

Flood Impact Statement

Proposed Residential Flat Buildings

At

167 HUME HIGHWAY, GREENACRE

For

IRIS CAPITAL

The logo for Iris Capital, featuring the word "iris" in a lowercase, rounded, blue sans-serif font.

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GLOSSARY

Annual Exceedance Probability (AEP)

The chance of a flood of a given or a larger size occurring in any one year, usually expressed as a percentage.

Australian Height Datum (AHD)

A common national surface level datum approximately corresponding to mean 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.

Catchment

The land area draining through the mainstream, as well as tributary streams, to a particular site. It always relates to an area above a specific location.

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.

Flood Liable Land or Flood Prone Land

Land susceptible to flooding by the PMF.

Flood Planning Levels (FPLs)

Are the combinations of flood levels and freeboards selected for floodplain risk management purposes.

Freeboard

Is a factor of safety typically used in relation to the setting of floor levels.

Habitable Room

In industrial or commercial situation: an area used for offices or to store valuable possessions susceptible to damage in the event of a flood.

Peak Discharge

The maximum discharge occurring during a flood event.

Probable Maximum Flood

PMF is the largest flood that could conceivably occur at a location, usually estimated from probable maximum precipitation.

Probable Maximum Precipitation

PMP is the greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of the year.

Runoff

The amount of rainfall which actually ends up as stream flow.

1 INTRODUCTION

In accordance with Canterbury-Bankstown Council, Alpha Engineering and Development has been engaged to prepare a Flood Impact Assessment Report to accompany the development application for the proposed residential flat buildings at 167 Hume Highway, Greenacre.

2 EXISTING SITE CONDITIONS

The subject site is located within the jurisdiction of Canterbury-Bankstown Council. The property currently has four detached brick commercial buildings and an above ground asphalt carpark.

The brick buildings are scattered in position, with building located at the east, south, centre and east of the site. The natural surface of the site slopes towards the rear (west to east).

Refer to figures 1, 2 and 3 for the front view, survey, and the aerial map of the subject site.

Figure 1: Aerial view of the subject site



Figure 2: Site Survey (APPENDIX A)

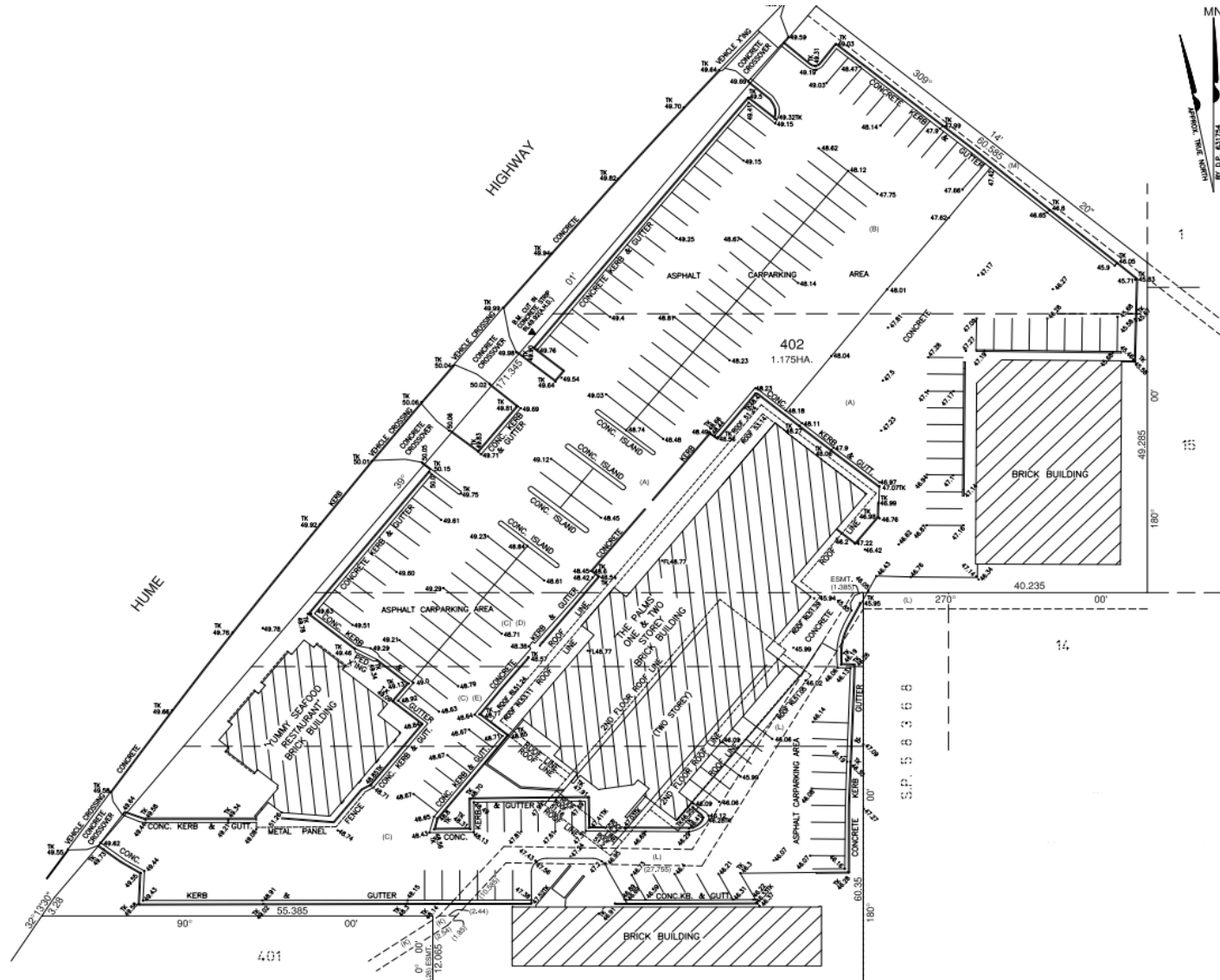


Figure 3: Aerial View of Subject site obtained from QGIS



3 Site Specific Information

Figure 4 below shows the flood inundation map of the subject site which was obtained from Canterbury-Bankstown Council in the form of Stormwater System Report Reference WP-SIA-1716/2021 dated 03-09-2021

From this information as shown in Figure 3, the maximum flood level on site during 1% AEP Flood is 44.5m AHD which occurs at the southern boundary (lowest point). The flood extent into the subject property is minor.

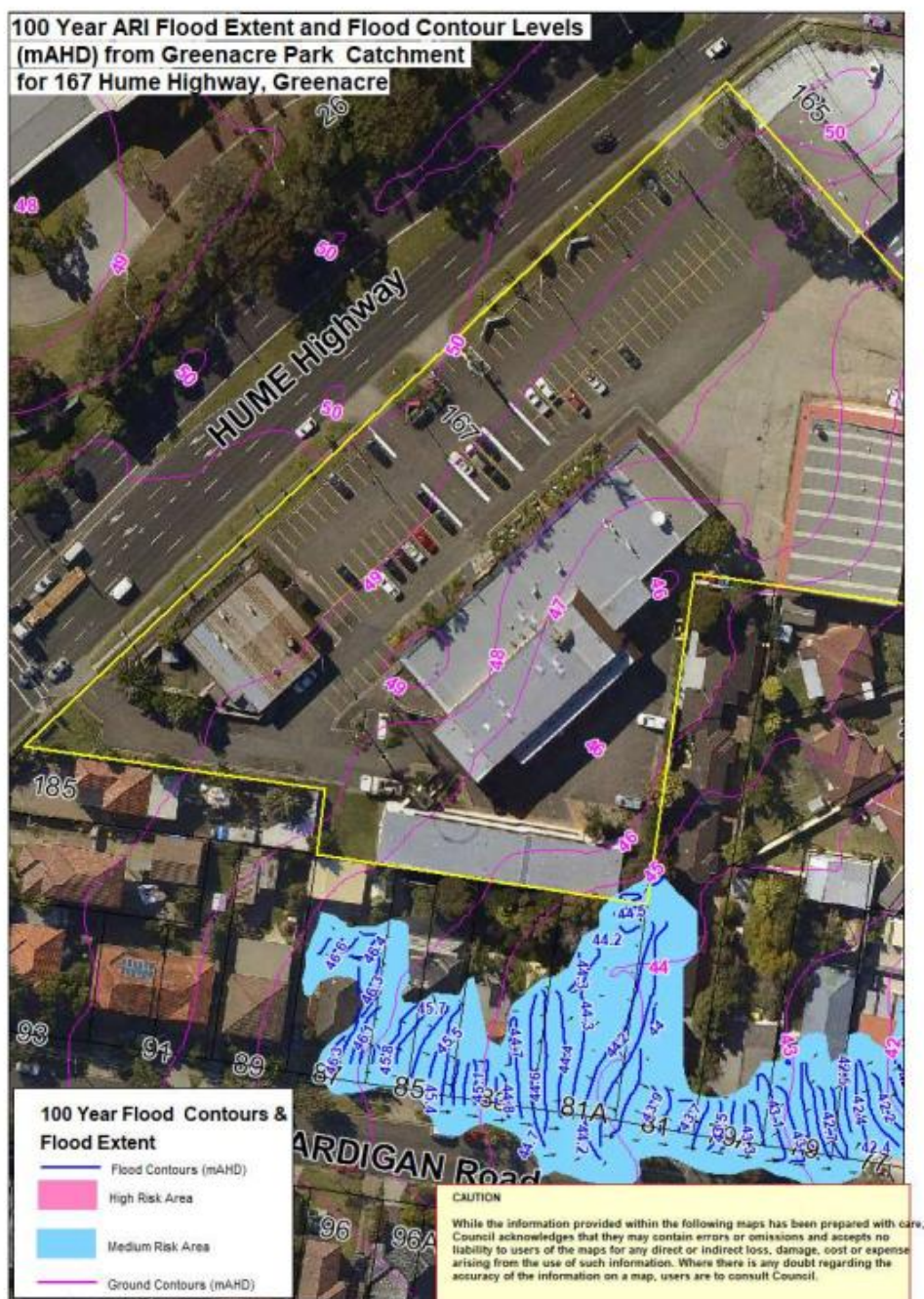


Figure 4: Flood Inundation Mapping provided by Canterbury-Bankstown Council (Appendix B)

Figure 5 presented below shows the flood depth in and near the site during the existing scenario during 1% AEP Flooding Events. The flood depth map does not represent flood depth below 100mm. Thus tallying Figure 4 and Figure 5 it seems that the small portion of the subject site in the south eastern boundary is affected by flood depth of less than 100mm.



Figure 5: 100 Year Flood Depth Map Provided by Canterbury - Bankstown Council (Appendix B)

Figure 6 below shows the extent of Probable Maximum Flood (PMF) extent within the site. The maximum PMF Level affecting the site is RL 46.3m AHD. It is visible from Figure 6 below that the site is affected by PMF extent within southern and eastern site boundary.



Figure 6: PMF Extent and Contour Levels

The flood hazard also known as product of flood depth velocity generally provides baseline information for floodplain assessment study. In such a preliminary assessment of risks or as part of a constraint's analysis for strategic land use planning, a combined set of hazard vulnerability curves presented in **Figure 8** and **Table 1** can be used as general classification of flood hazard on site.

Figure 7 presented below shows the flood velocity depth product (hazard) map in and near the site during the existing scenario during 1% AEP Flooding Events. Thus tallying Figure 4 and Figure 7 it seems that the small portion of the subject site in the south eastern boundary is affected by flood hazard of less than $0.05\text{m}^2/\text{s}$.

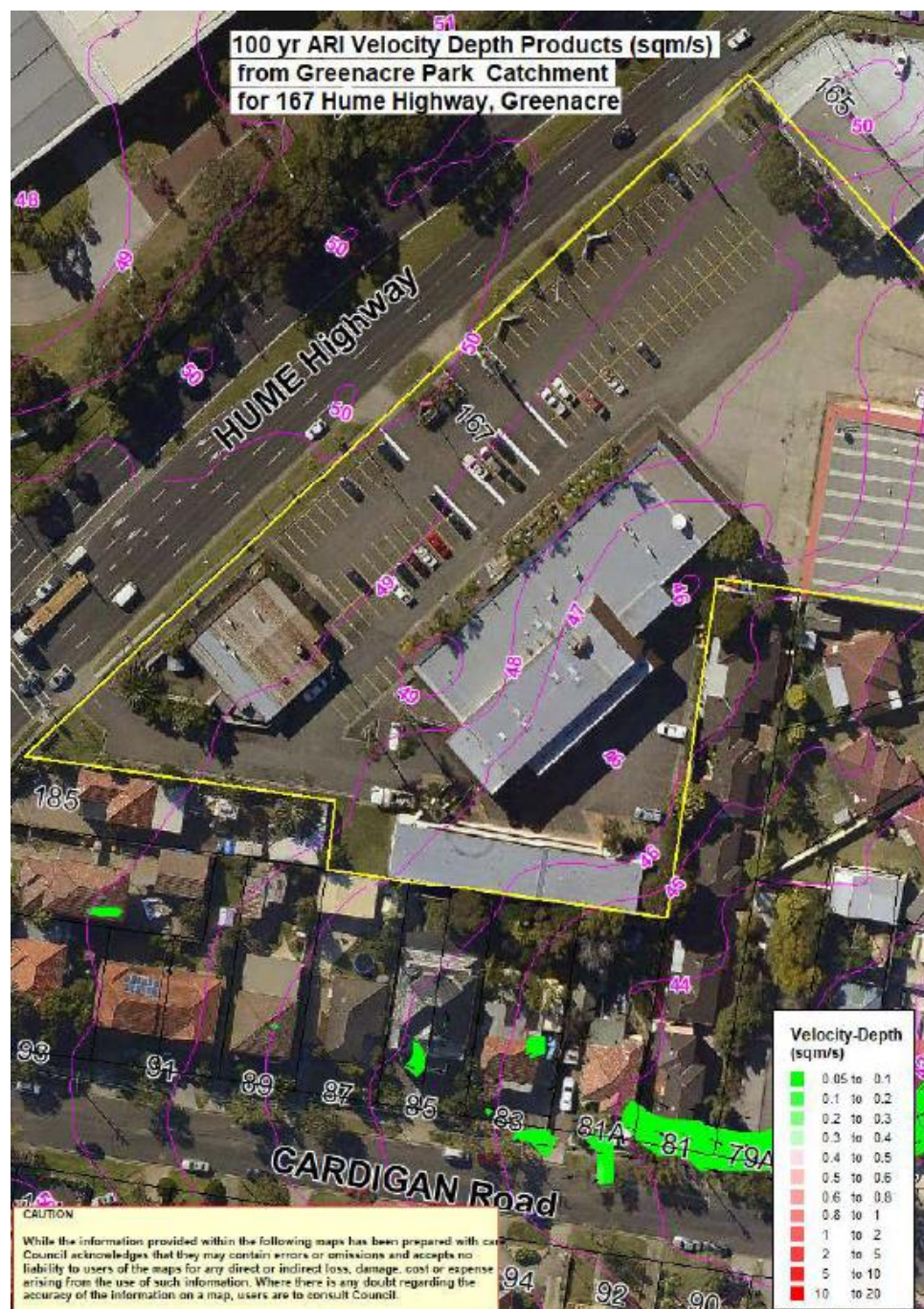


Figure 7: 100 Year Flood Velocity Map Provided by Canterbury-Bankstown Council (Appendix B)

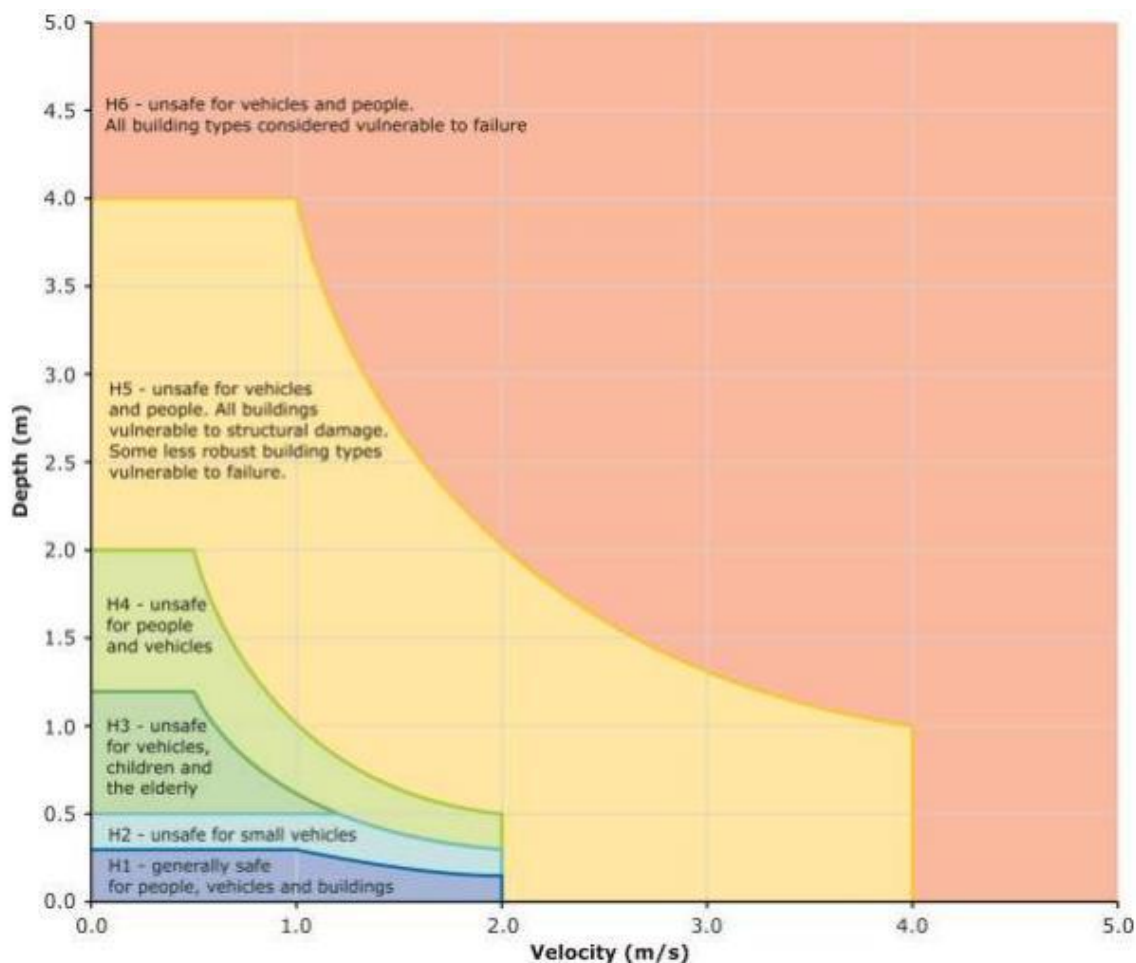


Figure 8: Flood Hazard Curve as per ARR Guideline

The combined flood hazard curves presented in **Figure 8** sets hazard thresholds that relate to the vulnerability of the community when interacting with flood waters. **Table 1** below shows the limits for the classifications provided in **Figure 8**.

Table 1: Combined Hazard Curves - Vulnerability thresholds classification limits

Hazard Vulnerability Classification	Classification limit (D and V in combination) m^2/s	Limiting still water depth (D) m	Limiting velocity (V) m/s
H1	$D \cdot V \leq 0.3$	0.3	2.0
H2	$D \cdot V \leq 0.6$	0.5	2.0
H3	$D \cdot V \leq 0.6$	1.2	2.0
H4	$D \cdot V \leq 1.0$	2.0	2.0
H5	$D \cdot V \leq 4.0$	4.0	4.0
H6	$D \cdot V > 4.0$	-	-

As per Figure 7 flood depth velocity for existing scenario is less than $0.5m^2/s$. Figure 5 flood depth for the existing scenario is below 0.1m. By tally this value with **Table 1** and **Figure 8** the flood hazard for the proposed site can be classified as H1 which is generally safe for vehicles, people and buildings.

4 PROPOSED DEVELOPMENT

The proposed development consists of four residential flat buildings. The existing brick buildings will be demolished. New structures will be built at across the whole site including but not limited to the southern side of the subject site.

This site is known to be flood affected with minor flood affectation, the proposed Building C and Building D is slightly affected by PMF flood extent.

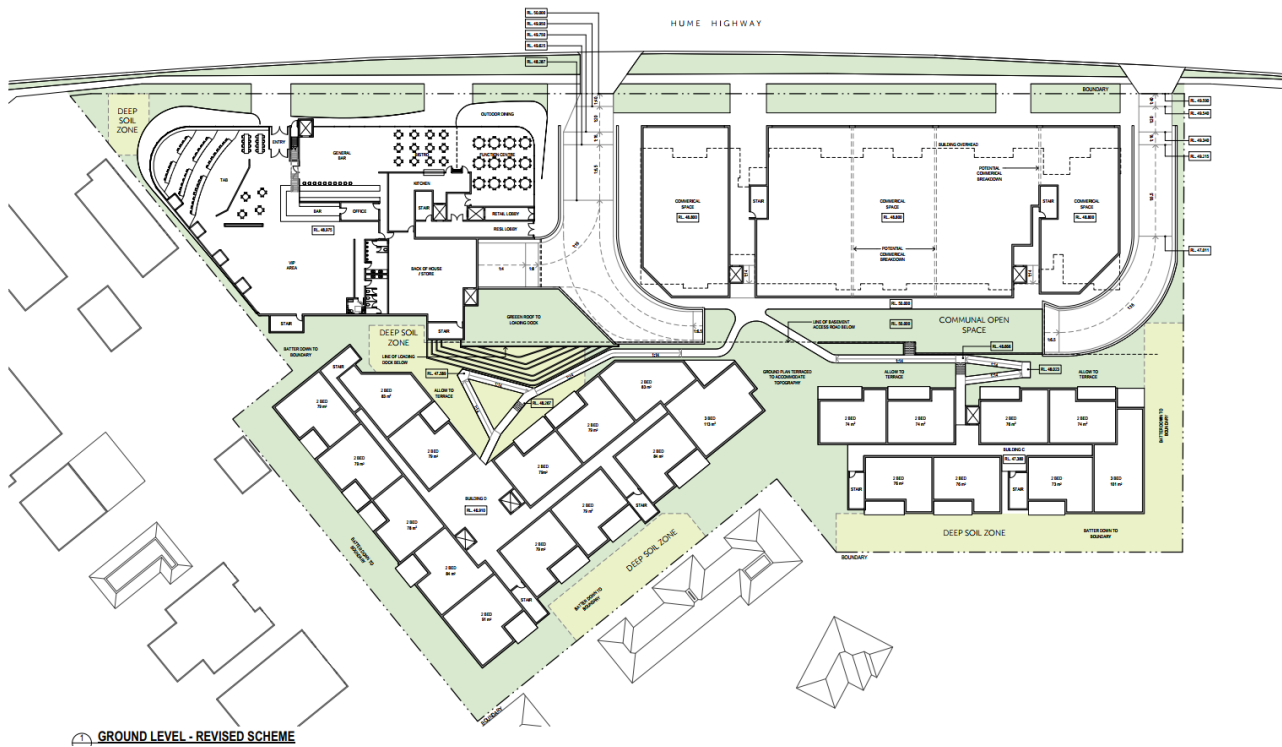


Figure 9: Proposed site plan (Appendix C).

5 FLOOD IMPACT ASSESSMENT

As required by Direction 4.3 Flooding and Canterbury Bankstown Council, a Flood Impact Assessment is required for the site.

The site is affected by 1% AEP Flood event in small portion of the south eastern boundary as presented in Figure 4. The proposed building footprint is outside this flood extent thus the construction of the proposed development will not have any negative impact to environment and neighbouring properties during 1% AEP flood event.

The site is affected by PMF event in the southern and eastern boundary. As the proposed development footprint for Building C and Building D is not significantly encroaching PMF extent, there will not be any negative impact to environment and neighbouring properties after construction of proposed development during PMF event. Furthermore, the entry to basement car park is outside PMF extent, it is not necessary to provide any flood control measures at the entry to Basement.

5.1 RISK MANAGEMENT STRATEGIES ADOPTED

It is evident that the subject site is affected by PMF flood extent in the southern and eastern boundary (Refer to Figure 6). In order to comply with Canterbury Bankstown Council's flood related DCP and LEP requirements and also to comply with Direction 4.3 Flooding it is required to minimise the exposure to potential flood risks to the development, following key flood risk management strategies. The Key management strategies that have been adopted are as follows:

a. Adoption of Flood planning level to determine the ground floor level

Council's LEP defines Flood Planning Level (FPL) as 1% AEP flood level plus 500mm freeboard. It ensures the people living inside the building are safe during 1% AEP flood event. In addition, as per Direction 4.3 Flooding, it is required to provide safety to people living inside the building during PMF flood event.

As this site is known to be flood affected with minor flood affectation, the floor levels of the new building (building D) shall be designed based on the flood level and the freeboard requirements. Habitable floor levels will have a freeboard of 500mm minimum plus 1% AEP Flood Level. This is to be applied to the ground floor.

The flood planning levels for the proposed section of the development have been designed as shown below:

Description	100yr Flood Level (m AHD)	Freeboard (mm)	Minimum Floor Level (m AHD)	Proposed Finished Floor Level (m AHD)
Ground floor (Building D)	44.50	0.50	45.00	46.910

Table 2: Summary of 100 year flood levels and ground floor Planning levels

In order to comply with Direction 4.3 Flooding, the proposed finished flood level is proposed to comply with maximum PMF level.

Description	PMF Level (m AHD)	Proposed Finished Floor Level (m AHD)
Ground floor (Building D)	46.30	46.910
Ground floor (Building C)	44.90	47.38

Table 3: Summary of PMF levels and ground floor Planning levels

As presented in **Table 3**, the proposed finished floor level of Building C and Building D is proposed above Maximum PMF Level.

b. Installation of flow through fencing

It is recommended to install flow through fencing with some louvres upto 100mm height from the ground along the boundaries affected by PMF flood event to allow floodwater to pass through unobstructed.

5.2 Bankstown DCP 2015 – PART B12 COMPLIANCE

As required by Council, the flood affected site must comply with the objectives of Flood Impact specified in – “*Greenacre Park Stormwater Catchment Flood Study*”.

The compliance of the development has been explained in detail below:

In reference to flood exposure, the subject site falls within Low Flood Risk Precinct as defined in the Bankstown Council Flood Risk Management DCP – Part B12 **Figure 10** below shows the applicable DCP targets that has been addressed by this residential development in Low Flood risk precinct.

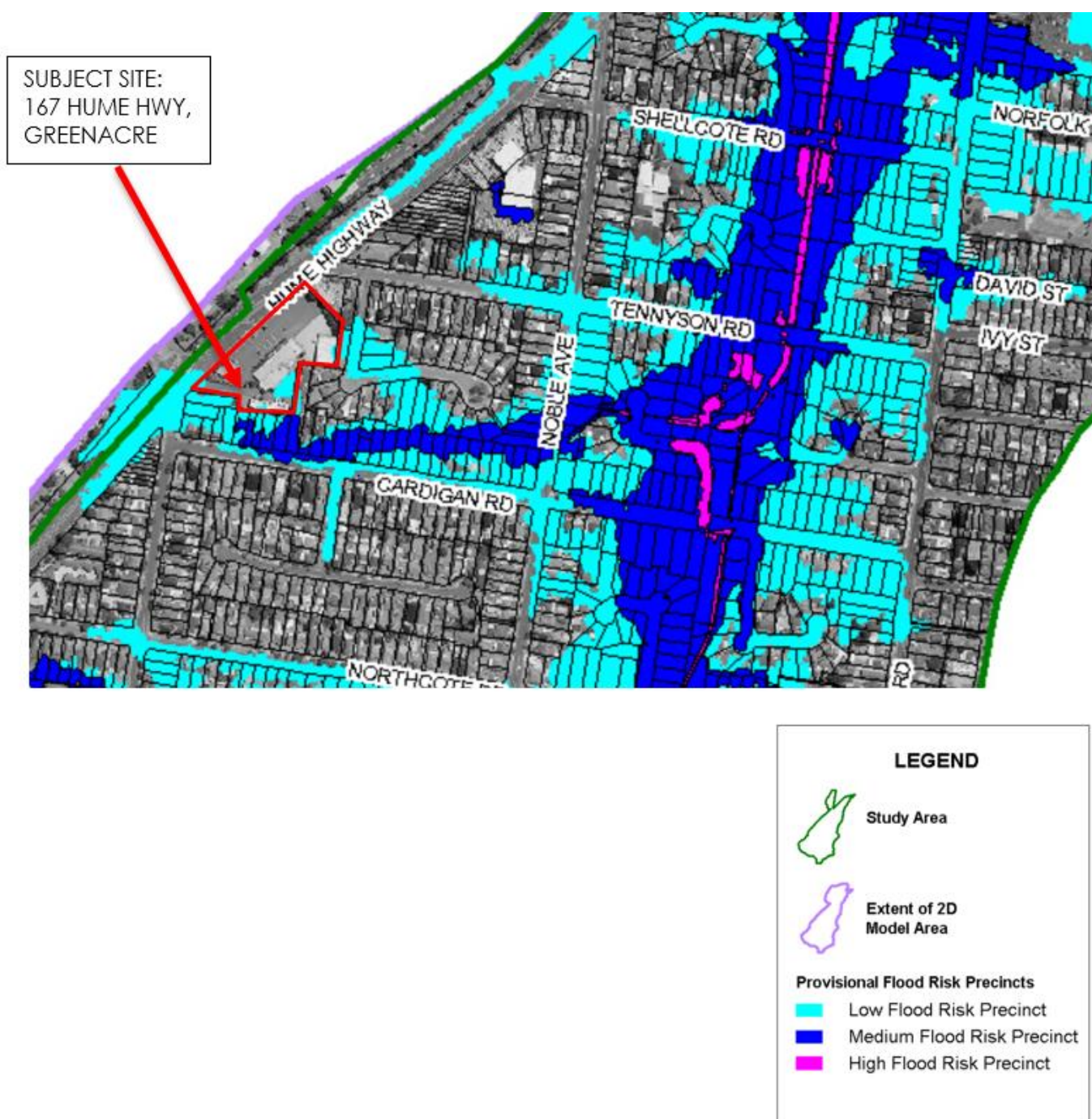


Figure 10: Flood Risk Map from Part B12

Planning Consideration	Flood Risk Precincts (FRP's)																							
	Low Flood Risk								Medium Flood Risk								High Flood Risk							
	Critical Uses & Facilities	Sensitive Uses & Facilities	Subdivision	Residential	Commercial & Industrial	Related Development	Recreation & Non-Urban	Concessional Development	Critical Uses & Facilities	Sensitive Uses & Facilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development	Critical Uses & Facilities	Sensitive Uses & Facilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development
Floor Level		3		2	2	2	1.6	4.7				2.6,7	5.6,7	2.6,7	1.6	4.7							1.6	4.7
Building Components		2										1	1	1	1	1							1	1
Structural Soundness		3										1	1	1	1	1							1	1
Flood Effects		2	3	3	3	3	3	3			1	2	2	2	2	2							1	1
Car Parking & Driveway Access		1,3,5,6,7		9	9	9	9	9				1,3,5,6,7	1,3,5,6,7	1,3,5,6,7	2,4,6,7	6,7,8							2,4,6,7	6,7,8
Evacuation		2,3,4		7	7	7	7	7			6	2,3	1,3	2,3	4,3	2,3							4,3	2,3
Management & Design		4,5									1		2,3,5	2,3,5	2,3,5	2,3,5							2,3,5	2,3,5

COLOUR LEGEND: Not Relevant Potentially Unsuitable Land Use

Figure 11: Flood Risk Precincts

1. Floor Level.

Control 2: Habitable Floor Levels to be no lower than 100-Year flood level plus freeboard

From the flood information provided by Bankstown Council, the flood level to be adopted for the subject site is stated to be 44.5m AHD. Applying the 500mm freeboard requirement, the flood planning level of the proposed warehouse development is set at a minimum of 45m AHD.

2. Flood Effect.

Control 3: Flood impacts to be considered in the case of major development if Council advise that the development may generate flood impact, such as significant loss of storage or conveyance. Any assessment may also be asked to demonstrate that the proposed development is structurally sound. The flood impact is negligible, there is no loss of storage or conveyance. The proposed development is structurally sound as result.

3. Car Parking and Driveway Access

Control 9: Flood related parking and access requirements to be advised by Council if necessary. Contact Council for advice as early as possible.

The entry to the basement Car Park is not affected by 1% AEP Flood extent. Thus it is not required to provide any flood control for entry to basement car park.

4. Evacuation

Control 7: Evacuation requirements to be advised by Council if necessary. Contact Council for advice as early as possible.

Flood evacuation plans are not required as the flood affectation is considered minimal, and the habitable floor level is provided with freeboard above 1% AEP flood level. The flood affectation is limited to the southern boundary and is low risk in nature.

5.3 Direction 4.3 Flood Prone Land COMPLIANCE

The compliance of site with Direction 4.3 Flooding is described below:

1. Flood Risk Assessment for PMF Extent:

The proposed floor level for Proposed Building C and Building D is higher than PMF maximum flood level as listed in **Table 3**: Summary of PMF levels and ground floor Planning levels **Table 3** above.

2. Evacuation Plan:

The site affected by PMF flood event which is minimal in nature. Due to the fact that, the proposed floor levels are higher than the maximum PMF flood levels, a flood evacuation plan is considered not be necessary.

It is recommended that during PMF flood event, to stay within the building, this will be a safe practice, as the proposed finish floor level is higher than the flood level in PMF flood event, and due to the short duration of flooding by its nature.

3. Carparking and Driveway Access:

The driveway access to basement is outside PMF flood extent thus, it is not required to provide any flood control measures at the driveway entries of the basement.

4. Structural Soundness:

Proposed Building C and Building D shall be designed to withstand damage due to scour, debris or buoyancy forces.

Structural engineer's report is recommended during later stages of approvals such as the Construction Certificate stage, to certify that the structure can withstand the forces of floodwater debris and buoyancy up to and including PMF flood level.

5.4 BANKSTOWN LEP 2015 COMPLIANCE

As a requirement of Canterbury Bankstown Council, the flood affected site must comply with the objectives of the Flood Impact which have been specified in section 5.21 of the Bankstown council's LEP.

(1) The objectives of this clause are as follows:

(a) to minimise the flood risk to life and property associated with the use of land,

The floor level at Building C and Building D which are slightly affected by PMF flood event are provided higher than Maximum PMF flood level affecting the site as described in **Table 3** above. This reduces the likelihood of flood water entering the internal zones of the building, which has in turn minimised the risk to human life and the property itself.

(b) to allow development on land that is compatible with the flood function and behaviour on the land, taking into account projected changes as a result of climate change,

As shown in Figure 4 the proposed building is outside the flood extent during 1% AEP flood event where as the proposed Building C and Building D is slightly encroaching the flood affected area during PMF flood event. The site is affected by low flood hazard and as described in Section 5 above the construction of proposed development will not have any negative impact on climate change.

(c) to avoid significant adverse impacts on flood behaviour and the environment

As described in Item 1(b) above, the construction of proposed development will not have adverse impacts on flooding behaviour and the environment.

(d) to enable the safe occupation and efficient evacuation of people in the event of a flood

The Carpark entry to the basement is not affected by PMF event. In addition, the ground floor level for Building C and Building D which are slightly affected by PMF extent is provided above Maximum PMF level. Thus, it is safe for people to stay inside the building during any flood event.

(2) Development consent must not be granted to development on land to which this clause applied unless the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development:

(a) is compatible with the flood function and behaviour on the land, and

The site falls into a low flood hazard category as described in **Section 3** above. As described in **Section 3** the flood hazard in and around the subject site is categorised as H1 which states that the subject site is safe for people, vehicles and buildings.

(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and

As described in **Section 5**, the construction of proposed development will not have detrimental increase in potential flood affectation of other development or properties.

(c) will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood, and

As described in item 1(d) above, it is safe to stay inside the building during 1% AEP Flood event.

(d) incorporates appropriate measures to manage risk to life in the event of a flood, and

As described in item 1(d) above, it is safe to stay inside the building during 1% AEP Flood event.

(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses

As described in **Section 5** above, the construction of proposed development will not have adverse impacts on flooding behaviour and the environment.

(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters—

(a) the impact of the development on projected changes to flood behaviour as a result of climate change,

As described in **Section 5**, there will not be change to flood behaviour

(b) the intended design and scale of buildings resulting from the development,

As described in **Section 3**, the flood hazard will remain as in pre development condition after construction of proposed development.

(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,

Refer to 1(d) above.

(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion

Refer to 2(e) above.

(4) A word or expression used in this clause has the same meaning as it has in the considering Flooding in Land Use Planning Guideline unless it is otherwise defined in the clause.

(5) In this clause –

Considering Flooding in Land Use Planning Guideline means the Considering Flooding in Land Use Planning Guideline published on the Department’s website on 14 July 2021.

flood planning area has the same meaning as it has in the Floodplain Development Manual.

Floodplain Development Manual means the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.

6 RECOMMENDATIONS AND CONCLUSION:

This investigation has been undertaken by Alpha Engineering and Development based on the information provided by Canterbury-Bankstown Council, the available survey plan and google maps service on the internet. To ensure compliance with the Council's flood prone land policy, the following is to be adopted:

- The minimum finish floor levels of the habitable areas of the proposed Building C and Building D is to be designed as per Flood level information on **Table 2**.
 - Finished floor level of the habitable ground floor area is to be a minimum of 45.00m AHD.
- The air conditioning units, hot water system must be located above PMF level
- Proposed structures of Building C and Building D below ground floor level, are to have flood compatible building components below the PMF levels. A structural assessment is recommended prior to occupation of building by any accredited Structural Engineers.
- It is recommended that open style or raised fencing to be adopted along the southern and eastern boundary to ensure there are no obstructions to overland flows coming into and leaving out of the subject site during PMF event.

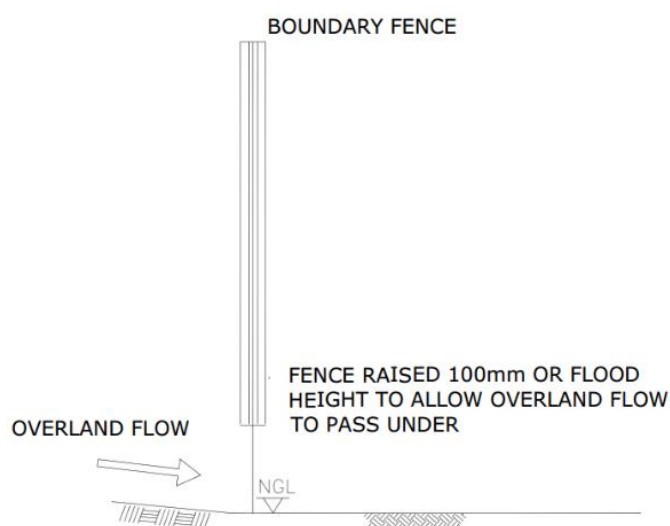


Figure 12: Elevated Fence Details

Building Component	Flood Compatible Material	Building Component	Flood Compatible Material
Flooring and Sub Floor Structure	<ul style="list-style-type: none"> • pier and beam construction or • suspended reinforced concrete slab 	Doors	<ul style="list-style-type: none"> • solid panel with waterproof adhesives • flush door with marine ply filled with closed cell foam • painted material construction • aluminium or galvanised steel frame
Floor Covering	<ul style="list-style-type: none"> • clay tiles • concrete, precast or in situ • concrete tiles • epoxy, formed-in-place • mastic flooring, formed-in-place • rubber sheets or tiles with chemical set adhesive • silicone floors formed-in-place • vinyl sheets or tiles with chemical-set adhesive • ceramic tiles, fixed with mortar or chemical set adhesive • asphalt tiles, fixed with water resistant adhesive • removable rubber-backed carpet 	Wall and Ceiling Linings	<ul style="list-style-type: none"> • brick, face or glazed • clay tile glazed in waterproof mortar • concrete • concrete block • steel with waterproof applications • stone, natural solid or veneer, waterproof grout • glass blocks • glass • plastic sheeting or wall with waterproof adhesive
Wall Structure	solid brickwork, blockwork, reinforced, concrete or mass concrete	Insulation	<ul style="list-style-type: none"> • foam or closed cell types
Windows	Aluminium frame with stainless steel or brass rollers	Nails, Bolts, Hinges and Fittings	<ul style="list-style-type: none"> • galvanised • removable pin hinges

Figure 13 General outline for flood compatible materials for construction

7 FLOOD RISK MANAGEMENT PLAN

- a. At the first signs that there may be a rainfall event, check any form of weather reports (i.e. Bureau of Meteorology, ABC Radio 702) for any possible forecast warnings issued. If any storm warnings have been forecast, this Flood Risk Management Plan must be actioned following the proceeding steps below.
- b. During flood events many local, major streets and roads will be cut off by floodwaters that may make the escape by vehicle extremely difficult. Travelling through floodwaters on foot or in a vehicle can be very dangerous as obstructions can be hidden under the floodwaters, or it is possible to be swept away, even if in a car, or the water may be polluted.
- c. It is recommended that during any flood event, staying within the building as much as practical is always the safest option. If the rainfall event has occurred, do not evacuate the building unless instructed by the State Emergency Services (SES) or police.
- d. Develop your own 'Family Flood Plan' generally in accordance with this Flood Emergency Response Plan. In the case that flooding should occur and children are home alone, arrangements should be ensured the children are aware not to leave the premises and to follow the 'Family Flood Plan'.
- e. If flood levels appear to approach the building of the residence:
 - (i) Move important documents, personal items, precious photographs, and vital medical supplies to a safe and easily accessible place with a pre-prepared 'Emergency Flood Kit'.
 - (ii) Gather medicines, special requirements for infants or elderly, mobile phones, first aid kit, special papers, battery operated torch and radio, fresh water, canned food, waterproof or easy dry clothing all packed in one location.
 - (iii) Locate any pets and gather special requirements for them
 - (iv) Put on strong shoes, raise any items within the home that may be damaged by water to a high level as possible, with electrical items on top. Turn off any large electrical items at the power point such as a TV that cannot be raised.

NOTE: SUITABLE STORAGE AREAS MAY BE ON TOP OF DESKS/TABLES/BENCH TOPS/ATTICS AND BEDS

- f. In the event that flood waters appear they may enter the building:
 - (i) Switch off electricity at the switchboard
 - (ii) Turn off gas at the meter
 - (iii) Turn off water at the meter
 - (iv) Block toilet bowls with a strong plastic bag filled with earth or sand
 - (v) Cover drains in showers, baths and laundry with a strong plastic bag filled with earth or sand.
 - (vi) Once flood waters have been entered the building, all occupants residing within the building must move to the 'First Floor' for refuge from a possible PMF storm event. It is only safe to leave this 'Safe Zone' once the flood water being to reside away from the building.
- g. In the event that flood waters have risen up to the building, do not evacuate the building under any circumstances, unless instructed by SES or police personnel. Floodwaters are much deeper, run much faster and are dangerous outside.
- h. Continue to monitor the Bureau of Meteorology forecasts and warnings, listen to ABC 702 radio.
- i. In the case of medical or life-threatening emergency ring 000 as normal but explain about the flooding.

- j. A laminated copy of this Flood Emergency Response Plan should be permanently attached to an inside cupboard door in the kitchen and/or laundry of the building and to the inside of the electrical meter box.
- k. This Flood Emergency Response Plan should be reviewed every 5 years, particularly with the potential sea level rise due to the greenhouse effect.

Important Phone Numbers

State Emergency Service: Emergency 132 500

General Enquires: 4251 6111

Police, Fire, Ambulance: Emergency 000

Bureau of Meteorology (Website): <http://www.bom.gov.au/weather>

Land, Weather and Flood Warnings, phone: 1300 659 215

DR/Hospital:

Family:

Friends:

Other:

8 FLOOD INFORMATION BACKGROUND

- Stay tuned to ABC 702 on a battery powered radio for official advice and warnings.
- Do not allow any children to play in or near flood waters.
- Avoid entering flood waters in all circumstances unless it is necessary. Check the depth in front of you before every step using a stick/pole or similar.
- Stay away from drains, culverts, and areas where the water is deeper than your knee.
- Do not turn on your gas or electricity until it has been checked by a professional/licensed repairer.
- Avoid using gas or electrical appliances which have been in flood water until checked for safety.
- Do not consume food that has been in flood waters.
- Boil tap water until supplies have been declared safe.
- Watch for trapped animals.
- Beware of fallen power lines.
- Take as many photos as possible of the damages for insurance purposes.
- Notify family and friends of your whereabouts

9 APPENDICES

Appendix	Description
Appendix A	Site Survey Plan
Appendix B	Council's Flood Information
Appendix C	Architectural Plans
Appendix D	Stormwater System Report



CIVIL & STRUCTURAL ENGINEERS
4.03, 16 RAILWAY PARADE, BURWOOD NSW 2134
TEL: 02 9745 5202
EMAIL: INFO@ALPHAENGINEERING.COM.AU

9.1 Appendix A: SITE SURVEY

NOTES

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2. RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGNOSTIC ONLY, AND DOES NOT CONSTITUTE A GUARANTEE, NOR SCALE OFF THIS PLAN WHERE OFFSET ARE CRITICAL. THEY SHOULD BE CONFIRMED BY A FURTHER SURVEY.
3. SERVICES SHOWN HEREON HAVE BEEN DETERMINED FROM VISUAL EVIDENCE ONLY PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE. THE RELEVANT UTILITY AND SERVICE PROVIDERS SHOULD BE CONSULTED TO CONFIRM LOCATION AND DEPTH.
4. THE BEARINGS ON THESE PLAN BOUNDARIES ARE BASED ON THE BEARING OF THE LINES, OR ON MAGNETIC DECLINATION. AN ACCURATE TRUE NORTH IS REQUIRED A FURTHER SURVEY WOULD BE NECESSARY.

www.dialbeforeyoudig.com.au

DIAL 1100
BEFORE YOU DIG

LEGEND

TK DENOTES TOP KERB
FL DENOTES FLOOR LEVEL

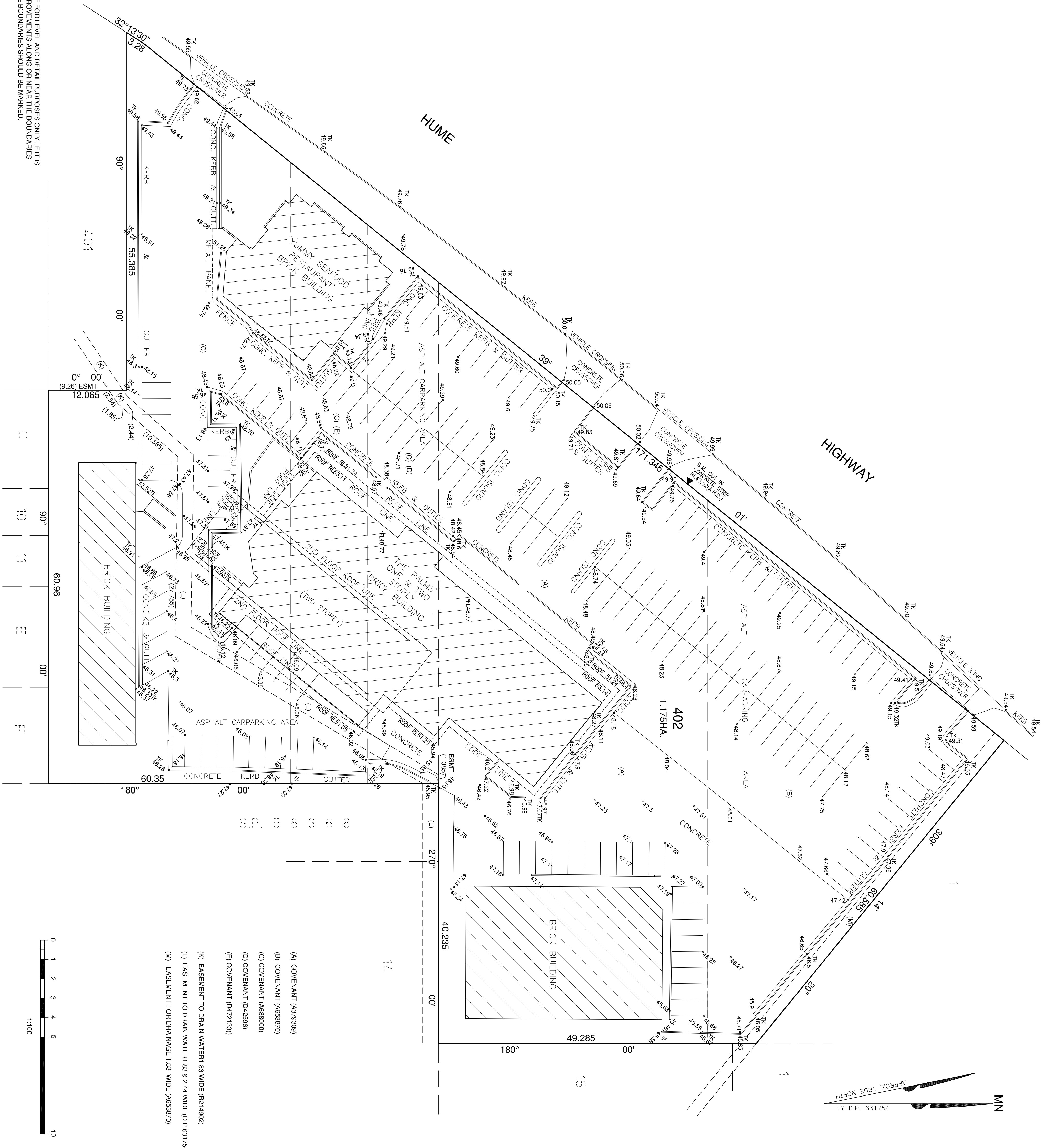
	REV.	AMENDMENTS	DATE
DATUM:		AUST HEIGHT DATUM	
ORIGIN:		SSM 141308 RL 49.76 (AHD)	
SOURCE:		S.CLIM.S.	

CONSULTING SURVEYORS



P.O. BOX 176
CARINGBAH N.S.W. 1495
PHONE: 9524 4073
FAX: 9540 1387
EMAIL: survevor@watsonbri.com.au

DRAWN:	B.M./S.C.	CHECKED:	J.W.
SCALE:	1:100	DATE OF SURVEY:	16/5/2014
SURVEYORS REFERENCE:	1:300@A1	PREVISION:	
14/2014		-	



THIS SURVEY HAS BEEN MADE FOR LEVEL AND DETAIL PURPOSES ONLY. IF IT IS INTENDED TO EFFECT ANY IMPROVEMENTS ALONG OR NEAR THE BOUNDARIES OF THE SUBJECT LAND THOSE BOUNDARIES SHOULD BE MARKED.

9.2 Appendix B: FLOOD INFORMATION PROVIDED BY CANTERBURY-BANKSTOWN COUNCIL



Level 1, 66 - 72 Rickard Road, Bankstown NSW
PO Box 8, Bankstown NSW 1885
Tel: (02) 9707 9010 - Fax: (02) 9707 9408
DX 11220 BANKSTOWN
council@cbc.city.nsw.gov.au

CITY OF CANTERBURY BANKSTOWN

To: Warren Duarte
41.04/264 George Crs
SYDNEY NSW 2000

STORMWATER SYSTEM REPORT 167 Hume Highway, GREENACRE NSW 2190

Date: 03-Sep-2021
Ref: WP-SIA-1716/2021
Development type: **Residential Flat Building**

NO

FLOOD/OVERLAND FLOW STUDY REQUIRED

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

- 450 mm diameter stormwater pipeline (according to Council records) and associated 1.83m wide easement located along the north eastern site boundary within the site.
- 375 & 450 mm diameters stormwater pipeline (according to Council records) and associated 1.83 & 2.44m wide easement located south of the site within the site.

Refer to the attached "**100 Year ARI Flood & PMF Extent Maps from Greenacre Park Catchment Study**". According to the flood & GIS maps, there isn't any significant overland flow paths to this property.

All structures and buildings must be located clear of pipelines and easements [existing or comply with Bankstown Council's *Development Engineering Standards** requirements].**

This report relates to the exposure of the subject site to Council's stormwater system, both underground and overland. It does not assess the suitability or otherwise of this site for the proposed development.

* Average Recurrence Interval

** Australian Height Datum

*** Bankstown Council's *Development Engineering Standards* and *Bankstown's Development Control Plan 2015* is available from Council's Customer Service Centre.

PMF Probable Maximum Flood

Pushpa Goonetilleke
ENGINEER

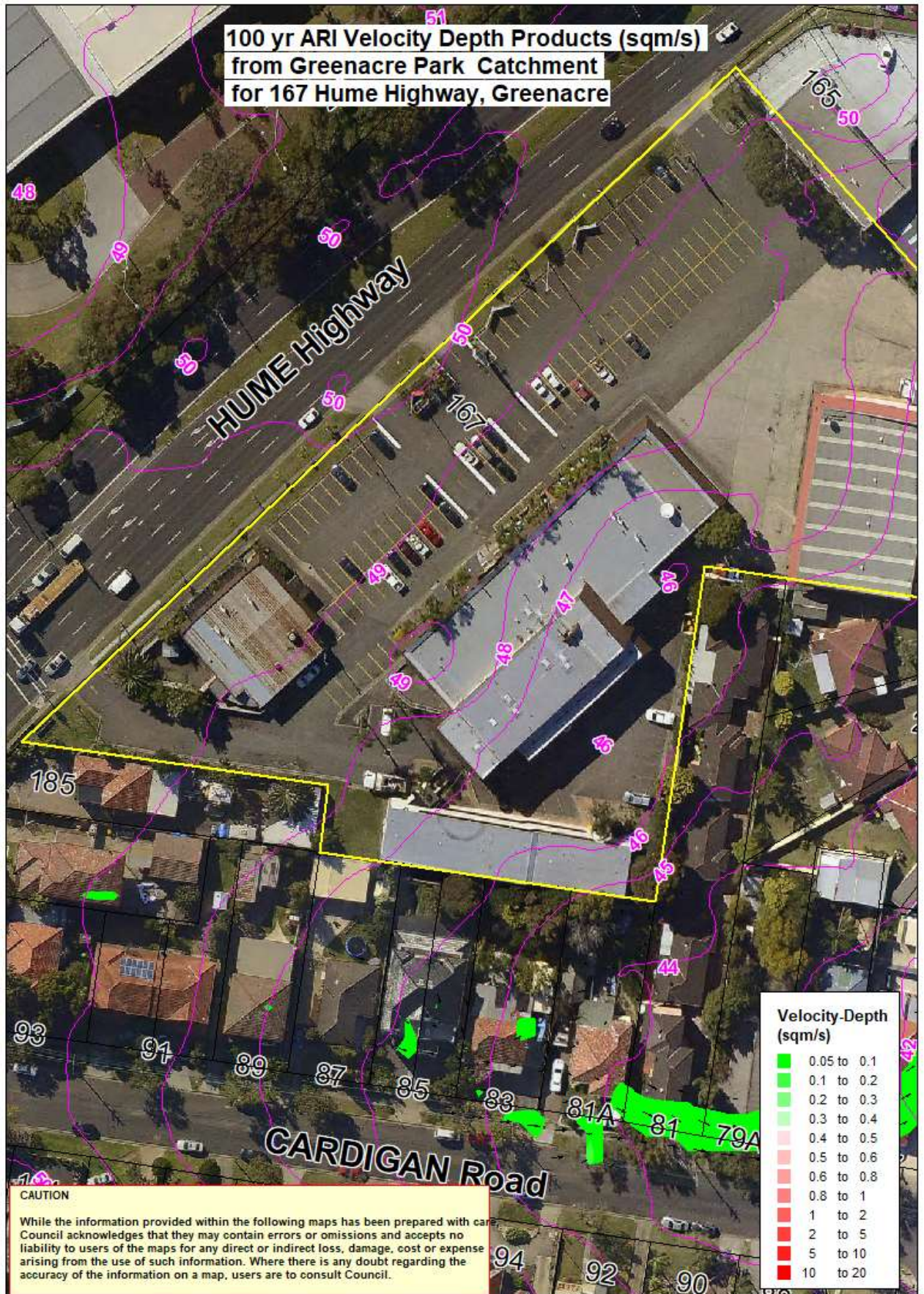
**100 Year ARI Flood Extent and Flood Contour Levels
(mAHD) from Greenacre Park Catchment
for 167 Hume Highway, Greenacre**



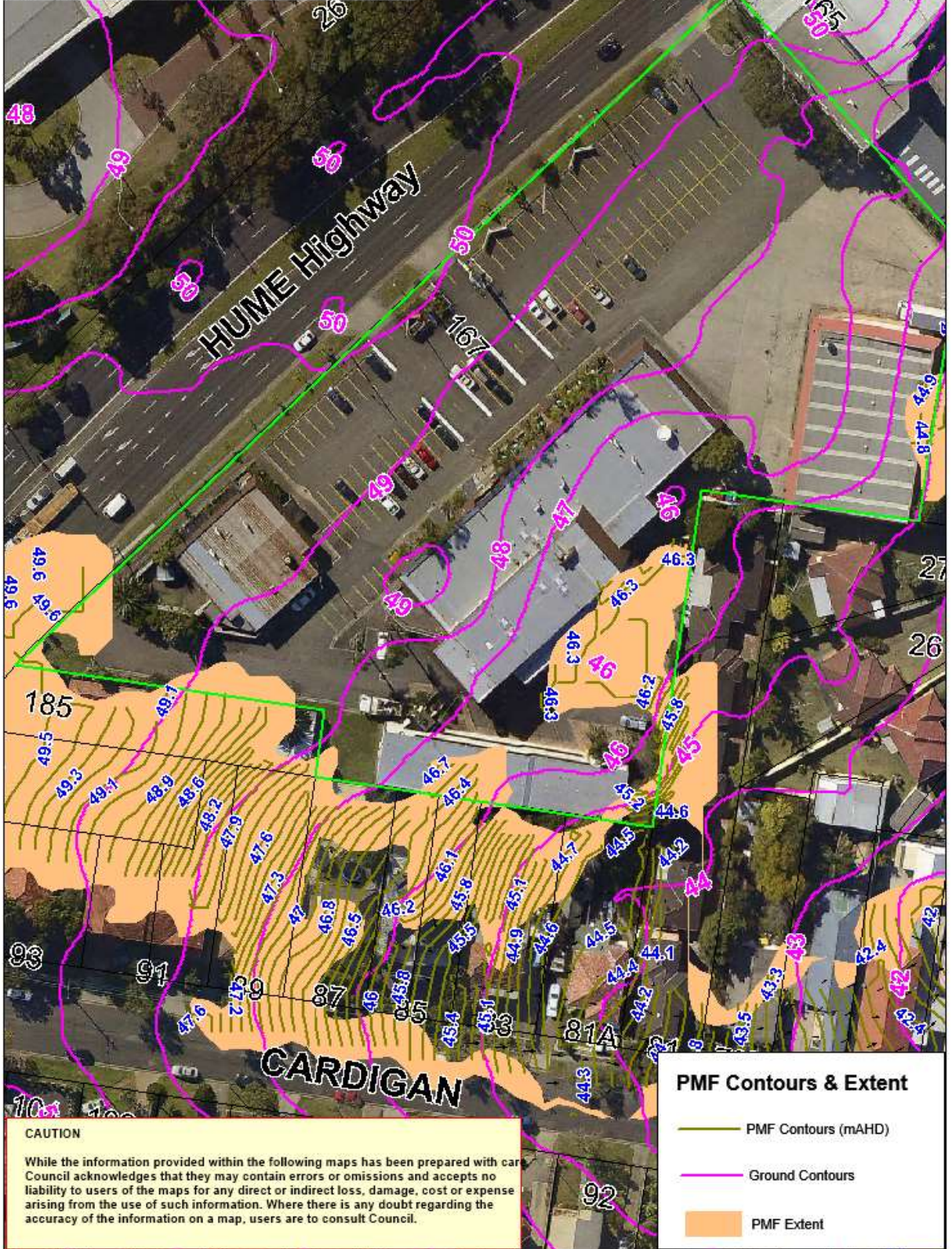
100 yr ARI Flood Depth (m) and Flood Contour Levels (mAHD) from Greenacre Park Catchment for 167 Hume Highway, Greenacre

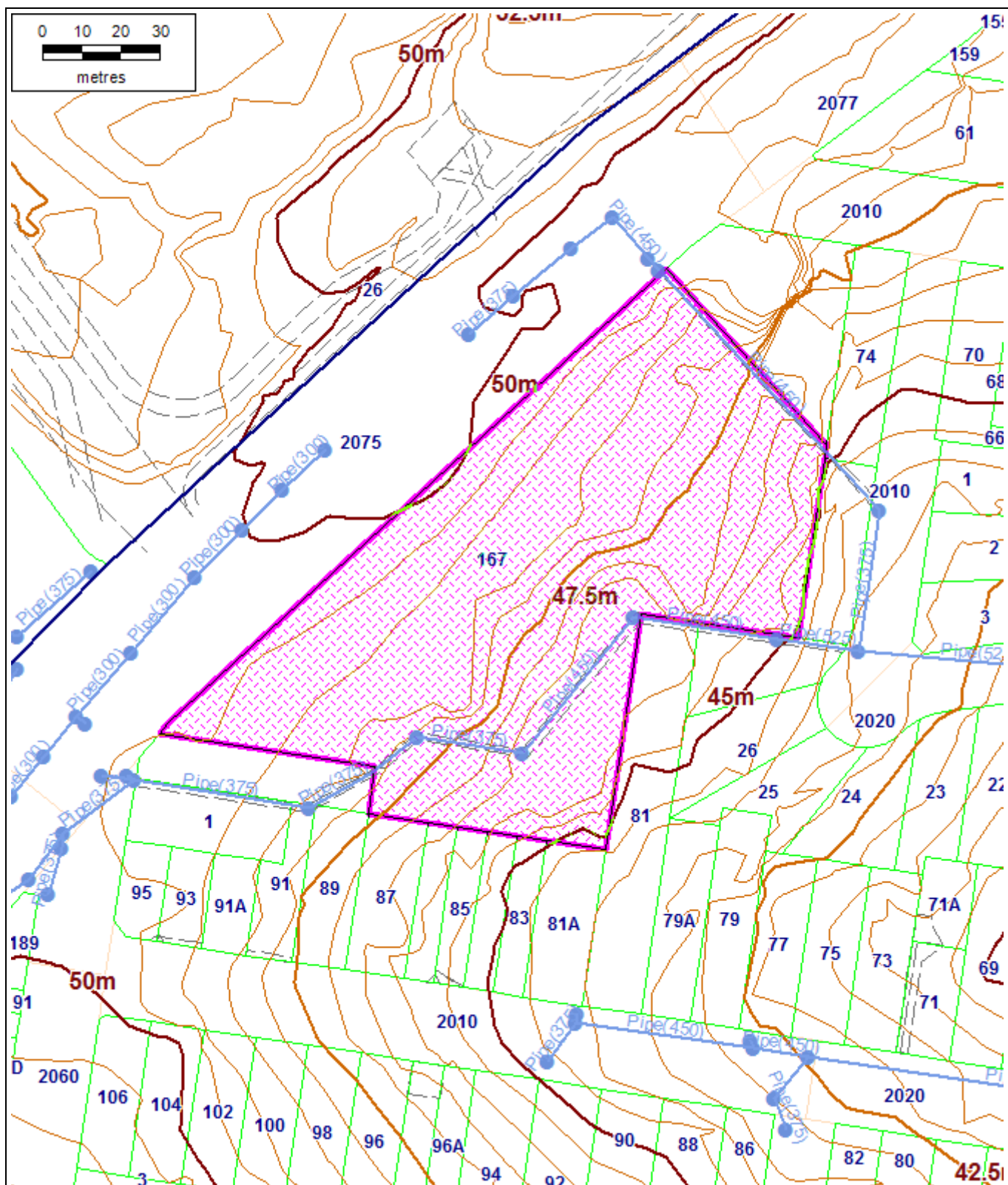


**100 yr ARI Velocity Depth Products (sqm/s)
from Greenacre Park Catchment
for 167 Hume Highway, Greenacre**



**PMF Extent and Contour Levels (mAHD)
from Rookwood Road Catchment
for 167 Hume Highway, Greenacre**





1:1,421
3 September 2021























167 Hume Highway, Greenacre

GIS Map

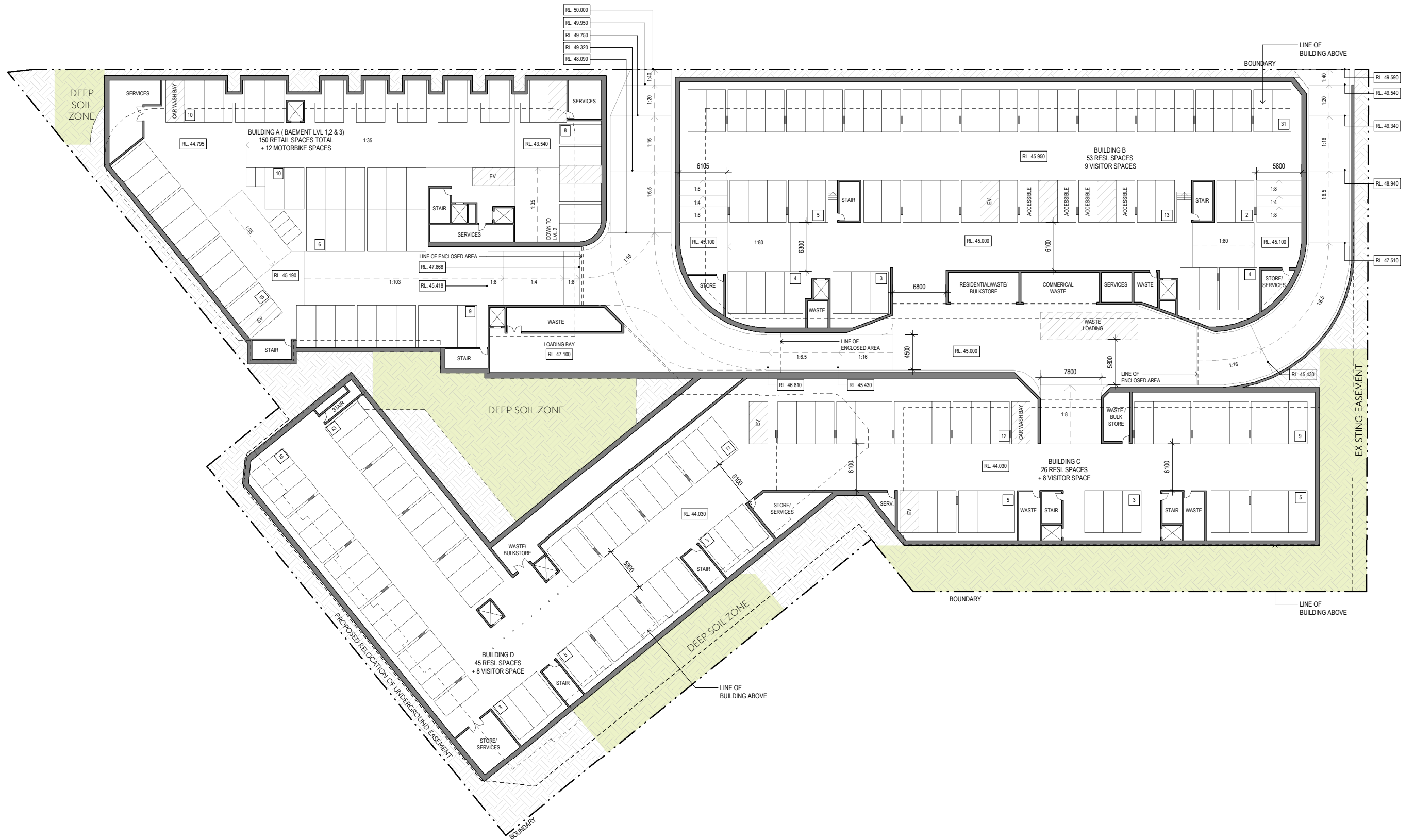
DISCLAIMER: COUNCIL EXPRESSLY DISCLAIMS ALL LIABILITY FOR
ERRORS OR OMISSIONS.
THIS PLAN HAS NO LEGAL STANDING



Legend

	Suburb
	Drainage Conduits
	Drainage Devices
	Sydney Water
	Contour Major 5m
	Contour Intermediate 2.5m
	Contour Minor 0.5m
	_25cm Contour Interval (Major)
	_25cm Contour Interval (Basic)
	_25cm Contour Interval (Minor)
	Parcel
	Parcel Associate
	Parcel Vinculum
	Jetty
	Easements
	Road Boundaries
	Aerial Photo 14052019
	Road Names
	Airport Internal Road
	Water Boundary
	Railway
	Airport Taxiway

9.3 Appendix C: ARCHITECTURAL PLANS



1 BASEMENT PLAN - REVISED BASEMENT SCHEME
1: 250 @ A1

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STATUS

PRELIMINARY

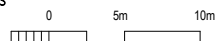
Do not scale drawings. Verify all dimensions on site.
This drawing is NOT SUITABLE for construction.

P18	14.09.21	PRELIMINARY ISSUE
P17	08.09.21	REVISED BASEMENT
P16	03.09.21	REVISED BASEMENT
P15	01.09.21	REVISED BASEMENT
P14	01.05.19	ISSUED FOR COUNCIL COMMENT
P13	22.06.17	PRELIMINARY ISSUE
P12	04.05.17	PRELIMINARY ISSUE
P11	28.10.16	PRELIMINARY ISSUE
P10	18.10.16	PRE LODGEMENT
P9	29.09.16	PRELIMINARY ISSUE
P8	27.09.16	PRELIMINARY ISSUE

ISS	DATE	PURPOSE OF ISSUE
-----	------	------------------

NOTES

1:500 @ A3
1:250 @ A1



PROJECT
THE PALMS CHULLORA

CLIENT
IRIS CAPITAL

squillace

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INTERIOR DESIGNERS
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Ph: +61 2 8354 1300 | Fax: +61 2 8354 1311
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246 Bourke Street, Melbourne VIC 3000
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ABN: 34 137 620 538

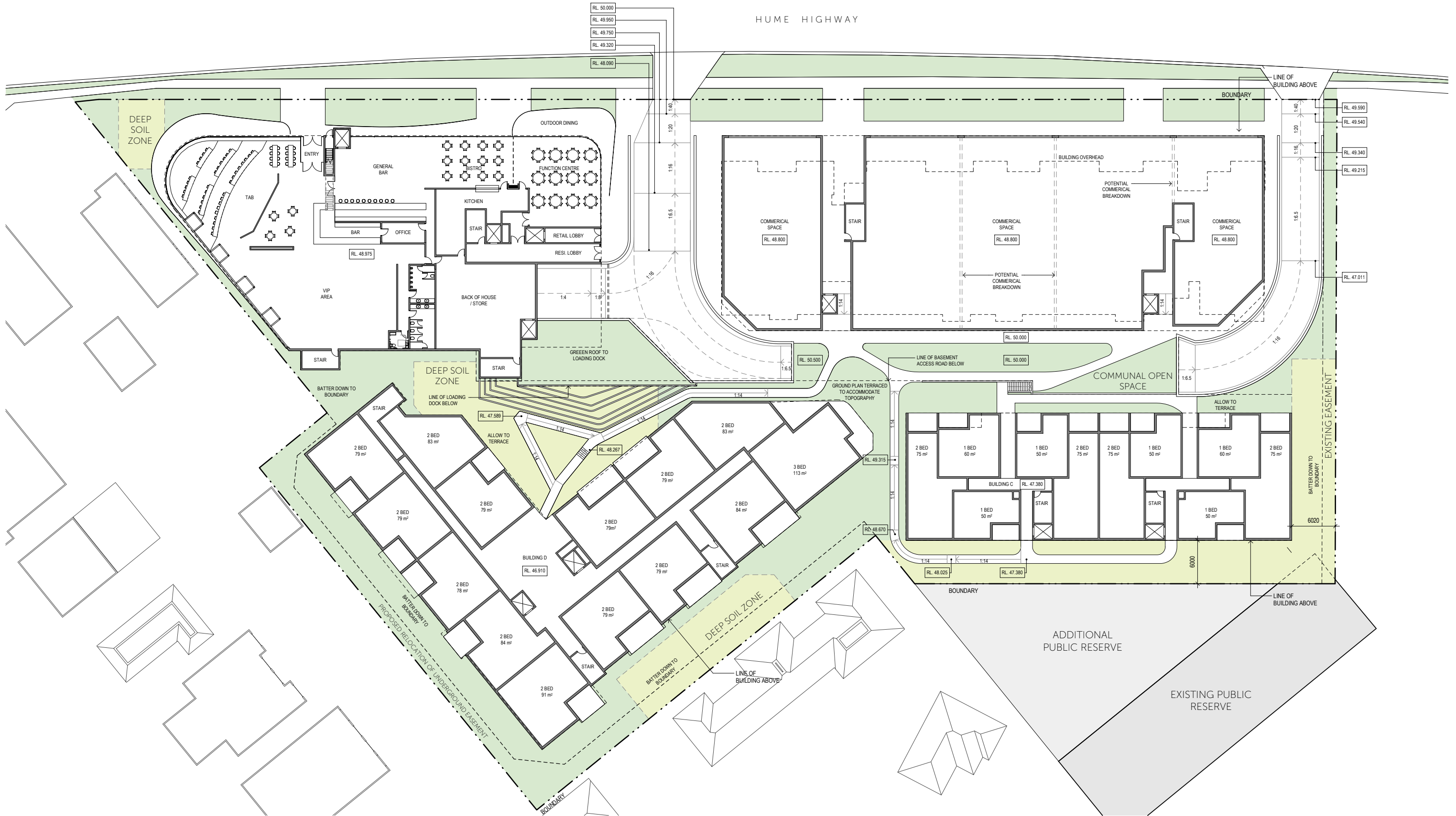
NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW),
17219 (VIC), 3677 (QLD)

DRAWING NO. **DA-099A P18** ISSUE **IRI1412** JOB NO.

DRAWN BY CHECKED BY SCALE **1: 250@ A1** DATE **14.09.21**

DRAWING TITLE
BASEMENT SKETCH





1 GROUND LEVEL - REVISED SCHEME
1:250 @ A1