

OMNI KING INVESTMENTS (PTY) LTD

**DEVELOPMENT OF ERF 438
STANFORD**

ENGINEERING SERVICES

PROJECT NO. 279

MAY 2024

ENGINEERING SERVICES



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1. INTRODUCTION

This report discusses the engineering implications of the proposed development of erf 438 at Stanford. The subdivision plan as prepared by Wrap Town Planners, was used as basis for discussion.

The site is situated to the east of Stanford on the eastern side of the R43 and south of the R326.

The site gradually slopes from the north to the south.

2. WATER

A bulk water and sewer capacity report for this development, dated 30 January 2024, was done by GLS Consulting.

The proposed connection to the existing Stanford water system is to the existing 160mm dia. pipe along the R43 Road.

The AADD for the 31 erven is 18.6 kl/day. The development is seen as a low-risk group 1 fire risk area and a minimum flow of 15 L/s per hydrant and a minimum residual head of 7m will be required.

The internal network will consist of a 110mm dia. ring main with 22mm dia. water connections to individual erven. A bulk water meter will be installed at the entrance to the development and each individual erf will be supplied with a water meter as required by the local authority.

The GLS report confirms that the reservoir capacity and the bulk supply has sufficient capacity to accommodate the proposed development. Upgrading of the network is proposed, with the implementation of masterplan item OSW1.3 which entails the parallel reinforcement of a section of pipeline.

3. SEWER NETWORK

A bulk water and sewer capacity report for this development, dated 30 January 2024, was done by GLS Consulting.

The proposed development will be accommodated within the existing Stanford pumping station drainage area. The proposed connection for the development will be to the existing 200mm dia. outfall sewer in Daneel Street on the northern side of the R43 Road. A sleeve is already in place under the R43 road to accommodate the pipe crossing.

The existing Stanford pumping station drainage area has insufficient capacity to accommodate the proposed development. Network upgrading of 260m of an existing 250mm dia. to be replaced with a 400mm dia. pipe, will be required.

The internal sewer network will consist of normal waterborne 160mm dia. main lines with 110mm dia. service connections. This will all drain to a central point on the southwestern side of the development, next to the entrance gate, where a pump station will be constructed. From there it will be pumped to the Municipal connection point in Daneel Street.

4. ROADS

Access to the development will be via the newly constructed access point coming off the R43 Road on the western side of the development. Access into the development will be via a controlled gate. Sufficient distance will be provided to allow the stacking of 3 motor vehicles in front of the gate.

The streets within the development will consist of 5m wide paved road with paved edges on each side built on a cross fall.

The pavement layers will be designed in accordance with TRH4 guidelines.

5. STORMWATER

The developer wants to continue with the rural nature of Stanford Village with this development. "Leiwater" furrows will therefore be constructed next to the roads. These furrows will act as the conduits for the minor stormwater system. Stormwater will be diverted into the furrows from the roads via chutes. This network will discharge into polishing detention ponds before the water is released into the wetland and dam on the southern side of the site at two points.

The roadways will act as the major stormwater system. This system opens to the south to cater for overland flows of higher intensity storms.

6. ELECTRICITY

See attached the electrical services report compiled by Driger Consulting for information on the electricity supply network.

7. REFUSE

A central refuse collection facility will be provided, and refuse will be removed from this facility as per Municipal agreement. The facility will be accessible from the public road with a parking area for the refuse truck.

The facility itself should be properly ventilated, with a cement floor. A tap with running water will be supplied, as well as a drainage point connected to the sewer network.

8. CONCLUSION

All Civil and Electrical Engineering Services will have to be designed according to Standards and Specifications as laid down by the Overstrand Municipality.

A service agreement will have to be drawn up between the developer and the Overstrand Municipality which will spell out the exact bulk levy contributions as well as the standard of services required.

AS van der Merwe

Pr Eng

May 2024

STANFORD ERF 438: ELECTRICAL SERVICES REPORT

1. ELECTRICITY SUPPLY NETWORK

This development comprises of the following:

- a) The Overstrand Municipality will make an 11kV supply available from the existing overhead line. RMU to be installed.
- b) A 70mm² PILC 11kV cable must be installed from this new switch to the minisubstation.
- d) The installation must be done strictly as per the consulting engineer's layout **drawing No. SF 23224/E1 Rev 0**, still to be approved by the municipality.

The entire distribution network shall be provided at the cost of the DEVELOPER.

The installation will also be according to the municipality's "Standard Guidelines for Electrical Services."

1.1 Underground services

The electricity network shall be an underground installation with all material/equipment and installation methods in accordance with the "Standard Guidelines for Electrical Services."

1.2 Impact on bulk and reticulation systems

The impact of this development on the existing 11kV supply in this area is not of such a nature that majure infrastructure upgrading is required.

1.3 Bulk service requirements (External 11kV connection)

No ring feed required.

1.4 Servitudes

All services will be installed in road reserves. No servitudes required.

1.5 Erf connections

Erf connections shall be for 60A single phase prepaid metering.

Due to the fact that this will be a secured village, all LV and prepaid metering will be by a private vendor.

1.6 Services charges

The developer will be responsible to pay the applicable bulk services levies on the bulk LV supply.

1.7 Ownership and maintenance

Ownership of the electricity supply network infrastructure as described in the plans and specification necessary for the development, shall **not** be transferred to the Overstrand Municipality. They will not be responsible for the operation and maintenance thereof.

2. STREETLIGHTS

The street lighting shall be provided at the cost of the DEVELOPER as per the client's requirements and specification.

2.1 Underground services

The electricity supply network to the streetlights shall be underground with all material/equipment and installation methods in accordance with the Guidelines for Township Electrical Services.

2.2 Type of streetlight

To be confirmed.

2.3 Streetlights power supply

The power to the new streetlights will be supplied from the new minisub.

2.4 Connection to existing streetlights

Not applicable.

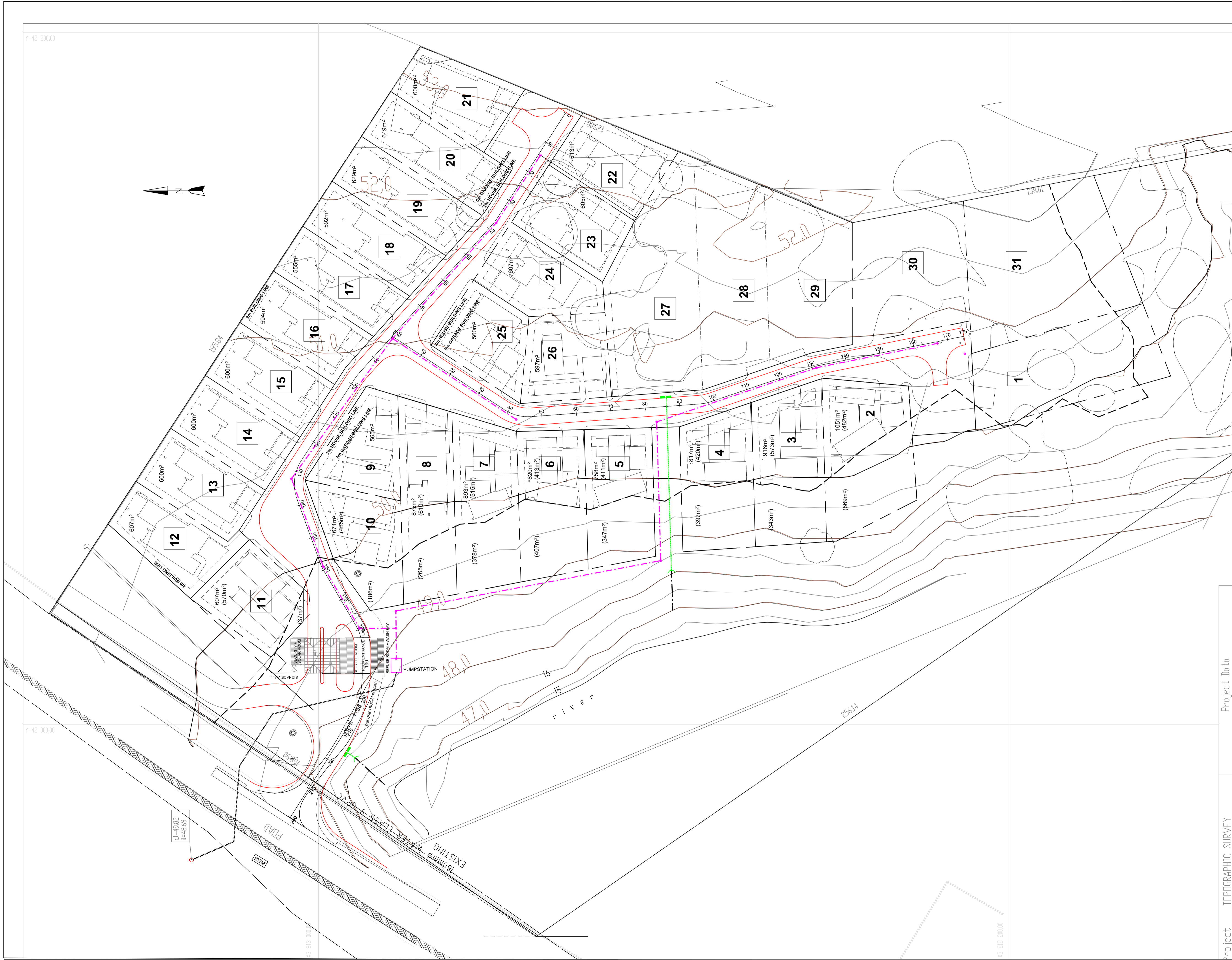
2.5 Connection/metering

A threephase meter, with a cell phone modem, will be installed by the private vendor in the proposed minisub.

Compiled by:



G J Bester Pr. Eng.
For Driger Consulting cc
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CONDITIONS:
THE COPYRIGHT IN THIS DRAWING, INCLUDING THE DESIGN AND DETAILS SHOWN HEREON, IS RESERVED BY THE ENGINEERS.
THIS DRAWING IS NOT TO BE USED IN WHOLE OR PART OTHER THAN FOR THE INTENDED PURPOSE AND PROJECT, AS DENIED IN THIS DRAWING. REFER TO THE CONTRACT FOR FULL TERMS AND CONDITIONS.

NOTES:
1. ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK. DISCREPANCIES TO BE REPORTED TO ENGINEER.
2. ALL WORK AND MATERIALS TO CONFORM TO THE RELEVANT SABS (SAR) SPECIFICATIONS.
3. THE ENGINEER TO BE PROVIDED WITH DENSITY TEST RESULTS ON SELECTED SUBGRADE, AND ALL CONSTRUCTION LAYERS.
4. CONTRACTOR TO CONTACT ALL SERVICE DEPARTMENTS AND CHECK THAT EXISTING SERVICES INDICATED ON THIS DRAWING ARE COMPLETE. POSITION AND DEPTH OF ALL SERVICES TO BE VERIFIED BY CAREFUL HAND EXCAVATIONS. SERVICES TO BE ADEQUATELY PROTECTED FROM DAMAGE TO THE FULL DURATION OF THE CONTRACT.
5. MANHOLE COVER LEVELS INDICATED ARE APPROXIMATE ONLY. COVERS AND FRAMES MUST BE SET TO LINES AND LEVELS TO SUIT FINISHED SURFACE LEVELS.
6. WHERE CLAY IS FOUND UNDER ROADS, THE CLAY IS TO BE REMOVED TO A MINIMUM DEPTH OF 450mm BELOW THE BOTTOM. ROAD LAYER AND REPLACED WITH SUITABLE MATERIAL AND COMPACTED TO THE ENGINEERS SPECIFICATIONS.
7. ALL WORK CARRIED OUT ON SITE TO BE DONE BY AN APPROVED CONTRACTOR, EXPERIENCED IN CIVIL ENGINEERING WORK.

GENERAL NOTES:

ROADS
EDGE OF ROAD
MOUNTABLE KERB - C&S
MOUNTABLE KERB M10
V-CURVE
EDGE OF E1
BARRIER KERBS - BK2 & C1
BARRIER KERBS - BK2

SEWER RETICULATION
NEW SEWER GRAVITY MAINS
150mm uPVC CLASS 3
SEWER HOUSE CONNECTION -
150mm uPVC CLASS 3
NEW SEWER FEMO MAINS
150mm uPVC CLASS 12
NEW SEWER MANHOLE
EXISTING SEWER MANHOLE

STORMWATER
DOUBLE CATCHPIT
SINGLE CATCHPIT
NEW STORMWATER MANHOLE
JUNCTION BOX
HEADWALL
375mm dia CONCRETE 1000
STORMWATER
450mm dia CONCRETE 1000
STORMWATER
STORMWATER CHANNEL

WATER RETICULATION
EXISTING WATER MAINS
150mm uPVC WATER MAINS CL 12
150mm uPVC WATER MAINS CL 12
NEW WATERHOUSE
CONNECTION
GATE VALVE
SCOUR VALVE
FIRE HYDRANT
AIR VALVE
END CAP
WATERMETER

DRAINAGE
BLUE DUCTS (150mm)
BLUE DUCTS (100mm)

Project Data

No	Date	Details	Revisions	Chd	Appd
0	30/04/2024	FOR INFORMATION ONLY		BS	AVDM

Client

Project

ERF 438 STANFORD

Description

PROPOSED SERVICES LAYOUT

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