



Mr and Mrs Concato

## Land Zone Suitability Advice

87 Tallawong Road, Rouse Hill

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September 2015

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#### **SYDNEY**

Suite 603, Level 6, 12 Century Circuit  
Norwest Business Park NSW 2153  
P (02) 9659 0005 F (02) 9659 0006  
E [sydney@barkerryanstewart.com.au](mailto:sydney@barkerryanstewart.com.au)

#### **CENTRAL COAST**

Suite F, 78 York Street  
East Gosford NSW 2250  
P (02) 4325 5255 F (02) 4322 0798  
E [coast@barkerryanstewart.com.au](mailto:coast@barkerryanstewart.com.au)

#### **HUNTER**

Unit 1, 17 Babilla Close  
Beresfield NSW 2322  
P (02) 4966 8388 F (02) 4966 1399  
E [hunter@barkerryanstewart.com.au](mailto:hunter@barkerryanstewart.com.au)

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### SYDNEY

Suite 603, Level 6, 12 Century Circuit  
Norwest Business Park NSW 2153  
P (02) 9659 0005 F (02) 9659 0006  
E [sydney@barkerryanstewart.com.au](mailto:sydney@barkerryanstewart.com.au)

### CENTRAL COAST

Suite F, 78 York Street  
East Gosford NSW 2250  
P (02) 4325 5255 F (02) 4322 0798  
E [coast@barkerryanstewart.com.au](mailto:coast@barkerryanstewart.com.au)

### HUNTER

Unit 1, 17 Babilla Close  
Beresfield NSW 2322  
P (02) 4966 8388 F (02) 4966 1399  
E [hunter@barkerryanstewart.com.au](mailto:hunter@barkerryanstewart.com.au)

# **1 Introduction**

Barker Ryan Stewart Pty Ltd has been engaged by Mr and Mrs Concato to review the suitability of 87 Tallawong Road, Rouse Hill to be re-zoned for open space purposes from a topographical and flooding perspective. The report is to include an investigation into the surrounding area for land that would be better suited for this purpose.

The site is shown as being proposed for playing fields under a zoning of RE1 with the lower part of the site being nominated as SP2 Infrastructure for drainage.

In preparation for this report the following documents have been considered:

1. The Riverstone East Water Cycle Management Report April 2015;
2. The Riverstone East Precinct Transport Study Final draft April 2015;
3. Draft State Environmental Planning Policy Maps (SEPP) 2006;

## 2 Site and Surrounding Topography

### 2.1 Site Details

The subject site is located at 87 Tallawong Road, Rouse Hill within a rural area. The lot contains one house, a large shed and a dam. The total site area is 2.02 ha with access to Tallawong Road. The north eastern corner has an RL of 52m AHD and the southern side has an RL of 42m AHD. The slope on the site varies from approximately 4% to 8% and would be best described as undulating with fall to the sites west.

The property is positioned alongside a crest in Tallawong Road which is located in front of 83 Tallawong Road and two depressions that run parallel with the properties side boundaries on both the northwest and southeast sides of the property. The depression on the northwest side is located in the adjoining property, 95 Tallawong Road while the depression to the sites south east is three properties away, being on the far side of the crest at 67 Tallawong Road. These properties are shown in Attachment 3 - Figure 1 for clarity. The height difference in road level between the crest and the depressions are both in the order of 4m. Councils provided contour map with the subject property shown in green and the drainage in the area shown in yellow is attached in Attachment A



Location of site – (source NSW Dept of Lands).

The following photographs have been taken of the site and of Tallawong Road during a site visit on the 27<sup>th</sup> August, 2015.





**Figure 1 Low point in front of 95 Tallawong Road**



**Figure 2 Driveway 95 Tallawong Road**





Figure 3 87 Tallawong Road Frontage with Subject Property



Figure 3 Comparing level between 87 and 95 Tallawong Road





**Figure 5** Looking at 87 Tallawong Road from Crest in Road (number 83)



**Figure 6** Looking Towards Second Low Point in Tallawong from Crest



## 2.2 Surrounding Details

The site and its surrounds drain in a south westerly direction into an unnamed watercourse, under Oak Street and into First Ponds Creek, approximately 300 to 400 metres away from the lowest boundary at the rear of the site. The top of the local catchment which drains into the unnamed watercourse is the ridge line that is located in properties that front Cudgegong Road, located to the sites north east. The main arm of the unnamed creek extends along the rear of the property through 26, 18 and 14 Oak Street and then diagonally through numbers 83 and 77 Tallawong Road before it joins with the road reserve in 67 Tallawong Road.

The flattest part of the local area is the region between the unnamed creek First Ponds Creek, being across lots 26, 18 and 14 Oak Street which has grades in the order of 1% to 2%. The figures below show the typical terrain of the lots in this area. These properties are shown in Attachment C - Figure 1.

A further area of flat terrain is located between Oak Street and Clark Street and is shown on topographical maps as having some of the flattest slopes in the area. This land is identified as Lot F DP 407865 and appears to have no direct road access.



Figure 7 14 Oak Street



**Figure 8 18 Oak Street**

### **3 Requirements**

#### **3.1 Riverstone East Water Cycle Management Report**

The report shows the existing and proposed flood extents along First Ponds Creek, the proposed regional basin location serving the larger area including the subject site as well as showing that the unnamed tributary of First Ponds Creek will be maintained up to Tallawong Road.

The existing area that is inundated during the 100 year flood covering the land on numbers 26, 18 and 14 Oak Street will no longer be flood liable as a result of the local basin works on the other side of First Ponds Road and/or the upgrading of the unnamed watercourse.

The report shows that the lower portion of the site is supposedly subject to flooding in the 1% AEP event due to waters originating from the low point in Tallawong Road in front of 95 Tallawong Road. However this adjoining property appears to be mostly below the subject site and it does not show up as being flood prone on their mapping. Figures 1, 2, 3 and 4 all show the low point in Tallawong in front of 93 Tallawong, with the direction of overland flow being down the driveway between the sheds, not into the subject property. Figure 5 shows the subject site in the foreground with the sheds in the background being at a level that is no higher than the subject property.



The flood mapping also shows that the numbers 34, 26, 18 and 14 Oak Street are all flood liable lots, with the main flowpath passing through the middle of lot 26 which is heavily treed. The proposed drainage philosophy shows that the main flowpath is to be redirected from its existing path through 26, 18 and 14 Oak street into the subject property and around behind number 26 Oak Street via an engineered channel thus reducing the extent of flooding across the properties that front Oak Street.

The report also shows that part of Lot F DP 407863 is also flood liable however a significant amount is not.

### **3.2 Department of Planning and Environments Documents**

The NSW Department of Planning and Environment's Riverstone East- North West Growth Centre- Development Control Map shows the existing flood extents along First Ponds Creek. The flood map shows the land at 34, 26, 18 and 14 Oak Street are all flood liable lots, with the main flowpath passing through the middle of lot 26 which is heavily treed.

The NSW department of planning and environment Riverstone East – North West Growth Centre – Land Zoning Map shows 87, 83, 77 and 67 Tallawong as Local open space (RE1) with a small portion of local drainage through the site. 14 and 18 Oaks Street is shown as R3 medium density residential and Lot f DP 407863 as R2 Low Density.

The NSW department of planning and environment Riverstone East Precinct – Draft Indicative Layout Plan shows a sporting field located at 87, 83, 77 and 67 Tallawong Road and town houses and terraces located at 14 and 18 Oaks Street.

Refer to Attachment B for extracts of reports.

### **3.3 Commentary on Above Reports**

In order for an engineered channel to be constructed at the rear of the subject property and the neighbouring properties, it will need to be dug into the existing topography and have its top of bank level matched with the surrounding surface levels to ensure that its floodwaters are contained. To do this so that the flood levels as nominated in the Water Cycle Management Report are produced, will require the channel to be dug into the existing topography by a couple of metres.

This will in turn increase the fall needed to be overcome across the subject lot, from a fall of 10m in 270m which is currently the case to at least 12m in 250m once the channel is constructed. The resulting fall from the high point in Tallawong Road near the front of the site to the proposed drainage channel located at the rear of the site will be in the order of 5 percent. This fall is constant in all directions from the high point in Tallawong Road falling to the east and west along the road and to the south across the proposed playing fields.

The playing field is proposed to be located in an area where there are level constraints due to the grading of the site. The 100 year water level along the south side of the playing fields is at RL 43.5m AHD compared to the level of the road which is at RL 53m AHD. The layout of the playing fields show that the playing fields will need to be located very close to the channel and also the road in order for them to fit in the area.

As the playing fields will need to be constructed on a relatively flat surface with minimal fall, ideally a crest in the middle with fall to the perimeter and drainage around their perimeter, large scale earthworks would need to be undertaken across the site with retaining walls required to be constructed either between the road and the playing fields and/or the playing fields and the drainage channel. These retaining walls will in turn impact on the constructability of the parking area within the open space area required for the users of the playing fields. The height differences will likely mean that retaining walls of up 8m in height will need to be constructed in some form, whether it is in a single wall or in multiple walls. To demonstrate this Attachment C - Figure 2 shows a section through the playing fields and extend out to the road and the channel.

Two locations have been identified within the local area as being better locations for the playing fields, being;

- At numbers 18 and 14 Oak Street with some encroachment into 6 Oak Street. Here the land has a very gentle slope and as Number 14 Oak Street is a market garden, obviously has reasonably fertile soils making this area a better suited location from an engineering earthworks point of view than 87 Tallawong Road.
- And secondly the land identified as Lot F DP 407863 which straddles First Ponds Creek some 500m downstream from the above mentioned Oak Street Properties. The area is also comprised of relatively flat land and is located on low lying plain.



## 4 Conclusions and Recommendations

In summary, the review of the relevant documents shows that land more suited for the positioning of the playing fields is either 14 and 18 Oak Street or Lot F DP 407863 further down the First Ponds Creek. The reasons for this are as follows;

- Site inspections and contour mapping show that they are the flattest areas which will require the least amount of site preparation
- Neither site will be flood affected due to the proposed works to be carried out on the main stream and side tributaries, and
- The subject site which will require extensive civil works to overcome the large level difference between the road and the rear of the site.

## **5 References**

NSW Department of Planning and Environment, Water Cycle Management Report, Riverstone East, April 2015.

NSW Department of Planning and Environment, Transport Study, Riverstone East Precinct, April 2015.

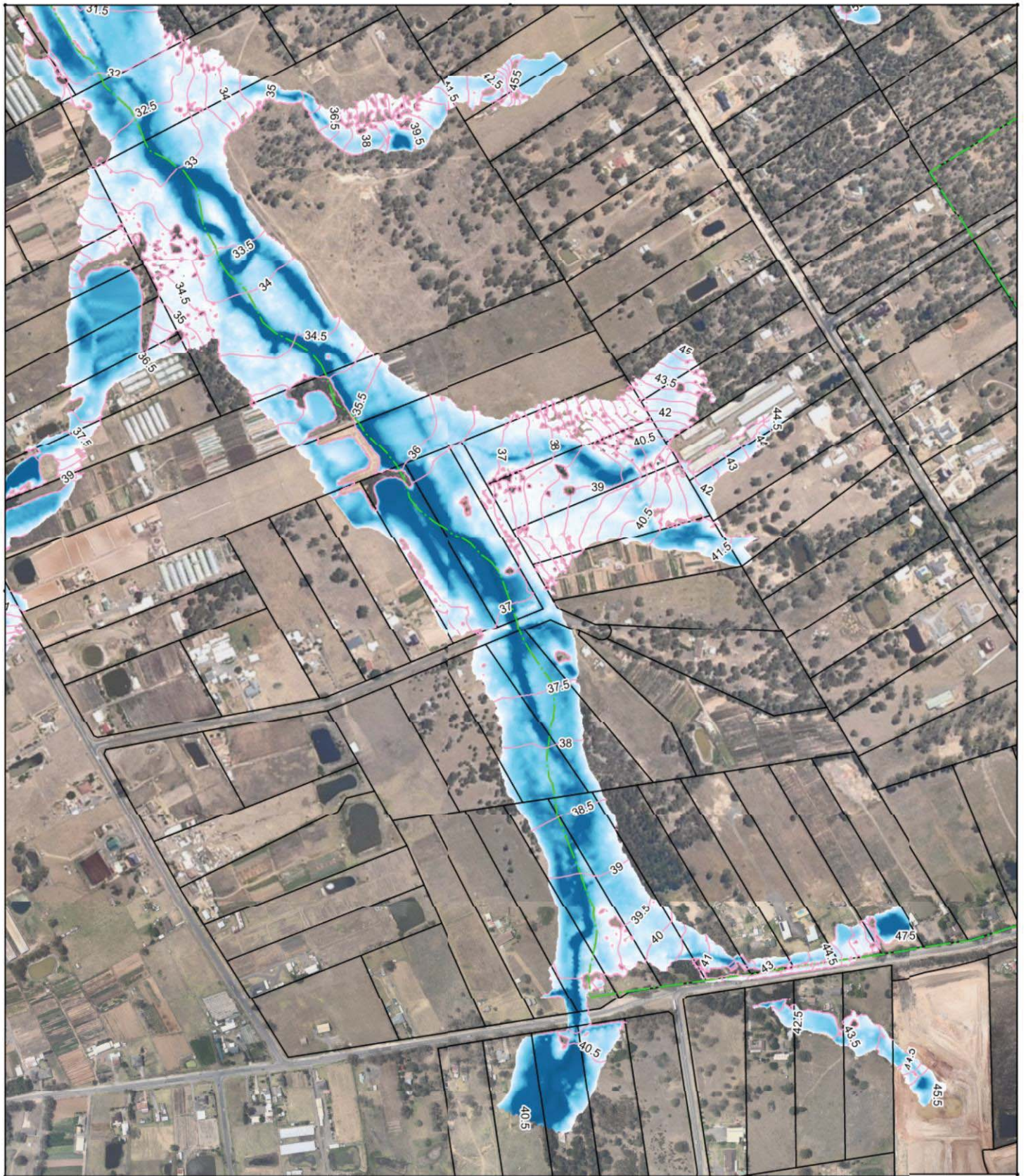
NSW Department of Planning and Environment, Sydney Region Growth Centres, 2006.





## **Attachment A**

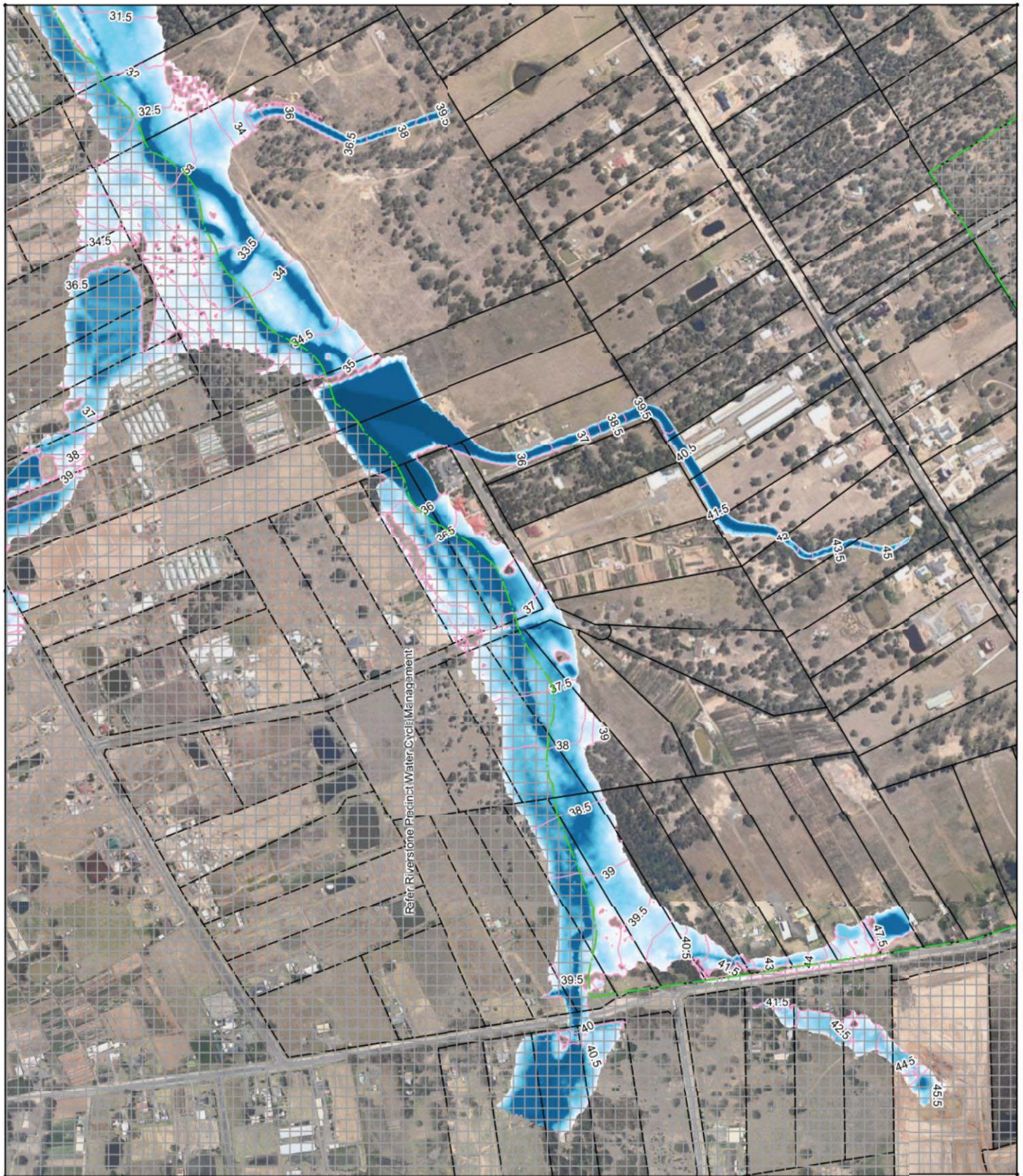
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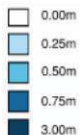





<div><div>Title</div><div>Riverstone East ILP</div><div>1% AEP Existing Flood</div><div>Flood Depth</div></div>				<div><div><div><div>0.00m</div><div>0.25m</div><div>0.50m</div><div>0.75m</div><div>1.00m</div></div></div><div><div>2100</div><div>0 m</div><div><div><div>N</div><div>E</div><div>S</div><div>W</div></div></div></div></div>				<div></div>	
Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Status	Rev		
16/01/2015	GL	GL	CA	1:8000	RE_EXL_100yr_120m_D	FI	B		





<b>Title</b> <b>Riverstone East ILP</b> <b>1% AEP Proposed Flood</b> <b>Flood Depth</b>				  		 	
<small>           This document is issued for the party which commissioned it and for specific purposes connected with the project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing an error or omission which is due to an error or omission in data supplied to us by other parties.         </small>							
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16/01/2015	GL	GL	CA	1:8000	RE_PRL_100yr_120m_D	FI	B



**ATTACHMENT B**

**NSW DEPARTMENT OF PLANNING AND ENVIRONMENT MAPS AND PLANS**

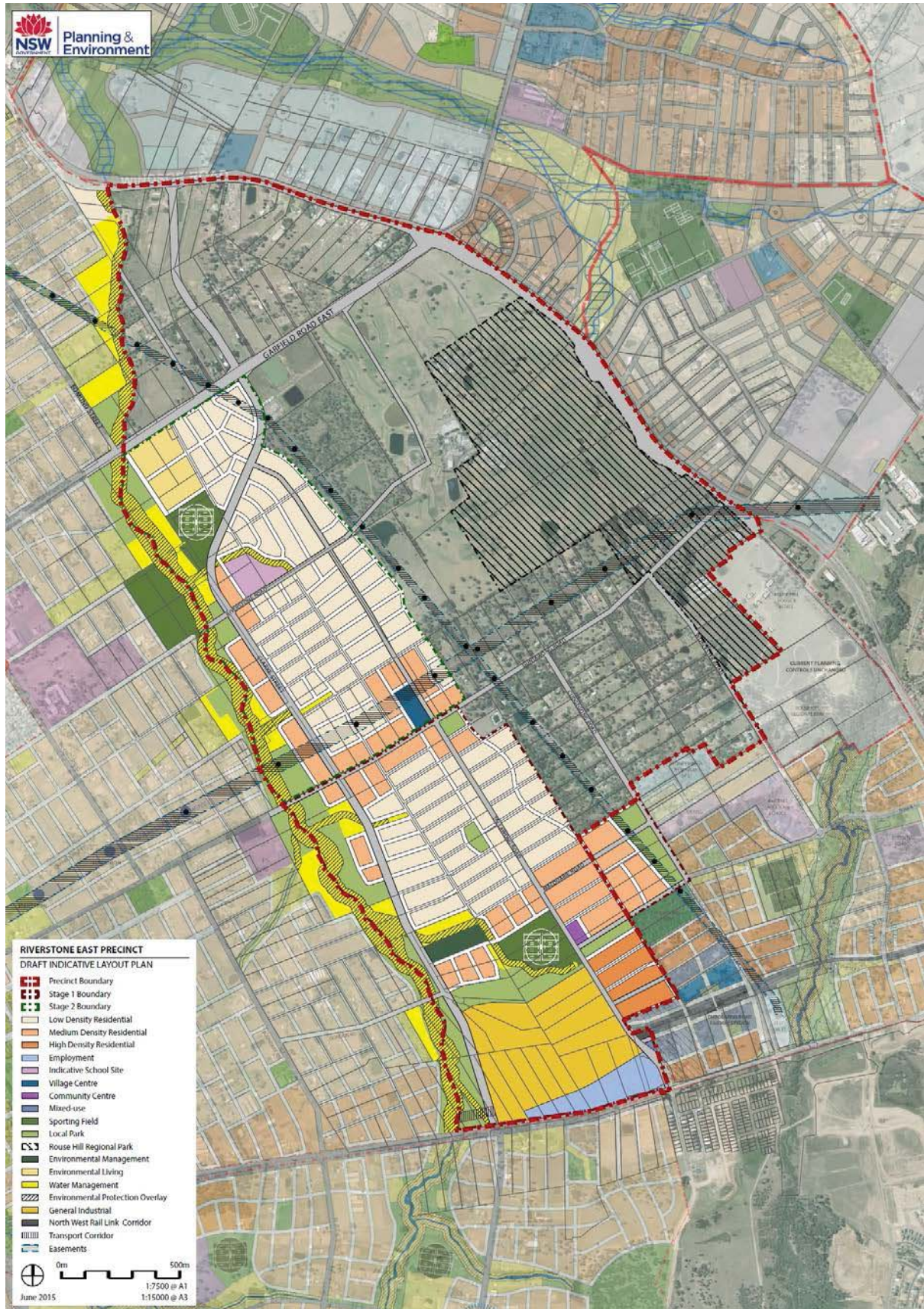
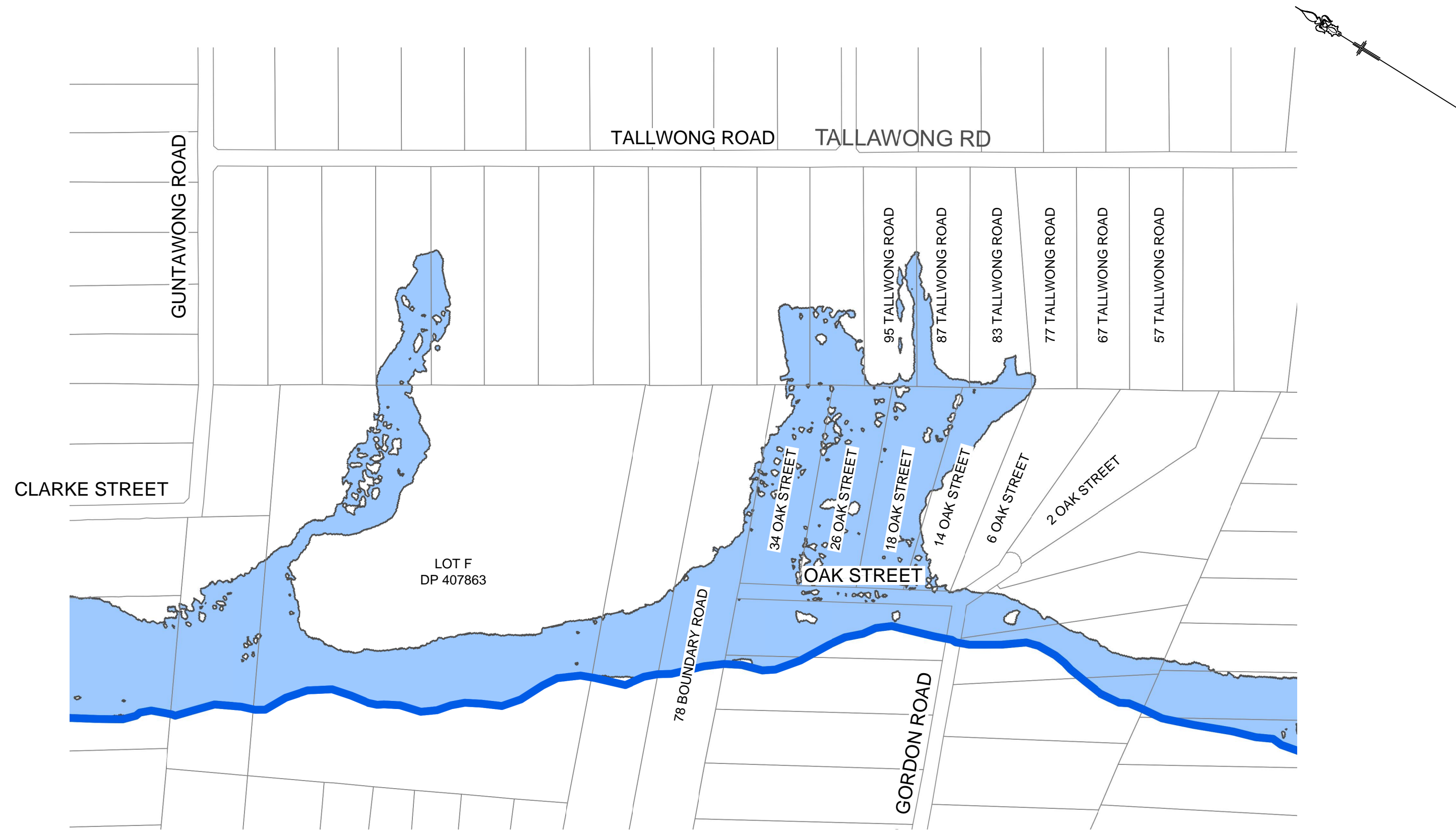


Figure 3-1 Indicative Layout Plan

## **ATTACHMENT C**

### **FIGURES 1 and 2**





A	XX/08/2015	FIRST ISSUE
No.	DATE	AMENDMENT



**BarkerRyanStewart**

Sydney P: 02 9659 0005  
Central Coast P: 02 4322 0798  
Hunter P: 02 4966 8385

ABN: 26 134 067 842  
barkerryanstewart.com.au  
mail@barkerryanstewart.com.au

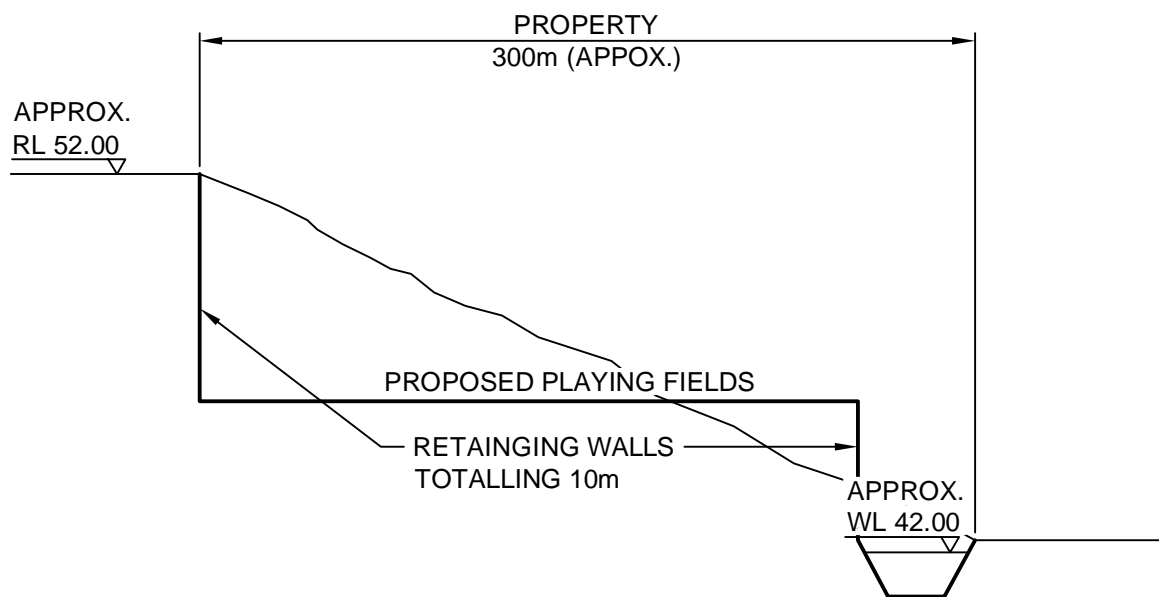
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Approved:	

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	Horiz.
	Vert.
	X-Sect.
Datum:	A.H.D.

Client:	JENNIFER CONCATO
LGA:	BLACKTOWN CITY COUNCIL
Council Ref:	

87 TALLAWONG ROAD ROUSE HILL	Plan No. SY15145SK01	RE A
FIGURE 1 - PROPERTY PLAN	File Ref. SY15145SK	
	SHEET 1 OF 1 SHEETS	



Plan No. SY15145SK2

Scale: N.T.S.

87 TALLAWONG ROAD

ROUSE HILL

FIGURE 2

SECTION THROUGH PROPOSED PLAYING FIELD



**BarkerRyanStewart**

Sydney  
P: 02 9659 0005  
Hunter  
P: 02 4966 8385

Central Coast  
P: 02 4322 0798

ABN: 26 134 067 842

barkerryanstewart.com.au  
mail@barkerryanstewart.com.au

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