



SORELL COUNCIL

NOTICE OF PROPOSED DEVELOPMENT

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

SITE: 6-8 North Street, Dodges Ferry (CT60957/3)

PROPOSED DEVELOPMENT:

DWELLING & OUTBUILDING

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: Attic Building Design

DATE: 24 April 2024

APPLICATION NO: 5.2024.63.1

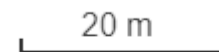


6-8 North Street, Dodge's Ferry (CT60957/3) - Representation Close Monday 13th May 2024

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:
	Development:
	<i>Large or complex proposals should be described in a letter or planning report.</i>

Design and construction cost of proposal:	\$
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Is all, or some the work already constructed:	No: <input type="checkbox"/> Yes: <input type="checkbox"/>
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Location of proposed works:	Street address:
	Suburb: Postcode:
	Certificate of Title(s) Volume: Folio:

Current Use of Site
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Current Owner/s:	Name(s).....
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Is the Property on the Tasmanian Heritage Register?	No: <input 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 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 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 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 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/>



Sorell Council
 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
 Plans Reference:P1
 Date Received:3/04/2024

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:
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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 _____



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Signature of General Manager, Minister or Delegate:	Signature: Date:
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Benjamin Valentine
PO Box 5, Dodges Ferry,
Tasmania, 7173
m: 0403 579 827
ben@theattic.net.au

3rd April 2024

Development Application - Cover Letter

**6 North Street, Dodges Ferry, TAS 7173
New Dwelling, shed and carport.**



To the planning department, Sorell Council,

Attic Building Design have been engaged to prepare a development application for a new dwelling at 6 North Street, Dodges Ferry. I am writing on behalf of our client Stuart Lawless. This letter should be read in conjunction with our application plans and attached documents.

The subject site is currently vacant and shares boundaries with 4 other properties. The site falls within the Low-Density Residential Zone and is subject to the Airport Obstacle Limitation Area Code and the Sorell Local Provisions Schedule: SOR-S2.0 Southern Beaches On-site Wastewater and Stormwater Management Specific Area Plan.

Dwelling

Our client proposes a modest dwelling at the subject address. The dwelling is proposed to include three bedrooms and two bathrooms, one of which is an ensuite to the master bedroom.

Good solar access has been incorporated and a deck supplies reasonable private open space more than the minimum.

We have kept the dwelling to a single storey to maximise solar access for the neighbour at 4 North Street. We have included shading diagrams to support this.

Shed & Carport

The proposed shed and carport provide ample storage for a family and two onsite car parking spaces are larger than the minimum dimensions. The carport provides level access to the dwelling.

Waste System

An AWTS is proposed on site. A standard septic may have sufficed however we believe the AWTS provides better security for a small site. Please consult the attached SSE & WWD.

Stormwater Management

We have included hydraulic design drawings with the application to support our management concept and we trust this will be acceptable.

Application Documents

The Attachments submitted with this application are listed below;

- Land Title
- Development Application Form & Cover Letter (this document)
 - Containing responses to the relevant parts of the planning scheme for the Low Density Residential zone and relevant codes.
- Architectural Plans
 - Location plan, site plan, floor plan, elevations and shading diagrams for March 21st, June 21st and Dec 21st at 9:00 am, 12:00 pm and 3:00 pm.
- Site Survey
- Site Soil Evaluation and Wastewater Design for assessment as required.
- Hydraulic Design Drawings
- Vehicular Crossing Application Form

I have addressed the applicable provisions of the planning scheme and relevant codes on the following pages, please enable bookmarks which have been included for ease of PDF viewing.

Please contact me to discuss any of the details within the application cover letter.

Yours faithfully,



Benjamin Valentine
PO Box 5, Dodges Ferry, Tasmania, 7173
m: 0403 579 827
ben@theattic.net.au



APPLICABLE SCHEME PROVISIONS



Sorell Council
 Development Application: Development
 Application - 6 North Street, Dodges Ferry -
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10.0 LOW DENSITY RESIDENTIAL ZONE

10.2 Use Table

The use table identifies ‘Residential Use’ as ‘No Permit Required’ within the zone.

10.4 Development Standards for Buildings and Works

10.4.2 Building height


Objective: *That the height of dwellings is compatible with the streetscape and do not cause an unreasonable loss of amenity for adjoining properties.*


Scheme Provision	Response
A1 <i>A dwelling must have a building height not more than 8.5m.</i>	The building has a maximum height of 6.6 m and complies with A1

10.4.3 Setback

Objective: *That the siting of dwellings is compatible with the streetscape and does not cause an unreasonable loss of amenity for adjoining properties.*

Scheme Provision	Response
A1 <i>Dwellings, excluding protrusions that extend not more than 0.9m into the frontage setback, must have a setback from a frontage not less than 8m.</i>	The dwelling setback from the primary frontage is 10.58 m. The outbuilding (carport & shed) is setback 3.26 m on the high side and 5.2 m on the lower side and therefore the performance criteria must be met.
P1 <i>The siting of a dwelling must be compatible with the streetscape and character of development existing on established properties in the area, having regard to:</i> <ul style="list-style-type: none"> <i>(a) the topography of the site;</i> <i>(b) the setbacks of surrounding buildings;</i> <i>(c) the height, bulk and form of existing and proposed buildings;</i> <i>(d) the appearance when viewed from roads and public open space adjacent to the site; and</i> <i>(e) the safety of road users.</i> 	The siting of the proposed development is informed by the functional requirements of a family home which include level access from the dwelling to private open space, storage / parking requirements and services / utilities. The site is small and numerous compromises have been made including overall height and solar access. (a) The topography of the site slopes at approximately 8 degrees to the south-east

 <p>Sorell Council</p> <p>Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf Plans Reference:P1 Date Received:3/04/2024</p>	<p>and obtaining undercover car parking and a storage shed dictates that these are situated closer to the street otherwise space is lost with unnecessary driveway area.</p> <p>(b) The setbacks of surrounding dwellings are shown below. The average setback for the carport is 4.4 m and is not dissimilar to some values below;</p> <ol style="list-style-type: none"> I. 8 North St - 6.69 m; II. 4 North St - 4.4 m; III. 9 North St - 4.6 m; IV. 7 North St – 15 m; V. 5 North St - 3.9 m. <p>(c) The height and bulk of the proposed buildings are modest. The overall height at the highest point above ground is 2 m under the maximum. The carport and shed closer to the street afford some privacy for the private open space which is important.</p> <p>(d) We believe the appearance is acceptable providing a blend between modern and echoing features of past Australian styles.</p> <p>(e) The road is blocked off at the upper end and currently services 6 homes which means it has quite low traffic volumes and therefore the development does not pose a higher risk to road users. The carport is open which maintains sightlines to the street.</p>
<p>A2</p> <p><i>Dwellings, excluding outbuildings with a building height of not more than 2.4m and protrusions that extend not more than 0.9m horizontally from the building, must have a setback from side and rear boundaries of not less than 5m</i></p>	<p>The dwelling setbacks from the sides and rear are 3.0 m minimum and 6.2 m from the upper side. The outbuilding (carport & shed) is setback 1.0 m on the upper boundary side, therefore the performance criteria must be met.</p>
<p>P2</p> <p><i>The siting of a dwelling must not cause an unreasonable loss of amenity to adjoining properties, having regard to:</i></p> <p><i>(a) the topography of the site;</i> <i>(b) the size, shape and orientation of the site;</i> <i>(c) the setbacks of surrounding buildings;</i> <i>(d) the height, bulk and form of existing and</i></p>	<p>The siting of the dwelling is a compromise between access, functionality of a modest 3 bedroom family home, services required and having respect to adjoining properties. We believe that there is relatively low loss of amenity to adjoining properties.</p> <p>(a) The topography of the site enables the</p>

<p><i>proposed buildings;</i> <i>(e) the existing buildings and private open space areas on the site;</i> <i>(f) sunlight to private open space and windows of habitable rooms on adjoining properties; and</i> <i>(g) the character of development existing on established properties in the area.</i></p> <div data-bbox="237 967 657 1164" style="border: 1px solid orange; padding: 5px; margin-top: 20px;">  <p>Sorell Council Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf Plans Reference:P1 Date Received:3/04/2024</p> </div>	<p>dwelling to fall below the sight lines of the dwelling at 8 North St.</p> <p>(b) The size and orientation of the site enables the proposed dwelling to be pushed away from the dwelling at 4 North St meaning that privacy is maintained and overshadowing kept to a minimum during winter.</p> <p>(c) The setbacks to surrounding buildings are 5.6 m from the shed to 8 North St which is the lower storey garage. The setback from the proposed dwelling to the dwelling at 4 North Street is 9.7m and is deemed very reasonable.</p> <p>(d) The height, bulk and form of the proposed building is modest.</p> <p>(e) The existing site is vacant.</p> <p>(f) Sunlight to habitable rooms and private open space on adjoining properties is largely unaffected for most of the year. See attached shading diagrams.</p> <p>(g) Dodges Ferry contains a mix of building styles and the proposed dwelling will only lift the character of the local area.</p>
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10.4.4 Site coverage and private open space

<p>Objective: <i>That site coverage:</i> <i>(a) is consistent with the character of existing development in the area;</i> <i>(b) provides sufficient area for private open space and landscaping; and</i> <i>(c) assists with the management of stormwater runoff.</i></p>	
Scheme Provision	Response
<p>A1 <i>Dwellings must have a site coverage of not more than 30%.</i></p>	<p>The proposed dwelling and shed / carport, have a total site coverage of 29.1% and therefore comply with A1</p>

10.4.5 Frontage fences for all dwellings

<p>Objective: <i>That the height and transparency of frontage fences:</i></p>

- (a) provides adequate privacy and security for residents;*
- (b) allows the potential for mutual passive surveillance between the road and the dwelling; and*
- (c) is reasonably consistent with fences in the street.*

Scheme Provision	Response
A1 <i>No Acceptable Solution</i>	There is an existing post and rail fence on site. If the fence is changed it will adhere to the conditions of the exemption within Table 4.6.

C2.0 PARKING AND SUSTAINABLE TRANSPORT CODE

C2.5 Use Standards

C2.5.1 Car parking numbers


Objective: *That an appropriate level of car parking spaces are provided to meet the needs of the use.*

Scheme Provision	Response
A1 <i>The number of on-site car parking spaces must be no less than the number specified in Table 2.1</i>	The proposal has a minimum of 2 car parks in compliance with Table 2.1 and therefore complies with A1.

C2.6 Development Standards for Buildings and Works


C2.6.1 Construction of parking areas

Objective: *That parking areas are constructed to an appropriate standard.*

Scheme Provision	Response
A1 <i>All parking, access ways, manoeuvring and circulation spaces must:</i> <i>(a) be constructed with a durable all weather pavement;</i> <i>(b) be drained to the public stormwater system, or contain stormwater on the site; and</i> <i>(c) excluding all uses in the Rural Zone, Agriculture Zone, Landscape Conservation Zone, Environmental Management Zone, Recreation Zone and Open Space Zone, be surfaced by a spray seal, asphalt, concrete, pavers or equivalent material to restrict abrasion from traffic and minimise entry of water to the pavement.</i>	The access and parking areas are to be constructed from concrete pavement in accordance with engineers' instruction to be supplied as part of the building application stage and therefore complies with A1. <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;">  <p>Sorell Council Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf Plans Reference:P1 Date Received:3/04/2024</p> </div>

C2.6.2 Design and layout of parking areas

Objective: *That parking areas are designed and laid out to provide convenient, safe and efficient parking.*

Scheme Provision	Response
<p>A1.1 <i>Parking, access ways, manoeuvring and circulation spaces must either:</i></p> <p>(a) <i>comply with the following:</i></p> <ul style="list-style-type: none"> <i>(i) have a gradient in accordance with Australian Standard AS 2890 - Parking facilities, Parts 1-6;</i> <i>(ii) provide for vehicles to enter and exit the site in a forward direction where providing for more than 4 parking spaces;</i> <i>(iii) have an access width not less than the requirements in Table C2.2;</i> <i>(iv) have car parking space dimensions which satisfy the requirements in Table C2.3;</i> <i>(v) have a combined access and manoeuvring width adjacent to parking spaces not less than the requirements in Table C2.3 where there are 3 or more car parking spaces;</i> <i>(vi) have a vertical clearance of not less than 2.1m above the parking surface level; and</i> <i>(vii) excluding a single dwelling, be delineated by line marking or other clear physical means;</i> <p><i>or</i></p> <p>(b) <i>comply with Australian Standard AS 2890- Parking facilities, Parts 1-6.</i></p>	<p>The proposal complies with all parts of A1.1</p> <div data-bbox="997 1014 1417 1211" style="border: 1px solid orange; padding: 5px; margin-top: 20px;">  <p>Sorell Council</p> <p>Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf Plans Reference:P1 Date Received:3/04/2024</p> </div>

C2.6.3 Number of accesses for vehicles

Objective: *That:*

- (a) access to land is provided which is safe and efficient for users of the land and all road network users, including but not limited to drivers, passengers, pedestrians and cyclists by minimising the number of vehicle accesses;*
- (b) accesses do not cause an unreasonable loss of amenity of adjoining uses; and*
- (c) the number of accesses minimise impacts on the streetscape.*

<p>A1 <i>The number of accesses provided for each frontage must:</i></p> <ul style="list-style-type: none"> <i>(a) be no more than 1; or</i> <i>(b) no more than the existing number of accesses, whichever is the greater.</i> 	<p>There is one existing access and therefore the proposal complies with A1.</p> <p>Please note the access will be moved up hill as per supplied plans.</p>
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C16.0 SAFEGUARDING OF AIRPORTS CODE

C16.4 Use or Development Exempt from this Code

C16.4.1 The following use or development is exempt from this code:

(a) development that is not more than the AHD height specified for the site of the development in the relevant airport obstacle limitation area.

The proposal is less than 152m and therefore complies with this code.

LOCAL PROVISIONS SCHEDULES REQUIREMENTS:

SOR – S2.0 Southern Beaches On-site Wastewater and Stormwater Management Specific Area Plan

See attached Site Soil Evaluation and Wastewater Design for compliance with this code.

GEOTECH 24-028

ROCK SOLID GEOTECHNICS PTY LTD

Peter Hofto

163 Orielton Road

Orielton

TAS 7172

0417 960 769

peter@rocksolidgeotechnics.com.au

4/3/2024

Geotechnical Assessment / Classification for Proposed Residential Development

6 North Street, Dodges Ferry.

CLIENT: Stuart Lawless stuart@lawbuild.com.au
Via Ben Valentine (Attic Building Design) 0403579827 ben@theattic.net.au

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SUMMARY

A residential development is proposed by Stuart Lawless at 6 North Street, Dodges Ferry ([Figure 1](#)). The site is underlain by deep sand over Triassic sandstone bedrock at between 1.60 and 1.90m depth.

The site is classified as **Class 'P'** in accordance with AS2870. The Class 'P' classification is due to the presence of a large, mature gum tree, and the potential for its root system to impact on the residence's footings. Foundations on sites with a Class 'P' classification should be designed by a structural engineer, experienced in the design of residential footings. If the tree is removed prior to the commencement of construction the site Classification is Class 'S'.

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	T2	
• Wind Load Classification	N3	

INVESTIGATION

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

A site investigation was completed on Monday 30 October, 2023. This included the augering of three 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](#).

The block lies on the western side of North Street ([Plate 1](#)). The site is covered in grass, with a single mature gum trees adjacent to the northwestern property boundary. The block generally slopes to the south at between 8 and 10 degrees, but with a flattened area through the central western portion (flattened to approx. 2 degrees). Groundwater was not encountered in any of the test holes. Typical of the profiles encountered in the [Test Holes](#) was:

0.00 – 0.20m	SAND: fine grained, light grey, rootlets – TOPSOIL
0.20 – 1.15m	SAND: fine grained, grey / light brown, moist
1.15 – 1.45m	clayey SAND: fine to medium grained, brown / yellowish brown, 20% clay, moist
1.45 – 1.60m	SAND: fine to medium grained, bright brown, trace clay, moist
1.60m+	Mechanical auger refusal on sandstone bedrock 1.60-1.90m depth.

Plate 1 – Looking across-slope to the west from North Street.



Plate 2 – Looking across-slope to the west (Test Hole #1).



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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.

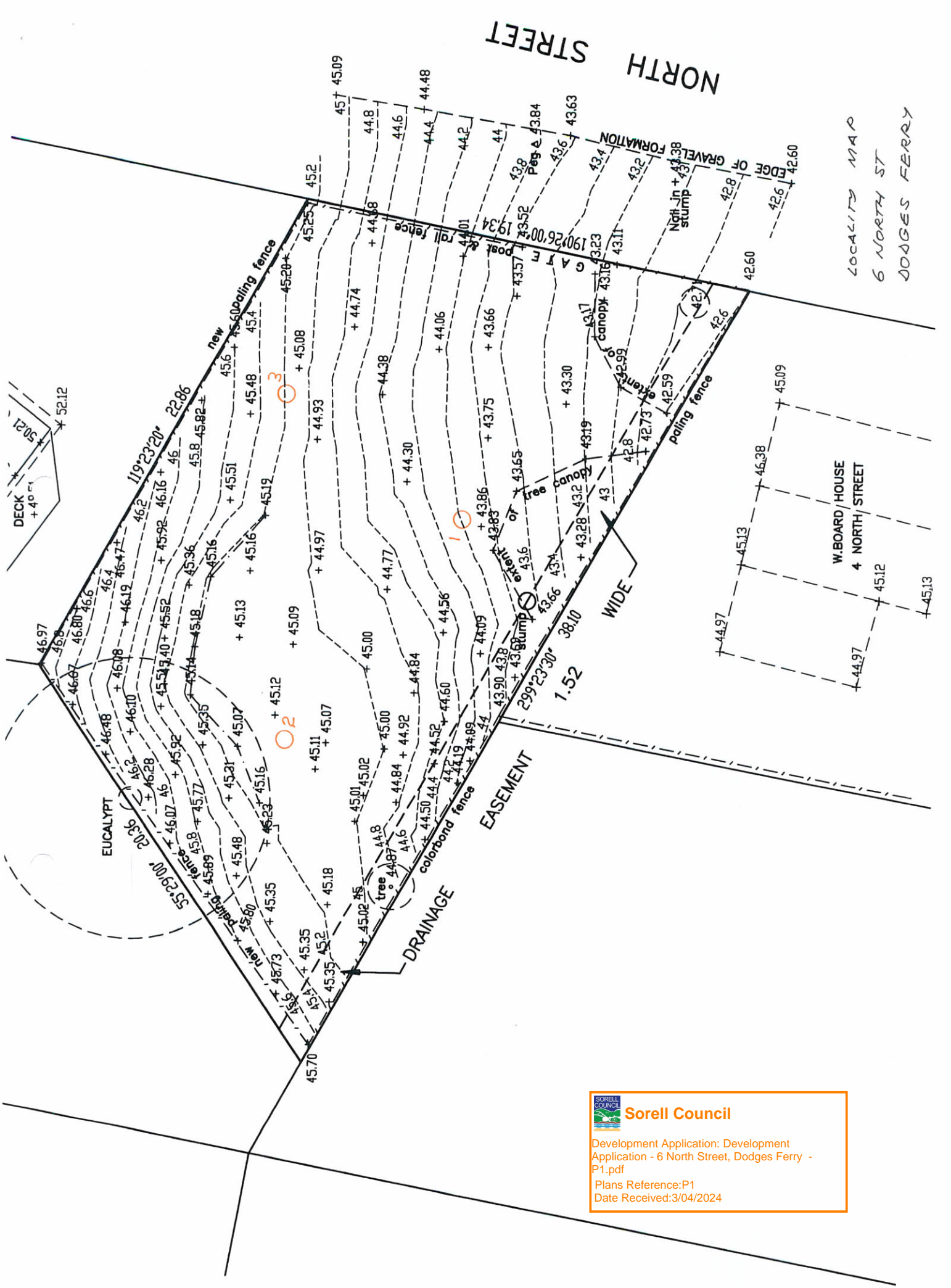
RSG is not responsible for the correct installation of wastewater systems. Any wastewater installation is the sole responsibility of the owner/agent and certified plumber. Any variation to the wastewater design must be approved by RSG, and an amended Special Plumbing Permit obtained from the relevant 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.

Copyright: The concepts & information contained in this report are the Copyright of Rock Solid Geotechnics Pty. Ltd.



PETER HOFTO

ROCK SOLID GEOTECHNICS PTY LTD



LOCALITY MAP
 6 NORTH ST
 DODGES FERRY

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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 the 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



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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
24-028

Date:

4/3/2024



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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.

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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.



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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 pends).

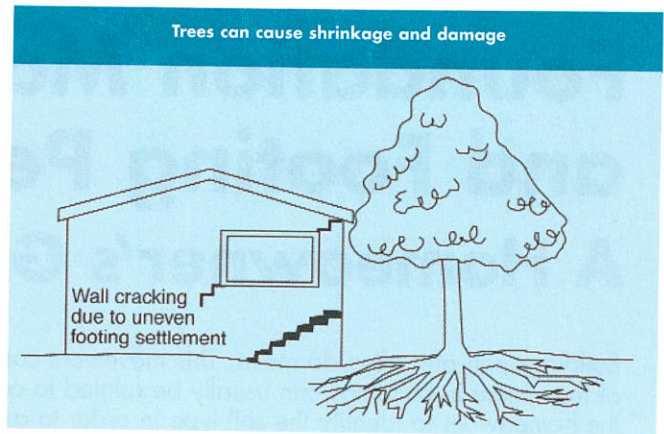
Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

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.



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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.

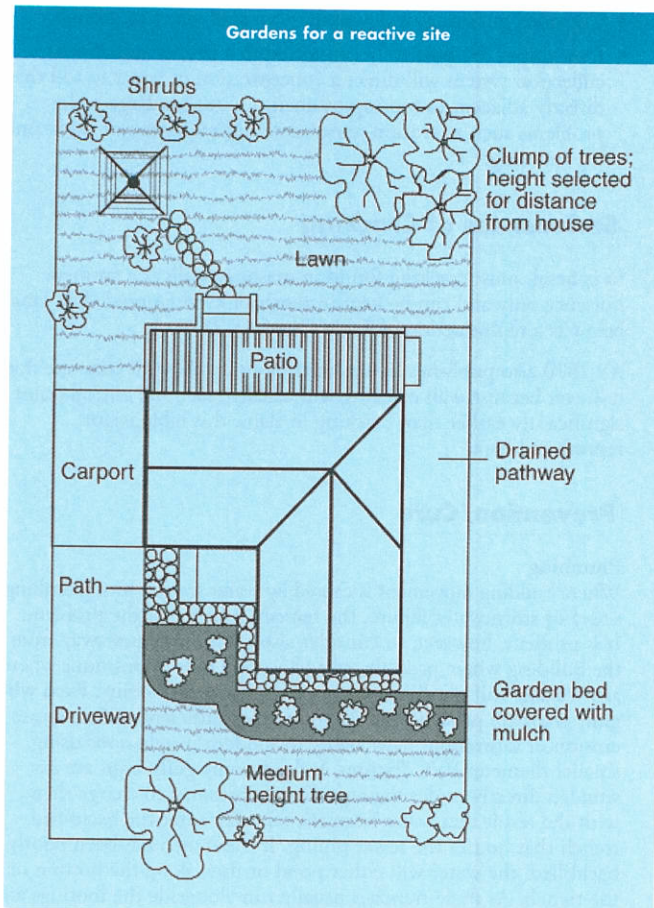
Protection of the building perimeter

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.

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:

This BTF was prepared by John Sorell, CSIRO Building Technology Partner, Construction Diagnosis.

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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 – 6 North 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 3-bedroom residence at 6 North Street, Dodges Ferry. This assessment should be read in conjunction with Site & Soil Evaluation Report ([GEOTECH 24-028](#)) - enclosed.

The block lies on the western side of North Street ([Plate 1](#)). The site is covered in grass, with a single mature gum trees adjacent to the northwestern property boundary. The block generally slopes to the south at between 8 and 10 degrees.

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

0.00 – 0.20m	SAND: fine grained, light grey, rootlets – TOPSOIL
0.20 – 1.15m	SAND: fine grained, grey / light brown, moist
1.15 – 1.45m	clayey SAND: fine to medium grained, brown / yellowish brown, 20% clay, moist
1.45 – 1.60m	SAND: fine to medium grained, bright brown, trace clay, moist
1.60m+	Mechanical auger refusal on sandstone bedrock 1.60-1.90m depth.

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 >1.5 m/day. A Design Loading Rate of [30mm/day](#) is appropriate (secondary treated effluent).

It is proposed to secondary treat the wastewater effluent in an Aerated Wastewater Treatment System (AWTS), dispersing two absorption trenches, sited on the eastern portion of the property. This area should be protected from vehicles as driving over the pipework will likely destroy the system.

COMPLIANCE WITH THE 2016 DIRECTOR'S GUIDELINES FOR ONSITE WASTEWATER

Compliance Table Directors Guidelines for OSWM		
Acceptable Solutions	Performance Criteria	Compliance achieved by
5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.		
A1 A new dwelling must be provided with a LAA that complies with Table 3.	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.	Complies with A1 50m ² of LAA required /bedroom, or 100m ² for this development
7. Standards for Wastewater Land Application Areas		
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; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.	P1 The LAA is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.	Complies with A1 LAA > 3m from level residence.
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.	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.	Complies with A2 LAA >100m from downslope surface water.
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.	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.	Complies with P3 LAA > 1.5m from upslope and side-slope property boundaries. 8° slope. 5m lower-slope boundary required. See Risk Assessment



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<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 at 1.6-1.8m depth.</p>

RISK ASSESSMENT

Each identified environmental aspect is subject to a qualitative risk analysis based on likelihood and consequences of environmental impact. The risk analysis matrix is as follows:

LIKELIHOOD	CONSEQUENCES				
	Catastrophic 1	Major 2	Moderate 3	Minor 4	Insignificant 5
A (almost certain)	Extreme	Extreme	High	High	Medium
B (likely)	Extreme	Extreme	High	High	Medium
C (possible)	Extreme	Extreme	High	Medium	Low
D (unlikely)	Extreme	High	Medium	Low	Low
E (rare)	High	Medium	Low	Low	Low

Criteria for the five categories of likelihood:

Almost certain: An environmental health impact is expected to occur in most circumstances.

Likely: An environmental health impact will probably occur in most circumstances

Possible: An environmental health impact could occur.



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Unlikely: An environmental health impact could occur but is not expected.

Rare: An environmental health impact would occur only in exceptional circumstances.

Criteria for determining consequence to environmental health from an on-site wastewater management issue:

Catastrophic: Widespread, irreparable environmental damage; loss of human life or long-term human health effects; serious litigation; over \$1 million to manage consequences.

Major: Widespread, medium to long term impact; moderate human health impacts requiring medical treatment; major breach of legal requirements (prosecution); \$50,000 to \$1 million to manage consequences.

Moderate: Localised medium to long term impact; minor and reversible human health impacts treatable with first aid; moderate breach of legal requirements with fine (EIN/prosecution); \$5,000 to \$50,000 to manage consequences.

Minor: Localised short to medium term impact; no injury to people; minor breach of legal requirements (eg. legal notice, EIN); \$1000 to \$5,000 to manage consequences.

Insignificant: Limited impact to a local area but no long-term effects; concern or complaints from neighbours; no injury to people; minor technical nonconformity but no legal nonconformity; less than \$1000 cost to manage consequences.

Conducting a risk analysis results in the allocating of a risk level of *extreme, high, moderate* or *low* for each environmental aspect. Environmental health aspects with an *extreme* or *high* risk are considered to be *significant*, that is, they have or can have a significant environmental impact.

Defined risk is:

- Boundary setback distance.

The defined site constraint items of specific concern (as defined in Table R1 of AS/NZS 1547:2021) FOR THE ABOVE DEFINED RISK is:

- A, D, J

A **Microbial quality of effluent.**

- Effluent to be secondary quality - treated in an AWTS – low risk level.

D **Slope.**

- Risk is off-site export of effluent. Effluent to be disposed of into absorption bed – lowest risk level for this site.

J **Application method.**

- Secondary treated quality effluent into an absorption bed in deep sand – lowest possible risk level for this site.



The risk assessment identifies several, linked risks for wastewater application on this site. These risks will be mitigated / reduced to an acceptable level by installing an AES bed that produces secondary quality effluent and applying the effluent into deep, dry sand. This is effectively the most extensive treatment available for this site.

WASTEWATER SYSTEM DESIGN:

It is proposed to secondary treat all the residential wastewater effluent in an Aerated Wastewater Treatment System (AWTS), and to apply the effluent into two absorption beds in a Land Application Area (LAA) sited between the residence and North Street.

The size of the LAA is conditional on the wastewater load and the permeability of the site:

3-bedroom residence	5-person occupancy
Tank water	120 litres / person / day
Wastewater load	600 litres / day 5 x 120 = 600
Design Loading Rate (DLR)	30mm/day (secondary treated effluent into sand bed)
Area of the LAA / absorption beds	600/30 = 20m ²

The absorption beds will each be 6m long and 1.7m wide (see Figure 2). A cross-section of the LAA is presented as Figure 3.

The absorption beds will be setback from the residence by 3m, from the eastern property boundary by 1.5m, and from the southern lower-slope boundary by 5m. A cutoff drain will not be required.

There is very limited available land for the LAA when setback distances are considered. If the LAA requires remediation in the future, it will be necessary to remove the underlying sand and to reinstall as per the original.

The absorption beds should be constructed as per the following specifications:

- LAA will be cleared of vegetation, excavated to 300mm depth and the base flattened.
- Place 20mm diameter screened aggregate on the exposed sand to a thickness of 50mm and level.
- Install Class 9, 40mm uPVC distribution pipework. Perforate as specified with 5mm holes on top only at 400mm centres, except the first and last drill hole in each lateral that should be drilled on the underside so that the system can drain between pump cycles.
- Add inspection risers and screw caps at far end of the grid.
- Connect distribution grid to AWTS via the Indexing Valve.
- Test the distribution system under pressure using clean water, before covering each lateral with an inverted half pipe section of 100mm PVC. This will prevent blockages of the drill holes.
- Cover the 100mm uPVC with screened 10-20mm aggregate.
- Cover the aggregate with geofabric / filter cloth.
- Cover the geofabric with loam and blend with the surrounding surface.



Peter Hofto

Rock Solid Geotechnics Pty Ltd

PLAN
ONSITE WASTEWATER

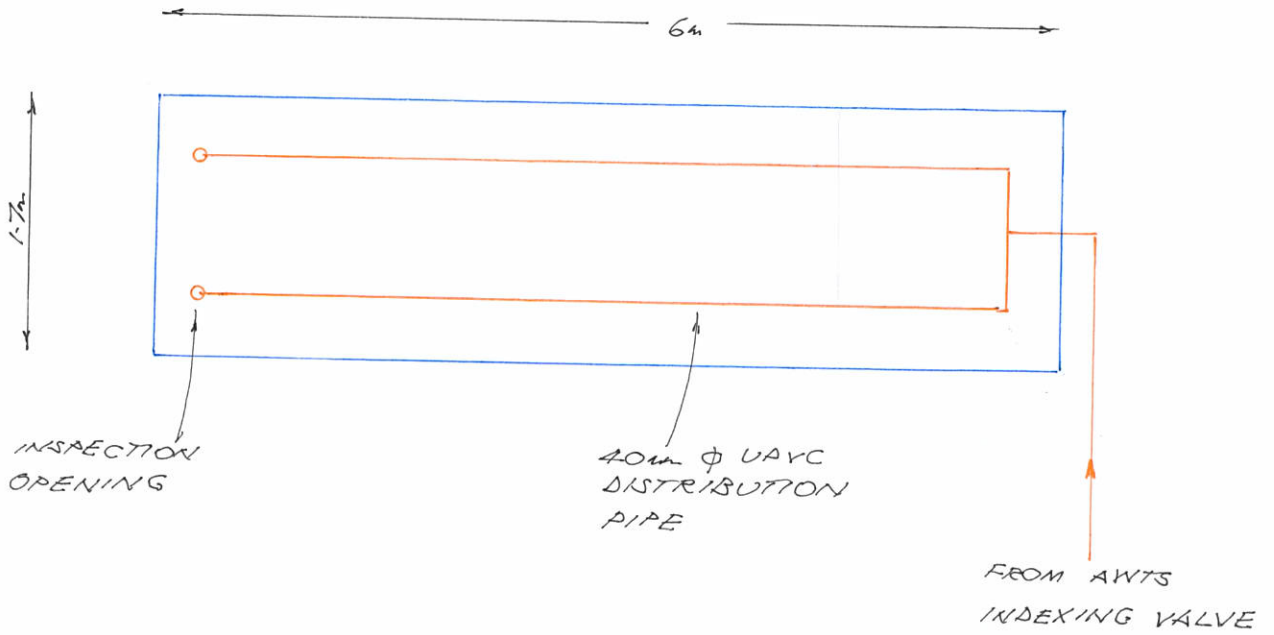
1:200

Neighbouring dwelling



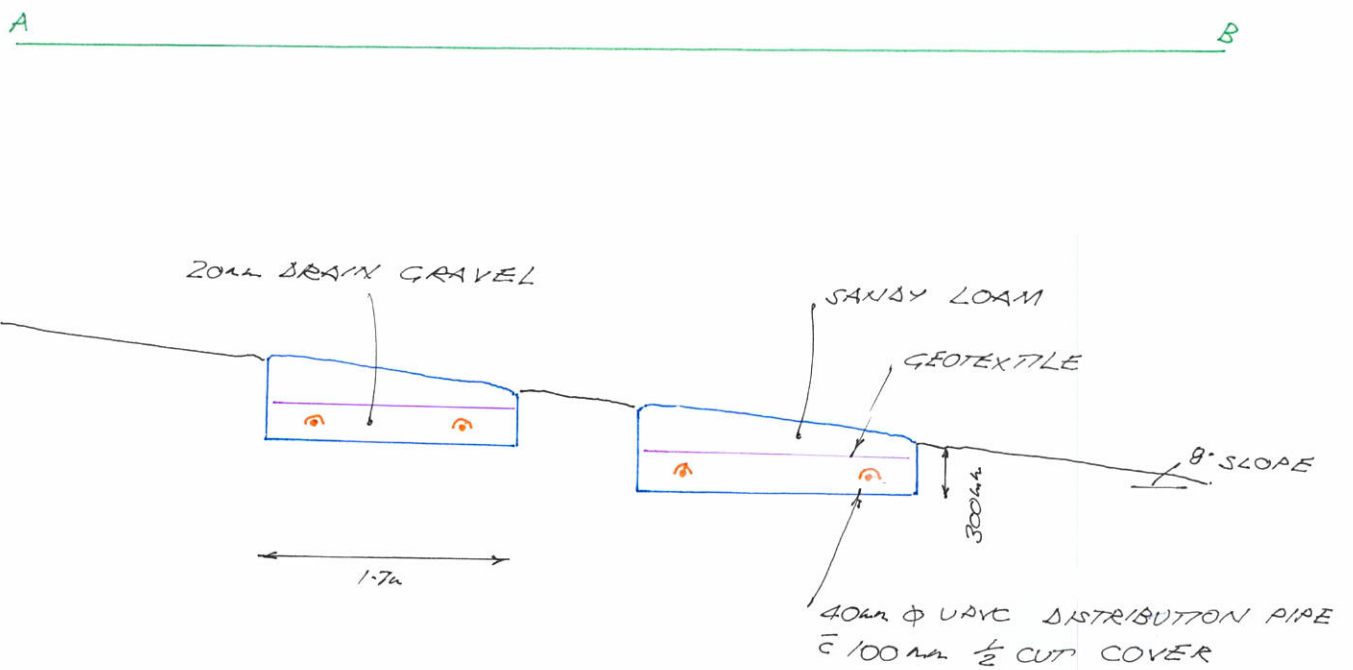
 **Sorell Council**
Development Application: Development
Application - 6 North Street, Dodges Ferry -
P1.pdf
Plans Reference:P1
Date Received:3/04/2024

PLAN
 PIPEWORK LAA
 1:50



Sorell Council
 Development Application: Development
 Application - 6 North Street, Dodges Ferry -
 P1.pdf
 Plans Reference: P1
 Date Received: 3/04/2024

CROSS-SECTION
 LAA
 1:50



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):

1.5m/d

Design Loading Rate (DLR)

30 mm/day

Geology:

Quaternary sediments

Slope:

8 degrees

Drainage lines / water courses:

Nil

Vegetation:

Grass

Site History: (land use)

Vacant block

Aspect:

south

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:

30/10/2023

Weather Conditions:

Fine



Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
Plans Reference:P1
Date Received:3/04/2024

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  **Sorell Council**
 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
 Plans Reference:P1
 Date Received:3/04/2024

(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	Plumber-Certifier; Architect, Building Designer or Engineer
		<input type="checkbox"/> Other (specify)	
Deemed-to-Satisfy: <input checked="" type="checkbox"/>		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: 4/3/2024
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 4/3/2024
Computations:	Prepared by: ROCK SOLID GEOTECHNICS	Date: 4/3/2024
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:**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:	Peter Hofto		4/3/2024
Licence No:	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		4/3/2024



Sorell Council
Development Application: Development
Application - 6 North Street, Dodges Ferry -
P1.pdf
Plans Reference:P1
Date Received:3/04/2024

Stuart Lawless
stuart@lawbuild.com.au

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

4/3/2024

Loading Certificate for Onsite Wastewater System

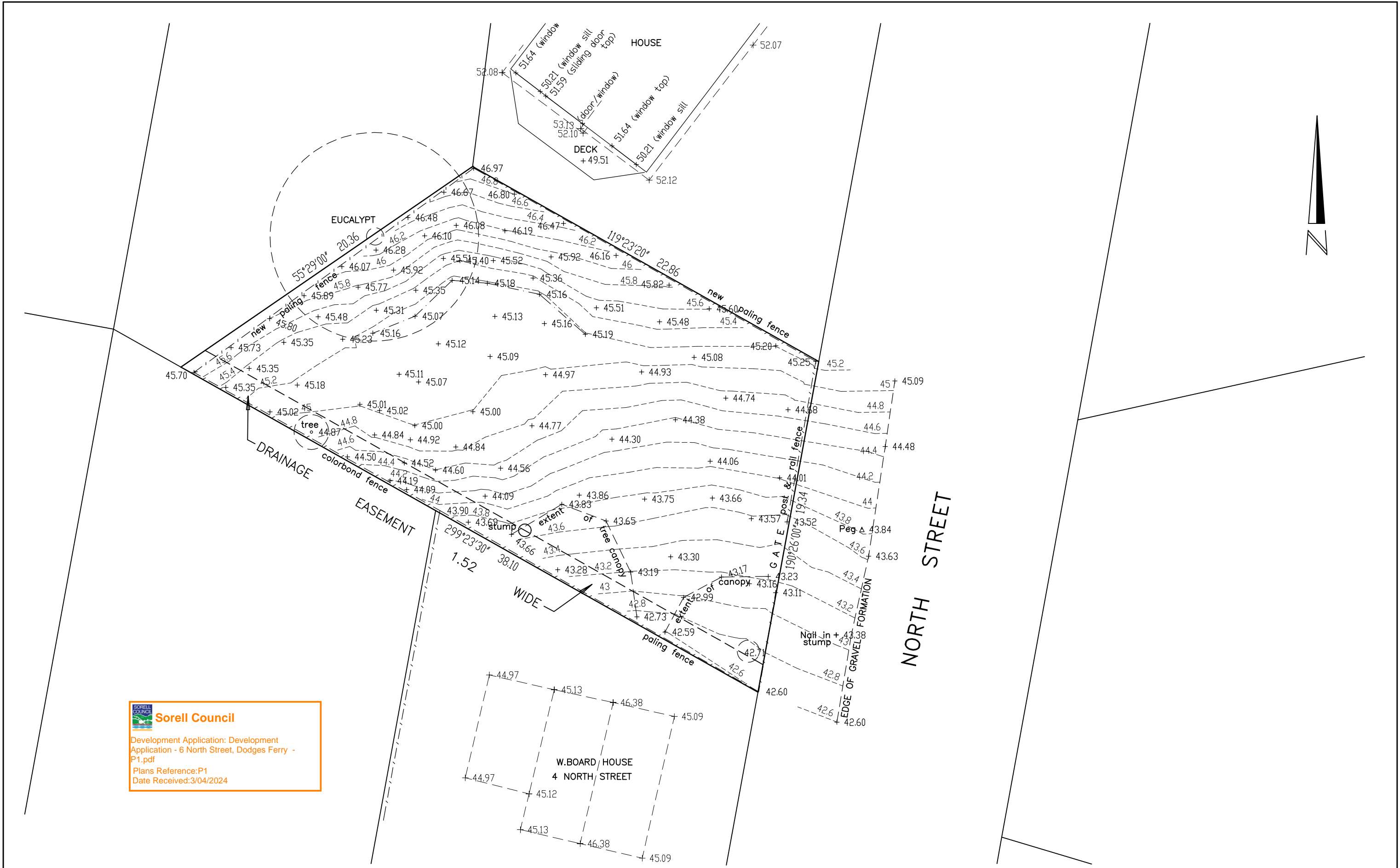
6 North Street, Dodges Ferry

- 1 System Capacity:
 - (medium/long term) 3-bedroom residence, 5 persons, 600 litres/day
- 2 Design Criteria Summary:
 - Primary Treated Effluent Aerated Wastewater Treatment System.
 - Soil Category Class 1 SAND
 - Land Application System 2 x 10m² absorption beds
- 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 10 persons in a 24-hour period or more than 2 temporary resident visitors (ie. up to 7 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 5 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 AWTS will be serviced by a registered contractor.

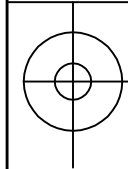


Peter Hofto
Rock Solid Geotechnics Pty Ltd






Sorell Council
 Development Application: Development
 Application - 6 North Street, Dodges Ferry -
 P1.pdf
 Plans Reference: P1
 Date Received: 3/04/2024



JOHN BAMFORD & ASSOCIATES
LAND & ENGINEERING SURVEYORS
 1 Aberdeen Street GLEBE 7000
 Telephone: 0408 128 682
 email: john.bamford@a1.com.au

SCALE: 1:200(A3)
 DATE: 24/10/23
 DATUM: Azimuth: MGA
 Level: AHD
 Drawn: jmb
 Checked: jmb
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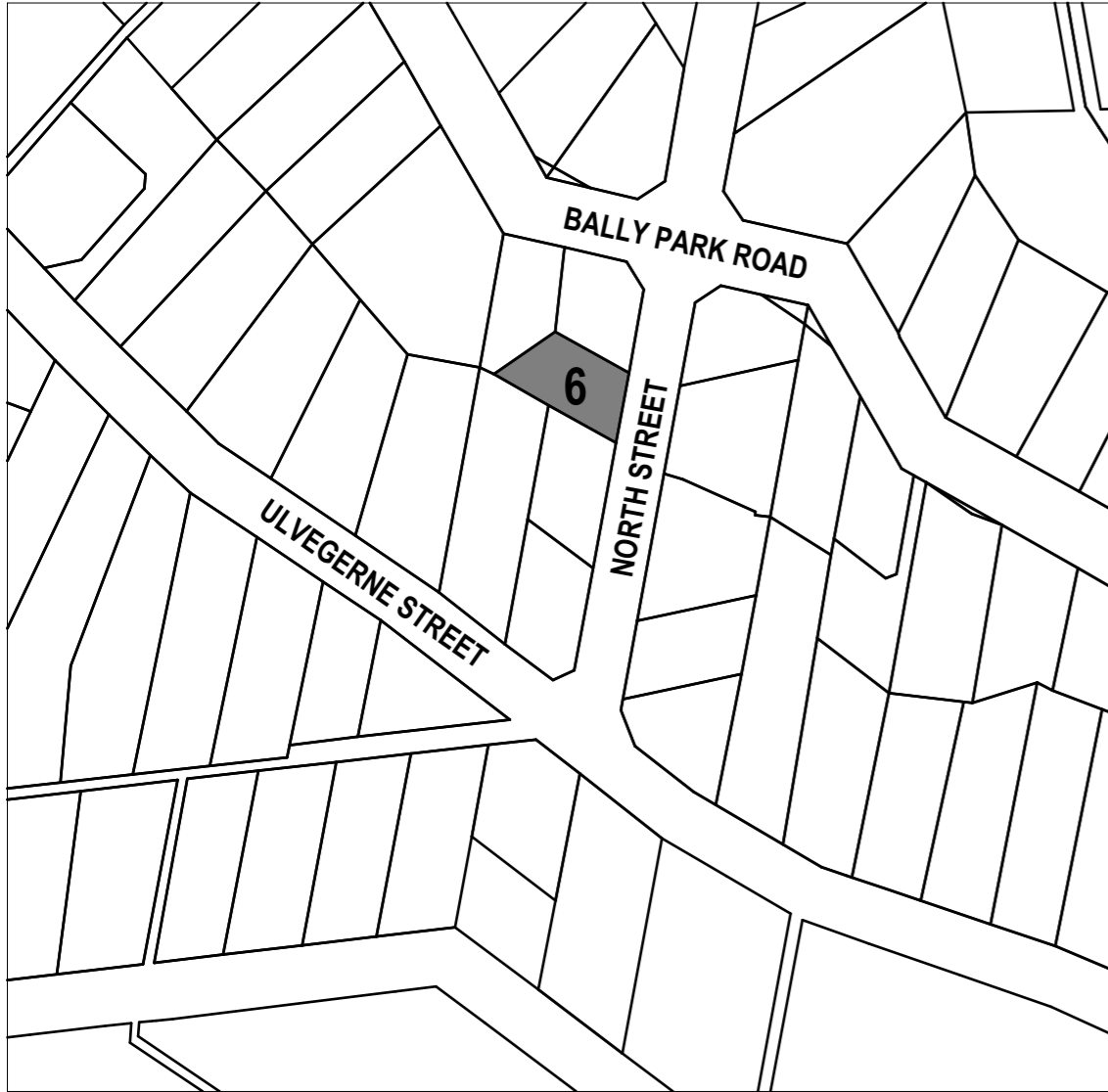
DETAIL PLAN – CT 60957/3
 6–8 NORTH STREET, DODGES FERRY

DRAWING NO.
 7660 detail
 SHEET 1 of 1



DEVELOPMENT APPLICATION NEW DWELLING

6 North Street, Dodges Ferry, TAS 7173



EXISTING AREAS		PROPOSED TOTAL AREAS	
SITE:	556.4m ²		
		FLOOR:	108.8m ²
		OUTBUILDINGS:	54.0m ²
		DECK:	34.0m ²
		SITE COVER:	29.1%
SITE INFORMATION			
BUILDING CLASSIFICATION:	1a - Dwelling		
LOCATION:	42°51'54.8"S, 147°37'00.1"E		
VOLUME:	60957		
LOT NO:	3		
SOIL CLASS:	'P'		
WIND SPEED:	N3 - 50 m/s		
CLIMATE ZONE:	7		
BUSHFIRE ATTACK LEVEL:	NA		
CORROSION ENVIRONMENT:	Construction is 320 m from Carlton Beach in Frederick Henry Bay, classed as breaking surf.		
STEEL FRAMING:	HIGH - 50 to 80 µm/y Steel framing as per NCC 2022 Vol. 2 & HP Part 6.3.9 incl. Table 6.3.9a, b & c.		
METAL CLADDING:	HIGH - 50 to 80 µm/y Metal sheet roofing as per NCC 2022 Vol. 2 & HP Part 7.2.2 & Table 7.2.2a.		
ADDITIONAL HAZARDS:	NIL		

DRAWING SCHEDULE	
Layout ID	Layout Name
A1.01	Cover Sheet & Index
A1.02	Site Plan
A1.03	Floor Plan
A1.04	Elevations
A1.05	Elevations
A1.06	Shading Diagrams 9:00 AM
A1.07	Shading Diagrams 12:00 PM
A1.08	Shading Diagrams 3:00 PM

ATTACHED DOCUMENTS:

Title - **DPIPWE**
 Application Cover Letter - **ATTIC BUILDING DESIGN - Ben Valentine**
 Application Form - **ATTIC BUILDING DESIGN - Ben Valentine**
 SSE & WWD - **ROCKSOLID GEOTECHNICS - Peter Hofto**
 Hydraulic Design Drawings - **REC Hydraulic Design - Rod Cooper**
 Site Survey - **JOHN BAMFORD & ASSOCIATES - John Bamford**

NOTE:

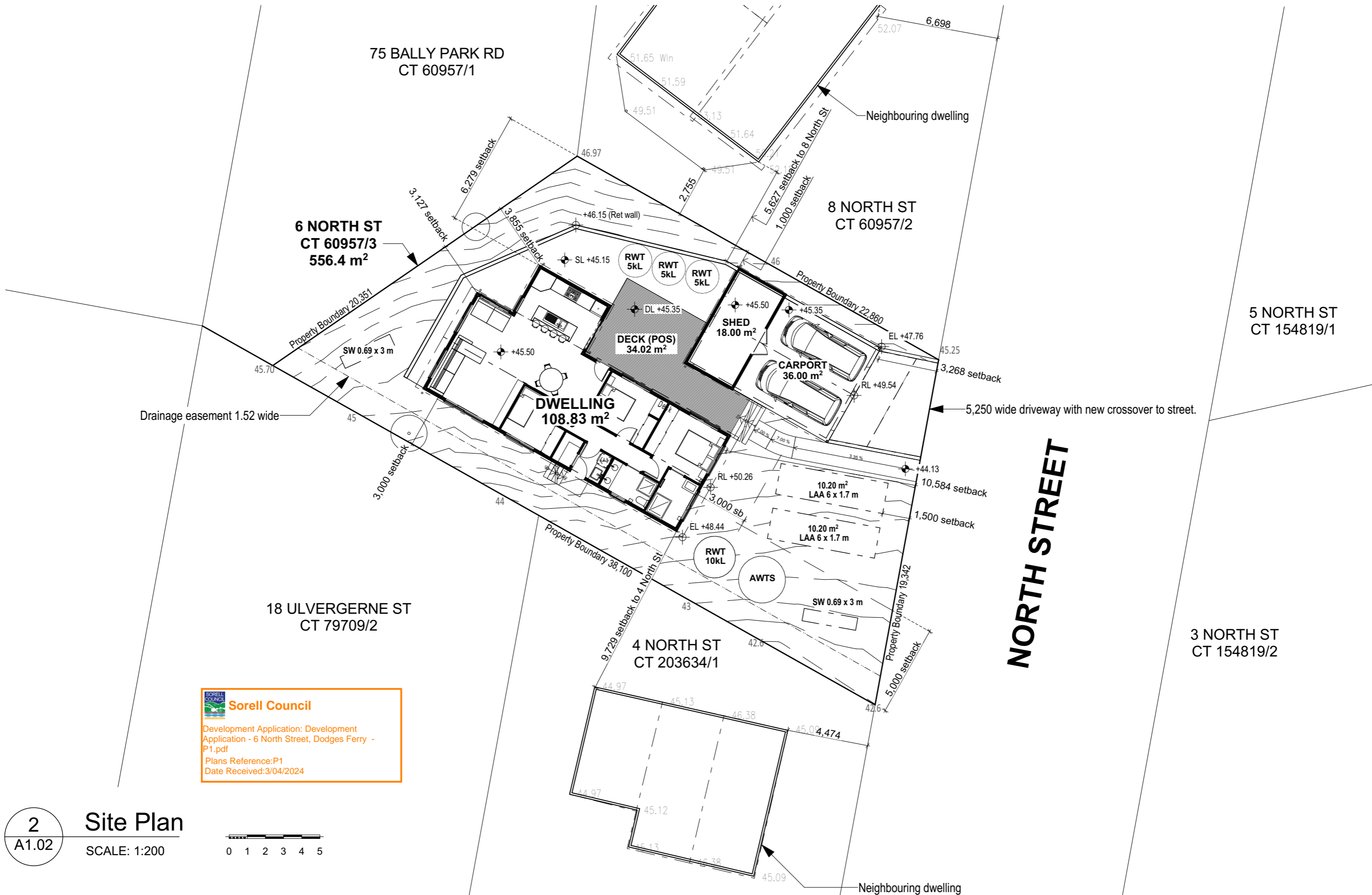
This document is for a new dwelling, shed and carport at 6 North Street, Dodges Ferry. Hydraulic design drawings have been attached at this stage in order to convey the stormwater management strategy for the site and proposed new development.

1 Location Plan
A1.01
SCALE: 1:2000

Sorell Council
 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
 Plans Reference:P1
 Date Received:3/04/2024

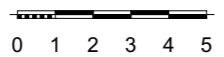


 BUILDING DESIGN DRAFTING PLANNING	CONTACT E: ben@theattic.net.au M: 0403 579 827 A: Po Box 5, Dodges Ferry, TAS 7173	DESIGN / DRAFT B Valentine SCALE 1:2000 APPROVED / DESIGN CERT. ENGINEER / DESIGN CERT.	PROJECT: NEW DWELLING 6 North Street, Dodges Ferry, TAS 7173 <small>© THIS PLAN MAY NOT BE USED FOR ANY PURPOSE WITHOUT THE CONSENT OR LICENSE FROM ATTIC BUILDING DESIGN</small>	REV. DESCRIPTION BY CHK DATE	CLIENT: LAWLESS DRAWING: Cover Sheet & Index		DRAWING SET: DEVELOPMENT APPLICATION SHEET: A1.01 OF 8 DATE: 3/04/2024 SIZE A3 JOB: ATT1605



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 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
 Plans Reference: P1
 Date Received: 3/04/2024

2
A1.02
Site Plan
 SCALE: 1:200



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 A: Po Box 5, Dodges Ferry, TAS 7173

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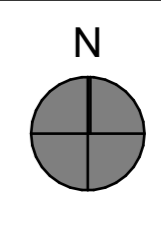
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LAWLESS

DRAWING:
Site Plan



DRAWING SET:
DEVELOPMENT APPLICATION

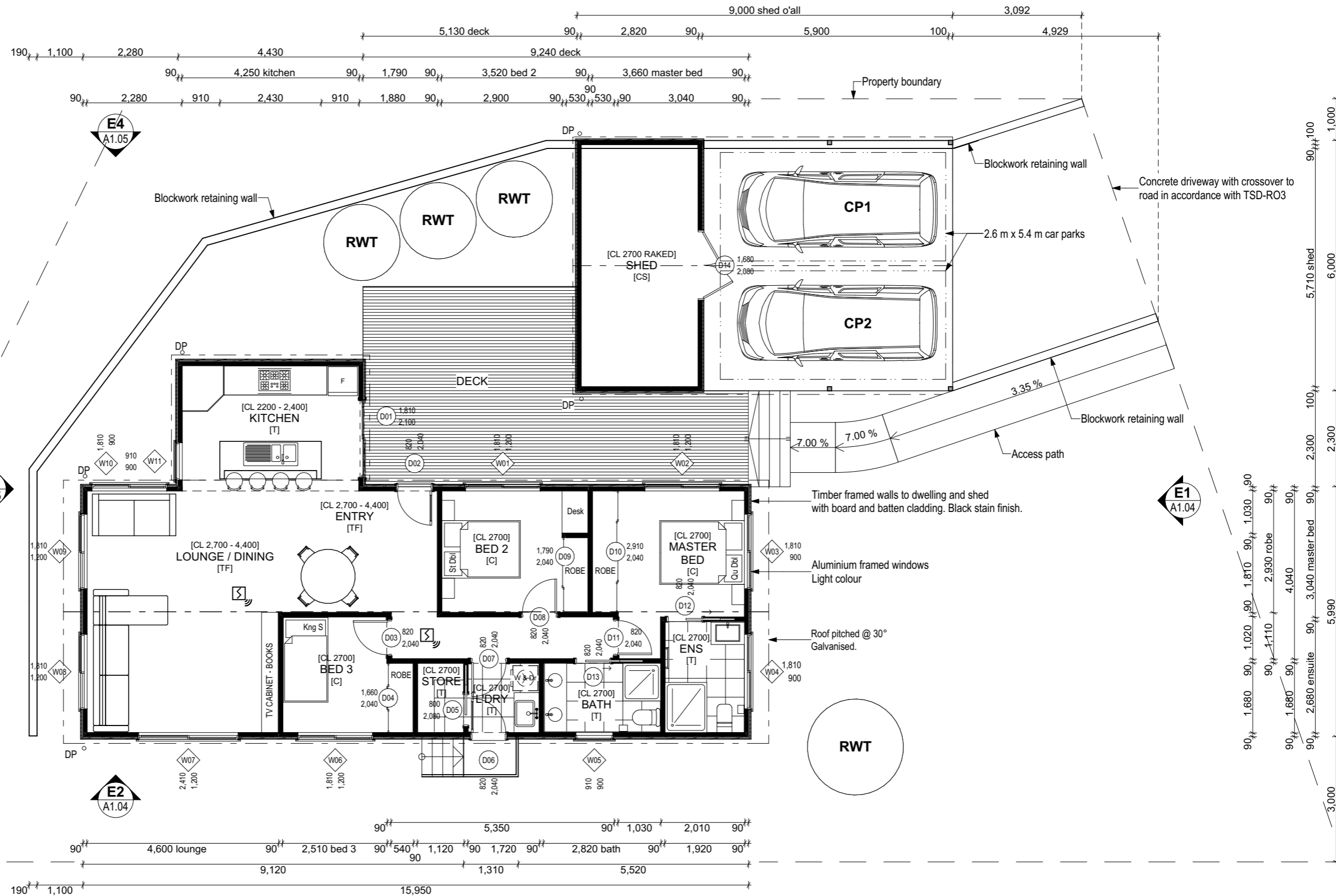
SHEET: **A1.02** OF **8**

DATE: **3/04/2024**

JOB: **ATT1605**

SIZE
A3

LEGEND	
[CS]	CONCRETE SLAB
[PC]	POLISHED CONCRETE SLAB
[TF]	TIMBER FLOORING (POLISHED)
[C]	CARPET
[T]	TILES
[V]	VINYL
	SMOKE ALARM (HARD WIRED)
	EXHAUST FAN (SEALED)
	WINDOW ID
	DOOR ID
MB	METER BOX
HWC	HOT WATER CYLINDER



3 Floor Plan
A1.03

SCALE: 1:100



Sorell Council
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 Plans Reference: P1
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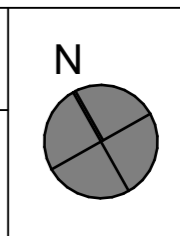
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 6 North Street, Dodges Ferry, TAS 7173

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LAWLESS

DRAWING:
Floor Plan

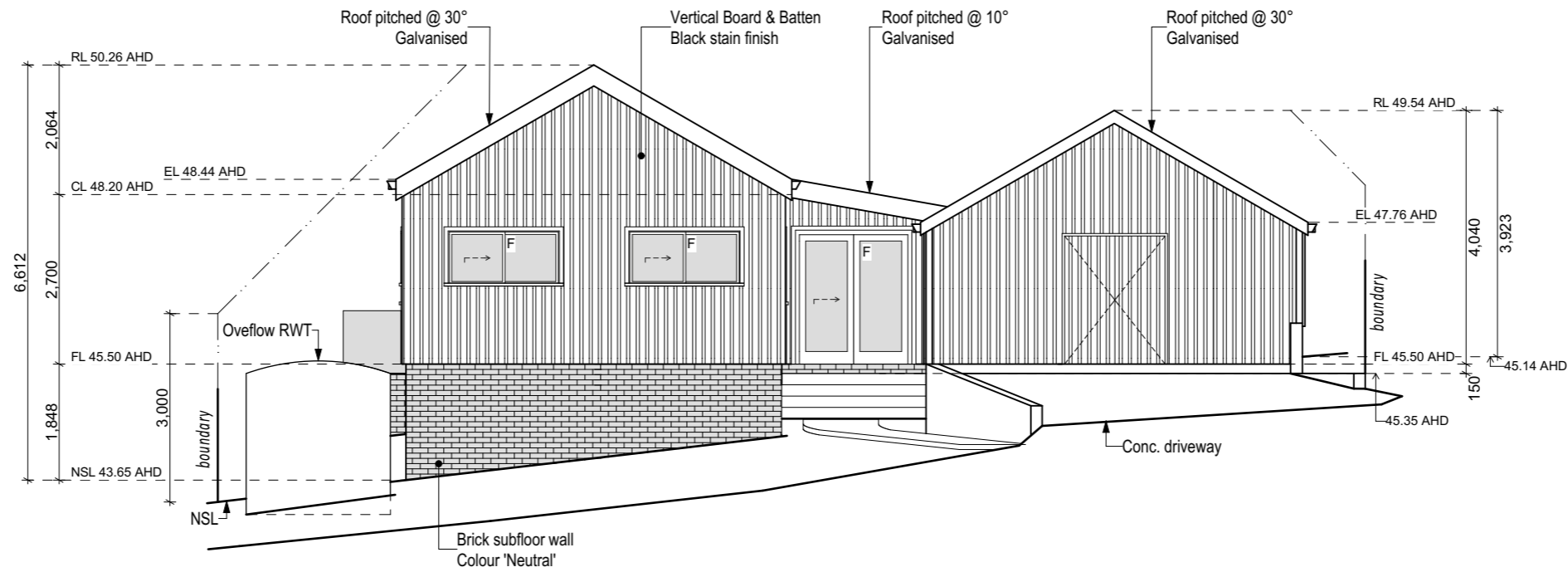


DRAWING SET:
DEVELOPMENT APPLICATION

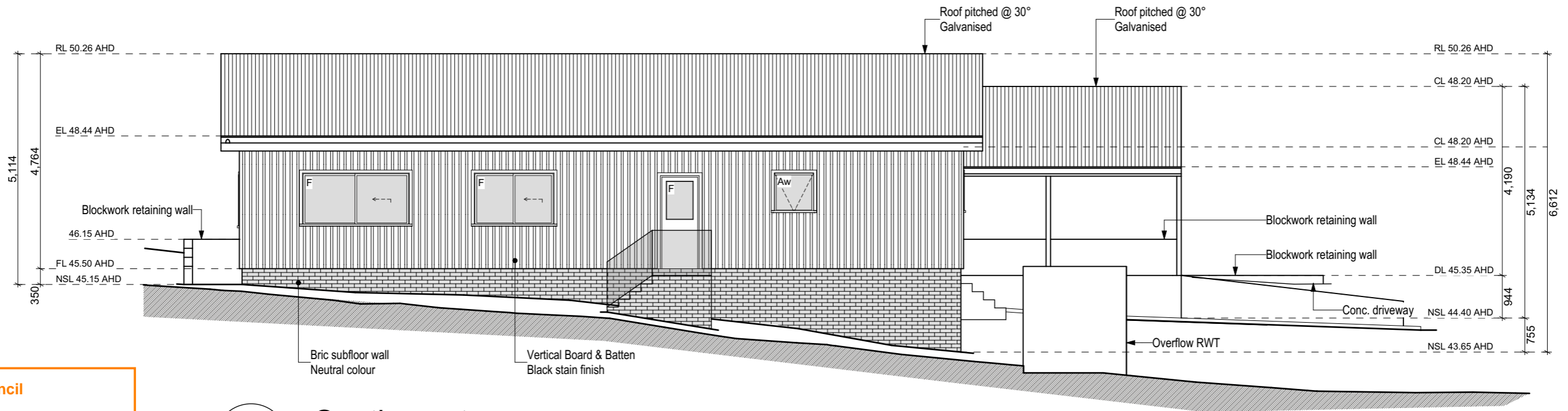
SHEET: **A1.03 OF 8**

DATE: **3/04/2024** SIZE: **A3**

JOB: **ATT1605**



E1
A1.04 **South-east**
SCALE: 1:100



E2
A1.04 **South-west**
SCALE: 1:100

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Plans Reference: P1
Date Received: 3/04/2024



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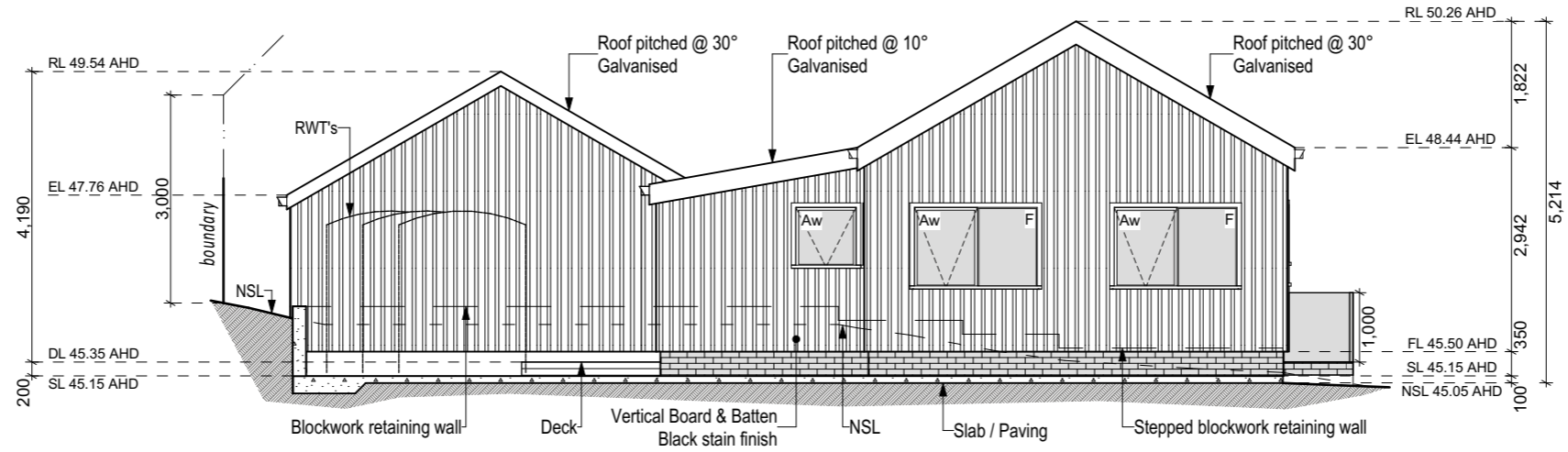
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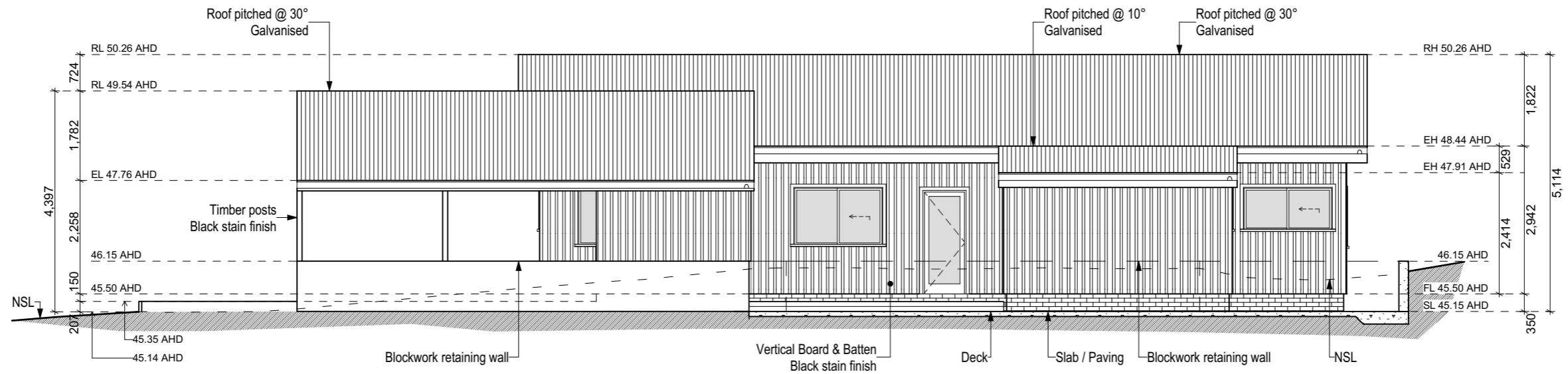
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CLIENT:
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DRAWING:
Elevations

DRAWING SET:
DEVELOPMENT APPLICATION
SHEET: **A1.04 OF 8**
DATE: **3/04/2024**
JOB: **ATT1605**
SIZE
A3



E3 North-west
A1.05 SCALE: 1:100



E4 North-east
A1.05 SCALE: 1:100



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Plans Reference: P1
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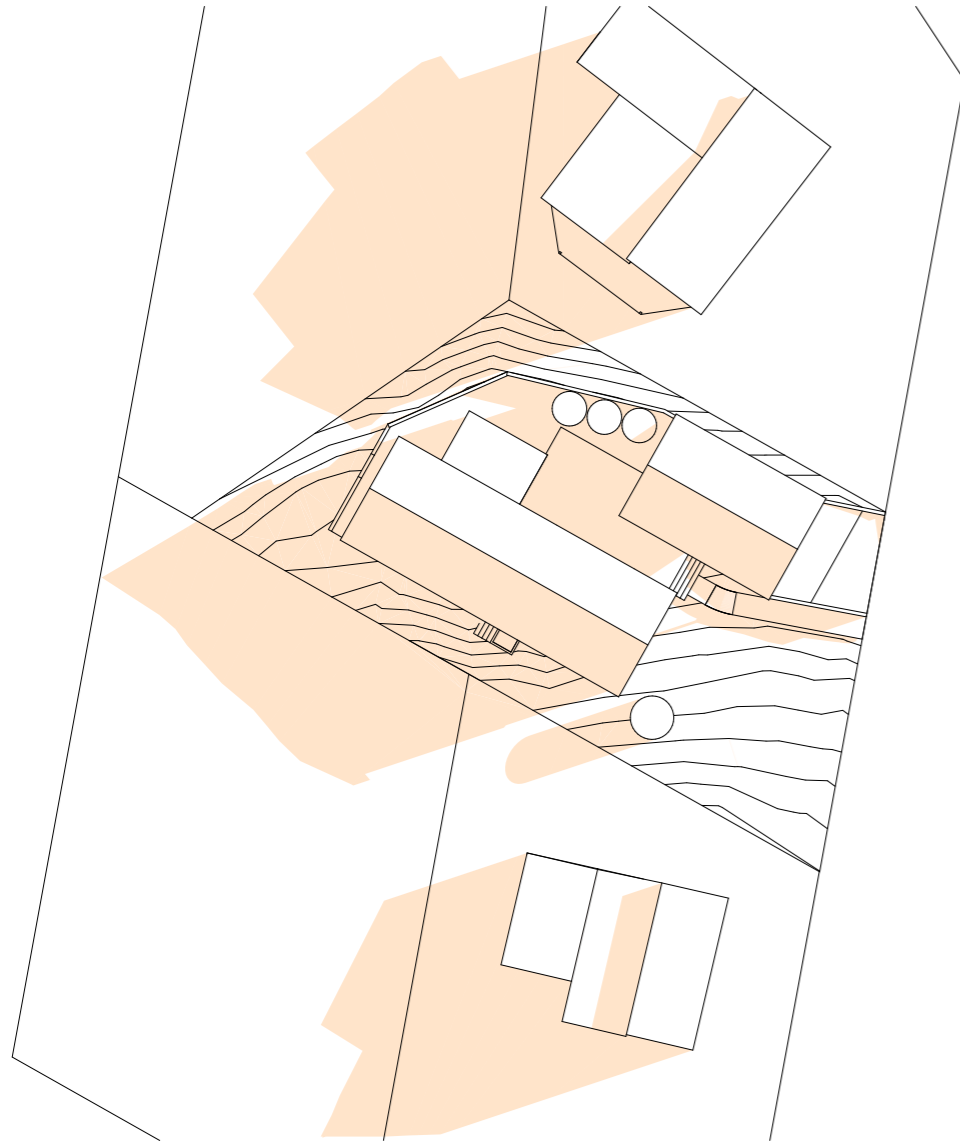
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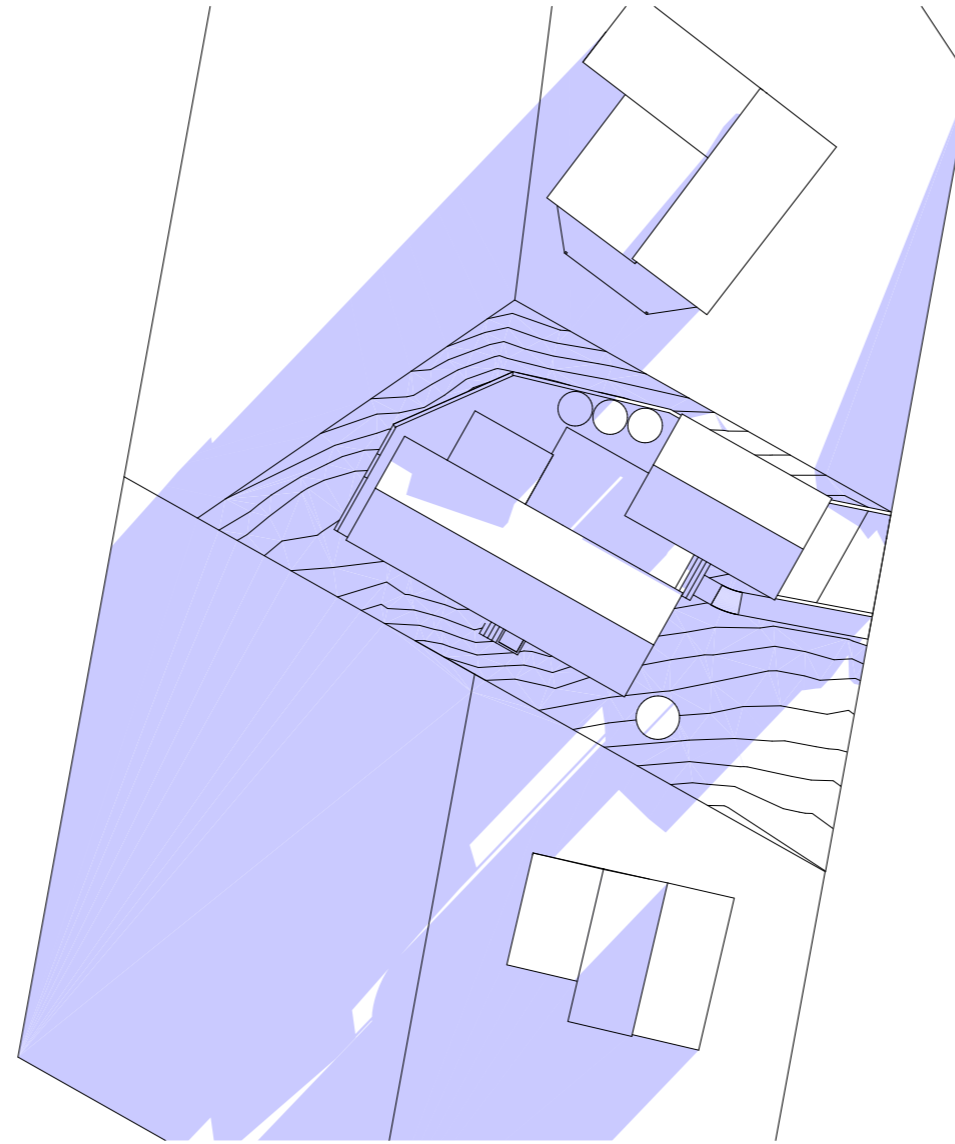
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Elevations

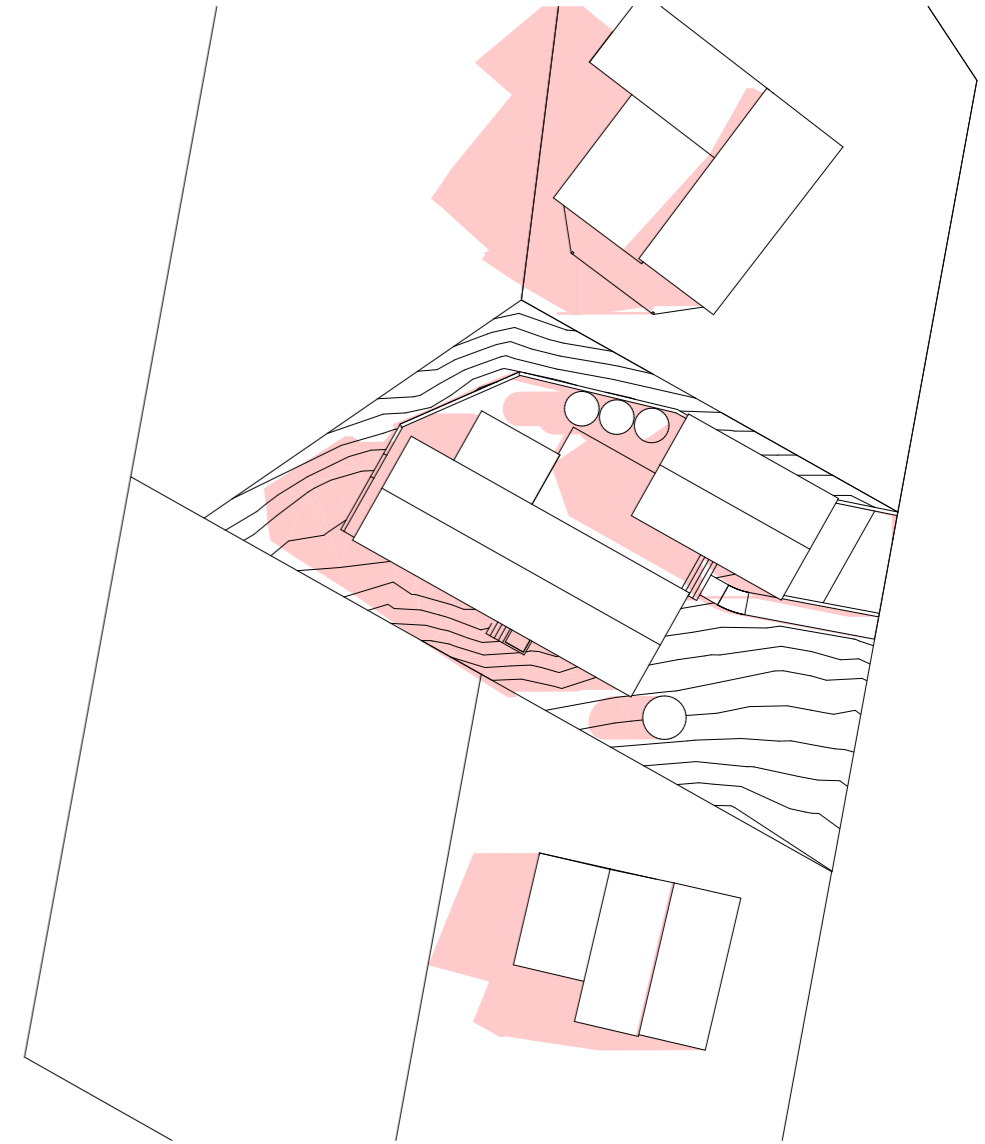
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DEVELOPMENT APPLICATION
SHEET: **A1.05 OF 8**
DATE: **3/04/2024**
JOB: **ATT1605**
SIZE
A3



SH1 **MAR 21st - 9:00 AM**
A1.06 SCALE: 1:400



SH2 **JUN 21st - 9:00 AM**
A1.06 SCALE: 1:400



SH3 **DEC 21st - 9:00 AM**
A1.06 SCALE: 1:400

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Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
Plans Reference:P1
Date Received:3/04/2024



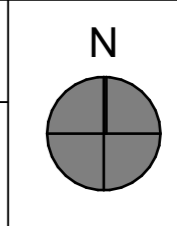
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B Valentine
SCALE
1:400
APPROVED / DESIGN CERT.
ENGINEER / DESIGN CERT.

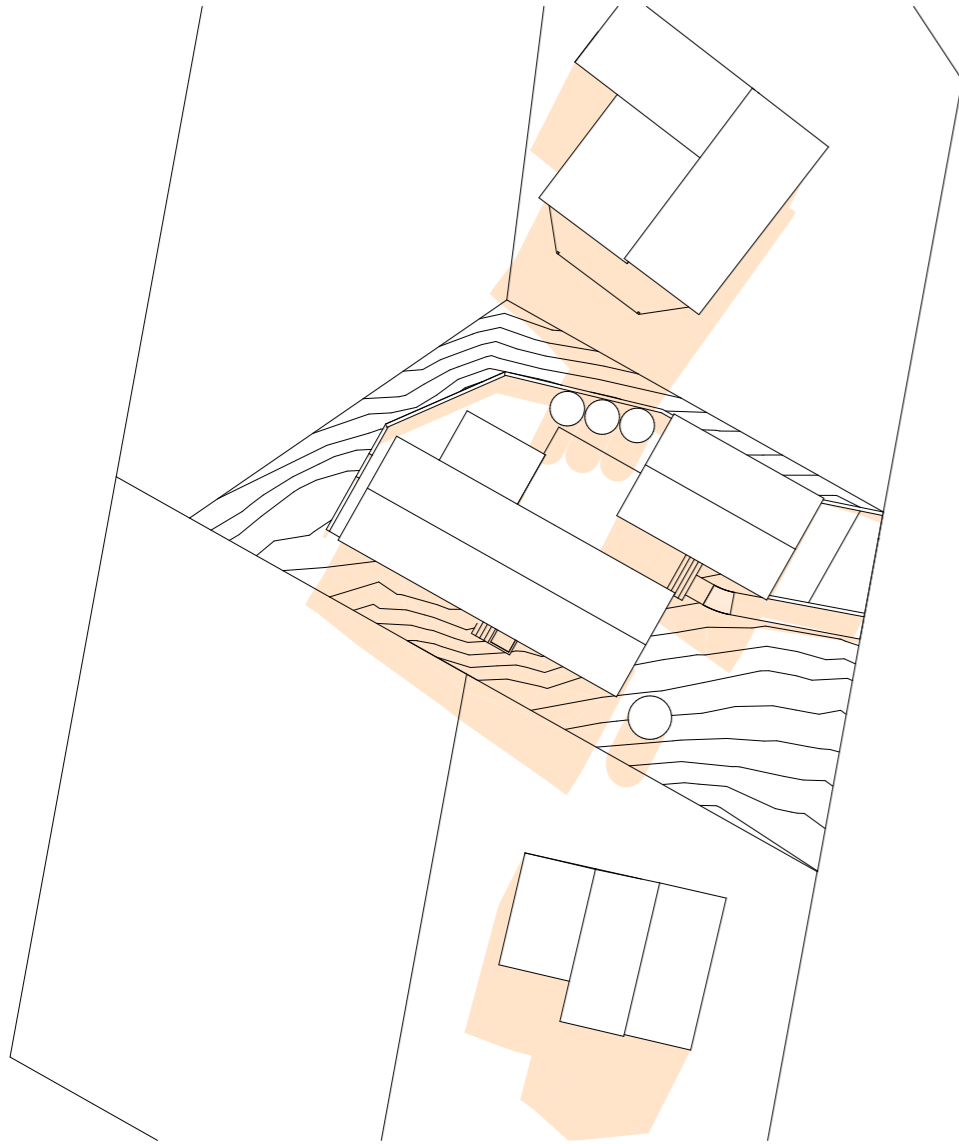
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NEW DWELLING
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REV.	DESCRIPTION	BY	CHK	DATE

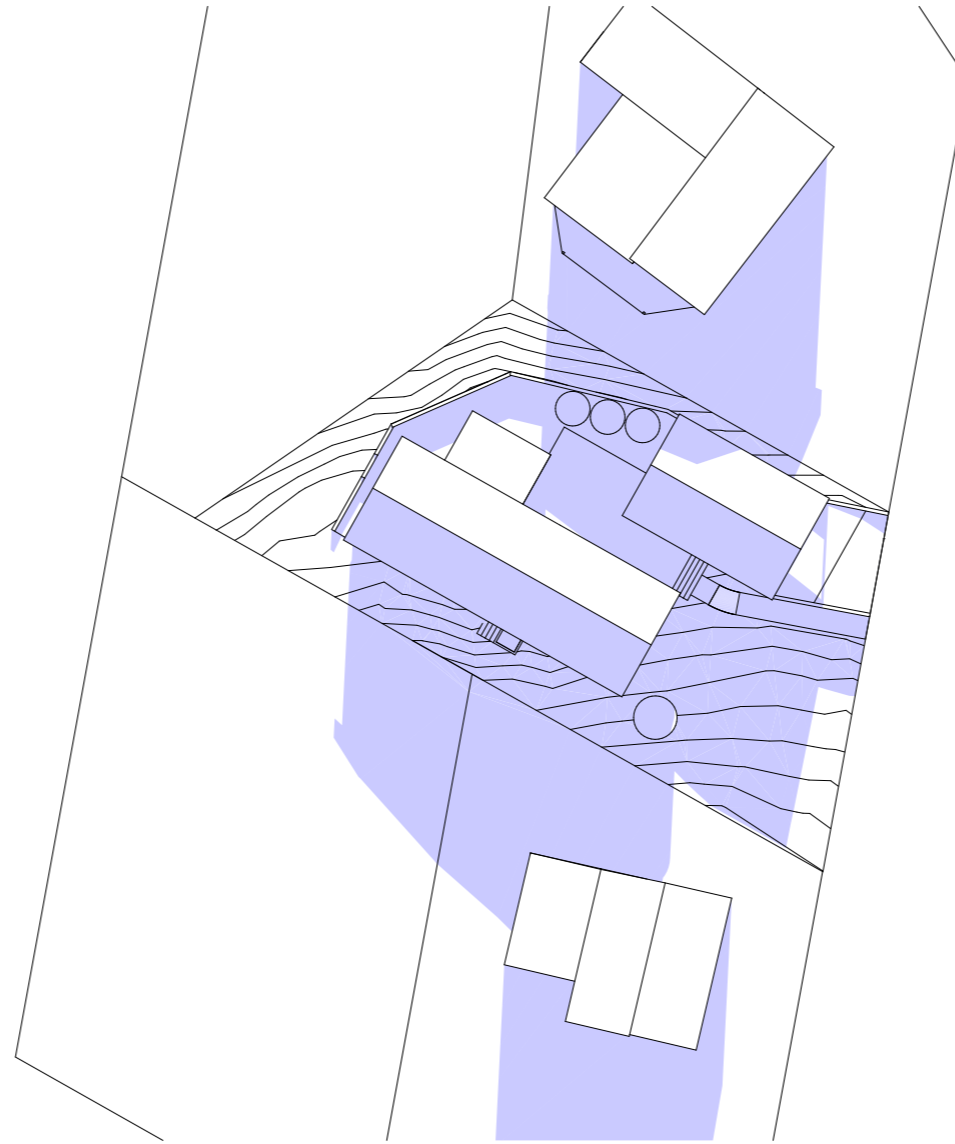
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Shading Diagrams 9:00 AM



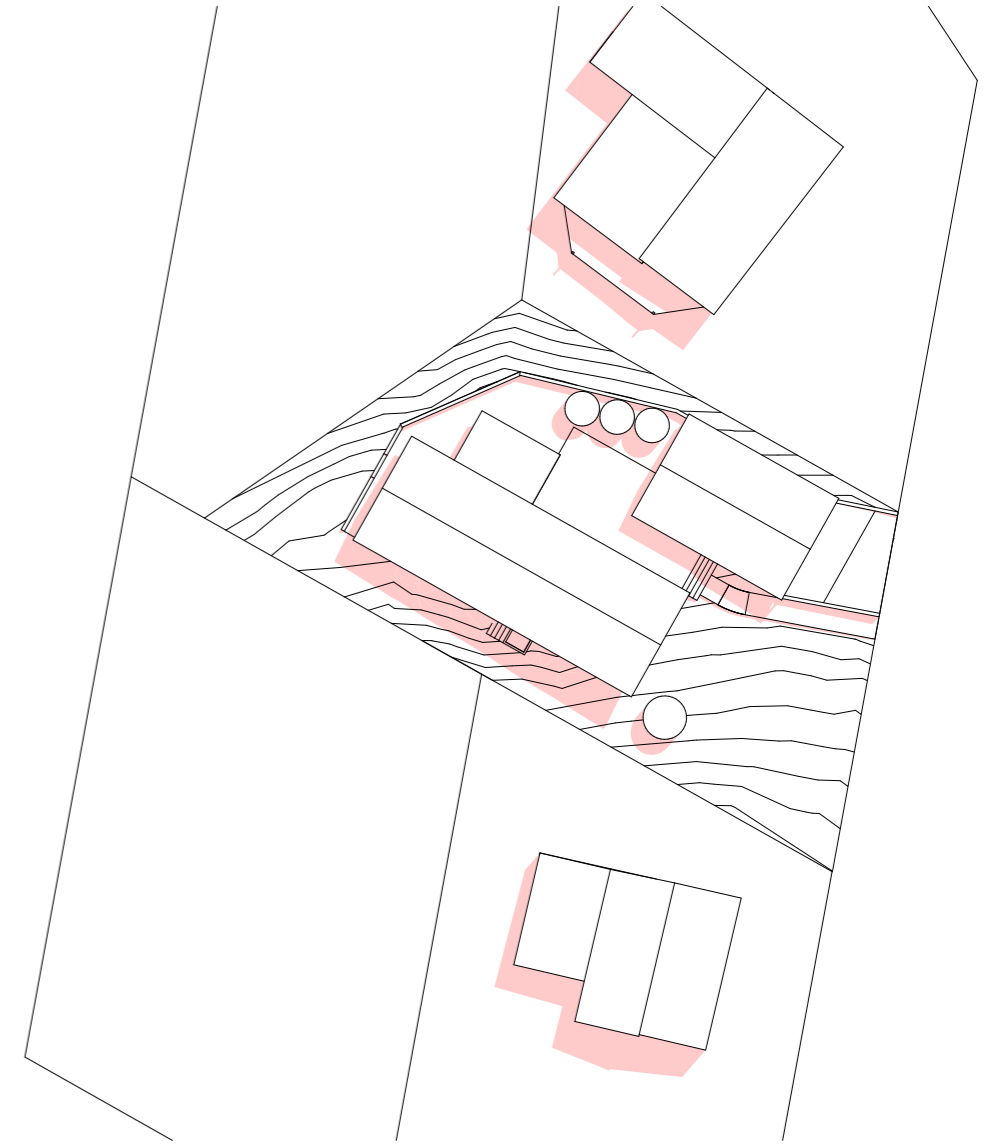
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DEVELOPMENT APPLICATION
SHEET: **A1.06** OF 8
DATE: **3/04/2024** SIZE **A3**
JOB: **ATT1605**



SH4 MAR 21st - 12:00 PM
A1.07 SCALE: 1:400



SH5 JUN 21st - 12:00 PM
A1.07 SCALE: 1:400



SH6 DEC 21st - 12:00 PM
A1.07 SCALE: 1:400

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 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
 Plans Reference: P1
 Date Received: 3/04/2024

Attic
 BUILDING DESIGN | DRAFTING | PLANNING

CONTACT	DESIGN / DRAFT B Valentine
E: ben@theattic.net.au	SCALE 1:400
M: 0403 579 827	APPROVED / DESIGN CERT.
A: Po Box 5, Dodges Ferry, TAS 7173	ENGINEER / DESIGN CERT.

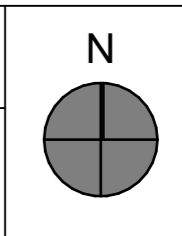
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NEW DWELLING
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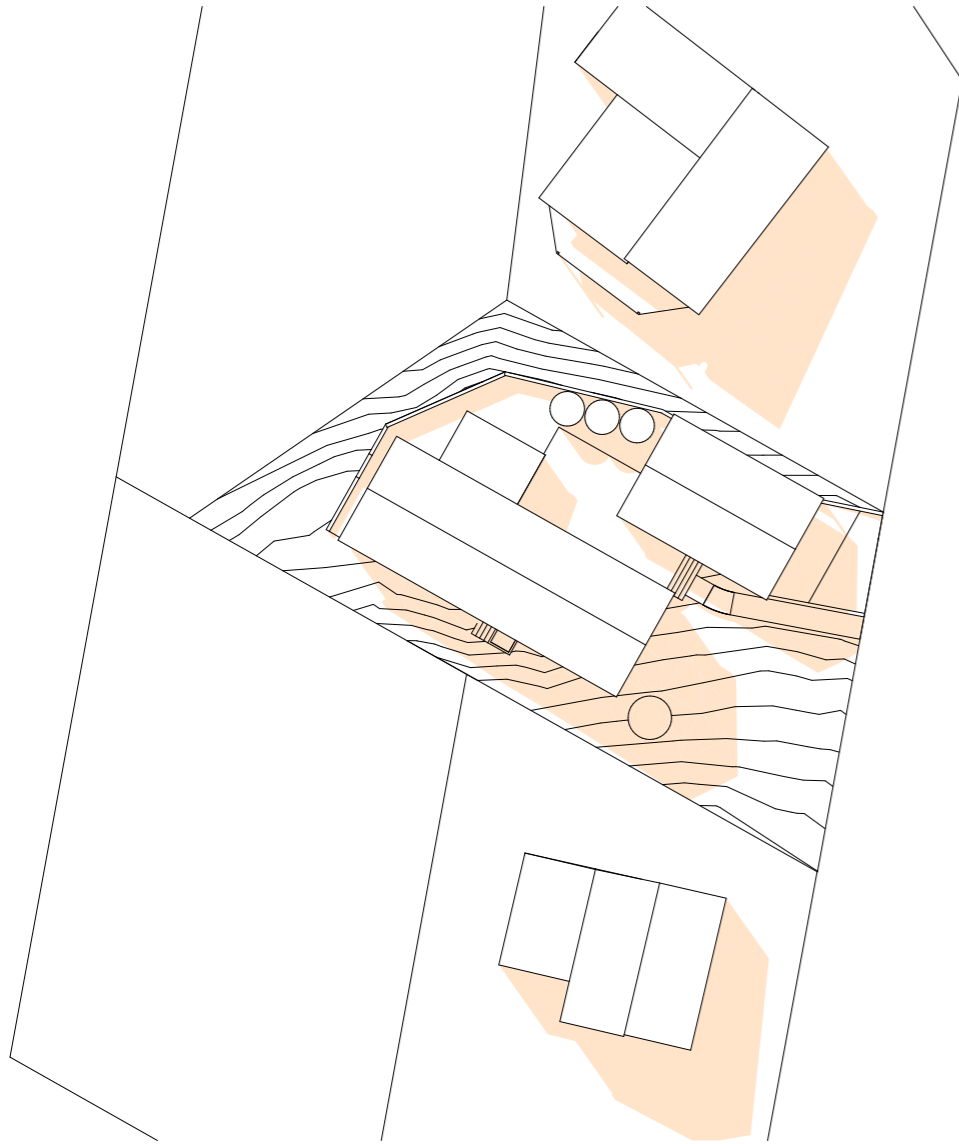
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LAWLESS

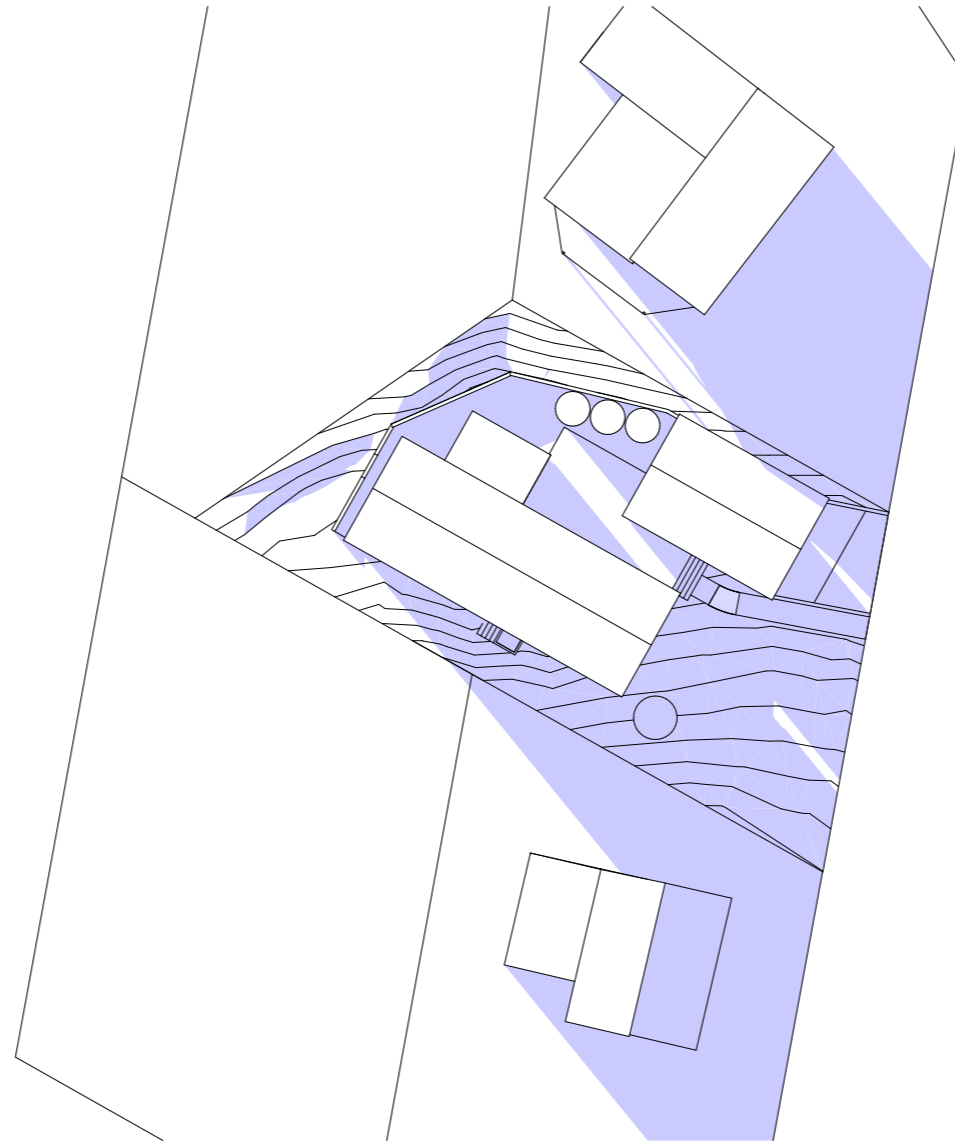
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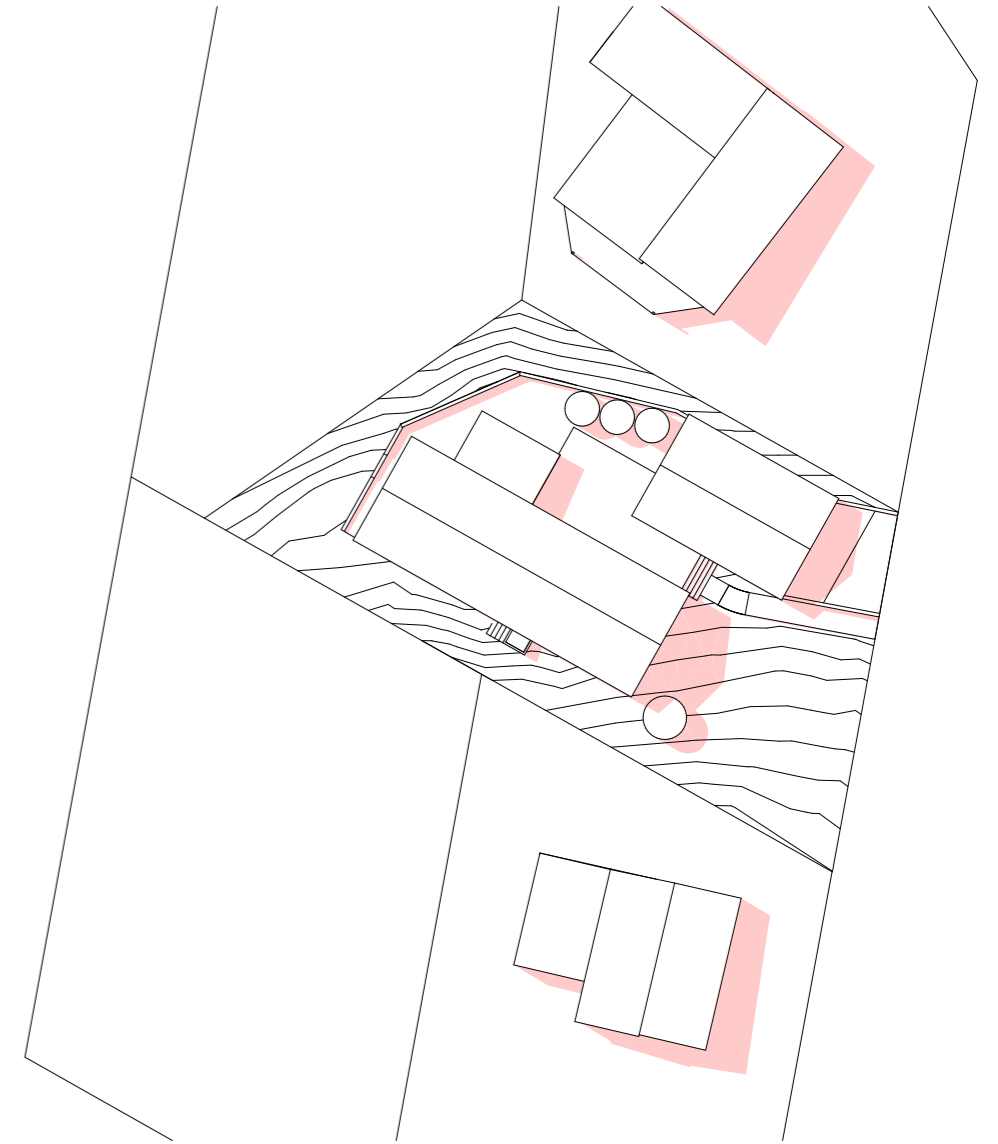
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SHEET: A1.07 OF 8	
DATE: 3/04/2024	SIZE A3
JOB: ATT1605	



SH7 **MAR 21st - 3:00 PM**
 A1.08 SCALE: 1:400



SH8 **JUN 21st - 3:00 PM**
 A1.08 SCALE: 1:400



SH9 **DEC 21st - 3:00 PM**
 A1.08 SCALE: 1:400

Sorell Council
 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
 Plans Reference:P1
 Date Received:3/04/2024



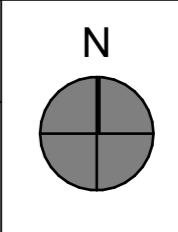
CONTACT
 E: ben@theattic.net.au
 M: 0403 579 827
 A: Po Box 5, Dodges Ferry, TAS 7173

DESIGN / DRAFT
B Valentine
 SCALE
1:400
 APPROVED / DESIGN CERT.
 ENGINEER / DESIGN CERT.

PROJECT:
NEW DWELLING
 6 North Street, Dodges Ferry, TAS
 7173
 © THIS PLAN MAY NOT BE USED FOR ANY PURPOSE WITHOUT THE CONSENT OR LICENSE FROM ATTIC BUILDING DESIGN

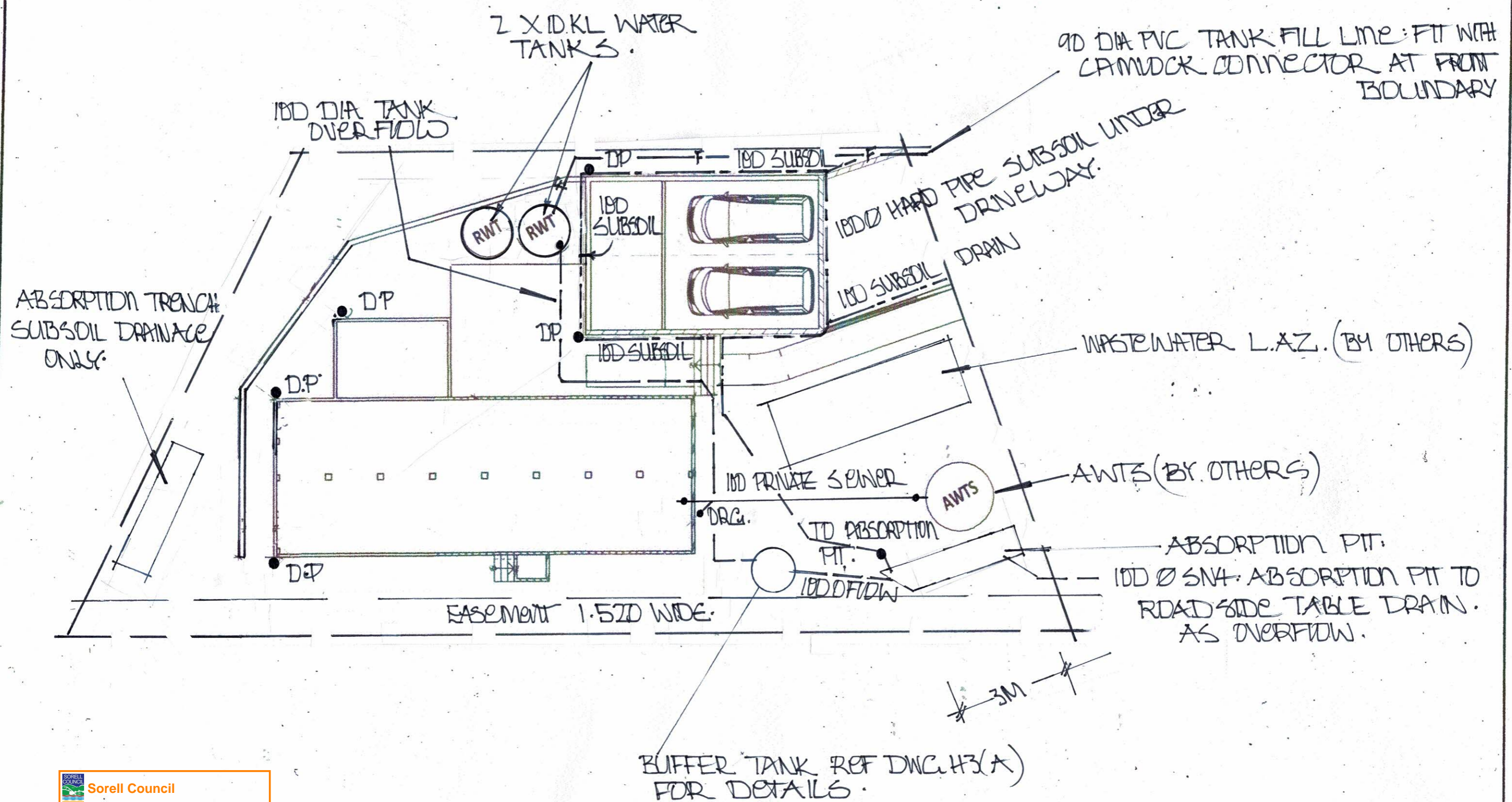
REV.	DESCRIPTION	BY	CHK	DATE

CLIENT:
LAWLESS
 DRAWING:
Shading Diagrams 3:00 PM



DRAWING SET:
DEVELOPMENT APPLICATION
 SHEET: **A1.08** OF 8
 DATE: **3/04/2024**
 JOB: **ATT1605**
 SIZE
A3

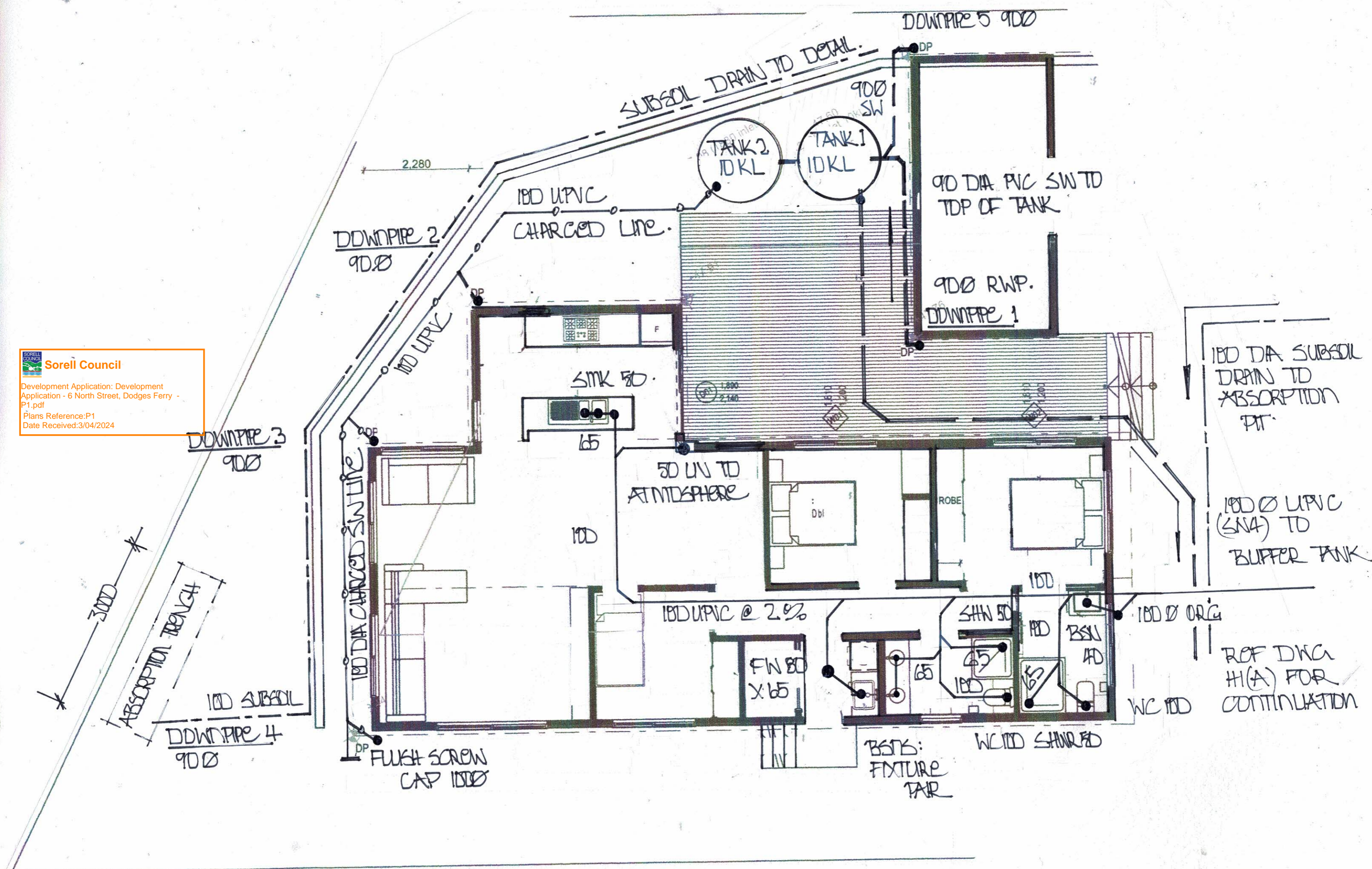
Do not scale this plan- refer to architect/designers plans for all dimensions. Changes to the hydraulic design must be approved in writing and supported with amended documentation.



Sorell Council
 Development Application: Development Application - 6 North Street, Dodies Ferry - P1.pdf
 Plans Reference: P1
 Date Received: 3/04/2024

DATE: 3/24	SCALE: NTS	DESIGNER: ROD COOPER	PROJECT: 6 NORTH ST DODIES FERRY
DRAWING No: DWG-H-11	REV: A	TITLE: DWELLING	

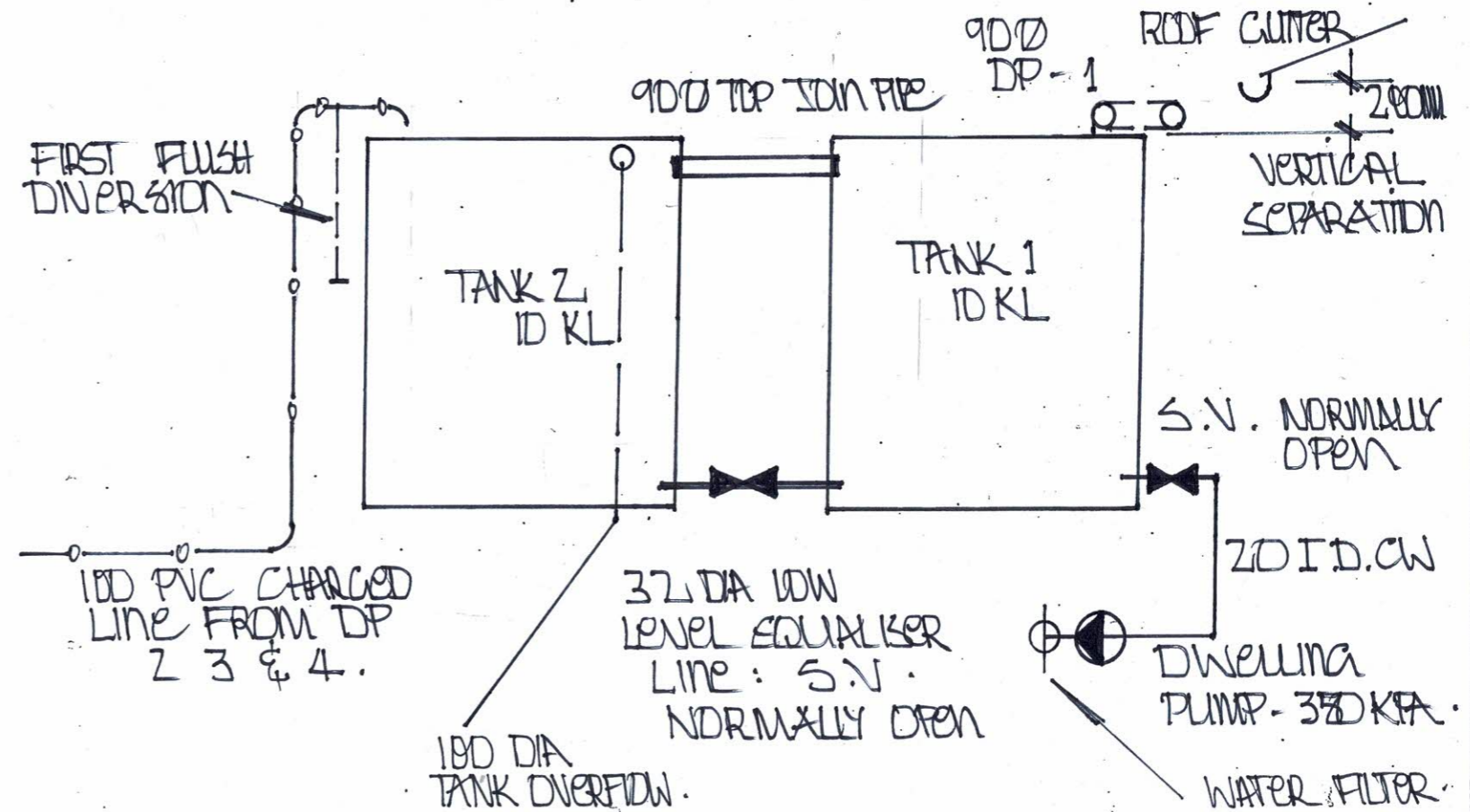
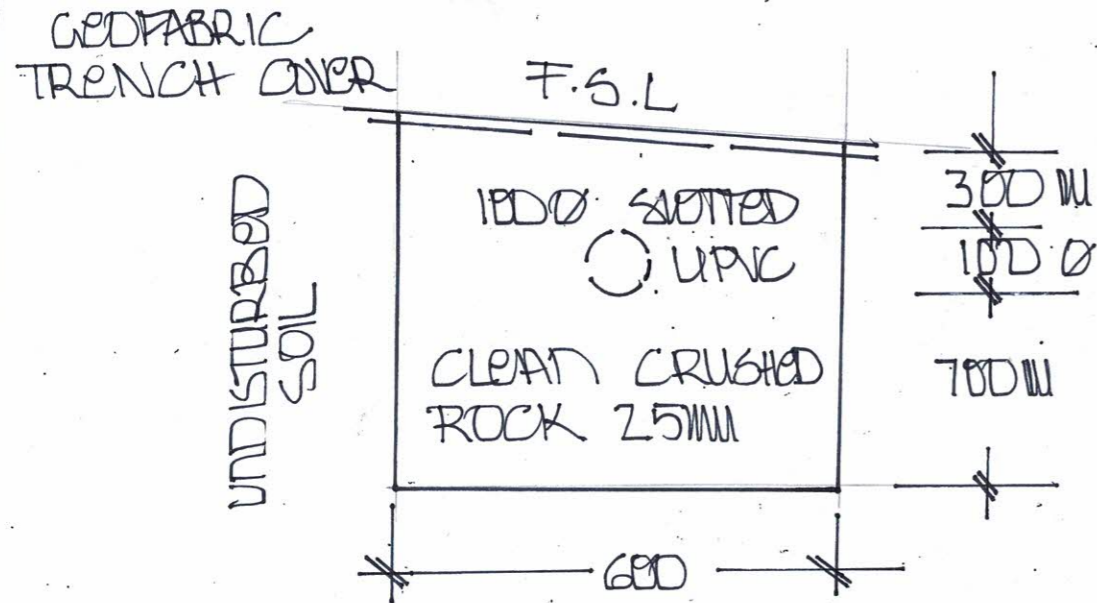
Sorell Council
 Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
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 Date Received: 3/04/2024



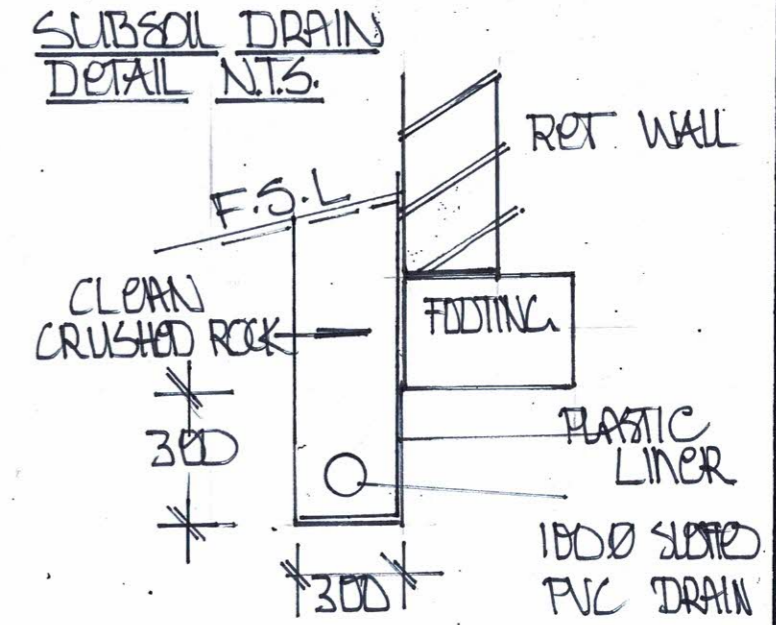
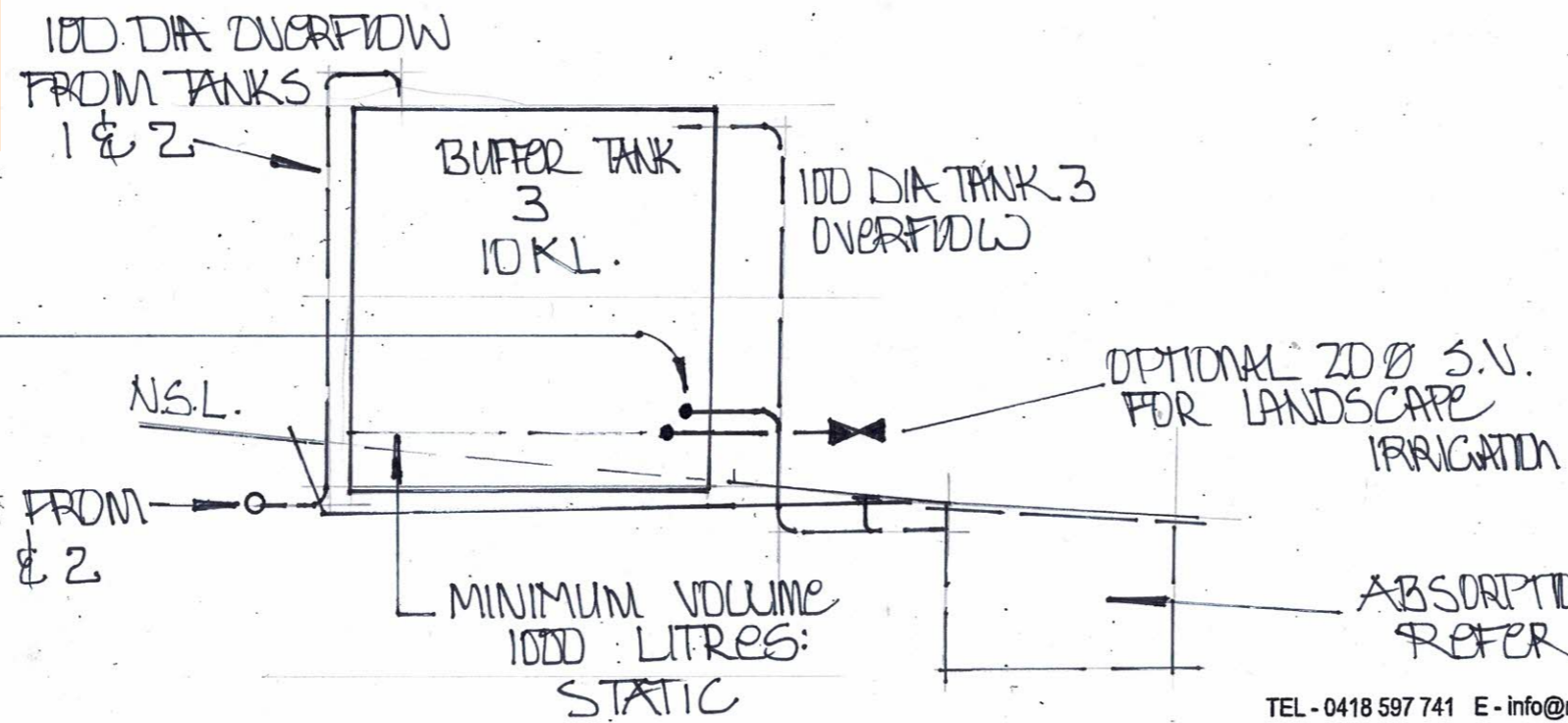
DATE: 3/24	SCALE: NTS	DESIGNER: R COOPER	ISSUE: A
DWG: H 2	PROJECT: 6 NORTH ST. DODGES FERRY		
TITLE: HYDRAULIC SERVICES	PROJECT NUMBER: 24/14		

Do not scale this plan- refer to architect/designers plans for all dimensions. Changes to the hydraulic design must be approved in writing and supported with amended documentation.

ABSORPTION TRENCH
DETAIL NTS



Sorell Council
Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
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Date Received: 3/04/2024



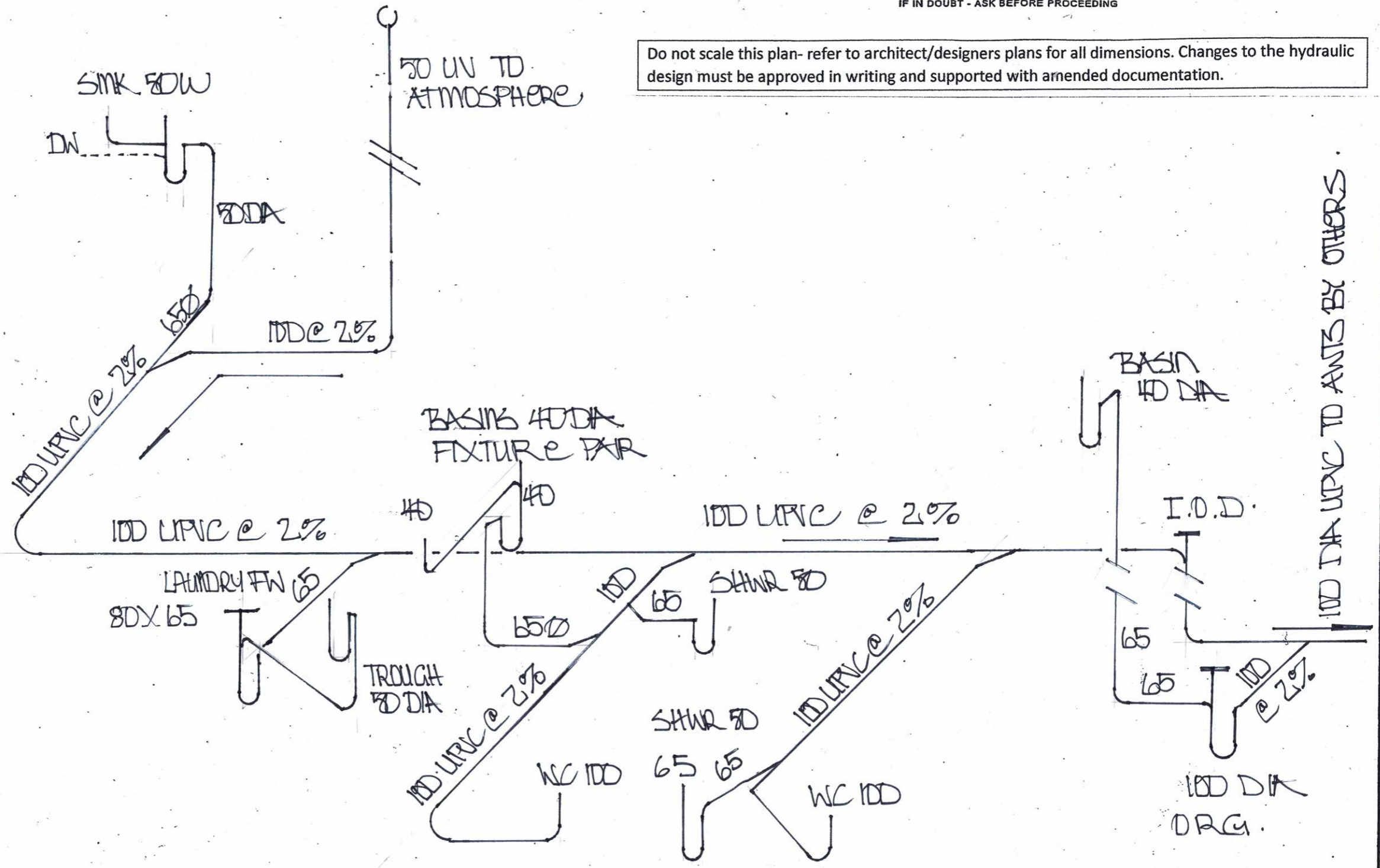
TANK UNDERFLOW LINE:
32mm DIA. PERMANENTLY
OPEN.

TEL - 0418 597 741 E - info@rehyd.com.au

PROJECT N°: 24/14

DATE: 3/24	SCALE: NTS	DESIGNER: ROD COOPER	PROJECT: 6 NORTH ST DODGES FERRY
DRAWING No: DWG-H-3	REV: 3	REV: A	TITLE: DWELLING

Do not scale this plan- refer to architect/designers plans for all dimensions. Changes to the hydraulic design must be approved in writing and supported with amended documentation.



SANITARY PLUMBING
ISOMETRIC LAYOUT:
NOT TO SCALE

Sorell Council
Development Application: Development Application - 6 North Street, Dodges Ferry - P1.pdf
Plans Reference: P1
Date Received: 3/04/2024

DATE: 3/24	SCALE: NTS	DESIGNER: ROD COOPER	PROJECT: 6 NORTH ST DODGES FERRY
DRAWING N°: DWG-H-4	REV: 4	REV: A	TITLE: DWELLING

THE PROJECT DESIGN IS FOR A NEW DWELLING ON VACANT LAND, THE SITE IS NOT CONNECTED TO RETICULATED SEWERAGE, WATER OR STORMWATER DRAINAGE (A PARTIAL TABLE DRAIN AT THE ROADSIDE CARRIES OFF STORMWATER FROM THE ROAD SURFACE, THE REQUIREMENT IS TO DEMONSTRATE HOW STORMWATER FROM THE DEVELOPMENT CAN BE MANAGED ON THE SITE.

BENCHMARK STANDARDS ARE AS/NZS3500-2021 1 TO 4 AS APPLICABLE AND NATIONAL CONSTRUCTION CODE PLUS SORELL COUNCIL STORMWATER POLICY. THERE ARE TWO STORMWATER WASTE STREAMS GENERATED ON THE SITE:

RAINWATER COLLECTED FROM THE BUILDING ROOFS WHICH WILL BE PIPED INTO TWO 10KL ROOFWATER HARVEST TANKS FOR USE IN THE DWELLING.

THE OWNER NEEDS TO BE MINDFUL OF THE POTENTIAL FOR LOW GRADE CONTAMINATION OF HARVESTED ROOF WATER AND INSTALLATION OF A SUITABLE WATER FILTER ON THE COLD WATER INLET TO THE HOUSE IS STRONGLY RECOMMENDED.

SUBSOIL WATER COLLECTED FROM THE SITE IS GENERALLY FROM NATURAL LAND RUNOFF AND IS COLLECTED BEHIND RETAINING WALLS, PAVED AREAS AND GENERAL OVERLAND FLOW. TANK OVERFLOWS AND ALL SUBSOIL WATER WILL BE DIRECTED TO 2 ABSORPTION PITS AS DETAILED.

TANK NUMBER 3 IS DESIGNED TO ACT AS BUFFER CONTAINMENT FOR OVERFLOW FROM TANKS 1 & 2, (REFER TO DWG H3(A)0 FOR TANK 3 SET UP WHICH ALLOWS FOR A RESERVE VOLUME AT 7 TIMES THE AVERAGE RAINFALL INTENSITY RECORDED FOR THE AREA, THE TANKS IS FITTED WITH AN OVERFLOW AND UNDERFLOW SYSTEM AS DETAILED.

THE CONTRACTOR SHALL:

- WORK ONLY FROM STAMPED AND APPROVED PLANS, A COPY OF WHICH MUST BE KEPT ON SITE AT ALL TIMES DURING THE CONSTRUCTION PHASE.
- ESTABLISH ALL TANK LEVELS IN RELATION TO ROOF GUTTER THRESHOLDS TO FACILITATE EFFECTIVE ROOF DRAINAGE AND COLLECTION.
- CONSTRUCT 2 ON SITE ABSORPTION TRENCHES AS DETAILED FOR ACCEPTABLE MANAGEMENT OF OVERFLOW /SUBSOIL WATER.
- INSTALL ALL DRAINS FROM THE DOWNSTREAM POSITION IN AN UPSTREAM DIRECTION, (ALLOW FOR THE AWTS UNIT TO BE INSTALLED AT THE CORRECT CONNECTION LEVEL.
- AT COMPLETION ALLOW TO PROVIDE 2 SETS OF DIMENSIONED AS CONSTRUCTED DRAWINGS ON A BUILDING SCALE OF 1:200 AND PROVIDE COPIES TO COUNCIL AND THE PROPERTY OWNER.

CLIMATE CHANGE IS AN UNKNOWN FACTOR AND IS THEREFORE UNQUANTIFIABLE- THIS DESIGN IS PREPARED BASED ON STANDARDS AND CODES RELEVANT AND CURRENT AT THE DATE OF THE DESIGN. REC HYDRAULIC P/L DESIGN DO NOT ACCEPT ANY RESPONSIBILITY FOR THE FUTURE EFFECT OF DROUGHT, UNSEASONAL RAINFALL EVENTS, LACK OF SYSTEM MAINTENANCE OR OTHER OCCURRENCES RESULTING FROM THE EFFECTS OF FUTURE CLIMATE CHANGE. DATED- MARCH 2024. ONGOING RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM REMAINS WITH THE PROPERTY OWNER

THE SCOPE OF WORKS IS NOT EXHAUSTIVE, LATENT CONDITIONS MAY ARISE DURING THE CONSTRUCTION PHASE THAT REQUIRE CHANGE, ANY AMENDMENTS MUST BE APPROVED BY THE DESIGNER BEFORE PROCEEDING.

IF IN DOUBT ASK BEFORE PROCEEDING.



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STORMWATER CALCULATIONS – 6 NORTH STREET

REFERENCED STANDARD – AS/NZS3500.3:2021 – TABLE D1.

ESTIMATED RAINFALL FOR DODGES FERRY (BASED ON SORELL FIGURES)

5% AEP (1:20 YEARS INTENSITY) 87mm PER HOUR.

TOTAL BUILDING ROOF AREA: 163 SQ METRES X 87mm PER HOUR = 14181 DIVIDE BY 3600

RESULTS IN A FLOW RATE OF 3.939 LITRES PER SECOND.

ROUND UP TO 3.94 L/SECOND.

THE BUFFER TANK No 3) will be fitted with a 100MM OVERFLOW AND A 32mm ID UNDERFLOW CONNECTION (REFER DETAIL) TO CONTROL MANAGED DISCHARGE TO THE LOWER ABSORPTION PIT.

BUFFER TANK VOLUME 10KL WITH 1000 LITRES STATIC VOLUME LEAVES 8500 LITRES OF BUFFER VOLUME. AT AN INCOMING RATE OF 3.94 LITRES PER SECOND THE BUFFER TANK CAN PROVIDE A HOLDING PERIOD OF 38 MINUTES OF RAINFALL OR EQUAL TO 7 x 1:20 YEAR RAINFALL EVENTS BEFORE ANY WATER DISCHARGES TO THE ABSORPTION PIT.

DATE: 3/24	SCALE: NB	DESIGNER: ROD COOPER	PROJECT: 6 NORTH ST DODGES FRY
DRAWING No: DWG-H-5	REV: A	TITLE: DWELLING	