

DRAFT VERSION – PUBLIC CONSULTATION ONLY

DRAFT INTEGRATED HERITAGE IMPACT ASSESSMENT IN TERMS OF SECTION 38 OF THE NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT 25 OF 1999): PROPOSED TOURISM DEVELOPMENT ON A PORTION OF THE FARM MELKHOUTEFONTEIN 449/11 (GOURITZ), RIVERSDALE DISTRICT AND HESSEQUA MUNICIPALITY



ON BEHALF OF: M & P DISTRIBUTORS (Pty) Ltd

OCTOBER 2024

COPYRIGHT RESERVED

STÉFAN DE KOCK | LITA WEBLEY | MARION BAMFORD

PERCEPTION Planning

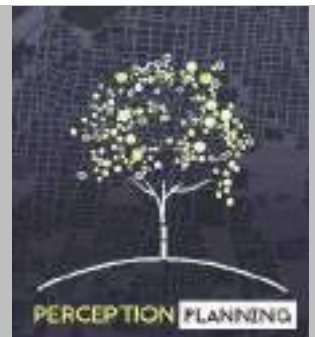
7 Imelda Court, 103 Meade Street, George

Cell: 082 568 4719

Fax: 086 510 8357

E-mail: perceptionplanning@gmail.com

www.behance.net/perceptionplanningSA



PERCEPTION Planning

URBAN & REGIONAL PLANNING- ENVIRONMENTAL PLANNING- HERITAGE IMPACT ASSESSMENT- URBAN DESIGN

CONTENTS:

1. INTRODUCTION
 - 1.1 Brief background to administrative process
2. DESCRIPTION OF THE STUDY AREA
3. HERITAGE STATUTORY FRAMEWORK
 - 3.1 Grading
 - 3.2 Methodology
4. PROPOSED DEVELOPMENT
5. SPATIAL PLANNING CONTEXT
6. HERITAGE RESOURCES AND ISSUES
 - 6.1 Historic background
 - 6.1.1 The early history of the Gouritz River
 - 6.2 Archaeology
 - 6.3 Palaeontology
 - 6.3.1 Geology and lithology
 - 6.3.2 Palaeontological Potential
 - 6.4 Cultural landscape context
7. SIGNIFICANCE AND GRADING
 - 7.1 Archaeology
 - 7.2 Palaeontology
 - 7.3 Cultural landscape context
8. ASSESSMENT OF IMPACTS
 - 8.1 Archaeology
 - 8.1.1 Recommendations: Archaeology
 - 8.2 Palaeontology
 - 8.2.1 Recommendations: Palaeontology
 - 8.2.2 Summary Fossil Finds Procedure
 - 8.3 Cultural landscape context
 - 8.4 Assessment of Alternatives
 - 8.5 Cumulative impact
 - 8.6 Socio-economic impact
9. PUBLIC PARTICIPATION
 - 9.1 Scope and proof of public participation
 - 9.2 Comments received, Response
10. RECOMMENDATIONS

PROJECT TEAM AND STATEMENT OF INDEPENDENCE

REFERENCES and ACKNOWLEDGEMENTS

ANNEXURES:

1. Power of Attorney/ Title Deeds/ SG Diagrams
2. HWC Interim Comments dated 4 June 2024.
3. Photographs
4. Site Development Plans
5. Palaeontological Impact Assessment
6. Proof of public consultation and comment received

FIGURES:

1. Locality, broader context.
2. Surrounding urban context.
3. Existing features and local topography.
4. Simple flow diagram illustrating typical S38 NHRA process.
5. Spatial Planning Context
6. Approximate location of Melkhoutefontein 449/11 on 1831 SGO diagram
7. 1880/1890s SG Mapping
8. Geological Map
9. Palaeontological sensitivity
10. Property on 1942 aerial imagery.

ABBREVIATIONS:

AIA – Archaeological Impact Assessment
APM – Archaeology, Palaeontology and Meteorites Committee of Heritage Western Cape
CRM – Cultural Resource Management
DCAS – Department of Cultural Affairs and Sport (WCG)
DEA&DP – Department of Environmental Affairs and Development Planning (WCG)
EA – Environmental Authorisation
ECO – Environmental Control Officer
EMPr – Environmental Management Programme Report
ESA – Early Stone Age
HIA – Heritage Impact Assessment
HWC – Heritage Western Cape
Ka/kyr – Thousand years ago
LSA – Later Stone Age
MSA – Middle Stone Age
NCW – Not Conservation Worthy
NGL – Natural Ground Level
NGSI – National Geo-Spatial Information, Department of Rural Development and Land Reform
NHRA – National Heritage Resources Act, 1999 (Act 25 of 1999)
NID – Notice of Intent to Develop
PHS – Provincial Heritage Site
SAHRA – South African Heritage Resources Agency
SAHRIS – South African Heritage Resources Information System
WCG – Western Cape Government
WHS – World Heritage Site

DRAFT VERSION
Public consultation only

COVER: Collage of contextual panoramic images of the study area and its direct environs (Author, 2024).

1. INTRODUCTION

PERCEPTION Planning was appointed by Chris Coetzee (SA ID 730201 5087 086) on behalf of M & P Distributors (Pty) Ltd (being the registered landowner) to compile and submit to Heritage Western Cape an Integrated Heritage Impact Assessment (HIA) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) with relation to proposed development on two portions of the subject area. The formal property descriptions are outlined below. Copies of the Power of Attorney, Mandate, Title Deeds and SG Diagrams are attached as part of **Annexure 1**.

The cadastral land units subject to this proposal are:

- Portion 11 of the farm Melkhoutefontein 449 (Gouritz River), measuring 105,3824 ha, registered to M & P Distributors (Pty) Ltd, held under title deed no T 61667/2010, and situated within the Riversdale District and Hessequa Municipality, Western Cape.

1.1 Brief background to administrative process

Following submission of a Notice of Intent to Develop in respect of the proposed development of the property on 28 May 2024, HWC on 4 June 2024 (**Annexure 2**) responded as follows [sic]:

"You are hereby notified that, since there is reason to believe that the proposed urban development on Remainder Erf 2833, Great Brak Rivier, Mossel Bay will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of Section 38(3) of the NHRA be submitted. Section 38(3) of the NHRA provides

*(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): **Provided that the following must be included:***

(a) The identification and mapping of all heritage resources in the area affected;

(b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

(c) an assessment of the impact of the development on such heritage resources;

(d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

(f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

(g) plans for mitigation of any adverse effects during and after the completion of the proposed development. (Our emphasis)

This HIA must in addition have specific reference to the following:

- Desktop/Palaeontological Impact Assessment

The HIA must have an overall assessment of the impacts to heritage resources which are not limited to the specific studies referenced above. The required HIA must have an integrated set of recommendations. The comments of relevant registered conservation bodies; all Interested and Affected parties; and the relevant Municipality must be requested and included in the HIA where provided. Proof of these requests must be supplied."

This Integrated HIA report focusses on addressing the aspects mentioned in the Interim comment dated 4 June 2024 whilst adhering to the requirements specified in terms of Section 38(3) of the NHRA.

2. DESCRIPTION OF THE STUDY AREA

The subject property (79,1664 ha in extent) is situated \pm 32km southwest of the Mossel Bay historic town centre, \pm 22km southwest of the PetroSA/Mossdustry industrial area and \pm 5km northwest of the coastal hamlet of Gouritz located at the mouth of the Gouritz River. The adjoining hamlets of Vleesbaai and Boggomsbaai are located \pm 8km and \pm 9km to the northeast, respectively, as shown through the locality plan (**Figure 1**). Vehicular access is directly off the R325, which traverses the property, and serves to connect Gouritz to the N2 National Road.

The property forms part of an undulating landscape and generally comprises of a flatter, higher lying portion west of ("above") the R325 road and an east-facing slope extending to the Gouritz River located east of the R325. Further to the aforementioned coastal hamlets, primarily used for holiday purposes, existing land use within the proximity is predominantly rural occupation and limited agriculture along the river floodplain some distance to the norther of the property (**Figure 2**).

Fieldwork was undertaken on 13 April 2024 and included a foot survey of both proposed development sites. The eastern site overlooks the river and is located just below a modern main residence and associated outbuildings. None of these structures are older than 60 years and/or considered of cultural significance. The

eastern site is underlain by sandy soils and was, until recently, densely overgrown by alien invasive vegetation but has now been cleared permitting good archaeological visibility. No structures or ruins were noted within the proximity of this proposed development site.



Figure 1: Study area location within sub-regional context (GoogleEarth, 2023 as edited).



Figure 2: Surrounding urban context (GoogleEarth, 2023 as edited).

While various tracks traverse the western portion of the property many of these have become overgrown and during fieldwork was only accessible on foot. No structures or ruins were noted along the periphery of the “blue gum forest” where new cottages are proposed to be constructed (see section 4). No burials or graveyards are known to occur on the property.



Figure 3: Existing features shown within context of topography (Elsenburg.com, 2022), as edited).

Photographs of the study area and its environs are attached as part of Annexure 3 to his report.

3. HERITAGE STATUTORY FRAMEWORK

3.1 Grading

References to grading as meant within the context of this Integrated Heritage Impact Assessment are based on the categories as prescribed by HWC¹ and summarised in Table 1 below. Gradings presented are (a) aimed at formulating responses with relation to the perceived provincial and/ or local cultural significance of heritage resources identified and (b) assigning the appropriate level of management responsibility applicable to such heritage resources.

Grading	Description of resource	Examples of possible Management Strategies	Cultural Significance
II	Heritage resources with special qualities which make them significant in the context of a province or region, but do not fulfil the criteria for Grade I status.	May be declared as a Provincial Heritage Site by HWC	Exceptionally High Significance
III A	Such a resource must be an excellent example of its kind or must be sufficiently rare. These are heritage resources which are significant in the context of an area.	This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant that any alteration, both internal and external, is regulated. Such buildings and sites may be representative, being excellent examples of their kind, or may be rare. In either case, they should receive maximum protection at local level.	High Significance
III B	Such a resource might have similar significances to those of a Grade III A resource, but to a lesser degree. These are heritage resources which are significant in the context of a townscape, neighbourhood, settlement or community.	Like Grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than Grade IIIA examples. They would receive less stringent protection than Grade IIIA buildings and sites at local level.	Medium Significance

¹ Grading: Purpose and Management Implications, Heritage Western Cape, 16th March 2016

III C	Such a resource is of contributing significance to the environs. These are heritage resources which are significant in the context of a streetscape or direct neighbourhood.	This grading is applied to buildings and/or sites whose significance is contextual, i.e. in large part due to its contribution to the character or significance of the environs. These buildings and sites should, therefore, only be regulated if the significance of the environs is sufficient to warrant protective measures, regardless of whether the site falls within a Conservation or Heritage Area. Internal alterations should not necessarily be regulated.	Low Significance
NCW	A resource that, after appropriate investigation, has been determined to not have enough heritage significance to be retained as part of the National Estate.	No further actions under the NHRA are required. This must be motivated by the applicant and approved by the authority. Section 34 can even be lifted by HWC for structures in this category if they are older than 60 years.	No research potential or other significance

Table 1: Summary of grading and possible mgmt. strategies for Grade II and III heritage resources (Source: HWC, 2016)

3.2 Methodology

This Integrated HIA process is undertaken in terms of Section 38(8) of the NHRA and in accordance with relevant HWC policies and guidelines and international practice principles. A flow diagram illustrating a normal, non-retrospective HIA process pertaining to development being proposed is as shown in Figure 4.

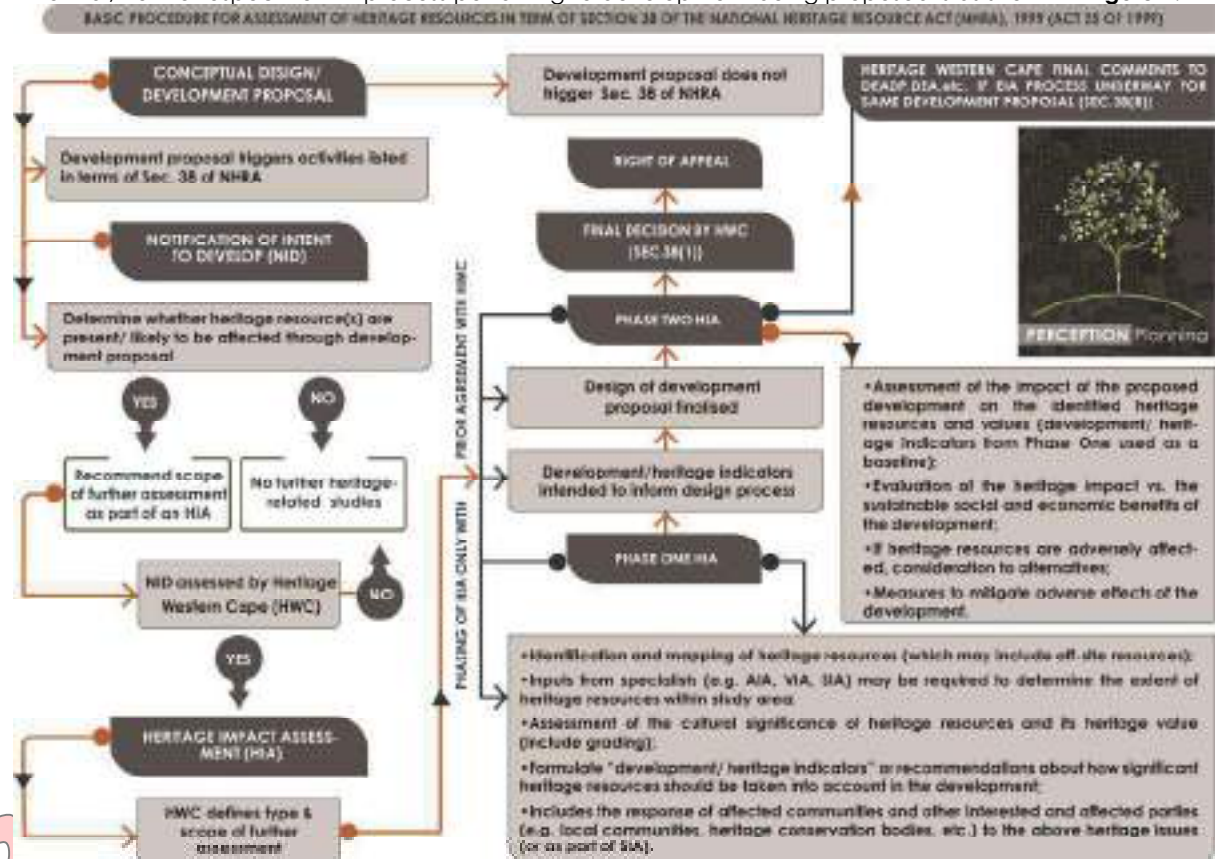


Figure 4: Flowchart illustrating a typical HIA process in terms of Section 38 of the NHRA (Act 25 of 1999).

Tasks undertaken during the compilation of this **Draft Integrated HIA** included, *inter alia*, the following:

- Liaise with project team including the contributing heritage professionals, landowner, environmental assessment practitioner (Cape EAPrac Environmental Consultants) and the local planning authority (Hessequa Municipality).
- Field work undertaken on 13th April 2024.
- Undertake basic historic background research.
- Assimilate findings from heritage-related specialist inputs: Desktop Palaeontological Assessment (Prof Marion Bamford).
- Archaeological specialist input by Dr. Lita Webley.
- Contextual analysis of the site and its direct environs, identification, and mapping of spatial informants.
- Identification of possible heritage-related issues and concerns.
- Establishing cultural significance and recommending grading based on criteria set out in NHRA.
- Identification of heritage informants for decision making and input to the planning process.

Tasks still to be undertaken:

- Undertake focussed public participation process with registered conservation body, local planning authority and other stakeholders as requested by HWC in the Interim Response to the NID and in accordance with the HWC Public Consultation Guidelines, June 2019.

- Incorporate outcomes emanating from public participation process and formulate appropriate response to comment received – to be included in the Final Integrated HIA report.
- Submission of Final Integrated HIA to HWC for adjudication.

4. PROPOSED DEVELOPMENT

According to information made available the proposal is for the construction of six (6) tourism accommodation glamping cottages intended for short term accommodation, to be located within two nodes on the property, one node being on the lower-lying eastern portion of the property, overlooking the Gouritz River and the second node on the higher lying western portion of the property west of the R325 and orientated around the periphery of a dense copse of mature blue gum trees. As per the site development plan, attached as **Annexure 4** to this report, the proposal incorporates the following components:

- Six glamping cottages for short-term letting (each 100m² -130m² in extent) arranged in two nodes of three cottages per node. Each node to include one "couple's cottage" measuring 130m².
- Each cottage to include carport (18m²), 2 500l water tank and 2 500l septic tank.
- Access to the two nodes will be via existing Jeep tracks. Access from these tracks to each individual cottage will be via a maximum 3m wide access of grass blocks/Hyson cells/concrete strips dependent on gradient and soil conditions.
- Drinking water: The property has an existing municipal potable water connection point and metered Ø32mm water pipeline that currently supply the existing farmhouse area with potable drinking water. It is proposed to connect the metered Ø32mm water pipeline to a new 10m³ water tank from where water will be distributed to each glamping cottage node. The water tanks will be equipped with solar pumps to provide the required water pressure.
- Emergency water supply: An existing dam with spring, is located south-west of the farmhouse which was historically used for livestock drinking purposes. It is proposed to install a water pipeline to extract water from the dam and connect it to an existing 120m³ concrete water reservoir on the property for emergency water supply to meet fire-fighting requirements. The water pipeline will be above ground and not buried to ensure minimal impact.
- 2 500 litre harvested rainwater storage tanks for each glamping chalet.
- Treatment of domestic sewerage will be a Biorock package plant in combination with an underground holding tank.
- Water distribution pipelines (±2000m in length) to follow alignment of sewer reticulation. Water from the existing metered ø32mm connection from the Hessequa Municipal network will be utilised.
- Hiking and cycling routes.
- Infrastructure and services ancillary to the above.

5. SPATIAL PLANNING CONTEXT

According to the Hessequa Spatial Development Framework (2017) the subject property is situated outside the urban edge provided for the settlement Gouritz Mouth. The SDF does not contain any spatial proposals applicable to the property.



Figure 5: Spatial proposals for the Gouritz Mouth settlement as per the Hessequa SDF (2017). The subject property is located well outside the scope of these proposals (Hessequa Municipality, 2017).

6. HERITAGE RESOURCES AND ISSUES

This section of the report adheres to HWC's interim comments dated 4 June 2024 as well as the requirements specified in terms of Section 38(3) of the NHRA.

6.1 Historic Background

Basic historic background research focussed on primary sources obtained through the Deeds Office, Surveyor General's Office, relevant secondary sources as well as as research previously undertaken by historian Kathleen Schulz.

6.1.1 The early history of the Gouritz River

From a colonial perspective, agriculturalists settled in the Gouritz region from as early as the 1730s. Unsurveyed loan farms in this region were granted to colonist by the Dutch East India Company (DEIC) for the purpose of providing meat, butter and wheat to Cape Town. In 1743 the DEIC established a magisterial seat in Swellendam in order to govern and control the activities of the frontier settlers. Quitrent rentals were paid annually to the Government over a period of twenty years, after which the property was deemed paid for. The quitrent system of 'loaning to won' replaced the previous DEIC loan farm agreements, which were renewed every five years (Schultz 2010). In the inventory of the Master of the Orphan Chamber (MOOC), two farms are listed on the Gouritz River by the end of the 18th century, one from the estate of Maria Magdalena Botha dating to 1786, the other to Jan Anton van Erenkroon dating to 1790². Both inventories suggest the farms were being used for the grazing of livestock.

The subject property forms part of the early farm Melkhoutefontein granted by quitrent to Johannes Frederick Janse van Rensburg on 1st September 1832³. The farm appears to have been resurveyed by surveyor JH Voorman during 1831 after the boundaries of the farm Melkhoutefontein were found to overlap with the adjoining farm of Wolvfontein (located to the south) and agreement regarding a corrected new cadastral boundary was reached between the respective owners⁴. The 1831 diagram does not show structures that may have existed within the landscape by this time, nor does it describe land use (**Figure 6**).

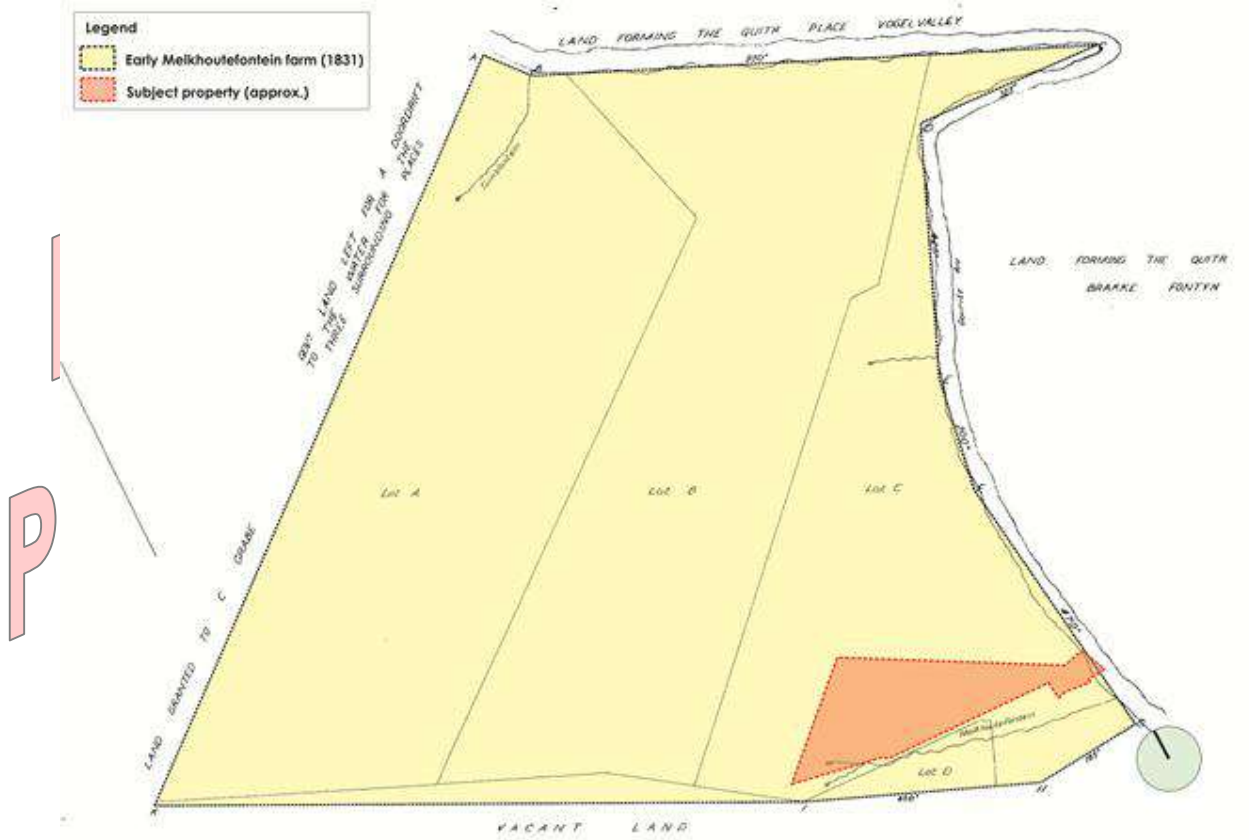


Figure 6: Approximate location of Melkhoutefontein 449/11 transposed onto extract from 1831 diagram (SGO as edited).

Subsequently 1880-1890 SG mapping for the area shows the extent of the farm together with early routes, early farmstead named "Tuisfontein" located on the northern portion of the farm. This mapping also shows the early farm Fishery to the south, at the confluence of the Gouritz River and the Indian Ocean where a

² MOOC 8/50.85 & MOOC 8/50.13b

³ Sw.Q.8-13

⁴ SG Diagram 616/1831

fishing settlement was granted town status in 1915 and which became the present day Gouritz coastal hamlet (Figure 7).

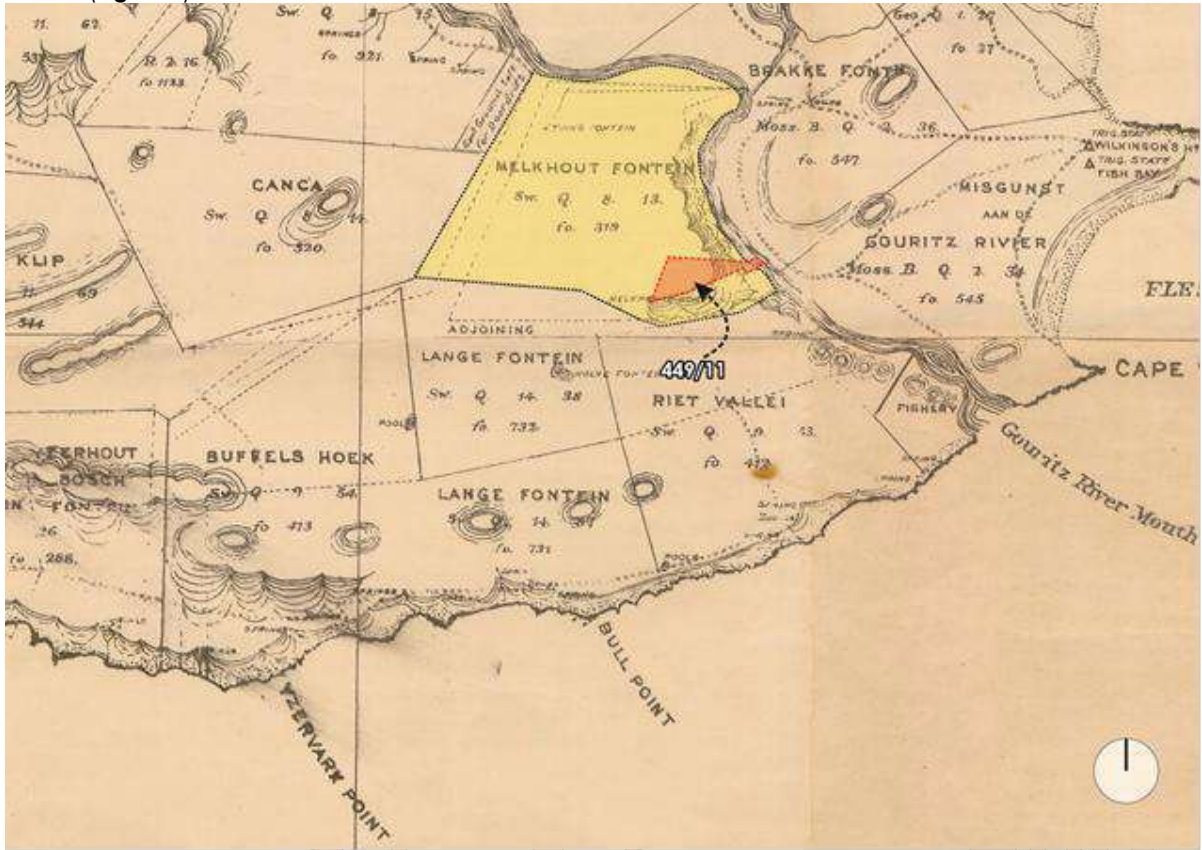


Figure 7: Location of the subject property in relation to the early farm Melkhoutfontein as transposed onto (±1880) SG mapping of the area (NGSI as edited).

During 1880, the early farm was subdivided into three portions, with the subject property forming part of the "lot C" (later renamed "Lot 3" and subsequently, portion 3 of the farm Melkhoutfontein 449). Lot 3 is recorded as having been allotted to Rensburg & Co, and C. Roelofse at this time⁵. With the exception of a farmstead on the northernmost portion of Lot 3, the 1880 diagram does not highlight any structures on the property. The subject property was surveyed and framed during 2010.

Historically, three shipwrecks are known to have taken place in Fleesch Bay, a natural bay located to the east along the coastline. The exact positions of the wrecks have not been established. The ship names are listed below⁶:

- Le Fortune 1763
- D'Elefant 1750
- Thomas Nickenson 1871

While a comprehensive deed search could not be undertaken as part of this study, the following more recent ownership timeline for the property could be obtained via the Deeds Office digital archive:

Transfer Date/No.	Transferred From:	Transferred To:
T34138/1973	Unknown	Blent Lindark van Rensburg
T82507/2004	Blent Lindark van Rensburg	Elderberry Inv 32 Pty Ltd
T61667/2010	Elderberry Inv 32 Pty Ltd	M & P Distributors Pty Ltd

Historic background research did not identify or highlight any other significant heritage-related themes pertinent to this particular portion of land. It is unlikely that detailed archival research would provide further meaningful insight into former use and/or broader understanding of heritage-related themes of the area.

6.2 Archaeology

A desktop review by Webley (2024) of archaeological reports undertaken within a 5km radius of the subject property, indicates that surface scatters of Early and Middle Stone Age artefacts (ESA and MSA) occur on the eastern banks of the Gouritz River mouth (Halkett & Hart 1996). In addition, they recorded an *in situ* Later Stone Age (LSA) shell midden in the side of an erosion gully. Further, they reported on a small shelter known

⁵ SG Diagram 1503/1880

⁶ Schulz 2010

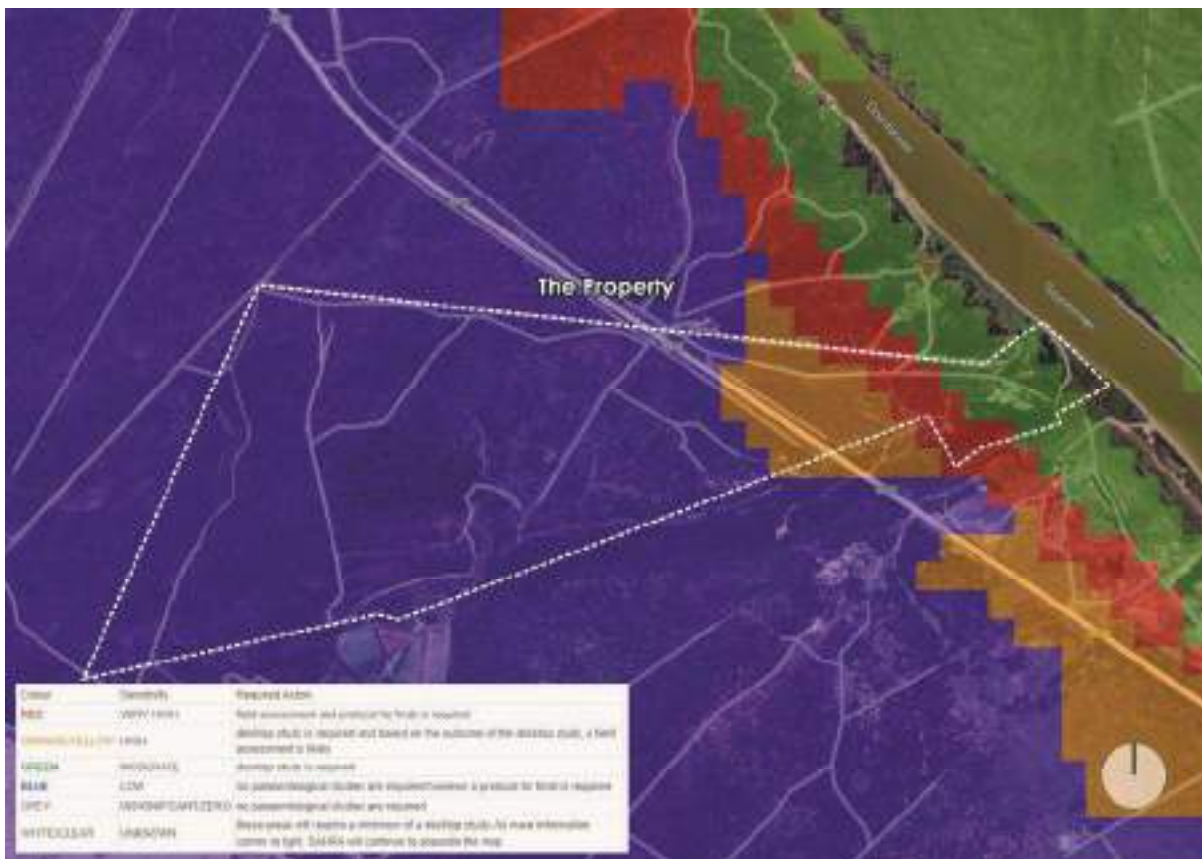


Figure 9: SAHRIS palaeosensitivity map for the site for the proposed development on Melkhoutefontein 449/11. Background colours indicate the following degrees of sensitivity: red = very highly sensitive; orange/yellow = high; green = moderate; blue = low; grey = insignificant/zero.

Marine invertebrates have been reported from the basal De Hoopvlei Formation with the echinoderm *Echinodiscus* and the bivalves *Glycymeris brogersi*, *Tivela bairni* and *Notocallista schwanzi* suggesting an Early Pliocene age (Le Roux, 1989; Malan, 1990, 1991; Roberts et al., 2006). The fluvial and terrace sands might preserve transported fossils, but they would be fragmented and out of primary context. In addition, it is difficult to distinguish between Pleistocene terrestrial snails and modern ones.

6.4 Cultural landscape context

Although the NHRA does not clearly define the term "cultural landscape", it briefly refers to it in the schedule of definitions. A working definition suggested by Winter, S (2004) is:

"A place of cultural significance, which engenders qualities relating to its aesthetic, architectural, historical, scientific, social, spiritual, linguistic, technological, archaeological or palaeontological value"

The following alternative definition offers insight into the complexity of cultural landscapes from a broader, holistic perspective (Green, B.H., 1995):

"The concept of landscape gives expression to the products and processes of the spatial and temporal interaction of people with the environment. It may thus be conceived as a particular configuration of topography, vegetation cover, land use and settlement pattern which establishes some coherence of natural and cultural processes and activities".

Cultural landscapes relate to the imprint created on a natural landscape through human habitation and cultivation over an extended period of time, as defined by a human geographer (Carl O. Sauer, 1925):

"The cultural landscape is fashioned from a natural landscape by a cultural group. Culture is the agent, the natural area is the medium, the cultural landscape is the result".

Essentially then cultural landscapes create a broad (spatial and temporal) relational framework within which all other heritage resources are rooted. The definition of cultural landscapes therefore enables broader understanding of the spatial and spiritual evolution of a landscape over time as expressed through

⁷ Baumann & Winter Heritage Consultants (2004)

perceivable "patterns" or associations relating to aspects such as socio-historic aspects, land use, settlement pattern, built form, vegetation cover, topography etc.

Given the limited nature of available primary and/or secondary archival sources pertinent to the particular property, analysis of early aerial photography was found useful to inform our understanding from a cultural landscape context. While archival sources provided some insight into historic use of the study area, analysis of earliest available aerial photography (1942) does provide some insight into traditional (Pre-Modern) land use patterns.



Figure 10: Approximate study area boundaries imposed onto compilation of 1942 aerial photography (Source: Flight Series, Images 6047, 6049, NGS) as edited).

The following patterns are evident from 1942 aerial imagery (**Figure 10**):

- Early alignment of the coastal road leading to the settlement Gouritz traversing the property.
- Two early structures are noted on the property – one to the east, close to the river and another close to the western property boundary. Several other structures are noted within the direct proximity of the property.
- At least three cultivated areas are noted on the western, higher lying portion of the property.
- Said cultivated areas are located around the perimeter of a dense copse of trees the location of which corresponds to that of the present blue gum forest.
- Several narrow paths are seen criss-crossing the property.
- The inconsistent density of vegetation growth across the property seems to suggest significant human intervention over an extended period of time.

The presence of bluegum planting suggests human intervention/ occupation and often coincide with the location of early farmsteads or ruins within present rural landscapes. The location of the bluegum forest at this location of the property is interesting. However, owing to the overgrown state of the bluegum forest detailed analysis by foot within the forest was not possible. The proposed development would however occur around the perimeter of the bluegum forest (which was surveyed) and is therefore unlikely to impact on possible ruins of early structures.

7. SIGNIFICANCE AND GRADING

7.1 Archaeology

Previous CRM survey work has indicated that archaeological sites/material from the general area (within a 5km radius) can range in significance from Not Conservation Worthy (NCW) to Grade IIIA. Sites of high

significance have been recorded at the Gouritz River estuary, but it is unlikely that highly significant sites will be recovered in the study area. In the event of the chance discovered of human remains, these would be of high significance at the local level (Grade IIIA).

7.2 Palaeontology

Conclusions outlined in the desktop palaeontological impact assessment undertaken by Prof Marion Bamford indicate that the palaeontological sensitivity of the area under consideration is mostly in sands and sandy soils that have low palaeosensitivity. Parallel to the road are the highly sensitive Bokkeveld Group shales but the geology and palaeontology in this area are not well exposed and it is highly unlikely that fossils are present on the surface.

7.3 Built Environment

No historic structures of cultural significance were noted during fieldwork.

7.4 Cultural landscape context

An assessment of the aerial photographs, a foot survey and historic overview indicate that the cultural landscape does not enjoy high local historic significance but that a grading of 3B (moderate local aesthetic cultural significance) is proposed.

8. ASSESSMENT OF IMPACTS

8.1 Archaeology

Due to its distance from the coast (5km) the project area is unlikely to contain shell middens. However, the potential for archaeological material, such as a spread of Early or Middle Stone Age artefacts, inland of the river cannot be excluded. It is likely that periodic flooding of the Gouritz River in the past, would have destroyed any pre-colonial settlements along the river. However, the sandy soils of the river do provide the necessary conditions for pre-colonial burials and therefore contractors should be alerted to this possibility.

8.1.1 Recommendations: Archaeology

Based on the above, it is our contention that while no further archaeological surveys are recommended, the following standard clause must apply:

The standard clause applies:

- If any human remains or significant archaeological materials are exposed during development activities, then the find should be protected from further disturbance and work in the immediate area should be halted and Heritage Western Cape must be notified immediately. These heritage resources are protected by Section 36(3)(a) and Section 35(4) of the NHRA (Act 25 of 1999) respectively and may not be damaged or disturbed in any way without a permit from the heritage authorities. Any work in mitigation, if deemed appropriate, should be commissioned, and completed before construction continues in the affected area and will be at the expense of the developer.

8.2 Palaeontology

Based on the nature of the project, surface activities may impact upon the fossil heritage if preserved in the development footprint. The geological structures suggest that the rocks are either the wrong type to preserve fossils or of unknown age. Furthermore, the material to be excavated is soil and sand and these does not preserve fossils. Since there is an extremely small chance that fossils from the Bokkeveld Group may be present and may be disturbed a Fossil Chance Find Protocol has been added to this report. Taking account of the defined criteria, the potential impact to fossil heritage resources is low.

8.2.1 Recommendations: Palaeontology

The Fossil Chance Find Protocol is recommended.

8.2.2 Summary Fossil Finds Procedure

"Should fossil bones and teeth be encountered in the deposits, work must cease at the site and the works foreman and the ECO for the project must be informed immediately. Scattered, unearthed parts/fragments of the find must be retrieved and returned to the main find site which must be protected from further disturbance. Heritage Western Cape must be informed and supplied with contextual information:

- A description of the nature of the find.
- Detailed images of the finds (with scale included).
- Position of the find (GPS) and depth.
- Digital images of the context. i.e. the excavation (with scales).

HWC and an appropriate specialist palaeontologist will assess the information and liaise with the owner, the environmental consultants and the ECO and a suitable response will be established. In the event of a significant fossil find, a professional palaeontologist must be appointed to undertake the excavation of the fossils and to record their contexts. Said palaeontologist must also undertake the recording of the

stratigraphy and sedimentary geometry of the exposures and must undertake the compilation of the detailed report.

A permit from HWC is required to excavate fossils. The applicant should be the qualified specialist responsible for assessment, collection, and reporting (palaeontologist). Should fossils be found that require rapid collecting, application for a palaeontological permit will immediately be made to HWC. The application requires details of the registered owners of the sites, their permission, and a site-plan map. All fossil finds must be recorded, and the fossils and their contextual information (a report) must be deposited at a SAHRA/HWC-approved institution."

8.3 Cultural landscape

While the R325, which connects the N2 National Road to Gouritz River mouth, travels through the eastern portion of the property, it is unlikely that the six cottages (three on each side of the road) will be visible to passing motorists or have a significant impact on the cultural landscape. Given the pattern of existing development on the property and those adjoining, as well as the limited scope and overall footprint nature of the proposal, it is considered that it would not materially impact on the existing cultural landscape context of the site and/or surrounding area.

No specific recommendations are therefore made in this regard.

8.4 Assessment of Impacts

The proposed development and the No-Go Option are considered below.

Alternative	Proposed Development	No-Go Option
Potential impact and risk:		
Nature of impact:	Potential destruction of heritage resources	N/A
Extent and duration of impact	Permanent	N/A
Consequence of impact or risk	Loss of heritage resources	N/A
Probability of occurrence:	Low	None
Degree to which the impact may cause irreplaceable loss of resources:	Low	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	Low	N/A
Significance rating of impact prior to mitigation:	Low	N/A
Degree to which impact can be avoided:	No	
Degree to which impact can be managed	Yes	N/A
Degree to which impact can be mitigated:	Low impacts. Fossil Finds Protocol proposed.	N/A
Proposed mitigation:	None proposed	N/A
Residual impacts:	None	N/A
Cumulative impact post mitigation:	None	N/A
Significance rating of impact after mitigation:	Low	N/A
Potential impact and risk:		
Nature of impact:	Potential destruction of heritage resources	N/A
Extent and duration of impact	Permanent	N/A
Consequence of impact or risk	Loss of heritage resources	N/A
Probability of occurrence:	Low	None
Degree to which the impact may cause irreplaceable loss of resources:	Low	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	Low	N/A
Significance rating of impact prior to mitigation:	Low	N/A
Degree to which impact can be avoided:	No	
Degree to which impact can be managed	Yes	N/A
Degree to which impact can be mitigated:	Low impacts. Fossil Finds Protocol proposed.	N/A
Proposed mitigation:	None proposed	N/A
Residual impacts:	None	N/A
Cumulative impact post mitigation:	None	N/A
Significance rating of impact after mitigation:	Low	N/A
Potential impact and risk:		
Nature of impact:	Potential destruction of heritage resources	N/A
Extent and duration of impact	Permanent	N/A
Consequence of impact or risk	Loss of heritage resources	N/A
Probability of occurrence:	Low	None
Degree to which the impact may cause irreplaceable loss of resources:	Low	None
Indirect impacts:	None	None
Cumulative impact prior to mitigation:	Low	N/A

Significance rating of impact prior to mitigation:	Low	N/A
Degree to which impact can be avoided:	No	
Degree to which impact can be managed	Yes	N/A
Degree to which impact can be mitigated:	Low impacts. Fossil Finds Protocol proposed.	N/A
Proposed mitigation:	None proposed	N/A
Residual impacts:	None	N/A
Cumulative impact post mitigation:	None	N/A
Significance rating of impact after mitigation:	Low	N/A

Table 2: Impact Assessment Table comparing the Proposed Development and the No-Go Option.

8.5 Cumulative impacts

With respect cumulative impacts, it is not possible to speculate what palaeontological impacts may have occurred during development in Gouritz River area prior to the implementation of the NHRA (No 25 of 1999). The few impact assessment reports which are available, suggest that impacts would have been low, and therefore cumulative impacts would also have been low.

From a cultural landscape perspective, the proposed development is likely to be low as it will not be visible from the R325 or the village of Gouritz River. No cumulative impacts are anticipated to the cultural landscape of the broader Gouritz River area.

8.6 Socio-economic development

Section 38(3)(d) of the NHRA requires an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefit to be derived from the development.

The development is likely to create limited temporary employment opportunities during the construction phase though this should be viewed within the context of the findings following from this HIA essentially concluding that the proposal is unlikely to negatively impact any significant heritage resources on the study area or its direct proximity.

9. PUBLIC PARTICIPATION PROCESS

The study area is situated within the jurisdiction of Hessequa Municipality and within an area covered by three local conservation bodies registered with HWC in terms of Section 25 of the National Heritage Resources Act, 1999 (Act 25 of 1999).

9.1 Scope of public participation

The public participation process (PPP) will be conducted in accordance with requirements outlined in the HWC Public Consultation Guidelines, June 2019 and extended over a period of at least 30 days. Components to the public participation process included the components listed below. Proof of public consultation will be attached as part of the final submission to Heritage Western Cape.

- Formal notice published in local press (South Cape Forum).
- Details regarding the proposal circulated to the local planning authority (Hessequa Municipality).
- Details regarding the proposal circulated to the local conservation bodies (Simon van der Stel Foundation: Southern Cape, Still Bay Heritage Conservation Trust).
- Public notices to be installed across the site for the duration of the public consultation process.

Contact details of interested and affected parties are listed in the table below.

Organisation / Department	Contact Person	E-mail
Hessequa Municipality (Planning & Building Control)	Wessel Van Brakel	wessel@hessequa.gov.za
Simon v/d Stel Foundation (Southern Cape)	Dr. Natie de Swardt	natiedes@gmail.com
Still Bay Heritage Conservation Trust	Mr. George Sabbagha	George.sabbagha@gmail.com

9.2 Comments received, Response

10. RECOMMENDATIONS

This report satisfies the requirements of Section 38(3) of the NHRA Act 25 of 1999 for a Heritage Impact Assessment, namely:

- 1) Identification and mapping of all heritage resources in the area affected;
- 2) Assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

- 3) Results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

It is recommended that HWC endorse the findings of this HIA report including the following Conditions of Approval, to be assimilated into future outcome(s) of the NEMA process currently underway:

No	Heritage Indicators/ Conditions of Approval
10.1	Implementation of the proposal must be in accordance with the Site Development Plan and design details provided, and as attached to this report as part of Annexure 4.
10.2	If any human remains or significant archaeological materials are exposed during development activities, then the find should be protected from further disturbance and work in the immediate area should be halted and Heritage Western Cape must be notified immediately. These heritage resources are protected by Section 36(3)(a) and Section 35(4) of the NHRA (Act 25 of 1999) respectively and may not be damaged or disturbed in any way without a permit from the heritage authorities. Any work in mitigation, if deemed appropriate, should be commissioned and completed before construction continues in the affected area and will be at the expense of the developer. The above recommendations should be included in the Environmental Management Program (EMPr) for the proposed residential development.
10.3	The HWC Chance Fossil Finds Protocol to be implemented and included in the Environmental Management Programme Report.

PERCEPTION Planning
15th October 2024



SE DE KOCK
 Hons (TRP) EIA Mgmt (IRL) PrPln PHP

DRAFT VERSION
 Public consultation only

PROJECT TEAM AND STATEMENT OF INDEPENDENCE

With relation to the authors' appointment as an independent specialist responsible for the compilation of an Integrated Heritage Impact Assessment in terms of Section 38(3) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for this project, it is hereby declared that the undersigned:

- Acts as an independent specialist in this application;
- Regards the information contained in this report as it relates to my specialist input/study to be true and correct;
- Have and will not have any vested interest in the proposed activity proceeding;
- Does not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- Have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2014 and any specific environmental management Act;
- Is fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 (specifically in terms of regulation 13 of GN No. R. 982) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- Is aware that a false declaration is an offence in terms of regulation 48 of GN No. R. 982.

It is certified that SE de Kock has 25 years' professional experience as urban planner (3 years of which were abroad) and 15 years' experience as professional heritage practitioner. He is professionally registered/ affiliated as follows:

- Professional Heritage Practitioner (Association for Professional Heritage Practitioners)
- Professional Planner (South African Council for Planners, South African Planning Institute)

Dr Lita Webley is a professional member of the Association of Southern African Professional Archaeologists (ASAPA) since 1989, including the Cultural Resource Management section of the same association (ASAPA professional member # 175). She is an accredited Principal Investigator for Stone Age archaeology, coastal & shell midden archaeology and Colonial Period archaeology, Field Director for Grave Relocation.

Dr Marion Bamford holds a PhD in Paleobotany (University of the Witwatersrand, 1990) and is a professional member of, *inter alia*, the Palaeontological Society of Southern Africa, the Royal Society of Southern Africa (2006) and the International Organization of Palaeobotany (1993). Presently, she is a Professor; Director of the Evolutionary Studies Institute, a Member of the Management Committee of the NRF/DST Centre of Excellence Palaeosciences, University of the Witwatersrand, Johannesburg.

Contributing heritage specialists' Declarations of Independence are contained in their respective reports.

REFERENCES and ACKNOWLEDGEMENTS

1. Almond, J. & Pether, J. 2009. Palaeontological Heritage of the Northern Cape; Palaeotechnical Report for SAHRA. 115pp.
2. Cape Town Archives
3. CTS Heritage. February 2021. Proposed resort development on Portion 12 of Farm 452, Riet Valley near Gouritz, Hessequa. Unpublished report for Enviroworks.
4. Fransen, H. 2006. Old towns and villages of the Cape. Jonathan Ball Publishers: Cape Town.
5. Halkett, D. & Hart, T. 1996. Phase 1 Archaeological Investigation of Land at the Mouth of the Gouritz River (SAHRIS MAPID 01866).
6. Kaplan, J. 1995. An Archaeological Survey of Rein's Nature Reserve, Southern Cape Coast (SAHRIS MAPID 02527).
7. Malan, A.J. 1989. Bredasdorp Group: In: Johnson, M.R. (ed). Catalogue of Southern African Lithostratigraphic Units. Suth African Commission on Biostratigraphy.
8. Morris, A.G. 1992. A Master catalogue: Holocene Human Skeletons from South Africa. University of Witwatersrand Press.
9. National Geo-Spatial Information, Department of Rural Development and Land Reform, Mowbray.
10. Nilssen, P. 2021. Heritage Impact Assessment: Proposed Construction of a Single Dwelling & Access Road on Portions of the Farm Misgunst Aan De Gouritz Rivier 257/19 (Fransmanshoek Peninsula), Mossel Bay Municipality, Western Cape. Unpublished report for Cape EAPrac).
11. Oestmo, S., Schoville, B.J., Wilkins, J & Marean, C. 2014. A Middle Stone Age Palaeoscape near the Pinnacle Point caves, Vleesbaai, South Africa. Quaternary International 350 (2014): 147-168.
12. Roberts, D.L., Botha, G.A., Maud, R.R., Pether, J., 2006. Coastal Cenozoic deposits. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). The Geology of South Africa. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 605-628.
13. Sabinet African Journals. 2024. Sabinet African Journals. [online]. Available at: <https://journals.co.za/> Accessed 18 March 2024].
14. Schultz, K. 2010. Historic Background: Farm Keerom 264, Rem Farm Vleeschbaai (Vlees Bay) 251 & Portion 2 Farm Misgunst aan de Gouritz 257.
15. Schultz, K. Southern Cape historian.
16. Webley, L. 2024. Proposed new cottages and water pipeline: Farm 449/11 Melkhoutefontein, Gouritsmond, Hessequa Municipality. Unpublished report to the NID application.
17. Winter, S. & Baumann, N. 2004. Guideline for determining the scope of specialist involvement in the EIA processes. Provincial Government of the Western Cape: Department of Environmental Affairs and Developmental Planning.

M & P Distributors (Pty) Ltd



07 UITZICHT PARK, 2 BELLINGHAM STR, HIGHVELD EXT 1, SOUTH AFRICA

P.O. BOX 12225, CENTURION, 0046 TEL: +27 (0)12 665 0995 / 0990

POWER OF ATTORNEY

I, CHRIS COETZEE (SA ID 730201 5087 086), being the Representative of M & P DISTRIBUTORS (PTY) LTD, being the Registered Owner of the farm MELKHOUTEFONTEIN 449/11 (GOURITS MOUTH), RIVERSDALE DISTRICT, HESSEQUA MUNICIPALITY, hereby nominate Stéfán de Kock of PERCEPTION Planning, with power of substitution, to be my agent in name, place and stead, (as set out in their quotation dated 6th June 2024) to sign on my behalf and submit to the appropriate authorities the following application, which mandate shall, without limiting the generality of the a foregoing, include:

a.) Integrated Heritage Impact Assessment and Paleontological Impact Assessment with relation to a tourism development on portions of the above property, as required through Heritage Western Cape's Interim Comments dated 4th June 2024 in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).

I hereby accept the Terms of Agreement as set out in abovementioned quotation dated 6th June 2024.

Signed at Centurion on 7 October 2024.

Representative

Witness

Witness

M & P Distributors (Pty) Ltd



07 UITZICHT PARK, 2 BELLINGHAM STR, HIGHVELD EXT 1, SOUTH AFRICA

P.O. BOX 12225, CENTURION, 0046 TEL: +27 (0)12 665 0995 / 0990

MANDATE/ PROXY

M & P DISTRIBUTORS (PTY) LTD, being the registered landowner of the of the farm MELKHOUTEFONTEIN 449/11 (GOURITS MOUTH), RIVERSDALE DISTRICT, HESSEQUA MUNICIPALITY hereby authorizes CHRIS COETZEE (SA ID 730201 5087 086) to appoint Stéfan de Kock of PERCEPTION Planning to compile and submit to Heritage Western Cape an Integrated Heritage Impact Assessment and Palaeontological Impact Assessment with relation to a tourism development on portions of the above property, as required through Heritage Western Cape's Interim Comments dated 4th June 2024 in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).

Signed at Centurion on 7 October 2024.

Director Chris Coetzee

Director Olof Vorster

1522
Eléne
Groenewald

30

MOSDELL, PAMA & COX
(021) 434 8875 HIGH STREET
PLETTENBERG BAY
6600

Prepared by me

[Signature]
CONVEYANCER
ARTLETT D.P.

FEE
R. 1050,00

DATA FILED
02 DEC 2010
EDWARDS DEBRA

DEED OF TRANSFER

BE IT HEREBY MADE KNOWN THAT

T 061667110

Belinda Ann Scholtz
appeared before me, REGISTRAR OF DEEDS at Cape Town, the said appearer
being duly authorised thereto by a Power of Attorney which said Power of Attorney
was signed at KNYSNA on 7 October 2010 granted to him by

ELDERBERRY INVESTMENTS 32 (PTY) LTD
Registration Number 2004/009232/07

DATA FILED
08 DEC 2010
VAN WYK JENNY

[Handwritten mark]

FOR FURTHER ENDORSEMENT SEE PAGE 5

And the appearer declared that his said principal had, on 23 July 2010, truly and legally sold by Private Treaty, and that he, the said Appearer, in his capacity aforesaid, did, by virtue of these presents, cede and transfer to and on behalf of:

M AND P DISTRIBUTORS CC
Registration number 1994/039269/23

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

**PORTION 11 (A PORTION OF PORTION 3) OF THE FARM
MELKHOUTEFONTEIN No 449 IN THE HESSEQUA MUNICIPALITY,
DIVISION OF RIVERSDALE, WESTERN CAPE PROVINCE**

**IN EXTENT 79.1664 (SEVENTY NINE COMMA ONE SIX SIX FOUR)
HECTARES**

First transferred by Deed of Transfer No T3187/1927 with diagram No A1978/1926 relating thereto and now held by Deed of Transfer No 82507/2004

- A. SUBJECT to the conditions referred to in Deed of Transfer dated 2 November 1904, No. 12286.
- B. SUBJECT FURTHER and ENTITLED to the special condition contained in said Deed of Transfer No 12286/1904, in the following terms :-

"That the said G.F. Roelofse and C.J. Roelofse and their successors in title to the property this day transferred to them shall be entitled to the use of the water out of the splot on Melkhoutefontein known as the Mill Splot for three and a half consecutive days and nights out of every turn of seven days and the said J.T. Roelofse and his successors in title to the above property shall be entitled to the said water for the remainder of each such turn."

- C. SUBJECT FURTHER to a servitude endorsement dated 29 May 1911 on said Deed of Transfer No. 12286/1904, in the following terms :-

"By Order of Court dated 21st March 1911, this property is made subject to certain, servitudes contained in a Consent paper annexed to such Order, as will more fully appear on reference to the Copies of the Order and Consent papers annexed."

- D. SUBJECT FURTHER to the following endorsement dated 12-9-1986 on Deed of Transfer No. T34138/1973, namely :

Endossement kragtens Artikel 32(5) van Wet 47 van 1937 (soos gewysig) Alle regte insluitende supingsregte tot die water wat ontspring op die plaas bekend as Doordrift No. 459 Afdeling Riversdal en wat mag kleeft aan die hierinvermelde eiendom, is onteien deur die Afdelingsraad Langeberg kragtens Artikel 7(2)(b) van die Onteieningswet 63/1975. Vide

Ontoieningskennisgewing No. 3/P/2 d.d. 17.3.1981 gelaasseer as Ontoienings Caveat EXP320/86 planne in tweevoud gelaasseer daarby.

- E. SUBJECT FURTHER to the following endorsement dated 25th August 2004 on Deed of Transfer No. T34138/1973, namely :

Endossement kragtens Artikel 32(5) van Wet 47 van 1937 (soos gewysig) Alle regte insluitende suiplingsregte tot die wat wat ontspring op die plaas bekend as Doordrift No. 459 Afdeling Riversdal én wat mag kleef aan die hierinvermelde eiendom, is ontoien deur die Afdelingsraad Langeberg kragtens Artikel 7(2)(b) van die Ontoieningswet 63/1975. Vide Ontoieningskennisgewing No. 3/P/2 d.d. 17.3.1981 gelaasseer as Ontoienings Caveat EXP45/1996 planne in tweevoud gelaasseer daarby.

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

ELDERBERRY INVESTMENTS 32 (PTY) LTD
Registration Number 2004/009232/07

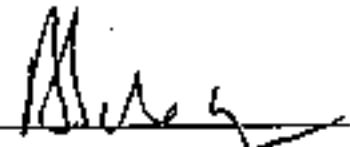
heretofore had to the premises, did in consequence also acknowledge it to be entirely
dispossessed of, and disentitled to the same, and that by virtue of these presents, the
said

M AND P DISTRIBUTORS CC
Registration Number 1994/039269/23

or its Successors in Title or assigns, now is and henceforth shall be entitled thereto,
conformably to local custom, the State, however reserving its rights, and finally
acknowledging the purchase price to be the sum of R4 332 000,00 (FOUR MILLION
THREE HUNDRED AND THIRTY TWO THOUSAND RAND).

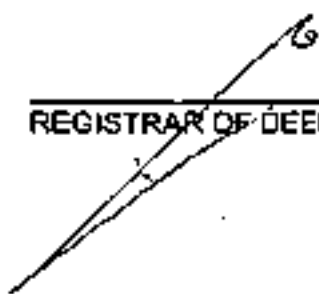
IN WITNESS WHEREOF, I the said Registrar, together with the Appearer, have
subscribed to these presents, and have caused the Seal of Office to be affixed
thereto.

THUS DONE and EXECUTED at the Office of the REGISTRAR OF DEEDS at Cape
Town on 15th November 2010



q.q.

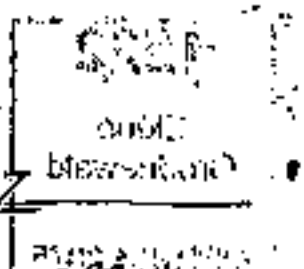
In my presence



REGISTRAR OF DEEDS



5



AN ENDORSEMENT IN TERMS OF SECTION 3(1)(N) OF ACT 47/1937
IN TERMS OF THE ABOVE SECTION THE NAME OF THE COMPANY
M AND P DISTRIBUTORS CC 1994/039269/23
HAS NOW BEEN CONVERTED TO READ M AND P
DISTRIBUTORS PROPRIETARY LIMITED REGISTRATION NUMBER
2023/510327/07

AS WILL MORE FULLY APPEAR FROM THE APPLICATION


DEEDS OFFICE
CAPE TOWN

[Signature]
REGISTRAR DEEDS

22 MAY 2023

ENDORSEMENT KRAGTORS ARTIKEL 44 VAN WET 47 VAN 1937	ENDORSEMENT BY VIRTUE OF SECTION 44 OF ACT 47 OF 1937
HEROOPGEHEFT	RESURVEYED
CONSTRANUMMER 4400 / 2010	DIAGRAM NUMBER
HOOFDNO. 105.382.4	HAAR
BO 0016023 / 2023	<i>[Signature]</i> REGISTRATEUR/REGISTRAR
22 MAY 2023	

11

SIDES Metres		ANGLES OF DIRECTION		CO-ORDINATES Y System: WG 21° X		S.G. No. 4400/2010			
		Constants:		± 0,00	± 0,00	Approved			
AB	1 715,84	276 38 04	A	-75 184,81	+3 799 447,20	 for SURVEYOR- GENERAL 8 - 12 - 2010			
BC	116,62	232 13 10	B	-76 889,16	+3 799 645,44				
CD	203,86	329 57 40	C	-76 981,33	+3 799 574,00				
DE	24,81	62 40 10	D	-77 083,38	+3 799 750,48				
EF	25,60	348 56 30	E	-77 061,34	+3 799 761,87				
FG	200,85	73 15 40	F	-77 066,25	+3 799 786,99				
GH	66,03	52 12 10	G	-76 873,91	+3 799 844,84				
HJ	136,80	150 49 10	H	-76 821,74	+3 799 885,31				
JK	1 333,10	69 28 39	J	-76 755,04	+3 799 765,87				
KL	50,36	104 09 10	K	-75 506,54	+3 800 233,22				
LM	709,82	78 07 15	L	-75 457,71	+3 800 220,91				
MA	1 011,88	204 37 50	M	-74 763,10	+3 800 367,02				
	INDICATORY	DATA							
gG	27,05	73 15 40	g	-76 899,82	+3 799 837,05				
Cc		232 13 10							
dD		62 40 10							
		MOS 47 Δ 60		-78 984,05	+3 799 070,74				
		MOS 49 Δ 62		-78 936,73	+3 802 022,89				

DESCRIPTION OF BEACONS

- A,B,L,H,g ... 20mm Iron Peg
 C,D,E,F ... 12mm iron peg
 G ... No beacon
 J ... Planted stone
 K,M ... Wooden corner fence post

SERVITUDE NOTE

The line v w x y z represents the centre line of a pipe line servitude, 10 metres wide, vide diagram S.G. No. 5732/1982.

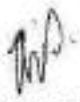
SHEET 1 OF 2 SHEETS

The figure A B c inner bank of Gouritz River d E F G H J K L M
 represents 105,3624 hectares of land being

PORTION 11 OF THE FARM MELKHOUTEFONTEIN No. 449

Situated in the Municipality of Hessequa and Administrative District of Riversdale,
 Western Cape Province

Surveyed in September 2010 by me


 T. VISAGIE (PLS 1036)
 Professional Land Surveyor

This diagram is annexed to No. d.d. : i.f.o. Registrar of Deeds	The original diagram for which this is substituted is: S.G. No. : A1978/1926 Transfer : 1927.74.3187 Grant :	File : Rsdle, 449 S.R. : 1935/2010 Comp. : AK-4BC (3566) LP1:00640000

PORTION 11 OF THE FARM MELKHOUTEFONTEIN No. 449

SHEET 2 OF 2 SHEETS

S.G. No.

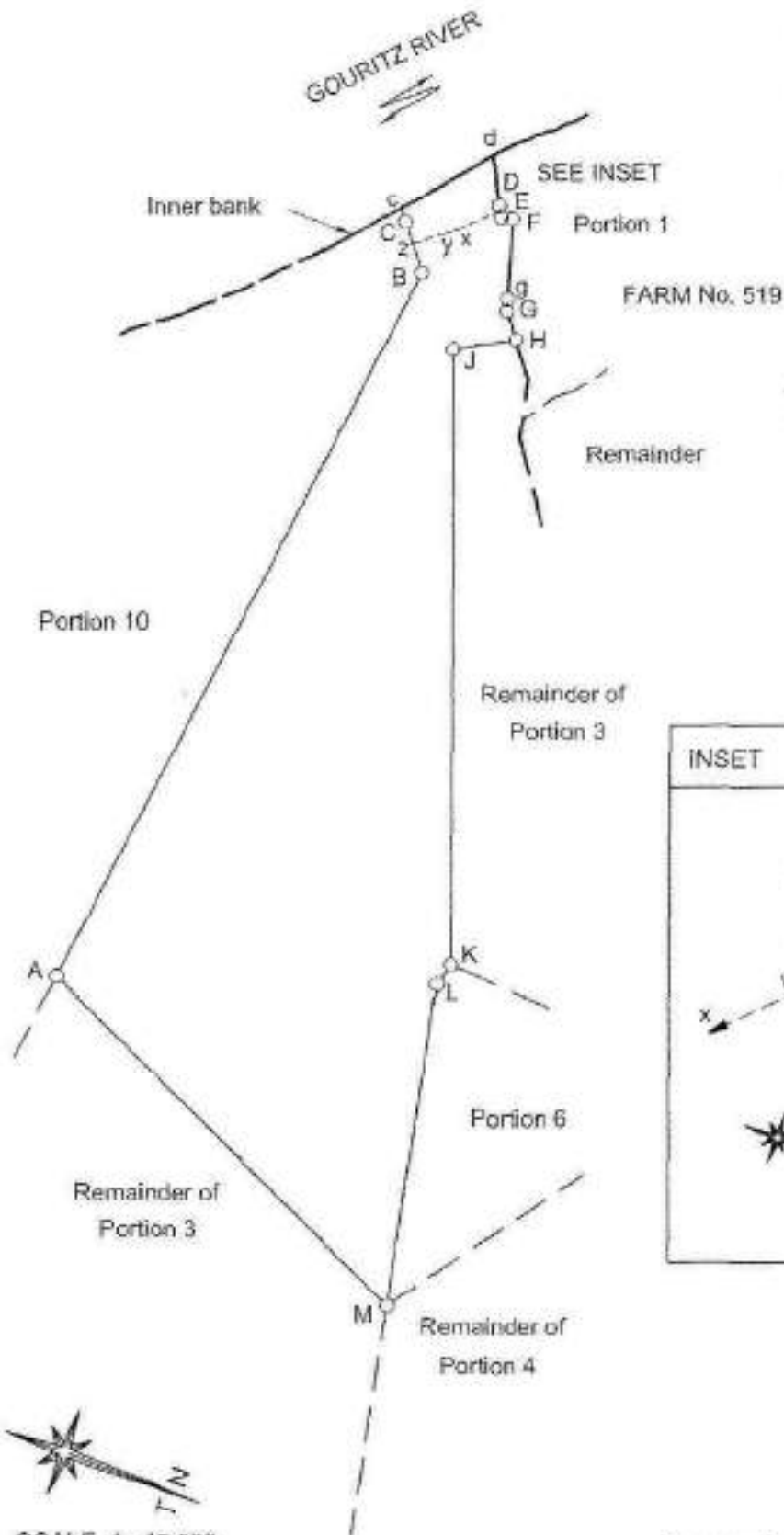
4400/2010

Approved

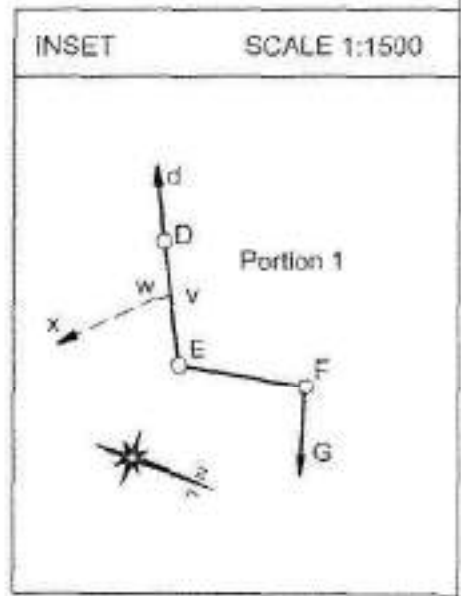
Abhodaya

for
SURVEYOR-
GENERAL

2-12-2010



SCALE 1 : 15 000



Surveyed in September 2010 by me

T. Visagie
T. VISAGIE (PLS 1036)
Professional Land Surveyor

PAGE 1 OF 2

Our Ref: HM / EDEN / HESSEQUA / MOSSEL BAY / PORTION 11 FARM 449
Case No.: HWC24050905EJV0516
Enquiries: Emily-Jane Vowles
E-mail: emily.vowles@westerncape.gov.za
Tel: 021 829 3324



Stefan de Kock / Chris Coetzee
Perception Planning / M & P Distributions
perceptionplanning@gmail.com

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: HIA REQUIRED
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape
Provincial Gazette 6061, Notice 298 of 2003

NOTIFICATION OF INTENT TO DEVELOP: PROPOSED DEVELOPMENT OF SIX HOLIDAYING COTTAGES IN TWO NODES WITH ANCILLARY INFRASTRUCTURE ON PTN 11 FARM 449, MELKHOUTEFONTEIN, GOURITS, HESSEQUA, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)

The matter above has reference.

Heritage Western Cape is in receipt of your application for the above matter received. This matter was discussed at the Heritage Officers Meeting held on 28 May 2024.

You are hereby notified that, since there is reason to believe that the proposed development of six holidaying cottages in two nodes with ancillary infrastructure on PTN 11 Farm 449, Melkhoutefontein, Gourits, Hessequa, will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of Section 38(3) of the NHRA be submitted. Section 38(3) of the NHRA provides

(3) *The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): **Provided that the following must be included:***

- (a) *The identification and mapping of all heritage resources in the area affected;*
- (b) *an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- (c) *an assessment of the impact of the development on such heritage resources;*
- (d) *an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- (e) *the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (f) *if heritage resources will be adversely affected by the proposed development, The consideration of alternatives; and*
- (g) *plans for mitigation of any adverse effects during and after the completion of the proposed development.*

(Our emphasis)

This HIA must in addition have specific reference to the following:

- Desktop Palaeontological Impact Assessment

The HIA must have an overall assessment of the impacts to heritage resources which are not limited to the specific studies referenced above.

The required HIA must have an integrated set of recommendations.

The comments of relevant registered conservation bodies; all Interested and Affected parties; and the relevant Municipality must be requested and included in the HIA where provided. Proof of these requests must be supplied.

www.westerncape.gov.za/cas

Street Address: Protea Assurance-Building, Green Market Square, Cape Town, 8000 • **Postal Address:** P.O. Box 1688, Cape Town, 8000
• **Tel:** +27 (0)21 483 5959 • **E-mail:** cas@heritage@westerncape.gov.za

Straatadres: Protea Assuransgebou, Groenmarkplein, Kaapstad, 8000 • **Posadres:** Postbus 1688, Kaapstad, 8000
• **Tel:** +27 (0)21 483 5959 • **E-pos:** cas@eritage@westerncape.gov.za

Idilesi yencawa: kumbonqophele, kensikhovo protea Assurance Groenmarkplein square, ikapa, 8000 • **Idilesi ye-post:** Iimboko yePostbox
yeeke 1688, ikapa, 8000 • **Iinombolo zamxeba:** +27 (0)21 483 5959 • **Idilesi ye-meyile:** cas@eritage@westerncape.gov.za

PAGE 2 OF 2

Our Ref: HM/ EDEN / HESSEQUA / MOSSEL BAY / PORTION 11 FARM 449
Case No.: HWC24050905EJV0516
Enquiries: Emily-Jane Vowles
E-mail: emily.vowles@westerncape.gov.za
Tel: 021 829 3324



If applicable, applicants are strongly advised to review and adhere to the time limits contained the Standard Operational Procedure (SOP) between DEADP and HWC. The SOP can be found using the following link <http://www.hwc.org.za/node/293>

Kindly take note of the HWC meeting dates and associated agenda closure date in order to ensure that comments are provided within as Reasonable time and that these times are factored into the project timeframes.

HWC reserves the right to request additional information as required.
Should you have any further queries, please contact the official above and quote the case number.


.....
Waseefa Dhansay
Assistant Director: Professional Services



www.westerncape.gov.za/cas

Street Address: Protea Assurance-Building, Green Market Square, Cape Town, 8000 • **Postal Address:** P.O. Box 1685, Cape Town, 8000
• **Tel:** +27 (0)21 483 5959 • **E-mail:** cas@heritage@westerncape.gov.za

Straatadres: Protea Assuransgebou, Groenmarkplein, Kaapstad, 8000 • **Posadres:** Postbus 1685, Kaapstad, 8000
• **Tel:** +27 (0)21 483 5959 • **E-pos:** cas@heritage@westerncape.gov.za

Idilesi yendawu: kumpani yase I. kensikhona protea Assurance Greenmarket Square, ikapa, 8000 • **Idilesi ye-post:** Iimboko yePostali ye-ikapa 1685, ikapa, 8000 • **Iinombolo zamxeba:** +27 (0)21 483 5959 • **Idilesi ye-imeyile:** cas@heritage@westerncape.gov.za



Photo 1: East-facing view towards Gouritz River along approach road from the R325. Existing modern dwelling and outbuilding to right. Proposed access road to three new cottages to follow clearing directly left of the access road seen here.



Photo 2: West-facing view of the existing modern dwelling and outbuildings overlooking the Gouritz River, a glimpse of which is visible to the far right of this image.



Photo 3: Northeast facing view from main access road to proposed development site for three (eastern) cottages intended to overlook the Gouritz River. Removal of alien invasive vegetation in progress.



Photo 4: South-facing view from the Gouritz River edge towards the eastern site intended for construction of three cottages. Extensive removal of alien invasive vegetation. Site underlain by sandy soils.



Photo 5: Southwest facing view of proposed (eastern) development site with existing main dwelling evident behind bluegum trees in the distance.



Photo 6: Northeast-facing view from the (eastern) development site towards the Gouritz River.



Photo 7: Northwest facing view along R325 (i.e. travelling from Gouritz towards N2). Access to lower-lying (eastern) portion of the property noted to right; access to higher-lying (western) portion of the property evident to the left.



Photo 8: Southwest facing view from R325 along main access road leading towards the upper/ western proposed development site.



Photo 9: Northwest facing view along narrow access track towards dense copse of bluegum trees – three cottages proposed to be constructed along the periphery of these.



Photo 10: Southwest facing from same vantage point as (9) showing extent of alien invasive vegetation. Two farm buildings located on adjoining farms noted in the distance (centre/ left).



Photo 11: No structures or ruins could be found within the proximity of the dense copse of bluegum trees. Area underlain by sandy soils.



Photo 12: Site intended for proposed construction of one cottage to far left.



Photo 13,14: Sites for construction of two cottages, respectively within copse of bluegum trees.



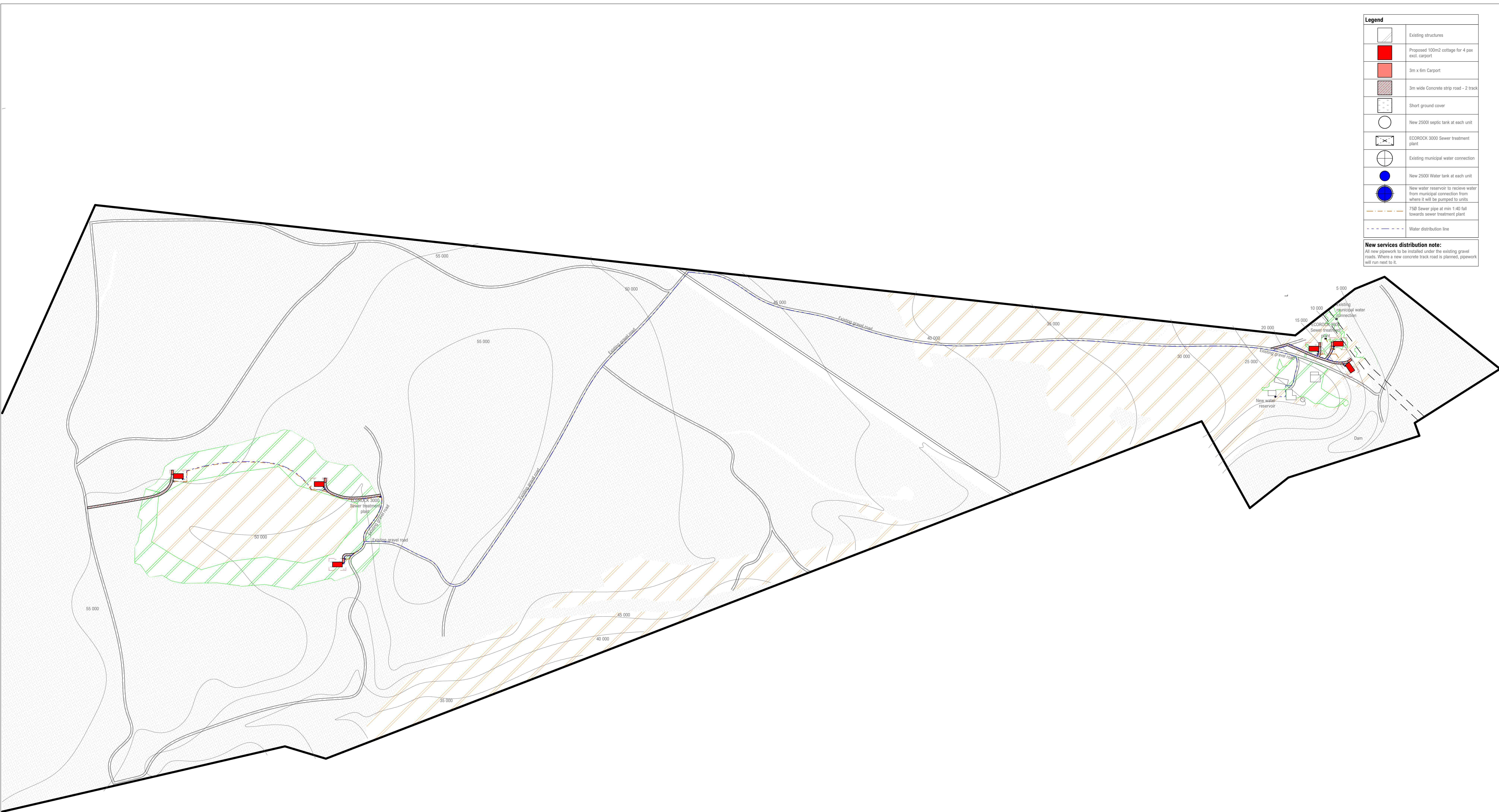
Photo 15: Dense vegetation along western periphery of bluegum copse and proposed access to 3rd cottage proposed.



Photo 16: Site of proposed 3rd cottage.



Photos 17, 18: Examples of two narrow access roads, densely overgrown by indigenous coastal shrub.



Legend	
	Existing structures
	Proposed 100m ² cottage for 4 pax excl. carport
	3m x 6m Carport
	3m wide Concrete strip road - 2 track
	Short ground cover
	New 25000 septic tank at each unit
	ECORDEX 3000 Sewer treatment plant
	Existing municipal water connection
	New 25000 Water tank at each unit
	New water reservoir to receive water from municipal connection from where it will be pumped to units
	750 Sewer pipe at min 1:40 fall towards sewer treatment plant
	Water distribution line

New services distribution note:
 All new pipework to be installed under the existing gravel roads. Where a new concrete track road is planned, pipework will run next to it.

GENERAL NOTES

- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
- CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORK. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT TBS AND THE SANS 5040 MINIMUM STANDARD SPECIFICATIONS.
- TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE ONLY SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
- ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.

REV.	DATE	BY	DESCRIPTION

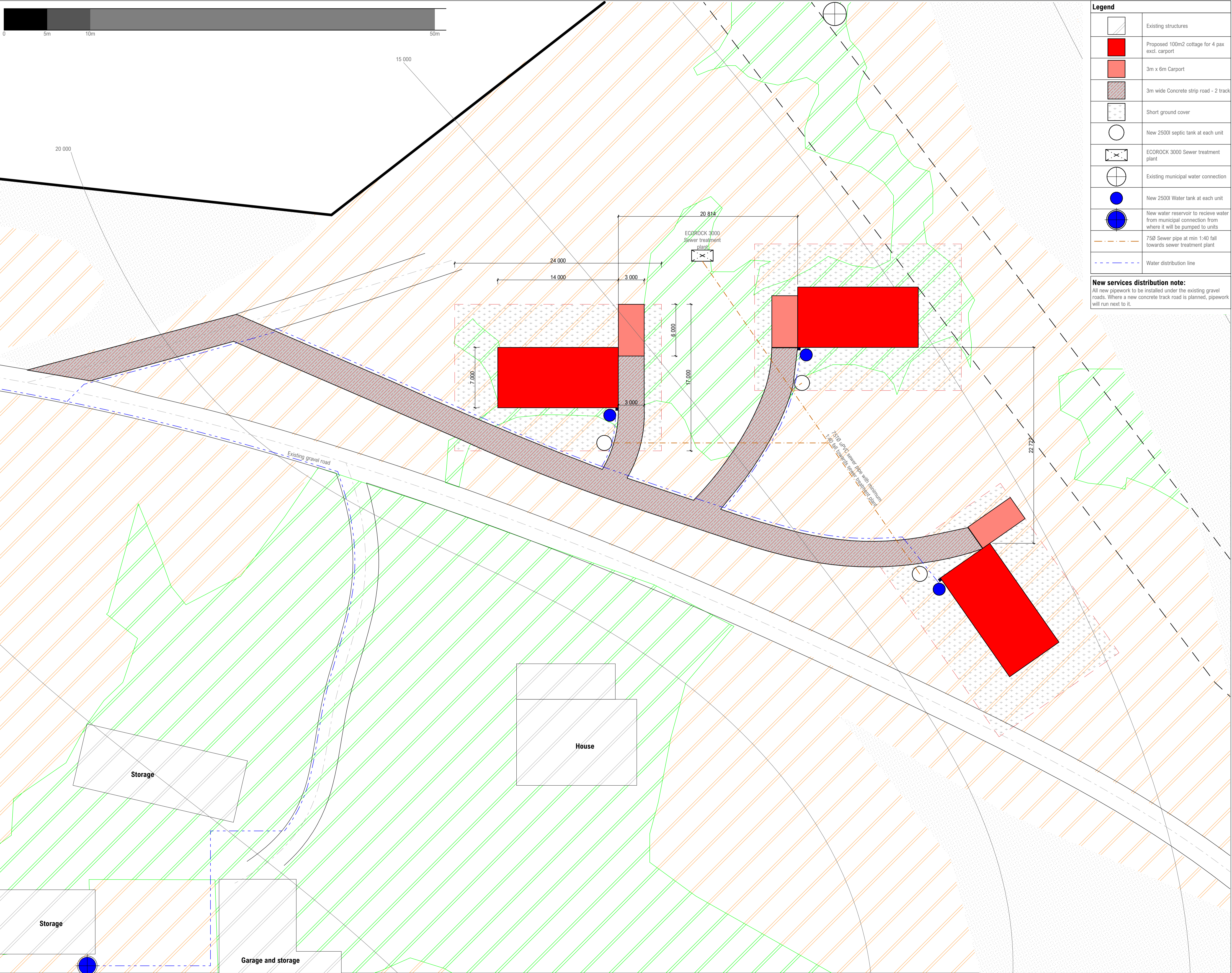
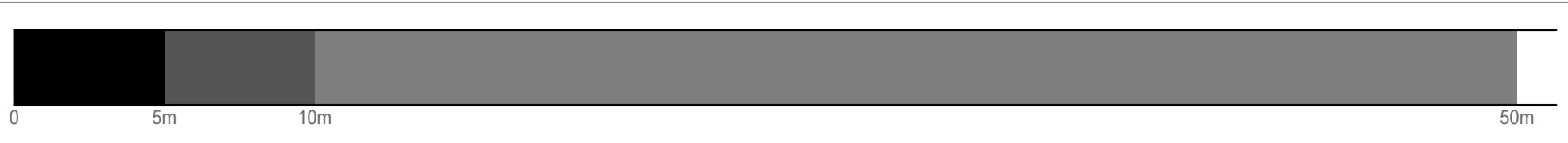
NORTH

ENGINEER

DRAWING STATUS
 ISSUED FOR [APPROVAL] [INFORMATION] [COUNCIL] [CONSTRUCTION]



CLIENT:	M&P Distributors
STAND DESCRIPTION:	111449 Melkhoutfontein, Gouritsmond
PROJECT TITLE:	New Cottages for M&P Distributors
DRAWING TITLE:	Locality Plan
SCALE:	1:2000, 1:200
CHECKED:	RP
APPROVED:	RP
SHEET SIZE:	A1
DRAWN:	RP
DATE:	2024/01/30
DRAWING No:	001
PROJECT No:	2308-11-449
REV:	



Legend	
	Existing structures
	Proposed 100m ² cottage for 4 pax excl. carport
	3m x 6m Carport
	3m wide Concrete strip road - 2 track
	Short ground cover
	New 2500l septic tank at each unit
	ECOROCK 3000 Sewer treatment plant
	Existing municipal water connection
	New 2500l Water tank at each unit
	New water reservoir to receive water from municipal connection from where it will be pumped to units
	750 Sewer pipe at min 1:40 fall towards sewer treatment plant
	Water distribution line

New services distribution note:
All new pipework to be installed under the existing gravel roads. Where a new concrete track road is planned, pipework will run next to it.

GENERAL NOTES

- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
- CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT NBR AND THE SABS 10400 MINIMUM STANDARD SPECIFICATIONS.
- TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE ONLY. SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
- ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.

REV	DATE	BY	DESCRIPTION

NORTH

ENGINEER

DRAWING STATUS
ISSUED FOR: [APPROVAL] [INFORMATION] [COUNCIL] [CONSTRUCTION]

das Moi

Rene Pretorius: M.Arch
SACAP: PRARCH21777 PIA: KE1095
076 259 9396
rene@dasmoi.co.za

CLIENT:
M&P Distributors

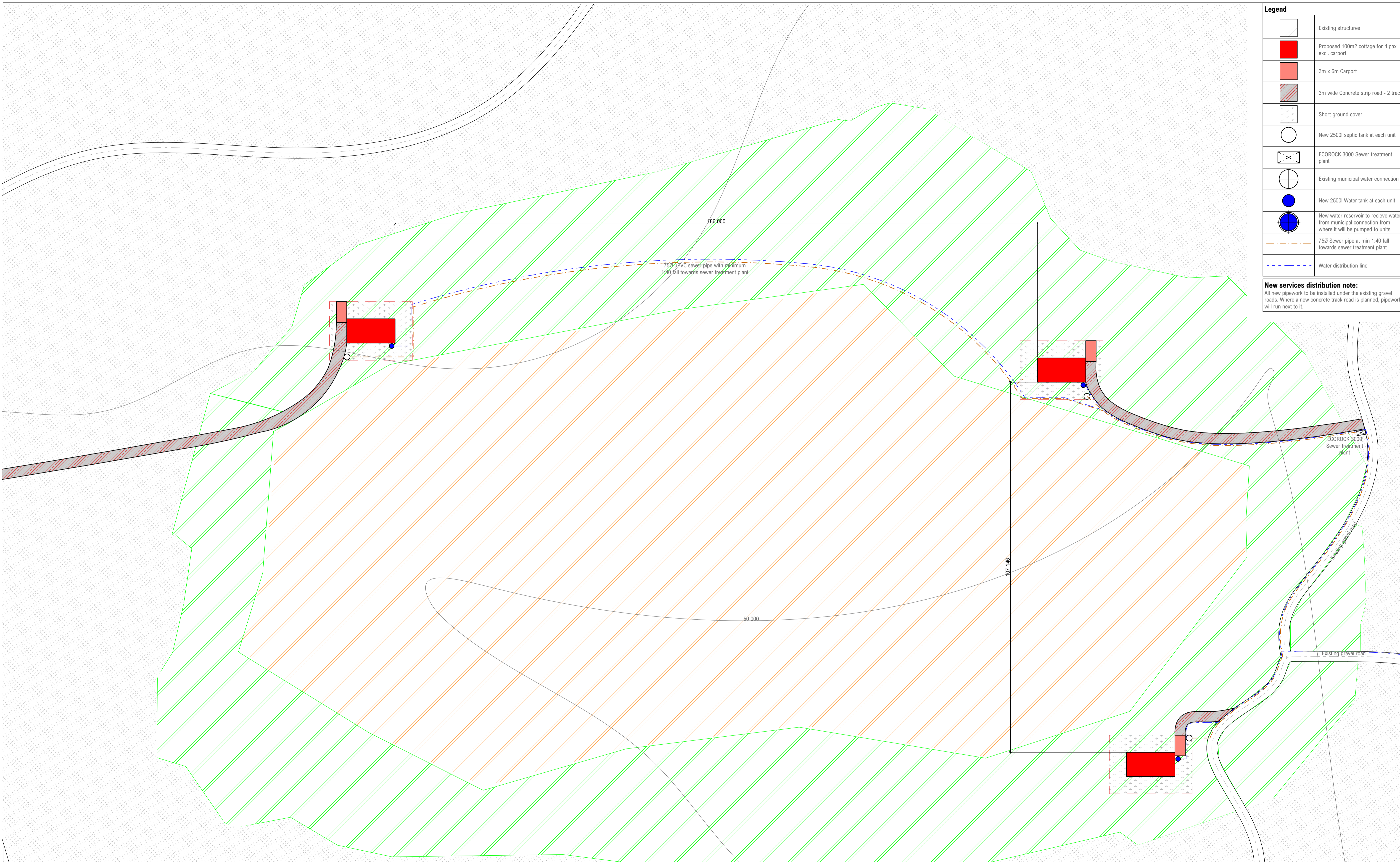
STAND DESCRIPTION:
11/449 Melkhoutfontein, Gouritsmond

PROJECT TITLE:
New Cottages for M&P Distributors

DRAWING TITLE:
Site Plan River Node

SCALE: 1:200	CHECKED: RP	APPROVED: RP
SHEET SIZE: A1	DRAWN: RP	DATE: 2024/01/30
DRAWING No: 002	PROJECT No: 2308-11-449	REV:

COPYRIGHT RESERVED



Legend	
	Existing structures
	Proposed 100m2 cottage for 4 pax excl. carport
	3m x 6m Carport
	3m wide Concrete strip road - 2 track
	Short ground cover
	New 2500l septic tank at each unit
	ECOROCK 3000 Sewer treatment plant
	Existing municipal water connection
	New 2500l Water tank at each unit
	New water reservoir to receive water from municipal connection from where it will be pumped to units
	750 Sewer pipe at min 1:40 fall towards sewer treatment plant
	Water distribution line

New services distribution note:
 All new pipework to be installed under the existing gravel roads. Where a new concrete track road is planned, pipework will run next to it.

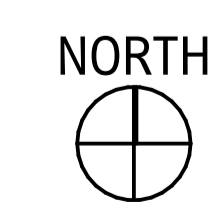
das MOi
 architects

Rene Pretorius: M.Arch
 SACAP: PRARCH21777 PIA: KE1095
 076 259 9396
 rene@dsmoi.co.za

CLIENT: M&P Distributors	SCALE: 1:500, 1:200	DRAWN: RP	DRAWING STATUS ISSUED FOR [APPROVAL INFORMATION COUNCIL CONSTRUCTION]		
DRAWING TITLE: Site Plan Forest Node	SHEET SIZE: A1	CHECKED: RP	PROJECT TITLE: New Cottages for M&P Distributors		
STAND DESCRIPTION: 11/449 Melkhoutfontein, Gouritsmond	REV:	APPROVED: RP	PROJECT No: 2308-11-449	DRAWING No: 003	DATE: 2024/01/30

ENGINEER _____

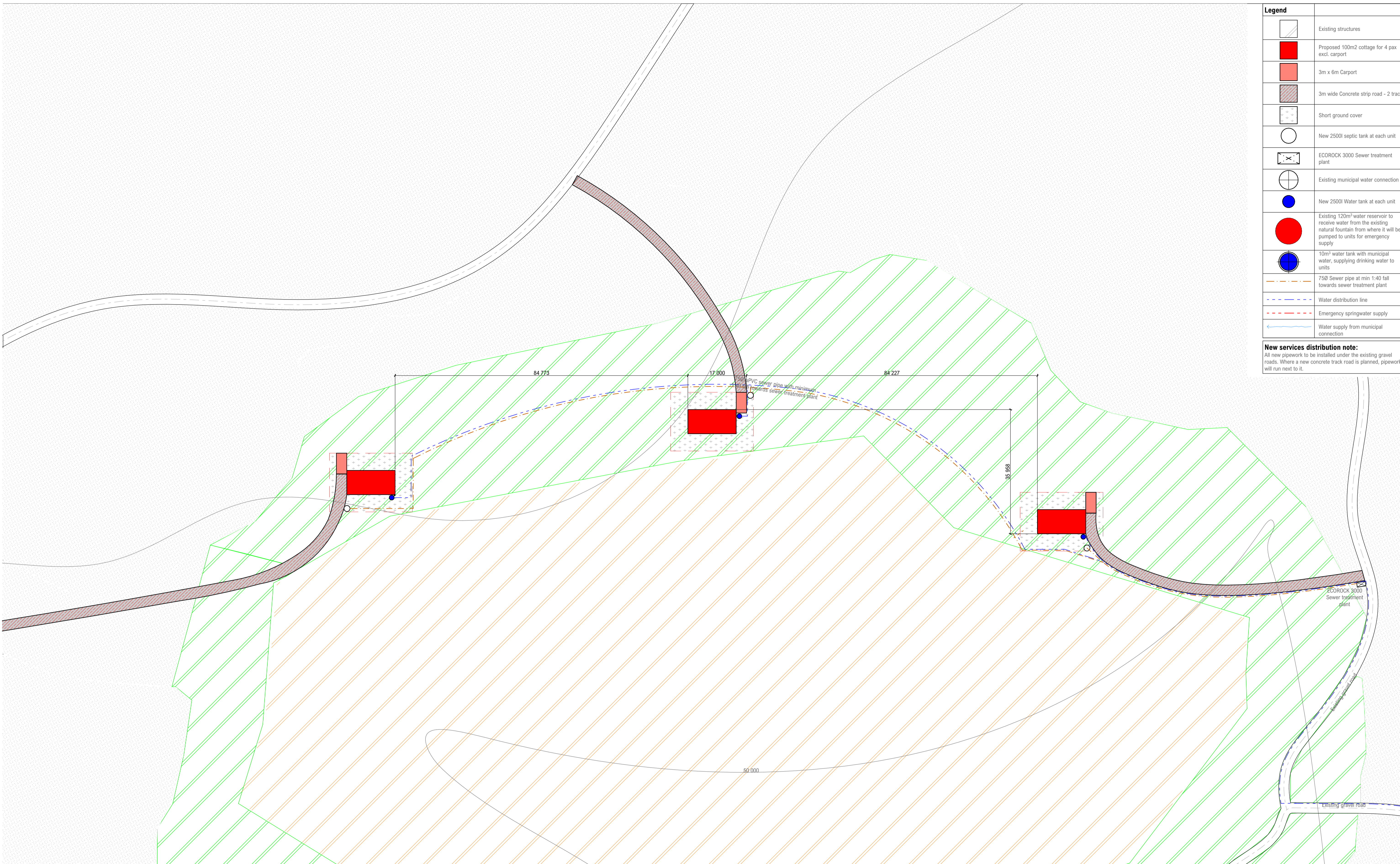
- GENERAL NOTES**
- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
 - THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
 - CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
 - CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 - QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT NBR AND THE SABS 10400 MINIMUM STANDARD SPECIFICATIONS.
 - TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE. ONLY SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
 - ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.



REV	DATE	BY	DESCRIPTION

REV	DATE	BY	DESCRIPTION

COPYRIGHT RESERVED



Legend	
	Existing structures
	Proposed 100m ² cottage for 4 pax excl. carport
	3m x 6m Carport
	3m wide Concrete strip road - 2 track
	Short ground cover
	New 2500l septic tank at each unit
	ECOROCK 3000 Sewer treatment plant
	Existing municipal water connection
	New 2500l Water tank at each unit
	Existing 120m ³ water reservoir to receive water from the existing natural fountain from where it will be pumped to units for emergency supply
	10m ³ water tank with municipal water, supplying drinking water to units
	750 Sewer pipe at min 1:40 fall towards sewer treatment plant
	Water distribution line
	Emergency springwater supply
	Water supply from municipal connection

New services distribution note:
 All new pipework to be installed under the existing gravel roads. Where a new concrete track road is planned, pipework will run next to it.

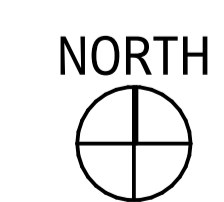


CLIENT: M&P Distributors	SCALE: 1:500, 1:200	DRAWN: RP	DRAWING STATUS ISSUED FOR [APPROVAL INFORMATION COUNCIL CONSTRUCTION]		
DRAWING TITLE: Site Plan Forest Node	SHEET SIZE: A1	CHECKED: RP	PROJECT TITLE: New Cottages for M&P Distributors		
STAND DESCRIPTION: 11/449 Melkhoutfontein, Gouritsmond	REV: 1a	APPROVED: RP	PROJECT No: 2308-11-449	DRAWING No: 003	DATE: 2024/07/30

ENGINEER _____

GENERAL NOTES

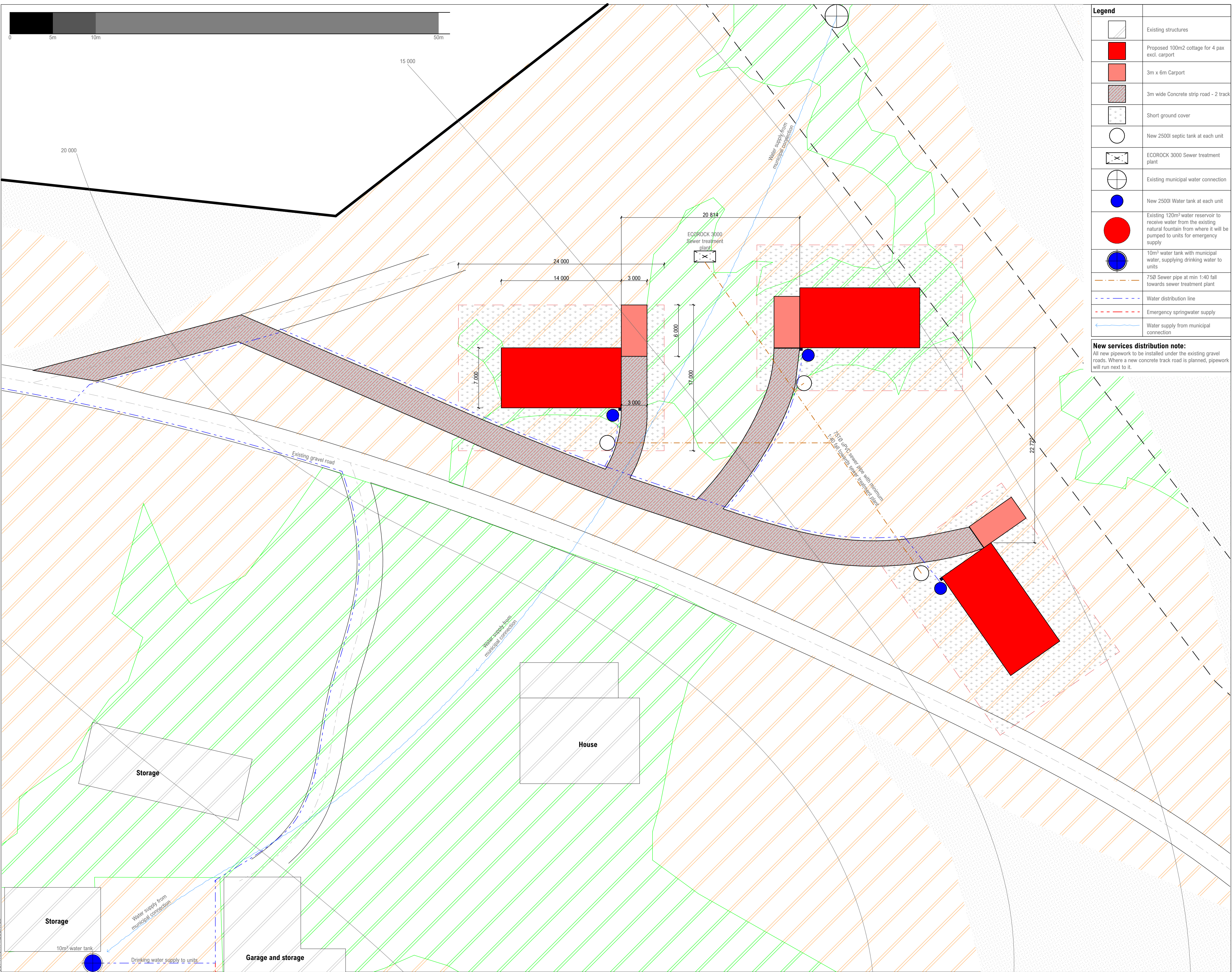
- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
- CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT NBR AND THE SABS 10400 MINIMUM STANDARD SPECIFICATIONS.
- TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE. ONLY SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
- ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.



REV	DATE	BY	DESCRIPTION

REV	DATE	BY	DESCRIPTION

COPYRIGHT RESERVED



Legend	
	Existing structures
	Proposed 100m2 cottage for 4 pax excl. carport
	3m x 6m Carport
	3m wide Concrete strip road - 2 track
	Short ground cover
	New 2500l septic tank at each unit
	ECOROCK 3000 Sewer treatment plant
	Existing municipal water connection
	New 2500l Water tank at each unit
	Existing 120m³ water reservoir to receive water from the existing natural fountain from where it will be pumped to units for emergency supply
	10m³ water tank with municipal water, supplying drinking water to units
	750 Sewer pipe at min 1:40 fall towards sewer treatment plant
	Water distribution line
	Emergency springwater supply
	Water supply from municipal connection

New services distribution note:
 All new pipework to be installed under the existing gravel roads. Where a new concrete track road is planned, pipework will run next to it.

GENERAL NOTES

- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
- CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT NBR AND THE SABS 10400 MINIMUM STANDARD SPECIFICATIONS.
- TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE ONLY. SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
- ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.

REV	DATE	BY	DESCRIPTION
1b	2024.07.30	RP	Water distribution

ENGINEER

DRAWING STATUS	
ISSUED FOR	[] APPROVAL [] INFORMATION [] COUNCIL [] CONSTRUCTION

das Moi

Rene Pretorius: M.Arch
 SACAP: PRARCH21777 PIA: KE1095
 076 259 9396
 rene@dasmoi.co.za

CLIENT: **M&P Distributors**

STAND DESCRIPTION: **11/449 Melkhoutfontein, Gouritsmond**

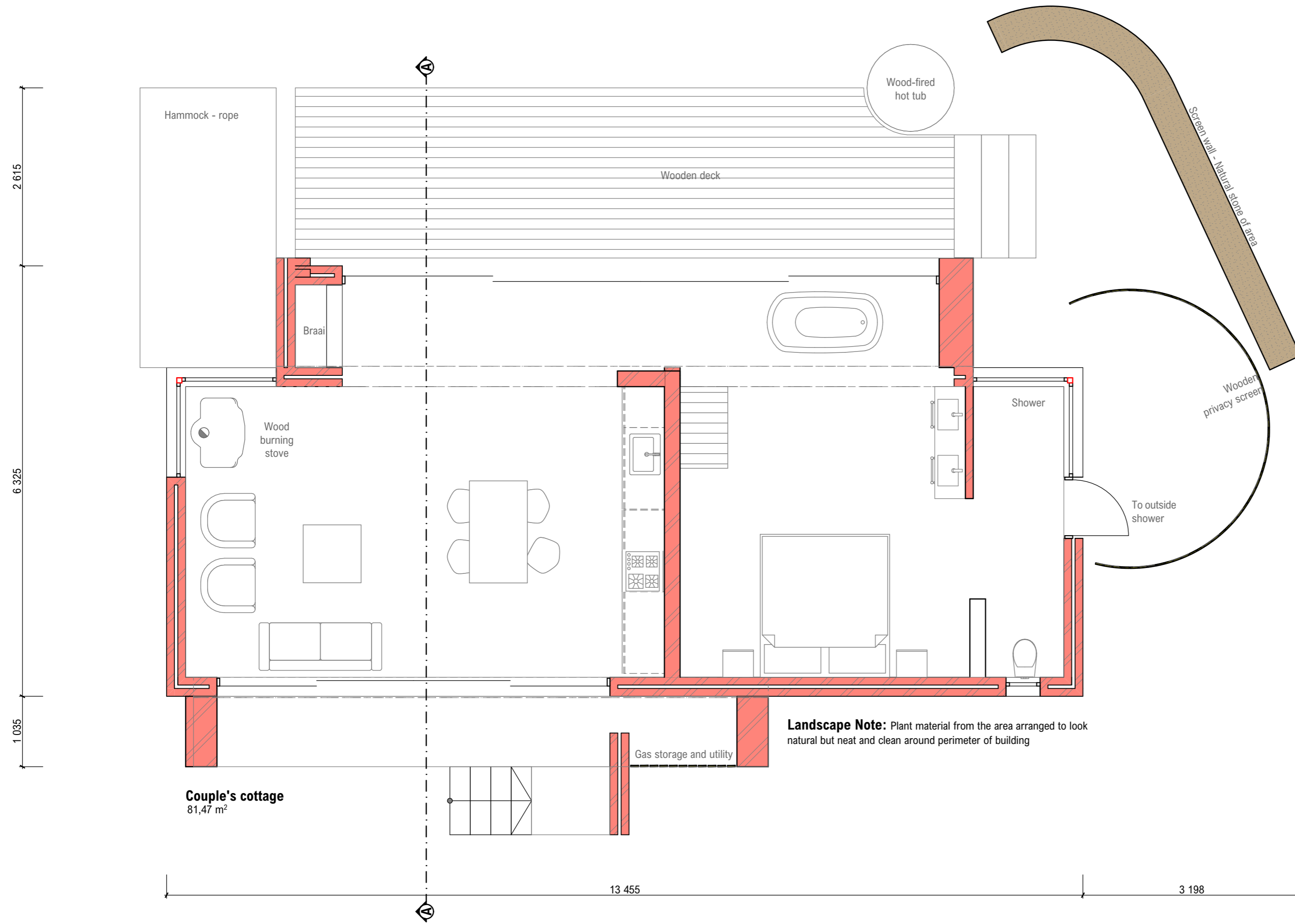
PROJECT TITLE: **New Cottages for M&P Distributors**

DRAWING TITLE: **Site Plan River Node**

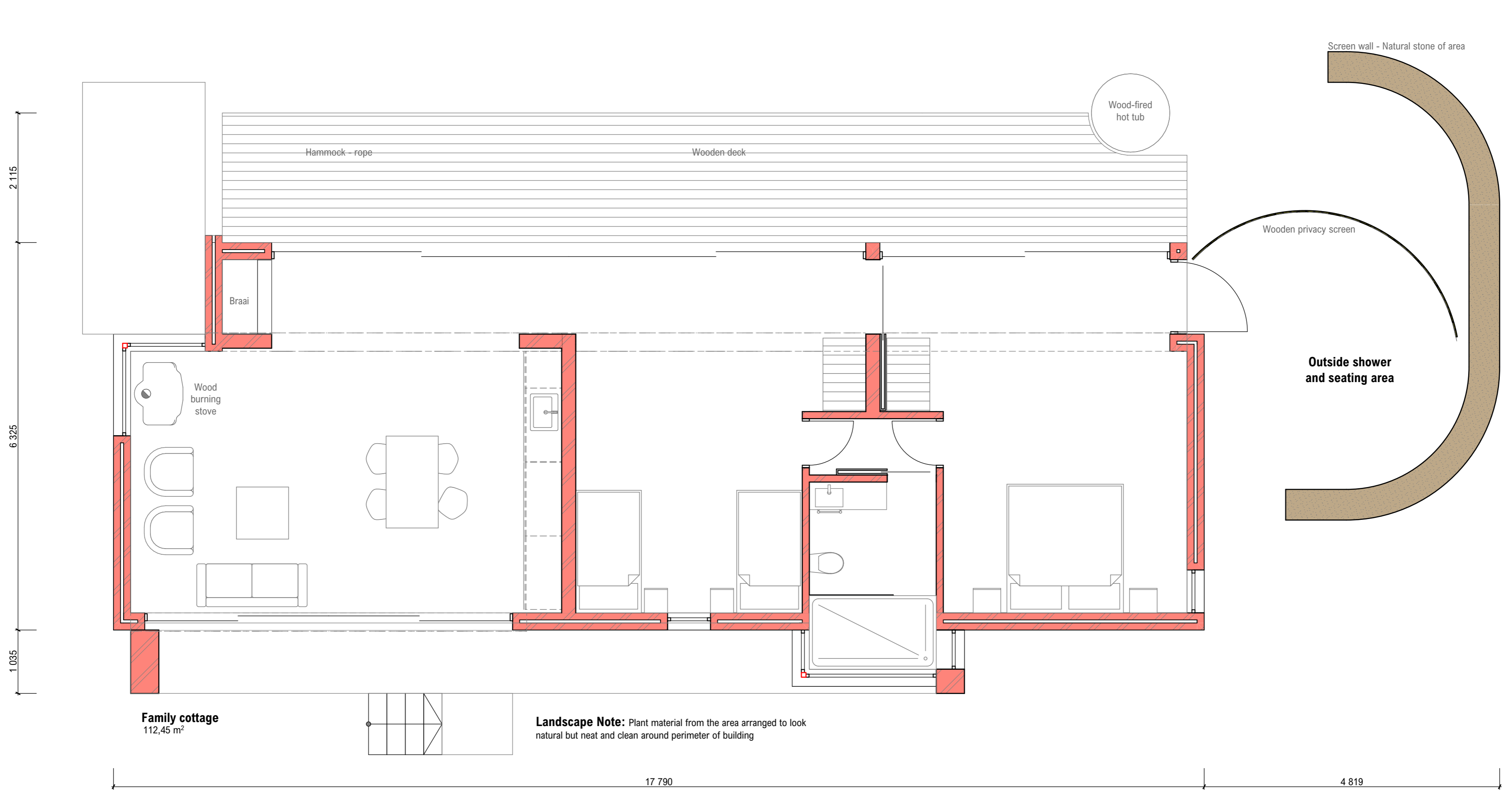
SCALE: 1:200	CHECKED: RP	APPROVED: RP
SHEET SIZE: A1	DRAWN: RP	DATE: 2024/07/30
DRAWING No: 002	PROJECT No: 2308-11-449	REV:

COPYRIGHT RESERVED

REV	DATE	BY	DESCRIPTION



1:50 Couple's Cottage

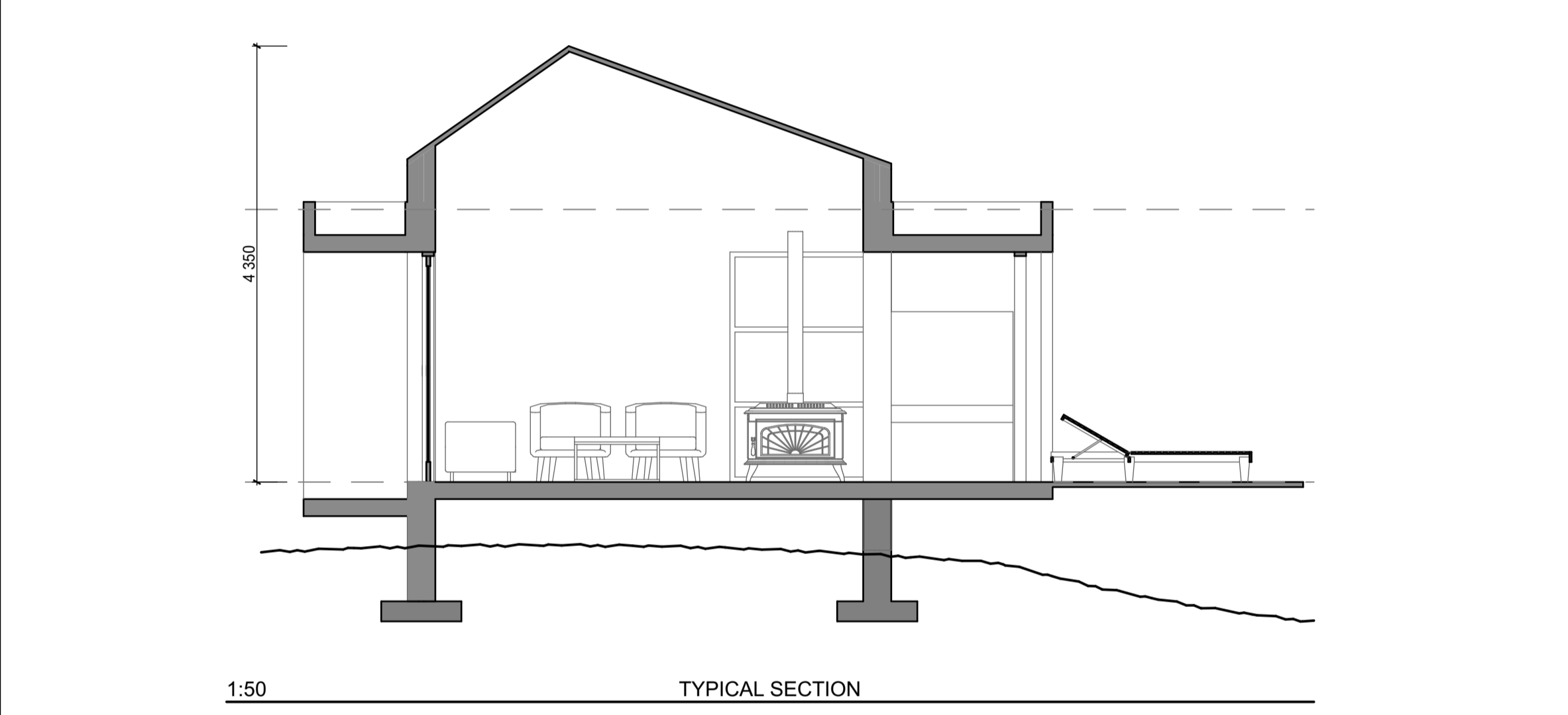


1:50 Family Cottage

CLIENT: M & P Distributors	SCALE: 1:50	DRAWN: RP	DRAWING STATUS ISSUED FOR [APPROVAL] [INFORMATION] [COUNCIL] [CONSTRUCTION]		
DRAWING TITLE: Floorplans	SHEET SIZE: A1	CHECKED: RP	PROJECT TITLE: Typical cottage concepts		
STAND DESCRIPTION: Erf 11/449, Melkhoutfontein, Gourits	REV:	APPROVED: RP	PROJECT No. #PIn	DRAWING No.	DATE: 2024/06/28

ENGINEER

- GENERAL NOTES
- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
 - THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
 - CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
 - CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
 - QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT NBR AND THE SABS 10400 MINIMUM STANDARD SPECIFICATIONS.
 - TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE ONLY. SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
 - ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.



FAMILY COTTAGE

Materials to be used:
 Facebrick walls - earthy tones from the area ie. brown or grey etc.
 Roofing - Concealed fix roof sheeting in non-reflective grey matt finish
 Focal walls - Cemcrete plaster resembling off-shutter concrete
 Raised concrete walkways/ balconies - evokes the idea of the building floating over the landscape

COUPLE'S COTTAGE



CLIENT: M & P Distributors	SCALE: 1:50	DRAWN: RP	DRAWING STATUS ISSUED FOR [APPROVAL INFORMATION COUNCIL CONSTRUCTION]		
DRAWING TITLE: Perspectives and Typical section	SHEET SIZE: A1	CHECKED: RP	PROJECT TITLE: Typical cottage concepts		
STAND DESCRIPTION: Erf 11/449, Melkhoutfontein, Gourits	REV:	APPROVED: RP	PROJECT No: #P1n	DRAWING No.:	DATE: 2024/06/28

ENGINEER _____

GENERAL NOTES

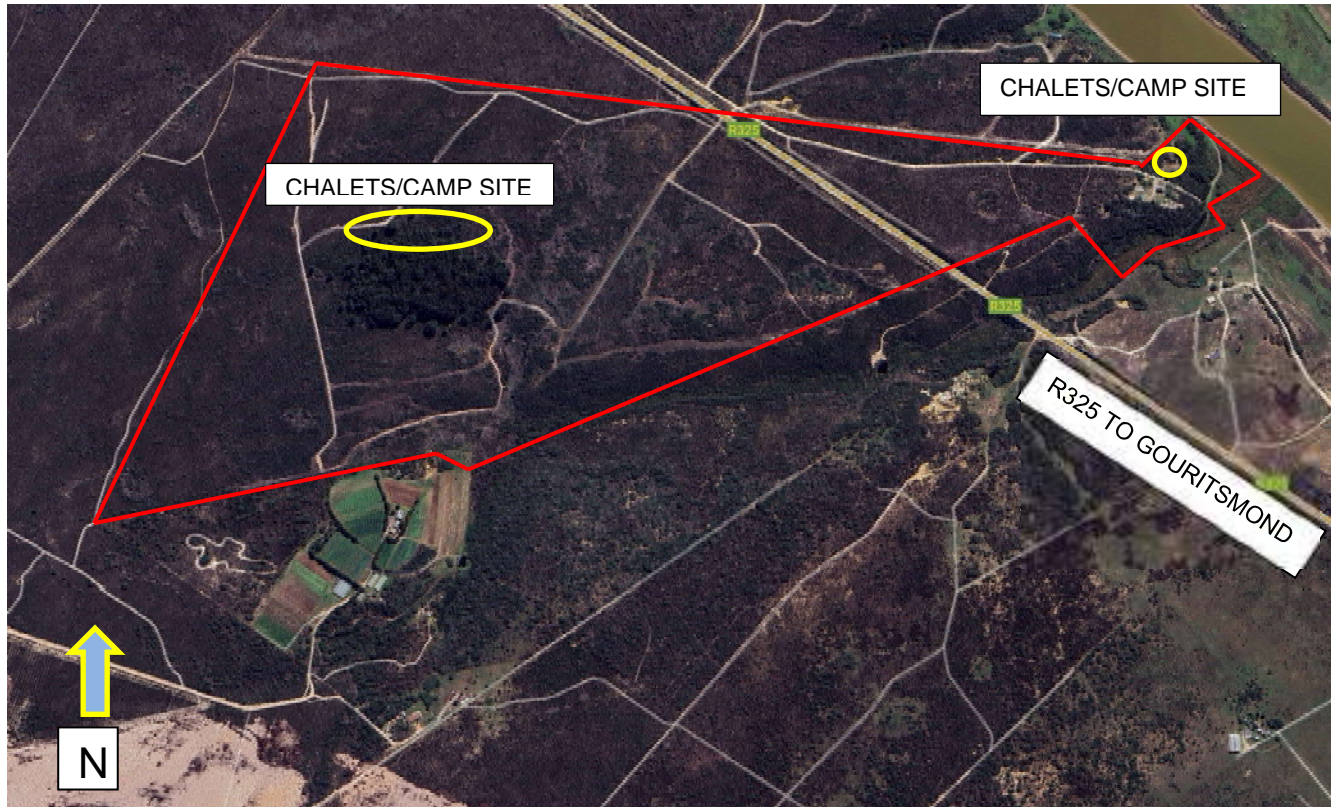
- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
- CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORKS. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT NBR AND THE SABS 10400 MINIMUM STANDARD SPECIFICATIONS.
- TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE. ONLY SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
- ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.

REV	DATE	BY	DESCRIPTION

REV	DATE	BY	DESCRIPTION

COPYRIGHT RESERVED

**PROPOSED DEVELOPMENT ON PORTION 11 OF FARM
449 MELKHOUTEFONTEIN, GOURITSMOND, HESSEQUA
MUNICIPALITY, WESTERN CAPE**



G 1 617 REVISION 02

SEPTEMBER 2024

Client:

Consulting Engineers:

M & P Distributors
7 Uitzicht Park
2 Bellingham Street
Highveld Ext 1
0157

Mr Chris Coetzee
chris@resonant.co.za



Cobus Louw Pr Eng

Office 12, Diaz Office Park, Beach Blvd West,
Diaz Beach.

MOSSEL BAY

Tel : 044 – 692 0441

admin@clconsult.co.za

Table 1 Current report version

Report Title:	PROPOSED DEVELOPMENT ON PORTION 11 OF FARM 449 MELKHOUTEFONTEIN, GOURITSMOND, HESSEQUA MUNICIPALITY, WESTERN CAPE
Client:	Mr C Coetzee
Report Number:	G 1 617
Revision Number:	02

Table 2 Report revision history

Date	Rev	Written By	Issued to		Distribution	Format
			Name	Institution		
5 June 2024	00	Cobus Louw	Chris Coetzee	M & P Distributors	E-mail	.pdf
2 August 2024	01	Cobus Louw	Chris Coetzee	M & P Distributors	E-mail	.pdf
10 September 2024	02	Cobus Louw	Chris Coetzee	M & P Distributors	E-mail	.pdf

EXECUTIVE SUMMARY

Cobus Louw professional Engineer cc compiled this civil engineering report for PORTION 11 OF FARM 449 MELKHOUTEFONTEIN, GOURITSMOND (hereafter referred to only as “the property”). This technical report is required as unput to the Application for Environmental Authorisation process.

The existing services in the area are addressed as well as the proposed services for the proposed improvements.

The so-called improvements exist of six (6) chalets/tents (glamping pods – low-key tourism development) at two proposed positions on the property. Hiking/cycling trails will also be introduced.

Existing services

- Provincial Road R325 split the property in 2 pieces with roughly 25% on the Eastern side of the R 325 and 75% on the Western side.
- The Hessequa Municipal raw water supply pipeline is running on most Eastern border of the property from where the current farmhouse is provided with potable water.
- The water connection to the property consists of a metered Ø32mm connection.
- An existing concrete reservoir exist on the property next to the existing farmhouse with a capacity of roughly 120m³.
- Several Jeep tracts exist on the property. These Jeep tracts provide access to the proposed clamping sites.
- Sewerage – The existing farmhouse area make use of a septic tank with a soak away sewerage system.
- Refuse removal services – None.

Proposed services

- Access to the property will be via Provincial Road R 325.
- Access to the clamping sites will be via new roads in the form of Jeep tracks on the property. Access roads will be in the form of grass blocks / Hyson cells. / concrete strips depending on gradient and soil conditions.
- 2 500 harvested rainwater storage capacity for each charlets/tent.
- Water from the existing metered Ø32mm connection from the Hessequa Municipal network will be utilised.
- Water from the existing fountain on the property will be utilized for fire prevention purposes.
- All in one domestic sewerage treatment system (Biorock) in combination of a underground holding tank for garden irrigation purposes.
- Stormwater management will be mainly bases on energy dissipating – and soak away techniques.
- **Normal Household refuse:** A distinction will be made on the premises between recyclable and non-recyclable refuse. Both these types of refuse will be delivered to the closes refuse collection point. The closest Municipal collection point is outside Gouritsmond.
- **Garden refuse:** Will be managed on-site by the owner through a composting facility in such a way that it does not pose a fire hazard to the environment.

Contents

EXECUTIVE SUMMARY	ii
LIST OF FIGURES.....	v
1 INTRODUCTION	4
2 LAND USE.....	4
2.1 Site Development Plan	4
3 EXISTING SERVICES	5
3.1 Buildings.....	5
3.2 Water	5
3.3 Sewerage	5
3.4 Access and Roads.....	6
3.5 Storm water	6
4 IN-SITU GROUND CONDITIONS.....	6
5 PROPOSED CIVIL ENGINEERING SERVICES.....	7
5.1 House construction.....	7
5.2 Water	7
5.2.1 Water during the construction phase.....	7
5.2.2 Water for long term household use.....	7
5.2.3 Water for Fire-flow design criteria.....	8
5.2.4 General household recommendations.....	8
5.3 Sewerage	9
5.4 Access and Roads.....	9
5.5 Storm water	12

5.6	Stormwater management	13
5.6.1	SuDS Process	13
5.6.1.1	Water quantity management.....	13
5.6.1.2	Water quality management	13
5.6.1.3	Biodiversity management.....	14
5.6.2	SuDS Selection	14
5.6.2.1	Source controls.....	14
5.6.2.2	Local controls.....	15
5.6.2.3	Regional controls	15
5.6.3	Stormwater management plan	15
5.6.3.1	Water quantity management.....	15
5.6.3.2	Water quality management	15
5.7	Solid Waste	16
6	GENERAL	16

LIST OF FIGURES

Figure 1 Locality map.....	4
Figure 2 Typical on-site Ecorock bioreactor plant	9
Figure 4 Internal roads and services on the farm	10
Figure 5 Unfilled Hyson Cells	11
Figure 6 Hyson Cells filled with concrete.....	11
Figure 7 Gravel road built with Hyson Cells.	11
Figure 8 Completed cement surfaced road built with Hyson Cells	11
Figure 9 Tensar TriAx Geogrid.....	11
Figure 10 Sudpave plastic grid paver (unfilled).	11
Figure 11 Pre-cast concrete grass blocks	12

1 INTRODUCTION

Cobus Louw Professional Engineer CC was appointed by M & P Distributors to prepare the necessary Civil Engineering Service Report for the proposed improvements. The improvements consist of six (6) chalets/tents (glamping pods – low-key tourism development) at two proposed positions on the property. Hiking/cycling trails will also be introduced on the existing roads / Jeep tracks on the property.

The total size of the property is 105.3824ha.

These glamping dwellings will be provided by a basic access road, single phase PV electrical system, water and on-site sewerage disposal.

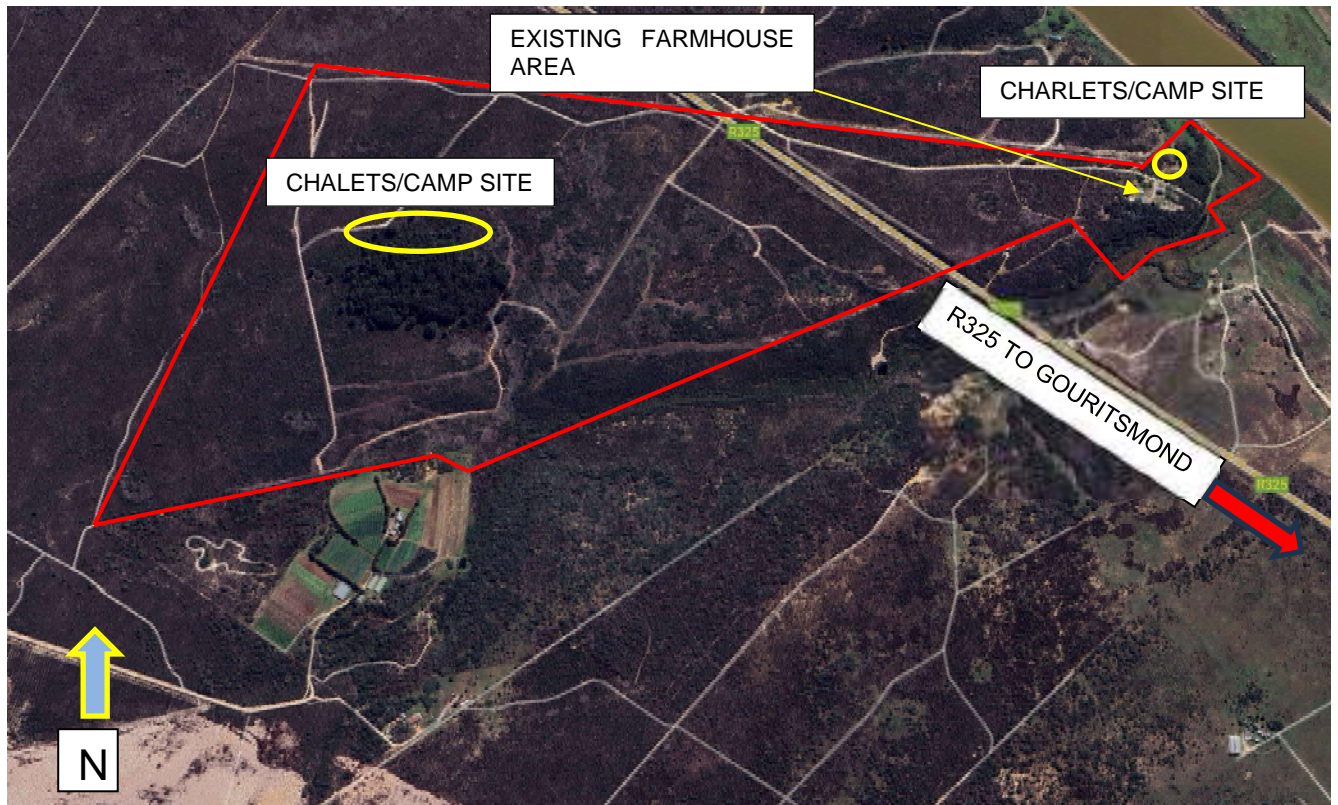


Figure 1 Locality map

2 LAND USE

2.1 Site Development Plan

Currently the zoning is Agricultural 1 (AGR1) for the total area. Application will be made for a consent use under Agriculture I. No rezoning is required. The erf size is 105.3824ha.

3 EXISTING SERVICES

3.1 Buildings

Existing Farmhouse	:	187m ²
Storage shed 1	:	84m ²
Storage shed 2	:	147m ²
Storage shed 3	:	140m ²
Concrete reservoir	:	120m ³

3.2 Water

A metered Ø32mm water pipeline exist that supply the farmhouse area with fresh drinking water. This water was stored in a 120m³ concrete reservoir to provide the necessary reserves for the busy holiday seasons Gouritsmond experience.

Next to the farmhouse a natural fountain exists which was historically used for livestock drinking purposes.



3.3 Sewerage

The farmhouse area has a septic tank with a soak away system like most historical rural sewerage systems were treated.

3.4 Access and Roads

The Northern-, Western and Southern boundaries exist out of the fence between neighbouring farms. The Eastern boundary was formed by the Goutitsriver.

The Eastern section of the farm get divided by the R 325 Provincial Road between Gouritsmond in the South and the N2 National Road in the North.

Access to the property to the East and the West is via the R325 Provincial Road. Several Jeep tracks exist on the property and mainly to the farmhouse area and other locations on the property.

3.5 Storm water

None.

The area is naturally drained to an Eastern direction with several local low and high points all over the property. Typical of natural dune habitat. Several local depressions create a situation that almost all stormwater runoffs will drain via the in-situ sandy soil conditions into the underground.

4 IN-SITU GROUND CONDITIONS

The in-situ soil types encountered are fine grained non plastic sands with a Typical Permeability Class of Moderate to High (600 – 6 000) mm/day.

The bearing capacity of the in-situ soil will typically range from 50-200kPa depending on the depth below natural ground level. At $\pm 1\ 500 - 2\ 000$ mm below natural ground level 200kPa bearing capacity could be expected.

5 PROPOSED CIVIL ENGINEERING SERVICES

5.1 House construction

The six (6) chalets (glamping pods – low-key tourism units) will consist of low- maintenance and carbon footprint structures.



5.2 Water

5.2.1 Water during the construction phase.

Due to the type of building material proposed for the glamping area limited water will be required during the construction phase. Whatever water will be required for construction purposes will be from the metered Ø32mm Municipal connection.

5.2.2 Water for long term household use.

The expected water usage for the farmhouse and the 6 glamping units will be between 4 500 – 4 850 litres / day.

A new 10 000 litre tank will be connected to the existing Ø32mm Municipal connection to the property. Each glamping unit will be provided with a 2 500 litre tank to be fed from the new 10 000 litre tank via a surfaced laid Ø32 - 50mm HDPE pipe provided the necessary flow via a solar pump where required.

The reason for the freshwater tanks closer to the glamping sites is to reduce the distribution water network pipe sizes.

The existing 120m³ freshwater reservoir will be filled from the natural spring for firefighting purposes. A registration Certificate from BOCMA does exist for the extraction and storage of water from the natural spring.

A secondary shallow laid HDPE pipe network will be required for fire fighting purposes

All new water storage tanks must be placed in such a way that it does not negatively influence the skyline. We are of the opinion that none of the higher lying areas will provide enough pressure for general household and fire requirements.

For this purpose, a pressure pump will be required for water distribution in and around the glamping areas to comply to the minimum residual head for general household purposes of 24m.

5.2.3 Water for Fire-flow design criteria

The area identified for the glamping units as well as the existing farmhouse could be classified as a low-risk area regarding fire risk based on the existing vegetation in the area.

Low-risk areas required a fire flow rate of 900 litre / min for a period of 2 hours at a minimum residual head of 7m. Taking into consideration that the prescribed fire flow is for areas of less than 2 000 dwelling units, the fire flow is thus excessive for the proposed development.

Although the existing 120m³ reservoir will provide the required excessive storage capacity for fire flow requirements.

5.2.4 General household recommendations

It is proposed that the residential units be equipped with the following water saving technology:

- **Dual Flush Toilets**
- **Low flow shower heads** – It is proposed that the residential units be equip with low flow shower heads, as these can not only reduce water consumption by up to 50%, but also the energy required for water heating by up to 50% (Eartheasy, 2008 - http://eartheasy.com/live_lowflow_aerators.htm). Low flow shower heads make use of either aerators or pulse systems to reduce the flow without compromising the quality of the shower. The choice of shower head is up to the homeowner but must have a flow of less than 7 litres per minute.
- **Low flow faucets** - Low flow faucets use aerators to reduce the flow of the water. These are either built into the faucet or added as an aftermarket product. The faucets in bathrooms should have a peak flow of less than 10 litres per minute.
- **Rainwater Tanks** - All houses should be fitted with rainwater collection tanks for use externally (landscaping, washing cars etc). Consideration should be given to provide solar pumps at each rainwater tank to supply the units more effectively. The overflow from tanks should be directed into the stormwater system. All water sources situated externally on buildings should be fed from these rainwater tanks. Bear in mind that water harvesting from a tented roof could be challenging and unpractical.
- **Geyser and pipe insulation** - Apart from the savings in terms of energy as detailed above, insulating geysers and pipes save water, as shorter periods of running the tap to get hot water are required. Homeowners must be required to install geyser and pipe insulation; this must be included in their building guidelines.

5.3 Sewerage

The calculated sewerage and grey water generation from the development has been calculated as follows:

3 x Clamping Units 720 – 1 080 litre / day.

It is recommended that all wastewater from the residential units been treated as follows:

- All grey and black water are directly diverted to a Ecorock bioreactor with a volume of 3 000 litres.
- All outflow from the Ecorock bioreactor flow to an underground holding tank from where it will be used for garden irrigation purposes.



Figure 2 Typical on-site Ecorock bioreactor plant

5.4 Access and Roads

Access to the property will be via Provincial Road R 325.

Access to the clamping sites will be via new Jeep tracks originated from the existing gravel roads on the property. Access roads will be in the form of grass blocks / Hyson cells. / concrete strips depending on gradient and soil conditions.

Water distribution from the metered water connection and the exiting 120m³ reservoir to the proposed glamping sites will be parallel to the exiting gravel roads and newly constructed access roads in the form of Jeep tracts.

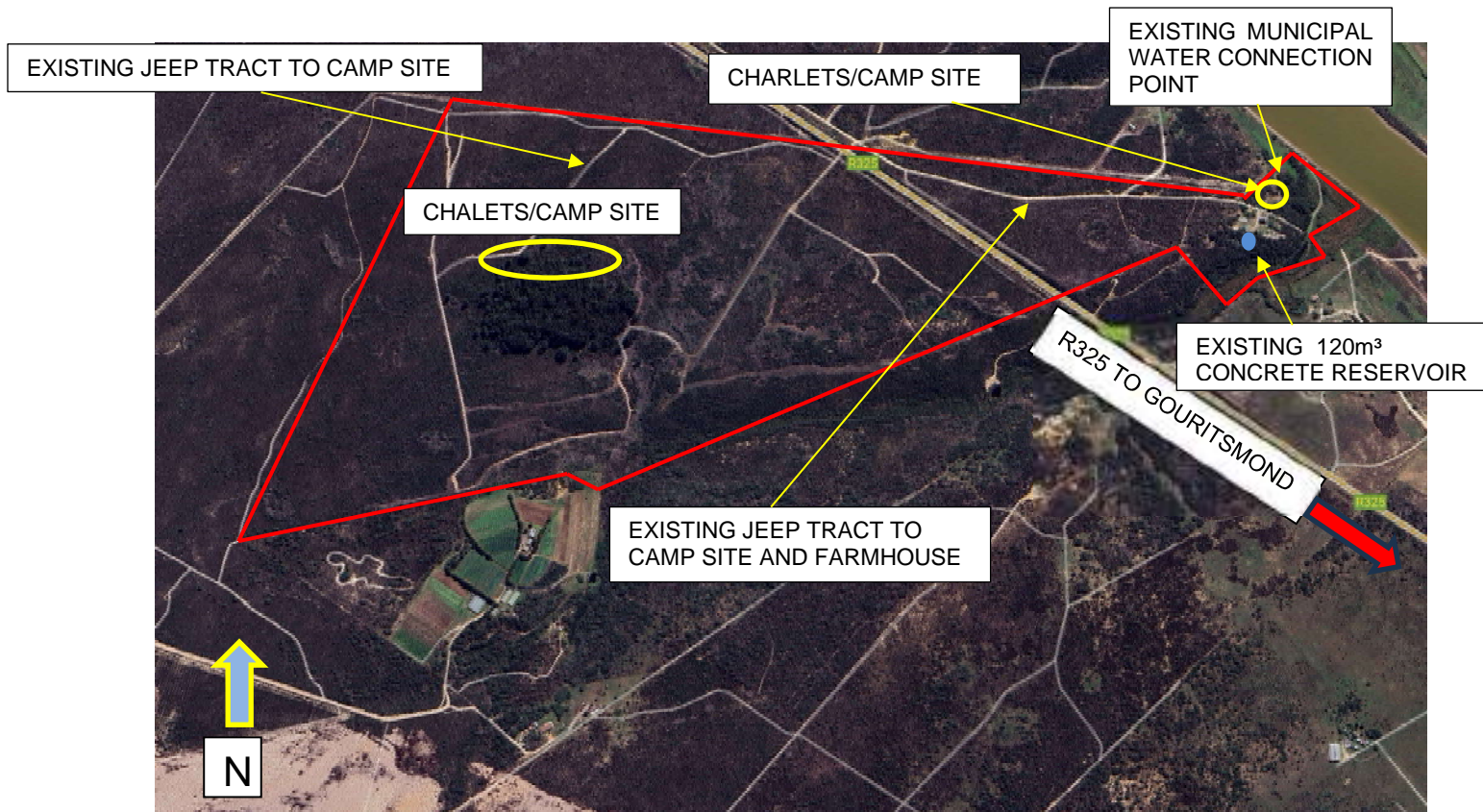


Figure 3 Internal roads and services on the farm

Internal roads are a so called “Jeep Track” existing of 2 vehicle tracks with most of the time lower vegetation growing in between the two tracks. These tracks are accessible with a normal 4 x 2 vehicle. Road reserves for these roads will not be wider than 3.5m and for areas where steeper gradients are encountered it could require road reserves of up to 6m to accommodate the potential stabilisation of the sides for cut/fill actions. In this case it does not seem necessary.

We recommend that these tracks to be built with one or a combination of the following options. Each area will be evaluated to determine the most workable option and to protect the sides next to the road. The road reserve width must not exceed 3.5m (6m at steep gradients) and will be limited to light commercial vehicles. Normally when steep gradients is

1. Hyson Cells filled with 15MPa concrete.
2. Tracks build with 20MPa concrete to form 2 concrete tracks each 300mm wide with construction joints at 2m intervals to prevent unnecessary expansion cracks.
3. Grass block in the form off:
 - Concrete pre-cast grass blocks.
 - Tensar TriAx Geogrid for soil stabilisation and grass / low growing vegetation over for coverage.
 - Sudpave plastic grid pavers with grass / low growing vegetation over for coverage.

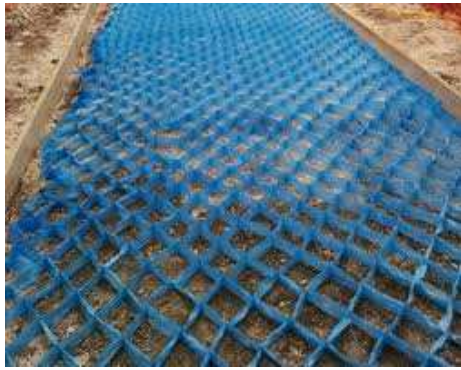


Figure 4 Unfilled Hyson Cells



Figure 7 Completed cement surfaced road built with Hyson Cells



Figure 5 Hyson Cells filled with concrete



Figure 8 Tensar TriAx Geogrid



Figure 6 Gravel road built with Hyson Cells.



Figure 9 Sudpave plastic grid paver (unfilled).

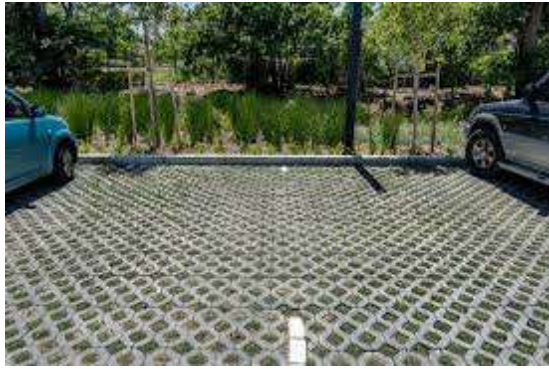


Figure 10 Pre-cast concrete grass blocks

The areas currently accessible with a normal 4 x 2 vehicle could be covered with wood chips harvested from the removal of alien vegetation. This is a non-official way of increasing the driving ability of roads in heavy sandy areas.

5.5 Storm water

The storm water system forms an integral part of the structure plan. The system rest on three legs, the minor system, the major system, and an emergency system. The minor storms are catered for in the road design by creating stormwater management structures for the minor floods while the major storms are routed through a linked system of road and public open spaces using attenuation techniques. The emergency system recognizes failure of the minor system by storms greater than provided for in the major system or in the event or malfunction of the minor system providing continuous overland flow routes as part of the major system to minimize flooding of buildings.

The natural slope of the proposed development is in a Southern direction.

- The minor disposal system will consist of several stormwater management structures build into the road design at the Hyson Cells / Grass blocks sections. The rest of the roads will consist of the in-situ soil with good permeability abilities and limited to no disruption of the natural vegetation that act as a superb natural stormwater management entity.
- The major system will make use of the natural low points in the area where water will accumulate, drain, and evaporate over time.
- The emergency system will flow overland in a Southern direction.

The following design criteria will be used:

Minor System: 2 Year return period conveyed in the road design by providing stormwater management structures to prevent road erosion by enabling as much as possible water to naturally soak away.

Major System: 20 Year return period. The difference between the 2 year and 20 year to be conveyed in the natural low points on the property. These low points will act as natural detention ponds from which water will drain and evaporate over time feeding the underground water source.

5.6 Stormwater management

To ensure the sustainability and environmental integrity of a stormwater management plan, it is advisable to consult *The South African Draft Guidelines for Sustainable Urban Drainage Systems*.

Sustainable Urban Drainage Systems (SuDS) focuses on sustainability by attempting to imitate the natural hydrological cycle, something that conventional drainage systems does not focus on. Once an area is developed, the natural permeability of the area is generally reduced as free draining surfaces are replaced with impermeable surfaces such as roofs, roads, and paved areas. This process, together with the fact that subsoil is usually compacted during development reduces the infiltration capacity of the area. As development also results in loss of vegetation, the evapotranspiration of the area is also reduced.

Conventional drainage systems are more focused on reducing flooding and possible flood damage to an area (flood attenuation). The focus of the SuDS process is on flood attenuation as well as promoting more natural, sustainable drainage systems.

5.6.1 SuDS Process

The SuDS principle can be broken up into the following three key areas:

- i. Water quantity.
- ii. Water quality
- iii. Biodiversity

5.6.1.1 Water quantity management

Stormwater quantities can be managed through inter alia the following processes that will be implemented:

- Capturing rainwater for supplementary water uses on site.
- Detaining stormwater before subsequent release.
- Conveyance of stormwater (transfer from one location to another).
- Long-term storage in a specified infiltrating area in the form of a wetland which will drain slowly.
- Stormwater outlet structures to act as energy dissipation structures to protect receiving watercourses in the event of flooding.

5.6.1.2 Water quality management

Water quality is promoted through cleaning or polishing of stormwater. This can be achieved through inter alia the following processes that will be implemented:

- Sedimentation – reducing flow velocities of stormwater runoff to allow sediment particles to fall out of suspension.
- Removal of nutrients and metals through plant-uptake (wetland).
- Photosynthesis – breakdown of organic pollutants through extended exposure to ultraviolet light.

5.6.1.3 Biodiversity management

Biodiversity management is promoted through the following controls that will be implemented:

- Health and safety plans and implementation to prevent injury or death to people.
- Environmental risk assessment and management to promote longevity of the system.
- Recreation and aesthetics – enhancing visual appearance by creating attractive open spaces.
- Education and awareness – distribution of knowledge about stormwater management among interested and affected parties.

5.6.2 SuDS Selection

To successfully manage stormwater several treatment processes may be required. This multiple process treatment is referred to in the SuDS guideline as a treatment train. A variety of options or combinations of options may be necessary according to the individual requirements of the site. The three key points where intervention is required are as follows:

- Source controls – manage stormwater runoff as close to its source as possible.
- Local controls – manage stormwater runoff in the local area.
- Regional controls – manage combined stormwater runoff from several developments.

5.6.2.1 Source controls.

Source control alternatives that were considered include:

- Green roofs are roofs covered in vegetation. The vegetation serves to delay runoff peaks as well as decrease runoff volumes. Green roofs also improve the biodiversity of post development areas. The limitations of this method of control includes a high set up cost due to the need to contract experienced professionals regarding the effects on the structure as well as vegetative requirements; the need for regular maintenance; and the possibility of roof failure if detained water leads to failure of waterproofing membranes. **Due to these limitations this alternative will not be implemented.**
- Sand filters are generally utilised to improve the quality of stormwater runoff. They comprise of a sedimentation chamber as well as a filtration chamber. Filtration through the sand bed coupled with microbial action in the medium leads to removal of suspended particles, heavy metals, and smaller particulates in stormwater runoff. Sand filters are expensive to implement, are generally unattractive and prone to clogging. **Due to these reasons this alternative will not be recommended.**
- Soakaways are excavated pits filled with a porous medium, like coarse aggregate. Soakaways are used for temporary storage of stormwater, which is then allowed to infiltrate into the ground. Soakaways are suitable in most climatic conditions; significantly reduces runoff volume; and has design lives of up to 20 years if maintained correctly. This control is only suitable to small areas where infiltrating water will not adversely affect foundations of adjacent structures. There is also a need for regular maintenance. **The overflow water collected from the roofs of the buildings need to be piped to a soakaway chamber system that does not negatively influence the foundation structure of the residential houses.**
- Stormwater collection and reuse reduces runoff which reduces the potable water consumption rates of a development. Stormwater collection is also a good way to attenuate flood peaks. Storage facilities are easy to find and quick to install but may not be aesthetically pleasing. **Water harvesting will therefore be implemented by means of water tanks that will be required at the proposed building on the site.**

5.6.2.2 Local controls

Local control alternatives that were considered inter alia include:

- Stormwater management structures as part of the hardened road construction sections.
- Make use of the natural vegetation and low points on the premises to act as natural energy dissipating structures and an
- Artificial wetland / detention pond being created on site.

Outlet structures from pipe- or channel stormwater systems will be designed in such a way to act as energy dissipating structures as well as a litter and sediment trap before water is released into the ocean in the case of a major flood. This will only be applicable for runoff water from hardened surfaces around the primary house.

5.6.2.3 Regional controls

Not applicable to this area since the final run-off is discharged directly into the Gouritsriver and no regional controls are available downstream of the site.

5.6.3 Stormwater management plan

5.6.3.1 Water quantity management

To create a more sustainable stormwater management system, a source control in the form of stormwater collection tanks at the building, will be used on site for stormwater to be reused for irrigation and domestic purposes. These tanks will be placed “in-line” on the building’s gutter system. The tanks will make use of an inlet by-pass system which ensures that the initial roof runoff is not collected in the tanks. This ensures that any pollutant build up on roofs will not be flushed into the collection tanks by the first rains, the so-called first flush phenomenon.

The building will be equipped with a surrounding pipe network to accommodate downpipes. The remainder of the stormwater on site will be accumulated and disposed into the artificial wetland.

5.6.3.2 Water quality management

SuDS water quality design is based on the implementation of various control methods which forms a treatment train. If water goes through more than one treatment process, there is more chance of prevention of pollution at a particular site.

Utilising the concept of a treatment train, water quality will first be addressed by parking cleansing for removal of litter and sand sized particles.

Secondly a proper designed outlet structure will control pollution as well as flooding by causing energy loss of the water and the settlement of solids.

In addition to the above, the treatment train proposed for the building area will consist of stormwater collection and re-use tanks.

5.7 Solid Waste

The refuse generated will be of chemical nature.

Two types of refuse will be generated

- Normal household refuse
 - Non-recyclable
 - Recyclable
 - Garden refuse
- } 0.48m³/Week

The following options for disposing of the refuse will be followed.

Normal Household refuse: A distinction will be made on the premises between recyclable and non-recyclable refuse. Both these types of refuse will be delivered to the closes refuse collection point. The closest Municipal collection point is outside Gouritsmond.

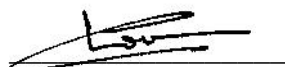
Garden refuse: Will be managed on-site by the resident of the home through a composting facility in such a way that it does not pose a fire hazard to the environment.

6 GENERAL

The whole development fall within the Master Planning for the greater Hessequa Municipal area.

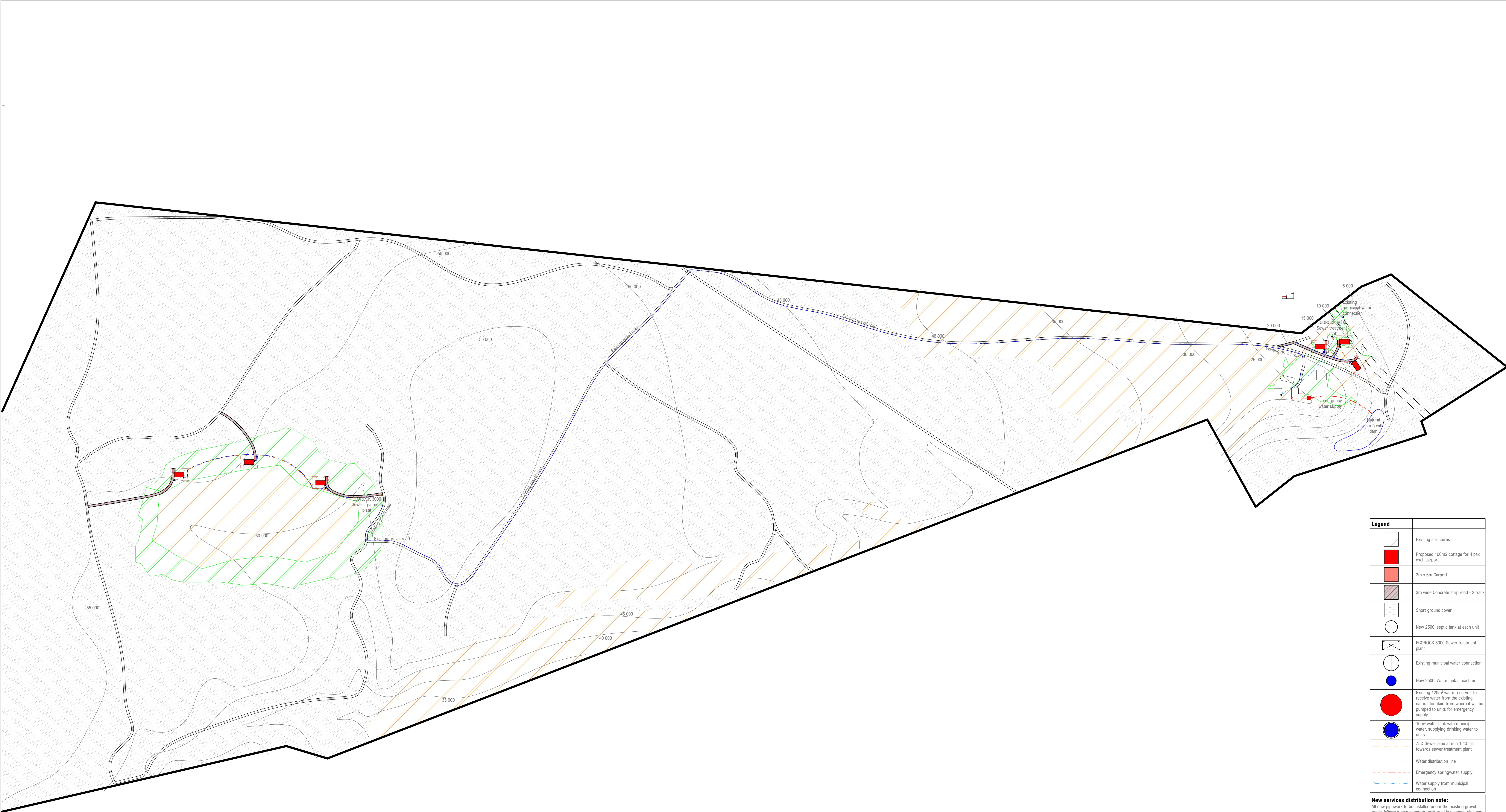
For any further queries do not hesitate to contact Cobus Louw at 072 4233 208.

Yours truly,



JL LOUW Pr Eng.

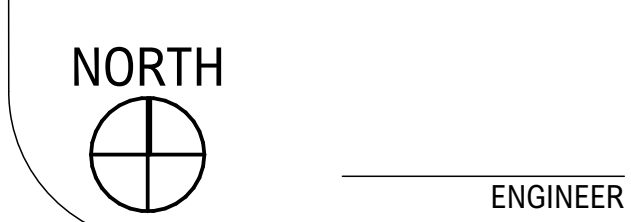
ATTACHED: Proposed Site Development Plan



GENERAL NOTES

- ANY ERRORS, DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- THIS DRAWING IS NOT TO BE SCALED. FIGURED DIMENSIONS TO BE USED AT ALL TIMES.
- CONTRACTORS ARE TO LOCATE AND IDENTIFY EXISTING SERVICES ON SITE AND TO PROTECT THEM FROM DAMAGE THROUGHOUT THE DURATION OF THE WORK. THESE SERVICES TO REMAIN THE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDINGS, ALL EXTERNAL AND ALL INTERNAL WALLS WITH PARTICULAR REFERENCE TO BOUNDARIES, BUILDING LINES ETC.
- QUALITY OF ALL MATERIAL, WORKMANSHIP AND CONDITIONS TO COMPLY WITH RELEVANT TSB AND THE SABS 5000 MINIMUM STANDARD SPECIFICATIONS.
- TRADE NAMES AND CODE NUMBERS ARE AS A GUIDE ONLY SIMILAR OR EQUAL ITEMS MAY BE USED BY PRIOR APPROVAL OF OWNER OR ARCHITECT.
- ANY QUERIES ARISING FROM ALL THE ABOVE MUST BE REPORTED TO THE ARCHITECTS FOR CLARIFICATION BEFORE ANY WORK IS PUT TO HAND.

REV	DATE	BY	DESCRIPTION
To	2024.07.30	RP	Water distribution



DRAWING STATUS
 ISSUED FOR [APPROVAL][INFORMATION][COUNCIL][CONSTRUCTION]

Legend	
	Existing structures
	Proposed 100m ² cottage for 4 pax excl. carport
	3m x 6m Carport
	3m wide Concrete strip road - 2 track
	Short ground cover
	New 2500l septic tank at each unit
	EGOROCK 3000 Sewer treatment plant
	Existing municipal water connection
	New 2500l Water tank at each unit
	Existing 120m ³ water reservoir to receive water from the existing natural fountain from where it will be pumped to units for emergency supply
	10m ³ water tank with municipal water, supplying drinking water to units
	750 Sewer pipe at min 1:40 fall towards sewer treatment plant
	Water distribution line
	Emergency springwater supply
	Water supply from municipal connection

New services distribution note:
 All new pipework to be installed under the existing gravel roads. Where a new concrete track road is planned, pipework will run next to it.



CLIENT:	M&P Distributors
STAND DESCRIPTION:	111449 Melkhoutfontein, Gouritsmond
PROJECT TITLE:	New Cottages for M&P Distributors
DRAWING TITLE:	Locality Plan
SCALE:	1:2000, 1:200
CHECKED:	RP
APPROVED:	RP
SHEET SIZE:	A1
DATE:	2024/07/30
DRAWING No:	001
PROJECT No:	2308-11-449
REV:	tb

**Palaeontological Impact Assessment for the
proposed development of six holiday cottages in
two nodes with ancillary infrastructure on
Portion 11 Farm 449 Melkhoutefontein,
Gourits, Hessequa,
Western Cape Province**

Desktop Study (Phase 1)

For

Perception Planning (Pty) Ltd

16 June 2024

Prof Marion Bamford

Palaeobotanist

P Bag 652, WITS 2050

Johannesburg, South Africa

Marion.bamford@wits.ac.za

Expertise of Specialist

The Palaeontologist Consultant: Prof Marion Bamford
Qualifications: PhD (Wits Univ, 1990); FRSSAf, mASSAf, PSSA
Experience: 35 years research and lecturing in Palaeontology
27 years PIA studies and over 350 projects completed

Declaration of Independence

This report has been compiled by Professor Marion Bamford, of the University of the Witwatersrand, sub-contracted by Perception Planning (Pty) Ltd, George, South Africa. The views expressed in this report are entirely those of the author and no other interest was displayed during the decision making process for the Project.

Specialist: Prof Marion Bamford

Signature: *MKBamford*

Executive Summary

A Palaeontological Impact Assessment was requested for the proposed development of six holiday cottages in two nodes with ancillary infrastructure on Portion 11 Farm 449 Melkhoutefontein, Gourits, Hessequa Municipality, Western Cape Province.

To comply with the regulations of the South African Heritage Resources Agency (SAHRA) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA), a desktop Palaeontological Impact Assessment (PIA) was completed for the proposed development.

The proposed site mostly lies on the non-fossiliferous quaternary sands but a small part of the easternmost section lies on the very highly sensitive Bokkeveld Group that might preserve invertebrate fossils. It should be noted that this exposure of the Bokkeveld Group is undifferentiated meaning there are no distinctive lithologies or fossils to determine the formation represented. Therefore, it is unlikely that any fossils occur on the and surface. Nonetheless, a Fossil Chance Find Protocol should be added to the EMPr. Based on this information it is recommended that no further palaeontological impact assessment is required unless fossils are found by the contractor, environmental officer or other designated responsible person once excavations or drilling for foundations, amenities and infrastructure have commenced. Since the impact will be low, as far as the palaeontology is concerned, the project should be authorised.

ASPECT	SCREENING TOOL SENSITIVITY	VERIFIED SENSITIVITY	OUTCOME STATEMENT/ PLAN OF STUDY	RELEVANT SECTION MOTIVATING VERIFICATION
Palaeontology	Very High	Low	Palaeontological Impact Assessment	Section 7.2. SAHRA Requirements

Table of Contents

Expertise of Specialist.....	1
Declaration of Independence.....	1
1. Background.....	4
2. Methods and Terms of Reference.....	7
3. Geology and Palaeontology.....	8
i. Project location and geological context	8
ii. Palaeontological context	10
4. Impact assessment	11
5. Assumptions and uncertainties.....	13
6. Recommendation	13
7. References.....	13
8. Chance Find Protocol.....	14
9. Appendix A – Examples of fossils	15
10. Appendix B – Details of specialist.....	16
Figure 1: Google Earth map of the general area to show the relative land marks.	6
Figure 2: Google Earth Map of the proposed development	7
Figure 3: Geological map of the area around the project site.....	8
Figure 4: SAHRIS palaeosensitivity map for the site	10

1. Background

PERCEPTION Planning was appointed by the landowner M & P Distributions (Pty) Ltd to submit to Heritage Western Cape (HWC) a Notice of Intent to Develop (NID) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) in relation to a proposed tourism development on two portions of the subject property. Heritage Western Cape (HWC) has requested an independent palaeontological impact assessment (Case ID: HWC24050905EJV0516) and the requested report is presented herein.

The Melkhoutfontein property is situated ± 32 km southwest of the Mossel Bay historic town centre, ± 22 km southwest of the PetroSA/ Mossdustria industrial areas and ± 5 km northwest of the coastal hamlet Gouritz located at the mouth of the Gouritz River. The adjoining coastal hamlets of Vleesbaai and Boggomsbaai are located ± 8 km and ± 9 km to the northeast, respectively, as shown through the locality plan (Figures 1-2). Vehicular access is directly off the R325, which traverses the property, and furthermore serves to connect Gouritz to the N2 National Road.

The proposed tourist cottage development on Portion 11 of Farm Melkhoutfontein 449 will include the following components:

- Six cottages for short-term letting (each 100m^2 in extent) arranged in two nodes of three cottages per node.
- Each cottage to include a carport (18m^2), 2,500l water tank and 2,500l septic tank.
- 3m wide concrete access roads to each unit as indicated on the site development plan.
- New water reservoir to serve proposed cottages.
- Two sewer treatment plant (one per node) together with relevant reticulation (75mm) to respective cottages.
- Water distribution pipelines to follow alignment of sewer reticulation.
- Access to two nodes will be via existing access tracks.
- Hiking and cycling routes.
- Infrastructure and services ancillary to the above.

A Palaeontological Impact Assessment was requested for the Melkhoutfontein 11/449 tourist cottages project. To comply with the regulations of the South African Heritage Resources Agency (SAHRA) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA), a desktop Palaeontological Impact Assessment (PIA) was completed for the proposed development and is reported herein.

Table 1: National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) - Requirements for Specialist Reports (Appendix 6). Includes the requirements from GNR Appendix 6 of GN 326 EIA Regulation 2017.

	A specialist report prepared in terms of the Environmental Impact Regulations of 2017 must contain:	Relevant section in report
ai	Details of the specialist who prepared the report,	Appendix B
a ii	The expertise of that person to compile a specialist report including a curriculum vitae	Appendix B
b	A declaration that the person is independent in a form as may be specified by the competent authority	Page 1
c	An indication of the scope of, and the purpose for which, the report was prepared	Section 1
ci	An indication of the quality and age of the base data used for the specialist report: SAHRIS palaeosensitivity map accessed – date of this report	Yes
cii	A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Section 5
d	The date and season of the site investigation and the relevance of the season to the outcome of the assessment	N/A
e	A description of the methodology adopted in preparing the report or carrying out the specialised process	Section 2
f	The specific identified sensitivity of the site related to the activity and its associated structures and infrastructure	Section 4
g	An identification of any areas to be avoided, including buffers	N/A
h	A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	N/A
i	A description of any assumptions made and any uncertainties or gaps in knowledge;	Section 5
j	A description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment	Section 4
k	Any mitigation measures for inclusion in the EMPr	Section 8, Appendix A
l	Any conditions for inclusion in the environmental authorisation	N/A
m	Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 8, Appendix A
ni	A reasoned opinion as to whether the proposed activity or portions thereof should be authorised	Section 6
nii	If the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	Sections 6, 8
o	A description of any consultation process that was undertaken during the course of carrying out the study	N/A

	A specialist report prepared in terms of the Environmental Impact Regulations of 2017 must contain:	Relevant section in report
p	A summary and copies of any comments that were received during any consultation process	N/A
q	Any other information requested by the competent authority.	N/A
2	Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

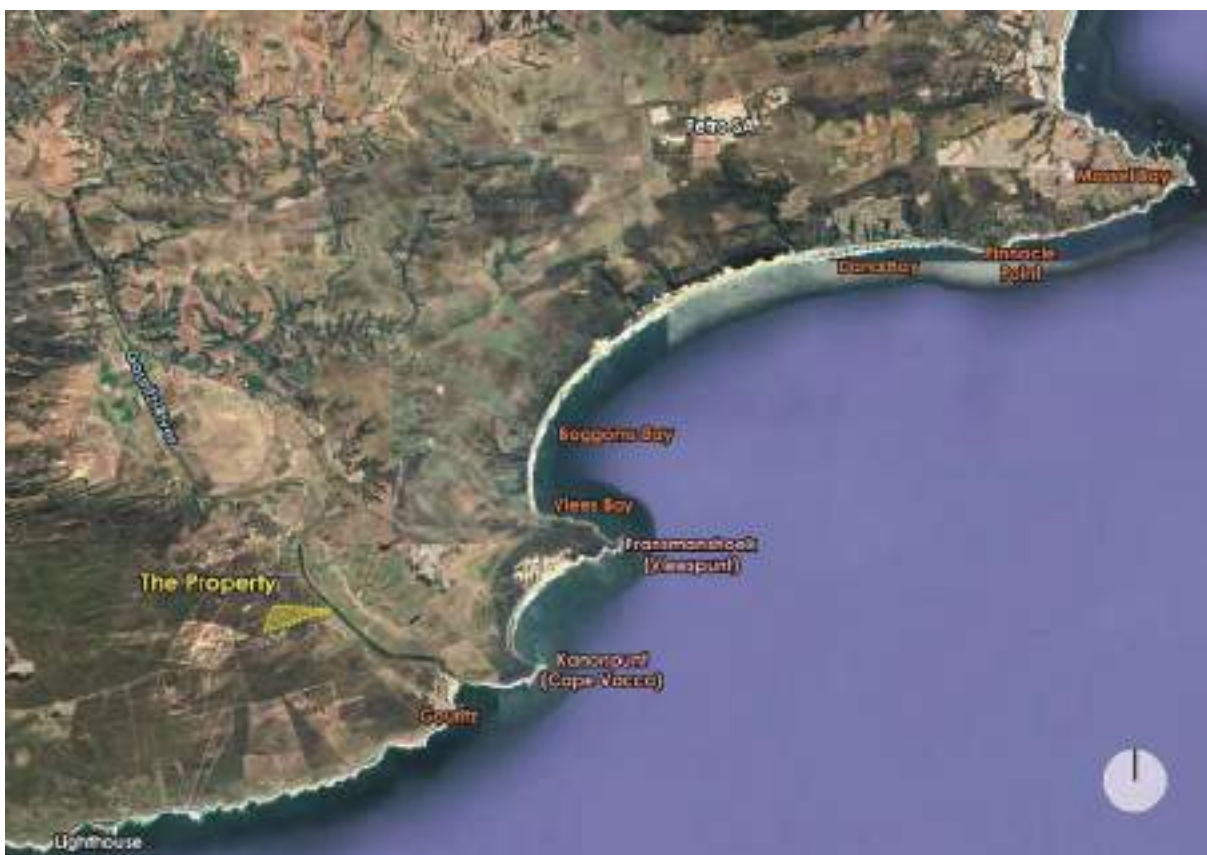


Figure 1: Google Earth map of the general area to show the relative land marks. The tourism cottages on Melkhoutefontein 449/11 is shown by the yellow polygon. Map supplied by Perception Planning NID.



Figure 2: Google Earth Map of the proposed area to be developed shown by the yellow dotted outline. Map supplied by Perception Planning NID.

2. Methods and Terms of Reference

The Terms of Reference (ToR) for this study were to undertake a PIA and provide feasible management measures to comply with the requirements of SAHRA.

The methods employed to address the ToR included:

1. Consultation of geological maps, literature, palaeontological databases, published and unpublished records to determine the likelihood of fossils occurring in the affected areas. Sources include records housed at the Evolutionary Studies Institute at the University of the Witwatersrand and SAHRA databases; eg <https://sahris.sahra.org.za/map/palaeo>
2. Where necessary, site visits by a qualified palaeontologist to locate any fossils and assess their importance (*not applicable to this assessment*);
3. Where appropriate, collection of unique or rare fossils with the necessary permits for storage and curation at an appropriate facility (*not applicable to this assessment*); and
4. Determination of fossils' representativity or scientific importance to decide if the fossils can be destroyed or a representative sample collected (*not applicable to this assessment*).

3. Geology and Palaeontology

i. Project location and geological context



Figure 3: Geological map of the area around the Farm Melkhoutefontein 449. The location of the proposed project is indicated within the blue polygon. Abbreviations of the rock types are explained in Table 2. Map enlarged from the Geological Survey 1: 250 000 map 3420 Riversdale.

Table 2: Explanation of symbols for the geological map and approximate ages (Roberts et al., 2006; Shone., 2006; Thamm & Johnson et al., 2006). SG = Supergroup; Fm = Formation; Ma = million years; grey shading = formations impacted by the project.

Symbol	Group/Formation	Lithology	Approximate Age
Q	Quaternary sand	Sand and alluvium	Quaternary Last 0.1 Ma to present
Qc	Quaternary sand and gravel	Sand and gravel, terrace deposits	Quaternary Last 0.1 Ma to present
Qg	Quaternary	Light grey to pale red sandy soil	Quaternary Last 1.0 Ma to present
Qsr	Strandveld Fm, Bredasdorp Group	Dune sand	Holocene
Qw	Waenhuiskraal Fm, Bredasdorp Group	Semi-consolidated aeolianite with calcrete lenses	Pleistocene
Qk	Klein Brak Fm, Bredasdorp Group	Shelly quartzose sand with pebbles	Early Pleistocene
Tw	Wankoe Fm, Bredasdorp Group	Calcarenite, sand and comminuted shell	Miocene-Pliocene

Symbol	Group/Formation	Lithology	Approximate Age
Td	De Hoopvlei Fm, Bredasdorp Group	Calcarenite with low angle cross-bedding, shells and conglomerate lenses	Miocene
T-Ql	Tertiary-Quaternary limestone	Sands, surface limestone, calcrete	Tertiary to Quaternary
Dbo	Undifferentiated Bokkeveld Group, Cape SG	Shale, siltstone with occasional sandstone beds	Devonian Ca 420-400 Ma

The project lies in the southern margin of the continent where the basal Cape Supergroup quartzites are unconformably overlain by the younger sediments of the Devonian Bokkeveld Group (Cape Supergroup) and the even younger Tertiary to Quaternary Bredasdorp Group.

After the late Precambrian to Early Cambrian Saldanian Orogeny (mountain building about 550 million years ago) and the Pan-African depositional cycles had ended in Gondwana, the siliciclastic Cape Supergroup was deposited in a passive margin basin (Thamm and Johnson, 2006). Up to 10km of sediments, representing about 170 million years from the Early Ordovician to the Early Carboniferous, was deposited. Afterwards these sediments were deformed by yet another orogeny, the Cape Orogeny. The Cape Supergroup is divided into three groups, the basal Table Mountain Group, the middle **Bokkeveld Group** and the upper Witteberg Group. Each group is lithologically distinctive and have a lateral extent of over 1000km (ibid). The depositional environments range from shallow marine, to fluvial, with a glacial interlude, to the progradation of wave-dominated deltas (Thamm and Johnson, 2006; Penn-Clarke et al., 2018).

During the Jurassic the large continental mass of Gondwanaland began to break apart and form the separate continents that we know today. Along the newly formed southern coast of South Africa, during the Late Jurassic and early Cretaceous, thick deposits accumulated in the complex graben and half-graben basins (Shone, 2006). Much of the material has since eroded away but the Uitenhage Group sediments can be found in the Mossel Bay basin, Plettenberg Bay basin, Gamtoos Basin and Algoa Basin.

The Cenozoic deposits of littoral marine, estuarine, fluvial, lacustrine and aeolian origin have developed along the coastal margin of South Africa over the last 60 million years. Onshore deposits are relatively thin but offshore deposits are much thicker, especially in the extensional rift basins and as cones at major river mouths (Dingle et al., 1983; Roberts et al., 2006). Reasons for this discrepancy in thickness are that the passive coastal margins are buoyant and the continent has undergone at least two phases of epeirogenic uplift (Partridge and Maud, 1987) but see Braun et al., (2014). Five groups of coastal deposits are recognised and the vary in width, extent and gradient.

In the Mossel Bay area the Bredasdorp Group comprises five coastal formations with differences in the amounts and types of limestones, calcarenites, calcrudites, conglomerates, coquinites and calcareous sandstones (Roberts et al., 2006), with the basal **De Hoopvlei Formation** sitting unconformably on the Enon Formation or the

Bokkeveld Group. The De Hoopvlei Formation has most of the lithofacies mentioned above with rare outcrops as it is mostly covered by the overlying aeolian sands of the Wankoe Formation. The Wankoe aeolianites form the most extensive package in the Bredasdorp Group. It probably represents dune cordons relating to the Early Pliocene transgression and is contemporaneous with the De Hoopvlei Formation (Roberts et al., 2006).

According to Malan (1990) the Klein Brak Formation rests unconformably on the wave cut platforms incised into Mesozoic and Palaeozoic rocks along the coast at elevations less than 18m asl. This thin early Pleistocene-aged formation is overlain by the semi-consolidated aeolianites and thin calcrete lenses of the Waenhuiskrans Formation. The latter is extensive and represents at least three dune cordons that formed in the Early Pleistocene. The uppermost and most recent deposit is the Strandveld Formation that is composed of unconsolidated calcareous sands formed from aeolian activity.

Along the rivers sands and alluvium have been deposited during the Quaternary, and continues today. These sediments have been reworked when there are marine transgressions and eroded away when there are marine regressions and down-cutting. Their origin and age, therefore, are difficult to determine.

ii. Palaeontological context

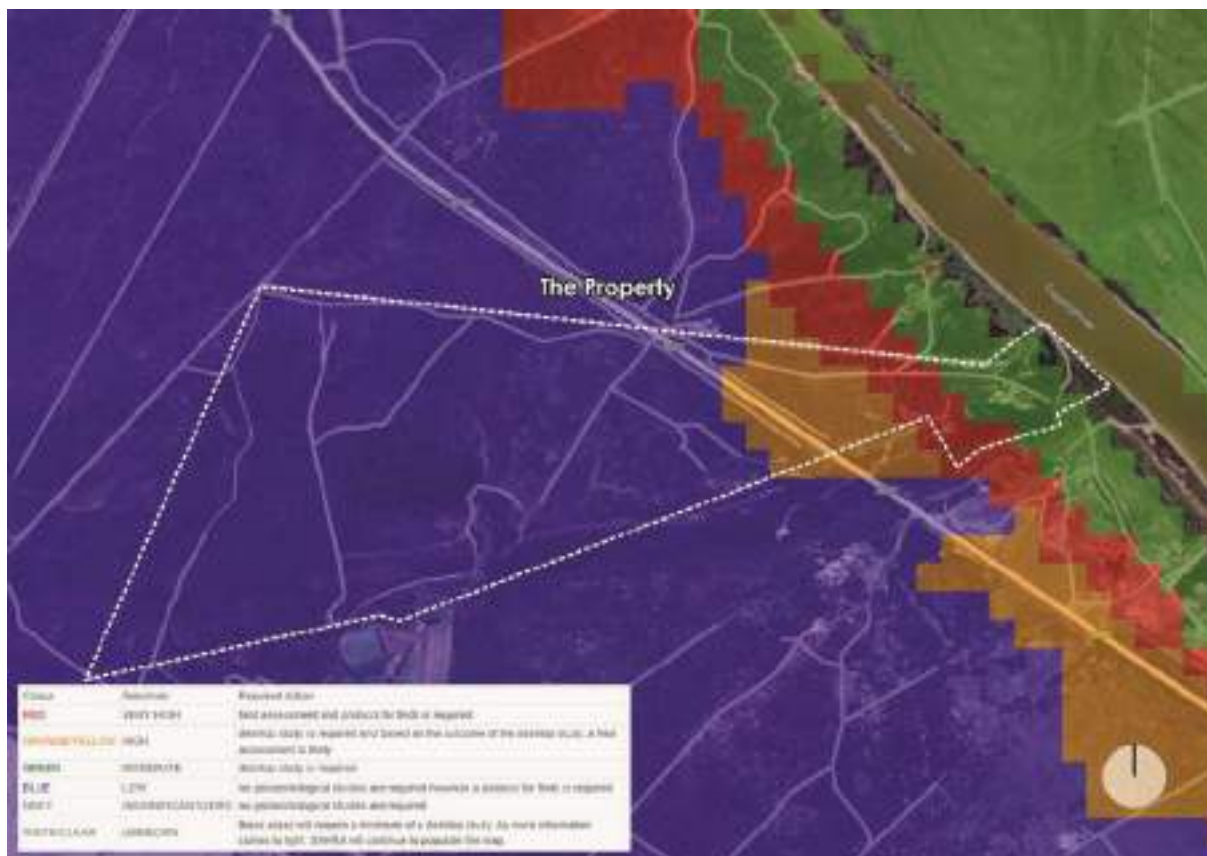


Figure 4: SAHRIS palaeosensitivity map for the site for the proposed Melkhoutfontein project shown within the yellow rectangle. Background colours indicate the following

degrees of sensitivity: red = very highly sensitive; orange/yellow = high; green = moderate; blue = low; grey = insignificant/zero.

The palaeontological sensitivity of the area under consideration is presented in Figure 4. The site for development mostly is in the sands and sandy soils that have low palaeosensitivity (blue). Parallel to the main road are the moderately sensitive terrace gravels and alluvium of the river (green), the very highly sensitive Bokkeveld Group shales (red) and the highly sensitive (orange) De Hoop Vlei Formation aeolianites.

The entire Bokkeveld Group is mapped as very highly sensitive (Almond et al., 2009) but only some of the formations are fossiliferous and can be used to distinguish the formations in the group. In this area the geology and palaeontology are not well exposed and the rocks are just classified as the undifferentiated Bokkeveld Group (Figure 3). It is highly unlikely that fossils are present on the surface.

Marine invertebrates have been reported from the basal De Hoopvlei Formation with the echinoderm *Echinodiscus* and the bivalves *Glycymeris brogersi*, *Tivela baini* and *Notocallista schwartzi* suggesting an Early Pliocene age (Le Roux, 1989; Malan, 1990, 1991; Roberts et al., 2006).

The fluvial and terrace sands might preserve transported fossils but they would be fragmented and out of primary context. In addition, it is difficult to distinguish between Pleistocene terrestrial snails and modern ones.

4. Impact assessment

An assessment of the potential impacts to possible palaeontological resources considers the criteria encapsulated in Table 3:

Table 3a: Criteria for assessing impacts

PART A: DEFINITION AND CRITERIA		
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.

	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national
PROBABILITY (of exposure to impacts)	H	Definite/ Continuous
	M	Possible/ frequent
	L	Unlikely/ seldom

Table 3b: Impact Assessment

PART B: Assessment		
SEVERITY/NATURE	H	-
	M	-
	L	Sands and alluvium do not preserve fossils; so far there are no records from the Bokkeveld Group of plant or invertebrate fossils in this region so it is very unlikely that fossils occur on the site. The impact would be negligible
	L+	-
	M+	-
	H+	-
	DURATION	L
M		-
H		Where manifest, the impact will be permanent.
SPATIAL SCALE	L	Since the only possible fossils within the area would be fossil invertebrates in the shales or sandstones, the spatial scale will be localised within the site boundary.
	M	-
	H	-
PROBABILITY	H	-
	M	-
	L	It is extremely unlikely that any fossils would be found in the loose soils and sands that cover the area or in the Bokkeveld Group sandstones that might be excavated. Nonetheless, a Fossil Chance Find Protocol should be added to the eventual EMPr.

Based on the nature of the project, surface activities may impact upon the fossil heritage if preserved in the development footprint. The geological structures suggest that the rocks are either the wrong type to preserve fossils or of unknown age. Furthermore, the material to be excavated is soil and sand and these does not preserve fossils. Since there is an extremely small chance that fossils from the Bokkeveld Group may be present and

may be disturbed a Fossil Chance Find Protocol has been added to this report. Taking account of the defined criteria, the potential impact to fossil heritage resources is low.

5. Assumptions and uncertainties

Based on the geology of the area and the palaeontological record as we know it, it can be assumed that the formation and layout of the aeolianites, sandstones, shales and sands are typical for the country and only some might contain fossil plant, insect, invertebrate and vertebrate material. The sands of the Quaternary period would not preserve fossils.

6. Recommendation

Based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the overlying soils of the Quaternary. There is a very small chance that fossils may occur in the sandstones or shales of the undifferentiated Bokkeveld Group (Cape Supergroup) or in the De Hoopvlei Formation aeolianites so a Fossil Chance Find Protocol should be added to the EMPr. If fossils are found by the environmental officer, or other responsible person once excavations for foundations, amenities and infrastructure have commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample. The impact on the palaeontological heritage would be low, as far as the palaeontology is concerned, so the project should be authorised.

ASPECT	SCREENING TOOL SENSITIVITY	VERIFIED SENSITIVITY	OUTCOME STATEMENT/ PLAN OF STUDY	RELEVANT SECTION MOTIVATING VERIFICATION
Palaeontology	Very High	Low	Palaeontological Impact Assessment	Section 7.2. SAHRA Requirements

7. References

Almond, J.E., Pether, J. 2009. Palaeontological Heritage of the Northern Cape; Palaeotechnical Report for SAHRA. 115pp.

Davies, O., 1973. Pleistocene shorelines in the Western Cape and South West Africa. *Annals of the Natal Museum* 21, 719-765.

Malan, A.J., 1989. Bredasdorp Group. In: Johnson, M.R., (Ed.), *Catalogue of South African Lithostratigraphic Units*. South African Commission on Biostratigraphy.

Malan, A.J., 1990. The stratigraphy and sedimentology of the Bredasdorp Group, southern Cape Province. Unpublished MSc dissertation, University of Cape Town, 197pp.

Penn-Clarke, C.R., Rubidge, B.S., Jinnah, Z.A., 2018. Two hundred years of palaeontological discovery: Review of research on the Early to Middle Devonian Bokkeveld Group (Cape Supergroup) of South Africa. *Journal of African Earth Sciences* 137, 157-178.

Plumstead, E.P., 1969. Three thousand million years of plant life in Africa. Geological Society of southern Africa, Annexure to Volume LXXII. 72pp + 25 plates.

Roberts, D.L., Botha, G.A., Maud, R.R., Pether, J., 2006. Coastal Cenozoic deposits. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). *The Geology of South Africa*. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 605-628.

Shone, R.W., 2006. Onshore post-Karoo Mesozoic deposits. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). *The Geology of South Africa*. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 541-552.

Thamm, A.G., Johnson, M.R., 2006. The Cape Supergroup. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). *The Geology of South Africa*. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 443 – 460.

Anderson, J.M., Anderson, H.M., 1985. *Palaeoflora of Southern Africa: Prodromus of South African megafloras, Devonian to Lower Cretaceous*. A.A. Balkema, Rotterdam. 423 pp.

8. Chance Find Protocol

Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.

1. The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.
2. When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone or coal) should be put aside in a suitably protected place. This way the project activities will not be interrupted.
3. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones (for example see Figures 5-6). This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and

housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.

7. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished then no further monitoring is required.

9. Appendix A – Examples of fossils from the Bokkeveld Group and Quaternary sands



Figure 5: Photographs of invertebrates that might occur in the Bokkeveld Group rocks.



Figure 6: Photographs of Quaternary invertebrates. Note they are very similar to the modern forms.

10. Appendix B – Details of specialist

Curriculum vitae (short) - Marion Bamford PhD January 2024

Present employment: Professor; Director of the Evolutionary Studies Institute.
Member Management Committee of the NRF/DSI Centre of Excellence Palaeosciences, University of the Witwatersrand, Johannesburg, South Africa

Telephone : +27 11 717 6690
Cell : 082 555 6937
E-mail : marion.bamford@wits.ac.za ; marionbamford12@gmail.com

ii) Academic qualifications

Tertiary Education: All at the University of the Witwatersrand:

1980-1982: BSc, majors in Botany and Microbiology. Graduated April 1983.
 1983: BSc Honours, Botany and Palaeobotany. Graduated April 1984.
 1984-1986: MSc in Palaeobotany. Graduated with Distinction, November 1986.
 1986-1989: PhD in Palaeobotany. Graduated in June 1990.

iii) Professional qualifications

Wood Anatomy Training (overseas as nothing was available in South Africa):

1994 - Service d'Anatomie des Bois, Musée Royal de l'Afrique Centrale, Tervuren, Belgium, by Roger Dechamps
 1997 - Université Pierre et Marie Curie, Paris, France, by Dr Jean-Claude Koeniguer
 1997 - Université Claude Bernard, Lyon, France by Prof Georges Barale, Dr Jean-Pierre Gros, and Dr Marc Philippe

iv) Membership of professional bodies/associations

Palaeontological Society of Southern Africa
 Royal Society of Southern Africa - Fellow: 2006 onwards
 Academy of Sciences of South Africa - Member: Oct 2014 onwards
 International Association of Wood Anatomists - First enrolled: January 1991
 International Organization of Palaeobotany – 1993+
 Botanical Society of South Africa
 South African Committee on Stratigraphy – Biostratigraphy - 1997 - 2016
 SASQUA (South African Society for Quaternary Research) – 1997+
 PAGES - 2008 –onwards: South African representative
 ROCEEH / WAVE – 2008+
 INQUA – PALCOMM – 2011+onwards

v) Supervision of Higher Degrees

All at Wits University

Degree	Graduated/completed	Current
Honours	13	0
Masters	13	3
PhD	13	7
Postdoctoral fellows	14	4

vi) Undergraduate teaching

Geology II – Palaeobotany GEOL2008 – average 65 students per year
 Biology III – Palaeobotany APES3029 – average 25 students per year
 Honours – Evolution of Terrestrial Ecosystems; African Plio-Pleistocene Palaeoecology;
 Micropalaeontology – average 12 - 20 students per year.

vii) Editing and reviewing

Editor: *Palaeontologia africana*: 2003 to 2013; 2014 – Assistant editor
 Guest Editor: *Quaternary International*: 2005 volume
 Member of Board of Review: *Review of Palaeobotany and Palynology*: 2010 –
 Associate Editor: *Cretaceous Research*: 2018-2020
 Associate Editor: *Royal Society Open*: 2021 -
 Review of manuscripts for ISI-listed journals: 30 local and international journals

viii) Palaeontological Impact Assessments

27 years' experience in PIA site and desktop projects

Selected from recent projects only – list not complete:

- Beaufort West PV Facility 2021 for ACO Associates
- Copper Sunset MR 2021 for Digby Wells
- Sannaspos PV facility 2021 for CTS Heritage
- Smithfield-Rouxville-Zastron PL 2021 for TheroServe
- Glosam Mine 2022 for AHSA
- Wolf-Skilpad-Grassridge OHPL 2022 for Zutari
- Iziduli and Msenge WEFs 2022 for CTS Heritage
- Hendrina North and South WEFs & SEFs 2022 for Cabanga
- Dealesville-Springhaas SEFs 2022 for GIBB Environmental
- Vhuvhili and Mukondeleli SEFs 2022 for CSIR
- Chemwes & Stilfontein SEFs 2022 for CTS Heritage
- Equestria Exts housing 2022 for Beyond Heritage
- Zeerust Salene boreholes 2022 for Prescali
- Tsakane Sewer upgrade 2022 for Tsimba
- Transnet MPP inland and coastal 2022 for ENVASS
- Ruighoek PRA 2022 for SLR Consulting (Africa)
- Namli MRA Steinkopf 2022 for Beyond Heritage
- Adara 2 SEF 2023 for CTS Heritage
- Buffalo & Lyra SEFs 2023 for Nextec
- Camel Thorn Group Prospecting Rights 2023 for AHSA
- Dalmanutha SEFs 2023 for Beyond Heritage
- Elandsfontein Residential 2023 for Beyond Heritage
- Waterkloof Samancor 2023 for Elemental Sustainability
- Zonnebloem WTP 2023 for WSP
- Elders Irrigation 2023 for SRK
- Leghoya WEFS 2023 for Red Cap & SLR

ix) Research Output

Publications by M K Bamford up to January 2024 peer-reviewed journals or scholarly books: over 175 articles published; 5 submitted/in press; 14 book chapters.

Scopus h-index = 32; Google Scholar h-index = 40; -i10-index = 121 based on 7261 citations.

Conferences: numerous presentations at local and international conferences.