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henry&hymas

23rd August 2023

Our Ref: A230148-C1/NW

Stephen Jones
C/- Kristina Mitkovski
Two Form Architecture + Interior Design
Level 2, 34 Charles Street
Parramatta NSW 2150

Dear Kristina,

RE: PROPOSED RESIENTAL ALTERATIONS AND ADDITIONS
3 WARATAH STREET, PALM BEACH
FLOOD PLANNING LETTER

The following letter has been prepared to discuss the alterations and addition works to the existing residential development and the interaction of the proposed alterations and addition with the local floodplain. This letter has also been prepared to discuss how the existing site and the proposed works relate to the relevant provisions of Council's Planning Requirements for Development on Flood Prone Land. The site is located at 3 Waratah Street Palm Beach, the site is legally identified as Lot 15 DP 651513. The site is identified as Flood Prone Land and is identified within a floodplain as detailed in the reference Flood Study, the "Avalon to Palm Beach Floodplain Risk Management Study and Plan" dated 2017, prepared by Manly Hydraulics Laboratory for Northen Beaches Council. The location of the site is shown below in Figure 1.

Figure 1: Site location (nearmaps)

The proposed alterations and addition works comprise of the alteration of the existing single-story garage to a two-story building in the same location. The rear of the garage is proposed to be extended into the area previously occupied by the existing covered patio. The altered building will remain a garage on the ground flood level with a habitable first-floor addition. The existing modifications also include an extension to the existing residence with the extension of a bathroom. The alterations and addition are document on the architectural concept drawings prepared by Two Form Architecture + Interior Design dated 16th August 2023 and are included in Appendix B. An excerpt of the drawings is shown below.

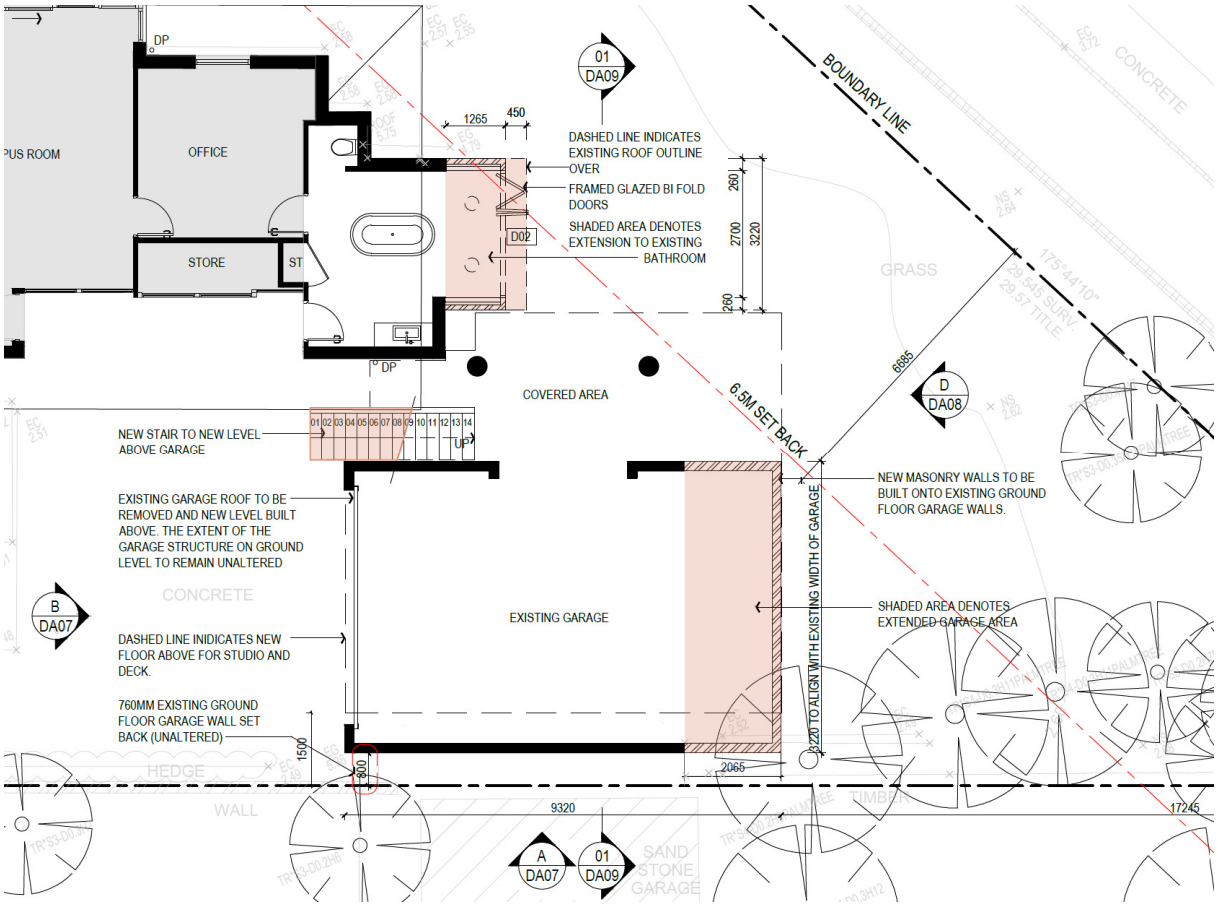
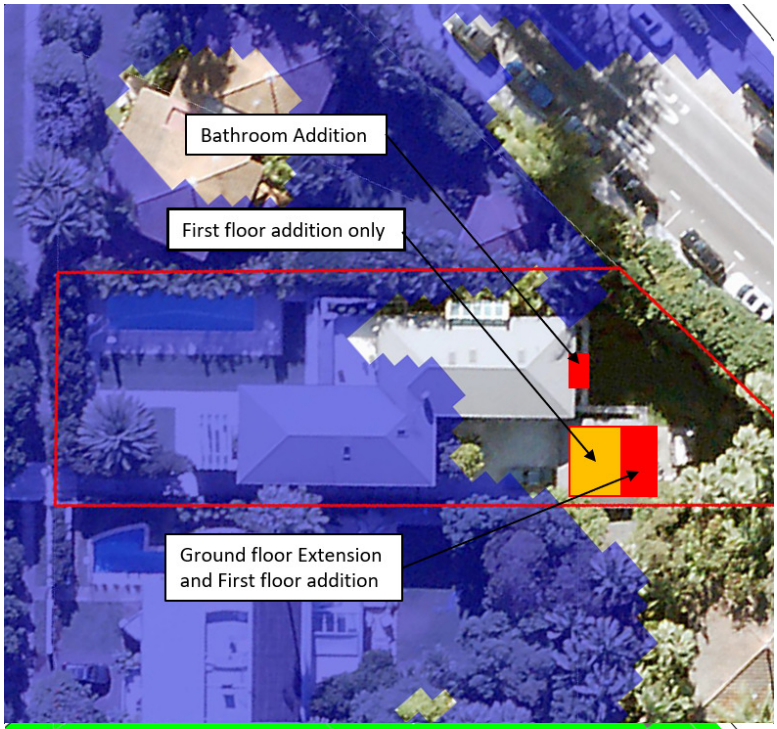


Figure 2: Proposed alterations and addition works (Two Form)

A Flood Information Request (FIR) was requested from Council to gain an understanding of the key flood attributes of the local floodplain where relevant to the proposed works onsite. A copy of the FIR is included in Appendix A of this letter. Figure 3 below shows an excerpt of Map B of the FIR (1% AEP Flood Extent) with the proposed alterations and additions indicatively annotated. Figure 4 show Map C of the flood information request (1% AEP Flood Hydraulic Category Extent Map) with the proposed alterations and additions indicatively annotated.



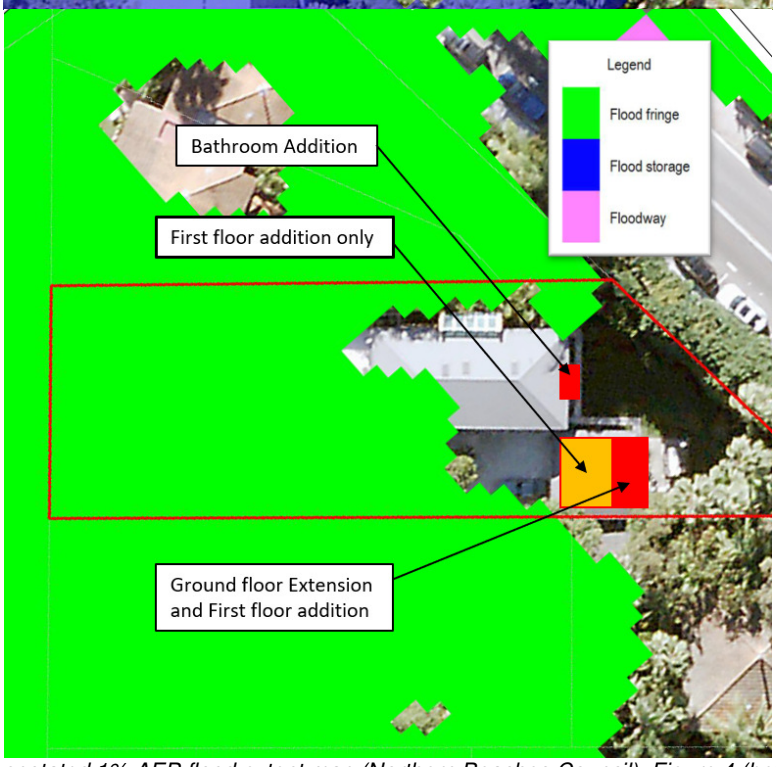


Figure 3 (above): Annotated 1% AEP flood extent map (Northern Beaches Council), Figure 4 (below): Annotated 1% AEP Flood hydraulic category extent map

From review of Figure 3, it is evident the proposed alterations and additions are located outside of the 1% AEP flood extent and the 1% AEP flood Fringe.

A summary of the relevant flood levels provided by the FIR are listed below:

- 1% AEP max water level: 2.64m AHD*
- 1% AEP Maximum Depth from natural ground level: 0.36 m
- 1% AEP Hydraulic Categorisation: Flood Fringe

A copy of the FIR is included in Appendix A of this letter.

*As stated in the FIR, "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."

From review of site feature survey (included in Appendix C), we note the existing garage is founded at RL 2.53m AHD and the existing ground floor is founded at FL 2.61m AHD. As Map B and Map C (Figure 3 and 4) show the existing garage is located beyond the extent of the 1% AEP flood extent it is evident that due to the sloping topography of the site the max 1% AEP water level occurs elsewhere onsite, away from the location of the proposed alterations and additions.

The proposed alterations and additions are located in a Low Flood Risk precinct, which is identified as all flood prone land not identified within the High or Medium flood risk precincts (the 1% AEP Flood Planning Area).

As the existing enclosed garage (proposed to be extended) is located outside of the 1% AEP flood extent and the enclosed garage is proposed to be extended away from the 1% AEP flood extent it is understood the extension of the enclosed garage, and retention of the existing garage at the existing level, is in accordance with relevant Northern Beach Council's Local Environment Plan (LEP) and Development Control Plan (DCP), particularly clause - Pittwater 21 DCP (2014) – B3.11 Flood Prone Land.

As the proposed bathroom extension is less than $10m^2$ ($2.04m^2$), the proposed enclosed or partially enclosed alterations and additions do not exceed $30m^2$, the works are an extension to and existing room, the works are extended away from flooding onsite outside of the 1% AEP flood extent, and the works are not located in the floodway or flood stage (or flood fringe), it is understood the bathroom extension is in accordance with relevant Northern Beach Council's Local Environment Plan (LEP) and Development Control Plan (DCP) particularly clause - Pittwater 21 DCP (2014) – B3.11 Flood Prone Land.

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Conclusion

Whilst the site is affected by the 1% AEP flood event, based on proposed alterations and additions to the existing buildings being located outside of the 1% AEP flood extent we note the proposed development is suitable given the nature of flooding on the property and is in accordance with Council's requirements for development on flood prone land.

We trust this satisfies your requirements in relation to flood planning, feel free to call me on (02) 9417 8400 to discuss further.

Yours faithfully,

NICHOLAS WETZLAR
For, and on behalf of,
H & H Consulting Engineers Pty Ltd

henry&hymas

APPENDIX A - Flood Information Request - Northern Beaches Council

FLOOD INFORMATION REPORT
(BASIC)

Property: 3 Waratah Road PALM BEACH NSW 2108
Lot DP: Lot 15 DP 651513
Issue Date: 16/08/2023
Flood Study Reference: Avalon to Palm Beach Floodplain Risk Management Study and Plan 2017, Manly Hydraulics Laboratory

Flood Information[1]:

Map A - Flood Risk Precincts
Maximum Flood Planning Level (FPL) [2, 3, 4]: 3.14 m AHD

Map B - 1% AEP Flood
1% AEP Maximum Water Level [2, 3]: 2.64 m AHD
1% AEP Maximum Depth from natural ground level[3]: 0.36 m
1% AEP Maximum Velocity: 0.25 m/s

Map C - 1% AEP Hydraulic Categorisation
1% AEP Hydraulic Categorisation: Flood Fringe

Map D - Probable Maximum Flood (PMF)
PMF Maximum Water Level [4]: 3.01 m AHD
PMF Maximum Depth from natural ground level: 0.70 m
PMF Maximum Velocity: 0.43 m/s

Map E - Flood Life Hazard Category in PMF

(1) The provided flood information does not account for 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.

Notes

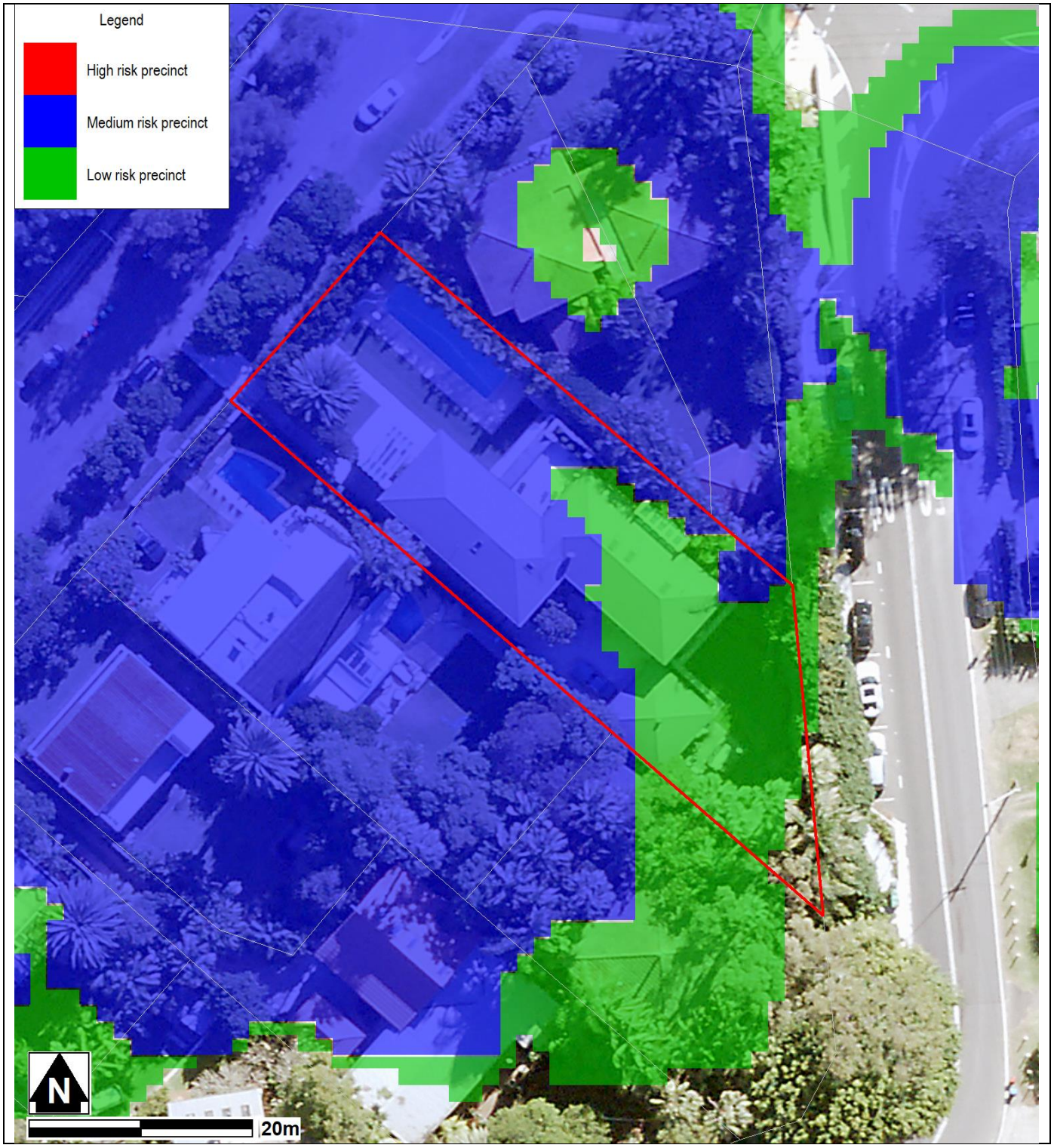
General

- 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 online Flood Study Reports webpage.
- 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.
- 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.
- Areas affected by an EPL in the former Pittwater LGA are mapped on Council's online Estuarine Hazard Map. Note that areas in the former Manly LGA affected by an EPL have been identified and will be soon added to this map.
- Council's drainage infrastructure is mapped on Council's Stormwater Map. Note that locations are indicative only and may not be exactly as shown.

Property

- The Basic Report is suitable for flat blocks where the same flood levels apply to the whole block (eg where flooding is back watering from a lagoon). Only the maximum level is provided for the whole block.
- Please note that a Comprehensive Flood Report is recommended for sloping blocks subject to flooding from creeks or other overland flow such that flood levels vary across the block. Levels are provided at multiple points across the block, and if requested, can be provided at chosen locations.

MAP A: FLOOD RISK PRECINCTS



Notes:

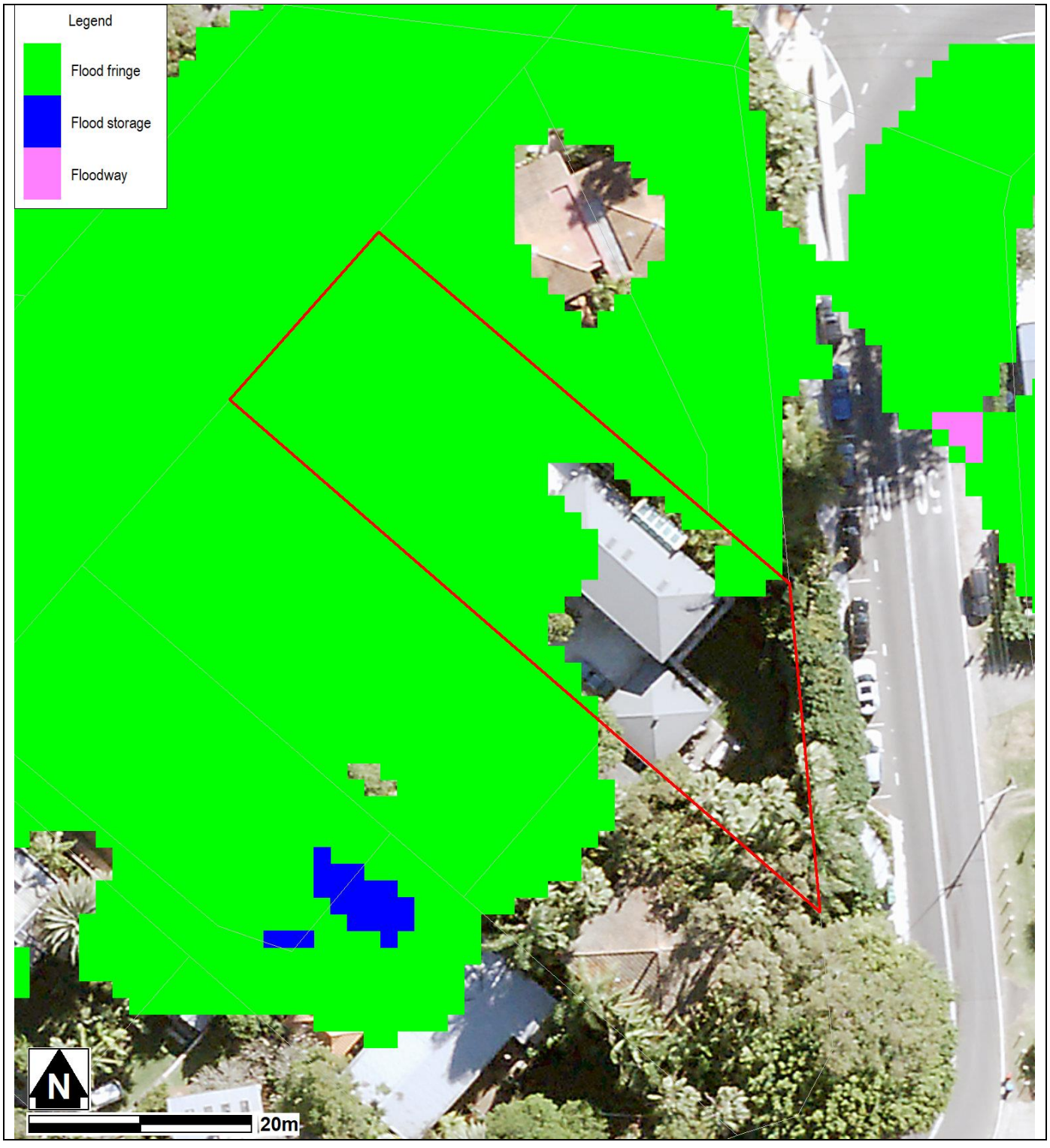
- **Low Flood Risk precinct** means all flood prone land not identified within the High or Medium flood risk precincts.
- **Medium Flood Risk precinct** means all flood prone land that is (a) within the 1% AEP Flood Planning Area; and (b) is not within the high flood risk precinct.
- **High Flood Risk 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.

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: Avalon to Palm Beach Floodplain Risk Management Study and Plan 2017, Manly Hydraulics Laboratory) and aerial photography (Source: NearMap 2014) are indicative only.

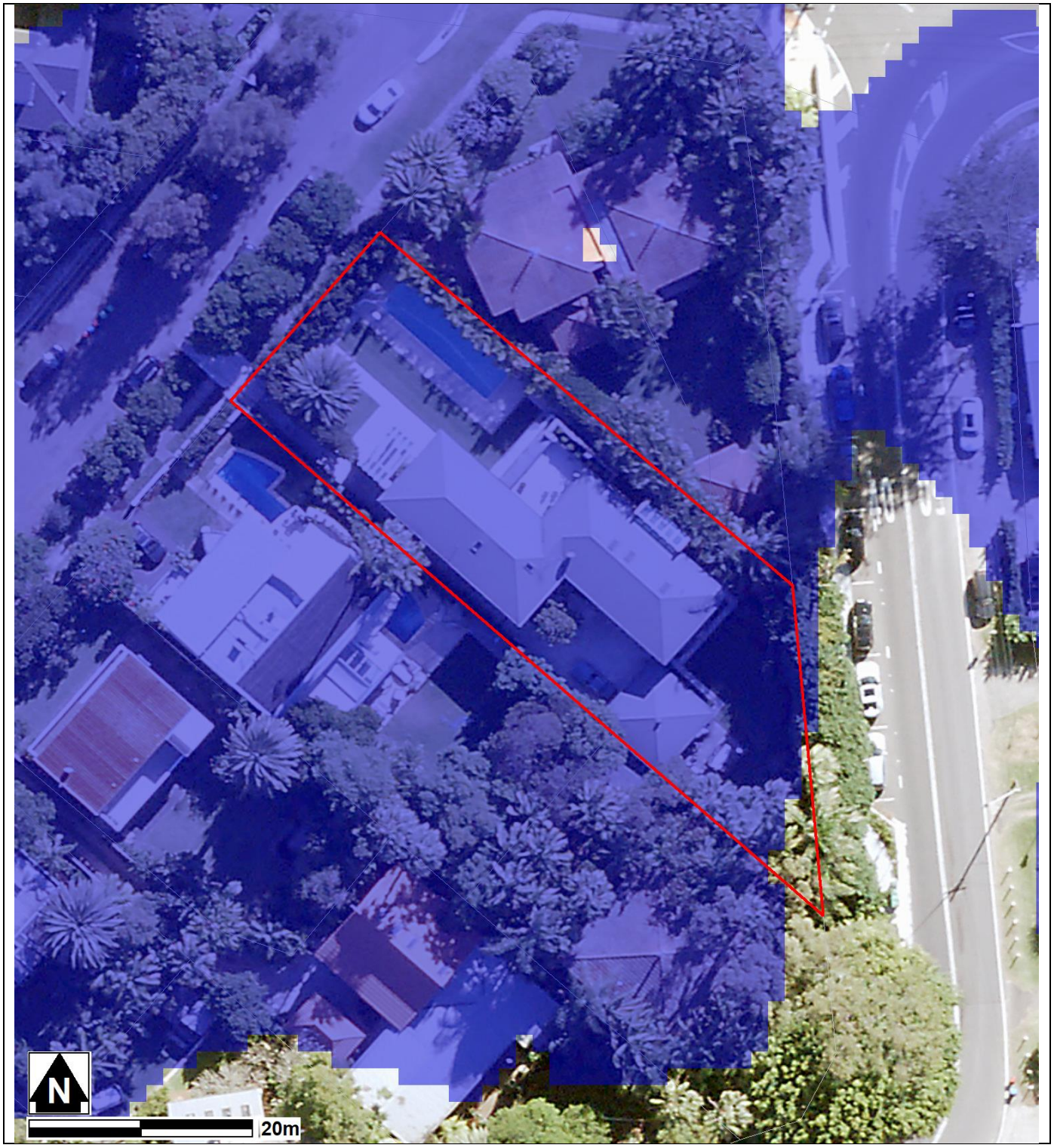
MAP C: 1% AEP FLOOD HYDRAULIC CATEGORY EXTENT MAP



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: Avalon to Palm Beach Floodplain Risk Management Study and Plan 2017, Manly Hydraulics Laboratory) and aerial photography (Source: NearMap 2014) are indicative only.

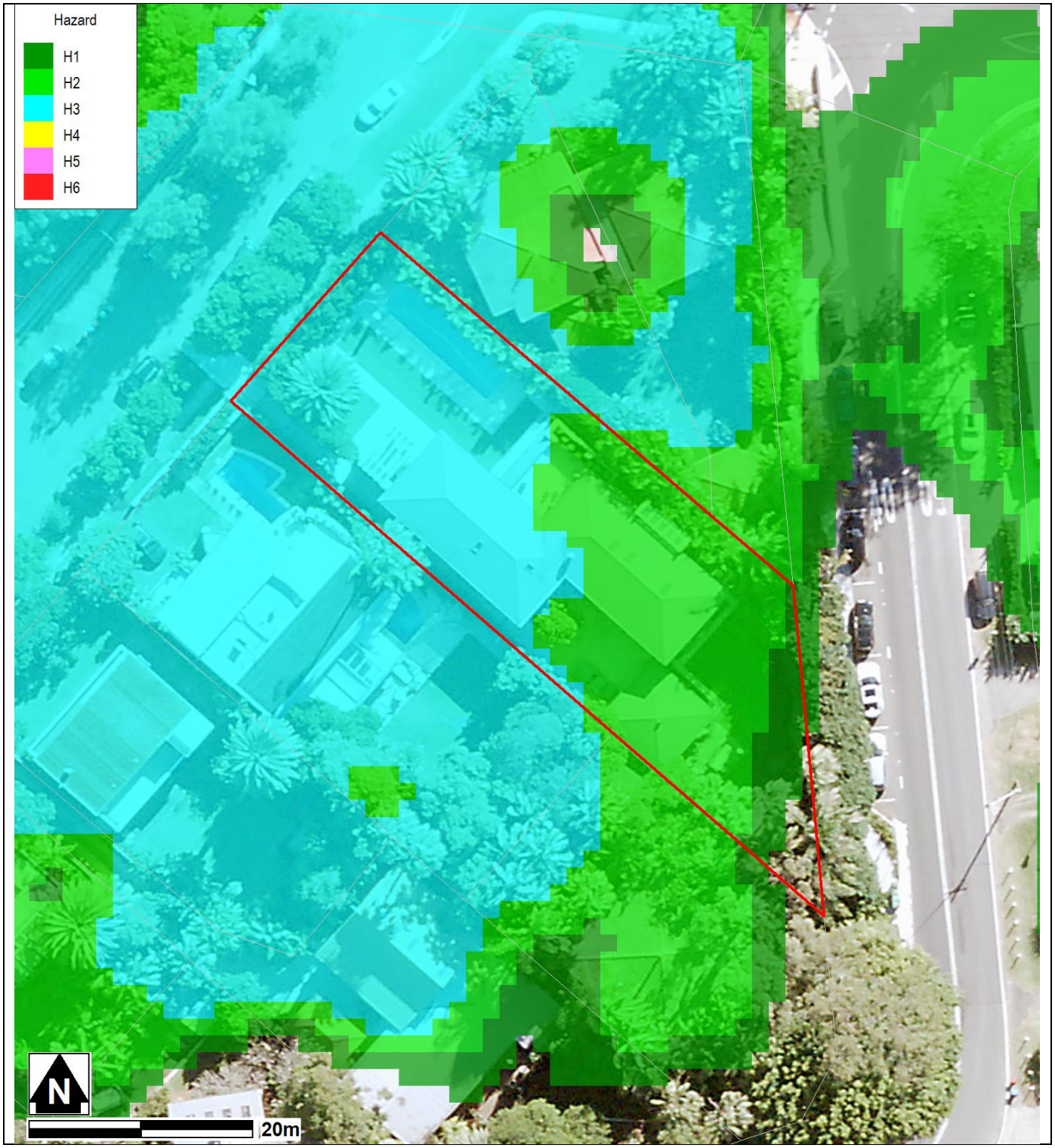
MAP D: PROBABLE MAXIMUM FLOOD EXTENT



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: Avalon to Palm Beach Floodplain Risk Management Study and Plan 2017, Manly Hydraulics Laboratory) and aerial photography (Source: NearMap 2014) are indicative only.

MAP E: FLOOD LIFE HAZARD CATEGORY IN PMF



Notes:

- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Avalon to Palm Beach Floodplain Risk Management Study and Plan 2017, Manly Hydraulics Laboratory) 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 .

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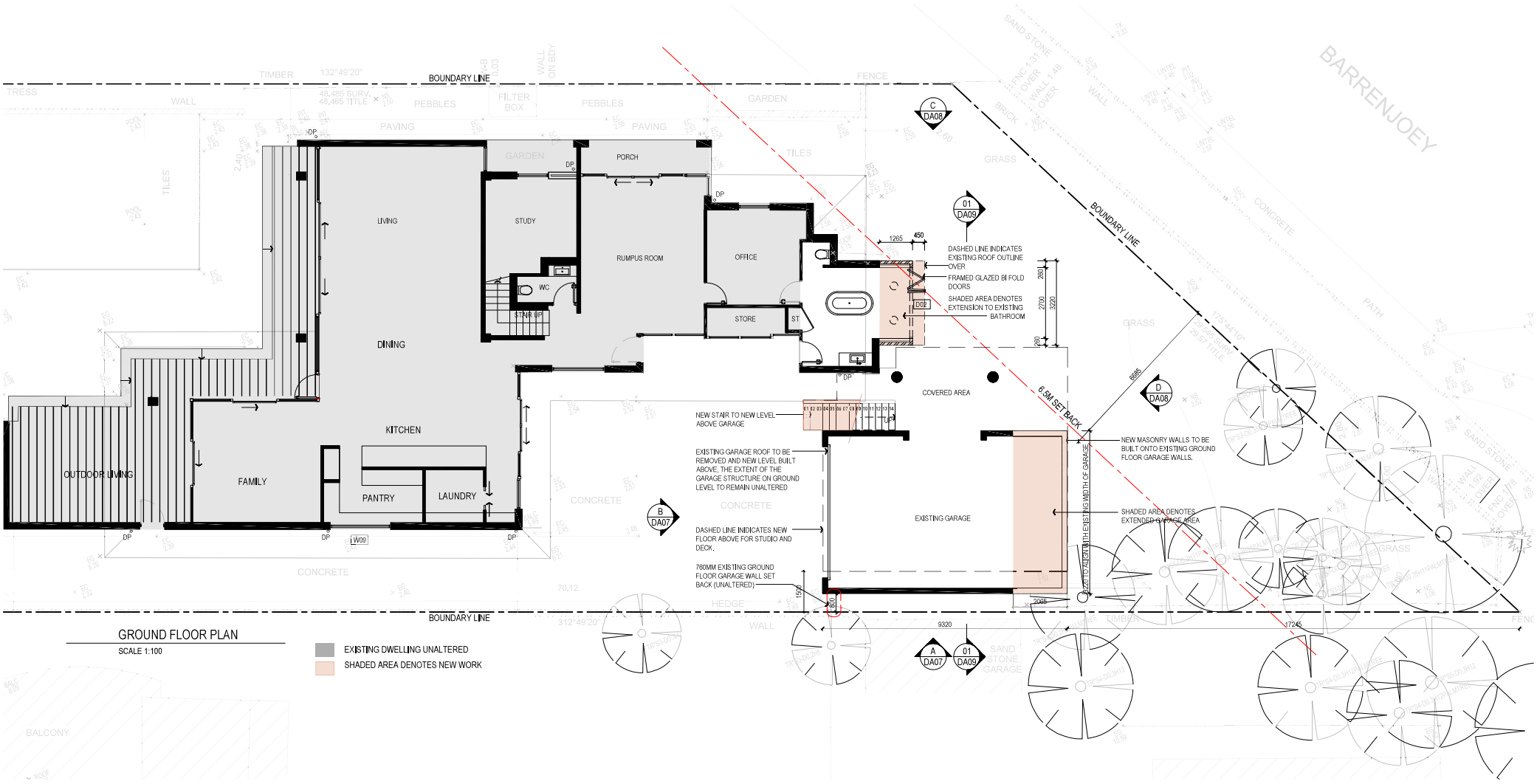
APPENDIX B – Architectural Drawings by Two Form



GROUND FLOOR PLAN

SCALE 1:100

EXISTING DWELLING UNALTERED

SHADED AREA DENOTES NEW WORK

REV.	DATE	DESCRIPTION	CHECKED
A	16.08.2023	ISSUED FOR DEVELOPMENT APPLICATION	KM

LEGEND

ABBREVIATIONS

AC	AIR CONDITIONING	JN	JOINERY
AHD	AUSTRALIAN HEIGHT DATUM	LGW	LOWER FLOOR WASTE
AS	AWNING WINDOW STANDARD	LGF	LOWER GROUND FLOOR
AW	AWNING WINDOW	LN	LINEN
BF	BALUSTRADE	NCC	NATIONAL CONSTRUCTION CODE (BCA)
CS	CASEMENT WINDOW	NGL	NATURAL GROUND LEVEL
DB	DOUBLE	NTS	NOT TO SCALE
DP	DOWNPIPE	PV	PHOTO VOLTAICS
EL	EXISTING	RT	ROOF TILE
EQ	EQUAL	SKL	SKYLIGHT
F	FIXED	SL	SLIDING DOOR
FCL	FINISHED CEILING LEVEL	SMK	SMOKE ALARM
FF	FIRST FLOOR	TOG	TOP OF GUTTER
FFL	FINISHED FLOOR LEVEL	V	VENT
FRL	FINISHED BOUNDARY LEVEL	VOS	VERIFY ON SITE
GF	GROUND FLOOR		

MATERIALS AND FINISHES

AD	ALUMINIUM DOOR	PB	PLASTERBOARD
AL	ALUMINIUM	R	RENDERED
AW	ALUMINIUM WINDOW	RC	REINFORCED CONCRETE
BB	BARRIE BOARD	S	SLATE
BK	BRICK	ST	STONE
BMP	BITUMINOUS MEMBRANE ROOFING	T	TIMBER
C	CARPET	TB	TIMBER BATTEN
CA	CARPET	TD	TIMBER DOOR
CL	CLEAR FINISH	TBK	TIMBER BEDDING
CD	CEMENT RENDER	T & G	TIMBER TONGUE & GROOVE
FB	FASCIA BOARD		
FC	FIBRE CEMENT	TLFC	TILE - TERRACOTTA
G	GLAZED	TW	TIMBER WINDOW
GD	GLAZED TIMBER DOOR	TLF	TILE - FLOOR
MRS	METAL ROOF SHEETING	WB	WEATHERBOARD
P	PAINTED	VI	VERMICULITE
PAV	PAVING	ZRS	ZINCALUME ROOF SHEETING

two form pty ltd
Nominated Architect Kristina Mitkovski NSW Reg No. 7998

The Contractor shall confirm on site existing dimensions and conditions before commencement of works. All discrepancies should be reported to the Architect for instructions. Two Form does not accept responsibility for the dimensional accuracy of any data contained in CAD or other attachments as it may be based on third party origin information. All information should be verified in writing

two form
ARCHITECTURE + INTERIOR DESIGN
Suite 203 level 2 34 Charles Street Parramatta NSW 2150
p 02 9008 8021 e info@twoform.com.au twoform.com.au

CLIENT
STEPHEN AND SUSAN JONES

DATE
AUG 2023

PROJECT
ALTERATIONS AND ADDITION TO EXISTING DWELLING
3 WARATAH ROAD, PALM BEACH LOT 15 DP 651513

DRAWING STAGE
DEVELOPMENT APPLICATION

SCALE
1:100 AT A2

DRAWING NAME
GROUND FLOOR PLAN

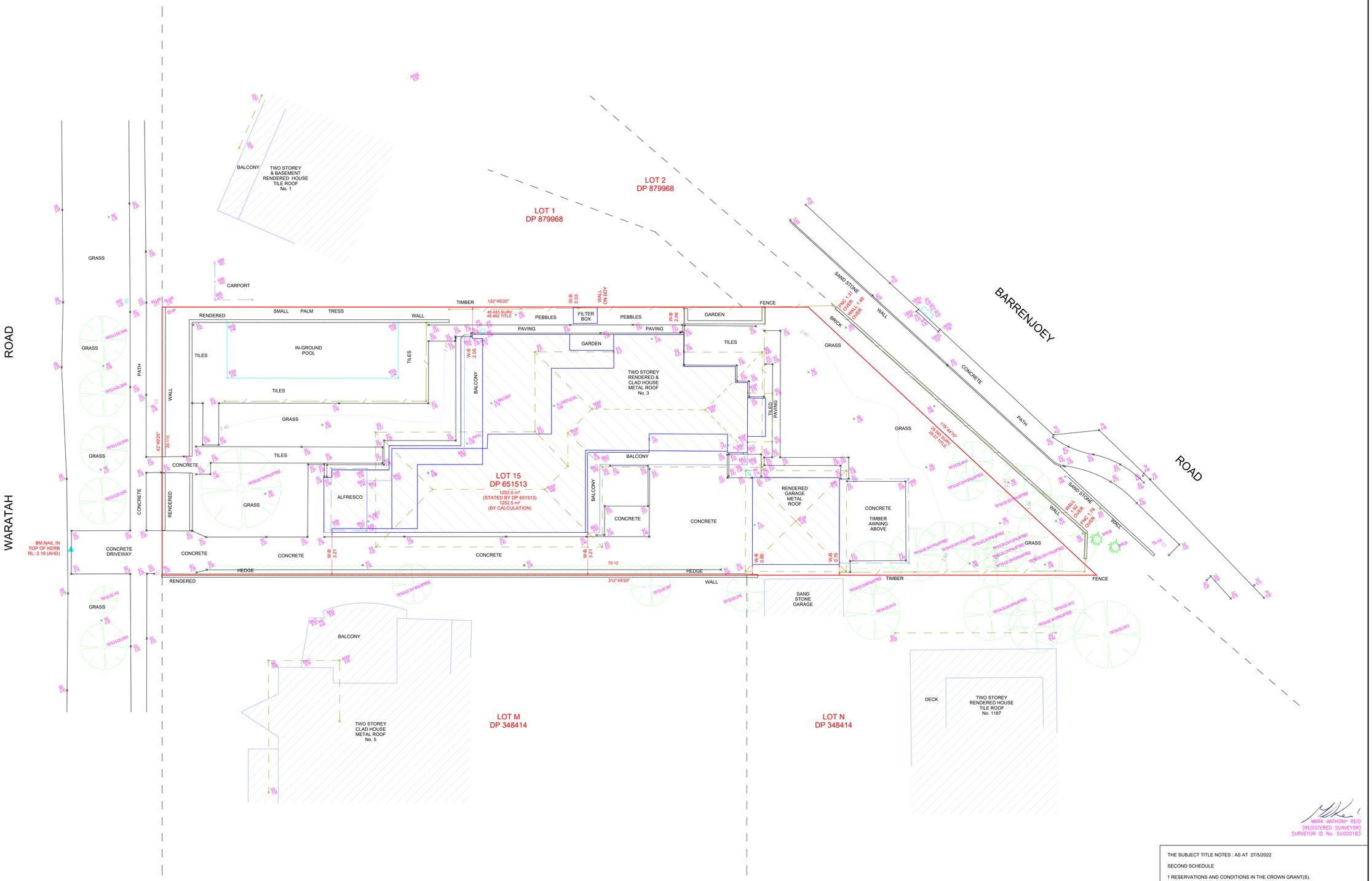
DRAWING NUMBER
22 026 AR **DA 05**

REVISION
A

henry&hymas

APPENDIX C – Feature Survey by C&A surveyors

A0



DIAL BEFORE YOU DIG
www.1100.com.au

LEGEND:

AHD	AUSTRALIAN HEIGHT DATUM
AWN	AWNING
A-B	AWNING TO BOUNDARY
BB	BOTTOM OF BANK
BL	BALCONY LEVEL
BM	BENCH MARK
BOW	BOTTOM OF WALL
BRW	BOTTOM OF RETAINING WALL
CL	CENTER LINE
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
INV	INVERT LEVEL
KO	KERB OUTLET
LH	LAMP HOLE
NS	NATURAL SURFACE
PAV	PAVERS
PP	POWER POLE
RL	REDUCED LEVEL
S	STEPS
S-B	SHED TO BOUNDARY
SL	SURFACE LEVEL
SILL	WINDOW SILL
SMH	SEWER MAN HOLE
SV	STOP VALE
TB	TOP OF BANK
TEL	TELSTRA PIT
TK	TOP OF KERB
TOW/TW	TOP OF WALL
TRW	TOP OF RETAINING WALL
VC	VEHICLE CROSSING
W-B	WALL TO BOUNDARY
WM	WATER METER
WTOP	TOP OF WINDOW

MARK ANTHONY REID
(REGISTERED SURVEYOR)
SURVEYOR ID No. SU000183

THE SUBJECT TITLE NOTES : AS AT 27/5/2022

SECOND SCHEDULE

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S).
2 AD246689 MORTGAGE TO AMP BANK LIMITED.

NOTES:

A) BOUNDARIES OF THE SITE HAVE BEEN IDENTIFIED BY SURVEY
B) 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.
C) DIAMETER, HEIGHT & SPREAD OF TREES ARE APPROXIMATE ONLY.
D) LEVELS SHOWN ARE OF AUSTRALIAN HEIGHT DATUM. ORIGIN OF LEVELS : PM 40338, RL 3.244 (AHD), CLASS LC.
E) USE STATED DIMENSIONS. DO NOT SCALE.
F) THESE NOTES FORM PART OF THIS PLAN AND CANNOT BE REMOVED.
G) NO COVENANTS AND/OR RESTRICTIONS HAVE BEEN INVESTIGATED BY C & A SURVEYORS PTY LTD.

C&A SURVEYORS
30 Grose Street, Parramatta, NSW 2150
Ph: 96309299 email: info@candasurveyors.com.au
www.candasurveyors.com.au

DETAIL & BOUNDARY IDENTIFICATION SURVEY OF LOT 15 IN DP 651513, LOCATED AT No. 3, WARATAH ROAD PALM BEACH.

APPROXIMATE LOCATION OF BURIED SEWER MAIN BY SYDNEY WATER RECORDS.
APPROXIMATE LOCATION OF BURIED WATER MAIN (WM) BY SYDNEY WATER RECORDS.
ELECTRIC LINE
TELSTRA PIT
STOP VALE
POWER POLE
WATER METER
HYDRANT

TREE
D/H/S DIAMETER/HEIGHT/SPREAD

INSTRUCTING PARTY:	LISA KOEHLER	SURVEYED BY:	GB	DATUM:	AHD
LGA: NORTHERN BEACHES	AREA BY DP: 1252.0 m²	DRAWN BY:	VI	CHECKED BY:	JD
SURVEY DATE: 30/05/2022	AREA BY CALC: 1252.5 m²	SCALE:	1:100@A0	REF.NO:	21815-22 DET/ID
DATE DRAWN: 31/05/2022	CONTOUR INTERVAL 0.2 m	REV NO:	01	SHEET:	1 OF 1