

Provision of Civil Services

ERF 3535, SECUNDA



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Introduction

Barcor Trust has been commissioned to prepare a civil services report for the proposed sub-division of Erf 3535 in Secunda.

All civil engineering services will be provided in terms of the “Guidelines for Human Settlement Planning and Design” (Red Book) published by CSIR Building and Construction Technology.

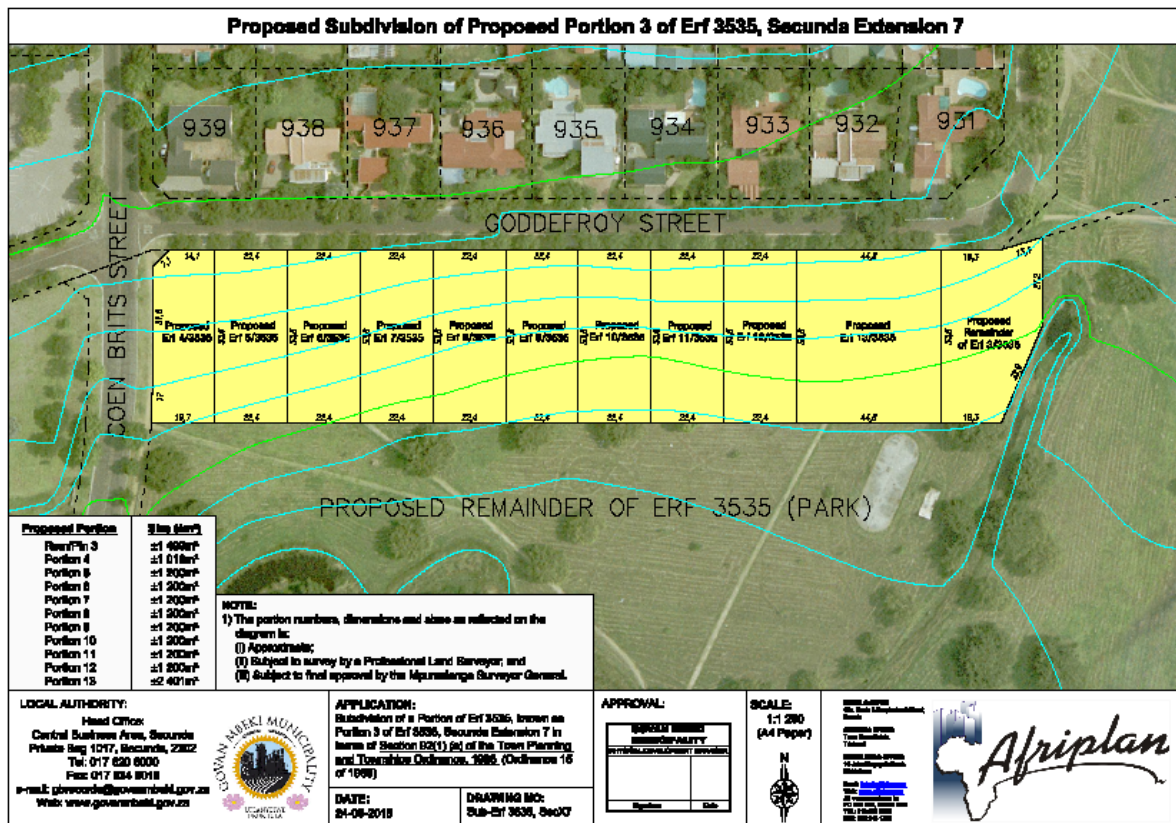
Sufficient bulk water should be available for the proposed sites and the water reticulation network should not be detrimentally influenced by the addition of the proposed sites.

The existing sewer reticulation system should have the capacity to accept the additional sewer outflow from the proposed sites.

No additional roads or storm water will be required as the sites will get access from the existing surfaced road.

The proposed sub-division is indicated in Figure 1 below.

Figure 1: Proposed Sub-Division Layout



Standard of Service

All civil engineering services will be provided in terms of the “Guidelines for Human Settlement Planning and Design” (Red Book) published by CSIR Building and Construction Technology.

Water Reticulation

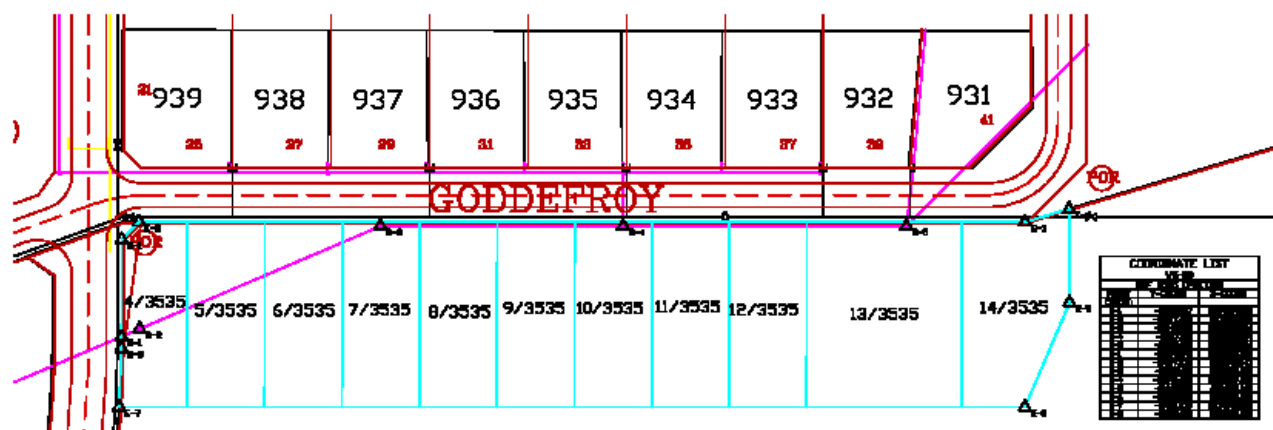
The water demand for the proposed sub-division is estimated at an average annual daily demand of 1250 l/day/site. Hence the average annual daily water demand is approximately 13,75 Kl for the proposed sub-division. The average summer peak demand is thus approximately 20,625 Kl/day. The existing water reticulation system around the proposed sub-division should have sufficient capacity to provide the required water to the sites. It is recommended that 32mm diameter saddles and associated erf connections be installed on the existing water pipe traversing in front of the sites along Goddefroy Street.

Sewer Reticulation

The estimated average daily waste water outflow is estimated at 1000 l/unit/day. Hence the average daily waste water outflow is estimated at 11 000 l/day for the proposed sub-division. The peak design flow that will be added to the existing sewer outfall that traverse the site is only 0,366 l/s.

The existing outfall sewer is indicated in Figure 2 below.

Figure 2: Outfall Sewer Location



From Figure 2 it is noticed that the outfall sewer traverse sites 4/3535 to 7/3535. Hence any buildings on these sites have to be positioned so that it does not cross the route of the outfall sewer.

The depth of the existing outfall sewer varies from 2,8m to approximately 3,6m below ground level, hence the necessary safety precautions will have to be taken when excavating for the sewer connections.

The following parameters will be used for the sewer reticulation design:

- Minimum diameter: 110 mm;

- Pipe material: PVC Class 34 sewer pipes;
- Class B bedding;

The minimum grades for the sewer pipes are as per the “Red Book” and is indicated below.

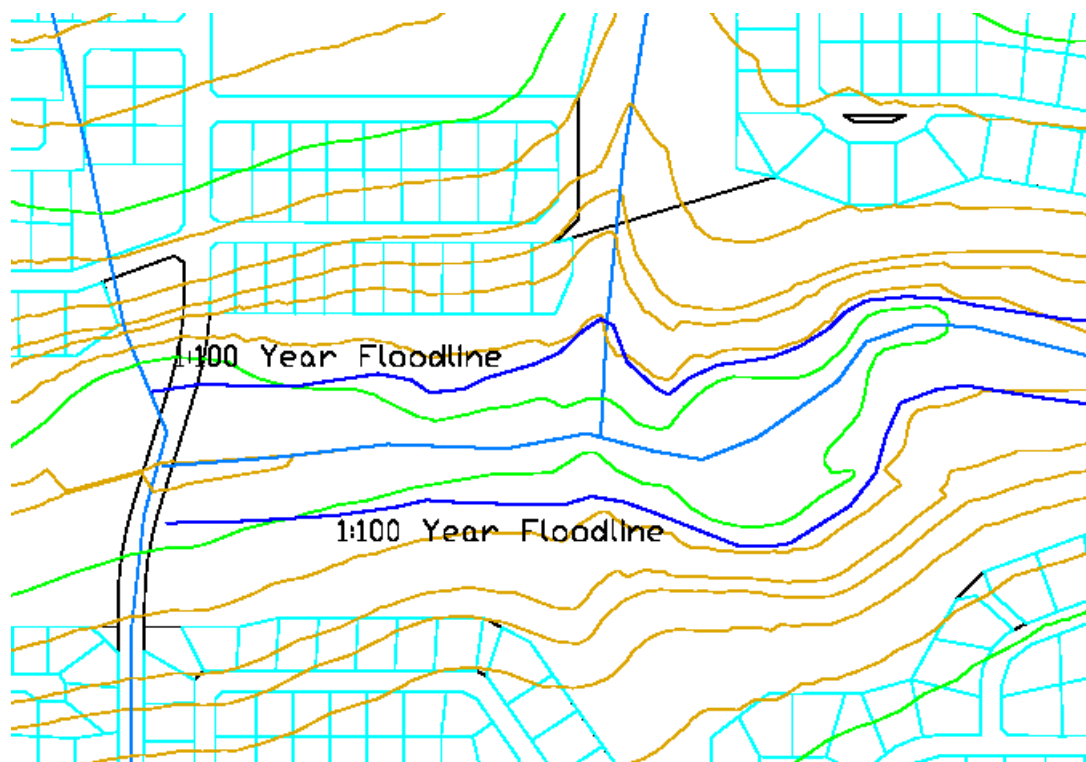
Table 1: Minimum Gradients

Sewer Diameter (mm)	Minimum Gradients
100	1:120
150	1:200
200	1:300
225	1:350
250	1:400
300	1:500

Drainage

All the sites drain towards the adjacent park and stream located on the southern side of the proposed sub-division sites. A 1:100 year flood line was determined and does not encroach on the proposed sub-division as indicated in Figure 3 below.

Figure 3: 1:100 Year Floodline



Roads

Access to the sites will be from Goddefrey road located on the northern side of the proposed sub-division.

Care should be taken when constructed the access roads to eliminate storm water that could enter from the existing road.

Building Foundations

Building foundations will be designed in terms of the guidelines of the NHBRC. It is anticipated that all buildings will have to be provided with reinforced raft foundations.



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DRAWINGS