

17 April 2019

The Hills Shire Council
PO Box 7064
Norwest NSW 2153

For the Attention of the Development Assessment Manager

Address: 89 – 97 Castle Hill Road, West Pennant Hills

Proposal: Rezoning Application

Subject: Traffic Statement to Accompany Development Application

Introduction and Background

InRoads Group was engaged to provide traffic engineering input into the proposal for the rezoning of a section of the Cumberland State Forest, located at 89 – 97 Castle Hill Road, West Pennant Hills.

Currently, there are two (2) unused dwellings within the State Forest land at the north of the site (fronting Castle Hill Road) and at the south of the site (fronting Oratava Avenue).

The intent is for the rezoning of this land and future modification to the existing lot boundaries to create separate allotments which will contain the area of the unused dwellings and curtilage, given that these areas are not currently well integrated into the uses of the Cumberland State Forest.

The following sections document the results of our investigations addressing the key traffic design issue, which is vehicular access to potential new lots created following the proposed rezoning.

Subject Site and Existing Access Arrangements

The Cumberland State Forest is located at 89 – 97 Castle Hill Road, West Pennant Hills. It comprises around 40 hectares of State Forest within the northwestern area of Sydney, approximately 21km from the Sydney CBD. The State Forest is generally surrounded by suburban low-density residential properties to the north, east, and south, and a substantial office development to the west.

As shown in **Figure 1** over page, the Cumberland State Forest has road frontage to Castle Hill Road to the north and Oratava Avenue to the south.

The forest is used for recreational purposes including walking trails and picnic facilities, and includes a visitor information centre for the education of members of the public. It also includes a retail plant nursery and a café, as well as a corporate facility which accommodates the NSW Forestry Corporation. A privately-operated ropes course is also located within the site.

Vehicular access to the Cumberland State Forest is currently provided from the north via a priority (stop) controlled T-intersection (Castle Hill Road / Cumberland Forest Way), and from the south via a priority-controlled access (Oratava Avenue / Bryant Road).

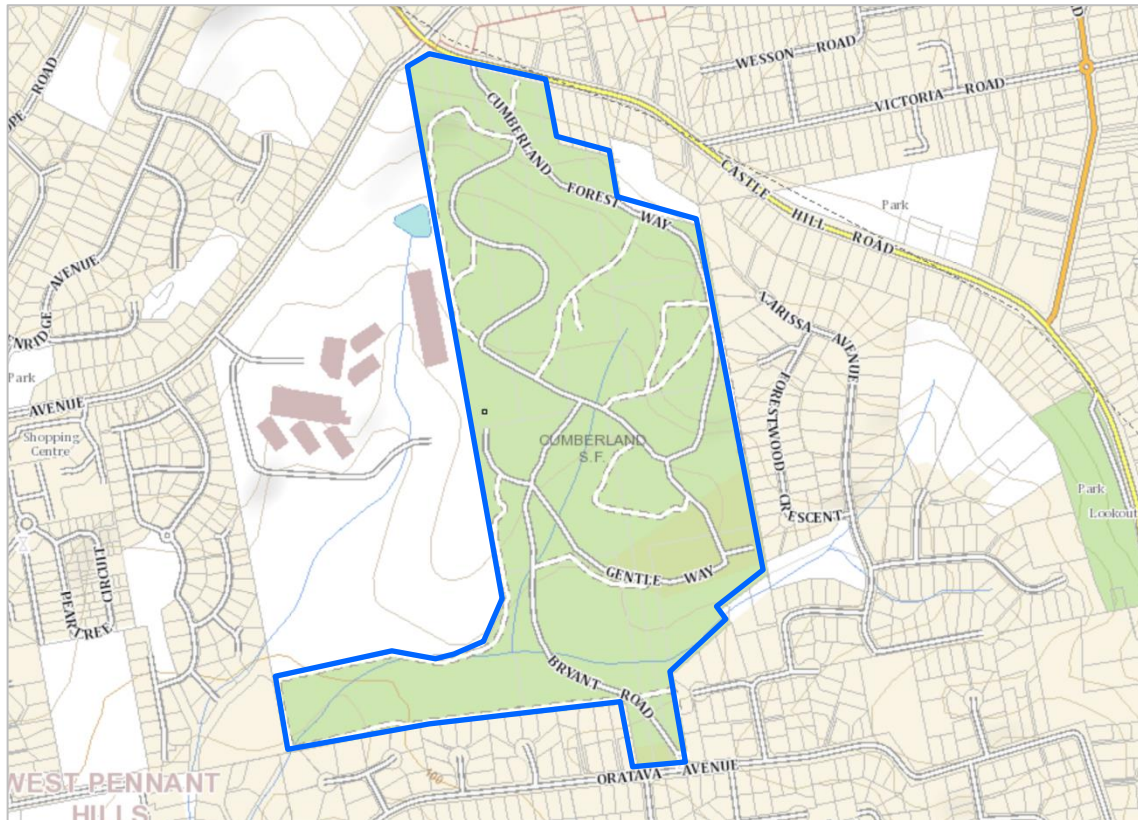


Figure 1: Cumberland State Forest

Source: SixMaps

The Cumberland State Forest is comprised of a total of 14 lots within DP11133, DP914864, DP338977, P343971 and DP337618. The properties to which this application relates (containing and adjacent to the two (2) unused dwellings at the north of the site (fronting Castle Hill Road) and at the south of the site (fronting Oratava Avenue)) include the following, as shown in **Figure 2** over page:

Northern Reconfiguration Area

- Lot 6, DP11133: a 3,560m² lot fronting Castle Hill Road.
- Lot 7, DP11133: a 4.125 hectare lot comprising an unused access handle off Castle Hill Road between Lot 6 and the adjoining property to the east at 87A Castle Hill Road and extending south to approximately the centre of the State Forest.

The northern unused dwelling and associated structures straddle the boundary of the above lots. Vehicular access to this dwelling is currently provided for by way of two (2) existing crossovers onto Castle Hill Road as shown in the images included in **Attachment A**. One of these driveways is positioned adjacent to the eastern boundary of Lot 7, and the other is positioned approximately midway along the frontage of Lot 6.

Southern Reconfiguration Area

- Lot 15 DP11133: a 5.367 hectare lot comprising an access handle off Oratava Avenue extending north to approximately the centre of the State Forest.
- Lot 16 DP11133: a 5.556 hectare lot comprising an unused access handle off Oratava Avenue extending north to approximately the centre of the State Forest.
- Lot 17 DP11133: a 4.338 hectare lot comprising an unused access handle off Oratava Avenue extending north to approximately one quarter of the State Forest.

These lots are accessed via a private internal road (Bryant Road), which connects to Oratava Avenue within Lot 15 DP11133 at a priority-controlled access, as shown in the images included in **Attachment A**. A driveway connecting to Bryant Road and travelling parallel to Oratava Avenue provides vehicular access to the existing unused dwelling which straddles existing Lot 16 and Lot 17.



Figure 2: Reconfiguration Areas

Source: SixMaps

Adjacent Road Network

As previously noted, the Cumberland State Forest (including the areas which are the subject of this rezoning application) has frontage to Castle Hill Road to the north, and Oratava Avenue to the south.

Castle Hill Road is a classified State Road (MR 156), which connects from Pennant Hills Road (HW13) at Pennant Hills, westerly, to the Old Northern Road (MR160) at Rogans Hill. It has a four-lane, two-way undivided cross-section as shown in **Figure 3** below, and provides direct access to a considerable number of residential properties along its length. There is a clearway along the frontage of the site (westbound carriageway) which is in force from 6am – 7pm Monday to Friday and 9am – 6pm on weekends and public holidays. Castle Hill Road is posted at 60km/hr in the vicinity of the site.

There is speed camera infrastructure within the verge along the frontage of the site (on each side of the existing western crossover), in addition to a signal controller box, as shown in the images included as **Attachment A**.



Figure 3: Castle Hill Road (looking westbound)

Source: Google Maps

Oratava Avenue is a local street which provides access to primarily residential properties along its length. It connects from the Cumberland Highway at its eastern end to Aiken Road at its western end. It has a two-lane, two-way undivided cross-section as shown in **Figure 4** below, with a pavement width of approximately 11.5m. Kerbside parking is generally permitted on both sides of the road clear of intersections and property access driveways in accordance with NSW Road Rules. Oratava Avenue is posted at 50km/hr.



Figure 4: Oratava Avenue (looking westbound)

Source: Google Maps

Proposal

As previously noted, there are two (2) unused dwellings within the State Forest land at the north of the site (fronting Castle Hill Road) and at the south of the site (fronting Oratava Avenue). The proposal involves the rezoning of the areas which contain these dwellings and their curtilage, given they are not currently well integrated into the uses of the Cumberland State Forest.

It is understood that Council has requested that the Applicant provide indicative subdivision plans to demonstrate how the subject land may potentially be subdivided from the main forest land in future. These plans are included as **Attachment B** and **Attachment C**, and show potential (indicative) modifications to the existing lot boundaries to separate these parcels from the Cumberland State Forest.

We are advised that the purpose of the rezoning and potential future subdivision is to allow the Castle Hill Road and Oratava Avenue sites to be separated from the main Cumberland State Forest area to enable them to be managed in a way that does not detract from, and that contributes to the quality of, the Cumberland State Forest.

Vehicular Access Arrangements

The subject application involves the rezoning of the subject land only, and as a result, no modifications are proposed to the vehicular access arrangements. However as previously discussed, indicative subdivision plans have been prepared to demonstrate how the subject land may potentially be subdivided from the main forest land in future. There are several options for access to potential future residential lots, as discussed in the following sections.

Northern Reconfiguration Area

The potential vehicle access arrangements for the northern reconfiguration are as shown in the diagram included as **Attachment D**.

From a traffic perspective, the eastern driveway (providing access to Lot 671 as shown in the indicative subdivision plans) could be provided in essentially any location along the frontage. It is however suggested that the existing driveway location (adjacent to the eastern site boundary) be retained if possible, given that this access operates acceptably, and retaining it would minimise disruptive works.

The western driveway (providing access to Lot 672 as shown in the indicative subdivision plans) could be provided in essentially any location along the approximately 34m of frontage, clear of the speed camera infrastructure / traffic signal controller box. Again, it is suggested that the existing driveway location be retained if possible.

Lot 68 would be forest land, therefore vehicular access to this lot would be retained via Cumberland Forest Way, which connects to Castle Hill Road as previously discussed.

The potential vehicular access arrangements for the northern reconfiguration area (as shown conceptually in the diagram included as **Attachment D**) are considered to be acceptable and supportable on the following grounds:

- The indicative lot reconfiguration would not require the provision of any new driveways on Castle Hill Road.
- It is anticipated that the potential future lots would accommodate single dwelling houses only. Accordingly, the volume of traffic which would use the Castle Hill Road driveways would be extremely low i.e. 0 – 1 vehicle trips in the critical peak hours, and 10 – 11 vehicle trips per day (entry and exit), per driveway. This volume of entering / exiting traffic would have a marginal impact upon through traffic on Castle Hill Road.
- Given the horizontal and vertical alignment of Castle Hill Road in proximity to the site (see **Figure 7** and **Figure 8** over page), visibility to/from existing or relocated access driveways on Castle Hill Road would be considerable, and exceed the minimum requirements stipulated in AS2890.1 for a 60km/hr speed environment (i.e. 55m minimum for domestic property access, 65m minimum otherwise).



Figure 7: Castle Hill Road (looking east)



Figure 8: Castle Hill Road (looking west)

- The future lot configuration would achieve compliance with the requirements for access driveway locations as shown in Figure 3.1 of AS2890.1, i.e. driveways would not be positioned within 6m of the tangent point of an intersection. If the existing access driveways are to be retained, the access arrangements would provide substantial separation to adjacent intersections, i.e.:
 - in excess of 33m from the western access driveway to the access to State Forest;
 - approximately 130m from the western access driveway to the signalised intersection of Castle Hill Road / Edward Bennett Drive / Coonara Avenue; and
 - approximately 800m from the eastern access driveway to the signalised intersection of Castle Hill Road / New Line Road.
- The potential future lot reconfiguration would make provision for the appropriate access treatment to be provided i.e. a Category 1 driveway as required under Table 3.1 of AS2890.1, which is a combined entry/exit driveway of 3.0m – 5.5m width.
- The signalised intersections to the east and the west of the subject site create a platooning effect in through traffic flow on Castle Hill Road, providing ample opportunities for traffic to exit the potential future lots onto Castle Hill Road.
- Importantly, there is considerable precedent along Castle Hill Road in the vicinity of the site, i.e. existing dwellings which have direct access to Castle Hill Road. Examples include:

Southern Side of Road

- 87A Castle Hill Road
- 87 Castle Hill Road
- 85A Castle Hill Road
- 85 Castle Hill Road
- 83 Castle Hill Road

Northern Side of Road

- 120 Castle Hill Road
- 120A Castle Hill Road
- 122 Castle Hill Road
- 122A Castle Hill Road
- 124 Castle Hill Road
- 126 Castle Hill Road
- 128 Castle Hill Road
- 130 Castle Hill Road
- 130A Castle Hill Road
- 132 Castle Hill Road
- 134 Castle Hill Road
- 136 Castle Hill Road

The above examples are within a distance of only 100m from the subject site. This level of precedent suggests that the road environment on Castle Hill Road is conducive to direct property access.

In light of the above considerations, it is considered acceptable and supportable from a traffic engineering perspective that two (2) existing access driveways onto Castle Hill Road be retained for access to the potential future residential lots fronting this road.

The detail of the vehicular access arrangements would be developed and refined as part of future reconfiguration of lot and/or development applications over the subject land.

Southern Reconfiguration Area

Potential vehicle access arrangements for the southern reconfiguration area are shown in the diagram included as **Attachment E**. As shown in this plan, the following options for vehicular access to the site have been identified:

- Access Option 1: Direct access for the potential two (2) residential lots onto Oratava Avenue (noting that civil works would be required due to the embankment / level difference between the sites and Oratava Avenue in this location); or
- Access Option 2: Access via Bryant Road and a right of carriageway over Lot 1181 in favour of Lot 1182 along the southern boundary of the site (i.e. adjacent to Oratava Avenue).

The potential access arrangements for the southern reconfiguration area (as shown conceptually in the diagram included as **Attachment E**) are considered to be acceptable and supportable on the following grounds:

- Oratava Avenue is a local access street, therefore direct access to the new lots (under Access Option 1) is consistent with its existing form and function (i.e. a low speed, low volume access road).
- Under Access Option 1, sightlines along Oratava Avenue would exceed the minimum requirements under the provisions of AS2890.1, i.e. 40m minimum for a 50km/hr speed environment for domestic property access.
- Under Access Option 2, the potential access arrangements are consistent (in principle) with the existing arrangements, with the exception of a very marginal increase in traffic volumes due to the additional lot (as discussed following).
- It is anticipated that the new lots would accommodate single dwelling houses. Accordingly, the additional volumes of traffic generated would be extremely low i.e. 0 – 1 vehicle trips in the critical peak hours, and fewer than 10 – 11 vehicle trips per day (entry and exit). This volume of entering / exiting traffic would have a negligible impact upon the adjacent road network.

The detail of the vehicular access arrangements would be developed and refined as part of future reconfiguration of lot and/or development applications over the subject land.

Conclusion and Recommendation

On the basis of the above and the information provided herein, it is recommended that the application for the rezoning of the subject areas which contain two (2) unused dwellings at the north of the site (fronting Castle Hill Road) and at the south of the site (fronting Oratava Avenue), be approved from a traffic engineering perspective.

It is considered that acceptable and supportable vehicular site access arrangements are achievable, however these would be developed and refined as part of future reconfiguration of lot and/or development applications over the subject land.

We trust this information is of assistance. Should you have any queries regarding the above, please do not hesitate to contact the undersigned.

Regards,

A handwritten signature in blue ink, appearing to read 'Anne', followed by a horizontal line.

Anne Coutts

Director, InRoads Group

BE (Civil) | MIEAust | MAITPM

Attachment A

Photographs of Site and Existing Road / Traffic Conditions



Image 1: Castle Hill Road (looking west), showing Existing Western Access Driveway



Image 2: Castle Hill Road (looking east), showing Existing Eastern Access Driveway



Image 3: Speed Camera Infrastructure and Traffic Signal Controller Box - Castle Hill Road frontage



Image 4: Speed Camera Infrastructure - Castle Hill Road frontage



Image 5: Bryant Road Access off Oratava Avenue



Image 6: Access to Existing Unused Dwelling off Bryant Road



Image 7: Visibility from Bryant Road to west on Oratava Avenue



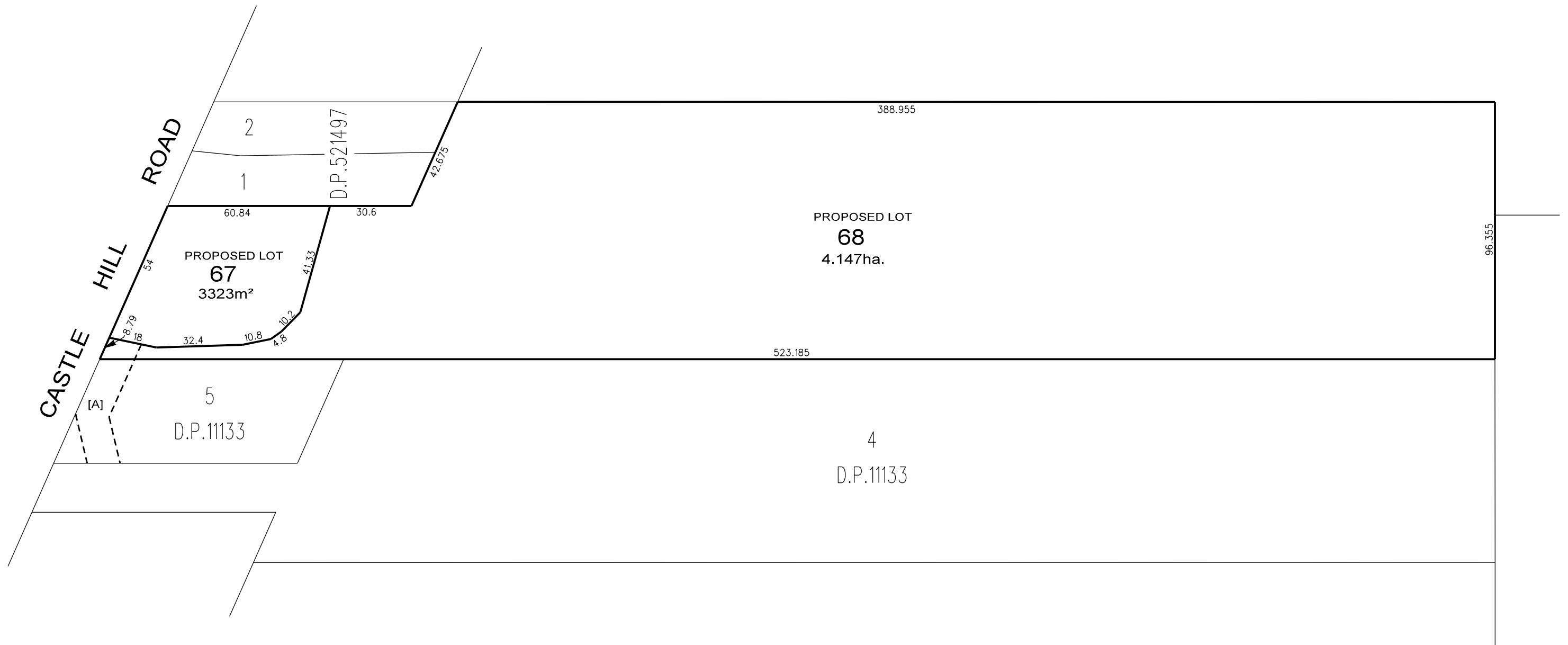
Image 8: Visibility from Bryant Road to east on Oratava Avenue

Attachment B

Indicative Lot Reconfiguration Plans - North

PLAN
OF PROPOSED SUBDIVISION OF
LOTS 6 & 7 D.P.11133
CASTLE HILL ROAD, WEST PENNANT HILLS
L.G.A. THE HILLS
1:1500

STAGE 1



NOTE :
DIMENSIONS AND AREA SHOWN HEREON ARE
APPROXIMATE AND SUBJECT TO SURVEY.

[A] - PROPOSED RIGHT OF WAY
12 WIDE

DRAFT

08/03/2018

Rygate & Company Pty Limited
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ABN 61 001 204 897

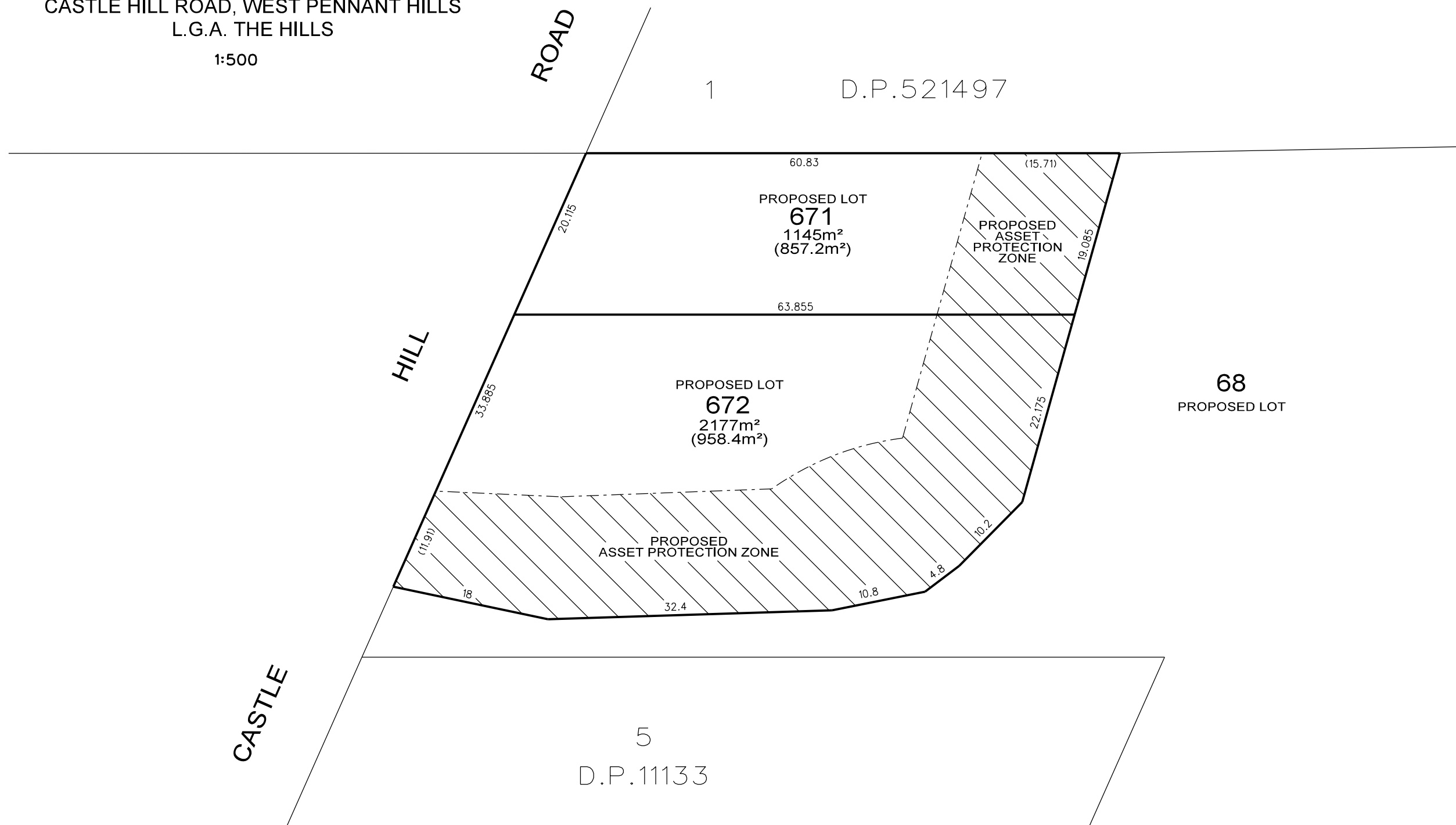
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REF: 78450B_prop_sub DATE: 08/03/2018

PLAN
OF PROPOSED SUBDIVISION OF
LOT 67 D.P.
CASTLE HILL ROAD, WEST PENNANT HILLS
L.G.A. THE HILLS
1:500

STAGE 2



NOTE :
DIMENSIONS AND AREA SHOWN HEREON ARE
APPROXIMATE AND SUBJECT TO SURVEY.

DRAFT

15/03/2019

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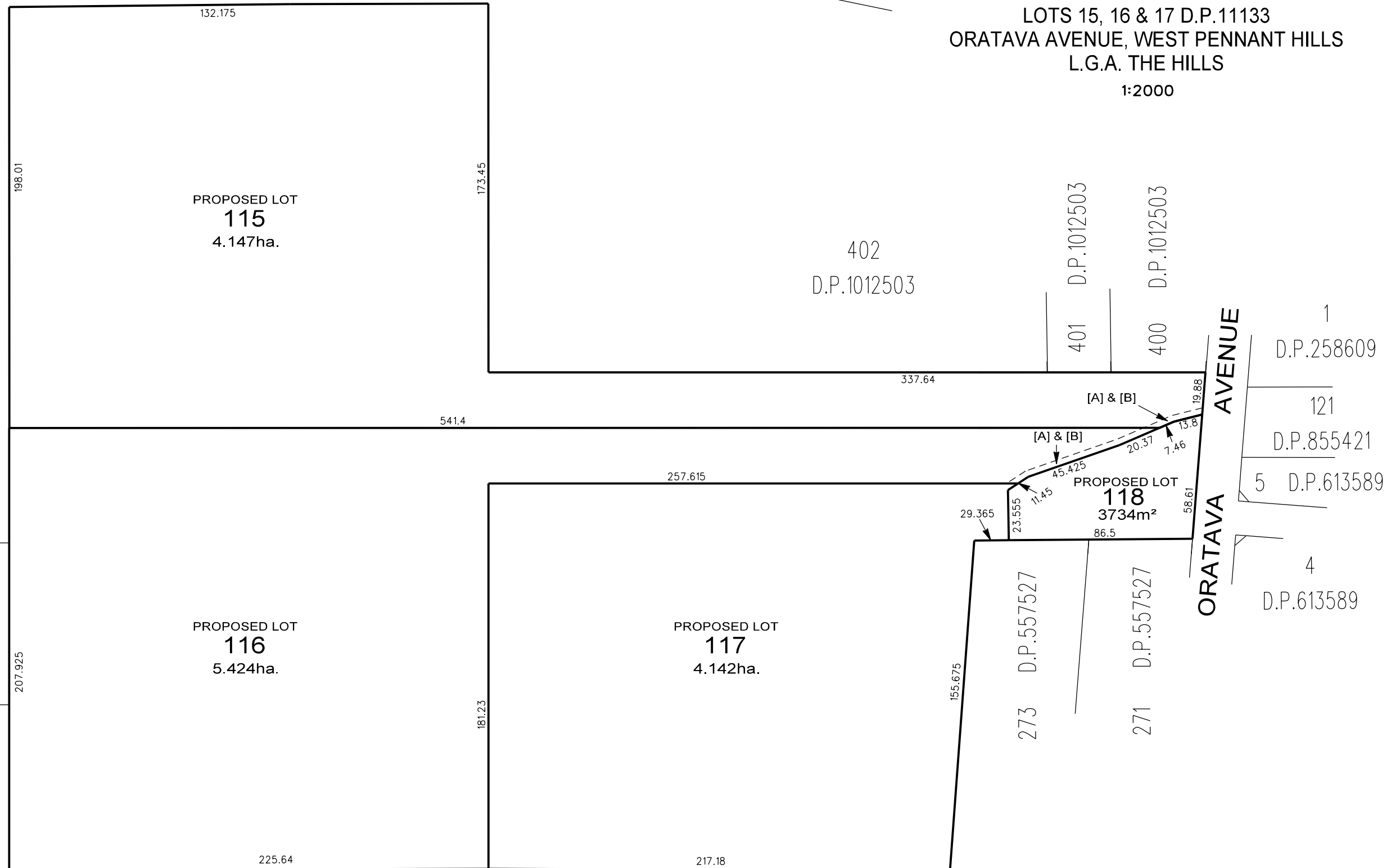
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Attachment C

Indicative Lot Reconfiguration Plans - South

STAGE 1

PLAN OF PROPOSED SUBDIVISION OF LOTS 15, 16 & 17 D.P.11133 ORATAVA AVENUE, WEST PENNANT HILLS L.G.A. THE HILLS 1:2000



NOTE:
DIMENSIONS AND AREA SHOWN HEREON AREA
APPROXIMATE AND ARE SUBJECT TO SURVEY.

[A] - PROPOSED RIGHT OF CARRIAGEWAY 3 WIDE
[B] - PROPOSED EASEMENT FOR SERVICES 3 WIDE

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STAGE 2

PLAN OF PROPOSED SUBDIVISION OF LOTS 118 D.P. ORATAVA AVENUE, WEST PENNANT HILLS L.G.A. THE HILLS

1:600

AVENUE

ORATAVA

402
D.P.1012503

401
D.P.1012503

400
D.P.1012503

1
D.P.258609

121
D.P.855421

5
D.P.613589

4
D.P.613589

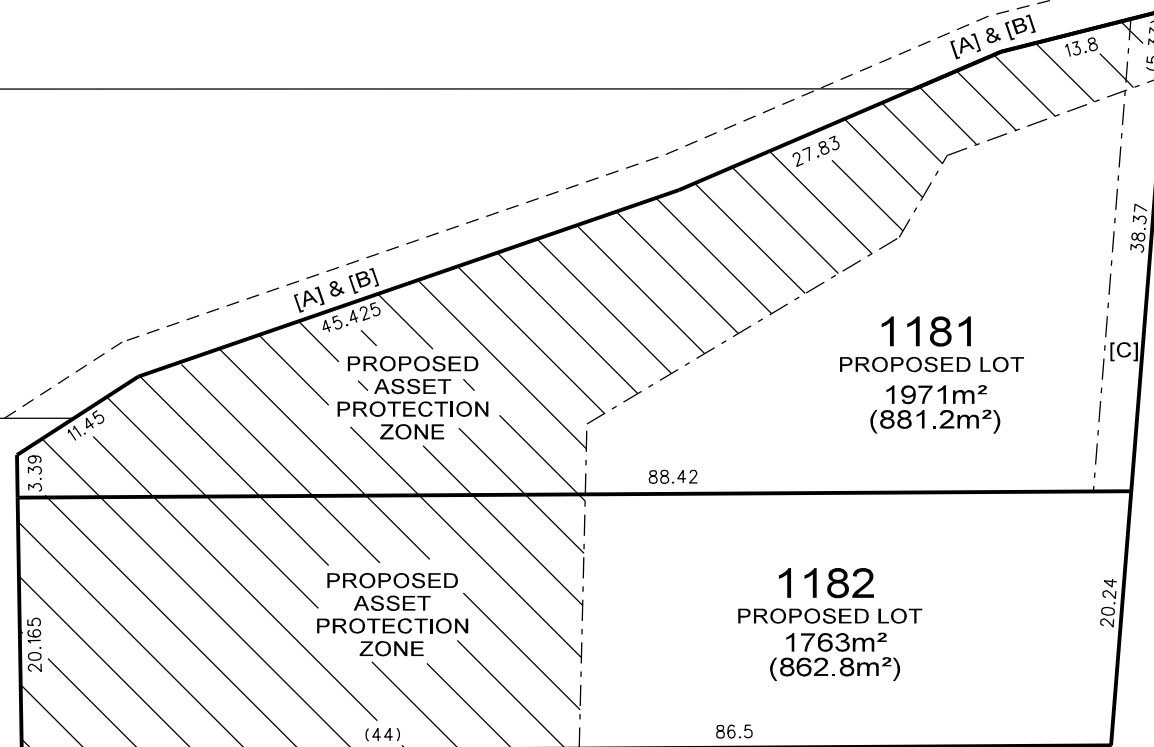
PROPOSED LOT
115

PROPOSED LOT
116

PROPOSED LOT
117

273
D.P.557527

271
D.P.557527



NOTE:
DIMENSIONS AND AREA SHOWN HEREON AREA
APPROXIMATE AND ARE SUBJECT TO SURVEY.

[A] - PROPOSED RIGHT OF CARRIAGEWAY 3 WIDE
[B] - PROPOSED EASEMENT FOR SERVICES 3 WIDE
[C] - PROPOSED RIGHT OF CARRIAGEWAY 3 WIDE

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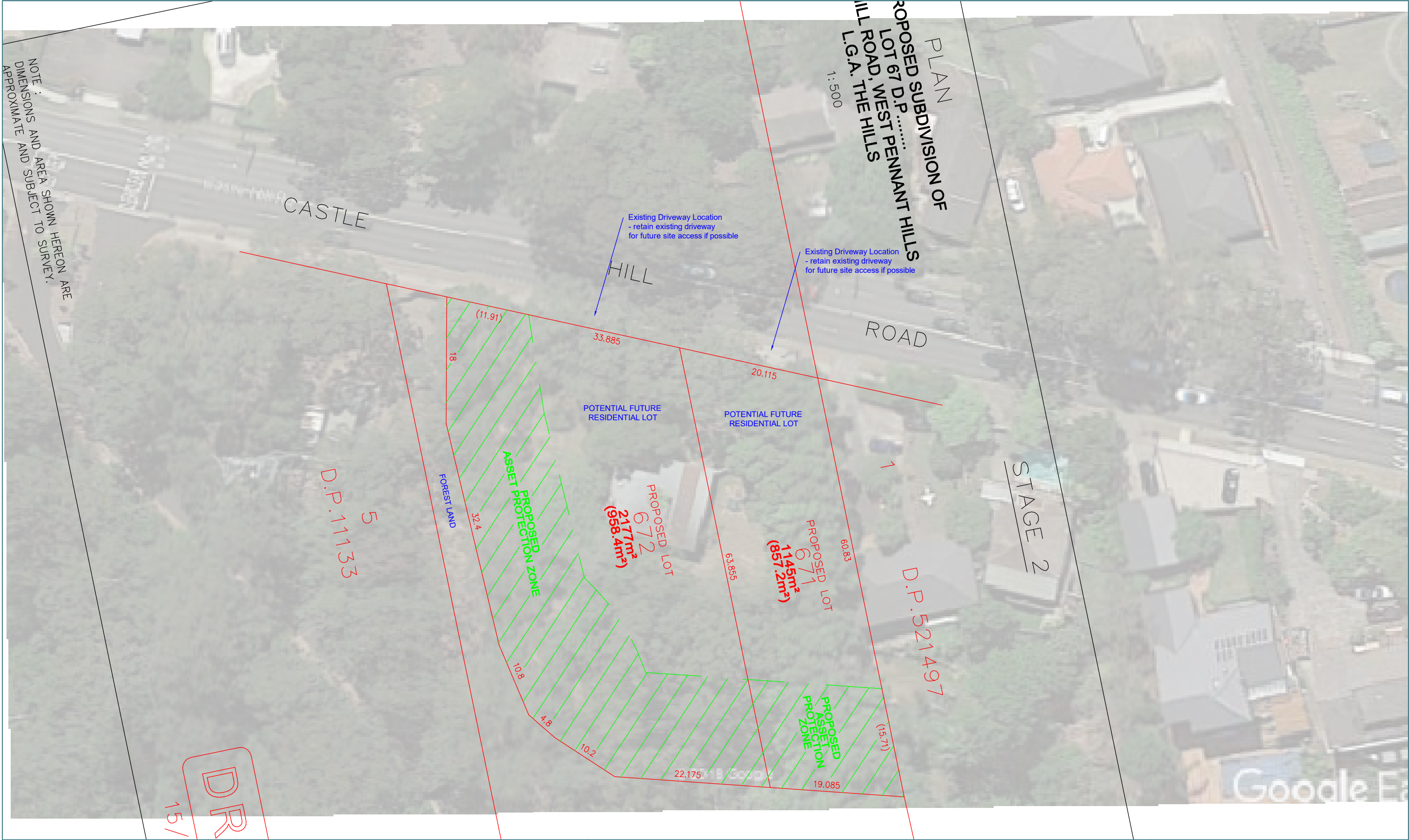


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Attachment D

Indicative Vehicular Access Diagram – North



INROADS:GROUP

drawing prepared by

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project 89-97 Castle Hill Road, West Pennant Hills

drawing title Preliminary Access Diagram
Northern Reconfiguration Area

project no.	drawing no.	revision	date	scale
18-043	DWG01	B	17/04/2019	1:500 @ A3

FOR INFORMATION ONLY - NOT FOR CONSTRUCTION

InRoads Group is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated drawing platforms. Vehicle data based upon relevant Australian Standards (AS/NZS 2890.1-2004 Parking facilities - Off-street car parking, and/or AS 2890.2-2002 Parking facilities - Off-street commercial vehicle facilities). These standards make allowance for a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

Attachment E

Indicative Vehicular Access Diagram – South

