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STRUCTURAL - CIVIL - STORMWATER - REMEDIAL

... STRUCTURALLY SOUND

Flood Management Report

3 Ross Smith Street, Great Mackerel Beach

Issue A

8 November 2023

Prepared for: Christopher & Victoria Logan

Prepared by: Sarah Raaff



Flood Management Report

Project no: 2309046

Issue: A

Date: 8.11.2023

Client: Christopher & Victoria Logan

Engineer: Sarah Raaff

Principal review: Michael Wachjo

Council: Northern Beaches Council (Region 1)

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Issue	Engineer	Peer Review	Principal Review	Description	Date
A	S.Raaff	H.Stubley	M.Wachjo	Report for DA submission	1.11.2023



Contents

1. Introduction.....	4
1.1 Aim.....	4
1.2 Description of Development	4
1.3 Site Conditions	4
1.4 Flood Behaviour	5
2. Flood Analysis.....	6
2.1 Site Flooding Extent	6
3. Assessment of Impacts	7
3.1 Development Matrix.....	7
4. Assessment and Recommendations	8
4.1 Flood Planning Level	8
4.2 Flood Storage	8
4.3 Building Components and Structural Soundness	8
4.3 Fences.....	10
4.5 Emergency Flood Response	11
5. Conclusion	11
APPENDIX A	12
APPENDIX B	13
APPENDIX C	14
APPENDIX D	15

1. Introduction

At the request of Christopher & Victoria Logan, Northern Beaches Consulting Engineers have undertaken a hydrologic and hydraulic investigation at 3 Ross Smith Street, Great Mackerel Beach to determine the effect of the proposed development on the existing floodplain.

For the undertaking of this report, Northern Beaches Consulting Engineers (NBCE) has analysed the general drainage patterns of the catchment and has considered the effects of mainstream flooding as determined in the Council Supplied Flood information with respect to the proposed development. This report has been prepared in accordance with:

- *Australian Rainfall and Runoff Guidelines 2019*
- *Northern Beaches Council (Pittwater Area)*
- *Pittwater Local Environmental Plan 2013 (LEP)*
- *Pittwater Development Control Plan (DCP) – Section B3.11 Flood Prone Land*
- *NSW Government Floodplain Management Manual (2005)*
- *Council supplied flood information*

1.1 Aim

This study explores the impact of mainstream flooding envisaged to occur at the subject site up to the 1% AEP storm event. The development under consideration is located at 3 Ross Smith Street in Great Mackerel Beach. This area is predicted to experience mainstream flooding during heavy rainfall events. The anticipated flood behaviour within the contributing catchment for the 1% Annual Exceedance Probability (AEP) and Probable Maximum Flood (PMF) has been assessed in relation to the proposed development at the subject site.

1.2 Description of Development

The proposed development at the residential property at 3 Ross Smith Street, Great Mackerel Beach consists of ground floor alterations and additions to the main dwelling and the addition of a separate gym/bathroom structure. (refer Appendix A).

1.3 Site Conditions

The property is approximately 1126m² and located within the Northern Beaches Council (Pittwater Area) LGA. The subject site is relatively flat, however has a relative high point in the middle of the property and mildly slopes towards the eastern and western boundary. The site is fronted by the shoreline of Great Mackerel Beach on the eastern boundary and at the rear is bounded by the lagoon which connects to the ocean (Refer to Figure 1).



Figure 1 – Site Location. Source: Six maps (NSW)

1.4 Flood Behaviour

The development lies in the floodplain of Great Mackerel Beach Lagoon which discharges to Great Mackerel Beach. The flood affected area has possible flooding impacts from three sources, as follows:

- Flooding from upstream runoff. This is the major cause of flooding.
- Storm surges as a result of low atmospheric pressure, combined with strong onshore winds.
- Tidal effects
- Flooding can occur as a combination of some, or all three, of the above



2. Flood Analysis

2.1 Site Flooding Extent

The site flooding extent has been determined using Council's available flood information. All relevant flood information is shown below:

Predicted 1% AEP flood level:	2.35m AHD
Predicted 1% AEP flood depth:	1.61m
1% AEP Maximum Velocity	Not Provided
Flood Planning Level (FPL):	2.85m AHD
Probable Maximum Flood (PMF) level:	2.97m AHD
Probable Maximum Flood (PMF) depth:	2.21m
Probable Maximum Flood (PMF) velocity:	Not Provided
Flood Risk Precinct:	Medium - High
Flood Life Hazard Category:	H3-H5
Hydraulic Categorisation:	Flood Storage (Assumed)
Existing Ground Floor Level (FFL):	2.59m AHD (refer Appendix D)
Proposed Garden Storage Level (FFL):	approx. 1.92m AHD (refer Appendix D)
Proposed Ground Floor Extension Level (FFL):	2.59-2.85m AHD (refer Appendix D)
Proposed Gym Floor Level (FFL):	2.97m AHD (refer Appendix D)

3. Assessment of Impacts

3.1 Development Matrix

The subject site is classified under the residential category in figure 2 below.

High Flood Risk Precinct						
		Vulnerable & Critical Use	Residential Use	Business & Industrial Use	Recreational & Environmental Use	Subdivision & Civil Works
A	Flood effects caused by Development	A1 A2	A1 A2	A1 A2	A1 A2	A1 A2
B	Building Components & Structural	B1 B2 B3	B1 B2 B3	B1 B2 B3	B1 B2 B3	
C	Floor Levels	C2 C3	C1 C3 C4 C6	C1 C3 C4 C6 C7	C3	C5
D	Car Parking	D1 D2 D3 D4 D7	D1 D2 D3 D4 D5 D6	D1 D2 D3 D4 D5 D6	D1 D2 D3 D4 D5 D6	D1
E	Emergency Response	E1 E2	E1	E1	E1	E3
F	Fencing	F1	F1	F1	F1	F1
G	Storage of Goods	G1	G1	G1	G1	
H	Pools	H1	H1	H1	H1	H1

Figure 1 - Development Matrix. Source: Northern Beaches Council Website Information

Table 1 - Assessment of Impacts Table

	Not Applicable	Compliance	
		Yes	No
A Flood effects caused by the development		x*	
B Building Components & Structural		x*	
C Floor Levels		x*	
D Carparking		x*	
E Flood Emergency Response		x*	
F Fencing		x*	
G Storage of Goods		x*	
H Pools		x*	

*Note – Compliance achievable should the recommendations outline in this report be adopted

4. Assessment and Recommendations

4.1 Flood Planning Level

The proposed floor level of the gym/bathroom structure is set above the Flood planning level (2.85m AHD) at the PMF (2.97 mAHd).

A one-off extension at the existing ground floor level (RL 2.59m AHD) below the FPL (2.85m AHD) within the 1% AEP extent is proposed to the existing storage area and deck. The proposed extension level is incompatible with the FPL (RL 2.85m AHD) but no more than 10 m² is below the 1% AEP flood level (and no more than 30m² is below the FPL). The extension and compensatory works will ensure no net loss of flood storage in all events up to the 1% AEP event.

4.2 Flood Storage

The building footprint area contributing to potential flood blockages is proposed to increase as a result of the development. To ensure the proposed development results in no net decrease of flood storage, the following measures are to be implemented (refer appendix A):

- The proposed gym/bathroom structure as well as the new decking and staircase is to have an open substructure to allow flood waters to flow unimpeded up to the 1% AEP.
- To offset flood blockages from the proposed storage room, the NGL below the gym structure (70m²) is to be skimmed by 50mm. Ensure area to be skimmed has a continuous fall to prevent trap points.

Flood storage calculation summary is provided below:

- Flood storage decrease from proposed development: $X = -3.5\text{m}^3$
- Flood storage increase $Y = 3.5\text{ m}^3$
- **Net Flood Storage: $Y-X = 3.5\text{ m}^3 - 3.5\text{m}^3 = 0\text{m}^3$**

Therefore, no net loss of flood storage is envisaged to occur at the property, provided the recommendations in Appendix A are implemented.

4.3 Building Components and Structural Soundness

All buildings are to be designed and constructed in accordance with Reducing Vulnerability of Buildings to Flood Damage – Guidance on Building in Flood Prone Areas, Hawkesbury-Nepean Floodplain Management Steering Committee (2006). Below are key areas to be considered in the architectural and structural design of the development:

Structural component and key risks	Provision for protecting structural performance
Existing Timber Floors: Timber flooring at potential risk of being weakened during and/or after flooring causing temporary or permanent deformation.	- To reduce the weakening of the timber floors caused by moisture during flooding a brick wall vent (minimum opening area 0.2 m²) in both external and internal walls is to be provided every 1 m. To maintain the thermal integrity of the house and to stop vermin entry these vents will need to have a protective mesh and/or flaps which does not impede water flow. - Provide cavity access to double brick walls to facilitate removal of silt from cavity. - To reduce the risk of ponding in subfloor areas after flooding has occurred, the sub-floor area is to be filled and levelled to ensure that it is highest at the centre and drains to the edges. - Provide a minimum 450mm clearance required between underside of timber structure and ground as per BCA. - Timber used in sub-floor structural members and in flooring should be minimum H3.
Existing Double Brick walls: A difference of less than 1 metre water level each side of a brick wall could cause extensive bowing, cracking and possibly even collapse of the wall.	- To reduce hydrostatic forces caused by unbalanced water levels between internal and external areas, brick wall vents as per above are to be installed so as to allow even distribution of flood waters between internal and external areas. - Side-fixed brick ties are recommended particularly in houses with water velocities greater than 0.5 m/s (refer section 5.3.2 of Reducing Vulnerability of Buildings to Flood Damage for further details).
Non-structural components (Joinery, built-in furniture):	- Avoid false floors in cupboards and wardrobes - Build units on legs to allow for cleaning and free flowing air underneath - Provide holes for drainage and ventilation to closed-off areas and hollow components - Construct joints so they shed water

	- Use supports at closer centres with structural ply panelling to limit permanent distortion (position supports at less than 500mm centres). - Refer section 6 of Reducing Vulnerability of Buildings to Flood Damage for further details of non-structural component design.
--	--

Any new structures are to be constructed of fit for purpose building materials in accordance with “Reducing vulnerability of buildings to flood damage”. Timber framed construction for any new structures below the PMF (2.97m AHD) and any construction which result in voids that are difficult to clean out after a flooding event are not to be used. New structures are to be designed and constructed to ensure structural integrity up to the FPL (2.85m AHD), taking into account the forces of floodwater, wave action, flowing water with debris and buoyancy and immersion.

The required on-site refuge (see: “*Evacuation Strategy and Onsite Response Plan*”) is proposed to be located in the new gym/bathroom structure. The on-site refuge is to be designed and constructed to ensure structural integrity up to the PMF (2.97m AHD), taking into account the forces of floodwater, wave action, flowing water with debris and buoyancy and immersion.

For any existing timber frame structure clad in Gyprock, an allowance must be made to immediately strip the Gyprock after a flooding event to ensure all wall voids can be cleaned of any mud/debris to allow the timber structure to dry before it starts to rot.

Furthermore, the switchboard and main circuit unit must be fitted above the FPL (2.85m AHD). All new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the FPL (2.85m AHD) and conduits must be laid such that they are free draining. All existing electrical equipment and power points located below the FPL (2.85m AHD) within the subject structure must have residual current devices installed that turn off all supply of electricity to the property when flood waters are detected.

4.4 Fences

Any proposed fencing along the boundaries, alternative to pool type fencing, are to be certified and/or designed by a civil engineer to withstand hydrostatic forces up to and including the 1% AEP storm event. Openings are to be provided, excluding the property frontage, to ensure the 1% AEP floodwater is able to flow through the property unimpeded.

4.5 Emergency Flood Response

The proposed gym structure (FL 2.97m AHD) is recommended to provide an on-site refuge above the PMF (2.97m AHD). The on-site refuge must have appropriate access installed to enable access points from all areas within the development and is to be designed and constructed in accordance with the Section 4.4 of this report to ensure structural integrity up to the PMF (2.97m AHD).

Occupants are to evacuate the main dwelling and seek refuge area should flood waters inundate either the rear or front boundaries or as ordered by the SES. Refer to Appendix B for the on-site refuge plan. Occupants are to print out the on-site refuge plan and fix a copy in a readily accessible area within the main dwelling and gym. Further, the on-site refuge (proposed gym) must remain readily accessible to use as a refuge at all times to all occupants on the property.

The on-site refuge must provide:

- Sufficient clean water for all occupants
- Portable radio with spare batteries
- Torch with spare batteries
- First aid kit

5. Conclusion

In accordance with accepted engineering practice, NBCE have undertaken a flood study at the above-mentioned site. No anticipated increased flooding is envisaged to occur at the subject site due to the proposed development should the recommendations of this report be carried out. The flood information provided by Northern Beaches Council has been used for this assessment. The recommendations of this report should be adopted for the development to meet the requirements of *Northern Beaches Development Control Plan (DCP)*. Please contact the author if further clarification is required.

NORTHERN BEACHES CONSULTING ENGINEERS P/L

Author:



Sarah Raaff

Junior Engineer

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Reviewed By:

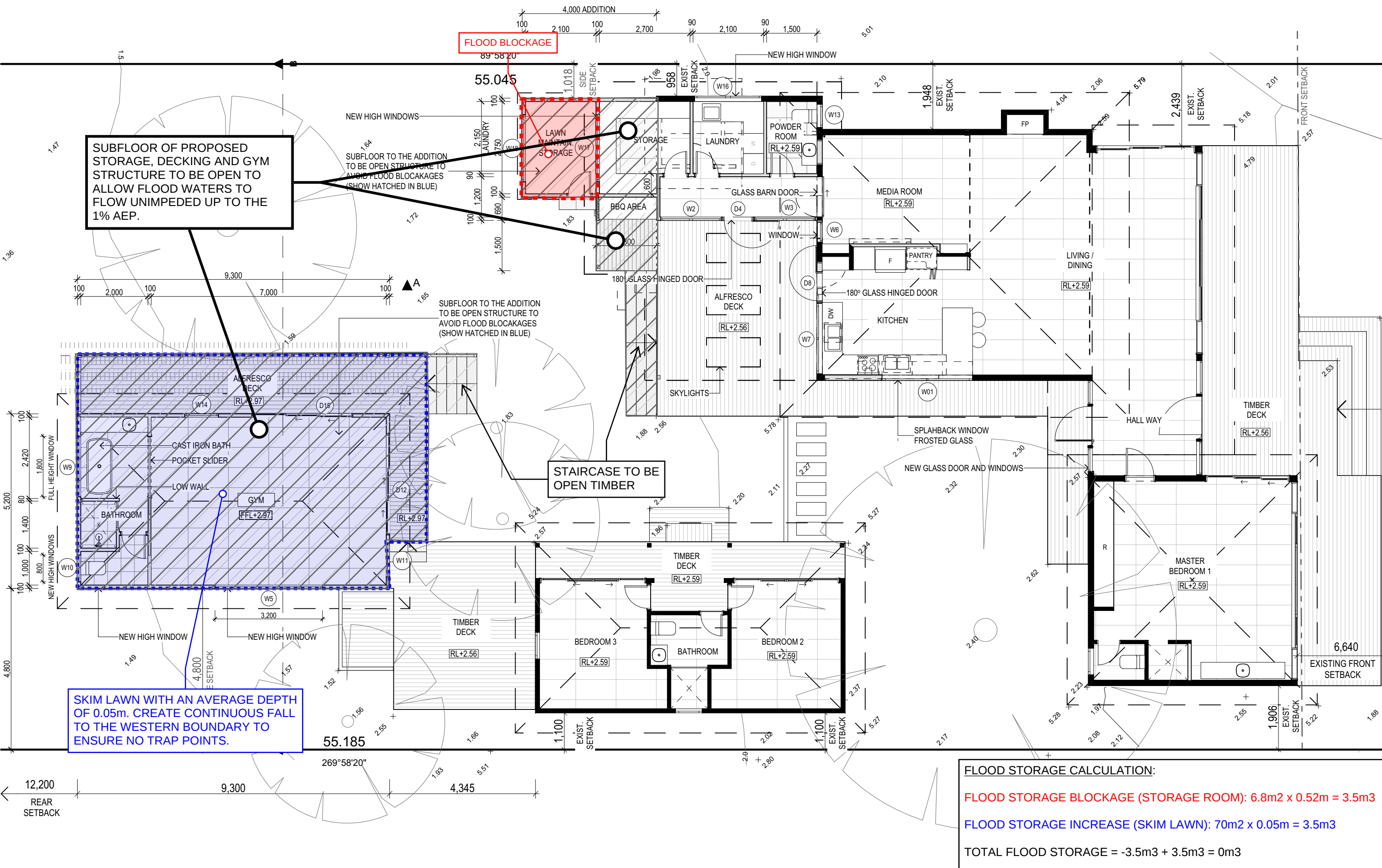


Michael Wachjo

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

APPENDIX A

Flood Storage Calculations



FLOOD STORAGE CALCULATION:

FLOOD STORAGE BLOCKAGE (STORAGE ROOM): $6.8m^2 \times 0.52m = 3.5m^3$

FLOOD STORAGE INCREASE (SKIM LAWN): $70m^2 \times 0.05m = 3.5m^3$

TOTAL FLOOD STORAGE = $-3.5m^3 + 3.5m^3 = 0m^3$

TRUE NORTH:

NOTES (E & OE)

- All structures including stormwater & drainage to engineer's details.
- Do not obtain dimensions by scaling drawings.
- All dimensions are to be checked on site prior to starting work.
- These drawings are to be read in conjunction with all other consultant's drawings and specifications.
- All workmanship & materials shall be in accordance with the requirements of current editions including amendments of the National Construction Code, relevant Australian Standards & local council requirements.
- New materials are to be used throughout unless otherwise noted.
- Concrete footings, slab, structural beams or any other structural members are to be designed by a practicing engineer.

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REV:	DATE:	DESCRIPTION:
A	21/08/23	PRELIMINARY DRAWINGS UPDATED
B	23/08/23	PRELIMINARY DRAWINGS UPDATED
C	13/09/23	PRELIMINARY DRAWINGS UPDATED
D	27/10/23	DA DRAWINGS UPD. AS PER FLOOD CONTROLS
E	30/10/23	DA DRAWINGS UPD. - REQUIRED PMF LEVEL

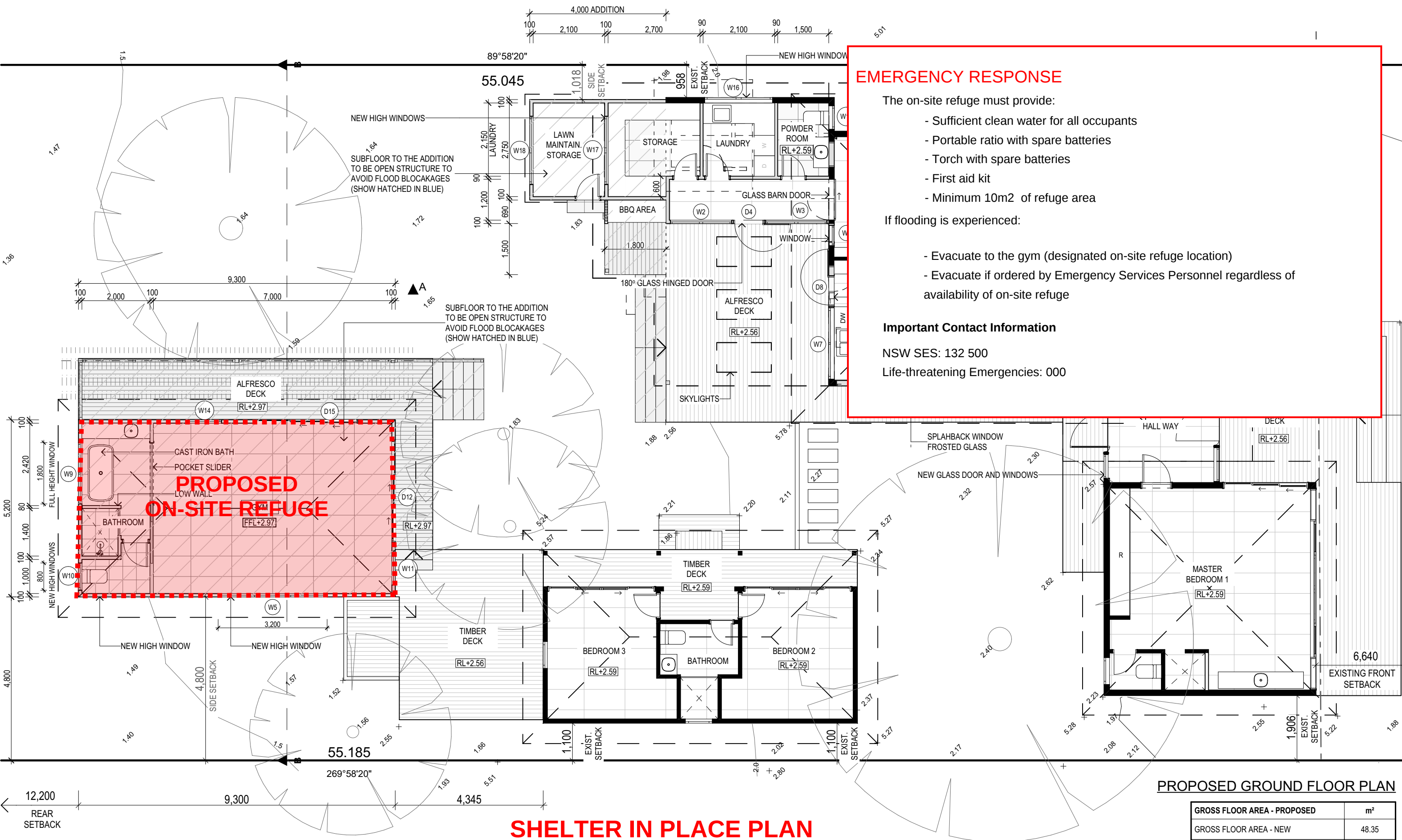
PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
PROPOSED GROUND FLOOR PLAN

DATE: AUGUST/23	DRAWN BY: LB	SCALE: 1:100 @ A3
JOB No: 1178/23	CHECKED BY: JJ	DRAWING No: DA.05

APPENDIX B

Shelter in place



EMERGENCY RESPONSE

The on-site refuge must provide:

- Sufficient clean water for all occupants
- Portable radio with spare batteries
- Torch with spare batteries
- First aid kit
- Minimum 10m2 of refuge area

If flooding is experienced:

- Evacuate to the gym (designated on-site refuge location)
- Evacuate if ordered by Emergency Services Personnel regardless of availability of on-site refuge

Important Contact Information

NSW SES: 132 500
Life-threatening Emergencies: 000

PROPOSED GROUND FLOOR PLAN

GROSS FLOOR AREA - PROPOSED	m²
GROSS FLOOR AREA - NEW	48.35
GROSS FLOOR AREA - NEW	5.50
	53.85 m²

TRUE NORTH:



NOTES (E & OE)

- All structures including stormwater & drainage to engineer's details.
- Do not obtain dimensions by scaling drawings.
- All dimensions are to be checked on site prior to starting work.
- These drawings are to be read in conjunction with all other consultant's drawings and specifications.
- All workmanship & materials shall be in accordance with the requirements of current editions including amendments of the National Construction Code, relevant Australian Standards & local council requirements.
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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Mackerel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
PROPOSED GROUND FLOOR PLAN

DATE:
AUGUST/23

DRAWN BY:
LB

SCALE:
1:100 @ A3

JOB No:
1178/23

CHECKED BY:
JJ

DRAWING No:
DA.05



APPENDIX C

Council Flood Information

FLOOD INFORMATION REPORT (BASIC)

Property: "3 Ross Smith Parade GREAT MACKEREL BEACH NSW 2108"

Lot DP: "Lot 3 DP 10000

Lot B DP 440802"

Issue Date: 29/08/2023

Flood Study Reference: Great Mackerel Beach Flood Study, 2005

Flood Information¹:

Map A - Flood Risk Precincts

Maximum Flood Planning Level (FPL) ^{2, 3, 4}: 2.85 m AHD

Map B - 1% AEP Flood

1% AEP Maximum Water Level ^{2, 3}: 2.35 m AHD

1% AEP Maximum Depth from natural ground level³: 1.61 m

Map C - 1% AEP Hydraulic Categorisation

Map D - Probable Maximum Flood (PMF)

PMF Maximum Water Level ⁴: 2.97 m AHD

PMF Maximum Depth from natural ground level: 2.21 m

Map E - Flood Life Hazard Category in PMF

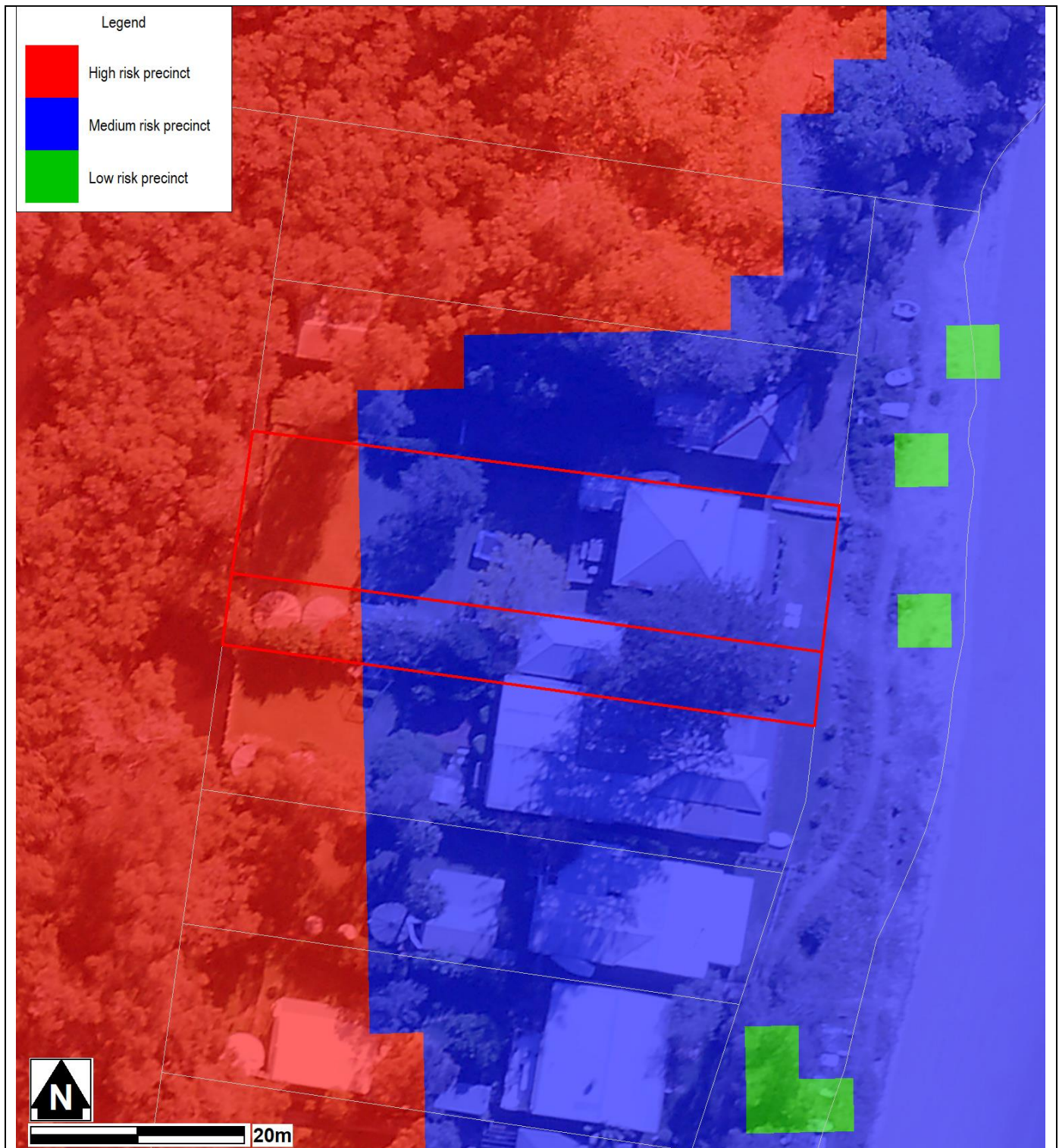
- (1) The provided flood information does not account for any local overland flow issues nor private stormwater drainage systems.
- (2) Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/ flood planning levels across the site. The maximum Flood Planning 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.

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.

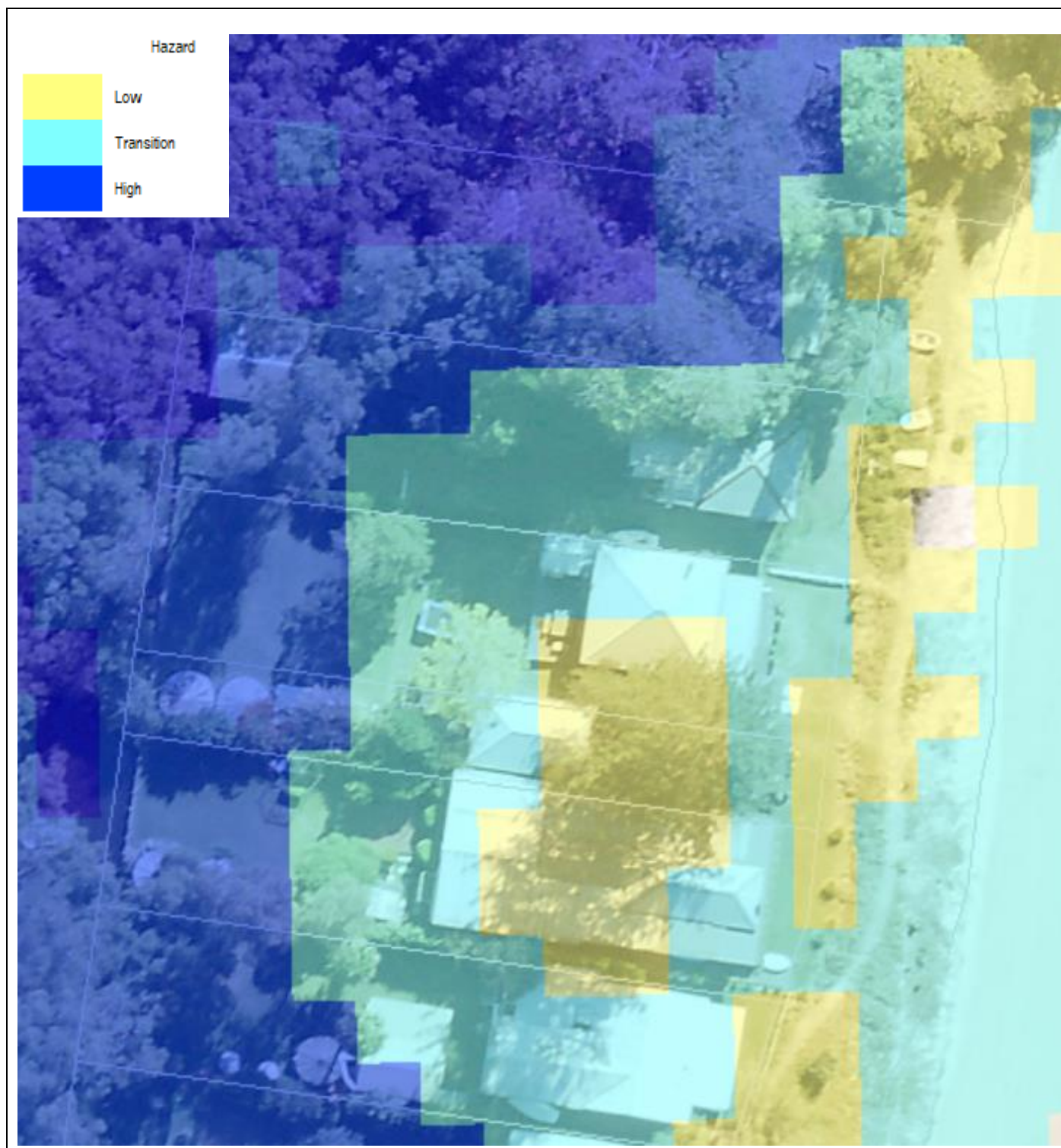
MAP B: FLOODING - 1% AEP EXTENT



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: Great Mackerel Beach Flood Study, 2005) 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: Great Mackerel Beach Flood Study, 2005) and aerial photography (Source: NearMap 2014) are indicative only.

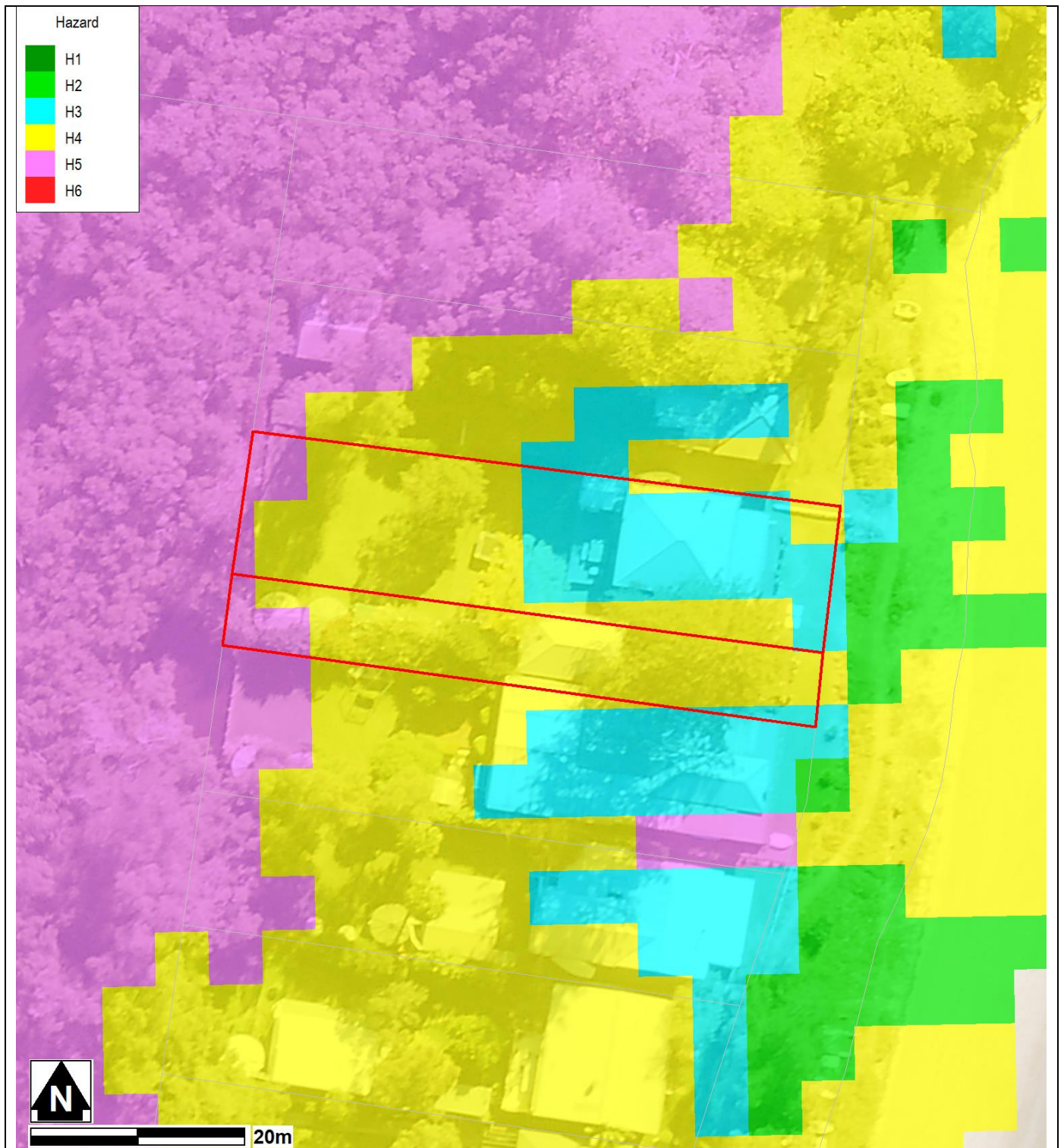
MAP D: PROBABLE MAXIMUM FLOOD EXTENT



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: Great Mackerel Beach Flood Study, 2005) 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: Great Mackerel Beach Flood Study, 2005) 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 D

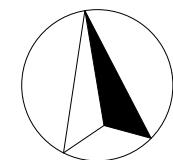
Proposed Development Plans & Survey

DEVELOPMENT APPLICATION

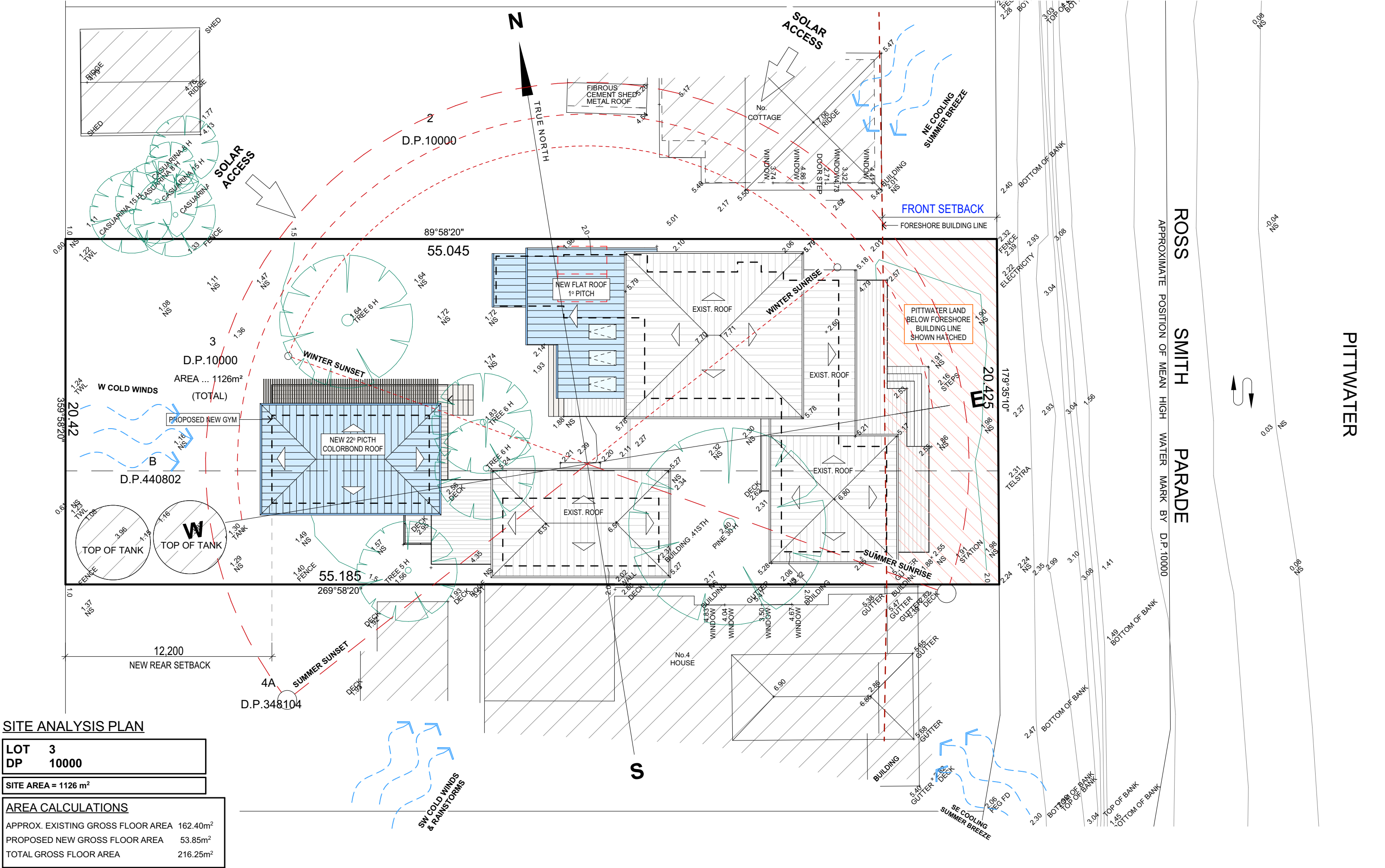
3 ROSS SMITH - GREAT MACHEREL BEACH NSW 2108

Prepared By *JJ Drafting PTY LTD*

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CONTENTS	
PAGE	DRAWING TITLE
DA.00	COVER PAGE
DA.01	SITE ANALYSIS PLAN
DA.02	EXISTING FLOOR PLAN
DA.03	EXISTING ELEVATIONS SHEET 1
DA.04	EXISTING ELEVATIONS SHEET 2
DA.05	PROPOSED GROUND FLOOR PLAN
DA.06	EAST AND WEST ELEVATIONS
DA.07	SOUTH AND NORTH ELEVATIONS
DA.08	SECTION AA & SECTION BB
DA.09	BASIX / SPECIFICATIONS NOTES
DA.10	LANDSCAPED AREA CALCULATION PLAN
DA.11	ROOF & STORMWATER CONCEPT PLAN
DA.12	EROSION & SEDIMENT CONTROL / WASTE MANAGEMENT PLAN
DA.13	SHADOW DIAGRAM JUNE 21 9:00 am
DA.14	SHADOW DIAGRAM JUNE 21 12 noon
DA.15	SHADOW DIAGRAM JUNE 21 3:00 pm



SITE ANALYSIS PLAN

LOT	3
DP	10000
SITE AREA = 1126 m ²	

AREA CALCULATIONS

APPROX. EXISTING GROSS FLOOR AREA	162.40m ²
PROPOSED NEW GROSS FLOOR AREA	53.85m ²
TOTAL GROSS FLOOR AREA	216.25m ²

TRUE NORTH:



NOTES (E & OE)

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- Do not obtain dimensions by scaling drawings.
- All dimensions are to be checked on site prior to starting work.
- These drawings are to be read in conjunction with all other consultant's drawings and specifications.
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- New materials are to be used throughout unless otherwise noted.
- Concrete footings, slab, structural beams or any other structural members are to be designed by a practicing engineer.

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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
SITE ANALYSIS PLAN

DATE:
AUGUST/23

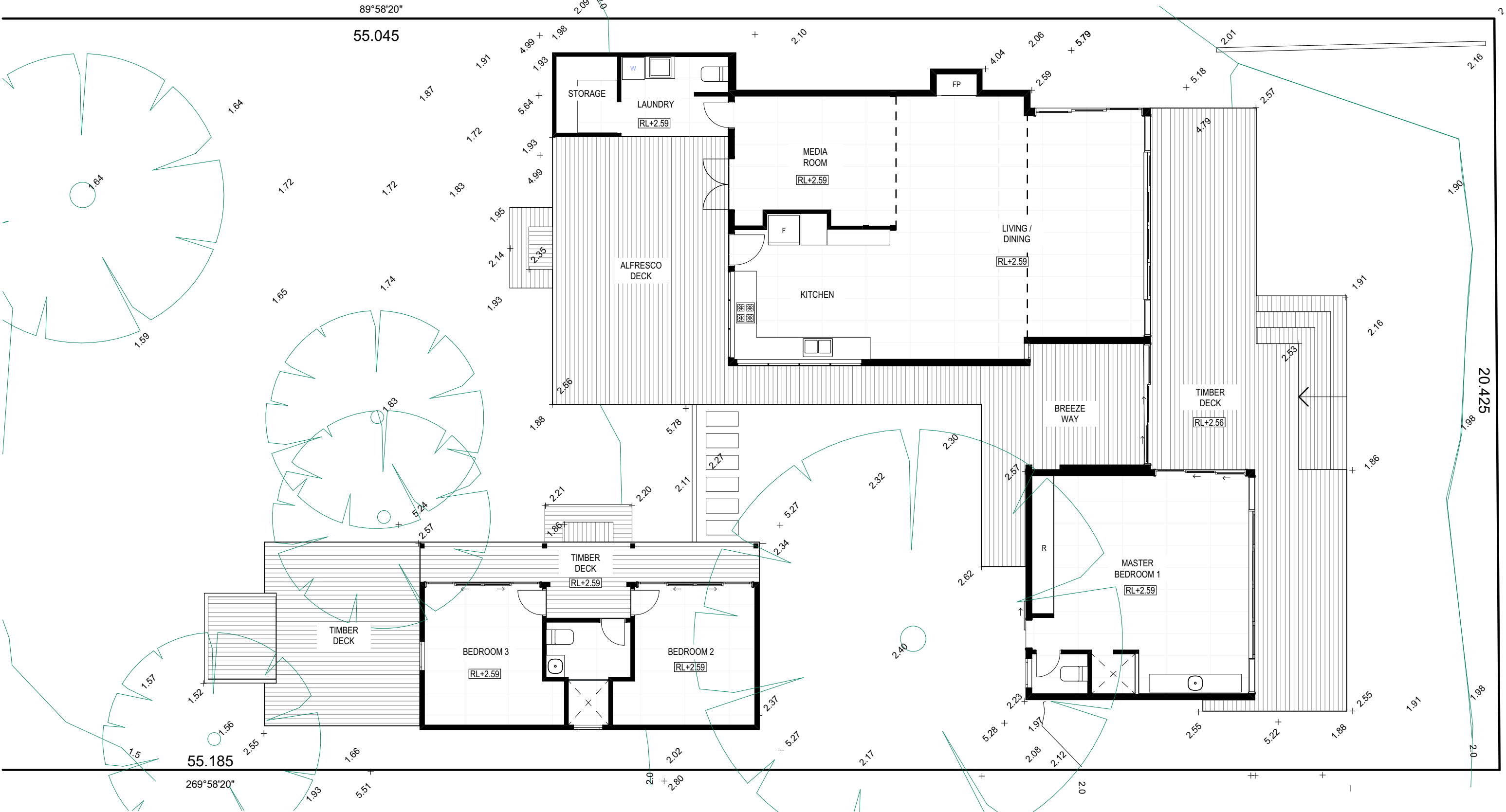
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DRAWING No:
DA.01



EXISTING GROUND FLOOR

GROSS FLOOR AREA - EXISTING	m²
GROSS FLOOR AREA - EXISTING	89.00
GROSS FLOOR AREA - EXISTING	38.80
GROSS FLOOR AREA - EXISTING	34.60
	162.40 m²

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PROPOSED ALTERATIONS AND ADDITIONS

3 Ross Smith - Great Mackerel Beach NSW 2108

CLIENT:
Christopher & Victoria Logan

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EXISTING FLOOR PLAN

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AUGUST/23

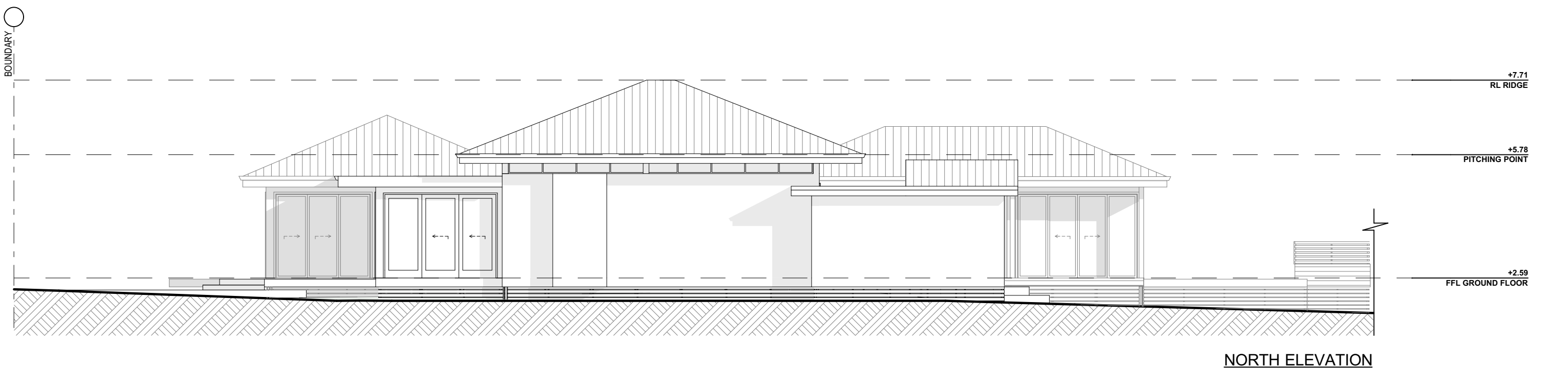
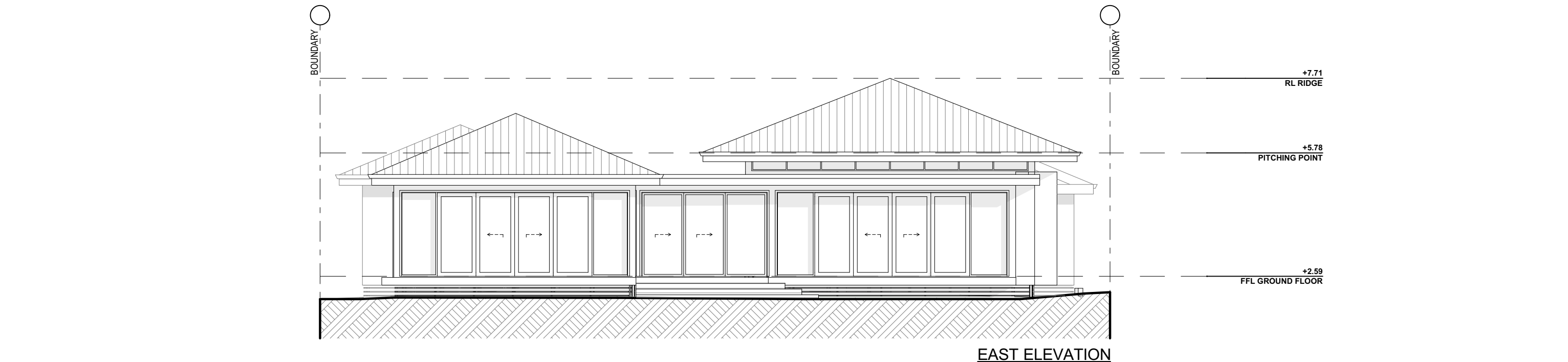
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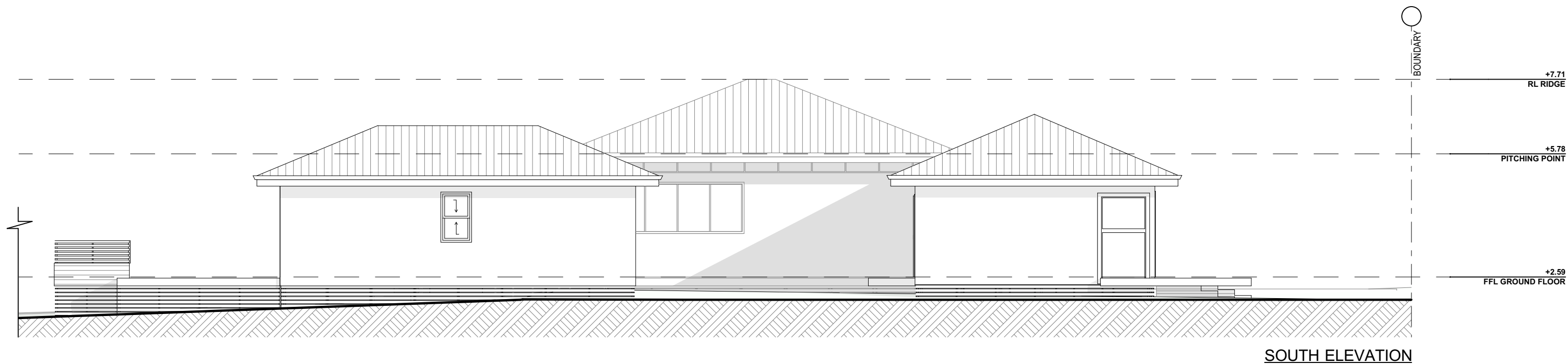
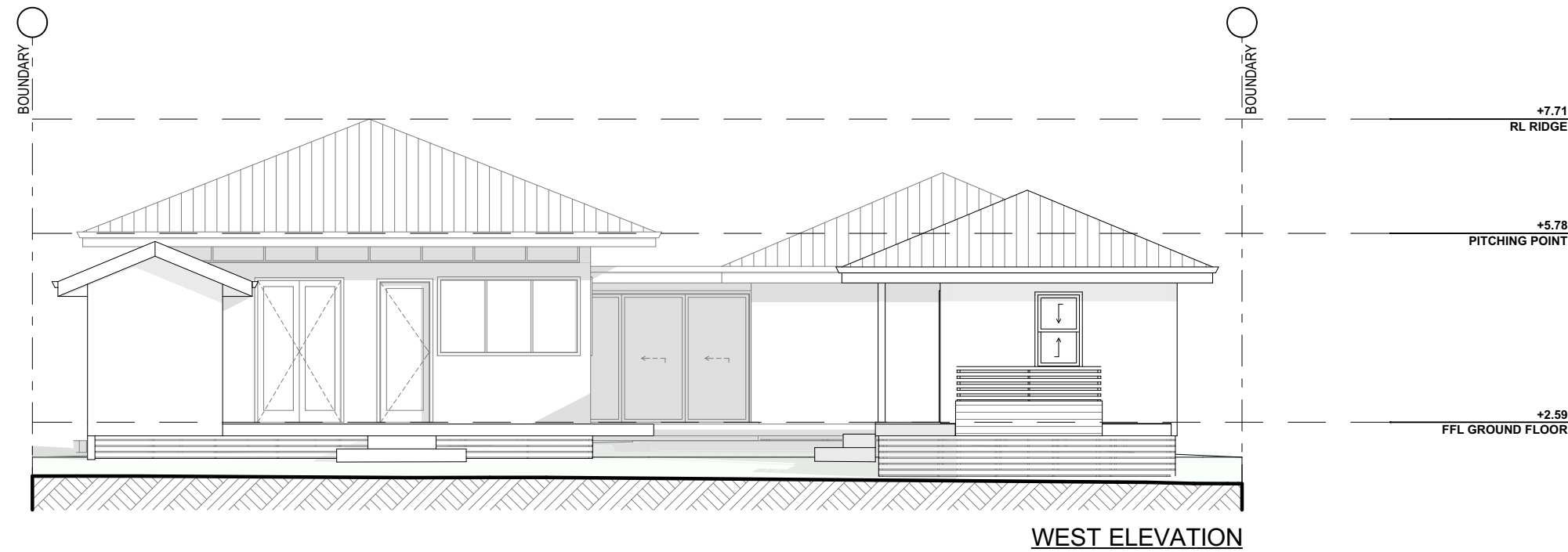
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NOTES (E & OE) • All structures including stormwater & drainage to engineer's details. • Do not obtain dimensions by scaling drawings. • All dimensions are to be checked on site prior to starting work. • These drawings are to be read in conjunction with all other consultant's drawings and specifications. • All workmanship & materials shall be in accordance with the requirements of current editions including amendments of the National Construction Code, relevant Australian Standards & local council requirements. • New materials are to be used throughout unless otherwise noted. • Concrete footings, slab, structural beams or any other structural members are to be designed by a practicing engineer.	JJ Drafting Australia P/L. 26/90 Mona Vale Road, Mona Vale, NSW, 2103 PO Box 687, Dee Why, NSW, 2099 Mob. 0414 717 541 Email. enquiries@jjdrafting.com.au www.jjdrafting.com.au ACN 651 693 346	REV: DATE: DESCRIPTION:	PROPOSED ALTERATIONS AND ADDITIONS 3 Ross Smith - Great Macherel Beach NSW 2108 CLIENT: Christopher & Victoria Logan		DATE: AUGUST/23	DRAWN BY: LB	SCALE: 1:100 @ A3	
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		E 30/10/23 DA DRAWINGS UPD.- REQUIRED PMF LEVEL						
					DRAWING TITLE: EXISTING ELEVATIONS SHEET 1			



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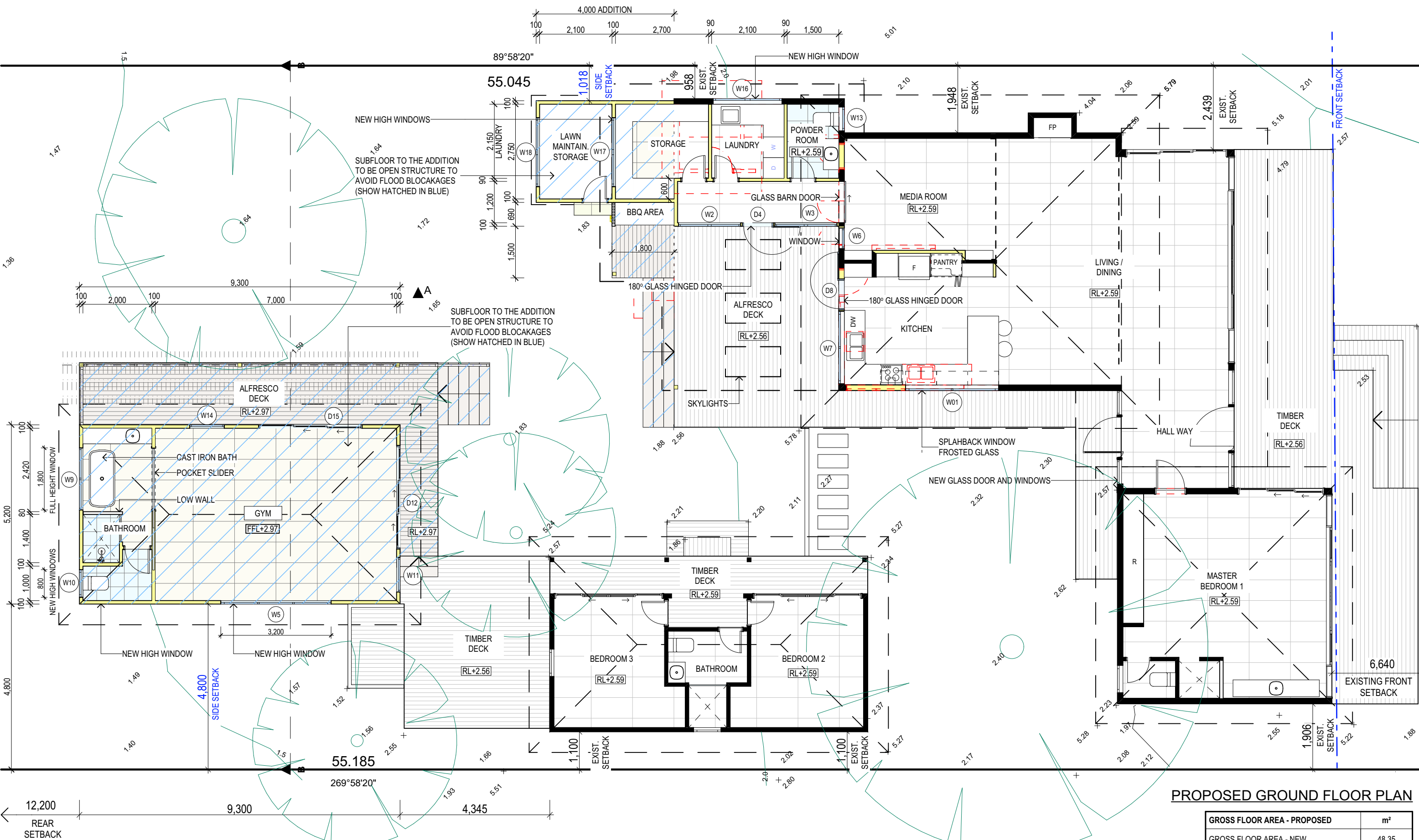
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PROPOSED ALTERATIONS AND ADDITIONS 3 Ross Smith - Great Macherel Beach NSW 2108 CLIENT: Christopher & Victoria Logan	DRAWING TITLE: EXISTING ELEVATIONS SHEET 2
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PROPOSED GROUND FLOOR PLAN

GROSS FLOOR AREA - PROPOSED	m²
GROSS FLOOR AREA - NEW	48.35
GROSS FLOOR AREA - NEW	5.50
	53.85 m²

TRUE NORTH:

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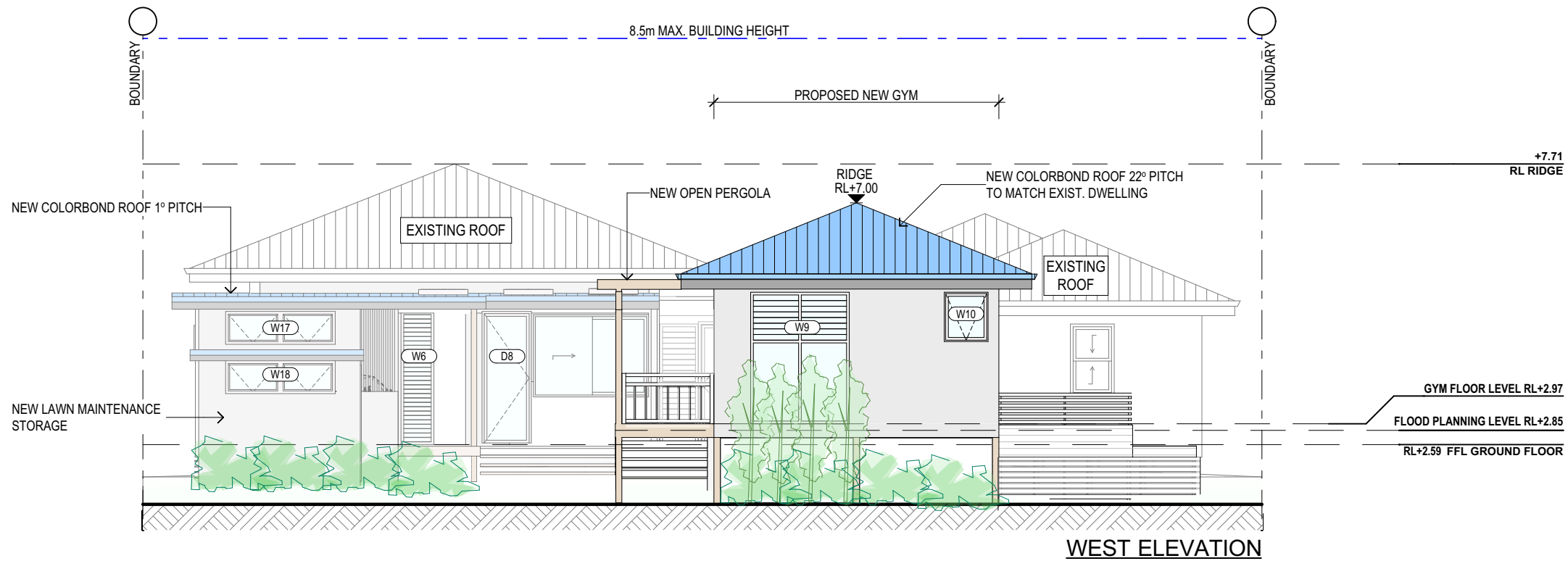
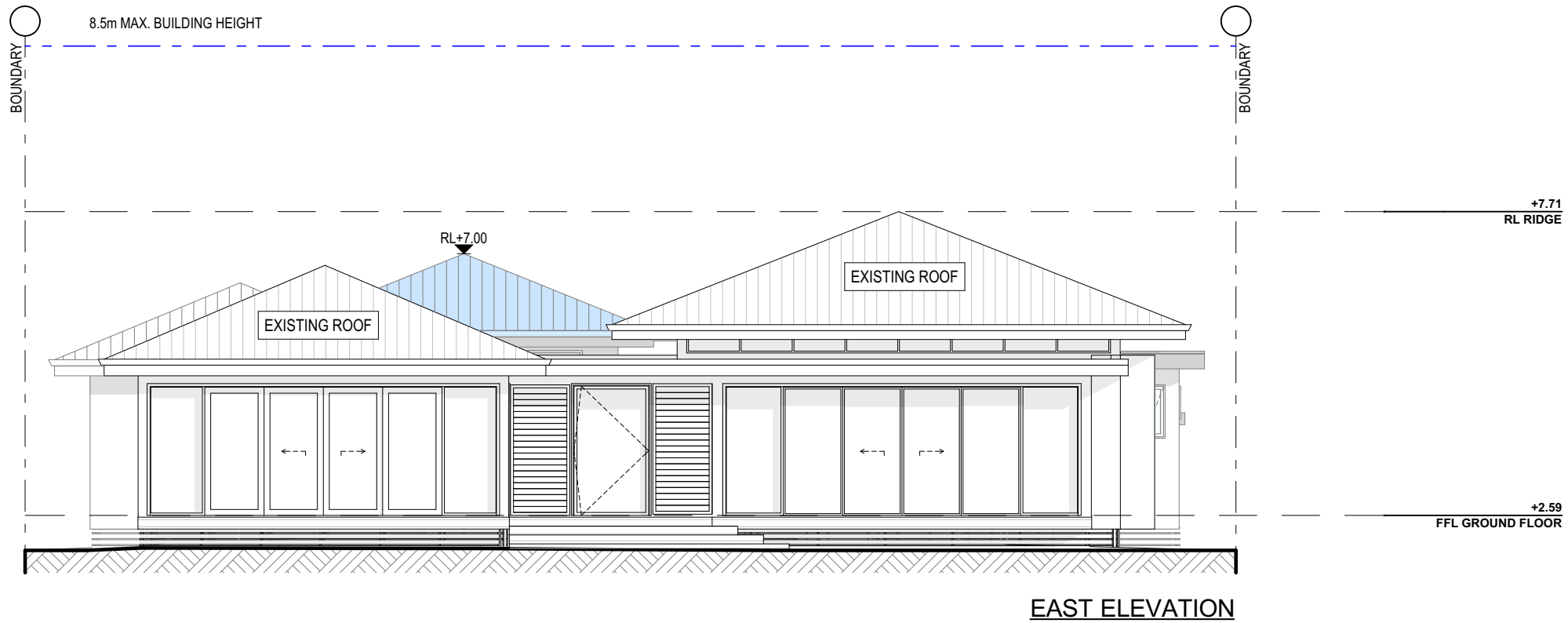
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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
PROPOSED GROUND FLOOR PLAN

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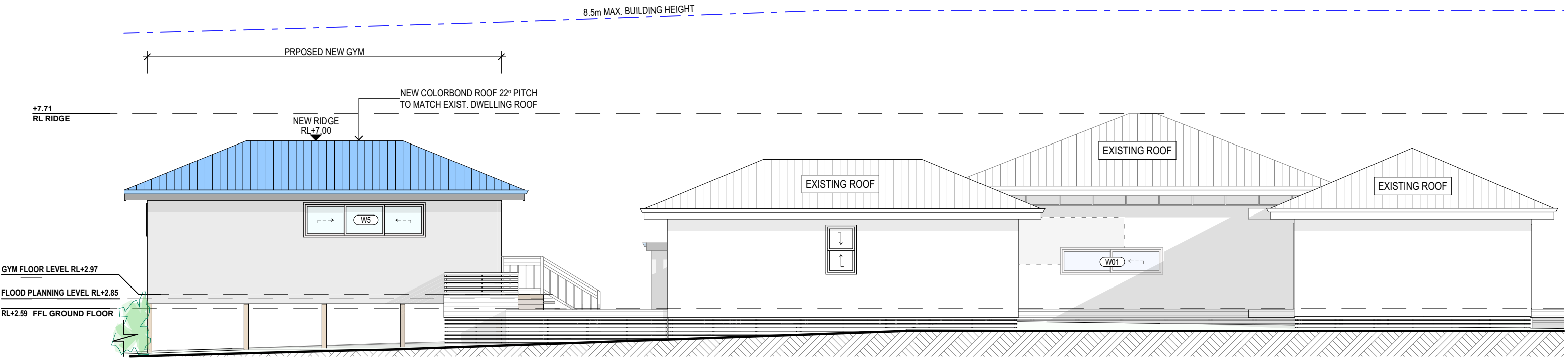
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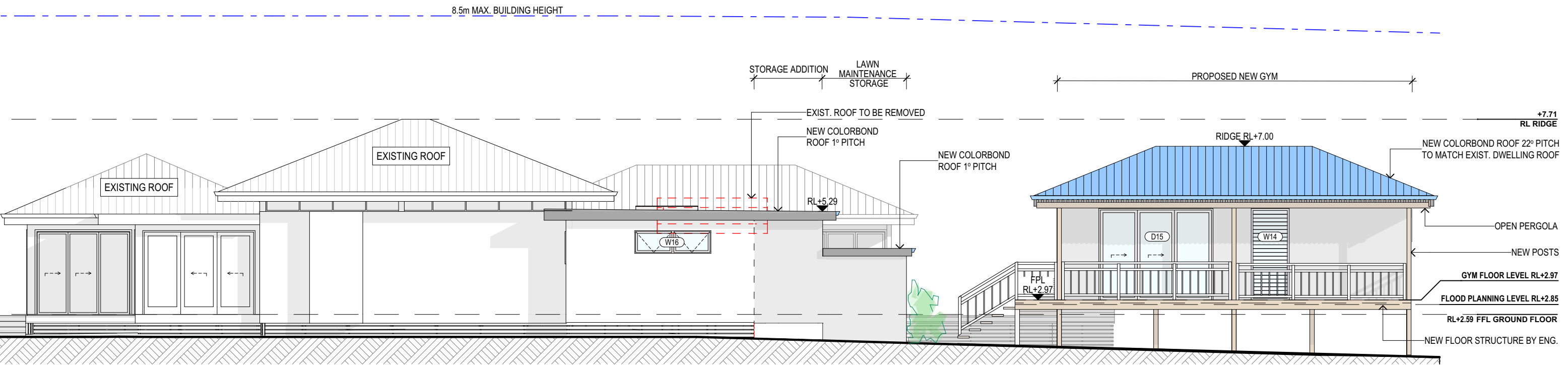
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PROPOSED ALTERATIONS AND ADDITIONS 3 Ross Smith - Great Macherel Beach NSW 2108 CLIENT: Christopher & Victoria Logan	DRAWING TITLE: EAST AND WEST ELEVATIONS
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SOUTH ELEVATION



NORTH ELEVATION

NOTES (E & OE)

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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
SOUTH AND NORTH ELEVATIONS

DATE:
AUGUST/23

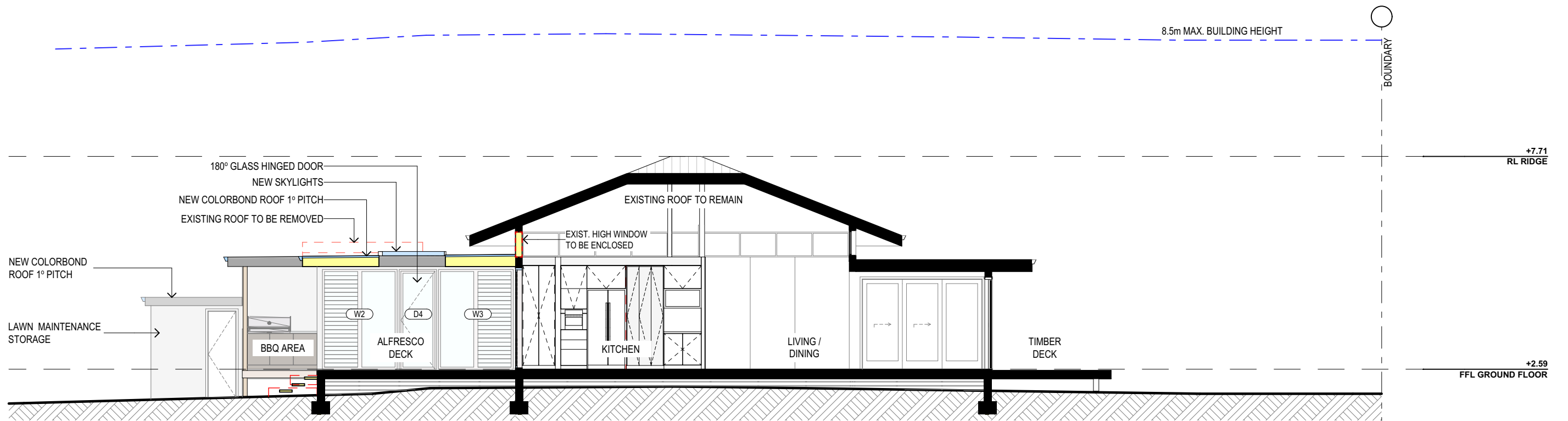
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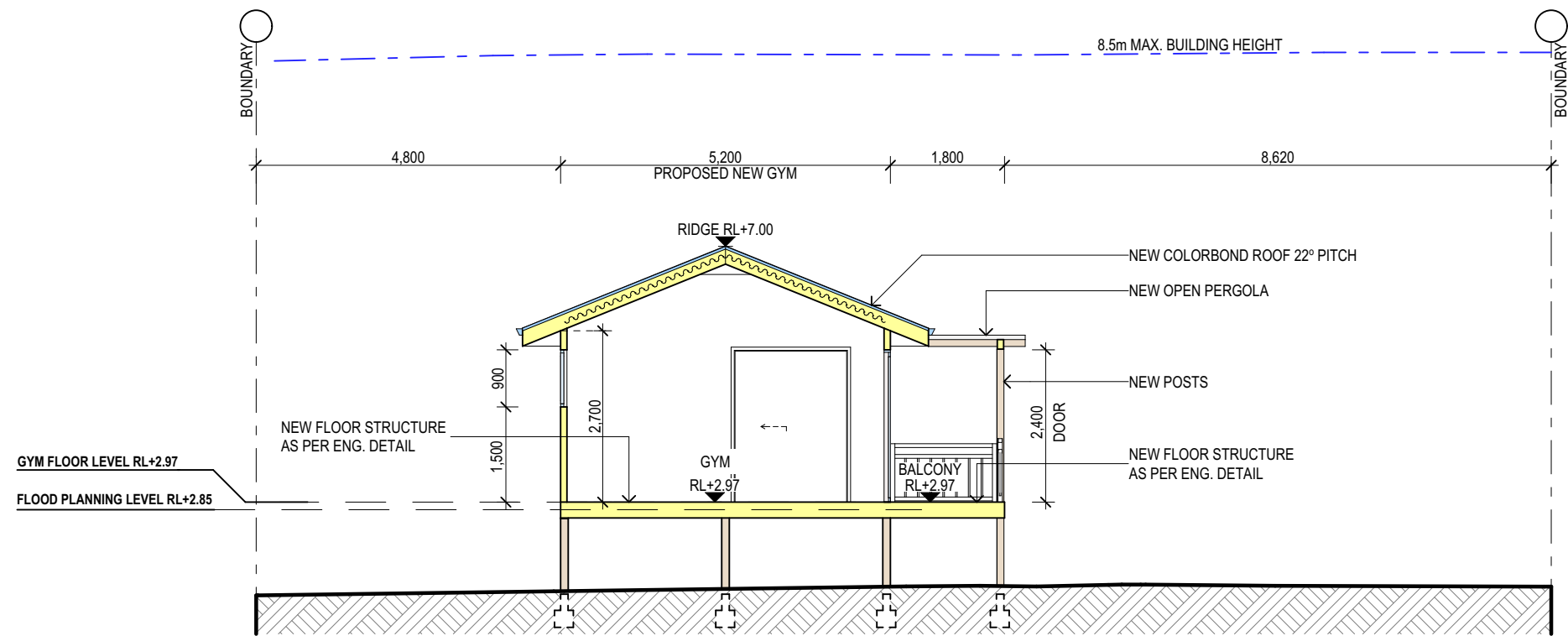
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DRAWING No:
DA.07



SECTION AA



SECTION BB

NOTES (E & OE)

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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
SECTION AA & SECTION BB

DATE:
AUGUST/23

JOB No:
1178/23

DRAWN BY:
LB

CHECKED BY:
JJ

SCALE:
1:100 @ A3

DRAWING No:
DA.08

BASIX REQUIREMENT:

BASIX Inclusions for 3 Ross Smith - Great Macherel Beach NSW 2108

LIGHTING REQUIREMENTS

40% OF NEW OR ALTERED LIGHT FIXTURES TO BE FITTED WITH FLUORESCENT, COMPACT FLUORESCENT, OR LIGHT-EMITTING-DIODE (LED) LAMPS

WATER

- SHOWER RATING _____ MINIMUM 3 STAR
- TAP RATING _____ MINIMUM 3 STAR
- WC'S RATING _____ MINIMUM 3 STAR

INSULATION REQUIREMENTS

CONSTRUCTION	ADDITIONAL INSULATION REQUIREMENT (R-VALUE)
SUSPENDED FLOOR WITH OPEN SUBFLOOR	R 0.80 (DOWN) (or R 1.50 INCLUDING CONSTRUCTION)
EXTERNAL WALL: FRAMED (WEATHERBOARD, FIBRO, METAL CLAD)	R 1.30 (OR R 1.70 INCLUDING CONSTRUCTION)
RAKED CEILING, PITCHED/SKILLION ROOF:FRAMED	Ceiling: R2.24 (up), roof: foil backed blanket (55 mm) Solar absorptance 0.475 - 0.70 = medium

GLAZING DOORS / WINDOWS

- STANDARD ALUMINIUM, SINGLE CLEAR, (or U-value: 7.63, SHGC: 0.75)
WINDOWS - W1, W2, W3, D4, W5, W6, W7, D8, W13, W14, W15

- ALUMINIUM DOUBLE Lo-Tsol / air gap clear (U-value: 4.90, SHGC: 0.33)
WINDOWS - W9, W10, W11, W12, W16

SPECIFICATION NOTES

INTERNAL LINING

- PROVIDE PLASTERBOARD LINING.

EXTERNAL WALLS:

- BRICK VENEER WALLS WITH SELECTED BRICKS TO DWELLING.
- ALL EXTERNAL WALL CLADDINGS MUST BE COMPLIANT WITH THE REQUIREMENTS OF NCC 2022 – ABCB HOUSING PROVISIONS PART 7, AS1684 AND ALL RELEVANT CODEMARK CERTIFICATES.
- ROOF AND WALL CLADDING INSTALLATION TO NCC 2022 - ABCB HOUSING PROVISIONS PART 7 & AS 1562 DESIGN AND INSTALLATION OF SHEET ROOF AND WALL CLADDING.

CONDENSATION MANAGEMENT:

- CONDENSATION MANAGEMENT MUST BE ADHERED TO IN ACCORDANCE WITH NCC 2022 – HOUSING PROVISIONS PART 10.8.

FLOOR:

- GROUND FLOOR TO BE REINFORCED CONCRETE SLAB IN ACCORDANCE WITH NCC 2022.
- FIRST FLOOR TO BE TIMBER FRAMED FINISHED WITH T&G HARDWOOD FLOORING.

WET AREAS:

- ALL WATERPROOFING TO NCC 2022 – ABCB HOUSING PROVISIONS PART 10, AS3740 AND PROVIDE A GUARANTEED FLEXIBLE WATERPROOF MEMBRANE TO ALL WET AREA FLOORS & SHOWER WALLS TO MANUFACTURED SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
- WATERPROOF INSTALLATION NCC (2022): HOUSING PROVISIONS PART 10, AS 3740 WATERPROOFING OF DOMESTIC WET AREAS (INTERNAL) & AS 4654 WATERPROOF MEMBRANES FOR EXTERNAL USE.

BEARERS AND JOISTS:

- SHALL BE INSTALLED TO COMPLY WITH AS1684 AS AMENDED FOR TIMBER COMPONENTS OR AS3620 FOR LIGHTWEIGHT STEEL FRAMING SECTIONS OR AS PER THE NASH ALTERNATIVES TO AS 3623.

ANT CAPS:

- SHALL BE INSTALLED IN ACCORDANCE WITH AS3660.

PROFILED STEEL ROOF:

- COLORBOND ROOF CLADDING
- METAL ROOF DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH NCC 2022 – ABCB HOUSING PROVISIONS PART 7, AS 1562.

ROOF TILES OR SHINGLES:

- NCC VOL.2 PART 3.5.2.

CONCRETE:

- SHALL BE IN ACCORDANCE WITH NCC VOL.1 PART B1.4 OR VOL.2 PART 3.2.3.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT EDITIONS OF THE AS3600.

BRICK AND BLOCKWORK:

- MASONRY STRUCTURES TO NCC 2022 - ABCB HOUSING PROVISIONS PART 5 & AS 3700 MASONRY STRUCTURES.

FOOTINGS:

- FOOTINGS TO BE IN ACCORDANCE WITH NCC 2022.
- RESIDENTIAL SLABS, FOOTINGS AND CONCRETE STRUCTURES TO NCC 2022 – ABCB HOUSING PROVISIONS PART 3 & 4, AS 2870 RESIDENTIAL SLABS AND FOOTING & AS 3600 CONCRETE STRUCTURES.

CARPENTRY:

- TIMBER TO COMPLY WITH NCC 2022.
-TERMITE MANAGEMENT INSTALLATION OF PERIMETER & COLLARS TO NCC 2022 - ABCB HOUSING PROVISIONS PART 3.4 & AS 3660.1 TERMITE MANAGEMENT - NEW BUILDING WORK.

TIMBER FRAMING:

-ALL EXTERNAL TIMBER FRAMED WALLS TO BE WRAPPED IN A BREATHABLE VAPOUR PERMEABLE MEMBRANE THAT COMPLIES, INSTALLED WITH AS/NZS 4200.1 & AS/NZS 4200.2.- TO COMPLY WITH NCC2022.
-TIMBER FRAMING INSTALLATION TO NCC 2022 - ABCB HOUSING PROVISIONS PART 6, AS 1684 RESIDENTIAL TIMBER FRAMED CONSTRUCTION & ASINZS 1170 STRUCTURAL DESIGN ACTIONS.
- GROUND FLOOR TIMBERS SHALL BE ONLY OF HARDWOOD, CYPRESS PINE OR PRESSURE TREATED RADIATA OR CANADA PINE BELOW A HEIGHT OF 300mm ABOVE FINISHED GROUND LEVEL AND MUST NOT BE BUILT INTO BRICKWORK.
- IN BUSHFIRE PRONE AREAS SPECIAL CONDITIONS APPLY.
- WHERE TERMITE BARRIERS NEED TO BE INSPECTED, 400mm CLEARANCE IS REQUIRED BETWEEN THE UNDERSIDE OF BEARER AND GROUND SURFACE.
- USE TREATED TIMBER WHERE REQUIRED FOR DURABILITY.
- DO NOT USE TIMBER UNSUITABLE FOR EXPOSURE TO MOISTURE IN EXPOSED LOCATION.
- USE GALVANISED FIXINGS WHERE EXPOSED TO WEATHER.

STEEL FRAMING:

-ALL STEEL FRAMING TO NCC 2022 - ABCB HOUSING PROVISIONS PART 6, AS 4100 STEEL STRUCTURES, ASINZS 4600 COLD-FORMED STEEL STRUCTURES & NASH STANDARD.

TERMITE CONTROL:

- TO BE IN ACCORDANCE WITH TO NCC2022.

FLASHING AND CAPPINGS:

- SELECTION AND INSTALLATION OF METAL RAINWATER GOODS
- FLASH PROJECTIONS ABOVE THE ROOF WITH TWO PART FLASHINGS CONSISTING OF AN APRON FLASHING AND OVER FLASHING, WITH AT LEAST 100mm OVERLAP.
- PROVIDE FOR INDEPENDENT MOVEMENT BETWEEN ROOF AND PROJECTION.
- DAMP PROOF COURSE AND FLASHINGS TO NCC 2022 - ABCB HOUSING PROVISIONS PART 5, 7 & 12 & ASINZS 2904 DAMP-PROOF COURSES AND FLASHINGS.

CONCRETE BLOCKS OR BRICKS:

- TO COMPLY WITH TO NCC2022

LIGHTING:

- 40% OF NEW OR ALTERED LIGHT FIXTURES TO BE FITTED WITH FLUORESCENT, COMPACT FLUORESCENT, OR LIGHT-EMITTING-DIODE (LED) LAMPS

WATERPROOFING FOR EXTERNAL TILED BALCONIES:

- WATERPROOFING TO COMPLY WITH NCC2022

DOORS & WINDOWS:

- ALL FRAMED WINDOWS SHALL BE INSTALLED IN ACCORDANCE WITH NCC2022 - ALUMINIUM WINDOWS AND TIMBER WINDOWS.
- ALUMINIUM FRAMED WINDOWS AND DOORS.
- WEATHER STRIPPING IS TO BE PROVIDED TO ALL EXTERNAL WINDOWS AND DOORS.
- ALL WINDOWS ARE TO BE RESTRICTED IN ACCORDANCE WITH NCC 2022 – ABCB HOUSING PROVISIONS PART 11.3.7 & PART 11.3.8 PROTECTION OF OPENABLE WINDOWS WHERE SURFACE BELOW IS MORE THAN 2M.
- PROVIDE LIFT-OFF HINGES WHERE THE TOILET PAN IS WITHIN 1.2 METRES OF THE HINGED SIDE OF THE DOOR IN ACCORDANCE WITH NCC 2022 – ABCB HOUSING PROVISIONS PART 10.4.

STAIRS, HANDRAILS AND BALUSTRADES:

- RELATIONSHIP OF RISER TO GOING SHALL BE BETWEEN 1:2 AND 1:1.35 UNLESS OTHERWISE DIRECTED TO GOING SHALL BE BETWEEN 1:2 AND 1:1.35 UNLESS OTHERWISE DIRECTED OR AS PERMITTED IN NCC2022.
- BALUSTRADES SHALL BE PROVIDED TO ALL LANDINGS, RAMPS, DECKS, ROOFS AND OTHER ELEVATED PLATFORMS WHERE THE VERTICAL DISTANCE FROM THAT LEVEL IS MORE THAN 1m ABOVE THE ADJOINING FLOOR OR FINISHED GROUND LEVEL.
- THE HEIGHT OF BALUSTRADE MUST BE A MINIMUM OF 1m HIGH ABOVE LANDING AND NOT LESS THAN 865mm ABOVE THE NOSINGS OF ANY STAIR TREADS OR FLOOR RAMP AND HAVE NO OPENING GREATER THAN 125mm.
- THE HEIGHT OF BALUSTRADE TO THE NEW STAIRCASES IS TO BE MEASURED A MINIMUM 865mm ABOVE THE NOSING LINE AND HAVE NO OPENING GREATER NO OPENING GREATER THAN 125mm.
- ALL BALUSTRADES & PRIVACY SCREENS TO COMPLY WITH NCC 2022 – ABCB HOUSING PROVISIONS PART 11, AS 1684, AS 1170, AS 1288 & AS/NZS 2208

SLIP RESISTANCE:

- MATERIALS TO BE USED FOR SURFACES OF FLOORS, STAIR LANDING, STEPS AND NOSINGS SHALL BE IN ACCORDANCE WITH THE CLASSIFICATIONS FOR SLIP RESISTANCE AS APPLY IN NCC2022.
- ALL STAIRS PROVIDING ACCESS TO COMPLY WITH NCC 2022 – ABCB HOUSING PROVISIONS PART 11, AS 4586 INCLUDING SLIP RESISTANCE P3 / R10 FOR DRY OR P4 / R11 FOR WET.

STORMWATER:

EAVES GUTTERS, VALLEY GUTTERS AND DOWPIPES

- IN ACCORDANCE WITH NCC 2022
- NEW DOWNPIPES TO BE CONNECTED INTO EXISTING STORMWATER LINE
- COLORBOND GUTTERS AND DOWNPIPES
- MINIMUM SLOPE OF EAVES AND GUTTERS 1:200

GLAZING:

-ALL WINDOW GLAZING AND DOOR GLAZING TO BE INSTALLED IN ACCORDANCE TO NCC 2022 - ABCB HOUSING PROVISIONS PART 8, AS 1288 GLASS IN BUILDINGS, ASINZS 2208 SAFETY GLAZING MATERIALS IN BUILDINGS & AS 2047 WINDOWS AND EXTERNAL DOORS IN BUILDINGS.
- SHOWER SCREEN/MIRRORS / WARDROBE GLASS INSTALLATION TO NCC 2022 - HOUSING PROVISIONS PART 8, AS 1288 & AS/NZS 2208.
- GLASS BALUSTRADE INSTALLATION TO NCC 2022 - HOUSING PROVISIONS PART 11, AS 1288 GLASS IN BUILDINGS, AS/NZS 2208 SAFETY GLAZING MATERIALS IN BUILDINGS & AS 1170 STRUCTURAL DESIGN ACTIONS.

FIRE SAFETY. SMOKE DETECTORS/ALARMS:

- PROVIDE HARDWIRED & INTERCONNECTED SMOKE ALARM DEVICES COMPLYING WITH THE REQUIREMENTS OF THE LOCAL GOVERNMENT ACT AND/OR STATE OR TERRITORY REGULATIONS MUST BE FITTED IN THE LOCATIONS REQUIRED AND APPROVED BY THE AUTHORITY. SMOKE ALARMS TO BE INSTALLED TO NCC 2022 – ABCB HOUSING PROVISIONS PART 3.7.5
- INSTALLATIONS IN BUILDINGS OTHER THAN CLASS 1a AND 1b MUST BE INSTALLED AND MANAGED TO COMPLY WITH NCC SECTIONS 3.7.5.3 and 3.7.5.4.
- FIRE SEPARATING WALL, A WALL WITHIN 900MM OF BOUNDARY INSTALLATION CERTIFICATE (FRL60/60/60) INCL ACOUSTIC SOUND (RW) + CTR50 TO NCC 2022 - ABCB HOUSING PROVISIONS
- BUSHFIRE-PRONE AREAS CERTIFICATE FOR BUILDING - NCC 2022 - VOL. 2 PART NSW H7D4 CONSTRUCTION IN BUSHFIRE PRONE AREAS - AS 3959 CONSTRUCTION OF BUILDING IN BUSHFIRE-PRONE AREAS & PLANNING FOR BUSHFIRE PROTECTION 2019.

WASTE MANAGEMENT:

- ALL WASTE SHALL BE TAKEN AWAY BY TRUCKS TO A SUITABLE LANDFILL OR RECYCLE DEPOT.
- ALL WASTE SHALL BE COVERED DURING TRANSPORTATION.
- WASTE GENERATED DURING CONSTRUCTION SHALL BE PLACED IN STEEL BINS AND TAKEN AWAY BY AN APPROVED CONTRACTOR TO A APPROVED LANDFILL SITE.

SEDIMENT CONTROL:

- A FILTER CLOTH SYSTEM SHALL BE INSTALLED TO STOP ANY SEDIMENT ENTERING COUNCILS STORMWATER SYSTEM.

SWIMMING POOLS & SAFETY:

-POOL PLUMBING/CIRCULATION TO COMPLY WITH NCC 2022 PART NSW H7D2, AS 1926.3 SWIMMING POOL SAFETY - WATER RECIRCULATION SYSTEMS
- ALL POOL FENCING TO BE INSTALLED TO: NCC 2022 NSW H7D2, AS 1926.1 – 2012 - SAFETY BARRIERS FOR SWIMMING POOLS, AS NCC2022 – LOCATION OF SAFETY BARRIERS FOR SWIMMING POOLS, STRUCTURAL DESIGN ACTIONS AND IF GLASS POOL FENCING TO ADDITIONALLY COMPLY WITH NCC2022 – SAFETY GLASS,
- AS 2783 USE OF REINFORCED CONCRETE FOR SMALL SWIMMING POOLS

MISCELLANEOUS ITEMS:

- ALLOW FOR SEPARATE TAPS FOR THE WASHING MACHINE AND KEEP THEM SEPARATE FROM THOSE OF THE LAUNDRY TUB. A DEDICATED LAUNDRY SPACE COMPRISING OF ONE WASHTUB AND A SPACE FOR A WASHING MACHINE MUST BE PROVIDED IN ACCORDANCE WITH NCC 2022 – ABCB HOUSING PROVISIONS PART 10.4.
- GAS FIRE SUPPLY AND INSTALLATION TO COMPLY WITH NCC 2022 - ABCB HOUSING PROVISIONS PART 12.4, AS/NZS 5601 GAS INSTALLATIONS.

NOTE:

ALL PLANS ARE TO BE READ IN CONJUNCTION AND COMPLY WITH THE BASIX CERTIFICATE, BUSHFIRE AND GEOTECH REPORTS.

NOTES (E & OE)

- All structures including stormwater & drainage to engineer's details.
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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108

CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
BASIX / SPECIFICATIONS NOTES

DATE:
AUGUST/23

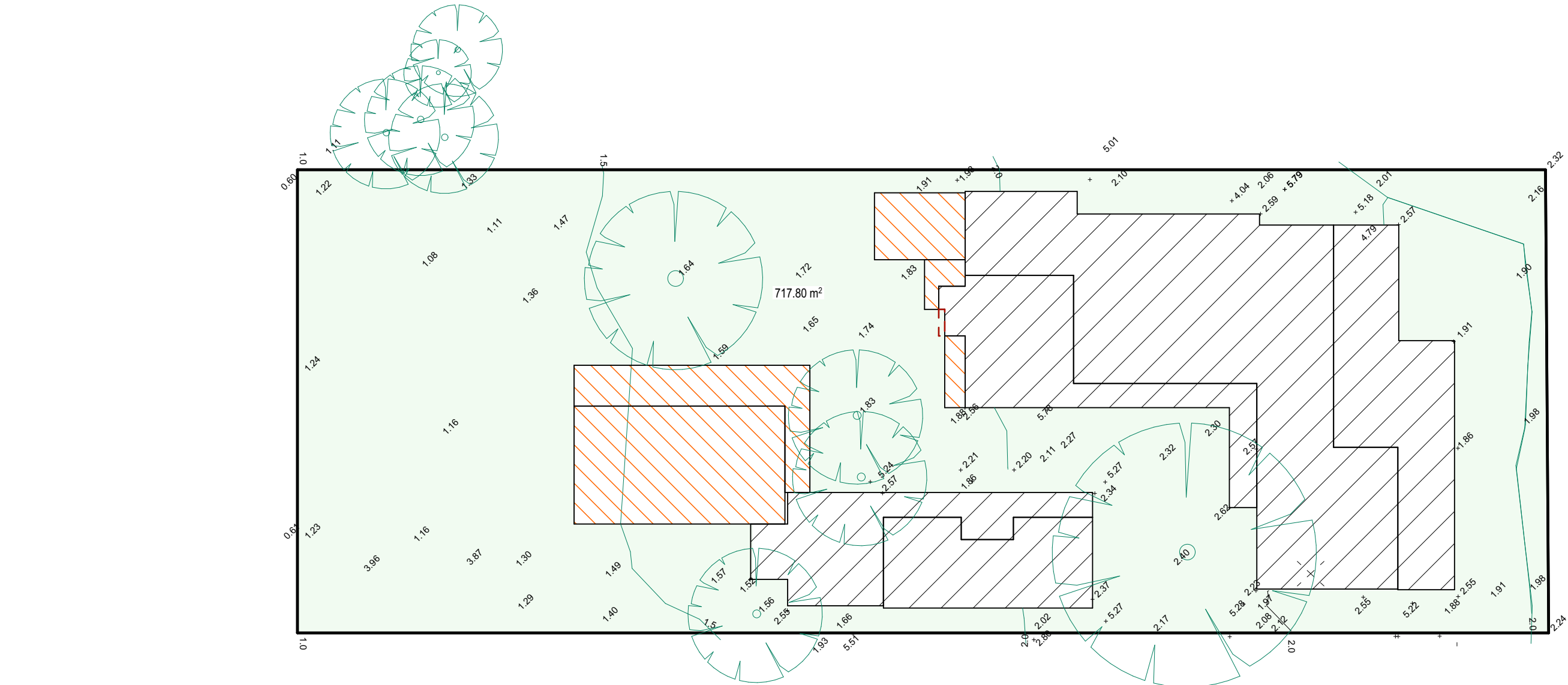
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LB

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1:1.25, 1:1.43 @ A3

JOB No:
1178/23

CHECKED BY:
JJ

DRAWING No:
DA.09



LANDSCAPED AREA CALCULATION PLAN

CALCULATIONS			
SITE AREA			1126m²
LANDSCAPE CONTROL		60%	675.60m²
EXISTING LANDSCAPED AREA		71.56%	805.80m²
TOTAL LANDSCAPED AREA		63.75%	717.80m²
EXISTING HARD SURFACE AREA			320.20m²
HARD SURFACE AREA TO BE RETAINED			319.90m²
NEW HARD SURFACE AREA			88.30m²
TOTAL HARD SURFACE AREA		36.25%	408.20m²

TRUE NORTH:

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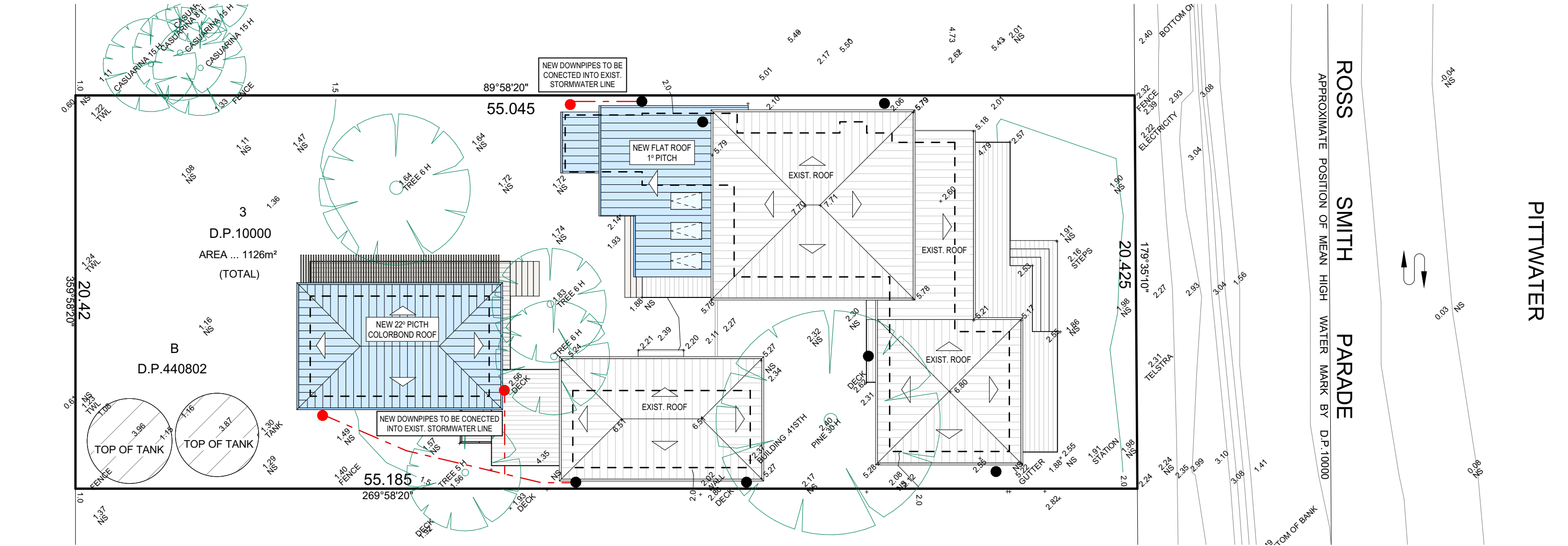
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PROPOSED ALTERATIONS AND ADDITIONS
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CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
LANDSCAPED AREA CALCULATION PLAN

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JOB No: 1178/23	CHECKED BY: JJ	DRAWING No: DA.10



ROOF & STORMWATER CONCEPT PLAN

STORMWATER CONCEPT LEGEND	
EXISTING DOWNPIPES	●
NEW DOWNPIPES	●
EXISTING STORMWATER LINE	---
NEW STORMWATER LINE	---

TRUE NORTH:

NOTES (E & OE)

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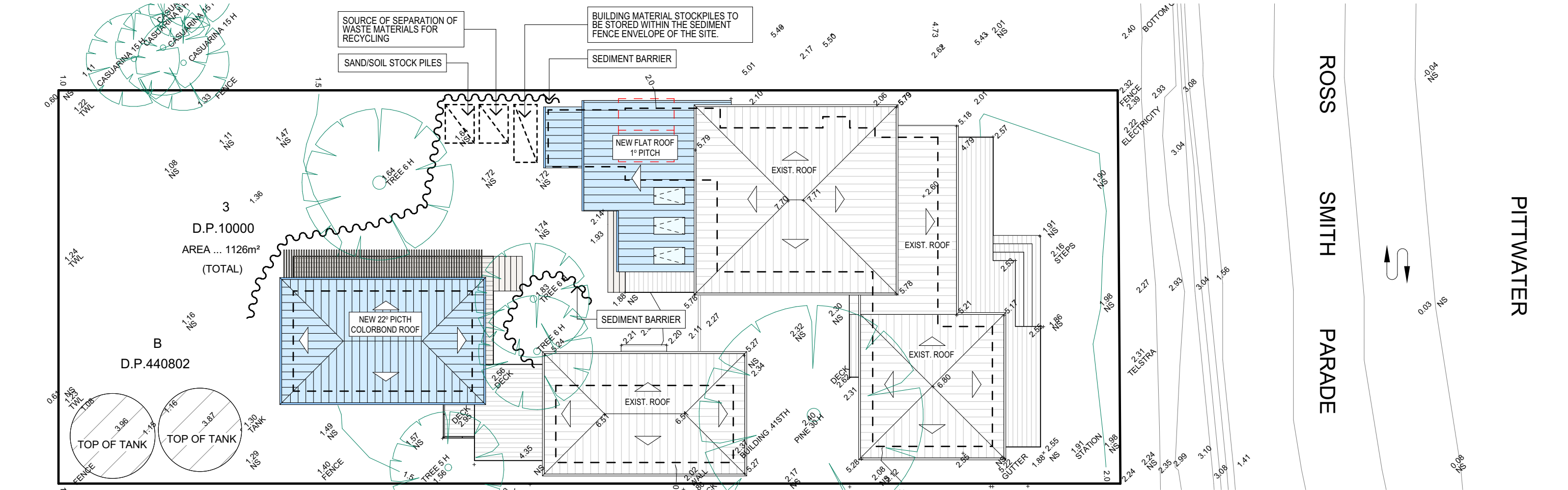
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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
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Christopher & Victoria Logan

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ROOF & STORMWATER CONCEPT PLAN

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JOB No: 1178/23	CHECKED BY: JJ	DRAWING No: DA.11



NOTES

DESIGNATED SITE MANAGER/BUILDER

PRIOR TO COMMENCEMENT OF WORK A SITE MANAGER OR BUILDER MUST BE NOMINATED. THE SITE MANAGER OR BUILDER WILL BE RESPONSIBLE AND LIABLE FOR ALL WORKS CARRIED OUT ON THE SITE. THIS ASSUMES THE RESPONSIBILITY FOR THE ACTIONS OF ALL SUBCONTRACTED PARTIES AS WELL AS ADVISING THEM OF COUNCIL'S REQUIREMENTS WHEN CARRYING OUT WORKS.

TOPSOIL MANAGEMENT

PRIOR TO THE STRIPPING OF TOPSOIL, THE VEGETATIVE COVER MUST BE REDUCED BY EITHER SLASHING OR MOWING. ALL TOPSOIL IS TO BE RETAINED AND PROTECTED FOR REUSE ON SITE. SOIL STOCKPILES MUST NOT BE LOCATED ON NATURE STRIPS, FOOTPATHS, ROADWAYS, KERBS, ACCESSWAYS, WITHIN DRAINAGE LINES/FLOWS/PATHS OR AROUND OR AGAINST TREE SHRUBS. SEDIMENT CONTROL MEASURES MUST BE INCORPORATED WITH ANY RESULTING STOCKPILE. THE STOCKPILE CAN BE PROTECTED FROM EROSION BY COVERING IT WITH AN IMPERVIOUS MATERIAL, IN CONJUNCTION WITH THE INSTALLATION OF A SEDIMENT FENCE AROUND IT. IF STOCKPILES ARE TO REMAIN FOR MORE THAN ONE MONTH THEY ARE TO BE GRASSED IMMEDIATELY AND STABILISED WITHIN FOURTEEN DAYS. SURPLUS TOPSOIL MUST BE REASONABLY REMOVED FROM SITE.

BUILDING MATERIAL STOCKPILING

SUFFICIENT AREA MUST BE ALLOCATED WITHIN THE SITE FOR SUCH STORAGE OF BUILDING MATERIALS, DEMOLITION WASTE, WASTE CONTAINERS, ETC. AS WILL BE REQUIRED.

SEDIMENT FENCES

A SEDIMENT FENCE SHOULD BE LOCATED ALONG THE DOWNSLOPE BOUNDARY(S) OF THE SITE, ON THE CONSTRUCTION SIDE OF THE TURF FILTER STRIP OR NATIVE VEGETATION, AND AROUND ALL STOCKPILES OF MATERIAL ON THE SITE.

DUST CONTROL

ALL TRUCKS/UTES MUST COVER THEIR LOADS AT ALL TIMES. APPROPRIATE METHODS ARE TO BE EMPLOYED TO PREVENT BLOWING DUST CREATING AN UNACCEPTABLE HAZARD OR NUISANCE ON THE SITE OR DOWN WIND. PRODUCTION OF DUST CAN BE MINIMISED BY LIMITING AREA OF EARTHWORKS, WATERING AND PROGRESSIVE VEGETATION. WHERE DUST IS CREATED AS A RESULT WORKS AND/OR SOIL EXPOSURE, THE BARE SOIL AREAS MUST BE WATERED, DURING AND/OR AT THE END OF EACH DAY TO LAY THE DUST. EARTH MOVING ACTIVITIES SHOULD BE AVOIDED WHERE WINDS ARE SUFFICIENTLY STRONG ENOUGH TO RAISE VISIBLE DUST.

EROSION & SEDIMENT CONTROLS

APPROPRIATE EROSION AND SEDIMENT CONTROLS MUST BE IMPLEMENTED ON ALL SITES THAT INVOLVE SOIL DISTURBANCE. THE MEASURES MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF WORK. THOSE CONTROLS ARE TO BE MONITORED AND MAINTAINED IN ORDER TO SERVE THEIR INTENDED FUNCTION FOR THE DURATION OF THE WORKS OR UNTIL SUCH TIME AS THE SITE IS FULLY STABILISED. IF ANY CONTROLS ARE DAMAGED OR BECOME INEFFECTIVE DURING THE COURSE OF THE WORKS THEY ARE TO BE REINSTATED OR REPLACED IMMEDIATELY. SUFFICIENT ACCESS TO THESE CONTROLS MUST BE PROVIDED IN CASE OF THE NEED TO REPAIR.

SEDIMENT TRAPS

WHERE A SEDIMENT FENCE IS NOT USED APPROPRIATE SEDIMENT TRAPS SHOULD BE LOCATED AT ALL POINTS WHERE STORMWATER LEAVES THE CONSTRUCTION SITE OR LEAVES THE GUTTER AND ENTERS THE DRAINAGE SYSTEM. A COMMON TECHNIQUE IS THE GRAVEL SAUSAGE.

DIVERSION CHANNELS

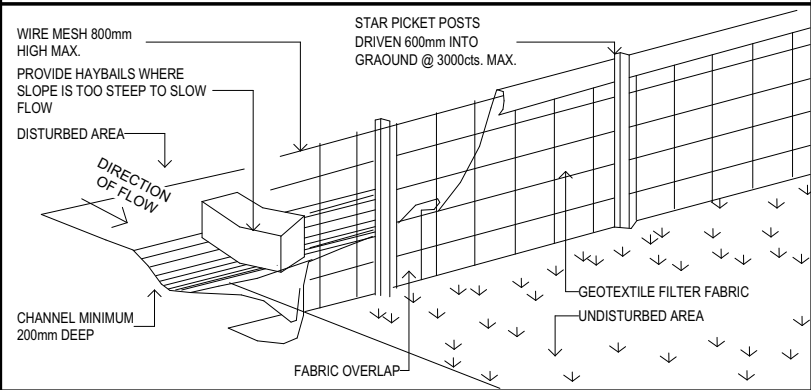
A DIVERSION CHANNEL IS AN EXCAVATED EARTH DITCH OR PATH. THESE STRUCTURES ARE USED TO INTERCEPT AND DIRECT RUN-OFF TO A DESIRED LOCATION WHERE POSSIBLE. ALL STORMWATER RUN-OFF FLOWING ONTO DISTURBED AREAS, INCLUDING STOCKPILES, MUST BE INTERCEPTED, DIVERTED AND/OR SAFELY DISPOSED OF. THIS CAN BE ACHIEVED BY CONSTRUCTING A TEMPORARY EARTH BANK AROUND THE UPSLOPE EXTENT OF THE CONSTRUCTION SITE WHERE THE DIVERSION DOES NOT AFFECT THE NEIGHBOURING PROPERTIES.

VEHICLE MOVEMENTS

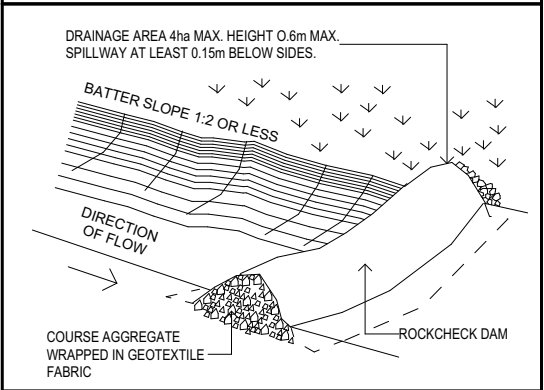
TO LIMIT DISTURBANCE TO THE SITE AND TRACKING OF MATERIAL ONTO THE STREET ALL VEHICLES AND PLANT EQUIPMENT ARE TO USE A SINGLE ENTRY/EXIT POINT UNLESS COUNCIL HAS APPROVED ALTERNATIVE ARRANGEMENTS. ACCESS POINTS AND PARKING AREAS ARE TO BE STABILISED WITH COMPACTED SUB-GRADE ASAP AFTER THEIR FORMATION. IF SPILLAGE DOES OCCUR IT IS TO BE CONTAINED IMMEDIATELY AND CAREFULLY REMOVED. THE AREA AFFECTED IS TO BE RESTORED TO A STANDARD EQUAL TO OR BETTER THAN ITS PREVIOUS CONDITION. ALL VEHICLES ARE TO BE WASHED PRIOR TO EXISTING THE SITE. THIS SERVES THE PURPOSE OF REMOVING SITE MATERIAL ON THE VEHICLE AND PREVENTS IT FROM BEING DEPOSITED ON THE ROAD NETWORK ADJACENT TO THE SITE AND THUS, THE STORMWATER SYSTEM. NO VEHICLE ASSOCIATED WITH THE WORK IS TO BE PARKED ON A FOOTPATH OR PUBLIC RESERVE. ALL VEHICLES VISITING THE SITE DURING DEMOLITION, EXCAVATION AND/OR CONSTRUCTION WORKS, ARE TO COMPLY WITH THE PARKING REQUIREMENTS IN THAT AREA.

EROSION & SEDIMENT CONTROL / WASTE MANAGEMENT PLAN

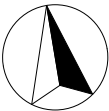
TYPICAL SEDIMENT FENCE - nts



TYPICAL DIVERSION CHANNEL - nts



TRUE NORTH:



NOTES (E & OE)

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PROPOSED ALTERATIONS AND ADDITIONS
3 Ross Smith - Great Macherel Beach NSW 2108
CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
EROSION & SEDIMENT CONTROL / WASTE MANAGEMENT PLAN

DATE:
AUGUST/23

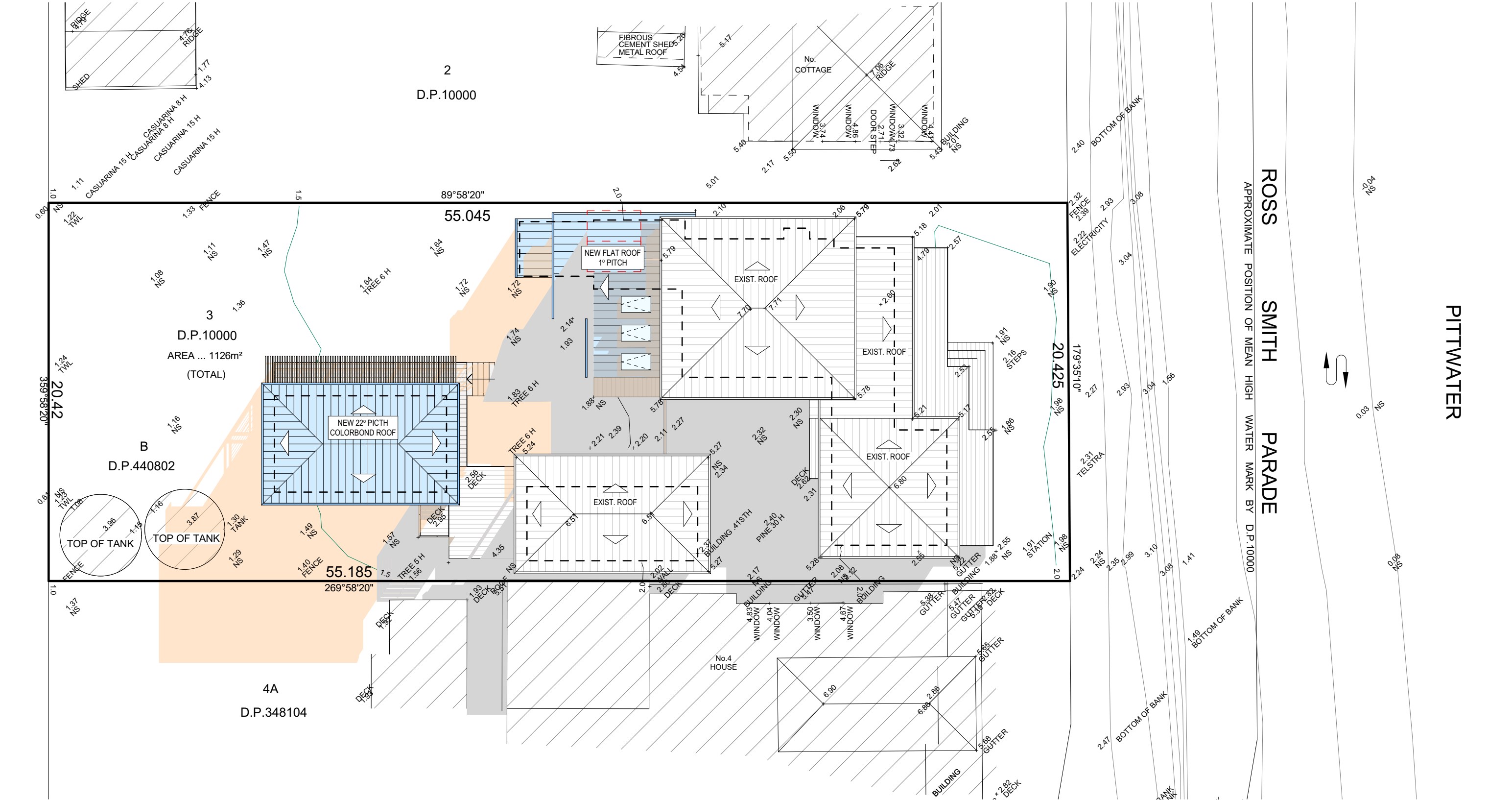
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1178/23

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JJ

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1:200 @ A3

DRAWING No:
DA.12



SHADOW DIAGRAM JUNE 21 9:00 am

21 JUNE SHADOW DIAGRAM LEGEND

EXISTING SHADOWS

NEW SHADOWS

TRUE NORTH:

NOTES (E & OE)

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PROPOSED ALTERATIONS AND ADDITIONS

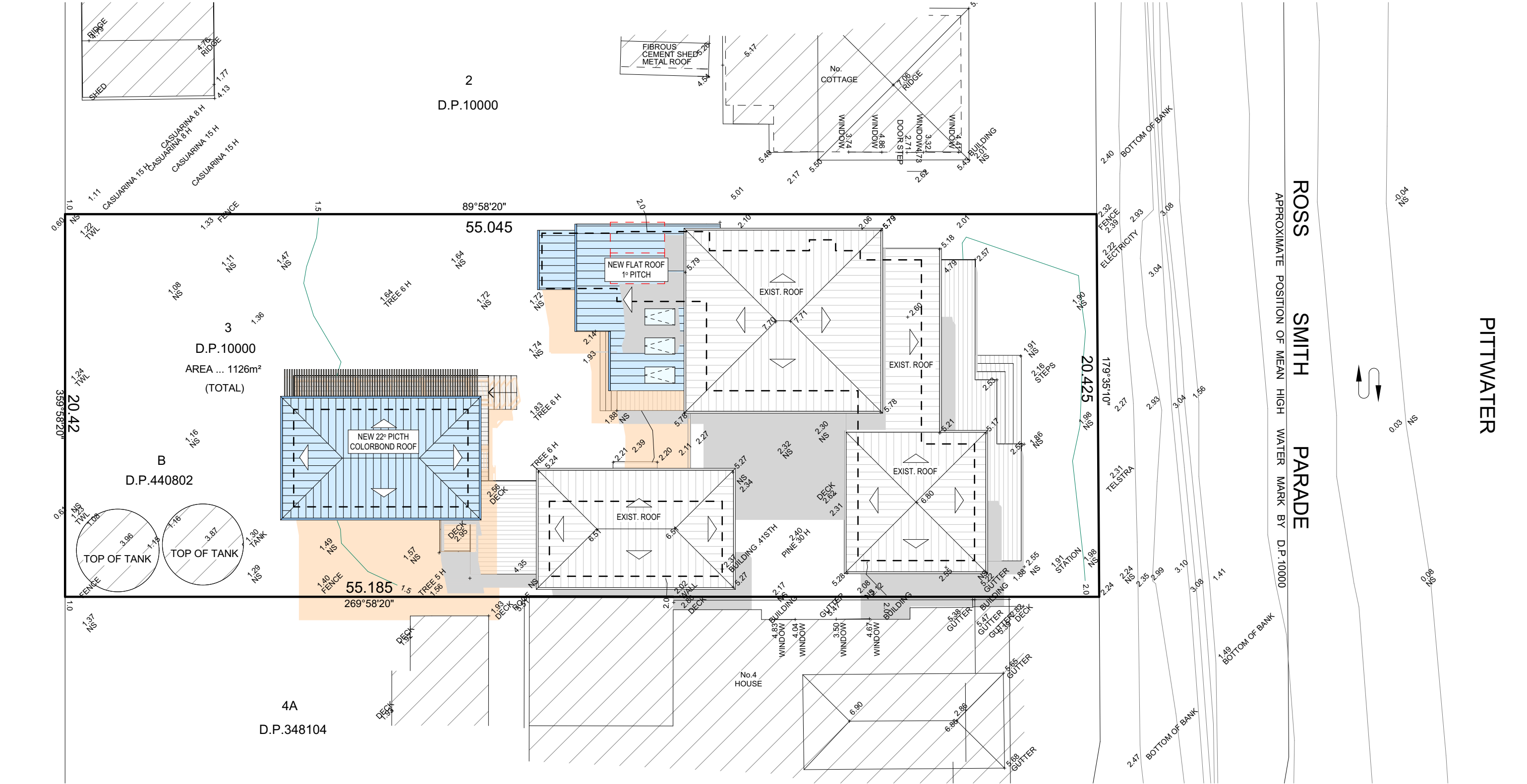
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Christopher & Victoria Logan

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SHADOW DIAGRAM JUNE 21 9:00 am

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JOB No: 1178/23	CHECKED BY: JJ	DRAWING No: DA.13



SHADOW DIAGRAM JUNE 21 12noon

21 JUNE SHADOW DIAGRAM LEGEND

EXISTING SHADOWS

NEW SHADOWS

TRUE NORTH:

NOTES (E & OE)

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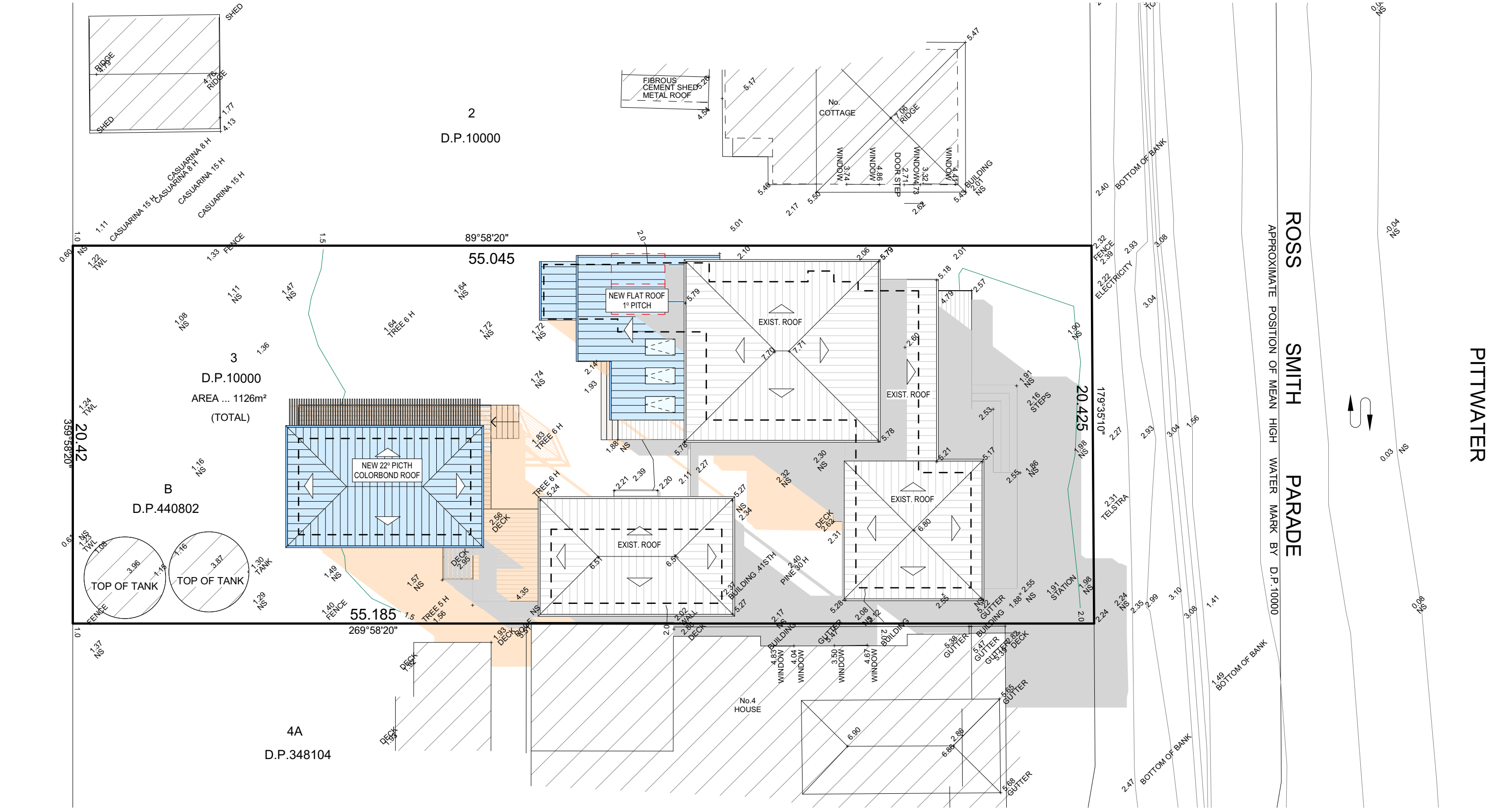
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SHADOW DIAGRAM JUNE 21 12 noon

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SHADOW DIAGRAM JUNE 21 3:00pm

21 JUNE SHADOW DIAGRAM LEGEND

EXISTING SHADOWS

NEW SHADOWS

TRUE NORTH:

NOTES (E & OE)

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3 Ross Smith - Great Mackerel Beach NSW 2108

CLIENT:
Christopher & Victoria Logan

DRAWING TITLE:
SHADOW DIAGRAM JUNE 21 3:00 pm

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