

RUSTENBURG LOCAL MUNICIPALITY

RESORT DEVELOPMENT ON PORTION 2 OF THE FARM VAALKOP 76-JQ

SERVICES REPORT

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VAALKOP 76-JQ : SERVICES REPORT**

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VAALKOP 76-JQ : SERVICES REPORT**

1. INTRODUCTION

CIVILCONSULT Projects (Pty) Ltd was appointed by Derick Peacock of Derick Peacock Associates to compile a Services Report for Civil- and Electrical Engineering Services for the Resort Development on Portion 2 of the Farm Vaalkop 76-JQ.

For the purposes of this report, we will refer to the Resort Development on Portion 2 of the Farm Vaalkop 76-JQ as the Proposed Development.

2. PROFESSIONAL TEAM

The professional team is as follows :

Professional Discipline	Name of Company	Contact Person(s)
Client / Developer	Dream Hotels & Resorts	Clyde Keevy
Town Planner	Derick Peacock Associates	Derick Peacock
Electrical Engineer	CIVILCONSULT Projects (Pty) Ltd	Nico van der Merwe
Civil Engineer		Leon Wentzel / Stefan Henning

3. LOCATION OF DEVELOPMENT AND FLOOD LINES

The Proposed Development is located on Portion 2 of the Farm Vaalkop 76-JQ.

The Proposed Development is bounded by Portion 1 of the Farm Vaalkop 76-JQ to the north. The eastern boundary of the Proposed Development is formed by the Remainder of Portion 11 of the Farm Bulhoek 75-JQ, the southern boundary by Portion 3 of the Farm Klipkopspruit 127-JQ and the western boundary by the Remainder of Portion 1 of the Farm Klipplaat 77-JQ.

The Vaalkop Dam is located directly north of the Proposed Development. The Proposed Development will, to the best of our knowledge, be affected by the 1:50 and 1:100-year flood lines of the Vaalkop Dam.

We are of the opinion that the 1:50 and 1:100-year flood lines of the Vaalkop Dam have already been determined.

Refer to Annexure A, Drawing No. 2888/100/01/00 for a locality plan.

4. LAND USES

The existing- and proposed uses for the Proposed Development are shown in Tables 4.1 and 4.2 below.

Table 4.1 : Existing Uses

Portion	Zoning		Area (ha)	FAR / Coverage	Number of Units / / Room / m ²
Portion 2 of the Farm Vaalkop 76-JQ	Resort Development (30/12/1992)	Chalets	406.00	N/A	3 Units
		Tented Chalets			2 Units
		Lodge			26 Rooms
		Restaurant			180m ²
		Conference Facility			150m ²
		Spa			70m ²

Table 4.2 : Proposed Uses to be Developed

Portion	Zoning		Area (ha)	FAR / Coverage	Number of Units
Portion 2 of the Farm Vaalkop 76-JQ	Resort Development (30/12/1992)	Chalets	30.00	N/A	15
		Tented Chalets			6

5. GEOLOGICAL ASPECTS

A Geotechnical Report is currently not available for the Proposed Development.

6. TRAFFIC ASPECTS

A Traffic Impact Assessment is currently not available for the Proposed Development.

7. CIVIL ENGINEERING SERVICES

7.1 Design Standards

The design standards to be followed are in accordance with the standards specified in "The Guidelines for Human Settlement Planning and Design – The Neighbourhood Planning and Design Guide" (Red Book) published in 2000 by the Council for Scientific and Industrial Research (CSIR) and reprinted in 2005 and the Department of Water Affairs and Forestry, Technical Guidelines for the Development of Water and Sanitation Infrastructure, Second Edition (2004).

7.2 Design Software

The designs of the civil engineering services will be carried out with Technocad design programs.

7.3 Ownership of Services

The land owner and/or his successor in title will take over and be responsible for the maintenance of the internal services.

8. WATER

8.1 Estimated Water Demand

The estimated water demand for the Proposed Development is shown in Table 8.1 below.

Table 8.1 : Estimated Water Demand

Zoning		Existing and Additional Use for the Proposed Development		
		No. of Units / Rooms / m ²	Average Annual Daily Demand (AADD)	Water Demand (kℓ/d)
Resort Development Resort (30/12/1992)	Chalets	18 Units	0.90kℓ/unit	16.20
	Tented Chalets	8 Units		7.20
	Lodge	26 Rooms	0.60kℓ/unit	15.60
	Restaurant (±45 people)	180m ²	0.10kℓ/person	4.50
	Conference Facility	150m ²	0.30kℓ/100m ²	0.45
	Spa	70m ²	2.40kℓ/100m ²	1.68
Total				45.63

Note : Fire Flow not included

8.2 Water Supply

8.2.1 General

The Proposed Development falls within the water supply area of the Rustenburg Local Municipality (RLM).

Due to the rural location of the Proposed Development, no existing municipal water infrastructure is available in the vicinity of the Proposed Development.

We propose that water be supplied from the existing ground water sources and that the existing water infrastructure be utilized as an interim solution. The internal water reticulation could connect to a municipal water reticulation of the RLM once such a municipal water reticulation is in place.

The total estimated water demand for the Proposed Development is 16 654.95kℓ/annum or 45.63kℓ/d (refer to Table 8.1 above).

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.2 Existing Water Infrastructure

The existing water infrastructure located within the Proposed Development consist of the following :

- 5 x Equipped Boreholes
- 40mm Ø HDPE PN10 Rising Mains
- 5 x 10 000ℓ JoJo Raw Water Tanks
- 5 x 4 500ℓ JoJo Raw Water Tanks
- 3 Stage Water Filter and UV Light Exposure Unit
- 4.50bar Pressure Pump
- 50mm Ø HDPE PN12.5 Water Feeder Pipes
- 32mm Ø HDPE PN12.5 Water House Connections

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.3 Ground Water Sources

8.2.3.1 Existing Boreholes

Two (2) existing boreholes are located within the boundaries of the Proposed Development. Three (3) existing boreholes are located on the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ, ±2.64km south west of the Proposed Development. The Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ is owned and operated by the same owner / entity (Dream Hotels & Resorts) as the Proposed Development.

It is proposed that water be supplied from the five (5) existing boreholes with an anticipated combined yield of 206.76m³/d.

The two (2) existing boreholes located within the boundaries of the Proposed Development are both equipped with submersible pumps. The raw water is pumped from the boreholes to two (2) existing sets of raw water storage tanks via 40mm Ø HDPE PN10 rising mains.

The three (3) existing boreholes located the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ are also equipped with submersible pumps. These pumps however are not connected to any existing water reticulation.

A save yield borehole test was conducted by Northwest Water Services CC during September 2016 on BH1.1 and 1.2 and by Vastrap Pomp Dienste during May 2021 on BH2.1, BH2.2 & BH2.3. The recommended save yields for the existing boreholes are as follows :

- BH 1.1 = 0.35ℓ/s for 6 hours at a time
- BH 1.2 = 0.50ℓ/s for 12 hours at a time
- BH 2.1 = 0.97ℓ/s for 24 hours
- BH 2.2 = 0.65ℓ/s for 24 hours
- BH 2.3 = 0.83ℓ/s for 24 hours

It is recommended that the recovery time of existing BH1.1 & BH1.2 be at least 3 hours per day.

The recommended abstraction rates for the existing boreholes are shown in Table 8.2.3.1 below.

Table 8.2.3.2.1 : Recommended Abstraction Rates

Borehole Location	Borehole No.	Recommended Abstraction Rates		
		Scheduled Abstraction Rate (ℓ/s)	Abstraction Schedule (hours/day)	Abstraction Rate (kℓ/d)
Inside Proposed Development	BH 1.1	0.35	6	7.560
	BH 1.2	0.50	12	21.60
Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ	BH 2.1	0.97	24	84.00
	BH 2.2	0.65	24	21.60
	BH 2.3	0.83	24	72.00
Total		3.30		206.76

We are of the opinion that the five (5) existing submergible pumps being utilized for the ground water extraction from the existing boreholes be inspected to ensure it complies with the relevant standards and specification. Should it be found that the pumps do not comply, these existing pumps will have to be upgraded and or replaced in accordance with the relevant standards and specifications.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.4 Water Balance

The anticipated water balance for the Proposed Development is shown in Table 8.2.4 below.

Table 8.2.4 : Water Balance

Ground Water Source	Proposed Development	
	Source Delivery (ℓ/s)	Daily Water Supply (kℓ/d)
BH 1.1	0.35	7.560
BH 1.2	0.50	21.60
BH 2.1	0.97	84.00
BH 2.2	0.65	21.60
BH 2.3	0.83	72.00
Combined Daily Water Supply		206.76
Combined Daily Water Demand		45.63
Difference (- Shortfall; + Excess)		+161.13

Note: The Water Balance includes for domestic use only

It is clear from Table 8.2.4 above that sufficient water could be extracted from the five (5) existing boreholes in order to accommodate the estimated AADD of the Proposed Development.

8.2.5 General Authorization

According to the General Authorization legislation, the Proposed Development and the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ falls within the Department of Water and Sanitation (DWS) A22F quaternary drainage region and is entitled to abstract 45kℓ/ha/annum of ground water. The total volume of water that may be abstracted for the Proposed Development area is 18 270kℓ /annum or 50.05kℓ/d and for the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ is 13 876.65kℓ /annum or 38.01kℓ/d.

The estimated AADD is less than the allowable abstraction rate for the area of the Proposed Development. The delivering capacity of the existing two boreholes (BH1.1 & BH1.2) located within the Proposed Development will not be able to accommodate the AADD of the Proposed Development.

The extraction of ground water from the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ could be utilized to accommodate the required AADD of the Proposed Development.

We are of the opinion that no Water Use License Application (WULA) will have to be submitted to DWS for the Proposed Development as well as for the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ.

The ground water will have to be purified should it not conform to the standards and specifications of DWS.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.6 Estimated Fire Flow

The existing water infrastructure does not make provision for fire flow.

The fire flow requirements for the Proposed Development will be 15ℓ/s for a 2-hour period according to the standards and specification of the Department of Water Affairs and Forestry, Technical Guidelines for the Development of Water and Sanitation Infrastructure, Second Edition (2004).

The required fire flow water storage for the Proposed Development is 108.00kℓ. It is proposed that an additional 108.00kℓ water storage facility i.e. swimming pool, river and/or dam, be provided in order to accommodate the required fire flow.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.7 Storage Capacity

8.2.7.1 Raw Water Storage

Two (2) sets of raw water storage tanks are currently being utilized for the Proposed Development.

The two (2) sets of raw water storage tanks are as follows :

- 5 x 10 000ℓ Storage Tanks = 50 000ℓ raw water storage capacity (50.00kℓ)
- 5 x 4 500ℓ Storage Tanks = 22 500ℓ raw water storage capacity (22.50kℓ)

The total existing raw water storage capacity for the Proposed Development is 72.5kℓ.

According to the standards and specification of the Department of Water Affairs and Forestry, Technical Guidelines for the Development of Water and Sanitation Infrastructure, Second Edition (2004) the minimum raw water storage required when pumping from a single source is 48hours Average Annual Daily Demand (AADD).

Based on the estimated AADD the raw water storage required for the Proposed Development is 91.26kℓ. The existing raw water storage tanks does not have sufficient storage capacity and it is proposed that additional storage tanks be installed to acquire a minimum storage capacity of 91.26kℓ.

Furthermore, it is proposed that a 4.5kℓ (2-hour Average Annual Daily Demand (AADD)) elevated storage tank be erected on the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ. The ground water extracted from the existing three (3) boreholes will be pumped into this proposed elevated storage tank and will gravitate to the proposed 48hours Average Annual Daily Demand raw water storage tanks located within the Proposed Development.

A new 2m wide servitude will have to be registered over the affected properties where the proposed gravity pipe from the Remainder of Portion 1 of the Farm Klipkopspruit 127-JQ to the Proposed Development will be installed.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.7.2 Clean Water Storage

The current configuration of the domestic water supply within the Proposed Development is gravity fed from the existing raw water storage tanks to the existing water filtration unit and then directly boosted into the existing water reticulation with an existing 4.5bar (45m head) booster pump.

This existing configuration will have to be adjusted in order to incorporate clean water storage tanks for the Proposed Development. It is proposed that clean water storage tanks be implemented between the existing water filtration unit and existing booster pump.

According to the standards and specification of the Department of Water Affairs and Forestry, Technical Guidelines for the Development of Water and Sanitation Infrastructure, Second Edition (2004) the minimum clean water storage required 48 hours AADD.

Based on the estimated AADD the clean water storage required for the Proposed Development is 91.26kℓ. It is proposed that clean water storage tanks be installed with a minimum storage capacity of 91.26ℓ.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.8 Water Filtration Unit

An existing 3 stage water filter and UV light exposure unit is currently being used for the purification of the extracted ground water.

It is proposed that the existing water filtration unit be inspected to verify whether it complies with the relevant standards and specifications as well as whether it will be able to filter the estimated AADD for the Proposed Development.

Should it be found that the existing water filtration unit cannot filter the estimated AADD of the Proposed Development and or does not comply with the relevant standards and specifications, it will have to be upgraded / replaced in order to comply.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.9 Booster Pump Station

An existing booster pump (4.5bar – 45m head) is currently utilized for the Proposed Development. This existing booster pump will have to be relocated / reconfigured to receive water from the proposed clean water reservoirs to be installed instead of directly from the existing water filtration unit it is currently operating from.

It is proposed that the existing booster pump be inspected to verify whether it will comply with the relevant design standards and specifications (domestic and fire flow). Should it be found that the existing booster pump does not comply it will have to be replaced / upgraded accordingly.

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.2.10 Pipe Diameters

The existing water distribution reticulation within the Proposed Development consist of 32mm, 40mm & 50mm Ø HDPE PN12.5 water pipes and isolating valves. It is however proposed that the existing water distribution reticulation be upgraded in order to accommodate the AADD and peak factors for the Proposed Development as well as the required fire flow conditions.

The reticulation pipes will be typically 75mm Ø, 110mm Ø and 160mm Ø (specifically if designed for fire flow).

Refer to Annexure B, Drawing No. 2888/200/01/01 to 2888/200/03/01 for details.

8.3 Water Design Criteria

The design criteria to be used and to analyse and design the water network are indicated in Table 8.3 below.

Table 8.3 : Water Design Criteria

Item No.	Design Element		Criteria
1.	Average Annual Daily Demand (AADD) for the Proposed Development		Refer to Table 8.1 above
2.	Design Loss Factor (LF)		10%
3.	Gross Average Annual Daily Demand (GAADD)		$(1 + LF) \times AADD$
4.	Instantaneous Peak Factor (IPF)		6.00
5.	Design Peak Flow Rate (DPFR) for the Proposed Development		$GAADD \times IPF$
6.	Maximum static head		90m
7.	Minimum residual head under conditions of residential and commercial peak flow		20m
8.	Maximum linear flow velocity under conditions of residential and commercial peak flow		1.5m/s
9.	Pipe type		HDPE / uPVC pipes
10.	Minimum pipe class		PE100 PN12.5 / Class 12
11.	Total fire flow		15ℓ/s
12.	Fire flow at any one hydrant under the condition of residential and commercial peak flow		15ℓ/s
13.	Minimum residual head (fire plus residential and commercial peak flow)		10m
14.	Maximum linear flow velocity under conditions of fire-fighting		2.2m/s
15.	Boundary roughness (K-Value)		0.1mm
16.	Available static head under fire flow conditions		To be Confirmed
17.	Flow formulae		D'Arcy Weissbach
18.	Minimum pipe diameter	Fire Flow	110mm
		Domestic Use	50mm

9. SANITATION

9.1 Estimated Sewage Flow

The estimated sewage flow for the Proposed Development is shown in Table 9.1 below.

Table 9.1 : Estimated Sewage Flow

Zoning		Existing and Additional Use for the Proposed Development		
		No. of Units / Rooms / m ²	Average Annual Daily Flow (AADF)	Sewage Flow (kℓ/d)
Resort Development (30/12/1992)	Chalets	18 Units	0.84kℓ/unit	15.12
	Tented Chalets	8 Units		6.72
	Lodge	26 Rooms	0.42kℓ/unit	10.92
	Restaurant (±45 people)	180m ²	0.07kℓ/person	3.15
	Conference Facility	150m ²	0.21kℓ/100m ²	0.315
	Spa	70m ²	1.68kℓ/100m ²	1.176
Total				37.401

Note : AADF bases on 70% of AADD

9.2 Existing Sewerage Infrastructure

9.2.1 General

Due to the rural location of the Proposed Development, no formal municipal sanitation infrastructure is located in the vicinity of the Proposed Development.

A number of existing French Drains with soak away pits have already been constructed throughout the Proposed Development. Each existing unit / facility has its own French Drain with soak away pit and is currently functional with no obvious problems.

RLM will unfortunately not approve of the existing French Drains and soak away pits currently utilized for the Proposed Development.

Refer to Annexure B, Drawing No. 2888/300/01/00 for details.

9.3 Proposed Sewerage Infrastructure

9.3.1 General

Due to the nature and size of the Proposed Development the installation of a waterborne sewage system will not be feasible. It is therefore proposed that single facility / house units with soakaway systems, package plants and sewage treatment facilities be constructed.

Refer to Annexure B, Drawing No. 2888/300/01/00 for details.

9.3.2 Water Use License Application

The Proposed Development is situated within the quaternary catchment areas as per Table 3.3 in Paragraph 3.4 of Section 21(f) of the General Authorization. Wastewater up to 2000m³ may therefore be discharged on any given day provided that the discharge –

- a) comply with the special wastewater limits values set out in Table 3.1
- b) does not alter the natural ambient water temperature of the receiving water resource by more than 2 degrees Celsius; and
- c) is not a complex industrial wastewater

9.4 Internal Sewerage Reticulation

9.4.1 Sewerage Reticulation Design Criteria

The design criteria used to design the sewage reticulation are indicated in Table 9.4.1 below.

Table 9.4.1 : Sewerage Reticulation Design Criteria

Item No.	Design Element	Criteria
1.	Average Annual Daily flow for the Proposed Development	Refer to Table 9.1 below
2.	Peak Factor	2,5
3.	Allowance for infiltration	15%
4.	Capacity of Sewer	Pipes may run full at the Total Design Flow, which includes the peak and infiltration flows
5.	Sewer pipe type	PVCu Maincore Class 400
6.	Minimum velocity	0,6m/s
7.	Minimum pipe diameter	110mm
8.	Minimum depth of cover	1,0m

10. STORM WATER DRAINAGE

10.1 Storm Water System

Storm water run-off from the Proposed Development will be collected in open channels adjacent to the roads from where it will be discharged into the open veld. The open channels will also serve to attenuate the storm water by decreasing the run-off speed. Storm water pipes will be installed where open channels are not practical and at road crossings.

The internal storm water system will be designed for a 1:5-year flood return period and a run-off coefficient of 80% ($C = 0.8$) will be allowed for the Proposed Development.

The storm water outlet structures will have energy breakers at the outlets to minimize the possibility of erosion at the point of discharge.

10.2 Hydrology

10.2.1 General

Hydrological data that will be used in the design of the storm water drainage system for the Proposed Development is summarized in Table 10.2.1 below.

Hydrological data used in the calculation of flood peaks are summarized in Table 10.2.1 below.

Table 10.2.1 : Hydrological Data

Hydrological Data	
a) Flood return period	1:5 years for storm water road systems
	1:25 years for the combined storm water pipe and road systems
	1:100 years for culvert watercourse crossings
b) Average yearly rainfall	±584.00mm
c) Minimum time of concentration and run-off co-efficient according to : "The Guidelines for Human Settlement Planning and Design" (Red Book)	
d) Design method	Rational method for smaller catchment areas

10.3 Design Standards

Table 10.3 lists the standards to be used in the design of the storm water drainage system.

Table 10.3 : Storm water Design Standards

Design Element	Specification
a) Minimum pipe size	300mm diameter
b) Pipe Type	Interlocking Joint Pipes Pipe Class : 50D 100D road crossings
c) Minimum pipe gradient	0,50%
d) Storm water details	According to "The Guidelines for Human Settlement Planning and Design" (Red Book)

11. ROADS

11.1 Access to the Development

Access is currently gained from an existing gravel road, directly west of the Proposed Development. This existing gravel road intersects two (2) farm portions (The Remainder of Portion 3 of the Farm Klipplaat 77-JQ and the Remainder of Portion 77 of the Farm Klipplaat 77-JQ) from west to south up to the eastern boundary of the Proposed Development.

The RLM could require that a Right of Way servitude be registered over the two affected farm portions.

An unknown gravel road links the existing access gravel road to the R556, located approximately 16.53km south west of the Proposed Development.

No roads master plan for the area is currently available.

Refer to Annexure B, Drawing No. 2888/400/01/00 for details.

11.2 Functional Classification of Roads

The functional classifications of roads are shown in Table 11.2 below.

Table 11.2 : Functional Classification of Roads

Description	Class No.	Function
R556	Class 3	District Distributor
Existing unknown Link Gravel Road	-	Access Collector
Existing Access Road	Class 5b	Residential Access Collector

11.3 Pavement Design

The proposed pavement designs are based on anticipated traffic volumes and ground conditions.

The pavement designs proposed are shown in Table 11.3 below.

Table 11.3 : Gravel Access Road (5d)

Wearing Course	N/A
Base	150mm thick natural gravel compacted to 95% of modified AASHTO density. Minimum CBR = 25 at 95% of modified AASHTO density. Treated with PERMA-ZYME 11X – G6 (in-situ or imported)
Fill (where required)	150mm thick layers compacted to 93% of modified AASHTO density. Minimum CBR = 7 at 93% of modified AASHTO density – G9

12. SOLID WASTE DISPOSAL

12.1 Volume of Solid Waste

The estimated volume of solid waste to be generated by the Proposed Development on a weekly basis is shown in Table 12.1 below.

Table 12.1 : Estimated Volume of Solid Waste

Zoning		No. of Units / Rooms / m ²	Volume / Week (m ³)
Resort Development (30/12/1992)	Chalets	18 Units	2.70
	Tented Chalets	8 Units	1.20
	Lodge	26 Rooms	3.90
	Restaurant (±45 people)	180m ²	6.70
	Conference Facility	150m ²	0.75
	Spa	70m ²	1.00
Total			16.25

- 12.2 The collection of solid waste within the Proposed Development will be carried out by the land owner and/or his successor in title. Adequate protection will be erected around the collection points of the solid waste to ensure minimal damage is caused by and to the wildlife roaming in the area.
- 12.3 Solid waste production at all sources should be minimised. The re-using, recycling and composting of these products should be maximized. Most of the waste material (bottles, newspapers, aluminium cans, and magazine and office paper) is recyclable.
- 12.4 The unusable solid waste will be transported from the Proposed Development to a transfer station or solid waste disposal site of the RLM, by the land owner and/or his successor in title who might appoint a private company for this purpose.

13. ELECTRICAL ENGINEERING SERVICES

13.1 Introduction

The Proposed Development is supplied with electricity from the Eskom Power Supply Network.

The external network design will adhere to Eskom's standards and requirements.

Other standards to which the electrical design will adhere to include the relevant SABS safety and equipment standards, as well as the NRS 048 Quality of Supply Standard.

13.2 Estimated Maximum Demand

The total estimated maximum demand of the Proposed Development is shown in Table 13.2 below.

Table 13.2 : Estimated Maximum Demand

Zoning		Existing and Additional Use of the Proposed Development		
		No. of Units / Rooms / Floor Area (m ²)	Unit Load Assumption (kVA / Unit or VA/m ²)	Load (kVA)
Resort Development (30/12/1992)	Chalets	18	6	108.0
	Tented Chalets	8	6	48.0
	Lodge	26	5	130.0
	Restaurant (+45 people)	180m ²	80VA/m ²	14.4
	Conference Facility	150mm ²	80VA/m ²	12.0
	Spa	70mm ²	80VA/m ²	5.6
Total				318.0

13.3 Estimated Maximum Demand with reduced supply from Eskom

Due to the shortage of electrical capacity in South Africa and the focus on energy saving, it is a requirement that new developments make use of energy saving methods. Energy saving requirements forms part of the agreement with Eskom. The required capacity could therefore be reduced by replacing the electrical stove plates of each individual unit with gas, heating the water with solar or gas and using energy saving lights. The electrical demand of an individual unit could be reduced as shown in Tables 13.3.1 and 13.3.2.

Table 13.3.1 : Estimated Maximum Demand with Conventional Electrical Appliances (Chalets)

Estimated ADMD (After Diversity Maximum Demand) per Dwelling before Alternative Energy					
Appliance	Quantity	Load/ Appliance (kVA)	Contribution to the Maximum Demand	Estimated Connected Load (kVA)	ADMD Load (kVA)
Geyser	1	4	100%	4.0	1.3
Lights	22	0.06	70%	0.9	0.3
Heater/ AC	2	1.6	70%	2.2	0.7
Television	1	0.3	100%	0.3	0.1
Decoder	1	0.2	100%	0.2	0.1
Computer	2	0.35	40%	0.3	0.1
Stove Plates	4	1.2	70%	3.4	1.1
Oven	1	3.5	50%	1.8	0.6
Fridge	1	0.75	60%	0.5	0.2
Freezer	1	0.5	50%	0.3	0.1
Kettle	1	1.25	50%	0.6	0.2
Microwave	1	1.8	50%	0.9	0.3
Washing Machine	1	3	15%	0.5	0.2
Clothing Iron, etc.	1	0.85	10%	0.2	0.1
Total				15.9	5.3

Table 13.3.2 : Estimated Reduced Maximum Demand with Gas Alternatives and Energy Efficient Equipment (Chalets)

Estimated ADMD per Dwelling (Gas stoves, gas or solar geysers and energy saver Lights)					
Appliance	Quantity	Load/ Appliance (kVA)	Contribution to the Maximum Demand	Estimated Connected Load (kVA)	ADMD Load (kVA)
Geyser	0	4	100%	0.0	0.0
Lights	22	0.015	70%	0.2	0.1
Heater/ AC	2	1.6	80%	2.6	0.9
Television	1	0.2	100%	0.2	0.1
Decoder	1	0.2	100%	0.2	0.1
Computer	2	0.35	40%	0.3	0.1
Stove Plates	0	1.2	70%	0.0	0.0
Oven	0	3.5	50%	0.0	0.0
Fridge	1	0.75	60%	0.5	0.2
Freezer	1	0.5	50%	0.3	0.1
Kettle	1	1.25	50%	0.6	0.2
Microwave	1	1.8	50%	0.9	0.3
Washing Machine	1	3	15%	0.5	0.2
Clothing Iron	1	0.85	10%	0.1	0.0
Total				6.2	2.1

Table 13.3.3 shows the total estimated reduced demand of the Proposed Development if the abovementioned restrictions and changes are implemented. The kVA per unit used for the residential units, allows for a safety margin in the event that not all possible energy saving methods are implemented.

Table 13.3.3 : Estimated Reduced Maximum Demand

Zoning		Proposed Development		
		No. of Units / Rooms / Floor Area (m ²)	Unit Load Assumption (kVA / Unit or VA/m ²)	Load (kVA)
Resort Development (30/12/1992)	Chalets	18	5	90.0
	Tented Chalets	8	5	40.0
	Lodge	26	4	104.0
	Restaurant (+45 people)	180m ²	80VA/m ²	14.4
	Conference Facility	150mm ²	80VA/m ²	12.0
	Spa	70mm ²	80VA/m ²	5.6
Total				266.0

13.4 External Supply Network

The Proposed Development is supplied by 2 x 200kVA Eskom bulk supply points.

The one 200kVA supply point provides power to the Lodge, Restaurant, Conference Facility and the Spa. This Eskom supply capacity is adequate for the required capacity.

The other 200kVA supply point will provide power to the Chalets and the Tented Chalets. This bulk supply will be adequate for the required capacity.

13.5 Bulk Metering

Bulk metering is to be done by Eskom inside the metering board at the 2 x bulk supply points.

13.6 Internal Reticulation

The following is proposed :

- install a 400/3.3kV step-up transformer near the 200kVA Eskom supply
- install a 3.3kV/400V step-down transformer near the Tented Camp
- install a 10mm² Armadac cable from the step-up transformer up to the step-down transformer
- install 70mm², 4-core, low voltage, copper cables from the step-down transformer to the Tented Chalets

13.7 Area Lighting

Not applicable

14. BULK SERVICES CONTRIBUTIONS AND DEVELOPMENT CHARGES

The property owner is providing all the civil engineering services for the Proposed Development.
No Bulk Services Contributions will be payable.

No Bulk Services Contributions will be payable to Eskom.

15. CONCLUSION

We trust that the above report meets with your requirements. Please contact us should you require any additional information.

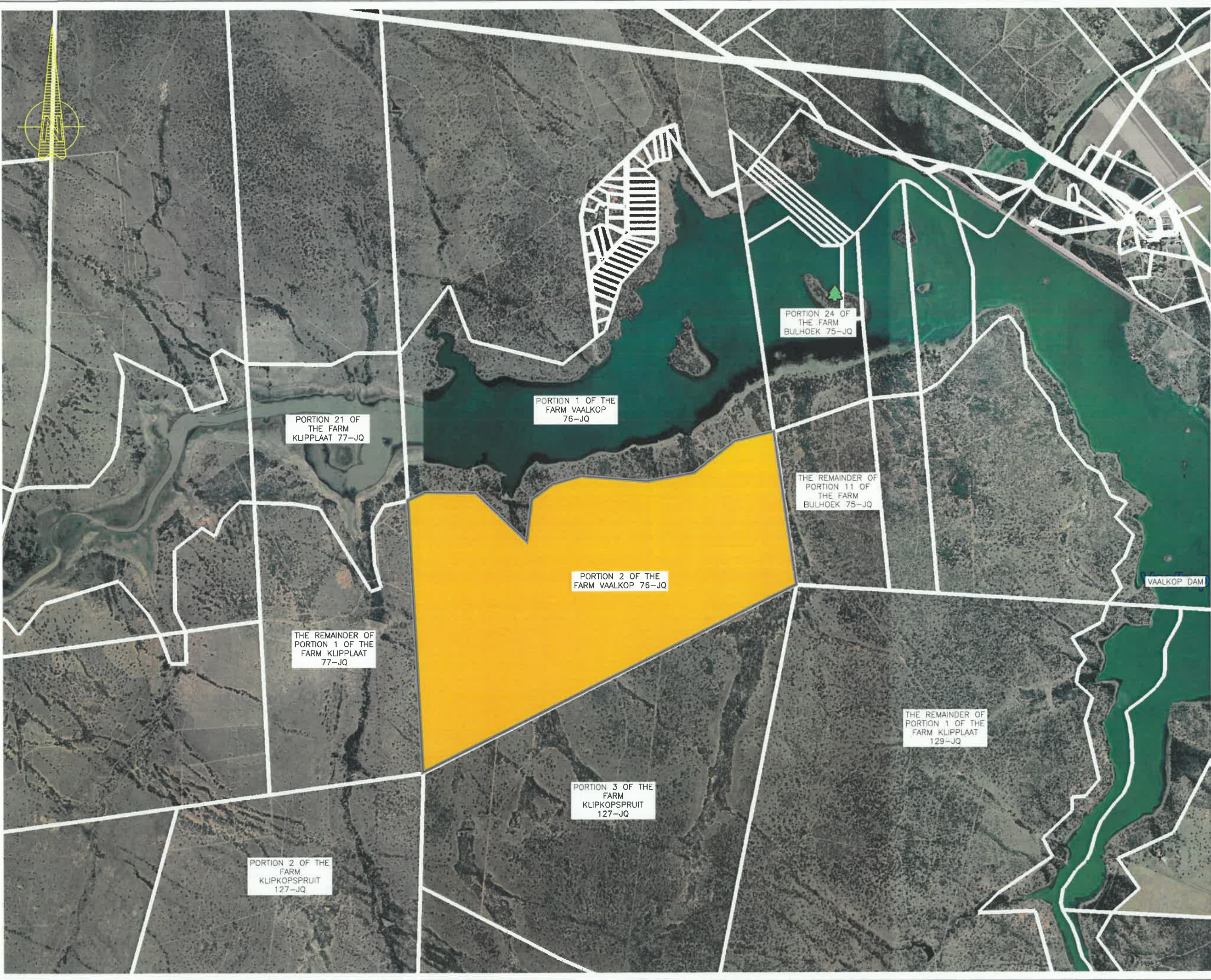


.....
Leon Wentzel
for CIVILCONSULT Projects (Pty) Ltd

15/06/2021
.....
Date

ANNEXURE A

LOCALITY PLAN



NOTES / NOTAS

DEVELOPMENT BOUNDARY

PROPOSED DEVELOPMENT

REFERENCE / VERWYSINGS

Rustenburg
Local Municipality

PO BOX 16
RUSTENBURG
0300

Tel 014 590 3111
Fax 014 5903006

CLIENT / KLIANT

DREAM
MOTORHOMES

310 MAIN ROAD
BRYANSTON
2191

Tel 011-267 8300
Fax -

CIVILCONSULT
Consulting Engineers

PO BOX 12645
HATFIELD
0028

Tel 012 343 6297 / 0845
Fax 012 343 8929 / 086 583 6249
mail@civilconsult.co.za

ENGINEER : L. WENTZEL

DESIGN : TRACED

DRAWN : S.S. HENNING

CHECKED : NAGESSEN

PROJECT / PROJEK

PORTION 2 OF THE FARM
VAALKOP 76-JQ

DRAWING TITLE / TEKENINGSTITEL

LOCALITY PLAN

DATE : JANUARY 2021

SCALE : N.T.S.

REVISION / WYIGING			
No.	DATE	INITIAL	DESCRIPTION
Nr.	DATUM	VOORL.	BESKRYWING

CC DWG. NO./OCC. NR.	FILE NO./LER. NR.
2888/100/01/00	
CLIENT DWG. NO./KLIANT. NR.	FILE NO./LER. NR.
--	-

ANNEXURE B

ENGINEERING LAYOUT DRAWINGS



- NOTES / NOTAS
- DEVELOPMENT BOUNDARY
 - EXISTING BOREHOLE POSITION
 - EXISTING RAW WATER STORAGE TANK
 - EXISTING 3 STAGE WATER TREATMENT FACILITY
 - EXISTING BOOSTER PUMP
 - EXISTING VALVE
 - EXISTING 40mmØ RISING MAIN
 - EXISTING 50mmØ DISTRIBUTION PIPE
 - PROPOSED WATER PIPE
 - PROPOSED CLEAN WATER RESERVOIR
 - EXISTING 32mmØ WATER HOUSE CONNECTION
 - PROPOSED 32mmØ WATER HOUSE CONNECTION

REFERENCE / VERWYSINGS

Rustenburg
Local Municipality

PO BOX 16
RUSTENBURG
0300

Tel 014 590 3111
Fax 014 5903006

CLIENT / KLIËNT

DREAM
PROPERTY DEVELOPERS

310 MAIN ROAD
BRYANSTON
2191

Tel 011-267 8300
Fax -

CIVILCONSULT
Consulting Engineers

PO BOX 12645
HAYFIELD
0028

Tel 012 343 6297 / 0845
Fax 012 343 8929 / 086 583 6249
mail@civilconsult.co.za

ENGINEER / INGENIEUR	: L. WENTZEL	
DESIGN / ONTWERP	: S.S. HENNING	TRACED / NAGETREK :
DRAWN / GETEKEN	: S.S. HENNING	CHECKED / NAGESKED :

PROJECT / PROEKT

CONSENT USE ON PORTION 2 OF
THE FARM VAALKOP 76-JQ

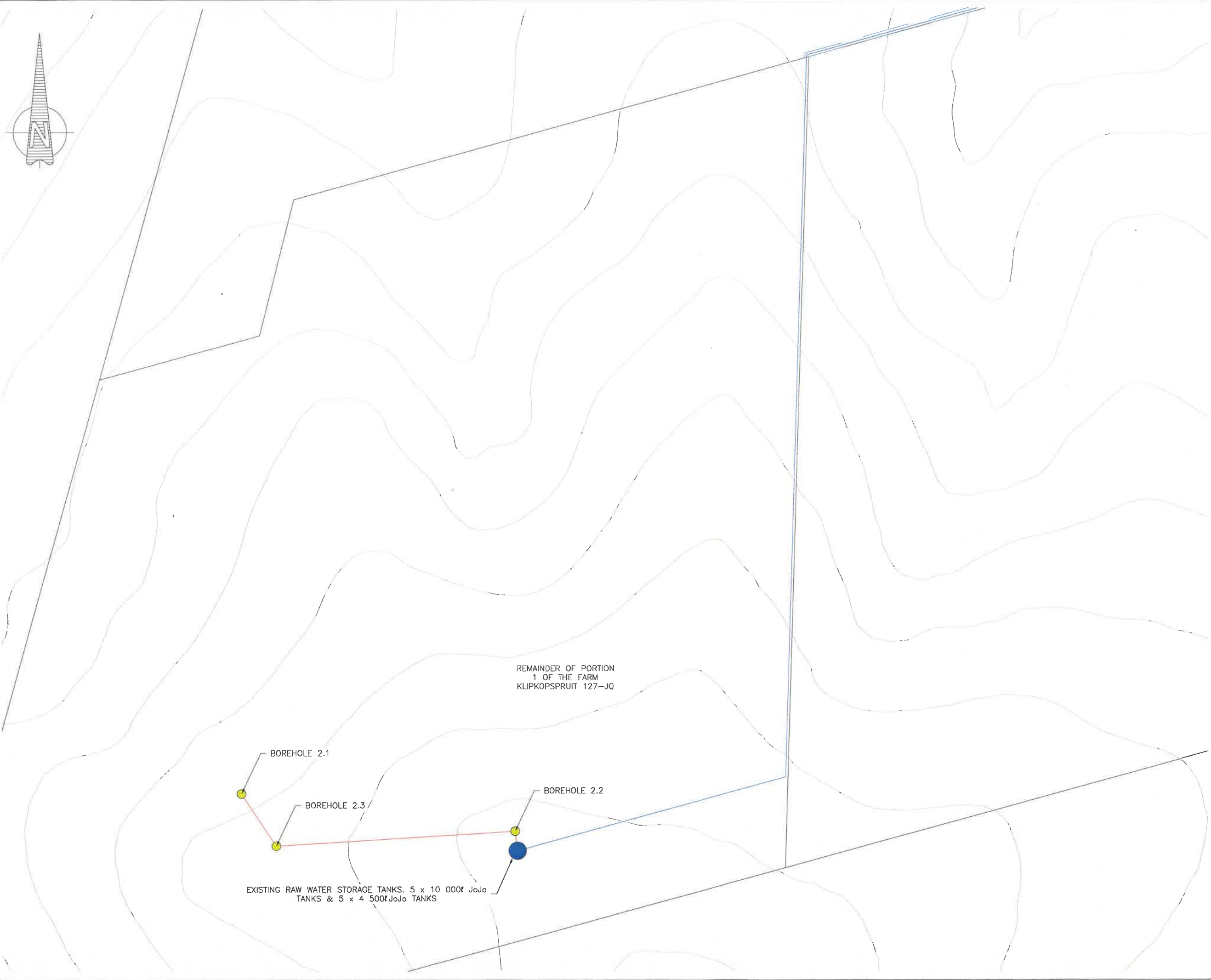
DRAWING TITLE / TEKENINGSTITEL

WATER RETICULATION:
GENERAL LAYOUT
SHEET 1 OF 3

DATE : MAY 2021
DATUM :
SCALE : 1:20 000
SKALA :

REVISION / WYSIGING			
No.	DATE / DATUM	INITIAL / VOORL.	DESCRIPTION / BESKRYWING

CC DWG. NO./CC TEK. NR.	FILE NO./Lêër NR.
2888/200/01/01	
CLIENT DWG. NO./Klant TEK. NR.	FILE NO./Lêër NR.
--	-



- NOTES / NOTAS
- DEVELOPMENT BOUNDARY
 - EXISTING BOREHOLE POSITION
 - EXISTING RAW WATER STORAGE TANK
 - EXISTING 3 STAGE WATER TREATMENT FACILITY
 - EXISTING BOOSTER PUMP
 - EXISTING VALVE
 - EXISTING 40mmØ RISING MAIN
 - EXISTING 50mmØ DISTRIBUTION PIPE
 - PROPOSED WATER PIPE
 - PROPOSED CLEAN WATER RESERVOIR
 - EXISTING 32mmØ WATER HOUSE CONNECTION
 - PROPOSED 32mmØ WATER HOUSE CONNECTION

REFERENCE / VERWYSINGS



Rustenburg
Local Municipality

PO BOX 16
RUSTENBURG
0300

Tel 014 590 3111
Fax 014 5903006

CLIENT / KLANT



DREAM
"DREAMS ARE REAL"

310 MAIN ROAD
BRYANSTON
2191

Tel 011-267 8300
Fax -

CIVILCONSULT
Consulting Engineers

PO BOX 12645
HATFIELD
0028

Tel 012 343 6297 / 0845
Fax 012 343 8929 / 086 583 6249
mail@civilconsult.co.za

ENGINEER	: L. WENTZEL
DESIGN	: S.S. HENNING
ORIGINATOR	: S.S. HENNING
DRAWN	: S.S. HENNING
CHECKED	: S.S. HENNING

PROJECT / PROEKS

CONSENT USE ON PORTION 2 OF THE FARM VAALKOP 76-JQ

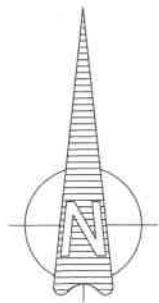
DRAWING TITLE / TSKENNINGSTITEL

WATER RETICULATION:
GENERAL LAYOUT
SHEET 2 OF 3

DATE : MAY 2021
DATUM :
SCALE : 1:4 000
SKAAL :

REVISION / WYSIGING			
No.	DATE	INITIAL	DESCRIPTION
Nr.	DATUM	VOORL.	BESKRYWING

CC DWG. NO./CC TSK. NR.	FILE NO./LIER NR.
2888/200/02/00	
CLIENT DWG. NO./KLANT TSK. NR.	FILE NO./LIER NR.



PORTION 21 OF THE
FARM KLIPPLAAT
77-JQ

PORTION 1 OF THE FARM
VAALKOP 76-JQ

EXISTING 50mmØ HDPE PN12.5
FEEDER WATER RETICULATION

EXISTING 40mmØ CLASS
10 HDPE RISING MAINS

BOREHOLE 1.2

PORTION 2 OF THE FARM
VAALKOP 76-JQ

EXISTING 4.50 BAR
PRESSURE PUMP

EXISTING 3 STAGE WATER FILTER AND
UV LIGHT EXPOSURE UNIT

EXISTING RAW WATER STORAGE TANKS. 5 x 10 000l JoJo
TANKS & 5 x 4 500l JoJo TANKS

PROPOSED CLEAN WATER RESERVOIRS TO BE
INSTALLED (DOMESTIC AND FIRE FLOW USE)

PORTION 3 OF THE FARM
KLIPKOPSPRUIT 127-JQ

NOTES / NOTAS

- DEVELOPMENT BOUNDARY
- EXISTING BOREHOLE POSITION
- EXISTING RAW WATER STORAGE TANK
- EXISTING 3 STAGE WATER TREATMENT FACILITY
- EXISTING BOOSTER PUMP
- EXISTING VALVE
- EXISTING 40mmØ RISING MAIN
- EXISTING 50mmØ DISTRIBUTION PIPE
- PROPOSED WATER PIPE
- PROPOSED CLEAN WATER RESERVOIR
- EXISTING 32mmØ WATER HOUSE CONNECTION
- PROPOSED 32mmØ WATER HOUSE CONNECTION

REFERENCE / VERWYBINGS



PO BOX 16
RUSTENBURG
0900

Tel 014 590 3111
Fax 014 5903006

CLIENT / KLIANT



310 MAIN ROAD
BRYANSTON
2191

Tel 011-267 8300
Fax -

CIVILCONSULT
Consulting Engineers

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HATFIELD
0028

Tel 012 343 6297 / 0845
Fax 012 343 8929 / 086 583 6249
mail@civilconsult.co.za

ENGINEER : L. WENTZEL

DESIGN : S.S. HENNING

TRACED

DRAWN : S.S. HENNING

CHECKED

PROJECT / PROEKS

CONSENT USE ON PORTION 2 OF
THE FARM VAALKOP 76-JQ

DRAWING TITLE / TEGENINGSKOP

WATER RETICULATION:
GENERAL LAYOUT
SHEET 3 OF 3

DATE : MAY 2021
DATUM :
SCALE : 1:4 000
SKALA :

REVISION / WYBIEKING			
No.	DATE	INITIAL	DESCRIPTION
Nr.	DATUM	VOORL.	BESKRYWING

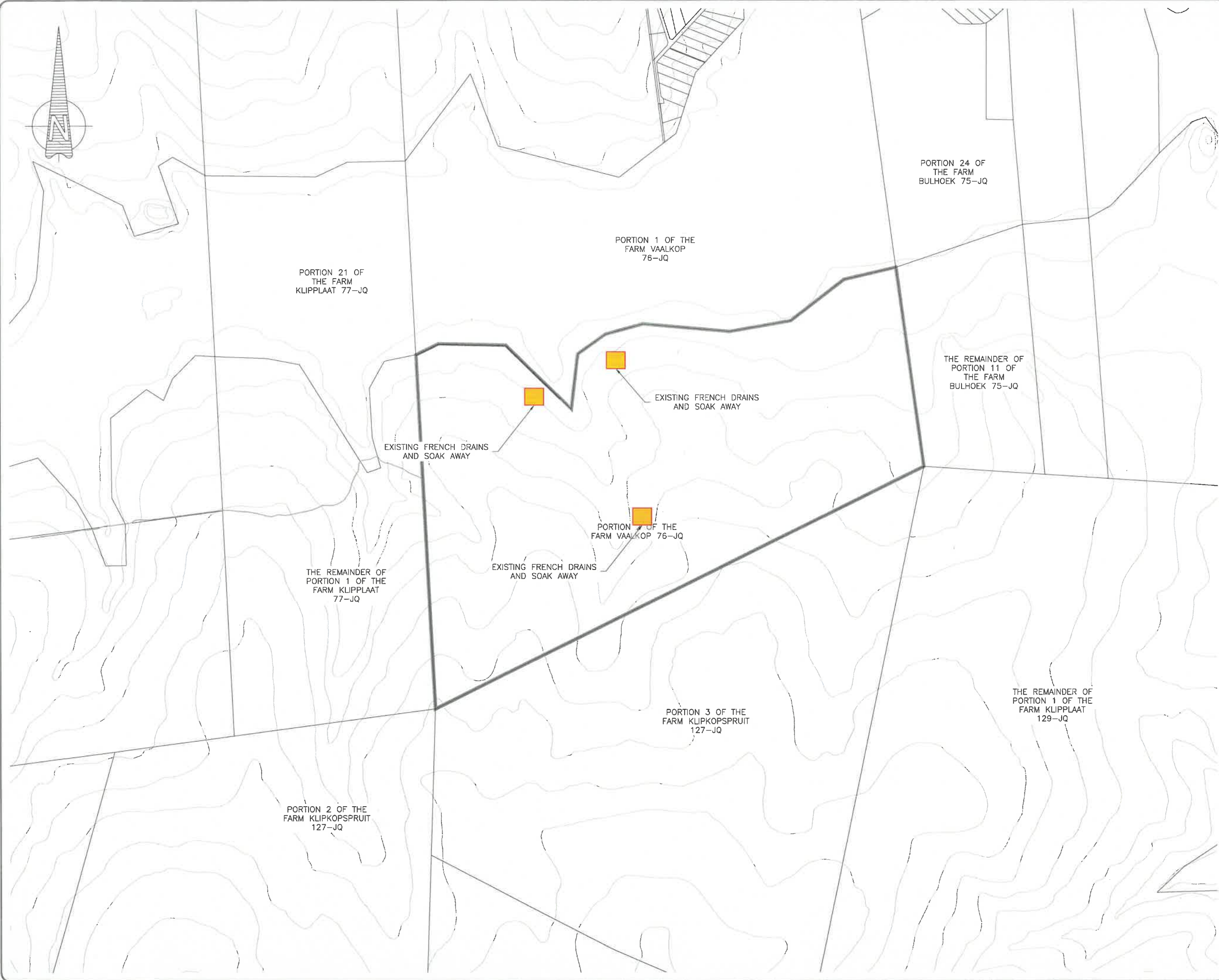
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2888/200/03/01

FILE NO./LIER NR.

CLIENT DWG. NO./KLIANT TSK. NR.

FILE NO./LIER NR.

2888/200/03/01



NOTES / NOTAS

DEVELOPMENT BOUNDARY

EXISTING FRENCH DRAINS & SOAK AWAY

REFERENCE / VERWYSINGS

Rustenburg
Local Municipality

PO BOX 16
RUSTENBURG
0300

Tel 014 590 3111
Fax 014 590 3006

CLIENT / KLIANT

DREAM

310 MAIN ROAD
BRYANSTON
2191

Tel 011-267 8300
Fax -

CIVILCONSULT
Consulting Engineers

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0028

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Fax 012 343 8929 / 086 583 6249
email@civilconsult.co.za

ENGINEER / INGENIEUR : L. WENTZEL

DESIGN / ONTWERP : S.S. HENNING

DRAWN / GETEKEN : S.S. HENNING

TRACED / NAGETREK :
CHECKED / NAGESKIE :

PROJECT / PROEKT

CONSENT USE ON PORTION 2 OF THE FARM VAALKOP 76-JQ

DRAWING TITLE / TEKENINGTITEL

SEWER RETICULATION:
GENERAL LAYOUT

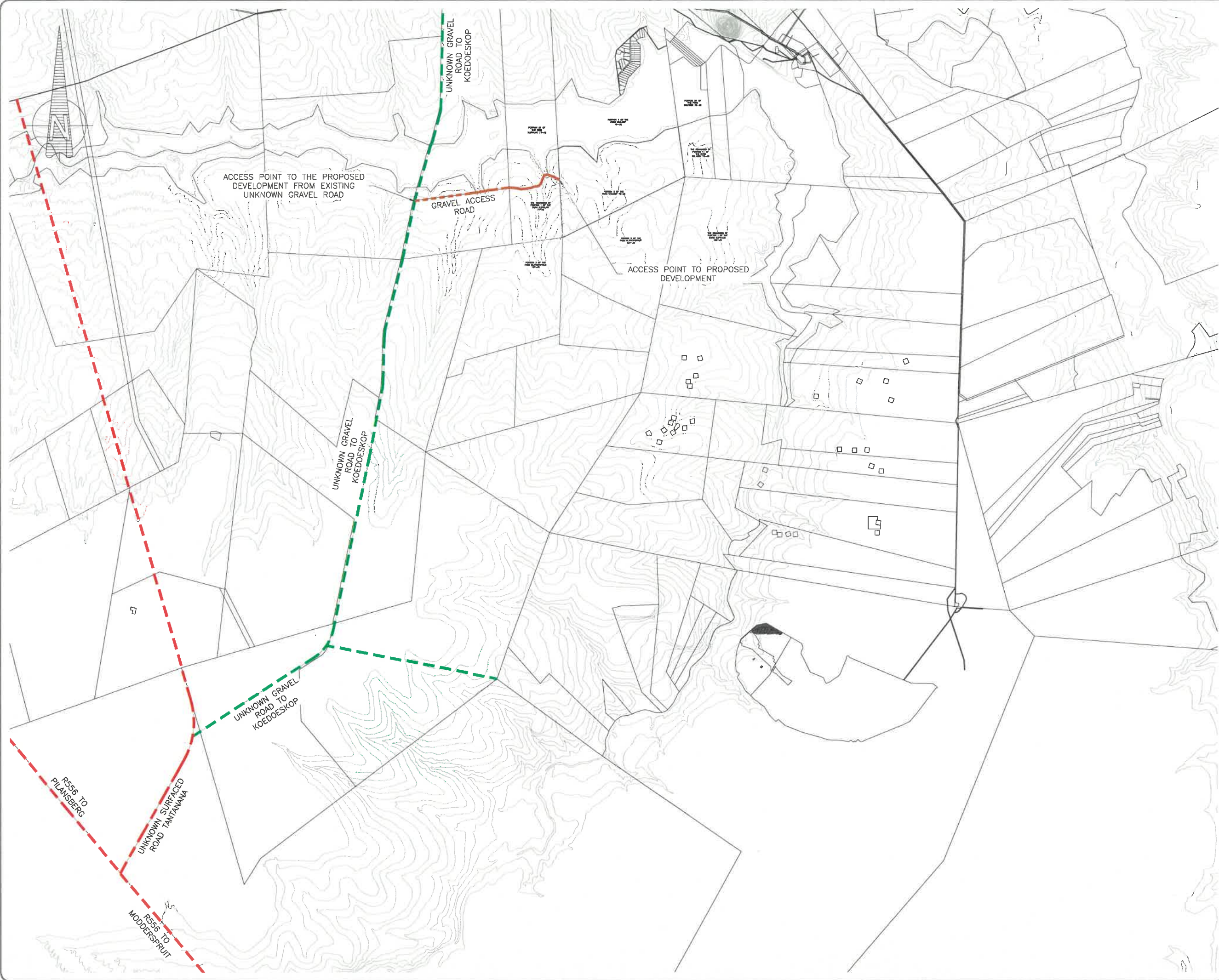
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SCALE / SKAAL : 1:10 000

REVISION / WYBEGING			
No.	DATE / DATUM	INITIAL / VOORL.	DESCRIPTION / BESKRYWING

CLIENT DWG. NO./KLIANT TEK. NR.	FILE NO./LIER NR.
2884/300/01/00	
CLIENT DWG. NO./KLIANT TEK. NR.	FILE NO./LIER NR.
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2884/300/01/00



NOTES / NOTAS

	DEVELOPMENT BOUNDARY
	EXISTING ROADS
	EXISTING GRAVEL ROAD
	EXISTING GRAVEL ACCESS ROAD

REFERENCES / VERWYSDINGS

Rustenburg
Local Municipality

PO BOX 16
RUSTENBURG
0300

Tel 014 590 3111
Fax 014 5903006

CLIENT / KLANT

DREAM
Engineering & Design

310 MAIN ROAD
BRYANSTON
2191

Tel 011-267 8300
Fax -

CIVILCONSULT
Consulting Engineers

PO BOX 12645
HAYFIELD
0028

Tel 012 343 6297 / 0845
Fax 012 343 8929 / 086 583 6249
mail@civilconsult.co.za

ENGINEER INGENIEUR	: L. WENTZEL	TRACED NAGETREK	:
DESIGN ONTWERP	: S.S. HENNING	CHECKED NAGESKED	:
DRAWN GETEKEN	: S.S. HENNING		:

PROJECT / PROEKT

CONSENT USE ON PORTION 2 OF
THE FARM VAALKOP 76-JQ

DRAWING TITLE / TEGENINOTITEL

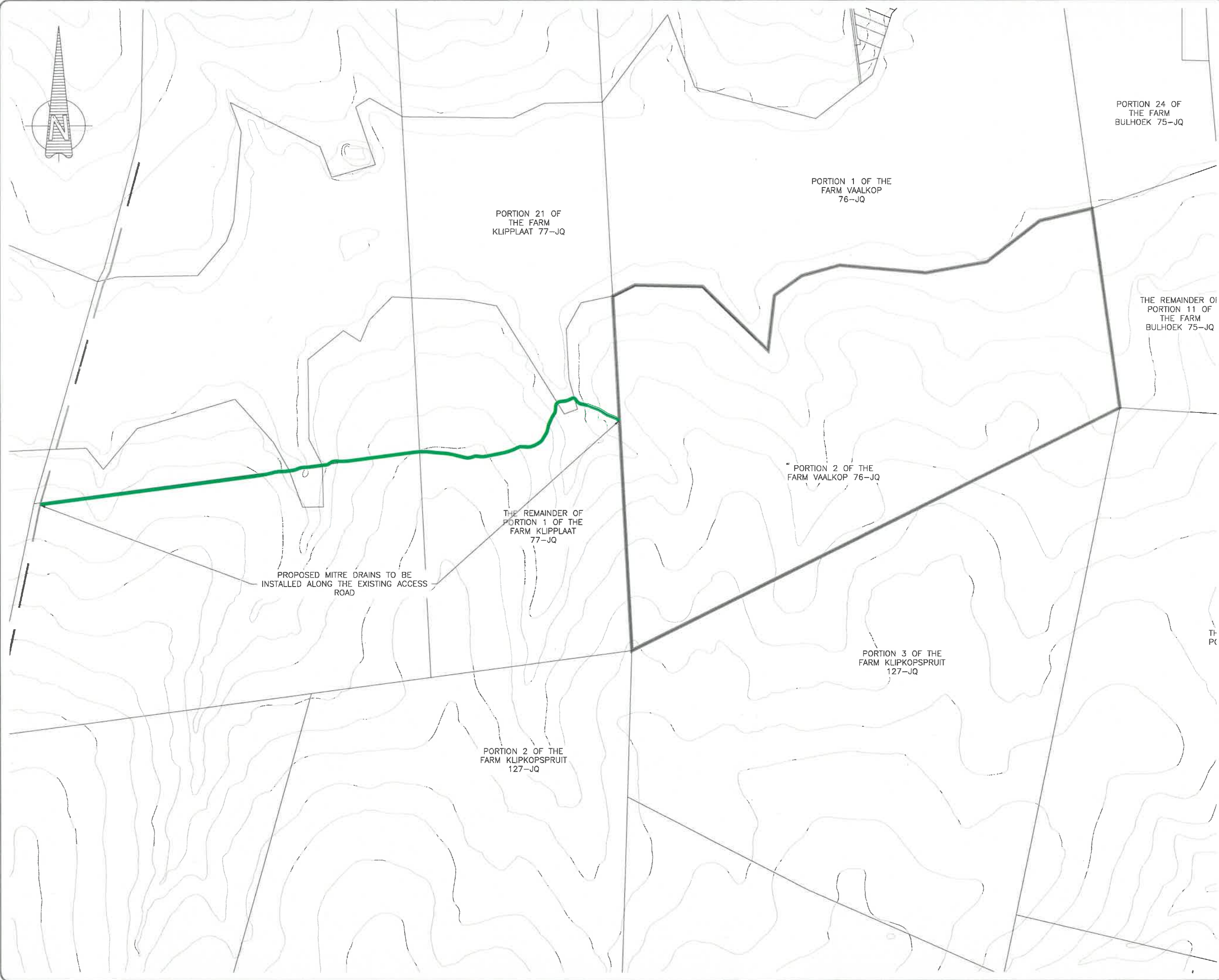
ROADS:
GENERAL LAYOUT

DATE : JANUARY 2021
DATUM :
SCALE :
SKALA : 1:40 000

REVISION / WYKORREG			
No.	DATE DATUM	INITIAL VOORL.	DESCRIPTION BESKRYWING

CLIENT DWG. NO./KANT. TEK. NR.	FILE NO./AER. NR.
2888/400/01/00	-
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2888/400/01/00



PROPOSED MITRE DRAINS TO BE
INSTALLED ALONG THE EXISTING ACCESS
ROAD

NOTES / NOTAS
DEVELOPMENT BOUNDARY
SECTION WHERE MITRE DRAINS NEEDS
TO BE INSTALLED

REFERENCE / VERWYSINGS

CLIENT / KLIANT

CIVILCONSULT
Consulting Engineers

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HATFIELD
0028

Tel 012 343 6291 / 0845
Fax 012 343 8929 / 086 583 6249
mail@civilconsult.co.za

ENGINEER INGENIEUR	: L. WENTZEL
DESIGN ONTWERP	: S.S. HENNING
DRAWN GETYKEN	: S.S. HENNING
	TRACED NAGETREK
	CHECKED NAGESIEK

PROJECT / PROEKT
TH-PC
CONSENT USE ON PORTION 2 OF
THE FARM VAALKOP 76-JQ

DRAWING TITLE / TERSKEDINGSTITEL
STORM WATER RETICULATION :
GENERAL LAYOUT

DATE : JANUARY 2021
DATUM :
SCALE : 1:10 000
SKAAL :

REVISION / WYSIGING			
No.	DATE	INITIAL	DESCRIPTION
Nr.	DATUM	VOORL.	BESKRYWING

CC DWG. NO./CC TEK. NR. 2888/500/01/00	FILE NO./LIER NR.
CLIENT DWG. NO./KLIANT TEK. NR. --	FILE NO./LIER NR. -

2888/500/01/00

ANNEXURE C

TITLE DEED

UITVOERING - EXECUTION

A. VIR AKTEKANTOOR GEBRUIK/FOR DEEDS OFFICE USE		(c) Registrerings Rectifications	
RYSHIE INC 129 991-3103		(b) Gelyktydige nie ingedien nie Simults not lodged	
Datum van indiening Date of lodgement		2019-08-01	
12/09/2019		2019-08-01	
DAVIDA C. NEELS		2019-08-01	
MMBI T.K.		2019-08-01	
Kamer/Room		2019-08-01	
9.53		2019-08-01	
Verwerp Reject		2019-08-01	
Passer Passed		2019-08-01	

B. (a) VIR AKTESORGER SE GEBRUIK FOR CONVEYANCER'S USE		T 000048254-2020	
Verwysing No / Reference		Skabelling/Linking	
540/19		22	

GELYKTYDIGES/SIMULTS		Firma Firm No.	
Name van Partye Name of Parties		No. in Stel/batch	
1 VA Reg 6001		1	
2 T Laffman - Dream		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	

(b) GELYKTYDIGES MET ANDER REGISTRASIEKANTORE/DEEDS OFFICES SIMULTS WITH OTHER REGISTRIES/SECTIONAL TITLES		Kantoor/Office	
Firma/Firm		Einde/End	
1		1	
2		2	
3		3	
4		4	

Registrasie Versoek deur/Registration requested by:		010014482030	
Datum/Date:		28/09/2019	
JAN ANTHONY EYSCH		010014482030	

(Brief description of property (only para. 1 in Deed) / (Kort beskrywing van eiendom (slegs para. 1 in Akte))

A. VIR AKTESORGER SE GEBRUIK/FOR CONVEYANCER'S USE:

Notes/Notas:

B. VIR AKTEKANTOOR GEBRUIK/FOR DEEDS OFFICE USE:

Interdite nagesien deur Interdicts checked by		Opmerkings Remarks		Paraaf Initials	
(1) Domp goeieur (seproklameer) Township approved (proclaimed)		(1)		(1)	
(2) Begiftiging Endowment		(2)		(2)	
(3) Begiftiging Endowment		(3)		(3)	
(4) Voorwaardes Conditions		(4)		(4)	
(5) Mikro Micro		(5)		(5)	
(6) Algemene plan General plan		(6)		(6)	
(7) Tiedakte Title deed		(7)		(7)	
(8) Verhoor teen dompasiaal Bonds against township title		(8)		(8)	
(9) Datum nagesien Date checked		(9)		(9)	

Kantoor/Instituut/Office instructions:

Sekste/Section:

129

CVL Attorneys & Conveyancers
Palm Block, Savannah Office Estate
Cnr Rugby Street & 9th Ave
Weltevredenpark 1709

SEELREG	
STAMP DUTY R	
F001	3190-00
FEES R	

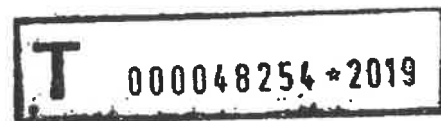
Prepared by me

CONVEYANCER
CHRISTIAAN JACOBUS VAN LILLE

DEED OF TRANSFER

BE IT HEREBY MADE KNOWN THAT

IAN ANTHONY FYSHE



appeared before me, REGISTRAR OF DEEDS at PRETORIA, he/she the said
Appararer being duly authorised thereto by a Power of Attorney signed at
JOHANNESBURG on 11 JULY 2019 and granted to him/her by

MILES DEREK LAPPEMAN

Identity Number 550211 5099 08 7

Married out of community of property

And the Appearer declared that his/her said principal had truly and legally sold on 10 May 2019 and that he/she, the said Appearer, in his/her capacity aforesaid, did, by these presents, cede and transfer to and on behalf of

DREAM HOTELS AND RESORTS PROPRIETARY LIMITED
Registration Number 2014/259730/07

its Successors in Title or assigns, in full and free property

PORTION 2 OF THE FARM VAALKOP No. 76
REGISTRATION DIVISION JQ, PROVINCE OF NORTH WEST

MEASURING 406,7493 (FOUR HUNDRED AND SIX COMMA SEVEN FOUR NINE THREE) Hectares

FIRST TRANSFERRED and still held by Deed of Transfer Number T48612/1987 with General Plan SG No. A4124/1987 relating thereto

SUBJECT to the following conditions :

1. Die plaas VAALKOP 76, Registrasie-afdeling JQ, Transvaal ('n gedeelte waarvan hiermee getranspoteer word), is onderhewig aan die volgende :-
 - (a) Kragtens Notariële Akte No. K675/1972 S geregistreer op 19 Mei 1972, is die reg aan EVKOM verleem om elektrisiteit oor die eiendom te vervoer, tesame met bykomende regte, en onderworpe aan voorwaardes, soos meer volledig sal blyk uit gesegde akte.
 - (b) Kragtens Notariële Akte van Wysiging van Serwituut No. K1223/1975 S gedateer 29 Julie 1974 geregistreer op 7 Mei 1975, is die roete, soos vermeld in Notariële Akte No. K675/1972 S, vasgestel en is nou meer volledig omskryf soos meer volledig sal blyk uit kaart geheg aan bogenoemde Notariële Akte van Wysiging.

SUBJECT to such conditions as are mentioned or referred to in the aforesaid Deed/s.

WHEREFORE the Appearer, renouncing all rights and title which the said

MILES DEREK LAPPEMAN, Married as aforesaid

heretofore had to the premises, did in consequence also acknowledge him to be entirely dispossessed of, and disentitled to the same, and that by virtue of these presents, the said

DREAM HOTELS AND RESORTS PROPRIETARY LIMITED

Registration Number 2014/259730/07

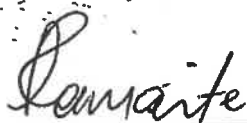
its Successors in Title or Assigns, now is and henceforth shall be entitled thereto, conformably to local custom, the State, however reserving its rights, and finally acknowledging the purchase price to be the sum of R12 900 000,00 (TWELVE MILLION NINE HUNDRED THOUSAND RAND).

IN WITNESS WHEREOF, I the said Registrar, together with the Appearer q.q., have subscribed to these presents and have caused the Seal of Office to be affixed thereto.

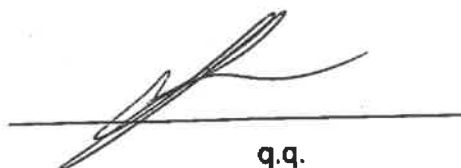
THUS DONE AND EXECUTED at the Office of the REGISTRAR OF DEEDS at PRETORIA on

02 08 19

In my presence



REGISTRAR OF DEEDS



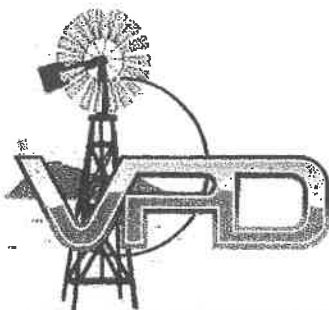
q.q.



9

ANNEXURE D

BOREHOLE TEST



**VASTRAP POMP DIENSTE
ANTON ERICHSEN
Sel: 078 154 3500**

0037

BOORGAT TOETS SERTIFIKAAT

TOETS VOLGENS SANS 10299-5-2003

KLIENT BESONDERHEDE / CLIENT DETAILS

Naam of Besigheid / Name or Business: DREAM HOTELS + RESORTS

Adres / Address: FINFOOL LODGE.

Kontak. / Contact Nr: 084 555 6151.

E-pos / E-mail: _____

BOORGAT BY WISTER ENGINE.

TOETS BESONDERHEDE / TEST DETAILS

Boorgat Diepte / Borehole Depth: 71 Meter

Watervlak / Water Level: 40 Meter

Getoets op / Test on: 65m Meter

Getoets vir / Test for: _____ Ure / Hours

Lewering / Delivery: BLAPS 2322 Lt, per uur / Lt, per hour

Herstel tyd / Recovery time: 34 min Ure / Hours

HANDTEKENING / SIGNATURE

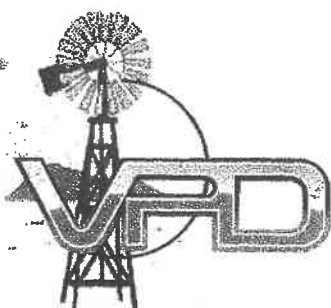
Klient / Client: Sup. W. H. H. H.

Handtekening / Signature: [Signature]

Getoets deur / Tested by: Anton ERICHSEN

Handtekening / Signature: [Signature]

Datum / Date: 12/05/2021



VASTRAP POMP DIENSTE
ANTON ERICHSEN
Sel: 078 154 3500

0038

BOORGAT TOETS SERTIFIKAAT

TOETS VOLGENS SANS 10299-5-2003

KLIENT BESONDERHEDE / CLIENT DETAILS

Naam of Besigheid / Name or Business: DEANAM HOTELS + RESORTS

Adres / Address: FINFOOT LODGE

Kontak. / Contact Nr: 084 555 6151

E-pos / E-mail: _____

BOORGAT BONNE KAMERTJIE

TOETS BESONDERHEDE / TEST DETAILS

Boorgat Diepte / Borehole Depth: 40 Meter

Watervlak / Water Level: 29,7 Meter

Getoets op / Test on: 37 Meter

Getoets vir / Test for: _____ Ure / Hours

Lewering / Delivery: 5425 Lt, per uur / Lt, per hour

Herstel tyd / Recovery time: 13 min Ure / Hours

1,1 kW 2200 Pump SUM 100/14 @ 3000 L/h

HANDTEKENING / SIGNATURE

Klient / Client: Sup Westhuizen

Handtekening / Signature: [Signature]

Getoets deur / Tested by: Anton ERICHSEN

Handtekening / Signature: [Signature]

Datum / Date: 17/03/2024

SVM

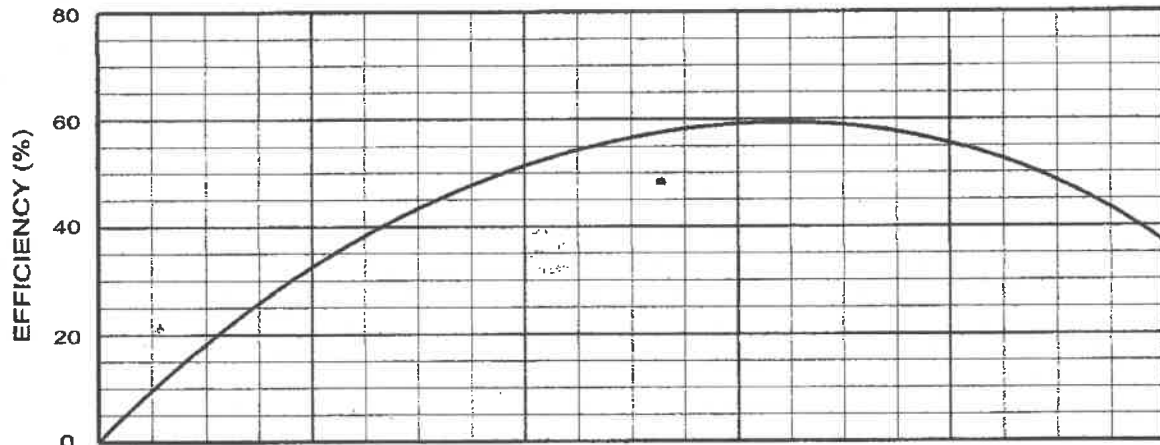
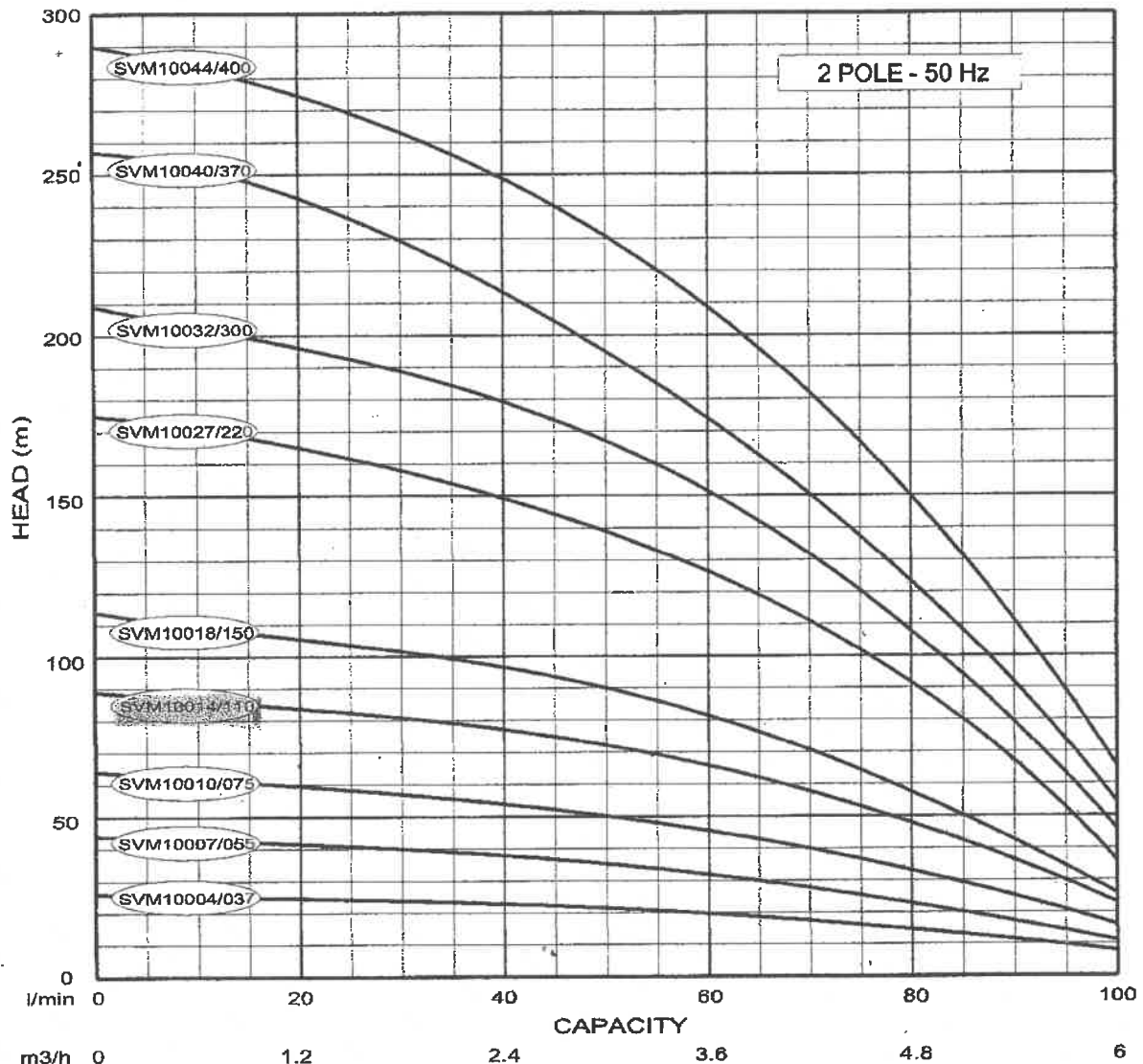
SUBMERSIBLE BOREHOLE PUMP

TYPICAL PERFORMANCE CURVE

BASED ON WATER AT 20°C DENSITY 1 000kg/m³

VISCOSITY 1.13 cst 113 mm²/s

SVM 100



DATE 01/09/09

PERFORMANCE CURVE NO - CSV100.1

SUPPLIED BY



Franklin Electric

SVM

SUBMERSIBLE BOREHOLE PUMP

TYPICAL TECHNICAL DATA

BASED ON WATER AT 20°C DENSITY 1 000kg/m³

VISCOSITY 1.13 cst 113 mm²/s

SVM 100

PERFORMANCE DATA

Model	Motor kW	Motor Amps		l/min m ³ /h l/sec	Capacity					
					0	30	45	60	80	100
		230V	400V		0.0	1.8	2.7	3.6	4.8	6.0
SVM 10004/037	0.37	4.0	1.1	Head (Metres)	0.0	0.50	0.75	1.00	1.33	1.67
SVM 10007/055	0.55	6.0	1.6		26	23	22	19	15	8
SVM 10010/075	0.75	7.3	2.1		44	40	36	32	23	11
SVM 10014/110	1.10	8.9	3.0		65	59	54	47	35	18
SVM 10018/150	1.50	11.1	4.0		92	84	77	69	51	25
SVM 10027/220	2.20	15.9	6.9		119	109	100	90	66	33
SVM 10032/300	3.00	-	7.8		179	164	151	133	99	54
SVM 10040/370	3.70	-	9.1		211	197	181	159	118	66
SVM 10044/400	4.00	-	10.0		268	246	225	195	138	71
					292	272	247	214	150	85

DIMENSION - 230 VOLT MOTOR

Model	Diameter mm		230 Volts - 1 Phase					
			Length mm			Mass Kg		
	Ø=C	ØMAX	B	E	L	MOTOR	PUMP	TOTAL
SVM 10004/037	93	95	278	242	520	8.6	2.9	11.5
SVM 10007/055	93	95	343	270	613	9.5	3.5	13.0
SVM 10010/075	93	95	411	298	709	10.9	4.2	15.1
SVM 10014/110	93	95	498	449	947	17.3	5.1	22.4
SVM 10018/150	93	95	588	487	1075	19.5	5.9	25.4
SVM 10027/220	93	95	784	564	1384	25.0	7.2	32.2
SVM 10032/300	93	95	Not available in 230 Volt x 1 phase					
SVM 10040/370	93	95						
SVM 10044/400	93	95						

DIMENSION - 400 VOLT MOTOR

Model	Diameter mm		400 Volts - 3 Phase					
			Length mm			Mass Kg		
	Ø=C	ØMAX	B	E	L	MOTOR	PUMP	TOTAL
SVM 10004/037	93	95	278	242	520	8.2	2.9	11.1
SVM 10007/055	93	95	343	270	613	9.5	3.5	13.0
SVM 10010/075	93	95	411	298	709	10.9	4.2	15.1
SVM 10014/110	93	95	498	402	900	15.0	5.1	20.1
SVM 10018/150	93	95	588	449	1037	18.3	5.9	23.2
SVM 10027/220	93	95	784	487	1271	19.5	7.2	26.7
SVM 10032/300	93	95	953	564	1517	25.0	9.2	34.2
SVM 10040/370	93	95	1128	564	1692	25.0	10.5	35.5
SVM 10044/400	93	95	1219	627	1846	27.7	11.8	39.5

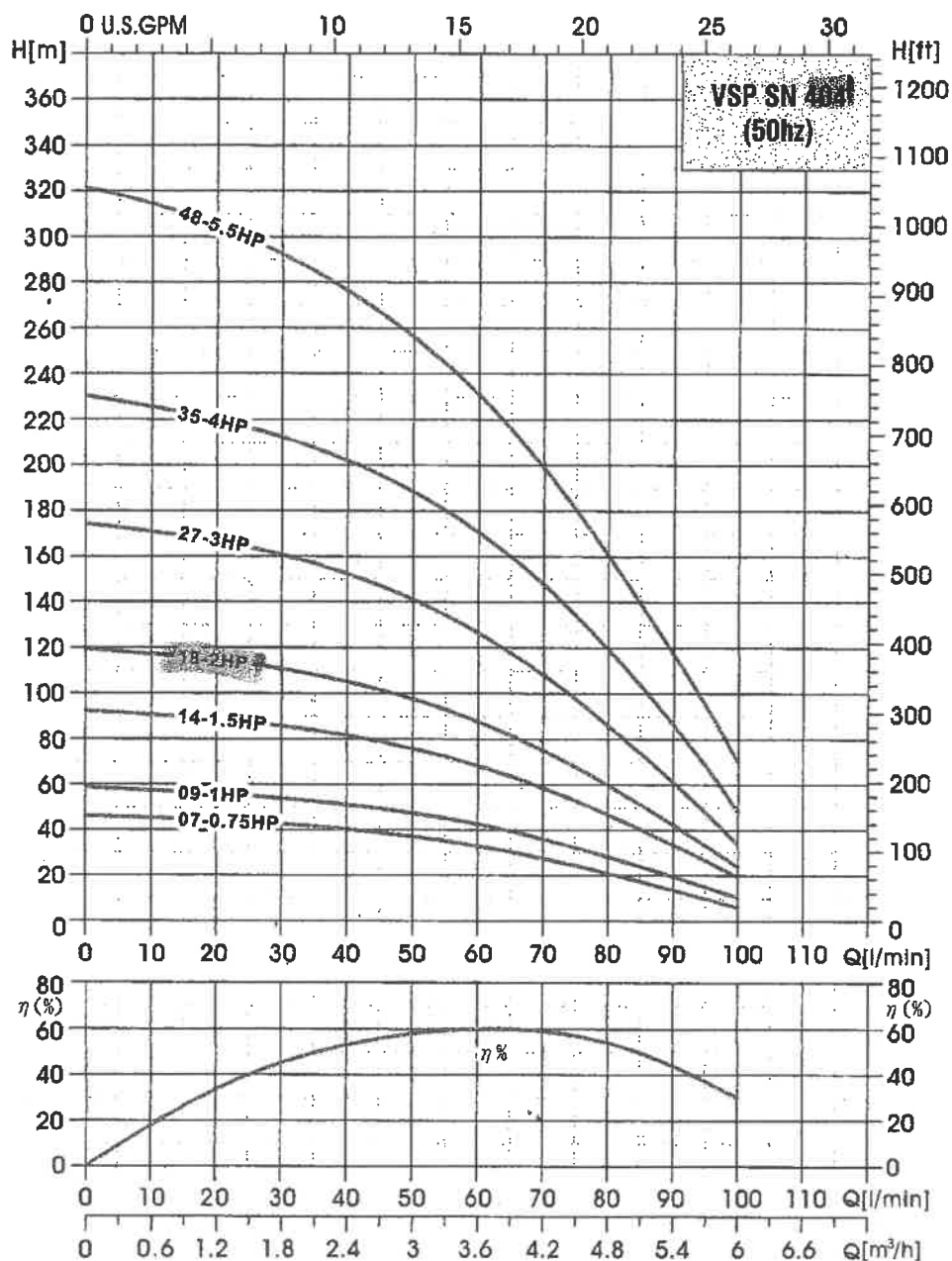
DATE 01/09/09

TECHNICAL DATA NO - DSVM100.1

SUPPLIED BY



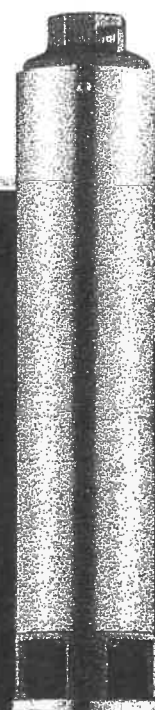
Franklin Electric



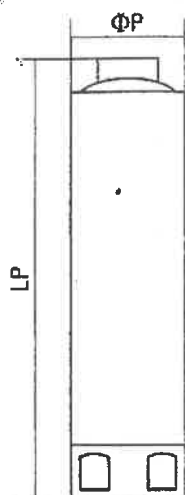
VSP SN 404 (50HZ)

No. of vanes	7	Capacity	3.0-6.0 m³/h
Outlet connection diameter (inside threaded) 1 1/2"		Delivery head	245 - 70 m
Pump outside diameter	95 mm	Shaft diameter (Hexagonal) 17 mm	

The hydraulic working characteristics have been taken with water at 15 °C, at the atmospheric pressure of 1 bar and specific gravity is 1 g/cm³



Technical Specifications



Diffuser : Noryl

Impeller : Noryl

Coupling : Stainless steel (AISI 304)

Strainer : Stainless steel (AISI 304)

Valve cap : Stainless steel (AISI 304)

Wear box : Stainless steel (AISI 304)

Top Diffuser : Noryl

Pump shaft : Stainless steel (AISI 304)

Suction case : Stainless steel (AISI 304)

Top bracket : Stainless steel (AISI 304)

Rotation : CCW

Revolution : 2.900 rpm



Dimension and Performance Table

Type	Stages	Motor			Pump			m ³ /h l/min	0	3.0	3.6	4.2	4.8	5.4	6.0
		Type	kW	HP	L (mm)	DN (RPT or NP)	Kg		0	50	60	70	80	90	100
VSP SN 404 / 07	7	4"	0.55	0.75	301	1.25"	3.0	Head (m)	46	36	33	28	21	13	7
VSP SN 404 / 09	9	4"	0.75	1.00	344	1.25"	3.3		59	47	43	37	28	20	10
VSP SN 404 / 14	14	4"	1.10	1.50	452	1.25"	4.1		93	76	68	58	47	33	19
VSP SN 404 / 18	18	4"	1.50	2.00	538	1.25"	4.7		120	98	88	75	60	42	25
VSP SN 404 / 27	27	4"	2.20	3.00	767	1.25"	6.2		175	141	127	109	87	61	35
VSP SN 404 / 35	35	4"	3.00	4.00	934	1.25"	7.9		231	184	166	145	119	85	49
VSP SN 404 / 48	48	4"	4.00	5.50	1.253	1.25"	9.9		322	245	228	198	160	118	70