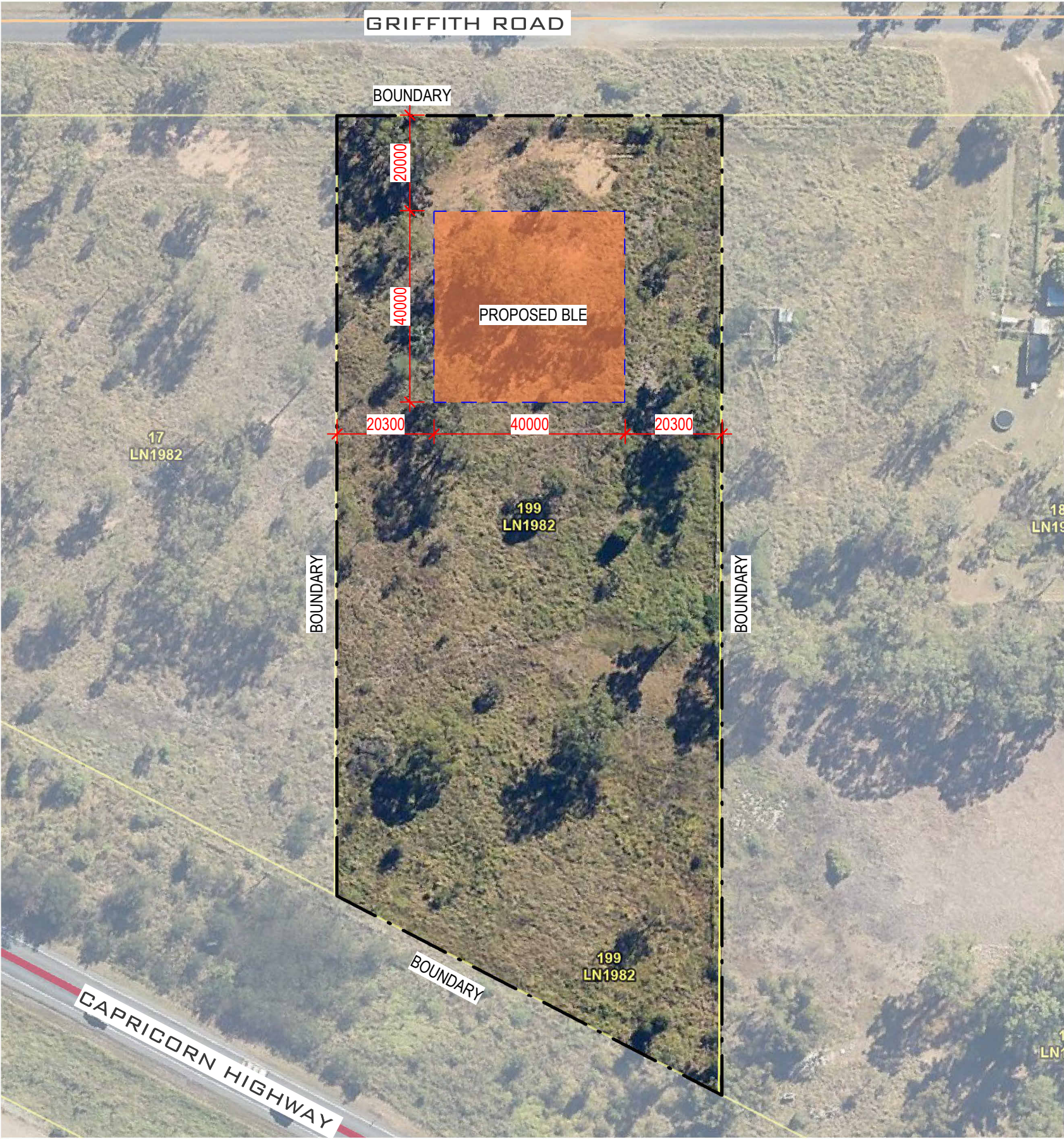




GENERAL LEGEND

--- - --- APPROX EXISTING BOUNDARY LINE
(TOTAL SITE APPROX 14ha)

PROPOSED BLE (APPROX 40m X 40m)

project:
**PROPOSED
SUBDIVISION**

drawing title:
**PROPOSED
SITE PLAN**

ROCKHAMPTON REGIONAL COUNCIL

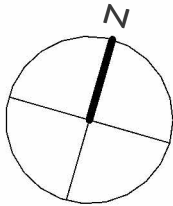
APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/72-2025
Dated: 21 August 2025

location:
Lot 199 Griffith Road, Stanwell
(Lot 199 on LN1982)

client:

drawing no:
SK-002



REVISIONS		
REVISIO	DESCRIPTION	DATE
N		
1	PRELIMINARY	24/03/2025
2	Revision 2	11/05/2025

**ISSUED FOR
PRELIMINARY**

scale
As indicated

A3 DRAWING
NOTED SCALES RELATE TO A3 DRAWINGS

project no: **GTP-016**
date **APR 25**
drawn **SV**
rev **2**

GENERAL NOTE:
- THESE DRAWINGS ARE PART OF A TOWN PLANNING APPROVAL APPLICATION AND SHOULD NOT BE USED FOR ANY OTHER REASON
- THESE DRAWINGS ARE APPROXIMATE AND HIGHLY CONCEPTUAL
- REFER TO TOWNPLANNING APPLICATION AND OPERATIONAL WORKS DOCUMENTATION WHEN VIEWING THESE PLANS.

GENERAL NOTE:
ALL BOUNDARIES, LOCATIONS AND DIMENSIONS ARE APPROXIMATES

**CQ SOIL
TESTING**



AS1547 Wastewater Design

SITE ADDRESS: Lot 199 (LN1982)
6 Griffith Road, Stanwell

Prepared for: Stan and Heather Medhurst C.O. Gideon Town
Planning

Job Number: CQ28003

Issue Date: 28/03/2024

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/72-2025

Dated: 21 August 2025



SUMMARY OF RECOMMENDATIONS

Treatment Facility –Aerated Water Treatment System (AWTS)
(Capable of producing advanced secondary quality effluent)

Disposal Mechanism
Surface Irrigation (360 sqm)

Client & Document Information

Client: Stan and Heather Medhurst C.O. Gideon Town Planning
Project: Lot 199 (LN1982)
6 Griffith Road, Stanwell

Investigation Type: **Wastewater Investigation**
Job Number: CQ28003
Date of Issue: 28/03/2024

Contact Information

CQ SOIL TESTING
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Document Control

Version	Concept By	Design Drawings	Design Review	Issue Approved By	Date
A	James Rider	P Munro	Scott Walton	Scott Walton	28/03/2024

1. INTRODUCTION

The purpose of this report is to evaluate and define a suitable on-site sewerage treatment and disposal system for household effluents in accordance with Australian Standard 1547 “On-site domestic wastewater management”. The Queensland Plumbing and Wastewater Code has been used for reference purposes during the compiling of this report.

The field investigation was carried out on the 16th April, 2025. This report relates exclusively to the proposed dwelling at the site identified on Page 1 of this report. This document has been prepared for the express purpose stated above. This document does not cover any other elements related to construction on the site.

2. SITE DESCRIPTION AND SUPPLIED INFORMATION

2.1 Allotment and Effluent Disposal Site

- *The landholder was interviewed. All information included in this report relating to the dwelling size, water source, fixtures etc have been provided by the landholder or the landholders representative.*
- *The landholder shall read and understand all aspects of this design. CQ Soil Testing may carry out amendments to this design if requested, additional fees shall apply.*
- *The landholder is to liaise with neighbouring properties regarding the presence of discrete/unregistered bores that may exist/be proposed on adjacent allotments prior to system installation.*
- The site is a rural allotment located at 6 Griffith Road, Stanwell (a sealed road).
- The slope configuration in relation to surface drainage is linear planar.
- The proposed effluent disposal area falls to the southeast and is considered to have fair drainage.
- The soil surface condition was moist at the time of testing.
- There was no evidence of cracking of the surface during the investigation.
- There were no visible boulders on the surface of the allotment.
- There were no rock outcrops evident.
- There was no watercourse, bore, well, or dam evident within 10 m of the proposed disposal area at the time of this investigation.
- The proposed effluent disposal area is exposed to sun and wind.
- The proposed disposal site is an existing grassed area.
- Surface water drainage from adjoining allotments may traverse this site.
- The weather conditions prior to testing were periods of moist conditions.
- The site is not a known flood area.

2.1 Dwelling and Fixtures

- The dwelling type is single storey - 4 bedrooms.
(6 equivalent persons – AS 1547:2012 Appendix J)
- The water source is tank supply.
(120 litre/person/day – AS 1547:2012 Appendix H)
- Standard water reducing fixtures **are to be** used throughout the dwelling.
- A spa bath **is not** proposed to be installed.
- A food waste disposal unit **is not** proposed to be installed.

3. SOIL PROFILE

The borelogs carried out at the site (refer attached Site Plan for localities) indicate that the soil profile typically consists of clay. Soil logs are detailed in this report.

Groundwater was not encountered during the field investigation.
Weathered rock was not encountered during the field investigation.

Table 1 - Determination of Soil Category

Soil Category BH2	Soil Texture	Structure	Indicative Permeability	Indicative Drainage Class
6 (00-1500mm)	Medium Clay	Moderately Structured	<0.06 m/day	Very Poorly Drained

Table 2 – Permeability test results and conclusions

Test No.	Soil Permeability	Test hole depth	Recommended Design Irrigation Rate
PT 1	<0.06	500 mm	
Average	<0.06		2.0 (mm/day)

Permeability testing aids in the design of an "On-site domestic-wastewater management system". CQ Soil Testing carries out a permeability testing in accordance with Appendix 4.1F of the Australian Standard 1547.

Whilst every effort has been made to ensure that the borelogs carried out at the subject allotment are indicative of the soil profile over the site any discrepancy between the profile detailed in the borelogs and that observed during construction shall be referred to CQ Soil Testing for immediate attention.

4. INVESTIGATION DETAILS

The investigation carried out at the site included machine augured boreholes up to 1500 mm depth and a series of permeability test pits (see Appendix 4). These test pits are located in the proposed effluent disposal area as shown on the attached design drawings.

The Queensland Plumbing and Wastewater Code and AS 1547 suggests that the use of a primary-treated effluent disposal system will be satisfactory provided:

- Sufficient permeable surface soil overlying rock is present over the disposal area, not less than 1.2 metres depth.
- A suitable soil category material (as per AS 1547) and minimum required depth is encountered.
- A minimum set-back distance of 50m is obtained.
- Acceptable permeability rates are obtained.

Not all the above requirements have been met, therefore it is concluded that the use of a primary-treated effluent septic system is not acceptable.

5. FINDINGS AND RECOMMENDATIONS

- The Design Irrigation Rate of 2.0 mm/day shall be adopted.
- All work must be carried out by a licensed plumber or drainer.
- A 100% reserve effluent disposal area can be obtained on this allotment and shall be kept clear of development for possible future expansion.

5.1. Treatment

- The site shall be provided with a ***“Wastewater-Treatment System” capable of producing advanced secondary quality effluent***, or an equivalent system, to Council’s approval in lieu of a septic tank.
- A filter is to be installed between the Treatment Plant and the Irrigation System. Regular maintenance of the Filter shall be undertaken, according to manufacturer’s recommendations.

5.2. Disposal

- The disposal system shall be by centred fixed adjustable pressure outlet point, with two heavy droplet sprinklers attached to approximately 3 m of purple sillage hose. The supply line to the outlet point is to be purple line and buried.
- The hose, sprinklers and effluent plumage must not at any time extend beyond the approved designated area.
- Adjustable valve to be installed to each irrigation line to ensure plume spray no higher than 0.3 m and no wider than 1.0 m.
- An in-line Filter is to be installed between the Treatment Plant and the Irrigation System. Regular maintenance of the Filter shall be undertaken, according to the manufacturer’s requirements.
- The hose and sprinklers are to be moved by the owner within the designated area to ensure even distribution of water over the entire area.
- Non-return valves should be installed on the irrigation line.
- The proposed disposal area will require rotary hoeing/scarified or aeration prior to installation, if no vegetation is present the area is to be seeded with water tolerant vegetation.
- A cut-off trench or diversion bank shall be constructed around/above the proposed disposal area to divert surface and groundwater away.
- The disposal area required is **360 sqm**.
- This area has been calculated on a daily flow rate of 720 litres/day (4 bedrooms/6 people each using 120 litres per day) and a design irrigation rate of 2.0 mm/day. This flow rate will accommodate the proposed four bedroom residence using ***Standard Water-Reducing Devices***, which include using a dual flush 6/3 litre water closet (maximum), shower flow restrictors, aerated faucets and a water conserving washing machine.
- The disposal area should be located in the vicinity of BH1, BH2 & BH3 and as per attached site plan.
- All set-back distances as required by the local authority shall be met.
- Stormwater run-off including roofwater from buildings shall be diverted around and away from the disposal area. Imported fill may be required should there be insufficient soil available for the design of the disposal system.

5.3. Setback Distances

Table 3 - Setback distances for surface land application area for greywater treatment plant or an on-site sewage treatment plant (QLD Plumbing & Wastewater Code Version 1:2019)

Feature	Horizontal separation distance ①
Property boundaries, pedestrian paths, walkways	2
Water edge of a swimming pool	6
Dwellings, recreation areas	10

① Distances are given in metres and are measured from the edge of the irrigated area to any point of the feature

Table 4- Setback distances for on-site sewage facilities and greywater use facilities – Protection of surface water and groundwater (QLD Plumbing & Wastewater Code Version 1:2019)

Feature	Separation distance ①		
For onsite – see Table 2.1 in AS 1546.3	Advanced Secondary	Secondary	Primary
For <i>greywater</i> – see Table 2.1 in AS 1546.4	Level 1 and Level 2	Level 3	Untreated
Top of bank of permanent water course	10	30	50
Top of bank of intermittent water course			
Top of bank of a lake, bay, or estuary			
Open stormwater drainage channel or drain			
Bore or a dam	0.3	0.6	1.2
Unsaturated soil depth to a permanent water table (vertically)			

① Distances are given in metres and are measured from the edge of the irrigated wetted area to any point of the feature

② Note: Primary effluent typically has a (BOD⁵) (Biochemical Oxygen Demand) of between 120 – 240 mg/L and Total Suspended Solids of between 65 – 180 mg/L.

5.4. Vegetation and signage

- Water tolerant vegetation shall be planted to maximize evapotranspiration and shall be carefully chosen. See vegetation specified in AS 1547:2012 “Disposal Systems for Effluent from Domestic Premises (Appendix C)”. CQ Soil Testing recommends consultation with local nurseries for selection/density of plantings.
- At least two signs stating “Recycled water – Do Not Drink” are to be erected on boundaries.
- The presence of buried pipes shall:

- (a) Be indicated e.g. using underground marking tape to AS/NZS 2648.1; OR
- (b) Be indicated by signage. Signs shall be prominently displayed with the words:

“Sewage effluent pipework installed below. DO NOT DIG.”

5.5. Greywater

Surface irrigation of greywater directly (without treatment) from the dwelling’s washing machine is permissible. CQ Soil Testing recommends the surface irrigation of greywater. The washing machine shall be connected to a flexible hose with the hose distributing greywater to the landholder’s garden/lawn. Provide an air admittance valve and suspend drainage (per AS/NZS 3500) to a rigid, fixed position external to building and reduce to a flexible hose fitting (minimum diam. 32 mm). Greywater should be used with care and used responsibly - Avoid:

- *Ponding of water.*
- *Run-off to neighbouring properties.*
- *Causing an odour.*

When using greywater:

- Choose laundry detergents with low phosphorus, sodium and nitrogen content.
- Take care not to keep watering the same spot - it can affect soil and can cause plants to die.
- Be careful when using on native plants and do not use on edible parts of vegetables or fruits.
- Make sure it does not enter swimming pools or flow into neighbouring properties.
- Avoid ponding, bad smells or damage to plants by restricting use or moving the outlet.
- Keep away from children's play areas and the footings of buildings.

6. CERTIFICATION

The local authority may request that an inspection and certification is to be undertaken on the installation of the system when nearing completion. CQ Testing is qualified to undertake this task and issue the appropriate Form 8 (**additional fees apply**). If certification is required, the installer must:

- Contact CQ Soil Testing prior to “burying” the system to arrange an inspection
- Must photograph the entire installation process and supply to CQ Soil Testing
- Supply to CQ Soil Testing a Form 8 signed by the licensed installer

Yours faithfully



SCOTT WALTON
Laboratory Manager

Soil Logs

BOREHOLE 1		
Depth (m)	Visual Class'n Symbol	Visual Description of Material
0.0	CH	<u>Silty CLAY</u> , high plasticity, trace fine to medium grained gravel, brown, M, S-ST
1.5		<i>CAT 6 Medium Clay – moderately structured.</i>
Borehole terminated at 1.5 m		
MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY
D – Dry	VS – Very Soft	VL – Very Loose
M – Moist	S – Soft	L – Loose
W – Wet	F – Firm	MD – Med Dense
	ST – Stiff	D – Dense
	V/ST – Very Stiff	VD – Very Dense
	H – Hard	
Allowable Bearing Pressure calculated using the guidelines in “Determination of Allowable Bearing Pressure under Small Structures” by MI Stockwell (NZ Engineering June 1997)		
DCP test results are to be used as a guide only to relative density and consistency of soils. Changes in moisture contents or the presence of coarse grained material can greatly influence the outcome of this test.		

Soil Logs

BOREHOLE 2			
Depth (m)	Visual Class'n Symbol	Visual Description of Material	
0.0	CH	Silty CLAY, high plasticity, trace fine to medium grained gravel, brown, M, S-ST	
1.5		CAT 6 Medium Clay – moderately structured.	
Borehole terminated at 1.5 m			
MOISTURE CONDITION		CONSISTENCY	RELATIVE DENSITY
D – Dry		VS – Very Soft	VL – Very Loose
M – Moist		S – Soft	L – Loose
W – Wet		F – Firm	MD – Med Dense
		ST – Stiff	D – Dense
		V/ST – Very Stiff	VD – Very Dense
		H – Hard	
Allowable Bearing Pressure calculated using the guidelines in “Determination of Allowable Bearing Pressure under Small Structures” by MI Stockwell (NZ Engineering June 1997)			
DCP test results are to be used as a guide only to relative density and consistency of soils. Changes in moisture contents or the presence of coarse grained material can greatly influence the outcome of this test.			

Soil Logs

BOREHOLE 3		
Depth (m)	Visual Class'n Symbol	Visual Description of Material
0.0	CH	<u>Silty CLAY</u> , high plasticity, trace fine to medium grained gravel, brown, M, S-ST
1.0		CAT 6 Medium Clay – moderately structured.
1.0	SM	<u>Gravelly Silty SAND</u> , fine to medium grained, low plasticity fines, light greyish brown, D, D.
1.5		CAT 2 Sandy Loam – massive structured
Borehole terminated at 1.5 m		
MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY
D – Dry	VS – Very Soft	VL – Very Loose
M – Moist	S – Soft	L – Loose
W – Wet	F – Firm	MD – Med Dense
	ST – Stiff	D – Dense
	V/ST – Very Stiff	VD – Very Dense
	H – Hard	
Allowable Bearing Pressure calculated using the guidelines in “Determination of Allowable Bearing Pressure under Small Structures” by MI Stockwell (NZ Engineering June 1997)		
DCP test results are to be used as a guide only to relative density and consistency of soils. Changes in moisture contents or the presence of coarse grained material can greatly influence the outcome of this test.		

Photographs



Image 1 Proposed disposal area



Image 2 Proposed disposal area

APPENDIX 1 - NOTES

1. Recommendations given in this report are based on the information supplied by the client regarding the proposed building construction in conjunction with the findings of the investigation. Any change in construction type, building location or omission in the client supplied information, may require additional testing and/or make the recommendations invalid.
2. Every reasonable effort has been made to locate the test sites so that the borehole profiles are representative of the soil conditions within the area investigated. The client should be made aware however, that exploration is limited by time available and economic restraints. In some cases, soil conditions can change dramatically over short distances, therefore, even careful exploration programs may not locate all the variations.
3. If soil conditions different from those shown in this report are encountered or are inferred from other sources, then the author must be notified immediately.
4. This report may not be reproduced except in full, and only then with the permission of the entity trading as CQ Soil Testing. The information and site sketch shall only be used and will only be applicable for the development shown on the client-supplied information provided for this site.
5. All information contained within this report is the intellectual property of the entity trading as CQ Soil testing. All information contained with can only be used for the express purposes of the commissioned scope of works.
6. Any dimensions, contours, slope directions and magnitudes shown on the site sketch plan shall not be used for any building construction or costing calculations. The purpose of the plan is to show approximate location of field tests only.
7. Any changes made to these recommendations by persons unauthorized by the author will legally be interpreted at that person assuming the responsibility for the long-term performance of the system.
8. The following documents are available from various sources and shall be read and adhered to in relation to this site:

AS/NZS 1547:2012 - On-site domestic wastewater management

<https://www.standards.org.au/standards-catalogue/sa-snz/waterandwasteservices/ws-013>

AS/NZS 1546.1 - On-site domestic wastewater treatment units - Septic tanks

<http://www.standards.com.au/>

AS/NZS 1546.2 - On-site domestic wastewater treatment units - Waterless composting toilets

<http://www.standards.com.au/>

AS/NZS 1546.3 - On-site domestic wastewater treatment units - Aerated wastewater treatment systems

<http://www.standards.com.au/>

Queensland Plumbing and Wastewater Code

https://www.hpw.qld.gov.au/_data/assets/pdf_file/0019/3943/queenslandplumbingandwastewatercode_26march2019.pdf

Standard Sewerage Law

<http://www.legislation.qld.gov.au/LEGISLTN/SLS/1998/98SL099.pdf>

Periodically during the course of your trench, ETA bed or irrigation areas life span it will most likely require maintenance such as deep scarification to promote the uptake, and transmission of effluent. This can also be achieved via deeper drilling, rotary hoe or excavator tines.

The Land Application Area designed by CQ Soil Testing is in accordance with the relevant Australian Standards to provide the most economical solution. Generally, this initial installation will be sufficient to successfully handle the load from the dwelling and/or building. Occasionally, however, all of the effluent is not absorbed or transpired due to reasons such as:

- diversion drains are not effective and stormwater enters the Land Application area.
- plants used for the aid of transpiration have not reached maturity resulting in less than optimum transpiration.
- water conservation is not being practiced within the household or building.
- soils can vary significantly over short distances resulting in significant variations in absorption characteristics.

APPENDIX 2 - WASTEWATER TREATMENT SYSTEM “DO’S AND DON’TS”

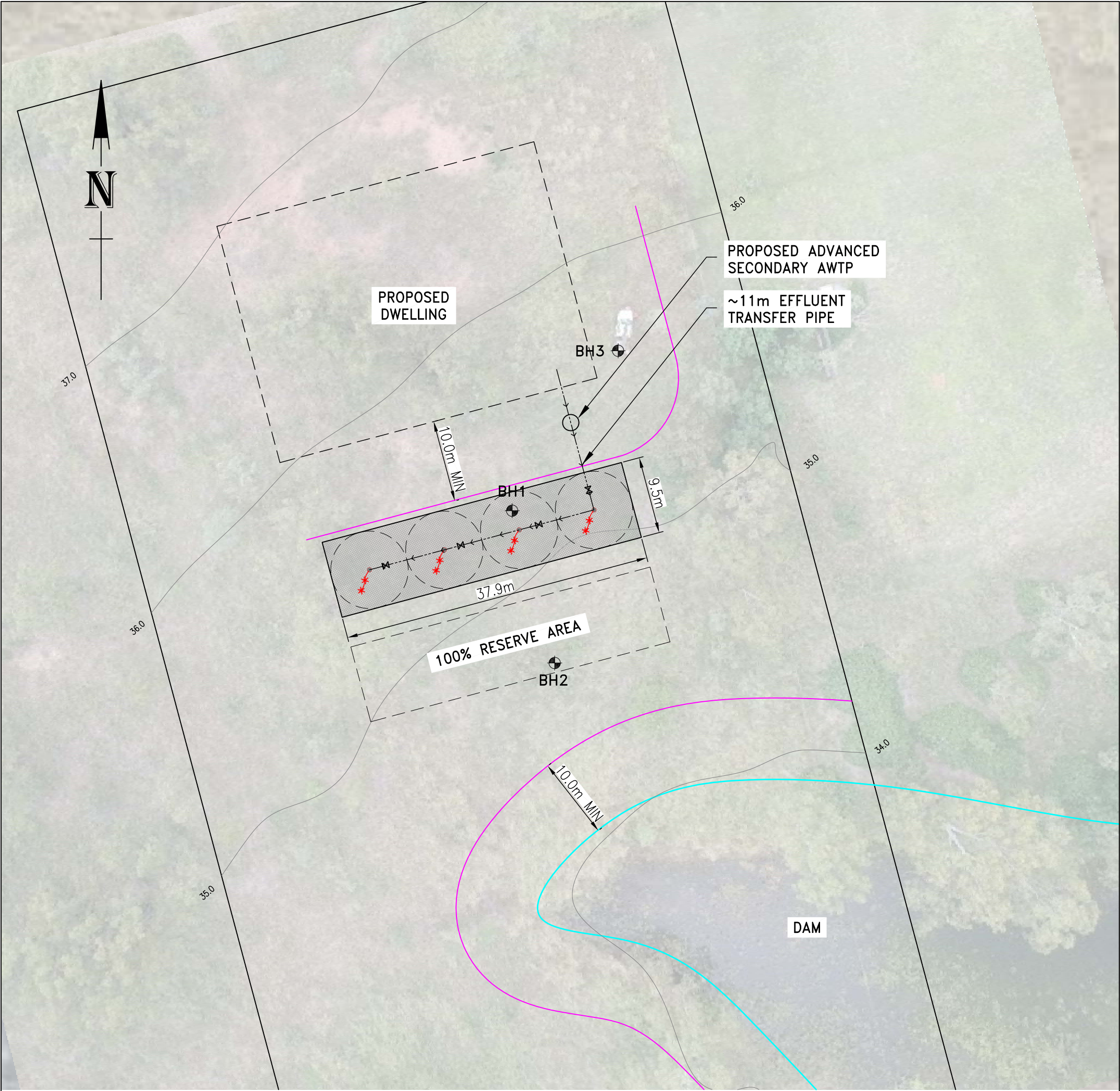
DO’S

- Do use cleaning and laundry products labelled “septic safe” only.
- Do ensure you have the treatment system serviced regularly as specified by the manufacturer. Your local shire council requires that your system is serviced by an approved service person.
- Do make sure treated water from your system stays on your property, don’t allow it to run-off into the street or onto your neighbours property.

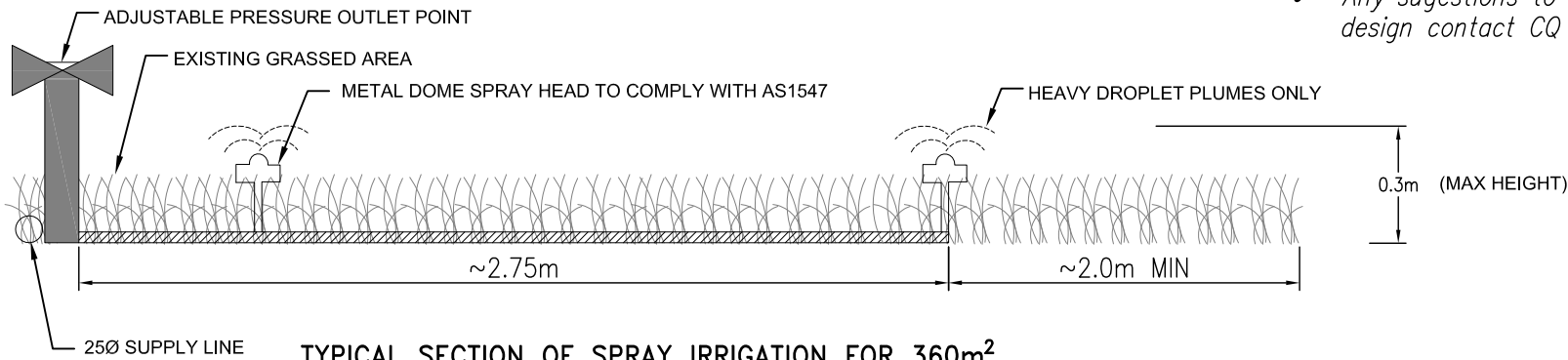
DON’TS

- Don’t use fine droplet or mist sprays on your irrigation line, the fine spray can be carried a long way by the wind.
- Don’t allow surface water to flood the tank system or wastewater disposal area.
- Don’t use bleaches, strong disinfectants, or large amounts of natural antibacterial’ s such as eucalyptus oil. Your treatment system relies on beneficial bacteria to treat the wastewater. Bleaches and other strong disinfectants can kill off these helpful bacteria, seriously reducing the system’s effectiveness.
- Don’t put cooking fat or oils down the sink.
- Don’t wash paint brushes or pour other chemicals in the sink.
- Don’t allow the treated water to come in contact with people or animals.
- Don’t use the treated water on your vegetable garden.
- Don’t pour Napisan or other soakers down the drain, soak clothes in a bucket and empty the bucket out on the grass instead.
- After mopping the floor, don’t pour the bucket of water (with Pine O Clean or other disinfectant/cleaner), down the drain. Empty the bucket out on the grass instead.
- Don’t use ‘Toilet Blue’ or toilet deodorizers that hang in the bowl. These add a continual low dose of disinfectant to the system.

•



- Plumber to confirm suitability of all infrastructure with landholder prior to installation.
- Any suggestions to change the design contact CQ Soil Testing.



SEWERAGE NOTES:

- ALL WORK TO BE IN ACCORDANCE WITH AS1547
- CONSTRUCT DIVERSION BANKS/DRAINS
- TURF VALVES TO BE EVENLY SPACED OVER THE IRRIGATION AREA
- SHOULD EXCAVATIONS REVEAL SOIL CONDITIONS DIFFERENT FROM THOSE SHOWN IN THE BORELOG SHEET IN THIS REPORT, CQ SOIL TESTING SHOULD BE CONTACTED IMMEDIATELY IN ORDER TO CARRY OUT FURTHER TESTING AND DESIGN (WHERE REQUIRED).
- NATURAL SOIL TO BE SCARIFIED AND PLANTED OUT WITH WATER TOLERANT VEGETATION
- INDIVIDUAL SPRINKLER VALVES TO BE SET AT <0.3m SPRAY HEIGHT AND <1m SPRAY DIAMETER

ASSUMED R.L.'S

- A) INLET TO PROPOSED AWTP ≈ 35.200
- B) OUTLET FROM AWTP = NOT APPLICABLE AS THE SYSTEM IS PRESSURISED
- C) R.L.'S OF TURF VALVES NOT APPLICABLE AS THE SYSTEM IS PRESSURISED

CQ SOIL TESTING
Servicing all of Central Queensland

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Website: www.cqsoiltesting.com.au

Project: LOT 199 GRIFFITH ROAD
STANWELL, QLD

For: STAN AND HEATHER MEDHURST C.O. GIDEON TOWN PLANNING

Title: EFFLUENT DISPOSAL DESIGN

Scale:	1:500 (A3)	Date:	MAY '25
Sheet:	1 of 1	Drawn:	C.T.
Job No:	CQ28003	Rev:	A