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Datum:

Date: 2026-05-12

P-J le Roux Town and Regional Planners
262 Main Road
Paarl
7646

For attention: Mr. P-J le Roux

Sir,

PROPOSED DEVELOPMENT OF FARM 109/16, JACOBS BAY SERVICES REPORT ON THE PROVISION OF ENGINEERING SERVICES

1. Introduction

The current agricultural property comprises of an existing dwelling unit and an accommodation building with five rooms and is approximately 9.8 ha in extent.

The submitted application is to obtain Consent Use (Tourist Facility) and Special Use (Function Venue) approval in terms of Article 15(2)(o) of Saldanha Bay Municipality Land Use 2015. The purpose of this application is to obtain rights to add to the existing buildings to accommodate a Function Venue, chicken coops, parking, and self-catering units.

The site is situated on Portion 16 of Farm 109, Jacobs Bay, on the north side of Jacobsbaai Road, approximately 5km east of the town, Jacobs Bay. A portion of the farm is situated to the south of Jacobsbaai Road where an existing dam is located.

The proposed development will be provided with the necessary infrastructure. This report covers the aspects for the provision of these civil engineering services.

The design of these civil services will be in accordance to the "Guidelines for the provision of engineering services and amenities in residential township developments" (Red book). These guidelines will be used in conjunction with the local municipal standards and requirements.

2. Access, roads and parking

The current access to the site is via a servitude dirt road that connects to Jacobsbaai Road (OP 7643). This entrance will stay in use. An additional entrance point from this servitude road is proposed for the new venue building, approximately 80m north of Jacobsbaai Road as indicated on the SDP of Walt Original Architecture and Design dated 26 February 2026. No upgrades to the existing servitude dirt road are foreseen by the increased traffic count.

The parking demand for the site is as follow:

- Existing Dwelling = 2 Bays (Garage)
- “Die Stalle” Self Catering = 5 Bays
- Manager’s House = 1 Bay (Garage)
- Function venue (250 seats):
1 bay/4 seats
= 63 Bays

A minimum of 71 parking bays will be required for the site. Provision are made for 94 parking bays on the SDP.

The parking areas will make use of laterite or similar materials as wearing course.

Layout:

- Minimum longitudinal grade on roads is 0,5%.
- Minimum cross grade on roads and parking areas is 2%.
- Minimum bellmouth radii of 8 meter.
- Turning circle radius of 8,5 meter.

3. Stormwater

The site falls predominantly from north to south.

Currently stormwater from the roofs of the existing buildings are captured in gutters and downpipes that releases stormwater overland that naturally drains away and infiltrates into the ground. No stormwater is released into the municipal pipe system.

Provision in the stormwater design will allow stormwater to be controlled and released into the existing stormwater channel, north of Jacobsbaai Road.

A small detention facility created with an earthen berm will detain the 1:50 year major storm event before releasing pre-development run-off volumes into the existing stormwater channel.

A Stormwater analysis will be done via the Rational Method with civil drawings submission to determine the size of the detention facility.

The design criteria for the stormwater will be as follows:

Runoff and Flow:

- The MAP for the region is taken as 200 mm per annum.
- The minor system is designed to cater for a 2-year return period with a maximum overland flow distance of approximately 80 m.
- Stormwater flow velocities in roadways and side channels will be kept as low as possible and related to the surface finish utilized to prevent scour and erosion.
- Roads will be graded to ensure a free and continuous flow of stormwater towards the main drainage routes as well as to prevent the ponding of water in intersections.
- Care will be taken in the design to eliminate scouring around outlet structures.

Materials:

- Stormwater pipes will generally be Class 100D precast reinforced concrete pipes laid on a Class C bedding.
- Minimum pipe diameter will be 300 mm.
- The minimum cover on stormwater pipes is generally 0,8 m.

4. Water

There is an existing municipal water main situated to the north of Jacobsbaai Road, adjacent to the property. A connection point to this municipal line is available for the proposed development, and it is proposed to be upgraded to a 110mm connection with an 80mm bulk watermeter.

The expected domestic water usage is as follows:

Average Annual Daily Demand:

Building	AADD	Unit	AADD [l / day]
Main Dwelling Unit	800	l / day	800
Self-Catering Accommodation (5 Rooms)	300	l / Room / day	1500
Manager's House	800	l / day	800
Function Venue (250 persons /day)	15	l / person / day	3750

Thus the total Average Annual Daily Demand for the development is 6.85 kl/day.

A fire engineer will be appointed to calculate the fire flow and if on-site storage will be necessary.

The design criteria for the water reticulation will be as follows:

Consumption & flow:

- Maximum static head of 90 m.
- Minimum static head of 25 m.
- Maximum flow velocity of 1,2 m/s in pipes.

Materials:

- Minimum pipe diameter of 110 mm.
- Pipes are SABS approved, Class 12 uPVC pipes on class C bedding.
- All uPVC pipes to utilize standard uPVC push-type pressure fittings.
- Minimum cover on water pipes to be 1 m.
- Specifications for isolation valves, air release valves (if required), fire hydrants and valve and hydrant chambers will be compatible with the Local Authority standards.
- On completion of construction, the Engineer will supervise and certify the scouring, chlorinating and testing of all water lines.

5. Sewerage

It is assumed that 80% of the water's average annual daily demand will end up in the sewerage system.

Currently the foul sewage from the existing buildings flow to existing septic tanks. All new buildings will flow to a new conservancy tank with at least 7-days capacity that will be pumped out weekly by the municipality's honey-sucker trucks to be transported to the municipal sewage treatment works for treatment. It is proposed to also connect the existing buildings sewerage to this new conservancy tank.

The expected sewer flow is as follow:

$$\begin{array}{lll} \text{Total Average Daily Flow} & = 0.8 \times 6\,850 & = 5\,480 \text{ l/day} \\ \text{Total Storage Required/week} & = 5\,480 \times 7 \text{ days} & = 48\,360 \text{ l} \end{array}$$

The design criteria for the sewer network will be as follows:

Discharge & Flow:

- Average Daily Flow equals 80% of the water's AADD
- An un-attenuated peak factor of 2,5.
- An infiltration rate of 15%.
- A minimum flow velocity of 0,7 m/s achieved at least once per day.

Materials:

- Pipes are standard lengths, Class 34 heavy duty, solid wall uPVC pipes.
- Minimum pipe diameter is 160 mm for main lines and 110 mm for house connections.
- A minimum cover of 0,8 m over all pipes.
- Maximum distance between manholes of 90 m.

- Design is such that maximum manhole depth does not exceed 2,5 m to invert.
- Solid shaft fibre cement manholes (suitably waterproofed) with flexible pipe connections or pre-cast concrete ring manholes will be used.
- On completion of construction, the Engineer will supervise and certify the testing of all sewer lines.

6. Solid Waste

The property falls within the municipality's service delivery area. Solid waste will be collected by the municipality on a weekly basis and transported to the municipal landfill site.

Yours faithfully



J.G de Villiers B. Eng (Civil)