

ARBORICULTURAL IMPACT REPORT

29 BILKURRA AVENUE
BILGOLA PLATEAU NSW

12 AUGUST 2019

PREPARED FOR MR AND MRS NICOL



Prepared by:
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1. BACKGROUND

Landscape Matrix Pty Ltd has been engaged by Mr and Mrs Nicol to prepare an Arboricultural Impact Report in respect to 5 trees potentially affected by a proposed new driveway and garage at 29 Bilkurra Avenue Bilgola Plateau (the site). The trees assessed for this report are located on the nature strip frontage and in the front garden area of the site.

This report has been prepared by Guy Paroissien a Director of Landscape Matrix Pty Ltd. The site was inspected on 6th August 2019 to collect the data for 5 trees at and adjoining the site.

The assessment of the trees is based upon a visual inspection of the trees from ground level using elements of the Visual Tree Assessment (VTA) method described by Mattheck & Breloer (1994). The Useful Life Expectancy (ULE) categories identified in the report follows Barrell (1996).

The inspection was limited to visual inspection of the trees without dissection, probing or coring. No aerial inspection of the trees was carried out and the assessment did not include any woody tissue testing or subterranean root investigation. The tree heights and canopy spreads were estimated and are expressed in metres and the tree diameters at breast height (DBH) were measured using a standard metal tape and are expressed in millimetres.

Measurements from the trees referred to in this report are to be taken as if measured from the centre of the trees' trunks.

2. TREES ASSESSED FOR THIS REPORT

Five mature trees have been assessed in preparing this report. The trees assessed for this report are located on the nature strip frontage and in the front garden area of the site. The location and context of the site is illustrated in the photograph on the cover page of this report.

A summary of these trees, their dimensions, condition, Useful Life Expectancy (ULE) and landscape significance is attached in Appendix B. The ULE categories identified in Appendix B follow those of Barrell (1996).

The locations of the trees are shown on the attached Site Plan: Proposed Works prepared by GWN Drafting dated July 2019 and identified as Drawing Number 01, Revision 00. (Attached at Appendix C)

The five trees are summarised in table 1 as follows:

Table 1: Summary of trees assessed at 29 Bilkurra Avenue Bilgola Plateau

Tree Number	Species and Common Name	Summary
1	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	A mature, single trunked specimen approximately 18 metres in height with a canopy spread of 14 metres and a diameter at breast height (DBH) of 520mm. In good health and of high landscape significance. The tree displays fair branch attachment with codominant leaders from 3.5 metres with some evidence of poor attachment at the junction - not considered at risk of failure in the short term. At the time of inspection the tree exhibited low levels of internal dieback typical for age and species.
2	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	A semi mature, single trunked specimen approximately 8 metres in height with a canopy spread of 7 metres and a DBH of 290mm. In moderate health and of moderate landscape significance. The tree's past canopy development has been suppressed. Longicorn Beetle larvae activity. At the time of inspection the tree was of moderate health and fair vigour and exhibited moderate to high levels of dieback - short ULE.
3	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	A mature, single trunked specimen approximately 20 metres in height with a canopy spread of 15 x 17 metres and DBH of up to 570mm (1050 x 1520mm above the root flare). In good health and of high landscape significance. Recent NBN works in TPZ and SRZ. Evidence of recent minor wounding (mechanical injury) to tissue on lower leader. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure in the short term. Minor cracking in 2 lower leaders on west side - possibly torsional stress cracks under wind loading - monitoring recommended.
4	<i>Jacaranda mimosifolia</i> (Jacaranda)	A mature, single trunked specimen approximately 5 metres in height with a canopy spread of 6 metres and a DBH of 260mm. In good health and of moderate landscape significance. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback. Exempt species.
5	<i>Macrozamia</i> spp. possibly <i>Macrozamia communis</i> (Cycad, possibly Burrawang)	A mature, single trunked specimen approximately 2.5 metres in height with a canopy spread of 3 metres and a DBH of ca. 4000mm. In good health and of low landscape significance.

None of the trees assessed for this report is listed individually as a threatened species on the Schedules of the NSW *Biodiversity Conservation Act 2016* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Tree number 4 (Jacaranda) is exempt from protection under Northern Beaches tree management controls.

3. IDENTIFICATION OF SETBACKS FOR THE TREES

A number of methods to determine the likely extent of root zones and appropriate setbacks for tree root protection zones for trees on development sites have been developed in the past. The key criteria used in determining setbacks is the tree’s trunk diameter at breast height (DBH) in conjunction with other factors including the sensitivity of the species in question to environmental disturbance/change, the age of the tree and the tree’s health and vigour at the time.

Harris et al (2004) provide formulae for calculating tree protection zones based on the above criteria and modified from the 1991 British Standard for protection of trees on construction sites (BS 5837:1991). The 2005 version of the British Standard (BS 5837:2005) recommends a radius of 12 times the tree’s DBH. For multi trunked trees BS 5837:2005 recommends a setback of 10 times the basal trunk diameter.

The Australian Standard *AS 4970 Protection of trees on development sites* also identifies a ‘Tree Protection Zone’ of 12 times the tree’s DBH. The Australian Standard also provides a formula for calculating the ‘Structural Root Zone’ of trees on development sites. In regard to palms, other monocots, cycads and tree ferns the Standard identifies the Tree Protection Zone should not be less than 1 metre outside the crown projection. (Australian Standards Association 2009)

The tree protection zones identified below have been calculated using the Australian Standard *AS 4970 Protection of trees on development sites* and are the identified setback from the trees where disturbance (e.g. soil level changes, compaction, excavation etc.) should be minimised to reduce potential impacts on the long term health of the trees.

Table 2: Tree Protection Zones - 29 Bilkurra Avenue Bilgola Plateau

Tree Number	Species and Common Name	Tree Protection Zone*	Structural Root Zone*
1	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	6.2 metres	2.7 metres
2	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	3.5 metres	2.1 metres
3	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	15 metres**	3.7 metres
4	<i>Jacaranda mimosifolia</i> (Jacaranda)	3.1 metres	2.1 metres
5	<i>Macrozamia spp.</i> possibly <i>Macrozamia communis</i> (Cycad, possibly Burrawang)	2.5 metres	N/A

* = Radial offset measured from centre of trunk, ** = Maximum TPZ under AS4970-2009

Preferably, no more than 10% of the root protection zone should be disturbed with compensation made by extension of other areas of the TPZ to compensate for the area(s) disturbed. Where greater than 10% of the tree protection zone is potentially disturbed the tree's viability needs to be investigated and demonstrated by the project arborist. The structural root zone is the area required for stability and where disturbance of any sort should be avoided.

4. POTENTIAL IMPACTS ON THE TREES

The extent of impacts to the trees has been assessed using the Site Plan: Proposed Works prepared by GWN Drafting dated July 2019 and identified as Drawing Number 01, Revision 00.

The extent of potential impacts to the trees is summarised in the table 3 and has been rated using the following guideline:

- 0% of root zone impacted – no impact of significance
- 0 to 10% of TPZ impacted – low level of impact
- 10 to 15% of TPZ impacted – low to moderate level of impact
- 15 to 20% of TPZ impacted – moderate level of impact
- 20 to 25% of TPZ impacted – moderate to high level of impact
- 25 to 35% of TPZ impacted – high level of impact
- >35% of TPZ impacted – significant level of impact

The root zone calculations referred to in this report were made using scale drawings of the trees' identified tree protection zones (TPZ) in a CAD program (TurboCAD®) with potentially affected areas added to the drawing. The area of potential impact was converted to a percentage of TPZ using a spreadsheet (Microsoft Excel®).

Table 3: Summary of potential impacts on the trees – 29 Bilkurra Avenue Bilgola Plateau

Tree Number	Species and Common Name	Summary
1	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	The proposed driveway is located 2.2 metres from the tree at the closest point and the garage 4 metres from the tree – these structures are calculated to encroach within 35.4m ² or 28.95% of the tree's identified TPZ – this is a high level of impact with potential to affect the tree's long term health and

		reduce its ULE. However, if the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised.
2	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	The proposed driveway is located 0.9 metres from the tree at the closest point and is calculated to encroach within 11.47m ² or 30.16% of the tree's identified TPZ – this is a high level of impact with potential to affect the tree's long term health and reduce its ULE. However, if the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised. Notwithstanding this, it is considered long term retention at this offset may be problematic although it is also noted the tree has a short ULE.
3	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	The proposed driveway is located 2.3 metres from the tree at the closest point and the garage 8.5 metres from the tree – these structures are calculated to encroach within 72.64m ² or 10.28% of the tree's identified TPZ – this is a low to moderate level of impact and within an acceptable threshold in terms of TPZ calculation, However, it is noted the actual impacts will be greater than the calculated encroachment due to the restriction to root growth due to the road which will have resulted in greater root growth in other areas including the area potentially impacted. In addition, the driveway crossing is within the tree's SRZ and some excavation will be required to achieve an acceptable gradient from the existing road level. As with trees 1 and 2, if the remainder of the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised. The proposed stormwater pipeline is located 3.1 metres from the tree at the closest point and, if installed using traditional trenching methods could impact a further 24.97m ² or 3.53% of the tree's identified TPZ located between the pipeline and the existing masonry retaining wall along the existing driveway – it is recommended the pipeline be installed by hand excavation under the direction of the site arborist to ensure roots of 30mm or greater diameter are retained and protected (tunneled under).
4	<i>Jacaranda mimosifolia</i> (Jacaranda)	The proposed stormwater pipeline is located 1.75 metres from the tree at the closest point and, if installed using traditional trenching methods will affect 5.07m ² or 16.59% of the tree's identified TPZ – while this is a moderate level of impact the pipeline is within the tree's STZ and it is recommended the pipeline be installed by hand excavation under the direction of the site arborist to ensure roots of 25mm or greater diameter are retained and protected (tunneled under).
5	<i>Macrozamia spp.</i> possibly <i>Macrozamia communis</i> (Cycad, possibly Burrawang)	The tree is within the footprint of works (garage) and will require removal (or transplanting) as part of the works.

The potential impacts can be summarised as follows:

- The proposed works will impact on 13.81% the identified TPZ of tree number 3 – this is a low to moderate level of impact and within an acceptable threshold for the tree. However, it is noted the actual impacts will be greater than the calculated encroachment due to the restriction to root growth due to the road which will have resulted in greater root growth in other areas including the area potentially impacted. In addition, the driveway crossing is within the tree’s SRZ and some excavation will be required to achieve an acceptable gradient from the existing road level. However, if the remainder of the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised. The proposed stormwater pipeline, if installed using traditional trenching methods, could impact a further 3.53% of the tree’s identified TPZ located between the pipeline and the existing masonry retaining wall along the existing driveway – it is recommended the pipeline be installed by hand excavation under the direction of the site arborist to ensure roots of 30mm or greater diameter are retained and protected (tunneled under).
- The proposed stormwater pipeline will impact on 16.59% the identified TPZ of tree number 4 – while this is a moderate level of impact the pipeline is within the tree’s STZ and it is recommended the pipeline be installed by hand excavation under the direction of the site arborist to ensure roots of 25mm or greater diameter are retained and protected (tunneled under).
- The proposed driveway and garage will impact on 28.95% and 30.16% the identified TPZs of tree numbers 1 and 2 - while this is a high level of encroachment if the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised. Notwithstanding this, it is considered long term retention tree number 2 may be problematic (it is noted this tree has a short ULE).
- Tree number 5 is within the footprint of works (garage) and will require removal (or transplanting) as part of the works.

Specific driveway construction recommendations

1. All driveway construction works are to be undertaken under the supervision of the appointed project arborist
2. Install 100mm depth woodchip mulch to soft landscape areas of the TPZ outside the footprint of the approved driveway alignment. Ground protection is to be provided within a 2 metre radius of the driveway alignment in association with tree protection fencing;
3. Install formwork for the driveway in accordance with the approved driveway plan;
4. Removal of organic material (grasses, mulched areas, twigs, fallen leaves, etc.) is to be undertaken using hand tools (e.g. rakes). No compaction of driveway footprint is permitted.
5. Install a shallow bed of sand in driveway footprint area using the existing road surface for access – sand to be installed using wheelbarrows or similar, not machinery and levelled using hand tools;

6. Concrete to be delivered to the formed area of driveway using the existing road surface;
7. Formwork to be removed following concrete cure;
8. Remove ground protection and add 50mm depth of compost to areas of ground protection mulch.

5. TREE PROTECTION MEASURES

The following generic tree protection measures are recommended to assist in minimising potential impacts to trees proposed for retention.

A. Measures to be implemented prior to the commencement of any works on the site.

1. Tree to be retained are to be clearly identified by signage as protected trees.
2. The tree protection zones (TPZ) of trees to be retained are to be protected by fencing during the entire construction period except for specific areas directly required to achieve construction works.
3. The tree protection fence shall be constructed of galvanised pipe at 2.4 metre spacing and connected by securely attached chain mesh fencing to a minimum height of 1.8 metres and shall be installed prior to work commencing.
4. The tree protection fencing shall be installed as closely as possible to the alignment of the identified TPZ and shall be approved and certified by the site arborist prior to commencement of any construction or demolition works on the site.

B. Measures to be implemented and maintained during the life of construction works on the site.

5. Any excavation within the identified TPZ of trees to be retained shall be carried out by hand to minimize disturbance to tree roots. Roots greater than 25mm are not to be damaged or severed without prior assessment by an arborist to determine likely level of impact and the restorative actions required to minimise the impacts of root damage.
6. Tree roots between 10mm and 25mm diameter, severed during excavation, shall be cut cleanly by hand by an experienced Arborist/Horticulturist with a minimum qualification of the Horticulture Certificate or Tree Surgery Certificate.
7. The following activities/actions are prohibited from the tree protection zones:
 - Soil cut or fill including excavation and trenching
 - Soil cultivation, disturbance or compaction
 - Stockpiling storage or mixing of materials
 - The parking, storing, washing and repairing of tools, equipment and machinery
 - The disposal of liquids and refueling
 - The disposal of building materials
 - The sitting of offices or sheds
 - Any action leading to the impact on tree health or structure
8. Canopy pruning of trees identified for protection which is necessary to accommodate approved building works shall be undertaken in accordance with *Australian Standard 4373-2007 'Pruning of Amenity Trees'*.

6. CONCLUSION

Five semi mature to mature trees have been assessed for this report. The trees assessed for this report are located on the nature strip frontage and in the front garden area of the site.

The trees comprise remnant canopy trees (tree numbers 1, 2 and 3) and exotoc species (tree 4) and a Cycad (tree 5). The trees were mostly of good health at the time of inspection and did not exhibit evidence of significant pest or disease.

However, tree number 2 is of declining health and vigour and has a short useful life expectancy (ULE). Tree number 4 (Jacaranda) is exempt from protection under Northern Beaches tree management controls.

The potential impacts can be summarised as follows:

- The proposed works will impact on 13.81% the identified TPZ of tree number 3 – this is a low to moderate level of impact and within an acceptable threshold for the tree. However, it is noted the actual impacts will be greater than the calculated encroachment due to the restriction to root growth due to the road which will have resulted in greater root growth in other areas including the area potentially impacted. In addition, the driveway crossing is within the tree's SRZ and some excavation will be required to achieve an acceptable gradient from the existing road level. However, if the remainder of the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised. The proposed stormwater pipeline, if installed using traditional trenching methods, could impact a further 3.53% of the tree's identified TPZ located between the pipeline and the existing masonry retaining wall along the existing driveway – it is recommended the pipeline be installed by hand excavation under the direction of the site arborist to ensure roots of 30mm or greater diameter are retained and protected (tunneled under).
- The proposed stormwater pipeline will impact on 16.59% the identified TPZ of tree number 4 – while this is a moderate level of impact the pipeline is within the tree's STZ and it is recommended the pipeline be installed by hand excavation under the direction of the site arborist to ensure roots of 25mm or greater diameter are retained and protected (tunneled under).
- The proposed driveway and garage will impact on 28.95% and 30.16% the identified TPZs of tree numbers 1 and 2 - while this is a high level of encroachment if the driveway and can be installed on a shallow bed of sand on top of existing grade (no excavation or compaction) then the impacts can be minimised. Notwithstanding this, it is considered long term retention tree number 2 may be problematic (it is noted this tree has a short ULE).
- Tree number 5 is within the footprint of works (garage) and will require removal (or transplanting) as part of the works.

Generic tree protection measures are identified in section 5 of this report. The following specific recommendations are made in respect of the proposed driveway construction.

Specific driveway construction recommendations

1. All driveway construction works are to be undertaken under the supervision of the appointed project arborist
2. Install 100mm depth woodchip mulch to soft landscape areas of the TPZ outside the footprint of the approved driveway alignment. Ground protection is to be provided within a 2 metre radius of the driveway alignment in association with tree protection fencing;
3. Install formwork for the driveway in accordance with the approved driveway plan;
4. Removal of organic material (grasses, mulched areas, twigs, fallen leaves, etc.) is to be undertaken using hand tools (e.g. rakes). No compaction of driveway footprint is permitted.
5. Install a shallow bed of sand in driveway footprint area using the existing road surface for access – sand to be installed using wheelbarrows or similar, not machinery and levelled using hand tools;
6. Concrete to be delivered to the formed area of driveway using the existing road surface;
7. Formwork to be removed following concrete cure;
8. Remove ground protection and add 50mm depth of compost to areas of ground protection mulch.



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Director
Landscape Matrix Pty Ltd
12th August 2019

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APPENDIX A



Photograph 1: Tree # 2 - Illustrating the dieback.



Photograph 2: Tree # 5 - Illustrating Longicorn Beetle larvae activity.



Photograph 3: Illustrating the general location of the proposed driveway.



Photograph 4: Tree # 3 – Illustrating existing conditions in the area of the proposed driveway.



Photograph 5: Tree # 3 – Illustrating low levels of dieback in outer canopy areas.



Photograph 6: Tree # 3 – Illustrating the level drop into the site in TPZ/SRZ of the tree.



Photograph 7: Tree # 3 – Illustrating minor cracking in 2 lower leaders on west side.



Photograph 8: Tree # 3 – Illustrating a closer view of the minor cracking in lower leaders on west side

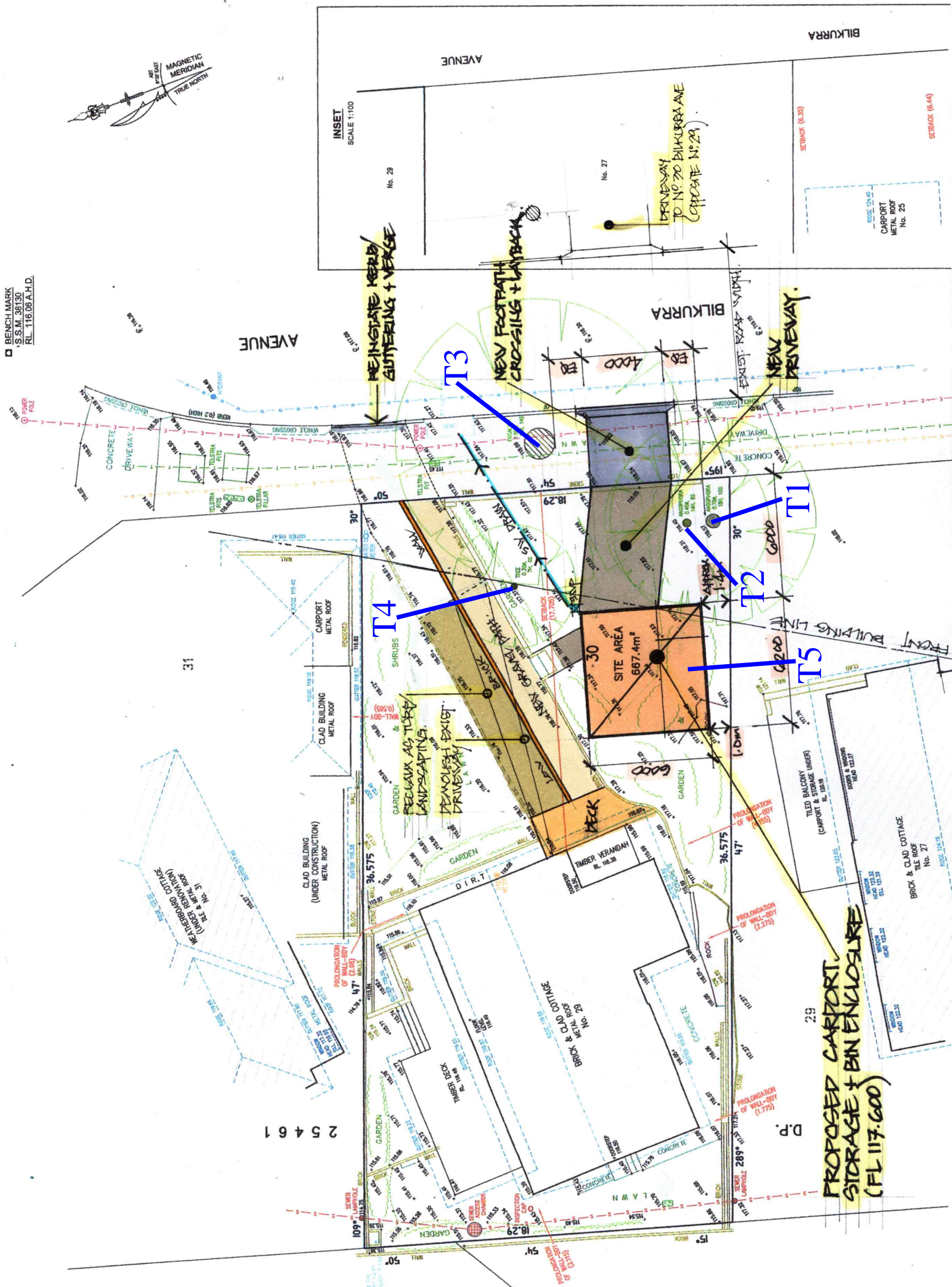
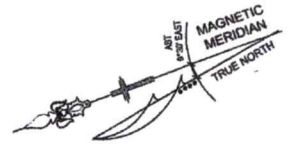
APPENDIX B - TREE DATA SUMMARY - 29 BILKURRA AVENUE BILGOLA PLATEAU

Tree No.	Genus, Species (Common Name)	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
1	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	18	14	520	520	620	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	Mid to upper branches pruned for OH wires on east	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	High landscape significance	1	The tree displays fair branch attachment with codominant leaders from 3.5 metres with some evidence of poor attachment at the junction - not considered at risk of failure in the short term. At the time of inspection the tree exhibited low levels of internal dieback typical for age and species.
2	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	8	7	290	290	340	Fair foliage condition	Semi Mature	Single trunk	Upright trunk	Majority of canopy to the north	No evidence of significant past pruning	Appears stable	Fair branch attachment	Moderate health	Fair vigour	10 to 15%	Longicorn Beetle larvae activity	3 Short (5 to 15 years)	Moderate landscape significance	3	The tree's past canopy development has been suppressed. Longicorn Beetle larvae activity. At the time of inspection the tree was of moderate health and fair vigour and exhibited moderate to high levels of dieback - short ULE.
3	<i>Angophora costata</i> (Smooth Barked Apple, Sydney Red Gum)	20	15 x 17	Up to 570 (1050 x 1520 above the root flare)	1285	1285	Good foliage condition	Mature	Multi trunked	Slight trunk lean to the NW	Majority of canopy to the NW	Lower limbs pruned in past to 3 metres, lower branches pruned through centre for OH wires	Appears stable	Fair branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	High landscape significance	1	Recent NBN works in TPZ and SRZ. Evidence of recent minor wounding (mechanical injury) to tissue on lower leader. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure in the short term. Minor cracking in 2 lower leaders on west side - possibly torsional stress cracks under wind loading - monitoring recommended.
4	<i>Jacaranda mimosifolia</i> (Jacaranda)	5	6	260	260	320	Fair foliage condition	Mature	Single trunk	Slight trunk lean to the NW	Majority of canopy to the NW	Lower limbs pruned in past to 3 metres	Appears stable	Sound branch attachment	Good health	Fair vigour	10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback. Exempt species.
5	<i>Macrozamia spp.</i> Possibly <i>Macrozamia communis</i> (Cycad possibly Burrawang)	2.5	3	ca 400	N/A	N/A	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	N/A	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Low landscape significance	3	

ca = approximate diameter at breast height (DBH) estimated from nearest property boundary or fence where trees were located on adjoining properties

* Retention Values: 1 - High (Priority for retention); 2 - Moderate (Consider for retention); 3 - Low or short ULE (Not warranting specific design consideration) and 4 - Remove (very short ULE, structurally unsound, weed species etc.)

BENCH MARK
S.S.M. 38130
R.L. 116.06 A.H.D.



INSET
SCALE 1:100

REINSTATE KERB/
GUTTERING + VERGE

NEW FOOTPATH
CROSSING + LAYBACK

DRIVEWAY
TO NO. 20 BILKURRA AVE
(CROSSING NO. 29)

NEW
DRIVEWAY

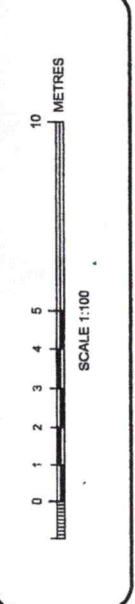
PROPOSED CARPORT
STORAGE + BIN ENCLOSURE
(FL 117.600)

PROJECT: NEW CARPORT + STORAGE
25 BILKURRA AVE BILGOLA PLATEAU
CLIENT: JOANNE & GREG NICOL
SCHEME: 2 DATE: JULY 2019
SCALE: 1:200
DRAWING NO: 7001
DRAWING NO: 01

GWN DRAFTING ARCHITECTURAL DRAFTSMAN
GREG NICOL

CLIENT	Mr G. & Mrs J. NICOL
PROPERTY	No. 29 BILKURRA AVENUE, BILGOLA PLATEAU
DATUM	A.H.D.
SURVEYED	S.P.
SCALE	1:100 @ A1
DATE	17/10/2018
DRAWN	S.C.
DWG No.	20845
SHEET No.	1 of 1
REV No.	00

PLAN SHOWING BOUNDARIES, RELATIVE HEIGHTS &
PHYSICAL FEATURES OVER LOT 30 IN D.P. 25461
KNOWN AS NO. 29 BILKURRA AVENUE, BILGOLA PLATEAU.
L.G.A.: NORTHERN BEACHES



LEGEND

0/HEAD ELECTRIC LINES	—
BOARDS SEWER	—
PLASTER	—
WATER LINES	—
0/45 LAKE	—
0/45 GUTTER	—
0/45 WINDOW	—
0/45 GATE	—
0/45 TREE	—
0/45 GARDEN	—
0/45 DRIVEWAY	—
0/45 ROAD	—
0/45 GUTTER	—
0/45 GATE	—
0/45 WINDOW	—
0/45 GATE	—

- NOTES:
- 1) CAUTION: SHOULD ANY DEVELOPMENT OR CONSTRUCTION BE PLANNED ON OR NEAR THE BOUNDARIES, THE BOUNDARIES SHOULD BE CLEARLY MARKED ON SITE.
 - 2) AREA AND DIMENSIONS HAVE BEEN SURVEYED FROM PLANS MADE AVAILABLE AT LAND REGISTRY SERVICES.
 - 3) ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM G.P.S. (SMARTNET).
 - 4) TREE SPREADS ARE DIAGRAMMATIC ONLY AND ARE NOT SYMMETRICAL.
 - 5) UNDERGROUND (NON VISIBLE) SERVICE LINES HAVE BEEN SHOWN FROM "DIAL BEFORE YOU DIG" SERVICE AUTHORITY RECORDS & ARE DIAGRAMMATIC ONLY IN REGARD TO THEIR POSITION & WIDTH UNLESS STATED OTHERWISE.
 - 6) SPOT LEVELS ARE ACCURATE.
 - 7) BEARINGS SHOWN ARE ON MAGNETIC MERIDIAN.

INVESTIGATION OF THE SERVICES YOU DIG UNDERGROUND SERVICES HAS BEEN MADE. DETECTION OF UNDERGROUND SERVICES IS NOT AN INTEGRAL PART OF THIS SURVEY. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON NEAR THE SITE. DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.

CARELESS DIGGING CAN:

- CAUSE BATHS OF SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC
- CAUSE BATHS OF SERIOUS DAMAGE TO UNDERGROUND COMMUNICATIONS
- LEAD TO PERSONAL PROSECUTION AND DAMAGE CLAIMS
- CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESSES
- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED

MINIMISE YOUR RISK AND DIAL BEFORE YOU DIG
TEL 1100



Bee & Lethbridge
Quality Surveying & Development Solutions

Bee & Lethbridge Pty Ltd
Suite 2, 14 Starkey Street,
PO Box 330, Forestville, NSW 2087
Phone: 9451 6757 Fax: 9475 3535
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