Clarence... a brighter place

DEVELOPMENT APPLICATION

PDPLANPMTD-2023/039121

PROPOSAL: Dwelling & Outbuilding

LOCATION: 7 Chilean Court, Sandford

RELEVANT PLANNING SCHEME: Tasmanian Planning Scheme - Clarence

ADVERTISING EXPIRY DATE: 30 January 2024

The relevant plans and documents can be inspected at the Council offices, 38 Bligh Street, Rosny Park, during normal office hours until 30 January 2024. In addition to legislative requirements, plans and documents can also be viewed at www.ccc.tas.gov.au during these times.

Any person may make representations about the application to the Chief Executive Officer, by writing to PO Box 96, Rosny Park, 7018 or by electronic mail to clarence@ccc.tas.gov.au. Representations must be received by Council on or before 30 January 2024.

To enable Council to contact you if necessary, would you please also include a day time contact number in any correspondence you may forward.

Any personal information submitted is covered by Council's privacy policy, available at www.ccc.tas.gov.au or at the Council offices.

Clarence City Council

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APPLICATION FOR DEVELOPMENT / USE OR SUBDIVISION

*The personal information on this form is required by Council for the development of land under the Land Use Planning and Approvals Act 1993. We will only use your personal information for this and other related purposes. If this information is not provided, we may not be able to deal with this matter. You may access and/or amend your personal information at any time. How we use this information is explained in our **Privacy Policy**, which is available at www.ccc.tas.gov.au or at Council offices.*

Proposal: New Dwelling

Location: Address 7 Chilean Court

Suburb/Town Sandford Postcode 7020

Current Owners/s:

Applicant:

Personal Information Removed

Tax Invoice for application fees to be in the name of: (if different from applicant)

Estimated cost of development $700000

Is the property on the Tasmanian Heritage Register? Yes ☐ No ☑

(if yes, we recommend you discuss your proposal with Heritage Tasmania prior to lodgement as exemptions may apply which may save you time on your proposal)

If you had pre-application discussions with a Council Officer, please give their name: Imogen Rowe

Current Use of Site: vacant land

Does the proposal involve land administered or owned by the Crown or Council? Yes ☐ No ☑

Declaration:

- *I have read the Certificate of Title and Schedule of Easements for the land and am satisfied that this application is not prevented by any restrictions, easements or covenants.*
- *I authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation. I agree to arrange for the permission of the copyright owner of any part of this application to be obtained. I have arranged permission for Council's representatives to enter the land to assess this application*
- *I declare that, in accordance with Section 52 of the Land Use Planning and Approvals Act 1993, that I have notified the owner of the intention to make this application. Where the subject property is owned or controlled by Council or the Crown, their signed consent is attached. Where the application is submitted under Section 43A, the owner's consent is attached.*
- *I declare that the information in this declaration is true and correct.*

Acknowledgement:

- *I 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 consultation; 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.*

Applicant's Signature:

Signature O'Hupperd Date 27/9/23

PLEASE REFER TO THE DEVELOPMENT/USE AND SUBDIVISION CHECKLIST ON THE FOLLOWING PAGES TO DETERMINE WHAT DOCUMENTATION MUST BE SUBMITTED WITH YOUR APPLICATION.

Clarence City Council

DEVELOPMENT/USE OR SUBDIVISION CHECKLIST

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Documentation required:

1. **MANDATORY DOCUMENTATION**

This information is required for the application to be valid. An application lodged without these items is unable to proceed.

- ☑ Details of the location of the proposed use or development.
- ☑ A copy of the current Certificate of Title, Sealed Plan, Plan or Diagram and Schedule of Easements and other restrictions for each parcel of land on which the use or development is proposed.
- ☑ Full description of the proposed use or development.
- ☑ Description of the proposed operation.
  May include where appropriate: staff/student/customer numbers; operating hours; truck movements; and loading/unloading requirements; waste generation and disposal; equipment used; pollution, including noise, fumes, smoke or vibration and mitigation/management measures.
- ☑ Declaration the owner has been notified if the applicant is not the owner.
- ☑ Crown or Council consent (if publically-owned land).
- ☑ Any reports, plans or other information required by the relevant zone or code.
- ☐ Fees prescribed by the Council.

  Application fees (please phone 03 6217 9550 to determine what fees apply). An invoice will be emailed upon lodgement.

2. **ADDITIONAL DOCUMENTATION**

In addition to the mandatory information required above, Council may, to enable it to consider an application, request further information it considers necessary to ensure that the proposed use or development will comply with any relevant standards and purpose statements in the zone, codes or specific area plan, applicable to the use or development.

- ☑ **Site analysis plan and site plan**, including where relevant:
  - *Existing and proposed use(s) on site.*
  - *Boundaries and dimensions of the site.*
  - *Topography, including contours showing AHD levels and major site features.*
  - *Natural drainage lines, watercourses and wetlands on or adjacent to the site.*
  - *Soil type.*
  - *Vegetation types and distribution, and trees and vegetation to be removed.*
  - *Location and capacity of any existing services or easements on/to the site.*
  - *Existing pedestrian and vehicle access to the site.*
  - *Location of existing and proposed buildings on the site.*
  - *Location of existing adjoining properties, adjacent buildings and their uses.*
  - *Any natural hazards that may affect use or development on the site.*
  - *Proposed roads, driveways, car parking areas and footpaths within the site.*
  - *Any proposed open space, communal space, or facilities on the site.*
  - *Main utility service connection points and easements.*
  - *Proposed subdivision lot boundaries.*

Clarence City Council

DEVELOPMENT/USE OR SUBDIVISION CHECKLIST

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☐ Where it is proposed to erect buildings, **detailed plans** with dimensions at a scale of 1:100 or 1:200 showing:

- *Internal layout of each building on the site.*
- *Private open space for each dwelling.*
- *External storage spaces.*
- *Car parking space location and layout.*
- *Major elevations of every building to be erected.*
- *Shadow diagrams of the proposed buildings and adjacent structures demonstrating the extent of shading of adjacent private open spaces and external windows of buildings on adjacent sites.*
- *Relationship of the elevations to natural ground level, showing any proposed cut or fill.*
- *Materials and colours to be used on rooves and external walls.*

☐ Where it is proposed to erect buildings, a plan of the proposed **landscaping** showing:

- *Planting concepts.*
- *Paving materials and drainage treatments and lighting for vehicle areas and footpaths.*
- *Plantings proposed for screening from adjacent sites or public places.*

☐ Any additional reports, plans or other information required by the relevant zone or code.

This list is not comprehensive for all possible situations. If you require further information about what may be required as part of your application documentation, please contact Council's Planning Officers on (03) 6217 9550 who will be pleased to assist.

CERTIFICATE OF TITLE

LAND TITLES ACT 1980

TASMANIA

TORRENS TITLE

VOLUME	FOLIO
184332	8
EDITION	**DATE OF ISSUE**
3	18-Sep-2023
Page 1	of 1

I certify that the person described in Schedule 1 is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries specified in Schedule 2 and to any additional entries in the Folio of the Register.

Recorder of Titles

RECORDER OF TITLES TASMANIA

DESCRIPTION OF LAND

City of CLARENCE
Lot 8 on Sealed Plan 184332
Derivation : Part of 110 Acres Gtd. to J G Jennings
Prior CT 173683/4

SCHEDULE 1

N133689 TRANSFER to AYLA MAE SHEPPERD and JEFFREY ANDREW JAMES HUNTER Registered 18-Sep-2023 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
SP184332 EASEMENTS in Schedule of Easements
SP184332 COVENANTS in Schedule of Easements
SP184332 FENCING COVENANT in Schedule of Easements
SP173683 COVENANTS in Schedule of Easements
SP135274 & SP173683 FENCING PROVISION in Schedule of Easements
SP135274 WATER SUPPLY RESTRICTION
SP135274 SEWERAGE AND/OR DRAINAGE RESTRICTION

OWNER
ALDANMARK PROJECT MANAGEMENT PTY LTD
MERLIN DEVELOPMENTS PTY LTD

FOLIO REFERENCE C.T.173683/4

GRANTEE Part of 110 Acres Gtd. to J G Jennings

PLAN OF SURVEY

BY SURVEYOR DAVID BRUCE MILLER
ROGERSON AND BIRCH SURVEYORS
UNIT 1 – 2 KENNEDY DRIVE, CAMBRIDGE PARK
PH 6248-5898 MOB. 0400-114-824

CITY OF CLARENCE

SCALE 1:3000 LENGTHS IN METRES

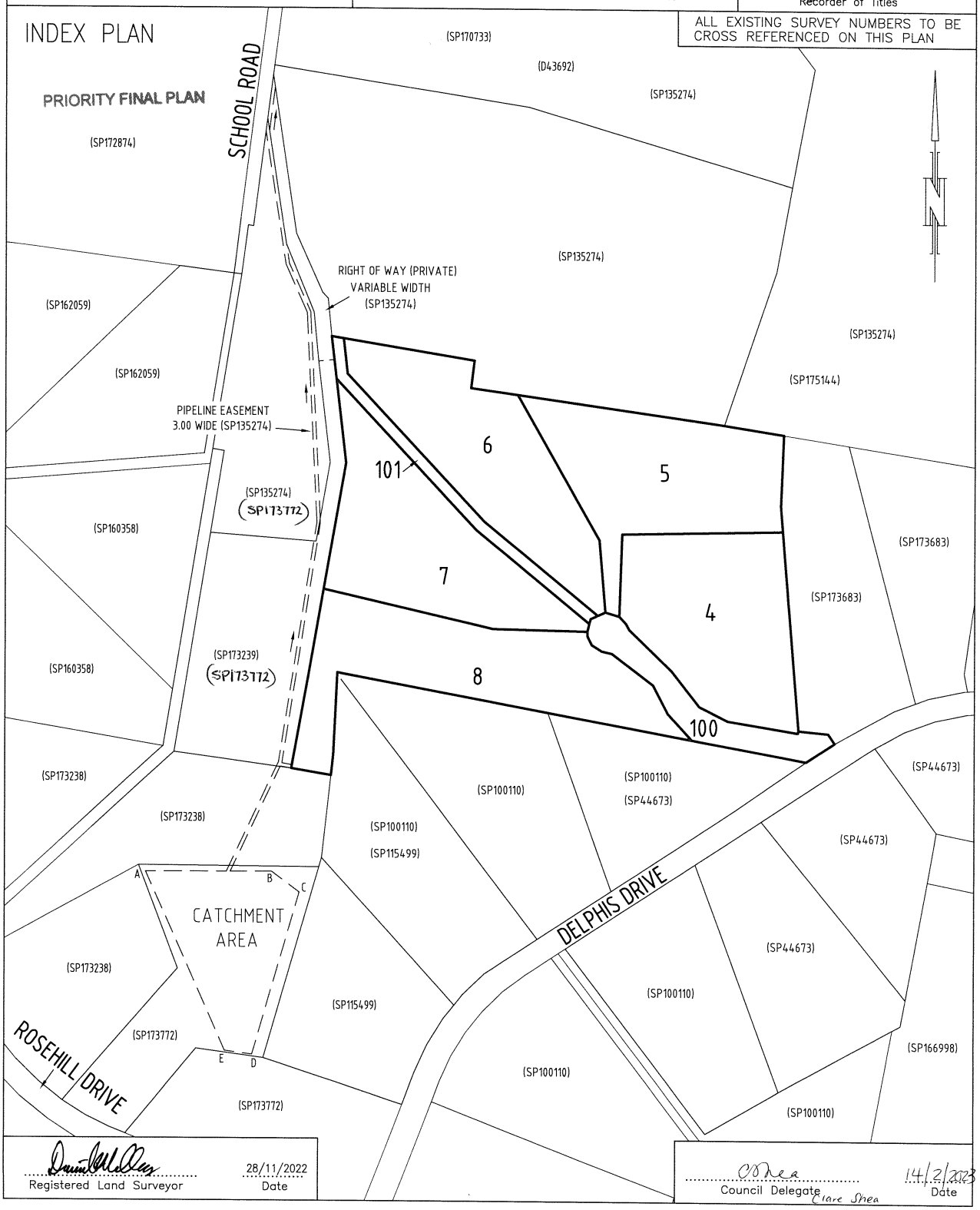
REGISTERED NUMBER
SP184332

~~APPROVED~~
EFFECTIVE FROM 28 FEB 2023
Recorder of Titles

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

INDEX PLAN

PRIORITY FINAL PLAN



Registered Land Surveyor — 28/11/2022 Date

Council Delegate — 14/2/2023 Date

Clare Shea

PLAN OF SURVEY
ANNEXURE SHEET

SHEET 2 OF 2 SHEETS

OWNER: ALDANMARK PROJECT MANAGEMENT PTY LTD
MERLIN DEVELOPMENTS PTY LTD

FOLIO REFERENCE: C.T.173683/4

SCALE 1: 1500 LENGTH IN METRES

Registered Number

SP.184332

SIGNED FOR IDENTIFICATION PURPOSES

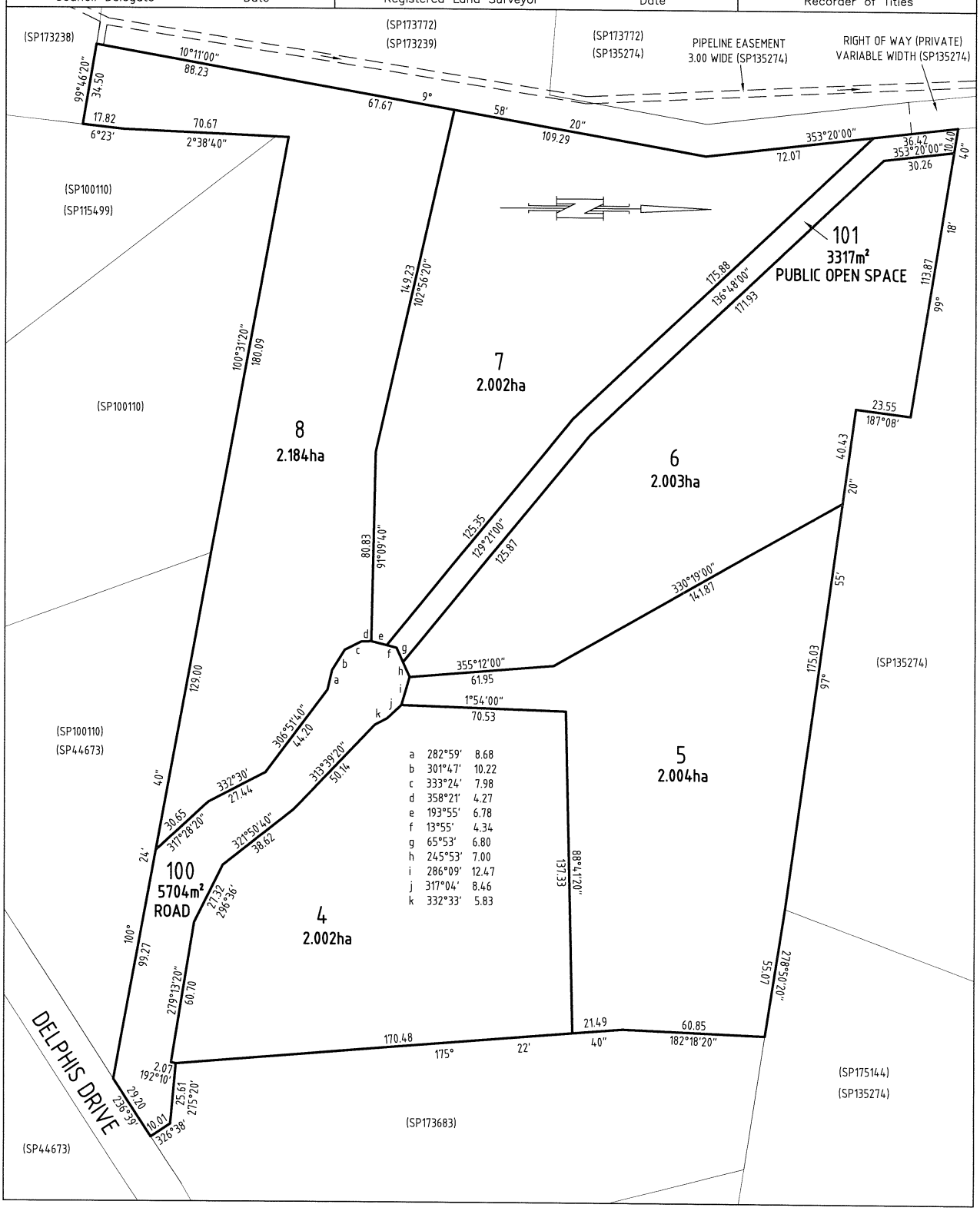
Council Delegate 14/2/2023 Date

THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN.

Registered Land Surveyor 28/11/2022 Date

~~APPROVED~~ EFFECTIVE FROM 28 FEB 2023

Recorder of Titles



SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP 184332

EASEMENTS AND PROFITS

Each lot on the plan is together with:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
(2) any easements or profits a prendre described hereunder.
Each lot on the plan is subject to:-
(1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
(2) any easements or profits a prendre described hereunder.
The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

Each lot on the plan is: together with a right of carriage way over the land marked "RIGHT OF WAY (PRIVATE) VARIABLE WIDTH" shown on ~~Sealed Plan 135274~~ the Plan.

Each lot on the plan is: together with a pipeline easement over the land marked PIPELINE EASEMENT 3.00 WIDE shown ~~Sealed Plan 135274~~ on the Plan and more fully set forth in Sealed Plan 135274.

Each lot on the plan is: together with a right to draw water from the land marked "CATCHMENT AREA 'ABCDEF' shown on ~~SP 135274~~ the Plan and more fully set forth in Sealed Plan 135274.

Each lot on the plan covenants with Clarence City Council to the intent that the burden of this covenant may run with and bind the covenanters lot and every part thereof and that the benefit thereof may devolve with Clarence City Council to observe the following stipulation:
as per Sealed Plan 173683 not to design or construct any sensitive use on such lot whilst the quarry at 100 School Road is still active unless in accordance with the requirements of the Attenuation Code of the Clarence Interim Planning Scheme 2015, or its successor

The owner of each lot on the plan covenants with the vendors, Merlin Developments Pty Ltd and Aldanmark Project Management Pty Ltd, that the vendor will not be required to fence.

EXECUTED by **Merlin Developments Pty Ltd** in accordance with it's Constitution pursuant to section 127 of the Corporations Act: }

Signature of Director — Signature of Director

ADAM GLENN DICKEN — DAVID JAMES OVEREEM

Name of Director — Name of Director

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: Merlin Developments Pty Ltd & Aldanmark Project Management Pty Ltd FOLIO REF: Volume 173683 Folio 4 SOLICITOR & REFERENCE: OGILVIE JENNINGS Anthony Laning	PLAN SEALED BY: CLARENCE CITY COUNCIL DATE: 14 February 2023 SD-2015/52 REF NO. Stage 2 & 3 Council Delegate Clare Sheq
NOTE: The Council Delegate must sign the Certificate for the purposes of identification.	

ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 2 OF 2 PAGES	Registered Number SP 184332
SUBDIVIDER: Merlin Developments Pty Ltd & Aldanmark Project Management Pty Ltd FOLIO REF: Volume 173683 Folio 4	

EXECUTED by **Aldanmark Project Management Pty Ltd** in accordance with it's Constitution pursuant to section 127 of the Corporations Act: }

Signature of Director

Daniel Gardner

Name of Director

Signature of Director

MARIE GARDNER

Name of Director

NOTE: Every annexed page must be signed by the parties to the dealing or where the party is a corporate body be signed by the persons who have attested the affixing of the seal of that body to the dealing.

SITE INFORMATION

Title Reference Number:	**184332 / 8**	Volume / Folio
Wind Classification:	**N3**	Refer to Site Assessment Report
Soil Classification	**M**	Refer to Site Assessment Report
Climate Zone:	**7**	TBC
BAL Level:	**TBC**	Refer to Site Assessment Report
Alpine Area:	**TBC**	Refer to NCC
Corrosion Environment:	**Yes**	For steel subject to the influence of salt water, breaking surf or heavy industrial areas, Medium; NCC 3.5.1.2 & Moderate; NCC 3.4.4.4. Cladding and fixings to manufacturer's recommendations
Other Hazards:	**NA**	High wind, earthquake, flooding, landslip, dispersive soils, sand dunes, mine subsistence, landfill, snow & ice or other relevant factors

FLOOR AREA

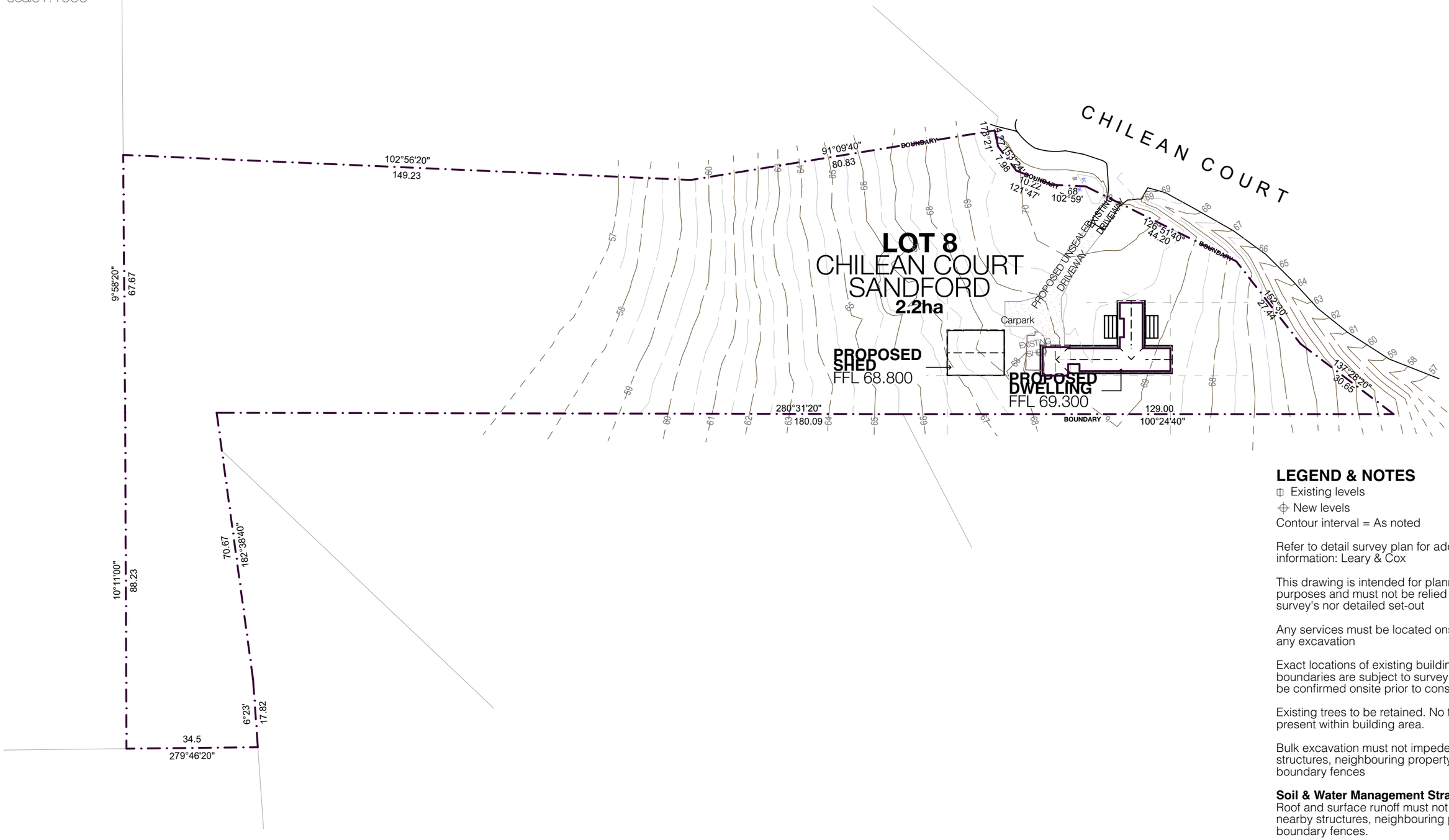
Proposed Dwelling:	**266m2**
Proposed Detached Shed:	**180m2**
Total Site Coverage:	**518.5m2**

DRAWING SCHEDULE

ID	Layout Name
01	Cover
02	Site Plan
03	Site Plan
04	Floor Plan
05	Elevations
06	Elevations
07	Floor Plan (shed)

BAL Notes
All works to comply with AS3959 - BAL (TBC) and the Bushfire Hazard Assessment Report (BHAR) and Bushfire Hazard Management Plan (BHMP).
Access and hardstand and firefighting water supply to comply as specified by BHAR.

Site Plan
scale1:1000



LEGEND & NOTES

Existing levels

New levels

Contour interval = As noted

Refer to detail survey plan for additional information: Leary & Cox

This drawing is intended for planning purposes and must not be relied upon for survey's nor detailed set-out

Any services must be located onsite prior to any excavation

Exact locations of existing buildings and boundaries are subject to survey and must be confirmed onsite prior to construction

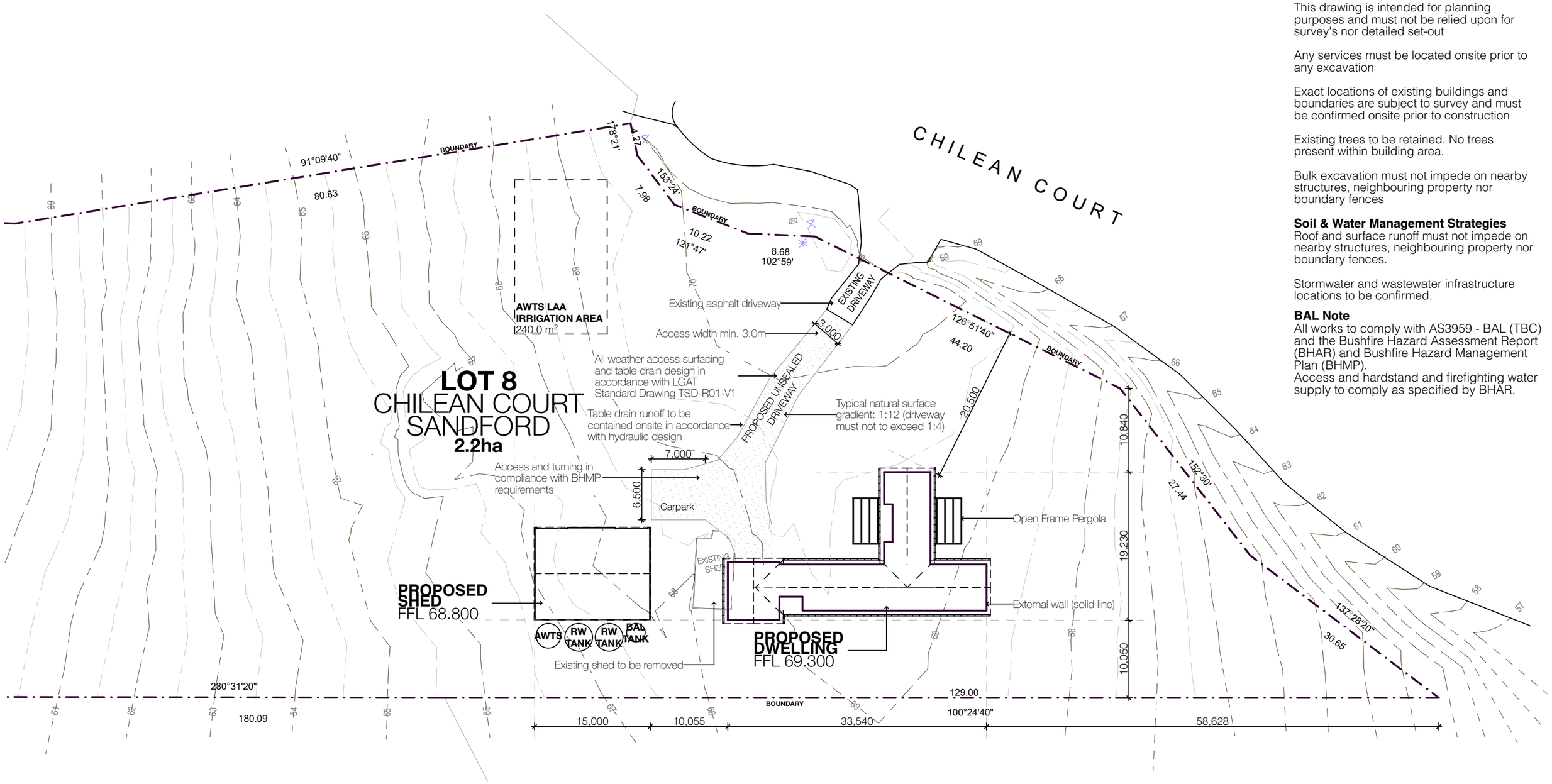
Existing trees to be retained. No trees present within building area.

Bulk excavation must not impede on nearby structures, neighbouring property nor boundary fences

Soil & Water Management Strategies
Roof and surface runoff must not impede on nearby structures, neighbouring property nor boundary fences.

Stormwater and wastewater infrastructure locations to be confirmed.

Site Plan
scale1:500



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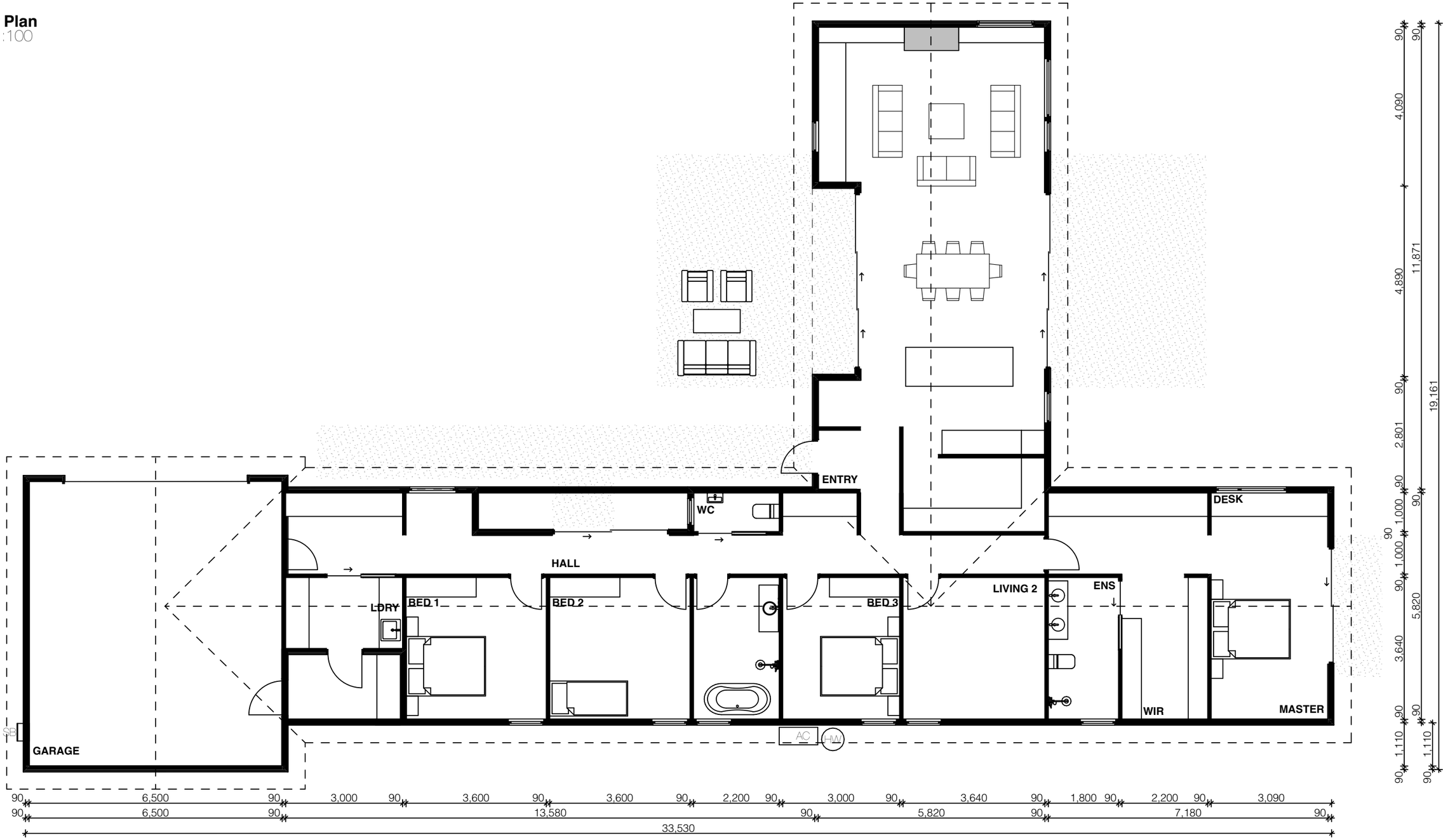
LOT 8 CHILEAN COURT,SANDFORD, TAS, 7020
AYLA SHEPPERD & JEFF HUNTER

axishomes
www.axishomes.com
ABN 31 639 378 751
Ph 0476 662 062
info@axishomes.com

Date Published **16/11/2023**
Drawing Status **DA**
Drawing Scale **1:500 at A3**
Drawn by **HF**
Revision **DA03**

Floor Plan
scale1:100



Legend

FFL - Finished floor level
EFL - Existing floor level
DP - Downpipe
SB - Switch board
MH - Manhole
SH - Shower
B - Basin
VB - Vanity basin
HW - Hot water cyclinder
WM - Washing machine
T - Laundry trough
S - Sink
DW - Dishwasher
M - Microwave
OV - Oven
CT - Cooktop
F - Fridge
FR - Freezer
WH - Wood heater
DR - Clothes Dryer

General Notes

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Wall Schedule

Black Fill: New 90mm timber stud walls with 10mm plasterboard lining throughout / Aquachek (or equivalent) to wet areas / Lightweight cladding externally

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Revision **DA03**

North Elevation
scale1:100

Legend
CJ - Control joint
DP - Downpipe
SD - Sliding door
GD - Glass door
SW - Sliding window
A - Awning window
F - Fixed window
CL - Ceiling level
FFL - Finished Floor level

Walls
Cladding
Type: T+G timber cladding.
Fixing: TBC
BAL requirement: TBC
Finish: TBC

Roofing
Deck: Colorbond Trimdek
Colour: CB Monument

Gutters: Colorbond Half round
Colour: CB Monument
Brackets: External
Other: gutter mesh installed to manufacturers specification

Downpipes
Type: UPVC 90mm
Colour: CB Monument

Window and External Doors
Type: Double glazed aluminium frame
Glass Tint: TBC
Frame colour: Satin black

East Elevation
scale1:100

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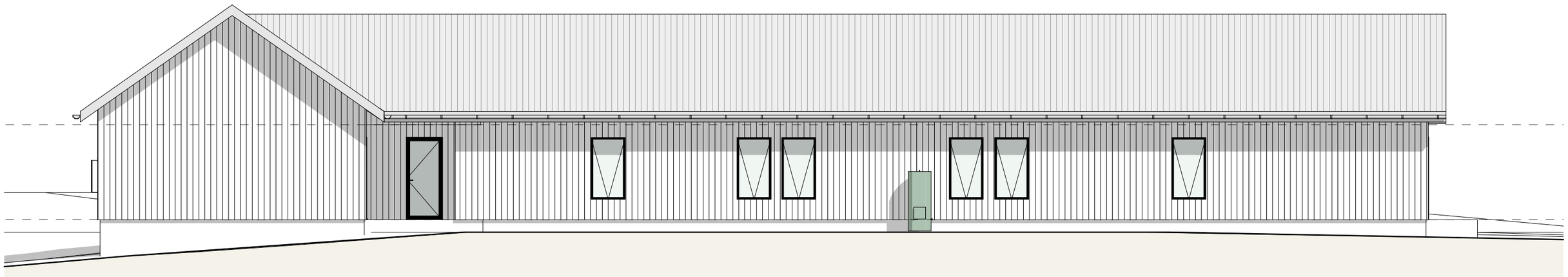
South Elevation
scale1:100



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Glass Tint: TBC
Frame colour: Satin black

West Elevation
scale1:100

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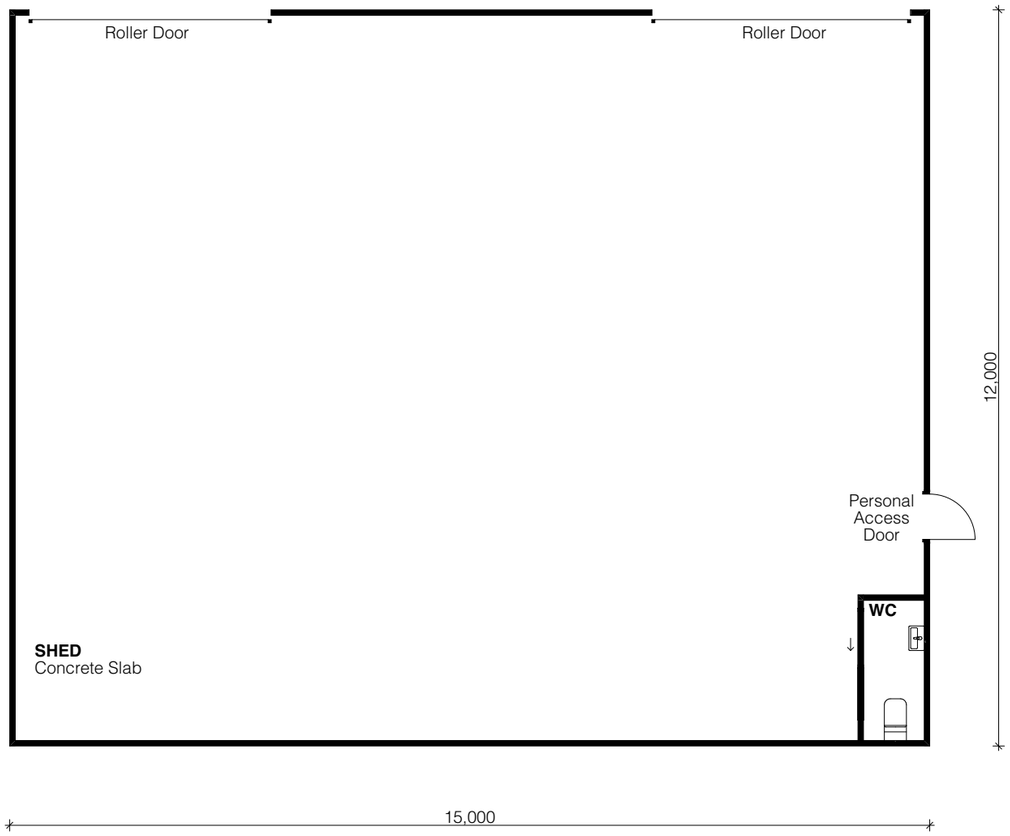
PAGE **06 of 8**

Floor Plan
Shed
scale1:100



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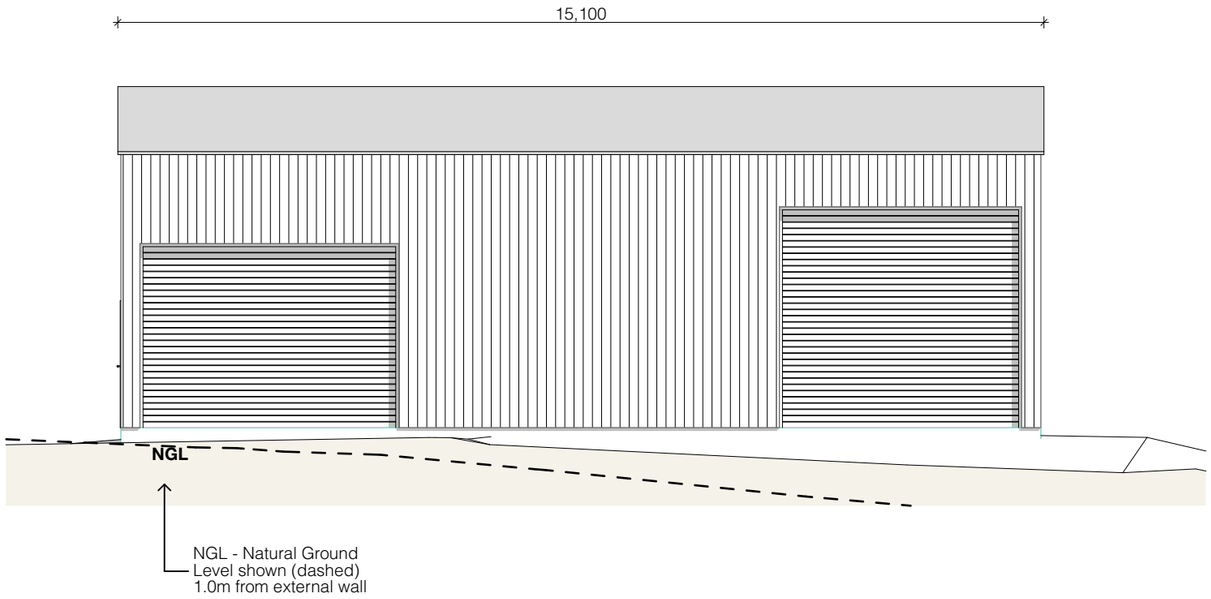
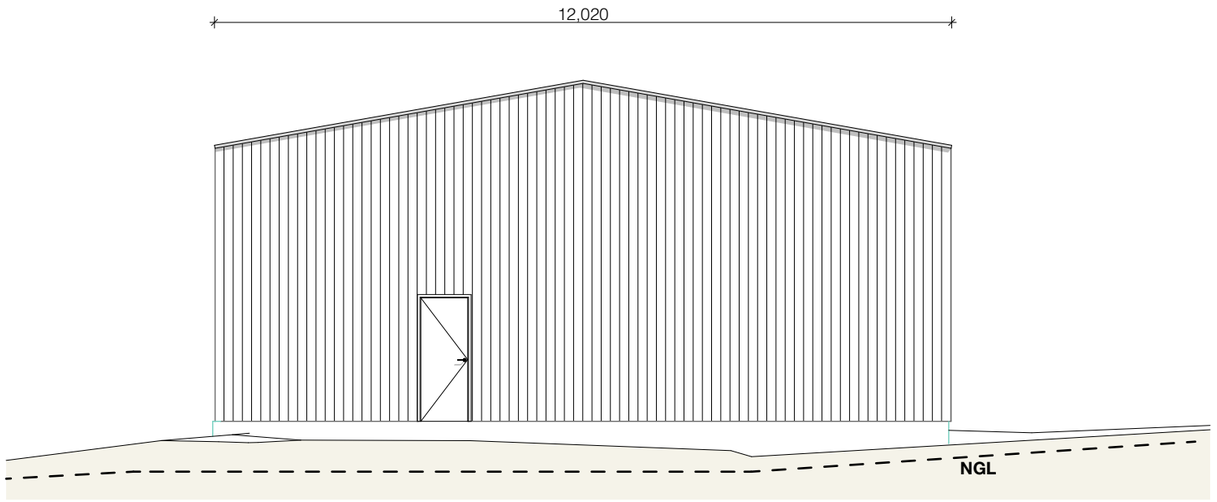
Revision **DA03**
PAGE **07 of 8**

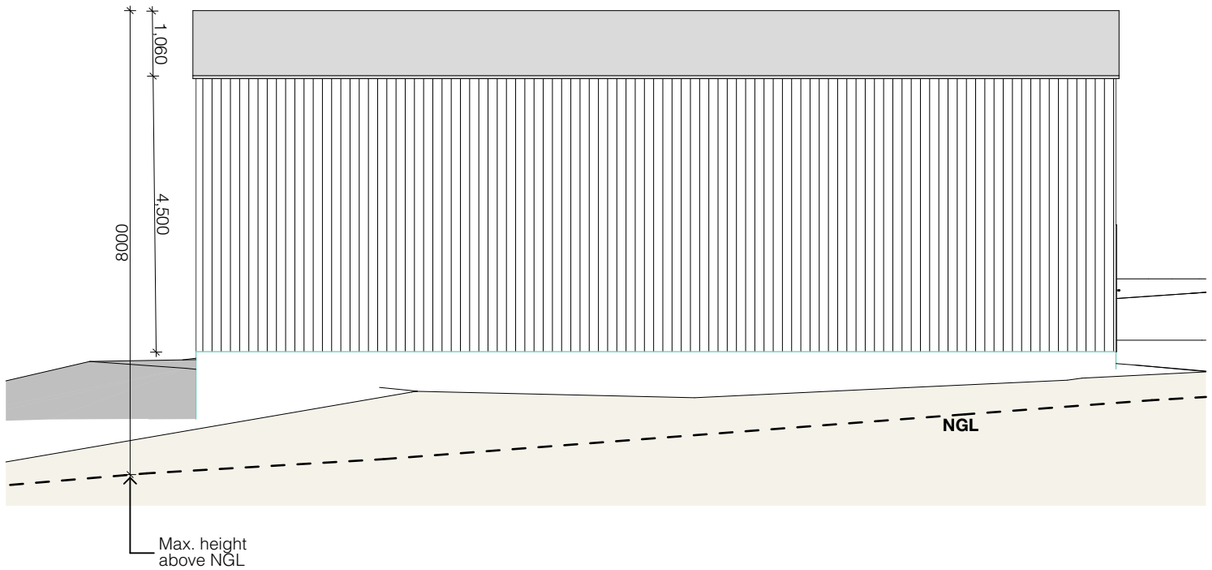
North Elevation
Shed
scale1:100



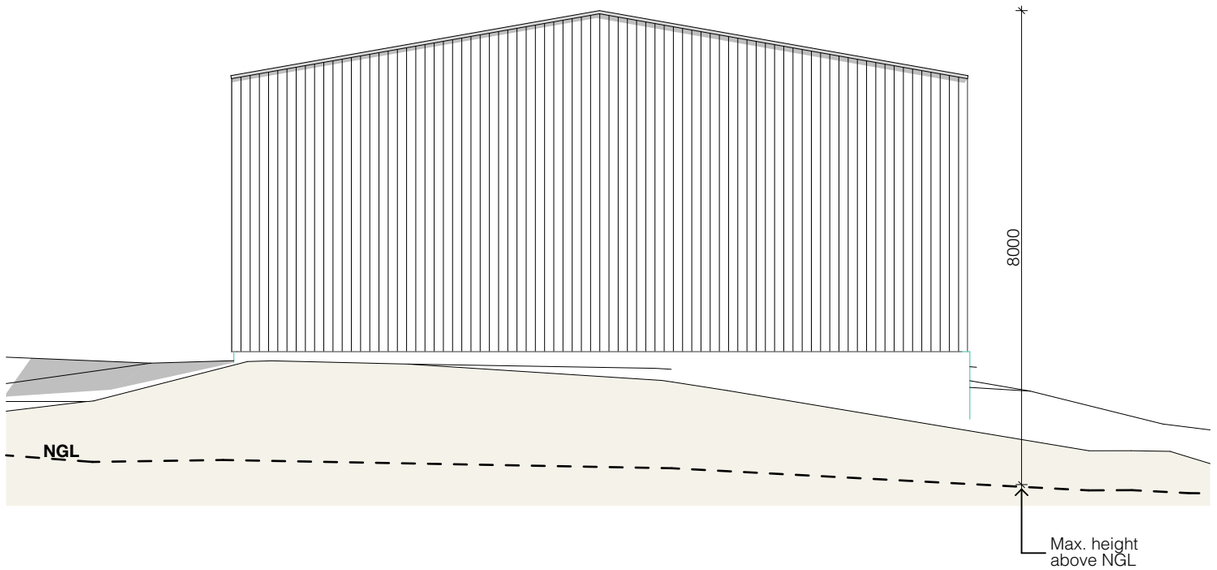
East Elevation
Shed
scale1:100



South Elevation
Shed
scale1:100



West Elevation
Shed
scale1:100



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Revision
DA03
PAGE
08 of 8

NVC
NOISE VIBRATION CONSULTING

Jeffrey Hunter
7 Chilean Court
Sandford, TAS 7020

22 December 2023

Ref: 23113-2 7 Chilean Court NIA

Attention: Jeffrey Hunter

7 Chilean Court — Noise Impact Assessment

A residential dwelling is proposed at 7 Chilean Court, Sandford. The proposed location of the dwelling is within the attenuation area surrounding an existing permitted quarry, and thus Council have requested a noise assessment to demonstrate likely compliance against clause C9.5.2-P1 of the Planning Scheme (the attenuation code). Following the submission of the original version of this document[1], further information was requested by Council. This letter presents an updated assessment, conducted by NVC in December 2023.

1. Background

1.1. Proposed Dwelling & Existing Quarry Layout

The proposed dwelling site is located at 7 Chilean Road, Sandford. It is noted the site is denoted as Lot 8 on the subdivision plan for Chilean Court, however it is addressed and will be henceforth referred to as 7 Chilean Court. Figure 1.1, below, shows the lot boundary (solid white outline), the quarry site (white dashed outline) and proposed dwelling (blue dot).

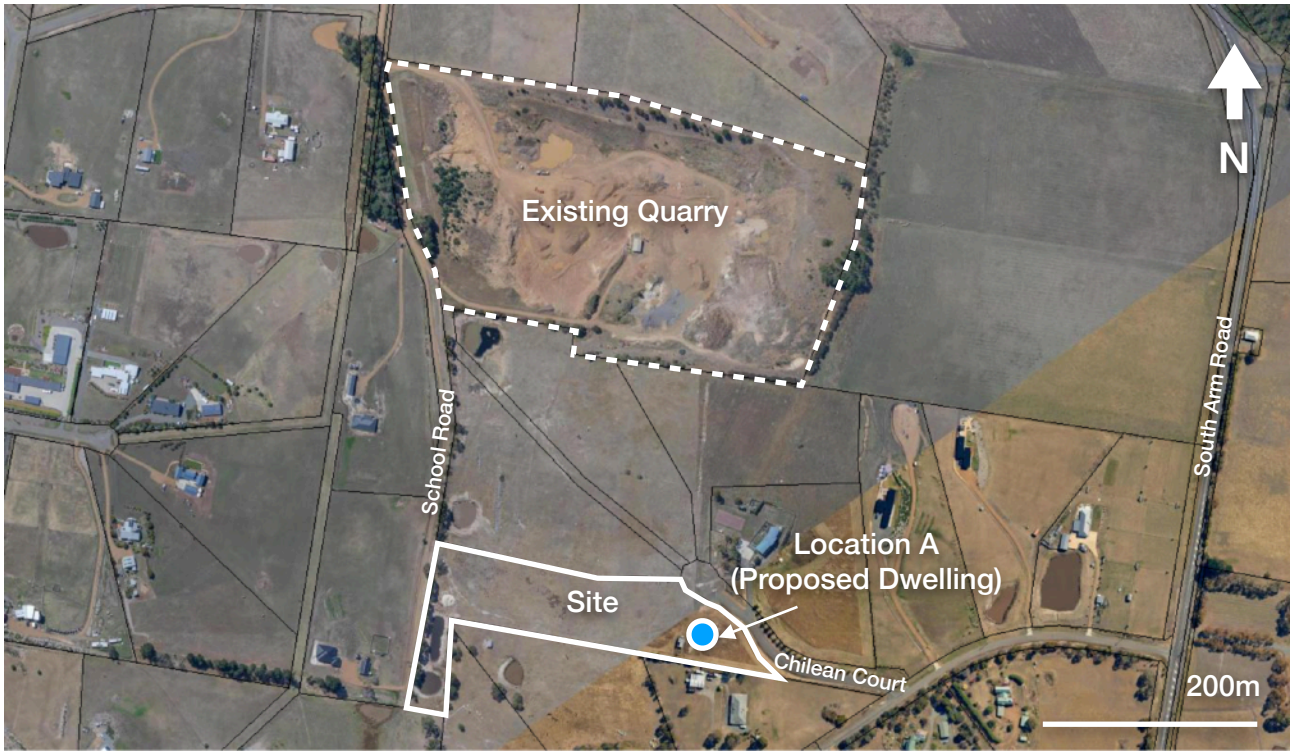

FIGURE 1.1: OVERALL SITE PLAN

[1] 7 Chilean Court - Noise Impact Assessment, 23113 7 Chilean Court NIA, NVC, December 2023.

The proposed dwelling site is currently an open grass paddock, with the block gently sloping down toward the south-west, away from the quarry. The lots surrounding Chilean Court are on a hill with the peak to the north of the proposed dwelling site, with the ridge line approximately shown in Figure 1.2 by the red dotted line, resulting in significant screening from quarry emissions and no line of sight to any part of the quarry.

Figure 1.2, below, shows a detailed view of the area, with location A denoting the location of the proposed dwelling, and location B denoting the noise measurement location positioned on the property boundary. Figure 1.2 also shows the location of key quarrying equipment at the time of writing.

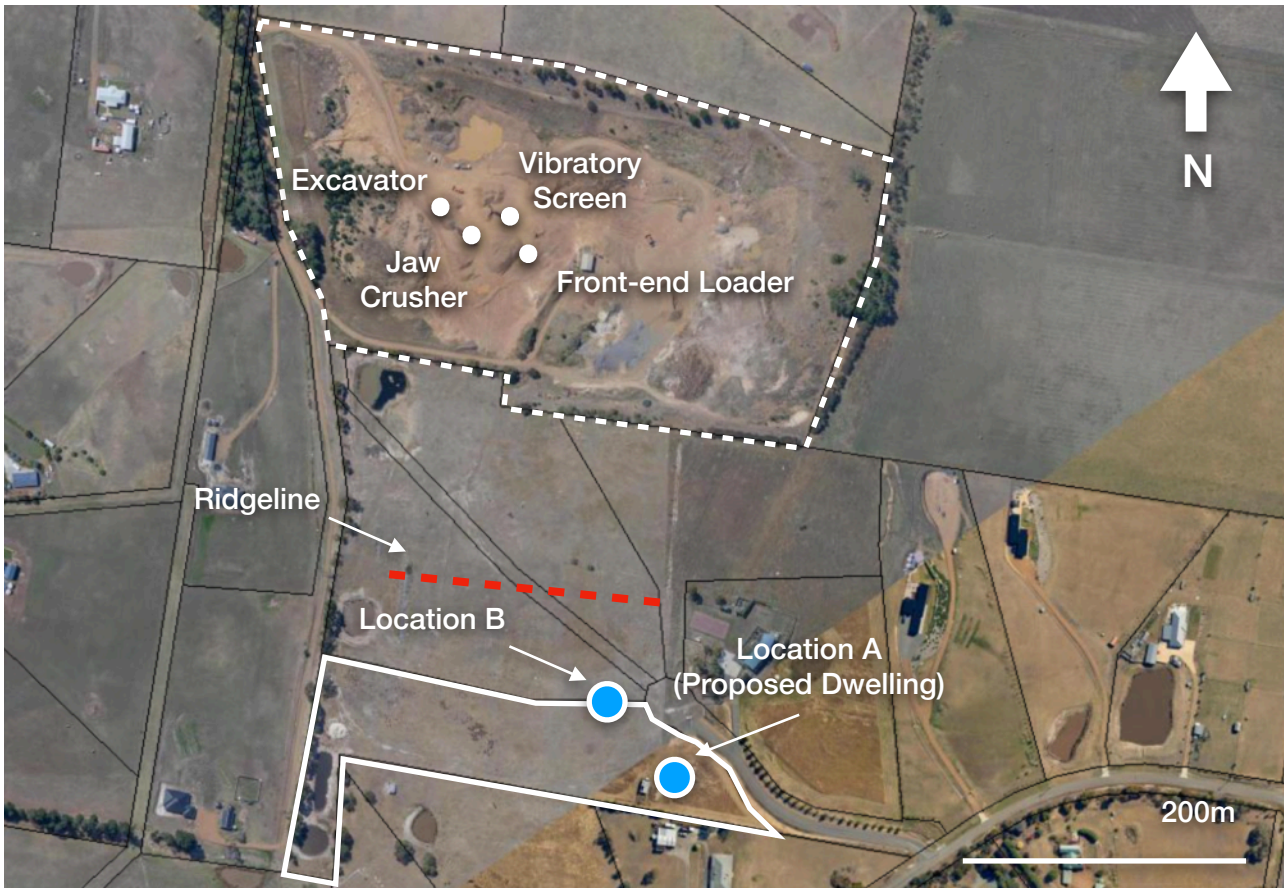

FIGURE 1.2: DETAILED VIEW OF PROPOSED DWELLING SITE AND EXISTING QUARRY SITE

1.2. Existing Quarry Operations

Existing quarry operations comprise extraction of product using Komatsu D155A dozer, screening of unprocessed product using a Rangerscreens Husky vibratory screen, crushing of oversized product using a stationary jaw crusher, and stockpiling of sized product using a Daewoo 300 V wheeled front-end loader. Product is then loaded into both semi-trailers and trailers pulled by light vehicles using an excavator or the front-end loader and transported off-site.

NVC has been informed by the quarry manager that the aforementioned dozer is only used nominally once every month and is in the process of being moved off site. The dozer is not intended to return to site and therefore will not be included within the noise measurements.

The quarry machinery operates from 7:30AM to 4:00PM. As such, quarry noise emissions are within day time hours only (i.e. within the hours of 7:00AM to 7:00PM as per the QCoP - see section 2).

1.3. Proposed Dwelling

Existing Figure 1.3 shows the layout of the proposed site and Figure 1.4 shows the proposed floor plan of the dwelling. The dwelling is to be constructed nominally 325m to the south-east of the nearest quarry operation.

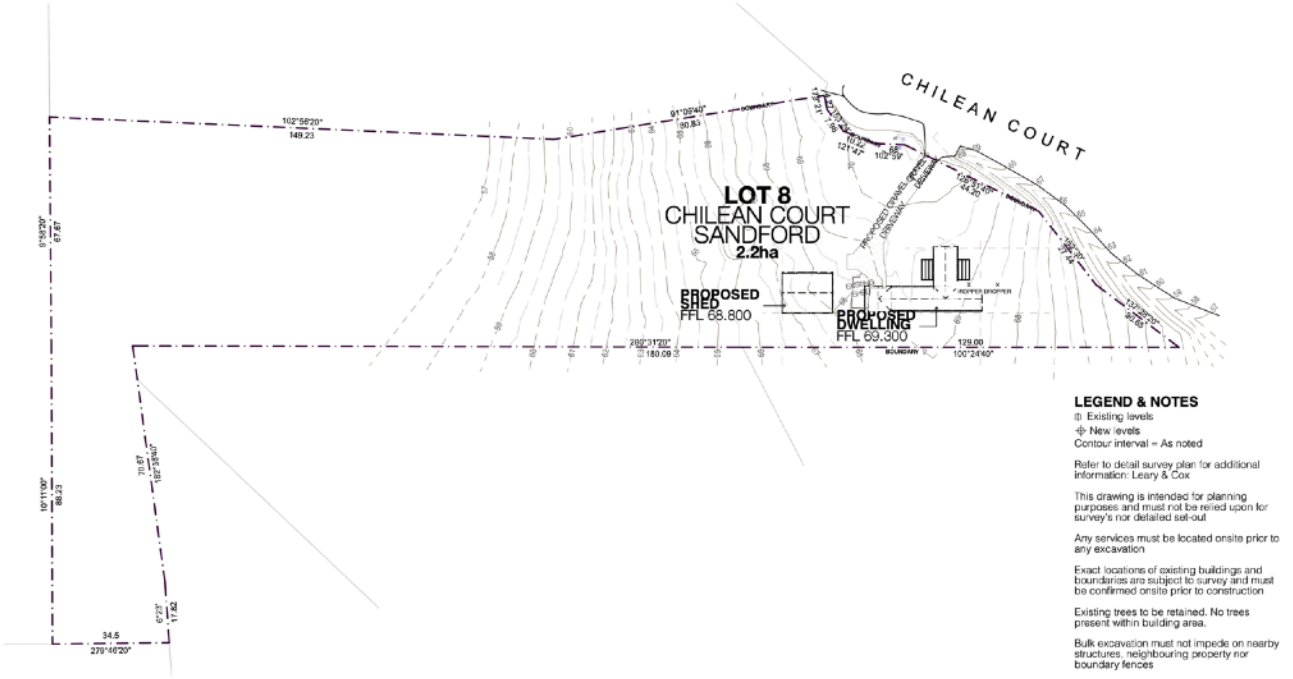

FIGURE 1.3: PROPOSED DWELLING SITE LAYOUT

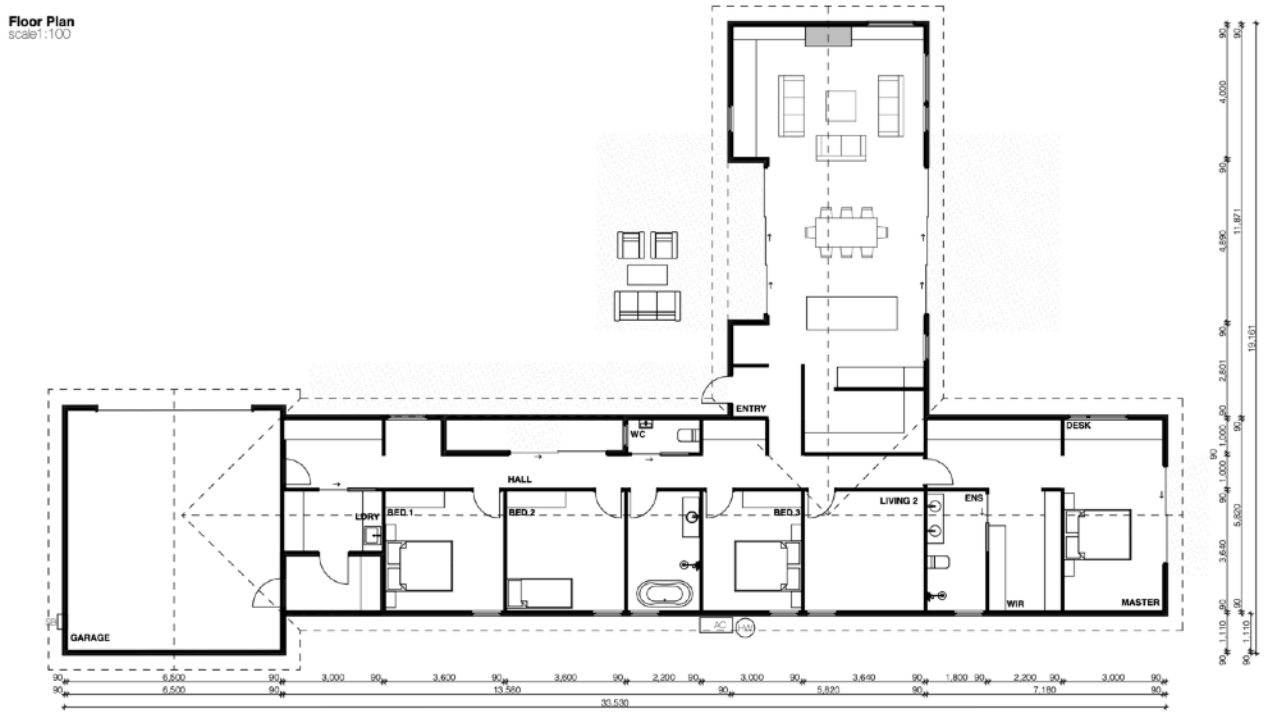

FIGURE 1.4: PROPOSED FLOOR PLAN

2. CRITERIA

Section C9.0 of the Tasmanian Planning Scheme (the attenuation code) contains criteria relevant to sensitive use within proximity to use with potential to cause environmental harm, the objective of which is to ensure:

"That sensitive use located within an attenuation area does not interfere with or constrain the operation of an existing activity listed in Tables C9.1 or C9.2."

To satisfy this objective, the following Acceptable Solutions and Performance Criteria are stated under clause C9.5.2:

Acceptable Solutions	Performance Criteria
A1 No Acceptable Solution.	**P1** Sensitive use within an attenuation area, must not interfere with or constrain an existing activity listed in Tables C9.1 or C9.2, having regard to: (a) the nature of the activity with potential to cause emissions including: (i) operational characteristics of the activity; (ii) scale and intensity of the activity; and (iii) degree of hazard or pollution that may be emitted from the activity; (b) the nature of the sensitive use; (c) the extent of encroachment by the sensitive use into the attenuation area; (d) measures in the design, layout and construction of the development for the sensitive use to eliminate, mitigate or manage effects of emissions of the activity; (e) any advice from the Director, Environment Protection Authority; and (f) any advice from the Director of Mines.

Section CLA-S11 of the Clarence Local Provisions Schedule contains criteria relevant to development of dwellings within proximity of the quarry, the objective of which is:

"(a) That the quarry located at 100 School Road, Sandford does not have an unreasonable impact on nearby residential amenity; and

(b) To protect the quarry from potential land use conflict arising from the development of dwellings in proximity to it."

To satisfy this objective, the following Acceptable Solutions and Performance Criteria are stated under Clause CLA-S11.7.1:

Acceptable Solutions	Performance Criteria
A1 (a) Buildings must not be for a Residential use; or (b) development is a non-habitable building or structure associated with an existing single dwelling; or (c) the quarry at 100 School Road, Sandford has ceased to operate.	**P1** Development of a single dwelling is to take into account potential impacts from the quarry including noise, dust and visual amenity and be designed, sited or screened accordingly.

To determine what constitutes an '*unreasonable impact on residential amenity*', the Noise EPP[2] is referred to. In *Table 1* of the Noise EPP, a list of Acoustic Environmental Indicator levels are given for which the environmental values specified in the Noise EPP *"…will be protected for the majority of the human population where the acoustic environment indicator levels are not exceeded…"* A section of that table is reproduced here in Table 2.1.

TABLE 2.1: ACOUSTIC ENVIRONMENTAL INDICATOR LEVELS - TAS NOISE EPP

Specific Environment	Critical Health Effect	LAeq	Time	LAmax
		dBA	hrs	dBA
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60

Additionally, the EPA maintain a *Quarry Code of Practice* (the QCoP[3]), which defines noise criteria for quarrying and associated activities. Specifically, section 7.2.2.2 states the following pertaining to noise emissions from quarrying activities:

> *"Noise from quarrying and associated activities, including equipment maintenance, when measured at any neighbouring sensitive use must not exceed the greater of;*
>
> - *the A-weighted 10 minute L90, excluding noise from the quarry, plus 5 dBA, or,*
> - *the following levels;*
> - *45 dBA from 0700 to 1900 hours (day time),*
> - *40 dBA from 1900 to 2200 hours (evening),*
> - *35 dBA from 2200 to 0700 hours (night time)."*

Relevant to appropriate internal noise levels for residential dwellings, AS2107[4] defines internal sound levels for houses in suburban areas or near minor roads. The recommended ambient noise levels are specified as:

Living areas (day time)	30 – 40 dBA Leq
Sleeping areas (night time)	30 – 35 dBA Leq

Since quarry operation is constrained to day time hours, an internal noise level of 30 – 40 dBA from quarry noise emissions is then deemed appropriate for all areas under AS2107.

As the quarry only operates during the day time period, the criteria for this assessment are relevant to the day time period only. It is noted that the QCoP has the tightest criteria for the day time period, and thus the adopted criteria for this assessment are as follows:

45 dBA $Leq_{(10\text{-minute})}$ at the building facade and private outdoor space during the day time (7AM to 7PM)

Should the above criteria not be satisfied, the following criterion is applicable:

40 dBA internally during the day time (6AM to 10PM)

[2] Tasmanian Environmental Protection Policy (Noise) 2009 (the Noise EPP)

[3] *'Quarry Code of Practice'*, EPA Tasmania, 3rd Edition, May 2017

[4] *AS/NZS 2107:2016 Acoustics - Recommended design sound levels and reverberation times for building interiors*, Standards Australia, 2016.

3. Noise Measurements

Attended noise measurements were conducted on site on the 20th November 2023 to quantify noise emissions from quarrying operations. Measurements used a Svan Type 1 sound level meter, logging in A-weighted decibels with a *Fast* response time. The data set comprised overall levels, one-third octave spectra and full statistical data at 10 minute intervals, with spectra and overall level data also recorded at 100ms intervals.

Unattended measurements were made over a period of nominally 60 minutes at locations A and B (see Figure 1.2), which were chosen as being representative of the noise emissions from the quarry at the location of the proposed dwelling and the nearest boundary respectively. Location B was selected at this point on the boundary due to it being the most raised location on the property and therefore experiences the least amount of natural topographical screening. This is therefore the worst-case (i.e. most exposed) location on the subject site.

Additionally, attended measurements at both locations were made over a suitably representative period of 5-minutes at each location.

The following observations made on site during attended measurements are deemed relevant:

- Operations within the quarry have no line of sight to the location of the proposed dwelling. The natural topography of the hillside completely screens the quarry from the dwelling location and the property boundary.
- When conducting measurements at the property boundary (location B), significant noise sources were perceived to be from both quarrying operations and traffic on South Arm Road.
    - Distinguishable quarry noise at location B was perceived to primarily consist of low frequency engine noise from the crusher and screen, mid-frequency rattling due to product passing through the screen, a low-level mid-frequency tone from the crusher, and low-frequency broad-band noise due to the loader engine.
    - Vehicle noise from South Arm Road consisting of broadband tyre noise was perceived to be of similar or greater influence to the noise levels at location B.
    - Birdsong and loud high frequency chirping was regular throughout the measurement period at this location.
- When conducting measurements at the dwelling location (location A), all significant noise sources were perceived to be from emissions other than quarrying operations.
    - Distinguishable quarry noise at location A was perceived to primarily consist of low frequency broadband engine noise from the loader when manoeuvring and driving up product stockpiles.
    - When only quarry noise was audible, constant low frequency engine noise was also audible.
    - Vehicle noise on South Arm Road (nominally 430m to the east of site) consisting of broadband tyre noise was frequent and the primary noise source at location A. Heavy vehicles on South Arm Road were infrequent but dominant when passing.
- The background (L90) noise level at both locations was observed to be controlled by the constant engine noise from the quarry machinery. The difference between the measured L10 and L90 is likely a result of traffic noise on South Arm Road and wildlife noise.
- Occasional light gusts of wind were noted during the attended measurements. As such, only sections of data without wind noise are presented.

It should be noted that, as per the Tas. Noise Measurements Procedures Manual, all measurements have been assessed and adjusted for intrusive or dominant characteristics. Due to the low frequency noise from the quarrying equipment, a low frequency assessment results in a required adjustment to the overall level of +5 dB.

Table 3.1 shows the noise levels at both locations for the unattended measurements which includes all sources such as vehicles on South Arm Road and birdsong, as well as noise levels during periods in which only worst-case quarry emissions were noted during attended measurements.

Figure 3.1 shows the noise level trend over a period that demonstrates the primary noise sources experienced at the proposed dwelling location. The start and end of the measurement show broadband tyre noise from vehicles on South Arm Road, the highest spikes in overall level are produced by high frequency bird noise, the middle section at 11:13 shows light wind noise, and the remaining sections demonstrate quarry emissions.

TABLE 3.1: SUMMARY OF MEASURED NOISE LEVELS

		Sound Pressure Level, dBA		
		L10	**L90**	**LEQ**
Location A	**All Sources**	42	29	39 / 44*
	Quarry Emissions Only	33	28	31 / 37*
Location B	**All Sources**	42	29	40 / 47*
	Quarry Emissions Only	36	29	33 / 38*

**Adjusted Leq*

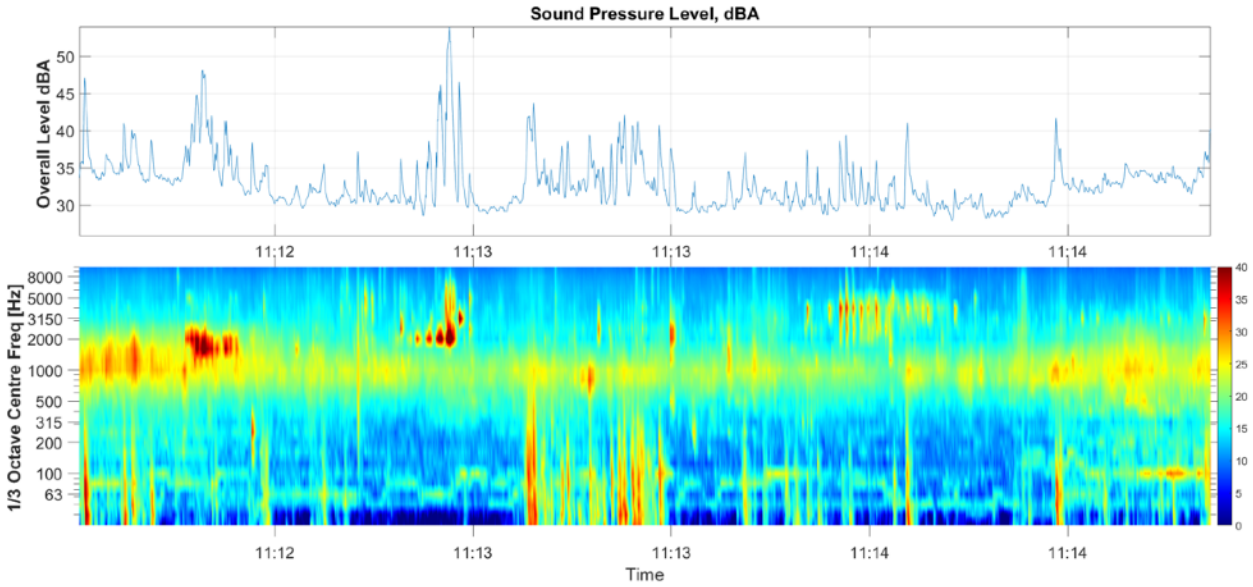

FIGURE 3.1: ATTENDED MEASURED SPECTROGRAM - LOCATION A

4. Noise Modelling

Noise emissions from the neighbouring quarry across the subject site have been modelled using iNoise software, which implements the ISO9613 algorithms for environmental noise. The predictions account for geometric divergence, topographical screening, barrier attenuation, atmospheric absorption, reflections/screening from buildings, and ground absorption. The following assumptions and information are relevant to the predictions:

- The main sources of quarry noise have been modelled using sound power level data from measurements taken on site at the School Road Quarry, with specific sound power levels utilised in the model shown in Table 4.1.
  - Noise sources have been modelled at a height of 0.5m above ground level, representative of primarily engine noise, as this was perceived to be the most significant component of the noise sources.
  - The front-end loader is modelled as a moving source, with it moving between stockpile locations, the crusher, and the screen. The loader is modelled as continuously operational.
- 1m topographical contours (from LIDAR data) have been used for the site and surrounding area.
  - The most recent topographical contours available are from 2013 and therefore are outdated for the purposes of a regularly changing quarry.
  - The topographical contours on site have been adjusted manually to be representative of the current quarry height lines based on perception of current elevations after multiple site visits.
- The ground has been assumed to have a ground factor of 0.5 (50% reflective). This is conservative.
- All building façades and barriers are modelled with a reflection factor of 0.8 (80% reflective).
- As per the Tasmanian Noise Measurement Procedures Manual, noise levels across the site are predicted at 1.2m above ground level.

Figure 4.1, below, shows the locations of modelled quarrying equipment and measurement locations.

Table 4.2 demonstrates that the model is predicting noise levels approximately 2dB higher than measurements demonstrate in reality (a barely perceptible difference), and thus the model is conservative, but sufficiently accurate.

Figure 4.2 shows the results of the noise model.

FIGURE 4.1: MODELLED NOISE SOURCES AND MEASUREMENT LOCATIONS

TABLE 4.1: MODELLED NOISE SOURCES

Source	Sound Power Level (dBA)
Jaw Crusher	99
Vibratory Screen	94
Front-end Loader	100

TABLE 4.2: MODELLED AND MEASURED SOUND PRESSURE LEVELS

Location	Sound Pressure Level, Leq (dBA)	
	Modelled	Measured
A	33	31
B	35	33

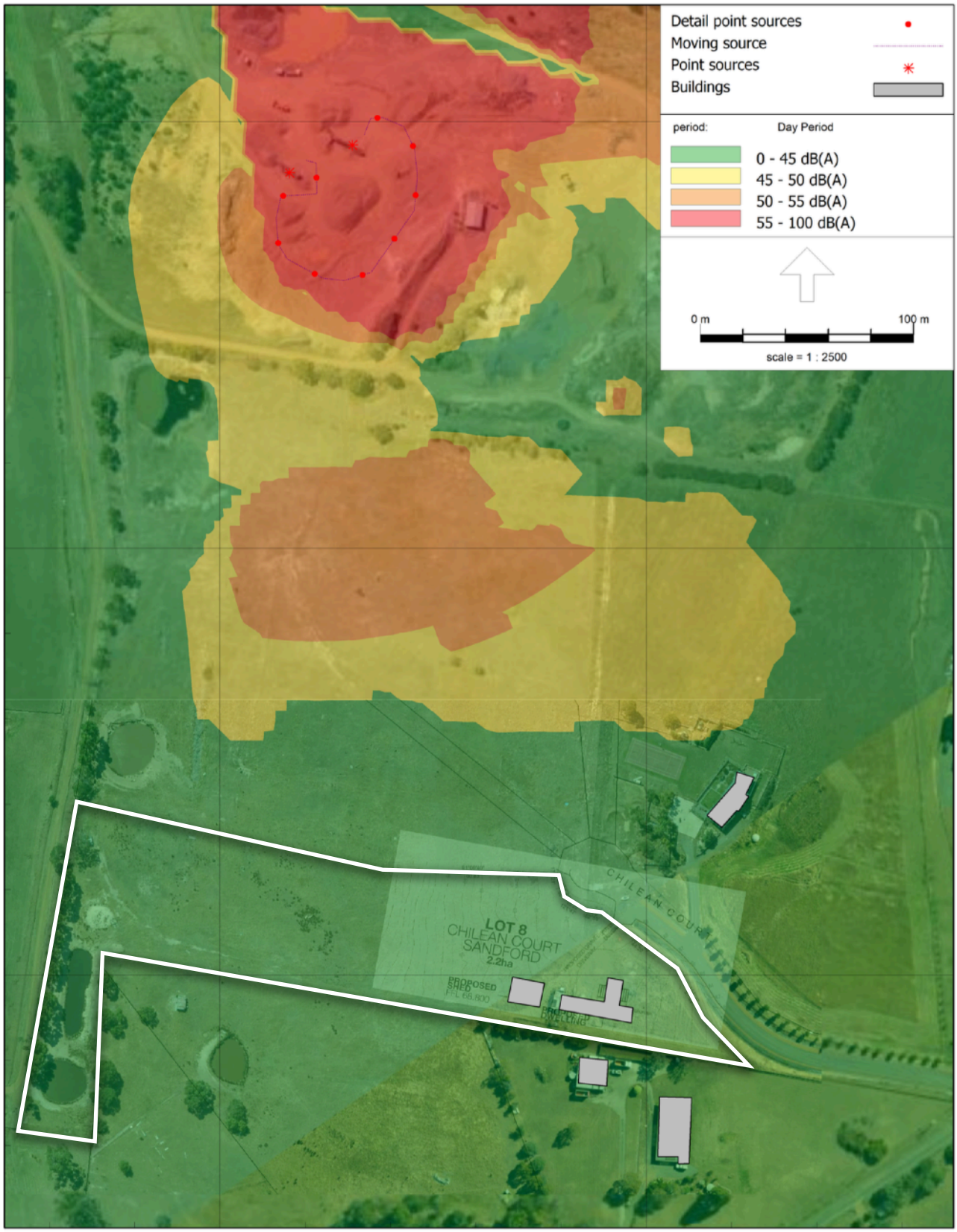

FIGURE 4.2: NOISE MODEL RESULTS

5. ASSESSMENT

No *Acceptable Solution* is given for clause C9.5.2 of the State Planning Provisions. As such, the following points are deemed relevant to the assessment of the proposal under the Performance Criteria in clause C9.5.2-P1. The following is also relevant in addressing the Performance Criteria under clause CLA-S11.7.1 of the Clarence Local Provisions Schedule.

- The noise level (Leq) of quarry operations at the location of the proposed dwelling (location A) was measured at 37 dBA_{Adj} and at the boundary (location B) as 38 dBA_{Adj}, both significantly lower than the day time criterion of 45 dBA under the QCoP.
- The noise modelling in Figure 4.2 shows that noise levels will be below the QCoP criteria across the entire property of 7 Chilean Court.
    - Adjustment for low frequency and tonality is required at some locations of the property, however, these adjustments still result in the overall level being well below the QCoP criteria. Mitigation for such characteristics is therefore not required.
    - Thus, no mitigation measures are required to meet the daytime design noise limit of 45 dBA for any part of the property.
    - It is noted that, due to the screening afforded by the ridge line between the quarry and the subject site, quarrying operations on any part of the quarry lease will still result in noise levels below the QCoP criteria.
- NVC has been informed that quarry operations are to remain the same in the short term, until the quarry ceases operation in the middle of 2024, with the land then to be subdivided and replaced by residential lots. It is expected that there will be minimal crossover time during which the dwelling is occupied and the quarry is operational.
- The existing quarry operates during day time hours on week days only, resulting in no potential loss of residential amenity during night time or weekends.
- Noise sources other than the quarry, principally traffic on South Arm Highway and bird noise, are the dominant ambient noise on the subject site.
- The proposed dwelling is positioned with all bedrooms located in the southern side of the dwelling, reducing the likelihood of any noise interference from the quarry in sensitive areas.
- The natural topography of the site results in no line of sight to the quarry anywhere near the proposed dwelling location or along the site boundary, therefore providing significant outdoor area with noise levels already below the QCoP criteria.
- Any dwelling construction will be sufficient to ensure internal noise levels do not exceed the recommended range provided by AS2107, including with open windows.

Noise emissions from existing quarrying operations therefore will not have an adverse impact on the residential amenity of the proposed dwelling. As such, the proposed dwelling is deemed to comply with the Performance Criteria under clause C9.5.2-P1 of the State Planning Provisions and clause CLA-S11.7.1 of the Clarence Local Provisions Schedule.

Should you have any queries, please do not hesitate to contact our office directly.

Kind regards,

Jack Pitt **Jarra Lewis**

NOISE VIBRATION CONSULTING

Appendix – Acoustic Glossary

Ambient Noise	All noise associated with a measurement, and typically ignoring the particular noise under investigation. Typically measured as Leq and will usually comprise noise from many sources.
Background Noise	Background noise describes the underlying level of noise present in the ambient noise. It may be described as the average of the minimum noise levels measured, and is typically measured by the statistical L90 level.
Decibel [dB]	The scale used for describing sound. It is a logarithmic scale that uses a reference sound pressure of 20 µPa, or reference sound power of 10-12 Watts.
d*BA*	A-weighted decibel. The human ear does not perform linearly and is better at hearing high frequency rather than low frequency sounds, ie. low frequency sound at the same dB level as a high frequency sound will be perceived as quieter. To replicate the human ear response a frequency weighting, denoted as an A-weighting, is applied to the sound. A sound measured in this way is then an A-weighted sound pressure level with units dBA. Practically all noise is measured using the A-weighting.
Leq	Energy averaged sound pressure level over a period of time, usually 10 to 15 minutes. Units of decibels, typically A weighted (LAeq). Because the decibel scale is a logarithmic ratio, the higher noise levels have far more sound energy, and therefore the Leq level tends to indicate an average which is strongly influenced by short-term, high level noise events. Many studies show that human reaction to level-varying sounds tends to relate closer to the LAeq noise level than any other descriptor..
Frequency	Frequency is synonymous with pitch and has the units of Hertz (Hz) or cycles per second. A bass drum produces a low frequency sound, and a small bell a high frequency sound. The frequency range for human hearing is approximately 30Hz to 16kHz.
L10, L90…	Ln is the sound pressure level that is exceeded for n% of the time. Hence the L10 describes the noisier events during the interval, and L90 the quieter events. The L90 is often used to describe the background level. A significant variation between the L10 and L90 would indicate an environment where there is a strong variation in noise levels, and the background is not the dominant source. As the variation between the L10 and L90 decreases, the background becomes a more dominant.
Lmax	The instantaneous maximum level using the time response and frequency weighting set for the meter (typically Fast response, A weighted).
Inversion	A condition typically occurring on clear, still nights which is characterised by the air near the ground being colder than air at higher altitudes. The increasing speed of sound with altitude bends the sound back towards the ground causing a focussing of the sound in a small area. The inversion effect can cause increases in noise levels of 5 to 10 dB with greater increases in exceptional circumstances.