

# JET SINGH CIVIL ENGINEERS (PTY) LTD

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Reference: 2022-101-AD-001

## TO: WHOM IT MAY CONCERN

07 March 2023

## **RE: PROPOSED SOCIAL HOUSING DEVELOPMENT @ERF 1359 QUEENSBURGH- SEWER DESIGN PROPOSAL**

Dear Sir,

The above has reference,

Jet Singh Civil Engineers (PTY) LTD was requested by the client and architect, to prepare sewer management plan for the Proposed Social Housing Development on Erf 1359 Queensburgh.

In accordance with the National Building, Regulations, for a development of this magnitude, the Municipality requires sewer management plan to identify the method of disposal of waste water generated from the proposed development.

The building is situated at Erf 1359 Queensburgh, on Huntley Road and the site is presently undeveloped.

The proposed development consists of 525 units and hardened area for parking. All designs and calculations have been carried out in accordance with SANS 10400 and all relevant codes.

The flow of sewer to be generated from this development is depicted below:

### **Sewer Calculations:**

NUMBER OF BLOCKS:	4	
NUMBER OF UNITS:	525	
FLOW PER UNIT:	500l/d	
FLOW FOR SITE:	$500 \times 525$	= 262500 l/d
PEAK FLOW FACTOR:	2.5	
	$2.5 \times 262500$	=656250 l/d
INFILTRATION FACTOR:	15%	

$$656250 \times 15\% = 754687.5\text{ l/d}$$

ULTIMATE DESIGN FACTOR: 1.5

$$754687.5 \times 1.5 = 1132031.25\text{ l/d}$$

$$= 13\text{ l/s}$$

$$= 0.0131\text{ m}^3\text{/s}$$

Our options for disposal are indicated below:

1. Municipal tie in
2. Conservancy tank
3. Septic tank
4. Sewer package plant and slotted pipe system.

We have met with municipality and have the following to report on:

#### **1. Municipal tie-in- as per communication with Municipality**

- The site location drains into Southern Wastewater Treatment Works (WWTW), which currently has no available capacity to treat any additional wastewater.
- Development on this site can only take place once the functional upgrades to the Southern WWTW have been completed.
- Upgrades to the Southern WWTW is subject to the availability of funds in the budget.
- In addition to the confirmation of the above, the onus lies with the client to carry out a complete sewer assessment of the municipal tie in and all sewer infrastructure leading to the treatment plant to ensure that the pipe infrastructure can handle the sewer generated from the proposed development.

#### **2. Conservancy Tanks**

- This option is not feasible for a development of this size. The objective is to minimize the operational costs of the development as this is a social housing development.

#### **3. Septic tank**

- The septic tank can be made use of in 2 forms i.e septic tank and municipal tie in or septic tanks and slotted pipe system.
- The Septic tank and municipal tie in will still however be based on the outcome of item no.1
- The Septic tank and slotted pipe system is currently not permitted as the rear on the site consists of DMOSS area.

#### **4. Sewer Package Plant**

- There are various service providers that offer the solution of an internal sewer package plant . The sewer is adequately treated and the decontaminated water is disposed off via a slotted pipe system which will benefit the adjacent undeveloped areas. There is adequate area within our site to install this system which will cater for the amount of sewer generated from our site.

Based on the above we have submitted 2 proposals viz:

Option 1- Municipal tie-in

Option 2- Sewer Package plant and slotted pipe system.

All sewer generated from the site will be collected in a piped network and directed to be disposed of via option 1 or option 2.

It must be noted that option 1 is only subject to the comment and approval from municipality based on their requirements.

Option 2 is independent of the municipal connection and is recommended at this stage.

I trust the above meets your requirements. Kindly contact me if you wish to discuss any information attached herewith.

Yours faithfully

Prepared by : Sanrika Ramcharan, B.Tech Structural Eng

Checky by :



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