

FLOOD RISK MANAGEMENT REPORT

179 HENRY LAWSON DRIVE, GEORGES HALL NSW 2198
PROPOSED TWO-STOREY DWELLING

Prepared For: Mr. & Mrs. Jamaledidine

Project No: MBR24075

Issue: A

Date: 31/03/2026

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Issue	Date	Description	Prepared By	Checked By
A	31/03/2026	Issue for DA	Michael Bou Rada	Michael Bou Rada

TABLE OF CONTENTS

1. INTRODUCTION & BACKGROUND.....	4
1.1 LOCATION.....	4
1.2 Proposed Development.....	5
1.3 Published Flood Data & Observations	6
2. FLOOD RISK MANAGEMENT	7
2.1 Floor Levels & Building Components.....	7
2.2 Flood Effects	7
2.3 Proposed Fences	7
2.4 Climate Change.....	9
2.5 Car Parking & Driveway Access.....	9
2.6 Evacuation Procedures	9
3. GLOSSARY	11

Appendix A: Survey Plan prepared by W. Buxton Pty Ltd

Appendix B: Architectural Plans prepared by PLANS R US

Appendix C: Stormwater System Report issued by Canterbury Bankstown Council

1. Introduction & Background

MBR Consulting Engineers has been engaged by Mr. & Mrs. Jamaledidine to prepare a Flood Risk Management Report for the proposed addition and alteration works at 179 Henry Lawson Drive, Georges Hall NSW 2198 to be submitted to Canterbury Bankstown City Council.

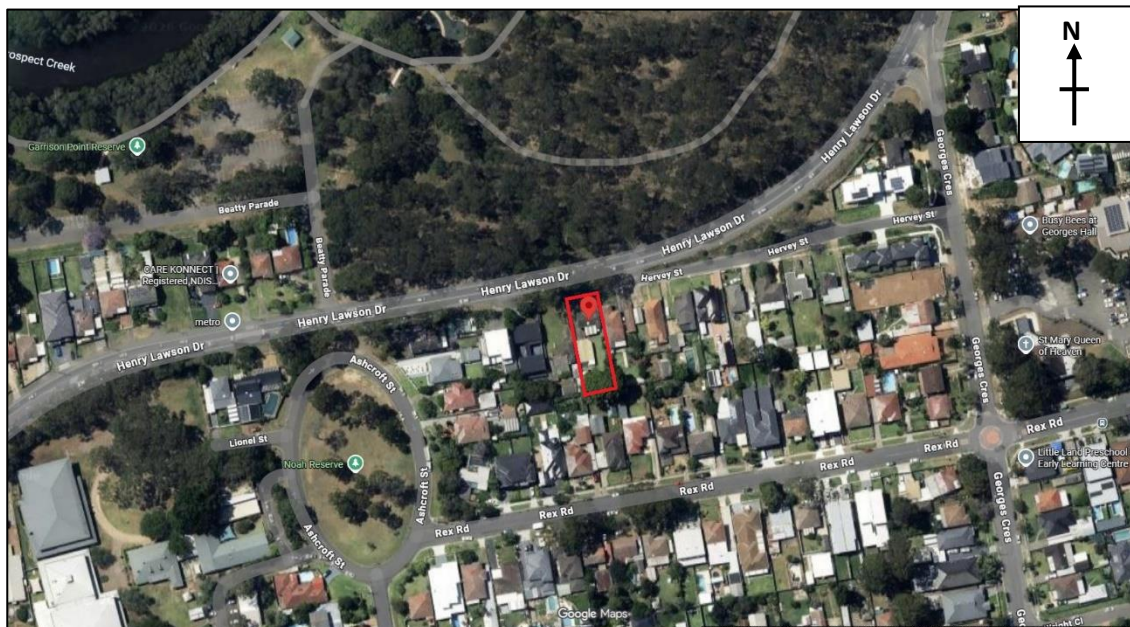
This report is prepared generally in accordance with:

- Australia Government, Bureau of Meteorology Website <http://www.bom.gov.au/>;
- Canterbury Bankstown Council – Bankstown Development Control Plan 2015 – Part B12;
- New South Wales Government – Floodplain Development Manual – The management of flood liable land, April 2005;
- LiDAR Data – Collected by ‘Land and Property Information’;
- Australia Rainfall and Runoff 2016.

1.1 Location

The existing development is a single-storey dwelling located within the municipality of Canterbury Bankstown Council and identified as Lot 240 on DP 13017. The site has a total site area of approximately 771.0m² by title and is bounded by a single-storey dwelling to the east, west and south, Henry Lawson Drive to the north.

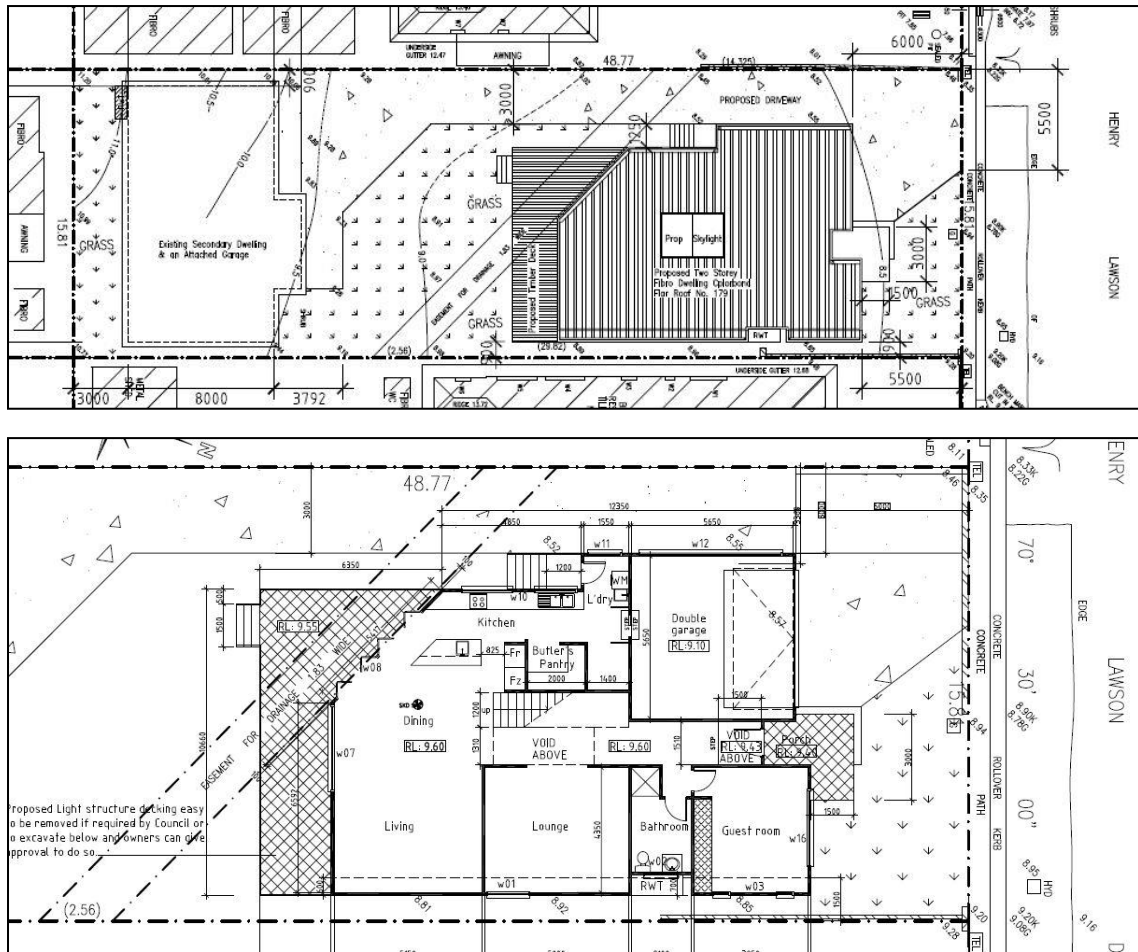
Figure 2.1 below shows the site's location outlines in red.



1.2 Proposed Development

The site owner proposes to demolish the existing dwelling at the front of the subject site and construct a two-storey dwelling. The proposed development consists of a second storey addition and a garage. Refer to **Appendix B** for the architectural plans of the proposed development.

Figure 2.2 below shows the proposed development plan.



1.3 Published Flood Data & Observations

A flood study 'Stormwater Catchment Flooding from Georges Hall Catchment Flood Study' was previously prepared and has been adopted by Canterbury Bankstown Council as their base flood model for the catchment.

Flood levels near the development site were adopted and applied to this study as prescribed by Canterbury Bankstown Council in their stormwater system report dated 14/05/2024 to Mr. Antoine Rassy (refer **Appendix C**), and extracted below:



2. Flood Risk Management

2.1 Floor Levels & Building Components

Council's stormwater system report sets the finished floor levels for the habitable areas to be 500mm above the finished external ground levels adjacent to the proposed building.

The proposed development is to be constructed from flood compatible materials below RL 9.60m AHD utilising waterproofing methods. Carpets and wallpaper shall not be used. Bolts, nails, hinges and fittings shall be galvanised or stainless steel. The sewerage system must incorporate a backflow system to prevent sewerage to surcharge into the building. Extensive guidance on flood compatible building materials and methods is provided in 'Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas'.

The proposed internal and external structures should be designed to withstand the forces, including hydrostatic, hydrodynamic, buoyancy and debris impact forces imposed by the 1% AEP floodwaters plus 0.5m freeboard (RL 9.60m AHD). The structural design must be undertaken by a suitably qualified Structural Engineer with relevant experience designing structures on flood prone lands. Prior to issuing the Occupation Certificate, a structural assessment by an accredited structural engineer is to be carried out to ensure the proposed works were carried out in accordance with BCA (Building Code of Australia).

All proposed electrical wiring, switches, outlets connections to main power supplies, switch boards and metering equipment should be located above RL 9.60m AHD. Earth core leakage systems or safety switches are to be installed. All wiring connections and conduits below RL 9.60m AHD should be suitable for submergence in water. Conduits shall be installed so they will be self-draining in the event of flooding. Where this is not possible for an already existing circuit, these existing circuits must be fitted with safety switches by a licensed electrician.

Heating and air-conditioning systems, including fuel supply and ducting, must be installed above RL 9.60m AHD. Where this is not possible, they should be installed in a manner to minimise damage from submersion. This may be achieved through measures such as access for cleaning and draining of water after flood events, manually operated cut off valves for fuel supply lines and ducts, securely fastening heating equipment and fuel storage tanks to prevent movement, and venting of fuel supply tanks, if applicable.

Therefore, the existing finished floor level is considered compliant with the 'Floor Level' and 'Building Components' requirements of Schedule 5 of Part B12 of Bankstown Council DCP 2015.

2.2 Flood Effects

The proposed development maintains the approximate building footprint as the existing dwelling. As a result, there will be no reduction in flood storage or change in flood behaviour or flow path characteristics to the site and surrounding properties.

Therefore, the proposed development is considered compliant with the 'Flood Effects' requirements of Schedule 5 of Part B12 of Bankstown Council DCP 2015.

2.3 Proposed Fences

Open style fencing must be provided along the southern, eastern and western boundaries to ensure that no blockages and/or obstructions to external flows and to minimise the impact on surrounding properties. An example of an open style fence could be a form of a colorbond fence with minimum 150mm gap underneath to allow the floodwaters to pass through the subject site and ensure no blockages and/or obstructions.

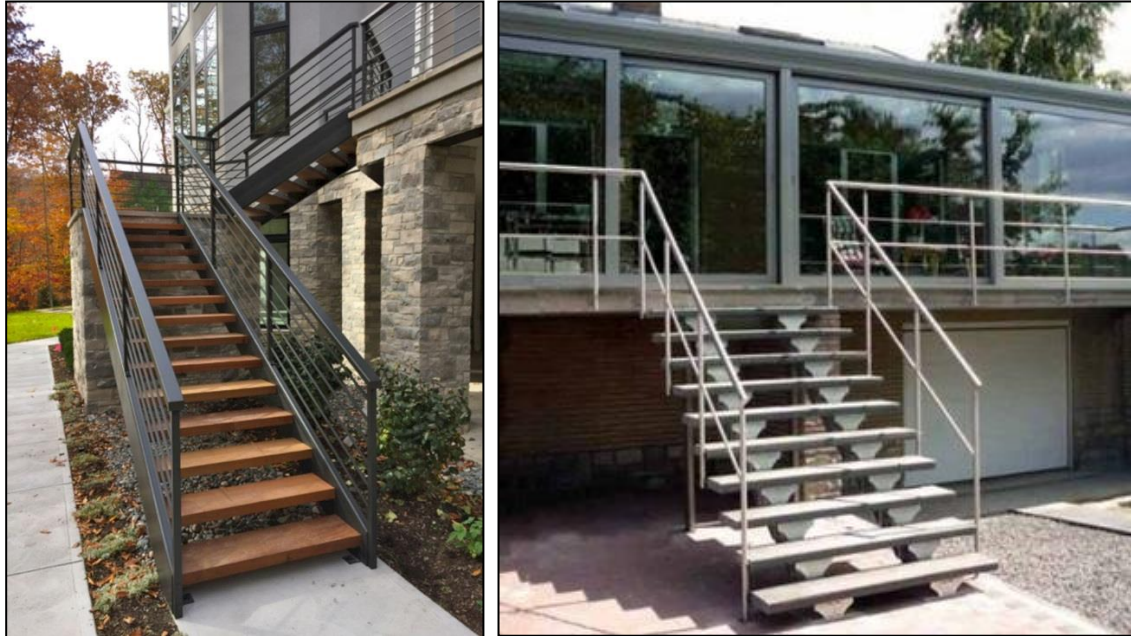
Figure 2.4.1 shows an example of an open style fence to be built at the front of the property.



Figure 2.4.2 shows an example of an open style fence to be built at the rear and along the sides of the property.



Figure 2.4.3 shows an example of open style stair to be built outside the rear alfresco.



2.4 Climate Change

Due to the climate change and the potential increase in rainfall intensities, it is recommended to review this Flood Risk Management every 5 years and assess the new risks and findings.

2.5 Car Parking & Driveway Access

The proposed garage level is depicted at RL 9.10m AHD at the 1% AEP flood level impacting the subject site. As a result, the proposed development is considered compliant with the 'Car Parking and Driveway Access' requirements of Schedule 5 of Part B12 of Bankstown Council DCP 2015.

2.6 Evacuation Procedures

The State Emergency Service of New South Wales (SES) is responsible for providing flood updates and issuing Flood Evacuation Warnings and Flood Evacuation Orders. Flood information issued by the SES may be received by local radio, television news, SMS messaging and door-knocking in affecting communities. The timing for the evacuation of persons is to be established in consultation with the SES.

To increase the flood-readiness of the occupants of the existing dwelling, owners/occupiers of the site should be made aware of FloodSafe kits developed by the NSW SES which aid household development of a Flood Emergency Plan. Information regarding FloodSafe kits is available from <https://www.ses.nsw.gov.au/disaster-tabs-header/flood/>.

Future owners and/or occupants of the site should prepare, regularly review and update a household Flood Emergency Plan. A copy of the household Flood Emergency Plan should be kept on the inside door of a kitchen or laundry cupboard, alongside instructions for operating any shut-off valves.

Future owners and/or occupants of the site should also prepare, maintain and replace (if necessary) the following items for any expected emergency that may happen:

- First aid kit and prescription medicines
- Radio with batteries and spare batteries
- Home-prepared emergency plan
- Store basic food items and bottled water
- Torch
- Local map
- Wet weather clothing
- Mobile phone

During the heavy rainfall event, residents should raise all electrical items and high value items within the ground floor to avoid any damages. In addition, all large electrical items that cannot be raised must be turned off and disconnected. Furthermore:

- Do not try to evacuate and travel through floodwaters on foot;
- Do not stay inside any vehicles on the street and in the garage;
- Occupants should move and stay in the highest level within the building (such as first floor);
- Occupants needing to leave the site must check and follow the instructions from SES.

The proposed ground floor level of RL 9.60m AHD will provide freeboard to the 1% AEP floodwaters. In this regard, occupants may remain on site within the proposed dwellings during any flood event. In addition, during the 1% AEP storm event, the existing pedestrian and vehicle accesses are considered reliable.

As a result, the proposed change of use development is considered compliant with the 'Evacuation' requirements of Schedule 5 of Part B12 of Bankstown Council DCP 2015.

3. Glossary

Terminology in this Glossary has been derived or adapted from the Floodplain Development Manual (NSW DIPNR 2005), where appropriate.

- **Annual Exceedance Probability (AEP)**
The chance of a flood of a given or larger size occurring in any one year, expressed as a percentage.
- **Australian Height Datum (AHD)**
A common national surface level datum approximately corresponding to sea level.
- **Average Recurrence Interval (ARI)**
The long-term average number of years between the occurrence of a flood as big as or larger than the selected event.
- **Local Overland Flooding**
Inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
- **Mainstream Flooding**
Inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
- **Probable Maximum Flood (PMF)**
The PMF is the largest flood that could conceivably occur at a particular location.
- **Risk**
Chance of something happening that will have an impact. It is measured in terms of consequences and likelihood.
- **Flood**
Relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with major drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunamis.
- **Flood Hazard**
A measure of the floodwaters potential to cause harm or loss. Full definitions of hazard categories are provided in Appendix L of the Floodplain Development Manual (NSW Government, 2005). In summary:
 - a- High: conditions that pose a possible danger to personal safety, evacuation by trucks difficult, able-bodied adults would have difficulty wading to safety, potential for significant structural damage to buildings.
 - b- Low: conditions such that people and their possessions could be evacuated by trucks, able-bodied adults would have little difficulty wading to safety.
- **Floodplain, Flood-prone Land**
Land susceptible to inundation by the probable maximum flood (PMF) event, i.e. the maximum extent of flood liable land.
- **Freeboard**
Provides reasonable certainty that the risk exposure selected in deciding on a particular flood chosen as the basis for the FPL is actually provided. It is a factor of safety typically used in relation to the setting of floor levels, levee crest levels etc... (see Section K5 of Floodplain Development Manual).
- **Hydraulics**
The term given to the study of water flow in a river, channel or pipe, in particular, the evaluation of flow parameters such as stage and velocity.

Appendix A

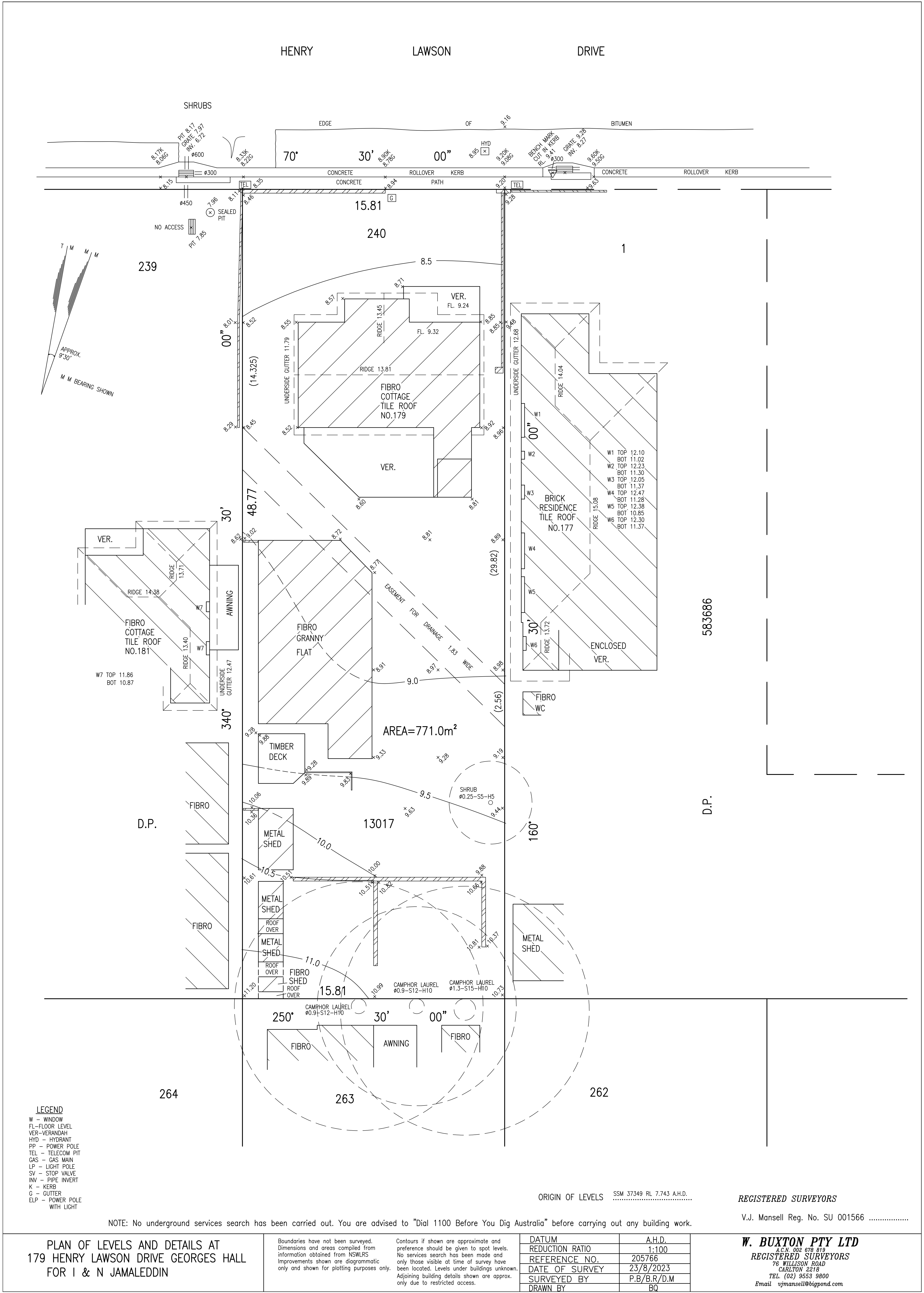
Survey Plan prepared by W. Buxton Pty Ltd

ABN: 61 625 079 923
ACN: 625 079 923

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Blacktown NSW 2148

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Appendix B

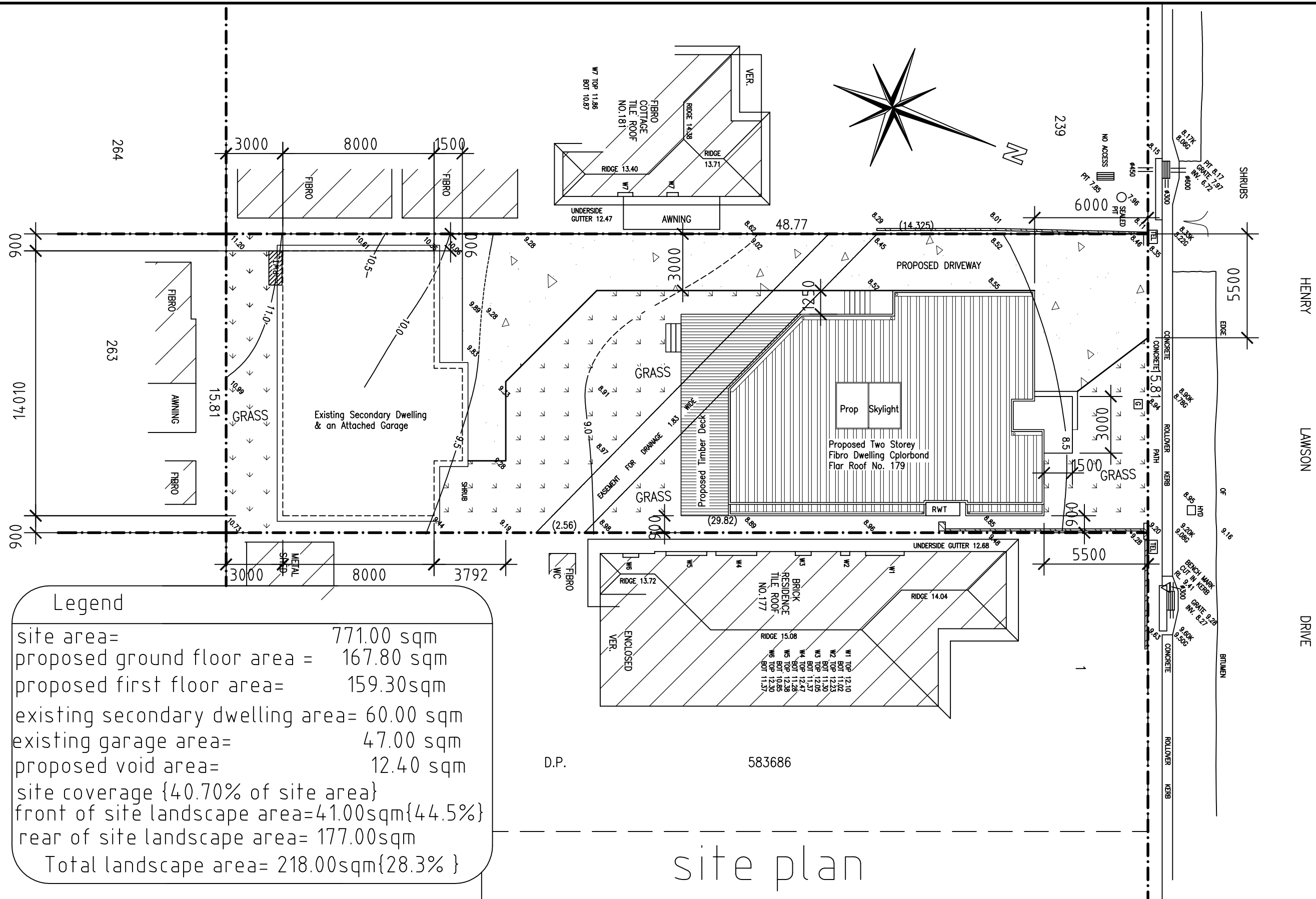
Architectural Plans prepared by PLANS R US

ABN: 61 625 079 923
ACN: 625 079 923

PO Box 8288,
Blacktown NSW 2148

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Legend

site area= 771.00 sqm
 proposed ground floor area = 167.80 sqm
 proposed first floor area= 159.30sqm
 existing secondary dwelling area= 60.00 sqm
 existing garage area= 47.00 sqm
 proposed void area= 12.40 sqm
 site coverage {40.70% of site area}
 front of site landscape area=41.00sqm{44.5%}
 rear of site landscape area= 177.00sqm
 Total landscape area= 218.00sqm{28.3% }

PLANS R US
 Architectural & Engineering Services

Fax: (02)97858483 M: 0421 133 660

Email: info@plansrus.com.au

Website: www.plansrus.com.au

NOTES:

- THE WORK TO BE COMPLETED WITH THE BUILDING CODE OF AUSTRALIA, AS CODES AND RELEVANT BY-LAWS.
- THE BUILDER/MANUFACTURER SHALL CHECK AND VERIFY ALL DIMENSIONS, RL GROUND LINES AND CONSTRUCTION METHODS PRIOR TO COMMENCEMENT OF WORK.
- PREFERENCES OF DIMENSIONED MEASUREMENTS TO BE TAKEN OVER SCALED MEASUREMENTS.
- OMISSIONS OR DISCREPANCIES TO BE NOTIFIED TO THE ARCHITECT.
- DO NOT SCALE.
- ALL RIGHTS RESERVED.

Project Title: Proposed demolish existing front dwelling & construct a new two storey dwelling.

Client/Address Title: For Mr & Mrs Jamaledidine at no 179 Henry Lawson Drive Georges Hall

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Sheet Title: Site Plan

Drawn By: Antoine Rassy

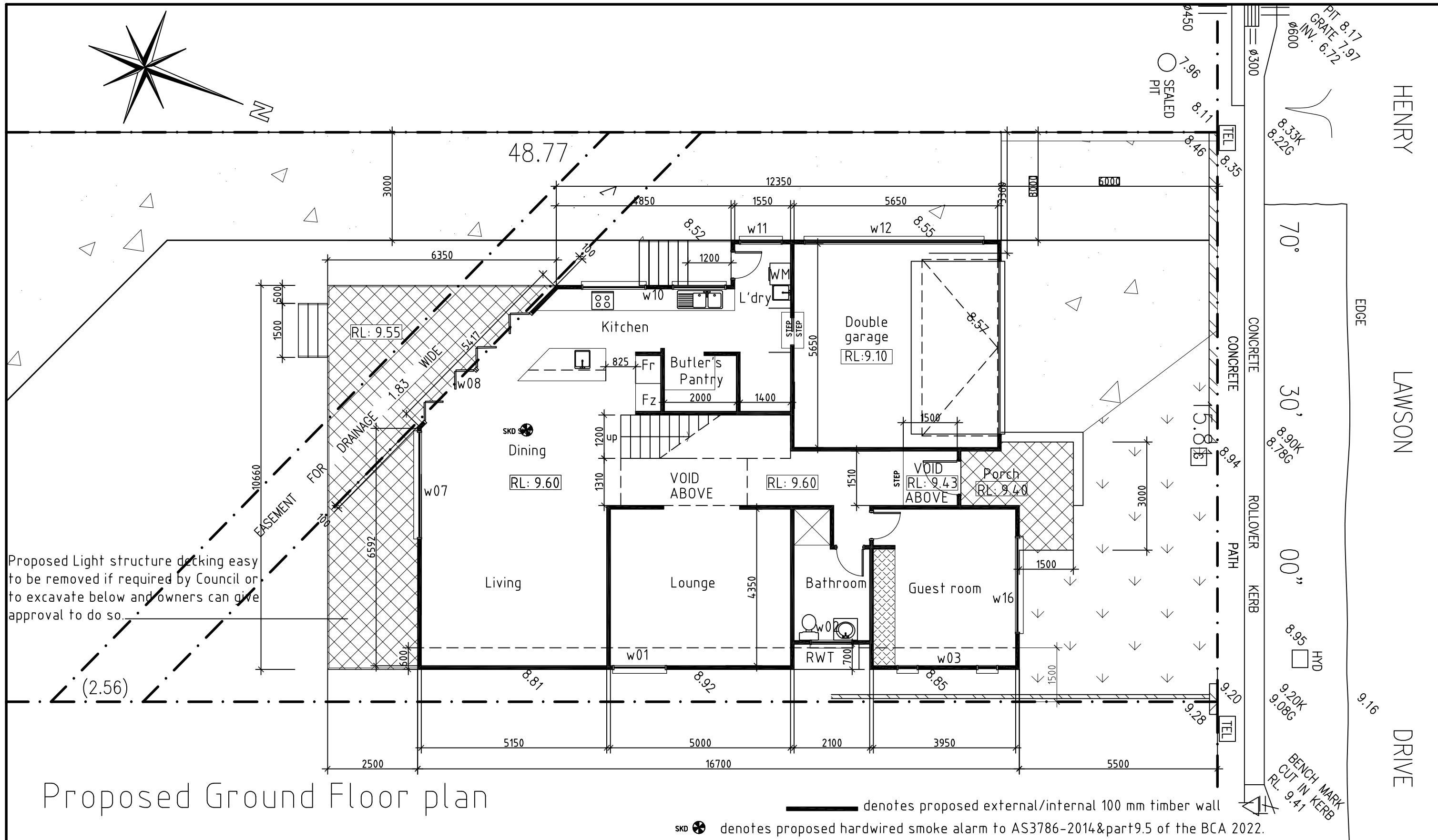
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Date: 31/01/2026

Drawing No: PRU/260155

Rev:

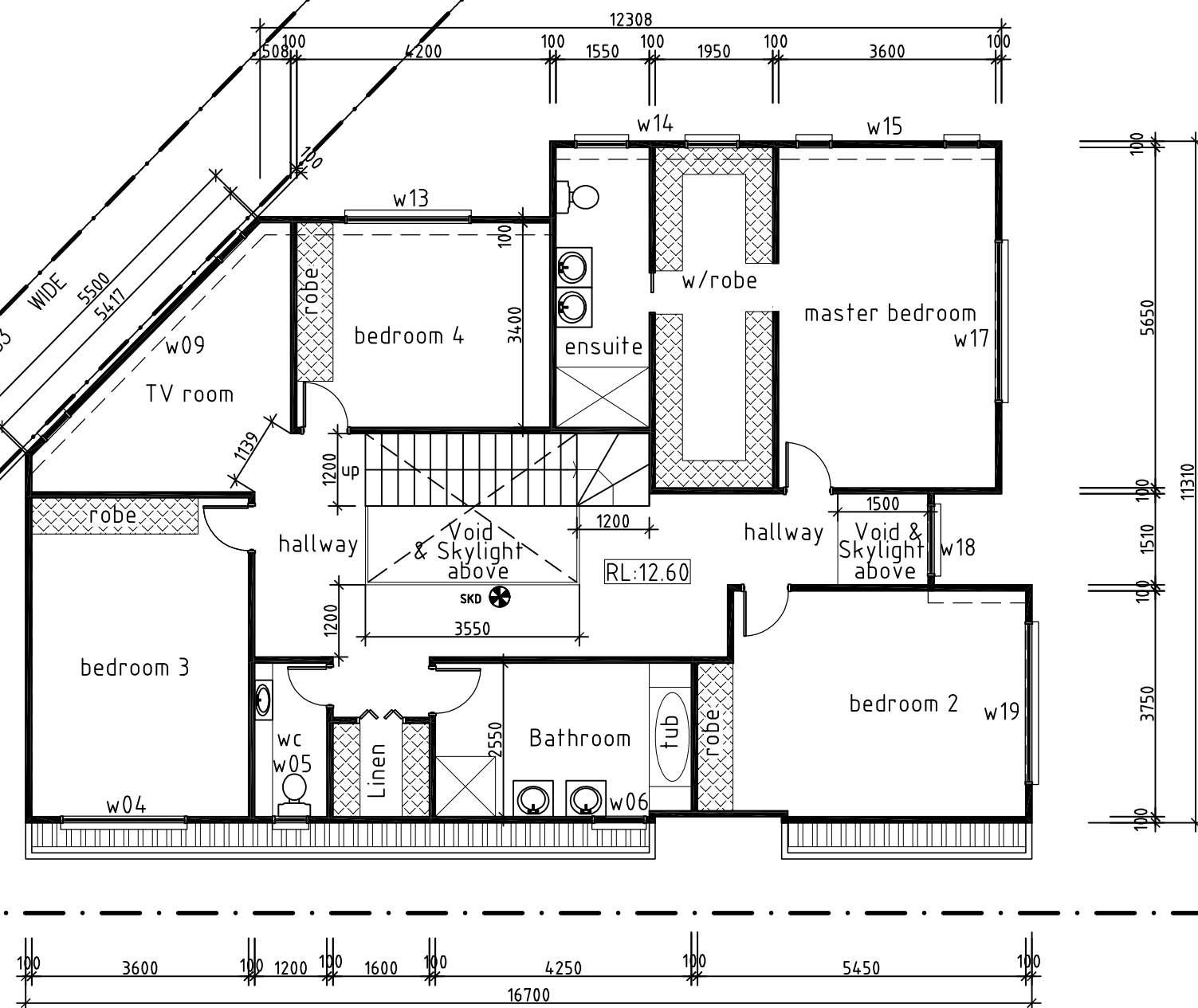
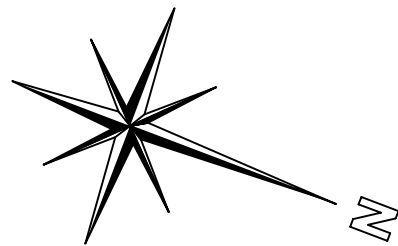
0m 1m 2m 3m 4m 5m



Proposed Ground Floor plan

— denotes proposed external/internal 100 mm timber wall
SKD ⊕ denotes proposed hardwired smoke alarm to AS3786-2014&part9.5 of the BCA 2022.

PLANS R US Architectural & Engineering Services Fax:(02)97858483 M:0421 133 660 Email: info@plansrus.com.au Website: www.plansrus.com.au	NOTES: - THE WORK TO BE COMPLETED WITH THE BUILDING CODE OF AUSTRALIA, AS CODES AND RELEVANT BY-LAWS. - THE BUILDER/MANUFACTURER SHALL CHECK AND VERIFY ALL DIMENSIONS, RL GROUND LINES AND CONSTRUCTION METHODS PRIOR TO COMMENCEMENT OF WORK. - PREFERENCES OF DIMENSIONED MEASUREMENTS TO BE TAKEN OVER SCALED MEASUREMENTS. - OMISSIONS OR DISCREPANCIES TO BE NOTIFIED TO THE ARCHITECT. - DO NOT SCALE. - ALL RIGHTS RESERVED.	Project Title: Proposed demolish existing front dwelling & construct a new two storey dwelling	Sheet Title: Proposed Ground Floor Plan		
		Client/Address Title: For Mr & Mrs Jamaleddine at no 179 Henry Lawson Drive Georges Hall	Drawn By: Antoine Rassy		
		© 2004 This plan remains the copyright of " PLANS R US". All rights reserved.	Scale:1:100 @ A3	Drawing No: PRU/260151	Rev:
Date:31/01/2026	0m1m2m3m4m5m				



Proposed First Floor plan

— denotes proposed external/internal 100 mm timber wall

SKD ⊕ denotes proposed hardwired smoke alarm to AS3786-2014&part9.5 of the BCA 2022.

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Project Title: Proposed demolish existing front dwelling & construct a new two storey dwelling

Client/Address Title: For Mr & Mrs Jamaledine at no 179 Henry Lawson Drive Georges Hall

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Sheet Title:

Proposed First Floor Plan

Drawn By: Antoine Rassy

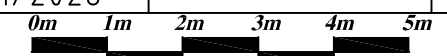
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Date: 31/01/2026

Drawing No:

PRU/260152

Rev:



Appendix C

Stormwater System Report issued by Bankstown Canterbury Council

ABN: 61 625 079 923
ACN: 625 079 923

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council@cbc.city.nsw.gov.au

To: Antoine Rassy
1 Wattle St, PUNCHBOWL NSW 2196

STORMWATER SYSTEM REPORT

Property Address	179 Henry Lawson Drive Georges Hall 2198
Lot/Section/Deposited Plan	Lot 240 DP 13017
Date Prepared:	14/05/2024
Ref:	WP-SIAONL-910/2024
Development Type:	Detached Dwelling (single house)
Prepared By:	Pushpa Goonetilleke

FLOOD STUDY REQUIRED

No

This Stormwater System Report (SSR) provides flood and stormwater information about the property.

The information in this report should be reviewed by those who are knowledgeable in flooding or have a technical requirement to understand more about Council's building development controls (such as surveyors, builders, certifiers, architects and engineers).

Stormwater Infrastructure

The site is affected by the following Council stormwater system components.

- Pipe Type (diameter in mm): Pipe (375), stormwater pipeline (according to Council records) and associated 1.83 m wide drainage easement located within the site.
- Refer the Canterbury Bankstown Development Engineering Standards (2023), required minimum easement width for existing stormwater pipeline at the site and development restrictions over the drainage easements.

Property Levels

Description	Minimum (m AHD)	Maximum (m AHD)
Approximate Ground Level	8.20	9.60

Flooding Levels

Stormwater Catchment Flooding from Georges Hall Catchment Flood Study (BMT WBM, 2013)

Flood Event	Minimum Level (m AHD)	Maximum Level (m AHD)
5% AEP (20 year ARI)	-	-
1% AEP (100 year ARI)	9.10	9.40
PMF (Probable Maximum Flood)	10.20	10.20

Terms and Definitions

Annual Exceedance Probability (AEP)	The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.
Average Recurrence Interval (ARI):	Similar to AEP. The long-term average number of years between the occurrence of a flood as big as (or larger than) the selected event.
metres above Australian Height Datum (m AHD)	The reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.
Maximum and Minimum Ground Level –	Highest and lowest ground levels on the property based on available ground level information. A Registered Surveyor can confirm exact ground levels.
Probable Maximum Flood	An extreme flood deemed to be the largest flood that could conceivably occur at a specific location The PMF defines the extent of flood prone land (i.e. the floodplain).

Further Information

For further information on flood-related development controls which may be applicable to this property, refer to the following guidelines:

- Canterbury Bankstown Development Control Plan (2023, chapter 2.2 Flood risk Management)
- Canterbury Bankstown Development Engineering Standards (2023)
- Council Standard Drawings.

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Any person having regard to the information contained in this document is encouraged to seek, at their discretion, all other sources of information on the subject matter as they consider appropriate, which may include local knowledge and/or professional advice.

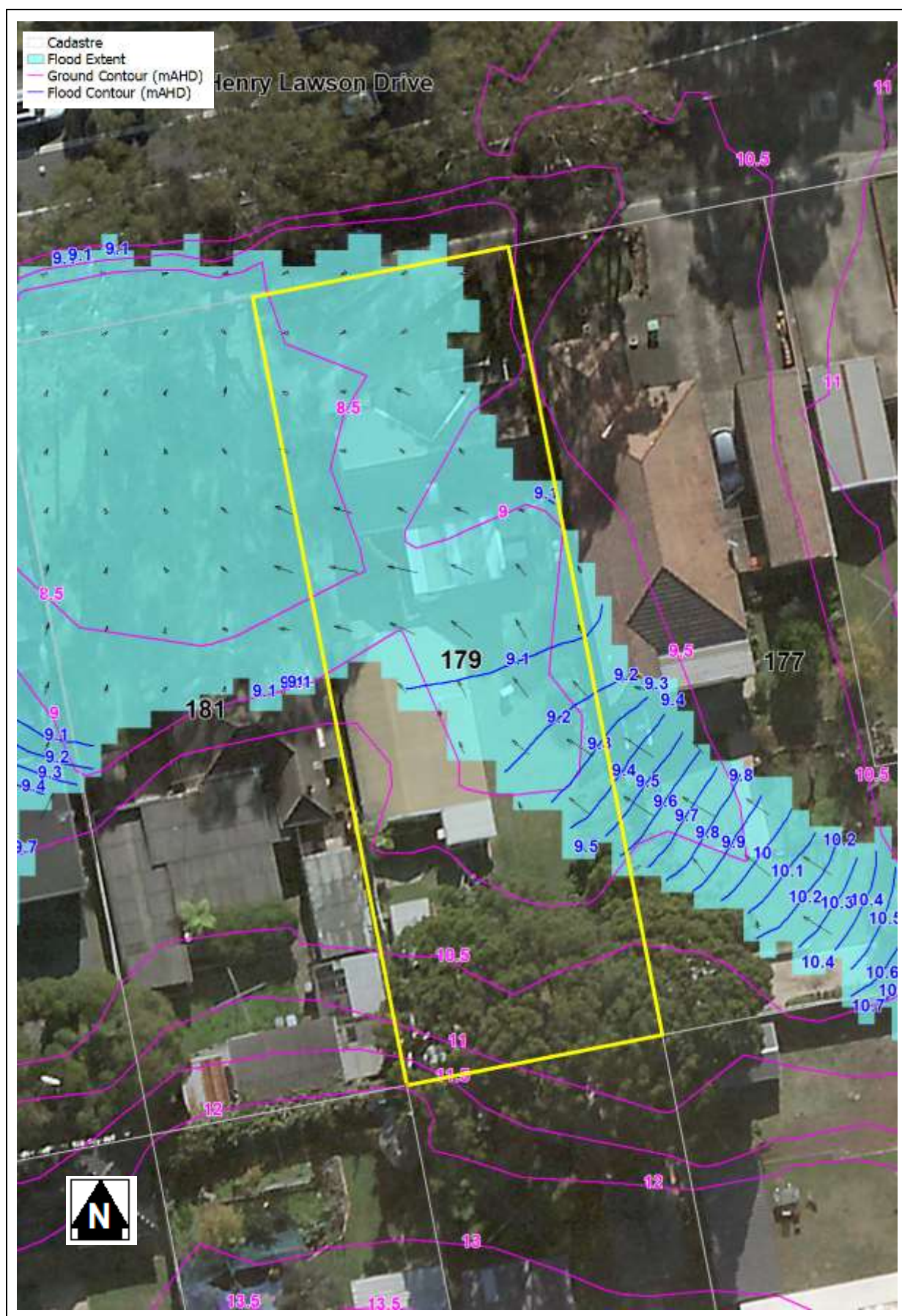
ATTACHMENTS

For 1% AEP (100 year ARI)

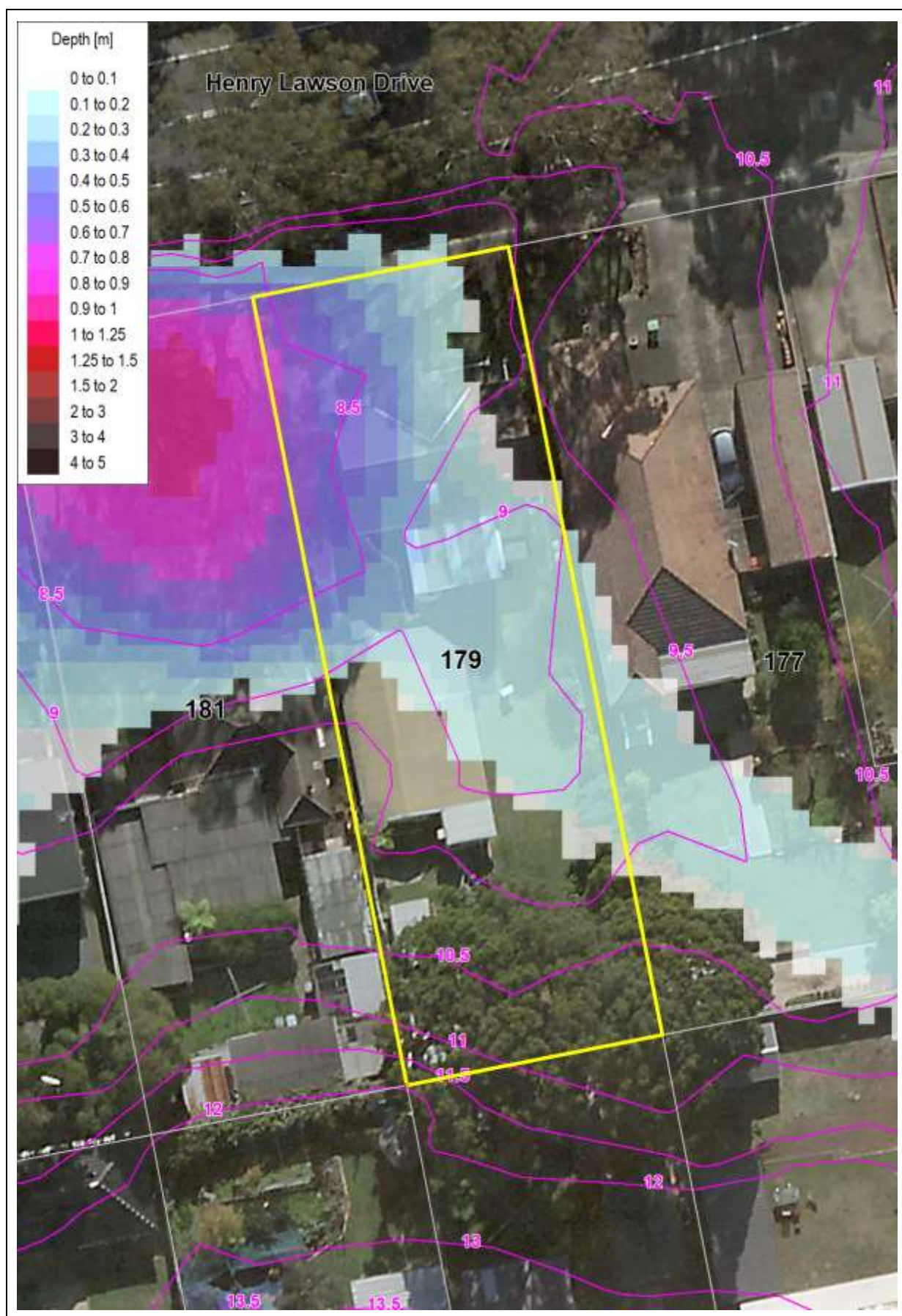
1. Flood Extent & Flood Contours Map
2. Flood Depth Map
3. Velocity Depth Product Map

For PMF

4. Flood Contours & Flood extent Map
 5. GIS Map (from Council's Data)
 6. Aerial Map (from Council 's Data)
- Note: Attached Georges River Flood Extent Map if affected by Georges River flooding



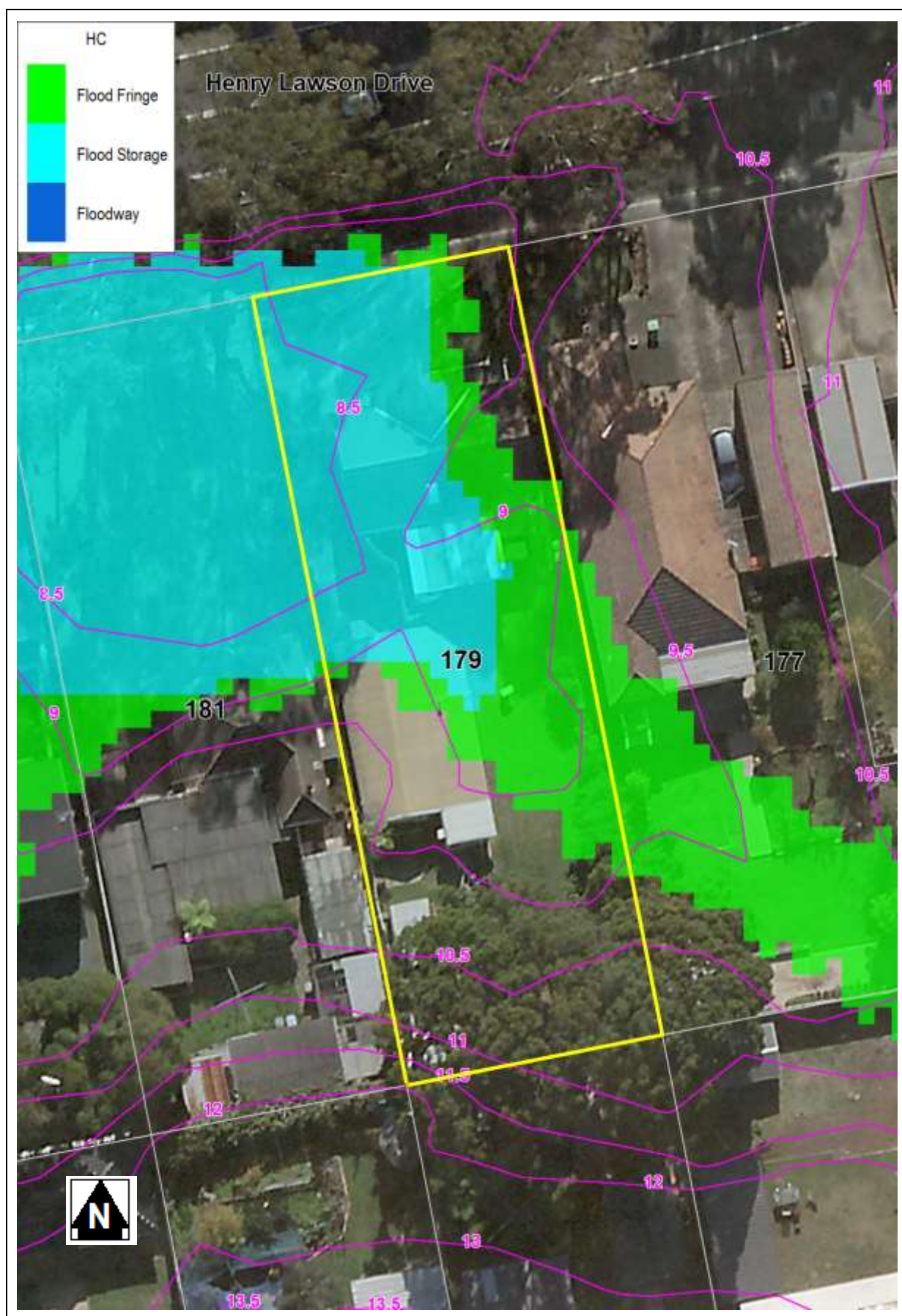
1% AEP (100 year ARI) Flood Extent



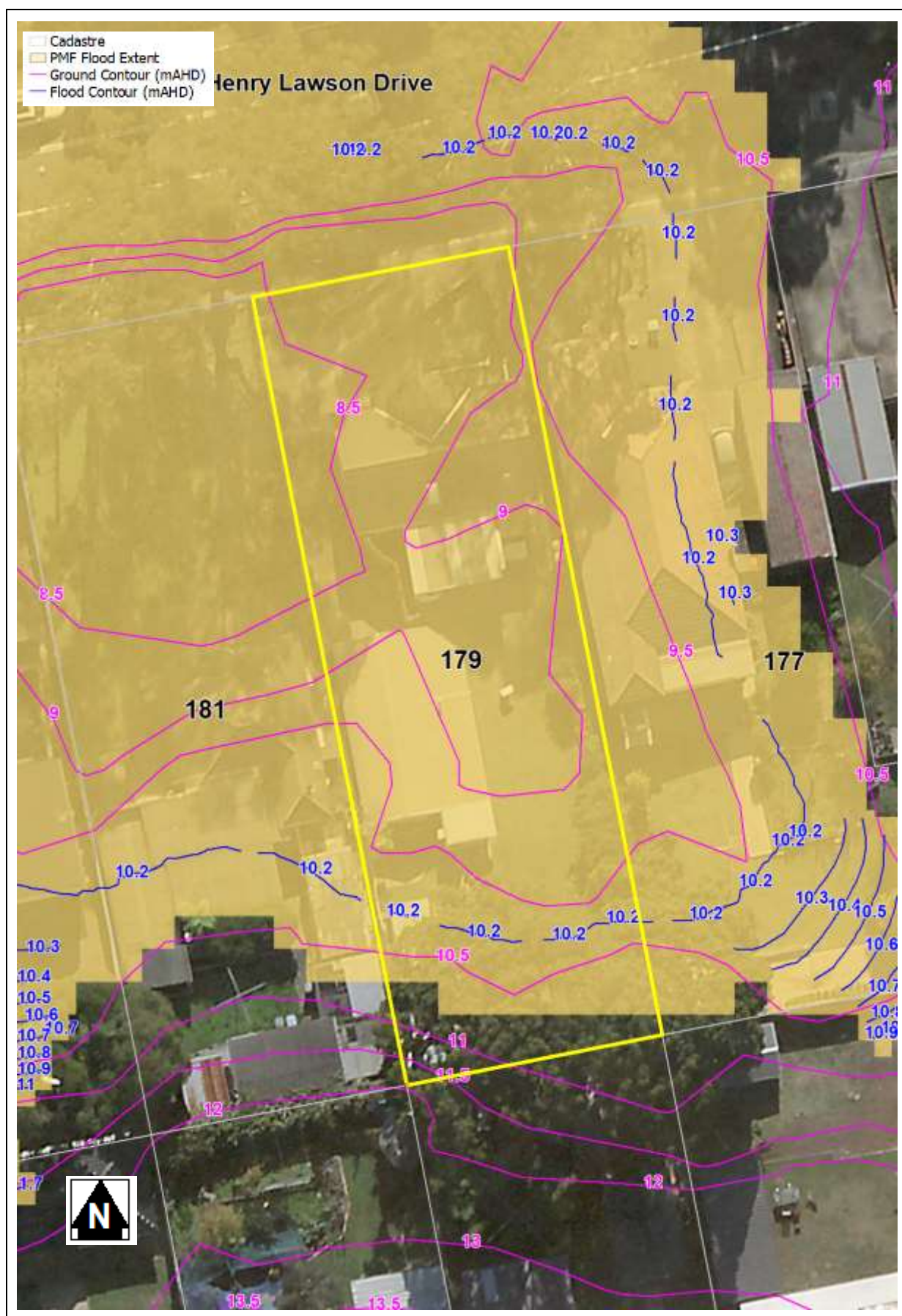
1% AEP (100 year ARI) Flood Depth



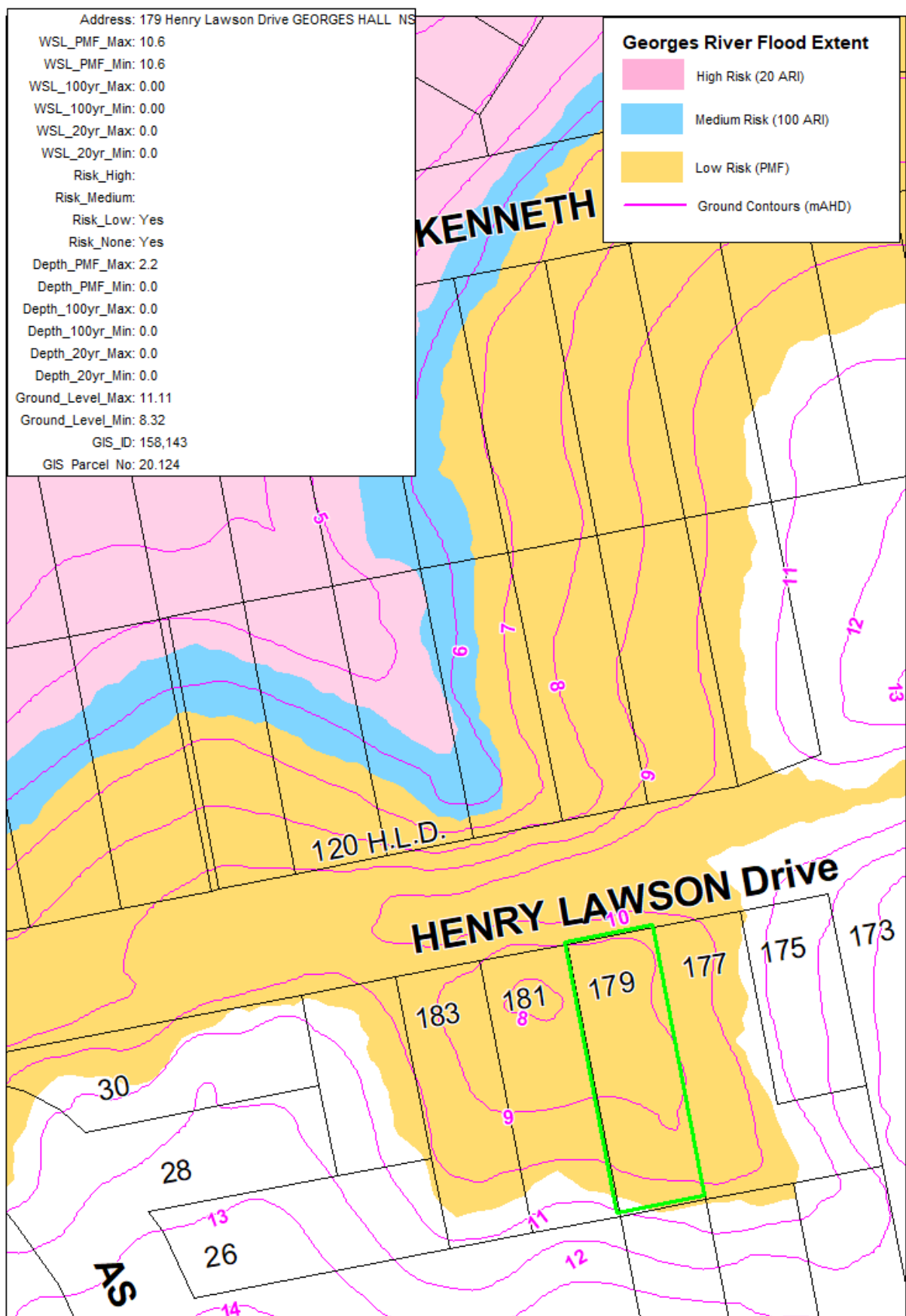
1% AEP (100 year ARI) Flood Velocity Depth Product



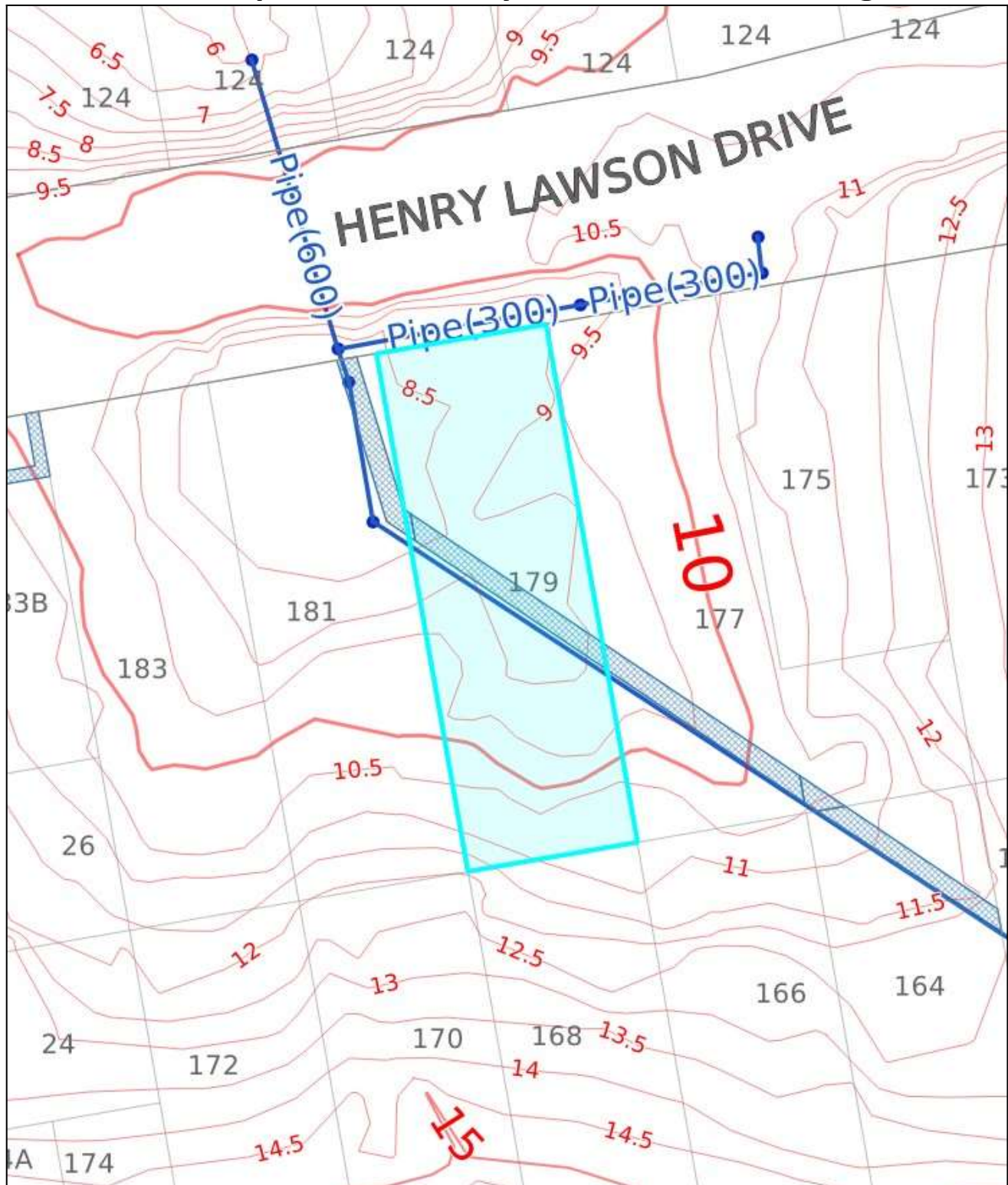
1% AEP (100 year ARI) Flood Hydraulic Category



PMF Flood Extent



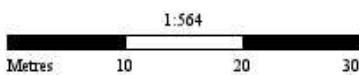
GIS Map for 179 Henry Lawson Drive, Georges Hall



DATE:May 14, 2024, 2:51 PM

PREPARED BY: Pushpa G

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Aerial Map - 179 Henry Lawson Dr, Georges Hall



DATE: May 14, 2024, 2:54 PM

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