construction camp	negative	definite	short	local	high	Cement mixing shall only be done at areas allocated by the Engineer, in consultation with the Environmental Officer. Cleaning of cement mixing and handling equipment shall only be done using proper cleaning trays. All empty containers shall be removed from the site. Any spillage must be reported to the Environmental Officer for cleanup measures. No dumping of concrete on or around the site.

DESCRIPTION	NATURE	PROBABILITY	DURATION	EXTENT	INTENSITY	RECOMMENDATIONS
Construction camp	negative	definite	short	local	high	Fuelling and servicing of vehicles shall be done off site. If fuelling on site, then dedicated bunded area for fuel tanks (to contain any spillage - size to be the capacity of the fuel tanks + 10%), and plastic lining under soil around fuelling area (where vehicles park to fuel up). In the event of a breakdown immediate steps shall be taken to prevent any spillage. If spillage occur, it shall be reported immediately to the ELO, ECO and shall be contained and cleaned up immediately.
Construction camp	negative	definite	short	local	high	Dangerous and toxic materials such as fuel, oil, paint, and herbicides shall be stored in bunded areas under lock and key in well-ventilated areas. Sufficient precautions shall be taken during handling to prevent any pollution. Any spillage shall be reported immediately to the ELO/ECO for cleanup measures. Rehabilitation of campsite upon completion of construction shall be by removal and cleanup of all plant, equipment, material, and waste. Thereafter the site shall be scarified, seeded with indigenous veld grass seed, and maintained until coverage of the area to the satisfaction of the ELO/ECO.
Health & safety	negative	definite	short	local	medium	Health & Safety practitioner to be appointed. Health & Safety plan to be formulated and implemented on site during construction. Extreme care to be exercised while working in proximity of existing live power supply.

DESCRIPTION	NATURE	PROBABILITY	DURATION	EXTENT	INTENSITY	RECOMMENDATIONS
Safety and security	negative	probable	long	local	medium	Emergency contingency plans for fire, accident and criminal activities to be formulated with SAPS, Local Authority and management agencies.
Financial constraints	negative	probable	short	local	medium	Financial constraints (Professional fees, interest) and time constraints (access, approvals, price increases) to be minimised.
Influx of labour during construction	negative	probable	short	local	medium	No labour to be hired at the entrance to the site. No loitering to be allowed outside the entrance to the construction site.
Employment opportunities	positive	probable	long	regional	medium	Employment during construction (contractors, sub-contractors, labourers) and limited employment during operational phases.
Environmental awareness	positive	probable	long	local	low	Awareness of the importance and conservation of natural vegetation in the area.
Waste disposal	negative	probable	long	local	medium	Waste disposal during construction as per recommendations under CONSTRUCTION CAMP. Waste disposal during operational phase to be handled on a weekly basis by Local Authority contractors. Recycling of oil and fluids.
Heritage	negative	definite	short	local	medium	In the event that graves or other artefacts or bones are found during excavations, all work shall stop and the ELO/ECO shall be informed.
Stormwater management	positive	definite	long	local	low	A stormwater management plan to be formulated by the engineer to facilitate effective surface stormwater control.
Compliance with legislation	positive	definite	long	local	medium	All construction to comply with NHBR, NBR and SABS standards and regulations.

DESCRIPTION	NATURE	PROBABILITY	DURATION	EXTENT	INTENSITY	RECOMMENDATIONS
Pollution	negative	probable	medium	local	medium	Veld fires/smoke to be minimized through controlled burning. Open fires to be minimized. Gaseous emissions by construction vehicles to be minimized by ensuring that vehicles and equipment/ plant are in good working order. Noise during construction to be limited to normal working hours and proper mechanical fittings. Dust during construction to be controlled by damping off/spraying of haul roads and stockpiles. Surface water to be contained by earth berms during construction. All water pollution to be reported to the Regional Office of Water Affairs. Spillage of any kind shall be contained where possible, reported immediately to ELO/ECO, and cleaned up.
Rehabilitation after construction	positive	definite	short	local	low	All disturbed areas to be rehabilitated to its former natural state upon completion of construction.
Solid waste disposal	negative	definite	long	local	low	Waste to be removed weekly to a registered dump site, either by the local Authority or a contractor to a registered dump site.
Disturbed areas	negative	definite	medium	local	high	All disturbed areas to be rehabilitated or to be integrated into the development of the site.
Environmental Management Programme (EMPr)	positive	definite	long	local	medium	EMPr to be implemented on site to regulate pre-construction, construction and post-construction phases of the development.

7 RECOMMENDATIONS

7.1 Environmental impact statement

Environmental impacts can be summarised as follows:

- Geographical impacts include upgrading of access, existing development in the area, proximity to similar developments in area, environmental awareness, and stormwater management.
- Physical impacts include geotechnical precautions, deep soil, developable slope for development, compatibility with adjacent landuses, views and visibility average to good, good exposure of the development, construction camp to be neat and adequate, health and safety guidelines and precautions, and rehabilitation of construction site.
- Biological impacts include no Red Data wildlife or vegetation found on site, and low agricultural potential of the site.
- Social impacts include employment opportunities and comprehensive IAP liaison.
- Economic impacts include economic upliftment, Local Authority approval of the development, investment opportunities, economic feasibility, development in the area, waste disposal during construction and operations, and recycling during construction and operations.
- Heritage impacts include no elements of historic architecture/graves/artefacts, if any elements of heritage importance found, notify ELO/ECO and Authorities, stop construction work in the area, and investigate.
- Cultural impacts include no influence/impact on local culture.

7.2 Traffic impact study

The traffic impact assessment (access, circulation, upgrading) is currently being conducted, and will be presented as part of the Final BAR.

7.3 Proposed Development Plans

The proposed development documentation (SDP, building/engineering plans) must be submitted to City of Matlosana for approval prior to construction.

7.4 Environmental Management Programme (EMPr)

The EMPr will be submitted in support of the Application for Environmental Impact Assessment (EIA) Authorisation for the proposed development.

8. CONCLUSION

This EIA BAR for the proposed development dealt with an overview of the site in both its regional and site specific context. Aspects investigated included natural, physical and sensorial characteristics, ecological and environmental processes, environmental policies and the legislative framework, evaluation of the proposed project, as well as public participation. The environmental impact assessment dealt with the following aspects: conservation status, site opportunities and constraints, ecological sensitivity, site development potential, community involvement, formulation of environmental impacts, the significance of impacts, and the mitigation of impacts. Recommendations include an Environmental Impact statement, Traffic Impact Study, finalisation of Proposed Development Plans, and Environmental Management Programme.

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APPENDICES

- A EAP information
- B Public participation
- B1 Adjacent Landowner Notifications
- B2 Site Advertisement
- B3 Newspaper advertisement
- B4 IAP Register
- B5 IAP comments and responses
- C State Department contact details
- D Specialist reports
- D1 Civil engineering services report
- D2 Electrical engineering services report
- D3 Geotechnical report
- E DFFE screening
- F Other reports

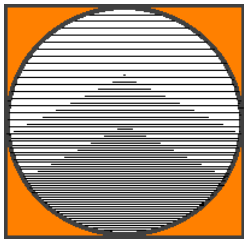
FIGURES

- 1 Site photographs

LIST OF DRAWINGS

- 1 Locality Plan
- 2 Site Plan
- 3 Environmental Sensitivity Plan
- 4 Proposed Development Plan

APPENDIX A – EAP INFORMATION



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Profile - Christiaan J (Ian) Roos

Ian Roos obtained a Bachelor of Science degree in Landscape Architecture at Texas A&M University, USA and a Masters degree in Landscape Architecture at the University of Pretoria, SA. He also obtained the National Certificates in Architectural Draughting, Civil Engineering, Turfgrass Management, and Estate Agency at Technicons, and the Management Development Programme in Project Management at Unisa. Ian is a Professional member of the SA Council for the Landscape Architectural Profession (PrLArch), the SA Council for the Architectural Profession (PrSArchT), the Environmental Assessment Practitioner's Association of SA (PrEAP). Also GBCSA (Green Building Council of SA) New Green Building accredited professional.

Personal involvement in projects, since 1977, includes:

- Environmental planning and impact studies – Bokong Nature Reserve, Delareyville X9 mixed use, Ngwenya River Estate, Tosca mixed use, Mvunisi lodge, The Downs Nature Reserve, Isago@N12 mixed use, Soshanguve mixed use, Loftus Park mixed use, various EIA Scoping and Basic Assessments in Gauteng, North West, Limpopo, KZN, Free State, Mpumalanga. Also S24G reports, environmental auditing and compliance monitoring, and Water Use License Applications...
- Site master planning - Letubi Valley Golf Eco Estate in Mpumalanga, Bondev Park Residential Estate in Centurion, Tsehlanyane National Park in Lesotho, Musina mixed use development ...
- Ecotourism and resort planning - Berg & Dal and Roodewal camps in Kruger Park, Fika Patso Dam tourism potential study, Liphofung Cave Cultural Heritage Centre in Lesotho, Fancourt Golf Resort, Brisbane hunting lodge in the Kalahari ...
- Landscape architecture – Hedgehog's Nest Country Lodge, Eldopark and Eldoglen residential estates, Fancourt golf resort & estate, Dainfern golf estate gatehouse and club complex, Midstream residential estate parks and streetscape, Midstream college, Prestige college, National University of Lesotho Library Plaza, Emdeni Library, Uncle Tom's Hall in Soweto, and various residential projects...
- Golf course and sports architecture - Dainfern Residential Golf Estate, QwaQwa Golf Course, Golfpark Bad Munder in Germany, Crown Colony Golf Estate in Texas, USA, Komatipoort golf course, Family Golf Centre, Alexandra and various Soweto soccer facilities, various tennis/basketball/netball/squash courts, Emndeni and Eldoglen sports halls ...
- Community involvement – Social facilitation, community participation, emerging contractor screening, training and economic empowerment at Alexandra soccer complex, various Lesotho tourism development projects, and various Soweto sports development projects ...
- Project Management – Midstream Estate landscaping, Moletsane Sports Complex in Soweto, Alexandra Square 1 Soccer Complex, Family Golf Centre, Arnoldi residence, Roos residence, Rustenburg lodge, Wolwekloof Manor estate...
- Architecture - Eldopark gatehouse, Mattanu game ranch lodge, Eldoglen sports facilities and clubhouse, Kriek residence on game ranch, De Wet residence in Clovelly, Moletsane sports tavern, Brisbane hunting/safari lodge, Rustenburg lodge on game farm, Musina hotel/wholesale/retail/filling station/truck stop, Lead Wood Inn restaurant/conference/venue/accommodation, Miracle Park indoor sports, Wolwekloof Manor manager residence...
- Infrastructure – Liphofung Cave power/sewer/water, Alexandra and Soweto soccer fields, Hillbrow and Soweto tennis/basketball/netball courts, Emndeni sports hall ...

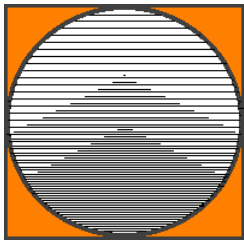
Ian is married, with two daughters. Personal interests include the outdoor environment, ecological restoration, sports and recreation, arts and crafts, wildlife and conservation, and innovative evangelism...

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Gauteng: P Joubert, 15 Marikana Street, WIERDA PARK X2, Centurion 0157 • tel +27(0)72 821 4982
e-mail: ecologic@mweb.co.za • pierre.joubert.larch@gmail.com • web: www.ecologicafrika.co.za

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APPENDIX B – PUBLIC PARTICIPATION

APPENDIX B1 – ADJACENT LANDOWNER NOTIFICATIONS



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10 November 2022

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Property description _____

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

Notice is hereby given that ecologic AFRIKA planning & design studio, on behalf of Letlowa La Khumo Trading (Pty) Ltd is applying to undertake an EIA Basic Assessment for proposed mixed use development and clearance of indigenous vegetation adjacent north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp. The previous notice expired prior to submission of the application.

Please study, as an Interested & Affected Party, the attached Notice, Locality Plan and Layout Plan. Further information is available from our offices.

Kind regards
ecologic AFRIKA

CJ Roos PrEAP
Cell 0836357315

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

Notice is given in terms of Regulations published in Government Notice No R.324, 325, 326, and 327, according to Chapter 5 of the National Environmental Management Act (Act 107 of 1998) of the application for an EIA Basic Assessment Authorisation, which will be submitted to North West Province's Department of Rural, Environment and Agricultural Development for the purpose of:

- Proposed mixed use development and clearance of indigenous vegetation (Listing notice 1, Activity 27 – clearance of an area of 1 hectares or more of indigenous vegetation, and Listing notice 1, Activity 28i – development inside an urban area bigger than 5ha on land previously used for Agriculture).
- Property description: Portion 603 and Part of Portion 604 of Townlands of Klerksdorp 424-IP, Matlosana
- Property location: Along and north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp.
- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Contact person: CJ Roos
Cell 0836357315
- Date of Notice: 10 November 2022

In order to ensure that you are identified as an interested and/or affected party please submit your name, association, contact information and interest in the matter to the contact person given above within 30 days of the date of this publication (by 10 December 2022 at 12h00 noon).

PTN OF TOWNSLANDS OF KLERKSDORP 424-IP

LOCALITY

Legend

- Feature 1
- Freemanville
- 🏨 Rio Hotel Casino and Convention Resort
- 🛢️ Shell - Klerksdorp

Meiringspark suburb

Scheeper St

THE SITE

old drive-in theatre

Shell ultra-city

Open veld

Rio Casino

Main Reef Rd

Residential

Uraniaville

Freemanville

Greyhound St

Benji Oliphant Rd

Newton Rd

Meteor Rd

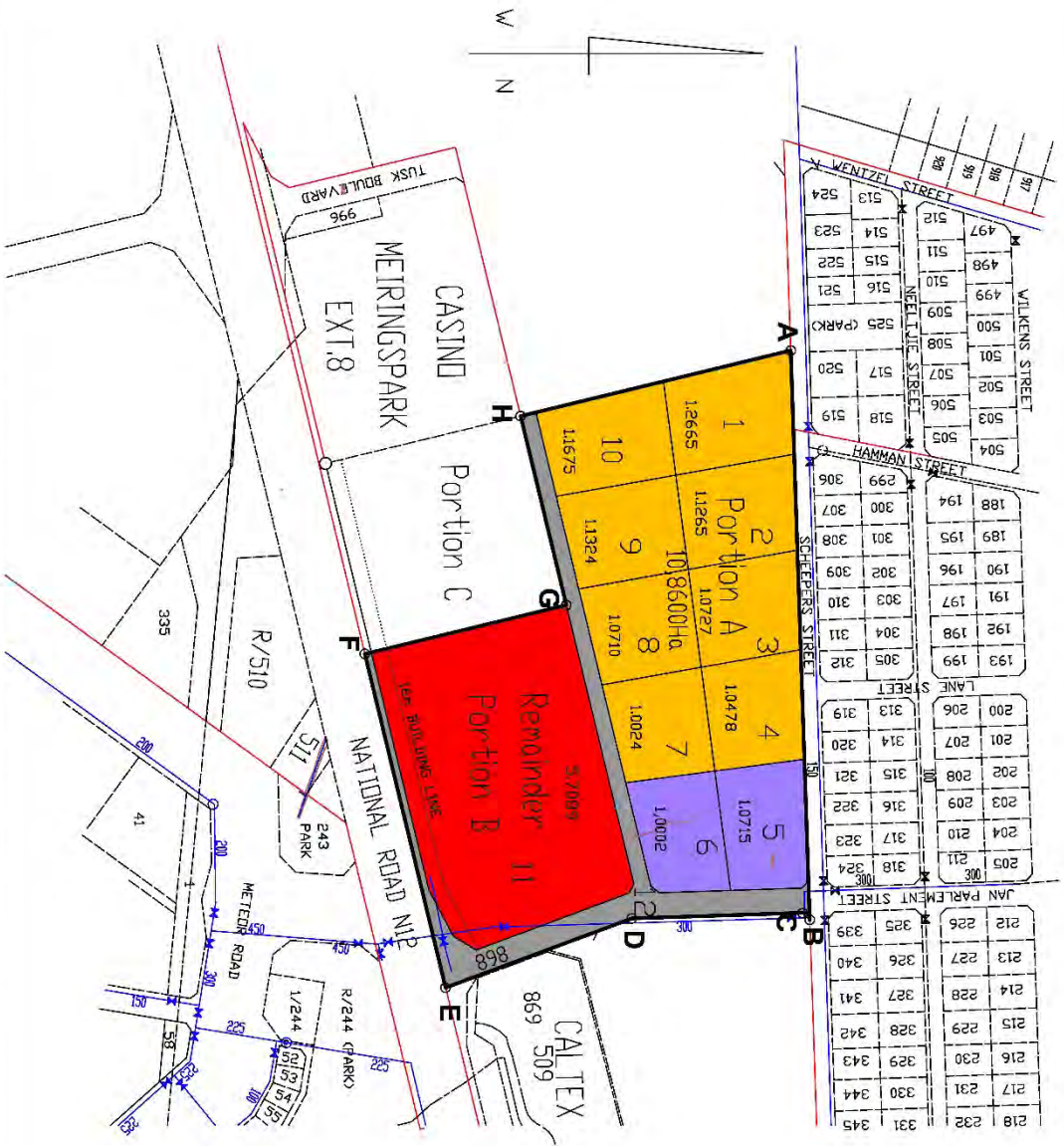
Google Earth

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500 m



PROPOSED MEIRINGSPARK EXTENSION



PROPOSED TOWNSHIP ON A PORTION OF THE FARM TOWNLANDS OF KLERKSDORP NO. 424-IP REPRESENTED BY FIGURE ABCDEF GH

LAND USE	NUMBER	AREA	%	ERF NO.
Residential 2	8	8,8890 Ha	48,20	1-4
Special 1	1	6,2075 Ha	32,27	7-10
Special 2	2	2,0718 Ha	10,77	5, 6
Public Road	1	2,0899 Ha	10,78	12
TOTAL	12	18,2592 Ha	100	

Minimum size of Erf: 1/400 g. van Erwe = 0,0142 Ha
 Ruling size of Erf: 1/200 g. van Erwe = 0,0284 Ha
 Total length of Streets / Talle lengte van Straat = 68 m
 Kombaanwaaie / Combin. Aanwaaie = 0,5 m

KONTIGERE
 Kontigere is in ooreenstemming met die gemeenskap se meerjare plan van ontwikkeling en
 groeiovername. JOZE MULLER

Consentenoem Artikel 18(4) van die Wetvoorn (NMR 54 van 1996) soos aangepas deur
 Artikel 6 van die Wetvoorn (NMR 75 van 1979) janselver as klanke en die
 P1 Reguleer

CONTIGUOUS - in ooreenstemming met die standaard luid down by town planning and building
 regulasies. JOZE MULLER

DITWEGEBRENG: GETEKENSWAAM

DATUM: 2014

Scale: 1:4 500

LOCALITY PLAN K0904-DF2



Waylyn Town & Regional Planners
 P.O. Box 20508
 Noordburg
 2522
 Tel / Faks : (018) 293 1536
 E-mail : potchetstroom@weilyn.co.za



Ian Roos

From: Ian Roos <ecologic@mweb.co.za>
Sent: Thursday, 10 November 2022 07:18
To: 'trshibiti@klerksdorp.org'; 'info@peermont.com'; 'NRStat@nra.co.za'
Subject: Notice of Application for EIA Authorisation for Portion 603 and Part of Portion 604 of Townlands of Klerksdorp 424-IP
Attachments: Adj owner notify & notice.pdf; Locality & Proposed development.pdf

Please find attached the Notice for proposed development on the above properties. The previous notice expired prior to submission of the application to Province.

trshibiti: Please forward the notice to Councillor Mangesi, Ward 11

Peermont: Rio casino, adjacent to the proposed development

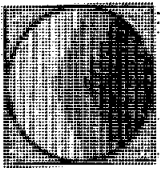
NRstat: Proposed development along the N12 west of Klerksdorp

Regards

Ian Roos

083 635 7315





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N A T U R E

INSKLA NATURE BEERVOOT
ROOFS SEI
AFRIKA EX
2620

10 November 2022

Property description EFF SIA MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

Notice is hereby given that ecologic AFRIKA planning & design studio, on behalf of Letlowa La Khumo Trading (Pty) Ltd is applying to undertake an EIA Basic Assessment for proposed mixed use development and clearance of indigenous vegetation adjacent north of the N12 freeway, between the Rto casino and Shell ultra-city west of Klerksdorp. The previous notice expired prior to submission of the application.
Please study, as an Interested & Affected Party, the attached Notice, Locality Plan and Layout Plan. Further information is available from our offices.

Kind regards
ecologic AFRIKA

CJ Roos PrEAP
Cell 0836357315

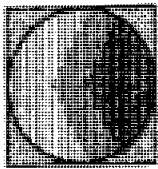
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NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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- Contact person: CJ Roos
Cell 0836357315
- Date of Notice: 10 November 2022

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CHRISTELINE BEHEERLIGENDOM

POTBLIS 2676

KLERKSDORP

2571

10 November 2022

Property description ERF 520, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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Kind regards
ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

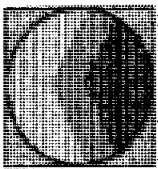
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supporting ecologicaafrica.joespei.adventures

**NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT
PROCESS**

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- Property description: Portion 603 and Part of Portion 604 of Townlands of Klerksdorp 424-IP, Matlosana
- Property location: Abng and north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp.
- Proponent: Letlowa La Khumo Trading (Pty) Ltd
ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Contact person: CJRoos
Cell 0836357315
- Date of Notice: 10 November 2022

In order to ensure that you are identified as an interested and/or affected party please submit your name, association, contact information and interest in the matter to the contact person given above within 30 days of the date of this publication (by 10 December 2022 at 12h00 noon).



ecologicafrika
in association with pierre joubert
planning & design studio

environmental studies
landscape architecture
green building architecture

011 461 1111
N A T U R E

CITY OF MATLOSANA

P.O. BOX 99

KLERKSDORP

2570

LOCAL AUTHORITY
EPE 525, MEIRINGSPARK
EPE R/244, MEIRINGSPARK

Property description

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

Notice is hereby given that ecologic AFRIKA planning & design studio, on behalf of Letlowa La Khumo Trading (Pty) Ltd is applying to undertake an EIA Basic Assessment for proposed mixed use development and clearance of indigenous vegetation adjacent north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp. The previous notice expired prior to submission of the application.

Please study, as an interested & Affected Party, the attached Notice, Locality Plan and Layout Plan. Further information is available from our offices.

Kind regards
ecologic AFRIKA

CJ ROOS PEAP
Cell 0836357315

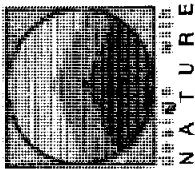
NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
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environmentally integrated and ecologically sustainable planning, design & development
W Cape: CJ Roos, PO Box 798, ROBERTSON 6705 • tel +27(0)83 635 7315 • fax +27(0)86 648 3594
Gauteng: P Joubert, 15 Marikana Street, WIERDA PARK X2, Centurion 0157 • tel +27(0)72 821 4982
e-mail: ecologis@mweb.co.za • pierre.joubert.larch@gmail.com • web: www.ecologicafrika.co.za
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planning & design studio

environmental studies
landscape architecture
green building architecture

HA SCHOLTZ
ROSBUS 30086
MATLOSANA
2575

10 November 2022

Property description ERF 306, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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Kind regards
ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

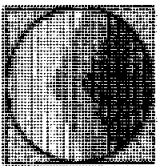
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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
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环境生态
NATURE

BT/M/M. BHIYO.....
SACHERS SR. DA.....
MEIRINGSPARK.....
257.....

10 November 2022

Property description ERF 367, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK XI0)

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ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

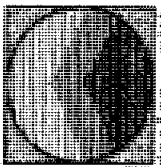
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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
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planning & design studio

environmental studies
landscape architecture
green building architecture

N A T U R E

NP/JM MALUIS
102 SAHEERS STR
MEIRINGSBARK
2571

10 November 2022

Property description ERF 308, MEIRINGSBARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSBARK XI@)

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ecologic AFRIKA

CJ Roos PEAP
Cell 0836357315

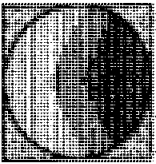
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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
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生态建筑 规划设计
N A T U R E

JE/A FISHER
100 SCHEERS STR
MEIRINGS-PARK
2571

10 November 2022

Property description EFF 309, MEIRINGS-PARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGS-PARK XI10)

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Kind regards
ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

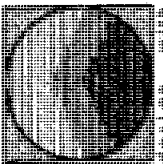
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e-mail: ecologika@mweb.co.za • pierre.joubert.larch@gmail.com • web: www.ecologicafrika.co.za
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- Property location: Along and north of the N12 freeway, between the R10 casino and Shell ultra-city west of Klerksdorp.
- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
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in association with pierre joubert
planning & design studio

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N A T U R E

M.L. MORISE 10 November 2022
P.S. SCHEERERS SAZ
MEIRINGSPARK
2571

Property description OFF 310, MEIRINGSPARK
**NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603
AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP,
MATLOSANA (MEIRINGSPARK X10)**

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ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

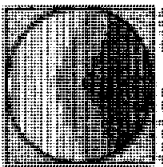
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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Contact person: CJ Roos
Cell 0836357315
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planning & design studio

environmental studies
landscape architecture
green building architecture

N A T U R E

JH/A DU PREEZ
K. LUBBE WEG 62
VALHALLA
0185

10 November 2022

Property description EFF 311, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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CJ Roos PIEAP
Cell 0836357315

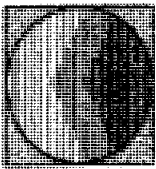
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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
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planning & design studio

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landscape architecture
green building architecture

011 083 635 7315
N A T U R E

AS VAN DER LINDE
ROOBS 3163
FREEMANVILLE
2573

10 November 2022

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Property description EFF 312, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

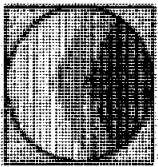
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ecologic AFRIKA

CJ Roos PEAP
Cell 0836357315

environmentally integrated and ecologically sustainable planning, design & development
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e-mail: ecologic@mweb.co.za • pierre.joubert@tch.com • web: www.ecologicafrika.co.za
supporting ecogic@mweb.co.za



ecologicaAFRIKA
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planning & design studio

environmental studies
landscape architecture
green building architecture

注册建筑师 编号: 11111

MM/MS SECTLOLLA
1. LANE ST
MEIRINGSPARK
2571

10 November 2022

Property description SEE 319, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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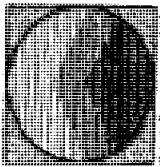
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- Property description: Portion 603 and Part of Portion 604 of Townlands of Klerksdorp 424-IP, Matlosana
- Property location: Along and north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp.
- Proponent: Letlowa La Khumo Trading (Pty) Ltd
ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Contact person: CJ Roos
Cell 0836357315
- Date of Notice: 10 November 2022

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environmentally integrated and ecologically sustainable planning, design & development
W Cape: CJ Roos, PO Box 798, ROBERTSON 6705 • tel +27(0)83 635 7315 • fax +27(0)86 648 3594
Gauteng: P Joubert, 15 Marikana Street, WIERDA PARK X2, Centurion 0157 • tel +27(0)72 821 4982
e-mail: ecologic@mweb.co.za • pierre.joubert.tsch@gmail.com • web: www.ecologicaafrika.co.za
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environmental studies
landscape architecture
green building architecture

011 461 4611
011 461 4611
N A T U R E

MS/DRE SEGIWE
90 SCHEERPS ST
MEIRINGSPARK
2571

10 November 2022

Property description: SEE 320, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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Kind regards
ecologic AFRIKA

CJ Roos PrEAP
Cell 0836357315

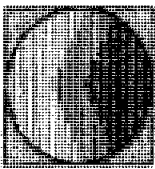
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e-mail: ecologic@inweb.co.za • pierre.joubert.lanoh@gmail.com • web: www.ecologicafrika.co.za
supporting ecologicafrika, gauteng@ecologicafrika.co.za



ecologicAFRIKA
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planning & design studio

environmental studies
landscape architecture
green building architecture

N A T U R E

ME/LM NTEU
P. SCHEEPERS ST
MEIRINGSPARK
2571

10 November 2022

Property description OFF 321, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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Kind regards
ecologic AFRIKA

CJ Roos PrEAP
Cell 0836357315

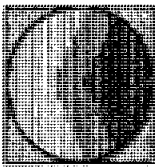
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e-mail: ecologic@mweb.co.za • pierre.joubert.larch@gmail.com • web: www.ecologicafrika.co.za
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planning & design studio

environmental studies
landscape architecture
green building architecture

N A T U R E

BM/ME.....RAPIE.....
R.G. SHEEPER.....ST.....
MEIRINGSPARK.....
2571.....

10 November 2022

Property description ERF 322, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

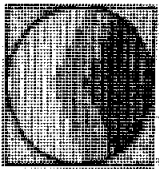
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e-mail: ecologica@mweb.co.za • pierre.joubert.lach@gmail.com • web: www.ecologicafrika.co.za
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environmental studies
landscape architecture
green building architecture

N A T U R E

MP/MK MOTLOUNG
PO BOX 10892
KLERKSDORP
2570

10 November 2022

Proerty description EPF 323, MEIRINGSPARK

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CJ Roos PREAP
Cell 0836357315

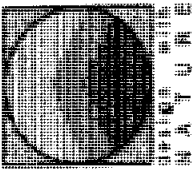
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e-mail: ecologic@nwweb.co.za • pierre.joubert@nwweb.co.za • web: www.ecologicafrika.co.za
supporting ecologicAFRIKA's green adventures

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planning & design studio

environmental studies
landscape architecture
green building architecture

RG/MY ~~LECHESA/SENDAWANE~~
~~82 SAHBERGERS ST.~~
MEIRINGS PARK
2571

10 November 2022

Property description EFF 324, MEIRINGS PARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGS PARK X10)

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Cell 0836357315

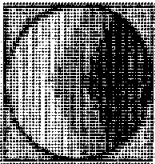
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e-mail: ecologica@mvweb.co.za • pierre.joubert.la@mvweb.co.za • web: www.ecologicafrika.co.za
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PO Box 798, ROBERTSON 6705
Tel 0836357315
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planning & design studio

environmental studies
landscape architecture
green building architecture

N A T U R E

EP/JH... KOEKENBER
1... JAN... PAREMENT... ST
MEIRINGSPARK
2571

10 November 2022

Property description EFF 339, MEIRINGSPARK

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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CJ Roos PUEAP
Cell 0836357315

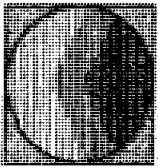
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environmental studies
landscape architecture
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注册# 14911 地址#
N A T U R E

J.B. LEKSONYANE
16. BOTHA ST
P. BENAARDSDORP
2571

10 November 2022

Pro perty description ERF 340, MEIRINGSPARK

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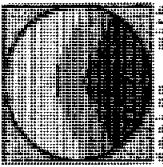
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environmental studies
landscape architecture
green building architecture

N A T U R E

MMAPHO GAS + ENERGY

P.O. BOX 3097A

RIVONIA

2128

10 November 2022

Property description: ERF 243 VIKANI/VILLE

NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

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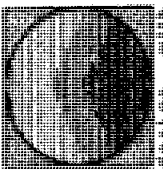
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supporting ecologicafrika@gmail.com

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in association with pierre joubert
planning & design studio

environmental studies
landscape architecture
green building architecture

生态设计
景观建筑
绿色建筑

~~SHELL SA~~

PO BOX 7469

ROGGERBEE

S.O.12

PTN 511 OF TOWNLANDS OF KLERKSDORP 424-IP
BEEF 509, URANIUMVILLE

Property description BEEF 509, URANIUMVILLE
NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK X10)

Notice is hereby given that ecologic AFRIKA planning & design studio, on behalf of Letlowa La Khumo Trading (Pty) Ltd is applying to undertake an EIA Basic Assessment for proposed mixed use development and clearance of indigenous vegetation adjacent north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp. The previous notice expired prior to submission of the application.
Please study, as an Interested & Affected Party, the attached Notice, Locality Plan and Layout Plan. Further information is available from our offices.

Kind regards
ecologic AFRIKA

CJ Roos PREAP
Cell 0836357315

environmentally integrated and ecologically sustainable planning, design & development
W Cape: CJ Roos, PO Box 798, ROBERTSON 6705 • Tel +27(0)83 635 7315 • Fax +27(0)86 648 3594
Gauteng: P Joubert, 15 Marikana Street, WIERDA PARK X2, Centurion 0157 • Tel +27(0)72 821 4982
e-mail: ecologic@mweb.co.za • pierre.joubert.arch@gmail.com • web: www.ecologicafrika.co.za
supporting ecologicafrika gaepei adventures

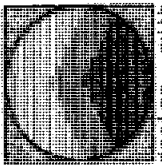
10 November 2022

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

Notice is given in terms of Regulations published in Government Notice No R.324, 325, 326, and 327, according to Chapter 5 of the National Environmental Management Act (Act 107 of 1998) of the application for an EIA Basic Assessment Authorisation, which will be submitted to North West Province's Department of Rural, Environment and Agricultural Development for the purpose of:

- Proposed mixed use development and clearance of indigenous vegetation (Listing notice 1, Activity 27 – clearance of an area of 1 hectares or more of indigenous vegetation, and Listing notice 1, Activity 28i – development inside an urban area bigger than 5ha on land previously used for Agriculture).
- Property description: Portion 603 and Part of Portion 604 of Townlands of Klerksdorp 424-IP, Matlosana
- Property location: Along and north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp.
- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Contact person: CJ Roos
- Date of Notice: 10 November 2022

In order to ensure that you are identified as an interested and/or affected party please submit your name, association, contact information and interest in the matter to the contact person given above within 30 days of the date of this publication (by 10 December 2022 at 12h00 noon).



ecologicafrika
in association with pierre joubert
planning & design studio

environmental studies
landscape architecture
green building architecture

南非自然生态
N A T U R E

GEM MILN RENSCHEMENDS
Re. BOX 1455
SAXONWORLD
2132

10 November 2022

Property description R/PTN 1 OF TOWNLANDS OF KLERKSDORP 424-IP
**NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603
AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP,
MATLOSANA (MEIRINGSPARK XI0)**

Notice is hereby given that ecologic AFRIKA planning & design studio, on behalf of Letlowa La Khumo Trading (Pty) Ltd is applying to undertake an EIA Basic Assessment for proposed mixed use development and clearance of indigenous vegetation adjacent north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp. The previous notice expired prior to submission of the application.
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Kind regards
ecologic AFRIKA

CJ Roos PrEAP
Cell 0836357315

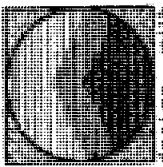
environmentally integrated and ecologically sustainable planning, design & development
W Cape: CJ Roos, PO Box 798, ROBERTSON 6705 • tel +27(0)83 635 7315 • fax +27(0)86 648 8594
Gauteng: P Joubert, 15 Markana Street, WIERDA PARK X2, Centurion 0157 • tel +27(0)72 821 4882
e-mail: ecologic@mweb.co.za • pierre.joubert.latchi@gmail.com • web: www.ecologicafrika.co.za
supporting ecologically aware people adventures

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- Proponent: Letlowa La Khumo Trading (Pty) Ltd
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
Fax 0866483594
- Contact person: CJ Roos
Cell 0836357315
- Date of Notice: 10 November 2022

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ecologicafrika

in association with pierre joubert
planning & design studio

environmental studies
landscape architecture
green building architecture

注册建筑师 执业证
N A T U R E

BASK APPEARANCE WHOLESALE
120 ARGYLE RD
DURBAN
4309

10 November 2022

Property description R/PTN 510 OF TOWNLANDS OF KLERKSDORP 424-IP
NOTICE OF PROPOSED ENVIRONMENTAL BASIC ASSESSMENT ON PORTION 603 AND PART OF PORTION 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424-IP, MATLOSANA (MEIRINGSPARK XI0)

Notice is hereby given that ecologic AFRIKA planning & design studio, on behalf of Letlowa La Khumo Trading (Pty) Ltd is applying to undertake an EIA Basic Assessment for proposed mixed use development and clearance of indigenous vegetation adjacent north of the N12 freeway, between the Rio casino and Shell ultra-city west of Klerksdorp. The previous notice expired prior to submission of the application.
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Kind regards
ecologic AFRIKA

CJ Roos PEAP
Cell 0836357315

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W Cape: CJ Roos, PO Box 798, ROBERTSON 6705 • tel +27(0)86 635 7315 • fax +27(0)86 648 3594
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NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
Tel 0836357315
- Consultant: ecologic AFRIKA planning & design studio
PO Box 798, ROBERTSON 6705
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List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
 (with an insurance option/met 'n versekeringsopsie)



Post Office

Full tracking and tracing/Volledige volg en spoor

Name and address of sender: Ecologic Afrika
 Naam en adres van afsender: Posbus 798
Robertson 6705

Enhanced National
 ShareCall
 number number
0860 111 502
 www.postoffice.co.za

No	Name and address of addressee Naam en adres van geadreseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-Kliëntafskrif
1	Masala Natuurreserwaat Posbus 539, Orkney 2620					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691494ZA CUSTOMER COPY 301028R
2	Christelhof Beheertiggaam Posbus 2676, Kloksdorp 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691503ZA CUSTOMER COPY 301028R
3	CITY OF MATLOSANA PO Box 99, Kloksdorp 2570					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691517ZA CUSTOMER COPY 301028R
4	HA Scholtz Posbus 20086, Matlosana 2575					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691525ZA CUSTOMER COPY 301028R
5	BT/MM Bhiyo Scheepersstraat 104, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691534ZA CUSTOMER COPY 301028R
6	NP/JM Molusi 102 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691548ZA CUSTOMER COPY 301028R
7	JE/A Fischer 100 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691551ZA CUSTOMER COPY 301028R
8	MI Modise 98 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691565ZA CUSTOMER COPY 301028R
9	JH/A du Preez Klubbeweg 62, Valhalla 0185					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691579ZA CUSTOMER COPY 301028R
10	AS vander Linde Posbus 3163, Freeburgville 2573					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691582ZA CUSTOMER COPY 301028R

Number of letters posted
 Getal briewe gepos 10 Total
 Totaal R R R R

Signature of client
 Handtekening van klient..... Rees

Signature of accepting officer
 Handtekening van aanneembeampte..... [Signature]

Robertson
 Date Stamp
 10-11-2022
 Folio 3
 0795
 Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof. Optional insurance of up to R200.00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000.00 is beskikbaar en is slegs binne-landse geregistreerde briewe van toepassing.

List of REGISTERED LETTERS

Lys van GEREGISTREERDE BRIEWE

(with an insurance option/met 'n versekeringsopsie)

Full tracking and tracing Volledige volg en spoor



Post Office

Enquiries Now on
ShareCall
0860 111 502
www.postoffice.co.za

Name and address of sender: Ecologic Afrika
 Naam en adres van afsender: Posbus 798
Robertson 6705

No	Name and address of addressee Naam en adres van geadreseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-Klëntafskrif
1	MM/MS Seotlolla 1 Lane St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691596ZA CUSTOMER COPY 301028R
2	MS/ODE Segwe 90 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691605ZA CUSTOMER COPY 301028R
3	ME/LM Ntshu 88 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691619ZA CUSTOMER COPY 301028R
4	BT/ME Apie 86 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691622ZA CUSTOMER COPY 301028R
5	MP/MK Motloung PO Box 10892, Klerksdorp 2570					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691636ZA CUSTOMER COPY 301028R
6	PG/MY Lechesa/Senckwane 82 Scheepers St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691640ZA CUSTOMER COPY 301028R
7	EP/JH Koekemoer 1 Jan Parlement St, Meiringspark 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691653ZA CUSTOMER COPY 301028R
8	JB Lekgonyane 16 Botha St, Diermasdorp 2571					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691667ZA CUSTOMER COPY 301028R
9	M MAPHO Gas + Energy PO Box 3094, Rivonia 2128					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691675ZA CUSTOMER COPY 301028R
10	SHELL SA PO Box 7469, Roggebaai 8012					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691684ZA CUSTOMER COPY 301028R

Number of letters posted 10 Total
 Getal briewe gepos Totaal

Signature of client [Signature]
 Handtekening van klient

Signature of accepting officer [Signature]
 Handtekening van aanneembeampte

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof. Optional insurance of up to R200.00 is available and applies to domestic registered letters only.

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Date stamp
Robertson
10-11-2022
Folio 3
6705
Datumstempel

List of REGISTERED LETTERS
Lys van GEREgistreerde BRIEWE
(with an insurance option/met 'n versekeringsopsie)



Post Office

Full tracking and tracing/Volledige volg en spoor

Name and address of sender:
 Naam en adres van afsender: Ecologic Afrika
Postbus 798
Robertson 6705

Enquiries/Navrae
 ShareCall
 number/nommer
0860 111 502
 www.postoffice.co.za

No	Name and address of addressee Naam en adres van geadresseerde	Insured amount Versekerde bedrag	Insurance fee Versekeringsgeld	Postage Posgeld	Service fee Diensgeld	Affix Track and Trace customer copy Plak Volg-en-Spoor-Kliëntafskrif
1	GEMTUN PENSIOEN FONDS PO Box 1455, Saxenburgh 2132					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691698ZA CUSTOMER COPY 301028R
2	BLACK APPEARANCE WHOLESALE 120 Argyle Rd, Durban 4309					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RC223691707ZA CUSTOMER COPY 301028R
3						
4						

REGISTERED LETTER
GEREGISTREERDE BRIEF
(with an insurance option/met 'n versekeringsopsie)



Full tracking and tracing/Volledige volg en spoor

Addressed to/Geadresseer aan
22 Twenty Two enlist
For
Ecologic Afrika
 Postcode
 Postkode

Postage paid _____ C
 Service fee/Diensgeld R _____ C
 Insurance/Versekering R _____ C
Total/Totaal R _____ C

Insured value of contents
 Versekerde waarde van inhoud R _____ C
Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502

Initial of accepting officer _____
 Paraaf van aanneembeampte _____
Date stamp
10-11-2022
Folio 3
6705
Datumstempel

The value of the contents of this letter is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof. Optional insurance up to R2 000.00 is available and applies to domestic registered letters only.
 Die waarde van die inhoud van hierdie brief is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering tot R2 000.00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing.

Affix Track and Trace customer copy
Plak Volg-en-Spoor-kliëntafskrif

Number of letters posted
 Getal briewe gepos 2
Total Totaal

R	R	R	R
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Signature of client
 Handtekening van kliënt..... [Signature]

Signature of accepting officer
 Handtekening van aanneembeampte..... [Signature]

Date stamp
Robertson
10-11-2022
Folio 3
6705
Datumstempel

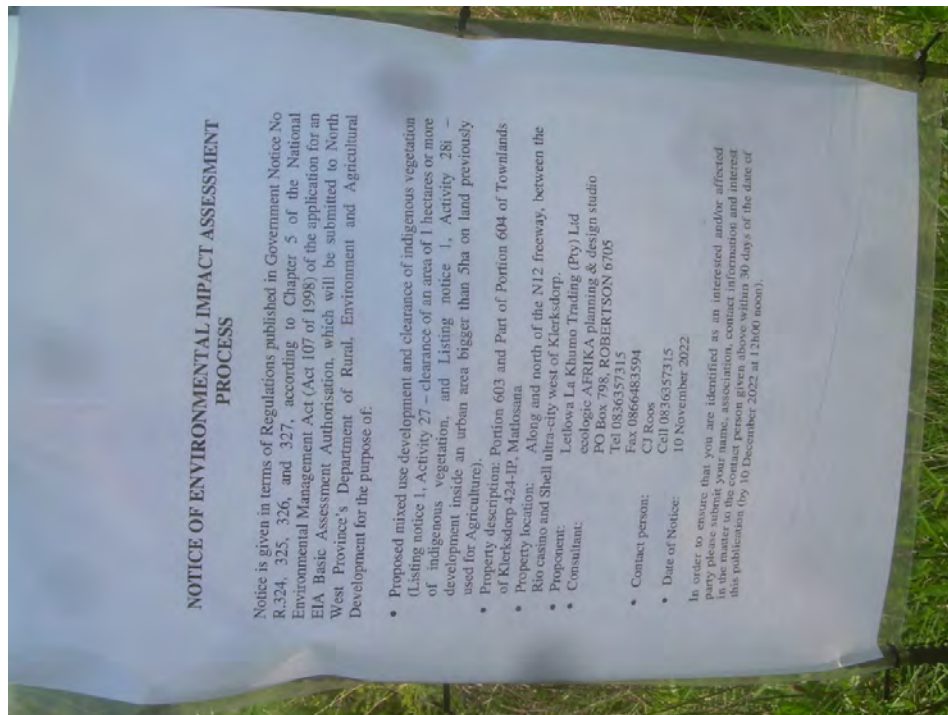
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APPENDIX B2 – SITE ADVERTISEMENT



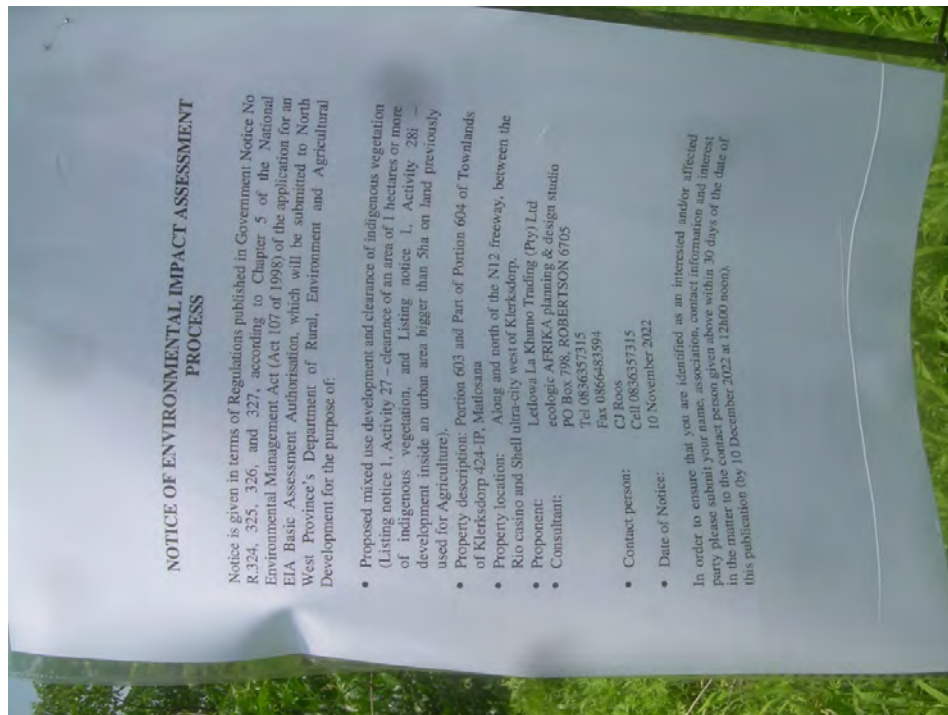
Proof of notice along N12 freeway



Detail of notice along N12 freeway



Proof of notice along Scheepers Street



Detail of notice along Scheepers Atreet

APPENDIX B3 – NEWSPAPER ADVERTISEMENT

APPENDIX B4 – IAP REGISTER

NO IAPs REGISTERED

APPENDIX B5 – IAP COMMENTS AND RESPONSES

NO IAPs REGISTERED.
NO COMMENTS AND RESPONSES

APPENDIX C – STATE DEPARTMENT CONTACT DETAILS

City of Matlosana

SG Mabuda
PO Box 99, KLERKSDORP
2570
Cell: N/A
Tel: 0184878300
Fax: 0184626023
e-mail: N/A

APPENDIX D – SPECIALIST REPORTS

APPENDIX D1 – CIVIL ENGINEERING SERVICES REPORT

CIVIL ENGINEERING SERVICES REPORT

PROPOSED TOWNSHIP ESTABLISHMENT IN MEIRINGSPARK

**ON PORTION 603
OF THE FARM TOWNLANDS OF KLERKSDORP 424 IP**

KLERKSDORP

NORTH WEST PROVINCE



Prepared for:

LETLOWA LA KHUMO
TRADING (PTY) LTD
PO BOX 2869
KLERKSDORP
2570

Prepared by:

MDCC (PTY) LTD
PO BOX 14140
FLAMWOOD WALK
2535

Tel.: 018 468 8000

Fax: 018 468 8020

Date: 8 March 2011



PROJECT DETAILS

TITLE : **Civil Engineering Services Report for Proposed Township Establishment on Portion 603 of the farm Townlands of Klerksdorp 424 IP, Klerksdorp, North West Province**

COMPILED BY : A Gabru, JH Herholdt

CLIENT : Letlowa La Khumo Trading (Pty) Ltd

REPORT STATUS : Version 1

REPORT NUMBER : 4321/3/2011

SUBMISSION DATE : 8 March 2011

CITY OF MATLOSANA

PROPOSED MEIRINGSPARK EXTENSION, KLERKSDORP

CIVIL ENGINEERING SERVICES REPORT

SERVICES REPORT FOR NEW TOWNSHIP ESTABLISHMENT ON PORTIONS 603 AND 604 OF THE FARM TOWNLANDS OF KLERKSDORP 424IP, KLERKSDORP, NORTH WEST PROVINCE

1. Introduction and Background

MDCC (Pty) Ltd has been approached to compile a report on civil engineering services for the proposed township establishment on Portions 603 of the farm Townlands of Klerksdorp 424 IP. The development consists of:

- 10 x residential 2 erven

The proposed township is situated in the area of jurisdiction of the City of Matlosana. The township will form part of the urban area of Klerksdorp, North West Province. It is bordered by the existing Meiringspark and Meiringspark Extension 2 townships to its north and undeveloped land to the west, south and east.

The township will be completed in one (1) Phase for installation of engineering services.

2. Topography

The site gradually slopes from south to north at an average incline of 1.0%. The average level of the township is 1 327 m above mean sea level. The area is covered with grass and the remaining of vandalized infra-structure of a drive-in theatre.

No rocky outcrop is visible on surface level.

3. Guidelines for provision of Civil Engineering Services

The report is based on standards as described in the publication "Guidelines for Human Settlement Planning and Design" which will be used as a guideline for the design of external and internal services for the proposed township.

Specific services requirements of the Local Authority will be incorporated in the design thereof. General assumptions and levels of service pertaining to this project are discussed below.

4. Drawings

The following drawings are attached indicating the proposed civil engineering services to be installed:

Drawing no	4321/0003	Water network
Drawing no	4321/0002	Sewer network
Drawing no	4321/0001	Roads and Stormwater

5. Provision of Bulk Civil Engineering Services

The City of Matlosana is the Water Services Authority in terms of the National Water Act for the Local Authority area of jurisdiction.

It is foreseen that the development will be provided with bulk services from existing infrastructure in adjacent developed areas.

5.1 Bulk Water Supply

The total annual average daily water demand for this township is estimated to be 315 kℓ/day for the potential number of 263 Residential 2 dwelling units.

The proposed township is to be serviced by the Alabama reservoirs with a combined capacity of 47.0 Mℓ. The top water level of the 17.5 Mℓ reservoir is 1375.14 m and a floor level of 1365.40 m.

The current average daily demand from the reservoir is 16.003 Mℓ that requires a storage capacity of 32.006 Mℓ. The estimated additional reservoir storage capacity required for the proposed township is 0.63 Mℓ, which can be accommodated in the reserve storage capacity in the reservoirs.

The Alabama reservoirs are supplied with water from Midvaal Water Company via the Ellaton pumpstation and pumpline system.

The bulk water supply pipes from the Alabama reservoirs to the townships of Meiringspark, Freemanville, De Clerqville and Uraniaville, is amongst others a 300 mm dia fibre cement pipe situated in the extension of Jan Parlement Street. Sufficient capacity in the bulk water-supply pipe is available.

The static water pressures within the township will vary between 310 and 340 kPa.

Connections for the internal water network will be made to the existing 300 mm dia fibre cement water main in Jan Parlement Street extension by means of cutting and installing T-pieces

The township is situated within an existing zone water metering area and will therefore no separate zone water metering is foreseen for the township.

5.2 Bulk Sewage Disposal

The proposed township drains towards the existing sewer network in Meiringspark Township. The sewer network discharges into the existing Meiringspark outfall sewer with diameters increasing from 300 mm to 375 mm.

The Meiringspark outfall sewer discharges in the 1 050 mm dia Schoonspruit outfall sewer. The Schoonspruit outfall sewer discharges into the Swart Street sewerage pumpstation from where sewage is pumped to the Klerksdorp Waste Water Treatment Plant.

Sewage is treated at the Klerksdorp Waste Water Treatment Plant with a capacity of 36.0 Mℓ/day. Currently the plant handles on an average of 26.9 Mℓ/day.

The total average daily sewage flow for the proposed township is 198 kℓ/day.
The Waste Water Treatment can accommodate the additional flow from the township.

The proposed sewer network for the township will gravitate and link with the existing sewer gravity network situated on the corner of Scheepers Street and Lane Street in Meiringspark.

Due to the limited capacity of the existing sewer network in Meiringspark, the development on the proposed Residential 2 erven in the township should be limited to a density of 40 dwelling units per hectare and 60% coverage on the erven, totalling 263 dwelling units.

5.3 Access and Storm water Disposal

The main access to the township will be directly from the adjacent Scheepers Street and from the extension of Jan Parlement Street to the south. The future extension of Jan Parlement Street to the south will link Scheepers Street with the national N12 route by means of a traffic light controlled intersection. The internal road within the township will form a temporary cul-de-sac which will be extended to the west with future township development of the City of Matlosana.

Storm water from the development will be collected by means of the streets acting as surface channels from where storm water will be transported via the road to the existing kerb inlets located in Hamman Street and Scheepers Street and then transported into existing concrete storm water pipes to the natural stream being a tributary of Schoonspruit.

6. **Provision of Internal Civil Engineering Services**

The general assumptions and levels of service for internal services pertaining to this township are indicated below.

6.1 Water Supply

6.1.1 Design Standards

The design standards, which are assumed applicable to the development, are summarised in the table below.

Service	Item			Criteria
Average water demand	Average Daily Water Demand (ADWD):			
	Residential 2	10 Erven	263 Units	1 200 ℓ/residential unit
	Sustained Summer Daily Water Demand (SSDWD)			1,2 x ADWD
	Peak flow (PF) (supply/storage)			2 x ADWD
	Peak flow (PF) (network)			4 x ADWD
Velocity	Maximum			1,2 m/s
	Preferred			0,6 m/s

Pressures	Minimum peak flow	240 kPa
	Maximum	900 kPa
Fire requirements	Risk category	Moderate Risk
	Hydrant flow (minimum)	1 500 l/min
	Head (minimum)	150 kPa
	Hydrant spacing (maximum)	180 m
	Hydrant type	Below ground level, London V-threaded outlet

6.1.2 Internal Water Reticulation

The network of the proposed development will be designed to cater for the peak demand as well as for the required fire flow for moderate risk development.

The internal water reticulation system will consist of 160 mm dia uPVC (Class 9) mains, approximately 530 m long situated within the proposed public road along the southern boundary of the township. This new 160 mm water main will tie with the existing 300 mm dia bulk supply pipe.

Provision will be made for fire hydrants and isolation valves on the new water network. Additional fire hydrants will be installed on the existing 150 mm dia water main in Scheepers Street.

Water connections for each erf will be made to the existing 150 mm dia fibre cement water main in Scheepers Street and the new 160 mm dia uPVC pipe. Metered erf connections will only be installed once development of the various erven commences and upon application with the municipality and at a cost to the developer of the erf.

Metered water consumption will be paid for by the consumer to the municipality by means of the applicable water tariff structure of the municipality based on actual meter readings.

6.2 Sewage Disposal

6.2.1 Design standards

The design standards, which are assumed applicable to the development, are summarised in the table below.

Service	Item			Criteria
Average daily sewage flow	Dry weather (ADDWF):			750 l/residential unit
	Residential 2	10 erven	263 units	
	Wet weather (ADWWF)			1,2 x ADWD
Peak factor (PF)				2.8
Minimum pipe Ø				160 mm
Minimum flow velocity				0,7 m/s (full flow)

Peak design flow		90% of full bore capacity of pipe
Allowance for extraneous flows		15 %
Manholes	Precast circular sections with step-irons	1 000 mm dia
	Spacing (maximum)	90 m

6.2.2 Internal Sewerage Reticulation

A conventional waterborne gravity sewage disposal system will be installed with a manhole spacing of maximum 90m. Sewer pipes will be 160 mm dia uPVC class 34 solid wall with fitted couplings.

The sewer network will be situated along erf boundaries internally and within road reserves externally.

Provision will be made for a marked sewer connection for each erf. Connections will consist of a y-junction from the 160 mm dia main sewer with a 110mm dia pipe to each erf.

Manholes will consist of 1 000 m dia pre-cast concrete sections with step irons for access and heavy duty lids.

6.3 Access Streets

6.3.1 Design Standards

The design standards, which are assumed applicable to the development, are summarised in the table below.

Service	Item	Criteria
Local distributor	Road Category	Class 4
	Traffic Class	E3 (1.0-3.0 x 10 ⁶ E80's)
	Surfaced Width	8,0 m
Residential access collectors	Road Category	Class 5a
	Traffic Class	E1 (0,3-1.0 x 10 ⁶ E80's)
	Surfaced Width	7,0 m
Residential access roads	Road Category	Class 5b
	Traffic Class	E0 (0,05-0,2 x 10 ⁶ E80's)
	Surfaced Width	6,0 m
Access cul-de-sacs	Road Category	Class 5c
	Traffic Class	ER (<0,05 x 10 ⁶ E80's)
	Surfaced Width	4,5 m

6.3.2 Access to township

The existing Scheepers Street borders the township on the northern side and provides access to erven 1 to 5.

The master planning of the municipality for development along the national N12 route to the west and development to the west of Meiringspark indicates proposed public collector roads to provide access to pockets of proposed development.

This proposed township is located within such a proposed development pocket and is bordered by the following proposed public collector roads:

- Extension of Jan Parlement Street to the south along the east boundary, classified as a local distributor, class 4, and
- An unnamed road along the southern boundary that links with Jan Parlement Street, classified as a residential access collector, class 5a.

Both the latter mentioned proposed collector roads have not been proclaimed as public roads to date but are prerequisites for purposes of access to erven 6 to 10 in the township.

To ensure access to the proposed erven 6 to 10:

- A Right of Way should be registered on the proposed alignment of the two roads for purposes of access and accommodating services
- The roads should be constructed to a standard that will suite the level of service as required by the roads master planning for the area.

The extension of Jan Parlement Street from Scheepers Street up to the unnamed road will be constructed with an intersection with the unnamed road and will provide for future extension to link with the N12 national road.

The unnamed road along the southern boundary of the township will be constructed with a temporary turning circle to form a temporary Cul-de-Sac on its western end until such stage that the municipality extend it to the west to link with Tusk Boulevard in future.

The structural design of the road pavement will be done according to the standards prescribed in the "Guidelines for Human Settlement and Planning".

Provision will be made for the installation of pre-cast concrete kerbs or edge beams on both sides of streets. Where kerbing lacks in Scheepers Street for the portion between Jan Parlement Street and Hamman Street, it will be provided to match the existing type of kerbing.

The long sectional gradient of the road will be varied, but will be a minimum of 0.5%.

The pavement design will consist of the following:

- Road width:
 - 8.0 m for Jan Parlement Street, class 4
 - 7.0 m for the unnamed road, class 5a
- Rip & compact in-situ for roadbed to 93% mod AASHTO density

- Import suitable G4 material and compact to 97% mod AASHTO or stabilize in-situ material to form a C3 (UCS>1.5 MPa)
- 25mm asphalt as per SANS 1200

6.3.3 Internal Streets

There are no internal streets in the township.

6.4 Stormwater Drainage

Stormwater will be accommodated on the surface in the road prism.

Streets will be utilized to collect water from the stands. Stormwater will be collected by means of existing catch pits and then be transported by existing concrete drainage pipes to outlet structures from where the water will be released back into the natural surroundings.

The design standards, which are proposed for the development, are as follows:

Item	Sub-item	Criteria
Mean annual rainfall		580 mm
Rainfall distribution		Triangle
Time to peak ration		0,39
Infiltration model		Horton
Starting infiltration value		45 mm/h
End infiltration value		15 mm/h
Decay constant		0,00115
Conduit routing		Time shift
Effective % area impermeable	Developed area	5-15
	Undeveloped area	1
Manning factor	Pipes	0,013
	Unlined canals	0,013
Design storm recurrence interval	Minor storms	2 year
	Major storms	5 years

6.5 Refuse Removal

Refuse will be collected weekly from site by the local Municipality and transported to the municipal disposal site. Normal rates will be applicable for the removal of refuse.

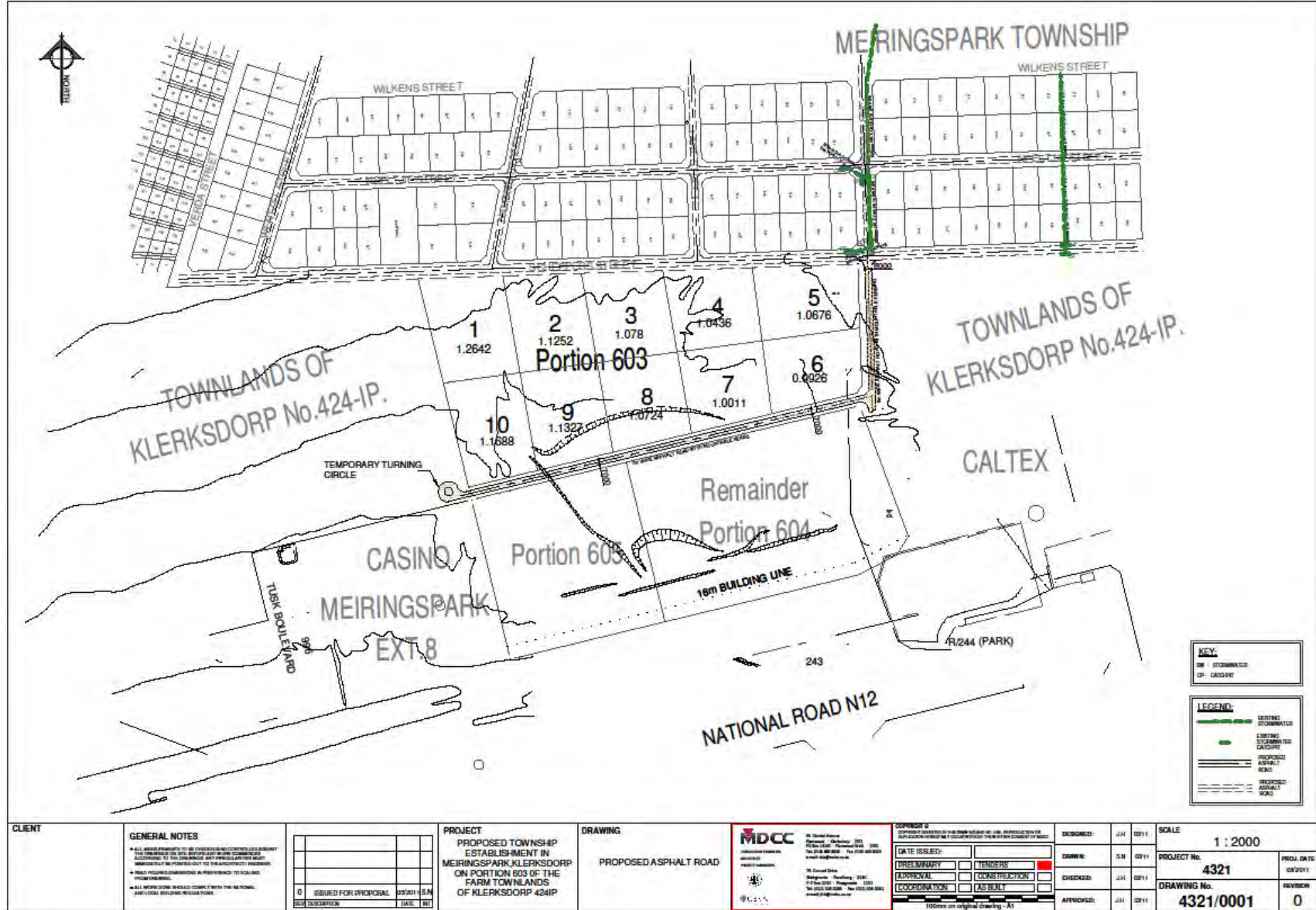
6.6 Cable Ducts for TELKOM Services and Electrical Road Crossings

Cable ducts and draw pits will be installed for TELKOM services as well as cable ducts for electrical road crossings.

7. Bulk services Contributions

No bulk services contributions are payable.

JH Herholdt
For MDCC (Pty) Ltd
8 March 2011



CLIENT

GENERAL NOTES

- ALL MEASUREMENTS TO BE TAKEN AS SHOWN UNLESS OTHERWISE SPECIFIED TO THE CONTRARY AND WHERE NECESSARY TO BE TAKEN TO THE CENTERLINE OF THE ROAD OR TO THE CENTERLINE OF THE PROPERTY.
- ALL MEASUREMENTS TO BE TAKEN AS SHOWN UNLESS OTHERWISE SPECIFIED TO THE CONTRARY AND WHERE NECESSARY TO BE TAKEN TO THE CENTERLINE OF THE ROAD OR TO THE CENTERLINE OF THE PROPERTY.
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ISSUED FOR PROPOSAL	02/2011	HSN
DATE		

PROJECT
 PROPOSED TOWNSHIP ESTABLISHMENT IN MEIRINGSPARK, KLERKSDORP ON PORTION 803 OF THE FARM TOWNLANDS OF KLERKSDORP 424IP

DRAWING
 PROPOSED ASPHALT ROAD

MDCC
 MDC CONSULTANTS (Pty) Ltd
 101-102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

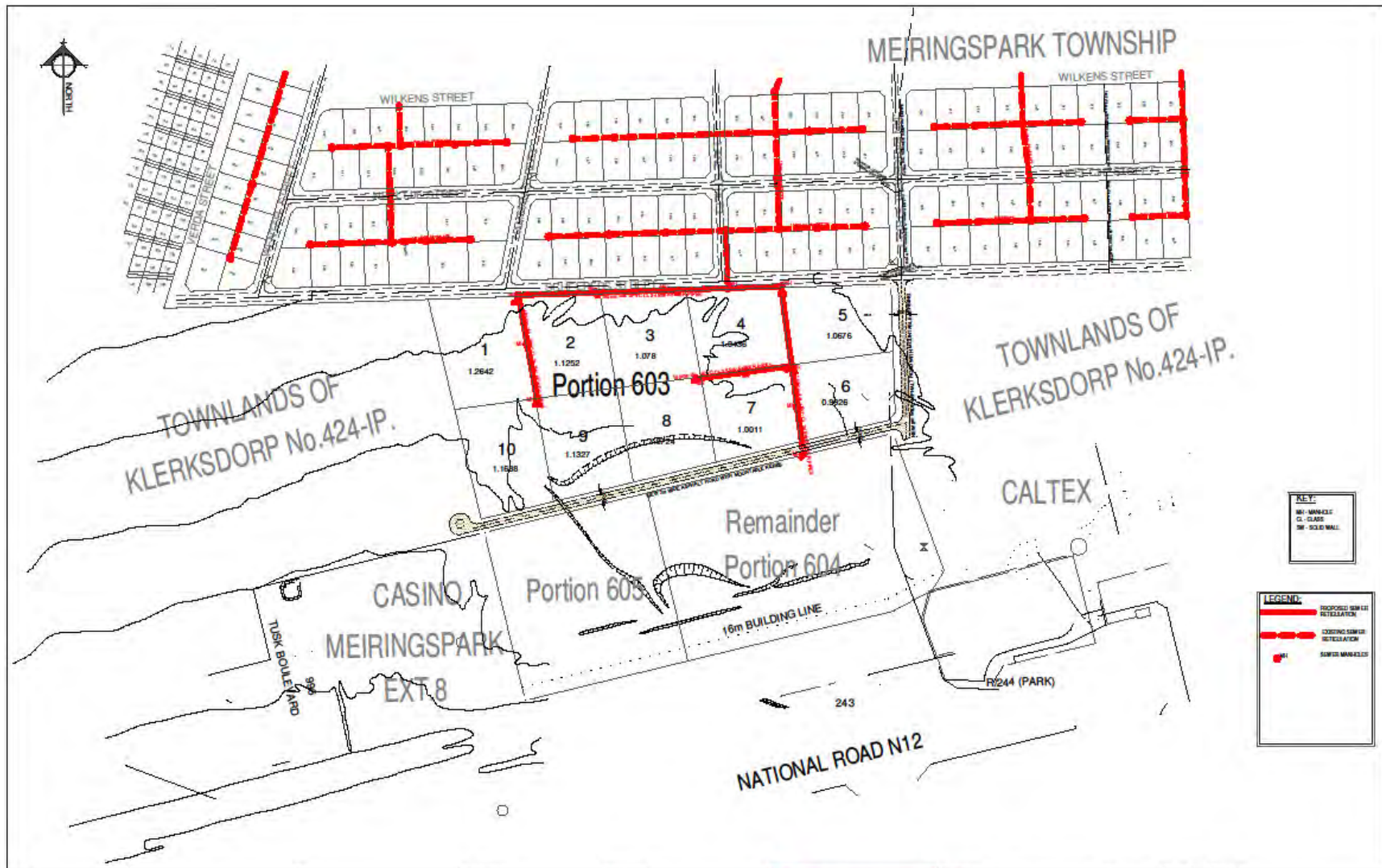
DATE ISSUED:

PRELIMINARY	TENDERS
APPROVAL	CONSTRUCTION
COORDINATION	AS BUILT

DESIGNED:	JJA	02/11
DRAWN:	SM	02/11
CHECKED:	JJA	02/11
APPROVED:	JJA	02/11

SCALE 1 : 2000

PROJECT No.	4321	ISSUE DATE	02/2011
DRAWING No.	4321/0001	REVISION	0



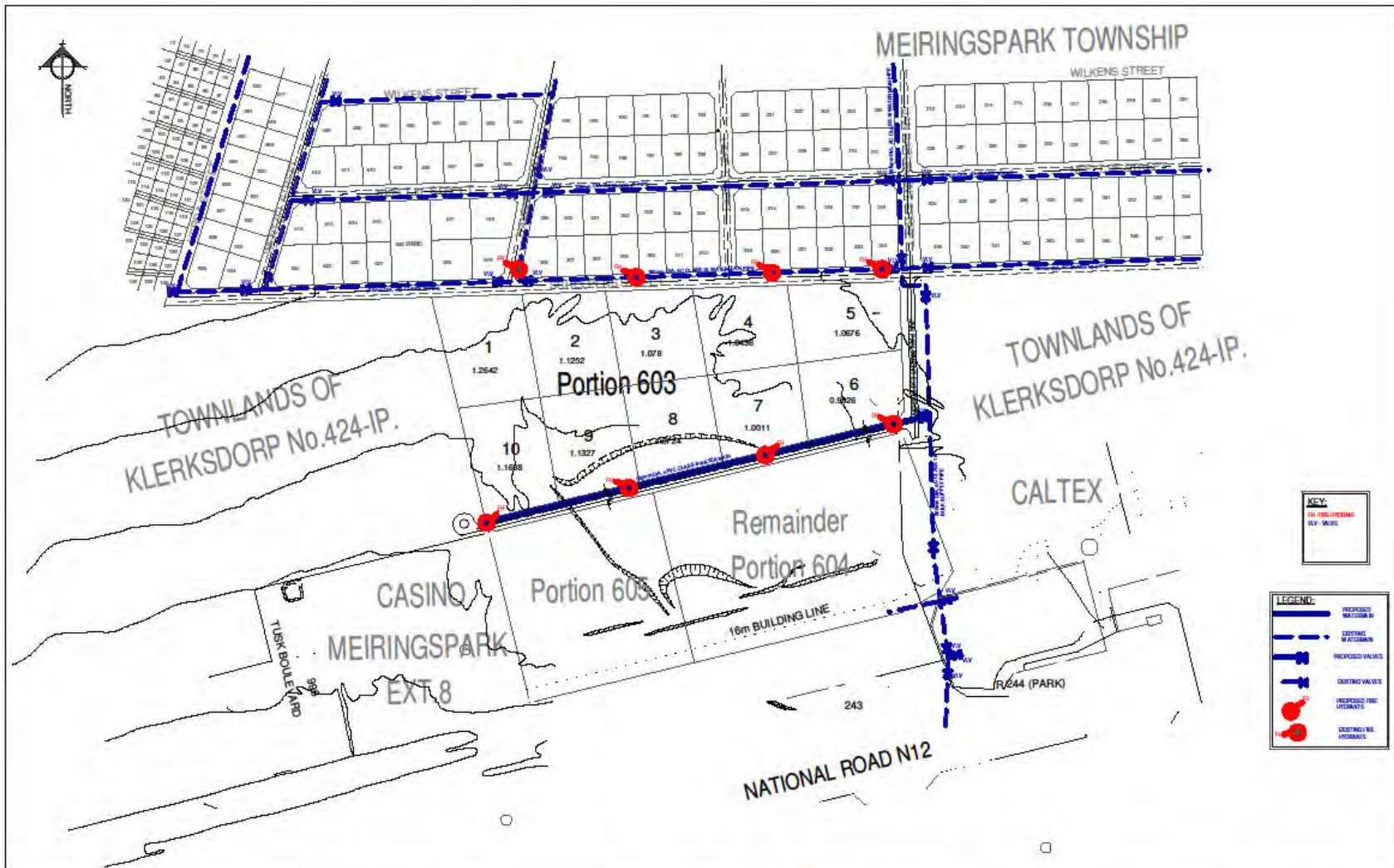
KEY:

—	PROPOSED MAIN PIPE
- - -	EXISTING MAIN PIPE
—	PROPOSED BRANCH
- - -	EXISTING BRANCH

LEGEND:

—	PROPOSED MAIN PIPE
- - -	EXISTING MAIN PIPE
—	PROPOSED BRANCH
- - -	EXISTING BRANCH

CLIENT GENERAL NOTES • ALL MEASUREMENTS TO BE CHECKED AND CONTROLLED AGAINST THE ORIGINAL DESIGN DRAWING AND NOTED CORRECTIONS ACCORDING TO THE STANDARD AND PRACTICE PERIODICALLY MADE FOR THE PURPOSES OF THE DESIGN AND CONSTRUCTION. • ALL FIELD MEASUREMENTS TO BE MADE IN ACCORDANCE WITH THE NATIONAL AND LOCAL BUILDING REGULATIONS.	PROJECT PROPOSED TOWNSHIP ESTABLISHMENT IN MEIRINGSPARK KLERKSDORP ON PORTION 603 OF THE FARM TOWNLANDS OF KLERKSDORP 424P	DRAWING PROPOSED SEWER NETWORK	MDCC CONSULTANTS 76 Cecil John Margate, Port Natal 3200 P.O. Box 1234, Margate 3200 Tel: 031 222 2222 Fax: 031 222 2222 email: info@mdcc.co.za	DESIGNER: J.S. DRAWN: S.N. CHECKED: J.S. APPROVED: J.S.	DATE ISSUED: PRELIMINARY APPROVAL OCCUPATION	TENDERS CONSTRUCTION AS BUILT	SCALE 1 : 2000 PROJECT No. 4321 DRAWING No. 4321/0002 REVISION 0
	ISSUED FOR PROPOSAL DATE: 2011	PROJECT No. 4321	DRAWING No. 4321/0002	REVISION 0	DATE: 2011	PROJECT No. 4321	DRAWING No. 4321/0002



KEY
PROPOSED WATER MAIN
EXISTING WATER MAIN
PROPOSED VALVES
EXISTING VALVES
PROPOSED FIRE HYDRANTS
EXISTING FIRE HYDRANTS

LEGEND:	
	PROPOSED WATER MAIN
	EXISTING WATER MAIN
	PROPOSED VALVES
	EXISTING VALVES
	PROPOSED FIRE HYDRANTS
	EXISTING FIRE HYDRANTS

CLIENT	GENERAL NOTES • ALL MEASUREMENTS TO BE CHECKED AND CORRECTED AS NECESSARY. • THE DIMENSIONS ON THIS DRAWING ARE APPROXIMATE AND SHOULD BE VERIFIED BY THE ARCHITECT/ENGINEER. • ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL AND LOCAL BUILDING REGULATIONS. • ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL AND LOCAL BUILDING REGULATIONS.	<table border="1"> <tr> <td>ISSUED FOR PROPOSAL</td> <td>ISSUED</td> <td>REVISED</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> </tr> </table>	ISSUED FOR PROPOSAL	ISSUED	REVISED	0	1	0	PROJECT PROPOSED TOWNSHIP ESTABLISHMENT IN MEIRINGSPARK/KLERKSDORP ON PORTION 603 OF THE FARM TOWNLANDS OF KLERKSDORP 424IP	DRAWING PROPOSED WATER MAIN RETICULATION NETWORK	 MDCC 28 Gouda Street, Johannesburg, 2001 Tel: 011 462 4000 Fax: 011 462 4001 www.mdcc.co.za	APPROVED & ISSUED FOR TENDERS DATE ISSUED: [] PRELIMINARY [] TENDERS [] APPROVAL [] CONSTRUCTION [] COORDINATION [] AS BUILT []	DESIGNED: JH 28/01/11 DRAWN: SM 28/01/11 CHECKED: JH 28/01/11 APPROVED: JH 28/01/11	SCALE 1 : 2000	PROJECT No. 4321	DRAWING No. 4321/0003	PROJ. DATE 28/01/11 REVISION 0
			ISSUED FOR PROPOSAL	ISSUED	REVISED												
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APPENDIX D2 – ELECTRICAL ENGINEERING SERVICES REPORT

Meirings Park X10 and X11

Electrical Services Report

1. Introduction

This report outlines the design philosophy of the electrical Medium Voltage (MV) and Low Voltage (LV) installation for the proposed Meirings Park X10 and X11 development.

The installation will be design to comply with the following standard specifications:

- i. SANS 10142
- ii. IEC Electrical Standards
- iii. SANS 0292
- iv. SANS 10098-1

2. Electrical Engineers

The developer, Letlowe La Khumo Trading (Pty) Ltd, appointed CA du Toit (Pty) Ltd as the electrical consulting engineers for this project.

3. The Development.

The new development will consist of:

- i. The development of residential stands
- ii. The development of commercial stands
- iii. The development of a Taxi Rank

4. Design Philosophy

Main Power Supply

A site survey was conducted to determine the best and most economical way to provide power to the site.

It was decided to close the 11kV ring between the Rio Casino and the CRU housing development. Currently both these two sites are fed on a spur feed.

Medium Voltage Reticulation

A MV cable will be installed from the Rio Casino connection point to the connection point at the Housing development. Two 11kV T3 outdoor switching units will be installed to make it possible to route the MV cable to pass all the stands.

The MV cable to be installed will be a coper cable, 120mm² 3 core 11/11kV at a depth of 1100mm.

Mini Substations

Mini Substations will be strategically positions on site alongside the new roads, connected by the MV unground cables.

All the mini substation shall be as per Matlosana approved standard specifications.

LV Reticulation

LV cables will connect the distribution kiosks and street lights with mini substation. The cables will be installed at 'n minimum depth of 600mm below final ground level. The minimum distance between MV and LV cables shall be 400mm.

Distribution Kiosk

Distribution kiosks will be installed at every stand. These kiosk will be fed with a 400V PVC/SWA/PVC from the min substations. The size of the cable will be determine by the stand developer's power requirement.

5. Streetlights

The street light design shall comply with SANS 10098-1, road category B2.

The streetlight fittings shall be installed on a steel galvanized pole with a mounting height of 10m.

The streetlight fittings shall be of the LED type.

6. Electrical Load Estimate

The electrical load estimate was based on the following assumptions:

- | | | |
|------|---------------|-----------------------------|
| i. | Living unit | 2,1kVA per unit |
| ii. | Shopping Mall | 125W/m ² average |
| iii. | Taxi rank | 30kVA power connection |

The total estimated electrical load after diversity is 1.8MVA.

7. Annexures

The following annexures is part of this report:

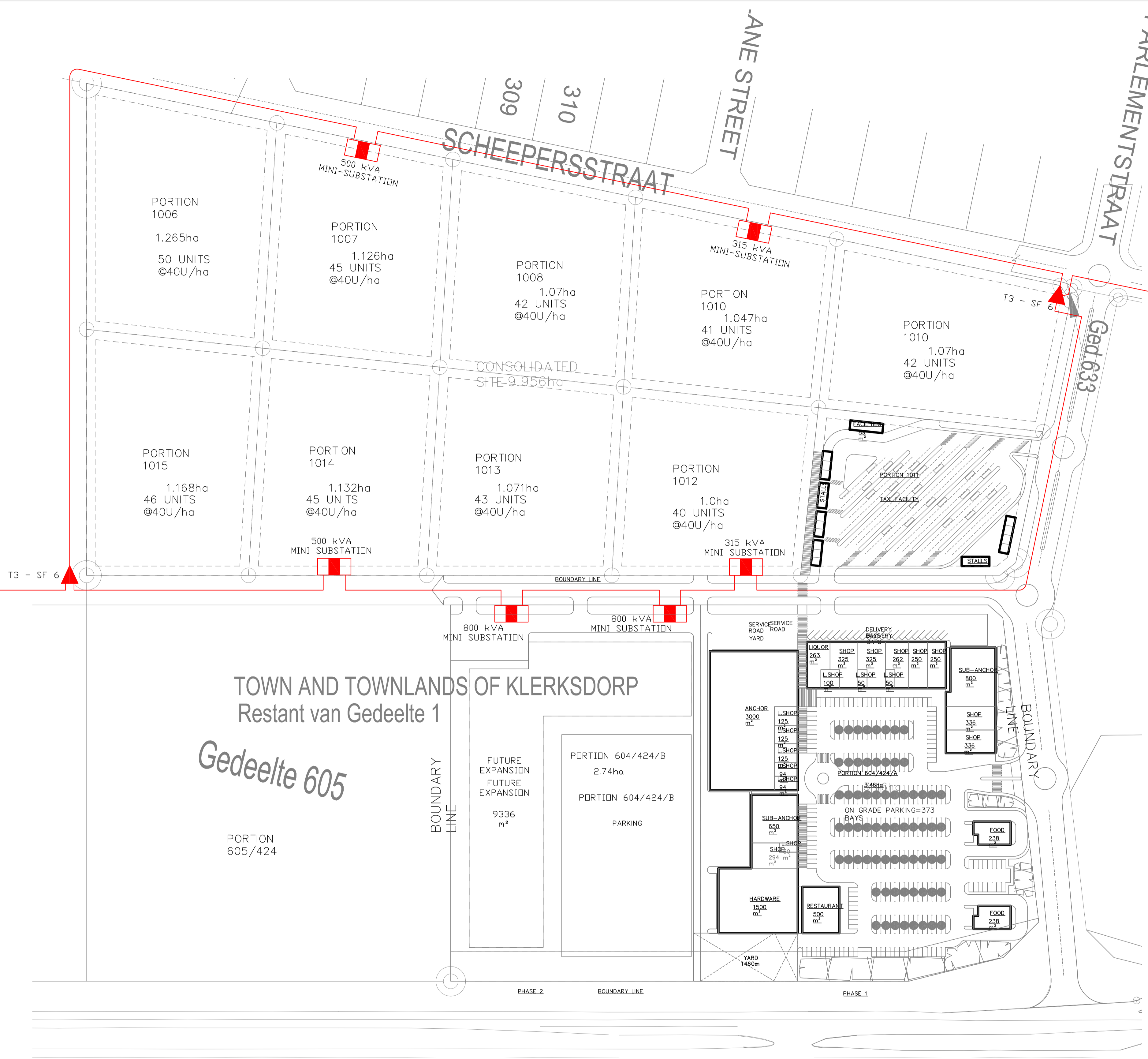
- | | | |
|-----|------------|--|
| i. | Annexure A | Site Layout – MV Reticulation – Drawing H8110/E01/01/R03 |
| ii. | Annexure B | Load Calculations |



AM Erasmus. Pr.Eng

01/06/2021

End of Report



LEGEND CARD	
	T3 - SF 6
	MINI-SUBSTATION
	120mm ² - 11 KV CABLE

No.	DATE	AMENDMENT	BY

file location	E:/CA DU TOIT/MEIRINGSPARK	paper size	A 1
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client
LETLLOWA LA KHUMO TRADING (Pty) Ltd

consultant
CA du Toit
CA DU TOIT CONSULTING ENGINEERS
PO BOX 2786
KLERKSDORP 2570
TEL: 083-388 5016
E-mail: louis@cadutoit.co.za

discipline
ELECTRICAL

service
11 KV RETICULATION

drawing title
11 KV RETICULATION MEIRINGSPARK X10 AND X 11

ref. no.	NA	designed	A ERASMUS
scale	1:1250	drawn	L STEENKAMP
date	2021/06/02	checked	
drawing number	H8110/E01/01/R03		

Meirings Park X10 & X11

Electrical Load : Estimate

1	Living units	40 /Ha
2	Load per unit	2.10 kVA
3	Taxi Rank	30.00 kVA
4	Mall load	125 W/m ²
5	Mall area	19,716 m ²

No	Stand No	Development	Size Ha	No units	Load kVA	Diversity Factor	Load after DV - kVA	Amps/phase
1	Portion 1006	Housing	1.2665	50	105.00	0.45	47.25	152.2
2	Portion 1007	Housing	1.1265	45	94.50	0.45	42.53	137.0
3	Portion 1008	Housing	1.0727	42	88.20	0.45	39.69	127.8
4	Portion 1009	Housing	1.0478	41	86.10	0.45	38.75	124.8
5	Portion 1010	Housing	1.0024	42	88.20	0.45	39.69	127.8
6	Portion 1011	Taxi Rank - Power	1.0710	1	30.00	0.35	10.50	43.5
7	Portion 1012	Housing	1.1324	40	84.00	0.45	37.80	121.7
8	Portion 1013	Housing	1.1675	43	90.30	0.45	40.64	130.9
9	Portion 1014	Housing	1.0715	45	94.50	0.45	42.53	137.0
10	Portion 1015	Housing	1.1680	46	96.60	0.45	43.47	140.0
11	Portion 604/424/A	Mall m ²	10,380	m ²	1,297.50	0.55	713.63	1,880.4
12	Portion 604/424/B	Mall m ²	9,336	m ²	1,167.00	0.55	641.85	1,691.3
					3,321.90		1,738.31	

A Total Estimated Electrical Load After Diversity

1.74 MVA

APPENDIX D3 – GEOTECHNICAL REPORT

Our Ref.: 4321 2022_08(101)

16 August 2022

Letlowa La Khumo Trading (Pty) Ltd
Boardwalk Office Park,
Phase 1, Block A, Unit A3,
107 Haymeadow Street,
FAERIE GLEN
0043

ATTENTION: Mr L Jacobs

E-mail: luc@crausegroup.com

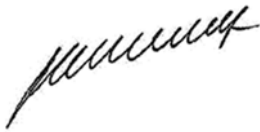
Sir

MEIRINGSPARK EXTENSIONS 10 and 11: GEOTECHNICAL REPORT

Please find attached the Geotechnical Report No GA0851/2022, dated July 2022, for Meiringspark Extensions 10 and 11 for your attention.

Please call us if further information is required.

Yours faithfully



JH HERHOLDT *Pr Tech Eng, Cert PM*
For MDCC (Pty) Ltd

mdcc

■ CONSULTING CIVIL AND
STRUCTURAL ENGINEERS

■ ARCHITECTS

■ PROJECT MANAGERS

HEAD OFFICE

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OFFICES

Johannesburg, Pretoria, Delhi, Lagos



GEOTECHNICAL REPORT

***MEIRINGSPARK RESIDENTIAL DEVELOPMENT
KLERKSDORP
NORTH WEST PROVINCE***

***Requested by
MDCC Consulting***

***Project GA0851/2022
July 2022***



GEOTECHNICAL REPORT

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Appendix A – Locality Map, Trial Hole and DPL Test Positions

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Appendix C – Dynamic Cone Penetrometer Test Results

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Project GA0851/2022

29th July 2022

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1 INTRODUCTION

This report refers to the findings of a geotechnical investigation undertaken on the 29th and 30th June 2022. The investigation forms part of the planning and design stage for the new Meiringspark Residential Development, Klerksdorp, North West Province. The investigation was carried out by Ground Africa Consulting Geotechnical Engineers and undertaken at the request of Mr Marvick Janse van Rensburg of MDCC (Pty) Ltd.

Previous geotechnical investigative works were undertaken by Real World Solutions in April 2009 and outlined in a report titled '*Geotechnical Investigations for a proposed Mixed Business and Residential Development, Meiringspark Ext, Klerksdorp*'. The scope, size and layout of the Meiringspark Development has since changed. Ground Africa Consulting Geotechnical Engineers was asked to carry out this investigation to augment and the information obtained in the previous geotechnical investigation as well as to provide founding recommendations.

The findings from this investigation aim to assist the civil and structural engineers in:

- Reinterpret the findings and recommendations of the original geotechnical investigation with respect to the updated and current scope of the development.
- Confirm the ground profile and recommend suitable founding solutions for the structures envisaged according to the current development plan.
- Confirm the geotechnical constraints identified in the previous investigation and outline the possible effect these will have on the new and updated scope of works.

2 SITE DESCRIPTION

The earmarked site for the proposed Meiringspark Residential Development (*with general GPS co-ordinates S26°51'57"; E26°37'27"*) is situated within the suburb of Meiringspark, approximately 4.5km west of the Klerkdorp CBD, North West Province. The site is accessed using the N12 national highway as well as along asphalt surfaced roads which pass through the neighbouring residential areas.

The identified site is unfenced, near rectangular in shape and is approximately 17.6ha in size. The N12 national highway forms the southern boundary. A residential road, Scheeper Street, forms the northern boundary with suburban areas beyond that. The eastern boundary is formed by a relatively new residential development and fuel station. The western boundary is partly open with the south western section marked by a casino development.

The overall site is generally level; however, the ground surface has been disturbed in places. Furrows and asphalt covered berms are present over the central area. These were created for a drive-in cinema. The area used for the drive-in cinema is approximately 1.8ha. From verbal communication and an assessment of previous geotechnical data it is understood that a portion of the area beneath the old drive-in cinema was utilised as a borrow-pit. The resultant pit was then backfilled to create the drive-in area. The exact lateral extent and depth of the pit is unknown. Two old derelict single storey structures as well as asphalt surfaced access roads are also present on the site. In addition, a number drainage furrows with associated embankments as well as randomly spread-out heaps of dumped refuse and building rubble are present across the site. The remaining open areas are covered in long grass, small trees and shrubs. A localised zone of dense bush is present in the southern section of the site.

Vehicle access about the site is possible; however, the clearance of rubble and vegetation as well as backfilling of old drainage furrows will be required in places. Manoeuvrability about the site for large plant will be easy.

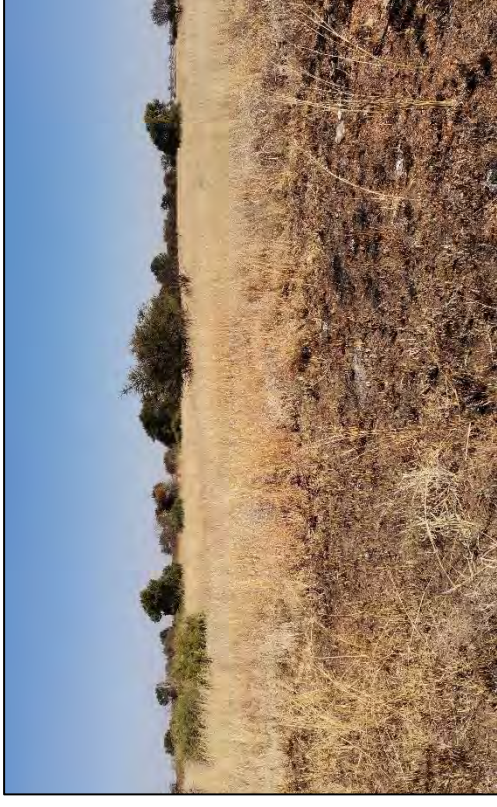
An existing water main passes through the midsection of the site and follows a general west to east directional heading. Potable water and sewer lines are present along the eastern boundary line.

An aerial image of the site as well as photographs taken at the time of the geotechnical investigation are shown over-page.





Picture 1: Looking west across the midsection of the site from the eastern boundary line.



Picture 2: Looking south west across the site from the northern area which is sparsely vegetated.



Picture 3: Old asphalt surfaced access roads pass through the site area.



Picture 4: An existing water main, aligned along a west/east line, is present through the centre of the site.

Site Photographs



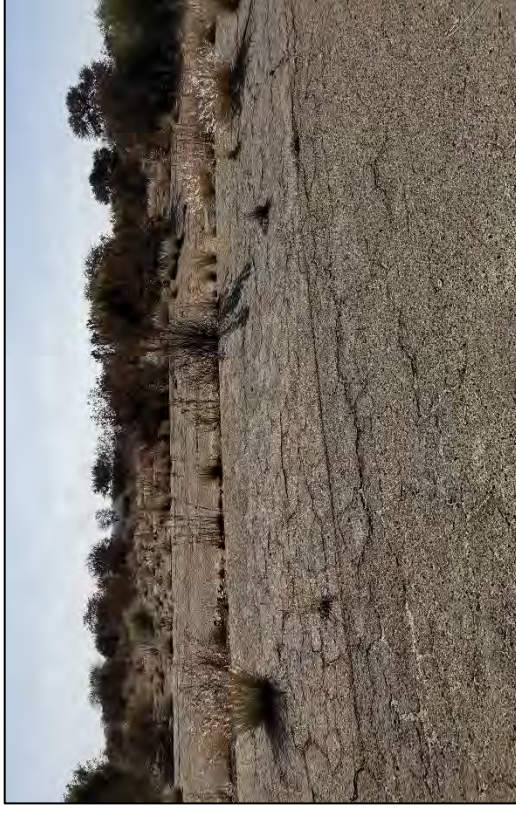
Picture 5: Heaps of rubble and miscellaneous fill are present about the site.



Picture 6: Overlooking the southern portion of the site in an easterly direction towards the neighbouring fuel station.



Picture 7: Remnants of old buildings which formed part of a previous drive-in cinema are present in the central part of the site.



Picture 8: Overlooking the old, undulating asphalt surfaced berms present within the footprint area of the drive-in cinema.

3 GEOLOGY

The general area within which the site is situated is underlain by volcanic and sedimentary rocks of the Platberg Group, Ventersdorp Supergroup. The Platberg Group includes four formations (Kameeldoorns, Goedgenoeg, Makwassie and Rietgat) which contain clastic and chemical sediments as well as felsic to mafic volcanic rock. The mafic and felsic lavas were deposited during graben development and accumulated within fault troughs. The lavas are overlain by scree and debris flow sediments with stromatolites. Stromatolites are layered biochemical accretions which are formed within shallow marine environments.

Geological mapping shows the site is underlain by amygdaloidal lavas of the Rietgat Formation, Platberg Group. The lavas comprise mostly greenish-grey amygdaloidal andesite to dacite with some interbedded shale, tuff, greywacke and conglomerate. Stromatolitic calcarenite has also been found to be present within the lithostratigraphy. The lavas and sedimentary rock are overlain by transported soils which can be colluvial or alluvial in origin. These near surface layers contain gravel rich, slightly cemented, pedogenic layers in places.

Trial hole excavations on site confirm the presence of amygdaloidal andesite. The residual soils derived from the in-situ decomposition of the parent rock has resulted in the formation of fine grained, clay rich residual soils which overlie the rock head contact.

4 FIELDWORK

4.1 Fieldwork Methods

Geotechnical fieldwork undertaken on the 29th and 30th June 2022 comprised the following:

- Site walkover and appraisal of the earmarked site by an engineering geologist.
- Mechanical excavation of thirteen (13x) trial holes to depths of between 1.2m and 3.0m below present ground level (PGL) using a standard sized TLB.
- Soil profiling of the ground horizons exposed in the trial hole sidewalls.
- Retrieval of representative soil samples for laboratory testing.
- Thirteen (13x) Dynamic Penetrometer Light (DPL) tests to obtain an indication of the variation in consistency of the underlying soil and weathered rock horizons.

The locations of the trial holes are shown in **Appendix A**. Trial hole depths were determined by tape measurement from present ground level. All the trial holes were profiled according to the method of Jennings, Brink and Williams as per the paper “Revised guide to soil profiling for civil engineering purposes in Southern Africa” as published in the Transactions of the South African Institution of Civil Engineers. Individual soil profiles are included in **Appendix B**.

In the dynamic penetrometer light (DPL) test, a specific angle ended cone fixed to the end of a steel rod is driven into the ground using a standard weighted hammer that drops by a constant height. The distance measured at each blow as the rod moves into the ground is recorded. These values are correlated to known values for soils and used to assess the density/consistency of the material for bearing capacity determination. DPL field results have been included in **Appendix C**.

4.2 Fieldwork Results

4.2.1 Soil Profiles

The excavation of trial holes indicates the overall site is generally underlain by a uniform subsurface ground profile. Weathered volcanic andesite rock was intersected within all trial holes excavated on site. The andesite is overlain by fine grained residual soils of variable thickness. Some fill was intersected in areas where previous ground disturbance has occurred, most notably in the area where the old drive-in cinema is present.

The generalised, ***natural*** soil profile is depicted below for reference:

<i>Colluvium</i>	Slightly moist, brown to brownish orange, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND – <i>Colluvium</i> with roots. <i>Note: Some hard rock andesite cobbles and boulders were noted at surface as well as within the colluvial soil horizon.</i>
<i>Upper Residual</i>	Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL – <i>Residual</i> with weathered andesite rock fragments.
<i>Lower Residual</i>	Slightly moist, yellowish olive with black blotches, medium dense/firm to dense/stiff, intact to slightly shattered; SILTY SANDY CLAY to SILTY CLAYEY SAND – <i>Residual Andesite</i> with weathered rock fragments. <i>Note: Some remnant zones of slightly weathered, hard rock andesite were found to be present within the residual soil layers.</i>
<i>Very soft to soft rock (Andesite)</i>	Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; <i>Andesite</i> .
<i>Soft to Medium hard rock (Andesite)</i>	Yellowish olive to olive grey with black staining along joint and fracture surfaces, highly to moderately weathered, fractured, medium to widely jointed, fine grained, soft to medium hard rock – <i>Andesite</i> .

The natural, undisturbed, ground profile has a layer of transported colluvial soils at surface. The colluvium is brown to brownish orange in colour and comprises a fine to medium grained, gravelly clayey sand. The colluvium was found to have intact soil structure and was noted to contain hard rock andesite cobbles and boulders in places.

Fill material present in disturbed areas overlies the colluvial soil layer. Fill intersected on site ranges from 0.2m to 1.6m thick, with the thickest horizons being encountered within the footprint area of the old drive-in cinema. The composition of the fill was found to vary; however, it appears to generally be reworked colluvial and residual soils. Fill, outside of the drive-in footprint area comprises rubble heaps, refuse and zones of mixed, miscellaneous debris.

The colluvial layer is underlain by residual soils derived from the in-situ decomposition of andesite rock. Distinct variation in colour and composition were observed within the residual section of the profile. Two prominent layers were identified and referenced as the upper and lower residual horizons for reporting purposes. The upper residual horizon was intersected at depths of between 0.2m and 1.6m below PGL. The material comprises a sandy clayey gravel which is brownish orange to reddish orange in colour. The upper residual has an intact to slightly shattered soil structure indicating that some slight heave and shrinkage movement can be expected with corresponding changes in in-situ moisture content. Weathered to slightly weathered andesite rock fragments were observed within the matrix of the upper residual horizon.

The lower residual horizon was intersected at depths of between 0.4m and 2.0m below PGL. The material comprises fine grained, silty sandy clay or fine-grained silty clayey sand which is yellowish olive with black blotches. The soil fabric has a slightly shattered soil structure in places. Weathered andesite rock fragments as well as remnant zones of slightly weathered, hard rock were found to be present within the lower residual horizon.

Andesite rock was intersected at depths of between 0.8m and 2.5m below PGL within trial hole excavations on site. The rock material was for the most part found to be completely to highly weathered and of a very soft to soft rock classification. Slow mechanical excavation was experienced within the weathered rock mass. Highly to moderately weathered, soft to medium hard rock is also present, particularly where the rock head contact lies at relatively shallow depths. The rock fabric is orange to olive grey in colour, fine grained and medium to widely jointed.

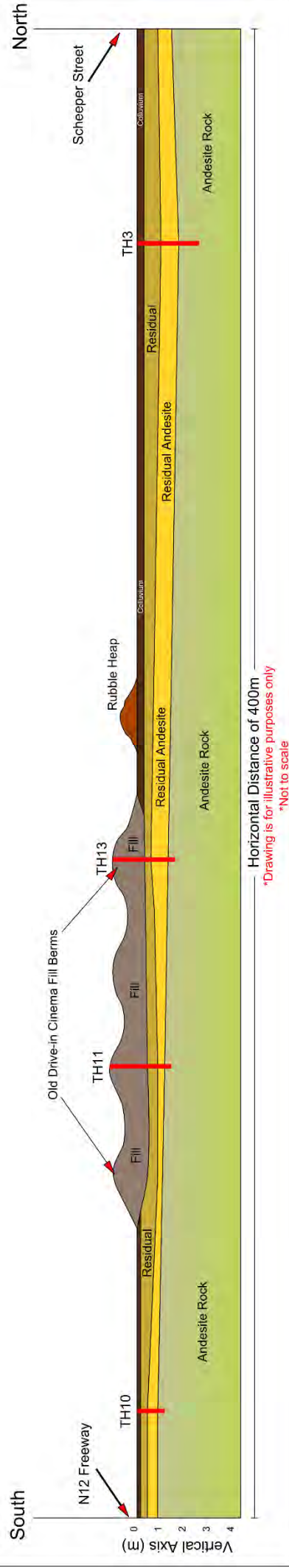
Individual soil profiles are included in **Appendix B** of the geotechnical report.

No groundwater seepage was encountered within the trial hole excavations on site. A table listing the depths to identified soil and rock horizons is provided over-page for reference. A generalised geological cross section has also been included over-page for interpretive reasons.

Trial Hole	Depth to Upper Residual Layer	Depth to Residual Andesite	Depth to Rock	Total Depth	Excavation Note
TH1	1.0m	1.5m	2.3m	2.7m	Slow mechanical excavation at base
TH2	0.2m	0.9m	1.2m	1.6m	Slow mechanical excavation at base
TH3	0.3m	1.1m	1.7m	2.2m	Slow mechanical excavation at base
TH4	0.4m	0.8m	1.1m	1.4m	Slow mechanical excavation at base
TH5	0.3m	0.8m	1.7m	2.3m	Slow mechanical excavation at base
TH6	0.4m	0.9m	1.2m	1.7m	Nearing refusal at base
TH7	0.4m	1.3m	1.7m	2.0m	Slow mechanical excavation at base
TH8	0.4m	1.1m	1.5m	2.0m	Slow mechanical excavation at base
TH9	0.2m	1.7m	2.5m	3.0m	Slow mechanical excavation at base
TH10	0.1m	0.4m	0.8m	1.2m	Nearing refusal at base
TH11	1.6m	2.0m	2.3m	2.5m	Slow mechanical excavation at base
TH12	0.1m	1.2m	1.5m	1.9m	Slow mechanical excavation at base
TH13	1.5m	1.8m	2.4m	2.6m	Slow mechanical excavation at base

Generalised Geological Cross-Section

**Generalised Geological Cross-Section (South - North)
Meiringspark Residential Development**



4.2.2 Dynamic Penetrometer Light Testing

A total of thirteen (13x) dynamic penetrometer light (DPL) tests were carried out across the site to obtain an indication of the variation in consistency of the underlying soils and weathered rock horizons. Testing was carried out from surface alongside the respectively numbered trial holes.

DPL testing through the colluvial soils shows the material is generally of a medium dense to dense consistency within penetration rates of between 25mm/blow and 8mm/blow being recorded. Testing shows that some dense to very dense zones, where the penetration rate drops to below 8mm/blow, are present.

Continued testing within the residual soils, intersected at depths of between 0.2m and 1.5m below PGL, shows the materials are initially of a medium dense/firm consistency and quickly transition to a dense/stiff consistency with increasing depth. Penetration rates for the residual soils range from 14mm/blow to 2mm/blow.

The intersection of weathered remnant zones of hard rock within the residual soils as well as weathered andesite rock resulted in the refusal of the DPL test apparatus at depths of between 0.6m and 2.3m below PGL.

Individual DPL test result sheets are included in **Appendix C** of the geotechnical report.

5 LABORATORY TESTING

A sample of the bulk fill material used to construct the berms of the old drive-in was retrieved and laboratory tested to determine grading, clay content, moisture/density relationships and California Bearing Ratios for material strength verification. Selected samples of the upper and lower residual soils were subjected to Foundation Indicator Tests to determine the clay content, plastic properties and particle size distribution of these materials as well as obtain an indication of heave and shrinkage properties. Result sheets as received from the laboratory are included as **Appendix D** with final results summarised in the tables below:

MOD/CBR

Sample	TH	Depth	Material	LS	PI	MDD (OMC)	GM	CBR					TRH 14	% Swell
								90	93	95	97	100		
MP4	TH13	0.2 – 1.2m	Brownish orange to orange; Clayey Sandy Gravel – Fill .	5	9.3	1858 (14.1)	1.87	11	11	11	13	14	G8	0

Foundation Indicator

Sample	TH	Depth	Material	LS	PI	% Clay (<0.002mm)	GM	Grading (% comprising)				Heave Potential
								Gr	Sa	Si	Cl	
MP1	TH1	1.3m	Yellowish olive with black blotches; Silty Sandy Clay – Residual Andesite .	6.7	10.3	32.5	0.85	16.7	27.2	23.6	32.5	Low
MP2	TH4	0.6m	Brownish orange to reddish orange; Sandy Clayey Gravel – Residual .	4.7	12.7	20.4	1.81	51.5	20.1	8.0	20.4	Low
MP4	TH13	0.2 – 1.2m	Brownish orange to orange; Clayey Sandy Gravel – Fill .	5.0	9.3	17.6	1.87	51.7	20.1	8.8	17.6	Low

Where:

TH: Trial hole from which samples were retrieved

LS: Linear Shrinkage

MDD: Maximum Dry Density at Optimum Moisture Content

CBR: California Bearing Ratio

% Clay: Clay content (<0.002mm)

Si: Silt

Cl: Clay

HP: Heave Potential

PI: Plasticity Index

GM: Grading Modulus

TRH: Technical Recommendations for Highways

Gr: Gravel

Sa: Sand

% comprising is according to MIT Size classification

Material strength and quality testing undertaken on a bulk sample of the fill obtained from TH13 indicates the material has a G8 rating according to the TRH14 Classification. The material has a moderately low linear shrinkage (5.0%) and plasticity index (9.3%) along with a negligible swell of the sample being recorded at 100% compaction.

Foundation indicator testing undertaken on a sample of the upper residual soils (MP2) shows the material comprises mostly gravel (51.5%) with relatively lesser concentrations of clay (20.4%), sand (20.1%) and silt (8.0%). Linear shrinkage (4.7%) and plasticity index (12.7%) values are classified as being low to moderate, with a low heave potential being determined for the material.

Testing undertaken on a sample of the lower residual horizon shows the material comprises mostly clay (32.5%) and sand (27.2%) with lesser concentrations of silt (23.6%) and gravel (16.7%). Linear shrinkage (6.7%) and plasticity index (10.3%) values are classified as being low to moderate.

An assessment of the upper and residual soil layers in-situ indicate that these soils have a slightly shattered to shattered soil structure in places. This suggests that some slight heave and shrinkage of the fine-grained material does occur, despite the low plastic properties measured for these materials. As such, it is suggested that some slight heave and shrinkage movement be anticipated for these soils with corresponding changes in the in-situ moisture content.

6 GEOTECHNICAL ASSESSMENT

6.1 Findings of Previous Investigation

A previous geotechnical investigation was undertaken across the earmarked site by Real World Solutions in April 2009. The report is titled '*Geotechnical Investigations for a proposed Mixed Business and Residential 2 Development Meiringspark Ext, Klerksdorp*'. The investigation was undertaken to determine the suitability of the site for a new residential development; however, the actual layout and nature of the planned building was not known the time of the investigation. The report contains mostly factual information a was written for municipal approval to confirm the site area would be satisfactory for further development from a geotechnical perspective. A summary of the notable findings from this initial investigation are listed below:

- The site is underlain by a generally uniform ground profile. The site is masked by a layer of colluvium which is in turn underlain by pedogenic and fine-grained residual soils. The residual soils are derived from the decomposition of the underlying volcanic lava (andesite) rockmass.
- The old drive-in cinema was built over an old borrow pit. The material used to construct the berms of the drive-in comprise well compacted gravels. The depth of the borrow pit was found to be in excess of 3.0m deep in places. This area has been classified as site class 'P' suggesting it is not suitable for development.
- No groundwater was intersected within trial hole excavations.
- The author classified the site as being predominantly 'D1' after the classification developed by Partridge, Wood and Brink. A site with a D1 classification for urban development is a site underlain by materials with low compressibility. This was confirmed by standard consolidation tests undertaken on soil samples.
- No formal recommendations, with respect to suitable foundation types, embedment depths or ground improvement methods were outlined in this report.

6.2 Proposed Development

From recent correspondence, it is understood that the proposed site will be utilised for a high density, multistorey residential development. New structures will be between two and three storeys; comprising ground floor, first floor and second floor levels. Formal parking areas, internal access roads and stormwater infrastructure will also form part of the proposed development.

6.3 Excavations and Earthworks

Significant site clearing and removal of the heaps of fill material will be required prior to commencement of construction works. In addition, formal rehabilitation of the drive-in area will be required should formal structures be positioned over this area. This will require selective removal of this material, stockpiling and replacement thereof to formal engineered specifications.

The use of both TLBs as well as 20ton excavators will be necessary. Demolition of old masonry and reinforced concrete structures will also need to be allowed for.

The fill contained within the randomly scattered heaps around the site will need to be removed and discarded off-site while the gravel used to backfill the old borrow pit and create the berms of the drive-in can be stockpiled for later re-use. No rubble is permitted to be used for backfilling purposes on site.

Trial hole excavations on site were undertaken using a standard sized tractor loader backhoe (TLB). Excavation through the fill, colluvium and residual soil horizons was found to be easy. Excavation effort became slow and difficult upon reaching the top of the weathered andesite rock head contact; albeit possible. Near refusal was encountered upon the intersection of the deeper highly to moderately weathered, soft to medium hard rock.

Where localised zones of remnant hard rock were intersected within the residual soils, excavation became difficult. Care must be taken during construction to not confuse these localised, near surface, zones of hard rock with bedrock. Excavation sidewalls were found to be stable in a freestanding state.

No groundwater was encountered within the trial hole excavations. Ponding within excavations can be expected after rainfall events owing to impermeable nature of the underlying rockmass. As such, it is recommended that pumping be allowed for in tender documentation.

6.4 Foundations

The natural ground profile underlying the site is deemed to be highly favourable for the development of triple storey residential structures. Rehabilitation of the disturbed areas present beneath the old drive-in, will, however require formal rehabilitation prior to construction.

In areas outside of the old drive-in footprint, the weathered andesite horizon will be able to support the planned residential buildings on appropriately sized steel reinforced concrete strip footings. The rockmass will provide sufficient bearing capacity with negligible post construction settlement. On average, foundation level is anticipated to range between 1.5m and 1.8m. There are localised areas, where foundation depth will be deeper; albeit founding depths deeper than 2.5m are not expected.

Buildings can be placed within the footprint of the old drive-in area; albeit significant rehabilitation and ground improvement will need to be undertaken prior to foundation construction.

6.4.1 Foundations outside of the footprint of the old drive-in

It is recommended that the following ground preparation be taken prior to foundation construction:

- Strip and remove all overlying vegetation, any fill and the colluvial soils to a minimum depth of 0.4m across the founding footprint of each new building.
- Excavate foundation trenches to depths that intersect the underlying weathered rock head contact. It is imperative that the clay rich lower residual horizon is intersected and that completely weathered andesite rock is reached along the full length of the trenches. In the majority of places, foundation trench excavation is expected to extend to a level of between 1.5m and 1.8m below PGL. Actual foundation depth will be reduced with the prior removal of 0.4m of material prior to trench excavation.
- Reinforcement steel can be placed and concrete poured directly over the weathered rock; however, the base of the trenches must be cleaned and all loose debris swept out.

Allowable bearing capacities, derived from empirical analysis, have been tabulated below.

Material	Foundation Type	Dimensions (width)	Embedment below finished floor level	Allowable Bearing Capacity*
Completely weathered, soft rock Andesite	Steel reinforced concrete strip footing	0.8m	1.0m	200kPa
Completely weathered, soft rock Andesite	Steel reinforced concrete strip footing	1.0m	1.0m	230kPa
Highly to moderately weathered, soft to medium hard rock Andesite	Steel reinforced concrete strip footing	0.8m	1.0m	>250kPa

6.4.2 Foundations within the footprint of the old drive-in

The old drive-in area will need to be rehabilitated as follows:

- All vegetation, isolated heaps of fill, concrete structures and old asphalt surfacing will need to be stripped from this portion of the site.
- The material must be discarded off-site, well away so as not to contaminate useable material stockpiled elsewhere on-site.
- Prepare a cleared area alongside the drive-in footprint as a place to stockpile material.
- Once the clearing has been completed, it is imperative that the underlying mixture of sandy clayey gravels which were used to backfill the old borrow pit are exposed throughout.
- At this step, it is recommended that further test pits are excavated across the actual footprint of any structures that will be placed in this area. The test pits are to determine the depth to undisturbed, weathered andesite. If found to be at feasible depth, the founding recommendations outlined in 6.4.1 can be followed. If depth to rock is found to be beyond that which is feasible, further rehabilitation will need to be undertaken, outlined in the following steps.
- Excavate and remove the granular material from the borrow-pit and stockpile on the cleared area. Any material and rubble that does not conform to the sandy clayey gravel must be removed prior to placement into the stockpile.

- Continue excavations until undisturbed, intact, weathered andesite rock is exposed throughout.
- Replace stockpiled material into the resultant void. Material must be carefully placed in successive 200mm thick layers. Each layer to be compacted to 98% MOD ASSHTO at 2% of Optimal Moisture Content (OMC).
- Heightened control must be implemented when stockpiling and replacing material, ensuring the quality of materials used, and the degree of compaction is achieved as per the recommended specifications.
- It is likely that insufficient quantities of material will be removed from the old borrow pit to rehabilitate it back up to final ground level. Selected granular residual soils removed from foundation trench excavations can be used to make up this shortfall provided they are of at least G8 quality.
- Place the new structure on steel reinforced concrete rafts so as to withstand some post-construction movement of the underlying engineered fill.

The profile of re-compacted sandy clayey gravels overlying weathered andesite is estimated to have a modulus of subgrade reaction of 30 000kN/m³ to 35 000kN/m³. A maximum 'allowable bearing pressure' of 150kPa can be assumed for this foundation type provided the area of the foundation is larger than 6mx4m.

6.5 Surface Beds

Prior to the construction of the surface beds, all remaining vegetation, roots and colluvial soils must be removed from the footprint area of each individual structure. The upper and lower residual soils can form the subgrade on which imported granular layer works can be placed.

It is recommended that surface bed preparation be undertaken as follows:

- Strip and remove all remaining vegetation, roots and colluvium beneath the footprint of the surface beds for each individual structure.
- Ensure undisturbed residual soils are cleanly exposed throughout.
- Scarify the residual soils to a further 200mm and compact to 98% MOD AASHTO at 2% Optimum Moisture Content (OMC).

- Introduce a geotechnically inert, granular G5 quality material and compact in consecutive 100mm thick layers at 98% MOD AASHTO at 2% OMC. Place layers up until the underside of the planned surface beds is reached.

All surface slabs will need to incorporate sufficient articulation to take account of some slight post-construction settlement of the underlying residual horizons. In addition to this, floor slabs must be nominally reinforced and cast independently of the surrounding walls.

6.6 Quality of In-situ Material

The materials used to backfill the old borrow pit, across the drive-in footprint, are of a G8 quality and can be re-used to rehabilitate this area as outlined herein. This material is mostly a mixture of the natural colluvial and upper residual soils that lie across the full site.

Granular material for use as subbase and base course requirements, placed beneath surface beds and roadways, will need to be obtained from commercial suppliers in the surrounding area.

6.7 Internal Roads and Parking Areas

The design of internal roadways, parking areas and walkways must be able to accommodate some expected differential settlements and slight heave movement as they will be placed over the residual horizons.

Prior to placement of granular layers works, it is imperative that all vegetation, fill and colluvium be removed so that the upper residual soil layer is exposed throughout. The exposed residual layer must be scarified and compacted to 98% MOD AASHTO at 2% OMC to create a subgrade of uniform stiffness. Imported gravels can then be placed and compacted over this prepared subgrade to form the layer works as per the specifications provided by the accountable civil design engineer.

6.8 Groundwater and Stormwater Drainage

Excessive groundwater seepage into excavated foundation trenches is not anticipated at this site. No groundwater was intersected within excavated trial holes and there is little evidence to suggest groundwater is present within the near surface ground horizons.

Owing to the low permeability of the pedogenic, residual and weathered rock horizons, surface stormwater run-off during periods of rainfall is expected to be excessive. A stormwater management system, with generous provision of both surface and subsurface

drainage, will be of paramount importance across this site. Further to this ponding within foundation trenches and deep excavations can be expected after rainfall events owing to the very low permeability of the natural soils and impermeable nature of the andesite rock. Allowance for pumping will be required especially if construction work is to be undertaken during the wetter summer months.

7 CONCLUSION

The site was found to have favourable founding conditions for the planned multi-storey structures envisaged for the new residential development. The majority of the site is underlain by a uniform succession of colluvial and residual soil layers, overlying near surface weathered andesite rock. There is a central 1.8-hectare area, where an old borrow pit was located. In the past, the borrow pit was backfilled and used as a drive-in cinema. Depth to the natural ground profile ranges across this area, but is estimated to not be greater than 3m below PGL. No groundwater was intersected within excavated trial holes. No groundwater was intersected in the excavated trial holes.

It is recommended that steel reinforced concrete strip footings are used for the new structures positioned over areas underlain by the natural ground profile. All foundations will need to extend to weathered andesite rock, on average foundation depth is anticipated to be between 1.5m to 1.8m below PGL. Buildings can be placed within the central drive-in area provided some rehabilitation of the underlying ground profile is undertaken, this process will require the removal of surface fill from site followed by the excavation, selective stockpiling and replacement of the granular soil to a formal engineered specification. Once this ground improvement has been undertaken, the new structures can be positioned in this area on steel reinforced concrete raft foundations.

Granular material for use as subbase and base course layers beneath internal roads, parking areas and surface beds will need to be imported from commercial sources.

Surface stormwater run-off is expected to be excessive across this site owing to the low permeability of the underlying ground profile. The provision of a site wide stormwater management system, where generous provision of stormwater drains is made, will be of paramount importance.

The geotechnical findings obtained from this investigation confirm the factual findings outlined in the original geotechnical investigation undertaken in April 2009.

The recommendations as listed will not entirely prevent all post-construction movements, but will contribute to their mitigation. It is concluded that the site is geotechnically acceptable for the development envisaged provided the recommendations as outlined are adhered to.

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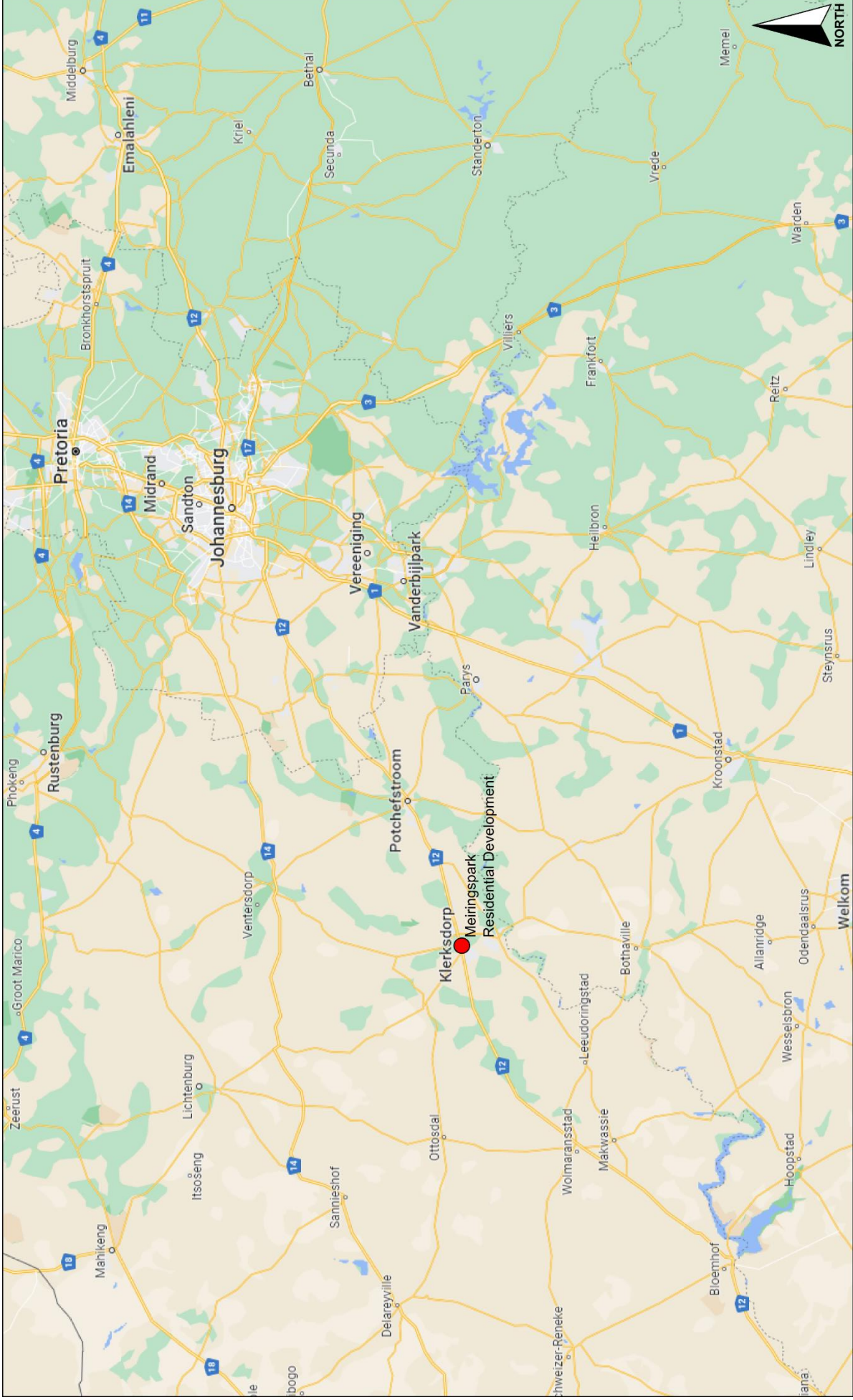


Frederick Volbrecht MIEAust CPEng, PrEng
Geotechnical Engineer




Nigel Brink Pr.Sci.Nat (115954)
Engineering Geologist


APPENDIX A
Locality Map
Trial Hole and DPL Test Positions






APPENDIX B
Individual Soil Profiles

	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p style="margin: 0;">CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH1 LATITUDE: 26°51'58.6"S LONGITUDE: 26°37'33.5"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth		Description	
		<i>Present Ground Surface</i>	
0,00	0,20	<p>CLAYEY SILTY SAND - FILL Slightly moist, brown with grey patches, medium dense, intact, fine grained; CLAYEY SILTY SAND - Fill with rubble and plastic debris.</p>	
0,5		<p>SANDY CLAYEY GRAVEL Slightly moist, brownish orange, medium dense, intact; SANDY CLAYEY GRAVEL - Colluvium .</p> <p>Note: Gravel comprises angular, pink quartz.</p>	
1,0	1,00	<p>SILTY SANDY CLAY Slightly moist, yellowish olive with black blotches, firm, highly shattered; SILTY SANDY CLAY - Residual with some gravel.</p>	
1,5	1,50	<p>SILTY SANDY CLAY Slightly moist, yellowish olive with black streaks and olive grey patches, firm to stiff, intact to slightly shattered; SILTY SANDY CLAY - Residual Andesite with weathered rock fragments.</p>	
2,0	1,80	<p>SILTY CLAYEY SAND Slightly moist, khaki orange with olive grey patches and black streaks, dense to very dense, intact with slightly shattered zones, fine grained; SILTY CLAYEY SAND - Residual Andesite with abundant weathered rock fragments.</p>	
2,5	2,30	<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE with zones of fractured, medium hard to hard rock.</p>	
	2,70		End of log

<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 2.7m 2: Slow mechanical excavation at base 3: Sample MP1 obtained at 1.3m 4: No groundwater encountered 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>				
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PROFILED BY: NB					
CHECKED BY: FCV					




TRIAL HOLE PROFILE

CLIENT: MDCC
PROJECT: Meiringspark Residential Development
PROJECT NO: GA0851/2022
LOCATION: Klerksdorp, NW Province

HOLE No: TH2
LATITUDE: 26°51'55.1"S
LONGITUDE: 26°37'30.9"E

Sheet 1 of 1

Depth		Description	
		<i>Present Ground Surface</i>	
0,00	0,20	<p>GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.</p> <p>Note: Andesite cobbles and boulders are present at surface in the surrounding area.</p> <p>SANDY CLAYEY GRAVEL Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.</p>	
0,5			
1,0	0,90	<p>SILTY CLAY SAND Slightly moist, yellowish olive with black blotches, medium dense to dense, intact to slightly shattered, fine grained; SILTY CLAY SAND - Residual Andesite with weathered rock fragments.</p>	
1,5	1,20	<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.</p>	
	1,60	End of log	

NOTES:


- 1: End of hole at 1.6m
- 2: Slow mechanical excavation at base
- 3: No sample obtained
- 4: No groundwater encountered
- 5: Hard rock cobbles and boulders can be expected within the colluvial and residual soils


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EXCAVATION METHOD: Mechanical Excavation using TLB
DATE PROFILED: 2022-06-30
PROFILED BY: NB
CHECKED BY: FCV

	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p style="margin: 0;">CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH3 LATITUDE: 26°51'55.8"S LONGITUDE: 26°37'25.2"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth		Description	
		<i>Present Ground Surface</i>	
0,00	0,30	<p>GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with hard rock Andesite cobbles and boulders.</p> <p>Note: Andesite cobbles and boulders are present at surface in the surrounding area.</p>	
0,5		<p>CLAYEY GRAVELLY SILT Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; CLAYEY GRAVELLY SILT - Residual with hard rock Andesite cobbles and boulders.</p>	
1,0	1,10	<p>SILTY CLAY SAND Slightly moist, yellowish olive with black blotches, medium dense to dense, intact to slightly shattered, fine grained; SILTY CLAY SAND - Residual Andesite with weathered rock fragments.</p>	
1,5	1,70	<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.</p>	
2,0	2,20	End of log	

<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 2.2m 2: Slow mechanical excavation at base 3: No sample obtained 4: No groundwater encountered 5: Hard rock cobbles and boulders can be expected within the colluvial and residual soils 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>				
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PROFILED BY: NB					
CHECKED BY: FCV					

	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p>CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH4 LATITUDE: 26°51'55.1"S LONGITUDE: 26°37'19.7"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
---	--	--

Depth		Description	
		<i>Present Ground Surface</i>	
	0,00	ASPHALT SURFACING	
	0,04	BASE COURSE Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; CLAYEY SANDY GRAVEL - Base Course.	
	0,20	GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.	
	0,40	Note: Andesite cobbles and boulders are present at surface in the surrounding area. SANDY CLAYEY GRAVEL Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.	
0,5	● MP2		
	0,80	SILTY CLAYEY SAND Slightly moist, yellowish olive with black blotches, medium dense to dense, intact to slightly shattered, fine grained; SILTY CLAYEY SAND - Residual Andesite with weathered rock fragments.	
1,0			
	1,10	Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.	
	1,40		
		End of log	

<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 1.4m 2: Slow mechanical excavation at base 3: Sample MP2 obtained at 0.6m 4: No groundwater encountered 	<p>Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>				
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DATE PROFILED: 2022-06-30					
PROFILED BY: NB					
CHECKED BY: FCV					




TRIAL HOLE PROFILE

CLIENT: MDCC
 PROJECT: Meiringspark Residential Development
 PROJECT NO: GA0851/2022
 LOCATION: Klerksdorp, NW Province

HOLE No: TH5
 LATITUDE: 26°51'59.0"S
 LONGITUDE: 26°37'22.0"E

Sheet 1 of 1

Depth			Description	
			<i>Present Ground Surface</i>	
	0,00		GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.	
	0,30		Note: Andesite cobbles and boulders are present at surface in the surrounding area. SANDY CLAYEY GRAVEL Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.	
0,5				
1,0		0,80	SILTY SANDY CLAY Slightly moist, yellowish olive with black blotches, firm to stiff, intact to slightly shattered; SILTY SANDY CLAY - Residual Andesite with weathered rock fragments.	
1,5				
2,0		1,70	Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.	
		2,30	End of log	

NOTES:

- 1: End of hole at 2.3m
- 2: Slow mechanical excavation at base
- 3: No sample obtained
- 4: No groundwater encountered

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EXCAVATION METHOD: Mechanical Excavation using TLB

DATE PROFILED: 2022-06-30


PROFILED BY: NB


CHECKED BY: FCV

	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p style="margin: 0;">CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH6 LATITUDE: 26°51'59.4"S LONGITUDE: 26°37'28.3"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth			Description	
			<i>Present Ground Surface</i>	
	0,00	0,40	<p>GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.</p> <p>Note: Andesite cobbles and boulders are present at surface in the surrounding area.</p>	
0,5		<p>SANDY CLAYEY GRAVEL Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.</p>		
1,0		<p>SILTY SANDY CLAY Slightly moist, yellowish olive with black blotches, firm to stiff, intact to slightly shattered; SILTY SANDY CLAY - Residual Andesite with weathered rock fragments.</p>		
	1,20		<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.</p>	
1,5		<p>Soft to medium hard rock ANDESITE Yellowish olive to olive grey with black staining along joint and fracture surfaces, highly to moderately weathered, fractured, medium to widely jointed, fine grained, soft to medium hard rock; ANDESITE.</p>		
		1,70	End of log	

<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 1.7m 2: Nearing refusal at base 3: No sample obtained 4: No groundwater encountered 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>
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	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p>CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH7 LATITUDE: 26°52'02.3"S LONGITUDE: 26°37'31.9"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth		Description	
		<i>Present Ground Surface</i>	
	0,00	<p>GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.</p> <p>Note: Andesite cobbles and boulders are present at surface in the surrounding area.</p>	
0,5	0,40	<p>SANDY CLAYEY GRAVEL Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.</p>	
1,0	1,00	<p>GRAVELLY SANDY CLAY Slightly moist, yellowish orange with black blotches, firm, intact to slightly shattered; GRAVELLY SANDY CLAY - Residual with abundant weathered Andesite rock fragments.</p>	
1,5	1,30	<p>SILTY CLAYEY SAND Slightly moist, yellowish olive with black blotches, medium dense to dense, intact to slightly shattered, fine grained; SILTY CLAYEY SAND - Residual Andesite with weathered rock fragments.</p>	
	1,70	<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.</p>	
2,0	2,00	End of log	

<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 2.0m 2: Slow mechanical excavation at base 3: No sample obtained 4: No groundwater encountered 	<p>Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>
<p>EXCAVATION METHOD: Mechanical Excavation using TLB DATE PROFILED: 2022-06-30 PROFILED BY: NB CHECKED BY: FCV</p>	




TRIAL HOLE PROFILE

CLIENT: MDCC
PROJECT: Meiringspark Residential Development
PROJECT NO: GA0851/2022
LOCATION: Klerksdorp, NW Province

HOLE No: TH8
LATITUDE: 26°52'02.5"S
LONGITUDE: 26°37'29.0"E

Sheet 1 of 1

Depth		Description	
		<i>Present Ground Surface</i>	
0,00	0,00	CLAYEY GRAVELLY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; CLAYEY GRAVELLY SAND - Colluvium with roots. Note: Andesite cobbles and boulders are present at surface in the surrounding area.	
0,5	0,40	SANDY CLAYEY GRAVEL Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.	
1,0	1,00	SILTY SANDY CLAY Slightly moist, yellowish olive with black blotches, firm to stiff, intact to slightly shattered; SILTY SANDY CLAY - Residual Andesite with weathered rock fragments.	
1,5	1,50	Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.	
2,0	2,00	End of log	

NOTES:

- 1: End of hole at 2.0m
- 2: Slow mechanical excavation at base
- 3: No sample obtained
- 4: No groundwater encountered

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EXCAVATION METHOD: Mechanical Excavation using TLB
DATE PROFILED: 2022-06-30
PROFILED BY: NB
CHECKED BY: FCV

	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p style="margin: 0;">CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH9 LATITUDE: 26°52'04.7"S LONGITUDE: 26°37'34.1"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth		Description	
		<i>Present Ground Surface</i>	
0,00	0,00	SANDY CLAYEY SILT - FILL Slightly moist, brownish orange with grey patches, medium dense, intact to slightly shattered; SANDY CLAYEY SILT - Fill with gravel and rubble.	
0,20	0,20	RESIDUAL ANDESITE Slightly moist, brownish orange to orange with olive grey patches, medium dense with very dense zones, slightly shattered; Angular hard rock Andesite (80 - 200mm) within Sandy Clayey Silt Matrix - Residual.	
0,5	0,5		
1,0	1,0		
1,5	1,5		
1,70	1,70	SILTY SANDY CLAY Slightly moist, orange to dark orange-red with black streaks, firm to stiff, intact with shattered zones; SILTY SANDY CLAY - Residual Andesite with zones of completely weathered soft rock.	
1,70	1,70		
2,0	2,0	SILTY CLAY SAND Slightly moist, khaki orange with olive grey patches and black streaks, dense to very dense, intact with slightly shattered zones, fine grained; SILTY CLAY SAND - Residual Andesite with abundant weathered rock fragments.	
2,5	2,5		
2,50	2,50	Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE with zones of fractured, medium hard to hard rock.	
3,0	3,00		
		End of log	

<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 3.0m 2: Slow mechanical excavation at base 3: No sample obtained 4: No groundwater encountered 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>				
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DATE PROFILED: 2022-06-30					
PROFILED BY: NB					
CHECKED BY: FCV					




TRIAL HOLE PROFILE

CLIENT: MDCC
PROJECT: Meiringspark Residential Development
PROJECT NO: GA0851/2022
LOCATION: Klerksdorp, NW Province

HOLE No: TH10
LATITUDE: 26°52'06.2"S
LONGITUDE: 26°37'27.8"E

Sheet 1 of 1

Depth			Description	
			<i>Present Ground Surface</i>	
	0,00		<p>GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.</p> <p>Note: Andesite cobbles and boulders are present at surface in the surrounding area.</p>	
	0,10		<p>SANDY CLAYEY GRAVEL Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.</p>	
0,5	0,40		<p>SILTY CLAYEY SAND Slightly moist, yellowish olive with black blotches, medium dense, intact to slightly shattered; SILTY CLAYEY SAND - Residual Andesite with weathered rock fragments.</p>	
	0,80		<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.</p>	
1,0	1,00		<p>Medium hard rock ANDESITE Olive grey with black and orange staining along joint and fracture surfaces, moderately weathered, fractured, medium to widely jointed, fine grained, medium hard rock; ANDESITE.</p>	
	1,20		End of log	

NOTES:


- 1: End of hole at 1.2m
- 2: Nearing refusal at base
- 3: No sample obtained
- 4: No groundwater encountered


Ground Africa Consulting Engineers

PO Box 926 26 John Ross Avenue
Eshowe, KZN Eshowe, KZN
3815 3815


Tel: +27 35 474 7949
Fax: +27 86 621 7160
Email: fcvolbrecht@groundafrica.co.za


EXCAVATION METHOD: Mechanical Excavation using TLB
DATE PROFILED: 2022-06-30
PROFILED BY: NB
CHECKED BY: FCV

	<p>TRIAL HOLE PROFILE</p> <p>CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH11 LATITUDE: 26°52'02.9"S LONGITUDE: 26°37'25.5"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth		Description	
		<i>Present Ground Surface</i>	
	0.00	ASPHALT SURFACING	
	0.04	BASE COURSE Slightly moist, orange brown with black blotches, medium dense, intact, fine to medium grained; CLAYEY SANDY GRAVEL - Base Course.	
	0.30	CLAYEY SANDY GRAVEL - FILL Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; CLAYEY SANDY GRAVEL - Fill.	
0,5	0.50	GRAVELLY CLAYEY SAND - FILL Slightly moist, brown to orange brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Fill.	
1,0			
1,5			
	1.60	SANDY CLAYEY GRAVEL Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.	
2,0	2.00	SILTY SANDY CLAY Slightly moist, yellowish olive with black blotches, firm, intact to slightly shattered; SILTY SANDY CLAY - Residual Andesite with weathered rock fragments.	
	2.30	Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.	
2,5	2.50		
		End of log	


<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 2.5m 2: Slow mechanical excavation at base 3: No sample obtained 4: No groundwater encountered 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>
<p>EXCAVATION METHOD: Mechanical Excavation using TLB DATE PROFILED: 2022-06-30 PROFILED BY: NB CHECKED BY: FCV</p>	

	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p>CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH12 LATITUDE: 26°52'00.8"S LONGITUDE: 26°37'18.7"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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Depth		Description	
		<i>Present Ground Surface</i>	
0,00	0,10	<p>GRAVELLY CLAYEY SAND Slightly moist, brown, medium dense, intact, fine to medium grained; GRAVELLY CLAYEY SAND - Colluvium with roots.</p> <p>Note: Andesite cobbles and boulders are present at surface in the surrounding area.</p>	
0,5	0,70	<p>CLAYEY GRAVELLY SILT Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; CLAYEY GRAVELLY SILT - Residual with weathered Andesite rock fragments.</p>	
1,0	1,20	<p>SILTY SANDY CLAY Slightly moist, orange to olive yellow with black blotches, firm, shattered; SILTY SANDY CLAY - Residual with weathered Andesite rock fragments.</p>	
1,5	1,50	<p>SILTY CLAY SAND Slightly moist, yellowish olive with black blotches, medium dense to dense, intact to slightly shattered; SILTY CLAY SAND - Residual Andesite with weathered rock fragments.</p>	
1,90	1,90	<p>Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.</p>	
		End of log	

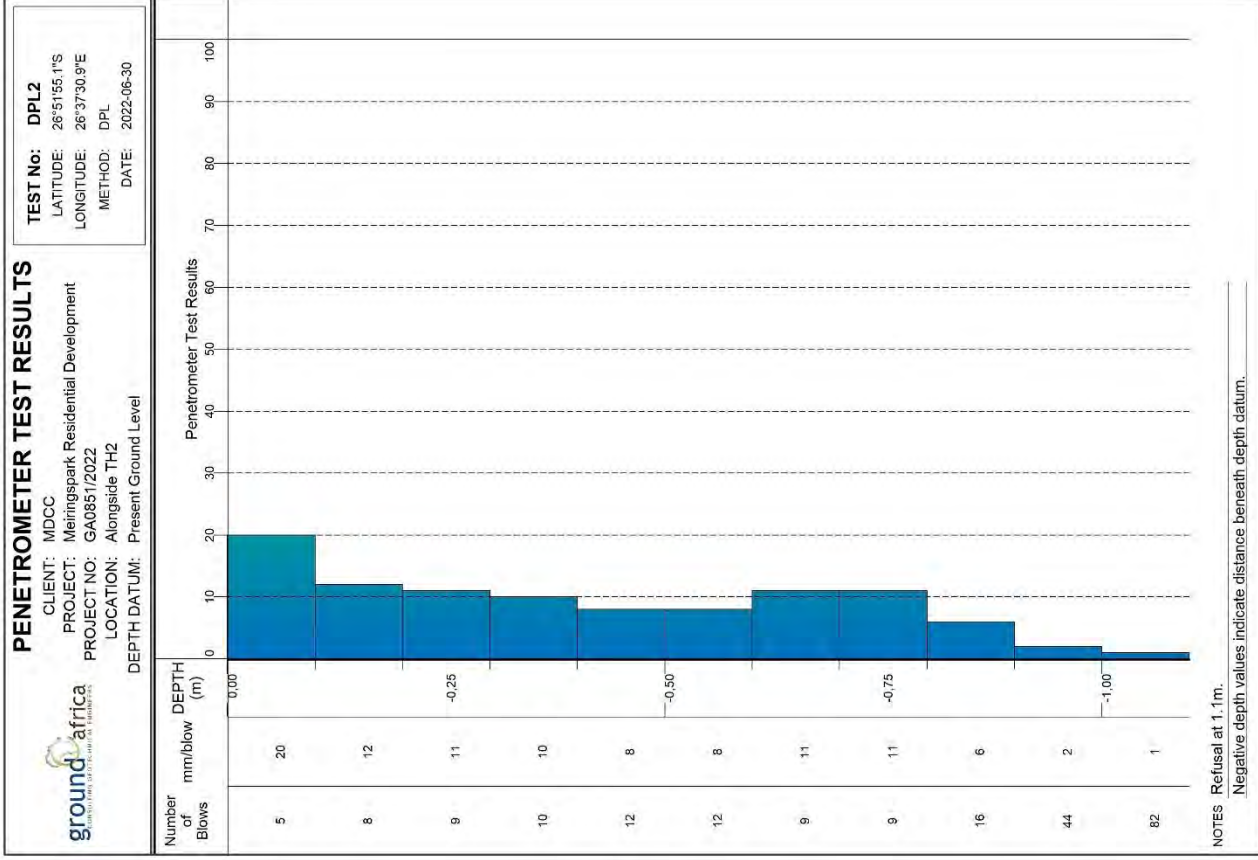
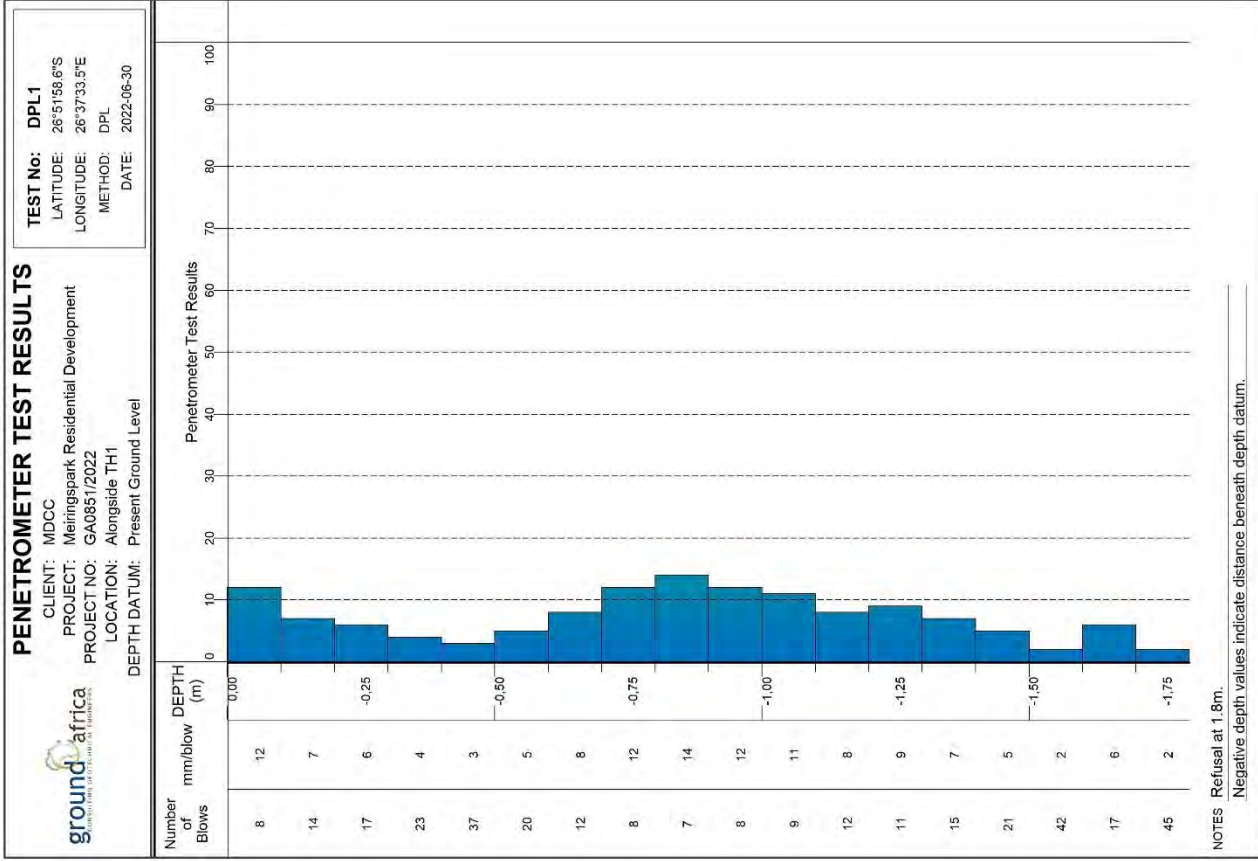
<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 1.9m 2: Slow mechanical excavation at base 3: No sample obtained 4: No groundwater encountered 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>
<p>EXCAVATION METHOD: Mechanical Excavation using TLB DATE PROFILED: 2022-06-30 PROFILED BY: NB CHECKED BY: FCV</p>	

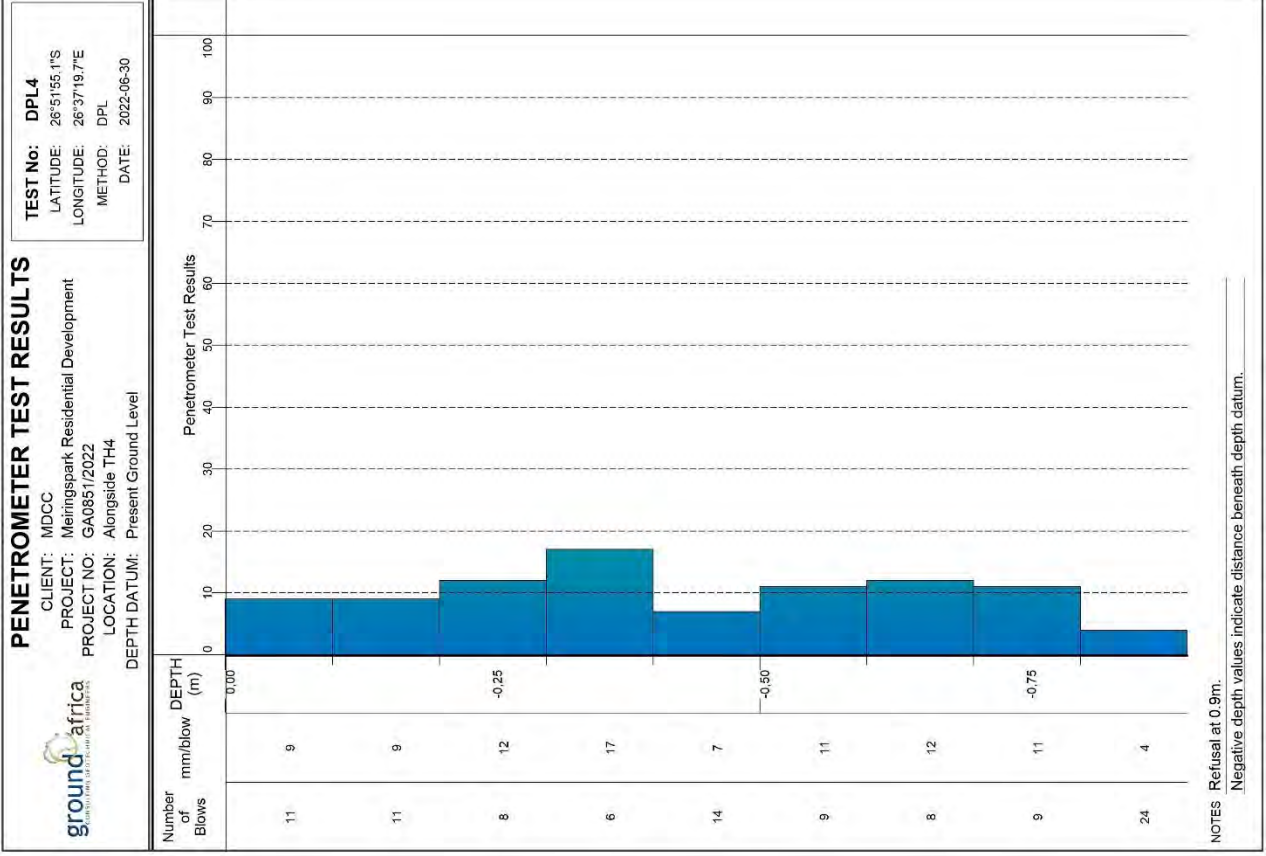
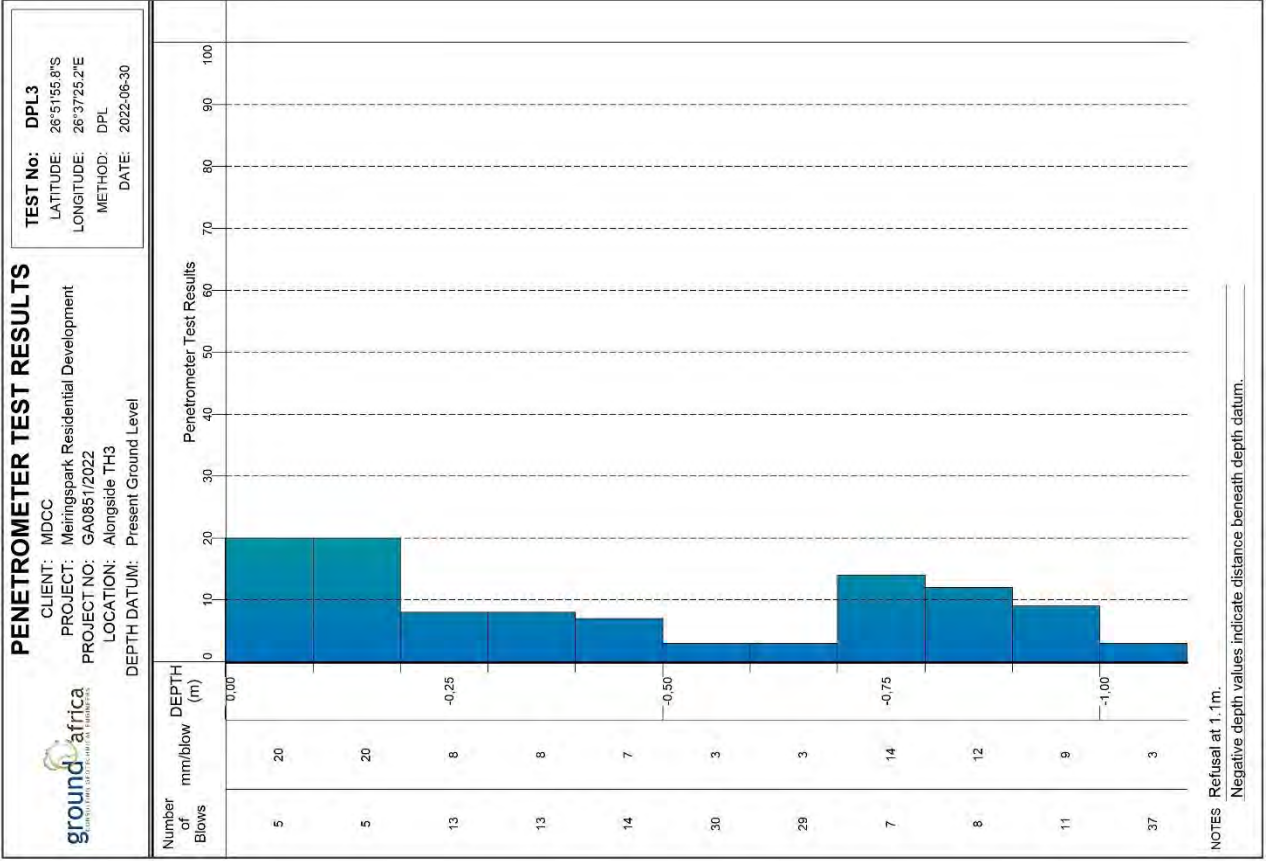
	<h3 style="margin: 0;">TRIAL HOLE PROFILE</h3> <p style="margin: 0;">CLIENT: MDCC PROJECT: Meiringspark Residential Development PROJECT NO: GA0851/2022 LOCATION: Klerksdorp, NW Province</p>	<p>HOLE No: TH13 LATITUDE: 26°51'59.3"S LONGITUDE: 26°37'26.6"E</p> <p style="text-align: right; font-size: small;">Sheet 1 of 1</p>
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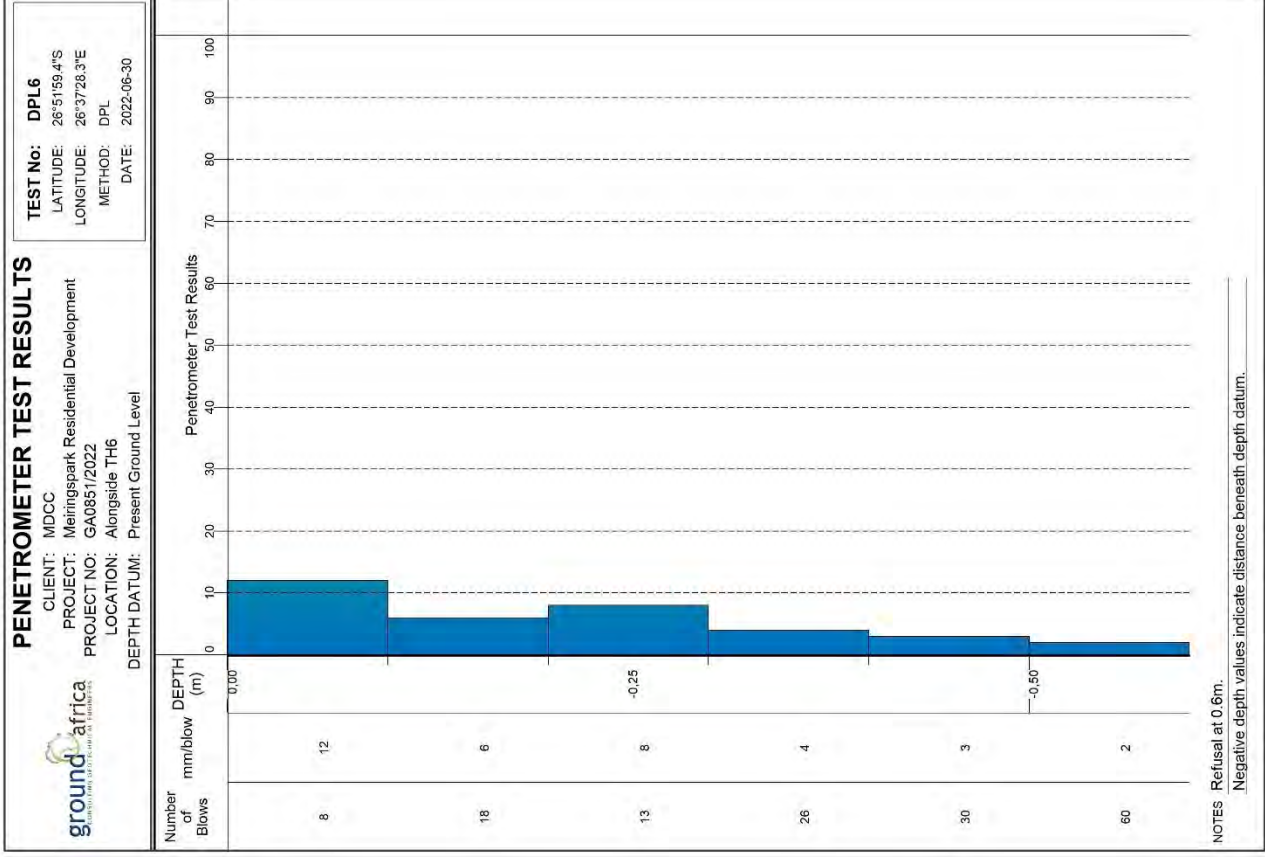
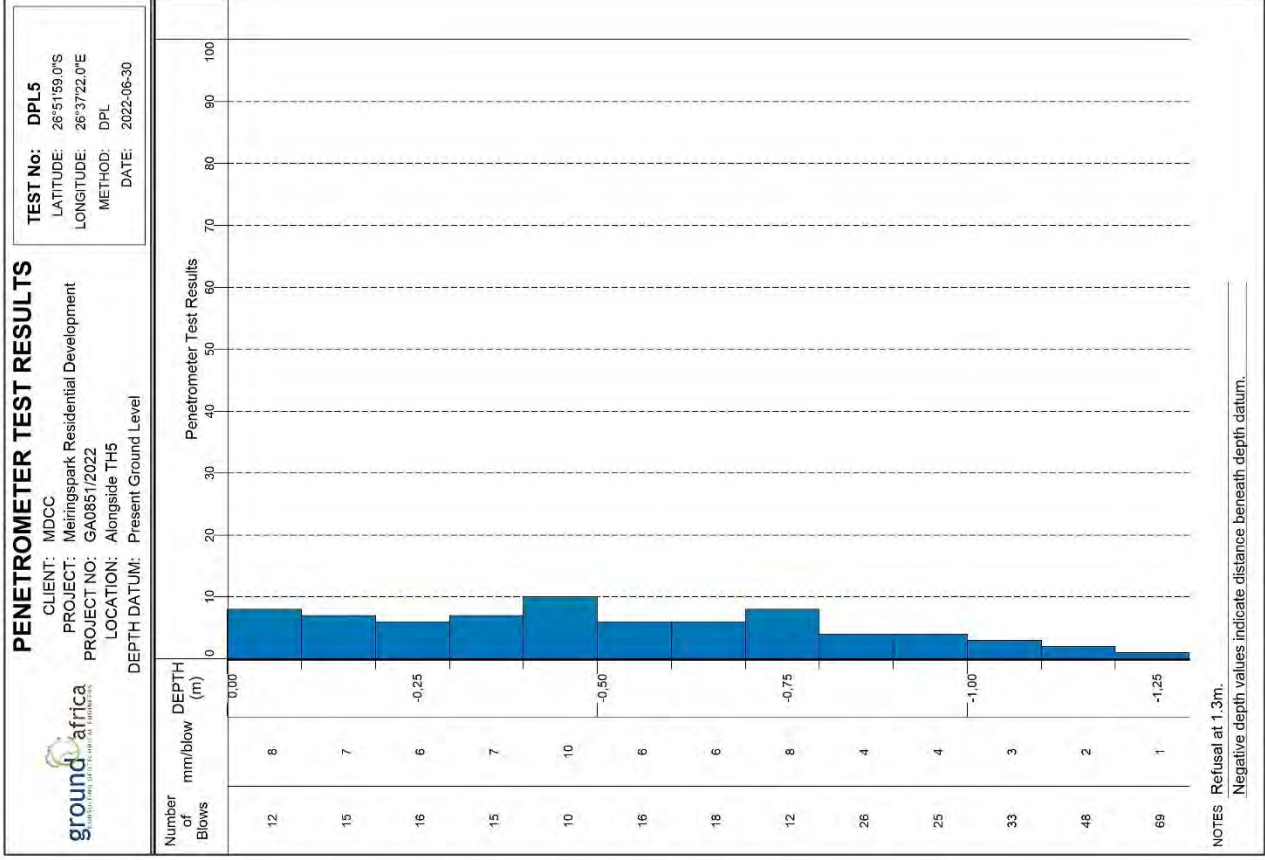
Depth		Description	
		<i>Present Ground Surface</i>	
	0.00	ASPHALT SURFACING	
	0.04	BASE COURSE Slightly moist, brownish orange to reddish orange with black blotches, medium dense, intact to slightly shattered; CLAYEY SANDY GRAVEL - Base Course.	
0,5	0.30	CLAYEY SANDY GRAVEL - FILL Slightly moist, orange with white and pink blotches, medium dense to dense, intact, fine to medium grained; CLAYEY SANDY GRAVEL - Fill.	
1,0			
1,5	1.50	SANDY CLAYEY GRAVEL Slightly moist, brownish orange to pinkish orange with black blotches, medium dense, intact to slightly shattered; SANDY CLAYEY GRAVEL - Residual with weathered Andesite rock fragments.	
	1.80	SILTY SANDY CLAY Slightly moist, orange to dark orange-red with black streaks, firm to stiff, intact with shattered zones; SILTY SANDY CLAY - Residual Andesite with zones of completely weathered soft rock.	
2,0	2.10	SILTY CLAYEY SAND Slightly moist, yellowish olive with black blotches, very dense, intact to slightly shattered, fine grained; SILTY CLAYEY SAND - Residual Andesite with weathered rock fragments.	
2,5	2.40	Very soft to soft rock ANDESITE Orange to olive grey with black staining along joint and fracture surfaces, completely to highly weathered, slightly fractured, medium to widely jointed, fine grained, very soft to soft rock; ANDESITE.	
	2.60	End of log	

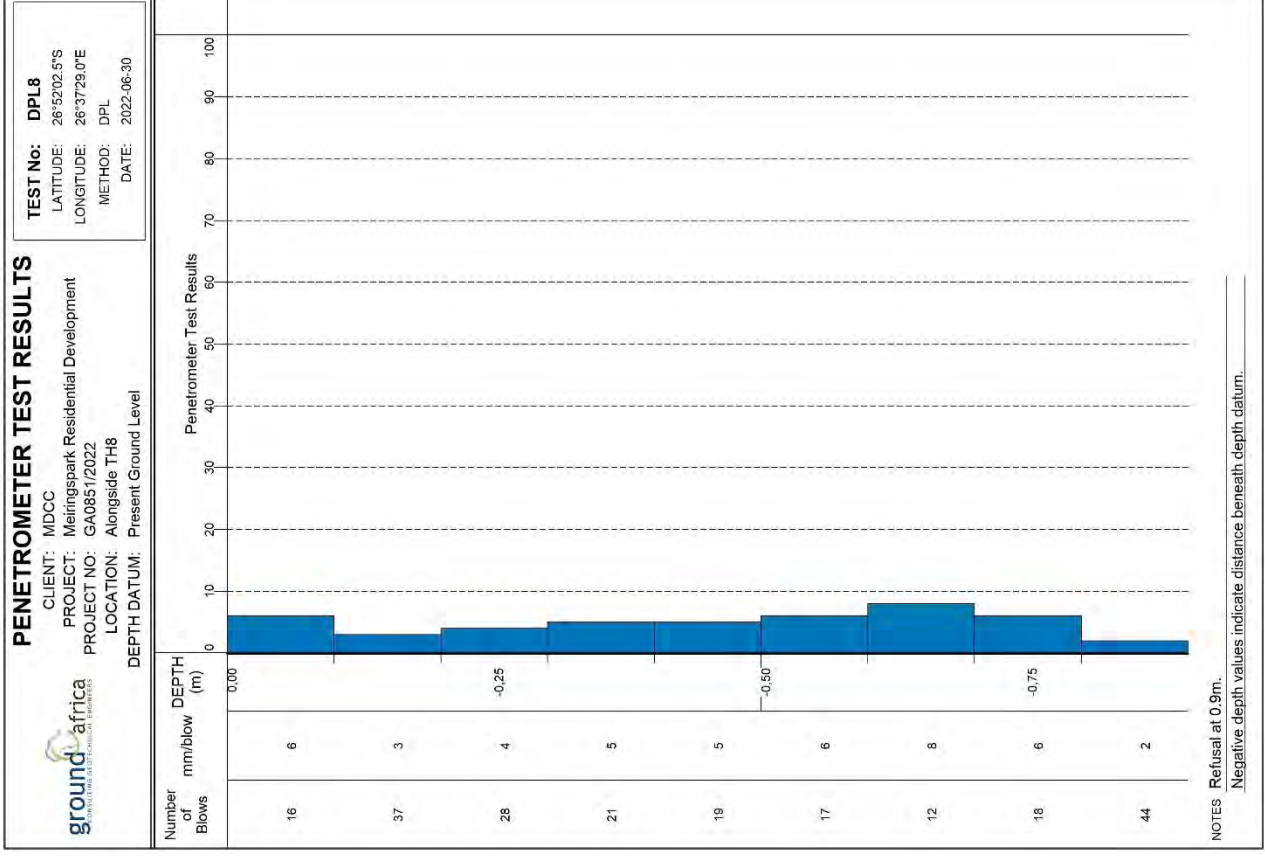
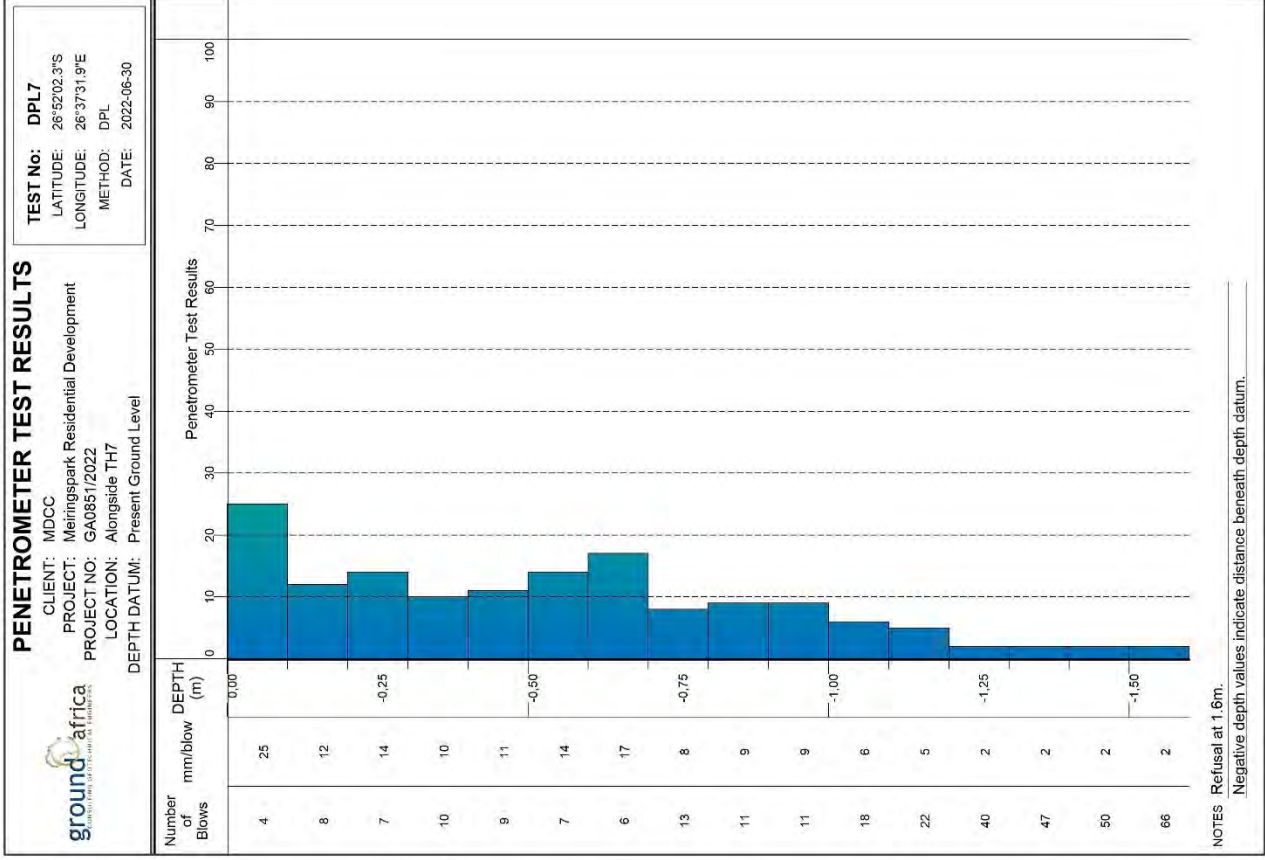
<p>NOTES:</p> <ol style="list-style-type: none"> 1: End of hole at 2.6m 2: Slow mechanical excavation at base 3: Sample MP4 obtained from 0.2m to 1.2m 4: No groundwater encountered 	<p style="text-align: center;">Ground Africa Consulting Engineers</p> <p>PO Box 926 26 John Ross Avenue Eshowe, KZN Eshowe, KZN 3815 3815</p> <p>Tel: +27 35 474 7949 Fax: +27 86 621 7160 Email: fcvolbrecht@groundafrica.co.za</p>
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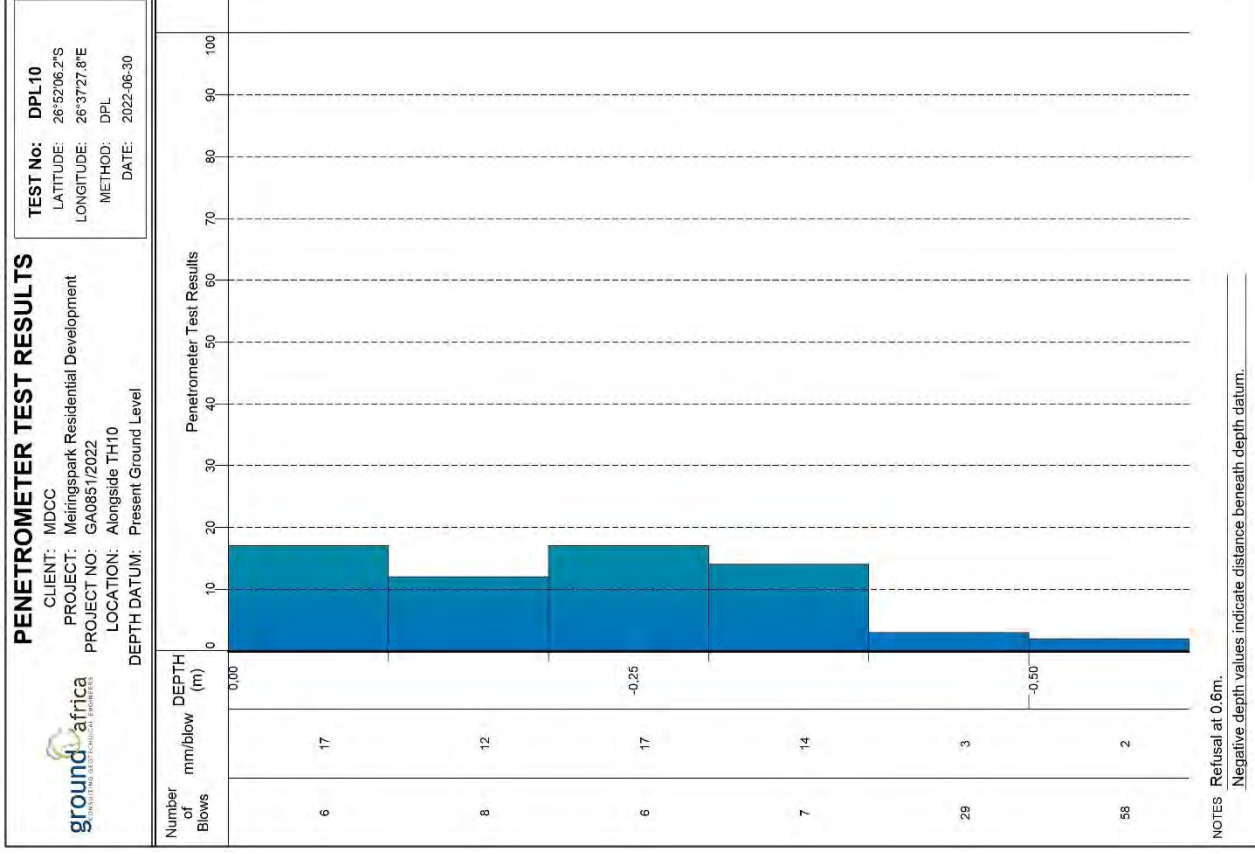
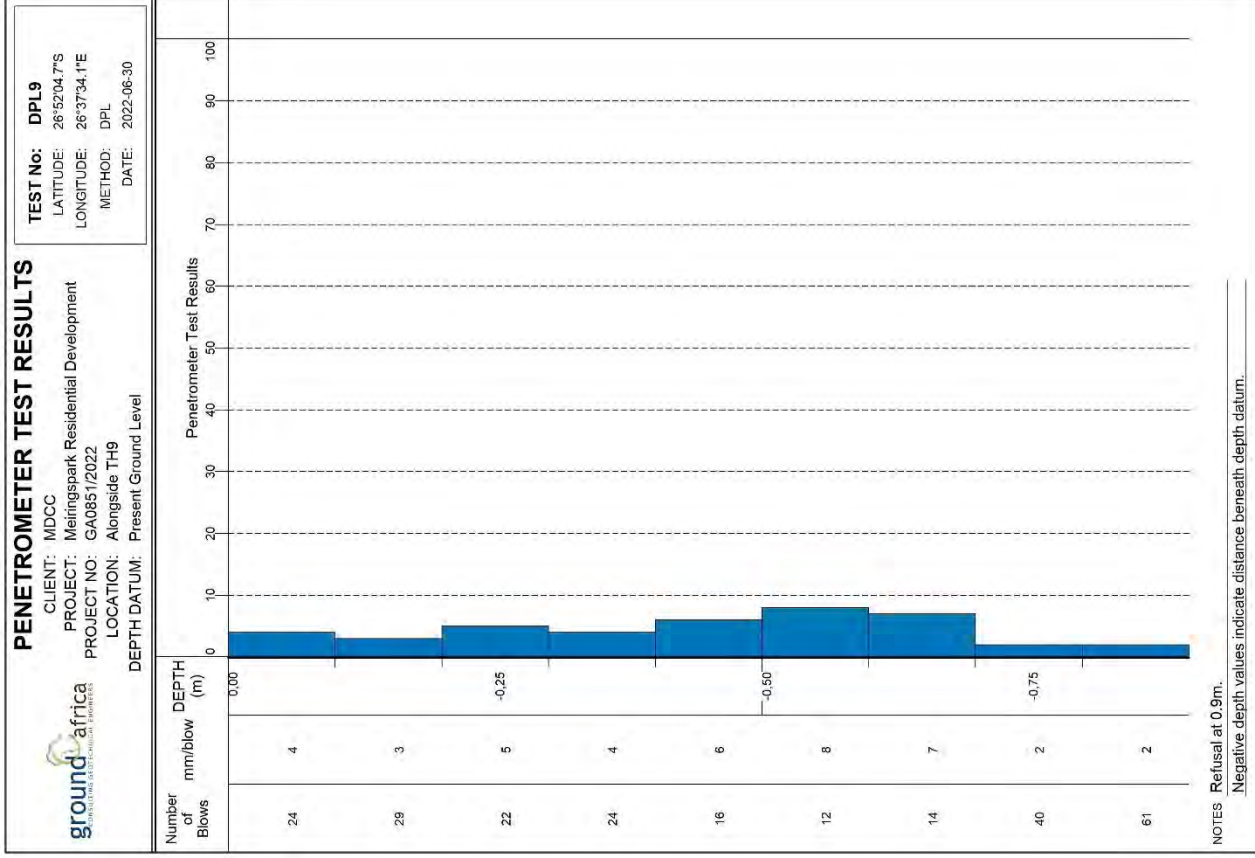
APPENDIX C
Dynamic Penetrometer Light Test Results

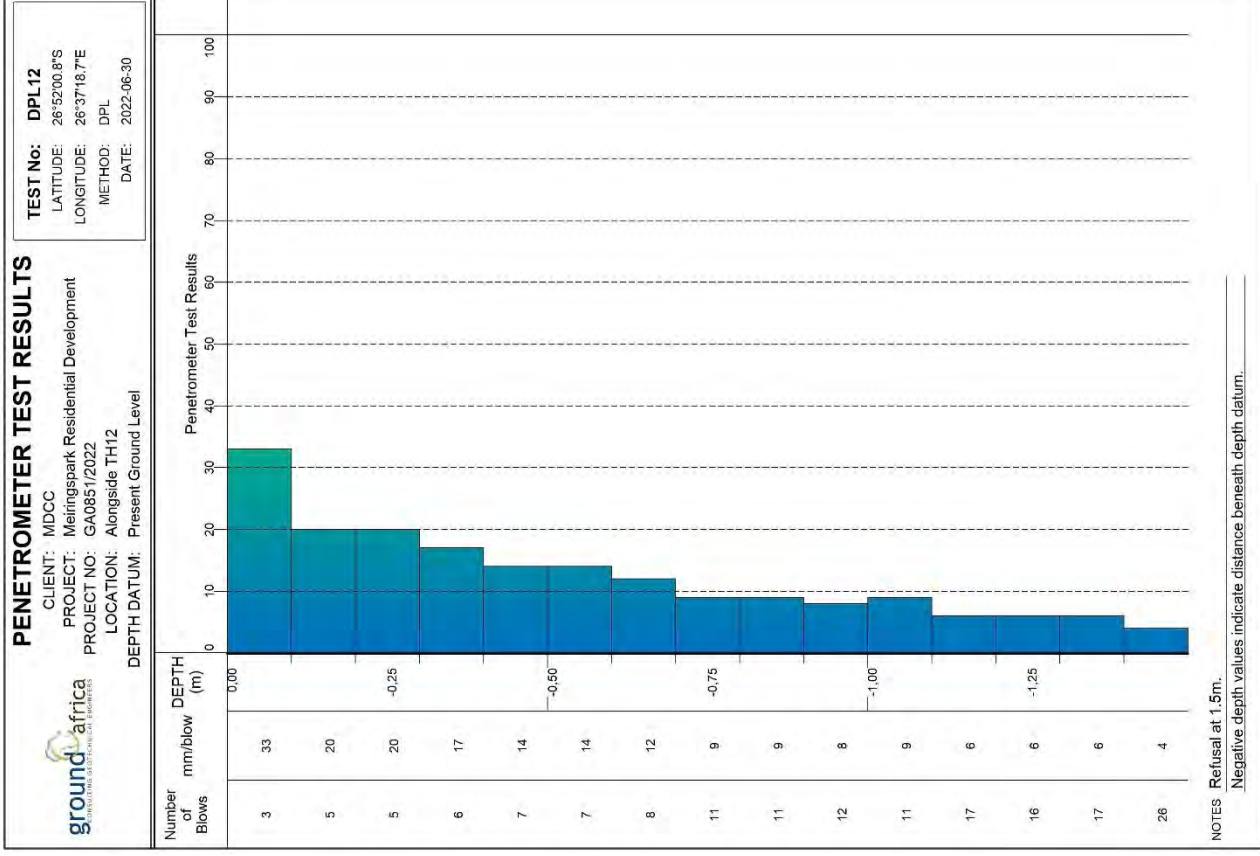
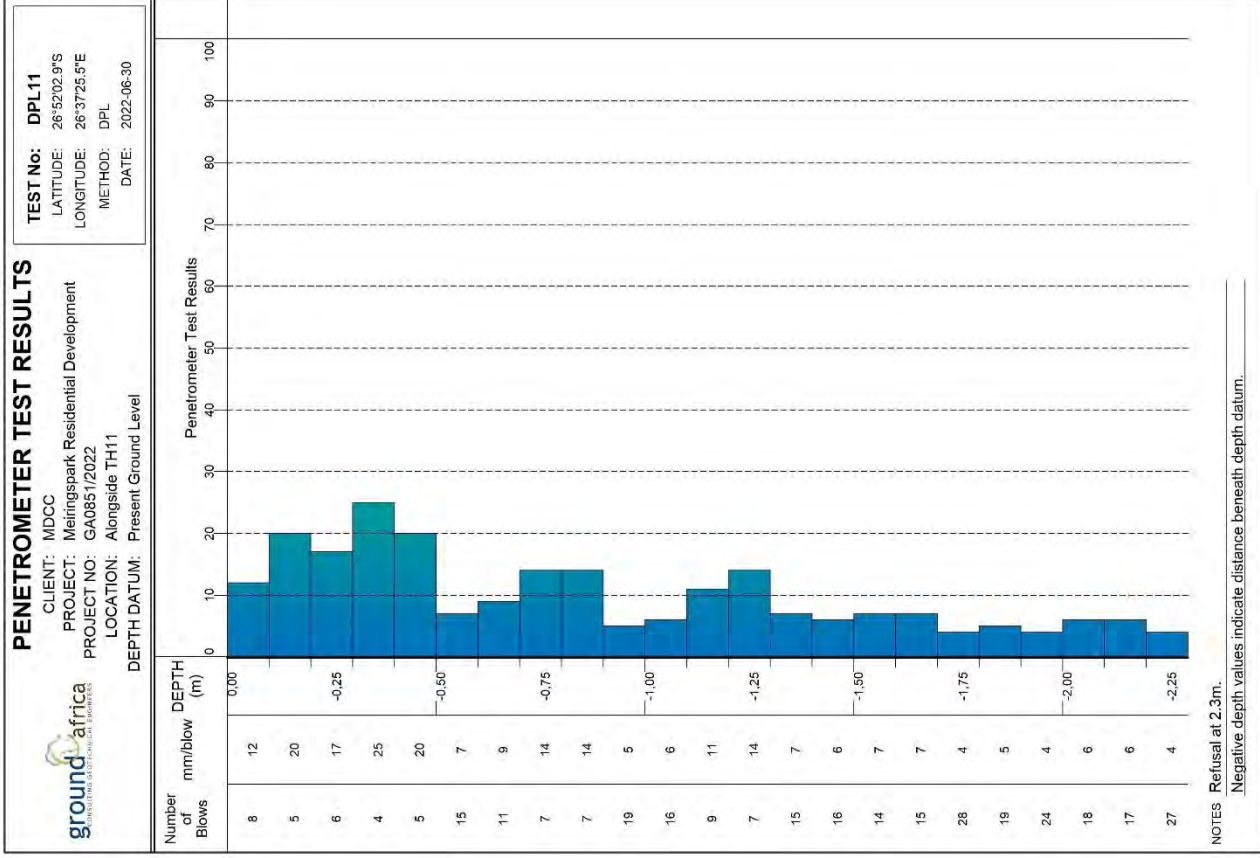




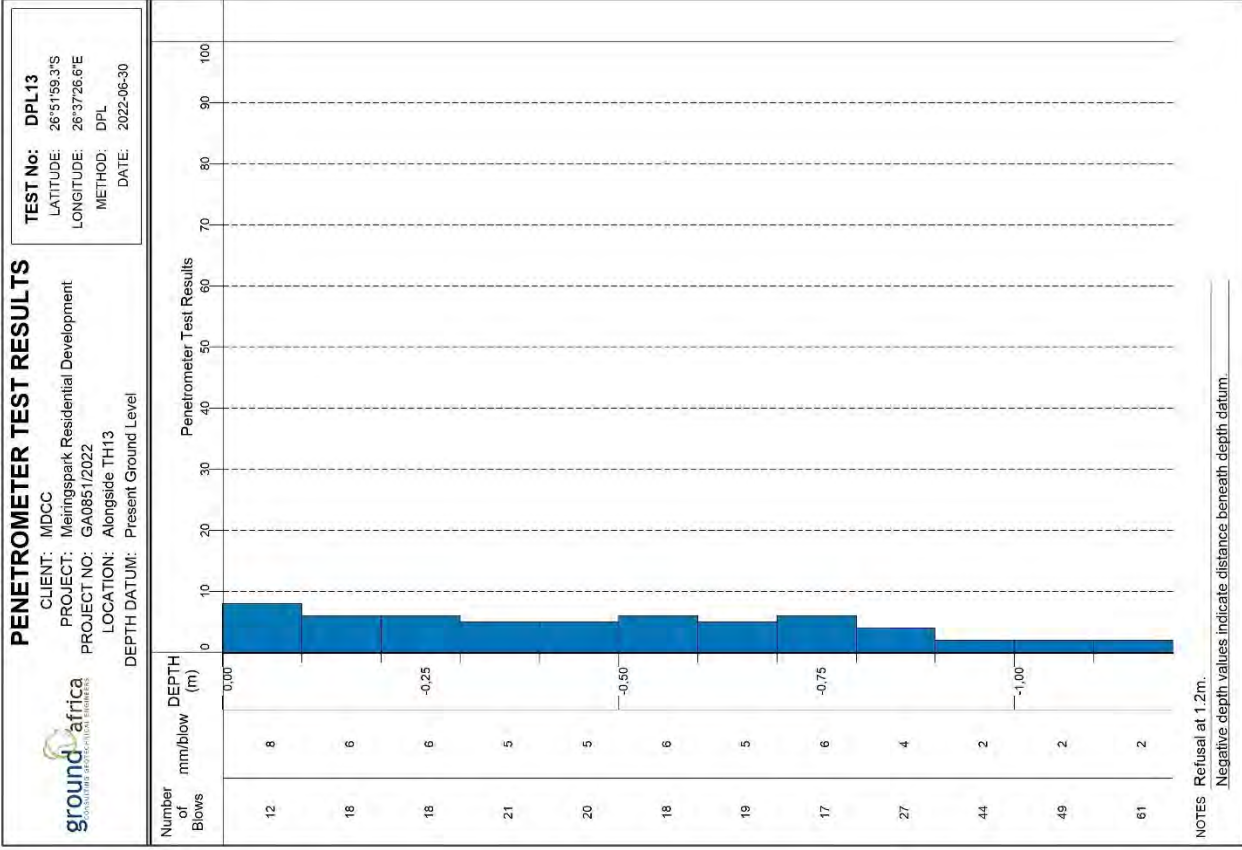








Dynamic Penetrometer Light Test Results



APPENDIX D
Laboratory Test Results

Job Description: 9582 MP Development		THEKWINI SOILS LABORATORY CC VAT REG. 49902 10061 UNIT 10, Alexander Park 29 Alexander Road JHELI, 6001 TSH 387 2216				
Lab no.	07055	07056	07057			
Location	MP 1 (TH1)	MP 2 (TH4)	MP 4 (TH13)			
Depth	1,3	0,6	0,2 - 1,2			
Description	-	-	-			
Blinder Material	-	-	-			
Particle Size (m)	75		100			
	53		97			
	37,5		95			
	26,5		90			
	19	100	87			
	13,2	96	80			
	9,5	90	75			
	4,75	67	62			
	2	83	48	47		
	0,425	74	41	39		
	0,25	71	39	36		
	0,15	67	36	33		
	0,075	58	29	27		
0,05	55	28	26			
0,02	46	25	22			
0,005	36	22	19			
0,002	32	20	18			
Coarse Sand <2.0 >0.425mm	10,7	14,8	16,9			
Fine Sand <0.425>0.05mm	40,2	61,5	61,6			
Silt <0.05 >0.005	16,6	5,0	5,7			
Clay <0.005	32,6	18,6	15,8			
Liquid Limit	35,5	34,2	31,6			
Plasticity Index	10,3	12,7	9,3			
Linear Shrinkage Limits	6,7	4,7	5			
Natural MC	-	-	-			
Mod AASHTO			1858			
Density			14,1			
OMC			14			
100%			13			
98%			11			
95%			11			
93% (Inferred)			11			
90%			0,00			
CBR Swell						
AASHTO Soil Classification	A - 6 (4)	A - 2 - 6 (0)	A - 2 - 4 (0)			
Grading Modulus	0,86	1,81	1,87			
TRH 14 (1985)			GB			
WT = Worse Than						

MATERIALS ANALYSIS

Project: 9582

Ref no.: MP Develo **Lab no.:** 07055 **Borehole/Pit no.:** MP 1 (TH1)

Depth: 1,3

THEKWINI SOILS LABORATORY CC
VAT REG. 45992 10961

UNIT 16, Alexander Park
24 Alexander Road
WESTBURY
3610
Tel : 087 898 2245

P. O. BOX 50404
MAYVILLE
4058

Grading Analysis		M.I.T SIZE		PLASTICITY	
Grain Size (mm)	%Passing	CLASSIFICATION			
75	100,0	Cobble%	0,0	Liquid Limit	35,5
53	100,0	Gravel%	16,7	Plasticity Index	10,3
37,5	100,0	Coarse	0,0	Linear Shrinkage	6,7
26,5	100,0	Medium	2,4		
19	100,0	Fine	14,3		
13,2	100,0	Sand%	27,2		
9,5	100,0	Coarse	7,9		
4,75	96,8	Medium	6,7		
2	83,3	Fine	12,6		
0,425	74,4	Silt%	23,6		
0,25	70,6	Coarse	10,3		
0,15	66,8	Medium	8,7		
0,075	57,7	Fine	4,6		
0,05	55,0	Clay%	32,5		
0,02	45,7				
0,005	36,5				
0,002	32,5				

GRADING		CLASSIFICATION	
D10 Size (mm)	<0,002	Potential Expansiveness	Low
Uniformity Coefficient	NA	Group Index	4
Grading Modulus	0,85	AASHTO Soil Classification	A - 6
		Unified Classification	ML or OL

Grading Curve

Ref no.: MP Development

Fig no.: -

MATERIALS ANALYSIS

Project: 9582

Ref no.: MP Develo **Lab no.:** 07056 **Borehole/Pit no.:** MP 2 (TH4)

Depth: 0,6

THEKWINI SOILS LABORATORY CC
VAT REG. 45902 10981

UNIT 16, Alexander Park
24 Alexander Road
WESTMEAD
3610
Tel: 087 838 2248

P. O. BOX 30464
MAYVILLE
4058

Grading Analysis		M.I.T SIZE		PLASTICITY	
Grain Size (mm)	%Passing	CLASSIFICATION			
75	100,0	Cobble%	0,0	Liquid Limit	34,2
53	100,0	Gravel%	51,5	Plasticity Index	12,7
37,5	100,0	Coarse	0,0	Linear Shrinkage	4,7
26,5	100,0	Medium	27,3		
19	100,0	Fine	24,3		
13,2	95,6	Sand%	20,1		
9,5	89,8	Coarse	6,4		
4,75	66,6	Medium	4,9		
2	48,5	Fine	8,8		
0,425	41,3	Silt%	8,0		
0,25	38,5	Coarse	3,6		
0,15	35,8	Medium	2,8		
0,075	29,2	Fine	1,7		
0,05	27,8	Clay%	20,4		
0,02	24,8				
0,005	21,8				
0,002	20,4				

GRADING		CLASSIFICATION	
D10 Size (mm)	<0.002	Potential Expansiveness	Low
Uniformity Coefficient	NA	Group Index	0
Grading Modulus	1,81	AASHTO Soil Classification	A - 2 - 6
		Unified Classification	SC

Grading Curve

Ref no.: MP Development

Fig no.: -

MATERIALS ANALYSIS



THEKWINI SOILS LABORATORY CC
NAT. REG. 40902 10961

UNIT 16, Alexander Park
24 Alexander Road
WESTHEAD 3610
Tel : 057 898 2245

P. O. BOX 30404
RAYVILLE
4058

Project: 9582

Ref no.: MP Develo **Lab no.:** 07057 **Borehole/Pit no.:** MP 4 (TH13)

Depth: 0,2 - 1,2

Grading Analysis

Grain Size (mm)	% Passing
75	100,0
53	97,4
37,5	95,4
26,5	90,2
19	87,1
13,2	79,5
9,5	75,3
4,75	61,6
2	46,5
0,425	38,7
0,25	35,8
0,15	33,0
0,075	27,3
0,05	25,9
0,02	21,8
0,005	19,0
0,002	17,6

M.I.T SIZE

CLASSIFICATION	
Cobble%	1,8
Gravel%	51,7
Coarse	10,7
Medium	22,3
Fine	18,6
Sand%	20,1
Coarse	7,0
Medium	5,2
Fine	7,9
Silt%	8,8
Coarse	4,7
Medium	2,6
Fine	1,6
Clay%	17,6

PLASTICITY

Liquid Limit	31,6
Plasticity Index	9,3
Linear Shrinkage	5

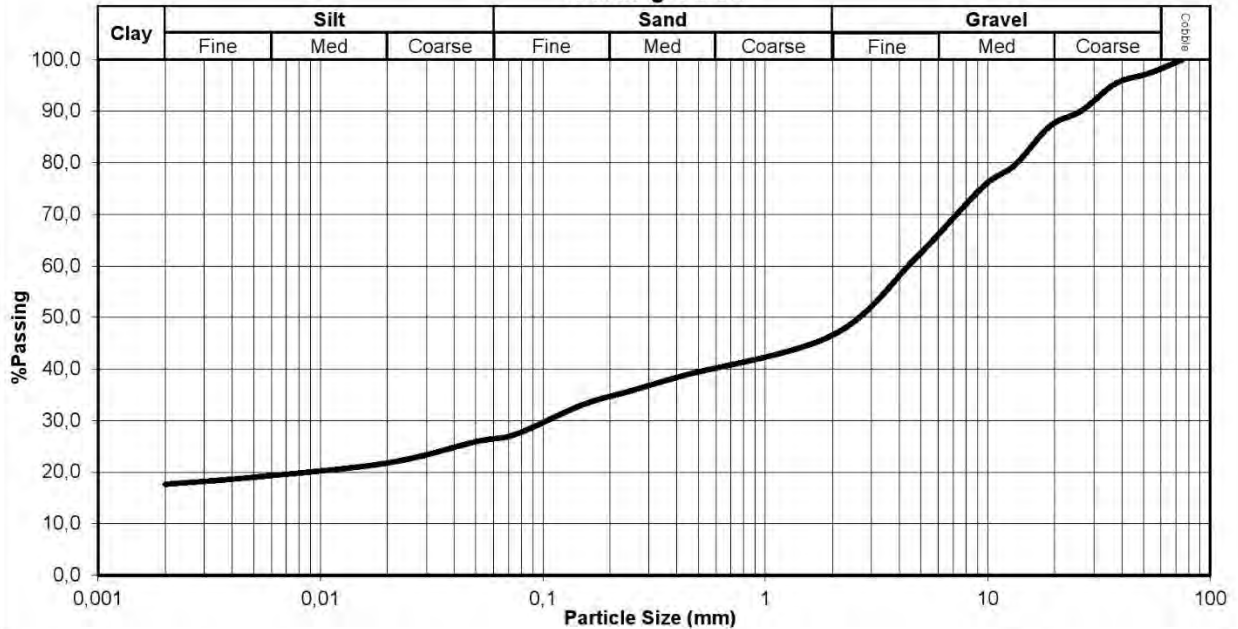
GRADING

D10 Size (mm)	<0,002
Uniformity Coefficient	NA
Grading Modulus	1,87

CLASSIFICATION

Potential Expansiveness	Low
Group Index	0
AASHTO Soil Classification	A - 2 - 4
Unified Classification	SC

Grading Curve



Ref no.: MP Development

Fig no.: -

APPENDIX E – DFFE SCREENING

See Annexure 7 of EIA Application for Authorisation form

APPENDIX F – OTHER REPORTS

NO OTHER REPORTS

FIGURE 1 – SITE PHOTOGRAPHS



Old drive-in road



Old drive-in entrance building



Central site to northwest



Rubble on site



Central site to northeast



Dumping/littering on site

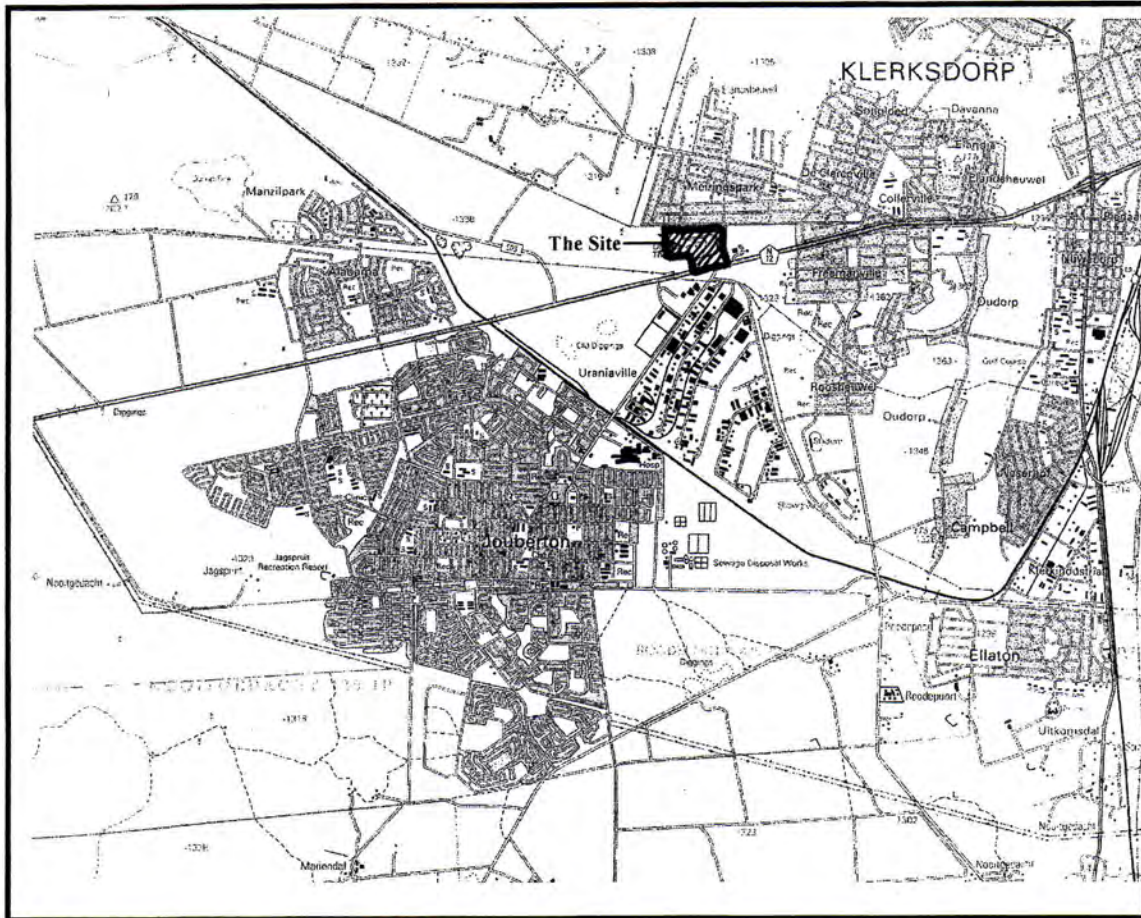


Drive-in berms central site



Adjacent development NE of site

DRAWING 1 - LOCALITY PLAN



Environmental studies
Landscape Architecture
Architecture

The Farm Townlands of Klerksdorp no.424-IP

ecologic AFRIKA
PO Box 8079
CENTURION
0046

LOCALITY PLAN



1: 50 000

Tel 012-6614863

Fax 012-6615251 (West of Klerksdorp between RIO CASINO & SHELL Ultra City)

DRAWING 2 – SITE PLAN

PTN OF TOWNSLANDS OF KLERKSDORP 424-IP

LOCALITY

Legend

- Feature 1
- Freemanville
- 🏨 Rio Hotel Casino and Convention Resort
- 🛢️ Shell - Klerksdorp

Meiringspark suburb

Scheeper St

THE SITE

old drive-in theatre

Shell ultra-city

Open veld

Rio Casino

Main Reef Rd

Residential

Uraniaville

Freemanville

Greyhound St

Benji Oliphant Rd

Newton Rd

Meteor Rd

Google Earth

©2021 Google
Image © 2021 Maxar Technologies
©2021 AfriGIS (Pty) Ltd.

500 m





DRAWING 3 – ENVIRONMENTAL SENSITIVITY PLAN

PTN 603 & PART PTN 604 OF TOWNSLANDS OF KLERKSDORP 424-IP

ENVIRONMENTAL SENSITIVITY

Legend

-  Rio Hotel Casino and Convention Resort
-  Shell

NO ENVIRONMENTAL SENSITIVITIES



vacant land

construction site

THE SITE

old drive-in theatre

filling station

vacant land

hotel & casino

Shell

residential suburb

FREEMANVILLE

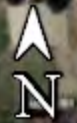
vacant land

light industrial suburb

Econo Petroleum Uranaville

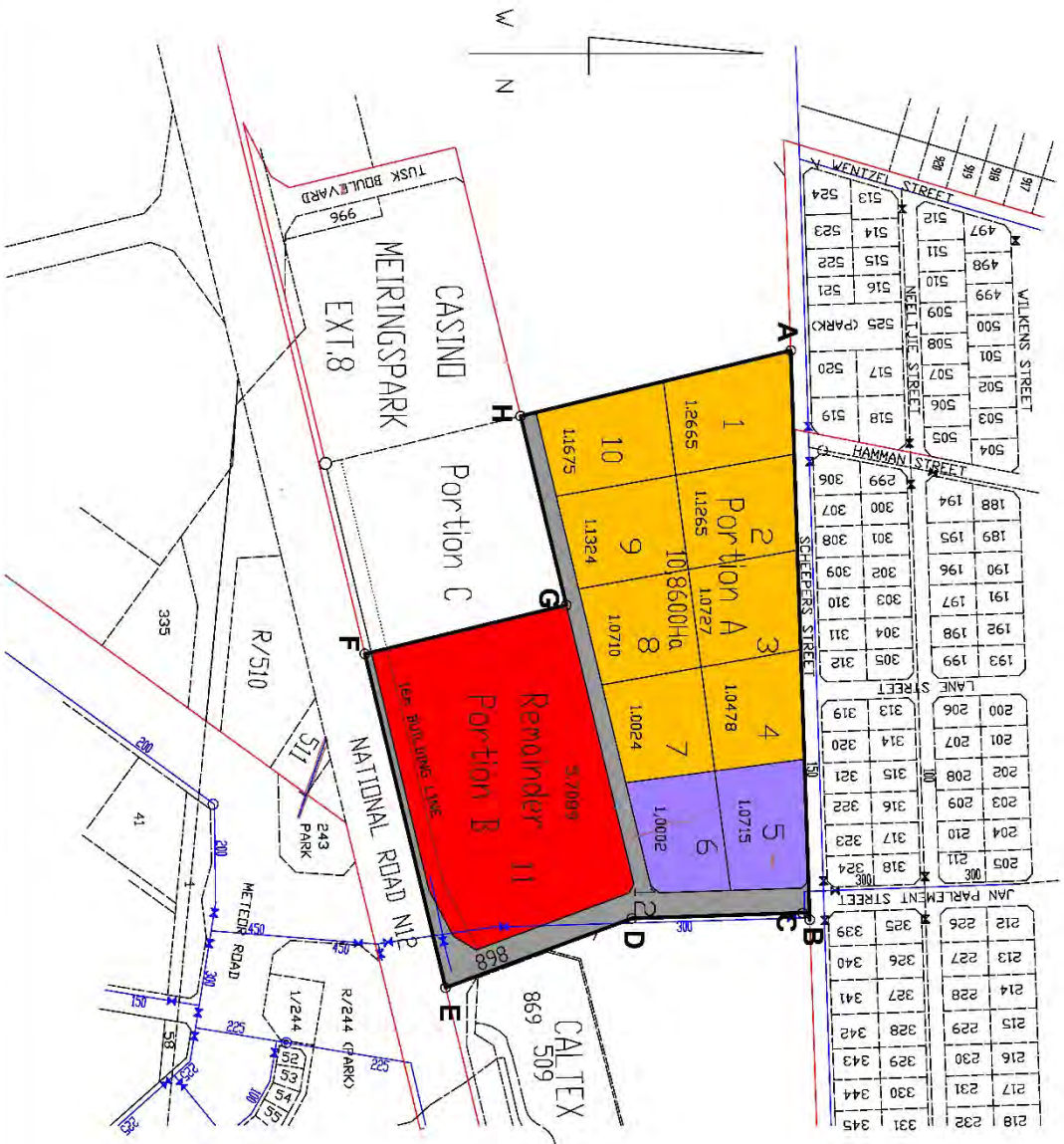
Google Earth

500 m



DRAWING 4 – PROPOSED DEVELOPMENT PLAN

PROPOSED MEIRINGSPARK EXTENSION



PROPOSED TOWNSHIP ON A PORTION OF THE FARM TOWNLANDS OF KLERKSDORP NO. 424-IP REPRESENTED BY FIGURE ABCDEF GH

LAND USE	NUMBER	AREA	%	ERF NO.
Residential 2	8	8,8890 Ha	48,20	1-4
Special 1	1	6,2075 Ha	32,27	7-10
Special 2	2	2,0718 Ha	10,77	5, 6
Public Road	1	2,0899 Ha	10,78	12
TOTAL	12	18,2592 Ha	100	

Minimum size of Erf: 1/400 gte van Erf = 0,0142 Ha
 Ruling size of Erf: 1/200 gte van Erf = 0,0284 Ha
 Total length of Streets / Talle lengte van Straat = 68 m
 Kombanewand / Combinatiewand = 0,5 m

KONTIGERE
 Kontigere is in ooreenstemming met die gemeenskap se meerjare plan, ontwerp en goedgekeurde plan. JOZE HULLEN
 Omskrywing Artikel 18(a) van die Wetvoorn (NMR 54 van 1996) soos verander deur Artikel 6 van die Wetvoorn (NMR 75 van 1979) betreffende die funksies van die P1 Reguleerder.
CONTIGUOUS - in accordance with the standard laid down by town planning and building authorities. JOZE HULLEN
 ONTWERPREGULEER: GETEKENDARAAN: DATUM: DATE

Scale: 1:4 500
 LOCALITY PLAN K0904-DF2



Waylyn Town & Regional Planners
 P.O. Box 20508
 Noordburg
 2522
 Tel / Faks : (018) 293 1536
 E-mail : potchetstroom@weilyn.co.za

