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ARBORICULTURAL REPORT

583 FERNTREE GULLY ROAD, GLEN WAVERLEY

March 2021

Revised August 2021

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1 Introduction

- 1.1 John Patrick, consulting arborists, have been engaged by Golden Age Enterprises to prepare an arboricultural report for 583 Ferntree Gully Road, Glen Waverley to accompany planning application documents for the site.
- 1.2 This revised report (20-295ARRevA) is in response to changes to the architectural plans.

2 Objectives

- 2.1 The intent of this report is to:
- Assess the condition of trees within the subject site and those neighbouring that may be impacted by the proposed development and estimate the extent of any impact.
 - Identify any trees worthy of retention and provide preliminary arboricultural advice to assist in their protection and retention.
- 2.2 The report will include the following;
- Botanic / Common names
 - Tree Location
 - Canopy width and height
 - DBH (trunk diameter)
 - Tree health & structure condition
 - Useful Life Expectancy (ULE)
 - Tree Protection Zones (TPZ's) in accordance with AS-4970
 - Arboricultural value
 - Other tree characteristics of consideration.

3 Methodology

- 3.1 The site was visited on the 7th July 2020 and a visual assessment of the subject trees was undertaken from ground level. Each tree was assigned an identification number for reference purposes, denoted on the attached Tree Location Plan (Section 5) which is based on the Boundary Re-establishment Feature and Level Survey & Site Analysis prepared for the site by Veris (Job No. 302420, 12/06/20)
- 3.2 Trees identified with a DBH of 150mm or less were not assessed in this report unless rare or of unusual attributes.
- 3.3 No aerial or diagnostic testing was undertaken as part of this assessment.
- 3.4 The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.
- 3.5 Heights and widths of canopies were measured using a laser range finder.
- 3.6 Where access directly to the trees was not possible DBH, heights and widths were estimated.

4 Observations

EXISTING CONDITIONS

- 4.1 The subject site is located on the northern side of Ferntree Gully Road. Currently it exists as a commercial site with a number of mostly brick buildings. The existing garden consists of a mix of native and exotic trees and shrubs scattered throughout areas of lawn.

VEGETATION CONTROLS

- 4.2 An internet search of VicPlan reveals that the site is not covered by any local overlays pertaining to tree control of the Monash City Council Planning Scheme.
- 4.3 As far as I am aware Monash City Council do not have any local laws relating to tree protection.
- 4.4 As the site is greater than 4000m² it is subject to the provisions of Clause 52.17 Native Vegetation however all native vegetation on site is highly likely to be planted and is therefore exempt from permit requirements under the provisions of Clause 52.17-7 Table of exemptions.

****Note: It is recommended that vegetation controls be confirmed with the local authority prior to any tree removal.***

TREE INFORMATION

- 4.5 A total of 50 trees or tree groups were assessed including 37 trees or tree groups within the subject site, 7 trees within neighbouring properties and 6 street trees. Information on these can be found in the following table.

TREE DATA

Tree No.	Common Name	Botanic Name	Size (m)	DBH (cm)	TPZ (m)	SRZ (m)	Age	Health	Structure	ULE (Yrs.)	Arb Value	Comments
1	Brittle Gum	<i>Eucalyptus mannifera</i>	16x6	27	3.2	2.1	Semi-mature	Fair	Poor	10-20	Medium	Street tree. Pruned around powerlines
2	Brittle Gum	<i>Eucalyptus mannifera</i>	18x8	43	5.2	2.5	Semi-mature	Fair	Poor	10-20	Medium	Street tree. Pruned around powerlines
3	Brittle Gum (x2)	<i>Eucalyptus mannifera</i>	8x4	20	2.4	1.8	Semi-mature	Fair	Poor	10-20	Low	Street tree. Pruned around powerlines
4	Brittle Gum	<i>Eucalyptus mannifera</i>	8x10	37	4.4	2.4	Semi-mature	Fair	Poor	10-20	Medium	Street tree. Pruned around powerlines
5	Brittle Gum	<i>Eucalyptus mannifera</i>	16x6	55	6.6	2.8	Semi-mature	Fair	Poor	10-20	Medium	Street tree. Pruned around powerlines
6	Brittle Gum	<i>Eucalyptus mannifera</i>	9x4	20	2.4	1.8	Semi-mature	Fair	Poor	10-20	Low	Street tree. Pruned around powerlines
7	Bhutan Cypress	<i>Cupressus torulosa</i>	20x8	70	8.4	3.1	Mature	Fair	Poor	10-20	Medium	Codominant at 1m
8	Variiegated Shining Privet	<i>Ligustrum lucidum</i> 'Variiegatum'	8x6	10, 15, 10, 20, 20, 10 (36)	4.3	2.4	Semi-mature	Fair	Poor	10-20	Low	
9	Red Tip Photinia (x3)	<i>Photinia x fraseri</i>	6x3	Multi (20)	2.4	1.8	Semi-mature	Fair	Fair	10-20	Low	
10	Desert Ash	<i>Fraxinus angustifolia</i>	8x6	15	2.0	1.5	Semi-mature	Poor	Poor	0-10	Low	Codominant at 2m
11	Sweet Pittosporum	<i>Pittosporum undulatum</i>	18x8	Multi (15)	2.0	1.5	Semi-mature	Poor	Poor	0-10	Low	
12	Shining Privet	<i>Ligustrum lucidum</i>	8x6	20, 20 (28)	3.4	2.1	Semi-mature	Poor	Poor	0-10	Low	Codominant at base
13	Loquat	<i>Eriobotrya japonica</i>	8x6	20, 30, 20 (41)	4.9	2.5	Semi-mature	Fair	Poor	0-10	Low	Decay in main stems
14	Broad-leaved Paperbark	<i>Melaleuca quinquenervia</i>	13x6	27	3.2	2.1	Semi-mature	Poor	Fair	10-20	Low	Sooty mould
15	Prickly-leaved Paperbark	<i>Melaleuca styphelioides</i>	8x6	80, 35, 20 (90)	10.8	3.5	Semi-mature	Fair	Fair	20+	Medium	
16	Prickly-leaved Paperbark	<i>Melaleuca styphelioides</i>	8x6	25, 23, 25, 22, 20, 30 (60)	7.2	2.9	Semi-mature	Fair	Fair	20+	Medium	
17	Brush-box	<i>Lophostemon confertus</i>	14x10	60	7.2	2.9	Semi-mature	Fair	Fair	20+	Medium	
18	Bracelet Honey-myrtle	<i>Melaleuca armillaris</i>	8x4	Multi(15)	2.0	1.5	Semi-mature	Fair	Poor	0-10	Low	
19	Liquidambar	<i>Liquidambar styraciflua</i>	15x10	38	4.6	2.4	Semi-mature	Fair	Fair	20+	Medium	
20	Port Jackson Fig	<i>Ficus rubiginosa</i>	16x16	42, 34, 42, 58, 46, 40 (108)	13.0	3.8	Mature	Good	Fair	20+	High	
21	Red Tip Photinia	<i>Photinia x fraseri</i>	10x6	20x6 (49)	5.9	2.7	Mature	Good	Poor	10-20	Low	
22	Box Elder	<i>Acer negundo</i>	12x15	30, 40, 60 (78)	9.4	3.3	Over-mature	Poor	Poor	0-10	Low	Decay in scaffold branches and upper canopy
23	Red Tip Photinia (x11)	<i>Photinia x fraseri</i>	8x4	Multi(30)	3.6	2.2	Semi-mature	Fair	Fair	10-20	Low	
24	Himalayan Cedar	<i>Cedrus deodara</i>	14x8	45	5.4	2.6	Semi-mature	Fair	Fair	20+	Medium	
25	Chinese Elm	<i>Ulmus parvifolia</i>	10x10	32, 25, 27 (49)	5.9	2.7	Semi-mature	Fair	Poor	10-20	Medium	
26	English Oak	<i>Quercus robur</i>	16x15	72	8.6	3.2	Semi-mature	Fair	Fair	20+	High	

Tree No.	Common Name	Botanic Name	Size (m)	DBH (cm)	TPZ (m)	SRZ (m)	Age	Health	Structure	ULE (Yrs.)	Arb Value	Comments
27	Sweet Pittosporum	<i>Pittosporum undulatum</i>	8x5	20	2.4	1.8	Semi-mature	Fair	Poor	10-20	Low	
28	Chinese Elm	<i>Ulmus parvifolia</i>	10x12	25	3.0	2.0	Semi-mature	Fair	Fair	20+	Medium	
29	Black Locust	<i>Robinia pseudoacacia</i>	10x10	35	4.2	2.3	Semi-mature	Fair	Fair	10-20	Low	
30	Callery Pear (x3)	<i>Pyrus calleryana</i>	8x2	15	2.0	1.5	Semi-mature	Fair	Poor	10-20	Low	
31	Black Locust	<i>Robinia pseudoacacia</i>	6x6	15, 8, 8 (19)	2.3	1.8	Semi-mature	Fair	Poor	10-20	Low	
32	Wattle	<i>Acacia</i> sp.	10x4	18	2.2	1.8	Semi-mature	Fair	Fair	0-10	Low	Likely self-seeded
33	Leyland Cypress	<i>Cupressocyparis x leylandii</i>	6x4	10, 10 (14)	2.0	1.5	Semi-mature	Fair	Fair	0-10	Low	
34	Manna Gum	<i>Eucalyptus viminalis</i>	16x10	65	7.8	3.0	Semi-mature	Fair	Poor	10-20	Low	Lopped at 8m
35	Lightwood (x4)	<i>Acacia implexa</i>	8x6	15	2.0	1.5	Semi-mature	Fair	Fair	10-20	Low	
36	Mugga Ironbark	<i>Eucalyptus sideroxylon</i>	15x8	30, 32 (44)	5.3	2.6	Semi-mature	Fair	Fair	20+	Medium	Not shown on survey
37	Yellow Box	<i>Eucalyptus melliodora</i>	10x4	30	3.6	2.2	Semi-mature	Fair	Fair	10-20	Low	Codominant at 1m
38	Leyland Cypress	<i>Cupressocyparis x leylandii</i>	10x6	25	3.0	2.0	Semi-mature	Fair	Fair	10-20	Low	#VALUE!
39	Yellow Gum	<i>Eucalyptus leucoxylon</i>	12x10	22, 18 (28)	3.4	2.1	Semi-mature	Fair	Fair	10-20	Medium	
40	Bracelet Honey-myrtle	<i>Melaleuca armillaris</i>	7x7	Multi (15)	2.0	1.5	Semi-mature	Fair	Poor	0-10	Low	Watersprouts
41	Manna Gum	<i>Eucalyptus viminalis</i>	16x10	30, 35, 25 (52)	6.2	2.8	Semi-mature	Fair	Fair	20+	Medium	
42	Manna Gum	<i>Eucalyptus viminalis</i>	18x8	40, 20	5.4	2.6	Over-mature	Poor	Hazardous	0	Low	Remove hazardous tree
43	Yellow Box	<i>Eucalyptus melliodora</i>	7x7	10x3 (17)	2.0	1.7	Semi-mature	Fair	Poor	10-20	Medium	
44	Narrow-leaved Black Peppermint	<i>Eucalyptus nicholii</i>	16x10	25, 40 (47, estimate)	5.6	2.6	Semi-mature	Fair	Fair	20+	Medium	
45	Brittle Gum	<i>Eucalyptus mannifera</i>	16x6	35	4.2	2.3	Over-mature	Poor	Poor	0-10	Low	Significant canopy decline
46	Silky Oak	<i>Grevillea robusta</i>	16x14	45	5.4	2.6	Semi-mature	Fair	Fair	20+	Medium	
47	Unknown Maple	<i>Acer</i> sp.	10x8	18, 20 (27)	3.2	2.1	Semi-mature	Fair	Fair	10-20	Low	
48	Lemonwood	<i>Pittosporum eugenioides</i> 'Variegatum'	10x6	18	2.2	1.8	Semi-mature	Fair	Poor	0-10	Low	
49	Lilly Pilly	<i>Syzygium smithii</i>	12x8	12x3 (21)	2.5	1.9	Semi-mature	Fair	Poor	0-10	Low	
50	Bracelet Honey-myrtle (multiple)	<i>Melaleuca armillaris</i>	6x3	15	2.0	1.5	Semi-mature	Fair	Fair	10-20	Low	Row of small trees along length of eastern boundary

TREE IMAGES



Tree 1, Brittle Gum



Tree 2, Brittle Gum



Tree 3, Brittle Gum



Tree 4, Brittle Gum



Tree 5, Brittle Gum



Tree 6, Brittle Gum



Tree 7, Bhutan Cypress



Tree 8, Lemonwood



Tree 9, Red Tip Photinia



Tree 10, Box Elder



Trees 11, Sweet Pittosporum and
12, Shining Privet



Tree 13, Loquat



Tree 14, Broad-leaved Paperbark



Tree 15, Prickly-leaved Paperbark



Tree 16, Prickly-leaved Paperbark



Tree 17, Brush Box



Tree 18, Bracelet Honey Myrtle



Tree 19, Liquidamber



Tree 20, Port Jackson Fig



Tree 21, Red Tip Photinia



Tree 22, Box Elder



Trees 23, Red Tip Photinia (left) and 24 Himalayan Cedar



Tree 25, Chinese Elm



Tree 26, English Oak



Tree 27, Sweet Pittosporum



Tree 28, Chinese Elm



Tree 30, Callery Pear



Tree 31, Black Locust



Tree 32, Wattle



Tree 33, Leyland Cypress



Tree 35 (Lightwood (1 of 4))



Trees 34, Manna Gum (right) and
36 Mugga Ironbark



Tree 37, Yellow Box



Tree 38, Leyland Cypress



Tree 39, Yellow Gum



Tree 40, Bracelet Honey Myrtle



Tree 41, Manna Gum



Tree 42, Manna Gum



Tree 43, Yellow Box



Trees 44, Narrow-leaved Black
Peppermint (right) and 45, Brittle Gum



Tree 46, Silky Oak



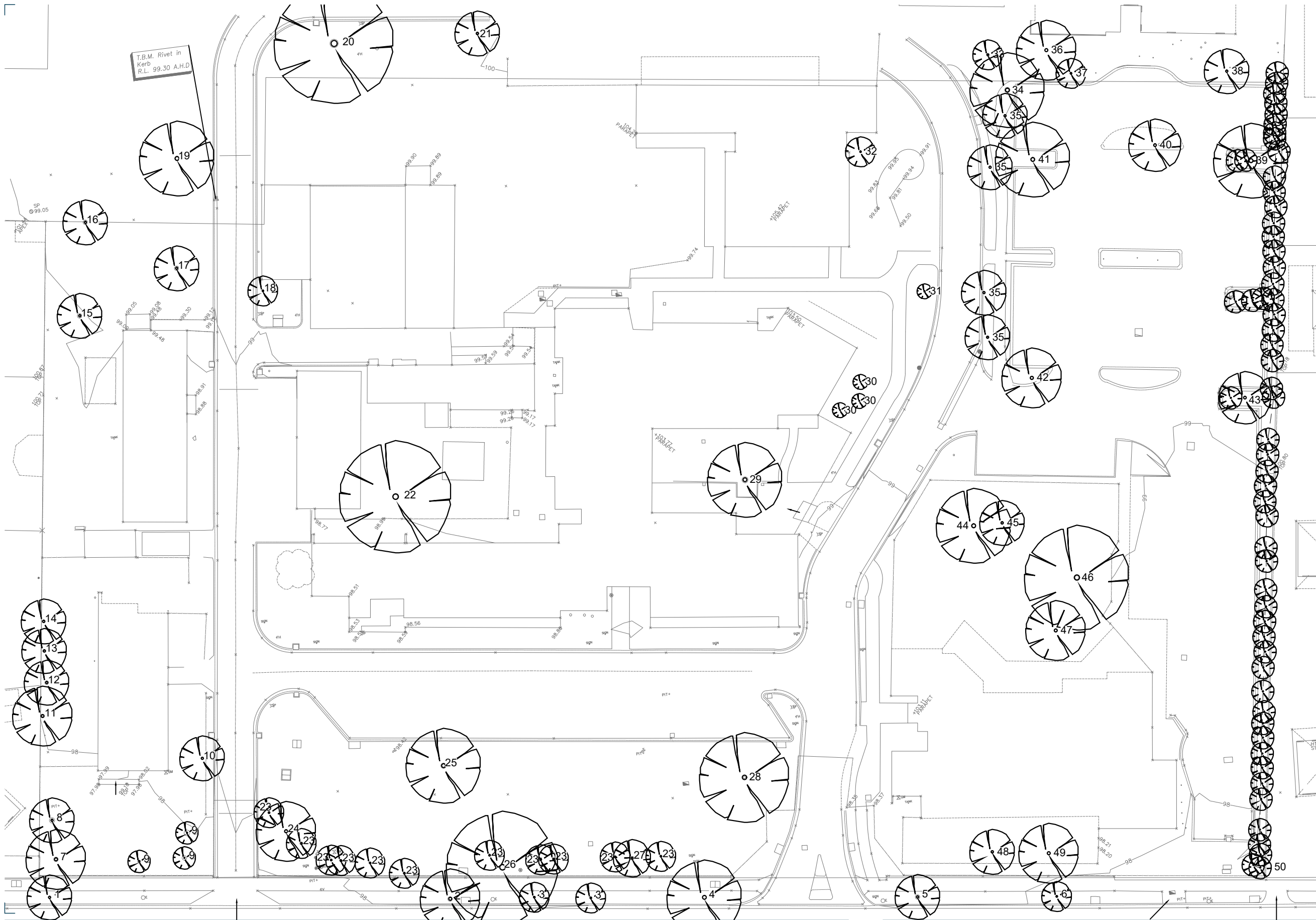
Tree 47, Maple



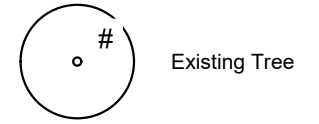
Trees 48, Lemonwood (right) and
49, Lilly Pilly (behind T48)



Tree 50, a row of Bracelet Honey Myrtle



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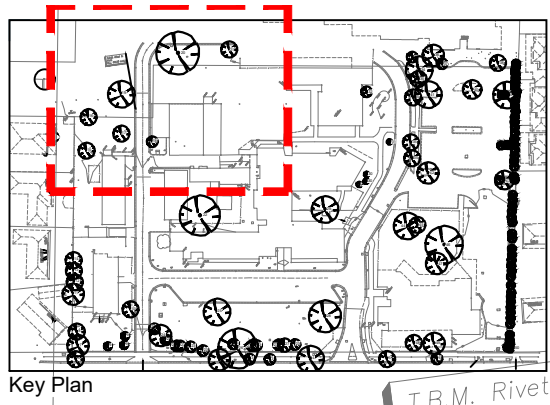
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**Golden Age
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 RESIDENTIAL DEVELOPMENT**
ADDRESS
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 Glen Waverley**

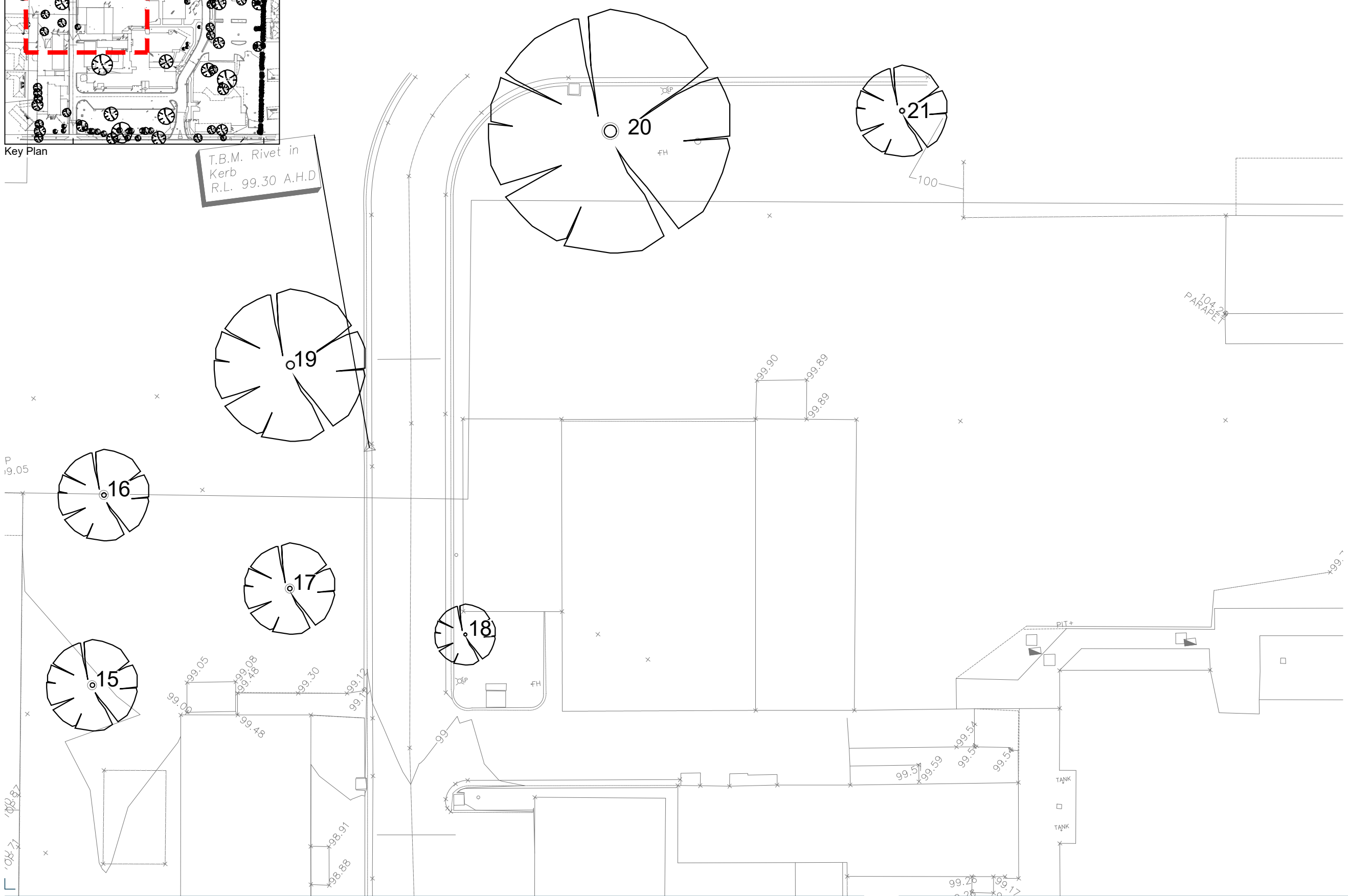
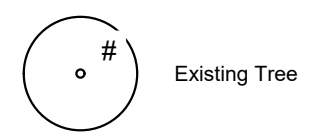
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DWG NO	TLP01



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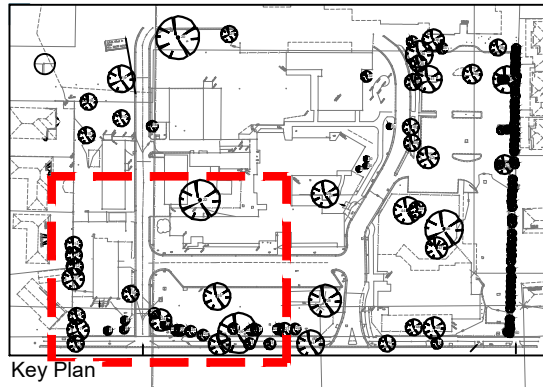
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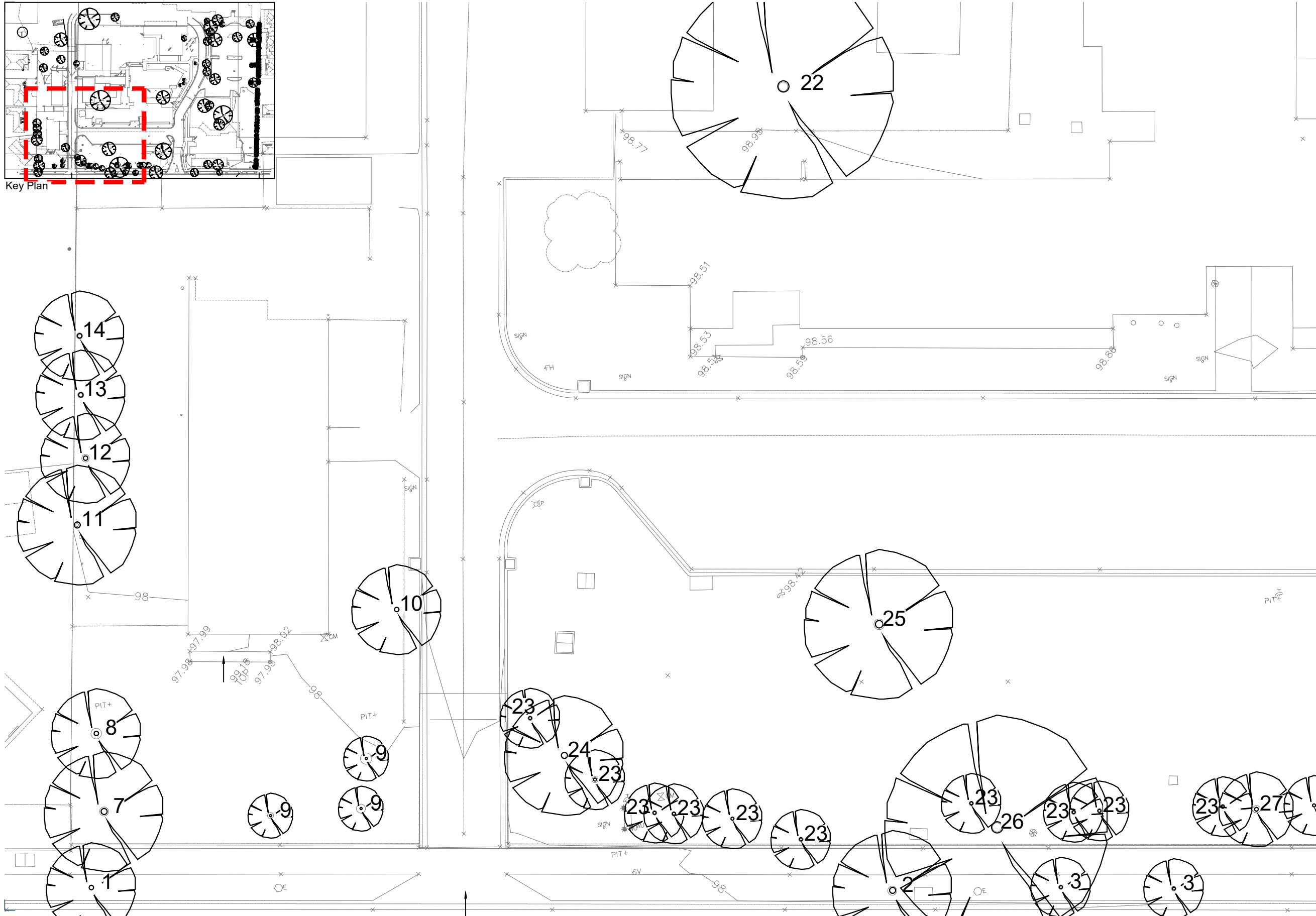
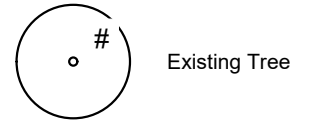
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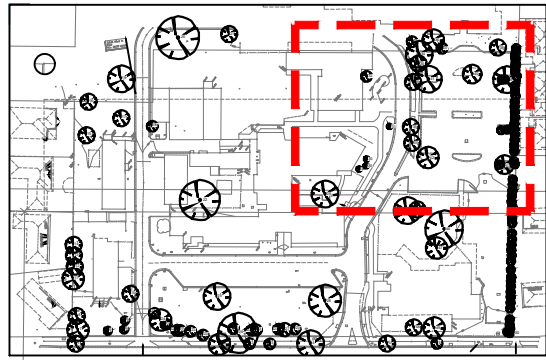
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Tree Location Plan



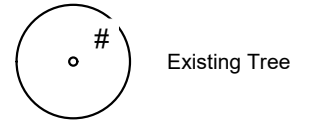
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DWG NO	TLP02



Key Plan



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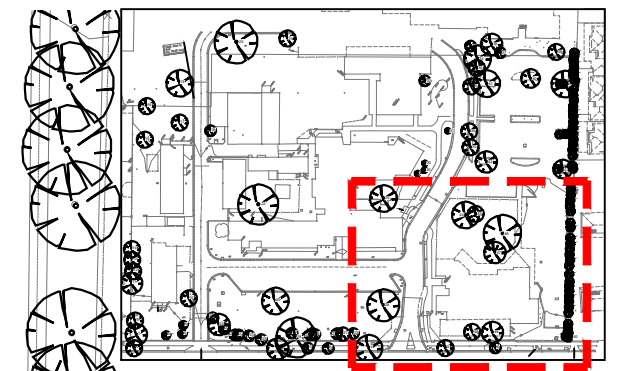
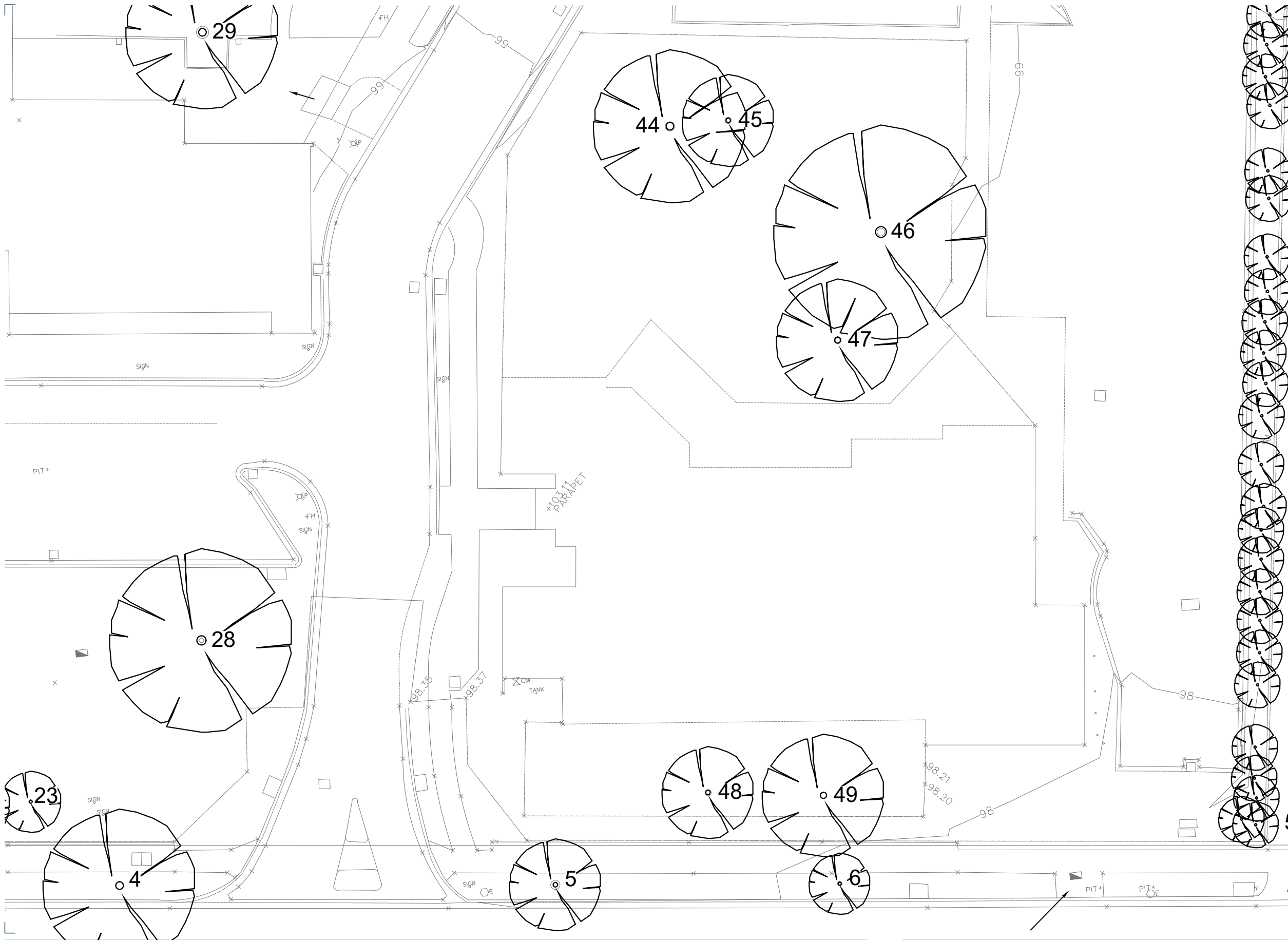
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PROJECT
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 RESIDENTIAL DEVELOPMENT**
 ADDRESS
**587 Ferntree Gully Road,
 Glen Waverley**

DRAWING
 Tree Location Plan



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○ # Existing Tree

Key Plan



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Tree Location Plan



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JOB NO	20-295 TS
DWG NO	TLP03

5 Discussion

- 5.1 A multi-dwelling residential development is proposed for the site. The following plans have been reviewed and form the basis of the following impact assessment:

*Overall Ground Floor Plan, TP01.02 A
Prepared by Rothe Lowman, 06/15/21*

- 5.2 This report assumes that the levels, dimensions and drawings provided by the surveyors and architects named within this report are correct as these have been used as the basis for this impact assessment.
- 5.3 Tree 36 was not shown on the survey provided, its location on the Tree Location Plan and Impact Assessment Plan is therefore based on a visual estimation of its location. Any comments regarding the impact on this tree are approximate only.

SITE TREES

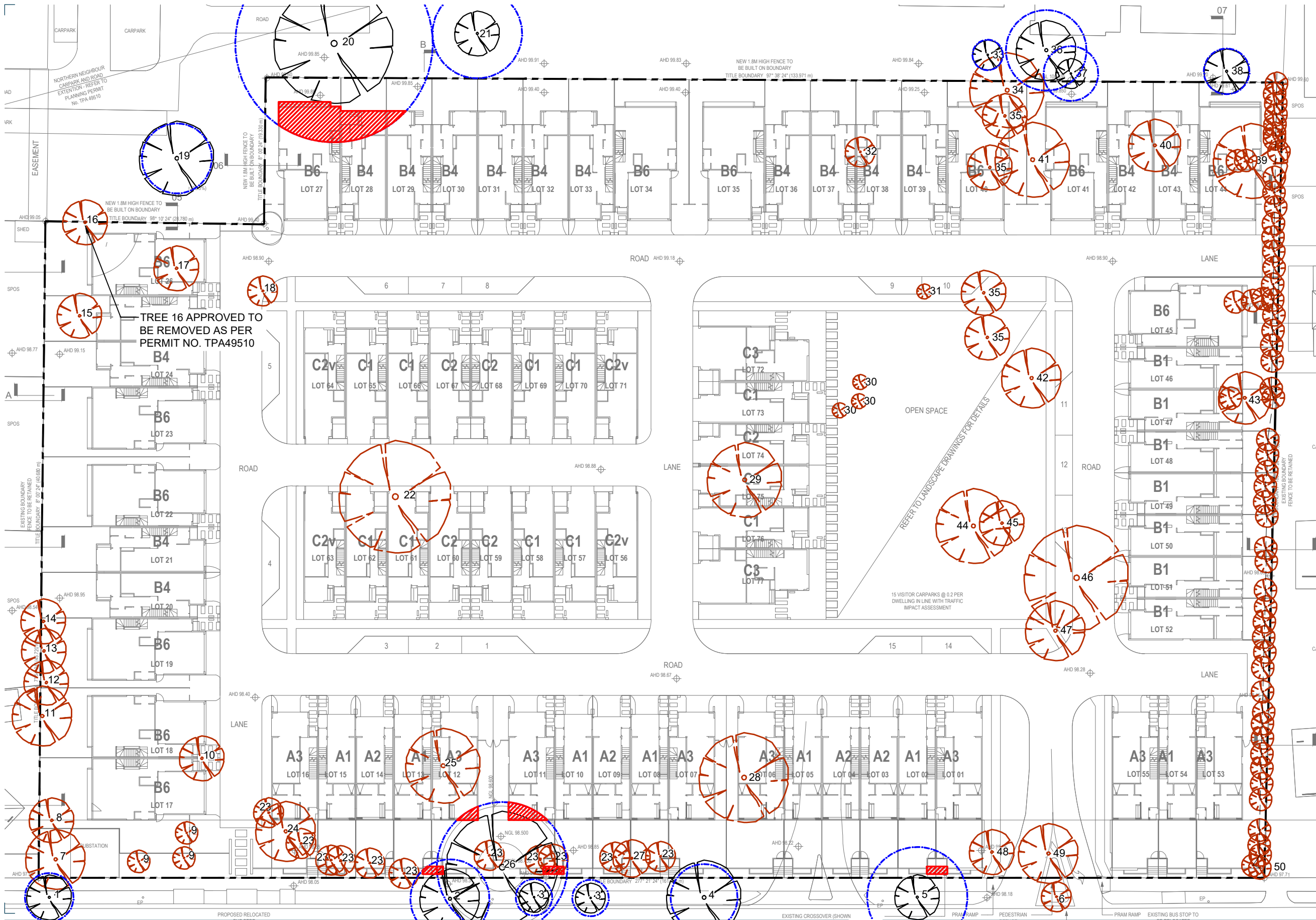
- 5.4 Floor plans indicate the retention of Tree 26, an English Oak of high arboricultural value. All other site trees are proposed for removal with the majority of these (twenty five) being of low arboricultural value (Trees 8 – 14, 18, 22, 23, 27, 29 – 32, 34, 35, 40, 42, 45 and 47 – 50) and eleven trees of medium arboricultural value (Trees 7, 15, 17, 24, 25, 28, 39, 41, 43, 44 and 46). As far as I am aware, permits are not required for removal of any of the trees.
- 5.5 Of the trees proposed for removal, a number could potentially be retained however they are mostly of low arboricultural value and not worthy of retention, with four of them recognised weed species. I understand a Landscape Concept Plan has been prepared for the site by Aspect Studios which identifies numerous opportunities for replacement tree planting.
- 5.6 Dwellings on Lots 11 and 12 encroach into the TPZ of Tree 26 (English Oak), resulting in a total encroachment of 5%. This complies with AS4970-2009. Fences, planter boxes and stairs are also proposed within the TPZ of this tree. Provided those sections of fence and stairs within the TPZ of the tree are of light-weight construction above existing soil levels with post holes hand dug and relocated if necessary to avoid any roots greater than 40mm diameter; planter boxes are constructed entirely above existing soil levels (i.e. no sub-terranean footings); and existing soil levels within the front set-backs are maintained, these elements are not expected to negatively impact the long-term healthy retention of this tree. The impact of encroachment is therefore restricted to that of the dwellings.

NEIGHBOURING TREES

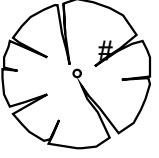
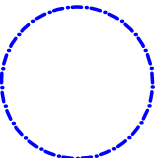


- 5.7 There are no works proposed within the TPZ of Trees 1 or 3, both Brittle Gum street trees along Ferntree Gully Road; 19, Liquidambar; 21, Red Tip Photinia; 33, Leyland Cypress; 36, Mugga Ironbark; or 38, Leyland Cypress. Provided any fences proposed within the TPZ of these trees are of light-weight construction with post holes hand dug and relocated if necessary to avoid major roots and all landscape areas within their TPZs are

maintained at existing grades, or with maximum fill of 150mm, the development is not expected to negatively impact their long-term healthy retention.

- 5.8 A retaining wall/, planter boxes, front fences and stairs of Lots 12 and 13 encroach into the TPZ of Tree 2, a Brittle Gum street tree. Existing grades within the front yard of Lots 12 will be maintained and the fence and planter box at the front of these lots will be constructed in a manner which protects Tree 26. The impact of encroachment on Tree 2 will therefore be restricted to the area within Lot 13, or approximately 3% of the TPZ. This complies with AS4970-2009 and is therefore not expected to negatively impact the long-term healthy retention of this tree.
- 5.9 A retaining wall barely enters the outer edge of the TPZ of Tree 4, a second Brittle Gum street tree. A planter box is also proposed within the TPZ of this tree, however provided this is constructed as described above, there is expected to be no impact to the long-term healthy retention of this tree.
- 5.10 Planters and fences for Lots 01, 02 and 03 and stairs to Lots 01 and 02 are proposed within the TPZ of Tree 5, a third Brittle Gum street tree. As with lots 11 and 12, provided those sections of fence and stairs within the TPZ of the tree are of light-weight construction with post holes hand dug and relocated if necessary to avoid any roots greater than 40mm diameter; planter boxes are constructed entirely above existing soil levels (i.e. no sub-terranean footings); and existing soil levels are maintained within the front set-backs located within the TPZ, these elements are not expected to negatively impact the long-term healthy retention of this tree.
- 5.11 Tree 6, a Brittle Gum street tree will require removal to accommodate a new vehicle entry into the site. Removal of this tree will need to be negotiated with the Responsible Authority.
- 5.12 The dwelling for Lot 26 encroaches into the TPZ of Tree 16, a neighbouring Prickly-leaved Paperbark. Plans indicate that this tree has been approved for removal (Permit No. TPA 49510).
- 5.13 Dwellings on Lots 27, 28 and 29 encroach into the TPZ of Tree 20, a neighbouring Port Jackson Fig, approximately 11.3%. It is noted that plans indicate a 4.1% encroachment into the TPZ of this tree from the neighbouring property (Permit No. TPA 49510), resulting in a total encroachment of 15.4%. Given the size, age, health and tolerance of this taxon to root disturbance, I believe this level of encroachment will not negatively impact the tree's long-term healthy retention. A non-destructive root investigation (NDRI) could be undertaken to confirm this should Council deem this necessary.
- 5.14 If any storage sheds, rainwater tanks etc are to be located within the TPZ of neighbouring trees, it is recommended these are installed on pavers or concrete slabs constructed above existing soil levels. If any boundary fences are to be replaced, it is recommended that any section of the new fences that pass through the TPZ of trees to be retained are of light-weight construction with post holes hand dug and relocated if necessary to avoid major roots. It is also recommended that all landscape areas within the TPZ of trees to be retained be maintained at existing grades or with no more than 150mm of fill. Fill is to be coarse and free draining to allow water and air to infiltrate



LEGEND

-  Existing Tree To Be Retained
-  Tree Protection Zone (TPZ)
-  Existing Tree To Be Removed
-  TPZ Encroachment

TREE 16 APPROVED TO BE REMOVED AS PER PERMIT NO. TPA49510

REFER TO LANDSCAPE DRAWINGS FOR DETAILS

15 VISITOR CARPARKS @ 0.2 PER DWELLING IN LINE WITH TRAFFIC IMPACT ASSESSMENT

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CLIENT
 Golden Age Enterprises Pty Ltd

PROJECT
 Residential Development

ADDRESS
 583 Ferntree Gully Road,
 Glen Waverley

DRAWING
 Impact Assessment Plan

SCALE 1:500 @A3
DATE AUGUST 2021
DRAWN MGR
CHECKED KM
JOB NO 20-295 TIA REV
DWG NO IAP01



6 Conclusion

- 6.1 A total of 50 trees or tree groups were assessed, comprising 37 within the subject site, 7 within neighbouring properties and 6 within the road reserve.
- 6.2 All site trees are proposed for removal except Tree 26, and English Oak and the only site tree of high arboricultural value. Encroachment into this tree is not expected to negatively impact its long-term healthy retention.
- 6.3 The majority of trees proposed for removal are of low arboricultural value and not worthy of retention. There are no tree controls requiring a permit for removal of the trees.
- 6.4 Tree 6, a street tree, will require removal to accommodate a new vehicle entry. Its removal will need to be negotiated with the Responsible Authority.
- 6.5 The proposed works are not expected to negatively impact any other neighbouring trees.

7 Recommendations

- 7.1 A Tree Management Plan be prepared to direct works around trees to be retained.

8 Descriptors

Tree Number:

Refers to the identification number for reference purposes, denoted on the Tree Data and Tree Survey Plan.

Botanical Name:

Botanical name of species, based on nomenclature and spelling in Spencer, R 1995, *Horticultural flora of South Eastern Australia* (vols. 1-5), University of NSW Press, Sydney. Where *Eucalyptus* spp. are not found in this source, nomenclature is based on Euclid: *Eucalypts of Australia*, 2006, Centre for Australian National Biodiversity Research (CANBR). *Eucalypt* subspecies information is also based on this source.

While accurate tree identification is attempted, and uncertainties are indicated, some inaccuracies in tree identification may still be present – especially in the case of difficult to determine genera (e.g. *Cotoneaster* and *Ulmus*), and with cultivars which can have similar characteristics.

From time to time taxonomists revise plant classification, and name changes are assigned. If it is known names have been revised post the publication of the relevant above listed source, the new nomenclature has been used.

Common Name:

Common names are based primarily on names and spelling used by Spencer in *Horticultural Flora of South Eastern Australia* (vols 1-5). The source of common names is taken in the following order:

- Single name supplied in *Horticultural Flora of South Eastern Australia*;
- First in list of names supplied in *Horticultural Flora of South Eastern Australia*, unless another name in the list is deemed more appropriate;
- Common name as per Costermans, LF 2006, *Trees of Victoria and adjoining areas*; Costermans Publishing, Victoria.
- Most widely used common name if not available in either source previously mentioned.

Common names are provided for thoroughness; the botanical name should be used when referring to the tree taxon.

Age:

Juvenile: Tree has recently been planted and is still in establishment phase. Tree currently makes little contribution to the amenity of the landscape. Trees of this age are possible candidates for relocation during development.

Semi-mature: Tree has established but has not yet developed mature habit. The tree provides some landscape contribution. Tree size would still be expected to increase considerably provided there are no significant changes to existing growing conditions.

Maturing: Tree has developed mature structural habit but has substantial potential to increase in size.

Mature: Tree has or is close to reaching full potential and expected size. Growth rate has slowed, however the tree does not exhibit any major signs of health or structural weakness due to age.

Over mature: Tree is no longer actively putting out extension growth, and is starting to show signs of decline in health due to age. Canopy may thinning and signs of die back in the canopy may be present

Height: The tree's height in metres

Width: The tree's average canopy width in meters. Variations in canopy width to that stated may be present due to canopy asymmetry.

DBH: The tree's trunk Diameter at Breast Height. Measured at 1.4m above ground level, in accordance with *AS4970 Protection of trees on development sites*, unless specified as having been measured lower. DBH may be estimated or measured, as specified in the report. In the case of multi-stemmed trees, stem diameter is either listed individually, or a measurement taken at a point lower than the point of stem divergence. In some cases, especially where trees are not considered worthy of retention or stems are too numerous the DBH may simply be listed as 'multi-stemmed'.

Health:

Good: Tree is not stressed and shows no obvious signs of pest or disease. It is free of wounding. Annual growth rate is as would be expected of a healthy specimen in the same area. There are no signs of die back and canopy is dense. Tree maybe partially suppressed by neighbouring trees.

Fair: Tree is showing signs of reduced health. It maybe drought stressed or show partial signs of pest or disease. Foliage density is less than optimal and minor die back may be present. Tree is typical of its species. Remedial works may improve tree health.

Poor: Tree exhibits signs of stress, e.g. sparse canopy and possibly stunted growth. A large number of dead branches or dieback are present. Tree is likely to be significantly affected by pests or disease. Tree often in decline. Remedial works not expected to improve long-term health.

Dead: Tree shows no signs of life and is not growing.

Note on Deciduous Species: Assessment of deciduous species can be problematic and results may vary depending on the time of year. Descriptor comments in relation to foliage density do not apply to deciduous trees assessed when dormant or entering or exiting dormancy. Time of leaf drop or bud burst and extent of bud swell may be considered in the health rating of these trees.

The ratings indicate that certain characteristics listed have, or have not, been observed. Inspections do not assess the entire tree in detail for each characteristic. The comments category should be referred to for further information.

Structure:

As a rule, the structure rating is based on identified faults in tree habit which reduce the structural integrity and may lead to partial or entire tree failure. It must be noted, however, that this is not a full hazard or failure assessment.

Good: Tree appears to have no obvious structural defects which would diminish the tree's structural integrity.

Fair: The tree has one or more obvious structural defects. e.g. dead branches or codominant stems, however the observed defects are unlikely to prevent retention of the tree. Judicious remedial intervention could remove structural defects and improve the structure rating.

Poor: Tree has at least one or more structural defects that remedial intervention cannot rectify without significantly reducing the retention value of the tree. These defects reduce the useful life expectancy of the tree.

Hazardous: The tree shows one or more structural faults that are prone to failure and present an immediate safety concern. Judicious intervention to remove structural faults and reduce safety risk would leave a tree not worthy of retention. These trees should be removed as a high priority.

Arboricultural Value:

The Arboricultural Values shown in the table below are based on the ULE of the tree which considers structure and health ratings and landscape contribution.

The arboricultural value assists in determining the positioning of structures and infrastructure outside the tree's identified TPZ.

ULE	Landscape Significance			
	High	Medium	Low	Very Low
20+ yrs.	High Arboricultural	Medium Arboricultural Value	Low	Very Low
10-20 yrs.	Medium Arboricultural Value			
5-10 yrs.				
0-5 yrs.	Low Arboricultural Value	No Arboricultural Value		
0 yrs.	No Arboricultural Value			

ULE: The Useful Life Expectancy of the tree from a health, structure, amenity and weediness viewpoint given no significant changes to the current situation occur. This category is difficult to determine, and should be taken as an estimate only. In addition, factors not observed at the time of inspection can lead to tree decline.

- 0 yrs.: Tree should be removed due advanced decline/ dead or hazardous.
- 0-5 yrs. Tree is in decline and has poor health or structural faults which cannot be resolved by intervention. Tree is often over- mature.
- 5-10yrs. Tree of fair health or structure
- 10-20. Semi-mature or mature tree of fair health and structure
- 20+ yrs. Juvenile or semi-mature, or a long lived species of good health and structure.

TPZ (Tree Protection Zone):

The Tree Protection Zone of the tree, measured as a radial distance in metres from the centre of the trunk. The TPZ is calculated using the method specified in Australian Standard *AS4970-2009 Protection of trees on development sites*. $12 \times \text{DBH} = \text{TPZ}$

Recommendation:

i.e. Further exploratory root investigation, alterations to proposed works to allow tree retention.

Comments:

Any additional comments specific to individual tree specimens.

AS4970-2009:

The recognised Australian Standard for the 'Protection of Trees on Development Sites'. It provides guidelines on tree protection and formulas for calculating Tree Protection Zones (TPZs), Structural Root Zones (SRZs) and the Diameter at Breast Height (DBH).

AS-4373-2007:

The recognised Australian Standard for the 'Pruning of Amenity Trees'. This Standard provides guidelines on tree pruning to encourage good health and structure.

Ecological Vegetation Class (EVC):

A type of native vegetation classification that is described through a combination of its floristics, life form and ecological characteristics, and through an inferred fidelity to environment attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification that is based solely on groups in the same species) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating.