



SORELL COUNCIL

NOTICE OF PROPOSED DEVELOPMENT

Notice is hereby given that an application has been made for planning approval for the following development:

SITE: 4 Lateena Street, Dodges Ferry

PROPOSED DEVELOPMENT:

SECONDARY RESIDENCE

The relevant plans and documents can be inspected at the Council Offices at 47 Cole Street, Sorell during normal office hours, or the plans may be viewed on Council's website at www.sorell.tas.gov.au until **Monday 13th May 2024**. Any person may make representation in relation to the proposal/s by letter or electronic mail (sorell.council@sorell.tas.gov.au) addressed to the General Manager. Representations must be received no later than **Monday 13th May 2024**.

APPLICANT: R M & G C Johnson

DATE: 24 April 2024

APPLICATION NO: 5.2024.16.1

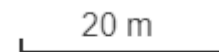


4 Lateena Street, Dodge Ferry - Representation Close Monday 13th May 2024

24-Apr-2024



Disclaimer: This map is a representation of the information currently held by Sorell Council. While every effort has been made to ensure the accuracy of the product, Council accepts no responsibility for any errors or omissions. Any feedback on omissions or errors would be appreciated.



Part B: Please note that Part B of this form is publicly exhibited.

Full description of Proposal:	Use: Residential
	Development: Proposed Ancillary dwelling
	<i>Large or complex proposals should be described in a letter or planning report.</i>
Design and construction cost of proposal:	\$ 40,000

Is all, or some the work already constructed:	No: <input type="checkbox"/> Yes: <input checked="" type="checkbox"/>
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Location of proposed works:	Street address: 4 Lateena Street
	Suburb: Dodges Ferry Postcode: 7173
	Certificate of Title(s) Volume: 228322 Folio: 1

Current Use of Site	Residential
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Current Owner/s:	Name(s) Ryan & Gabrielle Johnson
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Is the Property on the Tasmanian Heritage Register?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please provide written advice from Heritage Tasmania</i>
Is the proposal to be carried out in more than one stage?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please clearly describe in plans</i>
Have any potentially contaminating uses been undertaken on the site?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please complete the Additional Information for Non-Residential Use</i>
Is any vegetation proposed to be removed?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please ensure plans clearly show area to be impacted</i>
Does the proposal involve land administered or owned by either the Crown or Council?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please complete the Council or Crown land section on page 3</i>

If a new or upgraded vehicular crossing is required from Council to the front boundary please complete the Vehicular Crossing (and Associated Works) application form
<https://www.sorell.tas.gov.au/services/engineering/>


Part B continued: Please note that Part B of this form is publicly exhibited

Declarations and acknowledgements

- I/we confirm that the application does not contradict any easement, covenant or restriction specified in the Certificate of Title, Schedule of Easements or Part 5 Agreement for the land.
 - I/we consent to Council employees or consultants entering the site and have arranged permission and/or access for Council’s representatives to enter the land at any time during normal business hours.
 - I/we authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation and have permission of the copyright owner for such copies.
 - I/we declare that, in accordance with s52(1) of the *Land Use Planning and Approvals Act 1993*, that I have notified the owner(s) of the intention to make this application.
 - I/we declare that the information in this application is true and correct.
- Details of how the Council manages personal information and how you can request access or corrections to it is outlined in Council’s Privacy Policy available on the Council website.*

- I/we acknowledge that the documentation submitted in support of my application will become a public record held by Council and may be reproduced by Council in both electronic and hard copy format in order to facilitate the assessment process, for display purposes during public exhibition, and to fulfil its statutory obligations. I further acknowledge that following determination of my application, Council will store documentation relating to my application in electronic format only.

- Where the General Manager’s consent is also required under s.14 of the *Urban Drainage Act 2013*, by making this application I/we also apply for that consent.

Applicant Signature:	Signature:  Date: 16/1/23
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Crown or General Manager Land Owner Consent

If the land that is the subject of this application is owned or administered by either the Crown or Sorell Council, the consent of the relevant Minister or the Council General Manager whichever is applicable, must be included here. This consent should be completed and signed by either the General Manager, the Minister, or a delegate (as specified in s52 (1D-1G) of the *Land Use Planning and Approvals Act 1993*).

- Please note:
- If General Manager consent is required, please first complete the General Manager consent application form available on our website www.sorell.tas.gov.au
 - If the application involves Crown land you will also need a letter of consent.
 - Any consent is for the purposes of making this application only and is not consent to undertaken work or take any other action with respect to the proposed use or development.

I _____ being responsible for the administration of land at _____

declare that I have given permission for the making of this application for _____



Sorell Council

Development Application: Development Application - 4 Lateena Street, Dodges Ferry.pdf

Plans Reference: P1

Date Received: 19/01/2024

Signature of General Manager, Minister or Delegate:	Signature: Date:
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Sorell Council

Development Application: Response to Request for Information - 4 Lateena Street, Dodges

Ferry.pdf
Plans Reference: P3

Date Received: 3/04/2024

GEOTECH 24-037b

2/4/2024

Ryan Johnson

rjbuildingprojects@outlook.co

Shane Wells - Manager Planning

sorell.council@sorell.tas.gov.au

ROCK SOLID GEOTECHNICS PTY LTD

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ONSITE WASTEWATER SYSTEM DESIGN – 4 Lateena Street, Dodges Ferry – RESPONSE TO COUNCIL RFI

The following RFI was received from the Sorell Council – dated 28 March, 2024.

Planning:

1. Response to 10.4 Development Standards – Specially 10.4.3 - **Not Satisfied, please provide why the main dwelling & secondary residence cannot share the wastewater system**

Environmental Health:

4. Provide a Site & Soil Evaluation Report in accordance with AS/NZS 1547-2012 detailing the site and soil conditions and the suitability for onsite wastewater disposal. The Report should be prepared by a suitably qualified person such as an Engineer, Geologist, Environmental Health Officer or a Soil Scientist.
- **Not Satisfied, report provided demonstrates that there is sufficient area for wastewater land application for the ancillary dwelling, but does not demonstrate compliance with SAP SOR 2.7.1 P1 as the report does not comment on whether the whole site has sufficient area for wastewater land application.**

Response to RFI.

1. The decision to design a second wastewater system was taken after consultation with Greg Robertson (Senior EHO). The proposed new ancillary dwelling, sited between the main residence and Lateena Street cannot be connected to the main residence's wastewater system due to;
 - It is not 'hydraulically feasible' to connect to the main residence's wastewater system.
 - The main residence's wastewater system is not sized adequately to accept wastewater from an additional 4 occupants.
 - The main residence's wastewater system is wholly contained on the northern portion of the site.

- For the two residences to utilise a common wastewater system it would be necessary to install a completely new, larger system. This would require decommissioning the current wastewater system (no part could be reused). It would be necessary to install a relatively complex system with a macerating transfer pump to get fall to where a common system could be sited. This was considered unnecessary as the system is in good working order, and is sited on a dry, pure, deep sand site with extremely high permeability.

4. There is ample available land to the north of the main residence for a reserve wastewater Land Application Area. The area is underlain by deep, dry sand. Over 130m² of vacant, suitable land is available between the main residence and northern property boundary (Figure 1). If the current absorption trenches need to be replaced in the future an area of only 20m² would be required (within the above mentioned 130m²) if a new Advanced Enviro-Septic bed was installed (deep, dry sand).



Peter Hofto

Rock Solid Geotechnics Pty Ltd



132kV



GEOTECH 24-037a

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22/3/2024

Geotechnical Assessment / Classification for Proposed Residential Development

4 Lateena Street, Dodges Ferry.

CLIENT: Ryan Johnson 0400276570 rjbuildingprojects@outlook.com

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FIGURE 1 Site Plan

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APPENDIX 2	CSIRO 'Guide to home-owners on foundation maintenance and footing performance'
APPENDIX 3	Onsite Wastewater Assessment & System Design
APPENDIX 4	Forms 35s & 55s
APPENDIX 5	Wastewater Loading Certificate

SUMMARY

A residential development is proposed by Ryan Johnson at 4 Lateena Street, Dodges Ferry (Figure 1). The site is underlain by deep dry sand.

The site is classified as Class 'A' in accordance with AS2870.

Suitable upslope site drainage should be installed prior to the commencement of construction.

The following Wind Load Classifications (AS4055-2012: Wind Loads for Housing) are appropriate.

• Terrain Category Classification	TC2.5	Terrain with a few obstructions
• Shielding Classification	PS	Partial Shielding
• Topographic Classification	T1	
• Wind Load Classification	N2	

INVESTIGATION

The Tasmanian Geological Survey 1:50000 Geological Atlas 'Sorell' indicates that the site is underlain by Quaternary aged windblown sands.

A site investigation was completed on Wednesday 5 March, 2024. This included the augering of four test holes to assess the site for foundation conditions, and onsite wastewater and stormwater suitability (4WD mounted SAMPLA25 mechanical auger with 100mm diameter solid flight augers). The locations of the holes are marked on Figure 1.

It is proposed to construct an ancillary dwelling between the current residence and Lateena Street (Plate 1). The site is covered in grass and bare sand, and is devoid of trees. The site slopes to the south at between 1 and 3 degrees to the west.

Typical of the profiles encountered in the Test Holes was:

0.00 – 0.20m	SAND: fine grained, light grey, rootlets – TOPSOIL
0.20 – 2.10m	SAND: fine grained, grey / light brown, dry
2.10m+	Holes terminated at required depths - 2.10m+

Groundwater was not encountered in any of the holes.

Plate 1 – Test Hole #1 - Looking to the northeast from Lateena Street.



CONDITIONS OF INVESTIGATION

This report remains the property of Rock Solid Geotechnics Pty. Ltd. (RSG). It must not be reproduced in part or full, or used for any other purpose without written permission of this company. The investigations have been conducted, & the report prepared, for the sole use of the client or agent mentioned on the cover page. Where the report is to be used for any other purpose RSG accepts no responsibility for such other use. **The Forms 55 and 35 are not transferable to another body without consultation (reissue) from RSG.** The information in this report is current and suitable for use for a period of two years from the date of production of the report, after which time it cannot be used for Building or Development Application.

This report should not be used for submission for Building or Development Application until RSG has been paid in full for its production. RSG accepts no liability for the contents of this report until full payment has been received.

The results & interpretation of conditions presented in this report are current at the time of the investigation only. The investigation has been conducted in accordance with the specific client's requirements &/or with their servants or agent's instructions.

This report contains observations & interpretations based often on limited subsurface evaluation. Where interpretative information or evaluation has been reported, this information has been identified accordingly & is presented based on professional judgement. RSG does not accept responsibility for variations between interpreted conditions & those that may be subsequently revealed by whatever means.

Due to the possibility of variation in subsurface conditions & materials, the characteristics of materials can vary between sample & observation sites. RSG takes no responsibility for changed or unexpected variations in ground conditions that may affect any aspect of the project. The classifications in this report are based on samples taken from specific sites. The information is not transferable to different sites, no matter how close (ie. if the development site is moved from the original assessment site an additional assessment will be required). It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment & advice may be provided.

Investigations are conducted to standards outlined in Australian Standards:

- AS1726-1993: Geotechnical Site Investigations
- AS2870-2011: Residential Slabs and Footings
- AS4055-2012: Wind Loads for Housing
- AS1547-2012: Onsite Domestic Wastewater Management

& as specified in 'Guidelines for Geotechnical Assessment of Subdivisions and Recommended Code of Practise for Site Classification to AS2870 in Tasmania' - Institute of Engineers, Tasmanian Division.

All new developments should subject to strict site maintenance. Attention is drawn to the enclosed information reproduced with the permission from Standards Australia:

- CSIRO Information Sheet No. BTF18 – 'Guide to home-owners on foundation maintenance & footing performance'.

Any assessment that has included an onsite wastewater system design will require a further site visit / inspection once the system has been installed. After the inspection to verify that the system has been installed as per RSG's design a statement will be provided. An additional fee applies for the site visit & issuing the certificate.

RSG is not responsible for the correct installation of wastewater systems. Any wastewater installation is the sole responsibility of the owner/agent and certified plumber. Any variation to the wastewater design must be approved by RSG, and an amended Special Plumbing Permit obtained from the relevant council. The registered plumber must obtain a copy and carefully follow the details in the council issued Special Plumbing Permit. A "Certificate of Completion" will be based on surface visual inspection only, to verify the location of the system. All underground plumbing works are the responsibility of the certified plumber.

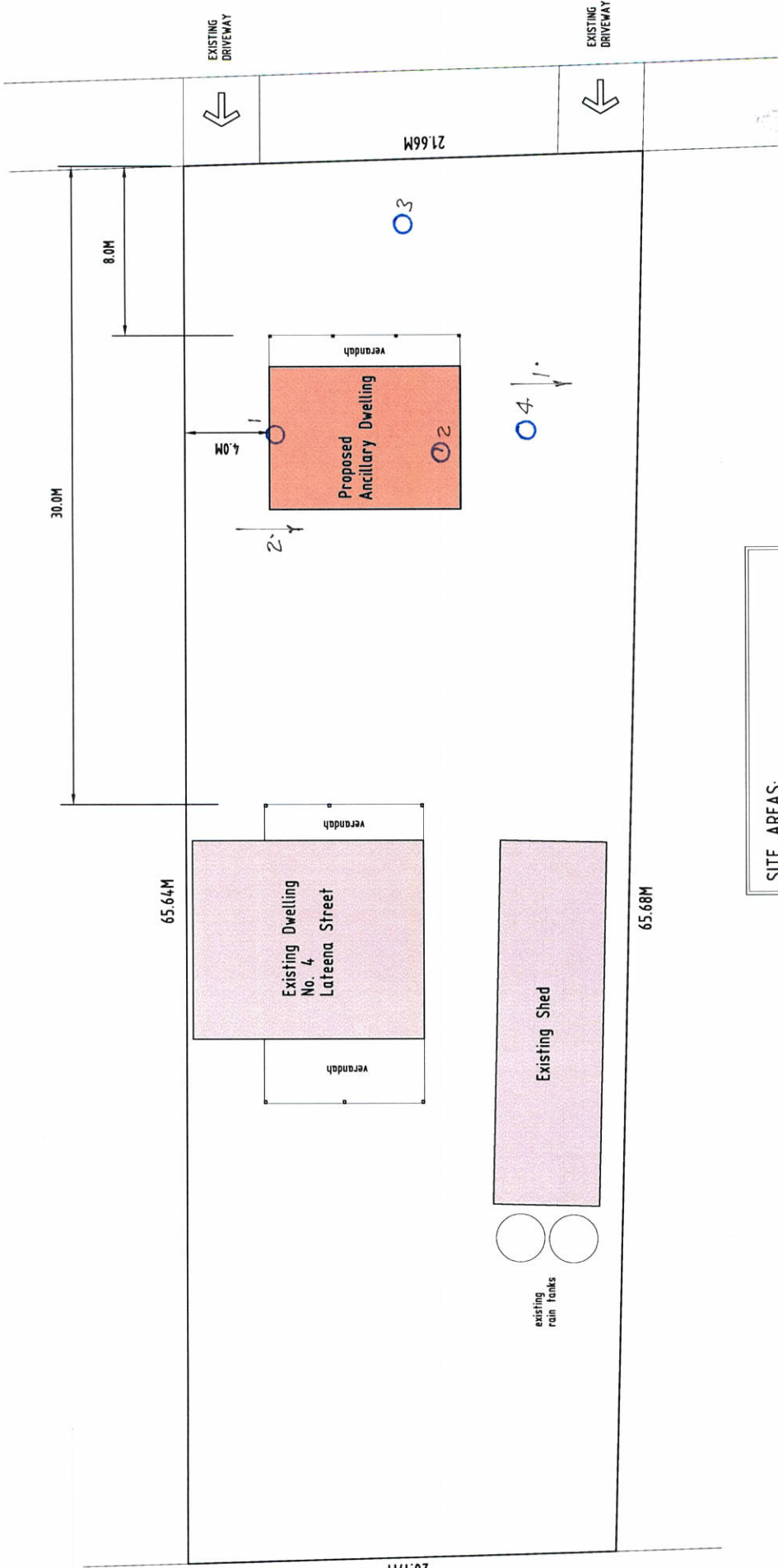
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PETER HOFTO

ROCK SOLID GEOTECHNICS PTY LTD

L a t e e n a Street



SITE AREAS:	
EXISTING DWELLING:	1015 m ²
EXISTING SHED:	85.0 m ²
PROPOSED ANCILLARY DWELLING:	60.0 m ²
SITE AREA:	1329 m ²
SITE COVERAGE:	296 m ² (22.3 %)



site plan

SCALE - 1:200

REV	AMENDMENT	DATE
A	PRELIM DESIGN 1	15.1.24
B	DA ISSUE	17.1.24

PROJECT
**PROPOSED ANCILLARY DWELLING
 4 LATEENA STREET,
 DODGES FERRY 7173**

DRAWING
SITE PLAN
 CLIENT
R. & G. JOHNSON

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DESIGN	TW	DATE	9.1.24
SCALE	TW	SHEET No.	0735TP-B
AS SHOWN	01 (OF 2)	REF No.	

Tim Wilson Design & Drafting
 Building Services Provider
 Licence CC7455
 Email: timwilsondrafting@gmail.com
 Mob: 0437 002 026

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

Qualified person:
 Address: Phone No:
 Fax No:
 Licence No: Email address:

Qualifications and Insurance details:	BSc (Hons) – Geology / Geophysics PI Insurance – Lloyds Underwriting PL Insurance – CGU Insurance Lt	(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)
Speciality area of expertise:	Onsite Wastewater System Design	(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:
 The assessable item related to this certificate:
 (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:
 (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 items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

Relevant calculations:

AS2870
AS4055

References:

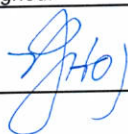
Substance of Certificate: (what it is that is being certified)

Scope and/or Limitations

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

GEOTECH
24-037

Date:

12/3/2024

Foundation Maintenance and Footing Performance: A Homeowner's Guide



CSIRO

BTF 18
replaces
Information
Sheet 10/91

Buildings can and often do move. This movement can be up, down, lateral or rotational. The fundamental cause of movement in buildings can usually be related to one or more problems in the foundation soil. It is important for the homeowner to identify the soil type in order to ascertain the measures that should be put in place in order to ensure that problems in the foundation soil can be prevented, thus protecting against building movement.

This Building Technology File is designed to identify causes of soil-related building movement, and to suggest methods of prevention of resultant cracking in buildings.

Soil Types

The types of soils usually present under the topsoil in land zoned for residential buildings can be split into two approximate groups – granular and clay. Quite often, foundation soil is a mixture of both types. The general problems associated with soils having granular content are usually caused by erosion. Clay soils are subject to saturation and swell/shrink problems.

Classifications for a given area can generally be obtained by application to the local authority, but these are sometimes unreliable and if there is doubt, a geotechnical report should be commissioned. As most buildings suffering movement problems are founded on clay soils, there is an emphasis on classification of soils according to the amount of swell and shrinkage they experience with variations of water content. The table below is Table 2.1 from AS 2870, the Residential Slab and Footing Code.

Causes of Movement

Settlement due to construction

There are two types of settlement that occur as a result of construction:

- Immediate settlement occurs when a building is first placed on its foundation soil, as a result of compaction of the soil under the weight of the structure. The cohesive quality of clay soil mitigates against this, but granular (particularly sandy) soil is susceptible.
- Consolidation settlement is a feature of clay soil and may take place because of the expulsion of moisture from the soil or because of the soil's lack of resistance to local compressive or shear stresses. This will usually take place during the first few months after construction, but has been known to take many years in exceptional cases.

These problems are the province of the builder and should be taken into consideration as part of the preparation of the site for construction. Building Technology File 19 (BTF 19) deals with these problems.

Erosion

All soils are prone to erosion, but sandy soil is particularly susceptible to being washed away. Even clay with a sand component of say 10% or more can suffer from erosion.

Saturation

This is particularly a problem in clay soils. Saturation creates a bog-like suspension of the soil that causes it to lose virtually all of its bearing capacity. To a lesser degree, sand is affected by saturation because saturated sand may undergo a reduction in volume – particularly imported sand fill for bedding and blinding layers. However, this usually occurs as immediate settlement and should normally be the province of the builder.

Seasonal swelling and shrinkage of soil

All clays react to the presence of water by slowly absorbing it, making the soil increase in volume (see table below). The degree of increase varies considerably between different clays, as does the degree of decrease during the subsequent drying out caused by fair weather periods. Because of the low absorption and expulsion rate, this phenomenon will not usually be noticeable unless there are prolonged rainy or dry periods, usually of weeks or months, depending on the land and soil characteristics.

The swelling of soil creates an upward force on the footings of the building, and shrinkage creates subsidence that takes away the support needed by the footing to retain equilibrium.

Shear failure

This phenomenon occurs when the foundation soil does not have sufficient strength to support the weight of the footing. There are two major post-construction causes:

- Significant load increase.
- Reduction of lateral support of the soil under the footing due to erosion or excavation.
- In clay soil, shear failure can be caused by saturation of the soil adjacent to or under the footing.

GENERAL DEFINITIONS OF SITE CLASSES

Class	Foundation
I	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites with only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which can experience moderate ground movement from moisture changes
H	Highly reactive clay sites, which can experience high ground movement from moisture changes
E	Extremely reactive sites, which can experience extreme ground movement from moisture changes
A to P	Filled sites
P	Sites which include soft soils, such as soft clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise

Tree root growth

Trees and shrubs that are allowed to grow in the vicinity of footings can cause foundation soil movement in two ways:

- Roots that grow under footings may increase in cross-sectional size, exerting upward pressure on footings.
- Roots in the vicinity of footings will absorb much of the moisture in the foundation soil, causing shrinkage or subsidence.

Unevenness of Movement

The types of ground movement described above usually occur unevenly throughout the building's foundation soil. Settlement due to construction tends to be uneven because of:

- Differing compaction of foundation soil prior to construction.
- Differing moisture content of foundation soil prior to construction.

Movement due to non-construction causes is usually more uneven still. Erosion can undermine a footing that traverses the flow or can create the conditions for shear failure by eroding soil adjacent to a footing that runs in the same direction as the flow.

Saturation of clay foundation soil may occur where subfloor walls create a dam that makes water pond. It can also occur wherever there is a source of water near footings in clay soil. This leads to a severe reduction in the strength of the soil which may create local shear failure.

Seasonal swelling and shrinkage of clay soil affects the perimeter of the building first, then gradually spreads to the interior. The swelling process will usually begin at the uphill extreme of the building, or on the weather side where the land is flat. Swelling gradually reaches the interior soil as absorption continues. Shrinkage usually begins where the sun's heat is greatest.

Effects of Uneven Soil Movement on Structures

Erosion and saturation

Erosion removes the support from under footings, tending to create subsidence of the part of the structure under which it occurs. Brickwork walls will resist the stress created by this removal of support by bridging the gap or cantilevering until the bricks or the mortar bedding fail. Older masonry has little resistance. Evidence of failure varies according to circumstances and symptoms may include:

- Step cracking in the mortar beds in the body of the wall or above/below openings such as doors or windows.
- Vertical cracking in the bricks (usually but not necessarily in line with the vertical beds or pendants).

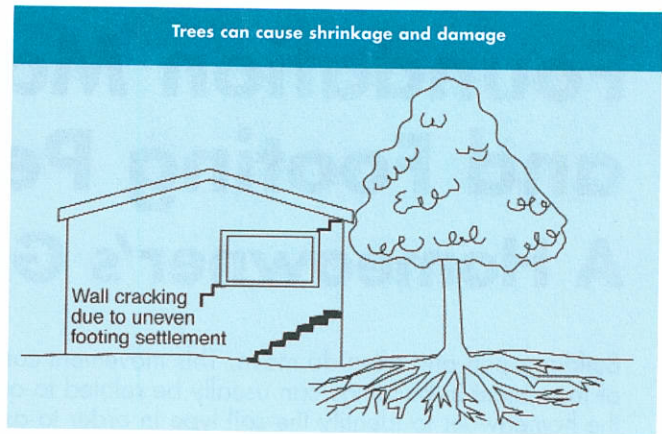
Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

Seasonal swelling/shrinkage in clay

Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the external footings are pushed higher than the internal ones.

The first noticeable symptom may be that the floor appears slightly dished. This is often accompanied by some doors binding on the floor or the door head, together with some cracking of cornice mitres. In buildings with timber flooring supported by bearers and joists, the floor can be bouncy. Externally there may be visible dishing of the hip or ridge lines.

As the moisture absorption process completes its journey to the innermost areas of the building, the internal footings will rise. If the spread of moisture is roughly even, it may be that the symptoms will temporarily disappear, but it is more likely that swelling will be uneven, creating a difference rather than a disappearance in symptoms. In buildings with timber flooring supported by bearers and joists, the isolated piers will rise more easily than the strip footings or piers under walls, creating noticeable doming of flooring.



As the weather pattern changes and the soil begins to dry out, the external footings will be first affected, beginning with the locations where the sun's effect is strongest. This has the effect of lowering the external footings. The doming is accentuated and cracking reduces or disappears where it occurred because of dishing, but other cracks open up. The roof lines may become convex.

Doming and dishing are also affected by weather in other ways. In areas where warm, wet summers and cooler dry winters prevail, water migration tends to be toward the interior and doming will be accentuated, whereas where summers are dry and winters are cold and wet, migration tends to be toward the exterior and the underlying propensity is toward dishing.

Movement caused by tree roots

In general, growing roots will exert an upward pressure on footings, whereas soil subject to drying because of tree or shrub roots will tend to remove support from under footings by inducing shrinkage.

Complications caused by the structure itself

Most forces that the soil causes to be exerted on structures are vertical – i.e. either up or down. However, because these forces are seldom spread evenly around the footings, and because the building resists uneven movement because of its rigidity, forces are exerted from one part of the building to another. The net result of all these forces is usually rotational. This resultant force often complicates the diagnosis because the visible symptoms do not simply reflect the original cause. A common symptom is binding of doors on the vertical member of the frame.

Effects on full masonry structures

Brickwork will resist cracking where it can. It will attempt to span areas that lose support because of subsided foundations or raised points. It is therefore usual to see cracking at weak points, such as openings for windows or doors.

In the event of construction settlement, cracking will usually remain unchanged after the process of settlement has ceased.

With local shear or erosion, cracking will usually continue to develop until the original cause has been remedied, or until the subsidence has completely neutralised the affected portion of footing and the structure has stabilised on other footings that remain effective.

In the case of swell/shrink effects, the brickwork will in some cases return to its original position after completion of a cycle, however it is more likely that the rotational effect will not be exactly reversed, and it is also usual that brickwork will settle in its new position and will resist the forces trying to return it to its original position. This means that in a case where swelling takes place after construction and cracking occurs, the cracking is likely to at least partly remain after the shrink segment of the cycle is complete. Thus, each time the cycle is repeated, the likelihood is that the cracking will become wider until the sections of brickwork become virtually independent.

With repeated cycles, once the cracking is established, if there is no other complication, it is normal for the incidence of cracking to stabilise, as the building has the articulation it needs to cope with the problem. This is by no means always the case, however, and monitoring of cracks in walls and floors should always be treated seriously.

Upheaval caused by growth of tree roots under footings is not a simple vertical shear stress. There is a tendency for the root to also exert lateral forces that attempt to separate sections of brickwork after initial cracking has occurred.

The normal structural arrangement is that the inner leaf of brickwork in the external walls and at least some of the internal walls (depending on the roof type) comprise the load-bearing structure on which any upper floors, ceilings and the roof are supported. In these cases, it is internally visible cracking that should be the main focus of attention, however there are a few examples of dwellings whose external leaf of masonry plays some supporting role, so this should be checked if there is any doubt. In any case, externally visible cracking is important as a guide to stresses on the structure generally, and it should also be remembered that the external walls must be capable of supporting themselves.

Effects on framed structures

Timber or steel framed buildings are less likely to exhibit cracking due to swell/shrink than masonry buildings because of their flexibility. Also, the doming/dishing effects tend to be lower because of the lighter weight of walls. The main risks to framed buildings are encountered because of the isolated pier footings used under walls. Where erosion or saturation cause a footing to fall away, this can double the span which a wall must bridge. This additional stress can create cracking in wall linings, particularly where there is a weak point in the structure caused by a door or window opening. It is, however, unlikely that framed structures will be so stressed as to suffer serious damage without first exhibiting some or all of the above symptoms for a considerable period. The same warning period should apply in the case of upheaval. It should be noted, however, that where framed buildings are supported by strip footings there is only one leaf of brickwork and therefore the externally visible walls are the supporting structure for the building. In this case, the subfloor masonry walls can be expected to behave as full brickwork walls.

Effects on brick veneer structures

Because the load-bearing structure of a brick veneer building is the frame that makes up the interior leaf of the external walls plus perhaps the internal walls, depending on the type of roof, the building can be expected to behave as a framed structure, except that the external masonry will behave in a similar way to the external leaf of a full masonry structure.

Water Service and Drainage

Where a water service pipe, a sewer or stormwater drainage pipe is in the vicinity of a building, a water leak can cause erosion, swelling or saturation of susceptible soil. Even a minuscule leak can be enough to saturate a clay foundation. A leaking tap near a building can have the same effect. In addition, trenches containing pipes can become watercourses even though backfilled, particularly where broken rubble is used as fill. Water that runs along these trenches can be responsible for serious erosion, interstrata seepage into subfloor areas and saturation.

Pipe leakage and trench water flows also encourage tree and shrub roots to the source of water, complicating and exacerbating the problem.

Poor roof plumbing can result in large volumes of rainwater being concentrated in a small area of soil:

- Incorrect falls in roof guttering may result in overflows, as may gutters blocked with leaves etc.

- Corroded guttering or downpipes can spill water to ground.
- Downpipes not positively connected to a proper stormwater collection system will direct a concentration of water to soil that is directly adjacent to footings, sometimes causing large-scale problems such as erosion, saturation and migration of water under the building.

Seriousness of Cracking

In general, most cracking found in masonry walls is a cosmetic nuisance only and can be kept in repair or even ignored. The table below is a reproduction of Table C1 of AS 2870.

AS 2870 also publishes figures relating to cracking in concrete floors, however because wall cracking will usually reach the critical point significantly earlier than cracking in slabs, this table is not reproduced here.

Prevention/Cure

Plumbing

Where building movement is caused by water service, roof plumbing, sewer or stormwater failure, the remedy is to repair the problem. It is prudent, however, to consider also rerouting pipes away from the building where possible, and relocating taps to positions where any leakage will not direct water to the building vicinity. Even where gully traps are present, there is sometimes sufficient spill to create erosion or saturation, particularly in modern installations using smaller diameter PVC fixtures. Indeed, some gully traps are not situated directly under the taps that are installed to charge them, with the result that water from the tap may enter the backfilled trench that houses the sewer piping. If the trench has been poorly backfilled, the water will either pond or flow along the bottom of the trench. As these trenches usually run alongside the footings and can be at a similar depth, it is not hard to see how any water that is thus directed into a trench can easily affect the foundation's ability to support footings or even gain entry to the subfloor area.

Ground drainage

In all soils there is the capacity for water to travel on the surface and below it. Surface water flows can be established by inspection during and after heavy or prolonged rain. If necessary, a grated drain system connected to the stormwater collection system is usually an easy solution.

It is, however, sometimes necessary when attempting to prevent water migration that testing be carried out to establish watertable height and subsoil water flows. This subject is referred to in BTF 19 and may properly be regarded as an area for an expert consultant.

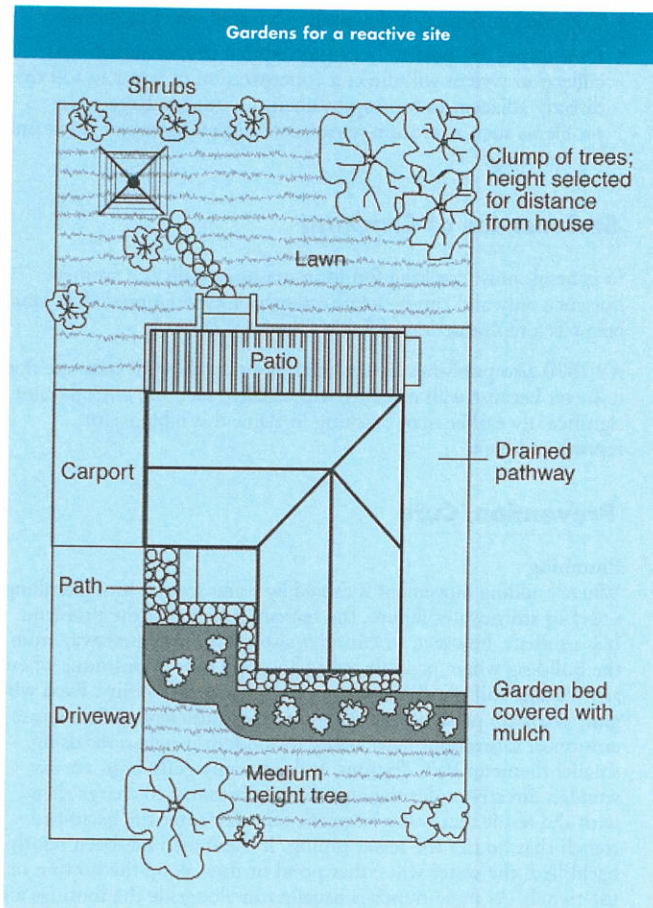
Protection of the building perimeter

It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

For this reason, particularly where problems exist or are likely to occur, it is recommended that an apron of paving be installed around as much of the building perimeter as necessary. This paving

CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS

Description of typical damage and required repair	Approximate crack width limit (see Note 3)	Damage category
Hairline cracks	<0.1 mm	0
Fine cracks which do not need repair	<1 mm	1
Cracks noticeable but easily filled. Doors and windows stick slightly	<5 mm	2
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weathertightness often impaired	5–15 mm (or a number of cracks 3 mm or more in one group)	3
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted	15–25 mm but also depend on number of cracks	4



- Water that is transmitted into masonry, metal or timber building elements causes damage and/or decay to those elements.
- High subfloor humidity and moisture content create an ideal environment for various pests, including termites and spiders.
- Where high moisture levels are transmitted to the flooring and walls, an increase in the dust mite count can ensue within the living areas. Dust mites, as well as dampness in general, can be a health hazard to inhabitants, particularly those who are abnormally susceptible to respiratory ailments.

The garden

The ideal vegetation layout is to have lawn or plants that require only light watering immediately adjacent to the drainage or paving edge, then more demanding plants, shrubs and trees spread out in that order.

Overwatering due to misuse of automatic watering systems is a common cause of saturation and water migration under footings. If it is necessary to use these systems, it is important to remove garden beds to a completely safe distance from buildings.

Existing trees

Where a tree is causing a problem of soil drying or there is the existence or threat of upheaval of footings, if the offending roots are subsidiary and their removal will not significantly damage the tree, they should be severed and a concrete or metal barrier placed vertically in the soil to prevent future root growth in the direction of the building. If it is not possible to remove the relevant roots without damage to the tree, an application to remove the tree should be made to the local authority. A prudent plan is to transplant likely offenders before they become a problem.

Information on trees, plants and shrubs

State departments overseeing agriculture can give information regarding root patterns, volume of water needed and safe distance from buildings of most species. Botanic gardens are also sources of information. For information on plant roots and drains, see Building Technology File 17.

Excavation

Excavation around footings must be properly engineered. Soil supporting footings can only be safely excavated at an angle that allows the soil under the footing to remain stable. This angle is called the angle of repose (or friction) and varies significantly between soil types and conditions. Removal of soil within the angle of repose will cause subsidence.

Remediation

Where erosion has occurred that has washed away soil adjacent to footings, soil of the same classification should be introduced and compacted to the same density. Where footings have been undermined, augmentation or other specialist work may be required. Remediation of footings and foundations is generally the realm of a specialist consultant.

Where isolated footings rise and fall because of swell/shrink effect, the homeowner may be tempted to alleviate floor bounce by filling the gap that has appeared between the bearer and the pier with blocking. The danger here is that when the next swell segment of the cycle occurs, the extra blocking will push the floor up into an accentuated dome and may also cause local shear failure in the soil. If it is necessary to use blocking, it should be by a pair of fine wedges and monitoring should be carried out fortnightly.

This BTF was prepared by John Lewer FAIB, MIAMA, Partner, Construction Diagnosis.

should extend outwards a minimum of 900 mm (more in highly reactive soil) and should have a minimum fall away from the building of 1:60. The finished paving should be no less than 100 mm below brick vent bases.

It is prudent to relocate drainage pipes away from this paving, if possible, to avoid complications from future leakage. If this is not practical, earthenware pipes should be replaced by PVC and backfilling should be of the same soil type as the surrounding soil and compacted to the same density.

Except in areas where freezing of water is an issue, it is wise to remove taps in the building area and relocate them well away from the building – preferably not uphill from it (see BTF 19).

It may be desirable to install a grated drain at the outside edge of the paving on the uphill side of the building. If subsoil drainage is needed this can be installed under the surface drain.

Condensation

In buildings with a subfloor void such as where bearers and joists support flooring, insufficient ventilation creates ideal conditions for condensation, particularly where there is little clearance between the floor and the ground. Condensation adds to the moisture already present in the subfloor and significantly slows the process of drying out. Installation of an adequate subfloor ventilation system, either natural or mechanical, is desirable.

Warning: Although this Building Technology File deals with cracking in buildings, it should be said that subfloor moisture can result in the development of other problems, notably:

The information in this and other issues in the series was derived from various sources and was believed to be correct when published.

The information is advisory. It is provided in good faith and not claimed to be an exhaustive treatment of the relevant subject.

Further professional advice needs to be obtained before taking any action based on the information provided.

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APPENDIX 3

ONSITE WASTEWATER ASSESSMENT / SYSTEM DESIGN – 4 Lateena Street, Dodges Ferry

Below find the assessment to determine of the type and size of wastewater treatment system, and the allocation of a Land Application Area (LAA) for a proposed 2-bedroom ancillary residence at 4 Lateena Street, Dodges Ferry. This assessment should be read in conjunction with Site & Soil Evaluation Report ([GEOTECH 24-037](#)) - enclosed.

It is proposed to construct an ancillary dwelling between the current residence and Lateena Street ([Plate 1](#)). The current residence's onsite wastewater system is wholly contained on the northern portion of the block. It is proposed to install a wastewater system solely for the ancillary dwelling.

The site is covered in grass and bare sand, and is devoid of trees. The site slopes to the south at between 1 and 3 degrees to the west.

Typical of the profiles encountered in the [Test Holes](#) was:

0.00 – 0.20m SAND: fine grained, light grey, rootlets – TOPSOIL

0.20 – 2.10m SAND: fine grained, grey / light brown, dry

Holes terminated at required depths - 2.10m+

Groundwater was not encountered in any of the test holes.

The site is classified as a Class 1 (SAND) site with an Indicative Permeability of >3.0 m/day. A Design Loading Rate of [35mm/day](#) is appropriate (secondary treated effluent).

It is proposed to install a septic tank discharging to an in-ground Advanced Enviro-Septic (AES) bed ([Plate 2](#)). This area should be protected from vehicles as driving over the pipework will likely destroy the system.

There is suitable area available for a reserve LAA if required in the future.

Plate 2 – Test Hole #4 - Looking to the south / southeast.



COMPLIANCE WITH THE 2016 DIRECTOR'S GUIDELINES FOR ONSITE WASTEWATER

Compliance Table Directors Guidelines for OSWM		
Acceptable Solutions	Performance Criteria	Compliance achieved by
<p>5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.</p>		
<p>A1 A new dwelling must be provided with a LAA that complies with Table 3.</p>	<p>P1 A new dwelling must be provided with a LAA that meets all of the following: a) The LAA is sized in accordance with the requirements of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p>	<p>Complies with A1 50m² of LAA required /bedroom, or 100m² for this development</p>
<p>7. Standards for Wastewater Land Application Areas</p>		
<p>A1 Horizontal separation distance from a building to a LAA must comply with one of the following: a) be no less than 6m; b) be no less than: (i) 3m from an upslope boundary or level building;</p>	<p>P1 The LAA is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.</p>	<p>Complies with A1 LAA > 3m from level residence.</p>

<p>(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.</p>		
<p>A2 Horizontal separation distance from downslope surface water to a LAA 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.</p>	<p>P2 Horizontal separation distance from downslope surface water to a LAA must comply with all of the following: a) Setbacks 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.</p>	<p>Complies with A2 LAA >100m from downslope surface water.</p>
<p>A3 Horizontal separation distance from a property boundary to a LAA 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; & (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.</p>	<p>P3 Horizontal separation distance from a property boundary to a LAA 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.</p>	<p>Complies with P3 LAA > 1.5m from upslope and side-slope property boundaries. 1° slope. 2.5m setback required to western property boundary</p>
<p>A4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.</p>	<p>P4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA 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.</p>	<p>Complies with A4 No known potable bores in the immediate vicinity.</p>
<p>A5 Vertical separation distance between groundwater & a LAA must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent</p>	<p>P5 Vertical separation distance between groundwater and a LAA 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.</p>	<p>Complies with A5 Groundwater not encountered.</p>
<p>A6 Vertical separation distance between a limiting layer & a LAA must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent.</p>	<p>P6 Vertical setback must be consistent with AS/NZS1547 Appendix R.</p>	<p>Complies with A6 Limiting layer not encountered.</p>

ONSITE WASTEWATER SYSTEM DESIGN

A new, 3250 litre (minimum) septic tank will be installed. The effluent leaving the septic tank will gravity feed an Advanced Enviro-Septic (AES) bed. The septic tank **should not** be fitted with an outlet filter.

The following calculations determine the size of the AES Bed designed to service the 2-bedroom.

2-bedroom residence	4 persons
Tank water	120 litres / person / day
Wastewater Flow Rate	4 x 120 = 480 litres / day
Design Loading Rate (DLR)	35mm/day
DLR	35 litres / m ² / day
Basal Area of Land Application Area	480 / 35 = 13.7m²

The Advanced Enviro Septic (AES) system utilizes a modular distribution layout consisting of pipework laid in "system sand".

This module consists of 3 runs of 3 x 300mm diameter AES pipes, 150mm apart, with 300mm side-wall clearance on each side - total width 1800mm.

$$\begin{aligned} \text{Distribution unit length} &= \text{AES pipe length} + (0.3\text{m} \times 2) \\ &= 6\text{m} + 0.6\text{m} = \mathbf{6.6\text{m}} \end{aligned}$$

$$\text{Width of 4-pipe wide AES unit} = \mathbf{1.80\text{m}}$$

$$\text{A System Extension is required for this site.} \quad 6.6\text{m long} \times 0.28\text{m wide} = \mathbf{1.8\text{m}^2}$$

$$\text{Area of AES} = 6.6\text{m} \times 2.08\text{m} = \mathbf{13.7\text{m}^2}$$

A cutoff drain will not be required (house site drainage should suffice).

The AES system should be installed by a plumber who has been accredited by Chankar Environmental Proprietary Limited to install Advanced Enviro Septic systems, and who has appropriate experience.

Site Preparation

- Rope off the site to prevent damage to the area during other construction activity on the lot.
- Vehicular traffic over the area must be prohibited to avoid compaction.
- Excavate the existing soil surface, parallel with the contour (cross slope) to a depth of 750mm over the selected wastewater land application area.
- Rake/scarify the exposed soil surface.
- Install and connect the septic tank and AES bed in accordance with the AES site instructions (see below) and the design plans attached.
- The AES pipe must be laid in a bed of approved "system sand". This is a coarse sand meeting the specifications as listed below.

AES System Sand Specifications

- Percentage Restrictions - 35% or less of the total sand may be gravel. 40%-90% of the total sand is to be coarse and very coarse sand.
- Gravel Quality Restrictions - No gravel is to exceed 9mm in diameter. No gravel is smaller than 2mm in diameter.
- Coarse Sand Quality Restrictions - No coarse sand is smaller than 0.5mm in diameter.
- Fines Quality Restrictions - No more than 2% of the total sand may pass through a 75µ m sieve.

Venting – AES system and septic tank

- Ensure that roof vent comprises a minimum of single 80mm diameter pipe or 2 x 40mm diameter vent pipes.
- Roof vent to be a minimum of 3m above ground vent.
- Venting of the septic tank is to be consistent with NCC Pt 3 Tas F101.2.

Low vent as per AES pipe layout plan (Low vent at end of pipework).

AES The World Leader in Passive Solutions ©

Site Address 4 Lateena Street, Dodges Ferry	State TAS	Post Code 7173
Client Name Ryan Johnson	Date of Site Visit 5/3/24	
Designers Name Peter Hofto, Rock Solid Geotechnics Pty Ltd	Designers Ph Number 0417 960 769	Designer Lic (e.gQBCC) CC6159I
Lic Plumber To be announced	Plumber Ph Number	Plumb / Drainer Lic Number TBA
Council Area Sorell	Designers AES Cert Number 1463	Date 22/3/24

This Calculator is a guide only, receiving soil classification, surface water, water tables and all other site constraints addressed by the qualified designer.

System Designers site and soil calculation data entry	IMPORTANT NOTES
---	-----------------

Enter AES L/m loading rate, "30" for ADV Secondary or "38" Secondary	38	>> This design is for a SECONDARY system.
Is this a new installation Y or N	Y	>> Minimum single vent size is 80mm or 2 x 50mm house vents
Number of Bedrooms	2	>> This is not used in ANY Calculation. If not known use N/A or 0.
Number of persons	4	>> A septic tank outlet filter is NOT RECOMMENDED
Daily Design Flow Allowance Litre/Person/Day	120	
Number of rows required to suit site constraints	3	>> Longer AES runs are better than multiple short runs.
Infiltration Soil Category from site/soil evaluation. CATEGORY	1	
Design Loading Rate based on site & soil evaluation DLR (mm/day)	35	
Bore log depth below system Basal area	1.5m	>> Min depth 1.5m. Check water table/restrictive layer
Is this design a GRAVITY system with no outlet filter? Y or N	y	>> GRAVITY. A House Vent & LOW VENT required on this system

PLEASE CHECK YOU HAVE FALL FROM TANK TO AES SYSTEM PIPES

COMMENTS :- "The outcome must be important to everyone."

- Designers need to be familiar with special requirements of Local Authorities. ie - Minimum falls from Septic tank outlets to Land application areas etc
- Plumbers are reminded to practice good construction techniques as per AS 1547 & as provided on AES installation instructions supplied with components.

AES System Calculator Outcomes			AES dimensions		
Total System load - litres / day (Q).	480	l/d		AES System	System Extension
Min Length of AES pipe rows to treat loading	4.25	lm	Length:(L)	6.60m	6.60m
Number of FULL AES Pipe lengths per row	2	lths	Width:(W)	1.80m	0.28m
Total Capacity of AES System pipe in Litres	1272	ltr.	Sand Depth :	0.75m	0.15m
			Area m2	11.9 m^2	1.8 m^2

USE CUT LENGTHS OF PIPE IN THIS DESIGN? (ENTER Y OR N) n

IF YOU WISH TO USE A TRENCH EXTENSION DESIGN OPTION ENTER "Y"

Enter Custom Width in metre

AES INFILTRATION FOOT PRINT AREA - $L = Q / (DLR \times W)$ <i>for this Basic Serial design is</i>	Length	Width	Minimum AES foot print required	
	6.60m	x 2.08m	= 13.7	m2 total

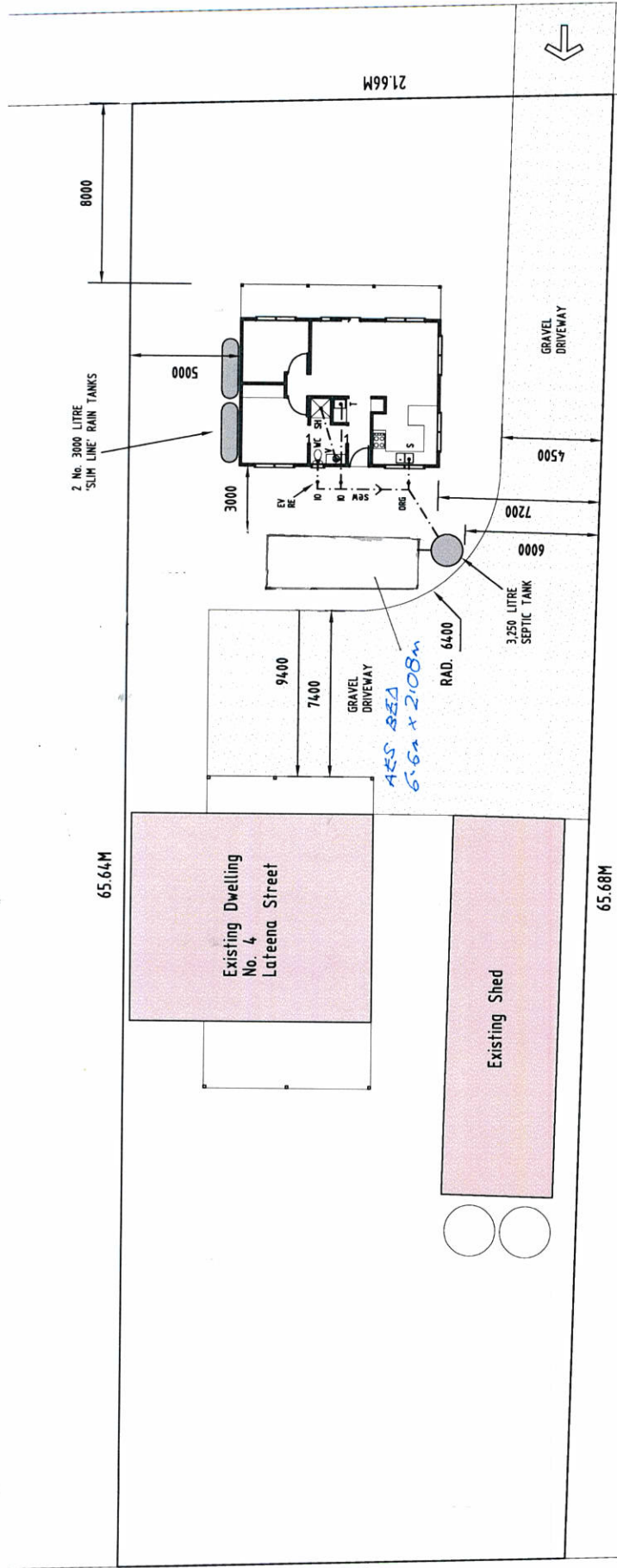
AES pipes are best centered in the trench parallel to the site slope

Code	AES System Bill of Materials.				Chankar Environmental Use Only
AES-PIPE	AES 3 metre Lengths required	6	lths		
AESC	AES Couplings required	3	ea		
AESO	AES Offset adaptors	6	ea		
AESODV	AES Oxygen demand vent	1	ea		
AES-IPB	AES 100mm Inspection point base	2	ea		
TD Kit 4	4 Hole Distribution Box Kit		ea		
TD Kit 7	7 Hole Distribution Box Kit		ea		
VS43-4	Sweet Air Filter VS43-4		ea		
AES DESO	Double Offset Adaptors		ea		
TOTAL SYSTEM SAND REQUIRED (Estimate Only)		11	m3		

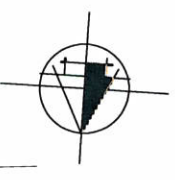
Please email your AES Calculator (EXCEL FORMAT), Site Layout & AES Design to designreview@enviro-septic.com.au

> The AES Calculator is a design aid to allow checking of the AES components, configuration and is a guide only. Site and soil conditions referencing AS1547 are calculated and designed by a Qualified Wastewater Designer.
 > Chankar Environmental accepts no responsibility for the soil evaluation, loading calculations or DLR entered by the designer for this calculator.
 > AES pipes can be cut to length on site. They are supplied in 3 meter lengths only.
 > AES ONLY supply AES components as detailed in the Bill of Materials.
 > SEPTIC Tank & other components including SAND will need to be sourced from other suppliers. Refer to our WEBSITE www.enviro-septic.com.au OR 07 5474 4055

L a t e n a Street



EXISTING ACCESS



STORMWATER DRAINAGE NOTES:

- SW01** STORMWATER LAYOUT IS INDICATIVE AND IS A GUIDE ONLY. BUILDER / PLUMBER TO NOTIFY THIS OFFICE WITH ANY VARIATIONS OR CHANGES TO THIS LAYOUT.
- SW02** CONNECT NEW DOWNPIPES TO LEGAL CONNECTION POINT VIA 100MM DIA UPVC STORMWATER PIPE LAID WITH A MINIMUM 100 FALL DISCHARGED TO THE SATISFACTION OF THE APPROPRIATE AUTHORITY.
- SW03** ALL STORMWATER DRAINAGE WORKS TO BE IN ACCORDANCE WITH A.S. 3500 AND THE RELEVANT AUTHORITY'S REQUIREMENTS.
- SW04** ENSURE 100MM COVER TO PIPES UNDER SOIL AND 50MM UNDER CONCRETE PAVING AND 100MM UNDER AREAS SUBJECT TO LIGHT VEHICLE TRAFFIC (MEASURED TO UNDERSIDE OF PAVING).
- SW05** ENSURE 100 DIA UPVC AGRICULTURAL DRAINS ARE PROVIDED TO THE BASE OF ALL CUTS AND RETAINING WALLS AND CONNECTED TO THE STORMWATER SYSTEM VIA SILT PITS TO THE AUTHORITIES REQUIREMENTS.
- SW06** PROPOSED FINISHED FLOOR LEVEL ABOVE EXTERNAL FINISHED SURFACES MUST NOT BE LESS THAN:
 - (i) 150 MM ABOVE FINISHED GROUND LEVEL
 - (ii) 100 MM ABOVE SANDY, WELL DRAINED AREAS
 - (iii) 50 MM ABOVE PAVED OR CONCRETED AREAS
 THAT SLOPE AWAY FROM THE BUILDING AS PER A.S. 2870.

- SW07** THE EXTERNAL FINISHED SURFACE SURROUNDING THE BUILDING MUST BE DRAINED TO MOVE SURFACE WATER AWAY FROM THE BUILDING AND GRADED TO GIVE A SLOPE OF NOT LESS THAN 50 MM OVER THE FIRST 1000 MM FROM THE BUILDING AS PER A.S. 2870.
- SW08** CHARGED DOWNPIPES TO COMPLY WITH DOC/T1/29261 OF THE BUILDING ACT 2016 "CHARGED DOWNPIPES TO RAINWATER TANKS FOR DRINKING WATER PURPOSES"

REFER TO ENGINEERS ON-SITE WASTEWATER DISPOSAL ASSESSMENT & DESIGN BY: RICK SOLID GEOTECHNICS P/L REF: GEOTECH 24-037 DATE: 12.3.24 TO COMPLY WITH LOCAL HEALTH REQUIREMENTS

LEGEND:

- 80MM ---> DENOTES 100 DIA UPVC SEWER DRAIN PIPE
- > MIN. 140 FALL TO LEGAL CONNECTION POINT
- WC - TOILET
- S - SINK
- V - VANITY
- SH - SHOWER
- T - TROUGH
- IO - INSPECTION OUTLET
- INSTALLED AT INTERVALS NOT EXCEEDING 30 METRES
- ORG - OVERFLOW RELIEF GULLY WITH TAP OVER
- EY - EDUCT VENT
- RE - ROD EYE

sewer drainage layout

SCALE - 1:200
SITE IS RELATIVELY FLAT



REV	AMENDMENT	DATE
A	PRELIM BA ISSUE	19.3.24

PROJECT
**NEW ANCILLARY DWELLING
4 LATEENA STREET,
DODGES FERRY 7173**

DRAWING
SEWER DRAINAGE LAYOUT

CLIENT
R. & G. JOHNSON

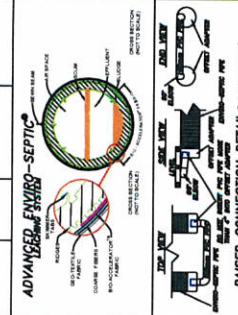
DESIGN TW	DRAWN TW	DATE 19.3.24
SCALE AS SHOWN	SHEET No. 03 (OF 9)	REF No. 0735WD-A

Building Services Provider
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Tim Wilson Design & Drafting

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REVISIONS		AUTHORISED	
REV #	DATE	SUBJECT	



CHANKAR ENVIRONMENTAL PTY LTD
T/A

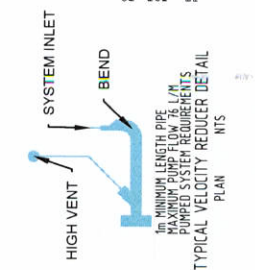
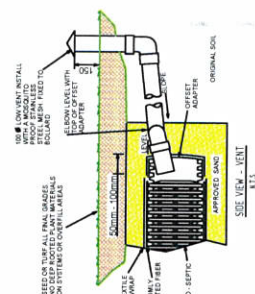
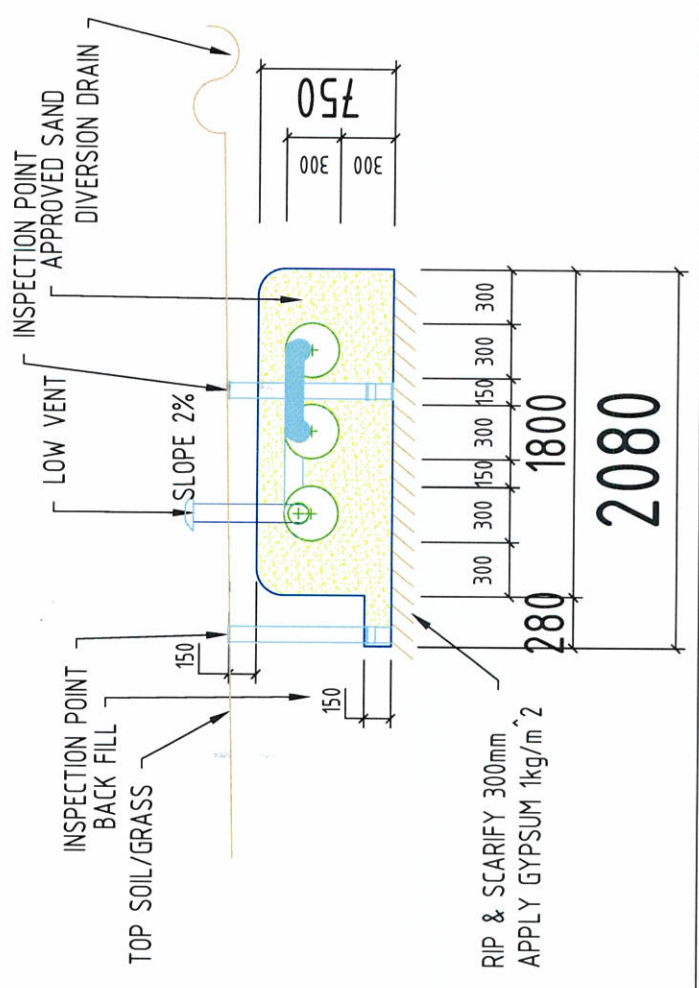
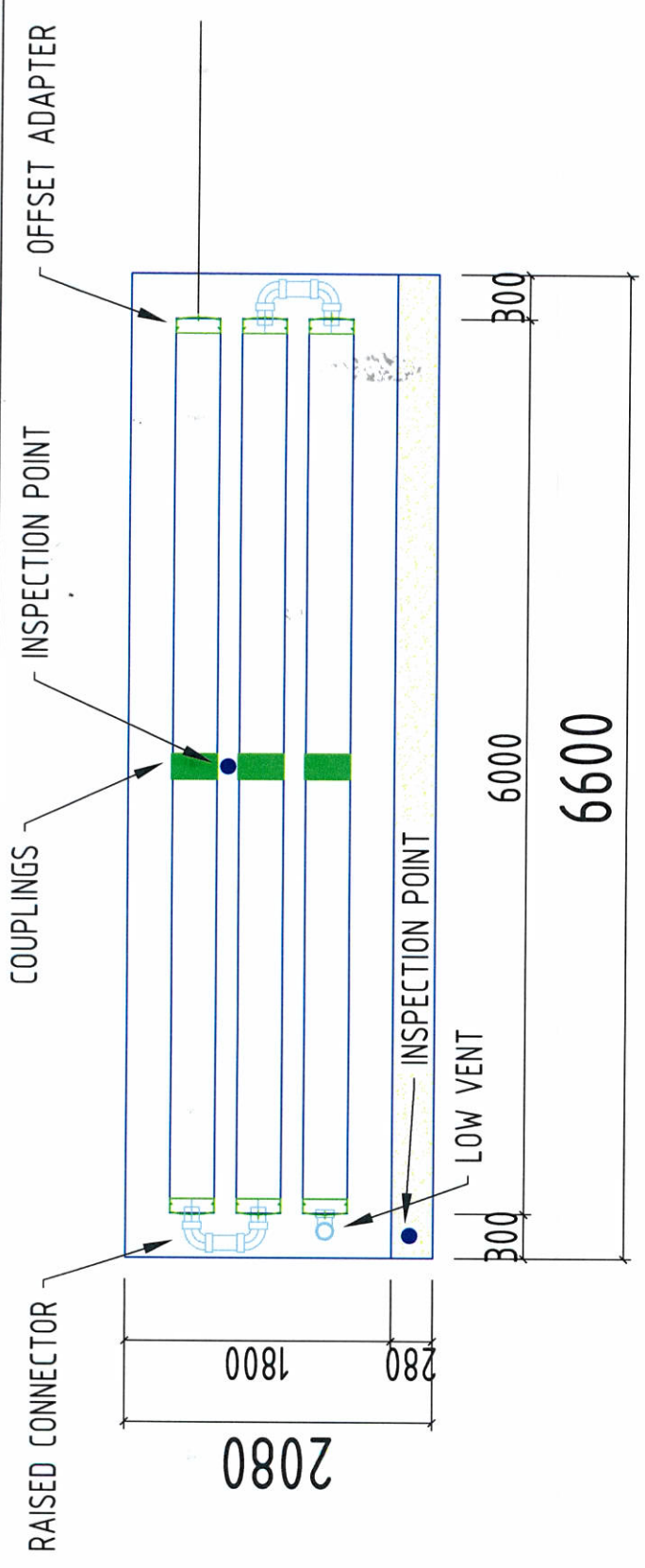
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NAME OF CLIENT		Ryan Johnson	
DESIGNER	DATE	DESIGNER	DATE
Peter Hefto	8/2/2024	Peter Hefto	8/2/2024
DRAWN	DATE	DRAWN	DATE
S. Dennis	8/2/2024	S. Dennis	8/2/2024
LOT & PLAN			
STREET ADDRESS			
4. Lareena St, Dudgees Ferry			
COUNCIL			
Sorell			
DRAWING DETAILS			
AES 3 Pipe 2 Row 2% Slope			
SCALE			
CLIENT REFERENCE #			
JOB NUMBER	REVISION	DWG #	S.L3



(NOT TO SCALE)

RAISED CONNECTION DETAIL

SITE AND SOIL EVALUATION REPORT

Soil Category:

Modified Emerson Test Required

No

1, ...2, ...3, ...4, ...5, ...6

If Yes, Emerson Class No.

Measured or Estimated Soil Permeability (m/d):

3m/d

Design Loading Rate (DLR)

35 mm/day

Geology:

Quaternary sediments

Slope:

1 degree

Drainage lines / water courses:

Nil

Vegetation:

Grass

Site History: (land use)

Residential block

Aspect:

West

Pre-dominant wind direction:

Northwest to southwest

Site Stability: Will on-site wastewater disposal affect site stability?

No

Is geological advice required?

No

Drainage/Groundwater:

Not Encountered

Depth to seasonal groundwater (m):

Not Encountered

Are surface or sub-surface drains required upslope of the land application area?

Yes

Date of Site Evaluation:

5/3/2024

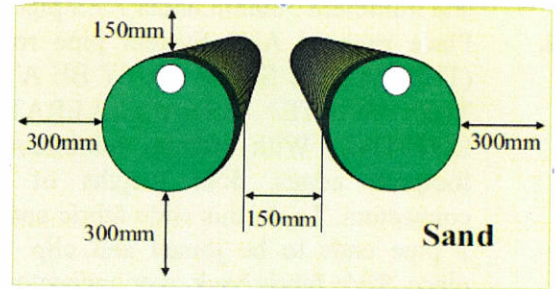
Weather Conditions:

Fine



1. SET OUT

- i. Set out should be in accordance with the design approved by Council.
- ii. The length of each run of AES System pipe must be horizontal
- iii. AES calculator footprint dimensions are based upon the DLR of the receiving soil and are the minimum footprint area.
- iv. Any system extension must be to the down slope side unless the infiltration footprint is level.



AES Sand Coverage Minimums

2. EXCAVATION – (track machinery causes less compaction of the soil.)

- i. Excavate as required leaving the base of excavation loose to aid infiltration. Strip and separate top soil for covering installation as per AS 1547:2012.
DO NOT damage infiltration area by driving equipment or walking on excavation prior to placement of sand layer. Refer to Appendix L Sec L7 of AS1547: 2012. Construction Techniques. Rip or scarify the infiltration area to a depth of 150 to 200mm minimum parallel to the AES pipe on all systems especially systems in Cat 4,5,6 soil with high clay content. (Refer to the design and report for this onsite installation)

“L7.1 Good construction technique AS 1547:2010

The following excavation techniques shall be observed so as to minimise the risk of damage to the soil:

- (a) Plan to excavate only when the weather is fine;
 - (b) Avoid excavation when the soil has a moisture content above the plastic limit. This can be tested by seeing if the soil forms a ‘wire’ when rolled between the palms;
 - (c) During wet seasons or when construction cannot be delayed until the weather becomes fine, smeared soil surfaces may be raked to reinstate a more natural soil surface, taking care to use fine tines and only at the surface;
 - (d) When excavating by machine, fit the bucket with ‘raker teeth’ if possible, and excavate in small ‘bites’ to minimise compaction; and
 - (e) Avoid compaction by keeping people off the finished trench or bed floor.
- In particular for trenches and beds:
- (f) If rain is forecast then cover any open trenches, to protect them from rain damage;
 - (g) Excavate perpendicular to the line of fall or parallel to the contour of sloping ground; and
 - (h) Ensure that the inverts are horizontal.



CL7.1

Damage can be done by:

- (a) Smearing, where the soil surface is smoothed, filling cracks and pores;
- (b) Compacting, where the soil porosity is reduced; and
- (c) Puddling, where washed clay settles on the base of the trench to form a relatively impermeable layer.

In particular, cohesive soils, or soils containing a significant quantity of clay, are susceptible to damage by excavation equipment during construction.

- ii. If using a raised bed configuration ensure you have sufficient soil to cover entire mound or bring in enough sand to fill out batters prior to covering with topsoil etc. as per AS 1547:2012.

3. SYSTEM SAND – Course washed sand with less than 2mm silt (ASTM C-33)

- i. Place minimum 150mm system sand to extension area and minimum 300mm under AES pipe footprint area.
- ii. Place runs of AES System pipe roughly in position (THE FABRIC SEAM MUST BE AT THE TOP AND THE WHITE BIO-ACCELERATOR AT THE BOTTOM.) With 300mm minimum clearance to all footprint edges. Join lengths of AES with AES connectors. To do this slide fabric and fibre back on the 2 pipe ends to be joined and clip AES connector in place. Slide fabric back over connector.
- iii. Place offset adaptors on each run with the 100mm hole at the top.
- iv. Ensure minimum 150mm between AES system pipes. This can be done with pegs, short pieces of 150mm pvc or reusable AES Spacer Plates. One side provides the 300m spacing required for minimum system sand. The opposite side must have a minimum of 300mm of system sand beyond the edge of the AES System pipe.
- v. Place system sand around AES pipes ensuring they stay level and in position. Remove and progressively position spacer plates or PVC pipe until all system pipes are surrounded by system sand to the top. **Walk sand between rows to aid compaction.**
- vi. EXTENSION SAND depth is a minimum of 150mm.



4. CONNECTING ROWS

- i. Connect rows with 100mm pipe as required with a maximum 100mm extending into the AES system pipe. (Raised connection – After placing raised connection pipes the top of the PVC pipe must be level with the top of the AES pipe. Lift and pack with sand.) This ensures airflow is not restricted and buffer capacity is maximised.



5. VENTING

- i. Ensure the system has a High Vent and a low vent. As per design. Low vent is a minimum 150mm above ground. Vents can be located any distance from the system provide they have no water traps that can block oxygen flow through the system. The High Vent must be 3 meters higher than the low vent.
- ii. Pressurised or steep gravity systems will require a **Velocity Diffuser**

6. BACK FILLING

- i. Ensure a minimum of 150mm System sand covers the AES pipes and PVC pipe work.
- ii. Refer to the Onsite design and Council approval and ensure that all diversions drains or site specific requirements are correctly installed.
- iii. Back fill with natural soil and compact. System extensions may require compaction in a couple of layers depending on the depth.
- iv. On mounds and down slopes strip vegetation and place fill evenly and level to all sides to avoid breakout from low points during high seasonal loadings.
- v. Cover excavation area with topsoil creating a finished surface level 50 to 100mm higher than the natural surface level ensuring that water sheds off the land application area and does not pond, compact lightly and seed or grass when completed.

For Installation support phone 0754744055

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: Owner name
 Address
 Suburb/postcode

Designer details:

Name: Category:
 Business name: Phone No:
 Business address:
 Fax No:
 Licence No: Email address:

Details of the proposed work:

Owner/Applicant Designer's project reference No.
Address: Lot No:

Type of work: Building work Plumbing work (X all applicable)

Description of work:

(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
	<input type="checkbox"/> Building design	Architect or Building Designer
	<input type="checkbox"/> Structural design	Engineer or Civil Designer
	<input type="checkbox"/> Fire Safety design	Fire Engineer
	<input type="checkbox"/> Civil design	Civil Engineer or Civil Designer
	<input checked="" type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Fire service design	Building Services Designer
	<input type="checkbox"/> Electrical design	Building Services Designer
	<input type="checkbox"/> Mechanical design	Building Service Designer
		Plumbing design
	<input type="checkbox"/> 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: ROCK SOLID GEOTECHNICS	Date: 12/3/2024
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 12/3/2024
Computations:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 12/3/2024
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:

AS 1547:2021 On-site domestic wastewater management

Director’s Guidelines for Onsite Wastewater Management

Any other relevant documentation:

Advanced Enviro Septic Design & Installation Manual.
 Advanced Enviro Septic Design Installation Instructions & Home-Owner’s Manual.
 All by Chandlers Environmental Pty Ltd

Site & Soil Evaluation and design report, 4 Lateena Street, Dodges Ferry, dated 12/3/2024

Form 55 by Rock Solid Geotechnics P/L, dated 12/3/2024, certifying Site & Soil Evaluation Report

Attribution as designer:

I Peter Hofto – ROCK SOLID GEOTECHNICS P/L 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.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	<input type="text" value="Peter Hofto"/>	<input type="text" value="Peter Hofto"/>	<input type="text" value="12/3/2024"/>
Licence No:	<input type="text" value="CC6159I"/>		

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:

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

Certification:

IPeter Hofto – ROCK SOLID GEOTECHNICS P/L.....
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

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Peter Hofto		12/3/2024

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent

Address

Suburb/postcode

Qualified person details:

Qualified person:

Address: Phone No:
 Fax No:

Licence No: Email address:

Qualifications and Insurance details:	BSc (Hons) – Geology / Geophysics PI Insurance – Lloyds Underwriting Policy Number ENG 22000391	(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)
Speciality area of expertise:	Site & Soil Evaluation & Land Application System Design	(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:

The assessable item related to this certificate:

Onsite wastewater management – site & soil evaluation for onsite wastewater management capacity, including; Characterisation of wastewater and predicted hydraulic loadings, Selection of onsite wastewater treatment system, 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: (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 items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

AS 1547:2021 On-site domestic wastewater management

Relevant calculations:

References:

AS/NZS 1547.2012 - Onsite domestic wastewater management

Director's Guidelines for Onsite Wastewater Management – CBOS - 2017

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

Site & Soil Evaluation & Design Report - 368 Primrose Sands Road, Primrose Sands by Rock Solid Geotechnics P/L dated 23/2/2024


Scope and/or Limitations

Exclusions: Design of AES Bed

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

GEOTECH
24-037

Date:

12/3/2024

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: *Owner name*
 Address
 Suburb/postcode

Designer details:

Name: *Category:*
 Business name: *Phone No:*
 Business address:
 Fax No:
Licence No: *Email address:*

Details of the proposed work:

Owner/Applicant *Designer's project reference No.*
Address: *Lot No:*
Type of work: Building work Plumbing work *(X all applicable)*

Description of work:

ONSITE WASTEWATER MANAGEMENT SYSTEM

(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
	<input checked="" type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Other (specify)	

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

Other details:

Performance solution, consistent with NCC Vol 3 with respect to:
 Advanced Enviro Septic unit producing secondary treated effluent consistent with definition provided by Director's Guidelines for onsite wastewater management systems 2017.

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 12/3/2024
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 12/3/2024
Computations:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 12/3/2024
Performance solution proposals:	Prepared by: Stephen Dennis	Date: 12/3/2024
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:

AS 1547:2021 On-site domestic wastewater management

Director’s Guidelines for Onsite Wastewater Management

Any other relevant documentation:

Advanced Enviro Septic Design & Installation Manual.
 Advanced Enviro Septic Design Installation Instructions & Home-Owner’s Manual.
 All by Chandlers Environmental Pty Ltd

Site & Soil Evaluation and design report by Rock Solid Geotechnics P/L for 4 Lateena Street, Dodges Ferry, dated 12/3/2024

Form 55 by Rock Solid Geotechnics P/L, dated 12/3/2024, certifying Site & Soil Evaluation Report

Attribution as designer:

I Peter Hofto – ROCK SOLID GEOTECHNICS P/L 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.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Stephen Dennis		12/3/2024
Licence No:	373083211		

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:

- The works will not increase the demand for water supplied by TasWater
- 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
- The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- The works will not damage or interfere with TasWater's works
- The works will not adversely affect TasWater's operations
- The works are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- I have checked the LISTMap to confirm the location of TasWater infrastructure
- 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 Stephen Dennis..... 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

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Stephen Dennis		12/3/2024

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

Qualified person:
Address: Phone No:
 Fax No:
Licence No: Email address:

Qualifications and Insurance details: *(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)*
Speciality area of expertise: *(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)*

Details of work:

Address: Lot No:
 Certificate of title No:
The assessable item related to this certificate: *(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: *(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 items, at any stage, as part of – (tick one)

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

Geotech 24-037 Rock Solid Geotechnics P/L

Relevant
calculations:

References:

NCC Vol 3. Refer to AES Tasmania NCC Performance Solution V4.

AS/NZS 1547.2012 - Onsite domestic wastewater management

Director's Guidelines for Onsite Wastewater Management 2017

Advanced Enviro Septic Design & Installation Manual,
Advanced Enviro-Septic Installation Instructions and,
Home Owner's Manual; all by Chankar Environmental Pty Ltd, 62 Rene Street, Noosaville QLD
4566

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

Confirmation of the performance solution for design of Advanced Enviro-Septic System at 4 Lateena Street, Dodges Ferry.

(Evidence of compliance with NCC Vol 3 TAS Section H is provided in the appended document headed "AES Tasmanian NCC Performance Solution")

Scope and/or Limitations

Exclusions: All works other than the above.

I certify the matters described in this certificate.

Qualified person:

Signed:

Certificate No:

**GEOTECH
24-037**

Date:

12/3/2024

Ryan Johnson
rjbuildingprojects@outlook.co

ROCK SOLID GEOTECHNICS PTY LTD
Peter Hofto
163 Orierton Rd
Orierton
TAS 7172
0417960769
peter@rocksolidgeotechnics.com.au

22/3/2024

Loading Certificate for Onsite Wastewater System

4 Lateena Street, Dodges Ferry

- 1 System Capacity:
 - (medium/long term) 2-bedroom residence, 4 persons, 480 litres/day

- 2 Design Criteria Summary:
 - Primary Treated Effluent 3250 litre dual purpose septic tank.
 - Soil Category Class 1 SAND
 - Land Application System 6.6m long x 2.08m wide AES Bed

- 3 Reserve Area:
 - Reserve LAA available if required.

- 4 Variation from design flows etc:
 - The system should successfully assimilate additional peak loadings which may result from occasional social gatherings provided that this does not exceed use by more than 8 persons in a 24-hour period or more than 2 temporary resident visitors (ie. up to 6 persons total) for a period not exceeding 4 days. Visitors should be advised of the requirement to minimise time spent in showers, not running taps whilst cleaning teeth, and other common sense water conservation measures.

- 5 Consequences of overloading the system:
 - Long term use by more than 4 residents or equivalent may result in overloading of the system, surfacing of effluent, public and environmental health nuisances, pollution of surface water etc.

- 6 Consequences of under-loading the system:
 - Nil.

- 7 Consequences of lack of operation, maintenance and monitoring attention:
 - The septic tank should be pumped every 3 years.

Peter Hofto
Rock Solid Geotechnics Pty Ltd



Sorell Council

Development Application: Response to Request
for Information - 4 Lateena Street, Dodges
Ferry.pdf
Plans Reference: P4
Date Received: 08/04/2024

GEOTECH 24-051

7/4/2024

CLIENT:

Ryan Johnson

rjbuildingprojects@outlook.com

ROCK SOLID GEOTECHNICS PTY LTD

Peter Hofto

163 Orielton Road

Orielton

TAS 7172

Ph 0417 960 769

peter@rocksolidgeotechnics.com.au

STORMWATER TRENCH DESIGN - 4 Lateena Street, Dodges Ferry

Ryan Johnson has proposed the construction of an ancillary residence at 4 Lateena Street, Dodges Ferry. As part of the development a new stormwater (SW) trench will need to be designed and installed (the subject of this assessment).

The proposed water tanks will be located on the eastern side of the residence. It is proposed to install a new SW trench to the immediate west of the residence. The site slopes at 1 degree to the west, is covered in grass and sand, and is devoid of trees.

The site is underlain by deep, dry sand, to greater than 2m depth. Groundwater was not encountered in any of the test holes completed.

It is proposed to install a single trench for the discharge from the SW tanks. The SW trench will need to be sited a minimum distance of 1.5m from the upslope residence (**Figure 1**).

The SW trench will need to be protected from vehicular access as driving over the trench may destroy the pipework.

STORMWATER TANK OVERFLOW TRENCH DESIGN

It is likely that the tanks will only overflow during the wetter, winter months.

It is proposed to install a single 5m long and 1m wide trench to accept the overflow water from the SW tanks.

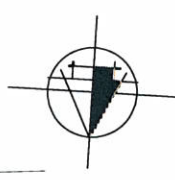
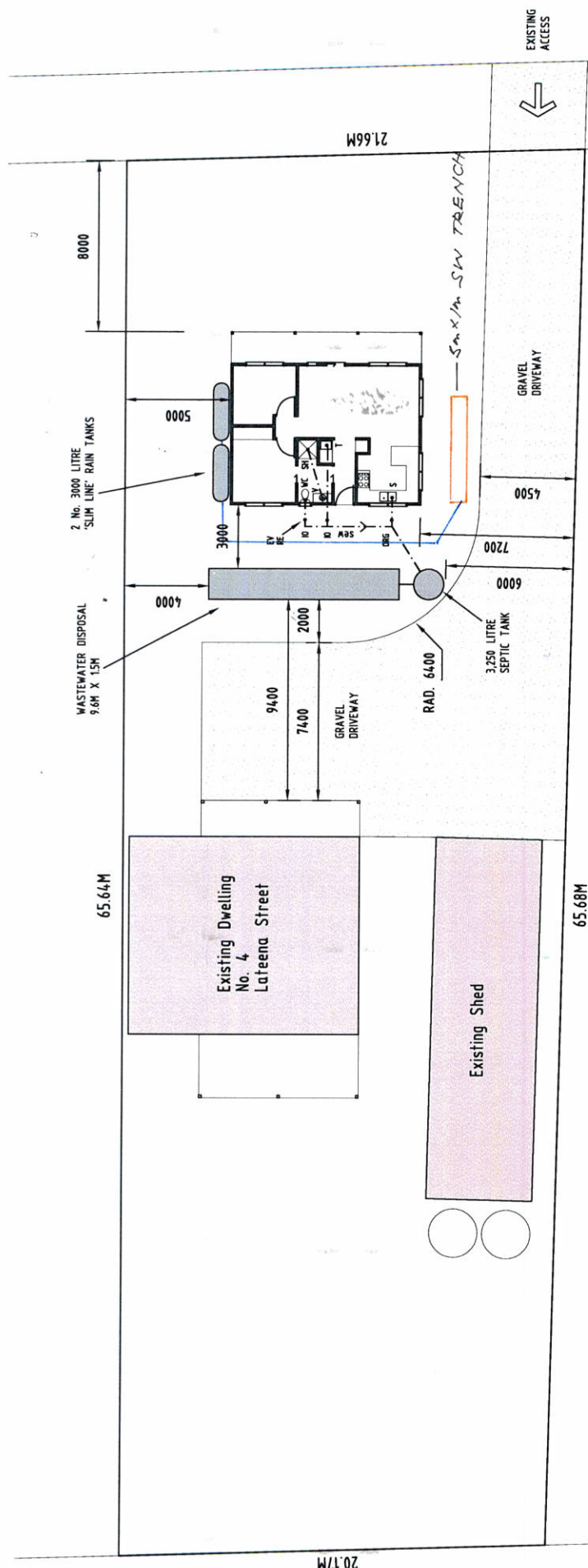
The trench will consist of 230mm trench arch in drain gravel (**Figure 2**).

Peter Hofto

ROCK SOLID GEOTECHNICS P/L

Plate 1 – Test Hole #4 - Looking to the south / southeast at the site for the proposed SW trench.





STORMWATER DRAINAGE NOTES:

- SW01** STORMWATER LAYOUT IS INDICATIVE AND IS A GUIDE ONLY. BUILDER / PLUMBER TO NOTIFY THIS OFFICE WITH ANY VARIATIONS OR CHANGES TO THIS LAYOUT.
- SW02** CONNECT NEW DOWNPIPES TO LEGAL CONNECTION POINT VIA 100MM DIA UPVC STORMWATER PIPE LAND WITH A MINIMUM 1:100 FALL, DISCHARGED TO THE SATISFACTION OF THE APPROPRIATE AUTHORITY.
- SW03** ALL STORMWATER DRAINAGE WORKS TO BE IN ACCORDANCE WITH A.S. 3500 AND THE RELEVANT AUTHORITY'S REQUIREMENTS.
- SW04** ENSURE 100MM COVER TO PIPES UNDER SOIL AND 50MM UNDER CONCRETE PAVING AND 100MM UNDER AREAS SUBJECT TO LIGHT VEHICLE TRAFFIC (MEASURED TO UNDERSIDE OF PAVING).
- SW05** ENSURE 100 DIA UPVC AGRICULTURAL DRAINS ARE PROVIDED TO THE BASE OF ALL CUTS AND RETAINING WALLS AND CONNECTED TO THE STORMWATER SYSTEM VIA SILT PIT/S TO THE AUTHORITY'S REQUIREMENTS.
- SW06** PROPOSED FINISHED FLOOR LEVEL ABOVE EXTERNAL FINISHED SURFACES MUST NOT BE LESS THAN:
 - (i) 150 MM ABOVE FINISHED GROUND LEVEL
 - (ii) 100 MM ABOVE FINISHED GROUND LEVEL
 - (iii) 50 MM ABOVE PAVED OR CONCRETED AREAS
 THAT SLOPE AWAY FROM THE BUILDING AS PER A.S. 2870.

- SW07** THE EXTERNAL FINISHED SURFACE SURROUNDING THE BUILDING MUST BE DRAINED TO MOVE SURFACE WATER AWAY FROM THE BUILDING AND GRADED TO GIVE A SLOPE OF NOT LESS THAN 1:50 OVER THE FIRST 1000 MM FROM THE BUILDING AS PER A.S. 2870.
- SW08** CHARGED DOWNPIPES TO COMPLY WITH DOC/17/39261 OF THE BUILDING ACT 2016 'CHARGED DOWNPIPES TO RAINWATER TANKS FOR DRINKING WATER PURPOSES'.

REFER TO ENGINEER'S ON-SITE WASTEWATER DISPOSAL ASSESSMENT & DESIGN BY: ROCK SOLID GEOTECHNICS P/L REF: GEOTECH 24-037 DATE: 19.3.24 TO COMPLY WITH LOCAL HEALTH REQUIREMENTS

LEGEND:

- DENOTES 100 DIA UPVC SEWER DRAIN PIPE
- MIN. 1:80 FALL TO LEGAL CONNECTION POINT
- WC - TOILET
- S - SINK
- V - VANITY
- SH - SHOWER
- T - TROUGH
- IO - INSPECTION OUTLET
- INSTALLED AT INTERVALS NOT EXCEEDING 30 METRES
- ORG - OVERFLOW RELIEF GULLY WITH TAP OVER
- EV - EDUCT VENT
- RE - ROD EYE

drainage layout

SCALE - 1:200
SITE IS RELATIVELY FLAT



REV	AMENDMENT	DATE
A	PRELIM BA ISSUE	19.3.24

PROJECT
**NEW ANCILLARY DWELLING
4 LATEENA STREET,
DODGES FERRY 7173**

DRAWING
SEWER DRAINAGE LAYOUT
CLIENT
R. & G. JOHNSON

DESIGN SCALE	DRAWN TW	DATE 19.3.24
SHEET No.	03 (OF 9)	REF No. 0735WD-A

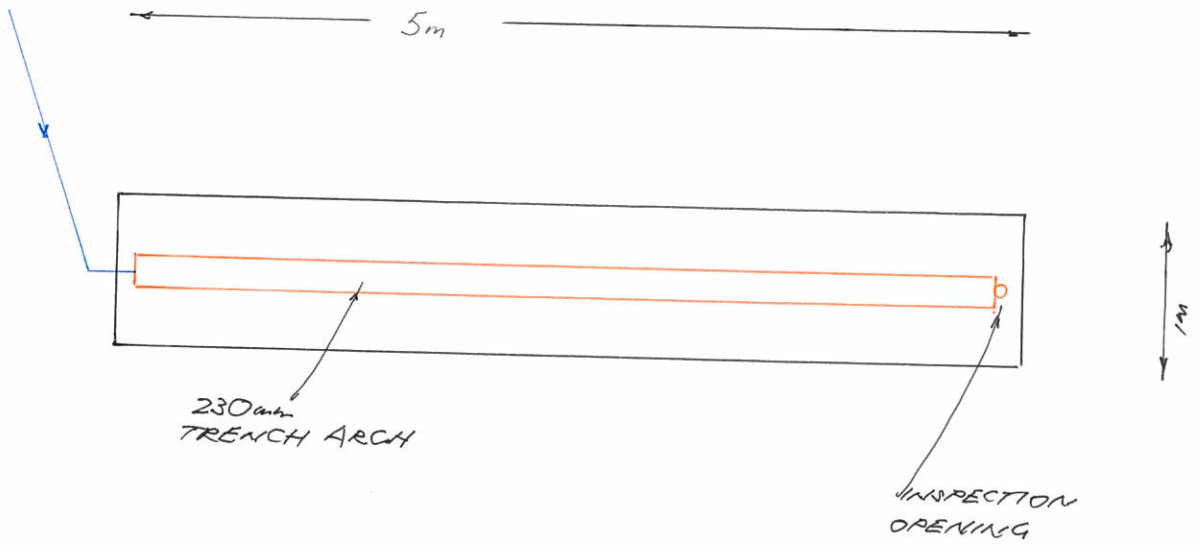
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Tim Wilson Design & Drafting

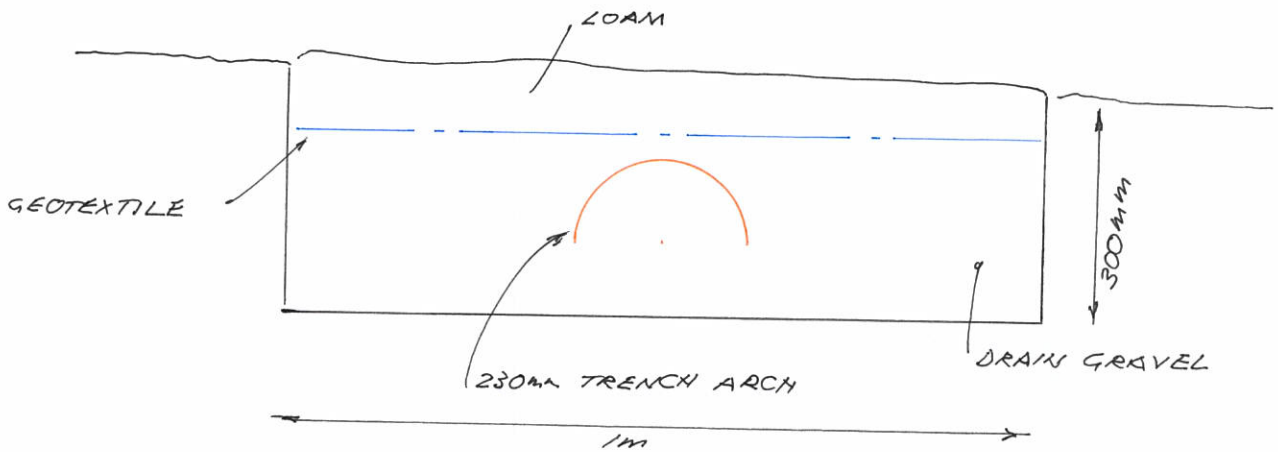
Building Services Provider
Licence CC7655
Email: timwilsondraft@bigpond.com
Mob: 0437 002 026

PLAN
SW TRENCH
1:50

FROM
WATER
TANKS



CROSS-SECTION
1:10



CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: *Owner /Agent*

Address

Qualified person details:

Qualified person:

Address: Phone No:

Fax No:

Licence No: Email address:

Qualifications and Insurance details:	BSc (Hons) – Geology / Geophysics PI Insurance – Lloyds Underwriting PL Insurance – CGU Insurance Ltd	<i>(description from Column 3 of the Director of Building Control's Determination)</i>
---------------------------------------	---	--

Speciality area of expertise:	Geotechnical Assessment	<i>(description from Column 4 of the Director of Building Control's Determination)</i>
-------------------------------	-------------------------	--

Details of work:

Address: Lot No:

Certificate of title No:

The assessable item related to this certificate:	Stormwater Drain Design	<i>(description of the assessable item being certified)</i> <i>Assessable item includes –</i>
--	-------------------------	--

[Empty box for details]

- 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: [Empty box]

Certificate type:

[Empty box for certificate type]

(description from Column 1 of Schedule 1 of the Director of Building Control's Determination)

This certificate is in relation to the above assessable item, at any stage, as part of -

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

In issuing this certificate the following matters are relevant -

Documents:

[Empty box for documents]

Relevant calculations:

[Empty box for calculations]

References:

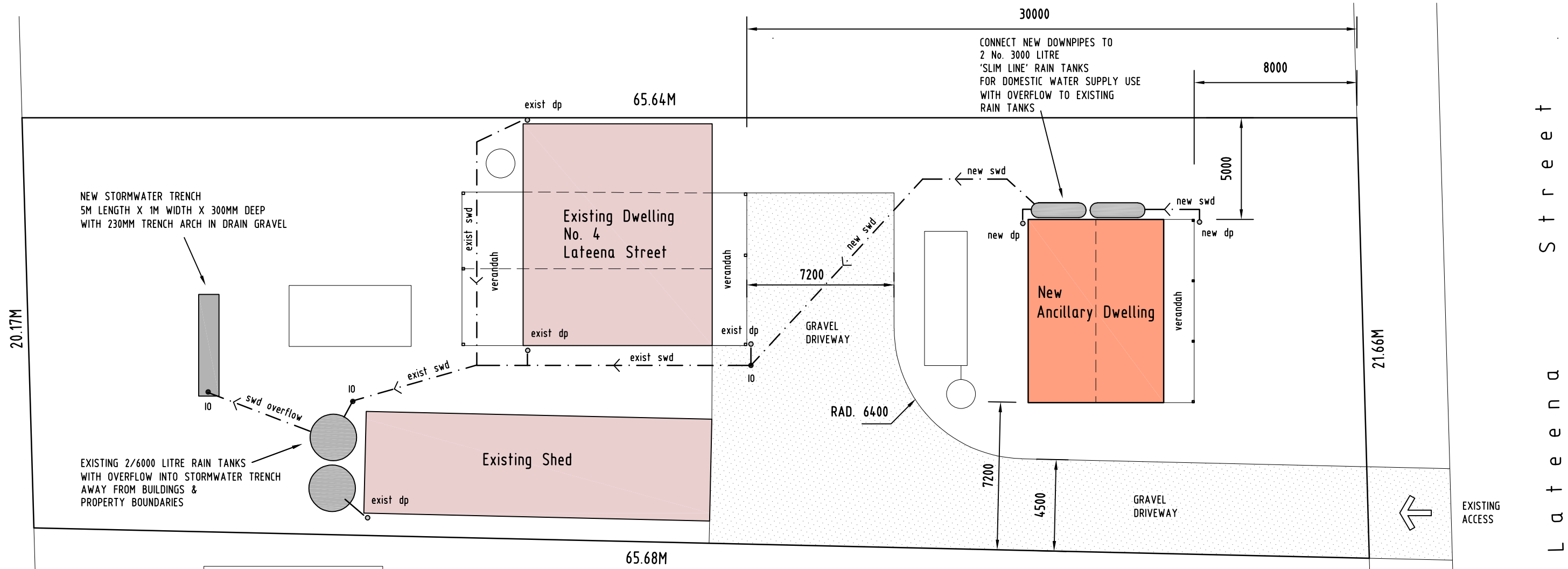
[Empty box for references]

I certify the matters described in this certificate.

Qualified person: *Signed:* [Signature]

Certificate No: GEOTECH 24-051

Date: 7/4/2024



20.17M

site plan / stormwater layout

SCALE - 1:200

SITE IS RELATIVELY FLAT



REFER TO ENGINEER'S STORMWATER TRENCH DESIGN BY: ROCK SOLID GEOTECHNICS P/L REF: GEOTECH 24-051 DATE: 7.4.24

SITE AREAS:	
EXISTING DWELLING:	101.5 m ²
EXISTING SHED:	85.0 m ²
PROPOSED ANCILLARY DWELLING:	60.0 m ²
SITE AREA:	1329 m ²
SITE COVERAGE:	296 m ² (22.3 %)

STORMWATER DRAINAGE NOTES:

- SW01** STORMWATER LAYOUT IS INDICATIVE AND IS A GUIDE ONLY. BUILDER / PLUMBER TO NOTIFY THIS OFFICE WITH ANY VARIATIONS OR CHANGES TO THIS LAYOUT.
- SW02** CONNECT NEW DOWNPIPES TO LEGAL CONNECTION POINT VIA 100MM DIA UPVC STORMWATER PIPE LAID WITH A MINIMUM 1:100 FALL, DISCHARGED TO THE SATISFACTION OF THE APPROPRIATE AUTHORITY.
- SW03** ALL STORMWATER DRAINAGE WORKS TO BE IN ACCORDANCE WITH A.S. 3500 AND THE RELEVANT AUTHORITY'S REQUIREMENTS.
- SW04** ENSURE 100MM COVER TO PIPES UNDER SOIL AND 50MM UNDER CONCRETE PAVING AND 100MM UNDER AREAS SUBJECT TO LIGHT VEHICLE TRAFFIC (MEASURED TO UNDERSIDE OF PAVING).
- SW05** ENSURE 100 DIA UPVC AGRICULTURAL DRAINS ARE PROVIDED TO THE BASE OF ALL CUTS AND RETAINING WALLS AND CONNECTED TO THE STORMWATER SYSTEM VIA SILT PIT/S TO THE AUTHORITIES REQUIREMENTS.
- SW06** PROPOSED FINISHED FLOOR LEVEL ABOVE EXTERNAL FINISHED SURFACES MUST NOT BE LESS THAN :-
 (i) 150 MM ABOVE FINISHED GROUND LEVEL
 (ii) 100 MM ABOVE SANDY, WELL DRAINED AREAS
 (iii) 50 MM ABOVE PAVED OR CONCRETED AREAS THAT SLOPE AWAY FROM THE BUILDING AS PER A.S. 2870.

- SW07** THE EXTERNAL FINISHED SURFACE SURROUNDING THE BUILDING MUST BE DRAINED TO MOVE SURFACE WATER AWAY FROM THE BUILDING AND GRADED TO GIVE A SLOPE OF NOT LESS THAN 50 MM OVER THE FIRST 1000 MM FROM THE BUILDING AS PER A.S. 2870.
- SW08** CHARGED DOWNPIPES TO COMPLY WITH DOC/17/39261 OF THE BUILDING ACT 2016 'CHARGED DOWNPIPES TO RAINWATER TANKS FOR DRINKING WATER PURPOSES'

- LEGEND:**
- exist dp ○ EXISTING 90MM DIA. UPVC DOWNPIPE
 - new dp ○ NEW 90MM DIA. UPVC DOWNPIPE
 - NOTE: PROVIDE IO (INSPECTION OUTLET) TO LOWEST SECTION OF ALL CHARGED DOWNPIPES TO RAINWATER TANK
 - . . . ← exist swd EXISTING STORMWATER DRAIN
 - . . . ← new swd NEW 100 DIA. UPVC STORM WATER DRAIN PIPE MIN 1:100 FALL
 - IO - INSPECTION OUTLET TO SWD CHARGED GROUND PIPE JUST PRIOR TO THE RISER PIPE TO RAINWATER TANKS
 - NOTE: INSPECTION OUTLET INSTALLED AT INTERVALS NOT EXCEEDING 30 METRES

Sorell Council
 Development Application: Response to Request for Information - 4 Lateena Street, Dodges Ferry.pdf
 Plans Reference: P4
 Date Received: 08/04/2024

REV	AMENDMENT	DATE
A	PRELIM DESIGN 1	15.1.24
B	DA ISSUE	17.1.24
C	COUNCIL PLANNING RFI	8.4.24

PROJECT
**PROPOSED ANCILLARY DWELLING
 4 LATEENA STREET,
 DODGES FERRY 7173**

DRAWING **SITE PLAN /
 STORMWATER LAYOUT**
 CLIENT **R. & G. JOHNSON**

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DESIGN TW	DRAWN TW	DATE 19.3.24
SCALE AS SHOWN	SHEET No. 01 (OF 3)	REF No. 0735TP-C

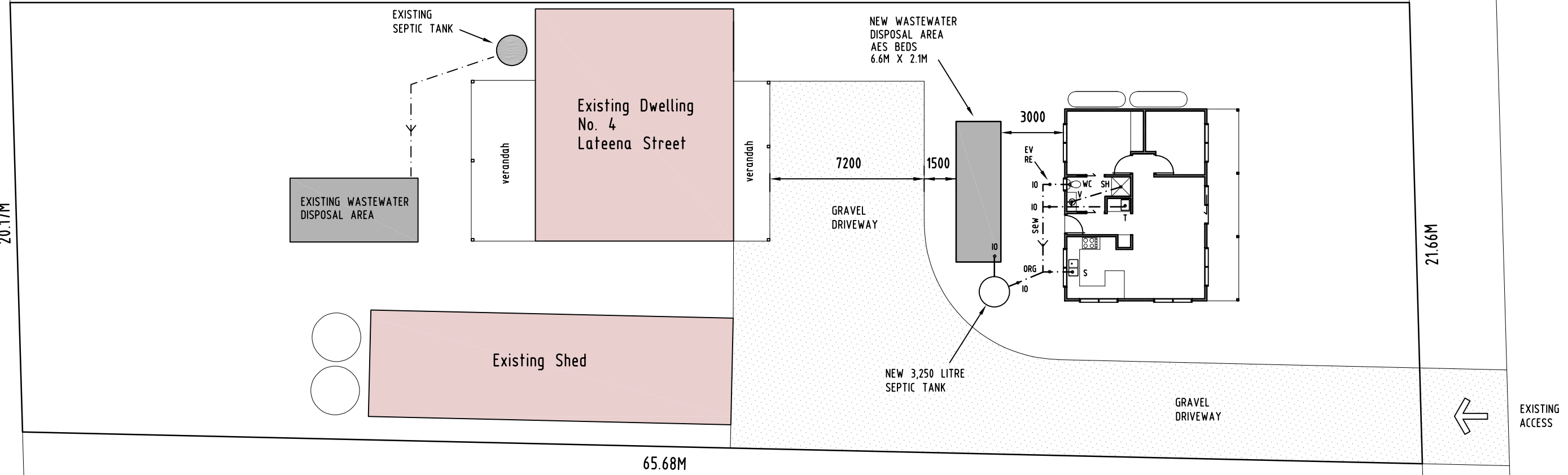
Tim Wilson Design & Drafting
 Building Services Provider
 Licence CC7455
 Email: timwilsondraft@bigpond.com
 Mob: 0437 002 026

20.17M

65.64M

21.66M

L a t e e n a S t r e e t



65.68M

EXISTING ACCESS

REFER TO ENGINEER'S ON-SITE
WASTEWATER DISPOSAL ASSESSMENT & DESIGN
BY: ROCK SOLID GEOTECHNICS P/L
REF: GEOTECH 24-037a DATE: 22.3.24
TO COMPLY WITH LOCAL HEALTH REQUIREMENTS

SEWER DRAINAGE NOTES:

- S01** ALL WORKS ARE TO BE IN ACCORDANCE WITH THE SEWERAGE CODE OF AUSTRALIA MELBOURNE RETAIL WATER AGENCIES CODE WSA 02-2014-3.1 MRWA VERSION 2 AND TASWATER'S SUPPLEMENTS TO THIS CODE.
- S02** SEWER LAYOUT IS INDICATIVE AND IS A GUIDE ONLY. BUILDER / PLUMBER TO NOTIFY THIS OFFICE WITH ANY VARIATIONS OR CHANGES TO THIS LAYOUT.
- S03** CONNECT NEW SANITARY FITTINGS TO LEGAL CONNECTION POINT VIA 100MM DIA UPVC SEWER PIPE LAID WITH A MINIMUM 1:60 FALL, DISCHARGED TO THE SATISFACTION OF THE APPROPRIATE AUTHORITY.
- S04** ALL SEWER, WATER SUPPLY & HOT WATER SUPPLY TO BE IN ACCORDANCE WITH A.S. 3500 AND THE RELEVANT AUTHORITY'S REQUIREMENTS.
- S05** ENSURE 300MM COVER TO PIPES UNDER SOIL AND 50MM UNDER CONCRETE PAVING AND 100MM UNDER AREAS SUBJECT TO LIGHT VEHICLE TRAFFIC (MEASURED TO UNDERSIDE OF PAVING).
- S06** THE HEIGHT OF THE OVERFLOW RELIEF GULLY MUST BE A MINIMUM OF 150 MM BELOW THE LOWEST SANITARY FIXTURE & MINIMUM 75MM ABOVE FINISHED GROUND LEVEL.
- S07** ALL PLUMBING WORK IS BE UNDERTAKEN BY A LICENCED PLUMBER IN ACCORDANCE WITH NCC 2019 & BUILDING ACT 2016
- S08** VENTS, OVERFLOW RELIEF GULLY AND INSPECTION OPENINGS TO BE PROVIDED AS PER THE PLUMBING CODES AND REGULATIONS

LEGEND:

- sew ———> DENOTES 100 DIA. UPVC SEWER DRAIN PIPE MIN. 1:60 FALL TO LEGAL CONNECTION POINT
- WC - TOILET
- S - SINK
- V - VANITY
- SH - SHOWER
- T - TROUGH
- IO - INSPECTION OUTLET INSTALLED AT INTERVALS NOT EXCEEDING 30 METRES
- ORG - OVERFLOW RELIEF GULLY WITH TAP OVER
- EV - EDUCT VENT
- RE - ROD EYE

sewer drainage layout

SCALE - 1:200

SITE IS RELATIVELY FLAT



Sorell Council
Development Application: Response to Request for Information - 4 Lateena Street, Dodges Ferry.pdf
Plans Reference: P4
Date Received: 08/04/2024

REV	AMENDMENT	DATE
A	PRELIM DESIGN 1	15.1.24
B	DA ISSUE	17.1.24
C	COUNCIL PLANNING RFI	8.4.24

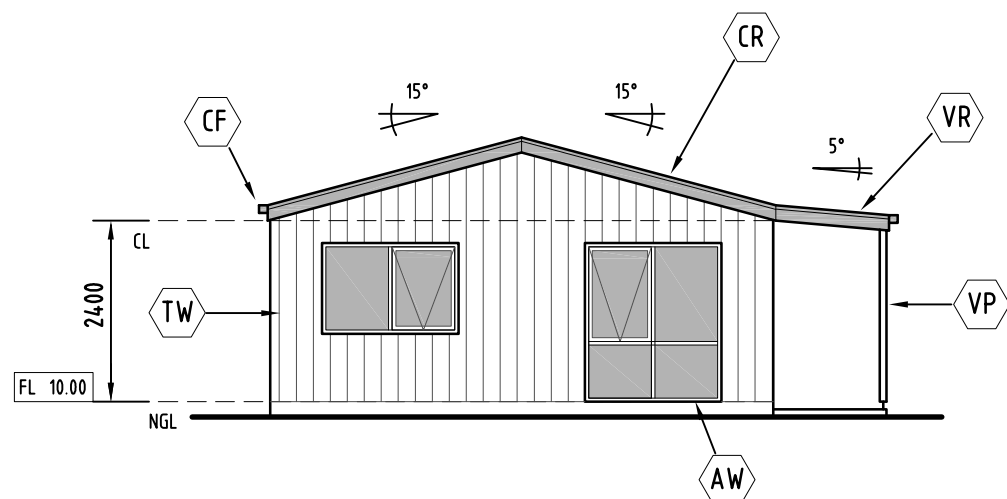
PROJECT
**PROPOSED ANCILLARY DWELLING
4 LATEENA STREET,
DODGES FERRY 7173**

DRAWING **SEWER DRAINAGE LAYOUT**
CLIENT **R. & G. JOHNSON**

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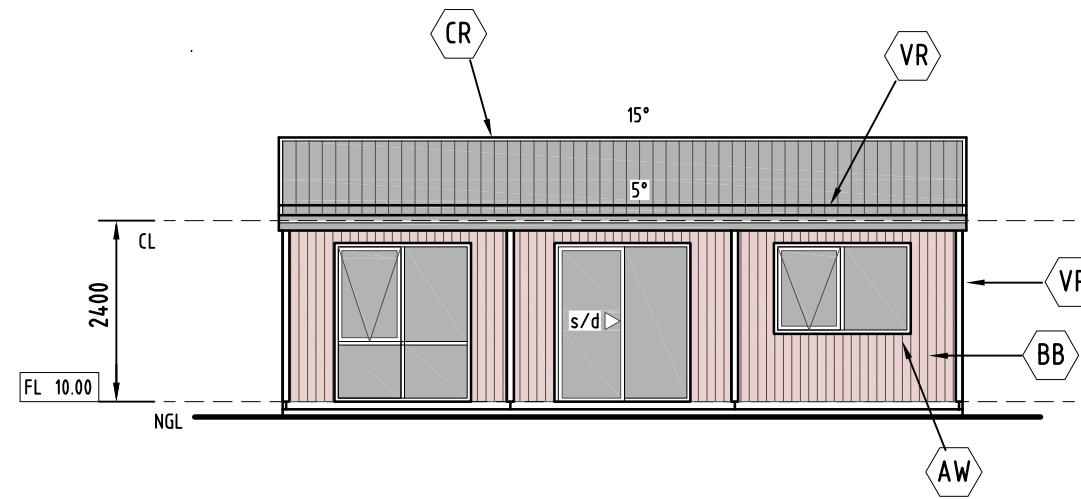
DESIGN TW	DRAWN TW	DATE 19.3.24
SCALE AS SHOWN	SHEET No. 02 (OF 3)	REF No. 0735TP-C

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Mob: 0437 002 026



west elevation

SCALE - 1:100

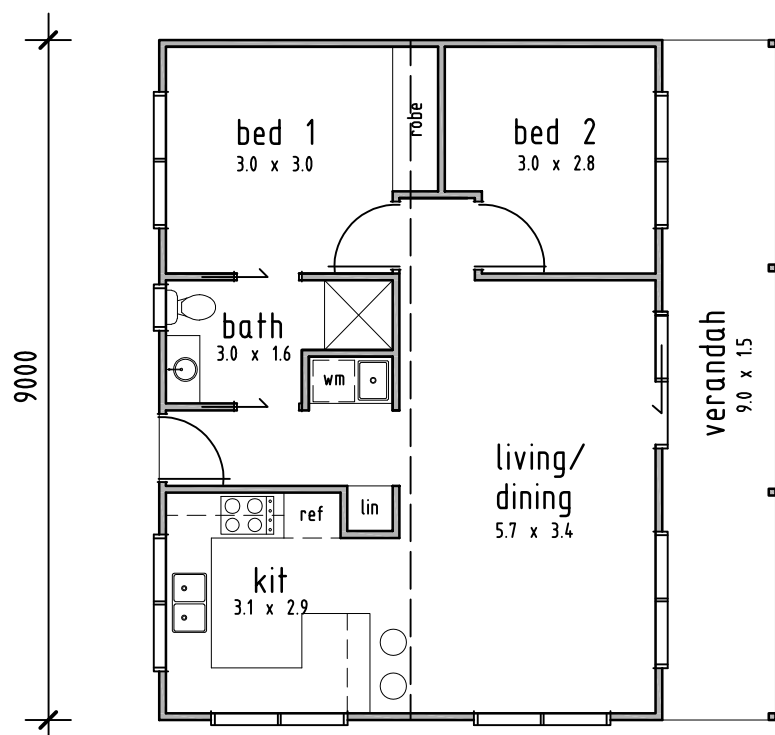
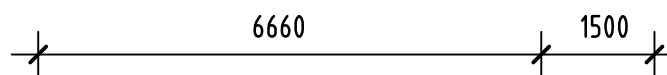


south elevation

SCALE - 1:100

external finishes

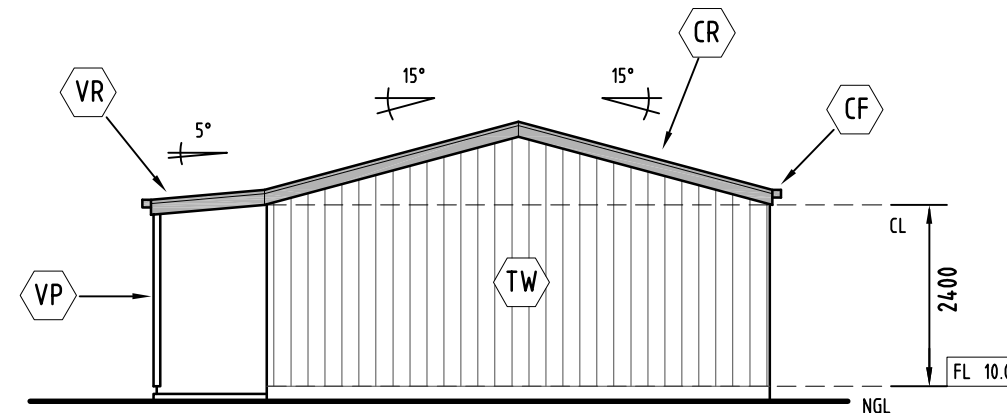
- CR COLORBOND TRIMDEK ROOF AT 15° PITCH
- CF COLORBOND FASCIA & GUTTER (NO EAVES)
- TW COLORBOND 'TRIMWALL' VERTICAL CLADDING
- BB BLACKBUTT TIMBER SHIP-LAP VERTICAL CLADDING
- VR COLORBOND TRIMDEK ROOF AT 5° PITCH (VERANDAH)
- VP TIMBER VERANDAH POSTS ON STIRRUPS
- AW ALUMINIUM FRAMED WINDOWS (DOUBLE GLAZED)



floor plan

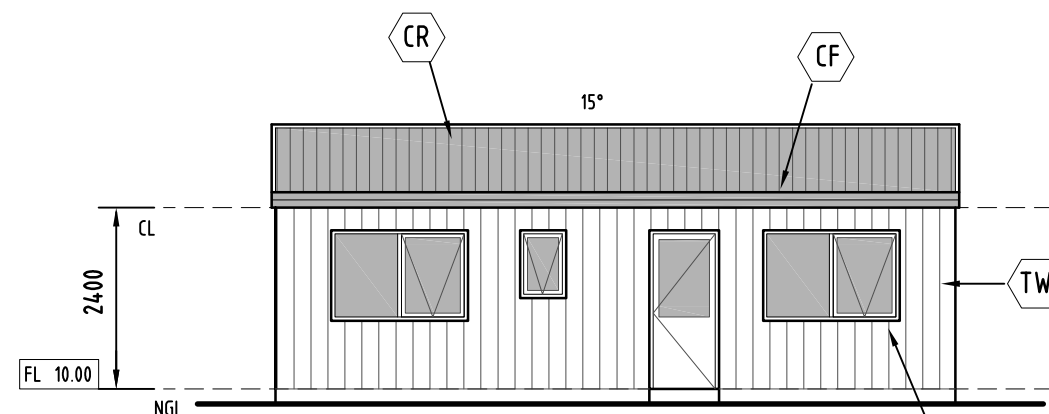
SCALE - 1:100

FLOOR AREA = 60M²



east elevation

SCALE - 1:100



north elevation

SCALE - 1:100

REV	AMENDMENT	DATE
A	PRELIM DESIGN 1	15.1.24
B	DA ISSUE	17.1.24
C	COUNCIL PLANNING RFI	8.4.24

PROJECT	PROPOSED ANCILLARY DWELLING 4 LATEENA STREET, DODGES FERRY 7173
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DRAWING	FLOOR PLAN & ELEVATIONS
CLIENT	R. & G. JOHNSON

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DESIGN TW	DRAWN TW	DATE 9.1.24
SCALE AS SHOWN	SHEET No. 03 (OF 3)	REF No. 0735TP-C

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Tim Wilson Design & Drafting