Attachment A
Applicant's supporting documents regarding biodiversity and tree retention

GOOGONG

6 November 2017

Queanbeyan Palerang Regional Council
PO Box 90
Queanbeyan NSW 2620
Attention: Mike Thompson

DA 123-2017
Googong Township – NH2 General Terms of Approval (GTA)

Dear Mike

We refer to recent discussion following receipt of OEH's General Terms of Approval (GTA) of 15 September 2017, and feedback conveyed from the JRPP visit to the NH2 site.l.

After consideration OEH's GTA we provide the following supplementary information to assist in Council's assessment of the DA.

General Terms of Approval

We note that OEH provided confirmation that they will be able to issue an AHIP subject to their noted conditions at their *Attachment A*, and we have no objection to the inclusion of these with the Consent conditions. As you are aware this is not unusual with the AHIP only being able to be applied for after Council DA approval.

Regarding OEH's required amendments to the submitted Aboriginal Cultural Heritage Assessment Report (ACHAR) included at their *Attachment B*, we note that as part of preparing the AHIP the ACHAR will be reviewed and the minor issues raised by OEH in the GTA will be addressed at that stage as required by the GTA.

To reiterate, as noted above and as required, an amended ACHAR will be re-submitted at AHIP stage for OEH's records clarifying the above.

Biodiversity Assessment and Tree Retention

We note OEH's comments regarding biodiversity within the GTA and their advice to GTPL that their role *"is only advisory, so the advice is more by way of comment."* Additionally, we understood from our earlier work with Council for the Structure Plan development and approval over 2016 & 2017, that OEH had formally confirmed that they had no issues with the proposed development.

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Notwithstanding the above, we understand that Council are the statutory body responsible for providing approval in relation to biodiversity matters. Over the course of both the earlier Structure Plan and this DA process, QPRC and GTPL have worked collaboratively to ensure the biodiversity aspects of the project have been considered.

These include assessment of the existing values of the land and we have refined the design to protect and enhance the biodiversity values of the land when urban development occurs.

Noting that the OEH comments are only advisory, through the thorough process followed with Council, GTPL believe we have addressed OEH's concerns in the submitted design with regards to biodiversity in the following ways:

- During the Structure Plan process QPRC raised eleven issues in relation to biodiversity and vegetation. Of these issues, ten were agreed between QPRC and GTPL at the Structure Plan stage with only one being considered a DA issue to be addressed later;
- The one issue that was agreed to be addressed at DA stage was whether offsets for the loss of native vegetation would be required. The comprehensive Flora and Fauna Assessment by Capital Ecology submitted with the DA, clearly demonstrates no significant impact on native vegetation communities - a point that OEH agrees with in their GTA. Offsets for native vegetation loss are only required when there is a defined 'significant impact' in accordance with the Environmental Planning & Assessment (EP&A) Act 1979 and the Threatened Species Conservation (TSC) Act 1995;
- Through the Structure Plan development, amendments to the masterplan were made to retain more native trees than initially proposed. This has been carried through in the DA design, resulting in the retention of significant native vegetation predominantly in groups rather than in isolated pockets;
- We do note that strong groupings of existing native trees associated with grasslands and riparian planting have indeed been retained within the NH2 development proposal, being in the Googong Common, Nangi Pimble, Googong Road corridor and the Old Cooma Road corridor;
- Given that most of the existing trees within the NH2 development area are isolated specimens, we believe the retention of stands of trees within large open space areas that support native under-storey is a far better biodiversity outcome than isolated trees within pockets parks, streets or suburban lots given the long-term maintenance regimes that typically occur in these spaces;
- The NH2 design includes approx 30% open space, or some 52.7Ha. The masterplan for the whole of Googong provides for around 24% open space or some 196Ha;

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- The DA design already establishes significant biodiversity links between Googong Common, Nangi Pimble and the Old Cooma Road corridor to establish movement paths not only for future residents but also local fauna – these are shown on the *NH2 Biodiversity Linkages Plan* enclosed at Attachment A;
- Within NH2 it is proposed to establish Nangi Pimble, which is over 10 hectares of open space. GTPL is proposing to undertake significant revegetation works of endemic native vegetation totaling over 3,000 native trees including species which are a critical food source and habitat for the Glossy Black Cockatoo;
- Within NH2, it is proposed to establish the largest section of Googong Common, some seventeen hectares of open space. Whilst satisfying the sporting and recreation needs of the community, this open space area will also establish significant tracts of riparian vegetation critical for enhancing the biodiversity values of Montgomery Creek and supporting the overall biodiversity values for the area;
- Street tree and open space planting programs in NH2 will see over 6,500 new trees planted of which some 3,900 will be native endemic trees. Native plantings will be approximately 65% of all proposed tree planting which is aimed at supporting the existing retained tree network. This is critical in providing habitat in the future when the existing trees that are being retained reach the end of their life;
- We have not recommended the retention of significant trees on lots because they are typically of a size that is not suited to suburban backyards. Experience has shown that when large trees are retained on lots, the residents typically seek to have the tree removed (legally or illegally) for fear of safety issues due to potential limb fall, nuisance and fire hazard issues (such as leaf and bark litter) and solar access issues, given the significant shadow that large eucalypts cast. Once a retained tree is removed the urban design that retained the tree in the first place is then forever flawed; and
- The NH2 DA design seeks to strike a balance between the biodiversity values of the land and the need for responsible, modern urban planning that considers the future needs of residents as well as the ongoing maintenance requirements and considerations of Council.

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More specifically, we provide the following additional information in response to OEH's proposed biodiversity conditions:

1. Given the constraints of urban development, we believe that all existing trees that can feasibly be retained - whilst maintaining a strong urban development outcome – are already documented as being retained;
2. Refer to the enclosed table of existing trees at *Attachment A* which notates the design development process and impacts on tree retention from the initial NH2 planning, through the Structure plan development & approval, and through to the current DA design and assessment. This table shows that trees able to be retained have increased in number through the design and approval process, with numbers of retained trees increasing from 61 in the initial layout to 85 in the DA design, with the potential for another two as described at item 13 below;
3. A network of large open spaces and smaller neighbourhood open spaces, consistent with the Local Planning Agreement (LPA) requirements, has been provided that in most instances retain existing trees. The provision of additional open spaces with the sole purpose of retaining isolated existing trees will result in the fragmentation of the urban planning and result in series of open spaces with little or no amenity and will establish an ongoing maintenance requirement and liability for Council;
4. The planning of NH2 already proposes to retain significant stands of existing native trees in Googong Common, Nangi Pimble, Googong Road corridor, Old Cooma Road corridor and select neighbourhood parks where they can be safely retained and managed in perpetuity. The areas identified by OEH in Figure 1 of their correspondence, as noted in item 2 above, will not allow for significant groupings of trees to be retained but rather a series of additional fragmented open spaces around isolated trees, resulting in the provision of a network of smaller pocket parks that have limited amenity and an ongoing maintenance and liability cost for Council;
5. Within the large open spaces of Nangi Pimble and Googong Common, the DA proposes substantial endemic native tree planting to support the retained trees to aid in the age class distribution of the tree population to a sustainable state. These designs include an estimated 3,900 native trees to be planted in these two areas alone, where the most significant stands of existing trees are to be retained;
6. In agreement with Council, the revegetation works in Nangi Pimble and parts of Googong Common have already commenced and will continue across the life of the development of NH2, ensuring the age class distribution of the tree population;

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7. Native trees will also be planted within the Old Cooma Road and Googong Road corridors as development occurs adjacent to these areas, which will further assist the sustainability of native trees within the Googong Urban Development Area;
8. The adopted Landscape Open Space Strategy (LOSS) for Googong has identified open spaces that can be maintained in a predominantly natural state, thereby reducing the impacts of urban development and its associated maintenance regimes. Mortality rates on retained and planted trees at Googong should therefore be reduced due to:
    a) the removal of grazing and associated farming practices;
    b) the establishment of large 'natural' open spaces where the maintenance regime can be tailored to enhance the natural feel (ie. reductions in the frequency of mowing);
    c) the installation of comprehensive path and trail networks through open spaces that will focus where activity occurs and therefore allow natural regeneration to occur over time;
    d) the provision of an integrated network of open spaces that provides for organised sport & recreation, active recreation opportunities, passive recreation and conservation opportunities, thereby allowing those areas of natural landscape to be protected, enjoyed and valued as an integral part of the open space network at Googong;
    e) Education centred on identifying the importance of the natural landscapes at Googong;
9. To reduce the impacts of removing existing trees, the planning of NH2 focuses on the retention of stands or clumps of trees within proposed open spaces so that a variety of existing trees in terms of quality and age are retained. In addition, the planting of new trees ensures that there are multiple ages of trees within open spaces and streets to aid the sustainability of the urban forests at Googong. It should be noted that the planting of trees will occur over several years further enhancing the sustainability of the of the urban forests.
10. Additional mitigation measures that will be looked at during detailed design may include approaches that have already been successfully employed in previously developed areas of Googong including;
    a) The movement of dead stags into open space areas;
    b) The provision of habitat boxes in existing trees;
    c) Extending the nest box monitoring program to Googong;

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11. We note that OEH suggests that the loss of three small patches of threatened grassland fauna should be offset by the development. This is despite agreeing with the comprehensive Flora and Fauna Assessment of Capital Ecology submitted with the NH2 DA, which clearly demonstrates no significant impact on native vegetation communities. As Council would be aware, offsets for native vegetation loss are only required when there is a significant impact in accordance with the EP&A and TSC Acts. Whilst offsets are not required in accordance with legislation, we believe the establishment of significant open spaces at Nangi Pimble and Googong Common, plus the retention and enhancement of significant existing vegetation within the Old Cooma Road and Googong Road corridors provide substantial open space areas that will allow for the re-establishment of significant native vegetation communities that will offset the loss of some insignificant under-storey planting;

12. Given the extent of urban development planned for the Googong Development Area the loss of existing isolated trees, some containing hollows, within the Googong Township is inevitable. However as discussed above, the completion of a thorough and rigorous design process from initial layouts, through the structure plan submission and onto this DA, has resulted in a masterplan that not only retains significant tracts of existing vegetation but proposes to re-establish significant native planting within large open space areas. The result of this is that the existing and proposed trees can be safely retained and managed in perpetuity – a key consideration when creating an urban environment the size of Googong;

13. There have already been revisions to the NH2 layout (with Council participation along the way) to accommodate retention of existing trees in small pocket parks and the associated additional maintenance responsibility for Council. After a further thorough review of the DA layout, there are two additional tress that have potential for retention – refer tree review drawings enclosed at *Attachment B.* Both these trees would require the support of Council (if it believes it is acceptable for these trees to be retained within residential lots) to collaboratively resolve the subsequent dwelling approval and construction issues that may raise;

14. The retention of any additional trees would create significant issues, including;

    a. Requirement for significant re-lotting and loss of yield, thus impacting negatively on resource efficiency and affordability considerations at Googong;

    b. Additional maintenance burden for Council via more pocket parks;

    c. Inefficient underground servicing and resultant additional lengths of rear lot services and structures and associated maintenance burden for Council;

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15. It is noted that there are four trees classified as 'exceptional value' in the NH2 site, with two being retained, and the two noted as removal having the following issues;
    a. Tree 48 located at the base of an existing farm dam embankment that cannot be retained – the removal of the dam necessitates earthworks that prevent the tree being retained;
    b. Tree 118 located within the subdivision pattern but with areas of open space - and significant groups of trees already being retained – nearby that cannot be connected without significant re-lotting and / or creation of additional park assets and burden for Council as noted above;

We note OEH's comment that *'the biodiversity report included in the DA is of a high standard and provides a solid basis for Council to make an informed decision on the DA.'* To this end, we believe the comprehensive DA submission, along with the above supplementary information addressing the points raised in OEH's correspondence, provides Council with a robust and comprehensive suite of documentation to finalise the DA assessment.

However, without compromising the agreed timeline to a November 2017 JRPP determination, we would welcome the opportunity to sit down with Council and discuss the above responses and to review those areas where it may be possible to retain additional existing trees and determine whether Council believe there is value for the community and the biodiversity outcomes to look at the retention of additional existing trees as noted at point 13 above. From GTPL's point of view we do not believe the retention of the additional trees noted would improve the biodiversity outcome or add significant value to the community.

Should you have any queries regarding the above please do not hesitate to contact the undersigned. Otherwise we look forward to receiving your confirmation that the above satisfactorily addresses OEH's correspondence and the initial JRPP comments to allow Council to finalise the DA assessment report.

Yours sincerely,

GOOGONG TOWNSHIP PTY LTD

Adrian Moy
Development Manager Encl.

ATTACHMENT A

TREE RETENTION SCHEDULE & PLANS

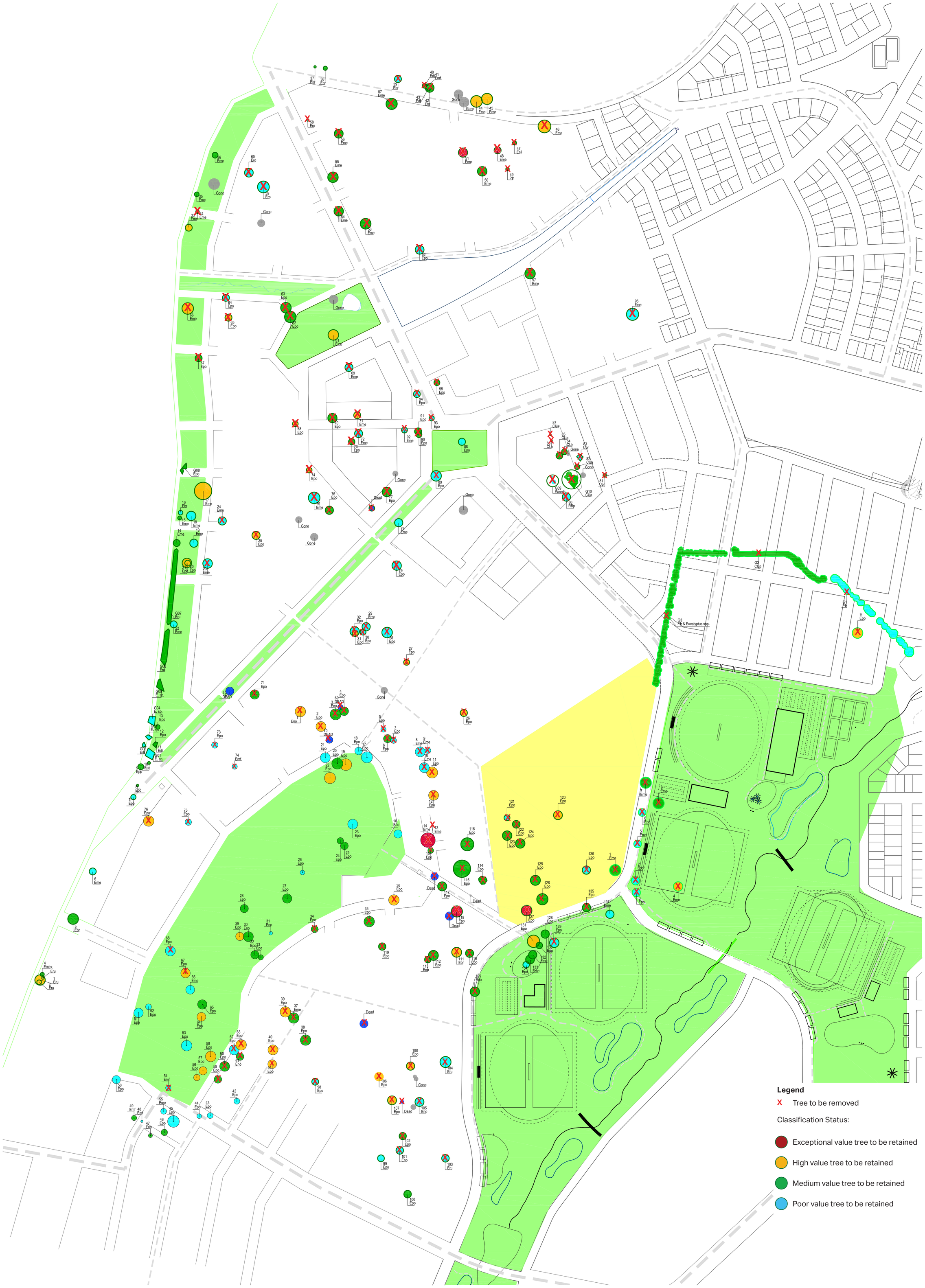
NEIGHBOURHOOD 2						
Tree No.	Botanical Name	Classification Status - Value	Design Process - Tree Retention			
			1. Pre-Structure Plan	2. Early Structure Plan	3. Later Structure Plan	4. DA Master Plan
1	*Eucalyptus rubida*	High	Yes	Yes	Yes	Yes
2	*Eucalyptus rubida*	High	Yes	Yes	Yes	Yes
3	*Eucalyptus rubida*	High	Yes	Yes	Yes	Yes
4	*Eucalyptus melliodora*	Medium	Yes	Yes	Yes	Yes
5	*Eucalyptus bridgesiana*	Medium	No	Yes	Yes	Yes
6	*Eucalyptus melliodora*	Poor	Yes	Yes	Yes	Yes
7	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes
8	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
9	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
10	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
11	*Eucalyptus dives*	Medium	Yes	Yes	Yes	Yes
12	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
13	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
14	*Eucalyptus melliodora*	Medium	Yes	Yes	Yes	Yes
15	*Eucalyptus melliodora*	Medium	Yes	Yes	Yes	Yes
16	*Eucalyptus bridgesiana*	Poor	Yes	Yes	Yes	Yes
17	*Eucalyptus melliodora*	High	No	Yes	Yes	Yes
18	*Eucalyptus melliodora*	Poor	Yes	Yes	Yes	Yes
19	*Eucalyptus melliodora*	Poor	Yes	Yes	Yes	Yes
20	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
21	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
22	*Eucalyptus melliodora*	Poor	Yes	Yes	Yes	Yes
23	*Eucalyptus melliodora*	Poor	No	No	No	No
24	*Eucalyptus melliodora*	Poor	No	No	No	No
25	*Eucalyptus polyanthemos*	High	No	No	No	No
26	*Eucalyptus polyanthemos*	High	No	No	No	No
27	*Eucalyptus polyanthemos*	High	No	No	No	No
28	*Eucalyptus polyanthemos*	Poor	No	No	No	No
29	*Eucalyptus melliodora*	Poor	No	No	No	No
30	*Eucalyptus polyanthemos*	Poor	No	No	No	No
31	*Eucalyptus polyanthemos*	High	No	No	No	No
32	*Eucalyptus polyanthemos*	Poor	No	No	No	No
33	*Eucalyptus melliodora*	High	Yes	No	No	No
34	*Eucalyptus melliodora*	Medium	No	No	No	No
35	*Eucalyptus melliodora*	Medium	Yes	No	No	No
36	*Eucalyptus melliodora*	Medium	Yes	No	No	No
37	*Eucalyptus bridgesiana*	Medium	Outside NH2 Boundary			
38	*Eucalyptus bridgesiana*	Medium	Outside NH2 Boundary			
39	*Eucalyptus bridgesiana*	Poor	No	No	No	No
40	*Eucalyptus dives*	Medium	No	No	No	No
41	*Eucalyptus mannifera*	Medium	No	No	No	No
42	*Eucalyptus bridgesiana*	Medium	No	No	No	No
43	*Eucalyptus dives*	Medium	No	No	No	No
44	*Eucalyptus melliodora*	High	Yes	Yes	Yes	Yes
45	*Eucalyptus melliodora*	High	Yes	Yes	Yes	Yes
46	*Eucalyptus melliodora*	High	No	No	No	No
47	*Eucalyptus nicholii*	Medium	No	No	No	No
48	*Eucalyptus melliodora*	**Exceptional**	No	No	No	No
49	*Pinus radiata*	Medium	No	No	No	No
50	*Eucalyptus melliodora*	Medium	No	No	No	No
51	*Eucalyptus melliodora*	**Exceptional**	No	No	No	Yes
52	*Eucalyptus polyanthemos*	Poor	No	No	No	No
53	*Eucalyptus melliodora*	Medium	No	No	No	No
54	*Eucalyptus melliodora*	Medium	No	No	No	No
55	*Eucalyptus melliodora*	Medium	No	No	No	No
56	*Eucalyptus melliodora*	Medium	No	No	No	No
57	*Eucalyptus melliodora*	Medium	No	No	No	No
58	*Eucalyptus rossii*	Poor	No	No	No	No
59	*Eucalyptus rossii*	Poor	No	No	No	No
60	*Eucalyptus melliodora*	Poor	No	No	No	No
61	*Eucalyptus melliodora*	High	Yes	No	No	No
62	*Eucalyptus polyanthemos*	Medium	No	No	No	No
63	*Eucalyptus polyanthemos*	Medium	No	No	No	No
64	*Eucalyptus polyanthemos*	Poor	No	No	No	No
65	*Eucalyptus polyanthemos*	High	No	No	No	No
66	*Eucalyptus melliodora*	High	Yes	No	No	No
67	*Eucalyptus polyanthemos*	Medium	Yes	No	No	No
68	*Eucalyptus polyanthemos*	High	No	No	No	No
69	*Eucalyptus melliodora*	Poor	No	No	No	No
70	*Eucalyptus polyanthemos*	Medium	No	No	No	No

71	*Eucalyptus melliodora*	High	No	No	No	No
72	*Eucalyptus melliodora*	Poor	No	No	No	No
73	*Eucalyptus polyanthemos*	Medium	No	No	No	No
74	*Eucalyptus polyanthemos*	High	No	No	No	No
75	*Eucalyptus melliodora*	Poor	No	No	No	No
76	*Eucalyptus polyanthemos*	Medium	No	No	No	No
77	*Eucalyptus polyanthemos*	Medium	No	No	No	No
78	*Eucalyptus melliodora*	Poor	Yes	No	No	No
79	*Eucalyptus polyanthemos*	Poor	No	No	No	No
80	*Robinia pseudoacacia*	Poor	No	No	No	No
81	*Ulmus procera*	Medium	No	No	No	No
82	*Cupressus arizonica*	Medium	No	No	No	No
83	*Ulmus procera*	Poor	No	No	No	No
84	*Cupressus arizonica*	Medium	No	No	No	No
85	*Cupressus arizonica*	Medium	No	No	No	No
86	*Cupressus sempervirens*	Poor	No	No	No	No
87	*Cupressus sempervirens*	Medium	No	No	No	No
88	*Eucalyptus polyanthemos*	Poor	No	No	No	No
89	*Eucalyptus polyanthemos*	Poor	No	No	No	No
90	*Eucalyptus polyanthemos*	Medium	No	No	No	No
91	*Eucalyptus polyanthemos*	Medium	No	No	No	No
92	*Eucalyptus melliodora*	Poor	No	No	No	No
93	*Eucalyptus polyanthemos*	Poor	No	No	No	No
94	*Eucalyptus polyanthemos*	Poor	No	No	No	No
95	*Eucalyptus polyanthemos*	Medium	No	No	No	No
96	*Eucalyptus melliodora*	Poor	No	No	No	No
97	*Eucalyptus melliodora*	Medium	No	No	No	No
98	*Eucalyptus polyanthemos*	Poor	No	No	No	No
99	*Eucalyptus polyanthemos*	Poor	Outside NH2 Boundary			
100	*Eucalyptus polyanthemos*	Medium	Outside NH2 Boundary			
101	*Eucalyptus nortonii*	Poor	No	No	No	No
102	*Eucalyptus polyanthemos*	Medium	No	No	No	No
103	*Eucalyptus rubida*	Poor	No	No	No	No
104	*Eucalyptus rubida*	Poor	No	No	No	No
105	*Eucalyptus nortonii*	Poor	No	No	No	No
106	*Eucalyptus polyanthemos*	High	No	No	No	No
107	*Eucalyptus polyanthemos*	High	No	No	No	No
108	*Eucalyptus polyanthemos*	High	No	No	No	No
109	*Eucalyptus polyanthemos*	Medium	No	No	No	No
110	*Eucalyptus polyanthemos*	Medium	No	No	No	No
111	*Eucalyptus bridgesiana*	High	No	No	No	No
112	*Eucalyptus polyanthemos*	Medium	No	No	No	No
113	*Eucalyptus nortonii*	Medium	No	No	No	No
114	*Eucalyptus polyanthemos*	Medium	No	No	No	No
115	*Eucalyptus polyanthemos*	Medium	No	No	No	No
116	*Eucalyptus polyanthemos*	Medium	No	No	No	No
117	*Eucalyptus polyanthemos*	Medium	No	No	No	No
118	*Eucalyptus polyanthemos*	**Exceptional**	No	No	No	No
119	*Eucalyptus polyanthemos*	Medium	No	No	No	No
G01	*Eucalyptus sp.*	Poor	Yes	Yes	Yes	Yes
G02	*Eucalyptus dives*	Poor	Yes	Yes	Yes	Yes
G03	*Eucalyptus sp.*	Poor	Yes	Yes	Yes	Yes
G04	*Eucalyptus sp.*	Poor	Yes	Yes	Yes	Yes
G05	*Eucalyptus sp.*	Medium	Yes	Yes	Yes	Yes
G06	*Eucalyptus rubida*	Medium	Yes	Yes	Yes	Yes
G07	*Eucalyptus rubida*	Medium	Yes	Yes	Yes	Yes
G08	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
G09	*Ailanthus altissima*	Poor	No	No	No	No
G10	*Cupressus arizonica*	Medium	Yes	No	No	No
120	*Eucalyptus polyanthemos*	High	No	No	No	No
121	*Eucalyptus polyanthemos*	Poor	No	Yes	Yes	Yes
122	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
123	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
124	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
125	*Eucalyptus polyanthemos*	Medium	No	Yes	No	No
126	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
127	*Eucalyptus polyanthemos*	**Exceptional**	No	Yes	Yes	Yes
128	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
129	*Eucalyptus polyanthemos*	Poor	No	No	No	No
130	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
131	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
132	*Eucalyptus melliodora*	Medium	Yes	Yes	Yes	Yes
133	*Eucalyptus melliodora*	Medium	Yes	Yes	Yes	Yes
134	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes

135	*Eucalyptus polyanthemos*	Medium	No	No	Yes	Yes
136	*Eucalyptus polyanthemos*	Poor	No	No	No	No
137	*Eucalyptus melliodora*	Poor	Yes	Yes	Yes	Yes
HILL 800						
1	*Eucalyptus nortonii*	High	No	Yes	Yes	Yes
2	*Eucalyptus polyanthemos*	High	No	Yes	Yes	Yes
3	*Eucalyptus nortonii*	Medium	No	Yes	Yes	Yes
4	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
5	*Eucalyptus polyanthemos*	Poor	No	No	No	No
6	*Eucalyptus polyanthemos*	Medium	No	No	No	No
7	*Eucalyptus polyanthemos*	Poor	No	No	No	No
8	*Eucalyptus melliodora*	Poor	No	No	No	No
9	*Eucalyptus melliodora*	Poor	No	No	No	No
10	*Eucalyptus melliodora*	Poor	No	No	No	No
11	*Eucalyptus polyanthemos*	High	No	No	Yes	Yes
12	*Eucalyptus polyanthemos*	High	No	No	Yes	No
13	*Eucalyptus melliodora*	Poor	No	No	Yes	Yes
14	*Eucalyptus melliodora*	**Exceptional**	No	Yes	Yes	Yes
15	*Eucalyptus polyanthemos*	Medium	No	Yes	No	No
16	*Eucalyptus polyanthemos*	Poor	Yes	No	No	No
17	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes
18	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes
19	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
20	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
21	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes
22	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
23	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes
24	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
25	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
26	*Eucalyptus polyanthemos*	Poor	Yes	Yes	Yes	Yes
27	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
28	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
29	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
30	*Eucalyptus nortonii*	Medium	Yes	Yes	Yes	Yes
31	*Eucalyptus nortonii*	Poor	Yes	No	Yes	Yes
32	*Eucalyptus polyanthemos*	Medium	Yes	No	Yes	Yes
33	*Eucalyptus polyanthemos*	Medium	Yes	No	Yes	Yes
34	*Eucalyptus polyanthemos*	Medium	No	No	No	No
35	*Eucalyptus polyanthemos*	Medium	No	No	No	No
36	*Eucalyptus polyanthemos*	High	No	No	No	No
37	*Eucalyptus melliodora*	Medium	No	No	No	No
38	*Eucalyptus polyanthemos*	Medium	No	No	No	No
39	*Eucalyptus polyanthemos*	High	No	No	No	No
40	*Eucalyptus polyanthemos*	High	No	No	No	Yes
41	*Eucalyptus polyanthemos*	High	No	No	No	No
42	*Eucalyptus polyanthemos*	Poor	Outside NH2 Boundary			
43	*Eucalyptus polyanthemos*	Poor	Outside NH2 Boundary			
44	*Eucalyptus polyanthemos*	Poor	Outside NH2 Boundary			
45	*Eucalyptus polyanthemos*	Poor	Outside NH2 Boundary			
46	*Eucalyptus polyanthemos*	Medium	Outside NH2 Boundary			
47	*Eucalyptus nortonii*	Medium	Outside NH2 Boundary			
48	*Eucalyptus mannifera*	Poor	Outside NH2 Boundary			
49	*Eucalyptus mannifera*	Medium	Outside NH2 Boundary			
50	*Eucalyptus polyanthemos*	Poor	Outside NH2 Boundary			
51	*Eucalyptus polyanthemos*	Poor	No	Yes	No	No
52	*Eucalyptus polyanthemos*	Poor	No	Yes	No	No
53	*Eucalyptus polyanthemos*	Poor	No	Yes	Yes	Yes
54	*Eucalyptus mannifera*	Poor	No	Yes	Yes	Yes
55	*Eucalyptus melliodora*	Poor	Outside NH2 Boundary			
56	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
57	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
58	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
59	*Eucalyptus polyanthemos*	Medium	No	Yes	No	No
60	*Eucalyptus polyanthemos*	Medium	No	Yes	Yes	Yes
61	*Eucalyptus nortonii*	Medium	No	Yes	Yes	Yes
62	*Eucalyptus polyanthemos*	Poor	No	Yes	Yes	Yes
63	*Eucalyptus polyanthemos*	High	No	Yes	Yes	Yes
64	*Eucalyptus polyanthemos*	High	Yes	Yes	Yes	Yes
65	*Eucalyptus polyanthemos*	Medium	Yes	Yes	Yes	Yes
66	*Eucalyptus melliodora*	Poor	Yes	Yes	Yes	Yes
67	*Eucalyptus polyanthemos*	High	No	No	No	No
68	*Eucalyptus polyanthemos*	Poor	No	No	No	No
69	DEAD					
70	DEAD					
71	*Eucalyptus polyanthemos*	Medium	No	No	No	No
72	DEAD					
73	*Eucalyptus polyanthemos*	Poor	No	No	No	No

74	*Eucalyptus mannifera*	Poor	No	No	No	No
75	*Eucalyptus polyanthemos*	Poor	No	No	No	No
76	*Eucalyptus polyanthemos*	High	No	No	Yes	Yes
NH1A Stage 7						
1	*Eucalyptus melliodora*	Medium	No	No	No	No
2	*Eucalyptus polyanthemos*	Poor	No	No	No	No
3	*Eucalyptus polyanthemos*	Poor	No	No	No	No
4	*Eucalyptus melliodora*	High	No	No	No	No
5	*Eucalyptus melliodora*	Poor	No	No	No	No
6	*Eucalyptus polyanthemos*	Poor	No	No	No	No
7	*Eucalyptus melliodora*	Medium	No	No	No	No
8	*Eucalyptus melliodora*	Medium	No	No	No	No
9	*Eucalyptus polyanthemos*	High	No	No	No	No
G1	*Pinus radiata*	Poor	No	No	No	No
G2	*Cupressus × leylandii*	Medium	No	No	No	No
G3	*Eucalyptus sp. Pinus radiata*	Poor-Medium	No	No	No	No

TOTAL	Retained	Retained	Retained	Retained
218	69	81	84	**85**
	Removed	Removed	Removed	Removed
	149	137	134	**133**



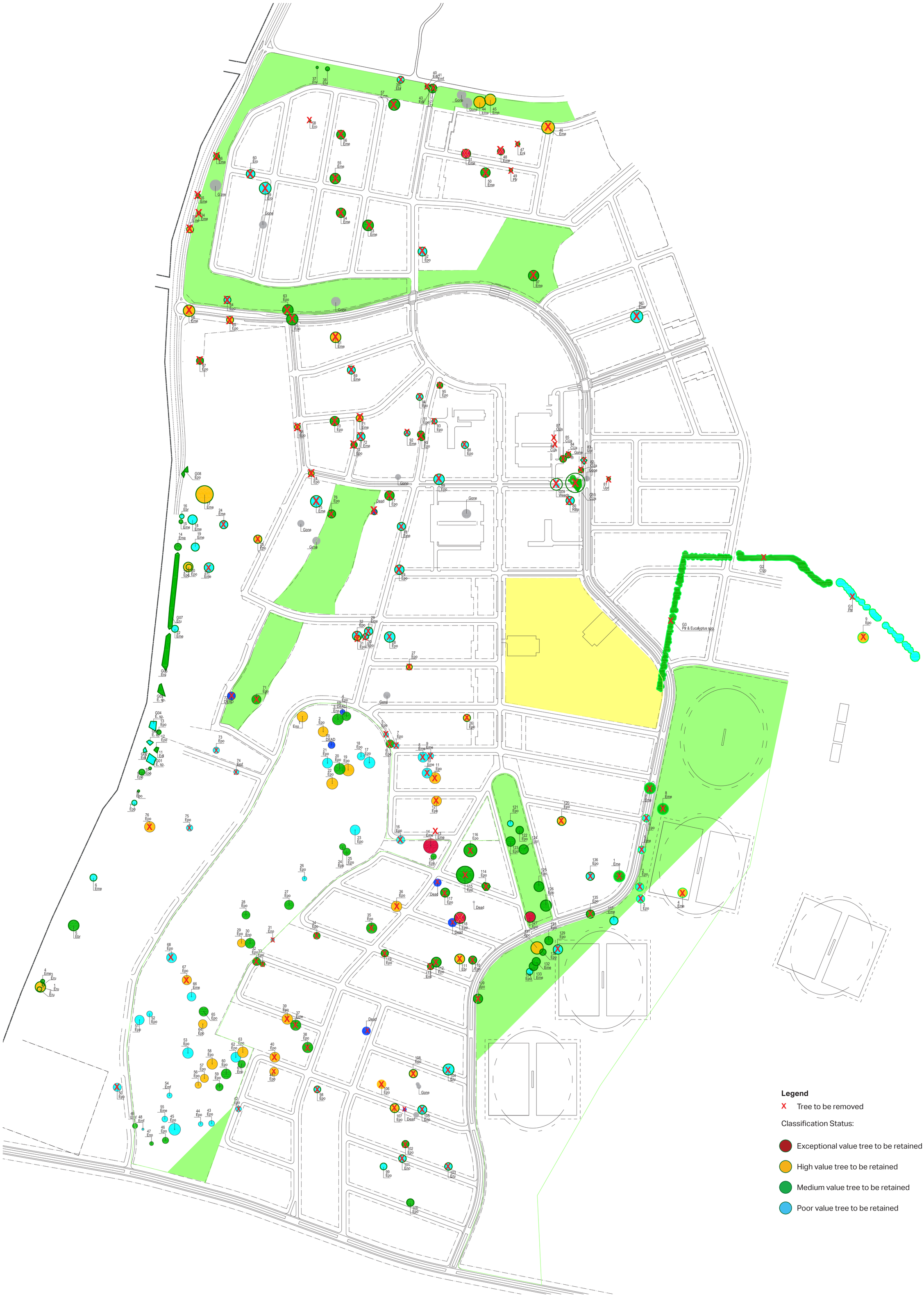
AECOM

Client: Googong Township Pty Ltd **Project Name:** Googong NH2

Date: 02/11/2017 **Project Number:** Tree Retention Plan

1. Pre-structure Plan

SK01



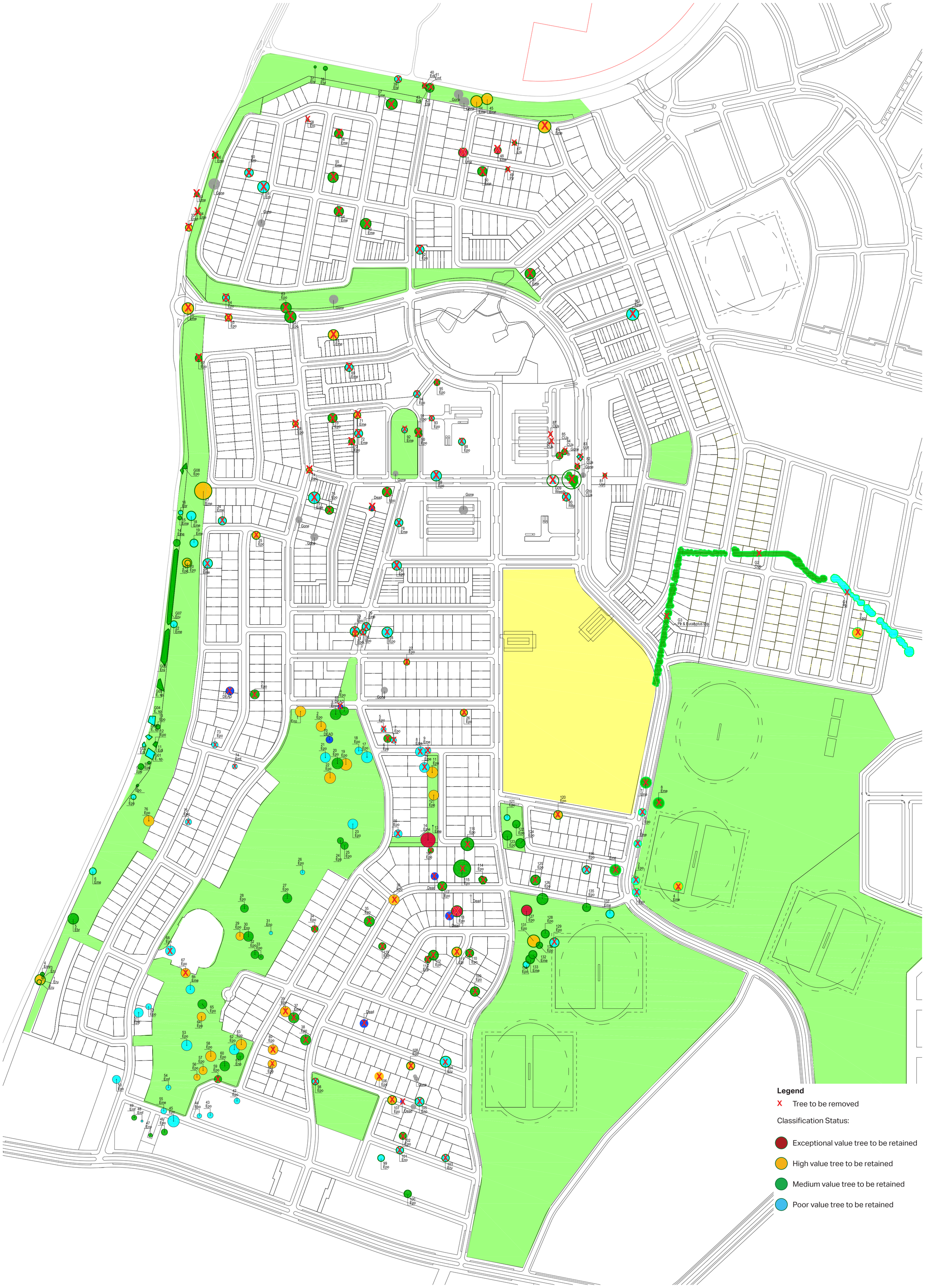
AECOM

Client: Googong Township Pty Ltd **Project Name:** Googong NH2

Date: 02/11/2017 **Project Number:** Tree Retention Plan

2. Early Structure Plan

SK02



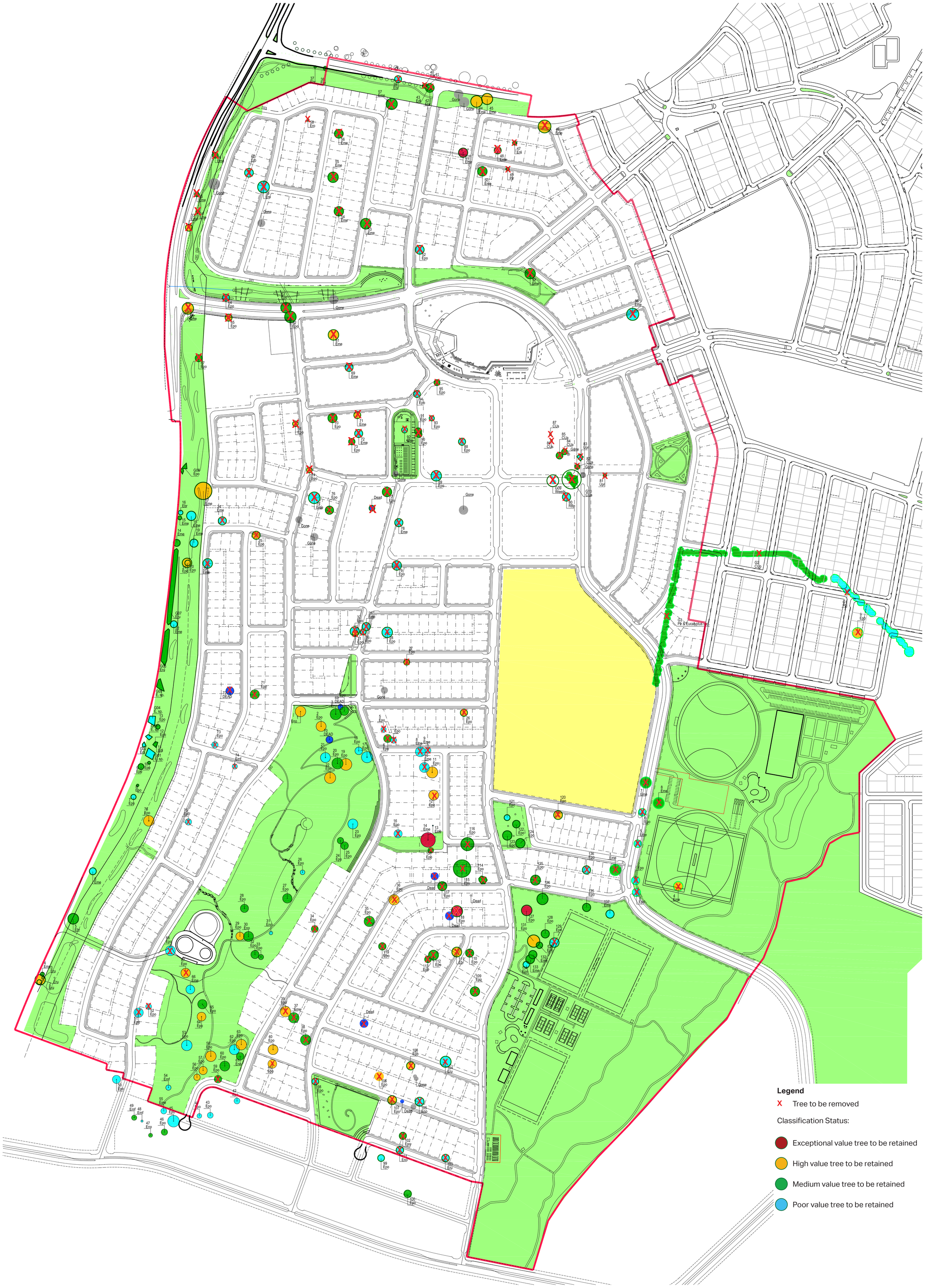
AECOM

Client: Googong Township Pty Ltd **Project Name:** Googong NH2

Date: 02/11/2017 **Project Number:** Tree Retention Plan

3. Later Structure Plan

SK03



AECOM

Client: Googong Township Pty Ltd **Project Name:** Googong NH2

Date: 02/11/2017 **Project Number:** Tree Retention Plan

4. DA Master Plan SK04

ATTACHMENT B

GOOGONG NH2 DA

ADDITIONAL REVIEW OF EXISTING TREES

ATTACHMENT B

LEGEND (From NH2 Tree Assessment)

SPECIES KEY

Ala = *Alianthus altissima* — Eme = *E. melliodora* — Ero = *E. rossii*
CUa = *Cupressus arizonica* — Emf = *E. mannifera* — Eru = *E. rubida*
CUp = *Cupressus x leylandii* — Eni = *E. nicholii* — Pir = *Pinus radiata*
CUs = *Cupressus sempervirens* — Eno = *E. nortonii* — RBp = *Robinia pseudoacacia*
Etr = *Eucalyptus bridgesiana* — Epo = *E. polyanthemos* — Upr = *Ulmus procera*
Ed = *E. dives*

ASSESSMENT DATA

TREE CLASSIFICATION STATUS

E — EXCEPTIONAL VALUE TREE. GRAND APPEARANCE AND STATURE, MAY HAVE UNUSUAL CHARACTER OR MAY BE RARE. LITTLE TO NO EPICORMIC SHOOTS.

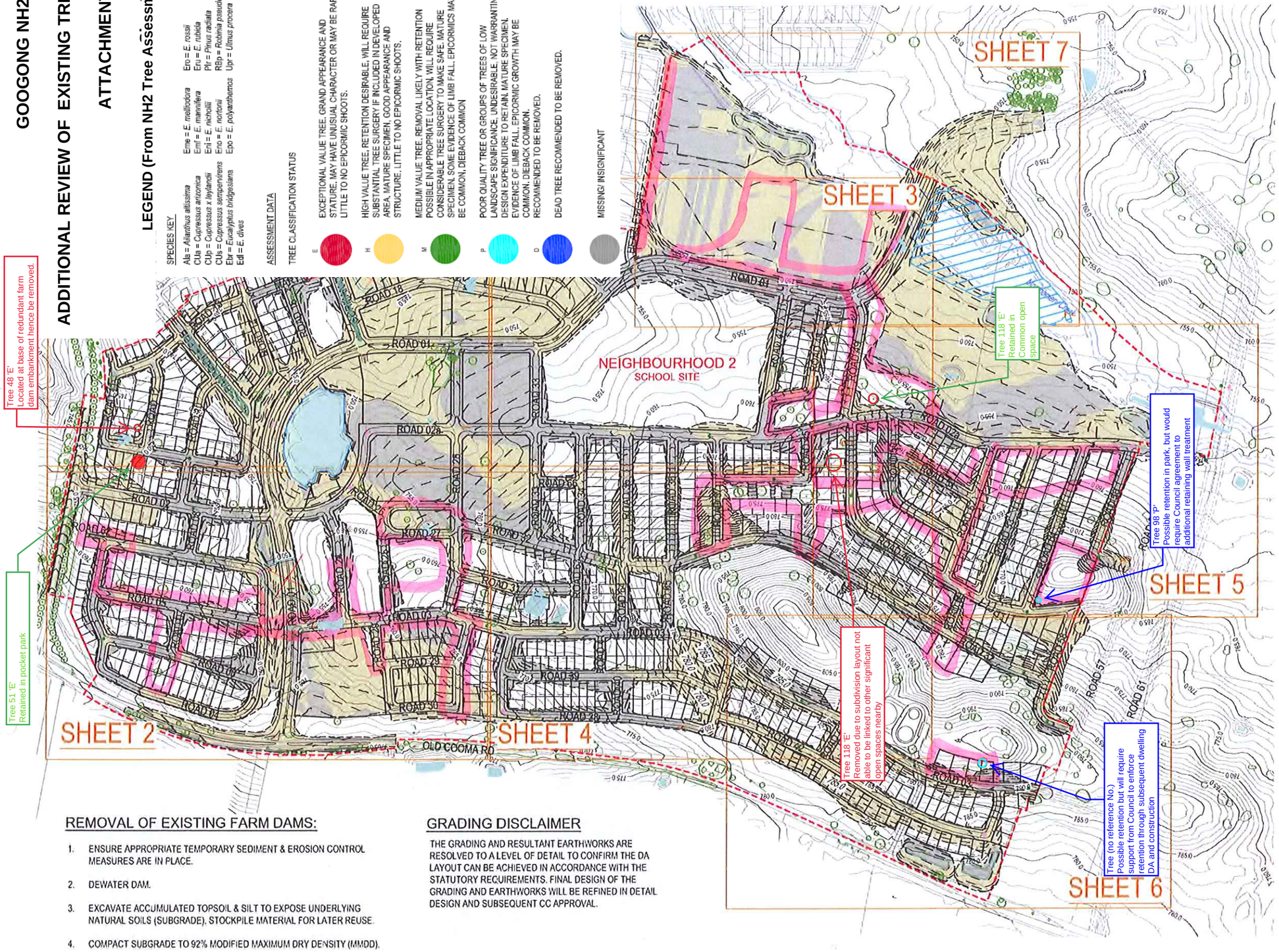
H — HIGH VALUE TREE. RETENTION DESIRABLE, WILL REQUIRE SUBSTANTIAL TREE SURGERY IF INCLUDED IN DEVELOPED AREA. MATURE SPECIMEN. GOOD APPEARANCE AND STRUCTURE. LITTLE TO NO EPICORMIC SHOOTS.

M — MEDIUM VALUE TREE. REMOVAL LIKELY WITH RETENTION POSSIBLE IN APPROPRIATE LOCATION. WILL REQUIRE CONSIDERABLE TREE SURGERY TO MAKE SAFE. MATURE SPECIMEN. SOME EVIDENCE OF LIMB FALL. EPICORMICS MAY BE COMMON. DIEBACK COMMON

P — POOR QUALITY TREE OR GROUPS OF TREES OF LOW LANDSCAPE SIGNIFICANCE. UNDESIRABLE. NOT WARRANTING DESIGN EXPENDITURE TO RETAIN. MATURE SPECIMEN. EVIDENCE OF LIMB FALL. EPICORMIC GROWTH MAY BE COMMON. DIEBACK COMMON. RECOMMENDED TO BE REMOVED.

D — DEAD TREE RECOMMENDED TO BE REMOVED.

MISSING/ INSIGNIFICANT



LEGEND

- NEIGHBOURHOOD BOUNDARY
- GRADING LIMITS
- CUT
- FILL
- EXISTING DAM, EXISTING DAM TO BE REMOVED
- EXISTING POND/BASIN
- PROPOSED BIO-RETENTION BASIN
- DETENTION BASIN
- PROPOSED WATER QUALITY POND
- RIPARIAN OUTER 50% CRZ
- RIPARIAN INNER 50% CRZ
- EXISTING TREES
- EXISTING TREES TO BE REMOVED
- HP HIGH POINT
- LP LOW POINT

OEH 'EXTRA' REVIEW AREAS

NOTES:

1. EXISTING CONTOURS AT 1.0m INTERVALS. DESIGN CONTOURS AT 0.5m INTERVALS.

REMOVAL OF EXISTING FARM DAMS:

1. ENSURE APPROPRIATE TEMPORARY SEDIMENT & EROSION CONTROL MEASURES ARE IN PLACE.
2. DEWATER DAM.
3. EXCAVATE ACCUMULATED TOPSOIL & SILT TO EXPOSE UNDERLYING NATURAL SOILS (SUBGRADE). STOCKPILE MATERIAL FOR LATER REUSE.
4. COMPACT SUBGRADE TO 92% MODIFIED MAXIMUM DRY DENSITY (MMDD).
5. PLEASE SELECT FILL IN MAXIMUM 200mm LAYERS TO NOMINATED FINISHED LEVELS. COMPACT AS FOLLOWS:
   UNDER STREETS -
- 92% MMDD TO 500mm BELOW STREET SUBGRADE LEVEL.
- 95% MMDD WITHIN 500mm OF STREET SUBGRADE LEVEL
- ELSEWHERE 92% MMDD

GRADING DISCLAIMER

THE GRADING AND RESULTANT EARTHWORKS ARE RESOLVED TO A LEVEL OF DETAIL TO CONFIRM THE DA LAYOUT CAN BE ACHIEVED IN ACCORDANCE WITH THE STATUTORY REQUIREMENTS. FINAL DESIGN OF THE GRADING AND EARTHWORKS WILL BE REFINED IN DETAIL DESIGN AND SUBSEQUENT CC APPROVAL.

COMPACTION STANDARDS BULK EARTHWORKS PACKAGE

UNDER STREET PAVEMENTS:

INCLUDING INFLUENCE ZONE AT 45° ANGLE FROM 100mm FROM BACK OF KERB.

- 92% MMDD TO 500mm BELOW STREET SUBGRADE LEVEL
- 95% MMDD WITHIN 500mm OF STREET SUBGRADE LEVEL

STREET VERGES & OPEN SPACES:

- 92% MMDD

BUILDING LOTS:

- 95% MMDD
- LEVEL 1 INSPECTION, TESTING & COMPLIANCE STATEMENT TO BE PROVIDED IN ACCORDANCE WITH AS 3798.

CARRY OUT EARTHWORKS TO FOLLOWING LEVELS:

- TO NOMINATED SUB-GRADE LEVEL FOR EACH STREET TYPE.
- FOR VERGES FINISHED LEVEL.
- FOR BUILDING LOTS FINISHED LEVEL.
- LEAVE VERGES 100mm LOW AND FILL WITH ONSITE TOPSOIL MATERIAL TO FINISHED SURFACE LEVEL.

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
AMENDMENTS	BC	AC			25/10/2017

AMENDMENT DETAILS

DWG No:
PROJECT No:

A1 PLOT 1:7000 — SCALE METRES 50 0 50 100 150 — A3 PLOT 1:3500

CLIENT: GOOGONG

PROJECT: GOOGONG NORTH NEIGHBOURHOOD 2 DA SUBMISSION

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DRAWING TITLE: SITE GRADING - KEY PLAN

DRAWING NUMBER: 16-001756-D035+

ISSUE:

Sheet 2/8

NOTE:

REFER DRAWING 16 001756 D035+
FOR NOTES AND LEGEND

N

Tree 48 'E'
Tree located at base of redundant dam embankment hence to be removed

Tree 51
Eme - exceptional
Tree is designated to be retained

Tree 50
Eme - medium
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

WALL HEIGHT 0.9m

FOR CONTINUATION REFER DRAWING 16 001756 D038+

FOR CONTINUATION REFER DRAWING 16 001756 D037+

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BC	KC			25/8/2017

AMENDMENTS

AMENDMENT DETAILS

AME No.

PROJECT No.

A3 PLOT 1:2000 SCALE (METRES) 10 5 0 10 20 30 40 50 A1 PLOT 1:1000

CLIENT GOOGONG

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
LOT GRADING
SHEET 1 OF 7

DRAWING NUMBER
16 001756-D036+

AMEND.

Sheet 3/8

FOR CONTINUATION REFER DRAWING 16 001756 D036+

FOR CONTINUATION REFER DRAWING 16 001756 D038+

N

Tree 57
Eme - medium
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Tree 60
Ero - poor
Clashes with rear lot services as well as final grading design to provide lot grading

Tree 59
Ero - Poor
Road alignment driven by lotting setout from western edge prevents retaining

Tree 62
Epo - Medium
Arterial entry road alignment driven by major overland flowpath prevents retaining

Tree 69
Eme - poor
Retaining in development site is not feasible, in addition to earthworks from road grading preventing retention

Tree 92
Eme - poor
Current urban park grading design and designated uses does not allow retaining

Tree non existent

Trees 90 & 91
Epo - medium
Town Centre development site planning, grading requirements and associated street network prevents retention

Tree 89
Epo - poor
Town Centre development site planning and associated street network prevents retention

Tree 77
Epo - medium
Retaining in development site is not feasible, in addition to earthworks from road grading preventing retention

Tree 75
Eme - poor
Retaining on lot would be probemlatic for future owner even if dwelling and lot layout could be be designed to accomodate

NOTE:

REFER DRAWING 16 001756 D035+
FOR NOTES AND LEGEND

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BC	KC			23/03/2017

AMENDMENTS — AMENDMENT DETAILS

AHE No.

PROJECT No.

A3 PLOT 1:2000 — SCALE (METRES) 10 5 0 10 20 30 40 50 — A1 PLOT 1:1000

CLIENT: GOOGONG

PROJECT: GOOGONG NORTH NEIGHBOURHOOD 2

DA SUBMISSION

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DRAWING TITLE: LOT GRADING SHEET 2

DRAWING NUMBER: 16 001756-D037+

AMEND.

Sheet 4/8

FOR CONTINUATION REFER DRAWING 16 001756 D042+

NOTE:

REFER DRAWING 16 001756 D035+
FOR NOTES AND LEGEND

HANNS ST

ROAD 01

ROAD 33

ROAD 47

ROAD 48

ROAD 45

Planting opportunities will be looked at as Googong Sportsclub design is progressed

DA design already includes substantial native tree planting

Substantial groups of existing trees all being retained in DA design

Tree 116
Epo - medium
Retention not possible due to lot and street layout

WALL HEIGHT 1.0m

WALL HEIGHT

FOR CONTINUATION REFER DRAWING 16 001756 D036+

FOR CONTINUATION REFER DRAWING 16 001756 D040+

FOR CONTINUATION REFER DRAWING 16 001756 D039

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BD	KC			23/03/2017

AMENDMENTS

AMENDMENT DETAILS

AHE No.

PROJECT No.

A3 PLOT 1:2000 — SCALE (METRES) 10 5 0 10 20 30 40 50 — A1 PLOT 1:1000

CLIENT GOOGONG

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
LOT GRADING
SHEET 3

DRAWING NUMBER
16 001756-D038+

AMEND.

Sheet 5/8

FOR CONTINUATION REFER DRAWING 16 001756 D038+

FOR CONTINUATION REFER DRAWING 16 001756 D037

FOR CONTINUATION REFER DRAWING 16 001756 D039+

Tree No 28 Epo 'P'
Unable to retained on lot.
Creation of additional pocket park not deemed appropriate.

Tree fallen since survey

Tree No 71 Epo 'H'
Unable to retained on lot.
Creation of additional pocket park not deemed appropriate.

Trees retained in pocket park as pert of DA assessment process

Trees retained in pocket park as pert of DA assessment process

ROAD 66 6.1%
ROAD 33
ROAD 34
ROAD 32 4.5%
ROAD 31
ROAD 63 4.1%
ROAD 64 7.7%
ROAD 65 1.1%
ROAD 03 10.2%
ROAD 41 6.5%
ROAD 39
ROAD 40 6.3%
ROAD 38 6.9%
OLD COOMA ROAD
ROAD 37 16.0%
ROAD 46
ROAD 45 8.9%
ROAD 42
1.0%
0.5%
4.0%
12.0%
4.2%
3.9%
8.5%
3.6%
1.3%
3.3%
4.6%
3.2%
5.9%
9.3%
9.5%
6.5%
4.5%
1.1%

HEIGHT 0.5m
HEIGHT 0.7m
WALL HEIGHT 0.5m
WALL HEIGHT 1.0m
WALL HEIGHT 1.1m
WALL HEIGHT 1.2m
WALL HEIGHT 1.0m
WALL HEIGHT 2.0m
STEPPED WALL (7) HEIGHT MAXIMUM 8.6m
WALL HEIGHT 4.2m
WALL HEIGHT 0.3m

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BD	KC			21/03/2017

AMENDMENTS

AMENDMENT DETAILS

AME No.

PROJECT No.

A3 PLOT SCALE (METRES) A1 PLOT
1:2000 10 5 0 10 20 30 40 50 1:1000

CLIENT GOOGONG

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
LOT GRADING SHEET 4

DRAWING NUMBER
16 001756-D039+

AMEND.

Sheet 6/8

FOR CONTINUATION REFER DRAWING 16 001756 D042+

FOR CONTINUATION REFER DRAWING 16 001756 D038+

Tree 114
Eme - medium
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Tree 127 'E' being retained in Common open space

Significant group of existing trees all being retained in DA design

Trees 110 Epo (m) & 111 Ebr (h)
Retention not possible due to lot and street layout

Tree 104
Eru - poor
Retention not possible due to lot and street layout

Dead tree
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Dead tree & Tree 118 Epo (E)
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Tree 117
Epo - medium
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Tree 115
Epo - medium
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Trees 112 Epo (m) & 113 Eno (m)
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Tree 103
Eru - poor
Unfeasible to retain in lot - would require loss of lot and retention in micro park and the subsequent maintenance issues for Council

Tree 98
Epo - poor
Tree could be retained at Council's discretion - would likley require additional retaining walls, and consideration of resultant maintenenace and open space management risk of poor tree in open space

WALL HEIGHT 4.2m
WALL HEIGHT 2.2m
WALL HEIGHT 1.8m
WALL HEIGHT 1.2m
WALL HEIGHT 0.8m

NOTE:
REFER DRAWING 16 001756 D035+ FOR NOTES AND LEGEND

FOR CONTINUATION REFER DRAWING 16 001756 D041+

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BG	KG			25/03/2017

AMENDMENT DETAILS

A1 PLOT SCALE (METRES) A1 PLOT
1:2000 10 5 0 10 20 30 40 50 1:1000

CLIENT: GOOGONG

PROJECT: GOOGONG NORTH NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE: LOT GRADING SHEET 5

DRAWING NUMBER: 16 001756-D040+

AMEND.

Sheet 7/8

FOR CONTINUATION REFER DRAWING 16 001756 D040+

FOR CONTINUATION REFER DRAWING 16 001756 D039+

N

ROAD 32
ROAD 57
ROAD 61
ROAD 42
ROAD 43
ROAD 03
OLD COOMA ROAD

WALL HEIGHT 0.3m

WALL HEIGHT 0.7m

Trees 51 & 52
Epo (E)
Not feasible to retain in lots - would require loss of lots

Tree not surveyed - could be retained on lot at the discretion of Council including needing Council support through the dwelling DA and construction phases

NOTE:

REFER DRAWING 16 001756 D035+
FOR NOTES AND LEGEND

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BC	KC			23/03/2017

AMENDMENTS

AMENDMENT DETAILS

AHD No.

PROJECT No.

A3 PLOT 1:2000 SCALE (METRES) 10 5 0 10 20 30 40 50 A1 PLOT 1:1000

CLIENT GOOGONG

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
LOT GRADING
SHEET 6

DRAWING NUMBER
16 001756-D041+

AMEND.

Sheet 8/8

NOTE:
REFER DRAWING 16 001756 D035+ FOR NOTES AND LEGEND

MONTGOMERY AV

WEATHERSTONE CIRC

Planting opportunities will be looked at as Googong Sportsclub design is progressed

DA design already includes substantial native tree planting

Tree is designated to be retained in DA design

ROAD 01

Montgomery Creek

FOR CONTINUATION REFER DRAWING 16 001756 D038+

FOR CONTINUATION REFER DRAWING 16 001756 D040+

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE
	BD	KG			23/03/2017

AMENDMENTS

AMENDMENT DETAILS

WAE No.

PROJECT No.

A3 PLOT 1:2000 | SCALE (METRES) 10 5 0 10 20 30 40 50 | A1 PLOT 1:1000

CLIENT GOOGONG

PROJECT
GOOGONG NORTH
NEIGHBOURHOOD 2
DA SUBMISSION

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DRAWING TITLE
LOT GRADING
SHEET 7

DRAWING NUMBER
16 001756-D042+

AMEND.

GOOGONG

Applicant's supporting documents regarding the lots within Nangi Pimble (Hill 800)

7 November 2017

Queanbeyan Palerang Regional Council PO Box 90
Queanbeyan NSW 2620
Attention: Mike Thompson

DA 123-2017
Googong Township – NH2 Lots adjoining Hilltop Reserve *Nangi Pimble*

Dear Mike,

We refer to recent discussion following regarding the above and provide the following supplementary information to assist in Council's assessment of the DA. The submitted DA drawings demonstrate that the lots adjoining the *Nangi Pimble* hill top reserve can be approved as part of the NH2 DA, and we provide the following information to assist Council in completing your assessment report:

- Googong is a major contributor to the delivery of Council's 2031 Land Release strategy – with NH2 already under the previously projected yield, any further reduction in yield will put additional pressure on the remaining Googong land and the Land Release Strategy;
- The Nangi Pimble reserve only has development to just under 50% of the reserve perimeter – any decrease to this yield will increase the extent of 'one sided roads' thus adversely affecting affordability;
- The lots are compliant with the approved Structure Plan and all of Council's other DCP controls, with the DA documentation provided demonstrating that:
  - Lots are designed with building area no more than 20% slope; and
  - Driveway grades are maximum 16%.
- The lots assist in providing an important part of the diversity of product mix, with these lots being in the range of circa 800m2 to 1100m2, are a product that is in demand at Googong, and good land economics (and logic) dictate that these size lots, with their associated views and aspect, be situated on just this type of sloping land, which allows smaller and more affordable lots to be on the flatter land thus assisting affordability;
- These lot sizes and location will allow a range of dwelling designs, and their position in the market are such that purchasers will prepare custom dwelling designs sympathetic to the slope, thus reducing the possibility of 'flat benched' sites being required and the associated undesirable large cut batters in excess of Council's DCP maximum wall / batter heights;
- We have previously provided example designs for dwellings on these lots as part of the NH2 assessment, demonstrating the expected 'split-level' arrangement, which would be compliant to all aspects of Council's DCP controls, considering;

GOOGONG

- Heights / level difference to ground levels;
- Maximum retaining wall heights;
- Private open space requirements;
- Carparking / garage / driveway access.

- Following the relayed JRPP feedback conveyed at the 25 Oct 2017 meeting, we have expanded these example designs to now include:
  - Examples of streetscape on steep areas within Googong showing how designers and builders have addressed sloping land and that a mix of dwelling styles and designs have been delivered, which provide an enhanced streetscape compared to what would be delivered if one simple earthworks platform was provided in the subdivision civil works – refer to Attachment A, images 1 & 2;
  - Current example of complying steep lot with built form solutions either side. Refer to refer to Attachment A, images 3 & 4;
  - Examples from dwellings at Googong demonstrating how the rear retaining has been dealt with, which complies with the Googong DCP and provides a practical solution to the site slope. The interface from the back of the retaining wall to the dwelling becomes a useable utility space connecting at appropriate outdoor level to the finished floor level FFL. Refer to images 5, 6 & 7;
  - Although not recommended for the reasons noted above (which would prevent varied dwelling designs that are sympathetic to the topography), as requested by the JRPP we provide an example of a potential earthworks 'platform' that could be included with the subdivision construction, establishing a notional site cut for the driveways & garages, and a notional position for a split-level demarcation, refer to Attachment B which notates some of the concerns and problems with this provision, including;
    - Extent of retaining walls is vastly increased, adding significant cost penalty;
    - Creates a problematic interface with the retaining wall, given the expected two-story dwelling designs don't suit a fixed wall position and would result in the creation of large voids between the wall and dwelling;
    - Would create a bland and predictable streetscape;
    - Creates a far worse environmental outcome with substantially more (and wasted) earthworks haulage and the resultant environmental costs rather than having custom and more sympathetic dwelling designs.

Regarding the concerns conveyed from the JRPP with potential non-compliant design and construction, we provide the following suggestions to assist Council in preventing undesirable outcomes:

- Council could insist on a higher level of documentation for the dwelling DA submissions and enforce the provision of detailed site plans showing retaining walls (including wall & level details);
- Pending legislative permissibility, Council could condition these lots (and hence GTPL could include the same as a sale Contract condition) requiring Council to be appointed as the dwelling proponent's PCA, thus providing opportunity for Council to approve DA designs and subsequently add DA conditions requiring site inspections prior to site cuts; and
- GTPL could prepare and issue fact sheets that are discussed at the time of sale;

We note that there are always good and bad examples of all dwelling designs, but for the reasons outlined above we believe these lots satisfy an important segment of the market, and add to the diversity of built form outcomes. Given the lot designs are all compliant with Council's DCP controls, we see no reason for not supporting their approval.

Should you have any queries regarding the above please do not hesitate to contact the undersigned. Otherwise we look forward to receiving your confirmation that the above satisfactorily addresses any concerns sufficient for Council to provide support for the DA in your assessment report to the JRPP.

Yours sincerely,

GOOGONG TOWNSHIP PTY LTD

Adrian Moy

Development Manager

Encl.

Image 1. A typical streetscape which shows a combination of front retaining walls used or a battered front lawn to take up the lot grade.

Image 2. A typical streetscape.

Image 3. A typical steep lot with resolved built form to the adjacent lot.

Image 4. A typical steep lot with resolved built form and side fencing to the adjacent lot.

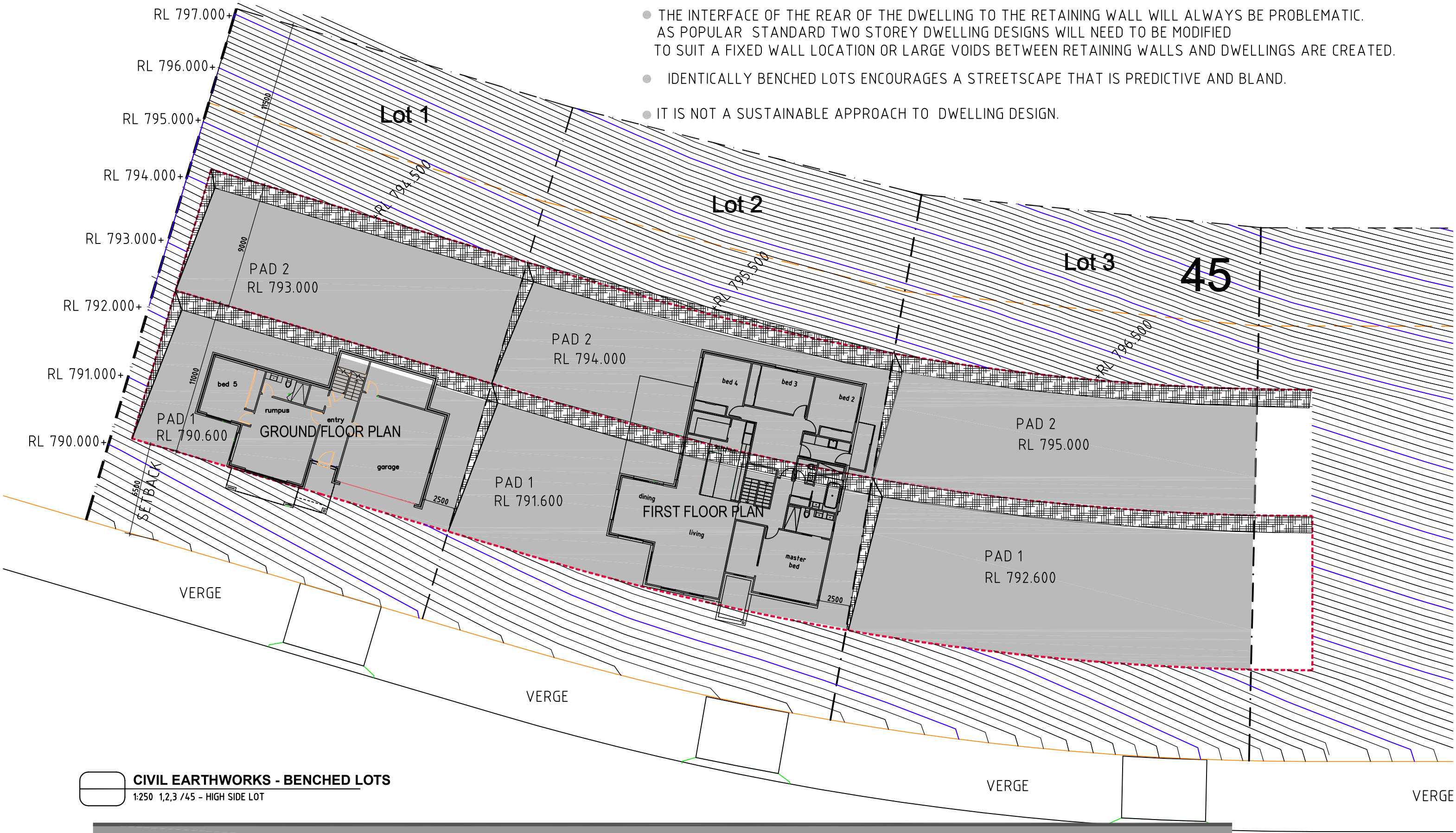
Image 5. Rear stepped retaining walls with side and rear fencing to a steep lot.

Image 6. Rear retaining wall solution with fencing above.

Image 7. Typical side view of lot a steep lot with side fencing and rear retaining beyond.

ISSUES FOR BENCHING LARGE TYPOLOGY LOTS.

- EXTENT OF RETAINING WALLS IS VASTLY INCREASED AND ADDS A SIGNIFICANT COST IMPACT.
- THE INTERFACE OF THE REAR OF THE DWELLING TO THE RETAINING WALL WILL ALWAYS BE PROBLEMATIC. AS POPULAR STANDARD TWO STOREY DWELLING DESIGNS WILL NEED TO BE MODIFIED TO SUIT A FIXED WALL LOCATION OR LARGE VOIDS BETWEEN RETAINING WALLS AND DWELLINGS ARE CREATED.
- IDENTICALLY BENCHED LOTS ENCOURAGES A STREETSCAPE THAT IS PREDICTIVE AND BLAND.
- IT IS NOT A SUSTAINABLE APPROACH TO DWELLING DESIGN.



CIVIL EARTHWORKS - BENCHED LOTS
1:250 1,2,3 /45 - HIGH SIDE LOT

GOOGONG NH2 SLOPE ANALYSIS

TYPICAL HIGHSIDE LOTS SECTION 45

1:250 NOV 2017