

Our Ref: 59919008 L001:SEG
Contact: Stephen Gribble

13 July 2018

Stockland Development Pty Ltd
Level 25
133 Castlereagh Street
Sydney NSW 2000

Attention: Anthony Kroser & Shaun Mets

Email: anthony.kroser@stockland.com.au, shaun.mets@stockland.com.au

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Dear Anthony & Shaun,

355 AND 375 CHURCH ST PARRAMATTA - FLOOD ADVICE

This flood advice statement for the proposed development at 355–375 Church Street Parramatta considers flood data provided by Parramatta City Council and details of the proposed development provided by Stockland. The proposed development is reviewed to the requirements with the Section 9.1 (formerly s117) Ministerial Direction 4.3 and the requirements of the Parramatta Development Control Plan 2011 in relation to floodplain management.

It is understood that as the proposed development requires an acceleration of proposed changes to the Parramatta CBD Local Environment Plan and that compliance with Section 9.1 Ministerial Directions are required.

Flood Data

The Flood Enquiry Information issued by Parramatta City Council on 3 July 2018 (attached) shows the site is not within the 100 year Average Recurrence Interval (ARI) mainstream flood extent and the south-eastern part of the site is within the Probable Maximum Flood (PMF) extent (classified as low hazard). Figure 1-1 is an extract from Council's flood map showing the subject property and the PMF extent. A peak PMF level of 12m AHD is advised. It advises affectation by overland stormwater runoff from the catchment is subject to detailed investigation.

It is therefore recommended that at DA stage additional assessment is undertaken to determine the extent of flooding due to local overland runoff and potential impacts for the development.

Proposed Development

The proposed development is a mixed-use development consisting of a fast food restaurant, retail and car parking on the ground floor. Residential towers are proposed above the mixed-use podium. Basement car parking is accessed from within the ground floor carpark.

Finished floor levels are not shown on the shown on the architectural drawings. It is expected that floor levels and entrance levels will be similar to or above the existing boundaries levels shown on the survey drawing by Lockley Land Title Solutions 2008 (Ref: 31282DT, attached). The following survey levels of existing ground give an indication of reference survey levels on the boundary:

- Victoria Rd driveway - RL 12.2m AHD
- Ross Street driveway - RL 12.1m AHD
- Church Street verge near proposed residential lobby - RL 11.3m AHD

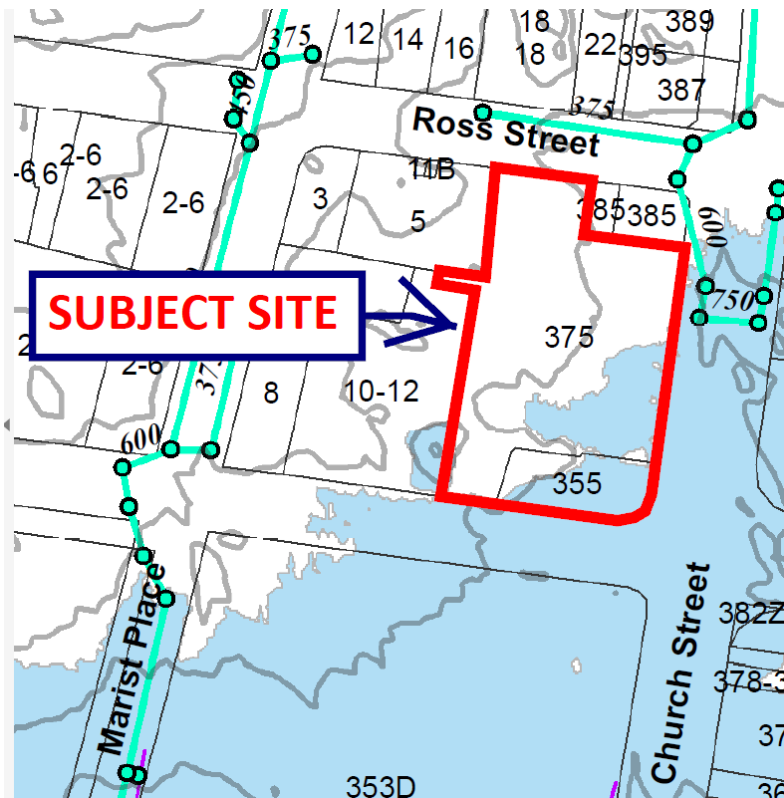


Figure 1-1 Site and Flood Extent

Compliance with Section 9.1 (formerly s117) Ministerial Direction 4.3

The requirements of Section 9.1 Ministerial Direction 4.3 include the following:

- 4) "A draft LEP shall include provisions that give effect to and are consistent with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 (including the Guideline on Development Controls on Low Flood Risk Areas).
- 5) A draft LEP shall not rezone land within the flood planning areas from Special Use, Special Purpose, Recreation, Rural or Environmental Protection Zones to a Residential, Business, Industrial, Special Use or Special Purpose Zone.
- 6) A draft LEP shall not contain provisions that apply to the flood planning areas which:
 - (a) permit development in floodway areas,
 - (b) permit development that will result in significant flood impacts to other properties,
 - (c) permit a significant increase in the development of that land."

A draft LEP may be inconsistent with the above requirements if it "is in accordance with a floodplain risk management plan prepared in accordance with the principles and guidelines of the Floodplain Development Manual 2005."

The planning proposal does not involve a change of zoning. The proposed development is located on the fringe of the PMF extent. Therefore it is not in a floodway and will not result in significant flood impacts to other properties.

The only inconsistency with Ministerial Direction is that the proposed development is a significant increase in the development of the land. However inconsistencies are permitted if it "is in accordance with a floodplain risk management plan prepared in accordance with the principles and guidelines of the Floodplain Development Manual 2005." Therefore the following section assesses the proposed development in accordance with the development controls of *The Floodplain Risk Management Plan for the Upper Parramatta River Catchment*.

Requirements of Parramatta DCP 2011

Parramatta DCP 2011 includes the development controls of *The Floodplain Risk Management Plan for the Upper Parramatta River Catchment* presented in a matrix format. Table 1-1 compares the proposed development to the floodplain matrix controls for residential and commercial development in a low flood risk precinct (being the precinct relevant for this site).

Table 1-1 Assessment Against Parramatta DCP 2011 Floodplain Matrix Controls

Consideration	Relevant Controls	Assessment
Floor Level	2. Habitable floor levels to be equal to or greater than the 100 year ARI flood level plus freeboard.	Existing ground survey levels at the site are at least 2m above the 100 year ARI flood level advised at locations not directly adjacent to the site.
Flood Affection	2. The impact of the development on flooding elsewhere to be considered 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 cumulate impact of multiple potential developments in the vicinity.	As the site is on the fringe of the PMF extent the development will not change flood flows or velocities. As the volume of flood water on the site in a PMF is negligible compared to the overall floodplain so any changes in flood level would be indiscernible.
Car Parking & Driveway Access	1. The minimum surface level of open spaces or carports shall be as high as practical, but no lower than 0.1m below the 100 year ARI flood level. In the case of garages, the minimum surface level shall be as high as practical, but no lower than the 100 year ARI flood level. 3. Garages capable of accommodating more than 3 motor vehicles on land zones for urban purposes, or enclosed car parking, must be protected from inundation by floods equal to or greater than the 100 year ARI flood. Ramp levels to be no lower than 0.5m above the 100 year ARI flood level. 5. The level of the driveway providing access between the road and parking spaces shall be no lower than 0.2m below the 100 year ARI flood level. 6. Enclosed car parking and car parking areas accommodating more than 3 vehicles, with a floor below the 100 year ARI flood level, shall have adequate warning systems, signage, exits and evacuation routes.	Existing ground survey levels at the site are at least 2m above the 100 year ARI flood level advised at locations not directly adjacent to the site. The levels of 100 year ARI flood, PMF flood, basement floor, and basement entry should be confirmed at DA stage to assess compliance.
Evacuation	3. Reliable access for pedestrians and vehicles is required from the site to an area of refuge above the PMF level, either on site (eg. second storey) or off site. 4 Applicant is to demonstrate the development is consistent with any relevant flood evacuation strategy or similar plan.	The extent of the PMF event advised is on the south-eastern part of the site thus there are locations within the site that would be above the PMF level. There is also access to upper floors if required. Molino Stewart (2016) identify the property as a "Shelter in Place" site for which evacuation is not required.

Local Overland Stormwater Runoff

The NSW Floodplain Development Manual (FDM) and Parramatta DCP 2011 requires that "New development must consider the impact of flooding resulting from local overland flooding whether it is a result of Local Drainage or Major Drainage."

The site survey indicates that is a sag point on Church adjacent to the proposed development with a kerb level of RL 10.91m. Runoff may pond here when the capacity of the stormwater is exceeded until the runoff is able to overtop the crown of Victoria Road. The survey shows that the crown of Victoria Road is RL 11.45m.

A hydraulic analysis of the local stormwater has not been undertaken. It is recommended that at DA stage additional assessment is undertaken to determine the extent of flooding due to local overland runoff and potential impacts for the development.

In the absence of a detailed investigation, potentially proposed habitable floor levels be set above the Victoria Road crown level plus an appropriate freeboard. The FDM recommends that a lower freeboard is applied to overland stormwater flooding than is normally applied to mainstream flooding.

Conclusion

The Planning Proposal for 355–375 Church Street Parramatta is consistent with the Section 9.1 Ministerial Direction 4.3. The only exception is that an increase in the occupation of the land is proposed, noting the preceding review of evacuation above.

Such inconsistencies are permitted where the planning proposal “is in accordance with a floodplain risk management plan prepared in accordance with the principles and guidelines of the Floodplain Development Manual 2005.” The proposed development is in accordance with the development controls of *The Floodplain Risk Management Plan for the Upper Parramatta River Catchment* as outlined in the *Parramatta DCP 2011*.

References

- Bewsher Consulting (2003) *The Floodplain Risk Management Plan for the Upper Parramatta River Catchment*, prepared for the Upper Parramatta River Catchment Trust
- Department of Infrastructure, Planning and Natural Resources (2005) *Floodplain Development Manual*
- Molino Stewart (2016) *Update of Parramatta Floodplain Risk Management Plans*, prepared for Parramatta City Council.
- Parramatta City Council (2011) *Parramatta Development Control Plan 2011*

Yours sincerely,



Stephen Gribble
Senior Civil Engineer
for Cardno
Direct Line: +61 2 9496 7700
Email: Stephen.Gribble@cardno.com.au

Enc: Flooding Information from Parramatta City Council
Site Survey by Lockley Land Title Solutions (2008, Ref: 31282DT)



Flood Enquiry Information Issued - 3 July 2018

Mainstream Flooding

Is this property affected by mainstream flooding? 355 and 375 Church Street, Parramatta		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Flood Levels	Closest Cross Sections: <i>(Please refer to Flood Study):</i> Refer to Flood Map	
<input type="checkbox"/> 5% AEP	m AHD	Comments: See Note on flood/Hazard Map
<input type="checkbox"/> 1% AEP	m AHD	
<input checked="" type="checkbox"/> PMF	RL 12 m AHD	
<input checked="" type="checkbox"/> Refer to flood maps provided for detailed flood levels.		
Flood information is obtained from the following flood study report: Upper Parramatta River Flood Study – Draft 8 (UPRCT)		

Note: Flood inundation can be verified by detail survey to AHD undertaken by a Registered Surveyor.

Local Flooding

Is the property located within a Hatched Grey Area? <i>Properties located within a Hatched Grey Area are subjected to flooding from the local catchment.</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the property located within a Grey Area? <i>Properties located within a Grey Area are subjected to additional site drainage controls to manage flooding in the local catchment.</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the property likely to be affected by overland stormwater run-off from the local catchment? Note: No site inspection conducted for this assessment. Based solely on the information supplied for this flood enquiry application.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Subject to Detailed Investigation
Note: You are required to contact Council's Development Service Engineer for any details and requirements relating to development that is affected by local flooding.	

Additional Recommended Actions

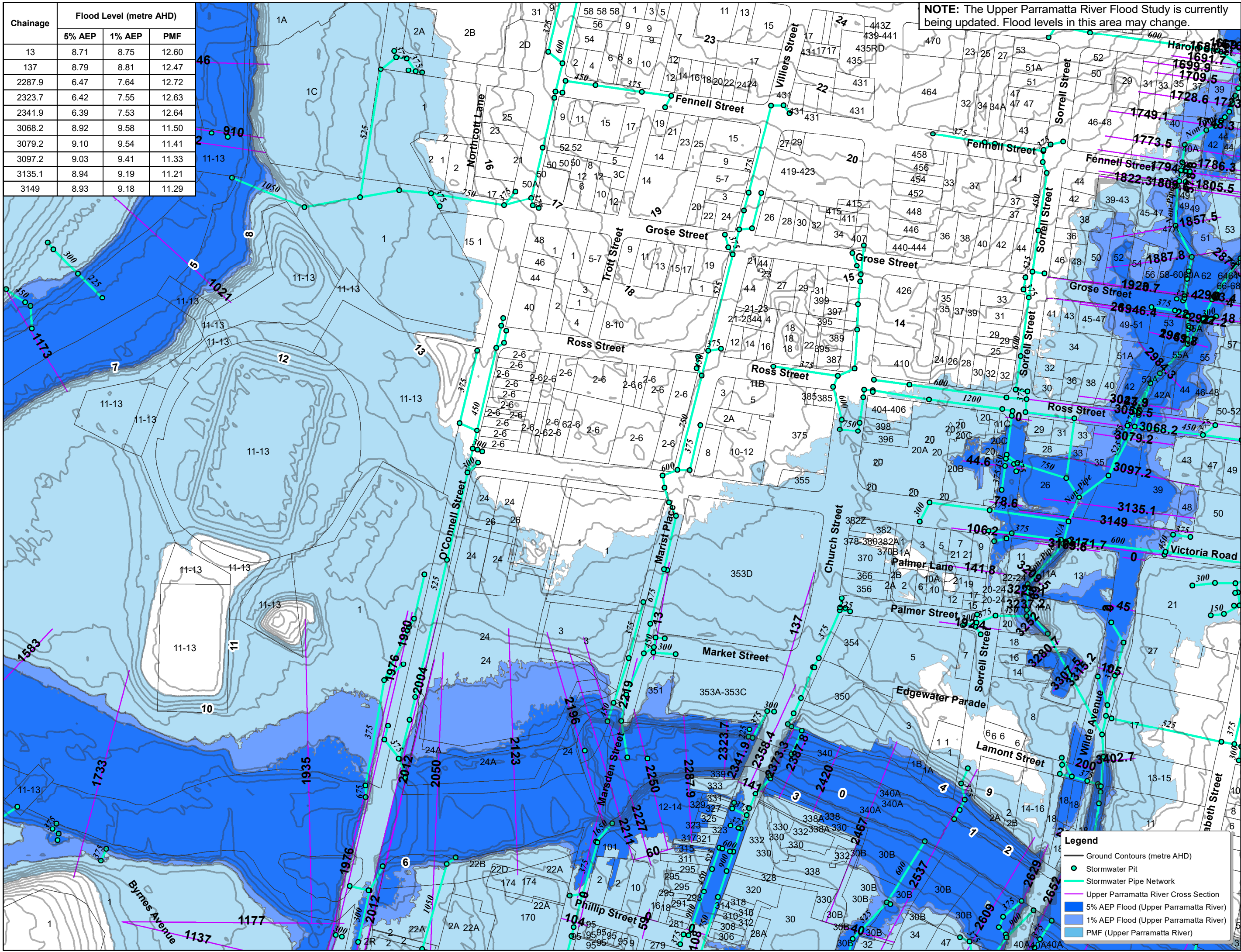
<input checked="" type="checkbox"/>	The Applicant needs to discuss the proposal to re-develop this site with Council's Town Planner and Development Services Engineer.
<input checked="" type="checkbox"/>	The Applicant needs to contact Council's Town Planner and organise a pre-lodgement meeting to discuss any proposal to redevelop this property.
<input checked="" type="checkbox"/>	The Applicant needs to refer to Council's Local Floodplain Risk Management policy for details relating to developing a land affected by flooding.

Definitions: (As per NSW Floodplain Development Manual dated April 2005)

- AHD** – a common national surface level datum approximately corresponding to mean sea level.
- ARI** – the long term average number of years between the occurrences of a flood as big as or larger than, the selected event.
- PMF** – is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation.
- AEP** – Annual Exceedance Probability is the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage.

Chainage	Flood Level (metre AHD)		
	5% AEP	1% AEP	PMF
13	8.71	8.75	12.60
137	8.79	8.81	12.47
2287.9	6.47	7.64	12.72
2323.7	6.42	7.55	12.63
2341.9	6.39	7.53	12.64
3068.2	8.92	9.58	11.50
3079.2	9.10	9.54	11.41
3097.2	9.03	9.41	11.33
3135.1	8.94	9.19	11.21
3149	8.93	9.18	11.29

NOTE: The Upper Parramatta River Flood Study is currently being updated. Flood levels in this area may change.



North Arrow
1:3,000

City of Parramatta Council Flood Map

DISCLAIMER: Flood levels and flood extent lines are based on current information held by Council. Council does not accept responsibility for the accuracy of this information. Any pipe sizes and location of pits and pipe lines should be confirmed by site investigation. The flood levels provided are only an approximate guide and have been derived using the current computer simulated model. The information provided on this document is presented in good faith. It is the responsibility of each individual using this information to undertake their own checks and confirm this information prior to its use. City of Parramatta Council, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement, or advice referred to above.

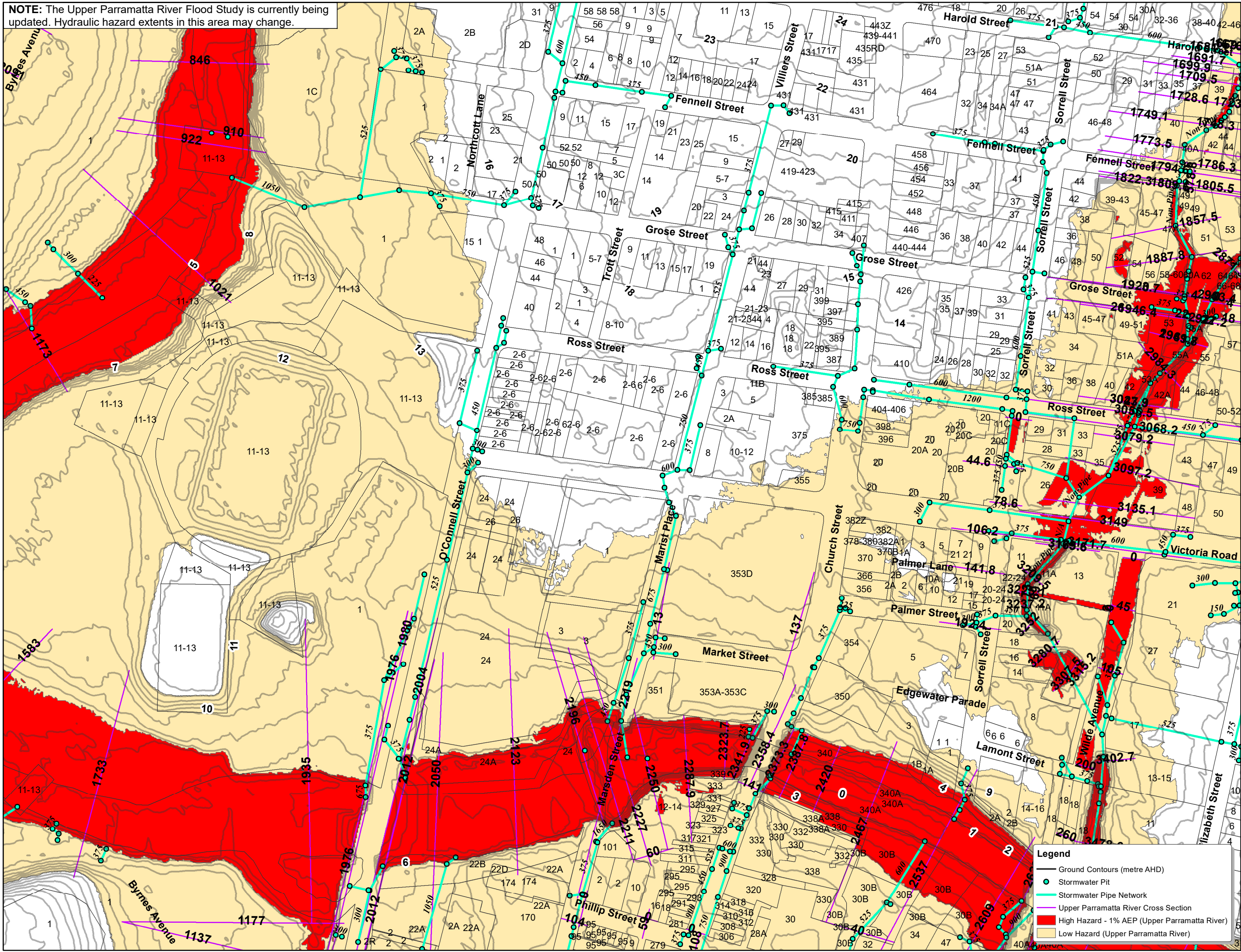
Legend

- Ground Contours (metre AHD)
- Stormwater Pit
- Stormwater Pipe Network
- Upper Parramatta River Cross Section
- 5% AEP Flood (Upper Parramatta River)
- 1% AEP Flood (Upper Parramatta River)
- PMF (Upper Parramatta River)



Printed
3/07/2018

NOTE: The Upper Parramatta River Flood Study is currently being updated. Hydraulic hazard extents in this area may change.



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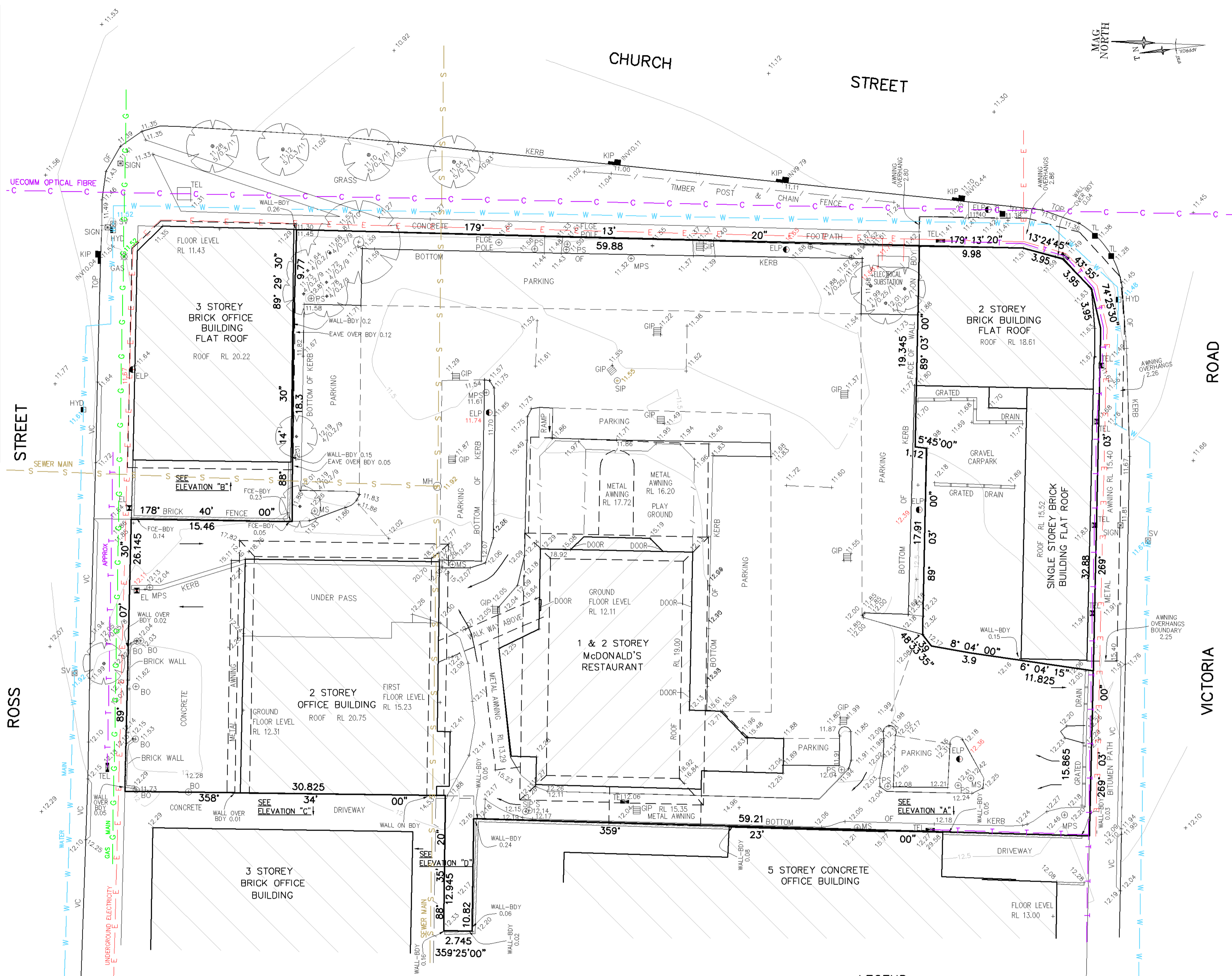
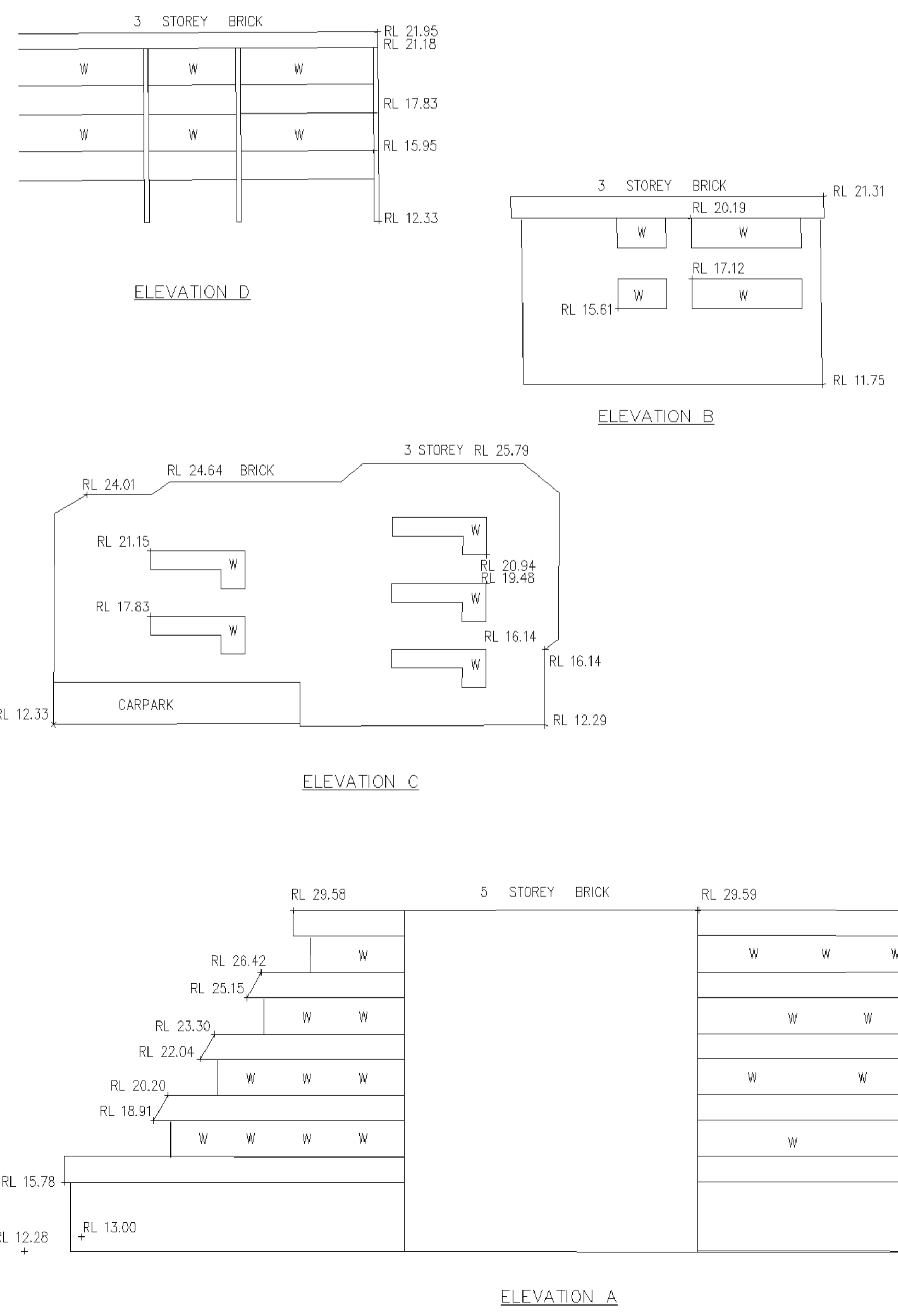
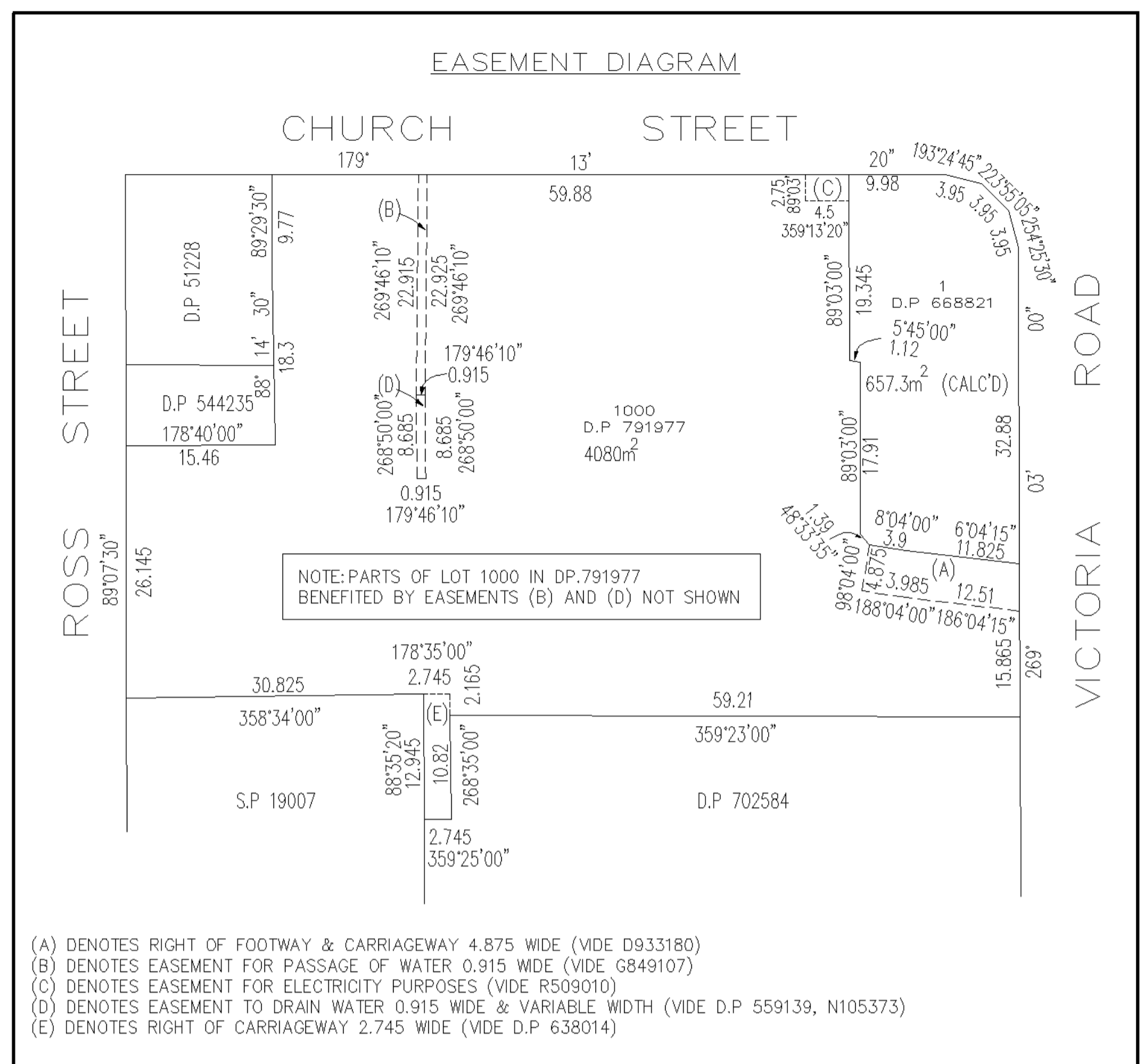
City of Parramatta Council Hydraulic Hazard Map

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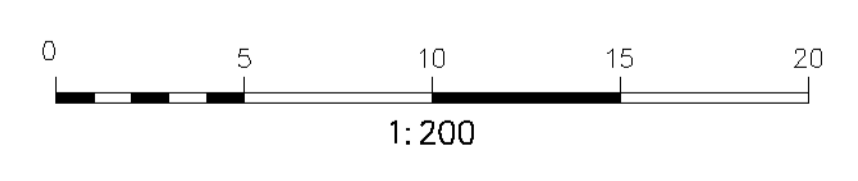
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EASEMENT DIAGRAM



NOTES

- 1) THE BOUNDARIES HAVE NOT BEEN MARKED.
- 2) ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY THE OFFICE OF LAND & PROPERTY INFORMATION (NSW) AND ARE SUBJECT TO FINAL SURVEY.
- 3) ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM SSM76669 R.L. 11.457 (A.H.D.) IN CHURCH STREET.
- 4) CONTOUR INTERVAL 0.5 m
- 5) CONTOURS ARE INDICATIVE ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.
- 6) KERB LEVELS ARE TO THE BOTTOM OF KERB UNLESS SHOWN OTHERWISE.
- 7) FLOOR LEVELS SHOWN ARE THRESHOLD LEVELS. NO INVESTIGATION OF INTERNAL FLOOR LEVELS HAS BEEN UNDERTAKEN.
- 8) NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE.
- 9) 8/4/7 DENOTES TREE SPREAD OF 8m, TRUNK DIAMETER OF 0.4m & APPROX HEIGHT OF 7m.
- 10) BEARINGS SHOWN ARE MAGNETIC. ADD APPROX. 9'30" FOR TRUE NORTH BEARINGS.



LEGEND

TELSTRA PIT	TEL	MANHOLE	MH
ELECTRIC LIGHT POLE	ELP	STOP VALVE	SV
ELECTRICITY BOX	EL	HYDRANT	HYD
TRAFFIC LIGHT	TL	GAS VALVE	GAS
STREET SIGN	SIGN	VEHICLE CROSSING	VC
GRATED INLET PIT	GIP	McDONALD'S PILON SIGN	MPS
KERB INLET PIT	KIP	PARKING SIGN	PS
SEWER INSPECTION POINT	SIP	McDONALD'S SIGN	MS
		BOLLARD	BO

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED: -

DATE OF SURVEY: 4-7-08
 DATUM: AHD
 REGISTERED SURVEYOR NSW

LOCKLEY LAND TITLE SOLUTIONS
 Registered Surveyors NSW
 19 Massey Street
 Gladesville NSW 2111
 PO BOX 400
 Gladesville NSW 1675
 ph:(02) 9879 6077
 fax:(02) 9879 7143

CLIENT: McDONALDS AUSTRALIA
 PLAN OF McDONALDS RESTAURANT, CORNER OF CHURCH STREET AND VICTORIA ROAD, PARRAMATTA.
 LGA: PARRAMATTA

ORIGINAL PLAN SIZE: A1
 PROJECT NO: -
 JOB REFERENCE: 31282DT
 SHEET OF 1 SHEETS 1