



# Site and Soil Evaluation

## On-Site Wastewater and Effluent Disposal System Design

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### Proposed Service Station

88-98 Mountain Ridge Road,  
South Maclean QLD 4280

Report #	TE2590423
Date	18 December 2025

OFFICE DETAILS	
LOCATION	South East Queensland
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DOCUMENT CONTROL			
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DOCUMENT APPROVAL	Chris Taylor, Director, MEnvMan, BAppSc(Chem), ADCivEng, Cert IV DWM003		

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# 1 Introduction

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## 1.1 Background

Taylor Environmental (Australia) Pty Ltd was engaged to design an on-site wastewater treatment and effluent disposal system for the proposed service station at 88-98 Mountain Ridge Road, South Maclean QLD 4280. The property is not connected to a municipal sewer network and will require all wastewater to be treated and disposed of on site.

This report has been prepared to support the Development Application by addressing the requirements of onsite management of domestic-type sewage. The proposed system is designed in accordance with the requirements of *AS1547:2012 On-site Domestic Wastewater Management* and the *Queensland Plumbing and Wastewater Code*.

## 1.2 Proposal

The existing dwelling will be demolished and replaced with a new eight-bowser fuel forecourt and shop incorporating in-house food service. The development will be located on the northeastern portion of the site at the corner of Teviot Road and Mountain Ridge Road. The undeveloped northwestern area will be allocated for effluent disposal.

## 1.3 Scope of Works

The scope of works for this Site and Soil Evaluation are outlined below:

- Undertake a desktop study of the property, including a review of the development, sensitive environments, geology and slope
- Carry out a site inspection
- Investigate the receiving soil
- Determine a suitable location and method of effluent disposal
- Prepare plans for the wastewater management system for Council consideration

## 1.4 Legislation and Standards

This report has been completed in accordance with the relevant legislative requirements:

- Queensland Plumbing and Drainage Act 2018
- Queensland Plumbing and Drainage Regulation 2019
- Queensland Plumbing and Wastewater Code
- AS/NZS 1547:2012 On-site Domestic Wastewater Management
- AS1546.3:2017 Secondary Treatment Systems
- Plumbing Code of Australia 2019
- Environmental Protection Regulation and Act

## 2 Site and Soil Assessment

### 2.1 Property Details

Details of the subject property are presented in Table 1, below.

Table 1: Property Details

Feature	Details
Property Address	88-98 Mountain Ridge Road, South Maclean QLD 4280
Lot and Plan	Lot 1 RP193885
Local Authority	Logan City Council
Property size	2.046 ha
Water Supply	Reticulated water

Figure 1 shows the subject property.



Figure 1: Subject Property

## 2.2 Proposed Land application area details

A summary of the proposed land application area are presented in Table 2.

Table 2: Disposal Area Details

Feature	Detail
Elevation	~56 m AHD
Slope	3-4% south east
Aspect	South east
Exposure	Good sun and wind exposure
Vegetation	Grass with few scattered trees

Figure 2 shows the typical site conditions.

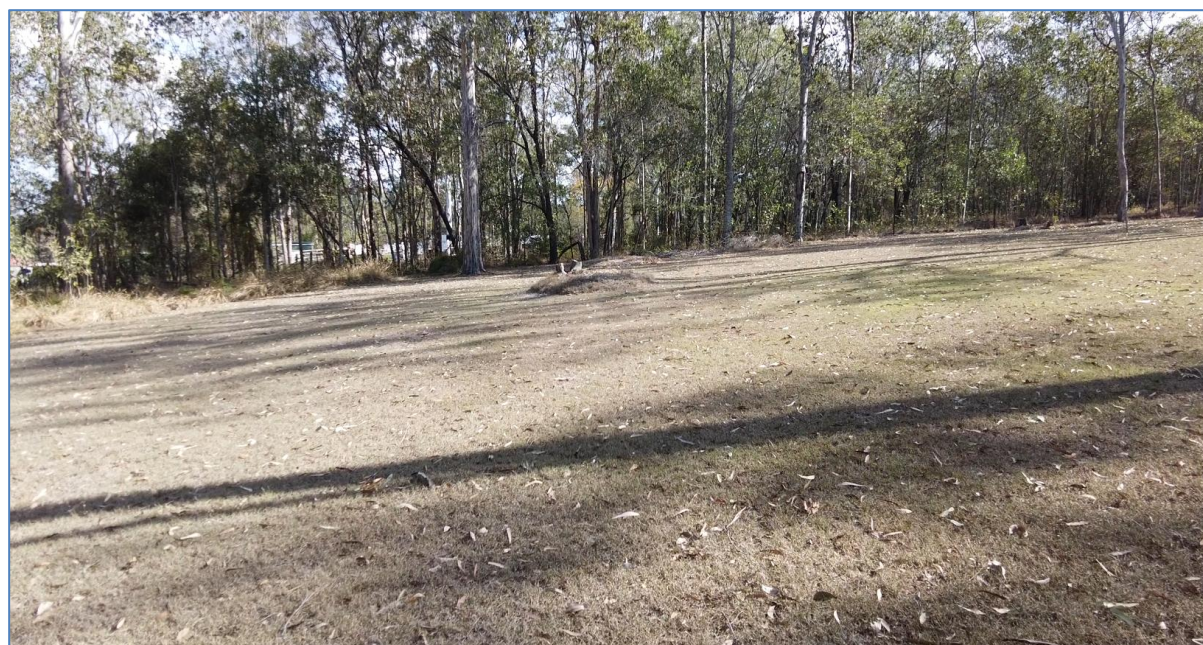


Figure 2: Typical site conditions

## 2.3 Soil Investigation

The soil profile and design characteristics for the effluent disposal area are presented in Table 3.

Table 3: Soil Type

Characteristic	Details
Soil Profile	0 – 400 Gravelly Silty Sand, Pale Brown 400 – 800 Extremely Weathered Sandstone Low to medium plasticity
Category	Category 3 weakly structured Loams
Indicative Permeability ( $K_{sat}$ )	0.5 – 1.5 m/day
Design Irrigation Rate (DIR)	4.0 mm/day for surface irrigation

## 2.4 Environmental Review

Table 4 outlines the relevant environmental considerations for this wastewater system.

Table 4: Environmental Review

Type	Details
Watercourses	<ul style="list-style-type: none"> <li>• No watercourses on the property</li> <li>• Closest permanent watercourse is approximately 350m west (Intermittent Stream Order 1)</li> </ul>
Dams	<ul style="list-style-type: none"> <li>• Small dam on the south east corner</li> </ul>
Springs	<ul style="list-style-type: none"> <li>• No springs on or nearby property</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>• No wetlands on or nearby property</li> </ul>
Flooding	<ul style="list-style-type: none"> <li>• Property is not in a flood risk area</li> </ul>
Overland flow paths	<ul style="list-style-type: none"> <li>• Overland flow will traverse the site from north west to south east</li> <li>• Stormwater diversion bunds are required around the land application area</li> </ul>
Ground water	<ul style="list-style-type: none"> <li>• Not encountered</li> </ul>
Groundwater Dependent Ecosystems	<ul style="list-style-type: none"> <li>• No GDE on or nearby property</li> </ul>
Matters of State Environmental Significance	<ul style="list-style-type: none"> <li>• Various MSES in the on and around the property: <ul style="list-style-type: none"> <li>○ Regulated Vegetation [category C]</li> <li>○ Wildlife Habitat [essential habitat]</li> <li>○ Wildlife Habitat [koala habitat]</li> </ul> </li> <li>• The site survey identified the actual line of vegetation onsite, which differs slightly from the overly mapping</li> <li>• The surveyed line of vegetation is through the south-western corner of the property</li> <li>• No vegetation to be removed for the land application area</li> </ul>
Matters of Local Environmental Significance	<ul style="list-style-type: none"> <li>• Secondary vegetation management area over entire property</li> </ul>

## 2.5 Existing Wastewater System

The existing house has a septic tank and greywater tank which will be decommissioned when the house is demolished.

## 3 Wastewater System Design

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### 3.1 Proposed Wastewater System

It is proposed to install an onsite wastewater system for treatment and disposal of sewage of domestic composition (no trade waste). This will consist of a gross pollutants trap (septic tank) and pre-packaged OSSF followed by a field of fixed location sprinklers.

### 3.2 Design Wastewater Volume

#### 3.2.1 Site Use

The service station will include eight fuel bowsers and a 400 m<sup>2</sup> building, with 150 m<sup>2</sup> dedicated to an ancillary food service operated by service station staff.

#### 3.2.2 Design Standards

The *Queensland Planning Guidelines for Water and Sewage 2019* (PGWS) has been used to nominate a design volume for the food service, which allows for flows of 900-1200 L per 100m<sup>2</sup> GFA. The higher value has been adopted for this design.

AS1547:2012 Table H4 has been adopted for the service station staff, allowing for 30 L/staff/day.

The national standard and Queensland design standards do not provide an allowance for public toilets and as such other design standards have been adopted, allowing for 6<sup>1</sup> L/use.

#### 3.2.3 Adopted Design Volume

The calculated design volume is:

5 staff	x 30 L/person	= 150 L/day
50 public toilet uses	x 6 L/use	= 300 L/day
150m <sup>2</sup> GFA food service	x 1,200L/100m <sup>2</sup>	= 1,800 L/day
<b>Total</b>		<b>= 2,250 L/day</b>

### 3.3 Wastewater Composition

#### 3.3.1 Sources

Wastewater at this property will be generated from:

- Public and staff bathrooms (toilets and basins)
- Staff kitchenette sinks
- Cleaners sink
- Kitchen prep sink and washdown
- Auto rinse cycles on coffee machines

The following items should not be connected to this system:

- Water from bin washdown or other trade waste
- Leftover milk from coffee machines (should not be poured down the drain as this significantly increases BOD loadings)

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<sup>1</sup> SA Health On-site Wastewater Systems Code = 5 L/person (WC/urinal and basin);

NT Department of Health, Code of Practice for Wastewater Management = 5 L/person (WC/urinal and basin);

Victorian EPA, Code of Practice – Onsite Wastewater Management: 6 L/person (public toilets with no showers)

### 3.3.2 Expected Compensation

Table 5 below shows the expected influent<sup>2</sup> and required effluent<sup>3</sup> for this design.

Table 5: Wastewater Characteristics

Constituent	Expected Influent	Required Effluent
pH	6.0 – 8.0	-
Biochemical Oxygen Demand	≈500 mg/L from sewage ≈1000 mg/L from kitchen	90% of samples ≤ 10 mg/L No samples over 20 mg/L
Total Suspended Solids	≈1000 mg/L	90% of samples ≤ 10 mg/L No samples over 20 mg/L
Total Nitrogen	≈100 mg/L	
Total Phosphorus	≈15 mg/L	
E. coli		90% of samples ≤ 10 mg/L No samples over 30 mg/L
Free Available Chlorine (chlorine disinfection)		Minimum 0.5 mg/L

### 3.3.3 BOD Loading

The treatment system has been sized with consideration for the BOD loading from the food service.

The estimated BOD Loading of the influent (before the septic tank and grease trap) is:

Sewage:	450 L/day @ 500 mg-BOD/L	= 225 g-BOD/day
Kitchen:	1,800 L/day @ 1000 mg-BOD/L	= 1,800 g-BOD/day
<b>Total:</b>		<b>= 2,025 g-BOD/day</b>

The Taylex ABS4200 has capacity for 2,331 g-BOD/day and is therefore sufficient.

## 3.4 ERA Equivalent Persons

The *Environmental Protection Regulation 2019 (EPR)* Schedule 2 Section 63 pertains to large scale onsite sewage treatment and disposal systems. A property undertakes an Environmental Relevant Activity (ERA) 63 when the sewerage works is greater than 21 Equivalent Persons (EP). If an ERA63 is undertaken, the wastewater system must be approved by the Department of Environment and Science.

As per the two calculation methods outlined by the EPR, the number of Equivalent Persons for this property is determined below.

$$\begin{aligned} \text{Treatment Capacity EP} &= Q / 200 \\ &= (2,025\text{L}) / 200 = \mathbf{10 EP} \end{aligned}$$

$$\begin{aligned} \text{Phosphorus EP} &= (\text{P loading rate} \times \text{daily volume}) / 2.5 \\ &= [15 \text{ mg/L} \times (2,025\text{L})] / 2.5 = \mathbf{12 EP} \end{aligned}$$

The number of Equivalent Persons for this sewage system does not exceed the ERA63 threshold of 21EP. As such, this wastewater system is Permit Work under the *Plumbing and Drainage Regulation* and an ERA63 permit is not required.

<sup>2</sup> Expected influent samples based on past experience at service stations

<sup>3</sup> AS1546.3:2017 Secondary Treatment Systems

### 3.5 Design Details

Table 6 below presents the features of the proposed wastewater system.

*Table 6: Design Features*

Feature		Details
Design Volume	Water supply	Reticulated water
	Design Volume (Q)	2,250 L / day
Soil Characteristics	Category	3
	Design Irrigation Rate (DIR)	4 mm/day
Treatment System	Gross Pollutants Trap	3,000L (min) septic tank to capture foreign items flushed down public toilets, and provides some initial BOD reduction
	Grease Trap	TBD by hydraulic engineer
	Treatment plant	Taylex ABS4200
	Treatment plant approval	24 - 2021
	Treatment level	Advanced Secondary with chlorine disinfection
Irrigation Area	Application method	Fixed location wobbler sprinklers
	Minimum area required	Area = Q / DIR = 2250 / 4 = 562.5 m <sup>2</sup>
	Install as	24m x 24m = 576 m <sup>2</sup>
	Configuration	8 rows of 8 sprinklers, at 3m spacings

The design of the system is presented in [Appendix A](#).

The Treatment Plant Approval is presented in [Appendix B](#).

#### *General requirements and notes - Treatment Facility*

- Install a flow meter, in lilac valve box, on the irrigation main so that transfer volumes can be manually monitored
- The treatment plant and septic tank are to be installed, operated and serviced in accordance with manufacture specifications

#### *General requirements and notes – Land Application Area*

- Install indexing valve to equally distribute effluent between each row of sprinklers
- Install flow control valve at start of each row
- Install flushing valve at end of each row
- Install 2x 'effluent reuse' warning signs around land application area
- The land application area is to be planted with grass or vegetation and regularly maintained
- The land application area has been designed based on a daily wastewater volume in accordance with AS1547. Any exceedance of this design volume may have adverse effects on the land application area

### 3.6 Setback Distances

The *Queensland Plumbing and Wastewater Code V1:2024* Appendix 1 outlines minimum setback separation distances required for onsite wastewater management facilities. This design complies with the relevant setbacks.

The 'Land Application Area Setback Distances' for surface spray areas (*QPWC Table T3*) are presented in Table 7.

*Table 7: Separation Distances: Surface land application areas*

Feature	Separation Distance
Property boundaries, pedestrian paths, walkways	2 m
Water edge of swimming pool	6 m
Dwellings, recreation area	10 m

*\*Distances are given in meters and are measured from the edge of the irrigated wetted area to any point of the feature*

The 'Protection of Surface Water and Groundwater Setback Distances' (*QPWC Table T5*) are presented in Table 8.

*Table 8: Separation Distances: Protection of Surface Water and Groundwater*

Feature	Separation Distance		
	Adv. Sec.	Secondary	Primary
Effluent Quality			
Top of bank of permanent water course	10 m	30 m	50m
Top of bank of intermittent water course	10 m	30 m	50m
Top of bank of a lake, bay or estuary	10 m	30 m	50m
Top water level of a surface water source used for agriculture, aquaculture or stock purposes	10 m	30 m	50m
Open stormwater drainage channel or drain	10 m	30 m	50m
Bore or dam	10 m	30 m	50m
Unsaturated depth to a permanent water table (vertical)	0.3 m	0.6 m	1.2m

*\*Distances are given in meters and are measured from,*

- any part of the on-site sewage facility (including pipes and fittings) and,*
- the edge of irrigated wetted area of the Land Application Area to the feature as listed.*

### 3.7 Maintenance

Property owners have a responsibility to ensure the onsite wastewater treatment and effluent disposal system is maintained and serviced. The following servicing and precautions are to be undertaken:

- Read the Owner's Manual that is provided with the treatment plant
- Follow the maintenance requirements specified by the manufacturer and authorised service agent
- Comply with local authority's servicing requirements
- Do not manipulate the system so that it no longer complies with the Council issued permit or the plans located in Appendix A of this document
- Maintain the land application area e.g. regularly mowed and ensure that there is no ponding of effluent
- Vehicles, animals and general access to the land application area is to be generally restricted with warning signs erected
- Use low sodium biodegradable soaps and detergents as per the label instructions and no paints, solvents, chemicals, food scraps, fats, oils or any other solids to be disposed of "down the drain"
- It is always good practice to minimise / stagger high wastewater generating activities such as laundry over a full week
- On-site sewage systems are not designed to cope with the flow from garbage grinders

The design was completed by Chris Taylor (Director, Taylor Environmental (Australia) Pty Ltd, QBCC Licence Number 150 556 72).



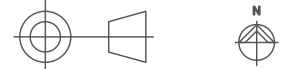
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Chris Taylor MEnvMan, BAppSc(Chem), ADCivEng Cert IV DWM003  
Director | Taylor Environmental (Australia) Pty Ltd  
18 Dec. 25



PROJECT:

# ONSITE WASTEWATER TREATMENT AND EFFLUENT DISPOSAL SYSTEM FOR PROPOSED SERVICE STATION AT 88-98 MOUNTAIN RIDGE ROAD, SOUTH MACLEAN



## REVISIONS

#	DATE	SUBJECT	AUTHORISED
A	18/12/2025	REVISION A	C. TAYLOR

TAYLOR ENVIRONMENTAL



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## WASTEWATER TREATMENT & EFFLUENT DISPOSAL SYSTEM

AUTHORISED FOR ISSUE DATE  
*M.C. Taylor* 18/12/2025

STREET ADDRESS  
88-98 MOUNTAIN RIDGE RD, SOUTH MACLEAN

LOT & PLAN  
LOT 1 RP193885

COUNCIL  
LOGAN CITY COUNCIL

NAME OF CLIENT  
KEPNOCK PTY LTD

DESIGNER  
C. TAYLOR

DRAWN  
M. MAHONY

DRAWING DETAILS  
TITLE PAGE

JOB NUMBER  
TE2590423

SCALE	REVISION	DWG #
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### GENERAL NOTES

- LOCATION OF HSTP, ORG, VENT PIPE AND OTHER WASTE PIPES TO BE DETERMINED BY PLUMBER
- REFER TO COMPLIANCE PERMIT FOR CONDITIONS OF COUNCIL APPROVAL
- PROPERTY FEATURES, STRUCTURES AND CONTOURS HAVE BEEN REPRODUCED BASED ON THE BEST AVAILABLE INFORMATION AND MAY NOT BE COMPLETE OR ACCURATE
- THE SYSTEM INSTALLER IS RESPONSIBLE TO ESTABLISH THE LOCATION, LEVELS AND DEPTHS OF ALL EXISTING SERVICES ON-SITE PRIOR TO COMMENCING ANY WORKS
- LOCATIONS AND SETOUT DIMENSIONS SHOWN ARE APPROXIMATE ONLY AND ARE TO BE CONFIRMED ON SITE.
- ACCESS AND LAY DOWN AREAS ARE TO BE CONFIRMED BY THE SYSTEM INSTALLER
- EXISTING BUILDINGS AND EXTERNAL STRUCTURES SHOWN ON THESE DRAWINGS ARE OBTAINED FROM THE AVAILABLE INFORMATION AND MAY NOT BE COMPLETE AND ACCURATE
- ALL DIMENSIONS ARE IN MM U.N.O
- PLUMBING AND DRAINAGE TO QLD PLUMBING & WASTEWATER ACT, AS / NZS 3500
- ALL PIPE WORK TO AS / NZS 4020
- ALL TANKS TO BE INSTALLED AND ANCHORED IN COMPLIANCE WITH THE MANUFACTURERS SPECIFICATIONS
- FLEXIBLE JOINTS ON ALL INSTALLED TANKS (AS / NZS 3500)
- THERE SHALL BE NO CROSS CONNECTION BETWEEN ANY WASTEWATER / EFFLUENT PIPEWORK AND ANY POTABLE WATER SUPPLY PIPEWORK
- MINIMUM DISTANCE BETWEEN TANKS AND BUILDINGS TO BE MAINTAINED (AS/NZS 3500)
- USE ONLY A LICENSED DRAINER THAT HAS BEEN ACCREDITED BY THE SYSTEM SUPPLIER.
- FINAL LOCATION OF THE LAND APPLICATION AREA AND ASSOCIATED PIPE WORK CAN ONLY BE ALTERED ON SITE TO MEET THE SITE CONDITIONS AFTER APPROVAL FROM TAYLOR ENVIRONMENTAL (AUSTRALIA) PTY LTD
- GRADE ALL BATTERS EVENLY AT 1 IN 5, UNLESS NOTED OTHERWISE
- ANY SOILS ENCOUNTERED WHICH SHOW EVIDENCE OF CONTAMINATION ARE TO BE STOCKPILED SEPARATELY. CONTAMINATED SOIL SHALL BE HANDLED IN ACCORDANCE WITH ALL WORKPLACE HEALTH & SAFETY AND ENVIRONMENTAL REGULATIONS
- IT IS THE INSTALLERS RESPONSIBILITY TO PROVIDE ACCURATE 'AS CONSTRUCTED' DRAWINGS TO RELEVANT LOCAL AUTHORITY AND INCUR ASSOCIATED COST
- ALL DISTURBED AREAS TO BE REINSTATED TO NATURAL GROUND CONDITIONS
- EXISTING TOPSOIL IS TO BE RETAINED AND SET ASIDE (WINDROWED) TO PREVENT DAMAGE FROM MACHINERY AND REDISTRIBUTED ONCE INSTALLATION IS COMPLETE
- AT LEAST A 5 TONNE MACHINE WITH POSI-TRACK SYSTEM IS REQUIRED FOR EARTHWORKS TO ELIMINATE POTENTIAL TRACK INDENTATIONS INTO GROUND LEVEL
- ALL MATERIALS SHALL BE NEW, PROVEN IN SERVICE AND SUITABLE FOR THE INTENDED USE
- IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENGAGE THE DESIGNER TO UNDERTAKE INSPECTIONS DURING INSTALLATION. FAILURE TO DO SO WILL RESULT IN THE FORM 8 / COMMISSIONING CERTIFICATE NOT BEING ABLE TO BE COMPLETED
- DO NOT SCALE FROM DRAWINGS
- TAYLOR ENVIRONMENTAL TAKES NO RESPONSIBILITY FOR WORKS UNDERTAKEN BY THE INSTALLER AND/OR INSTALLATIONS THAT ARE NOT IN ACCORDANCE WITH THESE PLANS
- THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE SITE AND SOIL REPORT, ARTICULATED JOINT DESIGN AND REGULATOR ISSUED COMPLIANCE PERMITS

### SANITARY DRAINAGE AND PLUMBING

- SANITARY DRAINAGE SHALL BE  $\phi$ 100 UPVC AT A 1:60 MINIMUM GRADE
- 10's UNDER CONCRETE/IMPERMEABLE GROUND COVERINGS SHALL BE TAKE TO SURFACE LEVEL AS AN IOS AND FITTED WITH AN APPROVED SCREW CAP
- ORG RISERS SHALL BE TO AS3500.2 AND EXTEND TO AN APPROVED GRATE AT 150mm BELOW LOWEST FIXTURE, 75mm ABOVE GROUND LEVEL AND ABOVE DEFINED FLOOD LEVEL
- UNDERSLAB SANITARY DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE ARTICULATED JOINT DESIGN (WHERE REQUIRED) AND AS3500.2 APPENDIX G
- LAGGING IN ACCORDANCE WITH AS3500
- BURIED PIPEWORK SHALL BE TRENCHED IN ACCORDANCE WITH AS3500.1 SECTION 5

### INSTALLATION

- IT IS THE INSTALLERS RESPONSIBILITY TO ENSURE THAT ALL COMPONENTS COMPLY WITH THESE GUIDES UPON COMMISSIONING OF THIS SYSTEM
- ALL BURIED PIPE WORK IS TO BE IDENTIFIED WITH UNDERGROUND MARKING TAPE PLACED ABOVE THE PIPE WORK
- ALONG THE BOUNDARY OF THE LAND APPLICATION AREA THERE SHALL BE AT LEAST 2 WARNING SIGNS CLEARLY VISIBLE TO ADVISE THAT RECYCLED WATER IS USED (EACH SIGN SHALL COMPLY WITH AS1319 AND HAVE THE WORDING RECYCLED WATER - AVOID CONTACT DO NOT DRINK)

### MAINTENANCE

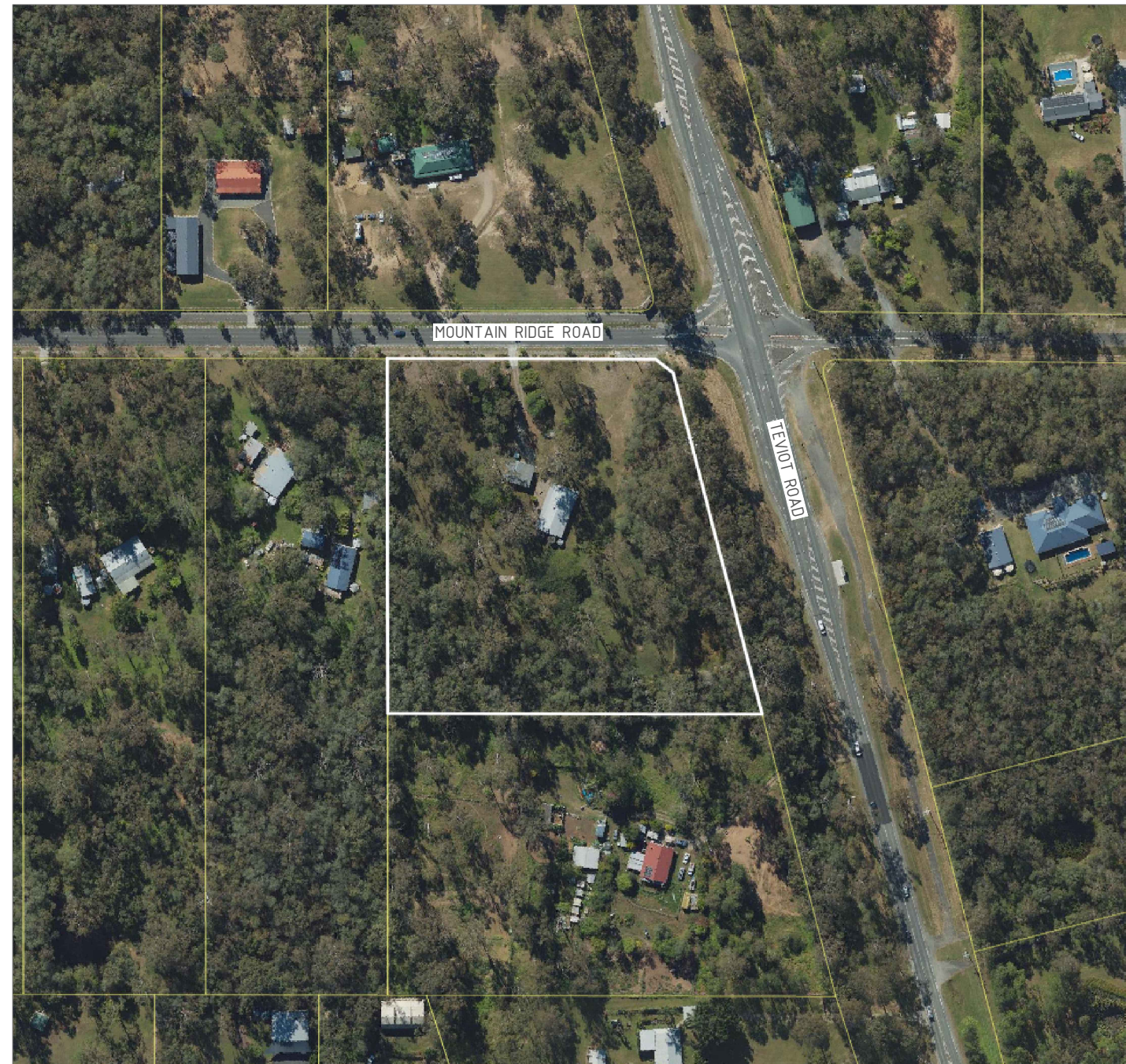
- SYSTEM TO BE SERVICED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURE SPECIFICATIONS AND COUNCIL GUIDELINES
- SEPTIC TANKS TO BE CHECKED FOR SOLIDS BUILD UP ANNUALLY
- SEPTIC TANKS TO PUMPED OUT IF  $\frac{1}{3}$  FULL OF SOLIDS OR 5 YEARS (WHICHEVER IS SOONER)
- LAND APPLICATION IS IMPORTANT AND IS TO BE REGULARLY MOWED AND ANIMALS AND VEHICLES EXCLUDED

### LEGEND

	PROPERTY BOUNDARY
	EASEMENT
	CONTOUR - MINOR
	CONTOUR - MAJOR
	DECOMMISSION
	FENCE
	MSES VEGETATION
	VEGETATION LINE
	TREE LINE
	INTERMITTENT WATERBODY
	PERMANENT WATERBODY
	FLOW PATH
	DEFINED FLOOD LINE
	CHANGE OF GRADE
	TOP OF BANK
	RETAINING WALL
	WASTEWATER COMPONENT
	S GRAVITY DRAINAGE - NEW
	eS GRAVITY DRAINAGE - EXISTING
	R RISING MAIN - NEW
	eP RISING MAIN - EXISTING
	SW STORMWATER PIPE
	W WATER MAINS
	E ELECTRICAL - OVER HEAD
	E-UG ELECTRICAL - UNDERGROUND
	COMM COMMS SERVICES
	NBN NBN SERVICES
	T TELSTRA SERVICES
	GAS GAS SERVICES
	FM FIRE MAIN SERVICES

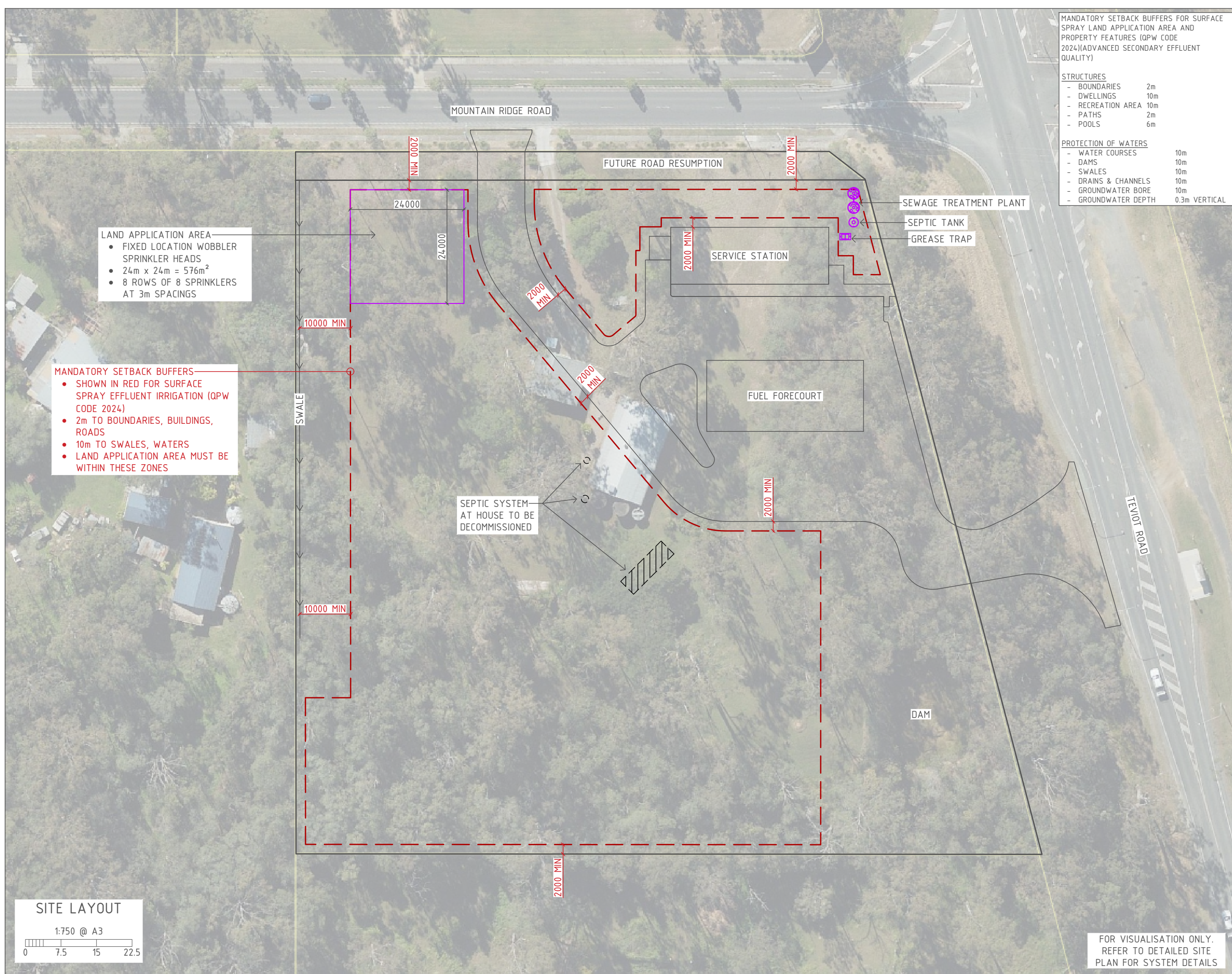
### ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
AS	AUSTRALIAN STANDARD
B	HAND BASIN
BTH	BATH TUB
COS	CLEAR OUT TO SURFACE
CS	CLEANERS SINK
DG	DISCONNECTOR GULLY
DW	DISHWASHER
e??	EXISTING ITEM
FFL	FINISHED FLOOR LEVEL
FSL	FINISHED SURFACE LEVEL
FWG	FLOOR WASTE GRATE
HSTP	HOME SEWAGE TREATMENT PLANT
IL	INVERT LEVEL
IO	INSPECTION OPENING
IOS	INSPECTION OPENING TO SURFACE
IV	INDEXING VALVE
LAA	LAND APPLICATION AREA
LT	LAUNDRY TUB
NGL	NATURAL GROUND LEVEL
ORG	OVERFLOW RELIEF GULLY
QSSF	ON-SITE SEWAGE FACILITY
RL	REDUCED LEVEL
S	SINK
SHR	SHOWER
ST	STACK
UR	URINAL
V	VENT
WC	WATER CLOSET



SUBJECT PROPERTY

1:2,500 @ A3



MANDATORY SETBACK BUFFERS FOR SURFACE SPRAY LAND APPLICATION AREA AND PROPERTY FEATURES (QPW CODE 2024)(ADVANCED SECONDARY EFFLUENT QUALITY)

STRUCTURES	
- BOUNDARIES	2m
- DWELLINGS	10m
- RECREATION AREA	10m
- PATHS	2m
- POOLS	6m

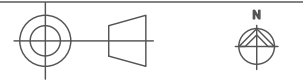
PROTECTION OF WATERS	
- WATER COURSES	10m
- DAMS	10m
- SWALES	10m
- DRAINS & CHANNELS	10m
- GROUNDWATER BORE	10m
- GROUNDWATER DEPTH	0.3m VERTICAL

**LAND APPLICATION AREA**

- FIXED LOCATION WOBBLER SPRINKLER HEADS
- 24m x 24m = 576m<sup>2</sup>
- 8 ROWS OF 8 SPRINKLERS AT 3m SPACINGS

**MANDATORY SETBACK BUFFERS**

- SHOWN IN RED FOR SURFACE SPRAY EFFLUENT IRRIGATION (QPW CODE 2024)
- 2m TO BOUNDARIES, BUILDINGS, ROADS
- 10m TO SWALES, WATERS
- LAND APPLICATION AREA MUST BE WITHIN THESE ZONES



**REVISIONS**

#	DATE	SUBJECT	AUTHORISED
A	18/12/2025	REVISION A	C. TAYLOR

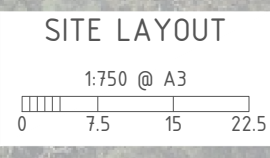
**TAYLOR ENVIRONMENTAL**



QBCC LICENCE NUMBER 150 556 72  
 ABN NUMBER 37 147 807 420  
 PHONE: 0400 301 364  
 EMAIL: chris@taylorenviro.com.au  
 WEB: www.taylorenviro.com.au

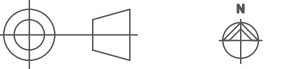
**WASTEWATER TREATMENT & EFFLUENT DISPOSAL SYSTEM**

AUTHORISED FOR ISSUE	DATE
<i>M.C. Taylor</i>	18/12/2025
STREET ADDRESS	
88-98 MOUNTAIN RIDGE RD, SOUTH MACLEAN	
LOT & PLAN	
LOT 1 RP193885	
COUNCIL	
LOGAN CITY COUNCIL	
NAME OF CLIENT	
KEPNOCK PTY LTD	
DESIGNER	
C. TAYLOR	
DRAWN	
M. MAHONY	
DRAWING DETAILS	
FULL SITE PLAN	
JOB NUMBER	
TE2590423	



FOR VISUALISATION ONLY.  
 REFER TO DETAILED SITE PLAN FOR SYSTEM DETAILS

SCALE	REVISION	DWG #
1:750	A	SL1



REVISIONS

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A	18/12/2025	REVISION A	C. TAYLOR

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WASTEWATER TREATMENT & EFFLUENT DISPOSAL SYSTEM

AUTHORISED FOR ISSUE DATE  
*M.C. Taylor* 18/12/2025

STREET ADDRESS  
 88-98 MOUNTAIN RIDGE RD, SOUTH MACLEAN

LOT & PLAN  
 LOT 1 RP193885

COUNCIL  
 LOGAN CITY COUNCIL

NAME OF CLIENT  
 KEPNOCK PTY LTD

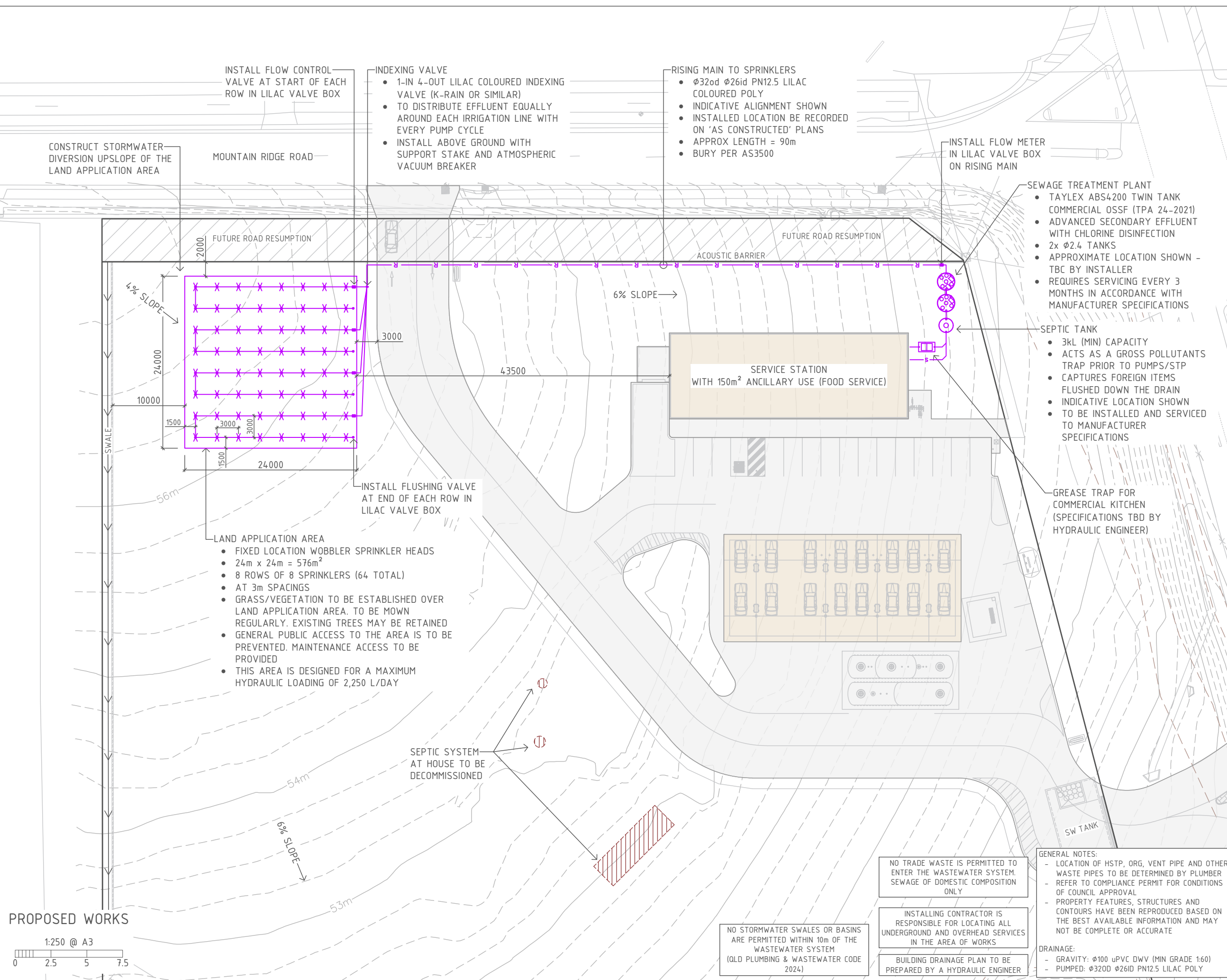
DESIGNER  
 C. TAYLOR

DRAWN  
 M. MAHONY

DRAWING DETAILS  
 PROPOSED WORKS

JOB NUMBER  
 TE2590423

SCALE	REVISION	DWG #
1:500	A	SL2



**RIISING MAIN TO SPRINKLERS**

- Ø320d Ø261d PN12.5 LILAC COLOURED POLY
- INDICATIVE ALIGNMENT SHOWN
- INSTALLED LOCATION BE RECORDED ON 'AS CONSTRUCTED' PLANS
- APPROX LENGTH = 90m
- BURY PER AS3500

**INSTALL FLUSHING VALVE AT END OF EACH ROW IN LILAC VALVE BOX**

6% SLOPE →

4% SLOPE →

6% SLOPE →

6% SLOPE →

53m

54m

56m

10000

2000

24000

1500

1500

24000

3000

43500

ACOUSTIC BARRIER

FUTURE ROAD RESUMPTION

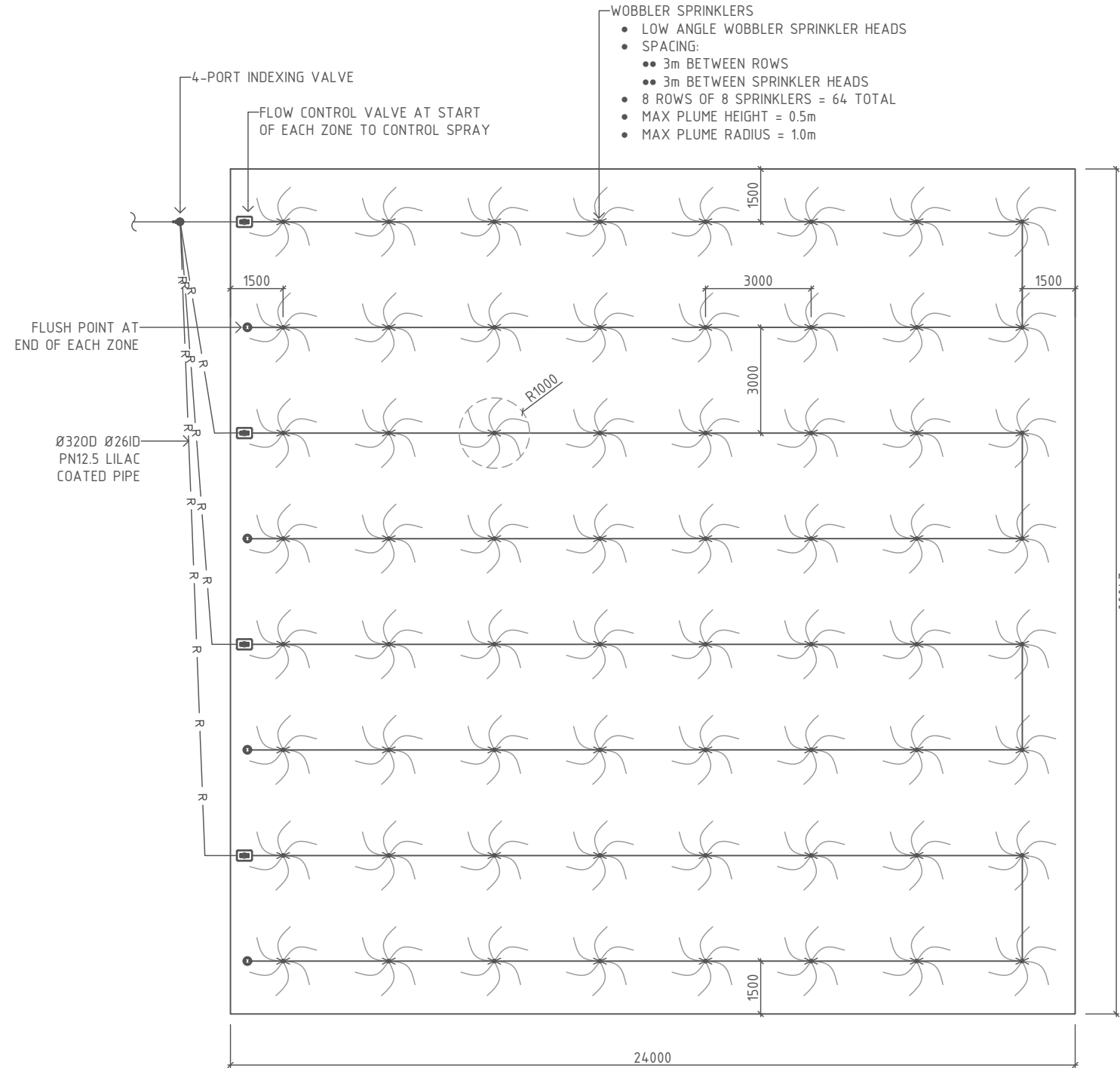
FUTURE ROAD RESUMPTION

SERVICE STATION WITH 150m<sup>2</sup> ANCILLARY USE (FOOD SERVICE)

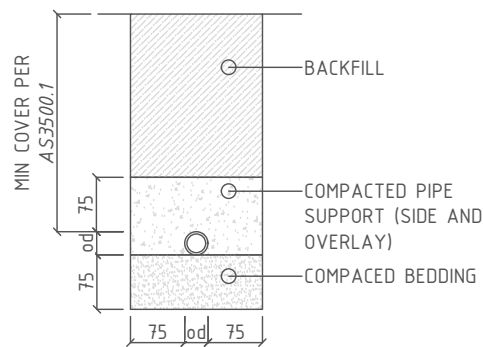
SW TANK

SEPTIC SYSTEM AT HOUSE TO BE DECOMMISSIONED

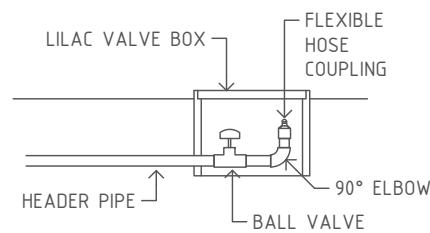
SOIL CHARACTERISTICS	
SOIL PROFILE	0 - 400 GRAVELLY CLAYEY SAND 400 - 800 EXTREMELY WEATHERED SANDSTONE
RECEIVING SOIL	WEAKLY STRUCTURED CATEGORY 3 LOAM
DESIGN IRRIGATION RATE	4.0 mm/DAY FOR SURFACE IRRIGATION
DESIGN VOLUME	
WATER SUPPLY	RETICULATED WATER
STAFF	5 STAFF x 30 L/PERSON = 150 L/DAY
PUBLIC TOILETS	50 USES x 6 L/USE = 300 L/DAY
FOOD SERVICE	150m <sup>2</sup> x 1,200 L/100m <sup>2</sup> = 1,800 L/DAY
ESTIMATED HYDRAULIC LOADING	2,250 L/DAY
ESTIMATED BOD LOADING	≈2,025 g/DAY BEFORE SEPTIC TANK & G.I.T (450L @ 500mgBOD/L + 1,800L @ 1,000 mgBOD/L)
TREATMENT PLANT	
GREASE TRAP	BY OTHERS
GROSS POLLUTANTS TRAP	3,000L SEPTIC TANK
TREATMENT FACILITY	TAYLEX ABS4200
CAPACITY	4,200 L/DAY HYDRAULIC CAPACITY 2,331 g/DAY BOD5 CAPACITY
APPROVAL NUMBER	24 - 2021
TREATMENT LEVEL	ADVANCED SECONDARY WITH DISINFECTION
SERVICING FREQUENCY	QUARTERLY
LAND APPLICATION AREA	
DISPOSAL METHOD	FIXED LOCATION SPRINKLERS
AREA REQUIRED	$A = Q / DIR = 562.5 \text{ m}^2$
AREA PROPOSED	24m x 24m = 576 m <sup>2</sup>
CONFIGURATION	4 ROWS OF 8 SPRINKLERS AT 3m SPACINGS
PUMP DUTY	
HEAD LOSS: HSTP	2 m
HEAD LOSS: ELEVATION	3 m
FRICTION LOSS	12 m
TOTAL LOSS	17 m
FLOW RATE	10 L/MIN/SPRINKLER
PUMP DUTY	17 m HEAD @ 160 L/MIN
TRANSFER TIME [500L]	3.2 MIN



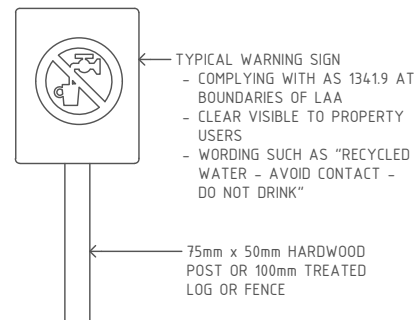
TYPICAL PLAN VIEW



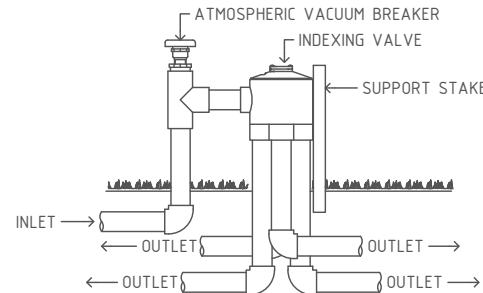
TYPICAL PIPE TRENCHING



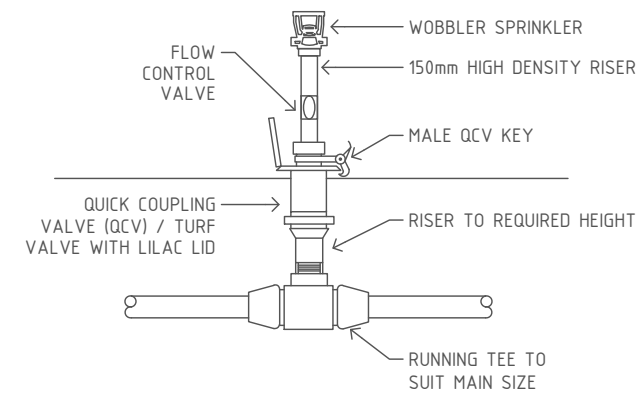
TYPICAL FLUSHING VALVE



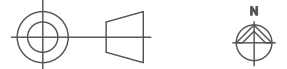
TYPICAL WARNING SIGN



TYPICAL INDEX VALVE



TYPICAL SPRINKLER ARRANGEMENT



REVISIONS

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A	18/12/2025	REVISION A	C. TAYLOR

TAYLOR ENVIRONMENTAL



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WASTEWATER TREATMENT & EFFLUENT DISPOSAL SYSTEM

AUTHORISED FOR ISSUE	DATE
<i>M.C. Taylor</i>	18/12/2025

STREET ADDRESS  
88-98 MOUNTAIN RIDGE RD, SOUTH MACLEAN

LOT & PLAN  
LOT 1 RP193885

COUNCIL  
LOGAN CITY COUNCIL

NAME OF CLIENT  
KEPNOCK PTY LTD

DESIGNER  
C. TAYLOR

DRAWN  
M. MAHONY

DRAWING DETAILS  
DETAIL

JOB NUMBER  
TE2590423

SCALE	REVISION	DWG #
N/A	A	SL3





**TREATMENT PLANT APPROVAL 24/2021**  
*Plumbing and Drainage Act 2018*

**Approval**

1. The **Taylex Concrete ABS 4200 (28EP/4200L)** ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by **Taylex Australia Pty Ltd** ("the manufacturer") (ABN 43 646 051 989) ("the manufacturer") has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 March 2019.
2. Approval is granted for the advanced secondary quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Regulation 2018*, and the conditions of approval detailed below.
3. This approval, the conditions of approval and the Schedule comprise the entire Treatment Plant Approval document.
4. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

**Conditions of approval**

5. The manufacture, installation, operation, service and maintenance of the systems must be in conformity with the conditions of this Treatment Plant Approval.
6. The system when tested by a certification accreditation body in accordance with AS1546.3:2017 was found to comply with the advanced secondary 28EP/4200L level with nutrient reduction of 45.35% in Nitrogen and 13.72% for Phosphorus and must continue to meet the following requirements:

**TABLE 2.1 (AS1546.3:2017)**  
**EFFLUENT COMPLIANCE CRITERIA**  
**FOR AN STS WITH NO NUTRIENT**  
**REDUCTION FACILITIES**

Parameter	Secondary effluent		Advanced secondary effluent	
	90% of samples	Maximum	90% of samples	Maximum
BOD <sub>5</sub>	≤20 mg/L	30 mg/L	≤10 mg/L	20 mg/L
TSS	≤30 mg/L	45 mg/L	≤10 mg/L	20 mg/L
<i>E. coli</i> *	≤10 cfu/100 mL	30 cfu/100 mL	≤10 cfu/100 mL	30 cfu/100 mL
FAC	Minimum 0.5 mg/L†	N/A	Minimum 0.5 mg/L†	N/A
Turbidity	N/A	N/A	N/A	5 NTU

\* Where disinfection is required.

† Minimum level, not 90% of samples.

7. Each system must be serviced in accordance with the accreditation certificate by Global Certification Pty Ltd on 18 October 2021, and details supplied in the owner's operation and maintenance manual.
8. Each system must be supplied with —
  - (a) a copy of this Treatment Plant Approval document;
  - (b) details of the system;
  - (c) instructions for authorised persons for its installation;
  - (d) a copy of the owner's manual to be given to the owner at the time of installation; and
  - (e) detailed instructions for authorised service personal for its operation and maintenance.
9. At each anniversary of the Treatment Plant Approval date, the supplier must submit to the Chief Executive a list of all systems installed in Queensland during the previous 12 months. Where the Chief Executive is notified of any system failures the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the supplier's nominated NATA accredited laboratory which systems are to be audited for BOD<sub>5</sub> and TSS. The sampling and testing of the selected systems, if required, is to be done at the supplier's expense. The following results must be reported to the Chief Executive;
  - (a) Address of premises;
  - (b) Date inspected and sampled;
  - (c) Sample identification number;
  - (d) BOD<sub>5</sub> for influent and effluent; and
  - (e) TSS for influent and effluent.
10. The Chief Executive may, by written notice, cancel this approval if the manufacturer/supplier fails —
  - (a) to comply with one or more of the conditions of approval; or
  - (b) within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
11. This approval may only be assigned with the prior written consent of the Chief Executive.
12. This approval expires on 21 November 2026 unless cancelled earlier in accordance with paragraph 10 above.

Lindsay Walker

**Director**  
**Plumbing, Drainage and Special Projects**  
**Building Legislation and Policy**  
Date approved: 22 November 2021

Level 15,  
53 Albert Street Brisbane  
GPO Box 2457, Brisbane Qld 4001  
**Telephone** +61 7 3008 2557  
**Facsimile** +61 7 3237 1248  
**Website** [www.epw.qld.gov.au](http://www.epw.qld.gov.au)

ABN 61 331 950 314

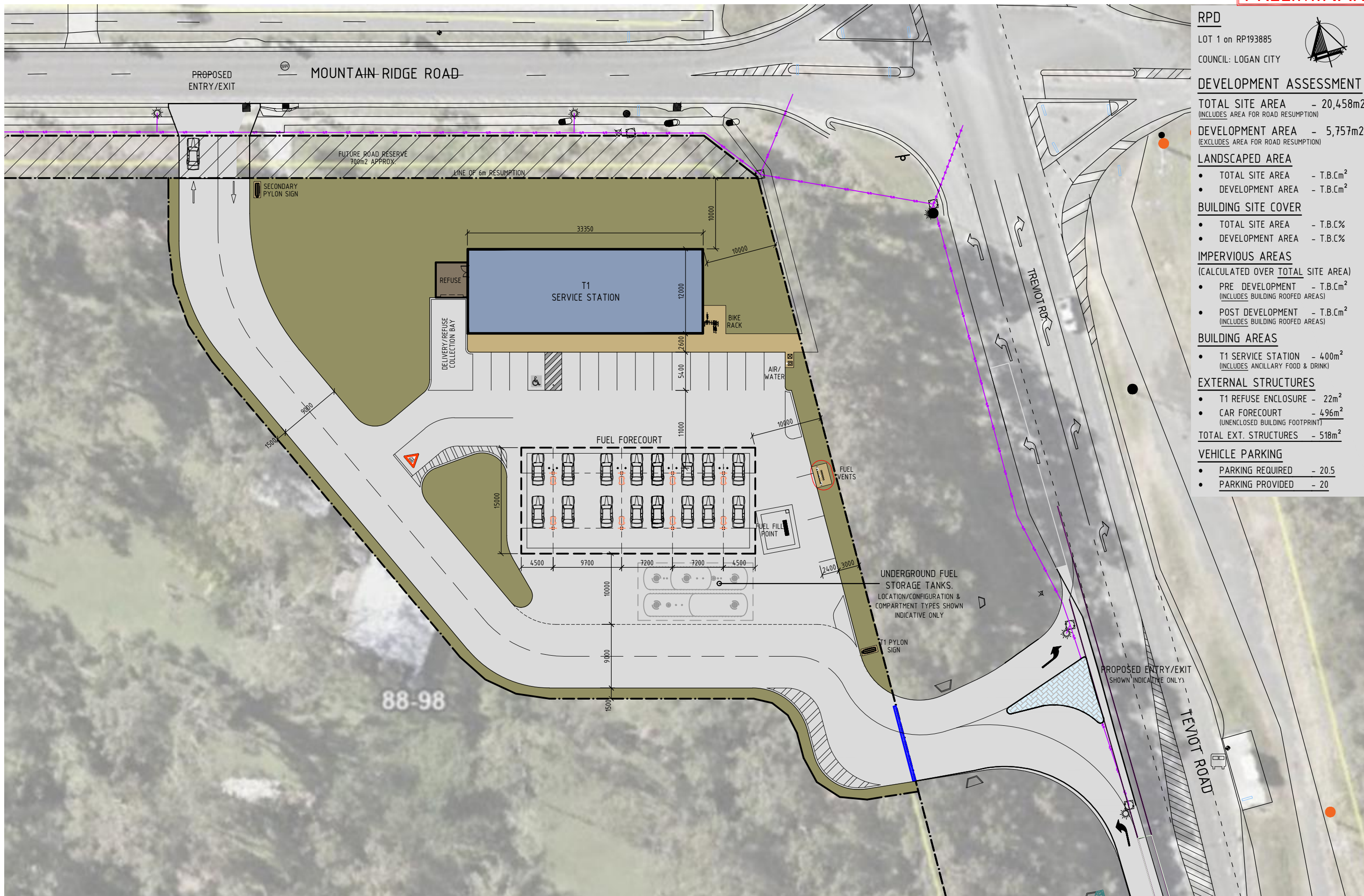
**Treatment Plant Approval**  
Approved by: Lindsay Walker  
Delegated Authority  
Department of Energy & Public Works



**Treatment Plant Approval**  
Approved by: Lindsay Walker  
Delegated Authority  
Department of Energy & Public Works







<b>RPD</b>	
LOT 1 on RP193885	
COUNCIL: LOGAN CITY	
<b>DEVELOPMENT ASSESSMENT</b>	
TOTAL SITE AREA	- 20,458m <sup>2</sup>
<small>(INCLUDES AREA FOR ROAD RESUMPTION)</small>	
DEVELOPMENT AREA	- 5,757m <sup>2</sup>
<small>(EXCLUDES AREA FOR ROAD RESUMPTION)</small>	
<b>LANDSCAPED AREA</b>	
• TOTAL SITE AREA	- T.B.Cm <sup>2</sup>
• DEVELOPMENT AREA	- T.B.Cm <sup>2</sup>
<b>BUILDING SITE COVER</b>	
• TOTAL SITE AREA	- T.B.C%
• DEVELOPMENT AREA	- T.B.C%
<b>IMPERVIOUS AREAS</b>	
<small>(CALCULATED OVER TOTAL SITE AREA)</small>	
• PRE DEVELOPMENT	- T.B.Cm <sup>2</sup>
<small>(INCLUDES BUILDING ROOFED AREAS)</small>	
• POST DEVELOPMENT	- T.B.Cm <sup>2</sup>
<small>(INCLUDES BUILDING ROOFED AREAS)</small>	
<b>BUILDING AREAS</b>	
• T1 SERVICE STATION	- 400m <sup>2</sup>
<small>(INCLUDES ANCILLARY FOOD &amp; DRINK)</small>	
<b>EXTERNAL STRUCTURES</b>	
• T1 REFUSE ENCLOSURE	- 22m <sup>2</sup>
• CAR FORECOURT	- 496m <sup>2</sup>
<small>(UNENCLOSED BUILDING FOOTPRINT)</small>	
TOTAL EXT. STRUCTURES	- 518m <sup>2</sup>
<b>VEHICLE PARKING</b>	
• PARKING REQUIRED	- 20.5
• PARKING PROVIDED	- 20

Consulting Engineer



- commercial
- mixed-use
- self storage
- industrial
- service stations
- quick service restaurants
- child care centres
- large format retail

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Revision and approvals			
Code	Date	By	Description
P1	04.12.2025	GN	PRELIMINARY ISSUE

Project Description	
PROPOSED SERVICE STATION 88-98 MOUNTAIN RIDGE RD. SOUTH MACLEAN	
Scale	Approved
1:2500A1 / 1:5000A3	Issued
Drawn	

Drawing Title	
CONCEPT SITE PLAN OPTION 2	
Drawing Number	Revision
25213-SK02	P1