



Flood Control Certificate

Date: 11/08/2021 Job No. 2107116
Client: Sarah & Philip Monteleone Engineer: HS/MW

Site: 6 Lido Avenue, North Narrabeen

NB Consulting Engineers has assessed the architectural plans prepared by *Grant Seghers Design* (dated April 2021) for proposed new pool at the above site address in reference to potential flood issues. A survey prepared by C & A Surveyors NSW P/L (dated 08/04/2021) was also assessed.

Flood levels have been obtained from council. This assessment has been based on the *Narrabeen Lagoon Flood Study 2013*, *BMT WBM* information and has considered that the development is within the predicted flood extent and flood affected area.

Pittwater Council flood management information indicates the following:

• Flood Category	Flood Storage
• Flood life hazard classification	H5
• Provisional Flood Hazard	High Risk Precinct
• 1% AEP Flood Level	3.03 AHD
• 1% AEP Flood Depth (Max)	1.17 m
• Flood Planning Level (FPL)	3.53 AHD
• Probable Maximum Flood (PMF)	4.90 AHD
• Probable Maximum Flood Depth (PMF)	3.03 m
• Probable Maximum Velocity	1.12 m/s

We have considered that while the proposed works are within the 1% AEP flood extent, the proposed inground pool is considered an ancillary development and not envisaged to affect the flood storage or impede flood waters should the following conditions be complied with.



The proposed works are to be limited to the building of a new inground pool. The pool coping is to match existing ground levels to ensure flood storage and overland flows are not impeded or altered as a result of the proposal. Open pool fencing is required to ensure floodwaters pass through with minimal blockage. The proposed works must ensure that existing levels are maintained, and works do not impede potential floodwaters.

All electrical equipment associated with the pool (including pool pumps) is to be waterproofed and/or located at or above the Flood Planning Level. All chemicals associated with the pool are to be stored at or above the Flood Planning Level.

This is in general accordance with *Pittwater Council DCP21* and *section 3.36 of NSW State Environmental Planning Policy 2017*.

The development is not envisaged to have a detrimental effect on neighboring properties.

We trust that this certificate meets with your requirements. Please contact the author if further clarification is required.

NORTHERN BEACHES CONSULTING ENGINEERS P/L

Michael Wachjo

Senior Engineer | Director | B.E.(Civil), MIEAust.

\\NBADS\Company\Synergy\Projects\2107116 6 LIDO AVENUE, NORTH NARRABEEN\ENG Design\2107116 Flood Control Certificate 2021-08-11.doc

APPENDIX A - COUNCIL FLOOD INFORMATION

FLOOD INFORMATION REPORT - BASIC

Property: 6 Lido Avenue NORTH NARRABEEN NSW 2101

Lot DP: Lot 331 DP 16719

Issue Date: 06/08/2021

Flood Study Reference: Narrabeen Lagoon Flood Study 2013, BMT WBM

Flood Information for lot 1:

Flood Risk Precinct – See Map A

Flood Planning Area – See Map A

Maximum Flood Planning Level (FPL) ^{2, 3, 4}: 3.53 m AHD

1% AEP Flood – See Flood Map B

1% AEP Maximum Water Level ^{2, 3}: 3.03 m AHD

1% AEP Maximum Depth from natural ground level³: 1.17 m

1% AEP Maximum Velocity: 1.12 m/s

1% AEP Hydraulic Categorisation: Floodway See Flood Map D

Probable Maximum Flood (PMF) – See Flood Map C

PMF Maximum Water Level ⁴: 4.90 m AHD

PMF Maximum Depth from natural ground level: 3.03 m

PMF Maximum Velocity: 2.00 m/s

Flood Life Hazard Category – See Map E

¹ The flood information does not take into account any local overland flow issues nor private stormwater drainage systems.

² Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/flood planning levels across the site. The maximum Flood Planning Level may be in a different location to the maximum 1% AEP flood level.

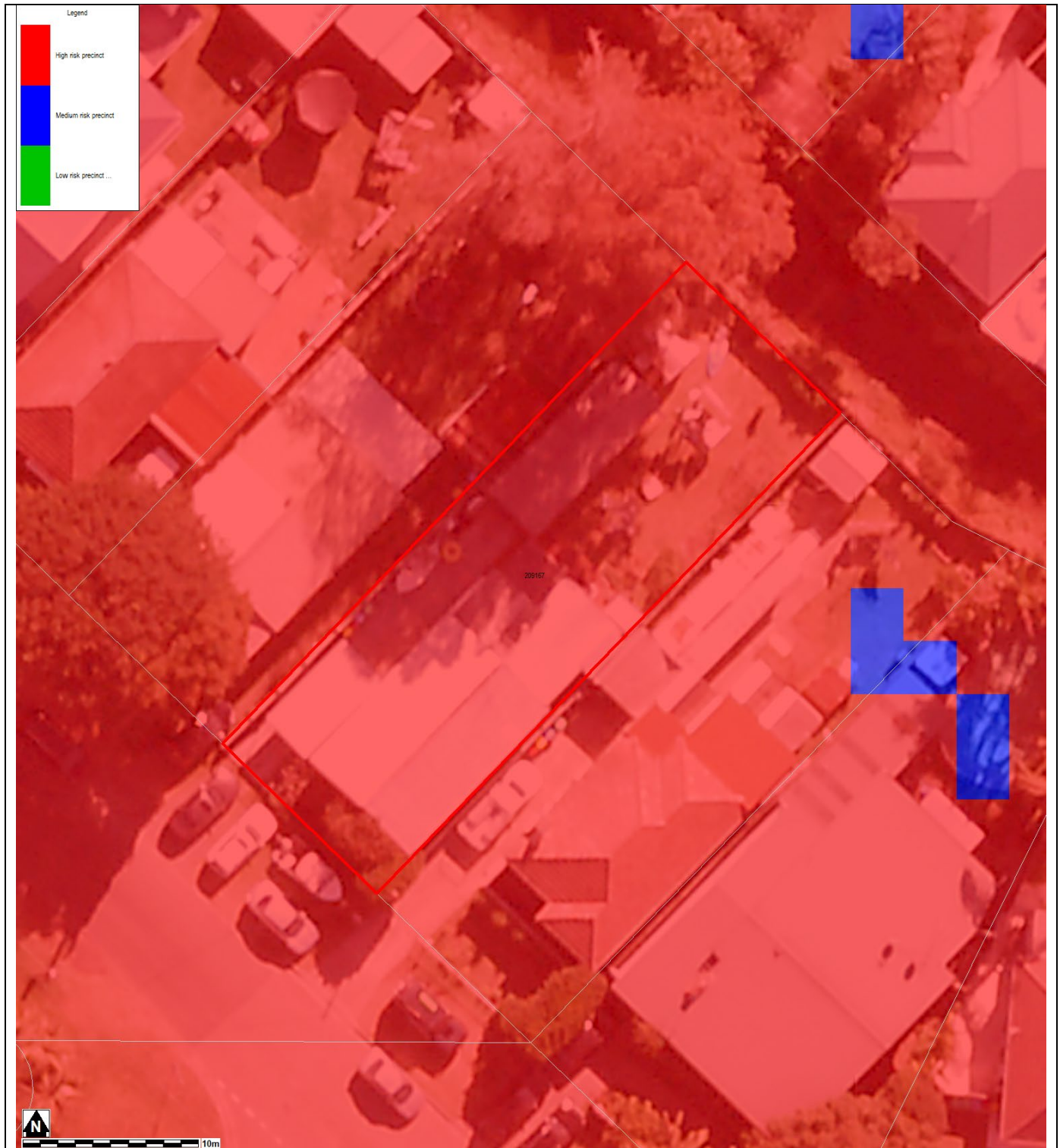
³ Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels.

⁴ Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or FPL.

General Notes:

- All levels are based on Australian Height Datum (AHD) unless otherwise noted.
- This is currently the best available information on flooding; it may be subject to change in the future.
- Council recommends that you obtain a detailed survey of the above property and surrounds to AHD by a registered surveyor to determine any features that may influence the predicted extent or frequency of flooding. It is recommended you compare the flood level to the ground and floor levels to determine the level of risk the property may experience should flooding occur.
- Development approval is dependent on a range of issues, including compliance with all relevant provisions of Northern Beaches Council's Local Environmental Plans and Development Control Plans.
- Please note that the information contained within this letter is general advice only as a detail survey of the property as well as other information is not available. Council recommends that you engage a suitably experienced consultant to provide site specific flooding advice prior to making any decisions relating to the purchase or development of this property.
- The Flood Studies on which Council's flood information is based are available on Council's website.

FLOOD MAP A: FLOOD RISK PRECINCT MAP



Notes:

- **Low Flood Risk precinct** means all flood prone land not identified within the High or Medium flood risk precincts.
- **Medium Flood Risk precinct** means all flood prone land that is (a) within the 1% AEP Flood Planning Area; and (b) is not within the high flood risk precinct.
- **High Flood Risk precinct** means all flood prone land (a) within the 1% AEP Flood Planning Area; and (b) is either subject to a high hydraulic hazard, within the floodway or subject to significant evacuation difficulties (H5 or H6 Life Hazard Classification)
- The **Flood Planning Area** extent is equivalent to the Medium Flood Risk Precinct extent, and includes the High Flood Risk Precinct within it. The mapped extent represents the 1% annual Exceedance Probability (AEP) flood event + freeboard.
- None of these mapped extents include climate change.

FLOOD MAP B: FLOODING - 1% AEP EXTENT



Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Flood events exceeding the 1% AEP can occur on this site.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM, Ingleside, Elanora and Warriewood Overland Flow Flood Study 2019, WMAwater) and aerial photography (Source: NearMap 2014) are indicative only.

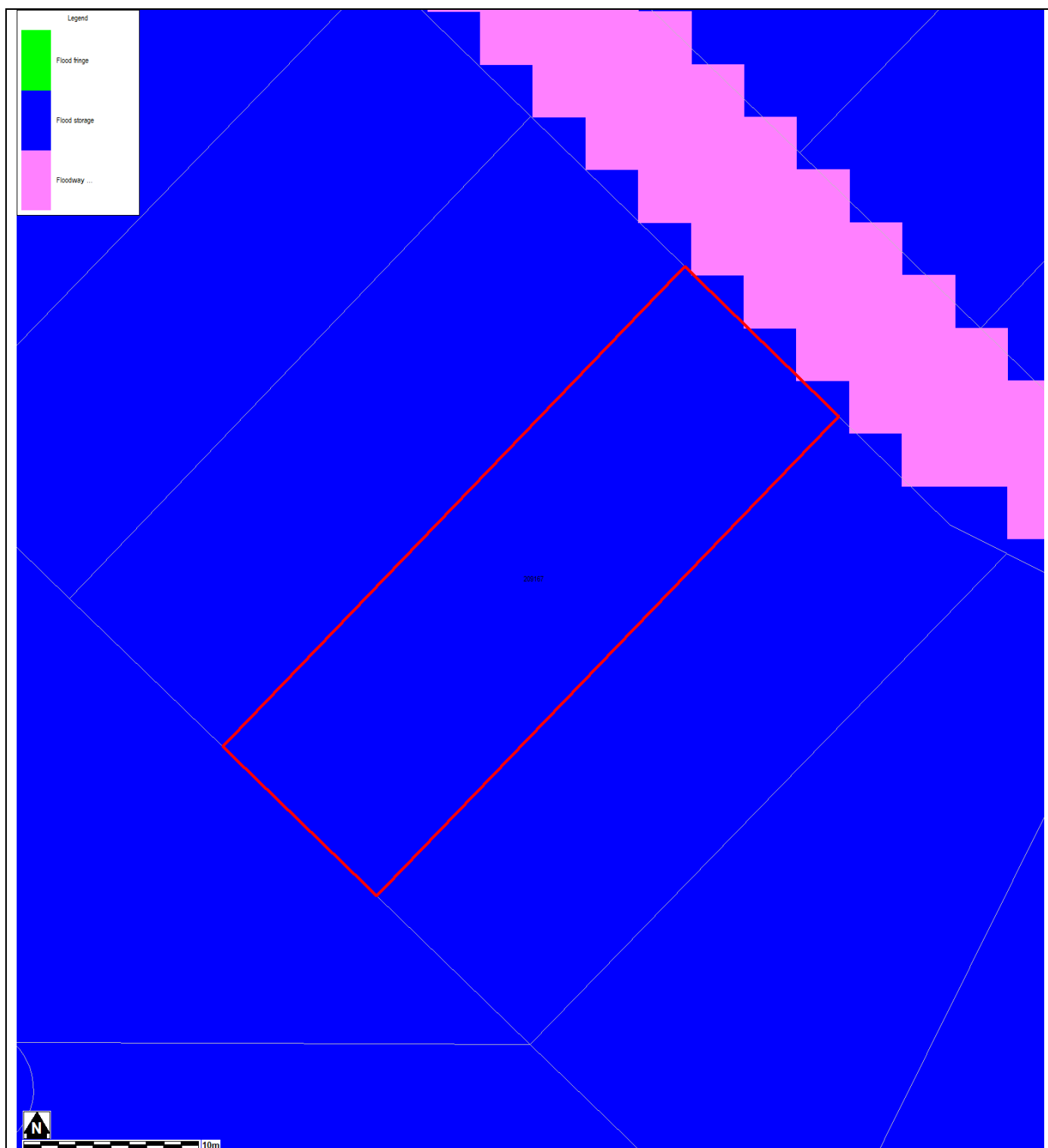
FLOOD MAP C: PROBABLE MAXIMUM FLOOD EXTENT



Notes:

- Extent represents the Probable Maximum Flood (PMF) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM, Ingleside, Elanora and Warriewood Overland Flow Flood Study 2019, WMAwater) and aerial photography (Source: NearMap 2014) are indicative only.

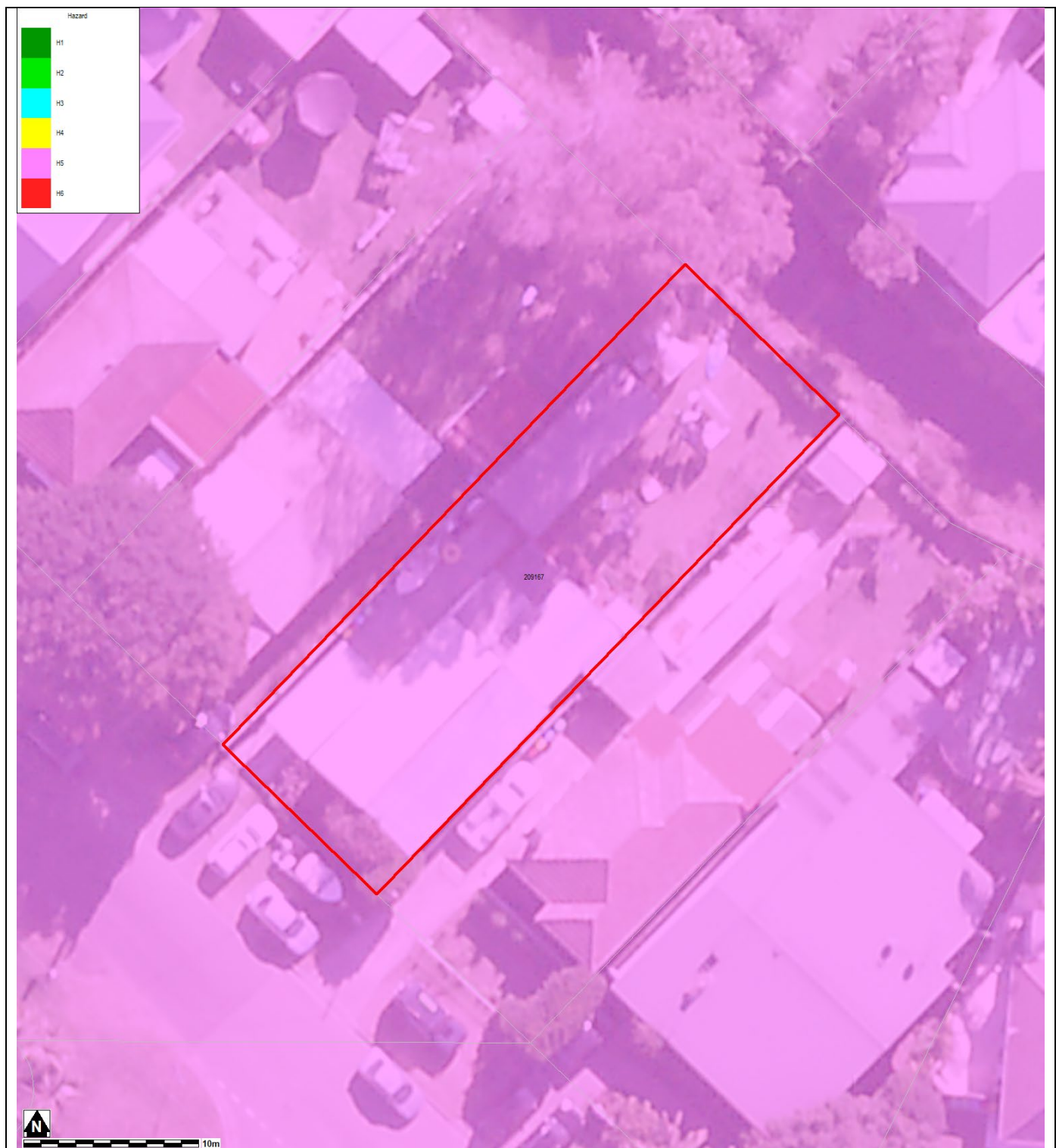
FLOOD MAP D: 1% AEP FLOOD HYDRAULIC CATEGORY EXTENT MAP



Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM, Ingleside, Elanora and Warriewood Overland Flow Flood Study 2019, WMAwater) and aerial photography (Source: NearMap 2014) are indicative only.

FLOOD MAP E: FLOOD LIFE HAZARD CATEGORY



Notes:

- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM, Ingleside, Elanora and Warriewood Overland Flow Flood Study 2019, WMAwater) and aerial photography (Source: NearMap 2014) are indicative only.

Preparation of a Flood Management Report

Introduction

These guidelines are intended to provide advice to applicants on how to determine what rules apply on flood prone land, and how to prepare a Flood Management Report. The purpose of a Flood Management Report is to demonstrate how a proposed development will comply with flood related planning requirements.

Planning Requirements for Flood Prone Land

Development must comply with the requirements for developing flood prone land set out in the relevant Local Environment Plan (LEP) and Development Control Plan (DCP). There are separate LEPs and DCPs for each of the former Local Government Areas (LGAs), although preparation of a LGA-wide LEP and DCP is currently under way.

The clauses specific to flooding in the LEPs and DCPs are as follows:

LEP Clauses	DCP Clauses
Manly LEP (2013) – 6.3 Flood Planning	Manly DCP (2013) – 5.4.3 Flood Prone Land
Warringah LEP (2011) – 6.3 Flood Planning Warringah LEP (2000) – 47 Flood Affected Land *	Warringah DCP (2011) – E11 Flood Prone Land
Pittwater LEP (2014) – 7.3 Flood Planning Pittwater LEP (2014) – 7.4 Flood Risk Management	Pittwater 21 DCP (2014) – B3.11 Flood Prone Land Pittwater 21 DCP (2014) – B3.12 Climate Change

* The Warringah LEP (2000) is relevant only for the “deferred lands” which affects only a very small number of properties, mostly in the Oxford Falls area.

Development on flood prone land must also comply with Council's Water Management for Development Policy, and if it is in the Warriewood Release Area, with the Warriewood Valley Water Management Specification. Guidelines for Flood Emergency Response Planning are available for addressing emergency response requirements in the DCP. These documents can be found on Council's website on the [Flooding page](#).

Note that if the property is affected by estuarine flooding or other coastal issues, these need to be addressed separately under the relevant DCP clauses.

When is a Flood Management Report required?

A Flood Management Report must be submitted with any Development Application on flood prone land (with exceptions noted below), for Council to consider the potential flood impacts and applicable controls. For Residential or Commercial development, it is required for development on land identified within the Medium or High Flood Risk Precinct. For Vulnerable or Critical development, it is required if it is within any Flood Risk Precinct.

There are some circumstances where a formal Flood Management Report undertaken by a professional engineer may not be required. However the relevant parts of the DCP and LEP would still need to be addressed, so as to demonstrate compliance. Examples where this may apply include:

- If all proposed works are located outside the relevant Flood Risk Precinct extent
- First floor addition only, where the floor level is above the Probable Maximum Flood level
- Internal works only, where habitable floor areas below the FPL are not being increased

Note that development on flood prone land will still be assessed for compliance with the relevant DCP and LEP, and may still be subject to flood related development controls.

What is the purpose of a Flood Management Report?

The purpose of a Flood Management Report is to demonstrate how a proposed development will comply with flood planning requirements, particularly the development controls outlined in the relevant LEP and DCP clauses. The report must detail the design, measures and controls needed to achieve compliance, following the steps outlined below.

A Flood Management Report should reflect the size, type and location of the development, proportionate to the scope of the works proposed, and considering its relationship to surrounding development. The report should also assess the flood risk to life and property.

Preparation of a Flood Management Report

The technical requirements for a Flood Management Report include (where relevant):

1. Description of development

- Outline of the proposed development, with plans if necessary for clarity
- Use of the building, hours of operation, proposed traffic usage or movement
- Type of use, eg vulnerable, critical, residential, business, industrial, subdivision, etc

2. Flood analysis

- 1% AEP flood level
- Flood Planning Level (FPL)
- Probable Maximum Flood (PMF) level
- Flood Risk Precinct, ie High, Medium or Low
- Flood Life Hazard Category
- Mapping of relevant extents
- Flood characteristics for the site, eg depth, velocity, hazard and hydraulic category, and the relevance to the proposed development

If the property is affected by an Estuarine Planning Level (EPL) which is higher than the FPL, then the EPL should be used as the FPL. If the FPL is higher than the PMF level, then the FPL should still be used as the FPL, as it includes freeboard which the PMF does not.

3. Assessment of impacts

- Summary of compliance for each category of the DCP, as per the table below.

	Compliance		
	N/A	Yes	No
A) Flood effects caused by Development			
B) Building Components & Structural Soundness			
C) Floor Levels			
D) Car parking			
E) Emergency Response			
F) Fencing			
G) Storage of Goods			
H) Pools			

- Demonstration of how the development complies with any relevant flood planning requirements from the DCP, LEP, Water Management for Development Policy, and if it is in the Warriewood Valley Urban Land Release Area, with the Warriewood Valley Water Management Specification (2001)

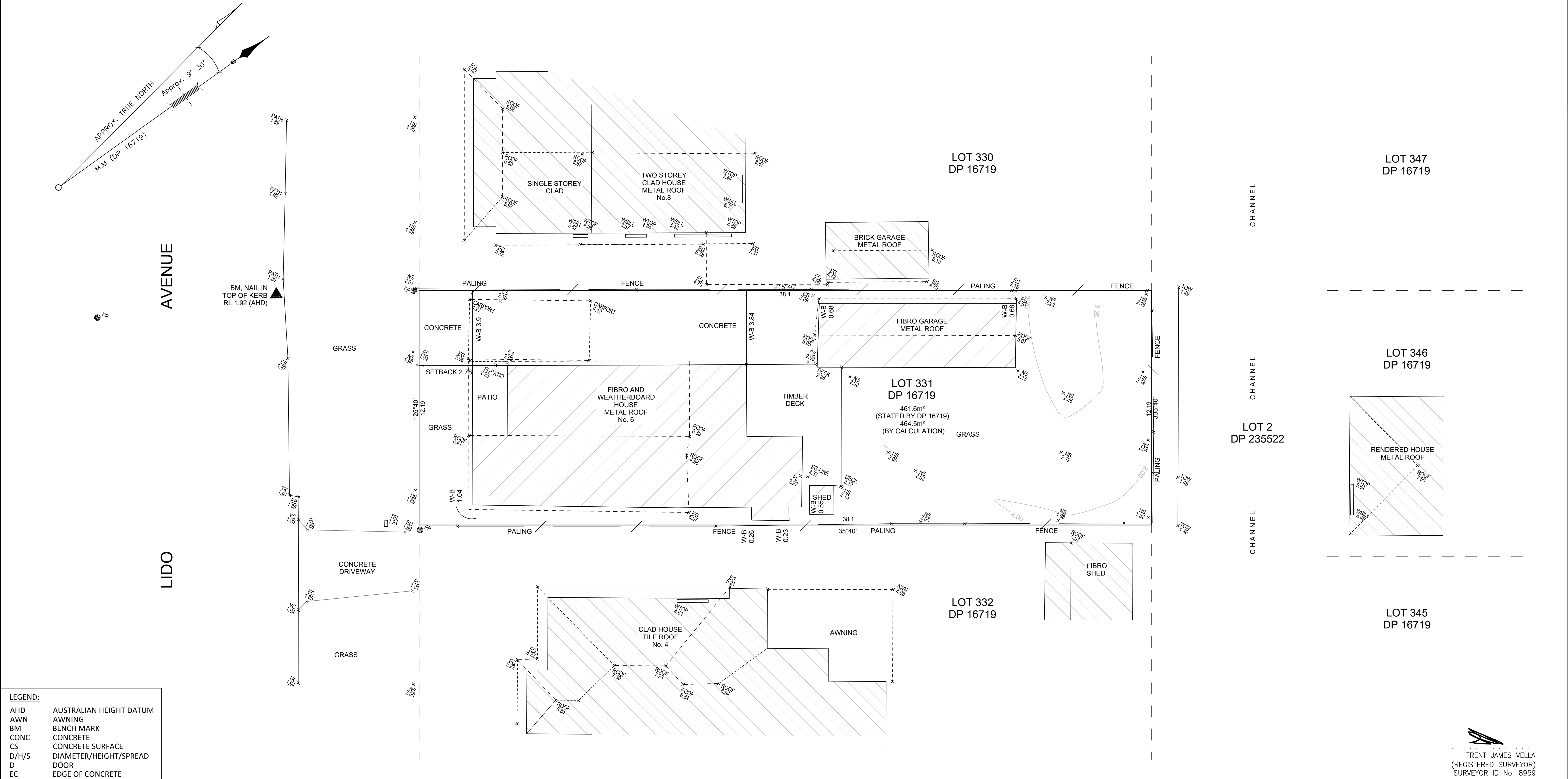
- For any non-compliance, a justification for why the development should still be considered.
- Calculations of available flood storage if compensatory flood storage is proposed
- Plan of the proposed development site showing the predicted 1% AEP and PMF flood extents, as well as any high hazard or floodway affectation
- Development recommendations and construction methodologies
- Qualifications of author - Council requires that the Flood Management Report be prepared by a suitably qualified Engineer with experience in flood design / management who has, or is eligible for, membership to the Institution of Engineers Australia
- Any flood advice provided by Council
- Any other details which may be relevant

Further information and guidelines for development are available on Council's website at:

<https://www.northernbeaches.nsw.gov.au/planning-and-development/building-and-renovations/development-applications/guidelines-development-flood-prone-land>

Council's Flood Team may be contacted on 1300 434 434 or at floodplain@northernbeaches.nsw.gov.au .

APPENDIX B - SURVEY



LEGEND:	
AHD	AUSTRALIAN HEIGHT DATUM
AWN	AWNING
BM	BENCH MARK
CONC	CONCRETE
CS	CONCRETE SURFACE
D/H/S	DIAMETER/HEIGHT/SPREAD
D	DOOR
EC	EDGE OF CONCRETE
EG	EAVE & GUTTER
FL	FLOOR LEVEL
GDN	GARDEN
HYD	HYDRANT
IL	INVERT LEVEL
LH	LAMP HOLE
NS	NATURAL SURFACE
PAV	PAVERS
PP	POWER POLE
RL	REDUCED LEVEL
S	STEPS
SL	SURFACE LEVEL
SILL	WINDOW SILL
SV	STOP VALE
TEL	TELSTRA PIT
TK	TOP OF KERB
TW	TOP OF WALL
VC	VEHICLE CROSSING
W	WINDOW
WM	WATER METER
WTOP	TOP OF WINDOW
W-B	WALL TO BOUNDARY



C & A SURVEYORS NSW P/L
Ph:9630 9299 Fax:9638 1199
30 GROSE STREET,
PARRAMATTA NSW 2150
info@candasurveyors.com.au
www.candasurveyors.com.au

DETAIL & BOUNDARY IDENTIFICATION SURVEY
OF LOT 331 IN DP 16719, LOCATED AT
No. 6, LIDO AVENUE, NORTH NARRABEEN.

INSTRUCTING PARTY: SHAUN WRIGHT

Revision No	Description	Date
01	DRAWN FOR ISSUE	09/04/2021

DATUM: AHD

SURVEY DATE: 08/04/2021

DATE DRAWN: 09/04/2021

REFERENCE: 17163-21 DET/ID

SURVEYED BY: AA

DRAWN BY: DR

SCALE: 1:100@A1

SHEET: 1 OF 1

- THE SUBJECT TITLE NOTES :
- 1) RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
 - 2) D226243 COVENANT
 - 3) AD988290 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA

- NOTES:
- A) SERVICES SHOWN HAVE BEEN DERIVED FROM VISUAL EVIDENCE APPARENT AT THE TIME OF SURVEY. SERVICES MAY EXIST WHICH ARE NOT SHOWN. THE RELEVANT SERVICE AUTHORITY SHOULD BE CONTACTED TO VERIFY THE EXISTENCE AND POSITION OF SERVICES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.
- B) DIAMETER, HEIGHT & SPREAD OF TREES ARE APPROXIMATE ONLY.
- C) LEVELS SHOWN ARE OF AUSTRALIAN HEIGHT DATUM.
ORIGIN OF LEVELS : PM 5315, RL 1.631 (AHD), CLASS LC.
- D) USE STATED DIMENSIONS. DO NOT SCALE.
- E) THESE NOTES FORM PART OF THIS PLAN AND CANNOT BE REMOVED.
- F) NO COVENANTS AND/OR RESTRICTIONS HAVE BEEN INVESTIGATED BY C & A SURVEYORS PTY LTD.

TRENT JAMES VELLA
(REGISTERED SURVEYOR)
SURVEYOR ID No. 8959

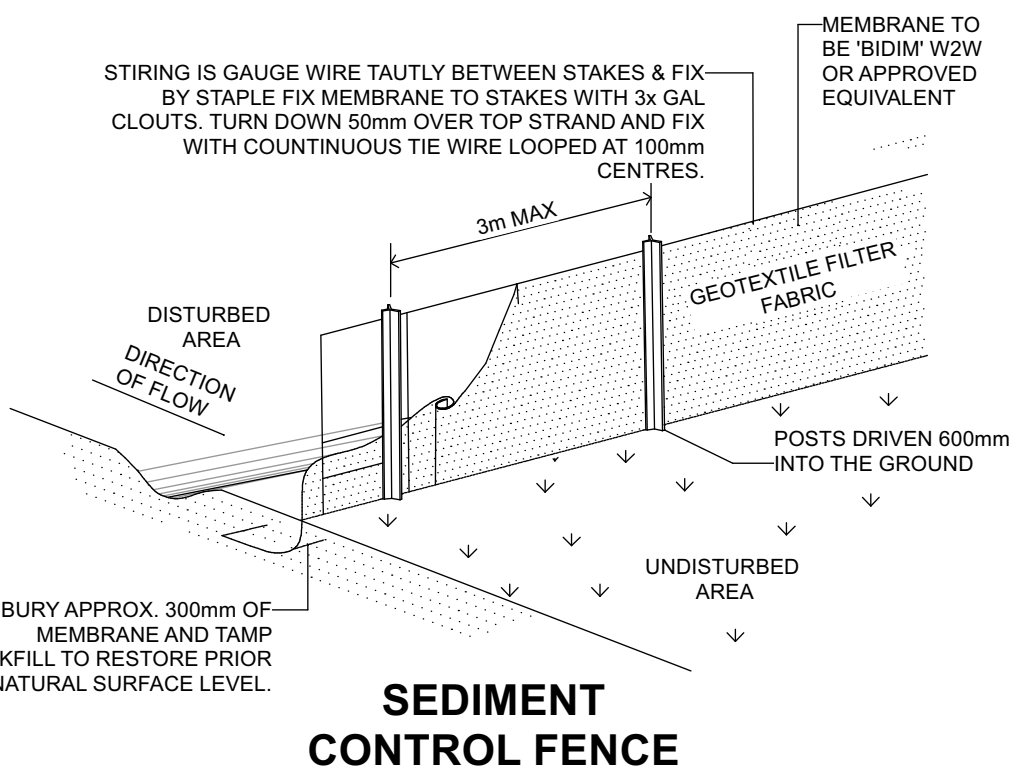
APPENDIX C -
ARCHITECTURAL PLANS



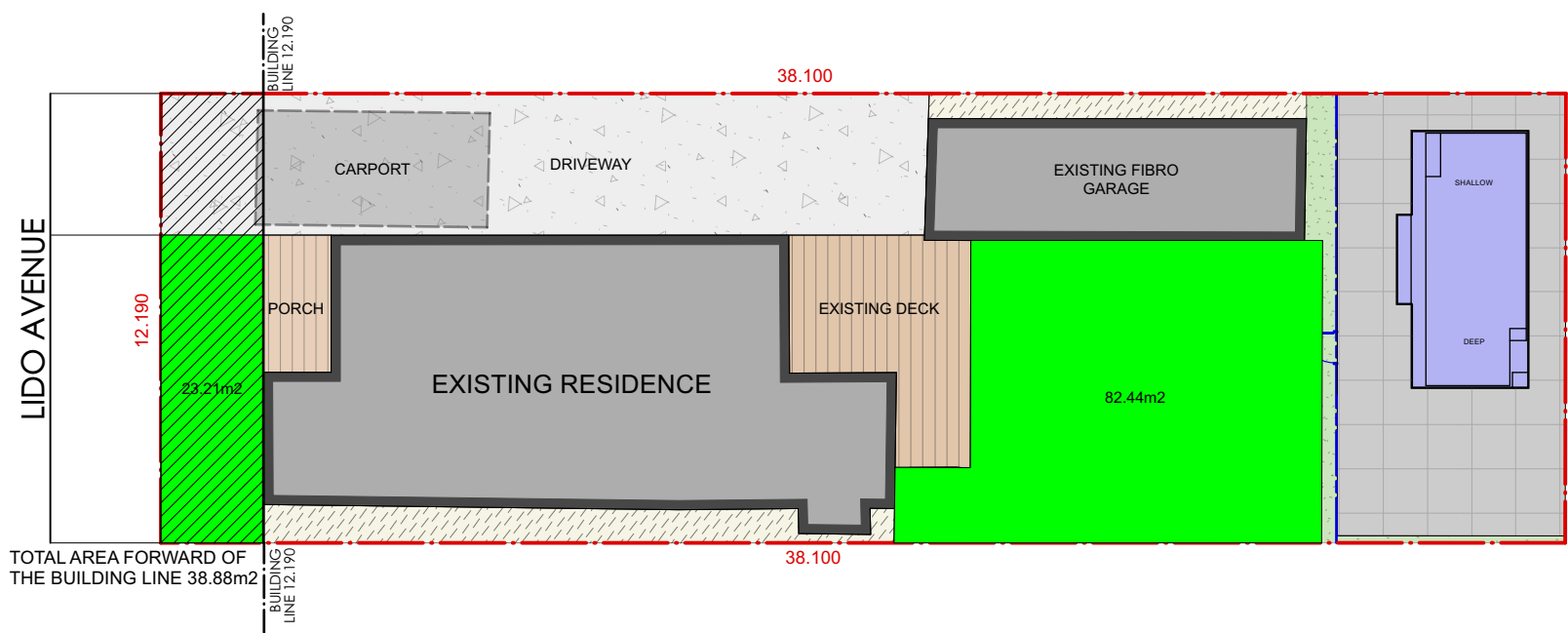
Proposed Swimming Pool - SYMPHONY 7

POOL COPING LEVELS
(RELATIVE TO EXISTING GROUND LEVELS)

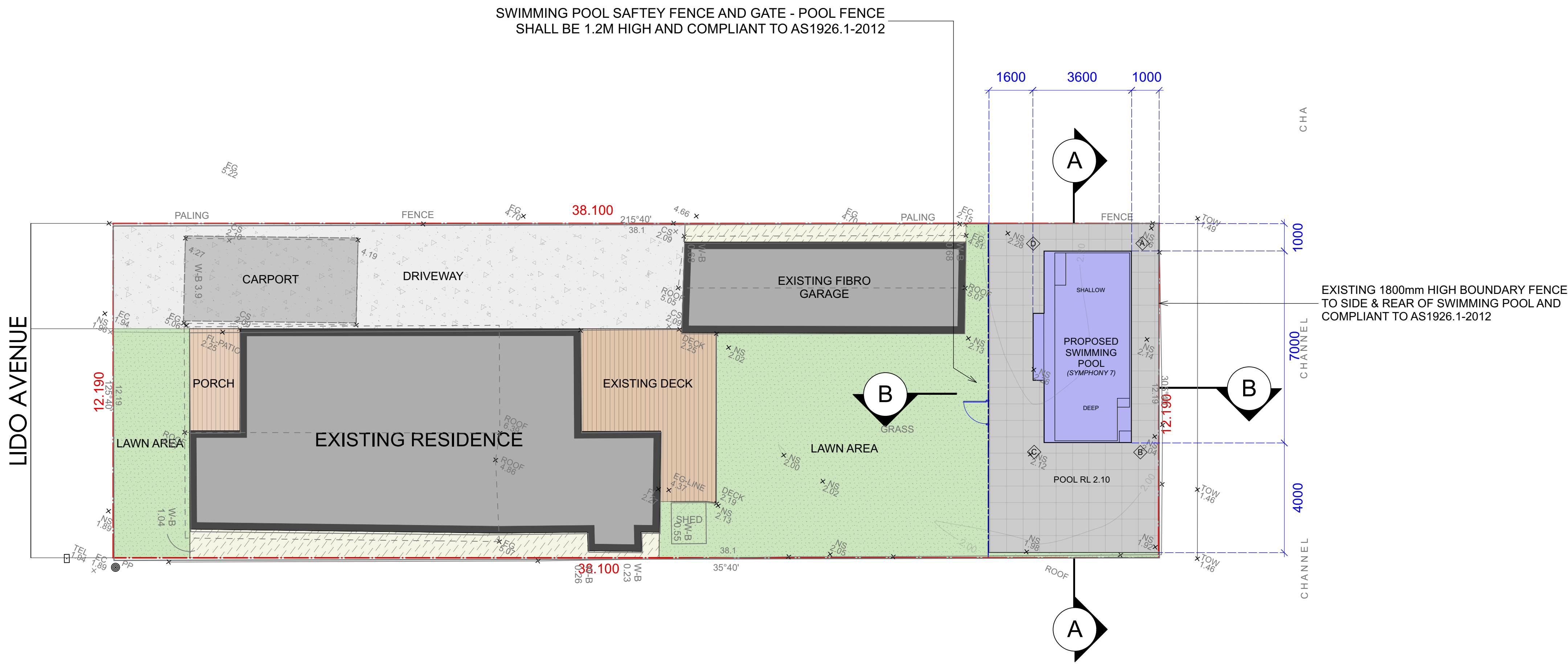
- A +150mm
- B +150mm
- C +150mm
- D +150mm



SEDIMENT CONTROL DETAILS
scale 1:100



SITE CALCULATIONS
scale 1:200



SITE PLAN
scale 1:100

CONTOUR
LANDSCAPE ARCHITECTURE

PO Box 698 MONA VALE NSW 1660
Tel: 0434 500 705 - AIDL

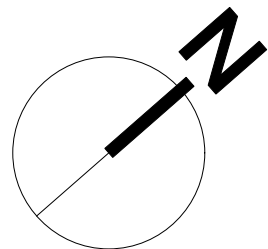
PROJECT:
Vince & Sarah Monteleone
6 Lido Avenue,
North Narrabeen, NSW 2101

NOTES
comply with building code of australia and all relevant australian standards
all works shall be in accordance with development application and construction certificate conditions of consent
all levels to ahd
refer to survey information relating to existing site data
verify all dimensions prior to works
do not scale from drawings
use figured dimensions in preference to scaling
refer all discrepancies to landscape architect for determination
this drawing is copyright and must not be retained, copied, used or reproduced in any way without prior written permission of
contour landscape architects.

DATE	REV.	ISSUE
16/04/2021	A	DRAFT

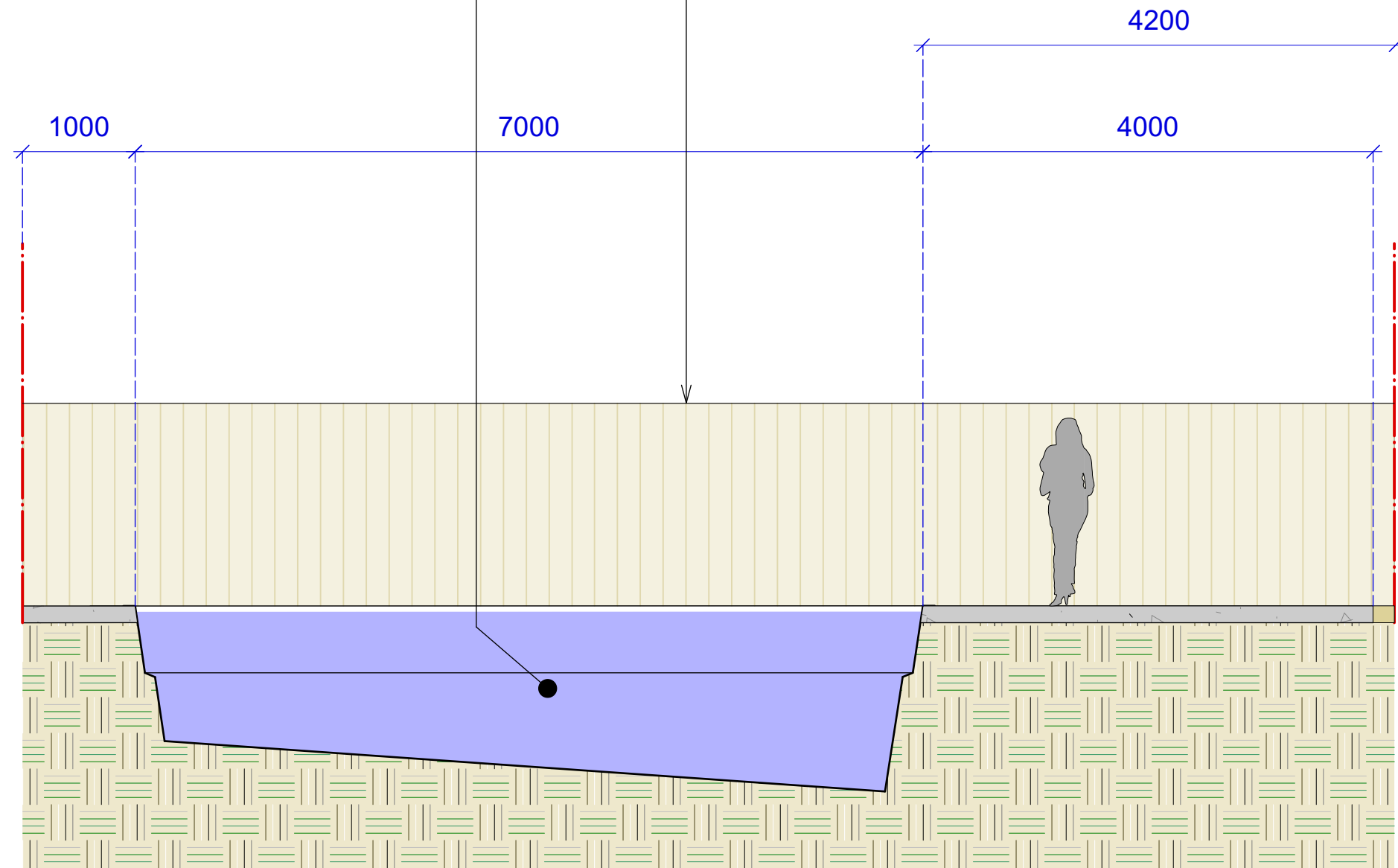
DATE: 16/04/2021
SCALE: 1:100 @ A1
1:200 @ A3
DRAWN: CC

DRAWING
POOL PLAN
DRAWING NO : C1
REV: A



PROPOSED SWIMMING POOL - SYMPHONY 7

EXISTING 1800mm HIGH BOUNDARY FENCE TO SIDE
AND REAR OF SWIMMING POOL AND COMPLIANT TO
AS1926.1-2012



SECTION AA

scale 1:50

CONTOUR
LANDSCAPE ARCHITECTURE

PO Box 698 MONA VALE NSW 1660
Tel: 0434 500 705 - AIDLM

PROJECT:

Vince & Sarah Monteleone
6 Lido Avenue,
North Narrabeen, NSW 2101

NOTES

comply with building code of australia and all relevant australian standards
all works shall be in accordance with development application and construction certificate conditions of consent
all levels to and
refer to survey information relating to existing site data
verify all dimensions prior to works
do not scale from drawings
use figured dimensions in preference to scaling
refer all discrepancies to landscape architect for determination
this drawing is copyright and must not be retained, copied, used or reproduced in any way without prior written permission of
contour landscape architects.

DATE REV. ISSUE

16/04/21 A

DATE: 16/04/2021

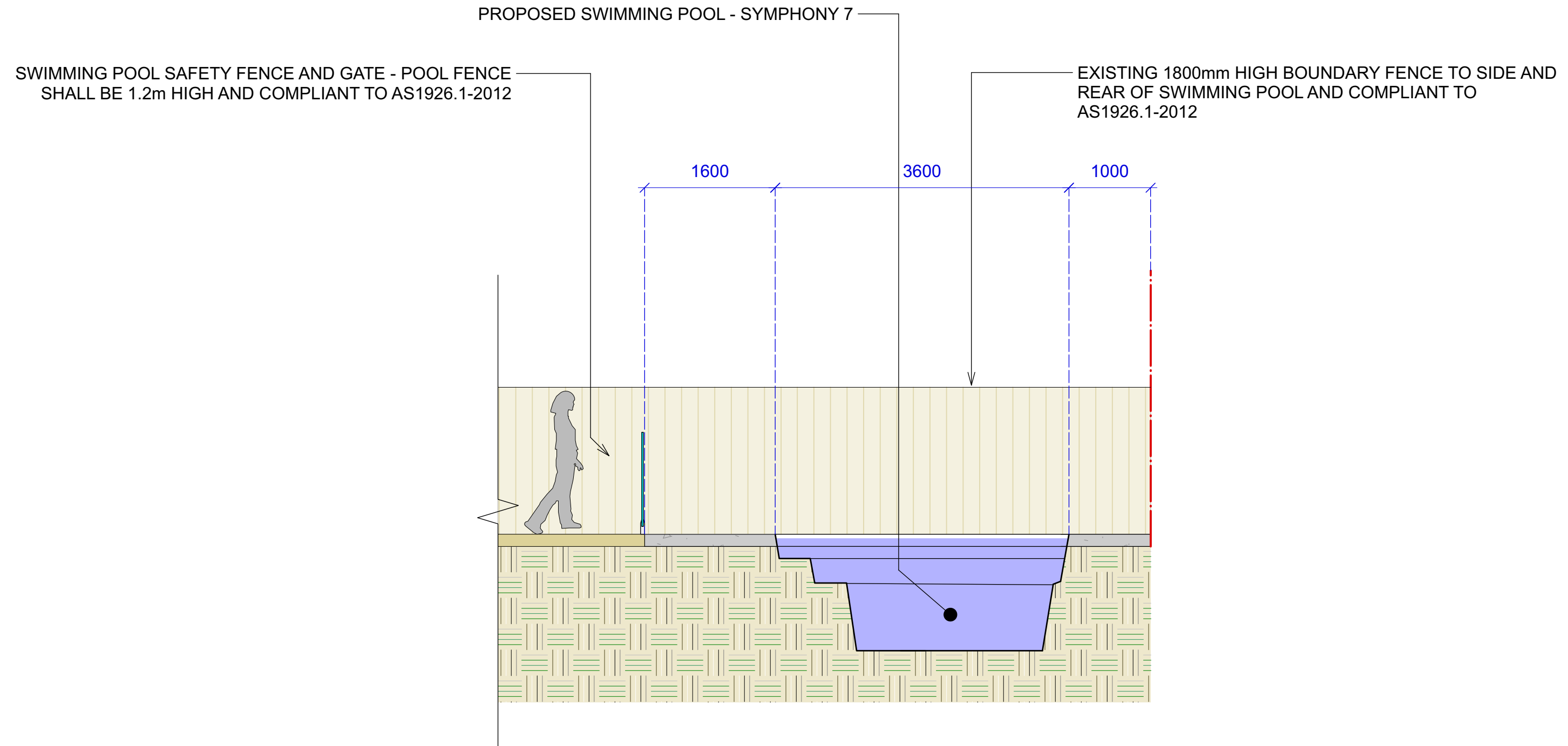
SCALE: 1:50@A3

DRAWN: CC

DRAWING
SECTION SHEET A

DRAWING NO : C2

REV: A



SECTION BB
scale 1:50

CONTOUR
LANDSCAPE ARCHITECTURE

PO Box 698 MONA VALE NSW 1660
Tel: 0434 500 705 - AIDLM

PROJECT:

Vince & Sarah Monteleone
6 Lido Avenue,
North Narrabeen, NSW 2101

NOTES

comply with building code of australia and all relevant australian standards
all works shall be in accordance with development application and construction certificate conditions of consent
all levels to and
refer to survey information relating to existing site data
verify all dimensions prior to works
do not scale from drawings
use figured dimensions in preference to scaling
refer all discrepancies to landscape architect for determination
this drawing is copyright and must not be retained, copied, used or reproduced in any way without prior written permission of
contour landscape architects.

DATE REV. ISSUE

16/04/21 A

DATE: 16/04/2021

SCALE: 1:50@A3

DRAWN: CC

DRAWING
SECTION SHEET B

DRAWING NO : C3

REV: A