**SKCMasakhizwe Engineers (Pty) Ltd**
***South Division***

*Consulting Engineers to Build the Nation*
*Established 1956*

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**B-BBEE LEVEL TWO CONTRIBUTOR**

Your ref.: Our ref.: W2230/11.18-01 21/06/2024

**Attention: Mr Jonhill Spies**

Swartland Municipality
Rainier Street
MALMESBURY
7300

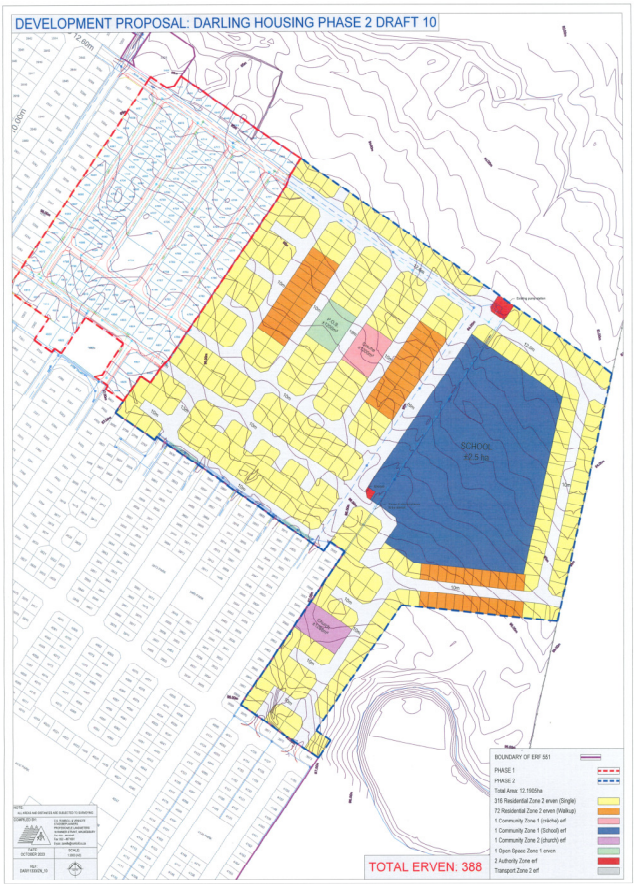
Jonhill,

**DARLING LOW COST HOUSING DEVELOPMENT PHASE 2 - SERVICES REPORT**

The Darling Housing Phase 2 development has an area of 12.19 ha. The development makes provision for 388 residential erven as well as a School Site and 2 community zoned erven.

The western- and southern boundaries extend into the existing residential areas. The northern and eastern boundaries are next to open unused land.

The site has a gradual fall of 1:70 towards the east.



## 1. DESCRIPTION OF SERVICES

### 1.1 ROADS

#### 1.1.1 Access Roads

Access to the development is via existing roads in the township with Disa-, Madeliefie- and Okkerneut Streets being the main feeder roads. The Okkerneut Street / R307 (Evita Bezuidenhout) intersection is earmarked to be constructed in Phase 1 of the Housing Development. Should the construction of this intersection be postponed, the intersection will have to be constructed during Phase 2 to cater for the additional traffic. The Estimated cost of this intersection is R 750 000.00 (VAT Excluded).

#### 1.1.2 Internal Roads

The internal road widths will vary from 5.5m for the access collectors to 4.5m for the access loops. Informal sidewalks will be provided on either side of the roads.

The roads will have a crossfall with a rollover kerb on the one side and an edging on the higher side of the road. These roads will be surfaced with a 13mm Cape Seal.

#### 1.1.3 Public Transport

The taxi drop-off area will be provided along the side of the road at the school site.

### 1.2 STORM WATER NETWORK

A storm water network will be installed in the road reserves. The storm water catchpits will be placed at a maximum spacing of 90m apart. The minimum diameter concrete pipes to be used, is 375mm Ø. The network will connect to the existing 750mm concrete stormwater pipe which discharges stormwater to the non-perennial stream northwest of the town.

### 1.3 WATER NETWORK

The proposed water network will connect to the existing water network in the residential area. The minimum pipe size is a 110mm diameter HDPE. Each erf will be fitted with an 18 mm water connection, ending with an end cap. The water meters will be supplied to the municipal store for installation during the construction of the top structures.

Water Demand

a) 388 residential houses @ 450 l/day = 175 kl/day

b) School site: 2,5 ha @ 15 kl/ha/day = 38 kl/day

c) Creche and Church 2 @ 500/day = 1 kl/day

**Average Daily Water Demand 214 kl/day**

Peak Demand: (Peak Factor = 4) 10l/s

A GLS report was commissioned for Phase 1 of the housing development. Certain upgrades were proposed in that report. We recommend that this report be updated to take into account the additional demand.

## 1.4 SEWER NETWORK

The sewer network will gravitate into an existing pump station. The pumpstation has a capacity of 22l/s. The existing rising main connects to the gravity sewerage network in Okkerneut Street. The main outfall sewer to the sewerage works is being upgraded as per the GLS report.

Sewerage Demand:

The sewerage demand for Phase 2: 80% x 214 kl/day = 171kl/day

Pumpstation Drainage Area:

| | | |
|---|---|---|
| a) | Existing residential area | 209 kl/day |
| b) | Industrial Area | 10 kl/day |
| c) | Darling Green Estate | 280 kl/day |
| d) | Darling Low-Cost housing Phase 1 | 66 kl/day |
| e) | Darling Low-Cost housing Phase 2 | 171 kl/day |
| | | 736 kl/day |

ADWF: 9 l/s

**Peak flow** 9 x 2.1 (pf) = **18 l/s**

**Existing Pump Capacity: 22 l/s**

We recommend that the pump sets be upgraded to cater for the additional demand.

**Cost Estimate: R650 000.00**

## 1.5 SOLID WASTE DISPOSAL

The solid waste disposal services fall under the Swartland Municipality as a normal service to the area. Waste will be disposed of at the Highlands Solid waste disposal site in Malmesbury. An additional 1t of solid waste will be generated per week.

We trust that you will find the above in order.

Regards

**MPJ LOUBSER PrEng**
SKCM Engineers

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