DOYLE SOIL CONSULTING

SITE AND SOIL EVALUATION REPORT

ONSITE WASTEWATER ASSESSMENT

203 Woodbridge Hill Road

Woodbridge

May 2026

Updated June 2026

Doyle Soil Consulting: 6/76 Auburn Rd Kingston Beach 7050 – 0488 080 455 – robyn@doylesoilconsulting.com.au

SITE INFORMATION

Client: Fabio Mazza

Address: 203 Woodbridge Hill Road, Woodbridge (CT 149070/1)

Site Area: Approximately 1.52 ha

Date of inspection: 11/01/2024

Building type: New house

Services: Tank water and onsite wastewater

Planning Overlays: Landslide Hazard area (low)

Mapped Geology - Mineral Resources Tasmania 1:250 000 Southeast sheet:
Jd = Jurassic dolerite

Soil Depth: 0.75 – 1.00 m

Subsoil Drainage: Imperfectly drained

Drainage lines/water courses: none

Vegetation: grass, trees at boundaries.

Rainfall in previous 7 days: Approximately 12 mm

Slope: Variable approx. 8° in LAA

SITE ASSESSMENT AND SAMPLE TESTING

Site and soil assessment in accordance with AS1547-2012 *Onsite domestic wastewater assessment and design*.

Emerson Dispersion test on subsoils.

Test holes were dug using a Christie Post Driver Soil Sampling Kit, comprising CHPD78 Christie Post Driver with Soil Sampling Tube (50 mm OD x 1600/2100 mm).

SITE AND SOIL COMMENTS

The natural soil profiles are formed from clayey colluvium derived from Jurassic dolerite with common hard dolerite boulders throughout. The profiles are moderately shallow with refusal occurring at approximately 0.8 to 1.0 m. The field textures of the soil profile are dominated by clay, which is weakly structured, with slight dispersion characteristics.

The site and soil constraints should be addressed by installing an accredited aerated wastewater treatment system (AWTS) with disinfection. LAA to be covered surface drip irrigation under mulch or subsurface under grass. The location of the new AWTS and the distribution line are away from any existing trees and will not encroach on any tree protection zones.

SOIL PROFILES – Test Hole 1

Depth (m)	Horizon	Description and field texture grade	Soil Cat.
0 – 0.05	A1	Brown (10YR 4/3) **Sandy Light Clay**, strong fine angular blocky structure, single grain, dry medium dense consistency, abundant roots.	**5**
0.05 – 0.3	$B2_1$	Brown (10YR 5/3) with organic coatings of peds/down cracks, **Gritty Light Clay**, strong medium angular blocky structure, slightly moist stiff consistency, few roots, few gravels.	**5**
0.3 – 0.6	$B2_2$	Light olive brown (2.5Y 5/3) **Gritty Light Clay**, massive breaking to weak coarse blocky structure.	**5**
0.6 – 0.8	BC	Light yellowish brown (2.5Y 6/4) **Gritty Clay Loam**, strong fine angular blocky structure, single grain, dry dense consistency.	**4**
0.8 – 1.0	C_w	Mixed grey (2.5Y 5/1) and light olive brown (2.5Y 5/3), **Clayey gravel**, single grain, common dolerite gravels, dry dense consistency. <u>Refusal.</u>	**2**

SOIL PROFILES – Test Hole 2

Depth (m)	Horizon	Description and field texture grade	Soil Cat.
0 – 0.10	A1	Brown (10YR 4/3) **Sandy Light Clay**, strong fine angular blocky structure, single grain, dry medium dense consistency, abundant roots.	**5**
0.15 – 0.50	$B2_1$	Olive brown (2.5Y 4/3) **Sandy Light Clay**, massive breaking to weak medium blocky structure, few green mottles, slightly moist stiff consistency, trace of charcoal.	**5**
0.50 – 0.65	$B2_2$	Light yellowish brown (2.5Y 6/4), **Gritty Light Clay**, massive breaking to weak medium blocky structure, slightly moist firm consistency.	**5**
0.65 – 0.80	Cw	Mixed grey (2.5Y 5/1) and light olive brown (2.5Y 5/3), **Clayey gravel**, single grain, common dolerite gravels, dry dense consistency. Refusal.	**2**

SOIL PROFILES – Test Hole 3

Depth (m)	Horizon	Description and field texture grade	USCS Class
0 – 0.10	A1	Brown (10YR 4/3) **Sandy Light Clay**, strong fine angular blocky structure, single grain, dry medium dense consistency, abundant roots.	**5**
0.10 – 0.30	$B2_1$	Olive brown (2.5Y 4/3) **Sandy Light Clay**, massive breaking to weak medium blocky structure, few green mottles, slightly moist stiff consistency, trace of charcoal.	**5**
0.30 – 0.50	$B2_2$	Light yellowish brown (2.5Y 6/4), **Gritty Light Clay**, massive breaking to weak medium blocky structure, slightly moist firm consistency.	**5**
0.50 – 0.75	Cw	Mixed grey (2.5Y 5/1) and light olive brown (2.5Y 5/3), **Clayey gravel**, single grain, common dolerite gravels, dry dense consistency. Refusal.	**2**

SOIL PROFILES – Test Hole 4

Depth (m)	Horizon	Description and field texture grade	Soil Cat.
0 – 0.10	A1	Brown (10YR 4/3) **Sandy Light Clay**, strong fine angular blocky structure, single grain, dry medium dense consistency, abundant roots.	**5**
0.10 – 0.45	$B2_1$	Olive brown (2.5Y 4/3) with organic coatings down cracks, **Sandy Light Clay**, strong medium angular blocky structure, few green mottles, slightly moist stiff consistency, trace of charcoal at 0.20 m.	**5**
0.45 – 0.60	$B2_2$	Light yellowish brown (2.5Y 6/4), **Gritty Light Clay**, massive breaking to weak medium blocky structure, slightly moist firm consistency.	**5**
0.60 – 0.70	BC_1	Light yellowish brown (2.5Y 6/4) **Gritty Clay Loam**, strong fine angular blocky structure, single grain, dry dense consistency.	**4**
0.70 – 0.90	CW	Mixed grey (2.5Y 5/1) and light olive brown (2.5Y 5/3), **Clayey gravel**, single grain, common dolerite gravels, dry dense consistency. Refusal.	**2**

EMERSON AGGREGATE DISPERSION TEST

Soils with an excess of exchangeable sodium ions on the cation exchange complex (clays), can cause clay dispersion. Under some circumstances the presence of dispersive soils can also lead to significant erosion, and in particular tunnels leading to eventual gully erosion. Dispersive clay subsoil materials can also cause sealing of the soil surface – if left out in wet weather, they then dry and set very hard in dry weather. Based upon field survey of the property and the surrounding area, no erosion was identified at the site.

The subsoil was tested for dispersion using the Emerson Aggregate Test (EAT). Testing resulted in Emerson class 2(1), indicating presence of soils with very slight dispersion characteristics. As such, exposure to rainfall may lead to minor spontaneous clay dispersion.

To minimise this, we recommend coverage of exposed subsoil with topsoil or regular treatment with gypsum at 0.5 Kg/m^2 along with minimising subsoil disturbance whenever possible.

TH #	Depth (m)	Visual sign	Class
1	0.3 - 0.6	Some dispersion (Slight milkiness immediately adjacent to aggregate)	2(1)
2	0.15 - 0.5	Some dispersion (Slight milkiness immediately adjacent to aggregate)	2(1)

WASTEWATER LAND APPLICATION AREA SETBACKS

Required setback from foundations: 6 m

Required setback from downslope surface water: 100 m

Required setback from the downslope boundary: 9.5m -

Required setback from upslope and side boundaries: 1.5 m

Required vertical setback to bedrock: 0.5 m below the LAA (Table R1 of AS1547-2012)

Required vertical setback to groundwater: 0.6 m below the LAA (Table R1 of AS1547-2012)

WASTEWATER CLASSIFICATION AND DESIGN

According to AS1547-2012, the soil is **category 5** (Light Clay).

Secondary treatment is recommended.

Wastewater loading: 5 persons @ 120 L/day (tank) - 600 L/day.

Design Loading Rate (DIR): 2.4 mm/day for LAA.(reduced by 20% due to slope angle

Total minimum Land Application Area required: 250 m^2.

The proposed three-bedroom house has a calculated maximum daily loading of 600 L/day. A 20% reduction in the normal design irrigation rate (DIR) shall be adopted (per Table M2 of AS1547-2012) to address the slope constraint. With a maximum daily loading of 600 L/day and a DIR of 2.4 L/m^2/day, a packaged treatment system will require a minimum irrigation area of 250 m^2. This should be installed using the approx. dimensions shown on the Site Plan and the Spec Sheet and can be installed as either covered surface under mulch with landscaped garden and 1 plant per 5m^2, or under a minimum of 150 mm topsoil and grassed (See site prep details below)..

Use **Lilac Netafim Unibioline CNL (ID: 16 mm, dripper flow rate: 2.3 L/hr, dripper spacing: 0.3 m, pressure compensating, anti-siphon, non-leakage)** and installed **at 1 m spacing and along the contour**.

A **disk filter (130 micron / 120 mesh)** is required on the distribution main of the AWTS. All filters and valves are to be housed in lilac-coloured valve boxes, installed flush with the ground surface. Vacuum release valves to be placed at highest points in each irrigation zone.

The minimum irrigation pump capacity for the proposed design is **32 L/min @ 17.4 m head**. A high head sump pump is required. If the standard pump of the AWTS unit does not provide the minimum pump capacity (check pump curve data), a **Davey D42A** is recommended. See Appendix 1 for hydraulic design calculations and minimum pump capacity requirements.

Per M11.1 (d) of the standard, the distribution pump shall run for approximately 3 minutes per cycle. To achieve this for the proposed irrigation system, the pump float on/off switches shall be set to deliver approximately 96 L per cycle/dose. This equates to 6 pump cycles per day, at wastewater maximum flows.

Site Prep / Installation

The local topsoils are thin horizons of light clay. The site is, therefore, **not suitable** for irrigation lines installed using a tractor mounted rig or lines in shallow, back-filled, trenches. To avoid compaction, the LAA is not to have vehicles or heavy machinery traffic during wet conditions - soil smearing/compaction will reduce permeability and may cause failure of the land application area.

To prepare the LAA site, the natural surface should be scarified prior to laying down the irrigation pipe. **Import either 150 mm of sandy loam topsoil or mulch. Cover irrigation lines with min. 150 mm sandy loam/mulch** and either sow grass seed or 1 plant per 5 m^2 (further details below).

Vacuum release valves to be placed at highest point of the irrigation zone.

All livestock and vehicular traffic to be excluded from the finished LAA (fence-off necessary).

Vegetation Component

The vegetative cover is vital part of the system. The LAA relies on evapotranspiration for excess water removal and plant growth for nutrient removal. For lawns, grass species which are winter active and tolerant to waterlogging are recommended, such as Tall Fescue (winter active), Phalaris and Kentucky Blue Grass, or a mix of all.

Do not mow until the grass has matured - mowing too early or frequently will delay and/or compromise grass establishment. Control weeds during grass establishment phase to ensure good grass cover for the evapotranspiration/absorption area. Installation of the LAA and grass establishment is ideally completed well in advance of occupancy so that some transpiration capacity exists for water removal, upon first use.

If mulching and landscaping, refer to the spec sheet for suggested suitable plants.

Additional Details – Long Term

When subjected to the maximum design hydraulic load of 600 L/day, the distribution pump will run for approximately 19 mins/day.

Healthy plants are required for effective evapotranspiration. If the system is consistently underloaded (i.e., by low occupation), supplementary watering may be required – maintain green grass cover. Once grass is well established, the area should be mowed to encourage growth and nutrient removal. Clippings to be removed – see Loading Certificate.

Compliance with *Directors Guidelines 2016* is shown in the attached table for acceptable criteria. It is recommended that during construction Doyle Soil Consulting be notified of any major variation to the soil conditions or loading rate as predicted in this report.

It is a requirement of the Directors Determination that the applicant provide a certificate of accreditation for the chosen AWTS. The relevant PDF can be downloaded here:

https://www.cbos.tas.gov.au/topics/technical-regulation/plumbing-standards/wastewater/aerated-wastewater-treatment-systems

IMPORTANT NOTICE REGARDING CERTIFICATION

Doyle Soil are to be notified by email before the plumber engaged commences work.

Progress photos with date and time stamp are to be provided to Doyle Soil at each stage of the work and that work confirmed or inspected by Doyle Soil before proceeding to the next stage

The plumber is to provide photos of the following:

- Installation depth of the SSI lines.
- Imported topsoil seeded with grass
- All filters and valves, as specified
- Flushing components
- Brand of AWTS

A copy of the completed Form 71b and as-installed plan shall also be provided to the designer.

Doyle Soil cannot provide a certificate of compliance unless the above has been complied with.

Robyn Doyle
B.Agr.Sc.
CPSS (Certified Prof Soil Scientist)
Soil Scientist and Wastewater Designer
Licence no. CC7418

Rowan Mason
B.Agr.Sc.(hons)
Soil Scientist

APPENDIX 1 – TRENCH™

Doyle Soil Consulting

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Assessment for	Fabio Mazza	Assess. Date	19-Jun-26
		Ref. No.	
Assessed site(s)	203 Woodbridge Hill Rd Woodbridge	Site(s) inspected	11-Jan-24
Local authority	Kingborough Council	Assessed by	R Doyle

This report summarises wastewater volumes, climatic inputs for the site, soil characteristics and sustem sizing and design issues. Site Capability and Environmental sensitivity issues are reported separately, where 'Alert' columns flag factors with high (A) or very high (AA) limitations which probably require special consideration for system design(s). Blank spaces on this page indicate data have not been entered into TRENCH.

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 600 (using a method independent of the no. of bedrooms)
Septic tank wastewater volume (L/day) = 200
Sullage volume (L/day) = 400
Total nitrogen (kg/year) generated by wastewater = 4.4
Total phosphorus (kg/year) generated by wastewater = 1.1

Climatic assumptions for site (Evapotranspiration calculated using the crop factor method)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	53	55	61	74	72	81	82	94	88	86	75	73
Adopted rainfall (R, mm)	53	55	61	74	72	81	82	94	88	86	75	73
Retained rain (Rr, mm)	42	44	49	60	57	65	66	75	70	69	60	58
Max. daily temp. (deg. C)												
Evapotrans (ET, mm)	156	137	104	70	47	31	34	50	72	104	118	149
Evapotr. less rain (mm)	**114**	**93**	**55**	**10**	**-10**	**-34**	**-31**	**-26**	**2**	**35**	**58**	**90**

Annual evapotranspiration less retained rain (mm) = 356

Soil characterisitics

Texture = Light Clay Category = 5 Thick. (m) = 0.8
Adopted permeability (m/day) = 0.12 Adopted LTAR (L/sq m/day) = 2 Min depth (m) to water = 3

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site:	All wastewater will be disposed of on the site
The preferred method of on-site primary treatment:	In a package treatment plant
The preferred method of on-site secondary treatment:	In-ground
The preferred type of in-ground secondary treatment:	None
The preferred type of above-ground secondary treatment:	Trickle irrigation
Site modifications or specific designs:	Are needed

Suggested dimensions for on-site secondary treatment system

Total length (m) =	25
Width (m) =	10
Depth (m) =	0.6
Total disposal area (sq m) required =	250
comprising a Primary Area (sq m) of:	250
and a Secondary (backup) Area (sq m) of:	

Sufficient area is available on site

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The adopted DIR for the category 5 soil is 2.4 mm/day and an irrigation area of 250 sq m is required. Therefore the system should have the capacity to cope with predicted climatic and loading events.

Doyle Soil Consulting

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report

Assessment for	Fabio Mazza	Assess. Date	19-Jun-26
		Ref. No.	
Assessed site(s)	203 Woodbridge Hill Rd Woodbridge	Site(s) inspected	11-Jan-24
Local authority	Kingborough Council	Assessed by	R Doyle

This report summarises data relating to the physical capability of the assessed site(s) to accept wastewater. Environmental sensitivity and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) site limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation Trench	Limitation Amended	Remarks
	Expected design area	sq m	1,000		Moderate		
	Density of disposal systems	/sq km	20		Moderate		
	Slope angle	degrees	9		Moderate		
	Slope form	Convex spreading			Very low		
	Surface drainage	Good			Very low		
	Flood potential	Site floods <1:100 yrs			Very low		
	Heavy rain events	Rare			Low		
A	Aspect (Southern hemi.)	Faces SE or SW			High		
	Frequency of strong winds	Infrequent			Moderate		
	Wastewater volume	L/day	600		Moderate		
	SAR of septic tank effluent		1.0		Low		
	SAR of sullage		2.5		Moderate		
	Soil thickness	m	0.8		Low		
AA	Depth to bedrock	m	0.8		Very high		
A	Surface rock outcrop	%	5		High		
	Cobbles in soil	%	5		Low		
	Soil pH		6.0		Low		
	Soil bulk density	gm/cub. cm	1.4		Very low		
	Soil dispersion	Emerson No.	5		Moderate		
	Adopted permeability	m/day	0.12		Very low		
A	Long Term Accept. Rate	L/day/sq m	2		High		

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The site is suitable for onsite wastewater disposal with a large area available. The site is limited by depth of soil and light clay subsoils. Therefore, secondary treatment and irrigation is recommended

Doyle Soil Consulting

Land suitability and system sizing for on-site wastewater management

Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Assessment for	Fabio Mazza	Assess. Date	19-Jun-26
		Ref. No.	
Assessed site(s)	203 Woodbridge Hill Rd Woodbridge	Site(s) inspected	11-Jan-24
Local authority	Kingborough Council	Assessed by	R Doyle

This report summarises data relating to the environmental sensitivity of the assessed site(s) in relation to applied wastewater. Physical capability and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation Trench	Limitation Amended	Remarks
A	Cation exchange capacity	mmol/100g	50		High		
	Phos. adsorp. capacity	kg/cub m	0.7		Moderate		
	Annual rainfall excess	mm	-356		Very low		
	Min. depth to water table	m	3		Very low		
	Annual nutrient load	kg	5.5		Low		
	G'water environ. value	Agric non-sensit			Low		
	Min. separation dist. required	m	10		Low		
	Risk to adjacent bores						Factor not assessed
	Surf. water env. value	Agric sensit/dom drink			Moderate		
A	Dist. to nearest surface water	m	100		High		
	Dist. to nearest other feature	m	30		Moderate		
	Risk of slope instability	Very low			Very low		
	Distance to landslip	m	1000		Very low		

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

There will be a low environmental risk due to adoption of conservative DIR (2.4mm/day) , subsurface irrigation, appropriate hydraulic design and SSI flushing capabilty. The large available area and the distance to the dowslope boundary means a very low risk of off-site movement.

APPENDIX 2 – Design Hydraulics, System Componentry & Pumping Capacity

System Sizing and Componentry - Subsurface Irrigation - 203 Woodbridge Hill Rd Woodbridge		
Design Hydraulic Load (L / day)	DIR (L / m^2 / day)	LAA (m^2)
600	2.4	250
Dripper Line material	Max. dripper line run length (m)	Dripper line spacing (m)
Lilac Netafim Unibioline CNL (ID: 14.2 mm, dripper flow rate: 2.3 L/hr, spacing: 0.3 m)	25	1.0
Total irrigation pipe (lineal metres)	Number of drippers	System flow rate (L/min)
250	833	32
Supply line material	Supply line internal dia. (mm)	Approximate supply line length (m)
Lilac LDPE	31.7	10
Non-return valve at pump outlet?	Make/model	Filter Type - Grade
Yes	Philmac 32mm Non-return valve	DISK - 120 mesh/130 micron (RED)

Dynamic Head Calculation	
Head loss Component	Approx. Head loss (m)
Supply line friction	0.2
Filter	0.6
Non-return valve	1.4
Other Fittings	0.2
Static head (max lift from AWTS to SSI system)	5.0
Minimum dripper operating pressure	10.0
Total	**17.4 m**

Pump Requirements	
Min. pump capacity	Max. Pump time @ Design Hydraulic Load
32 L / min @ 17.4 m head	19 mins / day

Dose volume per pump cycle	Recommended Pump
96 L	Davey D42A

Note: If using 25 mm ID LDPE supply main and fittings, TDH requirement increases to approx. 17.7 m at the same flow rate.

Acceptable Solutions	**Performance Criteria**	**Compliance**
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a) be no less than 6m; or b) be no less than: i) 3m from an upslope building or level building; ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building	P1 The land application area is located so that a) the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.; and b) is setback a sufficient distance from a downslope excavation around or under a building to prevent inadequately treated wastewater seeping out of that excavation	Complies with A1 (a) Land application area will be located with minimum separation distance to proposed building of 6m.
A2 Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b) a) be no less than 100m; or b) be no less than the following: i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.	P2 Horizontal separation distance from downslope surface water to a land application area must comply with all of the following: a) Setback must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with A2 (a) Land application area located > 100m from downslope surface water

A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following: a) be no less than 40m from a property boundary; or b) be no less than: i) 1.5m from an upslope or level property boundary; and ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.	P3 Horizontal separation distance from a property boundary to a land application area must comply with all of the following: a) Setback must be consistent with AS/NZS 1547 Appendix R; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with A3 (b) (i) Land application area will be located with a minimum separation distance of 1.5m from an upslope or level property boundary Complies with A3 (b) (iii) Land application area will be located with a minimum separation distance of 10 m of downslope property boundary (9.5 m required)
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following: a) Setback must be consistent with AS/NZS 1547 Appendix R; and b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable	Complies with A4 There is a bore identified within 50m but it is capped and has not operated since 1981 therefore it is not considered to be operational.

A5 Vertical separation distance between groundwater and a land application area must be no less than: a) 1.5m if primary treated effluent; or b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area must comply with the following: a) Setback must be consistent with AS/NZS 1547 Appendix R; and b) A risk assessment completed in accordance with appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	Complies with A5 (b) No groundwater encountered.
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: a) 1.5m if primary treated effluent; or b) 0.5m if secondary treated effluent	P6 Vertical setback must be consistent with AS/NZS1547 Appendix R.	Complies with A6 (b)
A7 nil	P7 A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties	Complies

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form 55

To: Fabio Mazza *Owner name*

203 Woodbridge Hill Rd *Address*

Woodbridge TAS 7162 *Suburb/postcode*

Qualified person details:

Qualified person: Robyn Doyle

Address: 6/76 Auburn Rd

Kingston Beach 7050

Phone No: 0488 080 455

Fax No:

Licence No: N/A

Email address: robyn@doylesoilconsulting.com.au

Qualifications and Insurance details: Certified Professional Soil Scientist (CPSS)
Professional Indemnity cover –

Probitas Syndicate 1492 at Lloyds
PIPOL11004782

(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items

Speciality area of expertise: Site and Soil evaluation and land application system design

(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: 203 Woodbridge Hill Rd

Lot No: 1

Woodbridge TAS 7162

Certificate of title No: 149070/1

The assessable item related to this certificate: Onsite wastewater management -Site evaluation and soil classification for onsite wastewater management capability

Including
Characterisation of wastewater and predicted hydraulic loadings
Selection of land application area
Determination of design loading rate

(description of the assessable item being certified)
Assessable item includes –
- *a material;*
- *a design*
- *a form of construction*
- *a document*
- *testing of a component, building system or plumbing system*
- *an inspection, or assessment, performed*

Certificate details:

Certificate type: On-site wastewater management - Site and soil evaluation

(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable item, at any stage, as part of - *(tick one)*

building work, plumbing work or plumbing installation or demolition work: X

or

a building, temporary structure or plumbing installation: ☐

In issuing this certificate the following matters are relevant –

Documents:	Doyle Soil Site and Soil Report for On-Site Domestic Wastewater Management
Relevant calculations:	
References:	AS1547-2012 On-Site Domestic Wastewater Management Directors Guidelines for On-Site wastewater Management Systems - CBOS -2017

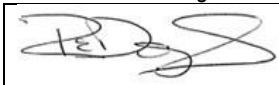
Substance of Certificate: *(what it is that is being certified)*

Site and soil evaluation

Scope and/or Limitations

The classification applies to the site as inspected and does not account for future alteration to foundation conditions as a result of earthworks, drainage condition changes or variations in site maintenance.

I certify the matters described in this certificate.

	Signed:	*Certificate No:*	*Date:*
Qualified person:		1995	13/05/2026

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: Fabio Mazza *Owner name*
203 Woodbridge Hill Road *Address*
Woodbridge 7162 *Suburb/postcode*

Designer details:

Name: Robyn Doyle
Category: Bldg srvcs dsgnr-hydraulic domestic
Business name: Doyle Soil Consulting
Phone No: 0488080455
Business address: 6/76 Auburn Rd
Kingston Beach 7050
Fax No:
Licence No: CC7418
Email address: robyn@doylesoilconsulting.com.au

Details of the proposed work:

Owner/Applicant Fabio Mazza
Designer's project reference No. 2026-06
Address: 203 Woodbridge Hill Road
Lot No: 1
Woodbridge 7162

Type of work: Building work ☐ Plumbing work ☒ *(X all applicable)*

Description of work:
Wastewater Design

(new building / alteration / addition / repair / removal / re-erection water / sewerage / stormwater / on-site wastewater management system / backflow prevention / other)

Description of the Design Work (Scope, limitations or exclusions): *(X all applicable certificates)*

Certificate Type:	Certificate	Responsible Practitioner
	☐ Building design	Architect or Building Services Designer
	☐ Structural design	Structural Engineer
	☐ Fire Safety design	Fire Engineer
	☐ Civil design	Civil Engineer
	☒ Hydraulic design	Building Services Designer
	☐ Fire service design	Building Services Designer
	☐ Electrical design	Building Services Designer
	☐ Mechanical design	Building Service Designer
	☐ Plumbing design	Plumber
	☐ Other (specify)	

Deemed-to-Satisfy: ☒ Performance Solution: ☐ (*X the appropriate box*)

Other details:

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: Doyle Soil Consulting	Date: June 2026
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Doyle Soil Consulting	Date: June 2026
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by: Doyle Soil Consulting	Date: June 2026

Standards, codes or guidelines relied on in design process:

AS1547-2012 On site domestic wastewater management.

AS3500 (Parts 0-5)-2013 Plumbing and drainage set.

Any other relevant documentation:

Site and Soil Evaluation Report

Attribution as designer:

I, Robyn Doyle, am responsible for the design of that part of the work as described in this certificate.

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act.

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	Name: (print)	*Signed*	*Date*
Designer:	R Doyle		19/06/2026
Licence No:	CC7418		

Assessment of Certifiable Works: (TasWater)

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.

TasWater must then be contacted to determine if the proposed works are Certifiable Works.

I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- [X] The works will not increase the demand for water supplied by TasWater
- [X] The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- [X] The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- [X] The works will not damage or interfere with TasWater's works
- [X] The works will not adversely affect TasWater's operations
- [X] The work are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- [X] I have checked the LISTMap to confirm the location of TasWater infrastructure
- [X] If the property is connected to TasWater's water system, a water meter is in place, or has been applied for to TasWater.

Certification:

I, ……Robyn Doyle……being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008,* that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au

	Name: (print)	*Signed*	*Date*
Designer:	Robyn Doyle		19/06/2026

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AS1547:2012 – Loading Certificate – AWTS Design

This loading certificate is provided in accordance with Clause 7.4.2(d) of AS/NZS 1547:2012 and sets out the design criteria and the limitations associated with use of the system.

Site Address: 203 Woodbridge Hill Rd Woodbridge

System Capacity: 5 persons @ 120 L/person/day

Summary of Design Criteria

DIR: 2.4 mm/day.

Irrigation area: 250 m^2

Reserve area location /use: Assigned – 100 % available

Water saving features fitted: Standard fixtures

Allowable variation from design flows: 1 event @ 200 % daily loading per quarter

Typical loading change consequences: Expected to be minimal due to use of AWTS and large land area

Overloading consequences: Continued overloading may cause hydraulic failure of the irrigation area and require upgrading/extension of the area.

Underloading consequences: Lower than expected flows will have minimal consequences on system operation unless the house has long periods of non-occupation. Under such circumstances additional maintenance of the system may be required. Long term under loading of the system may also result in vegetation die off in the irrigation areas and additional watering may be required.

Lack of maintenance / monitoring consequences: Issues of underloading/overloading and condition of the irrigation area require monitoring and maintenance, if not completed system failure may result in unacceptable health and environmental risks. Monitoring and regulation by the permit authority required to ensure compliance.

Other considerations: Owners/occupiers must be made aware of the operational requirements and limitations of the system, listed above, by the installer/maintenance contractor/owners/rental agents.

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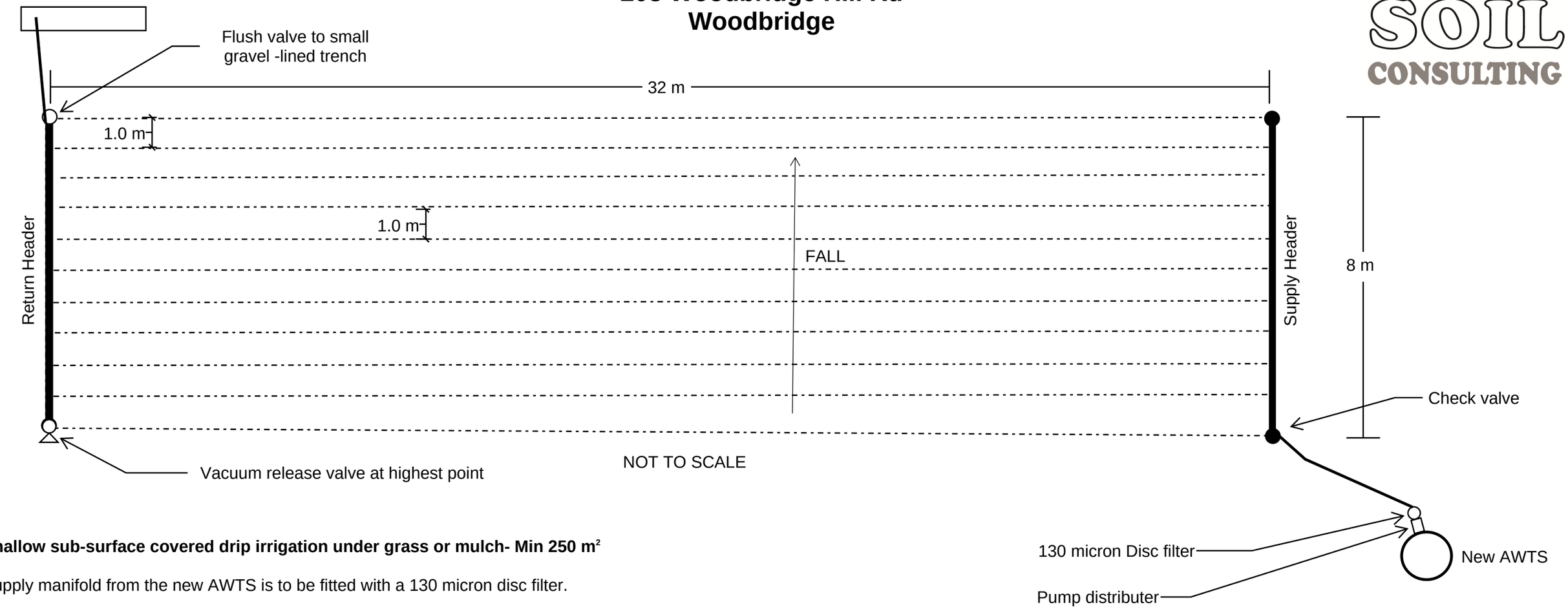
203 Woodbridge Hill Rd
Woodbridge



Shallow sub-surface covered drip irrigation under grass or mulch- Min 250 m²

Supply manifold from the new AWTS is to be fitted with a 130 micron disc filter.

Ground surface to be prepared per the specifications in the design report.

Netafim lilac Netafim Unibioline CNL (ID: 16 mm, dripper flow rate: 2.3 L/hr, dripper spacing: 0.3 m, pressure compensating, anti-siphon, non-leakage).

Dripper line to be laid along the contour at 1000 mm spacings

Supply and return manifolds, each comprising 32 mm diameter lilac coloured LDPE pipe, to be laid at either end of the dripper lines and buried to a depth of 100 – 200 mm.

Install vacuum breakers at (all) high points in each irrigation zone.

All valves to be placed in valve boxes with screw-down covers that are flush with the finished ground surface.

Flushing valve to be located diagonally opposite the supply line inlet, and discharging back to the distribution chamber of the AWTS -or into a small gravel lined trench (as shown).

Condition and performance of wastewater land application area to be monitored and reported during routine quarterly maintenance inspections.

The minimum irrigation pump capacity for the proposed design is 32 L/min @ 17.4 m head. If the minimum pump capacity is not achievable with the standard pump of the AWTS unit (check pump curve data), a Davey D42A is the recommended unit. See Appendix 2 for hydraulic design calculations and minimum pump capacity requirements. Calculation of TDH requirement assuming 32 mm (1.5") supply main and fittings - see Appendix 2 of design report.

All onsite wastewater management systems are site-specific. Installer to refer DSC report in full. Please contact the system designer with any questions or proposed changes to the system design prior to proceeding with changes.

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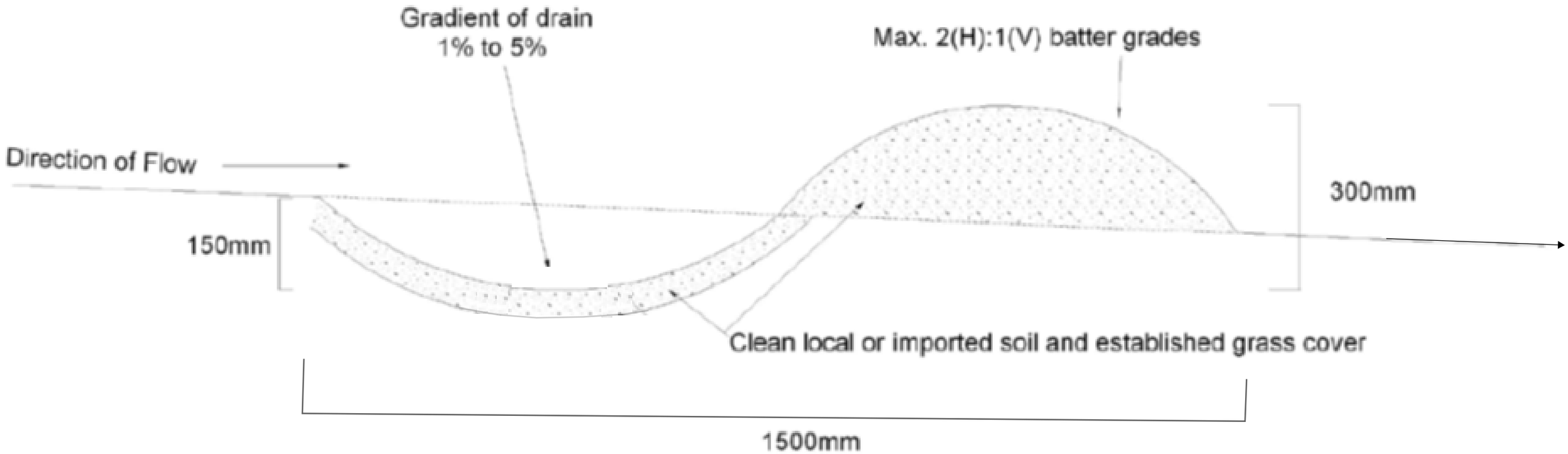
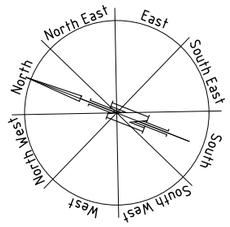
Cross Section: Upslope Diversion Drain





TGD Trafficable grate drain
P1 450x450 Trafficable pit. Each grate pit to be fitted with water quality improvement device. Designed & installed in accordance with manufacturers instructions
P2 325x325 Trafficable pit. Each grate pit to be fitted with water quality improvement device. Designed & installed in accordance with manufacturers instructions

Agg drains to be installed prior to slab/footings preparation. Evidence of the agg drainage installation to be supplied to the Engineer.

Plumber to confirm the location of existing on-site services prior to commencement of any excavations

S100ø 100uPVC sewerage 1.67% min. fall

100ø 100uPVC stormwater 1:100 min. fall

100x100 cast in kerb to downslope of driveway perimeter I.O. at each intersection & bend

Discharge to grassed swale drain in paddock below wastewater LAA

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Wastewater treatment system:

New AWTS
New Land application area:
- 250 m² drip irrigation under thick (min.150 mm) mulch or topsoil

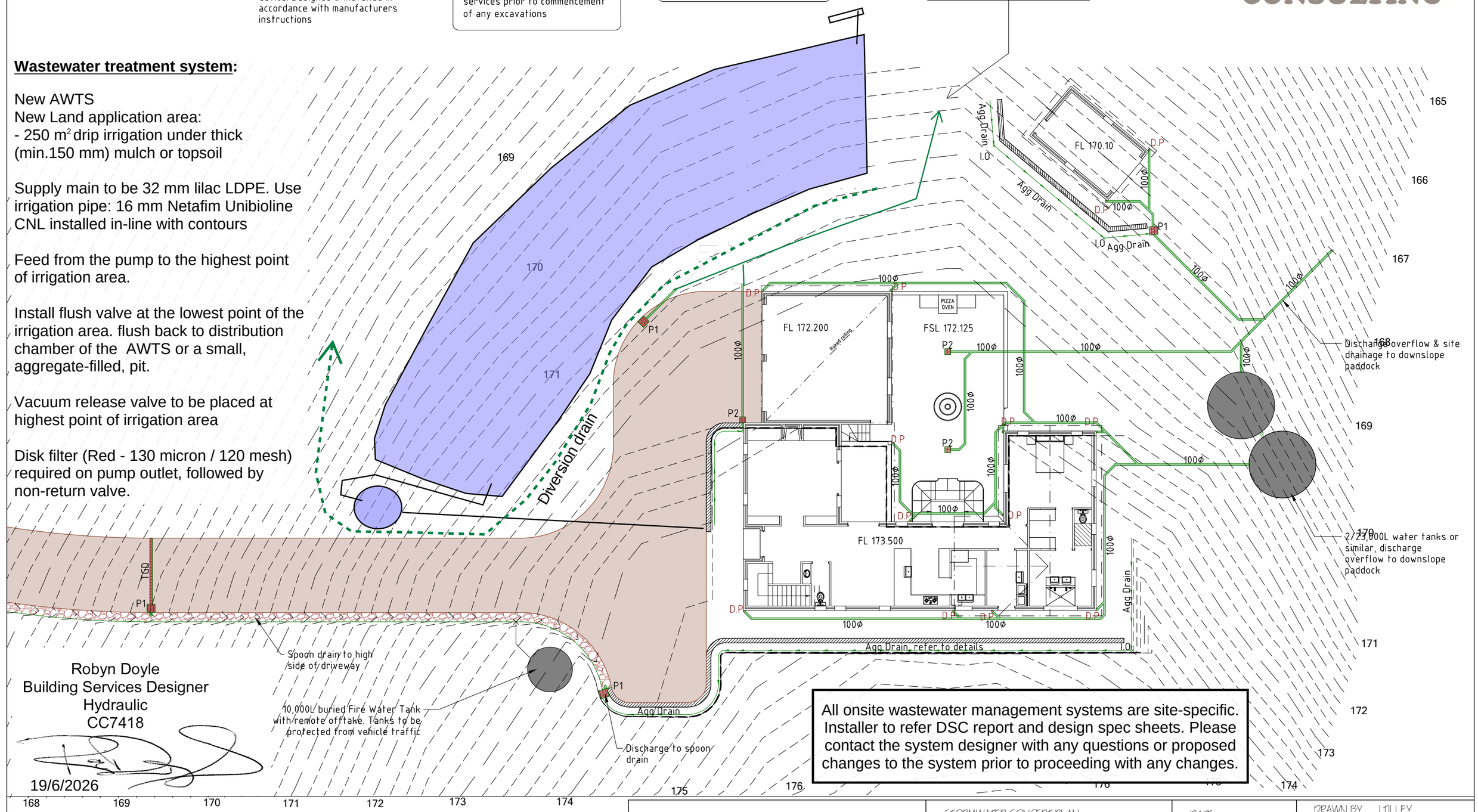
Supply main to be 32 mm lilac LDPE. Use irrigation pipe: 16 mm Netafim Unibioline CNL installed in-line with contours

Feed from the pump to the highest point of irrigation area.

Install flush valve at the lowest point of the irrigation area. flush back to distribution chamber of the AWTS or a small, aggregate-filled, pit.

Vacuum release valve to be placed at highest point of irrigation area

Disk filter (Red - 130 micron / 120 mesh) required on pump outlet, followed by non-return valve.



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Robyn Doyle
Building Services Designer
Hydraulic
CC7418

19/6/2026

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED RESIDENCE & OUTBUILDINGS FOR
MR.F. & MRS.E MAZZA AT
203 WOODBRIDGE HILL RD, WOODBRIDGE.

STORMWATER CONCEPT PLAN

DATE 19/06/2026

DRAWN BY J.TILLEY
email: qltilley7@biapond.com
phone ph 0400 671 582

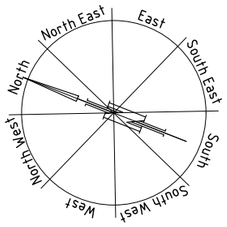
SCALE 1:200
0 2000 4000

AMENDED

DRAWING NO. 08 OF 12

Certified: G. Tilley Accreditation No.CC6201H

19/06/2026



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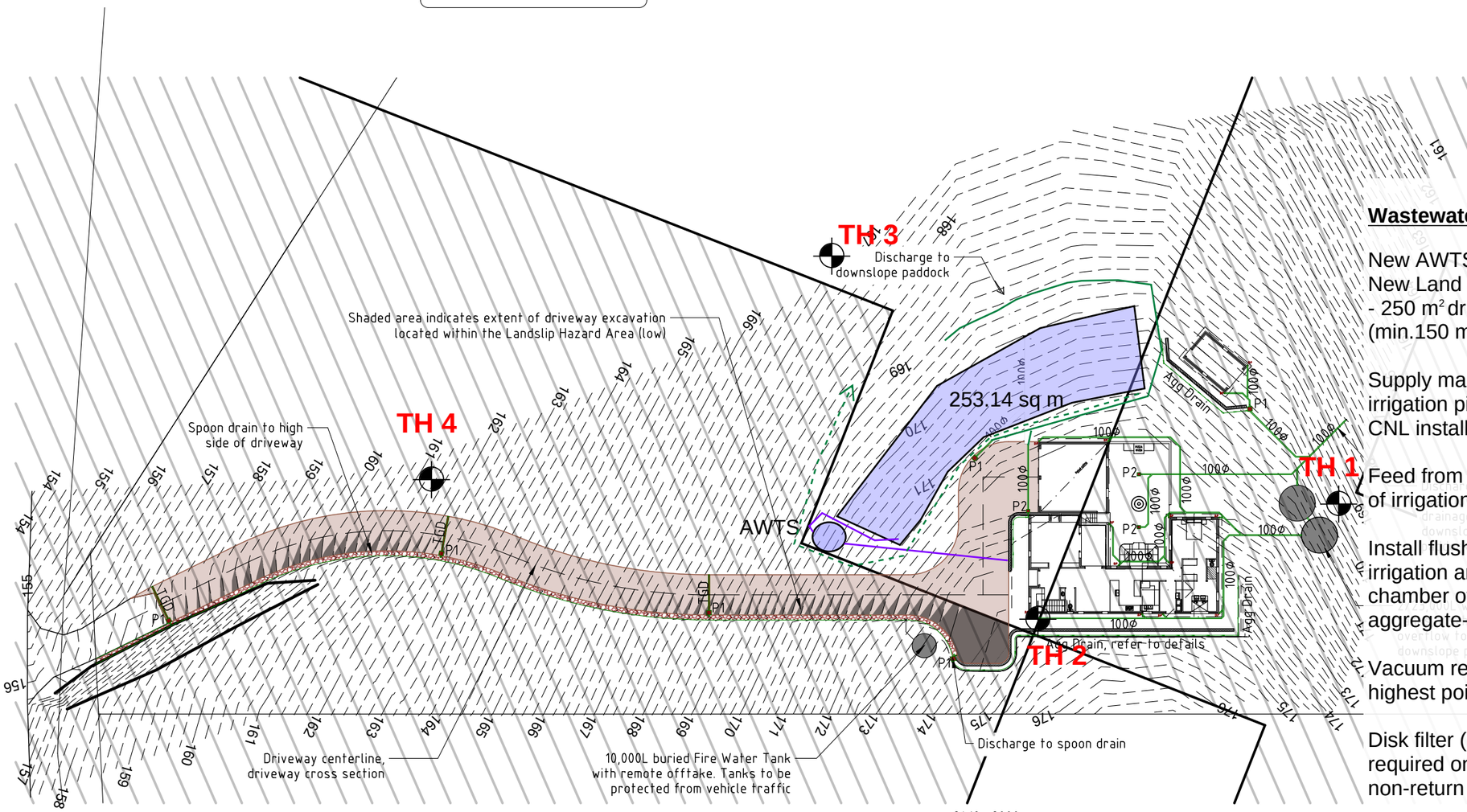

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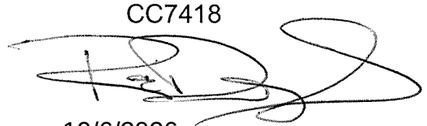

19/6/2026

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PROPOSED RESIDENCE & OUTBUILDINGS FOR
MR.F. & MRS.E MAZZA AT
203 WOODBRIDGE HILL RD, WOODBRIDGE.

STORMWATER CONCEPT PLAN

DATE 19/06/2026

DRAWN BY J.TILLEY
email: djtilley7@bigpond.com
phone ph 0400 671 582

SCALE 1:500
0 5000 10000

AMENDED

DRAWING NO. 09 OF 12

Certified: G. Tilley Accreditation No.CC6210H
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