



30 September 2021

WRAP
Unit B, Standard House
Cnr of Royal and Dirkie Uys Street
P.O. Box 1247
HERMANUS
7200

Attention: Mr Richard Kotzé

Dear Sir,

PROPOSED HOUSING DEVELOPMENT ON ERF 1772, STANFORD: CAPACITY ANALYSIS OF THE BULK WATER AND SEWER SERVICES

This report replaces the previous bulk water and sewer capacity report for the proposed development on Erf 1772, dated 24 November 2017.

The request by Mr Richard Kotzé of WRAP regarding comments on the bulk water supply and sewer discharge of the proposed development (Group housing development on Erf 1772, Stanford), refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Overstrand Municipality) dated June 2021 and the Sewer Master Plan dated June 2021.

A portion of the proposed development was conceptually taken into consideration for the June 2021 master plans for the water and sewer networks as a section of future development area SF4.

1. WATER DISTRIBUTION SYSTEM

1.1 *Distribution zone*

The master plan indicated that the proposed development should be accommodated within the existing Stanford reservoir water distribution zone. The proposed connection to the existing Stanford water system is to the existing 160 mm Ø pipe along the R326 Road, as shown in Figure 1 attached.

1.2 *Water demand*

The original water analysis for the master plan was performed with a total annual average daily demand (AADD) for the proposed development (a section of future development area SF4 in the June 2021 water master plan) of 60,0 kL/d.

For this re-analysis, the AADD and fire flows for the proposed development stay the same and is qualified as follows:

- 100 Group housing units @ 0,6 kL/d/unit = 60,0 kL/d
- Fire flow criteria (Low risk) = 15 L/s @ 7 m

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1.3 *Present situation*

Network conveyance

The existing Stanford reservoir water distribution network is supplied via the Stanford reservoir from a Top Water Level (T.W.L.) of 85,4 metres above sea level (m.a.s.l.). The existing water reticulation network of the Stanford reservoir water distribution zone has sufficient capacity in order to accommodate the proposed development with sufficient supply pressure and fire flow as per the criteria set out in the water master plan.

Reservoir capacity

The criteria for total reservoir volume used in the Overstrand Water Master Plan is 48 hours of the AADD (of the reservoir supply zone).

According to the water master plan the AADD of the Stanford reservoir water distribution zone is currently approximately 880 kL/d (based on the 2021 Water Master Plan water figures). The combined reservoir storage capacity of the existing Stanford reservoirs are 2 750 kL, which results in a reservoir storage capacity of **75** hours of the AADD.

There is therefore sufficient reservoir storage capacity in the existing Stanford reservoirs to accommodate the proposed development. The impact of the proposed development on the existing Stanford reservoirs storage capacity is however relatively significant as the development will use approximately 4% of the existing storage capacity available.

Bulk supply

The existing bulk supply system from the Stanford boreholes to the Stanford reservoir has sufficient capacity in order to accommodate the proposed development within the Stanford water system.

1.4 *Master plan*

It is proposed in the Water Master Plan for Stanford that the existing 110 mm Ø supply pipe in Kleine Street is reinforced in the near future to improve network conveyance and fire flow capacity to the Stanford North area. This is however not a minimum required item in order to accommodate the proposed development in the existing water system.

Network upgrade

- OSW1.3 : 485 m x 160 mm Ø parallel reinforcement R 620 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2020/21 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the route of the proposed pipeline is schematically shown on Figure 1, but has to be finalised subsequent to detailed pipeline route investigations.

1.5 *Minimum items required*

There are no minimum items required to accommodate the proposed development in the existing Stanford water system.

2. SEWER NETWORK

2.1 *Drainage area*

The master plan indicated that the proposed development should be accommodated within the existing Stanford pumping station (PS) drainage area. The proposed connection to the existing Stanford sewer system is to the existing 200 mm Ø outfall sewer along the R43 Road, as shown on Figure 2 attached.

The development is inside the sewer priority area.

2.2 *Sewer flow*

The original sewer analysis for the master plan was performed with a total peak daily dry weather flow (PDDWF) for the proposed development (a section of future development area SF4 in the June 2021 sewer master plan) of 42,0 kL/d.

For this re-analysis, the PDDWF for the proposed development was also used as 42,0 kL/d.

2.3 *Present situation*

The existing Stanford PS drainage area in Stanford has insufficient capacity to accommodate the proposed development within the existing sewer system.

2.4 *Implementation of the master plan*

The following master plan item will be required to reinforce the existing sewer network of the Stanford PS drainage area in order to accommodate the proposed development together with other future development areas.

Network upgrade

- OSS2.3 : 260 m x 400 mm Ø upgrade existing 250 mm Ø outfall sewer R 1 220 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT - Year 2020/21 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the route of the proposed pipeline is schematically shown on Figure 2, but has to be finalised subsequent to detailed pipeline route investigations.

2.5 *Minimum items required*

The minimum item required to accommodate the proposed development in the existing sewer system is master plan items OSS2.3 to reinforce the existing Stanford sewer system downstream of the Stanford PS 1.

3. CONCLUSION

The developer of Erf 1772 in Stanford may be liable for the payment of a Development Contribution (as calculated by the Overstrand Municipality) for bulk water and sewer infrastructure as per Council Policy.

The existing water reticulation network of the Stanford reservoir water distribution zone has sufficient capacity in order to accommodate the proposed development with sufficient supply pressure and fire flow as per the criteria set out in the water master plan. There is also sufficient reservoir storage capacity in the existing Stanford reservoirs to accommodate the proposed development.

It is proposed in the Water Master Plan for Stanford that the existing 110 mm Ø supply pipe in Kleine Street is reinforced in the near future to improve network conveyance and fire flow capacity to the Stanford North area. This is however not a minimum required item in order to accommodate the proposed development in the existing water system.

There is insufficient capacity in the existing sewer reticulation system to accommodate the proposed development.

The minimum item required to accommodate the proposed development in the existing sewer system is master plan items OSS2.3 to reinforce the existing Stanford sewer system downstream of the Stanford PS 1.

We trust that you find this of value.

Yours sincerely,

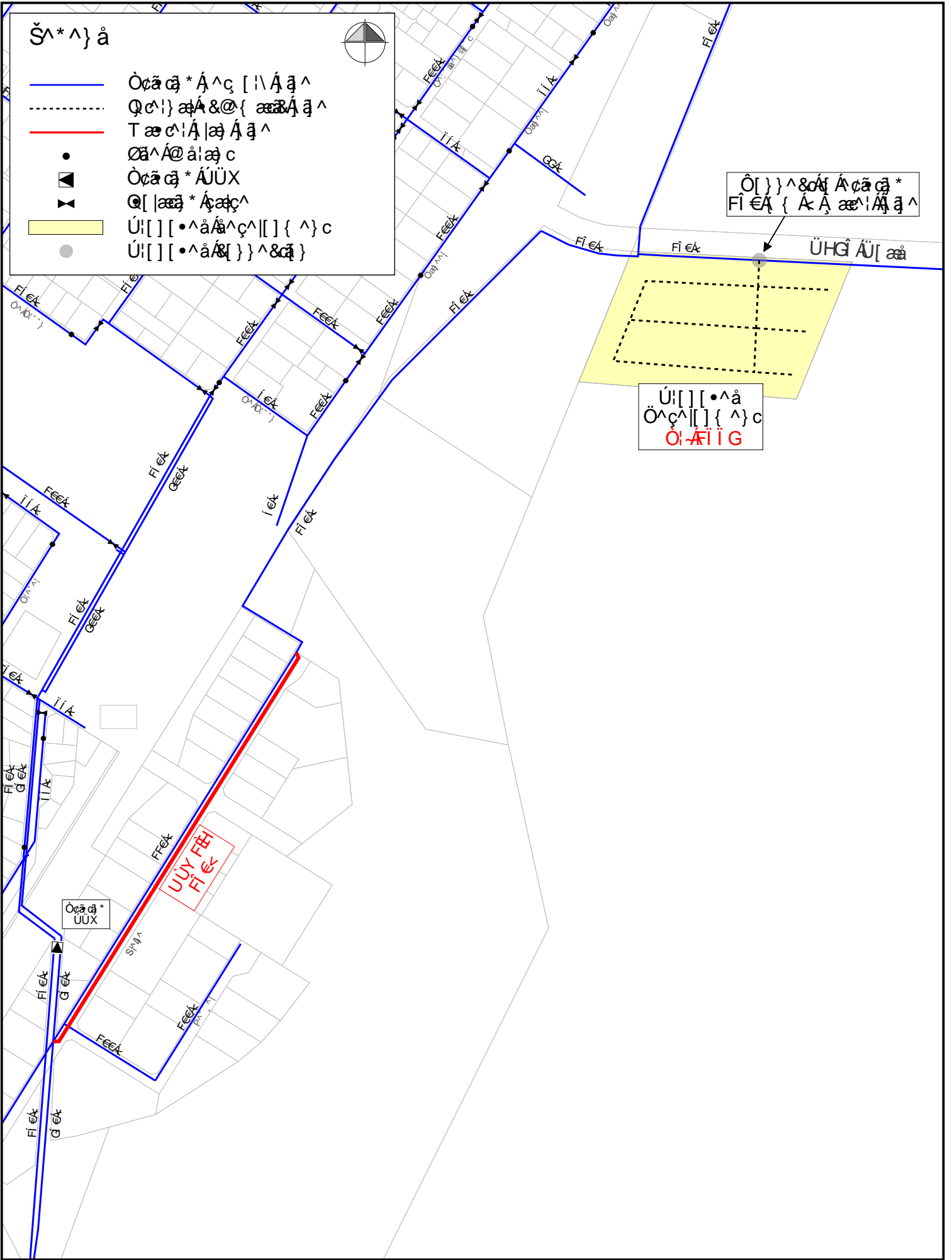
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Per: PC DU PLESSIS

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Attention: Mr Dennis Hendriks



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