

Property Description

Lot 60 & 61 on RP601438
1,010 m²

Revisions			
rev	date	description	by
P1	19.10.21	Preliminary Issue	RD
P2	20.10.21	Preliminary Issue	RD

Measured Drawing

These Architectural drawings are of an architectural site measure up.
These drawings are intended as a basis for future design work by the Architect only.
The size of structural elements, slabs, walls, beams and so on are approximate only and limited to what could physically be measured on site.
The location and size of any services shown are approximate only. Whilst every effort has been made to ensure the accuracy and consistency of these measured drawings, It is the builder's responsibility to verify and confirm critical dimensions on site prior to undertaking any building work.

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If in doubt, ASK

Project Details

client
K. DONOGHUE

project
NEW DWELLING

address
**GREY STREET,
MT MORGAN, QLD 4714**
title

Site Plan



29 (Little) Musgrave Street
North Rockhampton
QLD. 4701

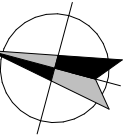
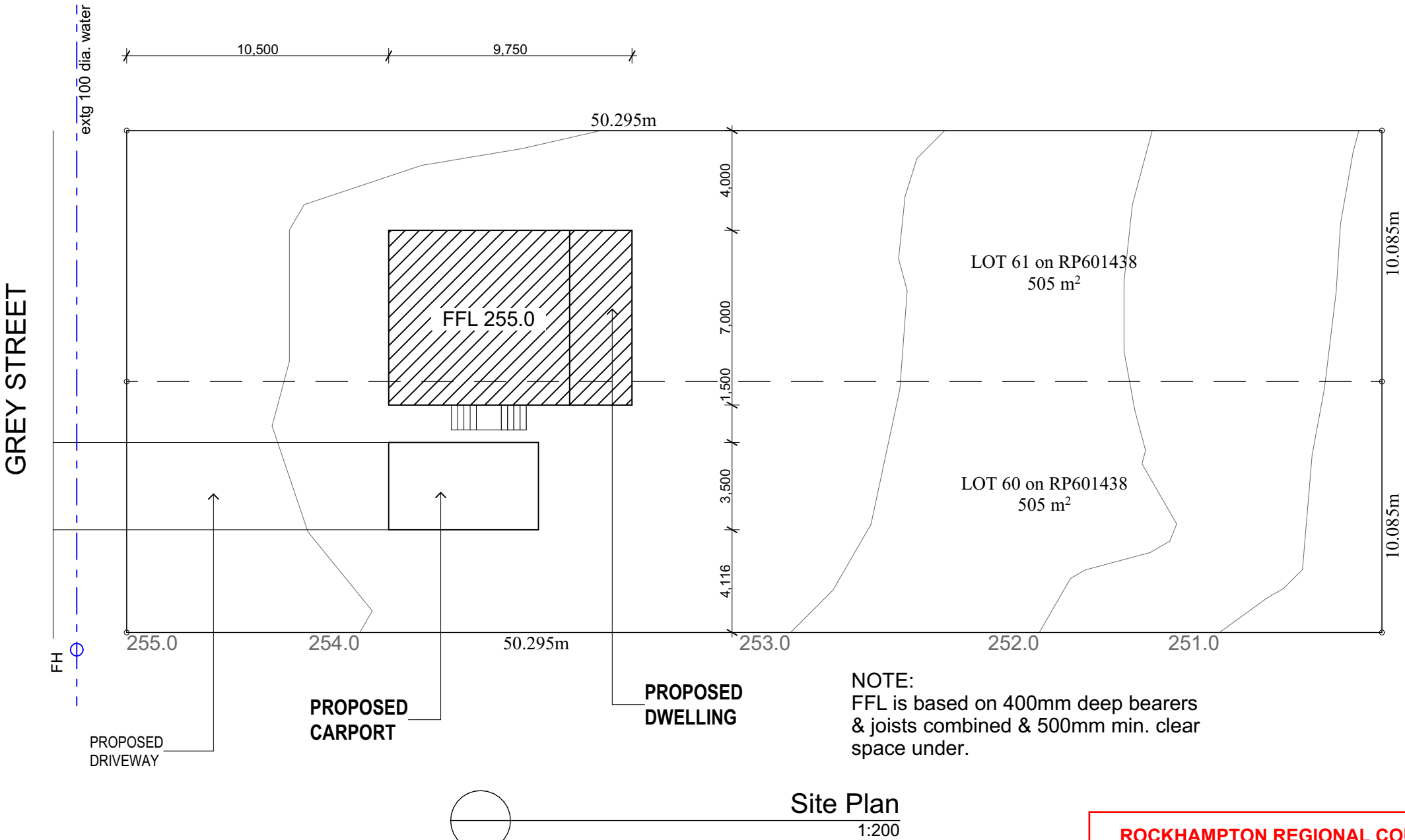
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design	RD	drawn	RD	chkd	RD
date	20/10/2021	job no.	2101-04		
scale	1:200	dwg no.	SD. A100		
orig size	A3	sheet	1 of 5	rev.	P2



ROCKHAMPTON REGIONAL COUNCIL

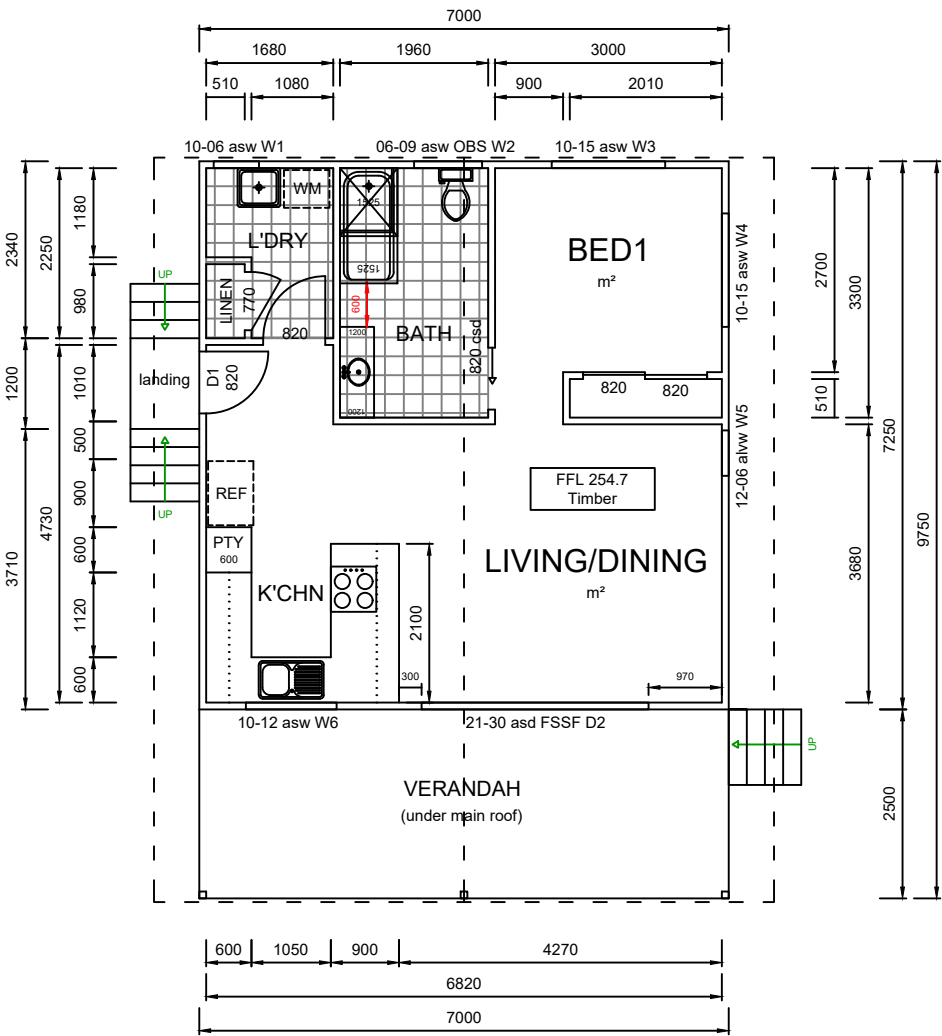
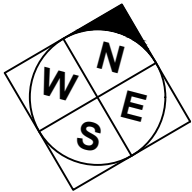
APPROVED PLANS

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

Development Permit No.: D/22-2022

Dated: 25 March 2022

FLOOR PLAN



FLOOR PLAN

SCALE 1:100 @ A3

ENCLOSED AREA (to outside of external walls) = 50.75m²
TOTAL AREA (inc. verandahs and porches etc.) = 69.34m²
BAL = TBA
SNOW LOAD = N/A
WALL FRAMES = TIMBER

All internal walls are 90mm thick timber
All external walls are 90mm thick timber
(unless otherwise noted)

ROOF TRUSSES = TIMBER
VERANDAH STRUCTURE = TIMBER
WINDOW MANUFACTURER = BRADNAMS QLD
SUB-FLOOR STUMPS = STEEL



DENOTES FLOOR TILING TO WET AREAS

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NOTES:

ALL WORKS SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA AND ALL CODES REFERRED TO THERIN. DESIGN WIND CATEGORY C2.

THE BUILDER SHALL PROVIDE ALL FLASHINGS, WEEPHOLES, DPC's, CAPPINGS ETC THAT MAY BE REQUIRED BY THE BCA & TO MAKE THE ENTIRE WORKS WATERTIGHT. ALL WORKS SHALL COMPLY WITH THE REQUIREMENTS OF THE BCA.

PROVIDE WET AREA WATERPROOFING IN ACCORDANCE WITH PART 3.8.1 OF THE BUILDING CODE OF AUSTRALIA & AS 3740. PROVIDE AN IMPERVIOUS SUBSTRATE (I.E TILES) TO FLOORS WITHIN A MINIMUM 150mm OF AN UNENCLOSED SHOWER AND SAME TO WALLS AT 1800mm ABOVE SHOWER BASE & 150mm ABOVE BATH, SINKS, HASINS AND SPLASH BACKS IN ACCORDANCE WITH AS3740. ALL WATERPROOFING TO BE PROVIDED AND INSTALLED BY OTHERS.

ALL DOORS AND WINDOWS SHALL BE INDICATED ON THE PLANS/ ELEVATIONS AS SCHEDULED

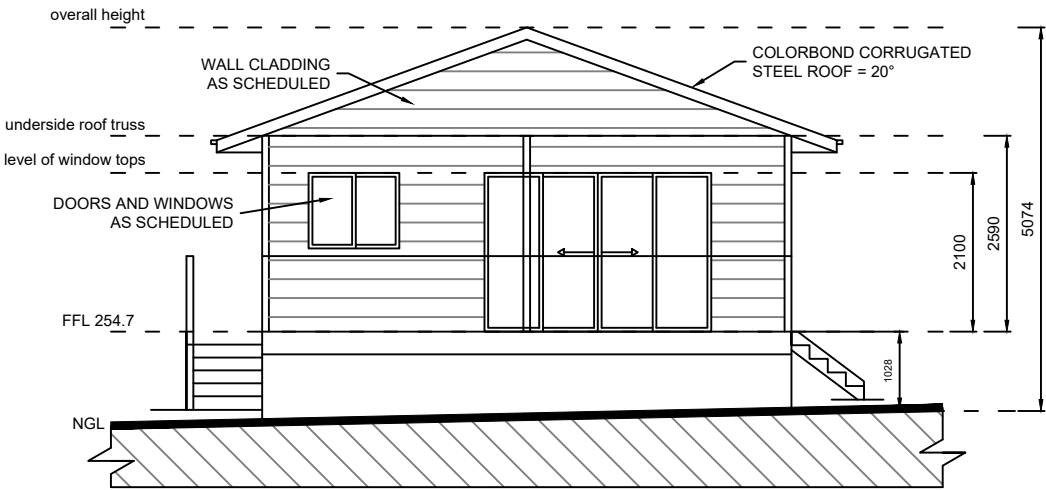
asd DENOTES ALUMINIUM SLIDING DOOR
aaw DENOTES ALUMINIUM AWNING WINDOW
asw DENOTES ALUMINIUM SLIDING WINDOW
csd DENOTES CAVITY SLIDING DOOR
DG DENOTES DOUBLE GLAZING
DS DENOTES DOUBLE SASH
OBS DENOTES OBSCURE GLASS

WHEN MAKING FLOOR FINISH SELECTIONS (CARPET, TILES, TIMBER ETC.) THE THICKNESS OF THE FLOOR FINISH WILL BE LIMITED AND THE OWNER/ BUILDER SHALL ENSURE THAT THE MINIMUM CEILING HEIGHT OF 2400mm (CLEAR) IS MAINTAINED TO ALL HABITABLE ROOMS.

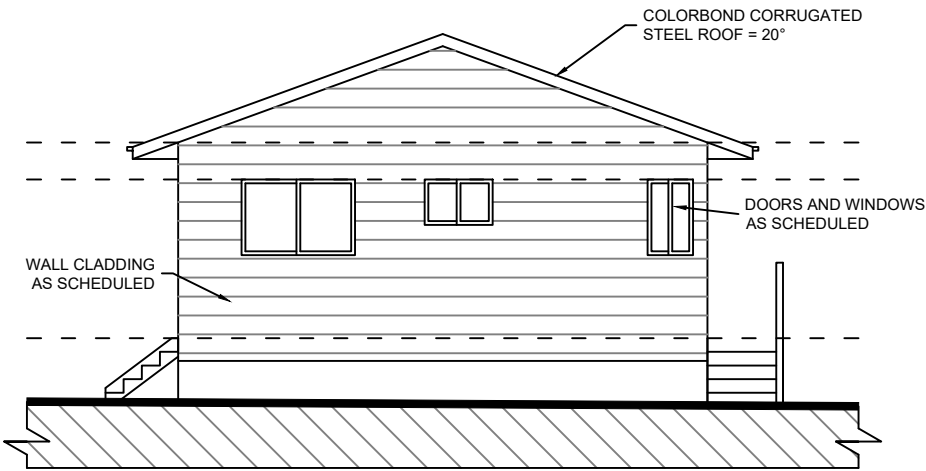
THE LAYOUT OF FIXTURES AND FITTINGS IN THE KITCHEN & WET AREAS IS TO BE VERIFIED BY THE CLIENT PRIOR TO CONSTRUCTION.

ALL WORKS SHALL COMPLY WITH THE REQUIREMENTS OF AS3959; BAL = TBA

ELEVATIONS 1



South Elevation - Viewpoint A



North Elevation - Viewpoint B

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NOTES:
SURFACE LEVELS INDICATED ON THESE ELEVATIONS AND SECTIONS ARE BASED ON INFORMATION SUPPLIED BY THE CLIENT. THE OWNER/ BUILDER SHALL VERIFY THE ACCURACY OF THE LEVELS ON SITE & PRIOR TO MAKING APPLICATIONS OR PUTTING WORK IN HAND. SHOULD ANY DISCREPANCIES BE FOUND THE OWNER SHALL ADVISE KITOME IMMEDIATELY IN WRITING.

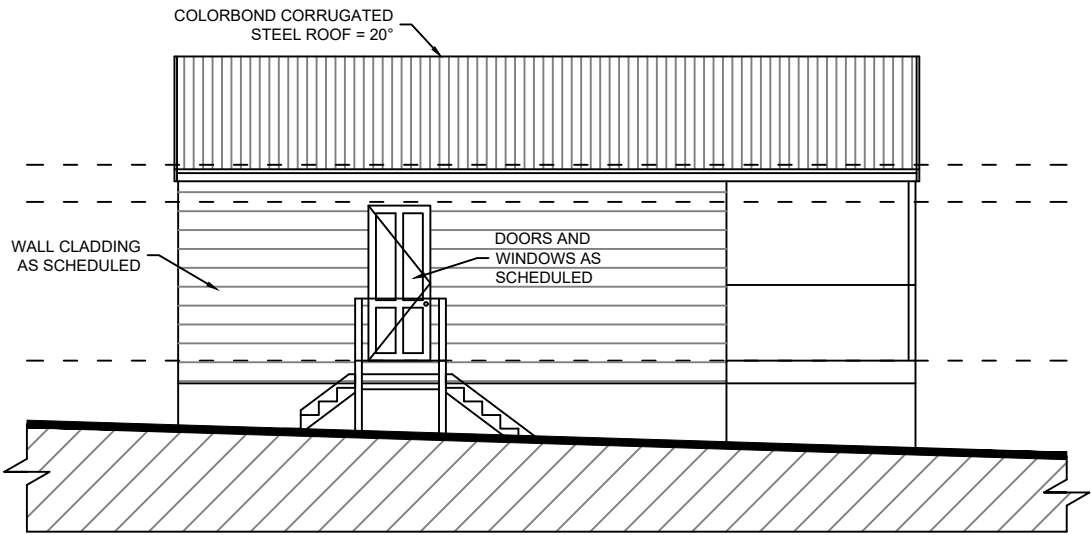
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EXTERNAL MATERIAL AND COLOUR SCHEDULE

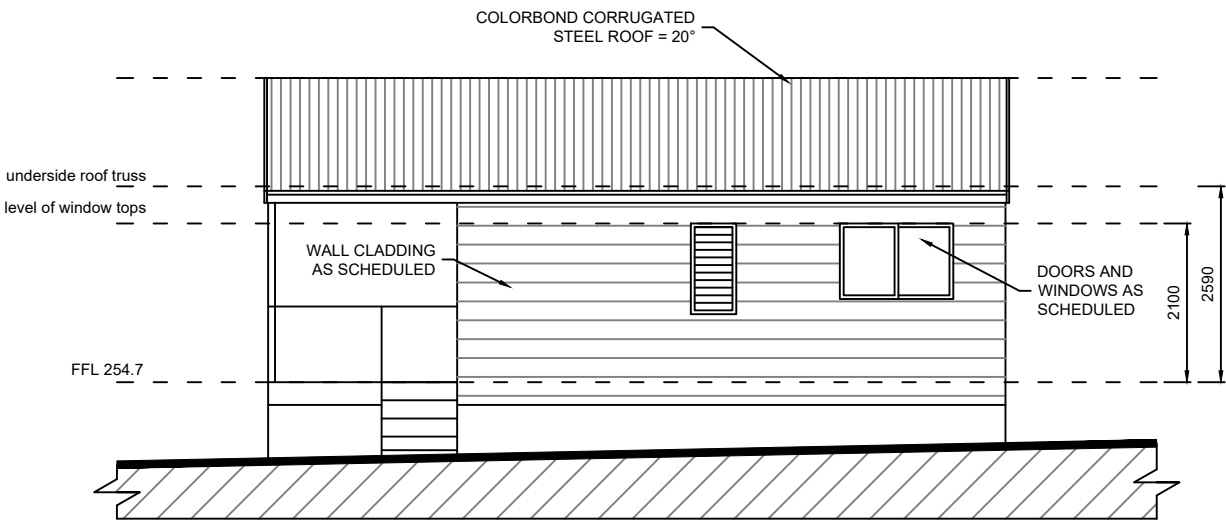
ELEMENT	MATERIAL	COLOUR
WALL CLADDING	WEATHERTEX CLASSIC RUFF SAWN	WHITE
DOWNPIPES	UPVC	WHITE
EAVES GUTTERS	COLORBOND STEEL	DEEP OCEAN
FASCIAS	COLORBOND STEEL	DEEP OCEAN
ROOF SHEETING	COLORBOND CUSTOM ORB	DEEP OCEAN
POSTS	TIMBER	TIMBER
DOORS	TIMBER	TIMBER
WINDOWS/ SLIDING DOORS	ALUMINIUM	ULTRA SILVER GLOSS

THE COLOURS INDICATED FOR THE NON PRE-FINISHED ELEMENTS (EG. TIMBER POSTS, WEATHERBOARD CLADDINGS) IN THIS SCHEDULE ARE TO BE VERIFIED ON SITE BY THE CLIENT. IF THERE ARE ANY CHANGES MADE TO PAINT COLOURS, THE OWNER SHALL OBTAIN APPROVAL FROM THE CERTIFYING AUTHORITY BEFORE PUTTING WORK IN HAND.

ELEVATIONS 2



West Elevation - Viewpoint C



East Elevation - Viewpoint D

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**CQ SOIL
TESTING**



AS1547 Wastewater Design

SITE ADDRESS: Lot 60 & 61 (RP601438)
Grey Street, Mount Morgan

Prepared for: K Donoghue

Job Number: CQ20223

Issue Date: 9/12/2021

ROCKHAMPTON REGIONAL COUNCIL

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SUMMARY OF RECOMMENDATIONS

Treatment

All-Waste Septic Tank (3000 litre minimum)
With serviceable filter

Disposal Mechanism

Two (2) Evapotranspiration/Absorption Beds
2.1 metres x 6.0 metres – Total Area 25 sqm

Client & Document Information

Client: K Donoghue
Project: Lot 60 & 61 (RP601438)
Grey Street, Mount Morgan

Investigation Type: **Wastewater Investigation**
Job Number: CQ20223
Date of Issue: 9/12/2021

Contact Information

CQ SOIL TESTING
ABN 47 715 943 484

PO Box 9654
PARK AVENUE QLD 4701

Telephone: (07) 4936 1163
Facsimile: (07) 4936 1162

Email: info@cqsoiltesting.com.au

Document Control

Version	Concept By	Design Drawings	Design Review	Issue Approved By	Date
A	Scott Walton	T Warne	Scott Walton	Scott Walton	9 Dec 2021

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 7th December, 2021. 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 not 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 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 residential type allotment located on Grey Street (a sealed road).
- The slope configuration in relation to surface drainage is linear planar.
- The proposed effluent disposal area falls to the south and 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 will drain toward the south.
- 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 proposed dwelling type is single storey – 1 bedroom.
(2 equivalent persons – AS 1547:2012 Appendix J)
- The water source is reticulated supply.
(150 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 soils. 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 BH1	Soil Texture	Structure	Indicative Permeability	Indicative Drainage Class
5 (00-300mm)	Light Clay	Strongly Structured	0.12 – 0.5 m/day	Poorly Drained
5 (300-1500mm)	Light Clay	Strongly Structured	0.12 – 0.5 m/day	Poorly Drained

Table 2 – Permeability test results and conclusions

Test No.	Soil Permeability	Test hole depth	Recommended Design Loading Rate
PT 1	0.12 – 0.5	500 mm	
Average	0.12 – 0.5		8 (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 site report. 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.

All the above requirements have been met, therefore it is concluded that the use of a primary-treated effluent septic system is acceptable.

5. FINDINGS AND RECOMMENDATIONS

- All work must be carried out by a licensed plumber or drainer.
- All pipework shall be installed in accordance with AS3500.2.2, National Plumbing and Drainage, Part 2.2, Sanitary Plumbing and Drainage.
- The Design Loading Rate of 8 mm/day has been adopted.

5.1. Treatment

- Septic Tank – 3000 Litre minimum to be installed.
- The local authority may require the installation of a grease trap.
- The septic tank shall be de-sludged and pumped out at a maximum interval of 5 years.
- A Septic Tank Filter shall be installed between the septic tank and the disposal area. Regular maintenance of the filter shall be undertaken, normally 3 monthly.

5.2. Disposal

- For the purpose of calculating evaporation, the long term average monthly pan evaporation and rainfall figures from the Bureau of Meteorology weather station at Rockhampton has been adopted. Water Balance and design calculations are appended.
- All wastewater shall be disposed of by Evapotranspiration/Absorption.
- The land application facility shall be by evapotranspiration-absorption with a total minimum area of **25 sqm**.
- A diversion mound shall be constructed above/around the disposal area to divert overland water flows.
- Effluent shall be distributed evenly throughout the beds via the use of a distribution chamber or equivalent system.
- The beds shall be 2.1 m in width and 6.0 m in length. Two (2) are required.
- The beds shall be installed level and across the natural contour of the land.
- The finished surface shall shed water.
- Detailed design drawings are attached to this report.
- The disposal area has been calculated on a daily all-waste flow rate of 300 litres/day, (1 bedroom/2 people each using 150 litres per day) and a design load rate of 8 mm/day. This flow rate will accommodate all-waste flows from the proposed one 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. 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.”

5.4. 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 landholder shall read and understand all aspects of this design. CQ Soil Testing may carry out amendments to this design if requested **(additional fees apply)**.

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	CI	<u>Silty Sandy CLAY</u> , medium plasticity, fine to coarse grained, dark grey, M, ST.	
0.3		CAT 5 Light Clay – strongly structured	
0.3	CI	<u>Sandy CLAY</u> , medium plasticity, fine to coarse grained, reddish brown, M, VST	
1.5		CAT 5 Light Clay – strongly 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 2		
Depth (m)	Visual Class'n Symbol	Visual Description of Material
0.0	CI	<u>Silty Sandy CLAY</u> , medium plasticity, fine to coarse grained, dark grey, M, ST.
0.6		CAT 5 Light Clay – strongly structured
0.6	CI	<u>Sandy CLAY</u> , medium plasticity, fine to coarse grained, light brown, D, VST.
1.3		CAT 5 Light Clay – strongly 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	CI	Fill <u>Gravelly Sandy CLAY</u> , medium plasticity, fine to coarse grained, brown, M, VST.	
0.4		CAT 5 Light Clay – strongly structured	
0.4	ML	Natural <u>Sandy SILT</u> , low plasticity, fine to coarse grained, grey, D, VST.	
0.8		CAT 3 Loam – weakly structured	
0.8	CH	<u>Sandy CLAY</u> , high plasticity, fine to coarse grained, reddish brown, D, VST.	
1.5		CAT 6 Medium Clay –strongly structured	
Borehole terminated at 1.5 m			

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 MAINTAINING YOUR SEPTIC SYSTEM

The following tips will help you to save money, reduce pollution and conserve resources:

Remove accumulated sludge from the tank:

- Generally, septic tanks require periodic cleaning or pumping out of accumulated solids every 4 years. If solids are allowed to build up in the tank to a point where they pass to the effluent treatment stage they can cause problems.
- Household pipes may become filled with sewage and the subsoil soil trench system could soon become clogged with solids. This may cause the effluent to come to the surface, pool and cause unpleasant smells. This can constitute a risk to public health, particularly to children playing in the vicinity.

Minimise or manage the volume of water entering the system to improve the lifespan and operation of the absorption trench:

- Regularly check plumbing fixtures for leaking taps or toilets cisterns. Have them repaired. Ensure water from roof downpipes does not enter the system and roof water is diverted away from the effluent disposal area.
- Install water saving devices such as shower heads that minimise water use and dual flush toilet cisterns.
- If the terrain slopes down to your absorption trench ensure that surface water is diverted around the soakage area by installing a stormwater diversion trench.
- Spread large washing loads over several days to minimise the impact on your septic tank system. Plan your water usage so that large flows to the system in a short time are avoided, for example, operate the dishwasher and washing machine at separate times.

Ensure the system can be readily accessed for maintenance:

If you own a house built prior to March 1995 and your tank is difficult to access for maintenance, you may consider installing an approved access shaft to minimise future maintenance difficulties.

Do not construct driveways, buildings or paved areas over the septic and soakage system as this may result in damage to the system and access problems when the tank requires pumping out at a later date.

Use household detergents and bleaches sensibly:

The normal use of household detergents and bleaches is considered satisfactory. If in doubt about any household product suitability, consult the product manufacturer.

Don't use the system for the disposal of chemicals:

Don't dispose of medicines or strong chemicals such as pesticides and paints into the septic system. This can cause the septic tank to malfunction and may pollute groundwater.

Protect the septic tank and disposal area from damage:

If the tank and disposal area are exposed to vehicle traffic use a barrier or other means to prevent vehicles driving over the tank and soakage as this could cause damage and result in costly repairs.

Prevent mosquito breeding:

Ensure that all vents associated with the system are fitted with mosquito proof mesh and access openings are correctly sealed.

After a number of years of use, some soakage systems may fail and require replacement. The first signs of this can be soggy patches on the surface in the area where the soakage trenches are located. This can be accompanied by strong odours and blocked pipes. This can constitute a health risk and advice should be sought from a registered plumber to confirm the cause. If the trench requires replacement or the system needs to be altered in any way, the local council Environmental Health Officer should be consulted. A malfunctioning effluent disposal system can constitute a risk to public health and in some cases result in action being taken by the relevant authority.

Note: Odours may occur on initial use of the system. If this becomes a problem consult your local council or the Department of Health.

Table 3 – Water Balance Calculations

EVAPO-TRANSPIRATION ABSORPTION

SITE DATA			DESIGN DATA (AS1547:2000)			DESIGN FLOWS (AS1547:2000)		
Soil Category:	5		Retention Rate:	0.5		No. Bedrooms:	1	
Soil Texture:	Light Clay		Evapotranspiration Factor:	0.75		Flow Rate per Person:	150 ltr/day	(A4.2D)
Soil Structure:	Strong		Design Loading Rate:	8 mm/day	(T4.2A2)	No. of persons:	2	(T4.3A1)
Measured Permeability:	0.12 m/day		Indicative Permeability:	0.12-0.5 mm/day	(T4.2A2)	Black Water Factor:	1.00	
						Daly Flow Rate (Total):	300.0 ltr/day	

http://www.bom.gov.au/climate/averages/tables/cw_039123_All.shtml

AREA CALCULATION

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Sum	Ave
Days	31	28	31	30	31	30	31	31	30	31	30	31		
Mean rainfall (mm)	129.8	144	104.7	43	45.3	37.8	31.8	27.1	24.5	49.5	66.3	104.3	808.1	67.3
Retained Rainfall (mm)	64.9	72.0	52.4	21.5	22.7	18.9	15.9	13.6	12.3	24.8	33.2	52.2	404.1	33.7
Pan Evaporation	198.4	165.2	167.4	135.0	105.4	90.0	96.1	108.5	129.0	167.4	180.0	195.3	1737.7	144.8
Mean daily evaporation (mm)	7.4	6.7	6.2	5.3	4.1	3.5	3.6	4.4	5.8	6.8	7.6	7.7	69.1	5.8
Evapotranspiration (mm)	229.4	187.6	192.2	159.0	127.1	105.0	111.6	136.4	174.0	210.8	228.0	238.7	2099.8	175.0
DLR per month (mm)	248.0	224.0	248.0	240.0	248.0	240.0	248.0	248.0	240.0	248.0	240.0	248.0	2920.0	243.3
Disposal Rate per month (ltr)	412.5	339.6	387.9	377.5	352.5	326.1	343.7	370.9	401.8	434.1	434.9	434.6	4615.8	384.6
Effluent per month (ltr)	9300.0	8400.0	9300.0	9000.0	9300.0	9000.0	9300.0	9300.0	9000.0	9300.0	9000.0	9300.0	109500.0	9125.0
Area (sq.m)	22.5	24.7	24.0	23.8	26.4	27.6	27.1	25.1	22.4	21.4	20.7	21.4		23.9

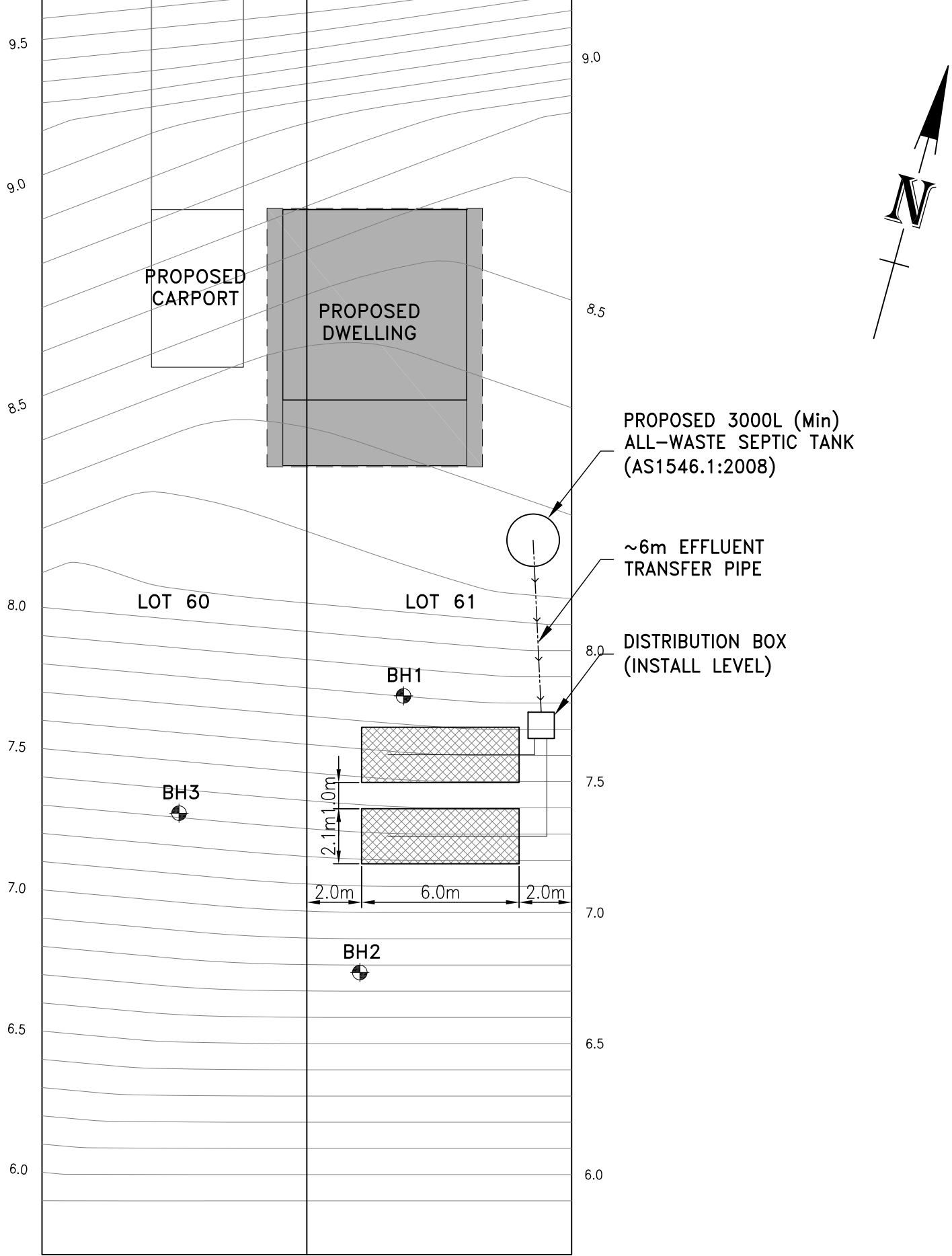
STORAGE CHECK

	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Area (sq.m)	25											
Application Rate (mm)	372.0	336.0	372.0	360.0	372.0	360.0	372.0	372.0	360.0	372.0	360.0	372.0
Disposal Rate (mm)	412.5	339.6	387.9	377.5	352.5	326.1	343.7	370.9	401.8	434.1	434.9	434.6
Excess Effluent (mm)	-40.5	-3.6	-15.9	-17.5	19.6	33.9	28.3	1.1	-41.8	-62.1	-74.9	-62.6
Stored Effluent Increase (mm)	-135.0	-12.0	-52.8	-58.3	65.2	113.0	94.3	3.8	-139.2	-206.8	-249.5	-208.5
Effluent Depth for month (mm)	0.0	0.0	0.0	0.0	0.0	65.2	178.2	272.5	276.3	137.2	0.0	0.0
Effluent Depth Total (mm)	0	0.0	0.0	0.0	0.0	65.2	178.2	272.5	276.3	137.2	0.0	0.0

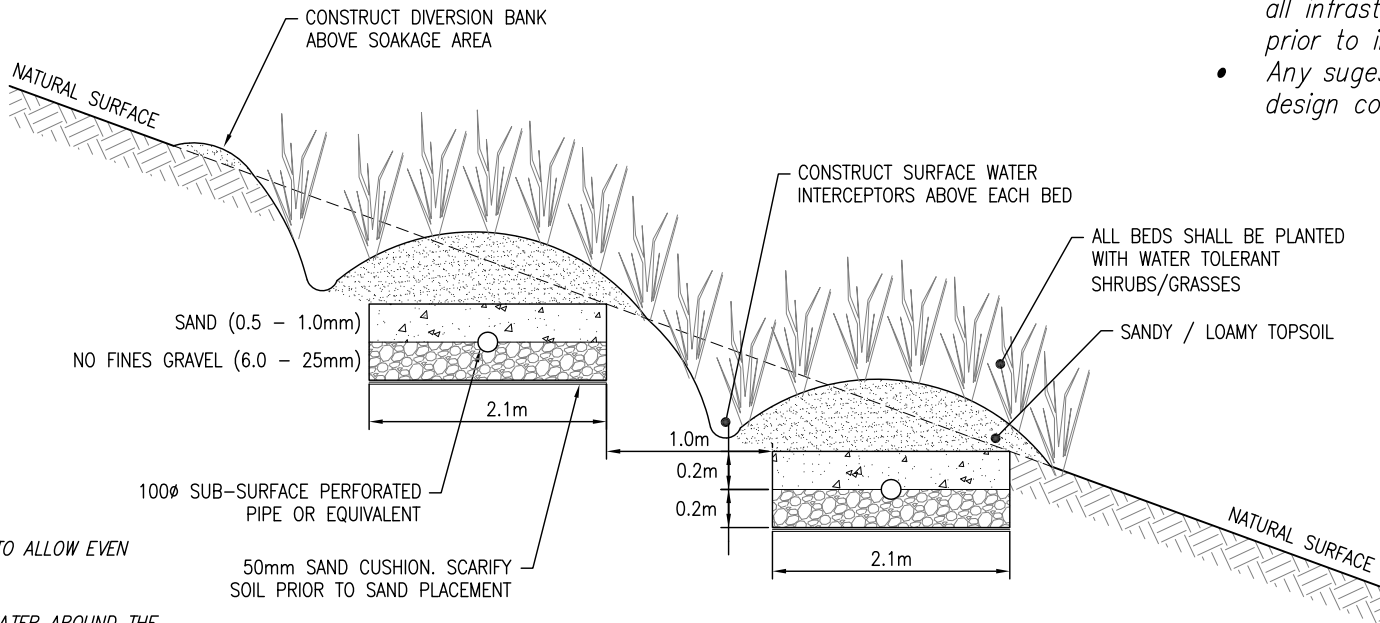
Depth of Gravel 200 mm
 Depth of Sand 200 mm
 Depth of Storage Area 400 mm

Freeboard 50 mm
 Permitted Depth of Effluent 350 mm

Area of ETA Bed 25
 Bed Dimensions
 No. of Beds 2
 Bed Length 6.0 m
 Bed Width 2.1 m



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



SEWERAGE NOTES:

- ENSURE THE BED IS INSTALLED LEVEL TO ALLOW EVEN DISTRIBUTION OF EFFLUENT
- FINISHED SURFACE IS TO SHED WATER
- DIVERSION DRAINS/BANKS TO DIVERT WATER AROUND THE DISPOSAL AREA
- CLAY BASED SOILS ARE NOT TO BE USED AS TOPSOIL
- 0.3m WIDE STRIP OF FILTER CLOTH ALONG FULL LENGTH OF PERFORATED PIPE
- AN INSPECTION PORT SHALL BE INSTALLED IN ACCORDANCE WITH AS1547_4.5
- ALL WORK TO BE IN ACCORDANCE WITH THE CONSTRUCTION TECHNIQUES STATED IN AS1547
- DISPOSAL AREA TO BE FENCED OFF FROM LIVESTOCK

CROSS SECTION OF PROPOSED ETA BEDS
(TOTAL AREA 25m²)

ASSUMED LEVELS:

- A) PROPOSED SEPTIC TANK INVERT ≈ 8.0
- B) PROPOSED INVERT AT DIST. BOX ≈ 7.6

CQ SOIL TESTING
Servicing all of Central Queensland

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Project:

LOT 60 & 61 GREY STREET
MOUNT MORGAN, QLD

For:

K DONOGHUE

Title:

EFFLUENT DISPOSAL DESIGN

Scale:

1:200 (A3)

Date:

DEC '21

Sheet:

1 of 1

Drawn:

T.W.

Job No:

CQ20223

Rev:

A