

**“GROWING MY WAY”**

**Tree Consultants**

Established 1977

EXCELLENCE in ALL ASPECTS OF TREE MANAGEMENT

FULL INSURANCE PROTECTION

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## ***Arboriculture Impact Assessment & Site-Specific Preliminary Tree Plan of Management***

**November 2024**

**Prepared for:** Tim & Franck Dyroff  
c/ Woodward & Architects

**146 Whale Beach Road Whale Beach NSW 2107**

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## 1. Summary

Tim & Franck Dyroff (as the Property Owners of 146 Whale Beach Road Whale Beach NSW 2107) via Woodward Architects, (Richard Coskie) commissioned the Growing My Way Tree Consultancy (GMW) to prepare an Arboriculture Impact Assessment & Preliminary Site - Specific Tree Plan of Management to be linked to a Development Application (DA) submission for *Alteration & Additions to Excising Dwelling*.

The site is Land Zoned as “E4 Environmental Living by NBC LEP, (C4 by State Legislation change)”.

This report discusses fifteen (15) trees in total, three (3) protected trees will be discussed in detail. All discussed trees are located within the subject site (146 Whale Beach Road Whale Beach), & the front of the subject site Whale Beach Road road reserve area.

The subject site shares common boundaries with three (3) same land zoning common boundary adjoining properties, & one (1) public road (Whale Beach Road). All same zoning common boundary adjoining properties are developed to contain dwellings & other infrastructure.

Motor vehicle & pedestrian access to the subject site is only via Whale Beach Road.

The sole consent authority is the Northern Beaches Council. (from herein NBC).

Information related to the discussed trees was gathered by onsite data collection with cross referencing to:

- *NBC website, online property & environment information website tools.*
- *Site Survey provided by CMS Surveyors, dated 24 October 2024.*
- *Proposed Plans, Elevations Sections etc., by Woodward Architects, dated 09 December 2024. Rev A*
- *NSW SEPP; 10/50 Vegetation Clearing ‘Code of Practice’.*
- *NBC “Tree Management Provisions”.*
- *NBC Heritage Conservation Area & Land Zoning LEP Maps.*
- *NBC Heritage Wildlife Corridor Map, Pittwater 21 DCP.*

*The aim of this report is:*

1. *To confirm the viability of the discussed tree, relating to its individual health, vigour & condition considering any potential impact foreseen by the proposed works.*
2. *Provide a Preliminary Site Specific ‘Tree Plan of Management’.*

This document supports with compliance of the preliminary specifications included (relative to tree management).

We confirm, three (3) protected trees and one (1) exempt trees within the road reserve area are assessed and can be retained with no able to be reasonably predicted compromise to their Useful Life Expectancy with intensive management during the proposed works.

This document supports (relative to tree management), the proposal as presented with replacement tree/s that at maturity will least replicate the ‘loss of green footprint’ provided by the supported to be replaced tree/s.

Kyle A Hill - AQF level 5, Diploma of Horticulture / Arboriculture, (TAFE NSW & other) & AQF level 8, Post Graduate Certificate in Arboriculture, (University of Melbourne) Practising/Consulting Arborist) with the assistance of Ao Wang (Master of Protected Area, Governance & Management (University of Tasmania) & Bachelor of Environmental

Biotechnology (University of Technology Sydney) has prepared this report based on “Visual Tree Assessment” (VTA) undertaken on Tuesday, 05 November 2024.

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## 2. Introduction

This report contains observations & recommendations intended to assist in the management of the fifteen (15) trees identified as close to the proposed works. Note: only three (3) discussed in detail trees are protected species.

Tree #1, Tree #2, Tree #7 & Tree #8 are located within the Whale Beach Road road reserve area in front of the subject site. Tree #3 & Tree #4, Tree #5, Tree #6 & Tree #9 are located within the subject site's front yard on the slope adjacent to the existing driveway. Tree #10, Tree #11 & Tree #12 are located within the subject site's front yard upper level-landscaped area adjacent to the existing house. Tree #13 Tree #14 & Tree #15 are located within the subject site's rear & rear yard upper area adjacent to the existing house. In addition to the discussed trees, there are two (2) exempt species trees next to Tree #14. They are *Beaucarnea recurvata* (Ponytail Palm), exempt as it is less than 4.5 meters in height & a *Syagrus romanzoffiana* (Cocos Palm) which is also exempt by species, refer to the NBC DCP Tree Exemption list.

The *Australian Standard (AS4970-2009) for the 'Protection of trees on development sites'* is the guideline document required to be addressed in this document.

We acknowledge & confirm to be familiar with the NBC "Tree Management Provisions", specifically the documents; Pittwater Local Environmental Plan 2014, (from herein; Pittwater *LEP*), the Pittwater Development Control Plan 21 last Amendments Dec 2020 (from herein Pittwater *DCP*), plus the State Environmental Planning Policy, Vegetation in Non-Rural Areas, 2017 (August 2017 SEPP).

The subject site is confirmed NOT located within a designated 10/50 vegetation clearing entitlement area, the 10/50 exemption to clear vegetation does NOT apply on this parcel of land (NSW Rural Fire Service).

The subject site is NOT within an NBC designated "*Heritage Conservation Area*". Neither is the subject site, or any common boundary adjoining property listed 'Heritage Items'.

The subject site & subject adjoining properties are within the CO1 - Those areas though disturbed are likely to be of habitat value due to good crown cover and/or understory (Pittwater Local Government Area Pittwater 21DCP – wildlife).

Information related to the discussed tree was gathered by onsite data collection with cross referencing to:

- *NBC website, online property & environment information website tools.*
- *Site Survey provided by CMS Surveyors, dated 24 October 2024.*
- *Proposed Plans, Elevations Sections etc., by Woodward Architects, dated 09 December 2024. Rev A*
- *NSW SEPP; 10/50 Vegetation Clearing 'Code of Practice'.*
- *NBC "Tree Management Provisions".*
- *NBC Heritage Conservation Area & Land Zoning LEP Maps.*
- *NBC Heritage Wildlife Corridor Map, Pittwater 21 DCP.*

This document includes a Preliminary Site Specific "Tree Plan of Management".

### 3. Methodology

Assessment Methodology for the discussed tree has been from ground level by eye, using *Visual Tree Assessment (VTA Stage 1)*, techniques developed by Claus Mattheck. The principles of VTA are illustrated & explained in the widely used reference textbook "*The Body Language of Trees (1994)*".

Assessment includes:

- *Onsite assessment, data collection*
- *Tree's current condition & likely future health*
- *Species tolerance to root disturbance &/or development*
- *Likely present & future risk to persons & property.*
- *Tree's (public & private landscape) amenity value, considering habitat potential.*

No root analysis, soil testing, 'Resistograph'<sup>®</sup> drilling or aerial canopy inspection was undertaken. See the following Appendices for further information:

- *Appendix A Glossary of Common Arboreal term*
- *Attachment A Tree Protection/Management Prior to & During Construction*

## 4. Observations

### 4.1 The Site

This report discusses fifteen (15) trees in total, three (3) Protected trees will be discussed in detail. All discussed trees are located within the subject site (146 Whale Beach Road Whale Beach), & the front of the subject site Whale Beach Road road reserve area.

The subject site is 893.5m<sup>2</sup> in size (*Site Survey provided by CMS Surveyors, dated 24 October 2024*).

The subject site shares common boundaries with three (3) same land zoning common boundary adjoining properties, & one (1) public road (Whale Beach Road). All same zoning common boundary adjoining properties are developed to contain dwellings & other infrastructure.

No Geotechnical issues are known to exist relative to tree management.



FIGURE 1: ABOVE ILLUSTRATES THE DISCUSSED TREE RELATIVE TO THE SITE 146 WHALE BEACH ROAD WHALE BEACH NSW 2107. (AERIAL PHOTOGRAPH FROM SUNDAY 22 SEPTEMBER 2024, MAP DATA COURTESY OF NEARMAP™)

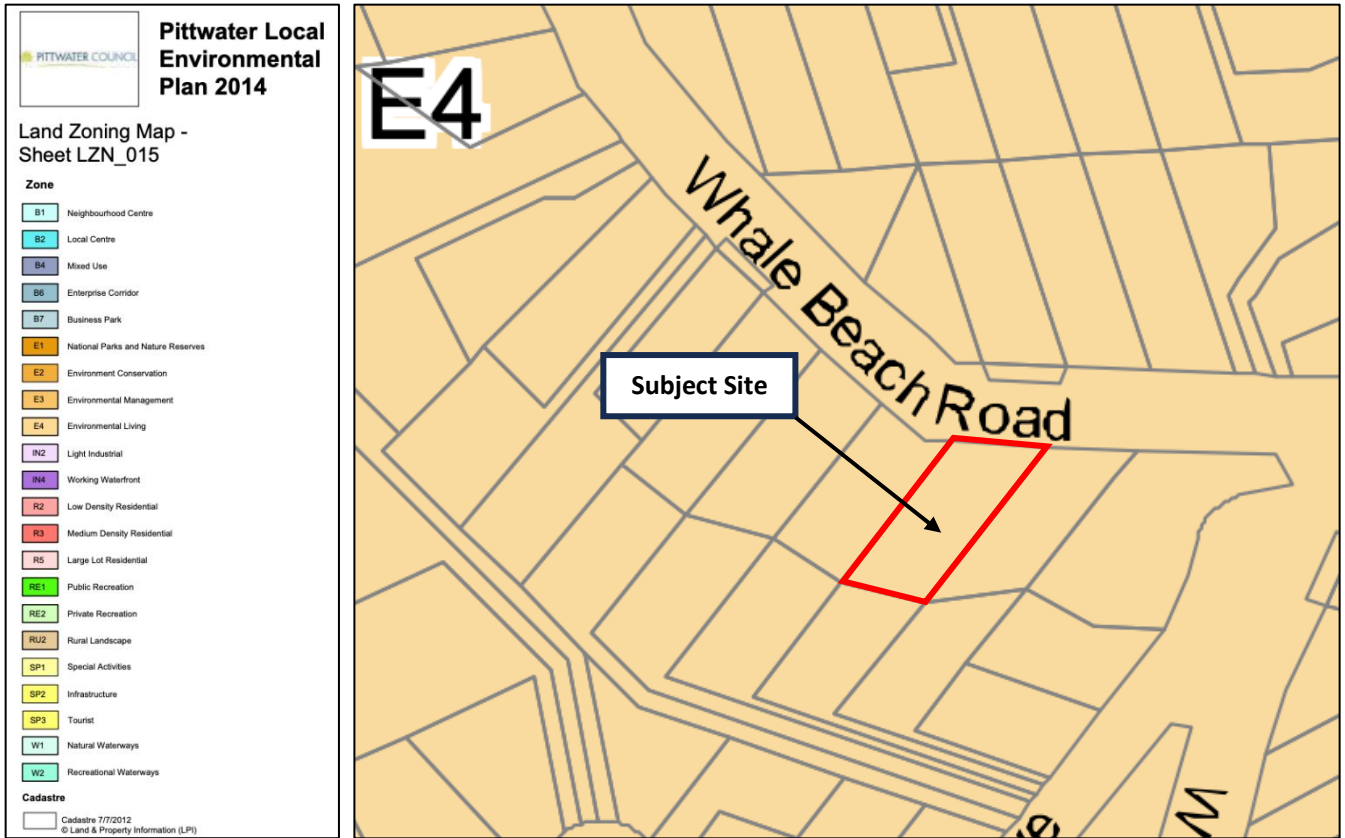


FIGURE 2: CONFIRMS STATUS OF THE SUBJECT SITE RELATIVE E4 ENVIRONMENTAL LIVING (CURRENT C4). (PITTWATER LOCAL ENVIRONMENTAL PLAN 2014, LAND ZONING MAP - SHEET LZN\_015).

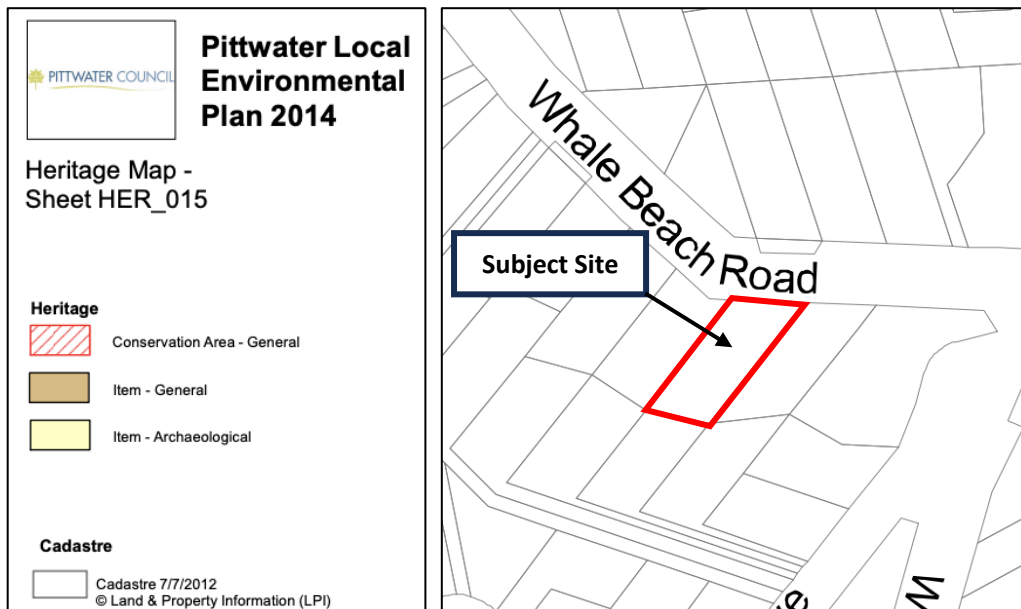


FIGURE 3: CONFIRMS STATUS OF THE SUBJECT SITE & SUBJECT ADJOINING PROPERTIES ARE NOT RELATIVE ANY HERITAGE ITEM. (PITTWATER LOCAL ENVIRONMENTAL PLAN 2014, HERITAGE MAP SHEET HER\_0015)



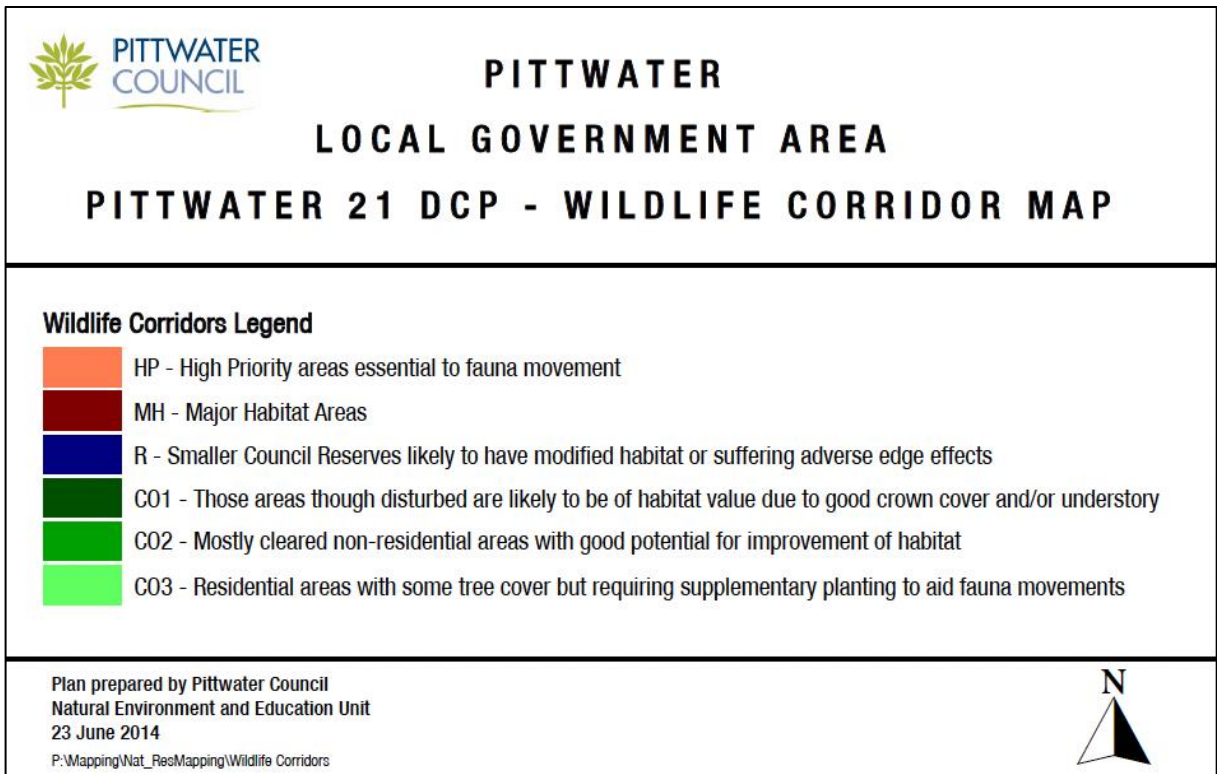
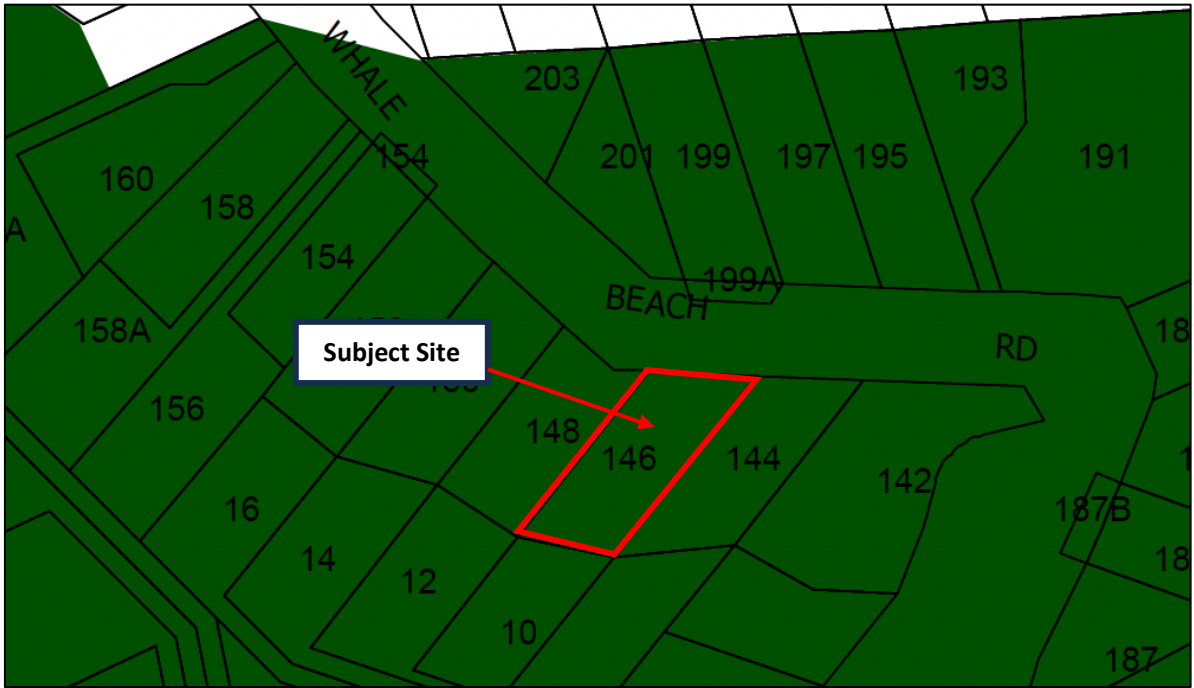
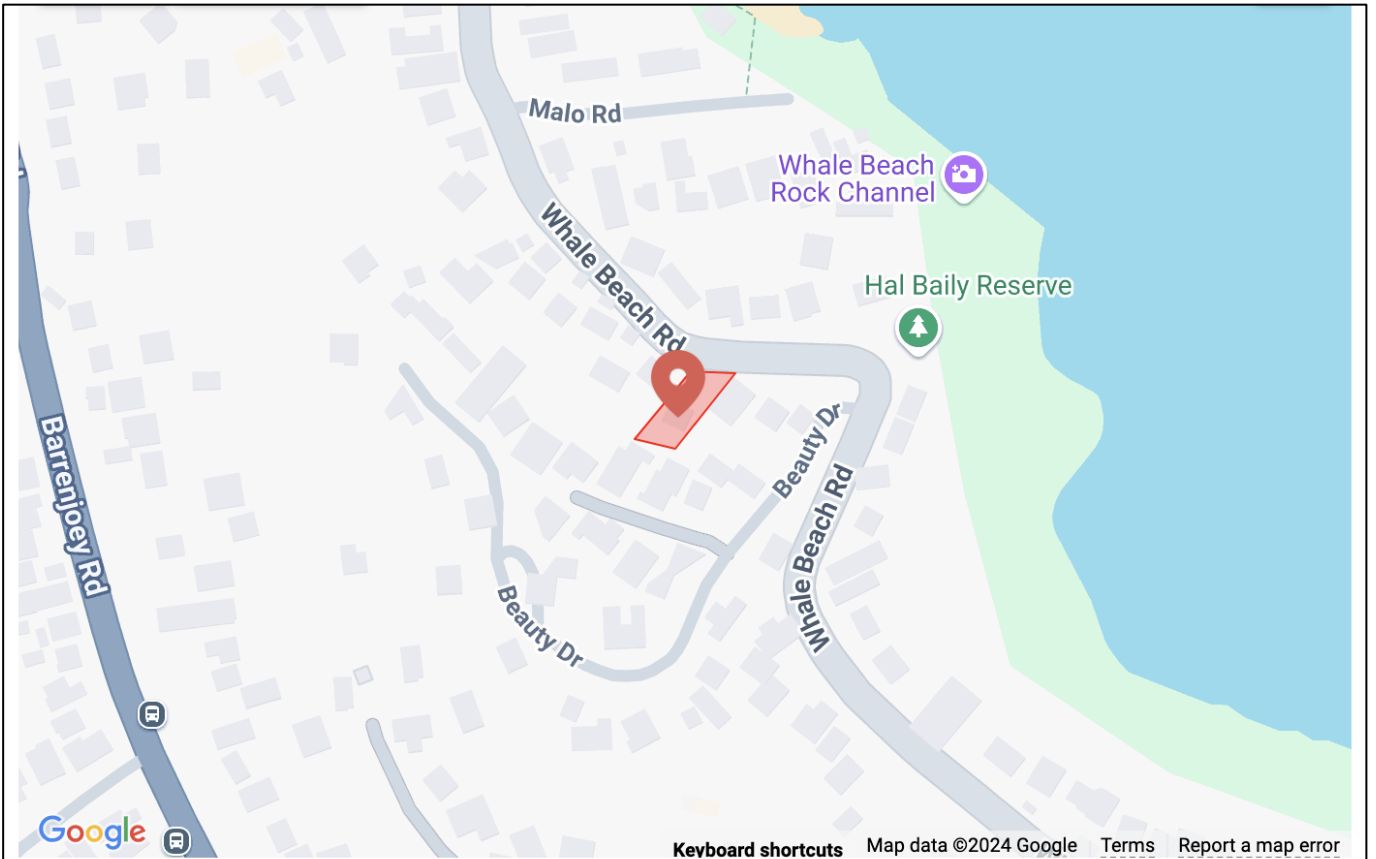


FIGURE 4: SUBJECT SITE IS WITHIN CO1 - THOSE AREAS THOUGH DISTURBED ARE LIKELY TO BE OF HABITAT VALUE DUE TO GOOD CROWN COVER AND/OR UNDERSTORY (PITTWATER LOCAL GOVERNMENT AREA PITTWATER 21DCP – WILDLIFE



### Your 10/50 search result

You have conducted a search of the 10/50 online tool for the land identified in the map above. This search result is valid for the date the search was conducted.

Please retain a copy of this search result for your records.



The parcel of land you have selected is not located in a designated 10/50 vegetation clearing entitlement area. You cannot use the 10/50 exemption to clear vegetation on this parcel of land. Contact your local council or [Local Land Services Office](#) regarding any clearing authorisation required.

FIGURE 5: CONFIRMS STATUS OF THE SUBJECT SITE IS NOT UNDER THE 10/50 SCHEME. (10/50 VEGETATION CLEARING CODE OF PRACTICE FOR NEW SOUTH WALES)

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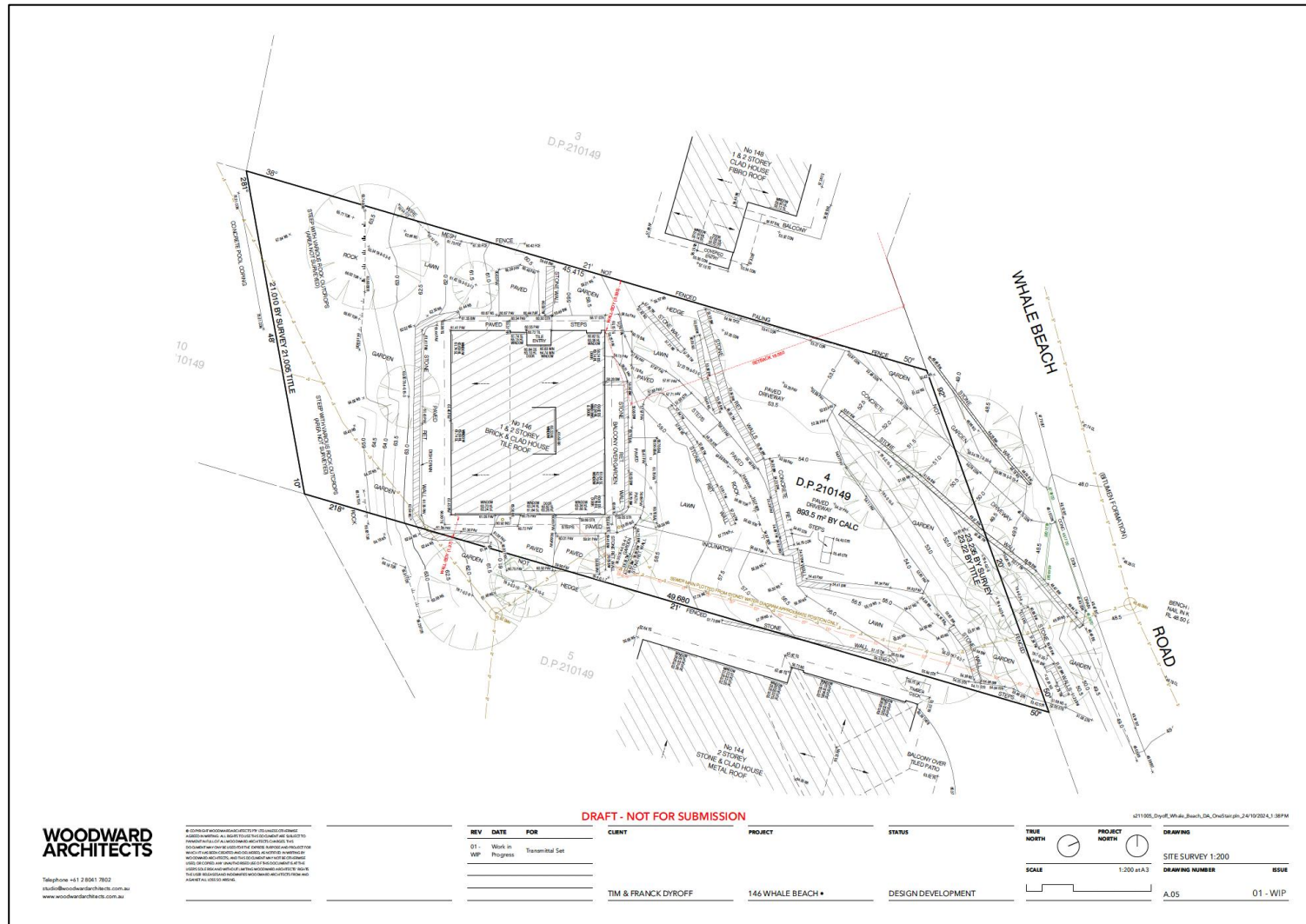


FIGURE 6: THE SITE SURVEY (SITE SURVEY PROVIDED BY CMS SURVEYORS, DATED 24 OCTOBER 2024.)

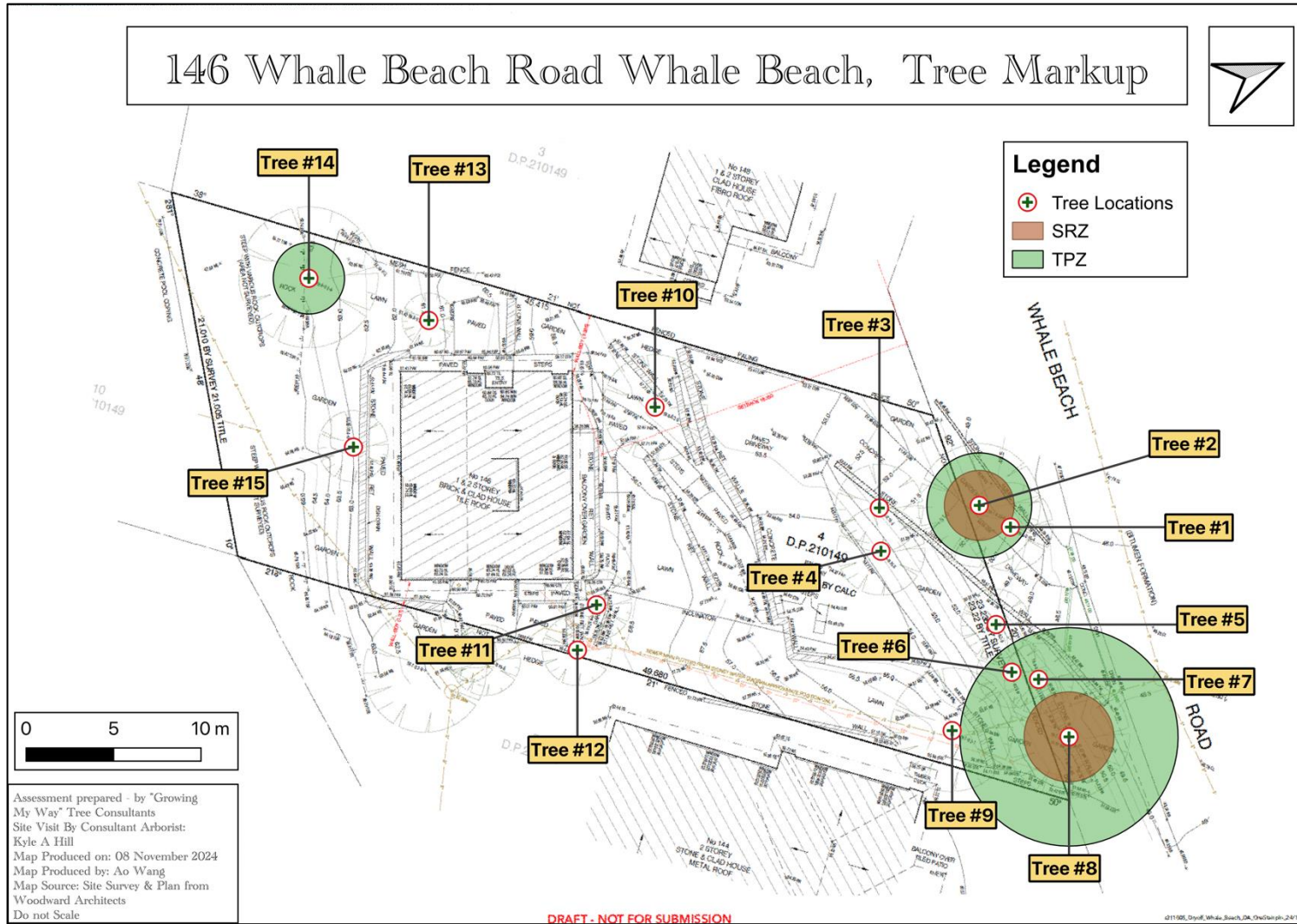


FIGURE 7: NUMBER AND LOCATION OF THE TREE ON SUBJECT SITE. (BY QGIS)

4.2 The Proposal

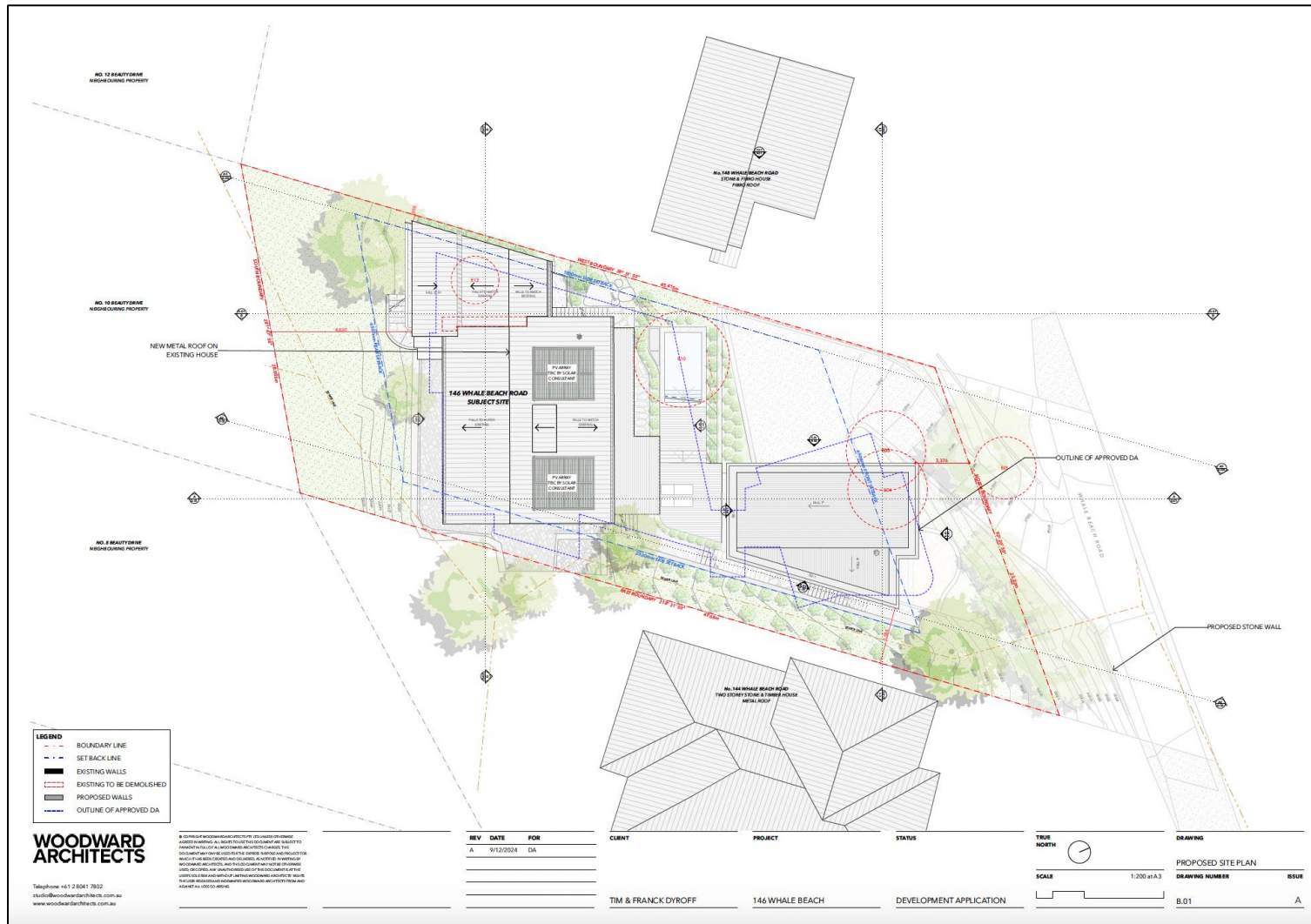


FIGURE 8: ILLUSTRATES PROPOSED SITEPLAN

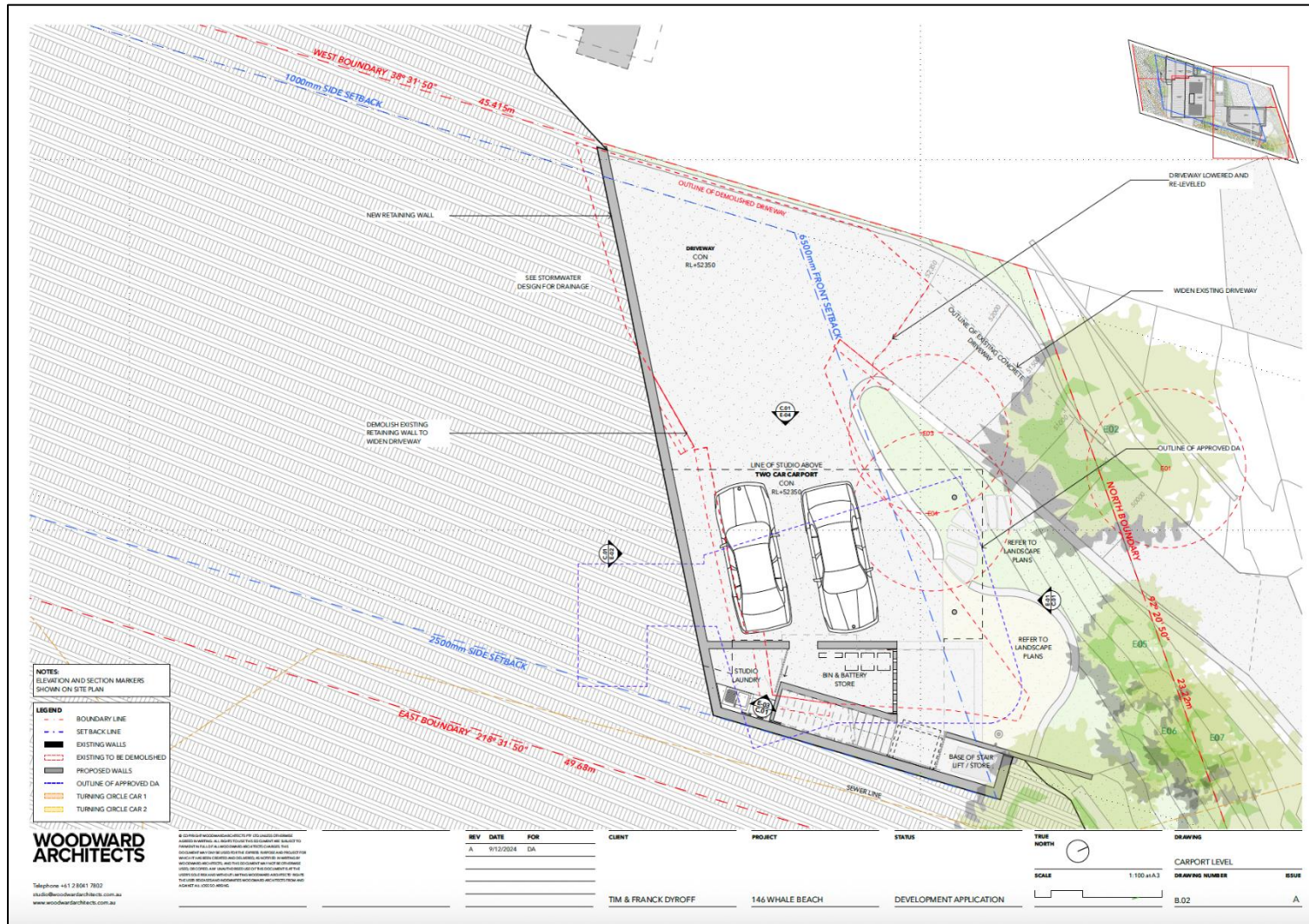


FIGURE 9: ILLUSTRATES PROPOSED CARPORT LEVEL



FIGURE 10: ILLUSTRATES PROPOSED STUDIO LEVEL

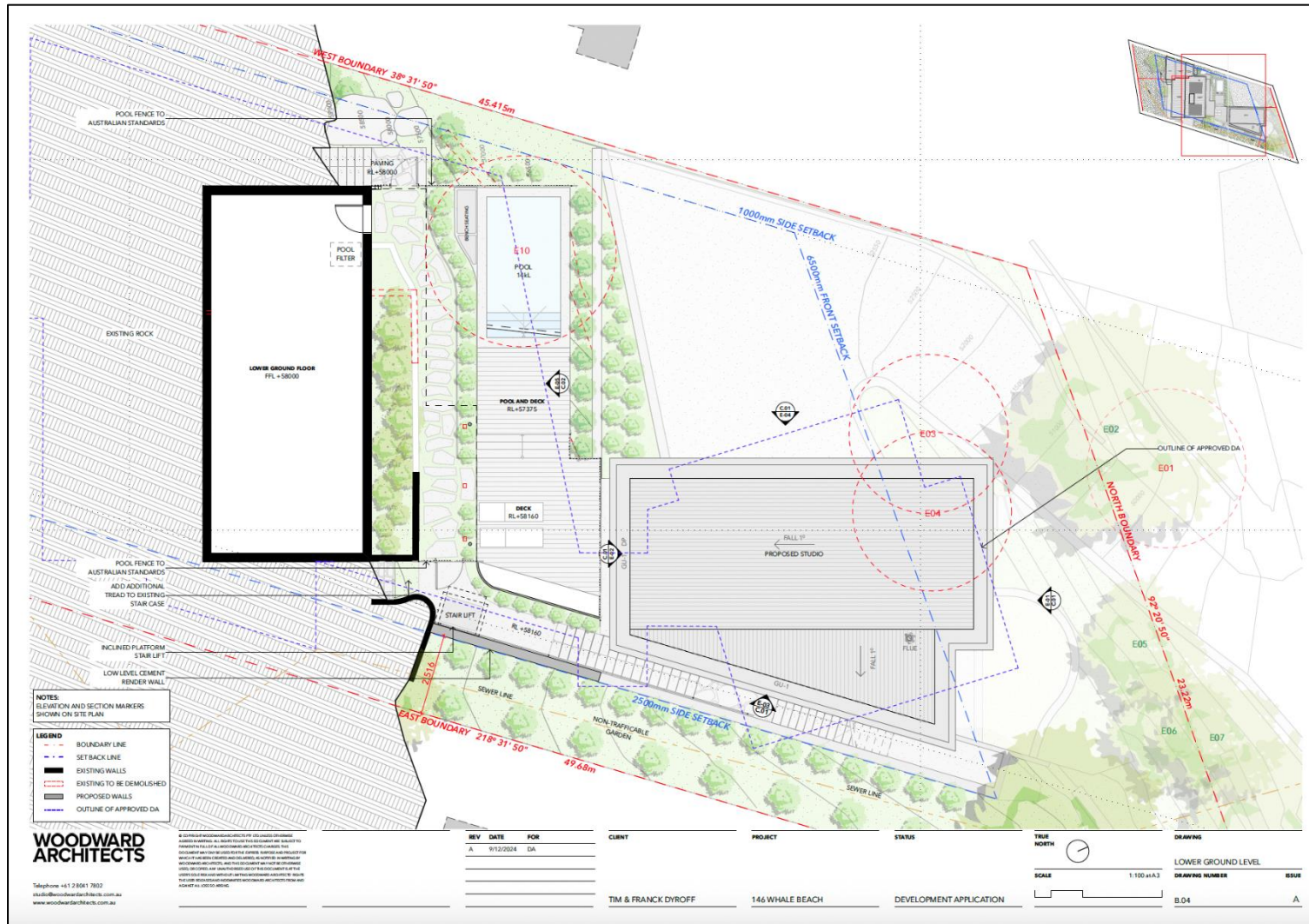


FIGURE 11: ILLUSTRATES PROPOSED LOWER GROUND LEVEL



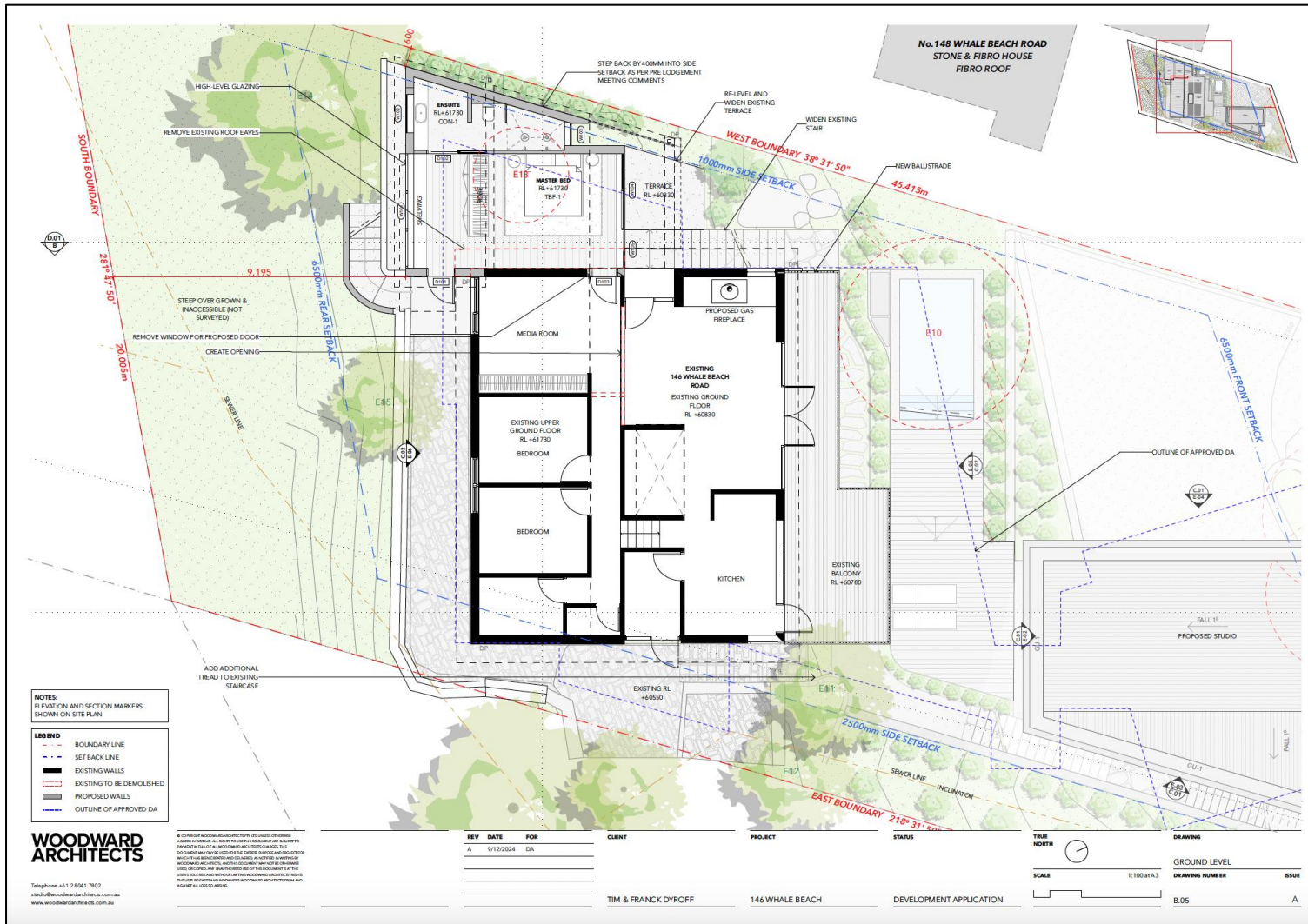


FIGURE 12: ILLUSTRATES PROPOSED GROUND LEVEL

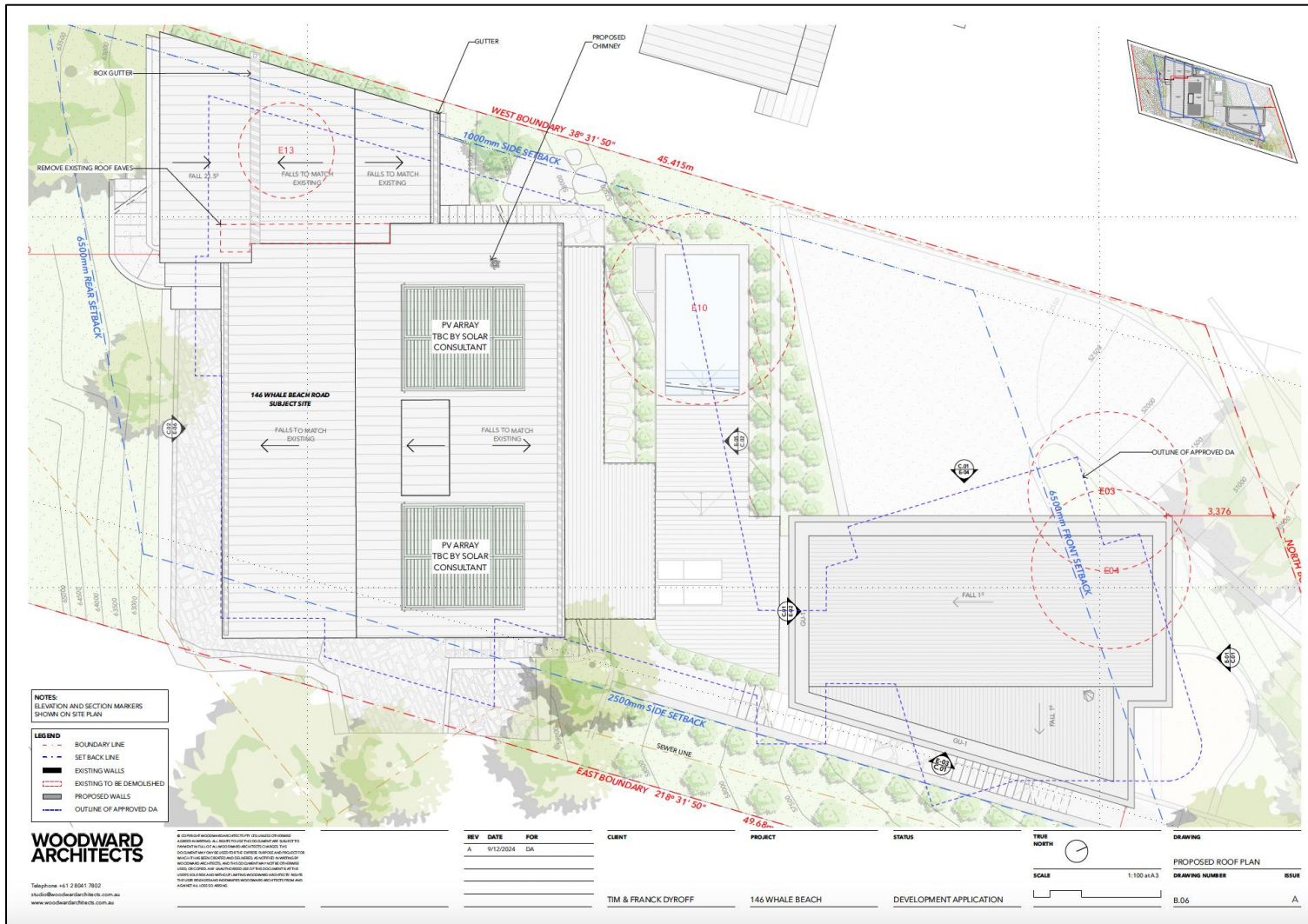


FIGURE 13: ILLUSTRATES PROPOSED ROOF PLAN

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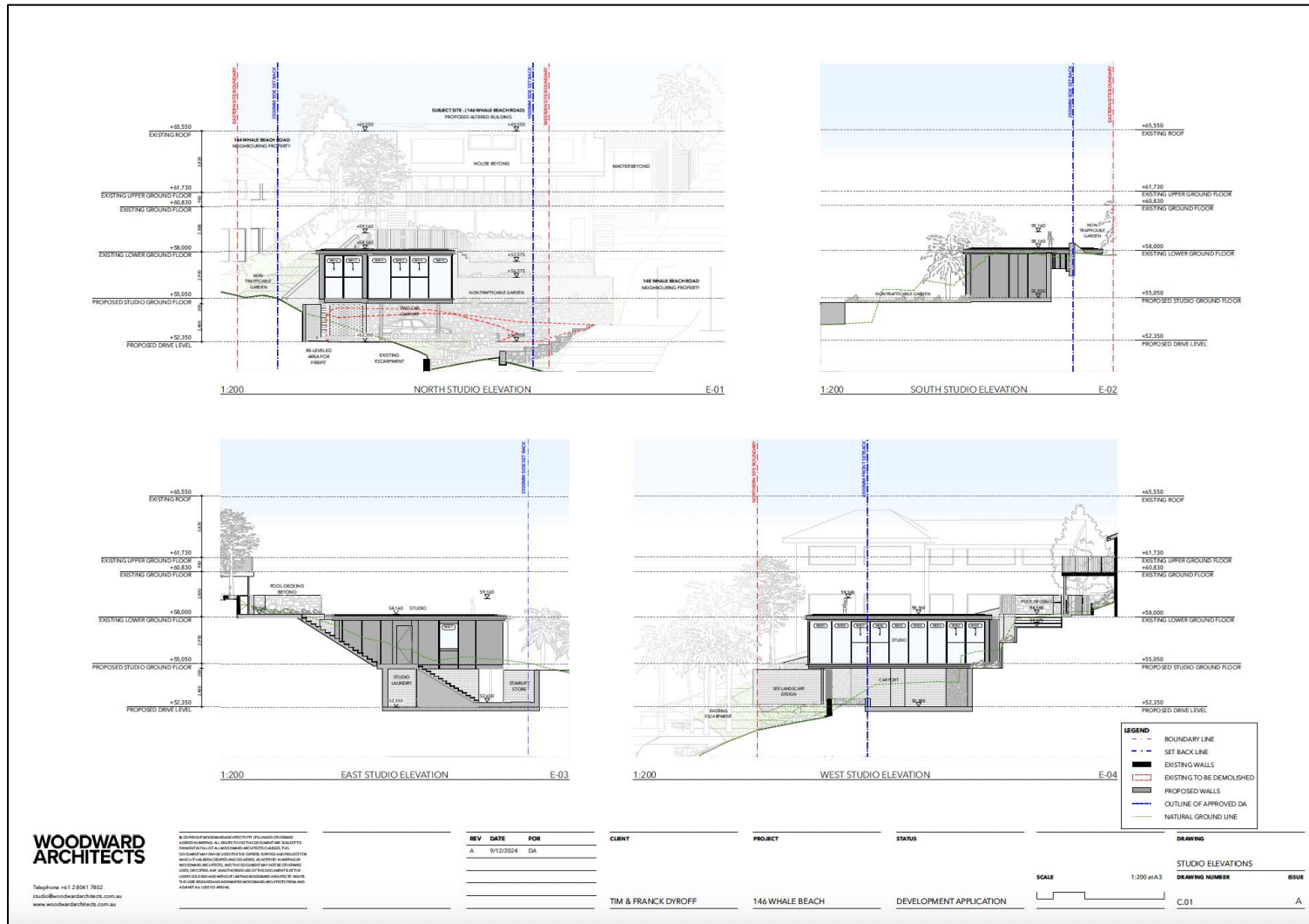


FIGURE 14: ILLUSTRATES PROPOSED STUDIO ELEVATIONS

# Growing My Way Tree Services

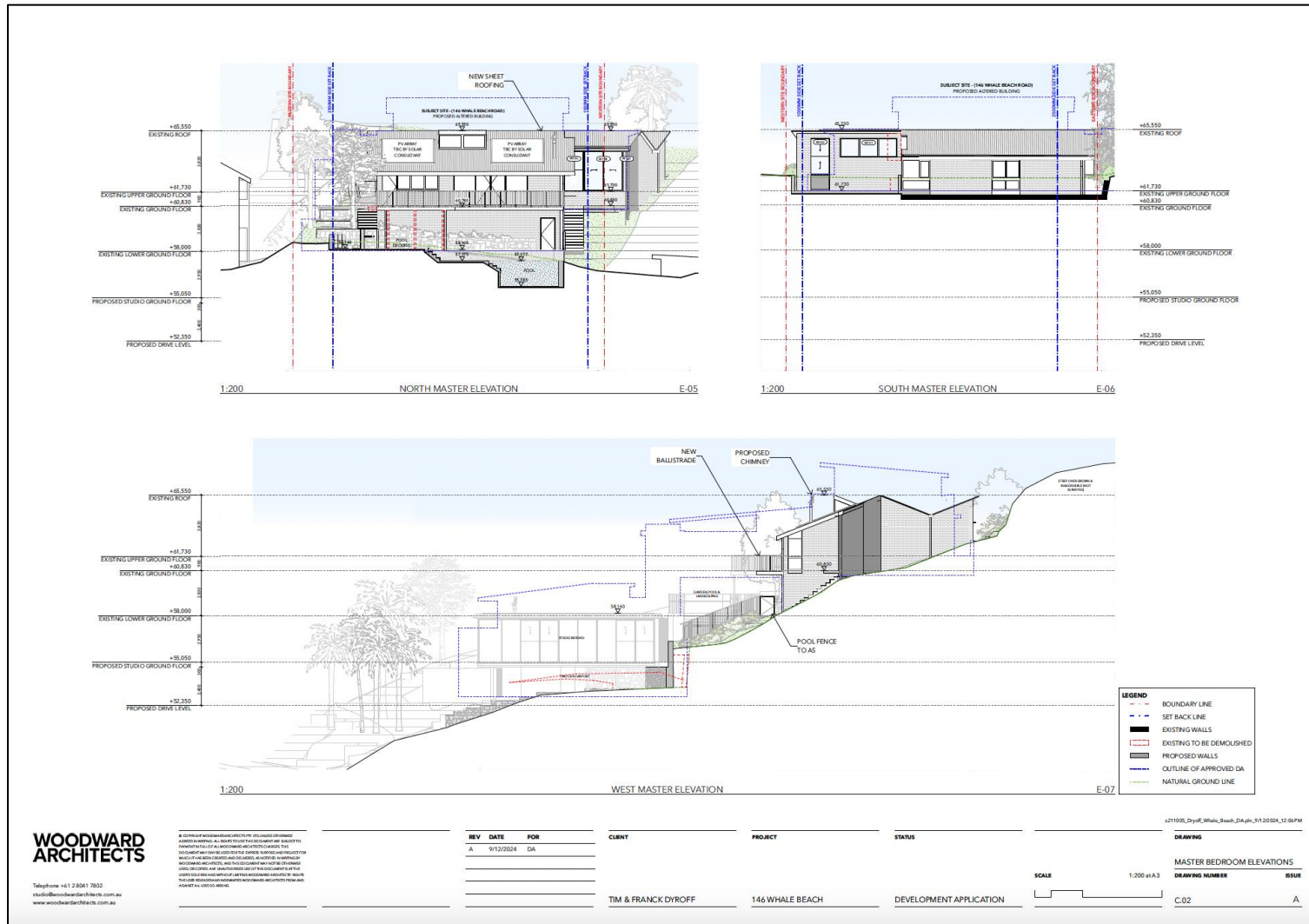


FIGURE 15: ILLUSTRATES PROPOSED MASTERBEDROOM ELEVATIONS

### 4.3 The Tree – Summary Table

Read this table in conjunction with Appendix A– Common Arboreal Terms

Trees Recommended for removal							Trees Recommended for retention					
Exempt species							Trees retainable but of low amenity/significance					
#	Identification	Height (m)	Crown (m)	DBH (m)	DRC (Base) (m)	TPZ (m)	SRZ (m)	Age	Health/Vigour	Structure / Retention value	Form/Habit	Comments
1	<i>Cotoneaster glaucophyllus</i> (Red Cluster Berry Plant)	<4.00	<3.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Typical	<b>REPLACE:</b> Exempt by size refers to NBC DCP Tree Exemption
2	<i>Callistemon citrinus</i> (Scarlet Bottlebrush)	<6.00	<3.50	0.25	0.30	3.00	2.00	M	Fair to Good & Fair to Good	High & High	Typical	<b>RETAIN, PROTECT &amp; MANAGE:</b> Install Tree Trunk Guard or Metal Mesh Fencing Panels with above ground supports and Manual Excavation within TPZ radial distance is specified.
3	<i>Plumeria acutifolia</i> (Frangipani)	<5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size refers to NBC DCP Tree Exemption
4	<i>Plumeria acutifolia</i> (Frangipani)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size refers to NBC DCP Tree Exemption

Growing My Way Tree Services

#	Identification	Height (m)	Crown (m)	DBH (m)	DRC (Base) (m)	TPZ (m)	SRZ (m)	Age	Health/Vigour	Structure / Retention value	Form/Habit	Comments
5	<i>Archontophoenix cunninghamiana</i> (Bangalow Palm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by species refers to NBC DCP Tree Exemption
6	<i>Archontophoenix cunninghamiana</i> (Bangalow Palm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by species refers to NBC DCP Tree Exemption
7	<i>Archontophoenix cunninghamiana</i> (Bangalow Palm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>RETAIN, PROTECT &amp; MANAGE:</b> Install Tree Trunk Guard or Metal Mesh Fencing Panels with above ground supports and Manual Excavation within TPZ radial distance is specified.  Tree within public lands. Exempt by species refer to NBC DCP Tree Exemption
8	<i>Glochidion ferdinandi</i> (Cheese Tree)	9.5	8.00	0.52	0.55	6.24	2.57	M	Fair to Good & Fair to Good	High & High	Typical	<b>RETAIN, PROTECT &amp; MANAGE:</b> Install Tree Trunk Guard and Manual Excavation within TPZ radial distance is specified.
9	<i>Plumeria acutifolia</i> (Frangipani)	<5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size refers to NBC DCP Tree Exemption
10	<i>Plumeria acutifolia</i> (Frangipani)	<5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size refers to NBC DCP Tree Exemption

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#	Identification	Height (m)	Crown (m)	DBH (m)	DRC (Base) (m)	TPZ (m)	SRZ (m)	Age	Health/Vigour	Structure / Retention value	Form/Habit	Comments
11	<i>Plumeria acutifolia</i> (Frangipani)	<5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size refers to NBC DCP Tree Exemption
12	<i>Howea forsteriana</i> (Kentia Palm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size species to NBC DCP Tree Exemption
13	<i>Archontophoenix cunninghamiana</i> (Bangalow Palm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size species to NBC DCP Tree Exemption
14	<i>Cyathea cooperi</i> (Dollar Spot Tree Fern)	<7.00	<3.00	0.17	N/A	2.04	N/A	N/A	Fair to Good & Fair to Good	High & High	Typical	<b>RETAIN, PROTECT &amp; MANAGE:</b> Install Tree Trunk Guard and Manual Excavation within TPZ radial distance is specified.
15	<i>Plumeria acutifolia</i> (Frangipani)	<5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>EXEMPT</b> Exempt by size species to NBC DCP Tree Exemption

#### 4.4 Tree & Site Images

Photographs taken on Tuesday, 05 November 2024. (Canon G1X MkII digital camera)







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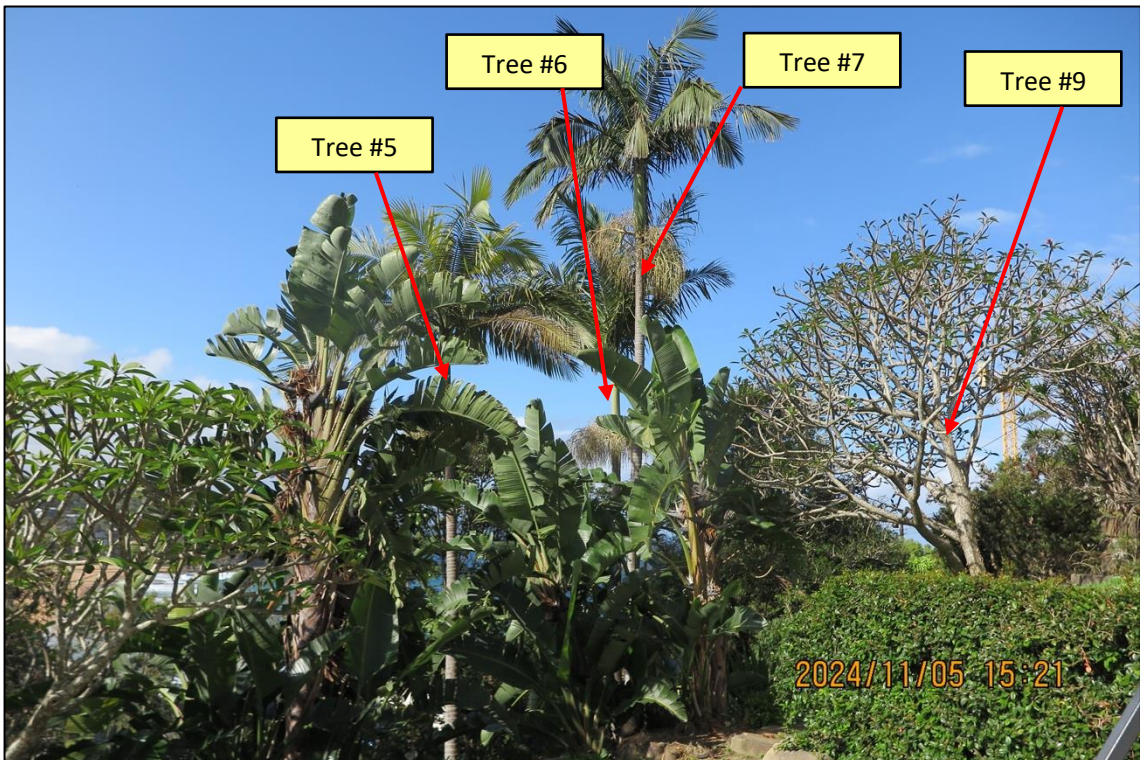








FIGURE 16: ABOVE & PREVIOUS PAGE PHOTOGRAPHS ILLUSTRATES THE FIFTEEN (15) DISCUSSED TREES LOCATIONS & SITE FEATURES

## 5. Discussion

### 5.1 General Discussion /Tree Environments:

There are fifteen (15) trees in total, three (3) protected trees and two (2) exempt species within road reserve area are required to be discussed in detail.

**Note: trees assessed as exempt species will not necessarily be removed as we are briefed the clients want to retain some of these trees (especially within the front of the subject site road reserve area).**

#### **Tree #1: *Cotoneaster glaucophyllus*** (Red Cluster Berry Plant)

Tree #1 is located within Whale Beach Road road reserve area in front of subject site.

It is exempt by size refers to NBC DCP Tree Exemption.

On the basis this tree is located within the built footprint of proposed new infrastructure, we support replacing it with potentially a locally indigenous specimen.

Any replacement tree/s are specified to be planted as far from any permanent existing (neighbours) & new subject site infrastructure as possible.

The replacement tree/s must be sourced from a grower/supplier whose stock is certified to meet the production benchmarks as described within the *Australian Standard (AS2303- 2015 Tree stock for landscape use)*.

Required new replacement tree/s are to be professionally planted & and maintained for at least a minimum full Sydney active growing season. defined as being from mid-August through late May.

#### **Tree #2: *Callistemon citrinus*** (Scarlet Bottlebrush)

Tree #2 is located within Whale Beach Road road reserve area in front of subject site. The proposed new work is confirmed to breach the TPZ total surface area for Tree #2

By our calculation, the total TPZ surface area of Tree #2 is 28.25m<sup>2</sup>. The proposed driveway retaining wall equates to an approximate 0.61m<sup>2</sup> mathematical disturbance of total TPZ surface area for Tree #2. This mathematically equates to approximately 2.1% of total TPZ surface area, (defined by AS4970-2009 as a Minor Encroachment).

It's risky to forecast any compromise to the Tree #2 Useful Life Expectancy by virtue of this tree species being accepted to be tolerant of way more significant total TPZ surface area breach than what is proposed in this situation. Based on the architectural design, the proposed retaining wall is supported by flexible located footings/piers. Provided the flexibly located footings/piers can be avoided or bridged over Tree #2 'live roots' of a significant diameter (greater than 50mm in diameter).

As such, we can support with management the proposed driveway retaining wall (must be manually excavated within Tree #2 TPZ area). Should any significant diameter 'live root/s' (greater than 50mm in diameter), be exposed the direct input & documentation with supporting evidence photographs from the retained project arborist is essential to confirm as close as possible to best Arboriculture Practice being applied.

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On this basis, Tree #2 requires management especially during excavation works phase. Tree #2 is additionally specified to require 'Tree Trunk Guard' during the proposed construction phase.

*In our opinion, with intensive management, this tree is assessed as able to be viably retained.*

### **Tree #3: *Plumeria acutifolia*** (Frangipani)

Tree #3 is located within subject front yard on the slope adjacent to the existing driveway. It is exempt by height refer to NBC DCP. **No NBC permission is required to remove Tree #3.**

Normal TPZ protection strategy as appropriate for the location of this tree will apply if it is retained.

### **Tree #4 *Plumeria acutifolia*** (Frangipani)

Tree #4 located within subject front yard on the slope adjacent to the existing driveway.

It is exempt by height refer to NBC DCP. **No NBC permission is required to remove Tree #4.**

Normal TPZ protection strategy as appropriate for the location of this tree will apply if it is retained.

### **Tree #5: *Archontophoenix cunninghamiana*** (Bangalow Palm)

Tree #5 is located within subject front yard on the slop adjacent to the existing driveway.

It is exempt by species refer to NBC DCP.

Normal TPZ protection strategy as appropriate for the location of this tree will apply if it is retained.

### **Tree #6: *Archontophoenix cunninghamiana*** (Bangalow Palm)

Tree #6 is located within subject front yard on the slop adjacent to the existing driveway.

It is exempt by species refers to NBC DCP.

Normal TPZ protection strategy as appropriate for the location of this tree will apply if it is retained.

### **Tree #7: *Archontophoenix cunninghamiana*** (Bangalow Palm)

Tree #7 is located within Whale Beach Road road reserve area in front of subject site.

It is exempt by species refers to NBC DCP.

Tree #7, if NBC DA determination is required to be retained will be isolated/protected by installing a 'Tree Trunk Guard' or 'Metal Mesh Fencing Panels with above ground supports' within TPZ radial distance.

Normal TPZ protection strategy as appropriate for the location of this tree will apply if it is retained.

### **Tree #8 *Glochidion Ferdinandi*** (Cheese Tree)

Tree #8 is located within Whale Beach Road road reserve area in front of subject site. We confirmed there is no breach between Trees #8 TPZ & proposed works.

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Should any significant diameter 'live root/s' (greater than 50mm in diameter), be exposed the direct input & documentation with supporting evidence photographs from the retained project arborist is essential to confirm as close as possible to best Arboriculture Practice being applied.

On this basis, Tree #8 is specified to require a 'Tree Trunk Guard' during the proposed construction phases.

*In our opinion, this tree is assessed as able to be viably retained.*

### **Tree #9: *Plumeria acutifolia*** (Frangipani)

Tree #9 is located within subject front yard on the slop adjacent to the existing driveway.

It is exempt by height refer to NBC DCP.

No formal discussion is required.

### **Tree #10: *Plumeria acutifolia*** (Frangipani)

Tree #10 is located within subject front yard levelled up landscape adjacent to the existing house.

It is exempt by height refer to NBC DCP. **No NBC permission is required to remove Tree #10.**

No formal discussion is required.

### **Tree #11: *Plumeria acutifolia*** (Frangipani)

Tree #11 is located within subject front yard levelled up landscape adjacent to the existing house.

It is exempt by height refers to NBC DCP.

No formal discussion is required.

### **Tree #12: *Howea forsteriana*** (Kentia Palm)

Tree #12 is located within subject front yard levelled up landscape adjacent to the existing house.

It is exempt by species refer to NBC DCP.

No formal discussion is required.

### **Tree #13: *Archontophoenix cunninghamiana*** (Bangalow Palm)

Tree #13 is located within subject rear yard adjacent to the existing house.

It is exempt by species refer to NBC DCP. **No NBC permission is required to remove Tree #13.**

No formal discussion is required.

### **Tree #14: *Cyathea cooperi*** (Dollar Spot Tree Fern)

Tree #14 is located within subject rear yard adjacent to the existing house. We confirmed there is no breach between Trees #14 TPZ & proposed works.

On this basis, Tree #14 is specified to require 'Metal Mesh Fencing Panels with above ground supports' within TPZ radial distance during construction phase.



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*In our opinion, this tree is assessed as able to be viably retained.*

### **Tree #15: *Plumeria acutifolia*** (Frangipani)

Tree #15 is located within subject rear yard adjacent to the existing house.

It is exempt by height refer to NBC DCP.

No formal discussion is required

NBC policy when trees have been approved to be replaced by impacts for proposed works, is to replace those trees with new trees that at maturity will equal & preferably exceed the existing 'green footprint' previously provided (when in good health & vigour) by the discussed in detail.

In our opinion, the area adjacent to the subject site & public pathway common boundary is an ideal area for new tree specimens to be planted as part of the methodology for replicating the existing 'green footprint' assessed as being required to be replaced.

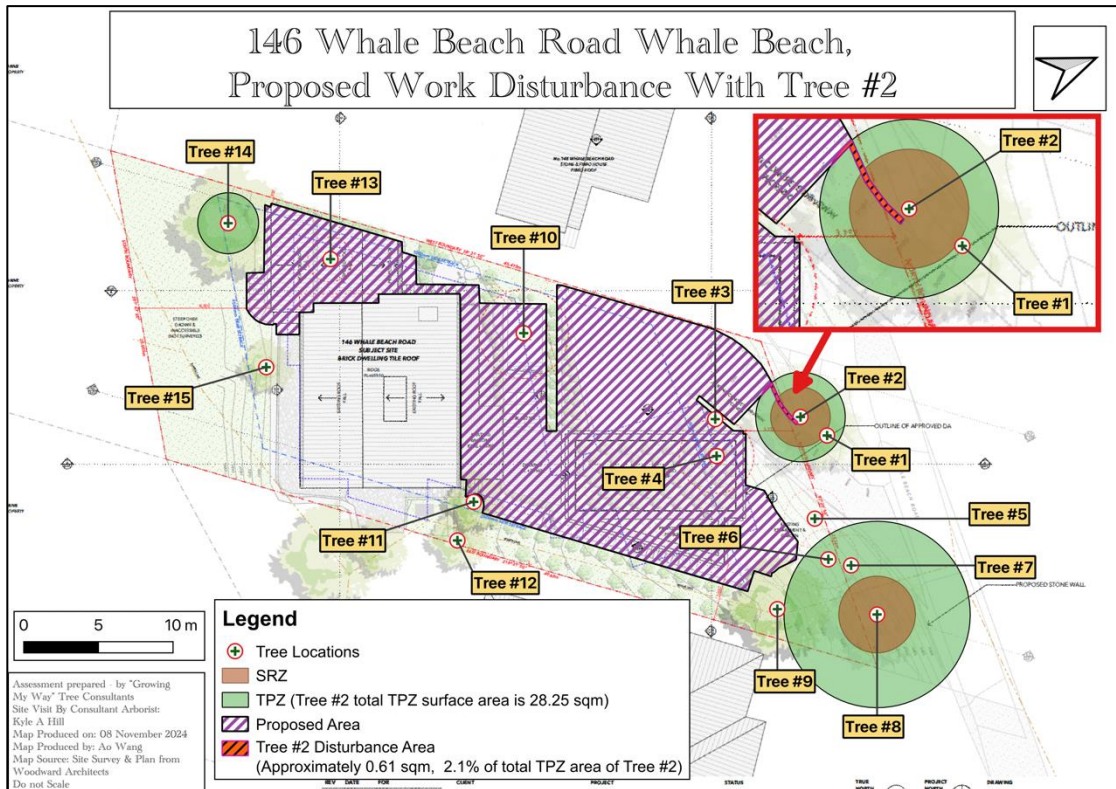
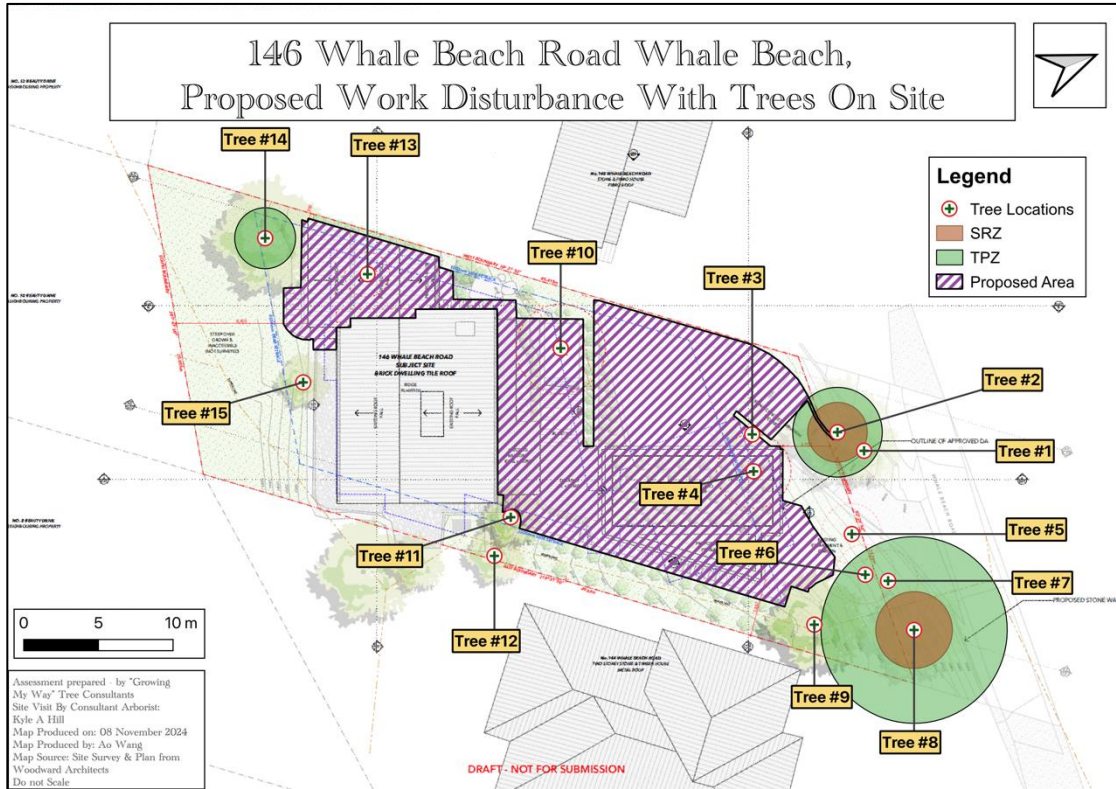
New trees are specified to be sourced from growers/suppliers whose stock is certified to meet the production benchmarks of the Australian Standard (AS23023-2015 Tree stock for landscape use). New trees are to be professionally planted & managed for a minimum of one coastal Sydney growing season (late August through early June).

Tree removal can only be undertaken by suitably qualified practitioners (or those always supervised/instructed by such a person) in compliance with the provisions within the WorkSafe NSW, (old WorkCover NSW) "*Amenity Tree Industry – Code of Practice 1998*".

See the below potentially suitable to the subject site tree species list is provided within this document. (The list includes both Exotic & Australian Native species. It is not necessarily the only species potentially chosen/specified for the subject site. We additionally, acknowledge that species availability may have an impact on the preferred chosen species.)

- *Backhousia citriodora* (Lemon Scent Myrtle)
- *Banksia integrifolia* (Coast Banksia)
- *Banksia serrata* (Old Man Banksia)
- *Livistona australis* (Cabbage Tree Palm)
- *Melaleuca linariifolia* (Snow in Summer)
- *Murraya paniculata* (Orange Jessimine)
- *Michelia champaca* (Himalayan Magnolia)
- *Tristanopsis laurina* 'Luscious'<sup>™</sup> (Watergum Cultivated Variety)
- *Waterhausea floribunda* 'Green Avenue'<sup>™</sup> (Weeping Lilly Pilly)

5.2 TPZ / SRZ Tree Disturbance Calculation Diagrams



### 5.3 Preliminary Site Specific “Tree Plan of Management”

#### Pre-Commencement of Works

- *Establish builder’s common boundary fencing to establish isolation for all discussed as able to be retained in a viable manner trees.*
- *Install ‘temporary metal mesh fencing panels with above ground supports’ for Tree #1 & Tree #14, to isolate from the proposed construction.*
- *Install ‘Tree Trunk Guard’ for, tree #2, Tree #7 & Tree #8, to isolate from the proposed construction.*
- *Any exempt from protection trees to be retained at the client’s discretion would also require the installation of either ‘temporary metal mesh fencing panels with above ground supports’ or a ‘Tree Trunk Guard’.*
- *Remove Tree #1, Tree #3, Tree #4, Tree #10 & Tree #13.*
- *TPZ installations (builders common boundary fencing) & mulch instated (where required) must be ‘signed off’ as being AS4970-2009 compliant. This requires documentation to be in writing with supporting photographic evidence. This document must be provided to the appointed Principle Certifying Authority.*

#### Commencement of and During Works

- *Ensure common boundary isolation fencing & mulch thickness is always intact.*
- *In the unlikely event, excavation (completed manually) exposes a ‘live root’ of a significant diameter it can only be managed & documented relative to the management strategy applied by the retained Project Arborist. Again, this requires documentation to be in writing with supporting photographic evidence. This document must be provided to the*
- *appointed Principle Certifying Authority.*
- *Any ‘live roots’ of any diameter are exposed they ideally should be covered if not by subject site topsoil, damp, hessian, or similar suitable geotextile matting to reduce any desiccation by exposure to direct sunlight.*

#### Post Completion of Works

- *Confirm the presence & condition of the required by the DA determination ‘Conditions of Consent’ individual tree required to be retained.*
- *The above is to be certified in writing with supporting photographic evidence as being DA determination ‘Conditions of Consent’ plus AS4970-2009 provisions compliant relative to all required to be retained trees.*
- *All documentation from each stage of works must be provided to the appointed Principle Certifying Authority as soon as is reasonably possible post each stage of works being completed.*

#### New Tree Generic Specifications:

- *Replacement trees are to be sourced from growers/suppliers whose stock meets the production benchmarks of the Australian Standard (AS2303.2015 Tree stock for landscape use) or NATSPEC specification to produce quality container produced trees.*
- *New tree specimens are to be professionally planted & maintained for a minimum period of six (6) months once installed.*

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- *New tree specimens are to be 45 litre container stock as the local environment has only shallow topsoil on top of sandstone bedrock. (A lack of natural topsoil depth may dictate smaller container replacement trees to be more appropriate.*

## 6. Conclusions

- The proposal in its present format is considered as able to be built without any compromise to any discussed tree with respect to individual Useful Life Expectancy with implementation of the once finalised Site Specific 'Tree Plan of Management'.
- This document can be submitted to the NBC assessment officers for review & approval in its present form.

If you have any questions relating to this report or implementation of recommendations, please contact Kyle Hill on 0412-221-962.

Yours faithfully,



Kyle A. Hill (AQF level 5 & 8 Practicing & Consulting Arborist)

## 7. Limitations on the use of this report

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, & directly attached to that submission, report or presentation.

## 8. Assumptions

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible; however, Growing My Way Tree Services, can neither guarantee nor be responsible for the accuracy of information provided by others.

### Unless stated otherwise:

Information contained in this report covers only the trees that were examined & reflects the condition of the trees at the time of inspection.

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

## 9. Recommended References

Barrell, J. 1993. *'Preplanning Tree Surveys: Safe Useful Life Expectancy (SULE) is the Natural Progression'*, *Arboricultural Journal* 17:1, February 1993, pp.

Barrell, J. 1995, *'Pre-development Tree Assessments'*, in *Trees & Building Sites*, Proceedings of an International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings, International Society of Arboriculture, Illinois

Dr. G. Watson & Dr. D. Neely, *'Trees & Building Sites'*, LSA Illinois USA 1995

Dr. N. Matheny & Dr. J.R. Clark, *'Trees & Development'*, ISA Illinois USA 1998

Phillip J. Craul, *'Urban Soil in Landscape Design'*, J. Wiley & Sons, New York USA 1992

## 10. Selected Bibliography

Hitchmough, J.D. 1994. *'Urban Landscape Management'*, Inkata Press, Sydney.

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Mattheck, C. & Breloar, H. 1994 '*Body Language of Trees*', The Stationery Office, London.

AS 4373:2007, '*Pruning of Amenity Trees*', Standards Australia.

AS 4970:2009, '*Protection of Trees on Development Sites*', Standards Australia.

BS 5837:2005, '*Guide for Trees in Relation to Construction*', Standards Board, UK.

## 11. Appendix A – Glossary

### Glossary of common Arboreal terms

<b>Age:</b>	<b>I</b>	<i>Immature</i> refers to a refers to a well-established but juvenile tree
	<b>SM</b>	<i>Semi-mature</i> refers to a tree at growth stages between immaturity & full size
	<b>M</b>	<i>Mature</i> refers to a full-sized tree with some capacity for further growth
	<b>LM</b>	<i>Late Mature</i> refers to a full-sized tree with little capacity for growth that is not yet about to enter decline
	<b>OM</b>	<i>Over-mature</i> refers to a tree about to enter decline or already declining
	<b>LS</b>	<i>Live Stag</i> refers to a tree in a significant state of decline. This is the last life stage of a tree prior to death

**Hth & Vig** Health & Vigour

**Health** refers to the tree's form & growth habit, as modified by its environment (aspect, suppression by other tree, soils) & the state of the scaffold (i.e., trunk & major branches), including structural defects such as cavities, crooked trunks, or weak trunk/branch junctions. These are not directly connected with health & it is possible for a tree to be healthy but in poor condition/vigour. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

**Vigour** refers to the tree's growth rate/condition as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion & the degree of dieback. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

**Useful Life Expectancy (ULE)** refers to any individual tree specimen's potential life

**expectancy (viability) based on VTA assessment, three groups are described,**

**Short = Less than Five years**

**Medium = Five–Fifteen years**

**Long = more than Fifteen years**

**Significant diameter roots** are defined as those being greater than 0.05m/50mm in diameter.

**Diameter at Breast Height (DBH)** refers to the tree trunk diameter at breast height (1.4 metres above ground level)

**Structural Root Zone (SRZ)** refers to a radial offset which relates to tree stability. This zone is presumed to be main location of the tree's structural support roots. It is calculated using the formula  $SRZ\ radius = (D \times 50)^{0.42} \times 0.64$ .

**Primary Root Zone (PRZ)** refers to a radial offset of ten (10) times the trunk DBH measured

from the centre of the trunk. This zone often contains a significant amount of (but by no means all a tree's) fine, non-woody roots required for uptake of nutrients, oxygen & water.

**Tree Protection Zone (TPZ)** is ideally a "No Go Zone" surrounding a tree to aid in its ability to cope with disturbances associated with construction works. **TPZ = DBH x 12**. Tree protection involves minimising root damage that is caused by activities such as construction. Tree protection also reduces the chance of a tree's decline in health or death & the possibly damage to structural stability of the tree from root damage.

To limit damage to the tree, protection within a specified distance of the tree's trunk must be maintained throughout the proposed development works. No excavation, stockpiling of building materials or the use of machinery is permitted within the TPZ.

A TPZ is required for each tree or group of trees within five metres (unless otherwise specified) of building envelopes.

**Stem/bark inclusion** refers to a genetic fault in the tree's structure. This fault is located at the point where the stems/branches meet. In the case of an inclusion this point of attachment is potentially weak due to bark obstructing healthy tissue from joining together to strengthen the joint.

**Decay** refers to the break down tissues within the tree. There are numerous types of decay that affect different types of tissues, spread at different rates & have different effect on both the tree's health & structural integrity.

**Point of Attachment** refers to the point at which a stem/branch etc join.

**Dead wood** refers to any whole limb that no longer contains living tissues (e.g., live leaves &/or bark). Some dead wood is common in several tree species.

**Die back** refers to the death of growth tips/shoots & partial limbs. Die back is often an indicator of stress & tree health.

**One dimensional crown** refers to branching habits & leaves that extend/grow in One direction only. There are many causes for this growth habit such as competition & pruning.

**Crown Foliage Density of Potential (CFDP)** refers to the density of a tree's crown in relation to the expected density of a healthy specimen of the same species. CFDP is measured as a percentage.

**Epicormic growth/shoots** refers to growth/shoots that are/have sprouted from axillary buds within the bark. Epicormic growth/shoots are a survival mechanism that often indicates the presence of a current or past stress even such as fire, pruning, drought etc.

**Over Head Powerlines (OHP)** Over head electricity wiring.

**LVOHP** Low Voltage Overhead Powerlines

**HVOHP** High Voltage Overhead Powerlines

**ABC** Aerial Bundled Cable



## 12. Attachment A: Tree Protection/Management Prior to & During Construction

The installation of Tree Protection Zone (TPZ) fencing is to be carried out prior to commencement of all works. The most suitable fencing material is 1.8m tall chain link mesh with 50mm metal pole supports, see **detail 1: tree protection fencing**.

A mulch layer of composted leaf & woodchip to a depth of 75mm is required within the TPZ to aid in retention of soil moisture & to protect soil from contaminants. Water is to be applied by handheld or soaker/leaky hose within TPZ as required & in Accordance with Stage 3 Water Restrictions. Watering is to be carried out by either an Arborist or is to form part of the Builder's/Contractor's contract, with recommended monthly checks by an Arborist.

There is to be no stock piling of building material (including waste), machinery or any other item within TPZ of any retained tree. Access to personnel & machinery, & storage of fuel, chemicals, cement or site sheds is prohibited.

Regular monitoring of protected trees during development works for unforeseen changes or decline, will aid in the success & longevity of the retained trees.

