

**ARBORICULTURAL IMPACT ASSESSMENT - DEVELOPMENT OF
NEW PRIMARY SCHOOL GOOGONG NSW - 2021.**

1. INTRODUCTION.

This ARBORICULTURAL IMPACT ASSESSMENT accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD-10326042).

The development is for a new primary school located on land bound by Gorman Drive, Aprasia Avenue, Wilkins Way and McPhail Way in Googong.

This report addresses the relevant Secretary's Environmental Assessment Requirements (SEARs), namely:

- *Point 3 – Trees and Landscaping.*
 - *Provide;*
 - *Where street trees are affected by the proposed development, an arboricultural impact assessment prepared by a Level 5 (Australian Qualifications Framework) Arborist, which details the number, location and condition of trees to be removed and retained, includes detailed justification for each tree to be removed.*

2. THE PROPOSAL

The proposed development is for construction and operation of a new primary school in Googong that will accommodate up to 700 students.

The proposed development is a Core 35 school and includes:

- A collection of 1-2 storey buildings containing 30 home base units, 3 special education learning units, canteen, hall, library and administrative facilities.
- On-site carpark with 60 spaces and on-street kiss-and-ride facilities.
- Outdoor sports court and play area.
- Integrated landscaping, fencing and signage.

3. SCOPE AND PURPOSE.

Mr Paul Todhunter Project Manager with Hansen Yuncken Pty Ltd has commissioned this report – he can be contacted on 02 9770 7600. The site was formally inspected on Saturday 24 April 2021.

The report is designed to provide;

- accurate identification of tree vegetation,
- tree condition, including any hazards present
- evaluation of the trees relative to their contribution to the environment, amenity and any other identified values
- evaluation of potential development impacts
- recommendations for management of the issues identified.

Wade Ryan Contracting – ABN 31 159 453 891

Interpretation of impacts and recommendations are based on the author's interpretation of *Australian Standard 4970-2009 Protection of trees on development sites*.

The following documents/ plan were provided to aid in the impact assessment.

Planning Secretary's Environmental Assessment Requirements – New Primary School at Aprasia Avenue Googong (Lot 3 DP 1179941). SSD-10326042 dated 20 November 2020.

Detail Survey Lot 3 DP 1179941 Locality – Googong LGA - QPRC. Job No 20011 Drawing Reference 20011_001. Original Issue 30/4/2020. (Amendments B dated 05/05/2021). Steger & Associates Kambah ACT.

Overall Site Plan – New Primary School in Googong – Gorman Drive. Pedavoli Architects (GOOG – SK – CDR_001 Rev B dated 30 March 2021.)

Option 3 – Road Widening along Wilkins Way. New Primary School in Googong – Gorman Drive Googong – Pedavoli Architects (SK01.07 Rev 6 06/09/2021)

SSD Concept Design Review – Swept Path Assessment – 1566 Googong Public School. Drawing number AG07. 6/05/2021. Ason Group Sydney.

Gorman Drive Pedestrian Crossing Concept Plan. Asongroup (Project 1566 – Googong Public School. AD01 31/08/2021).

[Diagram one](#) provides the location of the site.

[Diagram two](#) provides trees identified as potentially impacted- and reported in Table 1.

[Table one](#) provides a list, details and recommendations on the trees identified.

General [evaluation criteria](#) is contained at the conclusion of the report.

4. Site Description.

The site is located at Aprasia Avenue, Googong, and is formally described as Lot 3 DP1179941 (refer to Figure 1). The site is irregular in shape and has an area of 28,118.39 m².

The site is located within the Queanbeyan-Palerang Regional Council local government area approximately 10 km south of the Queanbeyan Central Business District.

The site is bordered by Aprasia Avenue to the north, Gorman Drive to the southwest, Wilkins way to the east/southeast and McPhail way to the west.

Googong North Village Centre, which contains a child care centre, supermarket, cafes and take-away food outlets, is located approximately 100 m west of the site across McPhail Way. The site is otherwise surrounded by low density residential development.

Googong is a recently developed town, with the planning beginning in the early 2000's and the first residents taking up residence in 2014.

Local Council (Queanbeyan-Palerang Regional Council) have established new street trees on all four streets joining the development site described as approximately 2 to 5 years of age. There are a total of 67 young street trees that border the proposed development as follows.

- a. Gorman Drive - 12 *Platanus x acerifolia* (Plane Trees)

- b. Wilkins Way – 25 *Eucalyptus cinerea* (Argyle Apple)
- c. Aprasia Avenue – 10 *Quercus palustris* (Pin Oak).
- d. McPhail Way – 6 *Eucalyptus species* (unidentified species).
- e. Gorman Drive – Traffic Island – 14 *Eucalyptus polyanthemos* (Red Box)

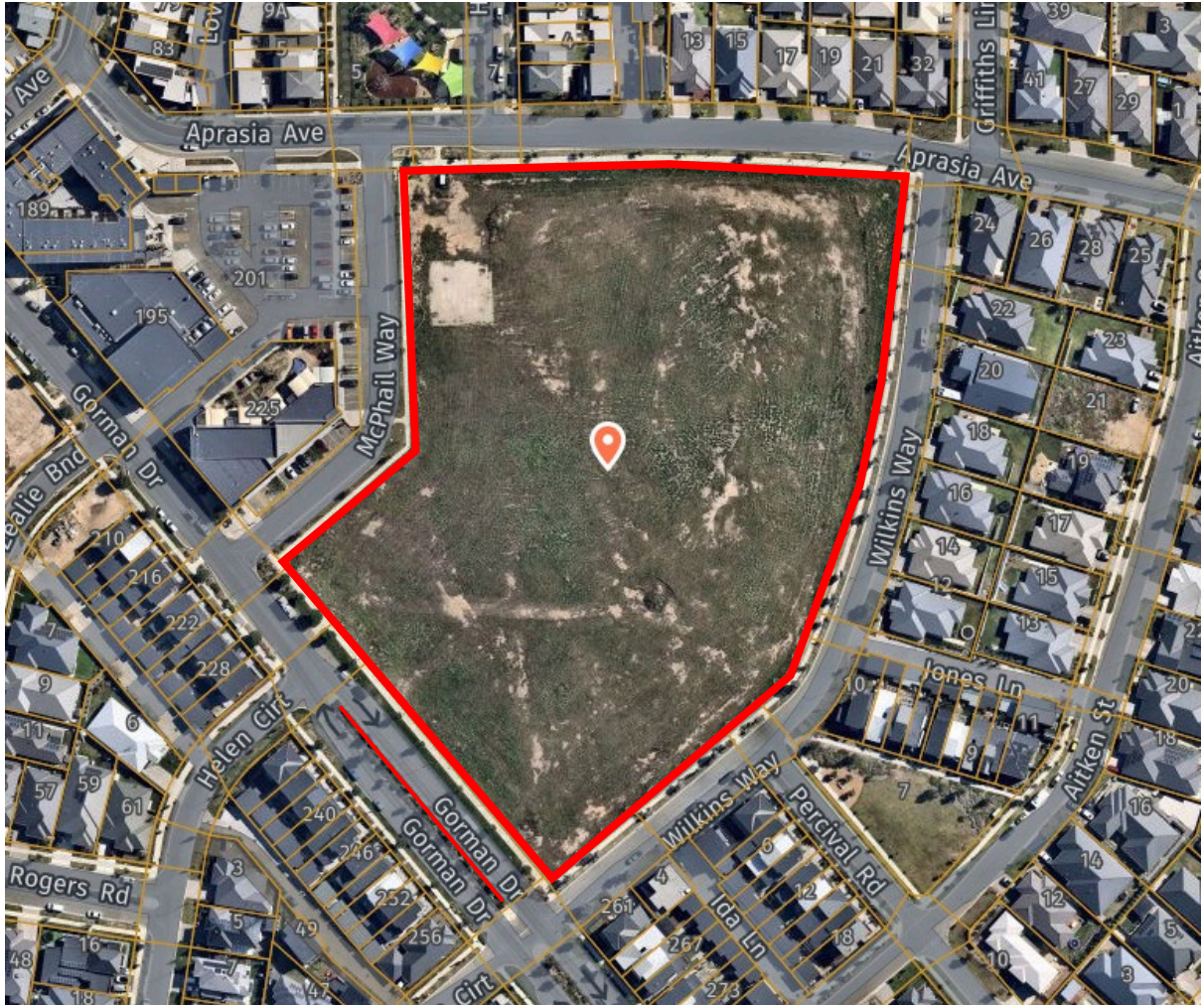


Diagram 1: Site aerial photograph - Source: Nearmap

Location of site with approximate boundary indicated by red lines. There is a total of 67 young trees established by local council immediately outside the development area along the red lines. Source – Google Maps 2021.

The Detailed Survey plan (as referenced above) contains a Tree Table with some 149 Trees plotted around the development site and roads and streets in the vicinity. Many of these trees present as not impacted by the development.

Tree numbers were allocated within the Detailed Survey Plan have been maintained in this report for consistency. The detail in the Detailed Survey Plan Tree Table is for practicable purposes correct. NOTE that the tree numbers are not sequential in many instances. This report address only the trees that are likely to be impacted by the development – Table 1 below.



Photo 1 – Street verge of Gorman Drive – South boundary of development.
Young Platanus x acerifolia (Plane Trees) have been established by the local council. The Development site is delineated by the temporary fencing to the left of shot. Part of a line of 12 trees identified as impacted by development.



Photo 2 – Street verge of Wilkins Way – East boundary of development.

Young Eucalyptus cinerea (Argyle Apple) have been established by the local council. The Development site is delineated by the temporary fencing to the right of shot. Part of a line of 25 trees identified as impacted by development. 20 of these trees are directly impacted.



Photo – Street verge of Aprasia Avenue – north boundary of development.
Young Quercus palustris (Pin Oak) have been established by the local council. The Development site is delineated by the temporary fencing to the left of shot. Part of a line of 10 trees identified as potentially impacted by development.



Photo 4 – Street verge of McPhail Way – west boundary of development.

Young Eucalyptus species (not identified to species) have been established by the local council. The Development site is delineated by the temporary fencing to the left of shot. Part of a line of 6 trees identified as potentially impacted by development.



Photo 5 – Traffic Island in Gorman Drive - view from intersection of Wilkins Way with development site in background – fenced area.

Tree 108 circled – Eucalyptus polyanthemos (Red Box) first tree in line of 14 trees in Traffic Island that extends to the intersection of Helen Circuit. Source – Google Street View 2021.



Diagram 2 – Development site bounded by local council street trees, and Trees 108 – 121 in traffic island in Gorman Drive.
Tree numbers have been duplicated from the detailed survey plan. Note tree number are not sequential on site.
Trees identified as requiring removal to accommodate the development in Gorman Drive, Aprasia Avenue and Wilkins Way are indicated.
All trees have an effective Tree Protection Zone of 2 m radially from stems.
Adapted from Google Earth 2021.

5. Tree Inspection, Impacts and Recommendations.

I can confirm that the development site itself contains no vegetation that qualifies as a tree; QPRC (2021a) and QPRC (2021b). There is no existing canopy coverage.

The Overall Site Plan identifies 150 trees young trees bordering on and in the vicinity of the development. Tree Table within the Overall Site Plan applies.

There are 67 of the 150 young trees on QPRC controlled land that may or will be impacted by the proposed development. There are no significant trees. The following potential impacts are identified.

1. Access and egress to the development site for plant, machinery and materials – physical or direct impact to a tree.
 - a. It was noted that there is one current driveway located off Gorman Drive.
 - b. The development site is currently delineated by a temporary fence around the whole perimeter – it is assumed that pedestrian traffic will to some degree maintain use of the footpaths and that there will need to be controlled access and egress from the within the site and the current perimeter fence will be located in a similar location.
2. As per the Overall Site Plan, the development plans to develop a ‘Kiss and drop’ area on Wilkins Way which will require the movement of the current kerb location to the west – directly impacting 20 of the newly planted council trees – tree will require removal to accommodate development.
3. A new pedestrian crossing is proposed for Gorman Drive through the existing traffic island that contains 14 young trees and ground cover vegetation. These 14 trees require removal to allow line of sight for the pedestrian crossing.
4. The kerb alignment on Gorman Drive will be moved north – and direct impacts exist to these Council Trees on the north verge.
5. A driveway is to be established on Aprasia Avenue that directly impacts two trees.

Table 1 – Trees Identified with potential or definitive Impacts – Details and Impacts.	
Tree Details	Evaluation Potential Impacts & Recommendations.
<p><u>Council Trees in Gorman Drive – North Verge.</u></p> <p>Tree numbers 91, 92, 93, 94, 95, 96, 97, 98, 99, 143 In Sequence from McPhail Way to Wilkins Way</p> <p><u>10 Small <i>Platanus acerifolia</i> (London Plane).</u></p> <p>Species Exotic. Stems 70 to 100 mm diameter. Height 6-8 meters. Canopy spread 2-3 meters. Condition and vigour Good to Excellent. Environmental Rating – Very Low. Expected useful life 40 years +.</p> <p><i>Tree Protection Zone (TPZ) 2 m radially</i> based on minimum area for a tree.</p>	<p>Trees present as sound young trees with long life expectancy. Council has invested time and resources to establish these trees to this point and would likely be keen to retain them. <u>Tree Evaluation - Retain and protect if possible.</u></p> <p><u>Identified Impacts.</u></p> <ul style="list-style-type: none"> General impacts to the canopy or stem from development – site access - movement/storage of plant and materials. As per supplied drawings the kerb realignment in Gorman Drive will directly impact trees numbered 91, 92, 93, 94, 95, 96, 97, 98, 99 and 143. <p><u>Recommendations.</u></p> <ol style="list-style-type: none"> Trees 91 to 99 inclusive and 143 will require removal to accommodate the development. Total Removals in Gorman Drive – North Verge – 10.
<p><u>Council Trees in Wilkins Way - West Verge</u></p> <p>Tree numbers 34, 35, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 55, 57, 70, 79, 25, 29, 33, 40, 54, 64, 62, 24. In sequence from Gorman Drive to Aprasia Avenue.</p> <p><u>25 Small <i>Eucalyptus cinerea</i> (Argyle Apple)</u></p> <p>Species endemic to immediate area. Stem diameters 70 mm to 100 mm. Heights 3-7 meters, canopy spread 2-3 meters.</p>	<p>Trees present as sound young trees with long life expectancy. Council has invested time and resources to establish these trees to this point and would likely be keen to retain them. <u>Tree Evaluation - Retain and protect if possible.</u></p> <p><u>Identified Impacts.</u></p> <ul style="list-style-type: none"> General impacts to the canopy or stem from development – site access movement/storage of plant and materials. Proposed construction of Kiss and Drop Zone on the east verge of Wilkins Way will directly impact trees 44,45,46,47,48,49,50,51,52,55,57,70,79,25,29,33,40,54,62 and 63. <p><u>Recommendations.</u></p> <ol style="list-style-type: none"> Trees 44,45,46,47,48,49,50,51,52,55,57,70,79,25,29,33,40,54,62 and 63 will require removal to accommodate development.

Table 1 – Trees Identified with potential or definitive Impacts – Details and Impacts.	
Tree Details	Evaluation Potential Impacts & Recommendations.
<p>Trees described as in good to excellent condition and vigour. Environmental Rating – Low. Expected useful life 40 years +. Tree Protection Zone (TPZ) 2 m radially based on minimum area for a tree.</p>	<p>a. Total of 20 trees to be removed in Wilkins Way. 4. Remaining individual trees are not outside the development fencing then erect fences around each tree so that at least 2 m radially is provided for each tree.</p>
<p>Council Trees in Aprasia Avenue – South Verge</p> <p>Tree numbers 12, 8, 5, 4, 3, 19, 18, 17, 11, and 9. In sequence from Wilkins Way to McPhail Way.</p> <p>10 small <i>Quercus palustris</i> (Pin Oak). Exotic Species. Stem diameters 50 to 100 mm. Heights 4 to 6 m canopy spread 2-3 meters. Condition and vigour good to excellent. Environmental Rating – Very Low. Expected Remaining useful life 40 years +. Tree Protection Zone (TPZ) 2 m radially based on minimum area for a tree.</p>	<p>Trees present as sound young trees with long life expectancy. Council has invested time and resources to establish these trees to this point and would likely be keen to retain them. <u>Tree Evaluation - Retain and protect if possible.</u></p> <p><u>Identified Impacts.</u></p> <ul style="list-style-type: none"> General impacts to the canopy or stem from development – site access movement/storage of plant and materials. Supplied Drawing indicate driveway to be developed in Aprasia Avenue – this directly impacts trees 17 and 18. <p><u>Recommendations.</u></p> <p>5. Trees 17 and 18 will require removal. Total of 2 trees to be removed from Aprasia Avenue. 6. Remaining individual trees are not outside the development fencing then erect fences around each tree so that at least 2 m radially is provided for each tree.</p>
<p>Council Trees in McPhail Way – East Verge</p> <p>Tree numbers 140, 141, 142, 132, 131, and 128. In sequence from Aprasia Way to Gorman Drive.</p> <p>6 <i>Eucalyptus species</i> (unidentified species)</p> <p>Species may be endemic to immediate area or as a minimum Australian Native. Stem diameters 70 mm to 100 mm. Heights 3-7 meters, canopy spread 2-3 meters. Trees described as in good to excellent condition and vigour. Environmental Rating – Low. Expected useful life 40 years +. Tree Protection Zone (TPZ) 2 m radially based on minimum area for a tree.</p>	<p>Trees present as sound young trees with long life expectancy. Council has invested time and resources to establish these trees to this point and would likely be keen to retain them. <u>Tree Evaluation - Retain and protect if possible.</u></p> <p><u>Identified Impacts.</u></p> <ul style="list-style-type: none"> General impacts to the canopy or stem from development – site access movement/storage of plant and materials. <p><u>Recommendations.</u></p> <p>7. If these trees are not outside the development fencing then erect fences around each tree so that at least 2 m radially is provided for each tree. a. <u>NO trees</u> identified for removal in McPhail Way.</p>
<p>Council Trees in Gorman Drive Traffic Island.</p> <p>Tree numbers 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120 & 121 in sequence from intersection of Wilkins Way to intersection of Helen Cct.</p>	<p>Trees present as sound young trees with long life expectancy. Council has invested time and resources to establish these trees to this point and would likely be keen to retain them. <u>Tree Evaluation - Retain and protect if possible.</u></p> <p><u>Identified Impacts.</u></p> <ul style="list-style-type: none"> Construction of pedestrian crossing in the mid-point of the island will require removal of the 14 trees for line of sight for oncoming traffic.

Table 1 – Trees Identified with potential or definitive Impacts – Details and Impacts.	
Tree Details	Evaluation Potential Impacts & Recommendations.
<p>14 <i>Eucalyptus polyanthemos</i> (Red Box) Likely endemic to area. Stem diameters about 100 mm and heights around 4 m.</p> <p>Trees described as in good to excellent condition and vigour.</p> <p>Environmental Rating – Low. Expected useful life 40 years +.</p> <p>Tree Protection Zone (TPZ) 2 m radially based on minimum area for a tree.</p>	<p><u>Recommendations.</u></p> <p>8. If the pedestrian crossing proceeds as planned then all 14 trees will require removal to accommodate the development.</p>

6. General Recommendations.

- A. There are a minimum of 46 young trees in good condition that will be required to be removed to accommodate this development – [as per Diagram 2.](#) The development site has significant opportunity and space to establish a much larger number of trees that should not only offset the loss of the 46 trees but significantly enhance the urban forest in this area. The Landscape plan for the project should reflect this opportunity.
- B. If any of the Council Trees are inside the development perimeter fencing then Erection of TPZ fencing should occur as part of the site set up and prior to any demolition works or bulk earth works.
 - a. Appropriate signs need to be erected on the TPZ fencing indicating that the trees are protected and no go zones.
- C. There should be no parking of vehicles, or plant or storage of any materials within the TPZ of any Council trees to be retained.
- D. There should be no trenching or excavation works within the TPZ without prior consultation with Level 5 Arboricultural consultant to evaluate the impacts on the trees. This specifically includes, trenching for services, general earth works, including landscaping that disturbs the soil profile.
- E. A Tree Protection Plan should be developed for the project and form part of the Construction Plan. The Tree Protection Plan should include but not limited to;
 - a. Appointment of a Project Arborist.
 - b. Clear identification of trees that are to be removed and those to be protected.
 - c. Specific measures to protect each tree that is to be retained.
 - d. Clear process for when a Level 5 Arborist is required on site to review works within the TPZ that may have impact on the tree/s – Prior to works commencing.
 - e. Construction/Demolition hold points pending Arborist attending site and confirming site conditions or works within tree protection zones.
 - f. I would suggest it is in the interests of the construction organisation to have the trees inspected periodically and as a minimum at site establishment, demolition, mid construction and completion to verify the condition and integrity of the trees – particularly if a compliance certificate will be required at project completion. It is very difficult for an Arborist to certify project compliance relative to the tree population if they have not been on site during construction.

Terms, Conditions and Limitations that apply.

Obviously, visual tree assessment from the ground has some limitation as every single portion of the tree cannot be observed or inspected. Most or the large majority of defects and tree issues can be observed from the ground. Where aerial inspection or other investigative means should be considered the report or email will recommend or provide those as an additional considerations. The integrity of the root zone of trees can often be difficult to determine from visual inspection – particularly on steep slopes and on shallow soil profiles. Unless there are indicators of some instability then most trees are effectively assessed as stable as part of Visual Tree Assessment.

Trees are a valuable asset and necessary part of both the urban and natural environment. They are the cornerstone of our environment and provide numerous benefits to our social wellbeing, biodiversity and ecology of any area. They provide water balance stability, salinity and erosion control, amenity, cultural, public health and aesthetic benefits; efforts should be made to preserve and plant new trees where possible. As an asset they require appropriate management and resource inputs.

It should be noted that trees cannot be guaranteed 'risk free'. All trees represent some degree of risk. Arboriculture is not an exacting science; rather it is an educated interpretation of the interaction of biotic and environmental circumstances, which change over time. It is not possible to determine or predict all limb or tree failures. This report is such an interpretation at the time of inspection.

Unless Quantified Tree Risk Assessment (QTRA) has been specifically applied and reported, then this report does not constitute a risk assessment. The Author does not seek to determine what level of risk any individual or organisation is prepared to accept but serves to provide tree managers with tree condition, hazards and other salient issues associated with the tree or trees; and provide or recommend management options.



16 September 2021

Wade Ryan Contracting – Independent Arboriculture Consultant AQF Level 5/8.

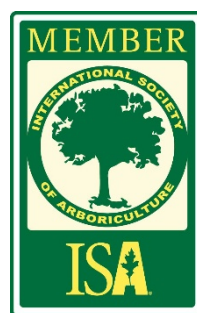
BAppSc(EnvHort) – AdvDip OH&S

Institute of Australian Consulting Arboriculturists (IACA) Associate Member ASM0622018

QTRA – Registered Advanced User (4519).

Member - International Society of Arboriculture

Associate Member – The Arboriculture Association (UK)



™ ISA Member : 257486



AS8205.

References.

QPRC (2021a). *Queanbeyan-Palerang Regional Council. Trees on private land.* Accessed online 3/05/2021 at;
<https://www.qprc.nsw.gov.au/Waste-Environment/Environment/Tree-Management/Trees-on-Private-Land#section-2>

QPRC (2021b). *Queanbeyan-Palerang Regional Council - Development Control Plan – section 2.12.* Accessed online 3/05/2021 at;
<file:///D:/Downloads/Part-2-All-Zones-Queanbeyan-Development-Control-Plan-2012.pdf>

Tree Evaluation Criteria.

Environmental Rating	Environmental Evaluation Considerations/criteria
1 -Very High	Normally Old growth Remnant Tree, multiple hollows important to endangered fauna, replacement would be well in excess of 150 years
2 - High	Mature or semi mature Endemic Tree with or without hollows, plays an important part in local ecology, or Australian Native that has high substitute values as endemic tree replacement would take 50-100 years
3 - Medium	Young or semi mature Endemic tree or Australian native species that has some positive values for local fauna/ecosystems - replacement would take 20 or more years. Large Exotic tree with elevated general values.
4 - Low	Normally exotic species, or small, young endemic or native that could be replaced in the short term 5-10 years
5 - Very Low	Listed Weed or nuisance species; or very small value or insignificant to local ecology - could be replaced within 5 years or readily replaced with species of greater value

Significant Tree value considerations/criteria	
Very Significant	Defined as Significant Tree by regulatory or other authority or Environmental rating 1 or Heritage Listed or Very High Cultural or heritage Values
Significant	Environmental rating 2 or Medium or large tree in good/excellent condition, suited to local environment or Imposing within the local landscape with long life expectancy and or Strong amenity values or some cultural or heritage links

Origin. **Endemic** - Species is native to this location. **Aus Native** - Species native to Australia but not this location. **Exotic Species** - introduced to Australia

Age Class. **New** - Recent Planting - last year or two. **Young** - Sapling, extended growth remaining. **Semi Mature** - Some remaining growth to reach maturity for the site and species. **Mature** - Considered mature size for site and species - typically no sign of decline. **Over Mature** - Tree has commenced to decline - obvious signs. **Senescent** - Extended signs of decline - recovery not expected. **Dead** - Little or no metabolic function remaining.

General Condition - Summation of all considerations. Includes Stem/Canopy Structure Defects, Form, Canopy Vigour, and Extent of any decay, Pest and Disease influences. 1 – Excellent. 2 – Good. 3 – Fair 4 – Poor 5 - Very Poor

Tree Height and canopy spread is estimated unless otherwise specified. Tree stem diameter is measured at approximately 1.4 m above - or at a point indicative of the tree dimension where abnormal growth occurs at 1.4 m above ground. Multi stemmed trees are calculated as per AS 4970

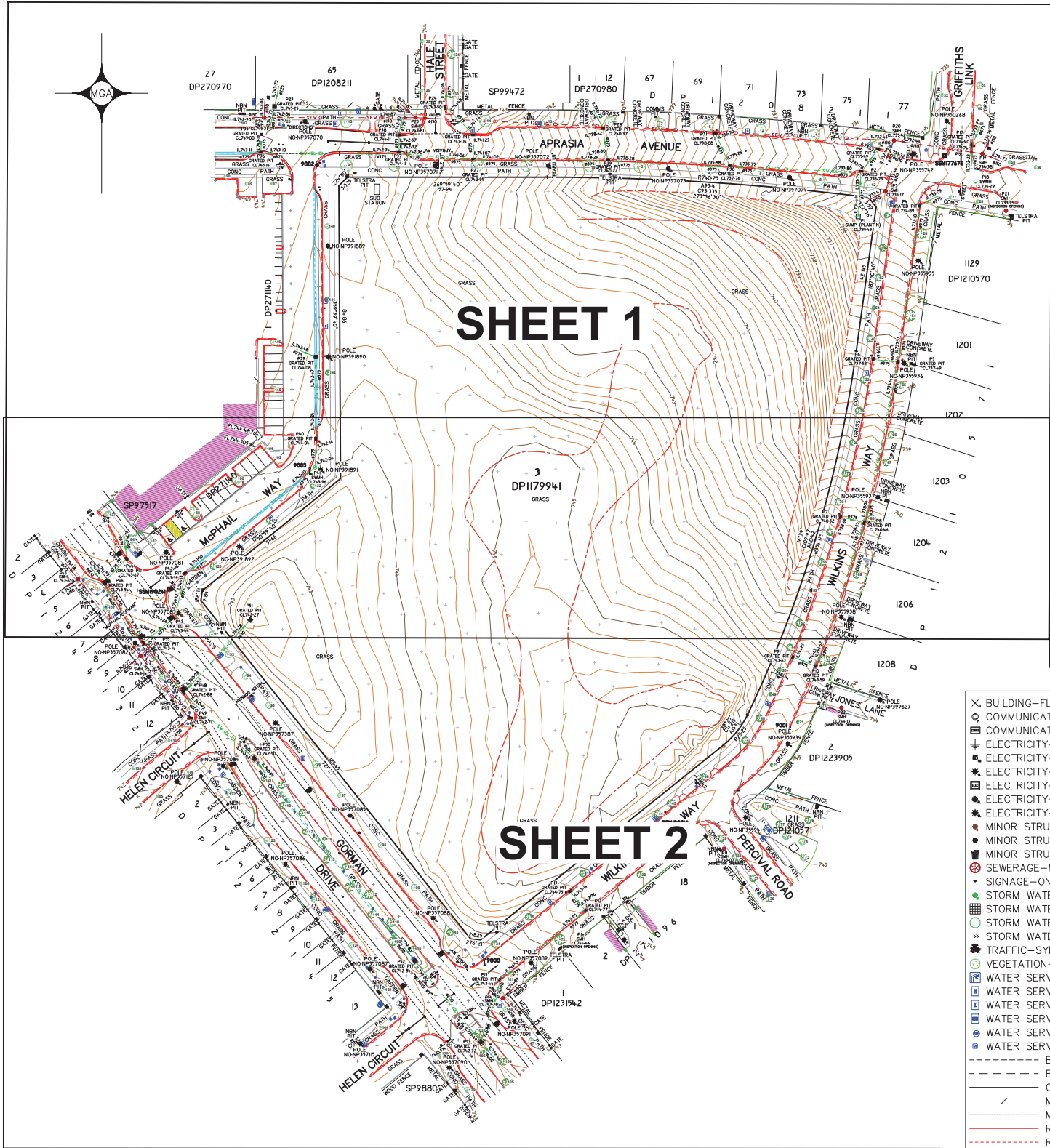
TPZ – Tree Protection Zone - specified area above and below ground and at a given distance from the trunk set aside for the protection of the tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.

SRZ - Structural Root Zone – the area around the base of a tree required for the tree's stability in the ground - calculated in meters radially from stem centre. (*From Australian Standard 4970-2009 Protection of Trees on development sites*) TPZ and SRZ are calculated from AS 4970

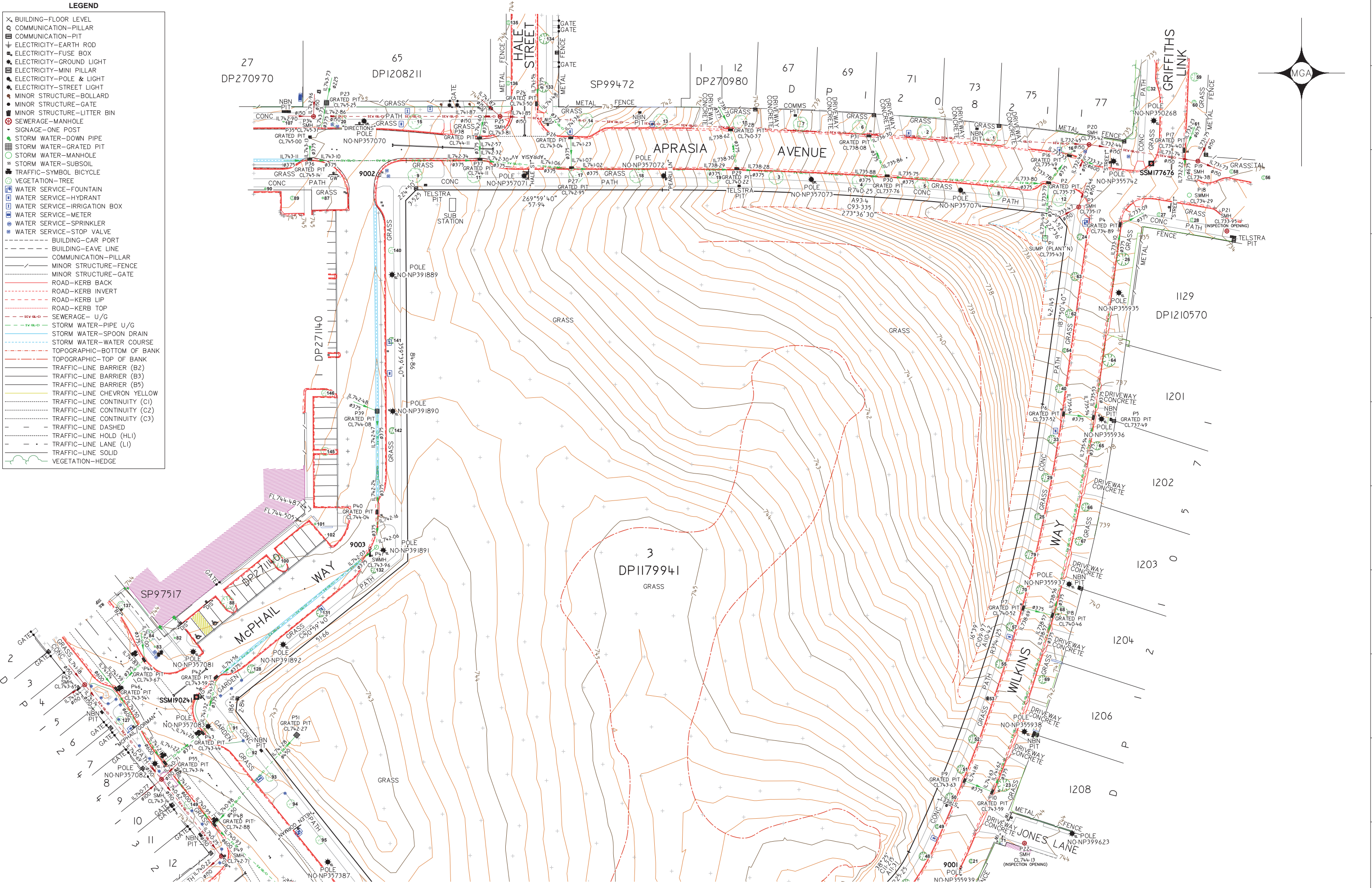
THE NEW PRIMARY SCHOOL IN GOOGONG DETAIL SURVEY

TREE TABLE

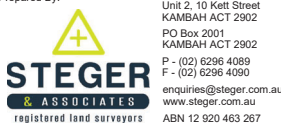
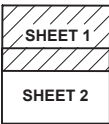
Tree No.	Easting	Northing	Trunk Dia.(m)	Canopy Dia.(m)	Type	Height.(M)	No.Trunks	Tree No.	Easting	Northing	Trunk Dia.(m)	Canopy Dia.(m)	Type	Height.(M)	No.Trunks
1	703279.24	6077854.35	0.08	3.5	DECIDUOUS	4.0	1	76	703277.61	6077655.77	0.10	2.0	EUCALYPT	3.0	1
2	703263.73	6077855.71	0.08	3.5	DECIDUOUS	4.0	1	77	703269.20	6077654.56	0.12	2.0	EUCALYPT	3.5	1
3	703228.73	6077845.14	0.08	3.5	DECIDUOUS	4.0	1	78	703265.22	6077659.78	0.12	2.0	EUCALYPT	3.5	1
4	703248.35	6077844.19	0.08	3.5	DECIDUOUS	4.0	1	79	703288.38	6077756.23	0.09	2.0	EUCALYPT	2.5	1
5	703263.07	6077843.00	0.08	3.5	DECIDUOUS	-	-	80	703317.10	6077848.33	0.05	1.0	ORNAMENTAL	2.0	1
6	703248.40	6077856.85	0.08	3.5	DECIDUOUS	4.0	1	81	703191.96	6077610.30	0.11	3.0	EUCALYPT	3.0	1
7	703234.49	6077857.58	0.08	3.5	DECIDUOUS	4.0	1	82	703087.16	6077736.67	0.03	0.4	ORNAMENTAL	2.0	1
8	703280.47	6077841.35	0.08	3.5	DECIDUOUS	-	-	83	703082.46	6077734.58	0.04	0.4	ORNAMENTAL	3.0	1
9	703143.75	6077845.49	0.09	3.5	DECIDUOUS	4.0	1	84	703080.69	6077737.15	0.10	3.0	ORNAMENTAL	5.0	1
10	703220.30	6077858.00	0.08	3.5	DECIDUOUS	-	-	85	703088.99	6077662.61	0.04	0.5	ORNAMENTAL	1.6	1
11	703157.68	6077845.53	0.09	3.5	DECIDUOUS	4.0	1	86	703097.88	6077669.67	0.04	0.5	ORNAMENTAL	3.5	1
12	703295.43	6077839.98	0.08	3.5	DECIDUOUS	4.0	1	87	703122.02	6077840.19	0.03	0.5	ORNAMENTAL	2.0	1
13	703201.63	6077858.26	0.08	3.5	DECIDUOUS	4.0	1	88	703099.65	6077744.96	0.05	3.0	ORNAMENTAL	3.0	1
14	703183.97	6077858.42	0.08	3.5	DECIDUOUS	4.0	1	89	703114.84	6077840.17	0.03	1.0	ORNAMENTAL	2.0	1
15	703143.72	6077858.17	0.09	3.5	DECIDUOUS	4.0	1	90	703108.48	6077842.35	0.05	0.5	ORNAMENTAL	2.0	4
16	703297.34	6077852.29	0.08	3.5	DECIDUOUS	4.0	1	91	703100.42	6077715.46	0.10	2.0	DECIDUOUS	6.0	1
17	703181.60	6077845.51	0.08	3.5	DECIDUOUS	4.0	1	92	703104.93	6077709.63	0.10	2.0	DECIDUOUS	6.0	1
18	703195.94	6077845.49	0.08	3.5	DECIDUOUS	-	-	93	703109.56	6077703.88	0.10	2.0	DECIDUOUS	6.0	1
19	703214.21	6077845.41	0.08	3.5	DECIDUOUS	4.0	1	94	703114.51	6077697.60	0.10	2.0	DECIDUOUS	6.0	1
20	703125.90	6077858.20	0.09	3.5	DECIDUOUS	4.0	1	95	703121.33	6077689.10	0.10	2.0	DECIDUOUS	4.0	1
21	703274.67	6077684.10	0.05	1.0	EUCALYPT	2.0	1	96	703134.72	6077671.94	0.10	2.0	DECIDUOUS	4.5	1
22	703267.09	6077671.69	0.02	1.0	EUCALYPT	1.0	1	97	703141.95	6077662.96	0.10	1.5	DECIDUOUS	5.0	1
23	703282.41	6077702.00	0.18	3.0	EUCALYPT	3.0	1	98	703153.66	6077648.49	0.10	1.5	DECIDUOUS	5.0	1
24	703300.35	6077831.01	0.08	1.5	EUCALYPT	2.0	1	99	703163.43	6077636.20	0.10	2.0	DECIDUOUS	5.0	1
25	703290.35	6077765.18	0.05	1.5	EUCALYPT	2.0	1	100	703111.71	6077754.72	0.05	3.0	ORNAMENTAL	3.0	1
26	703310.46	6077825.77	0.11	3.0	EUCALYPT	4.0	1	101	703120.20	6077763.47	0.03	0.5	ORNAMENTAL	2.0	1
27	703318.92	6077836.27	0.05	1.0	ORNAMENTAL	2.0	1	102	703122.57	6077760.92	0.01	0.1	ORNAMENTAL	1.8	1
28	703326.72	6077835.00	0.05	1.0	ORNAMENTAL	2.0	1	103	703182.52	6077594.11	0.15	3.0	EUCALYPT	6.0	1
29	703292.21	6077774.36	0.10	2.0	EUCALYPT	4.5	1	104	703189.31	6077585.75	0.15	2.0	EUCALYPT	6.0	1
30	703228.93	6077639.95	0.08	2.0	EUCALYPT	2.0	1	105	703189.95	6077579.82	0.13	2.0	EUCALYPT	5.0	1
31	703242.48	6077650.94	0.07	2.0	EUCALYPT	2.0	1	106	703183.43	6077588.04	0.10	2.0	EUCALYPT	6.0	1
32	703316.53	6077865.89	0.05	1.0	ORNAMENTAL	2.0	1	107	703112.77	6077858.24	0.05	0.5	ORNAMENTAL	3.0	1
33	703293.69	6077783.38	0.07	2.0	EUCALYPT	2.0	1	108	703163.08	6077618.53	0.10	1.5	EUCALYPT	4.0	1
34	703186.69	6077619.83	0.10	2.0	EUCALYPT	3.0	1	109	703157.19	6077620.60	0.10	2.5	EUCALYPT	5.0	1
35	703196.51	6077627.72	0.10	2.0	EUCALYPT	3.0	1	110	703156.69	6077626.19	0.10	2.5	EUCALYPT	5.0	1
36	703266.13	6077633.04	0.15	2.0	EUCALYPT	3.0	1	111	703150.92	6077628.32	0.10	2.0	EUCALYPT	3.5	1
37	703261.57	6077638.90	0.15	2.0	EUCALYPT	4.0	1	112	703150.26	6077634.19	0.10	2.5	EUCALYPT	5.0	1
38	703256.82	6077644.82	0.15	2.5	EUCALYPT	3.0	1	113	703144.56	6077636.28	0.13	2.5	EUCALYPT	5.0	1
39	703252.34	6077650.46	0.12	2.0	EUCALYPT	3.0	1	114	703143.62	6077642.31	0.13	2.0	EUCALYPT	5.8	1
40	703295.50	6077795.34	0.07	2.0	EUCALYPT	2.0	1	115	703138.06	6077644.28	0.10	2.0	EUCALYPT	4.5	1
41	703212.32	6077640.31	0.07	2.0	EUCALYPT	2.0	1	116	703137.32	6077650.34	0.80	1.0	EUCALYPT	3.0	1
42	703222.25	6077648.33	0.07	2.0	EUCALYPT	2.0	1	117	703131.76	6077652.37	0.10	1.5	EUCALYPT	4.0	1
43	703228.53	6077653.27	0.06	2.0	EUCALYPT	4.0	1	118	703130.96	6077657.88	0.10	2.0	EUCALYPT	3.5	1
44	703233.82	6077657.59	0.10	2.0	EUCALYPT	3.0	1	119	703125.39	6077659.99	0.13	2.0	EUCALYPT	6.0	1
45	703237.66	6077660.65	0.08	2.0	EUCALYPT	3.0	1	120	703124.94	6077665.92	0.10	2.0	EUCALYPT	4.0	1
46	703247.11	6077668.28	0.08	2.0	EUCALYPT	3.0	1	121	703119.73	6077667.80	0.08	1.5	EUCALYPT	3.8	1
47	703259.29	6077678.87	0.11	2.0	EUCALYPT	3.0	1	122	703109.53	6077663.83	0.10	2.0	DECIDUOUS	5.0	1
48	703263.39	6077685.27	0.08	2.0	EUCALYPT	2.0	1	123	703120.80	6077649.85	0.10	2.0	DECIDUOUS	5.0	1
49	703266.69	6077692.25	0.02	1.0	EUCALYPT	1.5	1	124	703145.01	6077619.50	0.10	1.5	DECIDUOUS	5.4	1
50	703269.65	6077699.17	0.10	2.0	EUCALYPT	3.0	1	125	703134.31	6077632.71	0.13	1.5	DECIDUOUS	5.5	1
51	703272.31	6077705.75	0.11	2.0	EUCALYPT	3.0	1	126	703130.65	6077637.30	0.04	1.0	ORNAMENTAL	2.5	1
52	703275.07	6077712.85	0.11	2.0	EUCALYPT	3.0	1	127	703074.32	6077717.23	0.13	2.0	DECIDUOUS	6.0	1
53	703278.57	6077722.39	0.08	1.0	DEAD	2.0	1	128	703105.21	6077729.34	0.10	2.0	EUCALYPT	4.0	1
54	703296.70	6077804.31	0.04	1.0	EUCALYPT	2.0	1	129	703178.76	6077577.60	0.10	1.5	DECIDUOUS	5.0	1
55	703281.41	6077730.51	0.10	2.0	EUCALYPT	2.5	1	130	703170.69	6077587.68	0.08	1.0	DECIDUOUS	4.5	1
56	703343.56	6077844.98	0.05	1.0	ORNAMENTAL	2.5	1	131	703121.50	6077742.55	0.10	2.0	EUCALYPT	4.0	1
57	703283.89	6077739.25	0.08	2.0	EUCALYPT	2.0	1	132	703134.08	6077752.62	0.10	1.5	EUCALYPT	3.5	1
58	703336.03	6077846.42	0.05	1.0	ORNAMENTAL	2.5	1	133	703174.02	6077866.31	0.10	2.5	EUCALYPT	5.0	1
59	703327.35	6077868.65	0.08	2.0	ORNAMENTAL	2.5	1	134	703174.23	6077877.68	0.10	2.5	EUCALYPT	5.5	1
60	703327.16	6077862.75	0.06	1.0	ORNAMENTAL	2.5	1	135	703165.71	6077881.45	0.05	1.0	ORNAMENTAL	3.5	1
61	703326.87	6077855.98	0.07	1.5	ORNAMENTAL	2.5	1	136	703165.64	6077867.19	0.04	1.0	ORNAMENTAL	3.0	1
62	703297.86	6077812.95	0.09	2.0	EUCALYPT	3.0	1	137	703074.55	6077744.30	0.10	2.0	DECIDUOUS	5.5	1
63	703299.12	6077821.69	0.10	2.0	EUCALYPT	3.0	1	138	703081.97	6077670.65	0.04	0.5	ORNAMENTAL	3.0	1
64	703307.18	6077801.99	0.15	3.0	EUCALYPT	4.0	1	139	703092.25	6077678.79	0.04	0.5	ORNAMENTAL	3.5	1
65	703304.35	6077781.86	0.13	2.0	EUCALYPT	3.0	1	140	703138.18	6077827.86	0.01	1.5	DECIDUOUS	3.5	1
66	703301.67	6077767.43	0.11	2.0	EUCALYPT	3.0	1	141	703138.22	6077806.64	0.10	1.5	EUCALYPT	3.0	1
67	703300.15	6077759.40	0.07	2.0	EUCALYPT	2.0	1	142	703138.37	6077785.44	0.10	1.5	EUCALYPT	4.5	1
68	703295.93	6077742.54	0.18	3.0	EUCALYPT	5.0	1	143	703173.82	6077623.22	0.10	2.0	EUCALYPT	6.0	1
69	703291.58	6077726.87	0.10	2.0	EUCALYPT	2.0	1	144	703153.56	6077595.77	0.04	0.5	ORNAMENTAL	4.0	1
70	703286.27	6077747.98	0.11	2.0	EUCALYPT	2.5	1	145	703122.52	6077780.53	0.04	2.0	DECIDUOUS	3.0	1
71	703281.32	6077688.95	0.06	1.0	ORNAMENTAL	2.5	1	146	703122.44	6077794.31	0.04	1.5	DECIDUOUS	3.0	1
72	703205.57	6077621.14	0.11	3.0	EUCALYPT	3.0	1	147	703197.25	6077591.79	0.10	1.5	DECIDUOUS	4.0	1
73	703276.32	6077645.00	0.07	2.0	ORNAMENTAL	2.5	1	148	703189.86	6077600.87	0.10	1.5	DECIDUOUS	4.0	1
74	703275.88	6077649.56	0.06	2.0	ORNAMENTAL	2.0	1	149	703090.32	6077697.43	0.10	2.0	DECIDUOUS	6.0	1
75	703271.18	6077651.12	0.06	2.0	ORNAMENTAL	2.0	1	150	703154.89	6077607.40	0.11	3.0	DECIDUOUS	5.0	1



- LEGEND**
- ✕ BUILDING—FLOOR LEVEL
 - COMMUNICATION—PILLAR
 - COMMUNICATION—PIT
 - ⊕ ELECTRICITY—EARTH ROD
 - ⊕ ELECTRICITY—FUSE BOX
 - ⊕ ELECTRICITY—GROUND LIGHT
 - ⊕ ELECTRICITY—MINI PILLAR
 - ⊕ ELECTRICITY—POLE & LIGHT
 - ⊕ ELECTRICITY—STREET LIGHT
 - ⊕ MINOR STRUCTURE—BOLLARD
 - ⊕ MINOR STRUCTURE—GATE
 - ⊕ MINOR STRUCTURE—LITTER BIN
 - ⊕ SEWERAGE—MANHOLE
 - ⊕ SIGNAGE—ONE POST
 - ⊕ STORM WATER—DOWN PIPE
 - ⊕ STORM WATER—GRADED PIT
 - ⊕ STORM WATER—MANHOLE
 - ⊕ STORM WATER—SUBSOIL
 - ⊕ TRAFFIC—SYMBOL BICYCLE
 - ⊕ VEGETATION—TREE
 - ⊕ WATER SERVICE—FOUNTAIN
 - ⊕ WATER SERVICE—HYDRANT
 - ⊕ WATER SERVICE—IRRIGATION BOX
 - ⊕ WATER SERVICE—METER
 - ⊕ WATER SERVICE—SPRINKLER
 - ⊕ WATER SERVICE—STOP VALVE
 - BUILDING—CAR PORT
 - BUILDING—EAVE LINE
 - COMMUNICATION—PILLAR
 - MINOR STRUCTURE—FENCE
 - MINOR STRUCTURE—GATE
 - ROAD—KERB BACK
 - ROAD—KERB INVERT
 - ROAD—KERB LIP
 - ROAD—KERB TOP
 - SEWERAGE—U/G
 - STORM WATER—PIPE U/G
 - STORM WATER—SPOON DRAIN
 - STORM WATER—WATER COURSE
 - TOPOGRAPHIC—BOTTOM OF BANK
 - TOPOGRAPHIC—TOP OF BANK
 - TRAFFIC—LINE BARRIER (B2)
 - TRAFFIC—LINE BARRIER (B3)
 - TRAFFIC—LINE BARRIER (B5)
 - TRAFFIC—LINE CHEVRON YELLOW
 - TRAFFIC—LINE CONTINUITY (C1)
 - TRAFFIC—LINE CONTINUITY (C2)
 - TRAFFIC—LINE CONTINUITY (C3)
 - TRAFFIC—LINE DASHED
 - TRAFFIC—LINE HOLD (HL1)
 - TRAFFIC—LINE LANE (LI)
 - TRAFFIC—LINE SOLID
 - VEGETATION—HEDGE



ORIGINAL	SURVEY	DRAWN	CHECK	APPROVED	ZONE	SURVEY	ISSUE	Notes:
ISSUE	SA/MV	SG	WJ	JS		20/04/20	30/04/20	
A	MM	SG	WJ	JS		19/04/21	05/05/21	
B		WJ	WJ	JS				
C								
D								
E								



Horizontal Datum:	Title:	DETAIL SURVEY
MGA2020/55	LOT: 3 DP1179941	
Vertical Datum:	LOCALITY: GOOGONG	
MARK: SSM190241	LGA: QPRC	
LEVEL: RL743.533	Job: 20011	Scale (metres): 1:400 0 2 4 6 8 10 12
SYSTEM: AHD 71	Sheet: 1 of 2	Drawing: 20011_001_RevB.dwg
Contour Interval: 0.20m		



ORIGINAL ISSUE	SURVEY	DRAWN	CHECK	APPROVED	ZONE	B
A						
B						
C						
D						
E						