

3 May 2024

3MP Sales and Education Services CC
1 Pioneer Avenue
CALEDON
7230

Attention: Mr. J.P. Pozen

Dear Sir,

ERF 998 & PORTION OF ERF RE/139 IN TERGNIET: DOLPHIN CIRCLE DEVELOPMENT: CIVIL ENGINEERING SERVICES REPORT

Below please find the Engineering Services Report for the proposed development of Erf 998 and Portion of Erf RE/139 in Tergniet, Western Cape. The purpose of this report is to determine the demand on the municipal sewer, water and stormwater services and to investigate the availability and the capacity of these existing services in close proximity to the proposed development. In lieu of a detailed Site Development Plan, assumptions were made based on the available information.

1 INTRODUCTION

1.1 BACKGROUND

As per **Figure 1-1** below, the proposed development area is located in Tergniet, north east of the MR344/DR1578 intersection.



Figure 1-1 - Locality Map - Erf 998 Tergniet, Western Cape

The proposal is to convert a portion of the land/erf into different land use developments, including business and residential units. The Site Development Plan has been attached to this report as **Annexure A**.

Existing bulk civil infrastructure in the area will be utilized to accommodate the proposed development.

1.2 ZONING

The two erven are currently zoned as Agricultural Zone I, refer to Figure 1-2 below, and an application will be submitted for rezoning. The proposal is to convert the land into different land use developments.



Figure 1-2: Current land use

1.3 DESCRIPTION OF DEVELOPMENT

The size of the proposed development is 10.3625 ha and will consist of business, community and residential units, including internal roads. There is a proposed entrance to the development from DR1578 (Sorgfontein Road).

The sizes and the amount of each type of development still needs to be determined, whereafter more detailed recommendations can be provided in terms of provision for civil services.

1.4 SITE DESCRIPTION

The site is located at the intersection of DR1578 and MR344 Road in Tergniet, with the approximate coordinates of 34° 3'47.81"S and 22° 11'17.66"E. The site consists of two erven with a frontal dimension of 370m and a width of 290m. There are currently structures on Erf 998, access onto both Erven from DR1578 (Sorgfontein Road), and a secondary access to the portion of RE/1578 from the MR344. The vegetation of the site is dry grasslands with some small shrubs.

The typical soil classification found in the vicinity of the proposed development are imperfectly drained sandy soils, as per the BGIS Land Use Decision (LUDS) Tool, refer to Figure 1-3.

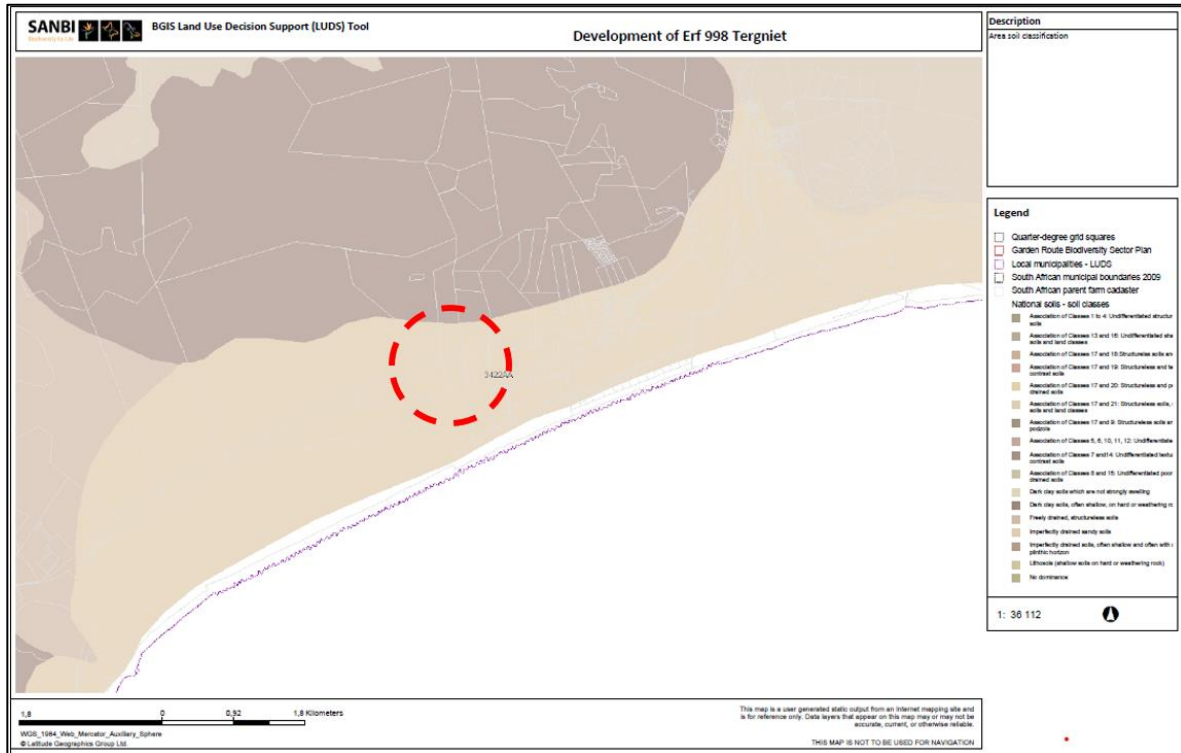


Figure 1-3: Typical soil classification (LUDS) tool

This is a general soil classification map of South Africa, and only serves as an indication of the typical soil of the area. Further specialist studies will be required to determine the exact characteristics of the in-situ soils relating to the structural and the groundwater conditions in the area.

1.5 TOPOGRAPHICAL SURVEY

The topography across the site is the steepest at approximately 8.6% from the southwestern portion of the site, falling towards the natural drainage line, which passes through the site, draining in an easterly direction. The site flattens out on both banks of the floodplain and gently ascends on the northern banks of the site. A topographical plan of the site has been attached to this report as **Annexure B**.

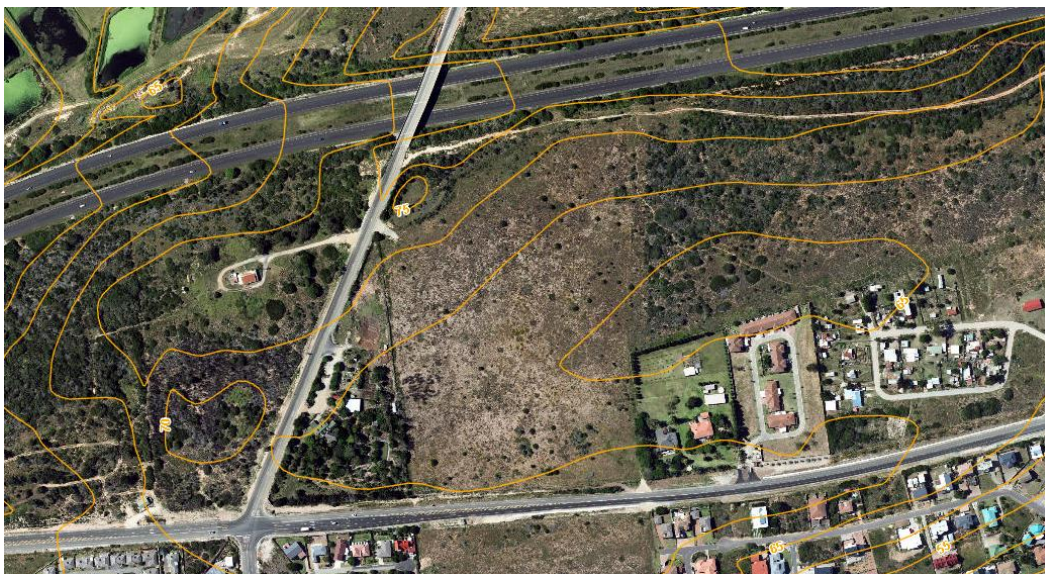


Figure 1-4: Site Contours

2 ENGINEERING SERVICES

2.1 EXISTING BULK SERVICES

Urban Engineering (Pty) Ltd received information regarding the existing infrastructure in the area from the Mossel Bay Municipality. The following is an interpretation of the existing services in the area and the potential challenges to be considered.

The existing infrastructure in the area is indicated on the drawings attached as **Annexure C**.

2.1.1 Potable Water

Water for the development will be sourced from the Mossel Bay Municipality Water Network, consisting of various raw water sources including the Wolwedans Dam, Klipheuwel Dam, Hartebees Kuil Dam, Ernest Robertson Dam as well as a number of boreholes. Raw water pipelines convey the untreated water from the various sources to seven Water Treatment Plants (WTP's) situated throughout the Municipal area.

Water is supplied to the Tergniet system from the Sandhoogte WTP, which has capacity to supply a total of 5.5 Mℓ per day. The Sandhoogte WTP is fed from the Wolwedans Dam and the Ernest Robertson Dam and supplies potable water to the Tergniet reservoir.

The Tergniet Reservoir supply line passes the property area along a gravity fed Water Reticulation Network which consists of 110mm up to 200mm diameter uPVC pipes. According to the Mossel Bay Municipality's Water Master Plan, the top water level of the reservoir is approximately 150.3m. Assuming that the height of the reservoir is approximately 6m, the outlet level of the reservoir is approximately 144.3m.

The highest proposed Erf for the development is situated at a level of approximately 81m above sea level, located within Business Zone I, based on the topographical contours available. The minimum required residual head for dwelling development is 30m, which implies that the static pressure from the existing elevated storage tank to the proposed development will provide adequate pressure in the water network.

2.1.2 Sewer

Sewerage in the Tergniet area is presently handled by a combination of suction and septic tanks with soak-aways (french drains). The closest waterborne sewerage reticulation is in the residential suburb south of the MR344, from where it is pumped via a sewer rising main to the Great Brak Waste Water Treatment Plant (WWTP) to the north east of the proposed development. The sewer rising main runs through the site under consideration.

2.1.3 Stormwater

There are some existing stormwater infrastructure in close proximity to the proposed development.

The National Road (N2) along the northern boundary of the proposed development acts as a cut-off drain for any attenuation from the north, the DR1578 (Sorgfontein Road) acts as a cut-off drain for stormwater from the west of the proposed development, and the MR344 acts as a cut-off drain for stormwater from the south of the proposed development.

There is an existing headwall structure and culvert that conveys attenuated stormwater from the north of the MR344, discharging via a headwall structure to the south. There is no information available regarding the spare capacity for the existing stormwater culvert underneath the MR344. Refer to **Annexure C** for the existing stormwater information.

2.1.4 Roads

The condition of the roads surrounding the proposed development is based on a desktop study.

The MR344 along the south of the proposed development falls under the authority of the Western Cape Province. The overall condition of the road can be classified as very good.

The DR1578 (Sorgfontein Road) along the western boundary of the proposed development falls under the authority of the Western Cape Province, and the overall condition of the road can be classified as good.

2.2 PLANNED ENGINEERING SERVICES

2.2.1 Potable Water

It is proposed that the water supply to the proposed development be a metered connection, connected to the 200mm diameter main water line running parallel to Sorgfontein Road (DR1578).

Calculations for the proposed water infrastructure is based on the *Neighbourhood Planning and Design Guide*, 2019. The following are applicable to the rational design of the potable water network for the proposed development:

1. From Table J.2:

Total Annual Average Daily Demands (TAADD)				
No	Zoning	Total area (ha)	AADD (kℓ/ha/day)	TAADD (kℓ/day)
1	Business Zone I	3.604	21	75.684
2	Business Zone IV	0.268	21	5.628
3	Community Zone III	0.527	20	10.540
4	Mixed Zone II	0.902	25	22.550
5	Open Space II	2.225	12	26.700
6	General Residential Zone II	0.697	17	11.849
7	General Residential Zone III	0.653	21	13.713
Total		8.876	-	166.664

- Total Annual Average Daily Demand (TAADD) for the development = 166.664kℓ/day

2. From Table J.9:

Peak Annual Average Daily Demands (PAADD)				
No	Zoning	TAADD (kℓ/day)	PF	PAADD (kℓ/day)
1	Business Zone I	75.684	1.7	128.6628
2	Business Zone IV	5.628	1.7	9.5676
3	Community Zone III	10.540	1.7	17.9180
4	Mixed Zone II	22.550	1.7	38.2500
5	Open Space II	26.700	1.7	38.3350
6	General Residential Zone II	11.849	2.2	26.0678
7	General Residential Zone III	13.713	2.2	30.1686
Total		166.664	-	288.9698

- Peak Annual Average Daily Demand (PAADD) for the entire development = 288.9698kℓ/day = 3.345ℓ/s

2.2.1.1 Hydraulic considerations for potable water

As stipulated in the *Neighbourhood Planning and Design Guide, 2019*, the following hydraulic considerations should be adhered to as far as possible:

- The pressure should be kept as low as possible to minimize real losses.
- The number of low and high points on pipes should be kept to a minimum to reduce the number of scour and air valves respectively.
- The velocities in the pipeline should be kept between 0.6 m/s and 1.2 m/s.
- Velocities through special fittings, should not exceed 6 m/s or as per manufacturer’s specifications.
- Pipelines should be designed to be protected against water hammer/surge pressures.
- Using 110 mm as the minimum pipe size for ring mains in urban areas should be considered where the provision of fire flow is required.

2.2.2 Fire Water

The provision of water for firefighting should comply with the requirements as specified in the *Neighbourhood Planning and Design Guide, 2019*, as well as the *SANS 10400 (National Building Codes)*.

1. The proposed development falls within the *Moderate risk 1: Industrial, business and high-rise flats* category for firefighting requirements. As such, the requirements listed in Table J.17 will apply:
 - Additional capacity of 50ℓ/s will be required for the total fire water demand (Allowing for two hydrants to be operational simultaneously, each delivering 25 ℓ/s).

- Minimum pressure at the fire node of 15m.
- Minimum pressure at the rest of the system of 5m.
- Fire flow must be sustained for a period of at least 4 hours.
- Maximum spacing between hydrants of 180m - The Site Development Plan will therefore require 7 hydrants.

The resultant reservoir capacity required to satisfy the firefighting needs are calculated as follows:

- $50\ell/s = 180\text{ k}\ell/h$
- 4 Hour Storage = 720 kℓ

2.2.2.1 Hydraulic considerations for fire water

As stipulated in the *Neighbourhood Planning and Design Guide, 2019*, the following hydraulic considerations should be adhered to as far as possible:

- Hydrants should not be provided off mains smaller than 75 mm diameter.
- Hydrants should be located in vehicular thoroughfares, opposite stand boundary pegs, and at a maximum spacing of 180 m (or as required by the Local Fire Department).
- 75 mm diameter sluice-valve hydrants should be used for the high-risk and moderate-risk categories. For the low-risk category, the hydrant may be the screw-down type.
- The location of hydrants should be indicated by using permanent marker posts on the verge opposite the fitting or painted symbols on road or kerb surfaces.
- Symbols on markers should be durable.
- The hydrants' flow rate should be serviced and checked for conformity requirements at intervals not exceeding one year.
- Where possible, fire hydrants should be positioned to also serve as a scour valve.

2.2.3 Water storage

The purpose of storing water is to meet balancing requirements and cater for emergencies e.g. firefighting or planned shutdowns of the water network. The balancing volume is required to cater for peak outflows while a constant (or variable) inlet flow is being received.

Where water is obtained from a Bulk Water Supply Authority, the storage capacity provided should comply with the requirements of the Authority. For domestic water use, a storage capacity of 48 hours of Annual Average Daily Demand is suggested, although there may be situations where 24 hours will suffice.

Since the Annual Average Daily (24 hours) Demand has been estimated as 166.664kℓ, it follows that a reservoir spare capacity of at least 333.328kℓ is required to satisfy the domestic water use requirement.

Combining the domestic (333.328kℓ) and the firefighting requirement (720 kℓ), it follows that a total reservoir spare capacity for the proposed development of approximately 1053.328kℓ will be required. The available capacity in the existing water network will have to be confirmed with the Mossel Bay Municipality.

2.2.4 Proposed Potable and Fire Water Reticulation

A minimum pipe size of 110mm diameter is proposed for the new development to accommodate the potable and the fire water demand. The total demand for the development is 53.345ℓ/s.

- As per the Neighbourhood Planning and Design Guide, the optimum flow velocity is between 0.6 – 1.2m/s, and velocities through special fittings should not exceed 6m/s.
- For the potable supply of 3.345ℓ/s, at a flow velocity of 1m/s, a minimum diameter of 75mm is required. However, as per the Neighbourhood Planning and Design Guide, the minimum pipe size for a ring main in urban areas that also provide for fire water demand, is 110mm diameter.
- For the fire and potable water demand of 53.624ℓ/s, the velocity in a 110mm diameter pipe is estimated to be approximately 5.613m/s. This is deemed to be acceptable, as fire hydrants can be classified as special fittings, and can resist velocities of up to 6m/s.

The operational pressure in the existing water network is unknown but based on the discussion in **Section 2.1.1** above, it is not envisioned that the pressure in the existing water supply network will be a problem.

The standard of the water services to be provided are as follows:

2.2.4.1 Valves

- All valves to be in accordance with SABS 1200, SABS 664/1974 and approved by the relevant department head.
- Valves to be approved and to exceed the specification of AVK resilient seal type.
- Valves shall be clockwise opening or anti-clockwise closing.
- Direction of opening to be clearly marked on valve body or spindle cap
- All valves shall heavy duty, class 16.
- All valves shall be non-rising spindle.
- All valves shall be fitted with cast iron caps, secured with retaining bolts.
- All valves Belltobies shall be polymer concrete as per AV Moulding, concrete, recycled plastic or cast iron, depending on area and relevant condition.
- Only valves supplied with a minimum thickness of 225-micron Copon EP 2300 epoxy paint applied to all surfaces after it has been thoroughly cleaned by grit blasting to SA 1/2 finishes in compliance with the requirements of SIS 05 09 00 or valves with similar approved coatings, will be acceptable.

2.2.4.2 Fire hydrants

- All fire hydrants shall be in accordance with SANS 1200, comply with the Local Fire Department Standard Regulations and approved by the relevant department head.
- All fire hydrants shall be 110mm diameter (internal).
- Outlets shall be London Round Thread with cast iron caps and securing chain.
- Hydrants shall be left hand closing.
- Hydrant covers shall be polymer concrete as per MV Moulding, concrete recycled plastic or cast iron, depending on area and relevant conditions.
- Hydrant covers shall be painted with a minimum of two coats oil paint, “Yellow”.

2.2.4.3 Water saving

The development is in a water scarce area and the following general water saving practices are proposed:

- Dual flush toilets.
- Low flow shower heads which make use of either aerators or pulse systems to reduce the flow without compromising the quality of the shower. The choice of shower heads is up to the homeowner, but must have a flow of less than 7 liters per minute.
- Low flow faucets. The faucets in the bathrooms should have a peak flow of less than 10 liters per minute.
- Rainwater tanks – all houses should be fitted with rainwater collection tanks for landscaping and washing of vehicles.
- Consideration should be given to provide solar pumps at each rainwater tank in order to more effectively supply the units. 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.
- Geyser and pip insulation. Homeowners must be required to install geyser and pipe insulation. This must be included in their building guidelines.

2.2.5 Sewer

As discussed in **Section 2.1.2** above, sewerage in the Tergniet area is presently handled by a combination of suction and septic tanks with soak-aways (french drains). The closest waterborne sewerage reticulation is the sewer rising main running through the proposed development.

The Mossel Bay Municipality has indicated that the development will not be permitted to tie into the rising main. With the absence of existing sewer infrastructure in close proximity, the proposed development requires one new sewer pump station to the east, which would be required to drain 100% of the effluent of the development. Sufficient emergency storage will be provided at the pump stations in order to mitigate events such as power outages, blockages and breakdowns.

In accordance with the *Neighbourhood Planning and Design Guide*, the following:

1. From Table K.4:

Peak Wet Weather Flow (PWWF)							
No	Zoning	TAADD (kℓ/day)	%AADD	ADWF (kℓ/day)	PF	PDWF (kℓ/day)	PWWF (15% infiltration) (kℓ/day)
1	Business Zone I	75.684	80	60.5472	2.5	151.368	174.073
2	Business Zone IV	5.628	80	4.5024	2.5	11.526	13.255
3	Community Zone III	10.540	80	8.4320	2.5	21.080	24.242
4	Mixed Zone II	22.550	80	18.0400	2.5	45.100	51.865
5	Open Space II	26.700	n/a	-	-	-	-
6	General Residential Zone II	11.849	90	10.6641	2.5	26.660	30.659
7	General Residential Zone III	13.713	95	13.0274	2.5	32.569	37.454
Total		166.664	-	115.2131	-	288.303	331.548

- The Peak Wet Weather Flow (PWWF) for the proposed development = 331.548 kℓ/day = 3.837 ℓ/s

2. A minimum pipe size of 160mm diameter is proposed for the new development to accommodate the anticipated sewage flows that will be generated.

- The total estimated sewage flow for the proposed development is 3.837 ℓ/s.
- As per the *Neighbourhood Planning and Design Guide*, the optimum flow velocity is between 0.6 – 2.5m/s. the maximum velocity of 4m/s is acceptable for short pipe lengths.
- For the estimated flow of 3.837 ℓ/s, at a flow velocity of 1.5m/s, a minimum diameter of 60mm is required. However, the minimum pipe diameter for sewer pipes is 160mm by industry guidelines.

The available capacity in the existing network will have to be confirmed with the Mossel Bay Municipality in order to determine the tie-in position.

2.2.5.1 Sewer Design Parameters

- Pipe diameter: uPVC Class 34, SANS 791, 160mm diameter solid wall for main lines and 110mm diameter solid wall for individual unit connections where required.
- Prefabricated fibre cement shafts or concrete manhole rings to be used for manholes where required, spaced at a maximum of 90m.

2.2.6 Stormwater

Due to the topography of the site, the lack of existing stormwater infrastructure in the area and the environmental benefits, it is proposed that the stormwater generated by the proposed development be managed by a Sustainable Urban Drainage System (SUDS) rather than a conventional stormwater system. A conventional stormwater system manages the stormwater by collecting the runoff and channelling it into the nearest stormwater watercourse, whereas the SUDS approach aims to mimic natural hydrological cycles, which prevents erosion of natural channels, siltation of water bodies and pollution, reducing environmental degradation.

SUDS embraces a number of options that are arranged in treatment trains, which helps to improve the efficiency and the resiliency of the system. There are three stages in the treatment train, each having slightly different combinations of SUDS options to control the stormwater:

1. **"Source Controls"** manage stormwater runoff as close to its source as possible, typically on site. Typical SUDS options include green roofs, rainwater harvesting, permeable pavements and soak-aways.
2. **"Local Controls"** manage stormwater runoff in the local area, typically within the road reserves. Typical SUDS options include bio-retention areas, filter strips, infiltration trenches, sand filters and swales.
3. **"Regional Controls"** manage the combined stormwater runoff from several developments. Typical SUDS options include constructed wetlands, detention and retention ponds.

As the treatment train progresses, the number of interventions decrease, but their individual size increases.

On site, the lack of formal subterranean, piped stormwater systems can be seen as a possible draw-back, but this principle is 100% in line with the SUDS recommendations of using swales and natural features to increase infiltration. A two-pronged approach to stormwater management for the proposed development is therefore proposed:

1. **"Source Controls"** - Reduce runoff by means of rainwater harvesting tanks which collect and store water from building roofs. Emergency overflows will be included in the design to allow controlled discharge of water during major storms. Harvested water can be used for general purposes such as irrigation of landscaped gardens as well as washing and general maintenance of facilities. Harvested water can also be used as part of a dual plumbing system in the water borne Sewer Reticulation Network, greatly reducing the development's potable water demand.
2. **"Local controls"** – Divert excess water to the grass lined stormwater channel situated along roads. If required, the capacity of the channel can be increased by improving the permeability of the channel. This is typically done by adding an additional drainage layer of washed stone to the bottom of the grassed channel as indicated in **Figure 2-1**.

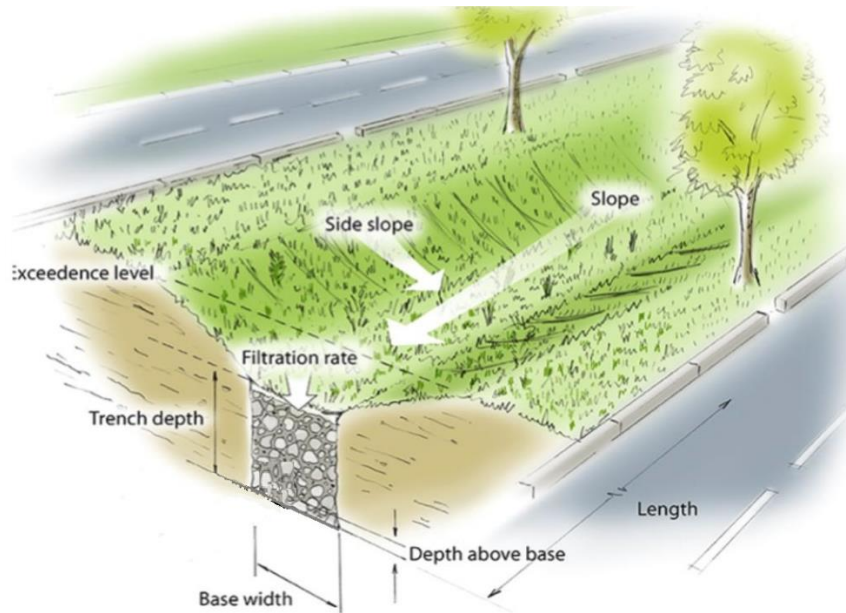


Figure 2-1: Grassed swale with increased infiltration capacity

2.2.6.1 Stormwater Design Parameters

- Minor system: 5 Year return period.
- Major system: 20 Year return period.
- The minimum gradient for pipelines (if required) will give a minimum velocity of 0.7m/s with the pipe flowing full.
- The maximum velocity used is 3.5m/s.
- Minimum pipe diameter is 450mm.
- Pipes to be reinforced concrete Class 100D spigot and socket pipes.

2.2.7 Roads

The proposed access to the development is via DR1578 Road to the northeast of the site. A comprehensive Traffic Impact Assessment (TIA) will be prepared as part of the application which will deal with the road access.

The access will need to be constructed to a standard which allows for safe entry and exit to the site for refuse removal and Firefighting trucks.

The planned densification of the Dolphin Circle area will lead to a direct increase in traffic volumes. In order to effectively handle the increased traffic volumes, geometric upgrades to the various roads might be required to ensure mobility along the main corridors remain unhindered. Currently, the only access to the development area is from the DR1578 Road, which intersects with the MR344 intersection.

2.2.7.1 Road Design Parameters

- The type of road surface to be discussed and agreed with the client.
- Sub-base and base materials will be imported.

- Sub-surface drainage, where applicable, will be installed.
- Barrier kerbs to be installed on bellmouths.
- Mountable kerbs and channels to be installed on the road edge, depending on the cross-fall of the road.

2.2.8 Solid waste

It is anticipated that the refuse from the proposed development be collected by the Municipal refuse truck and transported to the local landfill site.

As per the Mossel Bay Municipality Integrated Zoning Scheme by-laws, the Mossel Bay Municipality may require that the developer install a refuse receptacle on the property, which will be located adjacent to a public street or in a position that will provide sufficient access to the refuse collection vehicle. The receptacle will also have to comply with other standard conditions or requirements that the Municipality may impose relating to the access, health, pollution control, recycling, safety or aesthetics thereof.

3 FLOODLINES

The proposed development is not directly affected by any floodlines.

4 DEVELOPMENT CONDITIONS AND LAND REHABILITATION

The general terrain and the underlying geology of this site appears to be suitable for any development. However, it is recommended that a geotechnical investigation be carried out to determine the quality of the in-situ material.

5 CAPITAL CONTRIBUTIONS

Capital Contributions are the tariffs payable in respect of the water, electricity, sewerage, roads and solid waste removal infrastructure of the Municipality, relating to the capital and replacement costs and associated interest charges in respect thereof. The development costs for these capital contributions are to be determined by the Directors: Electrotechnical Services, Civil Engineering Services and Community Services in accordance with standard formulas & applicable road model.

Due to the complexity in calculation and time lapse between date of calculation and actual payment, it is recommended that the Capital Contribution amounts be determined after consultation with the relevant Municipal Departments and not be specified in the Engineering Services Report.

6 CONCLUSION AND RECOMMENDATIONS

The purpose of this report is to assess the existing municipal engineering services and the extent thereof that will be affected by the proposed development in Tergniet. Existing civil services near the proposed development were located on the Mossel Bay Municipality IMQS system.

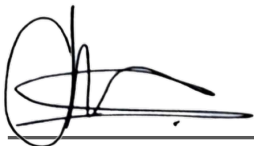
The findings of this report are summarised below:

- The proposed rezoning is in line with the Mossel Bay Municipality's Local Spatial Development Framework.
- It is proposed that the water supply to the proposed development be a metered connection, connected to the 200mm diameter main water line running parallel to Sorgfontein Road (DR1578). A minimum pipe size of 110mm diameter is proposed for the new development to accommodate the potable and the fire water demand. The total demand for the development is 53.354ℓ/s.
- On site water storage for Firefighting purposes may not be required. Capacity within the existing network will need to be confirmed by the Mossel Bay Municipality.
- The proposed development requires one new sewer pump station to the east, which would be required to drain 100% of the effluent of the development. A minimum pipe size of 160mm diameter is proposed for the new development to accommodate the anticipated sewage flows that will be generated.
- Due to the topography of the site, the lack of existing stormwater infrastructure in the area and the environmental benefits, it is proposed that the stormwater generated by the proposed development be managed by a Sustainable Urban Drainage System (SUDS). This will ensure that the stormwater runoff be discharged into natural water courses or soakaways as far as possible.
- The Capital Contributions are to be determined by the various Municipal Directorates involved.
- The access approval for the proposed development is dealt with under a separate report.

We trust that sufficient detail has been provided to decide on the way forward. if required, a detailed design of the proposed development's Civil Engineering Infrastructure based on the abovementioned report can be conducted by Urban Engineering (Pty) Ltd.

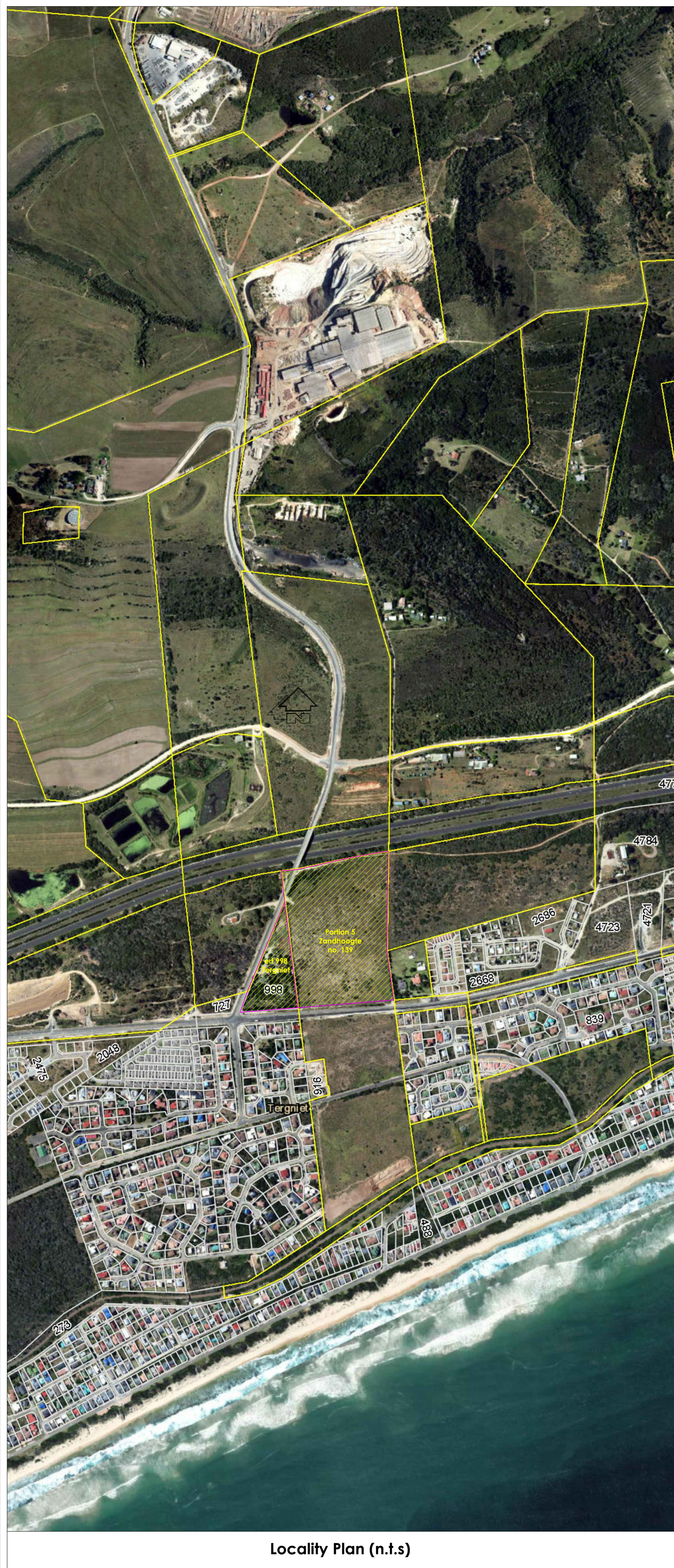
Should any additional information be required, or if you wish to discuss these recommendations with us, please do not hesitate to contact us.

Your faithfully,



Corlia Rens (B.Tech, Pr.Techni Eng)

Annexure A – Site Development Plan



Locality Plan (n.f.s)



1 : 1000
Subdivision Plan
 Consolidation of erf 998 and
 Portion 5 of the Farm Zandhoogte no. 139

Application for Consolidation, Rezoning and Subdivision

1. Application is made in terms of Article 15 (2)(e) of the Mossel Bay Municipality Zoning Scheme By-Law, 2021, to consolidate Portion 5 of the Farm Zandhoogte no. 139 (figure A, B, C, D, E, F & G), 8,3676ha in size and Erf 998, Tergniet (figure G,H en I), 1,8664ha in size.

2. Application is made in terms of Article 15(2)(a) for rezoning of the consolidated erf from Agriculture Zone I (AZI) to a subdivisional area to allow the following:

- 3 Business Zone I (BZI) erf with a total size of 2,604 ha.
- 1 Business Zone IV (BZIV) erf with a size of 0,268 ha.
- 1 Community Zone III (CZIII) erf with a size of 0,527 ha.
- 1 Mixed Use Zone II (MZII) erf with a size of 0,902 ha.
- 2 Open Space Zone II (OSZII) erf with a size of 1,225 ha.
- 1 General Residential Zone II (GRZII) erf with a size of 0,697 ha.
- 1 General Residential Zone III (GRZIII) erf with a size of 0,653 ha.
- 2 Transport Zone II (TZII) one erf with a size of 1,360 ha and Remainder erf 998, Tergniet - size 0,140 ha.
- 1 Split zone erf consisting of a portion Business Zone I (BZI) with a size of 1,0 ha and a portion Open Space Zone II (OSZII) with a size of 1,0 ha.

3. Application is made in terms of Article 15 (2)(d) for the subdivision of the subdivisional area into the following erven:

- portions 1 & 9: Business Zone I (BZI) erven.
- portion 5: Business Zone IV (BZIV) erf
- portion 2: Community Zone III (CZIII) erf
- portion 7: Mixed Use Zone II (MZII) erf
- portion 4 & 11: Open Space Zone II (OSZII) erf
- portion 3: General Residential Zone II (GRZII) erf
- portion 6: General Residential Zone III (GRZIII) erf
- portion 10 & 12: Transport Zone II (TZII)
- portion 8: Split zone erf consisting of a portion Business Zone I (BZI) and a portion Open Space Zone II (OSZII)

4. Site survey:

4.1 Site survey done by WJ Marais (Reg no. 50691) Topographic and Engineer's Surveyor, 13 Cypress Street, George.

4.2 Contour intervals: 1,0m

5. Servitudes:

5.1 Water line servitude - 5m wide northern side of the southern erf boundary (of the consolidated erf).

5.2 Sewer line servitude - 6m wide - south of the northern erf boundary (of the consolidated erf)

5.3 Sewer line servitude - 5m wide - eastern boundary of the line A, I and G.

5.4 Power line servitude - 20m wide - along the southern boundary - partly inside an partly outside the boundary line.

5.5 Power line (orange line) across the middle of the consolidated erf east to west - installed underground in the 25m road reserve.

5.6 A 40m wide no-go conservation buffer area - portion 11.

5.7 A 5m wide right of way servitude, shown as figure a, b, c & d, to be registered over portions 1 and a 5m wide right of way servitude, shown as figure b, e, f & c, to be registered over portions 2 to give future access to portion 11.

Amendments:

Date: 5/11/2022
 Description: Changes - erf sizes and road layout
 26/01/2023
 Description: Cover the servitudes around and change notes
 20/11/2023
 Description: Add 10m wide conservation zone servitude
 04/03/2024
 Description: new layout - subdivision plan
 30/03/2024
 Description: changed to subdivision plan

Table			
Zoning	Colour Notation	Size (ha)	%
Business Zone I (BZI)	[Blue]	3,604	35,21
Business Zone IV (BZIV)	[Light Blue]	0,268	2,62
Community Zone III (CZIII)	[Purple]	0,527	5,15
Mixed Zone II (MZII)	[Pink]	0,902	8,81
Open Space II (OSZII)	[Light Green]	2,225	21,74
General Residential Zone II (GRZII)	[Yellow]	0,697	6,81
General Residential Zone III (GRZIII)	[Orange]	0,653	6,38
Transport Zone II (TZII)	[Brown]	1,360	13,29
Total		10,236	100

8	
0,687ha	portion number
	portion size (ha)

Client: 3M Sales and Education Services CC

Project name: Dolfin Circle

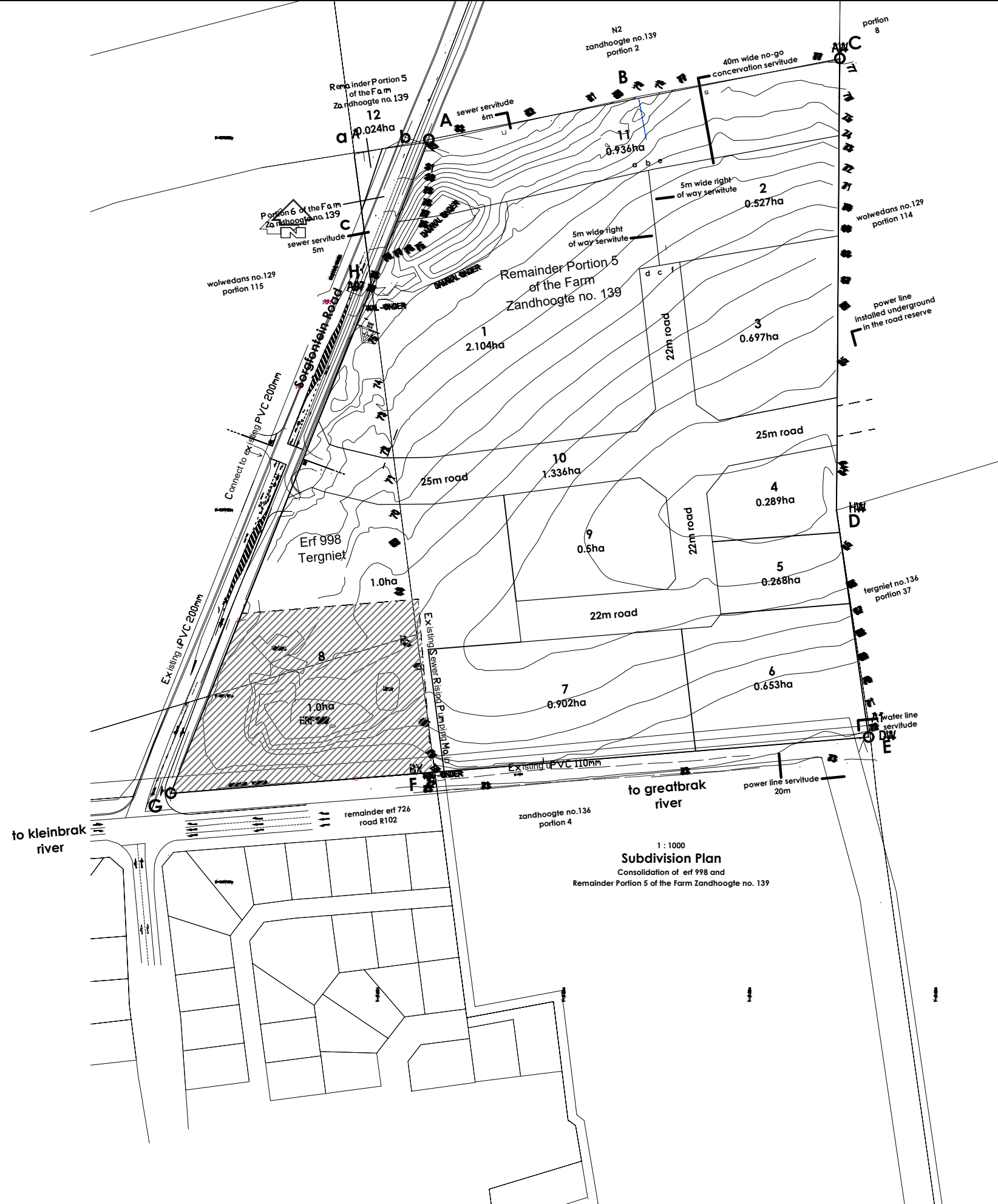
Project Description: Proposed Consolidation of erf 998, Tergniet and Portion 5 of the Farm Zandhoogte no. 139 Rezoning and Subdivision

Drawing Description: Consolidation, Rezoning and Subdivision Plan Locality Plan

Design Centre and Associates
 Architecture, Interior Design, Town Planning & Landscape Design
 p.o. box 7 molenkoff 6537 - cell no. 083 599 9882
 Email: info@designcentre.co.za

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Annexure B – Topographical Plan



Project
MOSEL BAY TERGNIET ERF 998

Drawing Title
TOPOGRAPHIC PLAN

Scale (Paper Size)	1 : 80	Date	MAY 2024
Designed	EW	Drawing Number	22-160-01
Drawn	EW	Revision	1
Checked	FvA		

Annexure C – Existing Services Information

Frans van Aardt

Subject: FW: Tergniet bestaande siviele dienste (Dolphin Circle) Erf 998 & 139/5

From: Kuyler, Jolandé

Sent: Friday, April 21, 2023 9:32 AM

To: Corlia Rens <corlia@urbanengineering.co.za>

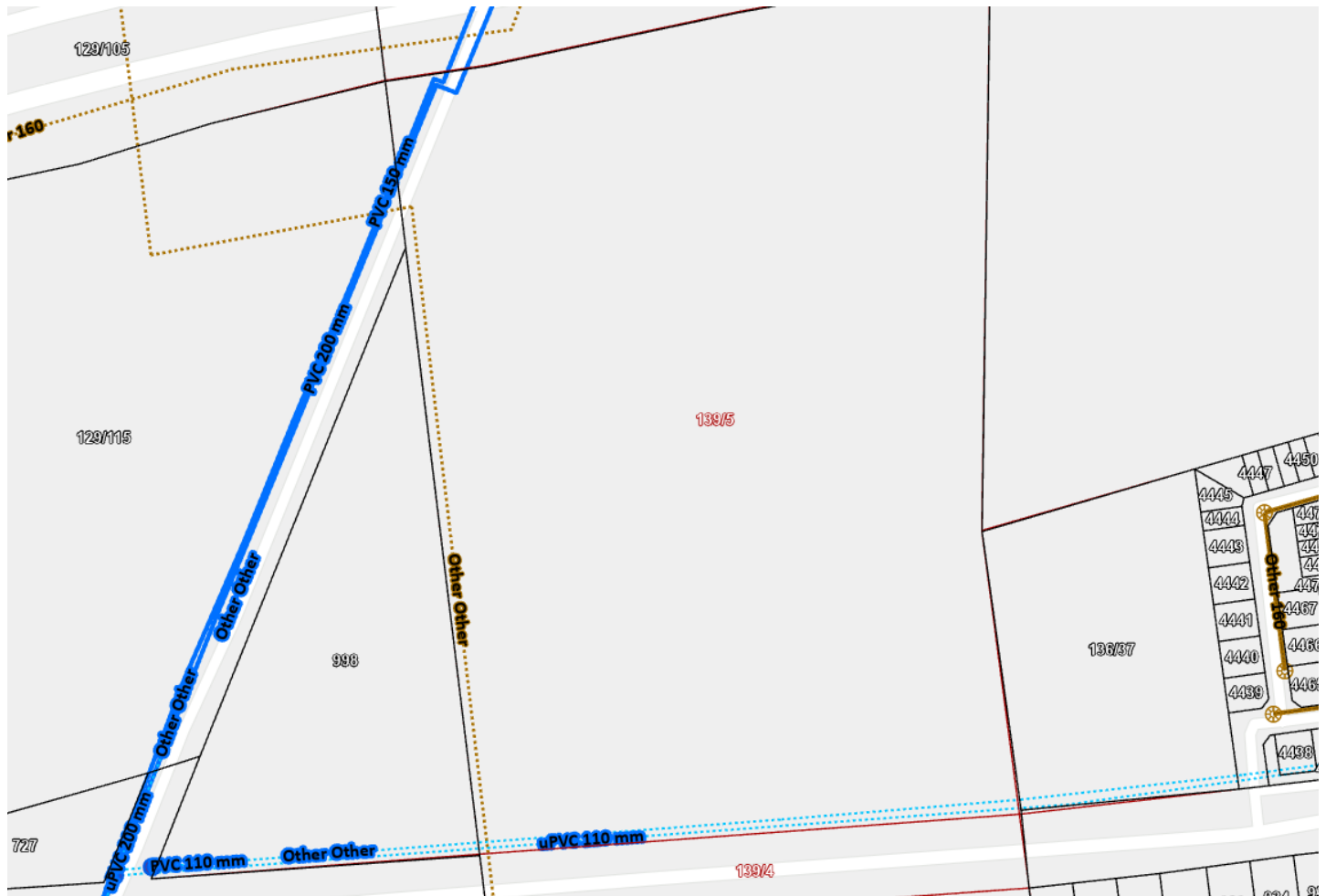
Cc: Lodewyk, Danie <dlodewyk@mosselbay.gov.za>; Eitner, Altus <aeitner@mosselbay.gov.za>; Van Zyl, Ryan <rvanzyl@mosselbay.gov.za>

Subject: RE: Tergniet bestaande siviele dienste (Dolphin Circle) Erf 998 & 139/5

Hi Corlia

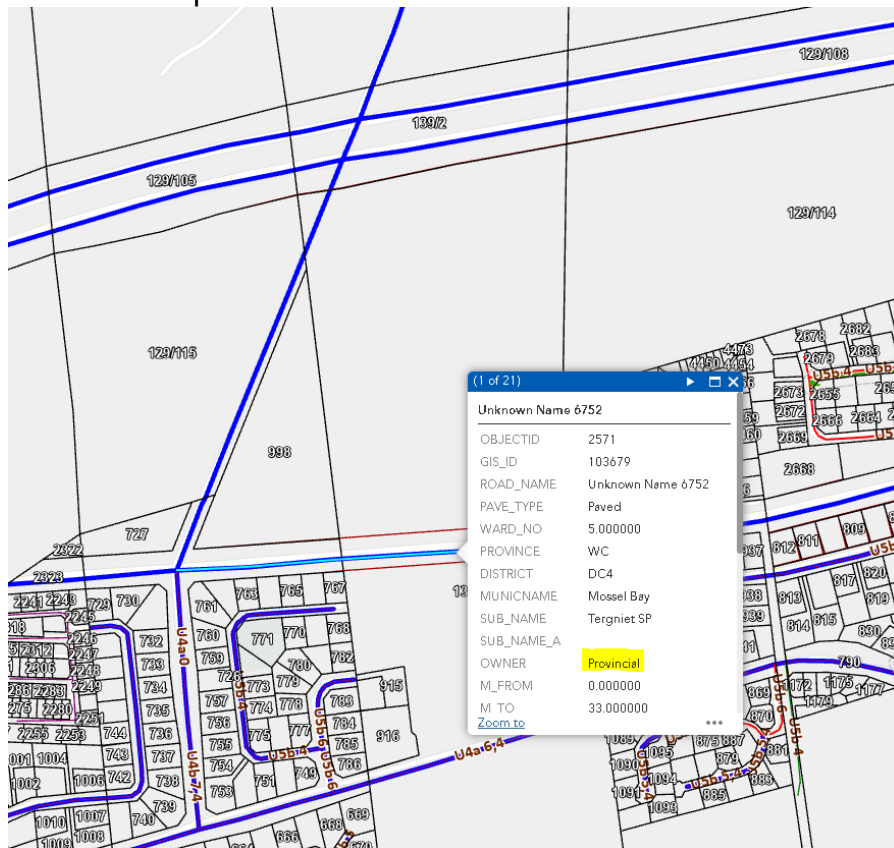
Water pyplyn is 110mm wat daar loop tans.

Daar is nie riool lyn waaraan gekoppel kan word nie daar loop wel 'n Riool Pomplyn maar dit mag nie beskadig word nie en kan nie aan gekoppel word nie.

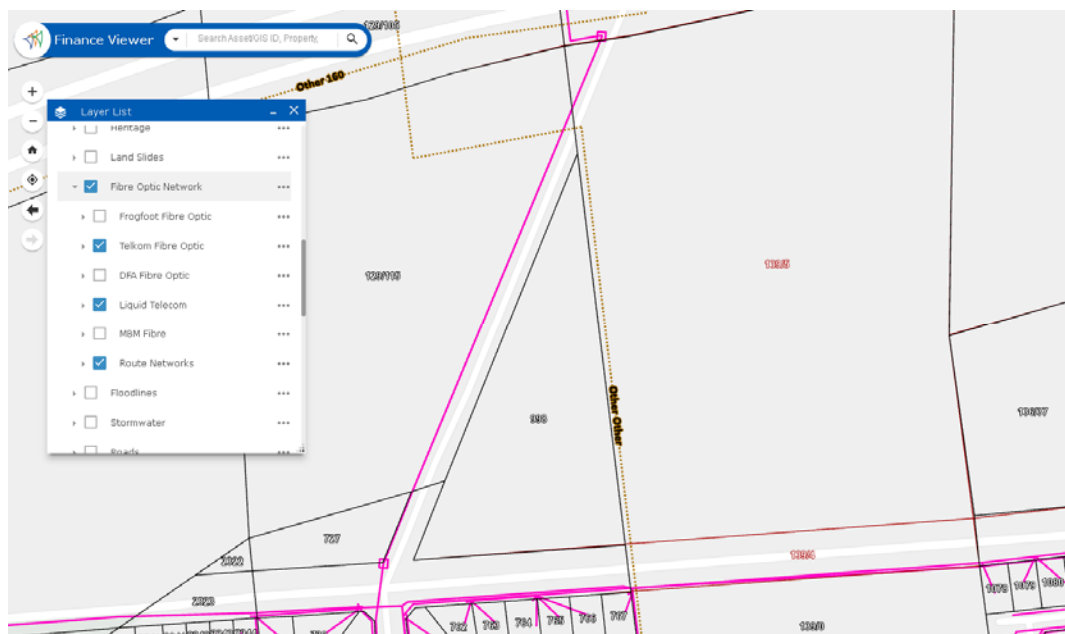


Geen Stormwater inligting jul sal moet uitvind by Provinsie.

Roads – Die pad is ook Provinsie.



Fibre Netwerke wat daar lê – Telkom, Liquid Telekom en Route Networks



So ek gaan basically vir jou 'n Waterpyp, Riool Pomp lyn en Fibre Clip.

Elektriese inligting moet jy bevestig met BDE op versoek van Ryan van Zyl. (BDE is hul konsultant)

Vriendelike groete



Jolandé Kuyler

GIS Administrator / Administrateur

101 Marsh Street, Mossel Bay

Email: jkuyler@mosselbay.gov.za

Web: <https://www.mosselbay.gov.za>

Tel: +27 44 606-5170



MOSSSEL BAY | HARTENBOS | GREAT BRAK RIVER | HERBERTSDALE

Anti-Fraud Hotline: 0800 333 466

From: Corlia Rens <corlia@urbanengineering.co.za>

Sent: Thursday, April 13, 2023 4:10 PM

To: Kuyler, Jolandé <jkuyler@mosselbay.gov.za>

Subject: Tergniet bestaande siviele dienste

Importance: High

*** [EXTERNAL]: This email originated from outside the organization. Exercise caution when opening attachments or clicking links, especially from unknown senders. ***

Hi Jolande!

Ek hoop dit gaan goed.

Ons is aangestel om siviele dienste verlag te doen vir n erf in Tergniet, en ek is op soek na enige inligting rakende die bestaande dienste in die area waarby ons sal kan Koppel.

Sien asb aangeheg die kmz, vir verwysing na die gedeelte waarna ons kyk.

Vriendelike groete,



Corlia Rens (B.Tech, PrTechni Eng)

☎ : 044-874 4098 / 072 842 7376

📍 : 18 Varing Avenue, George

Mossel Bay Municipality email disclaimer:

http://www.mosselbay.gov.za/mbm_disclaimer.pdf

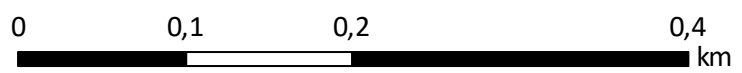
Mossel Bay Municipality,
101 Marsh Street,
Mossel Bay,
6506,
South Africa

Tel: +27 44 606 5000

www.mosselbay.gov.za



Mossel Bay Municipality

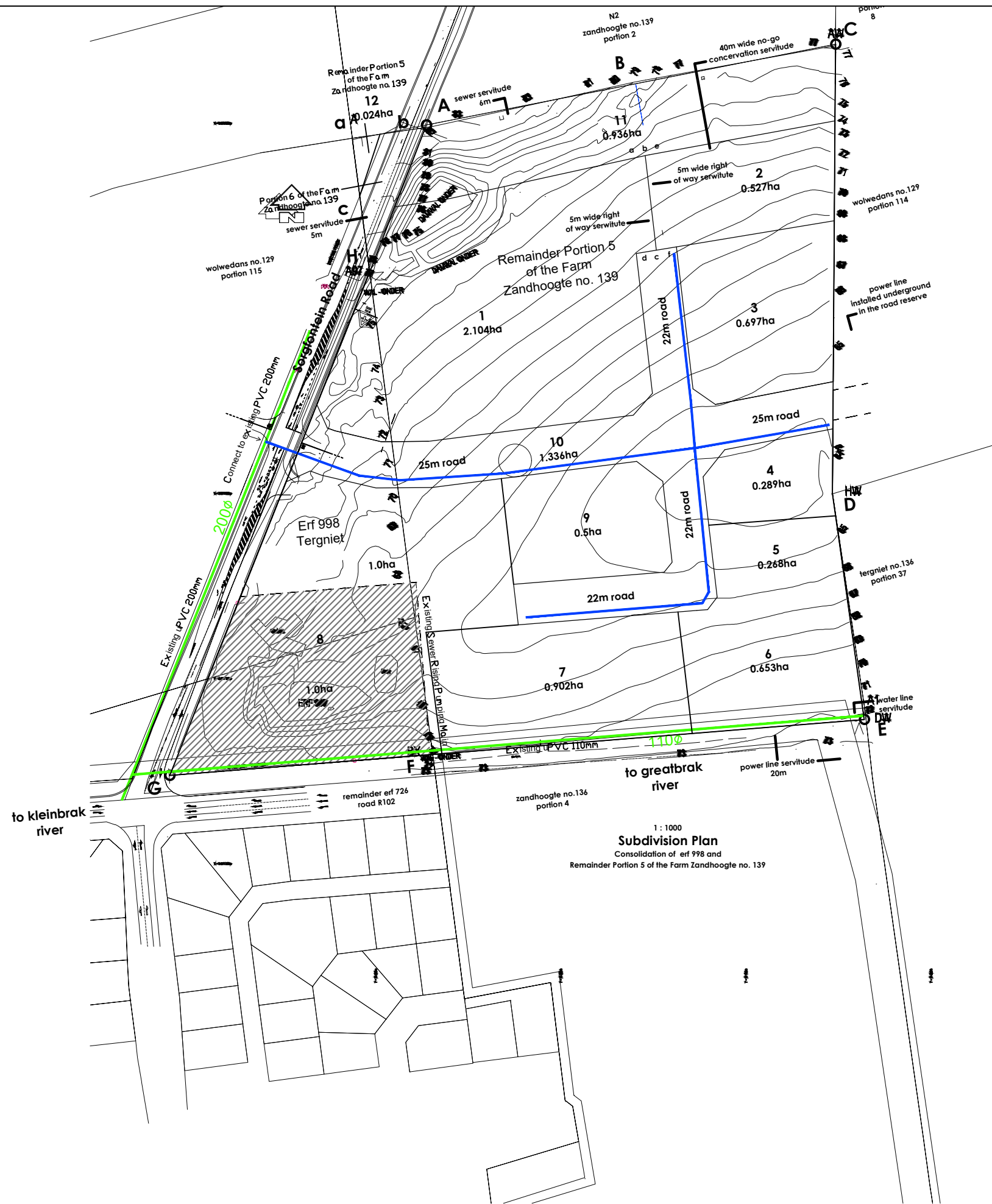


1:4 514

Date: 2022-09-26

Disclaimer:
The Mossel Bay Municipality accepts no responsibility for
and will not be liable for any errors or omissions
contained herein.





LEGEND:
WATER MAINS:

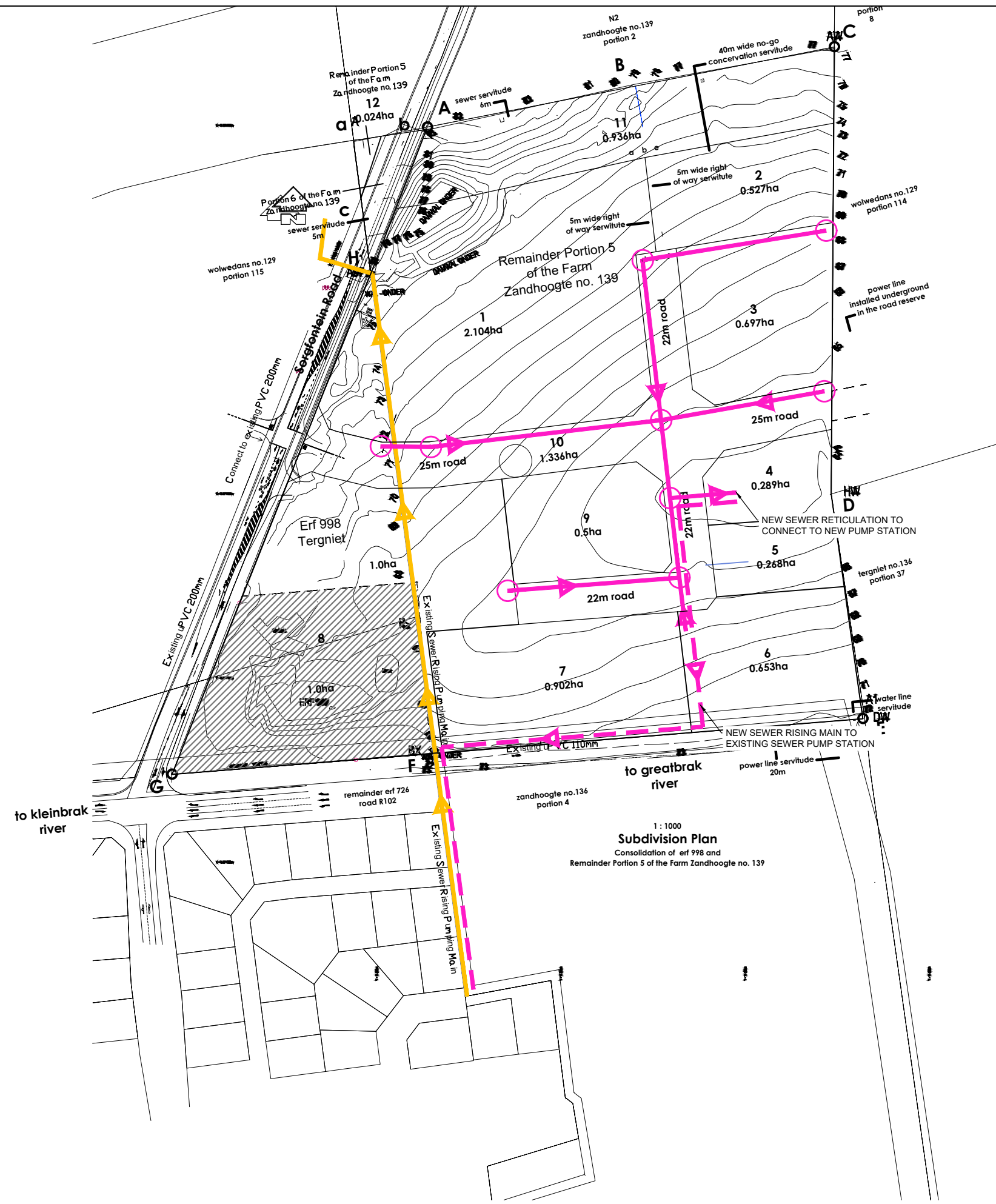
- NEW WATER PIPES
- EXISTING WATER PIPES



Project
PROPOSED DEVELOPMENT OF ERF 998

Drawing Title
EXISTING AND PROPOSED NEW WATER RETICULATION

Scale (Paper Size)	1 : 80	Date	MAY 2024
Designed	EW	Drawing Number	22-160-03
Drawn	EW	Revision	1
Checked	FvA		



LEGEND:
WATER MAINS:

- EXISTING SEWER PRESSURE LINE
- PROPOSED DEVELOPMENT SEWER RETICULATION
- - - PROPOSED DEVELOPMENT SEWER RISING MAIN



Project
**PROPOSED DEVELOPMENT
 ERF 998 TERGNIET**

Drawing Title
**EXISTING AND PROPOSED
 NEW SEWER RETICULATION**

Scale (Paper Size)	1 : 80	Date	MAY 2024
Designed	EW	Drawing Number	22-160-02
Drawn	EW	Revision	1
Checked	FvA		