



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, PRETORIA, 0001, 185 Francis Baard Street, Sedibeng Building, Pretoria
Tel: 012 336 7500 Fax: 012 336 7501
**LICENCE IN TERMS OF CHAPTER 4 OF THE
NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) (THE ACT)**

I, **Mr Luxolo Mditshane** in my capacity as Provincial Head: North West in the Department of Water and Sanitation and acting under the powers delegated to me by the Minister of Water and Sanitation, hereby authorises the following water use in respect of this licence.

Serial Number : 5192058117058909010
Provincial Head: North West
Date: Jul 27 2025 10:07PM

**LICENCE NO: 06/A21C/CI/16941
FILE NO: 27/2/2/A321/449/3
WUA NO: WU35361**

Licensee: Frankenwald Development (Pty) Ltd: Frankenwald Estate

**Postal Address: Private Bag X33
Craigshall
2024**

Provincial Head

B17225

1. Water Uses authorised by this licence

Table 1: Summary of Authorised water use activities

1.1	Section 21(c) of the Act	Impeding or diverting the flow of water in a water course; subject to the conditions set out in Appendices I and II.
1.2	Section 21(i) of the Act:	Altering the bed, banks, course or characteristics of a watercourse; subject to the conditions set out in Appendices I and II.

2. Property (ies) in respect of which the water use licence is issued

Table 2: Property details where the water use(s) will take place

Property description	Title Deed number	Owner
Remaining Extent of Portion 5 of the farm Bergvalei 37 IR.	T38495/2019	University of the Witwatersrand Johannesburg

3. Licence and Review Period

- 3.1 This licence is valid for a period of **20 year(s)** from the date of issuance and it may be reviewed at intervals of not more than five (5) years.
- 3.2 On review of the licence, a Responsible Authority may amend any condition of the licence, other than the period of validity thereof.

4. Definitions

Any terms, words and expressions as defined in the National Water Act, 1998 (Act 36 of 1998) shall bear the same meaning when used in this licence.

4.1 The following definitions are of relevance, but not exclusive, to this licence

Act	National Water Act, 1998 (Act 36 of 1998)
Buffer Zone	A scientifically determined area where water use activities are excluded.
Delegated Authority	The person that has been delegated certain functions of the Act
Department	The Department of Water and Sanitation
CMA	Catchment Management Agency
Commencement date	The date on which water use starts.
Days	Calendar days.
Minister	Minister of the Department of Water and Sanitation.
Provincial Head	Head of Provincial Operations : North-West Operation, Department of Water and Sanitation, Private Bag X5, Mmabatho, 2735, Cnr Dr James Moroka Drive and Sekame Road, Unit 99, MegaCity Shopping Centre
Responsible Authority	“Responsible authority” in relation to a specific power or duty in respect of water uses, means (a) if that power or duty has been assigned by the Minister to a catchment management agency, that catchment management agency; or

	(b) if that power or duty has not been so assigned, the Minister
Riparian habitat	"Riparian habitat" includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas.
Sensitive riffle habitats	A pool riffle rapid sequences that occur where a mixture of flows and depth provide a variety of habitats to support fish and invertebrate life. Pools are deep with slow water. Riffles are shallow with fast, turbulent water running over rocks. Runs are deep with fast water and little or no turbulence.
Watercourse	"Watercourse" means (a) a river or spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.
Extent of the watercourse	(a) the outer edge of the 1:100 year floodline or the delineated riparian habitat, whichever is the greatest, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; and (b) Wetlands and pans: the delineated boundary (outer temporary zone) of any wetland or pan.
Regulated area of a watercourse	(a) The outer edge of the 1 in 100 year flood line and /or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; (b) In the absence of a determined 1 in 100 year flood line or riparian area the area within 100m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench (subject to compliance to section 144 of the Act); or (c) A 500 m radius from the delineated boundary (extent) of any wetland or pan.

5. Description of activity and affected water resource(s)

This licence authorises Proposed Mixed Use Estate Development Situated on Portion 5 of the Farm Bergvalei 37 IR, within City of Johannesburg. The activity include housing development with associated infrastructures. The activities trigger section 21 c & i water uses which include sewer pipeline, water pipeline, bridges and stormwater ponds.

APPENDIX I

GENERAL PROVISIONS AND CONDITIONS OF THE LICENCE

1. GENERAL PROVISIONS

Legal Framework

- 1.1 This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998) as amended from time to time.
- 1.2 The licence shall not be construed as exempting the Licensee from compliance with the provisions of any other applicable Act, Ordinance, Regulation or By-law.

Administrative duties/obligations/responsibilities of the Licensee

- 1.3 The responsibility for complying with the provisions of the licence is vested in the licensee and not any other person or body.
- 1.4 The licensee will be responsible for any water use charges or levies imposed by a Responsible Authority according to the pricing strategy. The levies/charges will be charged from the date of the issuance of this licence.
- 1.5 No water taken may be pumped, stored, diverted, or alienated for any other purpose other than as intended in this licence without the written approval of the Delegated Authority.
- 1.6 It is the responsibility of the licensee to request an amendment of this licence to reflect the registered volume should the requirements change. All requests must be made to the Provincial Head/CEO.
- 1.7 If the water use licence is not exercised or fully exercised within the 5 (five) year period and the extended 2 (two) year period, as referred to in condition 2.4 and condition 2.5 in appendix I, the licence may be amended to reflect the extent of the water use that is being exercised, or the licence may be withdrawn.

Change of property details

- 1.8 Amendment of the licence to reflect the name of the new owner will not be approved if there are any outstanding charges or levies imposed by the Responsible Authority to the previous owner.
- 1.9 Any changes to the monitoring programmes should be approved by the Provincial Head/CEO.

Reviewal of licences

- 1.10 The volume authorised in this licence may be reduced when the licence is reviewed.

- 1.11 No water taken may be pumped, stored, diverted, or alienated for any other purpose other than as intended in this licence without the written approval of the Delegated Authority.

Effecting of the Reserve

- 1.12 While effect must be given to the Reserve as determined in terms of the Act, where a desktop determination of the Reserve has been used in issuance of a licence, when a comprehensive determination of the Reserve has finally been made, it shall be given effect to.

Liabilities and Rights

- 1.13 The Department accepts no liability for any damage, loss or inconvenience, of whatever nature, suffered as a result of, shortage of water; inundations or flood; siltation of the resource; and required Reserve releases.
- 1.14 The Minister reserves the right to construct water storage works at any time in any watercourse and to store all surplus water reaching the storage works, as well as to control the allocation of such water.

Restrictions

- 1.15 The licensee must adhere to any restrictions that are gazetted and imposed on the respective water resource.

Water measurement and reporting

- 1.16 The Provincial Head/CEO may at any time direct a licensee, at the licensee's expense, to have the accuracy of the licensee's water measuring device/s verified, in addition to the requirements of their inspection and calibration schedule by a person or an institution accredited to verify the accuracy.

Stormwater Management

- 1.17 Stormwater leaving the licensee's premises shall in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped, spilled on the premises.

Amendments

- 1.18 The licensee may apply for amendment of this licence in terms of the Act at any time during the period of validity of this licence. Applications must be submitted to the Provincial Head/CEO.

Appeals

- 1.19 If this licence is appealed, it is automatically suspended and the water use activities must cease upon receipt of a notification of the appeal from the Department, alternatively the licensee may request the Minister to lift the suspension pending conclusion of the appeal via the Chief Director Legal Services at the address below:

Private Bag X313,
Pretoria,
0001

2. GENERAL CONDITIONS

Administrative duties/obligations/responsibilities of the Licensee

- 2.1 The licensee must avail an original copy of the water use licence and the supporting reports upon request by the Department.
- 2.2 The conditions of the authorisation must be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of these activities and the licensee must take such measures that are necessary to bind such persons to the conditions of this licence.

Commencement of water use licence.

- 2.3 The licensee must inform the Provincial Head/CEO in writing within seven (07) days after the licensee commences with water use licence and again within thirty (30) days upon completion of the activity/ies.
- 2.4 The water uses authorised in this licence must be fully exercised within five (5) years from the date of issuance of this licence.
- 2.5 If the licensee cannot exercise or not fully exercise the water use licence within 5 (five) years, the licensee may request from the Provincial Head/CEO, with reasons, an extension of time to fully utilise the said water use licence, at least three months, before the expiry of the 5 (five) years. Only one request for extension of time, with maximum of 2 (two) years for commencement or of fully exercising of water use licence will be considered.

Change of details of licensee or property

- 2.6 The licensee must inform the Provincial Head/CEO of any change of ownership, name, address, premises and/or legal status within sixty (60) days of such change taking place.
- 2.7 If the properties in respect of this licence is/are subdivided or consolidated, the licensee must provide full details of any change(s) in respect of the properties to the Provincial Head/CEO within sixty (60) days after the registration of title deed(s).
- 2.8 If the licensee is not the end user/beneficiary of the water user related infrastructure and will not be responsible for long term maintenance and management of the infrastructure, the licensee must provide a hand over report to the successor in title including a brief management/maintenance plan and the agreement for infrastructure along with allocation of responsibilities, within sixty (60) days after the date of change of end user or beneficiary.

Early renewal for the Licence

- 2.9 The licensee must, if needed, apply for early renewal of this licence in terms of the Act within one (1) year before the expiry date of a licence. The application must be submitted to the Provincial Head/CEO.

Malfunctions, incidences, contingencies and pollution prevention

- 2.10 The licensee must service all vehicles and other machinery outside the extent of the watercourse/s.
- 2.11 Oils and other potential pollutants must be disposed of at a licensed site, with the necessary agreement from the owner of such a site.
- 2.12 The licensee must handle, transport, store and use any hazardous substances according to the relevant legislation or South African National Standards (SANS).
- 2.13 Accurate and up-to-date records must be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records must be available for inspection by the Provincial Head/CEO upon request. Such malfunctions must be tabulated under the following headings with a full explanation of all the contributory circumstances:
 - 2.13.1 operating errors;
 - 2.13.2 mechanical failures (including design, installation or maintenance);
 - 2.13.3 environmental factors (e.g. flood);
 - 2.13.4 loss of supply services (e.g. power failure); and
 - 2.13.5 other causes.
- 2.14 Any incident that causes or may cause water pollution shall be reported to the Provincial Head/CEO or the designated representative within 24 hours. Should the incident occur during a weekend or public holiday, the licensee must report the incident on the next official working day.
- 2.15 The licensee must, within 14 days, or a shorter period of time, as specified by the Provincial Head/CEO, from the occurrence or detection of any incident referred above, submit an action plan which must include a detailed time schedule to the satisfaction of the Provincial Head/CEO of measures to be taken to:
 - 2.15.1 correct the impacts resulting from the incident;
 - 2.15.2 prevent the incident from causing any further impacts; and
 - 2.15.3 prevent a recurrence of a similar incident
- 2.16 All incidents must be recorded in an incident register.

Water Conservation and Water Demand Management (WC/WDM)

- 2.17 The licensee must establish and implement a continual process of raising awareness among itself, its workers and stakeholders with respect to water conservation and water Demand Management initiatives.
- 2.18 The licensee shall use water efficiently to minimise total water intake, avoid usage of water where possible, implement best management and operating practices, and maximise the reuse /recycle of contaminated water.

- 2.19 The licensee must continually investigate new and emerging technologies and put into practice water efficient devices and /or apply technique for the efficient use of water, in an endeavour to conserve water at all times.

Storm water management

- 2.20 Storm water management facilities must be constructed, operated and maintained in a sustainable manner throughout the project as detailed in the Storm Water Management Plan.
- 2.21 Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the stream.
- 2.22 All storm water that would naturally run across the dirty areas shall be diverted via lined channels and drains designed to contain the 1:50 year flood.
- 2.23 The dirty storm water system shall be designed and implemented to provide suitable routing and pumping capacity for contaminated storm water from the individual facilities to the respective storm water dams in accordance with the design specifications.
- 2.24 Clean storm water must be diverted from construction works, and roads and must be managed in such a manner as to disperse runoff and to prevent the concentration of storm water flow.

Monitoring, Methods of analysis

- 2.25 Sample analysis must be conducted by a recognized analytical laboratory, accredited by the South African National Accreditation System (SANAS), or that participates in a recognised Proficiency Testing Scheme to analyze the relevant constituents in the wastewater.
- 2.26 The date and time of monitoring in respect of each sample taken shall be recorded together with the results of the analysis.
- 2.27 The licensee must adhere to the monitoring programmes submitted with the application.

Water measurement and Reporting

- 2.28 The licensee shall install appropriate water measuring devices to measure the amount of water abstracted prior use of water.
- 2.29 The licensee must install the flow metering devices to all water uses and readings must be taken on each flow meter on a monthly basis.
- 2.30 Flow measuring, recording and monitoring devices shall be maintained in a sound state of repair and calibrated/ verified by a suitable competent person as per device specification. This must include a programme of checking, calibration, and/ or replacement of measuring devices.

- 2.31 Calibration /verification certificates of the flow measuring, recording and integrating devices must be available for inspection by the Provincial Head/CEO or the representative upon request.

Restrictions on access to certain areas

- 2.32 Strict access procedures must be developed and followed in order to control access to the property. Access to the facility/ies must be limited to authorised persons and animals.
- 2.33 Notices prohibiting unauthorised persons from entering the areas as well as internationally acceptable signs indicating the risks involved in case of an unauthorised entry must be displayed along the boundary fence of these areas.

Auditing and Reporting

- 2.34 The licensee must conduct annual internal audits on compliance with the conditions of this licence. The first audit must be conducted within ninety (90) calendar days from the date of commencement of water use entitlement. A report on internal audits must be submitted to the Provincial Head/CEO within sixty (60) calendar days of the finalisation of the audits.
- 2.35 The licensee must appoint an independent external auditor to conduct biennial (every two (2) years) external audits on compliance with the conditions this licence. The first audit must be conducted and finalised within one (1) year after commencement of a water use. A report on the audit must be submitted to the Provincial Head/CEO within sixty (60) calendar days of the finalisation of each audit.

Security by applicant

- 2.36 The Licensee must ensure sufficient financial provision according to applicable legislation.

Compensative measures

- 2.37 The licensee must prevent adverse effects on other water users. All complaints must be recorded in complaints register and be investigated by a suitable qualified person, accredited by an institution/ registration body, appointed by the licensee, and if investigations prove that the licensee has impaired the rights of other water users, the licensee must implement appropriate compensative measures as determined by the Minister.

APPENDIX II

Section 21(c) water use: Impeding or diverting the flow of water in a watercourse/s

Section 21(i) water use: Altering the bed, banks, course or characteristics of a watercourse/s

1. Section 21(c and i) water use activities

- 1.1 This licence authorises the Section 21(c) or (i) water use activities as set out in Table 3 and in the water use licence application reports submitted to the Department or the Provincial Head (refer condition 1.2):

Table 3: Water uses authorised

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Section 21 (C& I)				
STORMWATER				
Section 21 (c) and (i) Mixed – Use Urban Estate	To establish Mixed-Use Urban area in eastern regions of Johannesburg.	243.25 ha	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°11'38.58"S 28°25'03.21"E
Section 21 (c) and (i) Proposed Stormwater Outlet 1 (SW01)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'16.41"S 28°5'48.19"E
Section 21 (c) and (i) Proposed Stormwater Outlet 2 (SW02)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'18.42"S 28°5'49.95"E
Section 21 (c) and (i) Proposed Stormwater Outlet 3 (SW03)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'9.10"S 28°5'55.65"E
Section 21 (c) and (i) Proposed Stormwater Outlet 4 (SW04)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'5.63"S 28°6'3.01"E
Section 21 (c) and (i)	Attenuation of	L: 1m	Remaining	26°4'3.12"S

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Proposed Stormwater Outlet 5 (SW05)	stormwater of the mixed-use urban estate	H: 0,5m W: 1.5m	Extent of Portion 5 of the farm Bergvalei 37 IR	28°6'3.01"E
Section 21 (c) and (i) Proposed Stormwater Outlet 6 (SW06)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'2.41"S 28°6'3.63"E
Section 21 (c) and (i) Proposed Stormwater Outlet 7(SW07)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'56.46"S 28°6'17.47"E
Section 21 (c) and (i) Proposed Stormwater Outlet 8 (SW08)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'58.33"S 28°6'24.71"E
Section 21 (c) and (i) Proposed Stormwater Outlet 9 (SW09)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'5.03"S 28°6'27.26"E
Section 21 (c) and (i) Proposed Stormwater Outlet 10 (SW10)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'3.32"S 28°6'29.51"E
Section 21 (c) and (i) Proposed Stormwater Outlet 11(SW011)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'5.37"S 28°6'29.55"E
Section 21 (c) and (i) Proposed Stormwater Outlet 12 (SWO12)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'20.16"S 28°6'32.41"E
Section 21 (c) and (i) Proposed Stormwater Outlet 13 (SWO13)	Attenuation of stormwater of the mixed-use urban	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the	26°4'25.54"S 28°6'34.24"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
	estate		farm Bergvalei 37 IR	
Section 21 (c) and (i) Proposed Stormwater Outlet 14 (SWO14)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'29.69"S 28°6'37.42"E
Section 21 (c) and (i) Proposed Stormwater Outlet 15 (SWO15)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'43.11"S 28°6'34.46"E
Section 21 (c) and (i) Proposed Stormwater Outlet 16 (SWO16)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'45.88"S 28°6'35.73"E
Section 21 (c) and (i) Proposed Stormwater Outlet 17 (SWO17)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'44.75"S 28°6'27.47"E
Section 21 (c) and (i) Attenuation Pond 1 (ATP1)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'10.96"S 28°5'56.21"E
Section 21 (c) and (i) Attenuation Pond 2 (ATP2)	Attenuation of stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'1.17"S 28°6'8.35"E
Section 21 (c) and (i) Stormwater Start Point 1(SWS1)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'51.84"S 28°5'38.33"E
Section 21 (c) and (i) Stormwater Start Point 2 (SWS2)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'49.23"S 28°5'51.74"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Section 21 (c) and (i) Stormwater Start Point 3 (SWS3)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'48.96"S 28°5'58.94"E
Section 21 (c) and (i) Stormwater Start Point 4 (SWS4)	stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'49.79"S 28°6'16.32"E
Section 21 (c) and (i) Stormwater Start Point 5 (SWS5)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'56.19"S 28°5'48.87"E
Section 21 (c) and (i) Stormwater Start Point 6 (SWS6)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'3.98"S 28°5'36.45"E
Section 21 (c) and (i) Stormwater Start Point 7 (SWS7)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'10.55"S 28°5'35.53"E
Section 21 (c) and (i) Stormwater Start Point 8 (SWS8)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'10.52"S 28°5'42.29"E
Section 21 (c) and (i) Stormwater Start Point 9 (SWS9)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'5.25"S 28°5'50.96"E
Section 21 (c) and (i) Stormwater Start Point 10 (SWS10)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'59.74"S 28°5'54.68"E
Section 21 (c) and (i) Stormwater Start Point	Stormwater of the mixed-use urban	L: 1m H: 0,5m	Remaining Extent of	26°3'57.13"S 28°5'53.43"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
11 (SWS11)	estate	W: 1.5m	Portion 5 of the farm Bergvalei 37 IR	
Section 21 (c) and (i) Stormwater Start Point 12(SWS12)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'7.37"S 28°6'15.51"E
Section 21 (c) and (i) Stormwater Start Point 13 (SWS13)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'7.73"S 28°6'6.62"E
Section 21 (c) and (i) Stormwater Start Point 14 (SWS14)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'10.07"S 28°6'2.63"E
Section 21 (c) and (i) Stormwater Start Point 15 (SWS15)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'13.58"S 28°6'1.95"E
Section 21 (c) and (i) Stormwater Start Point 16 (SWS16)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'13.75"S 28°6'11.60"E
Section 21 (c) and (i) Stormwater Start Point 17 (SWS17)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'11.82"S 28°6'17.90"E
Section 21 (c) and (i) Stormwater Start Point 18 (SWS18)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'18.36"S 28°6'11.68"E
Section 21 (c) and (i) Stormwater Start Point 19 (SWS19)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei	26°4'23.11"S 28°6'6.46"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
			37 IR	
Section 21 (c) and (i) Stormwater Start Point 20 (SWS20)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'26.92"S 28°5'59.08"E
Section 21 (c) and (i) Stormwater Start Point 21 (SWS21)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'27.82"S 28°6'11.02"E
Section 21 (c) and (i) Stormwater Start Point 22 (SWS22)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'23.38"S 28°6'24.55"E
Section 21 (c) and (i) Stormwater Start Point 23 (SWS23)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'25.80"S 28°6'23.81"E
Section 21 (c) and (i) Stormwater Start Point 24 (SWS24)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'29.18"S 28°6'27.45"E
Section 21 (c) and (i) Stormwater Start Point 25 (SWS25)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'33.51"S 28°6'29.89"E
Section 21 (c) and (i) Stormwater Start Point 26 (SWS26)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'32.47"S 28°6'14.52"E
Section 21 (c) and (i) Stormwater Start Point 27 (SWS27)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'34.74"S 28°6'11.37"E
Section 21 (c) and (i)	Stormwater of the	L: 1m	Remaining	26°4'33.26"S

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Stormwater Start Point 28 (SWS28)	mixed-use urban estate	H: 0,5m W: 1.5m	Extent of Portion 5 of the farm Bergvalei 37 IR	28°6'6.19"E
Section 21 (c) and (i) Stormwater Start Point 29 (SWS29)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'55.99"S 28°6'21.68"E
Section 21 (c) and (i) Stormwater Start Point 30 (SWS30)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'52.12"S 28°6'25.16"E
Section 21 (c) and (i) Stormwater Start Point 31 (SWS31)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'42.31"S 28°6'29.34"E
Section 21 (c) and (i) Stormwater Start Point 32 (SWS32)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'49.43"S 28°6'37.90"E
Section 21 (c) and (i) Stormwater Start Point 33 (SWS33)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'23.38"S 28°6'38.52"E
Section 21 (c) and (i) Stormwater Start Point 34 (SWS34)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'3.17"S 28°6'30.74"E
Section 21 (c) and (i) Stormwater Start Point 35 (SWS35)	Stormwater of the mixed-use urban estate	L: 1m H: 0,5m W: 1.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'57.90"S 28°6'29.98"E
SEWER				
Section 21 (c) and (i) Sewer connection 1	To provide sanitation services	L: 1m H: 1,5m	Remaining Extent of	26°3'54.26"S 28°6'19.78"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
(SCP1)	to the mixed-use urban estate	W: 2m	Portion 5 of the farm Bergvalei 37 IR	
Section 21 (c) and (i) Sewer connection 2 (SCP2)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'0.37"S 28°6'24.98"E
Section 21 (c) and (i) Sewer connection 3 (SCP3)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'59.66"S 28°6'30.82"E
Section 21 (c) and (i) Sewer connection 4 (SCP4)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'46.22"S 28°6'36.13"E
Section 21 (c) and (i) Sewer connection 5 (SCP5)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'47.19"S 28°6'24.32"E
Section 21 (c) and (i) Sewer river crossing 1 (SRC1)	To provide sanitation services to the mixed-use urban estate	L: 130m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'53.49"S 28°6'19.41"E
Section 21 (c) and (i) Sewer river crossing 2 (SRC2)	To provide sanitation services to the mixed-use urban estate	L: 130m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'57.83"S 28°6'22.12"E
Section 21 (c) and (i) Sewer start point 1 (SWS1)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'6.26"S 28°5'32.63"E
Section 21 (c) and (i) Sewer start point 2 (SWS2)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei	26°3'52.15"S 28°5'38.47"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
			37 IR	
Section 21 (c) and (i) Sewer start point 3 (SWS3)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'1.97"S 28°5'56.16"E
Section 21 (c) and (i) Sewer start point 4 (SWS4)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'57.19"S 28°5'53.35"E
Section 21 (c) and (i) Sewer start point 5 (SWS5)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'8.74"S 28°5'44.28"E
Section 21 (c) and (i) Sewer start point 6 (SWS6)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'9.66"S 28°6'10.46"E
Section 21 (c) and (i) Sewer start point 7 (SWS7)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'13.96"S 28°5'59.69"E
Section 21 (c) and (i) Sewer start point 8(SWS8)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'18.53"S 28°6'10.80"E
Section 21 (c) and (i) Sewer start point 9 (SWS9)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'23.31"S 28°5'58.90"E
Section 21 (c) and (i) Sewer start point 10 (SWS10)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'27.00"S 28°6'24.32"E
Section 21 (c) and (i)	To provide	L: 1m	Remaining	26°4'31.27"S

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Sewer start point 11 (SWS11)	sanitation services to the mixed-use urban estate	H: 1,5m W: 2m	Extent of Portion 5 of the farm Bergvalei 37 IR	28°6'9.28"E
Section 21 (c) and (i) Sewer start point 12 (SWS12)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'44.07"S 28°6'14.44"E
Section 21 (c) and (i) Sewer start point 13 (SWS13)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'52.71"S 28°6'23.11"E
Section 21 (c) and (i) Sewer start point 14 (SWS14)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'46.01"S 28°6'24.32"E
Section 21 (c) and (i) Sewer start point 15 (SWS15)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'34.73"S 28°6'27.70"E
Section 21 (c) and (i) Sewer start point 16 (SWS16)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'30.90"S 28°6'25.93"E
Section 21 (c) and (i) Sewer start point 17 (SWS17)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'23.54"S 28°6'24.47"E
Section 21 (c) and (i) Sewer start point 18 (SWS18)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'23.75"S 28°6'37.92"E
Section 21 (c) and (i) Sewer start point 19 (SWS19)	To provide sanitation services to the mixed-use	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the	26°4'18.27"S 28°5'47.68"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
	urban estate		farm Bergvalei 37 IR	
Section 21 (c) and (i) Sewer start point 20 (SWS20)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'50.58"S 28°6'38.70"E
Section 21 (c) and (i) Sewer start point 21 (SWS21)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'.93"S 28°5'50.61"E
Section 21 (c) and (i) Sewer start point 22 (SWS22)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'6.91"S 28°5'46.11"E
Section 21 (c) and (i) Sewer start point 23 (SWS23)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'1.23"S 28°5'49.45"E
Section 21 (c) and (i) Sewer start point 24 (SWS24)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'7.60"S 28°5'34.65"E
Section 21 (c) and (i) Sewer start point 25 (SWS25)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'51.87"S 28°5'44.19"E
Section 21 (c) and (i) Sewer end point 1 (SWE1)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'57.40"S 28°5'47.87"E
Section 21 (c) and (i) Sewer end point 2 (SWE2)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'58.59"S 28°6'9.93"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Section 21 (c) and (i) Sewer end point 3 (SWE3)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'5.94"S 28°6'19.61"E
Section 21 (c) and (i) Sewer end point 4 (SWE4)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'10.19"S 28°6'21.98"E
Section 21 (c) and (i) Sewer end point 5 (SWE5)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'12.56"S 28°6'29.14"E
Section 21 (c) and (i) Sewer end point 6 (SWE6)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'19.77"S 28°6'32.20"E
Section 21 (c) and (i) Sewer end point 7 (SWE7)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'27.30"S 28°6'30.18"E
Section 21 (c) and (i) Sewer end point 8 (SWE8)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'31.56"S 28°6'33.88"E
Section 21 (c) and (i) Sewer end point 9 (SWE9)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'42.35"S 28°6'19.07"E
Section 21 (c) and (i) Sewer end point 10 (SWE10)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'48.42"S 28°6'23.70"E
Section 21 (c) and (i) Sewer end point 11	To provide sanitation services	L: 1m H: 1,5m	Remaining Extent of	26°4'42.69"S 28°6'33.89"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
(SWE11)	to the mixed-use urban estate	W: 2m	Portion 5 of the farm Bergvalei 37 IR	
Section 21 (c) and (i) Sewer end point 12 (SWE12)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'54.97"S 28°5'49.62"E
Section 21 (c) and (i) Sewer end point 13 (SWE13)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'7.82"S 28°5'38.47"E
Section 21 (c) and (i) Sewer end point 14 (SWE14)	To provide sanitation services to the mixed-use urban estate	L: 1m H: 1,5m W: 2m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'51.87"S 28°5'44.19"E
WATER				
Section 21 (c) and (i) Bulk water connection to existing water reservoir (WCP1)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'46.93"S 28°5'45.67"E
Section 21 (c) and (i) Water connection to existing water line (WCP2)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°5'32.80"S 28°7'2.60"E
Section 21 (c) and (i) Water river crossing 1 (WRC1)	To provide water services to the Mixed-Use Urban Estate	L: 50m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'59.58"S 28°6'9.64"E
Section 21 (c) and (i) Water river crossing 2 (WRC2)	To provide water services to the Mixed-Use Urban Estate	L: 50m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'10.04"S 28°6'10.51"E
Section 21 (c) and (i) Water river crossing 3 (WRC3)	To provide water services to the Mixed-Use Urban	L: 78m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the	26°3'56.16"S 28°6'15.77"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
	Estate		farm Bergvalei 37 IR	
Section 21 (c) and (i) Water river crossing 4 (WRC4)	To provide water services to the Mixed-Use Urban Estate	L: 78m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'58.04"S 28°6'17.58"E
Section 21 (c) and (i) Bulk water river crossing 5 (WRC5)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'0.98"S 28°6'25.12"E
Section 21 (c) and (i) Bulk water river crossing 6 (WRC6)	To provide water services to the Mixed-Use Urban Estate	L:140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'59.35"S 28°6'29.71"E
Section 21 (c) and (i) Bulk water river crossing 7 (WRC7)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'1.66"S 28°6'25.62"E
Section 21 (c) and (i) water river crossing 8 (WRC8)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'0.21"S 28°6'29.75"E
Section 21 (c) and (i) Bulk water river crossing 9 (WRC9)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'2.05"S 28°6'25.34"E
Section 21 (c) and (i) Bulk water river crossing 10 (WRC10)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'0.50"S 28°6'29.73"E
Section 21 (c) and (i) Water river crossing 11 (WRC11)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'42.52"S 28°6'33.13"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Section 21 (c) and (i) Water river crossing 12(WRC12)	To provide water services to the Mixed-Use Urban Estate	L: 140m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'46.59"S 28°6'35.69"E
Section 21 (c) and (i) Water end point 1 (WEP1)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'4.29"S 28°5'35.24"E
Section 21 (c) and (i) Water end point 2 (WEP2)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'53.20"S 28°5'40.08"E
Section 21 (c) and (i) Water end point 3 (WEP3)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'48.89"S 28°5'51.77"E
Section 21 (c) and (i) Water end point 4 (WEP4)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'49.55"S 28°6'16.25"E
Section 21 (c) and (i) Water end point 5 (WEP5)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°3'53.50"S 28°6'28.52"E
Section 21 (c) and (i) Water end point 6 (WEP6)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'12.31"S 28°5'44.18"E
Section 21 (c) and (i) Water end point 7 (WEP7)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'7.25"S 28°6'6.84"E
Section 21 (c) and (i) Water end point 8	To provide water services to the	L: 1.1m H: 1,2m	Remaining Extent of	26°4'13.46"S 28°5'59.76"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
(WEP8)	Mixed-Use Urban Estate	W: 2.5m	Portion 5 of the farm Bergvalei 37 IR	
Section 21 (c) and (i) Water end point 9 (WEP9)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'22.66"S 28°6'4.98"E
Section 21 (c) and (i) Water end point 10 (WEP10)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'27.05"S 28°5'58.87"E
Section 21 (c) and (i) Water end point 11 (WEP11)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'31.86"S 28°6'4.24"E
Section 21 (c) and (i) Water end point 12 (WEP12)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'45.10"S 28°6'18.73"E
Section 21 (c) and (i) Water end point 13 (WEP13)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'52.75"S 28°6'24.20"E
Section 21 (c) and (i) Water end point 14 (WEP14)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'49.27"S 28°6'35.12"E
Section 21 (c) and (i) Water end point 15 (WEP15)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'46.48"S 28°6'41.66"E
Section 21 (c) and (i) Water end point 16 (WEP16)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei	26°4'32.05"S 28°6'38.81"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
			37 IR	
Section 21 (c) and (i) Water end point 17 (WEP17)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'27.79"S 28°6'29.51"E
Section 21 (c) and (i) Water end point 18 (WEP18)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'22.30"S 28°6'26.25"E
Section 21 (c) and (i) Water end point 19 (WEP19)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'9.79"S 28°6'21.49"E
Section 21 (c) and (i) Water end point 20 (WEP20)	To provide water services to the Mixed-Use Urban Estate	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26°4'23.80"S 28°6'38.12"E
BRIDGE CROSSING				
Bridge crossing point 1	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 3'55.95"S 28° 6'16.09"E
Bridge crossing point 2	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 3'58.05"S 28° 6'18.06"E
Bridge crossing point 3	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'1.46"S 28° 6'25.49"E
Bridge crossing point 4	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'0.02"S 28° 6'29.59"E

Water use(s) activities	Purpose	Dimension	Property Description	Co-ordinates
Bridge crossing point 5	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'42.76"S 28° 6'33.76"E
Bridge crossing point 6	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'45.88"S 28° 6'35.80"E
Bridge crossing point 7	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 3'58.78"S 28° 6'9.21"E
Bridge crossing point 8	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'2.21"S 28° 6'11.63"E
Bridge crossing point 9	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'17.51"S 28° 5'47.80"E
Bridge crossing point 10	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'19.25"S 28° 5'49.23"E
Bridge crossing point 11	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'3.22"S 28° 5'44.47"E
Bridge crossing point 12	To improve accessibility.	L: 1.1m H: 1,2m W: 2.5m	Remaining Extent of Portion 5 of the farm Bergvalei 37 IR	26° 4'0.57"S 28° 5'46.36"E

1.2 The licensee must carry out and complete all the activities listed under condition 1.1 according to all reports submitted with the application.

- 1.3 No fundamental alterations of the work method statement, site plan/s and drawings are allowed, unless a modification is requested and granted by the responsible authority in writing; and

2. Structures, Construction Plant and Materials

- 2.1 Structures must withstand a 1:100 year flood.
- 2.2 Structures must be non-erosive, structurally stable and must not induce any flooding or safety hazard.
- 2.3 Structures must be inspected for a minimum of once a quarter for accumulation of debris, blockage, erosion of abutments and overflow areas - debris must be removed and damages must be repaired and reinforced within a reasonable time.

3. Flow

- 3.1 The diversion activities must be conducted in a manner that does not negatively affect the yield of the water course where the activity will take place. The licensee must ensure that the overall magnitude and frequency of flow in the watercourse/s does not decrease, other than for natural evaporative losses and authorised attenuation volumes.
- 3.2 Where flow in watercourse/s is permanent, the trench must be staged across part of the channel to maintain flows. Flows must not be stopped unless essential, if necessary to stop flows it must be for a minimal time only.

4. Riparian and Instream Habitat (Vegetation and Physical Structure)

- 4.1 Activities must start up-stream and proceed into a down-stream direction where feasible, so that the recovery processes can start immediately, without further disturbance from upstream works.
- 4.2 Operation and storage of equipment within the riparian habitat must only take place within the approved limits of disturbance indicated in the site plans and work method.
- 4.3 Activities must not occur in sensitive riffle habitats unless authorised by this licence.
- 4.4 Indigenous riparian vegetation, including dead trees, outside the limits of disturbance indicated in the site plans must not be removed from the area.
- 4.5 Alien and invader vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be sustainably eradicated or controlled.
- 4.6 Soils that have become compacted through the water use activities must be loosened to an appropriate depth to allow seed germination.

- 4.7 Stockpiling of removed soil and sand must be stored outside the extent of the watercourse/s, to prevent being washed into the watercourse/s and must be covered to prevent wind and rain erosion.
- 4.8 The use of machinery within the instream and riparian habitat will lead to compaction of soils and vegetation and must be restricted to demarcated areas only.

5. Biota

- 5.1 The licensee must allow movement of aquatic species, including migratory species where applicable.
- 5.2 Ensure implementation of all mitigation measures not to disturb the breeding, nesting and/or feeding habitats and natural movement patterns of aquatic biota.

6. Rehabilitation and Management

- 6.1 The licensee must implement the rehabilitation programme to restore the watercourse/s to environmentally acceptable and sustainable conditions after completion of the activities as outlined in the rehabilitation plan.
- 6.2 The rehabilitation must be implemented according to the approved Rehabilitation
- 6.3 A photographic record must be kept as follows and submitted with reports as set out in condition 8:
- 6.4 Dated photographs of all the sites to be impacted before construction commences
- 6.5 Dated photographs of all the sites during construction on a monthly basis; and
- 6.6 Dated photographs of all the sites after completion of construction, seasonally.
- 6.7 All disturbed areas must be re-vegetated with indigenous plants in consultation with an indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.

7. MONITORING AND REPORTING

- 7.1 The monitoring plan must be implemented, and reporting done to the Provincial Head/CEO as stipulated under condition 7.2
- 7.2 Six (6) monthly monitoring reports must be submitted to the Provincial Head/CEO for the duration of the construction phase and yearly thereafter or until otherwise agreed in writing with the Provincial Head/CEO.
- 7.3 The monitoring programme for undermining watercourses must include the following:
- 7.4 At least two water quantity monitoring points, one upstream and one downstream of the affected length of the watercourse/s that is being undermined.

- 7.5 At least two water quality monitoring points, one upstream and one downstream of the affected length of the watercourse/s that is being undermined.
- 7.6 A bio-monitoring programme (SASS) must be implemented along the affected length of the watercourse/s and must include a habitat assessment. Guidance to bio monitoring.
- 7.7 Exact positions of monitoring points must be indicated on the master layout plan (including their co-ordinates).

8. Post-operational Phase

- 8.1 Upon completion of the undermining project, if survey results show that the watercourse/s to be stable, an application may be made to the Provincial Head/CEO for written approval to continue monitoring at less frequent intervals.
- 8.2 The mine must include the watercourse/s in its routine environmental inspection program and is obligated to advise the Provincial Head/CEO of any unusual deflections or observations.

9. Water Quality

- 9.1 In-stream water quality must be analysed on a two-weekly basis during construction otherwise monthly at monitoring points both upstream and downstream of the activities for the following variables until pre-construction water quality levels have been reached :
 - 9.1.1 <pH>;
 - 9.1.2 <Electrical conductivity (mS/M)>;
 - 9.1.3 <Suspended solids (mg/l)>;
 - 9.1.4 <Turbidity>;
 - 9.1.5 <Total dissolved solids (mg/l)>
 - 9.1.6 PO₄ (mg/l)
 - 9.1.7 Alkalinity (mg CaCO₃/l)
 - 9.1.8 Faecal coliforms (counts/100ml)
 - 9.1.9 Alkalinity (mg CaCO₃/l)
 - 9.1.10 NO₃/NO₂ (as N) (mg/l)
- 9.2 Monitoring must be undertaken as set out in condition 9.
- 9.3 Activities must be scheduled to take place during the dry seasons when flows are lowest where reasonably possible.

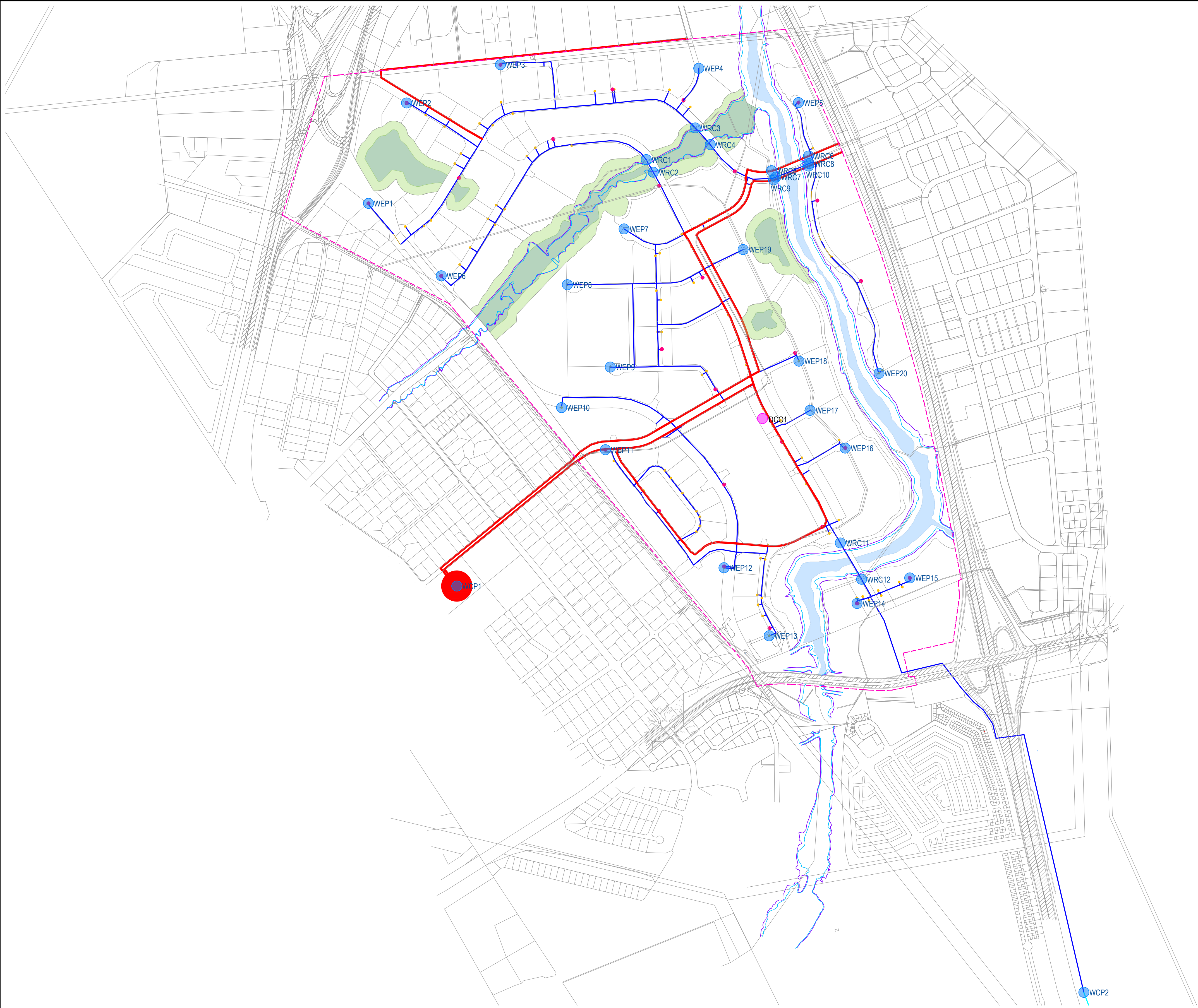
- 9.4 The licensee must ensure that the quality of the water to downstream water users does not decrease because of the water use activities listed under condition 1.1.

10. Site specific condition

- 10.1 Validity: These conditions apply only to the proposed development in the Water and Sanitation Design Report: Signed by FHB van Eyk (Pr. Eng.: 20160826); dated August 2024, provided such is implemented within a period of three (3) years from date of approval, unless superseded by Regulations prior to that date and for the quantity and quality of water specified therein.
- 10.2 Available capacity at Northern WWTW accommodates only phase 1 (5,0809 residential units and 173.248m² of warehousing and logistics, resulting in a sewer outflow of 2,297 kl/d) of Frankenwald development, the Licensee shall submit confirmation of available capacity at the receiving WWTW that will be accommodating the sewage flow of other phases of the development or supporting documents of an alternative wastewater treatment system that will be implemented.
- 10.3 For manholes located within the 1:100-year flood line, the manholes lid invert level must be placed at 100 mm above the 1:100 year flood line level.
- 10.4 The pipe material type for the section of the sewer pipeline crossing the watercourse should be an HDPE pipe having pipe connections that are either flanged or continuously butt-welded.
- 10.5 Construction Completion Report: The license holder shall provide the authority with the engineer's certificate of completion (COC) and supporting documentation to confirm that construction was in accordance with the accepted design and construction quality assurance (CQA) plan for written acceptance prior to use. The supporting documentation shall include a summary of test results which includes the number of tests; minimum, maximum, and mean value; standard deviation; and number of failures for each test method required by the CQA plan in compliance with SANS standards (being the latest version at time of commencement of construction).
- 10.6 A Landscape Design plan must be drawn up by a professional landscape architect and submitted within 12 months of issuance of the license.
- 10.7 Stormwater open channel, grass swale and bio- retention pond designs must be submitted with slow diffused overflow over a large area as possible. The inclusion of constructed wetlands must be investigated to enhance ecological categories.
- 10.8 Stormwater designs must include sediment and litter traps and take into account hydropedology.
- 10.9 Sustainable Urban Design System principles must be implemented.
- 10.11 Culverts and dams must include fishways and designs submitted that will also assist other animals like crabs.

- 10.12 A Rehabilitation plan must be submitted for all watercourses within 12 months of issuance of the license.
- 10.13 A Plant Species Plan must be drawn up by landscape architect or botanist and submitted within 12 months of issuance of the license.
- 10.14 The REC must be set as C.
- 10.15 A Maintenance, Monitoring and auditing plan must be submitted within 12 months of issuance of the license.

END OF LICENCE



LEGEND

ENVIRONMENTAL

- PROPERTY BOUNDARY
- 1:50 YEAR FLOOD LINE
- 1:100 YEAR FLOOD LINE
- RIVER
- RIVER BUFFER
- WETLAND
- WETLAND BUFFER

WATER SYSTEM

- PROPOSED WATER SUPPLY PIPE LINE
- PROPOSED BULK WATER PIPE LINE
- WCP1 CONNECTION TO EXISTING RESERVOIR
- WSP1 START POINTS
- WEP1 END POINTS
- WRC1 RIVER CROSSING POINTS

WULA CO-ORDINATES
WATER SYSTEM

DEVELOPMENT CO-ORDINATE

DCO1 26° 4'29.11"S
28° 6'23.55"E

CONNECTION TO EXISTING WATER RESERVOIR (BULK)

WCP1 26° 4'46.93"S
28° 5'45.67"E

CONNECTION TO EXISTING WATER LINE

WCP2 26° 5'32.80"S
28° 7'2.60"E

WATER RIVER CROSSING 1 (LENGTH 50m)

WRC1 26° 3'59.58"S
28° 6'9.64"E

WRC2 26° 4'1.04"S
28° 6'10.51"E

WATER RIVER CROSSING 2 (LENGTH 78m)

WRC3 26° 3'56.16"S
28° 6'15.77"E

WRC4 26° 3'58.04"S
28° 6'17.58"E

WATER RIVER CROSSING 3 (LENGTH 140m)

WRC5 26° 4'0.98"S
(BULK) 28° 6'25.12"E
WRC6 26° 3'59.35"S
(BULK) 28° 6'29.71"E
WRC7 26° 4'1.66"S
28° 6'25.62"E

WRC7 26° 4'1.66"S
28° 6'25.62"E
WRC8 26° 4'0.21"S
28° 6'29.75"E
WRC9 26° 4'2.05"S
(BULK) 28° 6'25.34"E
WRC10 26° 4'0.50"S
(BULK) 28° 6'29.73"E

WATER RIVER CROSSING 4 (LENGTH 140m)

WRC11 26° 4'42.52"S
28° 6'33.13"E
WRC12 26° 4'46.59"S
28° 6'35.69"E

WATER END POINTS

WEP1 26° 4'4.29"S
28° 5'35.24"E
WEP2 26° 3'53.20"S
28° 5'40.08"E
WEP3 26° 3'48.89"S
28° 5'51.77"E
WEP4 26° 3'49.55"S
28° 6'16.25"E
WEP5 26° 3'53.50"S
28° 6'28.52"E
WEP6 26° 4'12.31"S
28° 5'44.18"E
WEP7 26° 4'7.25"S
28° 6'6.84"E
WEP8 26° 4'13.46"S
28° 5'59.76"E
WEP9 26° 4'22.66"S
28° 6'4.98"E
WEP10 26° 4'27.05"S
28° 5'58.87"E
WEP11 26° 4'31.86"S
28° 6'4.24"E
WEP12 26° 4'45.10"S
28° 6'18.73"E
WEP13 26° 4'52.75"S
28° 6'24.20"E
WEP14 26° 4'49.27"S
28° 6'35.12"E

WEP15 26° 4'46.48"S
28° 6'41.66"E
WEP16 26° 4'32.05"S
28° 6'33.81"E
WEP17 26° 4'27.79"S
28° 6'29.51"E
WEP18 26° 4'22.30"S
28° 6'28.25"E
WEP19 26° 4'9.79"S
28° 6'21.49"E
WEP20 26° 4'23.80"S
28° 6'38.12"E

REVISIONS		
REV	DATE	DESCRIPTION

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WATER MASTER PLAN - WULA

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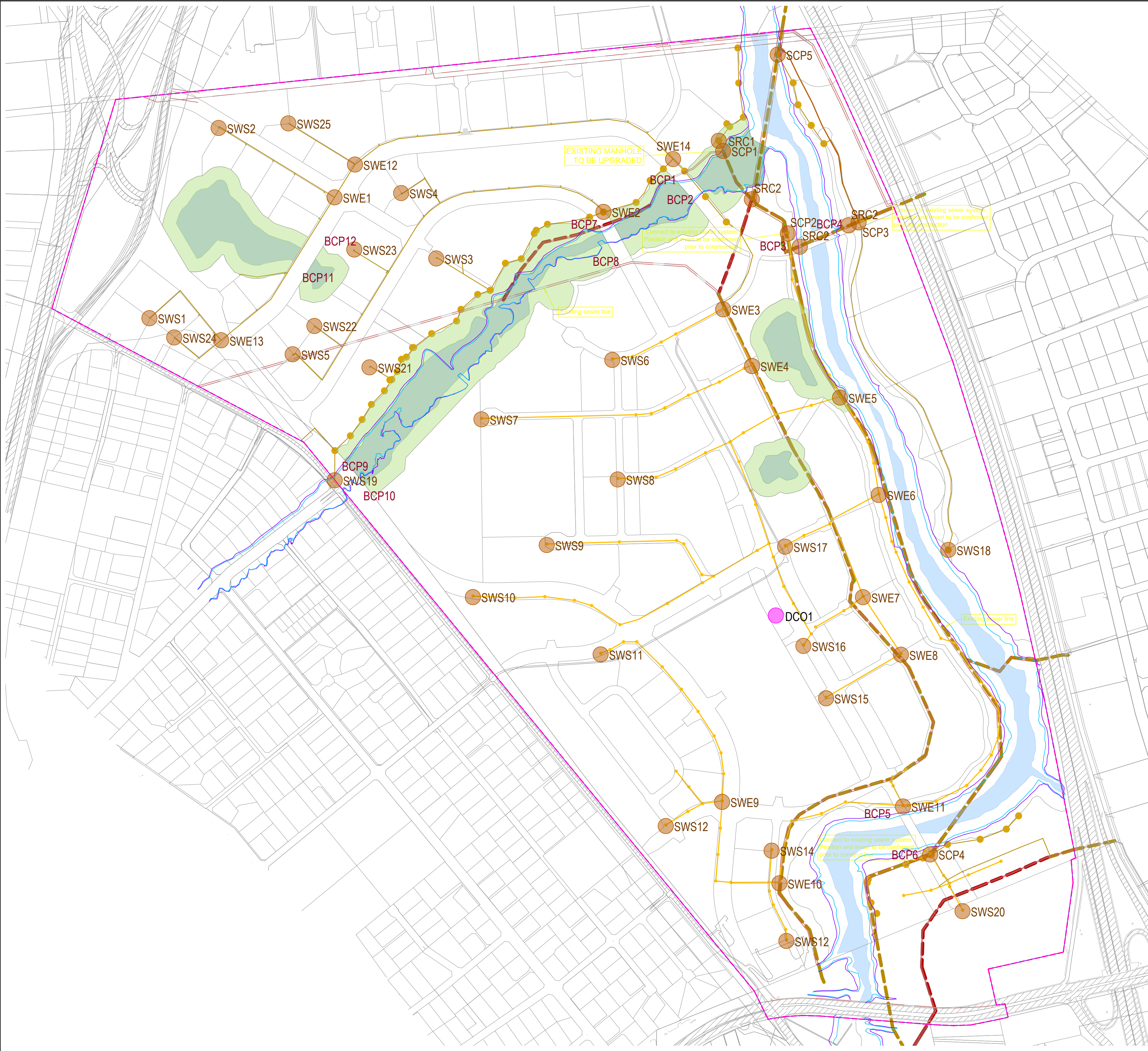
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PROJECT						
FRANKENWALD						
WULA WATER MASTER PLAN						
DRAWN BY	CHECKED BY	DATE	SCALE	DRAWING No.	SHEET	REV
ned	GT	2024-08-20	1:7250 @ A1	FW803-00		



LEGEND
ENVIRONMENTAL

- PROPERTY BOUNDARY
- 1:50 YEAR FLOOD LINE
- 1:100 YEAR FLOOD LINE
- RIVER
- RIVER BUFFER
- WETLAND
- WETLAND BUFFER

SEWER SYSTEM

- EXISTING SEWER PIPE LINE
- PROPOSED BULK SEWER PIPE LINE
- PROPOSED SEWER PIPE LINE
- SCP1 CONNECTION TO EXISTING SEWER
- SWS1 START POINTS
- SWE1 END POINTS
- SRC1 RIVER CROSSING POINTS

WULA CO-ORDINATES
SEWER SYSTEM

DEVELOPMENT CO-ORDINATE

DCO1 26° 4'29.11"S
28° 6'23.55"E

CONNECTION TO EXISTING
SEWER SYSTEM

SCP1 26° 3'54.26"S
28° 6'19.78"E
SCP2 26° 4'0.37"S
28° 6'24.98"E
SCP3 26° 3'59.66"S
28° 6'30.82"E
SCP4 26° 4'46.22"S
28° 6'36.13"E
SCP5 26° 3'47.19"S
28° 6'24.32"E

SEWER RIVER CROSSING 1
(LENGTH 130m)

SRC1 26° 3'53.49"S
28° 6'19.41"E
SRC2 26° 3'57.83"S
28° 6'22.12"E

SEWER RIVER CROSSING 2
(LENGTH 145m)

SRC3 26° 4'1.15"S
28° 6'25.71"E
SRC4 26° 3'59.74"S
28° 6'30.64"E

SEWER START POINTS

SWS1 26° 4'6.26"S
28° 5'32.63"E
SWS2 26° 3'52.15"S
28° 5'38.47"E
SWS3 26° 4'1.97"S
28° 5'56.16"E
SWS4 26° 3'57.19"S
28° 5'53.35"E
SWS5 26° 4'8.74"S
28° 5'44.28"E
SWS6 26° 4'9.66"S
28° 6'10.46"E
SWS7 26° 4'13.96"S
28° 5'59.69"E
SWS8 26° 4'18.53"S
28° 6'10.80"E
SWS9 26° 4'23.31"S
28° 6'4.88"E
SWS10 26° 4'27.00"S
28° 5'58.90"E
SWS11 26° 4'31.27"S
28° 6'9.28"E
SWS12 26° 4'44.07"S
28° 6'14.44"E
SWS13 26° 4'52.71"S
28° 6'24.23"E
SWS14 26° 4'46.01"S
28° 6'23.11"E
SWS15 26° 4'34.73"S
28° 6'27.70"E
SWS16 26° 4'30.90"S
28° 6'25.93"E
SWS17 26° 4'23.54"S
28° 6'24.47"E
SWS18 26° 4'23.75"S
28° 6'37.92"E
SWS19 26° 4'18.27"S
28° 5'47.68"E
SWS20 26° 4'50.58"S
28° 6'38.70"E
SWS21 26° 4'9.93"S
28° 5'50.61"E
SWS22 26° 4'6.91"S
28° 5'46.11"E
SWS23 26° 4'1.23"S
28° 5'49.45"E
SWS24 26° 4'7.60"S
28° 5'34.65"E
SWS25 26° 3'51.87"S
28° 5'44.19"E

SEWER END POINTS

SWE1 26° 3'57.40"S
28° 5'47.87"E
SWE2 26° 3'58.59"S
28° 6'9.93"E
SWE3 26° 4'5.94"S
28° 6'19.61"E
SWE4 26° 4'10.19"S
28° 6'21.98"E
SWE5 26° 4'12.56"S
28° 6'29.14"E

SWE6 26° 4'19.77"S
28° 6'32.20"E
SWE7 26° 4'27.30"S
28° 6'30.81"E
SWE8 26° 4'31.56"S
28° 6'33.88"E
SWE9 26° 4'42.35"S
28° 6'19.07"E
SWE10 26° 4'48.42"S
28° 6'23.70"E
SWE11 26° 4'42.69"S
28° 6'33.89"E
SWE12 26° 3'54.97"S
28° 5'49.62"E
SWE13 26° 4'7.82"S
28° 5'38.47"E
SWE14 26° 3'54.82"S
28° 6'15.63"E

REVISIONS		
REV	DATE	DESCRIPTION

SEWER MASTER PLAN - WULA

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PROJECT

FRANKENWALD
WULA SEWER MASTER PLAN

SIGNED	DATE	DRAWN BY	CHECKED BY	DATE	SCALE	DRAWING No.	SHEET	REV
	2024-08-20	ned	GT	2024-08-20	1:5000 @ A1	FW801-00		




LEGEND	
ENVIRONMENTAL	
---	PROPERTY BOUNDARY
---	1:50 YEAR FLOOD LINE
---	1:100 YEAR FLOOD LINE
---	RIVER
---	RIVER BUFFER
---	WETLAND
---	WETLAND BUFFER
STORMWATER SYSTEM	
---	PROPOSED STORMWATER LINE
●	PROPOSED STORMWATER OUTLET
●	PROPOSED STORMWATER START POINT
●	ATTENUATION POND
WULA CO-ORDINATES STORMWATER SYSTEM	
DEVELOPMENT CO-ORDINATE	
DCO1	26° 4'29.11"S 28° 6'23.55"E
ATTENUATION PONDS	
ATP1	26° 4'10.96"S 28° 5'56.21"E
ATP2	26° 4'1.17"S 28° 6'8.35"E
STORMWATER START POINTS	
SWS1	26° 3'51.84"S 28° 5'38.33"E
SWS2	26° 3'49.23"S 28° 5'51.74"E
SWS3	26° 3'48.96"S 28° 5'58.94"E
SWS4	26° 3'49.79"S 28° 6'16.32"E
SWS5	26° 3'56.19"S 28° 5'48.87"E
SWS6	26° 4'3.98"S 28° 5'36.45"E
SWS7	26° 4'10.55"S 28° 5'35.53"E
SWS8	26° 4'10.52"S 28° 5'42.29"E
SWS9	26° 4'5.25"S 28° 5'50.96"E
SWS10	26° 3'59.74"S 28° 5'54.68"E
SWS11	26° 3'57.13"S 28° 5'53.43"E
SWS12	26° 4'7.37"S 28° 6'15.51"E
SWS13	26° 4'7.73"S 28° 6'6.62"E
SWS14	26° 4'10.07"S 28° 6'2.63"E
SWS15	26° 4'13.58"S 28° 6'1.95"E
SWS16	26° 4'13.75"S 28° 6'11.60"E
SWS17	26° 4'11.82"S 28° 6'17.90"E
SWS18	26° 4'18.36"S 28° 6'11.68"E
SWS19	26° 4'23.11"S 28° 6'6.46"E
SWS21	26° 4'27.82"S 28° 6'11.02"E
SWS22	26° 4'23.38"S 28° 6'24.55"E
SWS23	26° 4'25.80"S 28° 6'23.81"E
SWS24	26° 4'29.18"S 28° 6'27.45"E
SWS25	26° 4'33.51"S 28° 6'29.89"E
SWS26	26° 4'32.47"S 28° 6'14.52"E
SWS27	26° 4'34.74"S 28° 6'11.37"E
SWS28	26° 4'33.26"S 28° 6'6.19"E
SWS29	26° 4'55.99"S 28° 6'21.68"E
SWS30	26° 4'52.12"S 28° 6'25.16"E
SWS31	26° 4'42.31"S 28° 6'29.34"E
SWS32	26° 4'49.43"S 28° 6'37.90"E
SWS33	26° 4'23.38"S 28° 6'38.52"E
SWS34	26° 4'3.17"S 28° 6'30.74"E
SWS35	26° 3'57.90"S 28° 6'29.98"E
SWS36	26° 4'14.18"S 28° 5'45.71"E
STORMWATER OUTLET POINTS	
SWO1	26° 4'16.41"S 28° 5'48.19"E
SWO2	26° 4'18.42"S 28° 5'49.95"E
SWO3	26° 4'9.10"S 28° 5'55.65"E
SWO4	26° 4'5.63"S 28° 6'3.01"E
SWO5	26° 4'3.12"S 28° 6'3.63"E
SWO6	26° 4'2.41"S 28° 6'5.68"E
SWO7	26° 3'56.46"S 28° 6'17.47"E
SWO8	26° 3'58.33"S 28° 6'24.71"E
SWO9	26° 3'54.03"S 28° 6'27.26"E
SWO10	26° 4'3.32"S 28° 6'29.51"E
SWO11	26° 4'5.37"S 28° 6'29.55"E
SWO12	26° 4'20.16"S 28° 6'32.41"E
SWO13	26° 4'25.54"S 28° 6'34.24"E
SWO14	26° 4'29.69"S 28° 6'37.42"E
SWO15	26° 4'43.11"S 28° 6'34.46"E
SWO16	26° 4'45.88"S 28° 6'35.73"E
SWO17	26° 4'44.75"S 28° 6'27.47"E

REVISIONS		
REV	DATE	DESCRIPTION

STORMWATER MASTER PLAN - WULA

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LEGEND

ENVIRONMENTAL

- PROPERTY BOUNDARY
- 1:50 YEAR FLOOD LINE
- 1:100 YEAR FLOOD LINE
- RIVER
- RIVER BUFFER
- WETLAND
- WETLAND BUFFER

BRIDGE CROSSING SYSTEM

- BCP1 BRIDGE CROSSING POINT

WULA CO-ORDINATES
BRIDGE CROSSINGS

DEVELOPMENT CO-ORDINATE

DCO1 26° 4'29.11"S
28° 6'23.55"E

BRIDGE CROSSING POINT 1 (60m)

BCP1 26° 3'55.95"S
28° 6'16.09"E
BCP2 26° 3'58.05"S
28° 6'18.06"E

BRIDGE CROSSING POINT 2 (140m)

BCP3 26° 4'1.46"S
28° 6'25.49"E
BCP4 26° 4'0.02"S
28° 6'29.59"E

BRIDGE CROSSING POINT 3 (130m)

BCP5 26° 4'42.76"S
28° 6'33.76"E
BCP6 26° 4'45.88"S
28° 6'35.80"E

BRIDGE CROSSING POINT 4 (125m)

BCP7 26° 3'58.78"S
28° 6'9.21"E
BCP8 26° 4'2.21"S
28° 6'11.63"E

BRIDGE CROSSING POINT 5 (67m)

BCP9 26° 4'17.51"S
28° 5'47.80"E
BCP10 26° 4'19.25"S
28° 5'49.23"E

BRIDGE CROSSING POINT 6 (97m)

BCP11 26° 4'3.22"S
28° 5'44.47"E
BCP12 26° 4'0.57"S
28° 5'46.36"E

REVISIONS		
REV	DATE	DESCRIPTION

BRIDGE CROSSING POINTS - WULA

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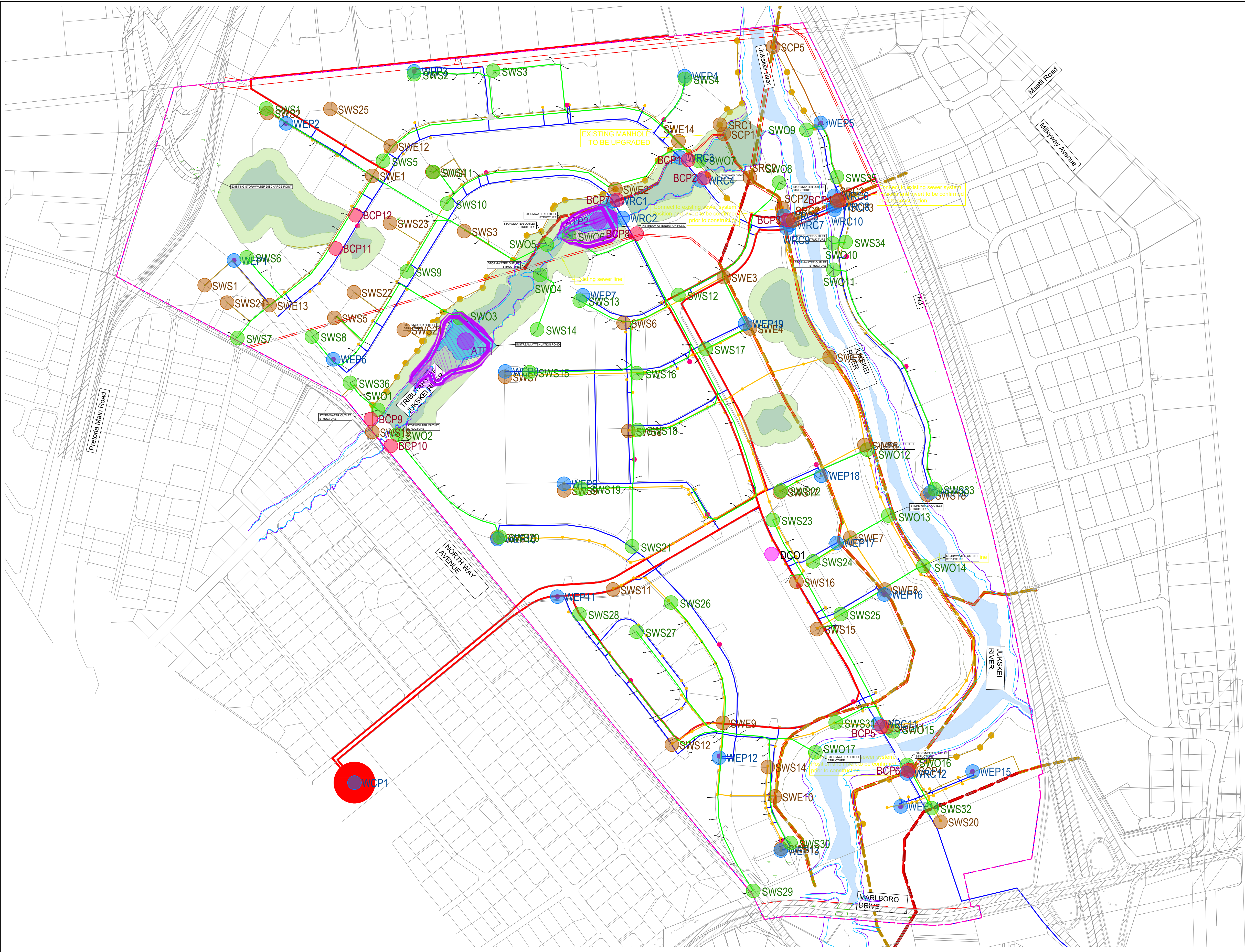
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BRIDGE CROSSING POINTS PLAN

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LEGEND

ENVIRONMENTAL

- PROPERTY BOUNDARY
- 1:50 YEAR FLOOD LINE
- 1:100 YEAR FLOOD LINE
- RIVER
- RIVER BUFFER
- WETLAND
- WETLAND BUFFER

SEWER SYSTEM

- EXISTING SEWER PIPE LINE
- PROPOSED BULK SEWER PIPE LINE
- PROPOSED SEWER PIPE LINE
- SCP1 CONNECTION TO EXISTING SEWER SYSTEM
- SWS1 START POINTS
- SWE1 END POINTS
- SRC1 RIVER CROSSING POINTS

WATER SYSTEM

- PROPOSED WATER SUPPLY PIPE LINE
- PROPOSED BULK WATER PIPE LINE
- WCP1 CONNECTION TO EXISTING RESERVOIR
- WSP1 START POINTS
- WEP1 END POINTS
- WRC1 RIVER CROSSING POINTS

STORMWATER SYSTEM

- PROPOSED STORMWATER LINE
- SWO1 PROPOSED STORMWATER OUTLET
- SWS1 PROPOSED STORMWATER START POINT
- ATTENUATION POND

BRIDGE CROSSING SYSTEM

- BCP1 BRIDGE CROSSING POINT

DEVELOPMENT CO-ORDINATE

- DCO1 DEVELOPMENT CO-ORDINATE

REVISIONS		
REV	DATE	DESCRIPTION

MASTER PLAN - WULA

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