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Job Number: **17NL265 – FR3** Date: **29th OCTOBER, 2021**

26 MOOREFIELDS ROAD, KINGSGROVE, NSW

FLOOD RISK MANAGEMENT PLAN FOR THE PROPOSED TOWNHOUSE DEVELOPMENT

Prepared by:

LOKA CONSULTING ENGINEERS

Nermein Loka
BSC, ME, MIE(AUST), CPEng, NPER, RPEQ
Senior Civil Engineer
Accredited Certifier
Director

SYNOPSIS

The objective of this report is to identify the flood issues, and to design and implement the appropriate management measures to effectively manage the full range of flood risk for the proposed townhouses at 26 Moorefields Road, Kingsgrove. The design measures comply with the 'NSW Floodplain Development Manual, April 2005', 'Section B5 Stormwater and Flood Management, Canterbury Development Control Plan 2012', and 'Section 6 Flood Management and Flood Proofing, Appendix 1 Engineering Specifications'.

To address the requirement of Canterbury-Bankstown City Council (CBCC), this flood risk management report will consider the site characteristics, flood management measures and emergency responses.

According to the Stormwater System Report (SSR) from council issued on 28th November, 2017 attached in Appendix B, the subject site is currently affected by Cooks River overland flood.

Referring to the architectural plan, the minimum ground floor finish level of the proposed development has been designed at RL 38.55m A.H.D., which is 0.75m above the overland flood extend level at RL 37.80m in 1% AEP flood event.

This report will identify the flood category of the proposed site and will provide flood background information as well as indicate the design criteria in accordance with Council's DCP. In addition, this report will propose measures to protect the proposed development if and when it is affected by the 100yr flood. The report will also provide a flood evacuation strategy and response for people in the building during the 100-year storm event.

It should be noted that the Evacuation Plan should be laminated and fixed in place at prominent location within the building. Our suggestion would be to fix the plan next to the entry in each townhouse, as well as in level 1.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

1. INTRODUCTION

The subject site is located at 26 Moorefields Road, Kingsgrove and the proposal is to build eight townhouses.

Referring to the Stormwater System Report issued by Council on 28th November 2017, the site is affected by Cooks River overland flooding extend at 100-year events. This report aims to provide appropriate strategies to control the impact of flood risks for the development, and ensure the safety of people and the general public, as well as minimise the effect on the local community.

The objectives of this report are as follows:

- Outline the strategies for appropriate flood risk management measures to ensure the public are safe to use the proposed building.
- Outline the site flood emergency response during the 100-year flood storm event.
- To ensure the development complies with the requirements of Canterbury-Bankstown City Council in relation to the flooding.

2. SITE DESCRIPTION

2.1 SITE LOCATION

The subject site is situated in the Kingsgrove area within the Canterbury-Bankstown City Council. The total site area is about approximately 1098m^2. The existing site is a one-storey single dwelling shown in Figure 1. The proposed development is multi-townhouses.

Figure 1: The Proposed Development Site location (Image taken from SIX maps)

3. FLOOD CLASSIFICATION AND CHARACTERISTICS

Refer to Council's DCP, Engineering Specification and SSR.

Three Flood Classifications have been defined as follow:

- **High Flood Risk:** is where the land below the 100-year flood that is either subject to a high hydraulic hazard or where there are significant evacuation difficulties.

- **Medium Flood Risk:** is where the land below the 100-year flood that is not subject to a high hydraulic hazard and there are no significant evacuation difficulties.

- **Low Flood Risk:** is where the land is not identified within either the High Flood Risk or the Medium Flood Risk.

It is advised by Council that the minimum finish floor level for the proposed development shall be designed based on 500mm above 1 in 100 Year flood level (RL38.54m). In this regard, this flood risk management report/plan is designed based on the flood level from the Cooks River overland flood as per Council's SSR.

The townhouses shall be constructed at least at the 100-year flood level plus 500mm freeboard from flood proof material capable of immersion in water and able to withstand the force of moving floodwaters and debris. Certification of this by a qualified structural engineer shall be provided to the Principal Certifying Authority prior to release of the Construction Certificate.

Below are listed the Council design criteria for the proposed site, which are in accordance with the requirements of Council's DCP & Engineering Specification:

Floor Level:

- Flood levels of all habitable rooms should be 0.5m or more above the standard flood level. A certificate by a registered practicing surveyor certifying the level of the completed building will be required.

Building Components & Method:

- All structures to have flood compatible building components (as per specified in Engineering Specification) below or at the 100-year ARI flood level plus freeboard.

Structural Soundness:

- Applicant to demonstrate that any structure can withstand the forces of floodwater, debris & buoyancy up to & including a 100-year flood plus freeboard.

Flood Affection:

- The development will not increase flood affectation elsewhere, having regard to: (i) loss of flood storage; (ii) changes in flood levels, flows and velocities caused by alterations to flood flows; and (iii) the cumulative impact of multiple potential developments in the vicinity;

Evacuation:

- Reliable access for pedestrians and vehicles is required from the site to an area of refuge above the PMF level, either on site or off site.
- Applicant to demonstrate the development is consistent with any relevant *flood evacuation strategy* or similar plan.

Management and Design:

- Site Emergency Response Flood plan required (except for single dwelling-houses) where floor levels are below the design floor level.
- Applicant to demonstrate that area is available to store goods above the 100-year flood plus 0.5m freeboard.
- No external storage of materials below the design floor level which may cause pollution or be potentially hazardous during any flood.
- Electrical and mechanical materials are required to be constructed and installed as per Engineering Specification. All electrical devices and equipment shall be installed above the 100-year flood level plus 0.5m freeboard.

4. PROPOSED DEVELOPMENT

The proposed building design levels are shown in Table 1.

Referring to the architectural plans and Council's requirement; it is noted that the finish Ground Floor level is above the 1% AEP flood event.

	Levels (m AHD)	**Information provided by**
100 - Year Flood Level	RL 37.80	CBCC
Townhouse Ground Floor	RL 38.55 – 38.75	Architect
Townhouse Level 1	RL 41.57 – 41.77	Architect
Basement Car Park	RL 35.44	Architect

Table 1: The relevant levels of proposed development and 100-year

5. FLOOD MANAGEMENT MEASURES

5.1 STRUCTURAL DESIGN ELEMENTS AND MATERIAL STANDARDS

The subject site is flood control lot and will be inundated during 1 in 100-year ARI flood event. All the subject site area is affected by 100-year ARI event. All structural components below 100-year flood level plus freeboard are recommended to be designed flood proofed, and only flood compatible materials to be used for construction in order to comply with the design standards.

5.2 HABITABLE FLOOR

Refer to Table 1, the finish floor level for the proposed development is RL 38.55m which is 750mm above the 1%AEP level at RL 37.80m from the Cooks River as per Council advice.

5.3 FLOOD AFFECTION

The proposed townhouse development with a basement will change the land form of the rear of the subject site, which is considered as a floodway area affected by the overland flow flood from the south-west direction during the 100year and PMF storm events. Therefore, the proposed development will increase flood affection elsewhere by causing changes in flood levels, flows and velocities due to alterations to flood flows, and possibly causing the cumulative impact of multiple potential developments in the vicinity.

To address the problem of flood affection, overland flow paths have been designed to direct the overland flow flood entering the subject site from the south-west direction. The first overland flow path has been designed as 1000x300mm along the western boundary of the subject site, and the second overland flow path has been designed as 2300x170mm with the pit and pipe stormwater system along the southern boundary of the subject site. The overland flow flood will eventually be directed to the boundary pit, and then to the existing kerb inlet pit on Moorefields Road, therefore, the problem of flood affection will be solved by using the designed overland flow paths, which collect the overland flow path into a grassed swale drain for catchment 1 then we continued with a grassed swale drain including pits and pipe to accommodate the total overland flow.

Please refer to the updated stormwater drainage plan prepared by Loka Consulting Engineers issued on 29th October 2021 for more details about the overland flow paths.

5.4 PREPARATION AND FLOOD EVACUATION

Floods can occur any time without warning, the people in the building should prepare, maintain and replace if necessary the following item for any expected emergency that may happen.

- Wet weather clothing
- Torch, Radio with Battery and Spare Batteries
- Local map, a prepared home emergency plan
- A First aid Kit and prescription medicines
- Important papers including emergency contact numbers and any personal documentations
- Mobile Phone
- Store basic food items and bottled water

A flood map shall be fixed behind all main entries to each of the townhouse to show the evacuation path to the flood free zone. The Flood evacuation drawing is shown in Appendix C.

5.5 MANAGEMENT AND DESIGN

Goods to be stored in ground floor or level 1 in the townhouses in case of 1:100 Yr Flood.
Basement to be protected by flood gate. Product details and design details to be provided prior Construction Certificate.
Fire escape stairs from basement to ground floor to be designed with water proof and structurally soundness for basement protection.

5.6 FLOOD WARNING SYSTEM

A flood warning system, including an appropriate warning sign, directional signs and a flood alert or detection system should be installed on the external wall of the dwelling near the southern boundary to inform the people during any emergency happen. The

audible alarm and flashing light are to be activated by float switches, and the flashing light (Blue) should be activated when the flood water level reaches to the lower level of the site referring to Appendix C. The audible alarms and the flashing light shall operate until the water completely drains from around the townhouses.

6. FLOOD EMERGENCY RESPONSE

As described earlier the flood will take a short period of time to reach the peak. In the event of a flood especially when the flood alarm system be activated (Blue Light), all people should move to first floor level or where is above flood level.

The owner of the townhouses should pay attention of drainage system of the development and runoff in the lower area of the site and surrounding streets.

If tenants/residences see any flood water from neighbouring area, flood water at the front of the landscape area, they should take the following action:

- Move to level 1 of the dwellings.

If the flashing light and audible alarm is activated, the flood water has reached to the level which is possible up to the 100yr flood level.

In addition, all people in the townhouses should also take the actions below:

- Do not try to evacuate and travel through floodwater on foot;
- Do not stay inside any vehicles on the street and in basement;
- Do not try to evacuate and exiting the site by any vehicles;
- Ensure all customers and their pets should move and stay in the level 1 of the building.

7. EMERGENCY CONTACT DETAILS

SES Canterbury Unit 196 Moorefields Rd, Beverly Hills NSW 2209	Phone: **132 500** **(02) 9750 9944**
Canterbury-Bankstown City Council Campsie Centre 137 Beamish Street, Campsie NSW 2194	Phone: **(02) 9806 5050**
Parramatta Police Station 95 Marsden Street Parramatta 2150	Phone: **(02) 9633 0799 or 000**

Closest Emergency Meeting Location Entrance to Site (refer to Evacuation Plan)	To be advised on the day
Energy Australia	Phone: **131 535**
Telstra	Phone: **1800 687 829**
Jemena Gas	Phone: **131 909**
Local Radio Stations Freq: 702 **ABC Sydney**	Phone:**1300 222 702**

These phone numbers are correct at the time of issuing this report.

8. CONCLUSION AND RECOMMENDATION

This report complies with the Flood Risk Management requirements of Council. The proposed development will not be impacted by flood because the habitable areas are above the 1%AEP storm event flood level. This report provides information relating to emergency responses and actions to be taken by the people in the townhouses before and during a flood event. In addition, a laminated copy of the flood evacuation plan should be fixed in basement, townhouse entry and level 1. It is important that a Flood Risk Management Plan be reviewed as a minimum every 5 years or just after a major flood event.

9. REFERENCES

1. Institute of Engineers Australia (1987) Australia Rainfall and Runoff, a Guide to Flood Estimation, Volume 1
2. NSW Floodplain Development Manual April 2005
3. Canterbury-Bankstown City Council's DCP 2012 (Former Canterbury)
4. Australian Standard AS3500
5. Bureau of Meteorology, EMA flyer, FLOODS – Warning, Preparedness and Safety.

10. GLOSSARY OF TERMS

Afflux
The rise in water level upstream of a hydraulic structure such as a bridge or culvert, caused by losses incurred from the hydraulic structure.

Australian Height Datum
National survey datum corresponding approximately to mean sea level.

Annual Exceedance Probability
The chance of a flood of a given size or larger occurring in any one year, generally expressed as percentage probability. For example, a 100-year ARI flood is a 1% AEP flood. An important implication is that when a 1% AEP flood occurs, there is still a 1% probability that it could occur the following year.

Average Recurrence Interval
Is the long-term average number of years between the occurrences of a flood as big as, or larger than the selected flood event?

Catchment
The catchment at a particular point is the area of land which drains to that point.

Design floor level
The minimum (lowest) floor level specified for a building.

Design flood
A hypothetical flood representing a specific likelihood of occurrence (for example the 100 year or 1% probability flood). The design flood may comprise two or more single source dominated floods.

Development
Existing or proposed works which may or may not impact upon flooding. Typical works are filling of land, and the construction of roads, floodways and buildings.

Discharge
The rate of flow of water measured in terms of volume over time. It is not the velocity of flow which is a measure of how fast the water is moving rather than how much is moving. Discharge and flow are interchangeable.

Digital Terrain Model
A three-dimensional model of the ground surface that can be represented as a series of grids with each cell representing an elevation (DEM) or a series of interconnected triangles with elevations (TIN).

Effective warning time

The available time that a community has from receiving flood warning to when the flood reaches their location.

Flood

Above Average River or creek flows which overtop banks and inundate floodplains.

Flood awareness

An appreciation of the likely threats and consequences of flooding and an understanding of any flood warning and evacuation procedures. Communities with a high degree of flood awareness respond to flood warnings promptly and efficiently, greatly reducing the potential for damage and loss of life and limb. Communities with a low degree of flood awareness may not fully appreciate the importance of flood warnings and flood preparedness and consequently suffer greater personal and economic losses.

Flood behaviour

The pattern / characteristics / nature of a flood.

Flooding

The State Emergency Service uses the following definitions in flood warnings:
Minor flooding: causes inconvenience such as closing of minor roads and the submergence of low level bridges
Moderate flooding: low-lying areas inundated requiring removal of stock and/or evacuation of some houses. Main traffic bridges may be covered.
Major flooding: extensive rural areas are flooded with properties, villages and towns isolated and/or appreciable urban areas are flooded.

Flood frequency analysis

An analysis of historical flood records to determine estimates of design flood flows.

Flood fringe

Land which may be affected by flooding but is not designated as floodway or flood storage.

Flood hazard

The potential threat to property or persons due to flooding.

Flood level

The height or elevation of flood waters relative to a datum (typically the Australian Height Datum). Also referred to as “stage”.

Flood liable land

Land inundated up to the probable maximum flood – flood prone land.

Floodplain
Land adjacent to a river or creek which is inundated by floods up to the probable maximum flood that is designated as flood prone land.

Flood Planning Levels
Are the combinations of flood levels and freeboards selected for planning purposes to account for uncertainty in the estimate of the flood level.

Flood proofing
Measures taken to improve or modify the design, construction and alteration of buildings to minimise or eliminate flood damages and threats to life and limb.

Floodplain Management
The coordinated management of activities which occur on flood liable land.

Floodplain Management Manual
A document by the NSW Government (2001) that provides a guideline for the management of flood liable land. This document describes the process of a floodplain risk management study.

Flood source
The source of the flood waters.

Floodplain Management
A set of conditions and policies which define the benchmark from

Standard
Which floodplain management options are compared and assessed.

Flood standard
The flood selected for planning and floodplain management activities. The flood may be an historical or design flood. It should be based on an understanding of the flood behaviour and the associated flood hazard. It should also take into account social, economic and ecological considerations.

Flood storages
Floodplain areas which are important for the temporary storage of flood waters during a flood.

Floodways
Those areas of the floodplain where a significant discharge of flow occurs during floods. They are often aligned with naturally defined channels. Floodways are areas that, even if they are partially blocked, would cause significant redistribution of flood flows, or a significant increase in flood levels.

Freeboard

A factor of safety usually expressed as a height above the flood standard. Freeboard tends to compensate for the factors such as wave action, localized hydraulic effects and uncertainties in the design flood levels.

Geographical Information System

A form of computer software developed for mapping applications and data storage. Useful for generating terrain models and processing data for input into flood estimation models.

High hazard

Danger to life and limb; evacuation difficult; potential for structural damage, high social disruption and economic losses. High hazard areas are those areas subject to a combination of flood depth and flow velocity that are deemed to cause the above issues to persons or property.

Historical flood

A flood which has actually occurred – Flood of Record.

Hydraulic

The term given to the study of water flow in rivers, estuaries with coastal systems.

Hydrograph

A graph showing how a river or creek's discharge changes with time.

Hydrology

The term given to the study of the rain-runoff process in catchments.

Low hazard

Flood depths and velocities are sufficiently low that people and their possessions can be evacuated.

Management plan

A clear and concise document, normally containing diagrams and maps, describing a series of actions that will allow an area to be managed in a coordinated manner to achieve defined objectives.

Map Grid Australia

A national coordinate system used for the mapping of features on a representation of the earth's surface. Based on the geographic coordinate system 'Geodetic Datum of Australia 1994'.

Peak flood level, flow or velocity

The maximum flood level, flow or velocity occurring during a flood event.

Probable Maximum Flood

An extreme flood deemed to be the maximum flood likely to occur at a
Particular location.

Probable Maximum Precipitation

The greatest depth of rainfall for a given duration meteorologically possible over a particular location. Used to estimate the probable maximum flood.

Probability

A statistical measure of the likely frequency or occurrence of flooding.

Riparian Zone

Areas that are located adjacent to watercourses. Their definition is vague and can be characterised by landform, vegetation, legislation or their function.

Runoff

The amount of rainfall from a catchment which actually ends up as flowing water in the river of creek.

Stage

Equivalent to water level above a specific datum- see flood level.

Stage hydrograph

A graph of water level over time.

Triangular Irregular Network

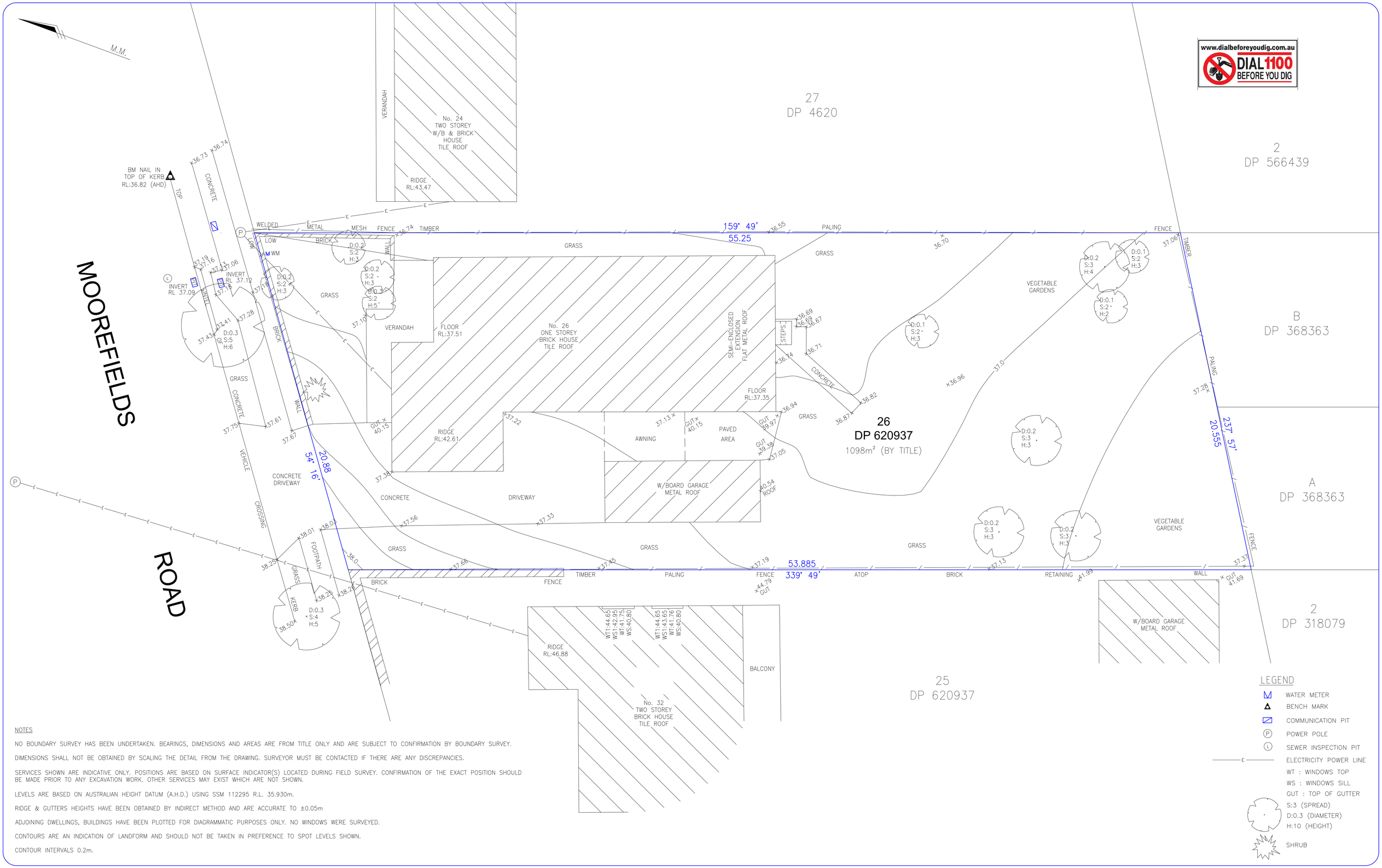
A mass of interconnected triangles used to model three-dimensional surfaces such as the ground (see DTM) and the surface of a flood.

Velocity

The speed at which the flood water is moving. Typically, modelled velocities in a river or creek are quoted as the depth and width averaged velocity, i.e. the average velocity across the Whole River or creek section.

APPENDIX A

SURVEY PLAN



NOTES

NO BOUNDARY SURVEY HAS BEEN UNDERTAKEN. BEARINGS, DIMENSIONS AND AREAS ARE FROM TITLE ONLY AND ARE SUBJECT TO CONFIRMATION BY BOUNDARY SURVEY.

DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DETAIL FROM THE DRAWING. SURVEYOR MUST BE CONTACTED IF THERE ARE ANY DISCREPANCIES.

SERVICES SHOWN ARE INDICATIVE ONLY. POSITIONS ARE BASED ON SURFACE INDICATOR(S) LOCATED DURING FIELD SURVEY. CONFIRMATION OF THE EXACT POSITION SHOULD BE MADE PRIOR TO ANY EXCAVATION WORK. OTHER SERVICES MAY EXIST WHICH ARE NOT SHOWN.

LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (A.H.D.) USING SSM 112295 R.L. 35.930m.

RIDGE & GUTTERS HEIGHTS HAVE BEEN OBTAINED BY INDIRECT METHOD AND ARE ACCURATE TO ±0.05m

ADJOINING DWELLINGS, BUILDINGS HAVE BEEN PLOTTED FOR DIAGRAMMATIC PURPOSES ONLY. NO WINDOWS WERE SURVEYED.

CONTOURS ARE AN INDICATION OF LANDFORM AND SHOULD NOT BE TAKEN IN PREFERENCE TO SPOT LEVELS SHOWN.

CONTOUR INTERVALS 0.2m.

LEGEND

- WATER METER
- BENCH MARK
- COMMUNICATION PIT
- POWER POLE
- SEWER INSPECTION PIT
- ELECTRICITY POWER LINE
- WT : WINDOWS TOP
- WS : WINDOWS SILL
- GUT : TOP OF GUTTER
- S:3 (SPREAD)
- D:0.3 (DIAMETER)
- H:10 (HEIGHT)
- SHRUB

A	15.09.17		INITIAL ISSUE

RGM property surveys

ABN 37 145 495 825

SCALE: 1 : 100 @ A1	SURVEYED BY: J.K.	DRAWN BY: L.N.	CLIENT: MORFOSIS ARCHITECTS PTY LTD
LOCAL GOVERNMENT AREA: CANTERBURY–BANKSTOWN	LEVEL BK	DESIGNED BY	
	DATE OF SURVEY: 12.09.17	CHECKED BY: T.P.	
HUY THAI – REGISTERED SURVEYOR	HEIGHT ORIGIN: AHD	APPROVED BY: H.T.	

PROJECT TITLE: 26 MOOREFIELDS ROAD, KINGSGROVE

DRAWING TITLE: PLAN SHOWING LEVELS & DETAIL OVER LOT 26 IN DP 620937

CAD REFERENCE: C:\171190.dwg

DRAWING NO: 171190–001

SHEET 1 OF 1

JOB NAME: 26 MOOREFIELDS

REV: A

APPENDIX B

STORMWATER SYSTEM REPORT

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@cbcity.nsw.gov.au

CITY OF CANTERBURY BANKSTOWN

To: Kay Ahmed
Suite 8
695 The Horsley Drv
SMITHFIELD NSW 2164

STORMWATER SYSTEM REPORT
26 Moorefields Road, KINGSGROVE NSW 2208

Date: 28-Sep-2021
Ref: WP-SIA-1951/2021
Development type: Villa/Townhouse

NO — FLOOD/OVERLAND FLOW STUDY REQUIRED

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

- Overland flowpath for excess stormwater runoff from the upstream catchment to the west of the site.

The site will be subject to stormwater inundation from this overland flowpath during large storm events. Refer to the attached **"100 Year ARI Flood Extent Map from Cooks River overland Catchment Study"** showing the flood contours to mAHD**. Provision should be made on site, and at boundary fences, for this stormwater runoff to pass unobstructed over the site. Stormwater flowing naturally onto the site must not be impeded or diverted.

The estimated 100 year ARI* flood level at the site is RL 37.2mAHD(for front building).**

For this development, a flood /overland flow study to determine the 100 year ARI* water surface level is not necessary provided that the **proposed development including floor levels, shall comply with the development controls specified in Part B12 Schedule 5, of Bankstown's Development Control Plan 2015 - Catchments Affected by Stormwater Flooding.**

The Development Application submission shall be based on an AHD datum for levels where sites are affected by overland flow / flooding. Refer Bankstown Council's *Development Engineering Standards**.**

Habitable floor levels are to be 500mm above the 100 year ARI* flood level at the site adjacent to the proposed buildings.

Runoff on the site, and naturally draining to it is to be collected and disposed of to Council's requirements detailed in Bankstown Council's *Development Engineering Standards****.

This report is given without the benefit of development plans or a site survey. Council may choose to vary some report requirements following evaluation of detailed plans when they are submitted.

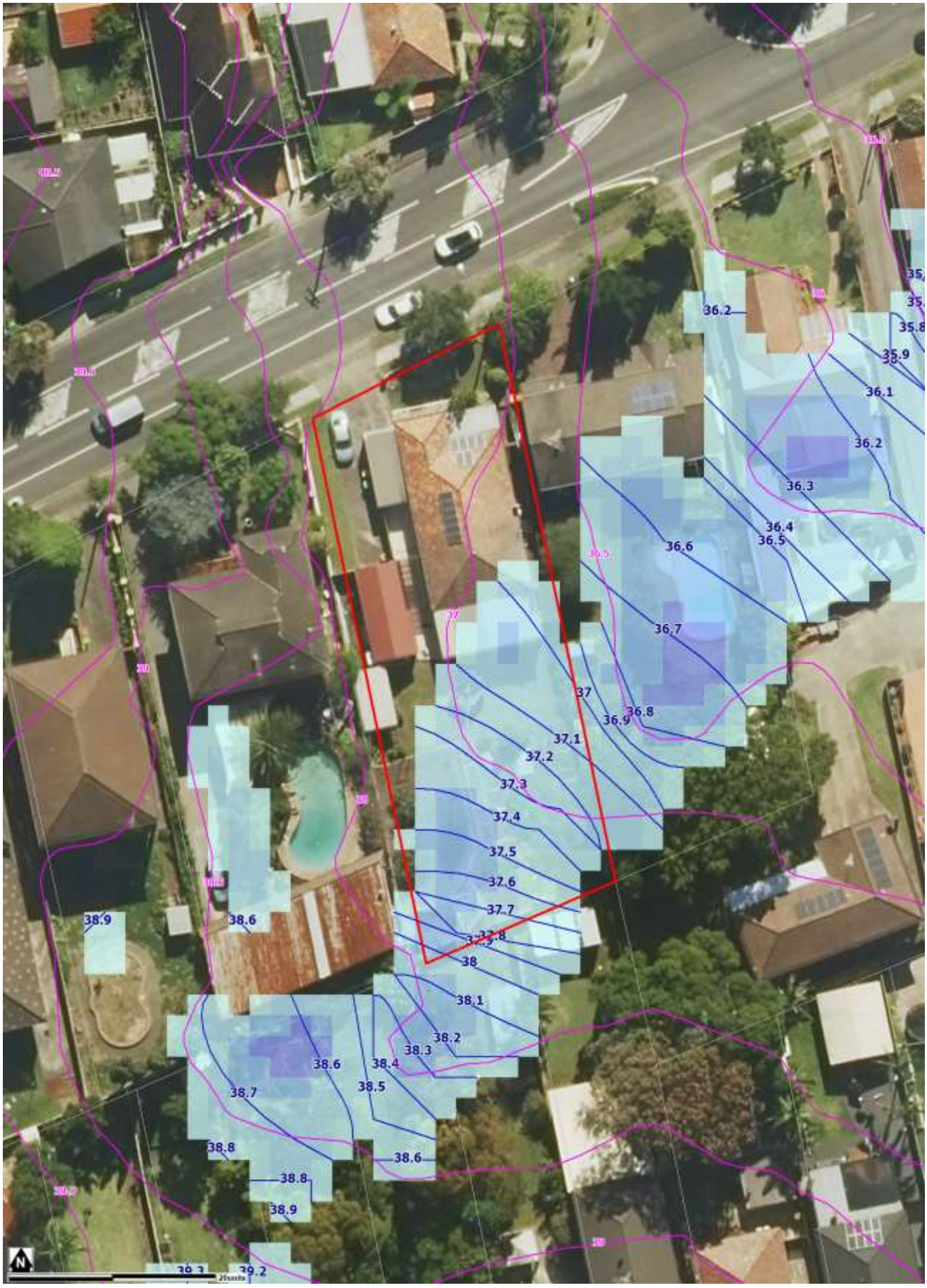
This report relates to the exposure of the subject site to Council's stormwater system, both underground and overland. It does not assess the suitability or otherwise of this site for the proposed development.

* Average Recurrence Interval

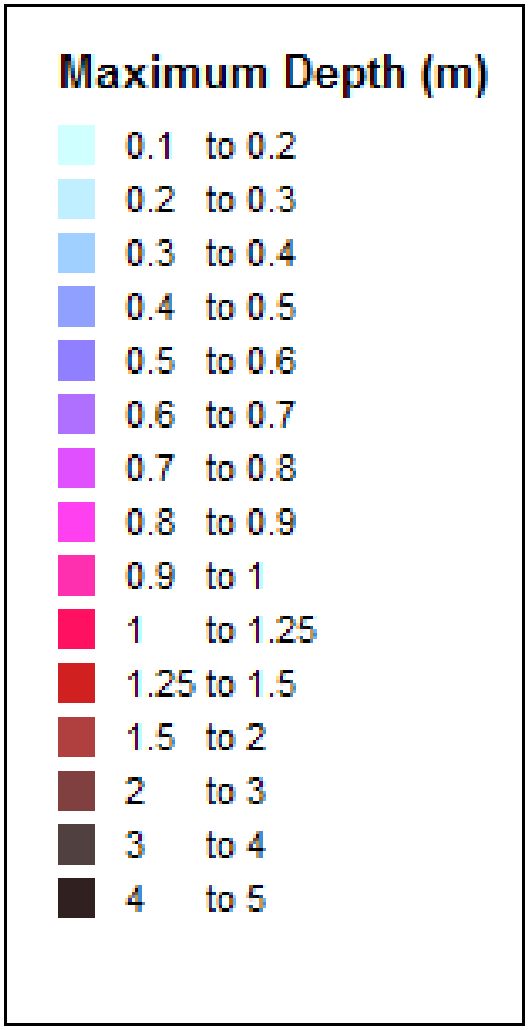
** Australian Height Datum

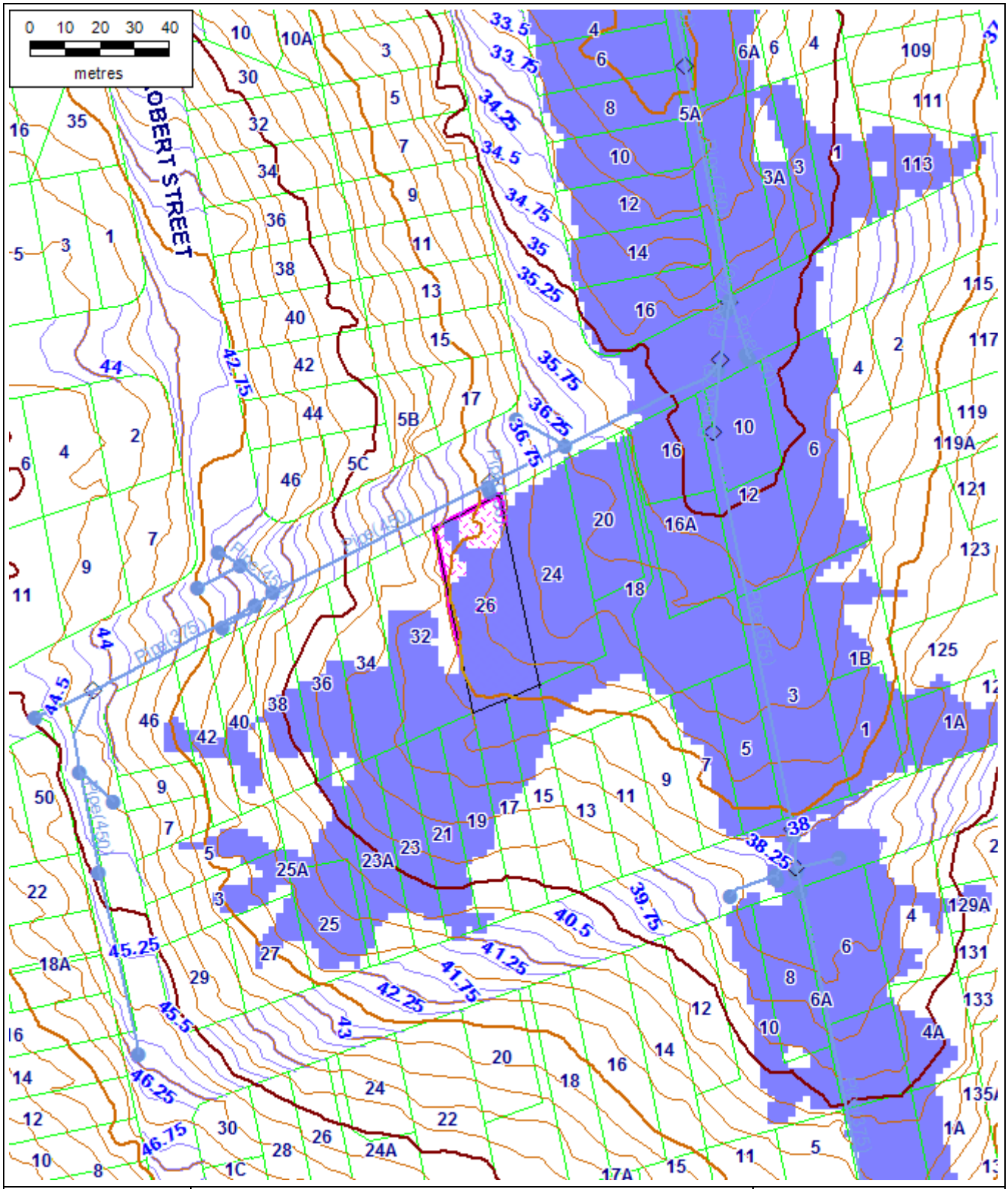
Pushpa Goonetilleke
ENGINEER

100yr ARI Flood Extent with Flood Contours to m AHD**



100yr ARI Flood Depth with Flood Contours to m AHD**


Maximum Depth (m)
0.1 to 0.2
0.2 to 0.3
0.3 to 0.4
0.4 to 0.5
0.5 to 0.6
0.6 to 0.7
0.7 to 0.8
0.8 to 0.9
0.9 to 1
1 to 1.25
1.25 to 1.5
1.5 to 2
2 to 3
3 to 4
4 to 5



1:1,590
28 September 2021

26 Moorefields Road, Kingsgrove

Probable Maximum Flood (PMF) Map

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

CANTERBURY BANKSTOWN

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


Flooding PMF EXTENT

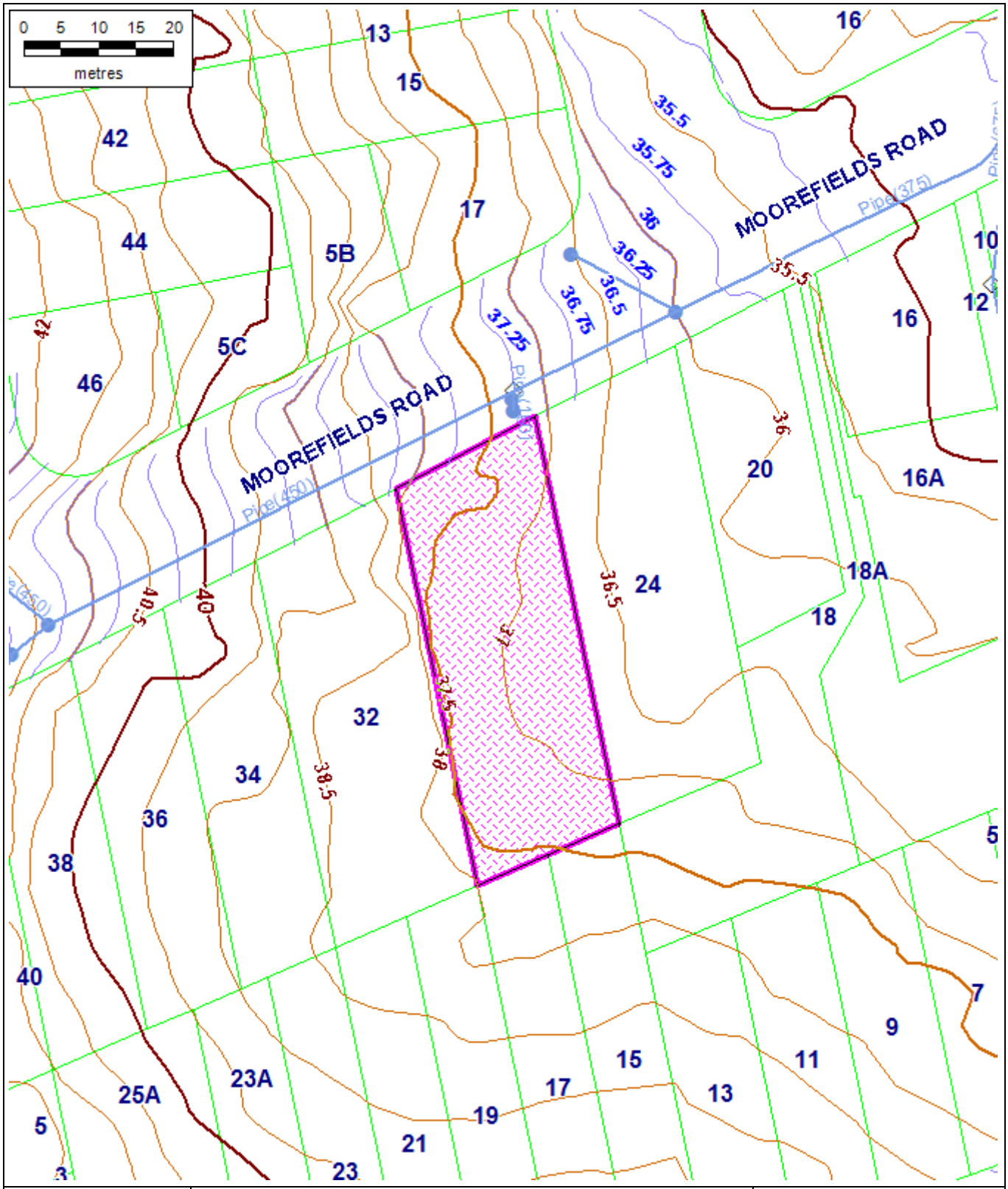
Road Names


Airport Internal Road


Water Boundary


Railway


Airport Taxiway



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28 September 2021

26 Moorefields Road, Kingsgrove

GIS Map

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THIS PLAN HAS NO LEGAL STANDING

CANTERBURY BANKSTOWN

1:741.5
28 September 2021

26 Moorefields Road, Kingsgrove

Aerial Map

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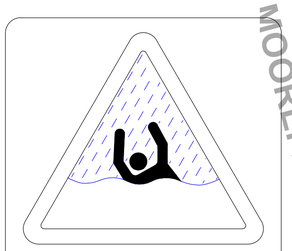
THIS PLAN HAS NO LEGAL STANDING

CANTERBURY BANKSTOWN

APPENDIX C

SITE EVACUATION PLAN

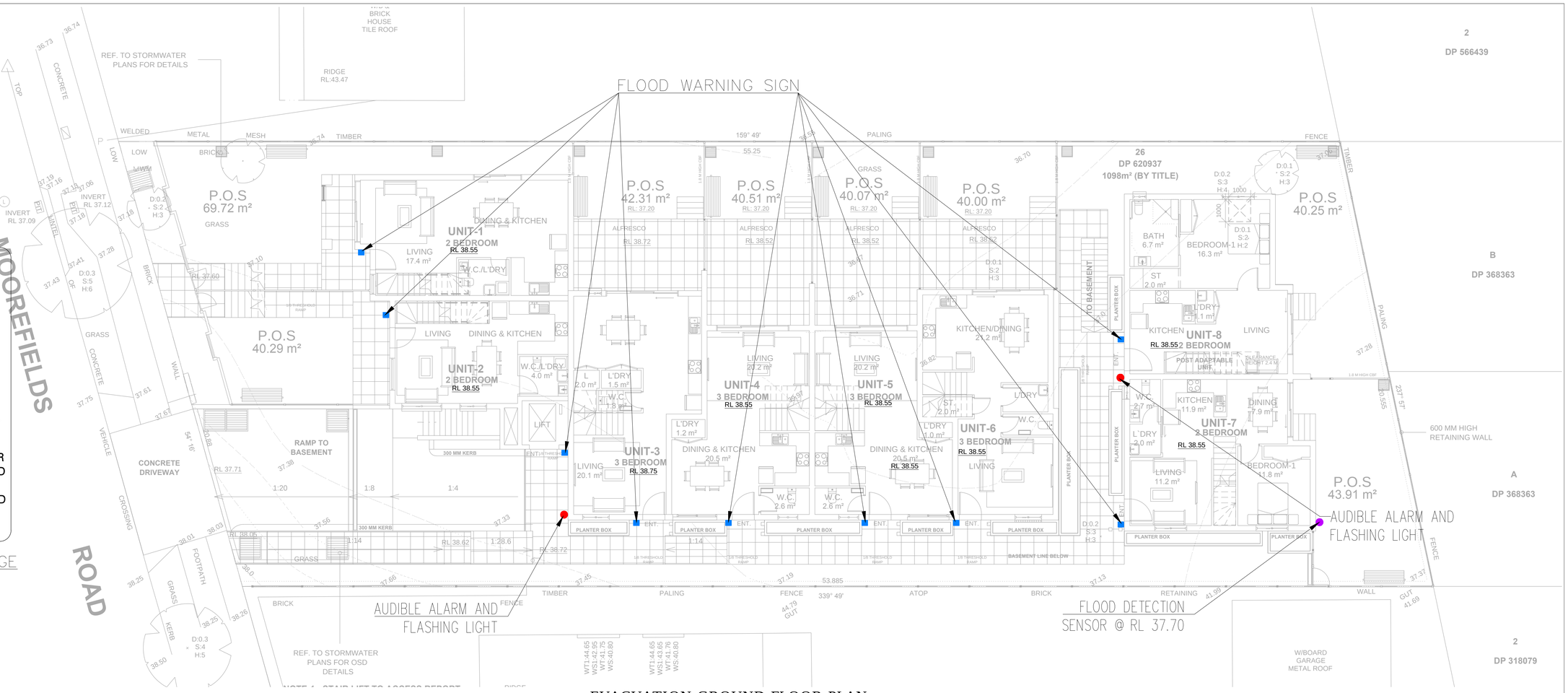


FLOODWAY

FLOOD WATERS MAY RISE AFTER EXTREME HEAVY RAIN. AS FLOOD WATERS RISE ABOVE THE FOOTPATH ENTRY WAY PROCEED TO EVACUATION ZONE ON GROUND FLOOR

FLOOD WARNING SIGNAGE

NTS



EVACUATION GROUND FLOOR PLAN

SCALE 1:100

FOR PEOPLE IN THE TOWNHOUSES

WHEN FLASHING LIGHT AND AUDIBLE ALARM IS ACTIVATED, YOU MUST:

- MOVE TO LEVEL 1 OF THE BUILDING.
- NOT TRY TO EVACUATE AND TRAVEL THROUGH FLOODWATER ON FOOT.
- NOT STAY INSIDE ANY VEHICLES ON THE STREET AND IN BASEMENT.
- NOT TRY TO EVACUATE AND EXITING THE SITE BY ANY VEHICLES.

NOTE OF FLOOD WARNING SYSTEM

-BLUE: FLASHING LIGHT AND AUDIBLE ALARM TO OPERATE WHEN WATER REACHED THE LEVEL AS SHOWN ON PLAN

SITE LOCATION

NOT FOR CONSTRUCTION

A1 0 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
C	FOR D.A. APPROVAL	N.L.	Y.L.	02-11-2021					
B	FOR D.A. APPROVAL	N.L.	J.P.	25-03-2021					
A	FOR D.A. APPROVAL	N.L.	L.Y.	15-12-2017					

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MORFOSIS ARCHITECTS PTY LTD
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ABN 44 609 593 473
P (02) 8712 5606 / F (02) 8712 5606 / M 0423777623

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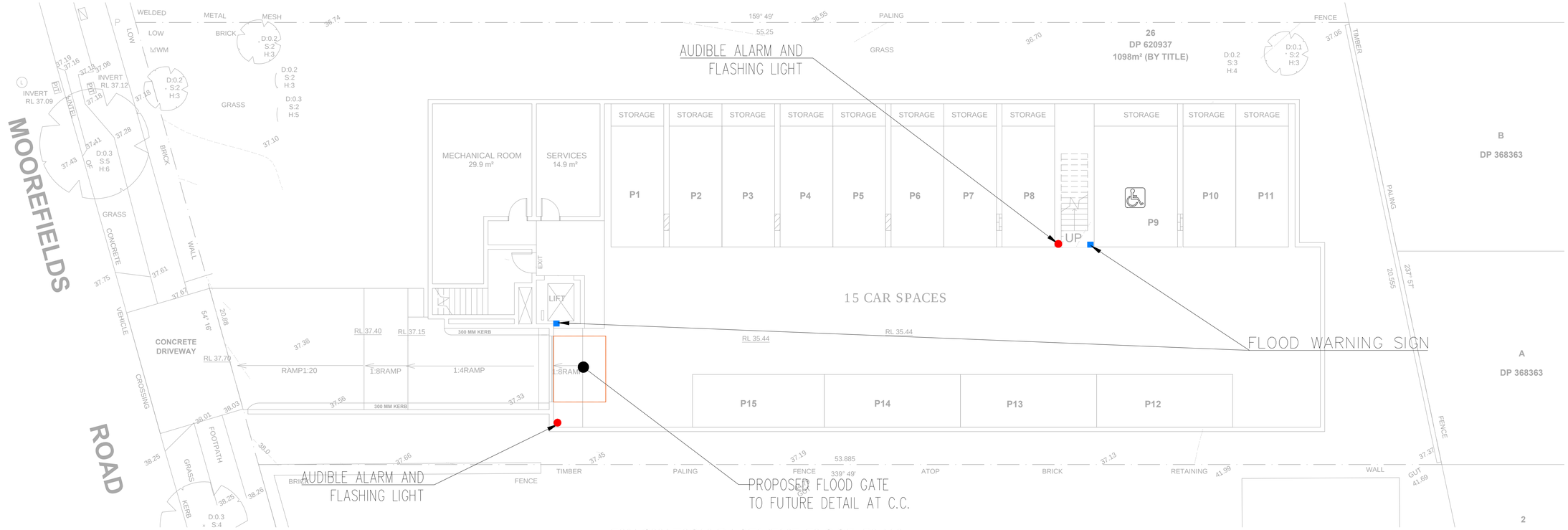
MOBILE: 0404 142 063 EMAIL: info@loceng.com.au

PROJECT
PROPOSED TOWNHOUSES
26 MOOREFIELDS ROAD,
KINGSGROVE, NSW

CONSENT AUTHORITY:
CANTERBURY-BANKSTOWN CITY COUNCIL

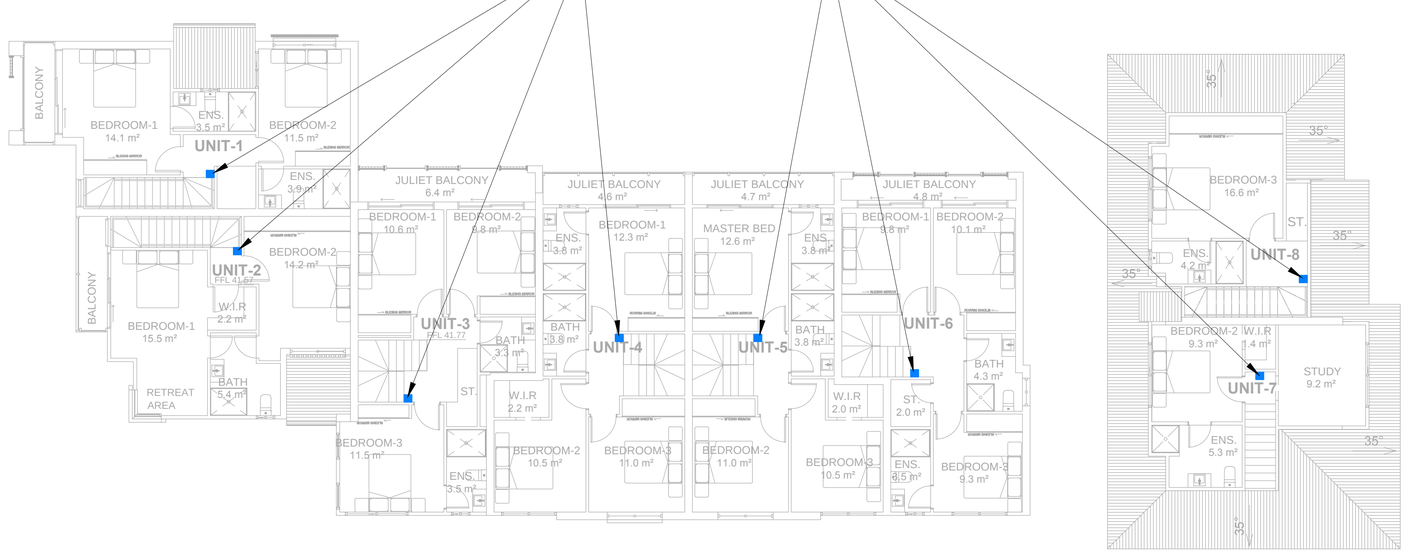
SHEET SUBJECT
GROUND FLOOR FLOOD EVACUATION PLAN

PROJECT	26 MOOREFIELDS ROAD, KINGSGROVE, NSW		
DATE	NOV 21	DRAWN	Y.L.
DESIGNED	N.L.	CHECKED	N.L.
SCALE @ A1	1:200 U.N.O.	JOB No	17NL265
AUTHORISED	NERMEIN LOKA	DWG No	F01
REV	C		



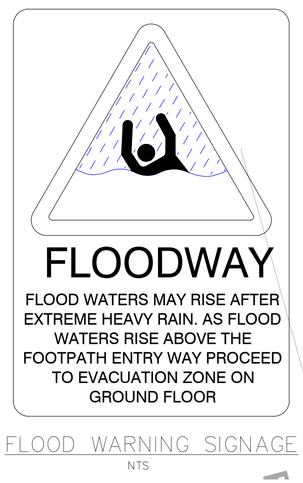
EVACUATION BASEMENT FLOOR PLAN

SCALE 1:100



EVACUATION LEVEL 1 FLOOR PLAN

SCALE 1:100



FLOOD WARNING SIGNAGE

NTS

NOT FOR CONSTRUCTION

A1 0 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE
B	FOR D.A. APPROVAL	N.L.	J.P.	25-03-2021
A	FOR D.A. APPROVAL	N.L.	L.Y.	15-12-2017

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PROJECT
PROPOSED TOWNHOUSES
26 MOOREFIELDS ROAD,
KINGSGROVE, NSW

CONSENT AUTHORITY:
CANTERBURY-BANKSTOWN CITY COUNCIL

SHEET SUBJECT
BASEMENT &LEVEL 1 FLOOD EVACUATION PLAN

PROJECT	26 MOOREFIELDS ROAD, KINGSGROVE, NSW
DATE	DEC 17
DRAWN	L.Y.
DESIGNED	N.L.
CHECKED	N.L.
SCALE @ A1	1:200 U.N.O.
JOB No	17NL265
AUTHORISED	NERMEIN LOKA
DWG No	F02
REV	B