

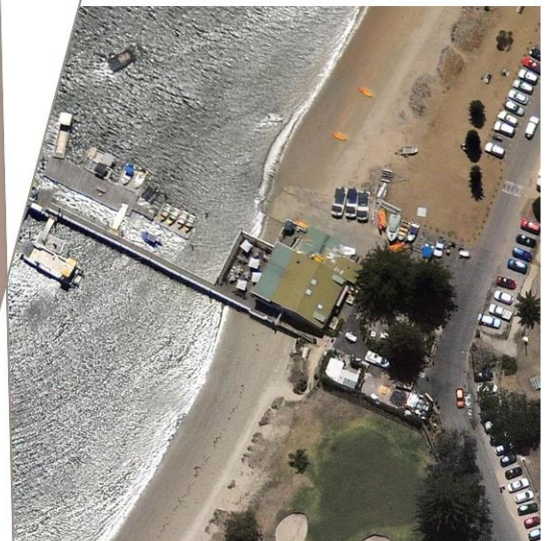
Flooding and Estuarine Risk Management

Boat House, Palm Beach

59916081/R004

Prepared for
London Lakes Partnership

12 May 2021



Contact Information

Cardno (NSW/ACT) Pty Ltd

ABN 95 001 145 035

Level 9 - The Forum

203 Pacific Highway

St Leonards NSW 2065

Australia

www.cardno.com

Phone +61 2 9496 7700

Fax +61 2 9496 7748

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Author(s):



Name: Doug Treloar – FIE Aust., NER 254510

Job title: Senior Principal Coastal Engineer

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Name: Chris Scraggs

Job title: Principal Coastal Engineer

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1 Introduction

1.1 Background

Cardno (NSW/ACT) Pty Ltd have been engaged by London Lakes Partnership (LLP), who plan to undertake refurbishment and renovations to the restaurant, boat-hire facilities and deck areas (The Superstructure), on their leased property at the Barrenjoey Boat House, Palm Beach. They also plan to upgrade the marina facilities under a separate application. The work will involve an almost complete demolition of the Superstructure and pier replacement under it as required, other than a few piers that are in sound condition.

Appendix A presents architectural plans provided by their Builder, Blue Pacific Constructions Pty Ltd (BPC), and includes a site survey undertaken in February 2018 and updated in August 2019. The survey shows the gazetted Mean High Water Mark (MHW) and that the Superstructure on the seaward side all lies within Crown Lands leased area on the water, whereas the outside seating area east of the main restaurant entrance is located on Council land. The renovation plans were prepared by Canvas Architecture & Design. Other relevant details are presented in Cardno (2021).

Figure 1.1 provides a locality plan of the site. Note that the survey includes beach levels, which will be needed for design and construction of replacement works, including below and along parts of the building. Note that Council has recently constructed a cut sand-stone block seawall near the back beach area to the south – extending south about 20m from the edge of the southern deck area.

The plan is to demolish and raise the existing facilities such as decks, toilets, a stairway and food processing areas to improve the overall restaurant, seaplane and boat hire operations and improve the satisfaction of patrons and employees. No areas are intended for accommodation and the upstairs areas provide office facilities for general operation. The remaining wharf and boat-berth areas lying seaward of the Boat House outer deck/wharf itself are not included in these proposed works except for raising of the large wharf immediately in front of the Superstructure by 200mm; noting that recent repairs have been made to those separate facilities following the major ocean storm in June 2016. The section of the wharf on the southern side of the building needs to be demolished and reinstated because of the poor condition of the joists and bearers; noting that the balcony on the first floor is supported by it.

Appendix B of Cardno (2021) provides some history of the site and includes condition reports prepared by Blue Pacific Constructions Pty Ltd – before June 2016. The building is old and was developed in a piece-meal fashion. The seaward deck level is 1.8m AHD and hence is currently not affected by the 50-years average recurrence interval (ARI) storm tide level of 1.47m AHD; but occasionally by high tides and ocean swell, such as in June 2016, when some damage to the structure, together with shoreline erosion, occurred. Deck boards have been loosened by wave action in the past – they are currently nailed to the deck beams/bearers below; with some nails obviously lifted. A higher upper-deck at 2.5m AHD and closer to the restaurant and along the southern side to the back of the building is accessed from the lower, seaward deck by steps and also the arrival area.

Northern Beaches (formerly Pittwater) Council requires that the lessees must submit an independent wave action and tidal inundation report and assessment to Council in the form of adequate qualitative and quantitative detail addressing estuarine planning level information, the management of estuarine risk and other criteria (where applicable), as they affect the subject building, land and its surroundings. The report is to address the issues presented in Council's P21 DCP Part B, see Appendix C of Cardno (2021). A definition of estuarine planning levels (EPL) is presented on Page 7 of Appendix 7 of P21 DCP prepared by the then Pittwater Council, see Appendix D of Cardno (2021).

Cardno (2021) has been prepared to address these matters and it is based on site visits first undertaken at 1530 hours on 17 November 2015, and subsequent visits following the June 2016 storm damage, in early March 2018 and on 28 January 2020, together with the Cardno report 'Pittwater Foreshore Floodplain Mapping of Sea level Rise Impacts' prepared for Pittwater Council – Report LJ2882/R2658v4-Final Report, 30 January, 2012. This risk management report has been prepared in accordance with Pittwater Council's P21 DCP and includes all of the required data. It also addresses inundation issues. However, this report has been prepared as a separate site flooding report.

1.2 Site Visits

The initial site visit occurred at a time near mid-tide – +0.8m LAT as recorded by the Manly Hydraulics Laboratory web-site; in the company of BPC – Mr Peter Heber. The dominant swell wave conditions that affect the shoreline will, on average, have wave crests near-parallel to the shoreline (near the shoreline) – with little net longshore transport to the south; except during major storms; noting that future storms may affect the building and cause inundation by wave overtopping of the area landward of the building.

There is no present day evidence of wave run-up and overtopping of the back-beach area, albeit there is evidence of back-beach storm erosion.

1.3 Other Reporting

Cardno (2021) addresses a range of other coastal processes matters at this site.

2 Review of Existing Information and Assessment

2.1 General

LLP, through Blue Pacific Constructions, have requested that the EPL for re-design and re-construction of the Superstructure at the Boat House Wharf be based on 2070, including projected sea level rise. This has been interpolated from the 2050 and 2100 data presented in Cardno (2012). This planning period is based on the likely design life of some of the proposed marine works. Design principals have been based on AS 4997-2005 for Design of Maritime Structures because the Superstructure is seaward of the gazetted MHWL and is classified as a normal commercial wharf structure. The design criterion of 50 years operational life has been adopted to limit access issues to the building and any effects on three significant Norfolk Island pines; noting that by 2100 a 100-years ARI storm would inundate the access roadway.

As per AS4997, Section 3.1:

'For wharves and jetties in locations subject to local river flooding or storm surge situations, the design may allow for periodic inundation during such events. Such structures should be able to withstand lateral loads and uplift from elevated water levels including flood effects from the design flood event.'

'Where overtopping of deck structures by waves would result in disproportionate level of damage to the superstructure above main deck level, means to prevent water damage to the property should be incorporated into the design.'

Note also that the rebuilt Superstructure could be raised after 50 years, above the new piers, bearers and joists that would be installed – if the building is still in use at 2070.

2.2 EPL Assessment

In terms of the Lawson and Treloar (now Cardno)/Cardno (2004, 2012) reports, the site is on Station/Barrenjoey Beach. That report provides estuary planning levels (EPL) and the nominally appropriate case for this project is the 50-years (from 2020) ARI storm and water level conditions for 2070. This level is 2.1m AHD (2.05m) at the Boat House – excluding freeboard and wave run-up and overtopping, which are addressed separately. This is the closest example site included in Cardno (2004, 2012). This level includes 0.6m of projected sea level rise to 2070.

Cardno's (2004, 2012) EPL study for Pittwater Council provided general planning level advice based on precincts and a range of back-beach types and crest levels for 2010, 2050 and 2100, including the related projected sea level rises. Wave data for 100-years ARI conditions were included also. These are intended for on-land development, generally, but can be applied to boat-sheds, for example.

Because of the type of structure at the Boat House, a planning period to 2070 has been adopted. Furthermore, there is a mixture of back beach types and a back-beach level of about 2.5m AHD; considering also the fact that the main structure is predominantly over water and is not intended for habitable space.

Hence, Cardno has taken the responsible course of determining a site/project specific EPL analysis, coupled with site specific wave overtopping and run-up levels and overtopping wave heights.

Hence an appropriate still water EPL of 2.05m at 2070 has been determined and then wave overtopping and uplift/horizontal forces determined. The equivalent EPL on the land near the front entrance then is 2.05m AHD + 0.4m (overtopping) + 0.3m (freeboard) = 2.75m AHD. This is just below the sealed top of the waste-water pump-out and holding tank (2.9m AHD), and for the appropriate 2070 planning period for this re-development project is consistent with the 3.05m AHD 2100 EPL – see below.

2.3 Estuarine Risk Management

The EPL assessed above complies with Appendix 7 of Pittwater 21 DCP. Note that:

- This is not a residential development under Appendix 7 and Pittwater 21 DCP clauses 3.8 and 3.9.
- The storage of dangerous goods and sewerage systems are all above the EPL.

2.4 Flooding

2.4.1 Estuarine Inundation

In terms of estuarine flooding at 2100, the EPL is 2.35m AHD (still water level) + 0.4m (overtopping) + 0.3m (freeboard) = 3.05m AHD; noting that the building is not habitable. Note that the foot-print of the proposed re-development will not change and the works will not affect nearby sites any more than they might do at present. The surrounding land area would be inundated by intermittent wave overtopping, including the access road in this design 2100 flooding scenario. Note that the new restaurant access decks will be above the existing ground level and allow flow beneath them, thereby allowing overtopping seawater to return seaward partially below the new deck. If needed, refuge could be taken in the upstairs office area, but this flooding could only occur at high tide and there would be ample storm warning – likely a major ECL. The interior restaurant floor level at 2.8m AHD will not flood at 2070, noting that the front and back doors to the restaurant must be sealed – EPL at 2070 is 2.75m AHD, to prevent minor wave wetting that might be caused by wave overtopping. The doors may be sealed by keeping available a plank that has rubber seals along the bottom and side edges and which can be firmly fixed to the insides of the door-frames when needed. Some minor leakage would still likely occur.

The lower deck and some other service areas would be inundated. Electrical outlets to be at 1.5m above floor levels on the lower deck and 1m above floor levels at other locations below 2.8m AHD. For levels at 2.8m AHD or above, outlets should be set 200mm above floor level. The main meter box will be installed at about 1.5m above ground level – about 4m AHD and will include automatic circuit breakers.

Moreover, the proposed development, having the same foot-print will not change the current coastal processes or flood levels – no change in foot-print. Removal of the marina facilities on the northern side may reduce the small salient at the site.

The seaward deck, raised to 2.04m AHD from 1.8m AHD, will be marginally inundated in this design EPL condition, but with significant wave overtopping. This area may suffer damage in rare severe storms, but can be repaired after storm abatement. The rear, or upper deck, restaurant interior and entrance area on the eastern side are all to be at 2.8m AHD, which is above the 2070 EPL, but can be marginally affected by severe storms – uplift addressed separately. The separate boat-hire office (floor level 2.5m AHD) and store shed (floor level 2.8m AHD) also will not be directly inundated. It is not practical to raise the front deck more than the proposed 0.2m up to 2.04m for overall access reasons.

The back beach level shown on the site survey is about 2.5m AHD. Hence the car park, outdoor seating and outdoor kitchen facilities area would not be inundated by 'still water' at 2070 in the design storm event; but wave overtopping would cause some inundation, which could flow back into the restaurant area. Hence the front door of the restaurant will need to be sealed well.

The related design wave condition is $H_s=1.5\text{m}$ with a zero crossing period of 10.2 seconds. This is an ocean wave that may propagate from the Tasman Sea to the site in a rare storm, most likely with an offshore direction of east to east north-east. These waves could cause considerable uplift force on the floors and decks of the building, and wave overtopping north and south of the building would extend up to 40m inland. The overtopping flow may be up to 0.4m deep at the shoreline with speeds in the order of 0.6 to 0.8m/s; and would be dangerous. However, ample warning of these storm conditions would be available, and in these circumstances the building and site would need to be vacated.

The access road to the north and south has levels of about 2.4 to 2.6m AHD and will flood in a future very severe storm with projected sea level rise.

The property boundary between Crown Lands and Council is defined by the gazetted MHWL, which is 1.17m AHD – based on the astronomical tide, that is, it excludes SLR and meteorological effects.

Existing levels on the bitumen and packed sand in front of the Boat House building vary from about 2.5m AHD at the landward side of the restaurant building and rise to 2.8m AHD towards the access road.

The redevelopment project includes a wastewater pump-out and holding tank, as well as a grease trap located in the facilities area east of the entrance to the restaurant. It has a sealed opening/access-point that is set at 2.9m AHD and is needed for maintenance access. The site specific EPL for this area is 2.75m AHD, including 0.3m freeboard. The area will be affected by intermittent wave overtopping in the 50-years planning period design scenario to 2070. Although some splashing would occur at the access point, there will be no identifiable sea water influx to the tanks. Setting these openings higher is not

appropriate or needed. In due course this 'manhole' entry point can be raised as projected SLR may occur.

Hence, the nearshore/onshore design EPL is 2.75m AHD = (2.1m AHD + 0.3m freeboard + 0.4m inundation by wave overtopping). This is a site specific calculation, noting that the back-beach level is higher than the 2m AHD included in Cardno (2004, 2012) for wave overtopping calculations.

None of these areas is habitable.

2.4.2 Catchment Flooding

Due to the location of the site at the shoreline in Pittwater, and the very small runoff area between this building and the landward dune system, together with the pervious sandy soils, this site will not be subject flooding by stream or overland flows. All rainfall runoff on the site will be directed to stormwater discharge beneath the building – as it presently is.

There will be no net loss of flood storage in a 1% AEP event, and because the decks are raised above ground level, runoff from outdoor areas will still be able to flow to sea – as it does now; without impedance.

3 Conclusions and Recommendations

3.1 General

The proposed additions and modifications/demolition and rebuild works at the Boat House, Palm Beach, will have little effect on estuarine/shoreline processes. No habitable areas are proposed.

This building has been developed in stages and some existing deck levels are lower than Council's estuary planning levels. Hence, significant still water and wave inundation would occur in a future very severe ocean storm, noting that storm damage occurred at the site and to the building in June 2016.

In a future design storm, wave overtopping of the shoreline and back-beach areas to the north and south of the refurbished Boat House would lead to potential intermittent and short term inundation.

Note that the lower deck facilities could suffer significant damage and the restaurant would suffer some wave damage during a major storm; and would need to be vacated in the event of an imminent, future very severe storm. The Boat House would be closed in these storm conditions, with ample warning time available to advise closure.

In the longer term, based on projected sea level rises, the access road may become inundated by storm tide to a depth of about 0.3 to 0.4m; posing evacuation concerns; albeit adequate warning should be available, as well as the upstairs area of the building.

The site will not be affected by catchment flooding, nor would the proposed works cause obstruction of runoff flows.

4 References

- Cardno (2012), Pittwater Foreshore Floodplain Mapping of Sea Level Rise Impacts. *LJ2882/R2658v5 – Final Report Prepared for Pittwater Council.*
- Cardno (2021): Coastal Engineering Assessment and Estuarine Risk Management; Boat House, Palm Beach. Report prepared for London Lakes Partnership. Report 59916081, R003.
- Department of Environment, Climate Change and Water (2009), Sea Level Rise Policy Statement. *NSW Government.*
- Lawson and Treloar (2003), Pittwater Estuary Processes Study. *Prepared for Pittwater Council.*
- OEH, 2012 [http://www.engineersaustralia.org.au/sites/default/files/2_sydney_harbour_vulnerability_studies_-_phil_watson.pdf]. Accessed 23/09/2013
- Tickell, R.G. (1994): Wave forces on structures. *In: Abbott & Price (Ed). Coastal, Estuarial and Harbour Engineers reference book.* Chapter 28, pp 369 – 380.

APPENDIX

A

RENOVATION ARCHITECTURAL PLANS

WALL TO BOUNDARY DIMENSIONS SHOWN HEREON MUST NOT BE USED FOR CONSTRUCTION. IF CONSTRUCTION IS INTENDED TO BE UNDERTAKEN ON OR ADJACENT TO PROPERTY BOUNDARIES THE BOUNDARIES OF THE LAND MUST BE MARKED.

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AREA IS APPROXIMATE ONLY AND HAS BEEN CALCULATED BY TITLE DIMENSIONS. ALL TITLE DIMENSIONS OF THE LAND HAVE NOT BEEN CONFIRMED BY SURVEY. IF AREAS ARE CRITICAL WE RECOMMEND A BOUNDARY SURVEY FOR PUBLIC RECORD.

IF CONSTRUCTION ON OR NEAR BOUNDARIES IS REQUIRED IT IS RECOMMENDED THAT THE BOUNDARIES OF THE LAND BE MARKED

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- RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGNOSTIC ONLY. WHERE OFFSETS ARE CRITICAL THEY SHOULD BE CONFIRMED BY FURTHER SURVEY.
- EXCEPT WHERE SHOWN BY DIMENSION LOCATION OF DETAIL, WITH RESPECT TO BOUNDARIES IS INDICATIVE ONLY.

• ONLY VISIBLE SERVICES HAVE BEEN LOCATED. UNDERGROUND SERVICES HAVE NOT BEEN LOCATED. DIAL BEFORE YOU DIG SERVICES (ph 1100) SHOULD BE USED AND A FULL UTILITY INVESTIGATION, INCLUDING A UTILITY LOCATION SURVEY, SHOULD BE UNDERTAKEN BEFORE CARRYING OUT ANY CONSTRUCTION ACTIVITY IN OR NEAR THE SURVEYED AREA.

• CRITICAL SPOT LEVELS SHOULD BE CONFIRMED WITH SURVEYOR.

* THIS PLAN IS ONLY TO BE USED FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS.

· CONTOURS SHOWN DEPICT THE TOPOGRAPHY. THEY DO NOT REPRESENT THE EXACT LEVEL AT ANY PARTICULAR POINT. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

* CONTOUR INTERVAL - 0.5 metre. - SPOT LEVELS SHOULD BE ADOPTED.

* POSITION OF RIDGE LINES ARE DIAGRAMMATIC ONLY (NOT TO SCALE).

• THE INFORMATION IS ONLY TO BE USED AT A SCALE ACCURACY OF 1:100.

• DO NOT SCALE OFF THIS PLAN / FIGURED DIMENSIONS TO BE TAKEN IN

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LEGEND:

BB = BOTTOM OF BANK
BBQ = BARBEQUE
BIT = BITUMEN
BLD = EXTERNAL BUILDING
BOL = BOLLARD
BW = BOTTOM WALL
CH = CHIMNEY
CON = CONCRETE
DD = DISH DRAIN
CK = DECK
FCE = FENCE
FL = FLOOR LEVEL
GDN = GARDEN
JET = JETTY
LID = MISCELLANEOUS PIST LID
NVS = NATURAL SURFACE
PAV = PAVING
PIL = PILE
RF = TOP OF ROOF
RR = ROOF RIDGE
STR = STAIRS
TB = TOP OF BANK
TG = TOP OF GUTTER
TR = TREE
TW = TOP OF WALL
ID → ELECTRICITY OVERHEAD
→ SEWER UNDERGROUND
× TREE
SPREAD-DIAMETER-HEIGHT

HORIZONTAL DATUM:
CO-ORDINATE SYSTEM: M.G.A.
MARKS ADOPTED: PM11657 & PM40338

VERTICAL DATUM:
DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
B.M. ADOPTED: PM 11657
R.L. 2.171 (ORDER L2)
SOURCE: S.C.I.M.S. (02/02/18)

CLIENT:
BLUE PACIFIC
CONSTRUCTIONS PTY LTD
74 CABARITA ROAD,
AVALON NSW 2108

**SURVEY PLAN
SHOWING DETAIL & LEVELS
OVER LOT 298 IN D.P.721522
"THE BOATHOUSE"
GOVERNOR PHILLIP PARK
PALM BEACH NSW 2108**

 C.M.S. Surveyors
Pty Limited

ACN: 096 240 201

PO Box 463 Dee Why
NSW 2099
2/99A South Creek Road,
Dee Why NSW 2099
Telephone: (02) 9971 4802
Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au

LGA: NORTHERN BEACHES | SHEET 2 OF 2

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SURVEY INSTRUCTION		SCALE	DATE OF SURV

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SHEET NUMBER	SHEET NAME
DA00	Addendum as requested by BCA Consultant
DA00	COVER
DA01	SITE ANALYSIS PLAN
DA02	SITE PLAN
DA03	DEMOLITION PLAN
DA04	SITE & GROUND PLAN
DA05	SITE & GROUND PLAN 1:200
DA06	PROPOSED GROUND FLOOR PLAN - A3
DA07	PROPOSED ANCILLARY BUILDING GROUND FLOO...
DA08	PROPOSED FIRST FLOOR PLAN
DA09	NORTH / EAST ELEVATIONS
DA10	SOUTH / WEST ELEVATIONS
DA11	THE BOATHOUSE LONG & CROSS SECTION
DA12	PROPOSED PUBLIC ACCESS ON CROWN LEASE L...
DA13	WASTE MANAGEMENT PLAN
DA14	PROPOSED OUTLINE NEW & EXISTING SERVICES
DA15	WINTER SOLSTICE 9 AM
DA16	WINTER SOLSTICE 12 PM
DA17	WINTER SOLSTICE 3 PM
DA18	NOTIFICATION PLANS SHEET 1
DA19	NOTIFICATION PLANS SHEET 2

THE BOATHOUSE

PALM BEACH

LOT 7005 IN DP.1117451 AND ROAD RESERVE HAVE BEEN ADDED
BY SCALE ONLY AND IS VERY APPROXIMATE - NO SURVEY OF
THESE BOUNDARYS HAS BEEN UNDERTAKEN AT THIS DATE.

PITTWATER

NOTE:
DP.117451 - LOT 7005 CONTAINS NO BEARINGS AND
DISTANCES THEREFORE HAS BEEN SCALED ON THIS PLAN - NO
FURTHER TITLE INVESTIGATIONS HAVE BEEN CARRIED OUT - ALL
BOUNDARY OFFSETS ARE APPROXIMATE ONLY - TO DETERMINE
ACCURATE BOUNDARIES FURTHER SURVEY AND INVESTIGATION
REQUIRED.

ROOF-SCALED BDY
121m BY SCALE - VERY APPROXIMATE
BOUNDARY HAS NOT BEEN SURVEYED

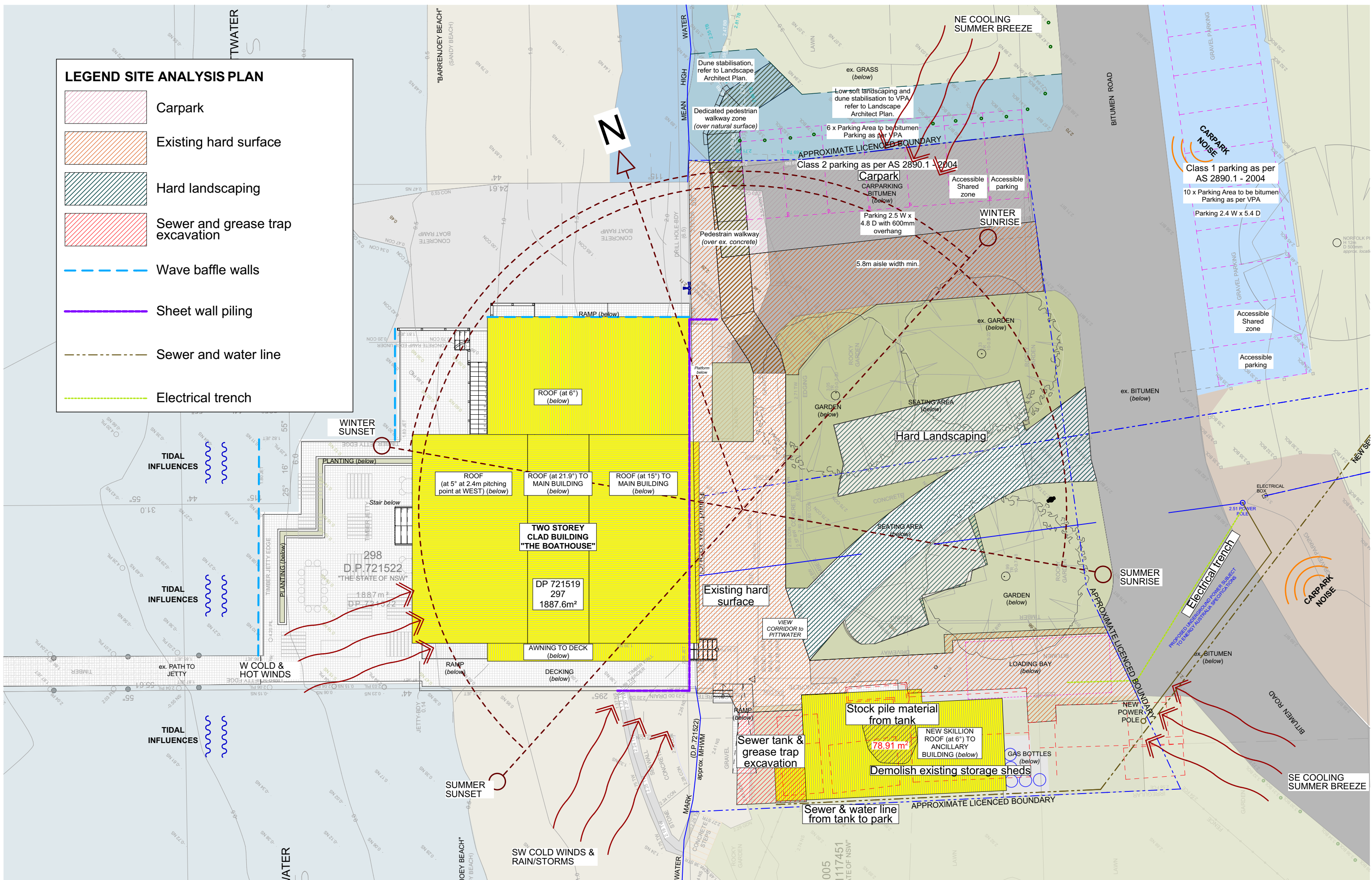
WALL-SCALED BDY
325m BY SCALE - VERY APPROXIMATE
BOUNDARY HAS NOT BEEN SURVEYED

132
DP.752046

7006
DP.1117451

NOT TO SCALE





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THE BOATHOUSE
PALM BEACH

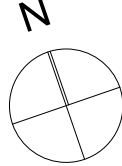
Canvas Architecture & Design
ABN 80 154 221 722
21 Endeavour Drive
BEACON HILL NSW 2100
Roslyn Miller
NSW REG: 9453 BARCH (HONS I)
roslyn@canvasarch.com.au 0405 60 11 30

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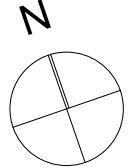
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ABN 60 154 221 722
21 Endeavour Drive
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NSW REG: 9453 BARCH (HONS I)
roslyn@canvasarch.com.au 0405 60 11 30

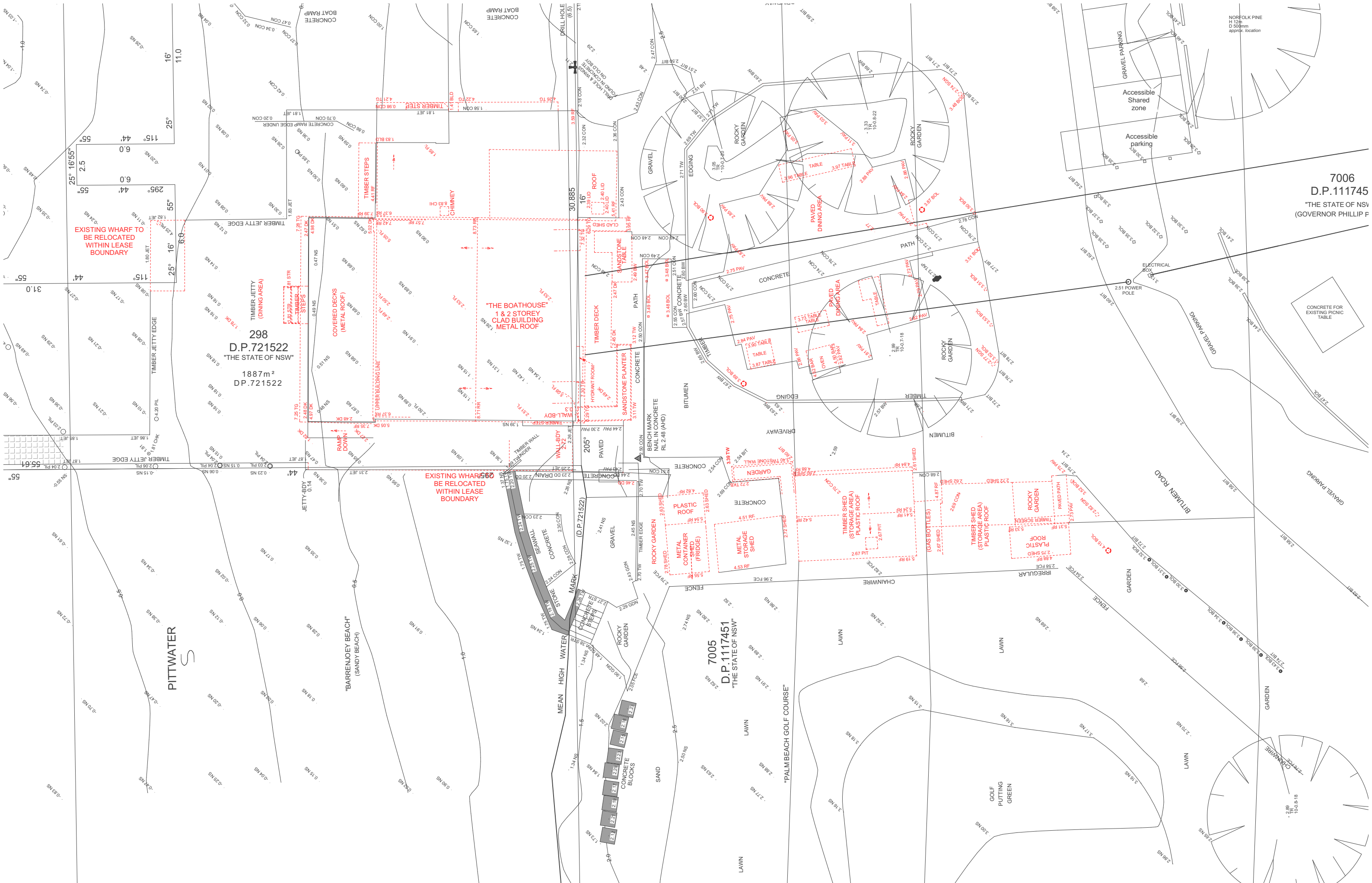
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THE BOATHOUSE
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Canvas Architecture & Design
ABN 80 154 221 722
21 Endeavour Drive
BEACON HILL NSW 2100
Roslyn Miller
NSW REG: 9453 BARCH (HONS I)
roslyn@canvasarch.com.au

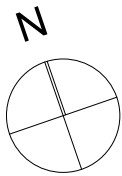
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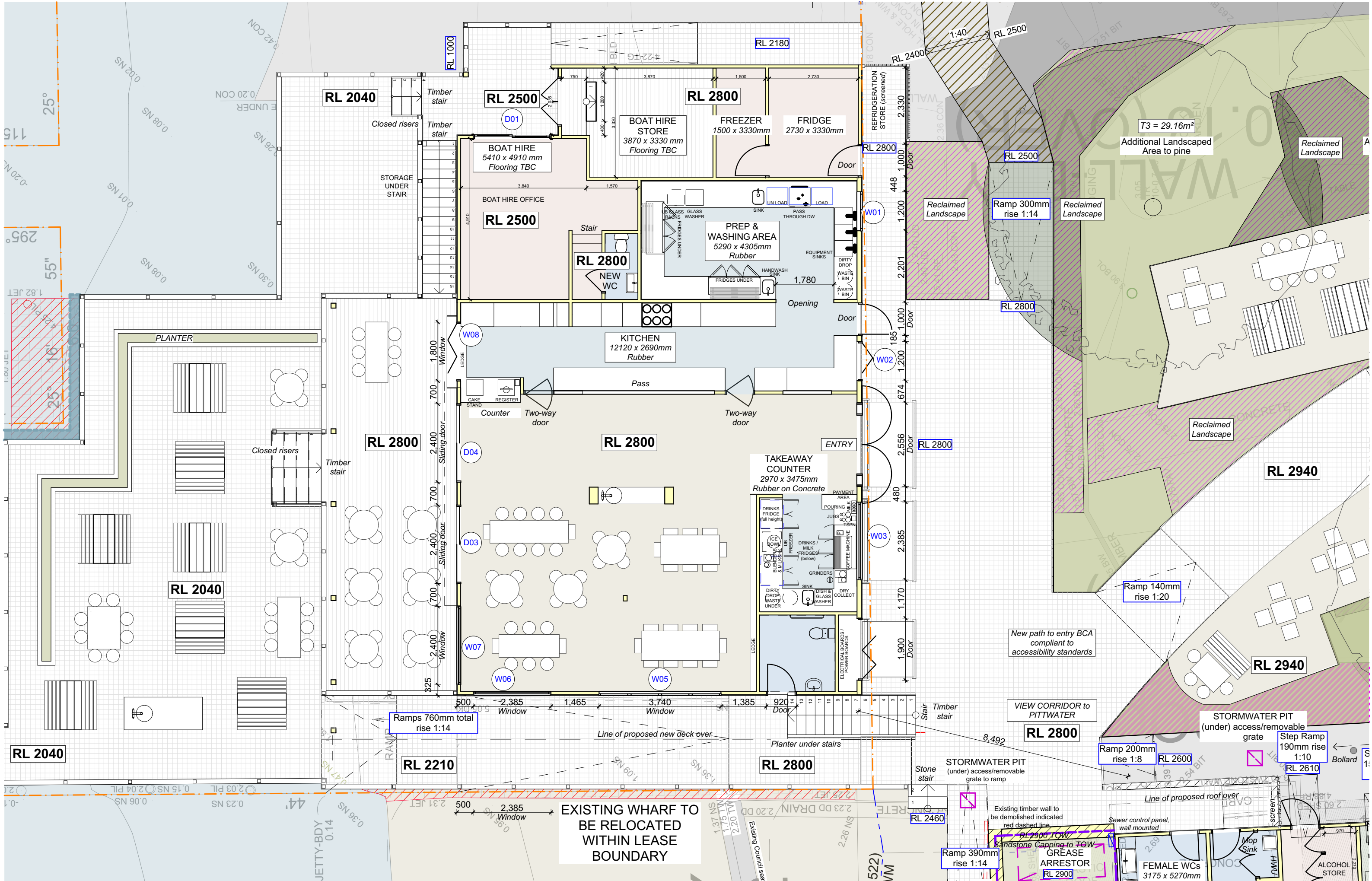
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DA03
30/01/2021 DEVELOPMENT APPLICATION





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CLIENT: LONDON LAKES PARTNERSHIP

THE BOATHOUSE
PALM BEACH

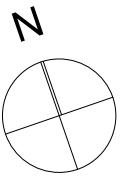
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Roslyn Miller
NSW REG: 9453 BARCH (HONS I)
roslyn@canvasarch.com.au 0405 60 11 30

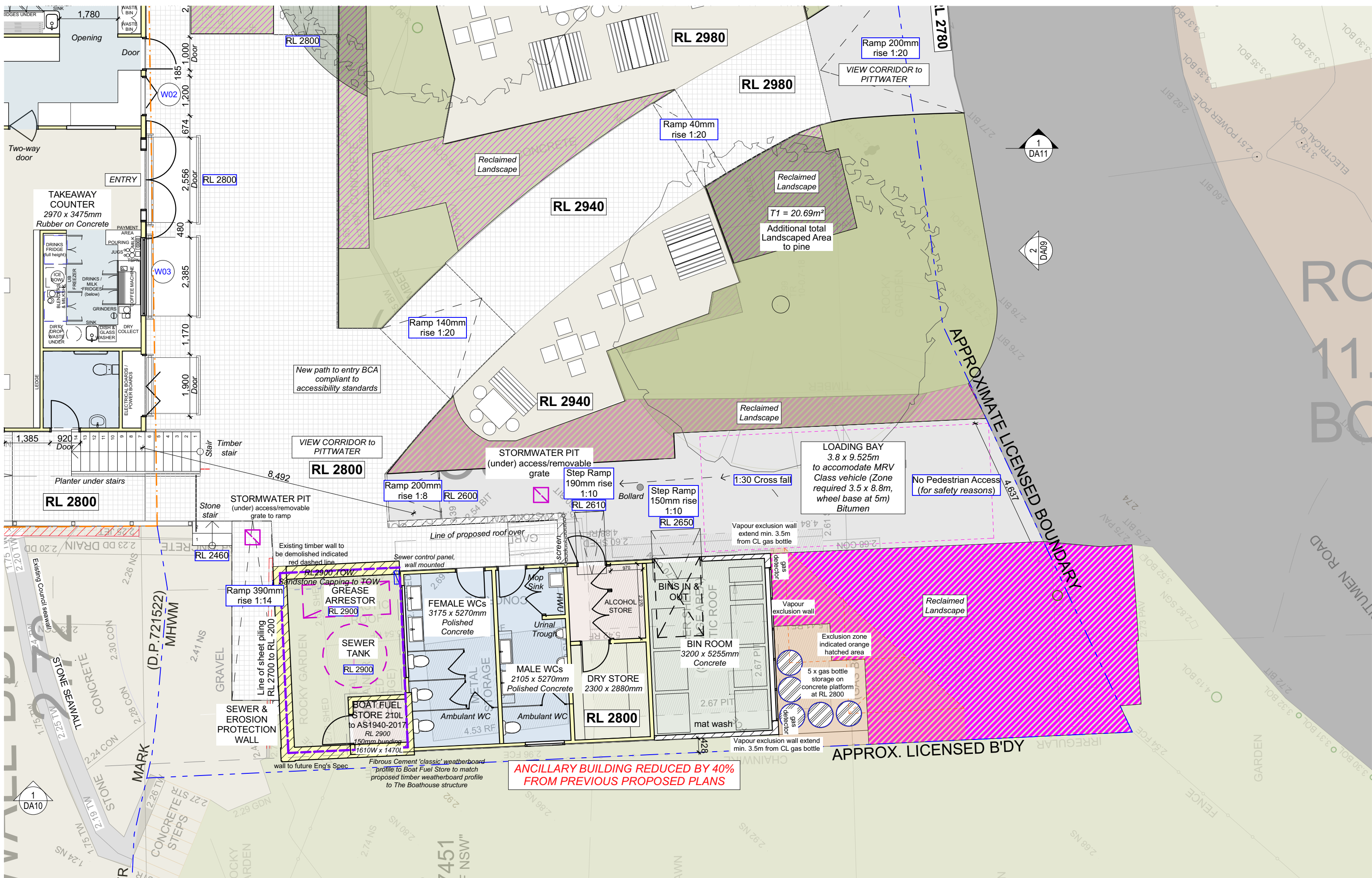
Drawing Name
**PROPOSED GROUND FLOOR
PLAN - A3**

Drawing Scale
1:100

Drawn
RM

Layout ID
DA06
30/01/2021 DEVELOPMENT APPLICATION





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PALM BEACH

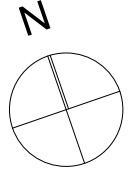
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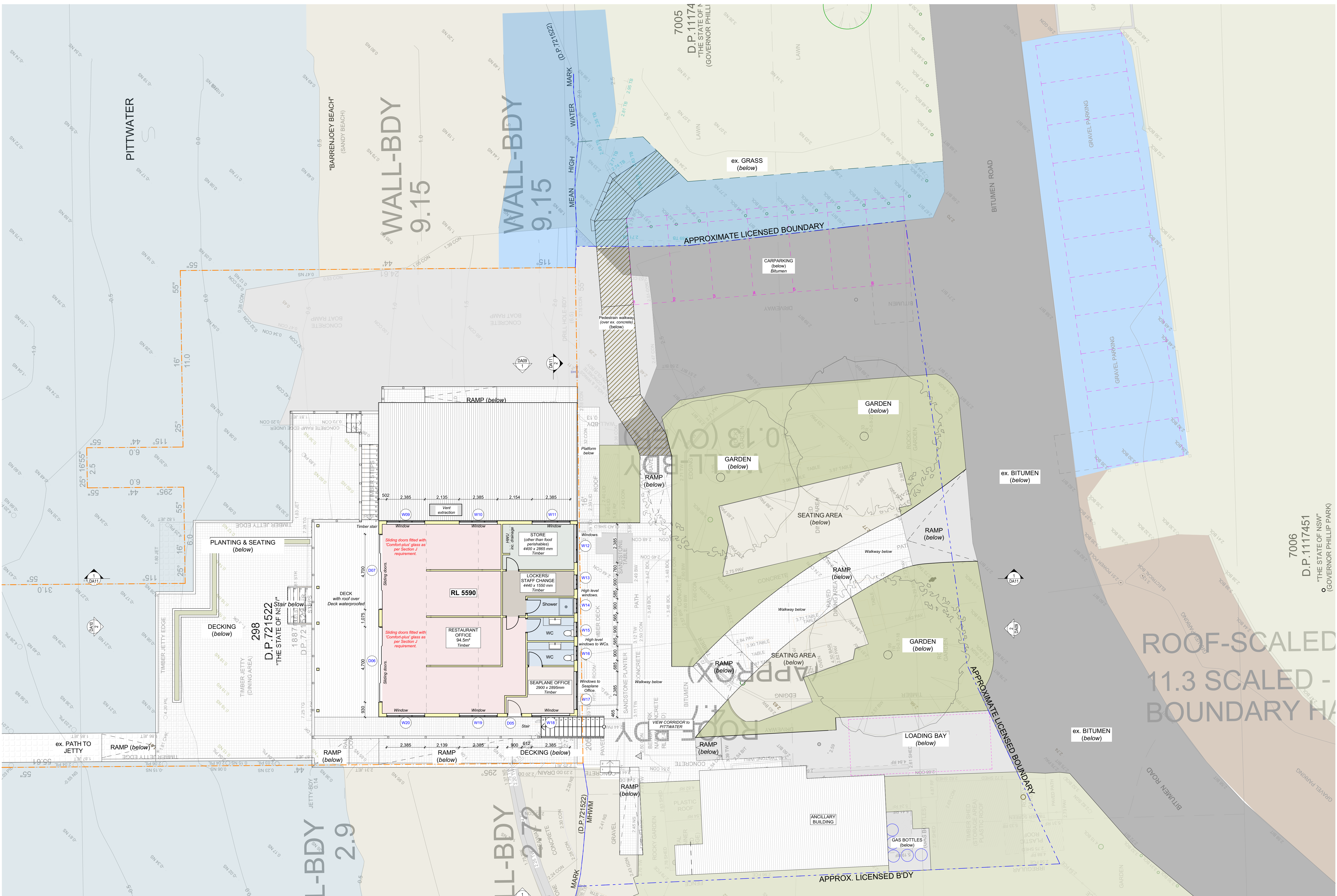
Drawing Name
**PROPOSED ANCILLARY
BUILDING GROUND FLOOR
PLAN - A3**

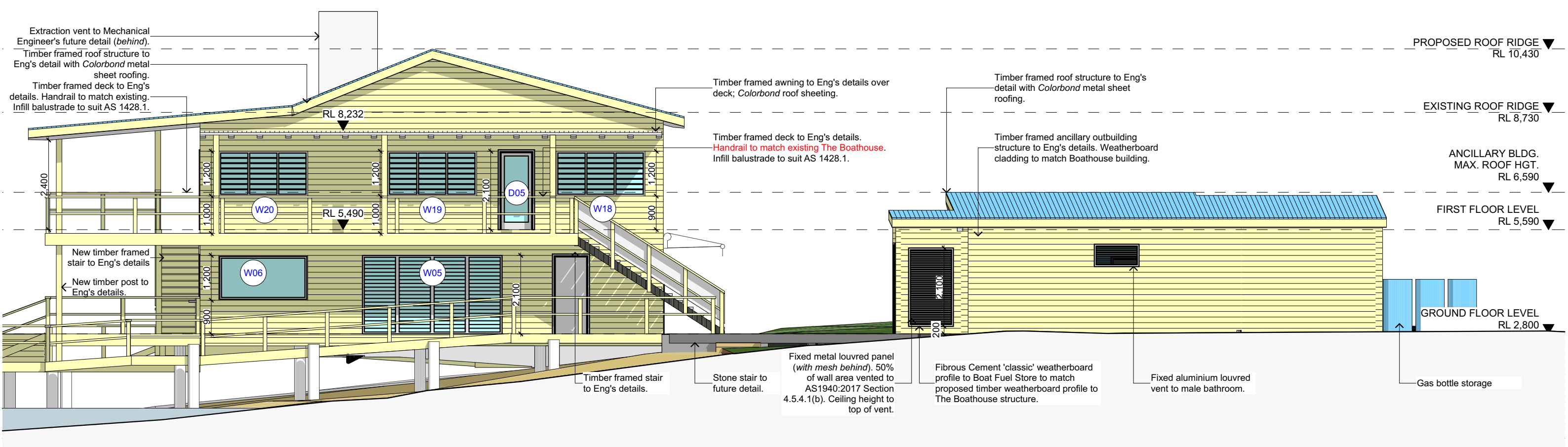
Drawing Scale
1:100

Drawn
RM

Layout ID
DA07
30/01/2021 DEVELOPMENT APPLICATION







SOUTH ELEVATION

1:100



WEST ELEVATION

1:100

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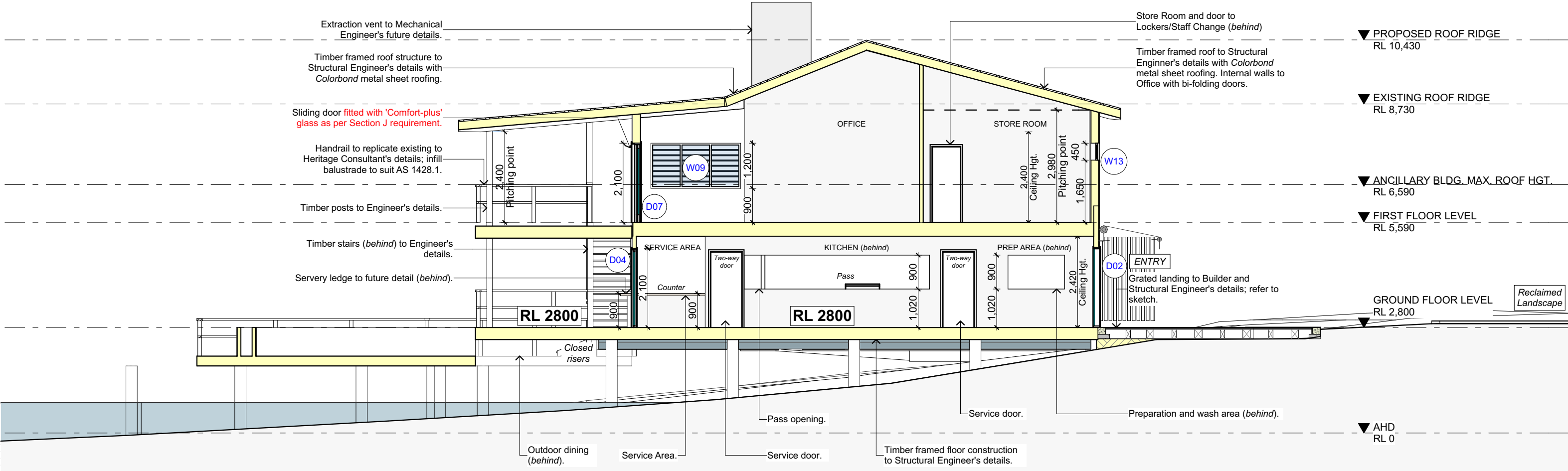
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Drawing Name
SOUTH / WEST ELEVATIONS

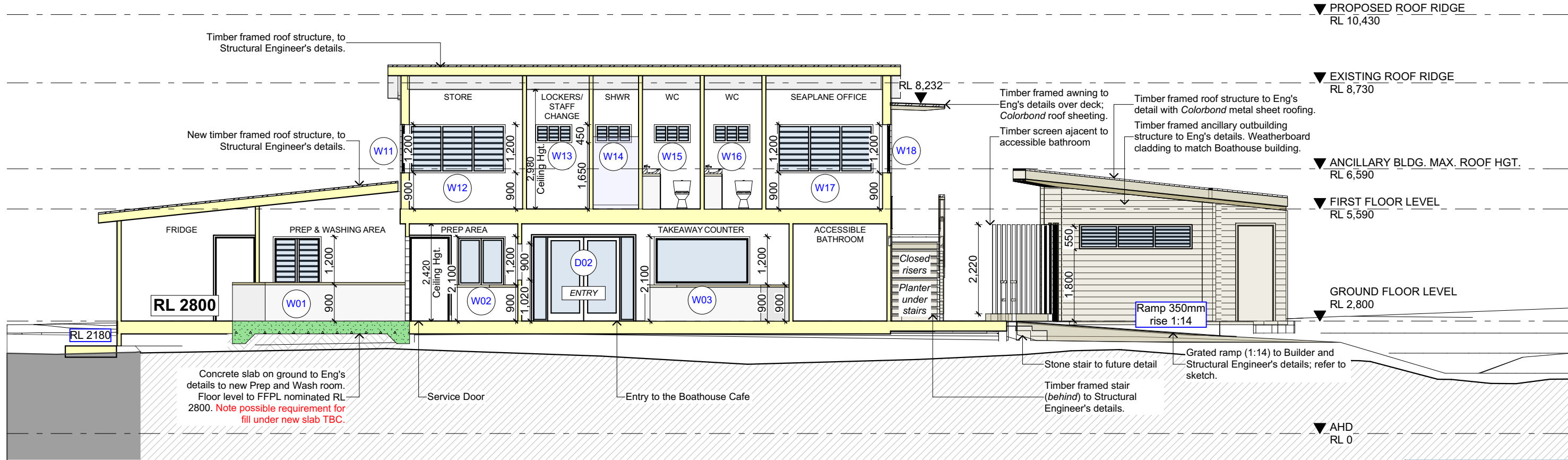
Drawing Scale
1:100

Drawn
RM

Layout ID
DA10
30/01/2021 DEVELOPMENT APPLICATION



1 S-01 Long Section 1:100



2 S-02 Cross Section 1:100

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CLIENT: LONDON LAKES PARTNERSHIP THE BOATHOUSE PALM BEACH

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Drawing Name THE BOATHOUSE LONG & CROSS SECTION

Drawing Scale 1:100 Drawn RM

Layout ID DA11 30/01/2021 DEVELOPMENT APPLICATION



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21 Endeavour Drive
BEACON HILL NSW 2100
Roslyn Miller
NSW REG: 9453 BARCH (HONS I)
roslyn@canvasarch.com.au 0405 60 11 30

Drawing Name
**PROPOSED PUBLIC ACCESS
ON CROWN LEASE LAND**

Drawing Scale
1:200

Drawn
RM

Layout ID

LEGEND WASTE MANAGEMENT PLAN

ABCDE

Rotated storage

F

Storage during demolition & once new floor built

1

Storage & bin storage

2

Delivery and concrete pump

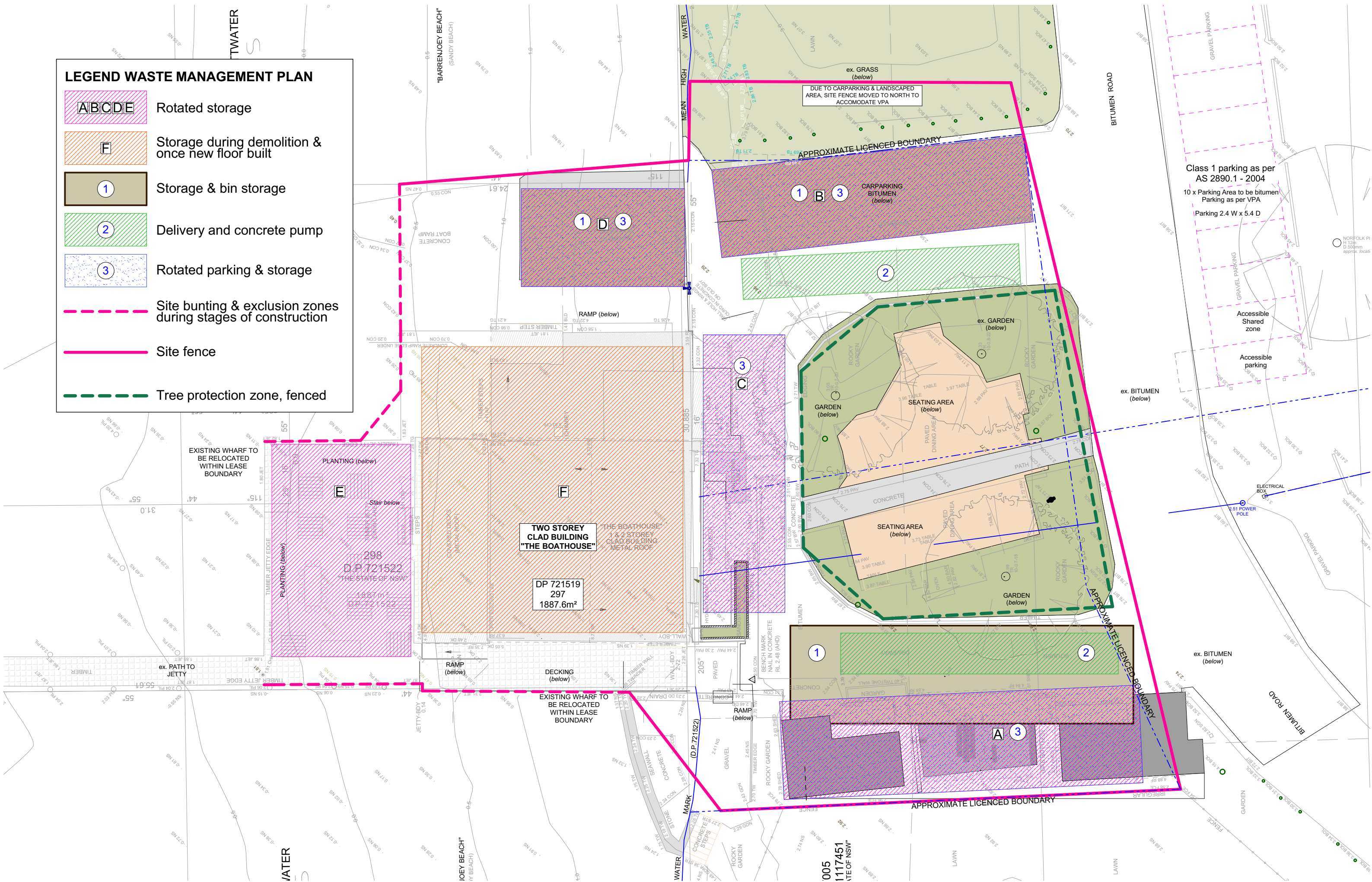
3

Rotated parking & storage

Site bunting & exclusion zones during stages of construction

Site fence

Tree protection zone, fenced



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PALM BEACH

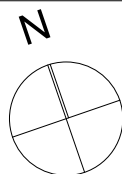
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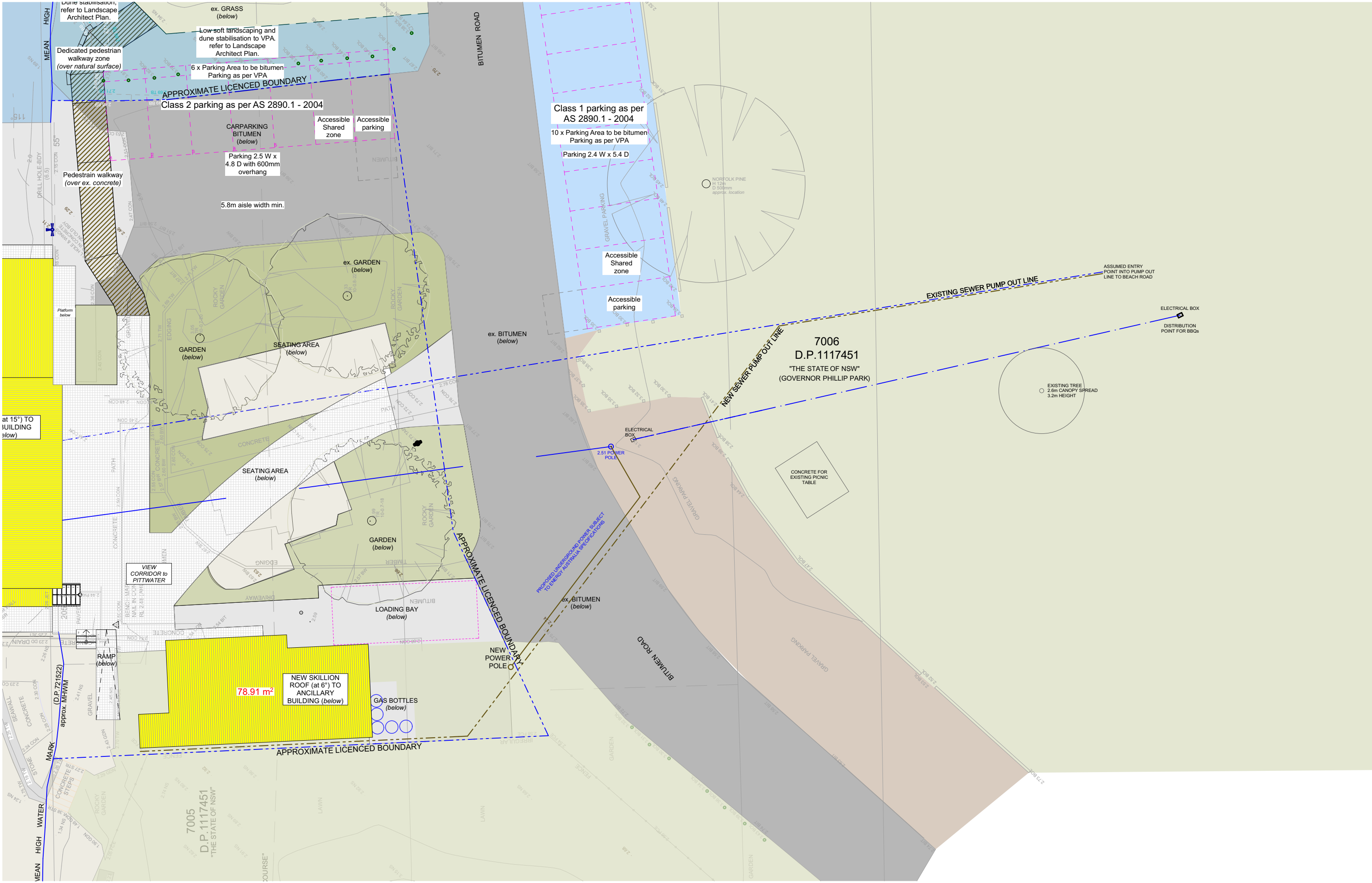
Drawing Name
WASTE MANAGEMENT PLAN

Drawing Scale
1:200

Drawn
RM

Layout ID
DA13
30/01/2021 DEVELOPMENT APPLICATION





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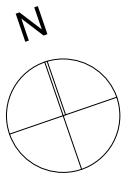
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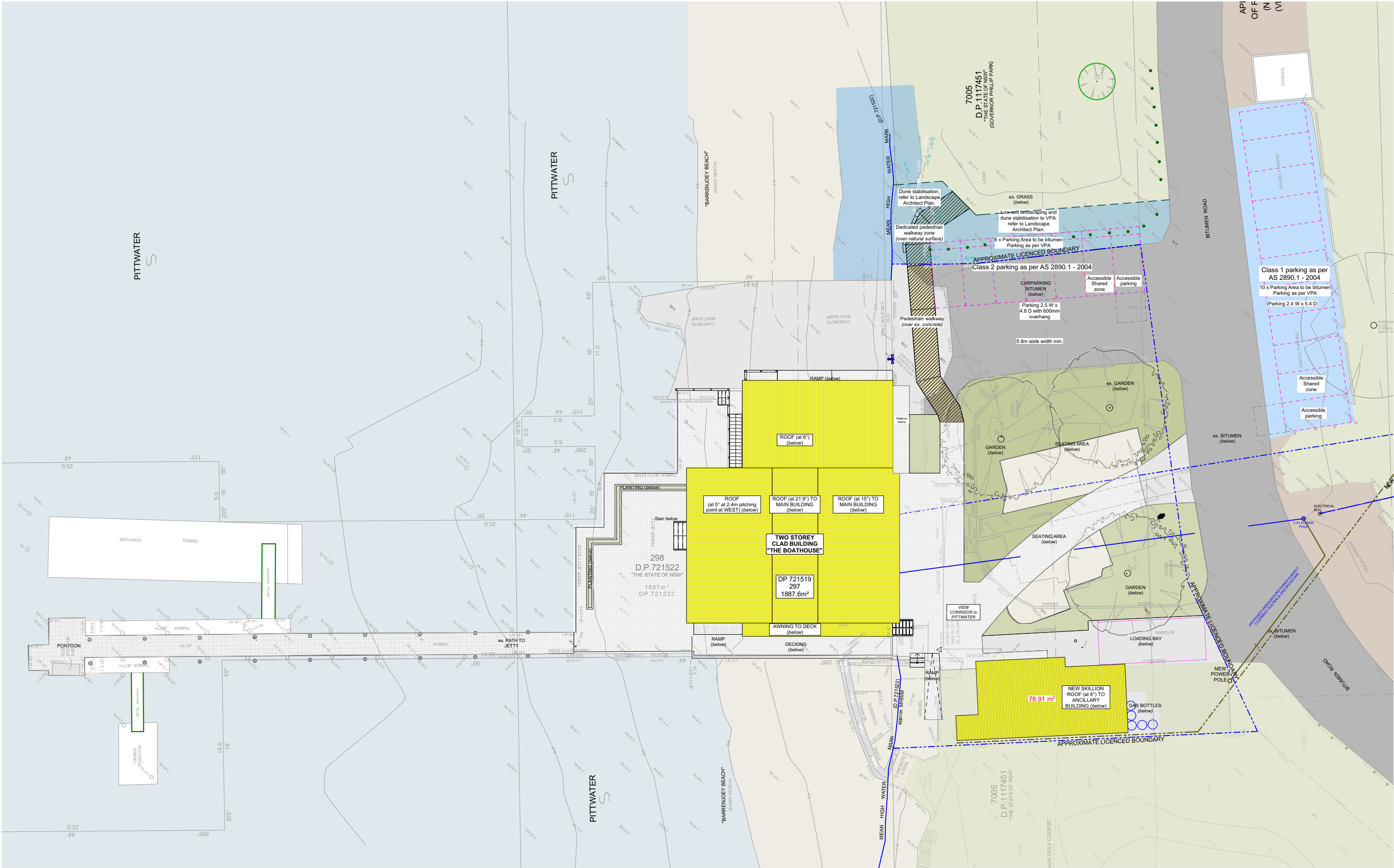
Drawing Name
PROPOSED OUTLINE NEW & EXISTING SERVICES

Drawing Scale
1:200

Drawn
RM

Layout ID
DA14
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1 SITE / ROOF PLAN 1:300

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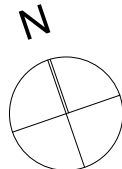
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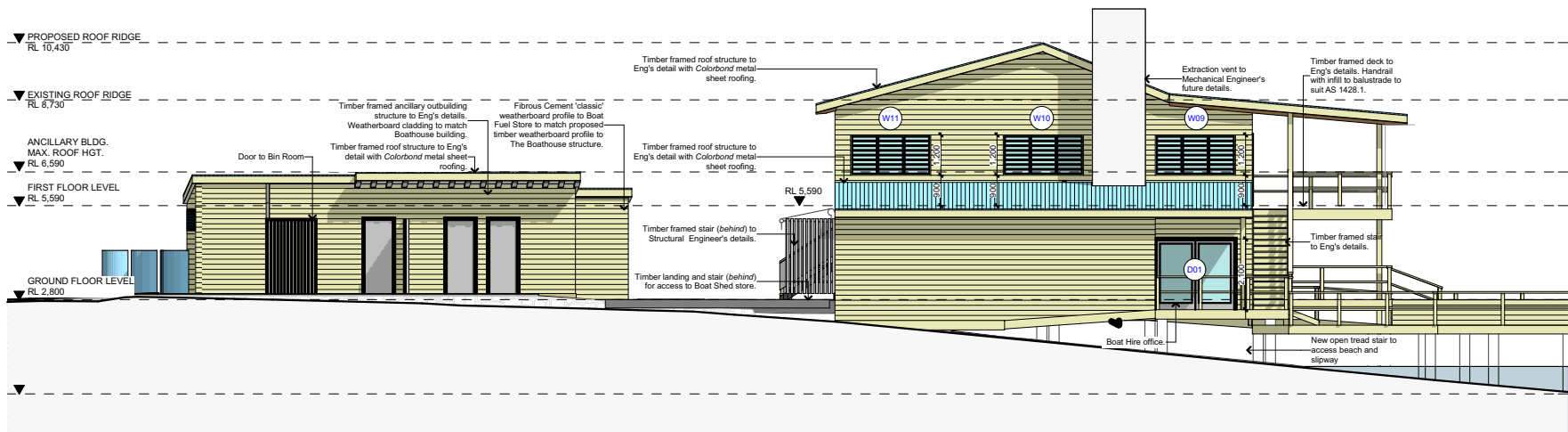
Drawing Name
NOTIFICATION PLANS SHEET
1

Drawing Scale
1:300

Drawn
RM

Layout ID
DA18
30/01/2021 DEVELOPMENT APPLICATION





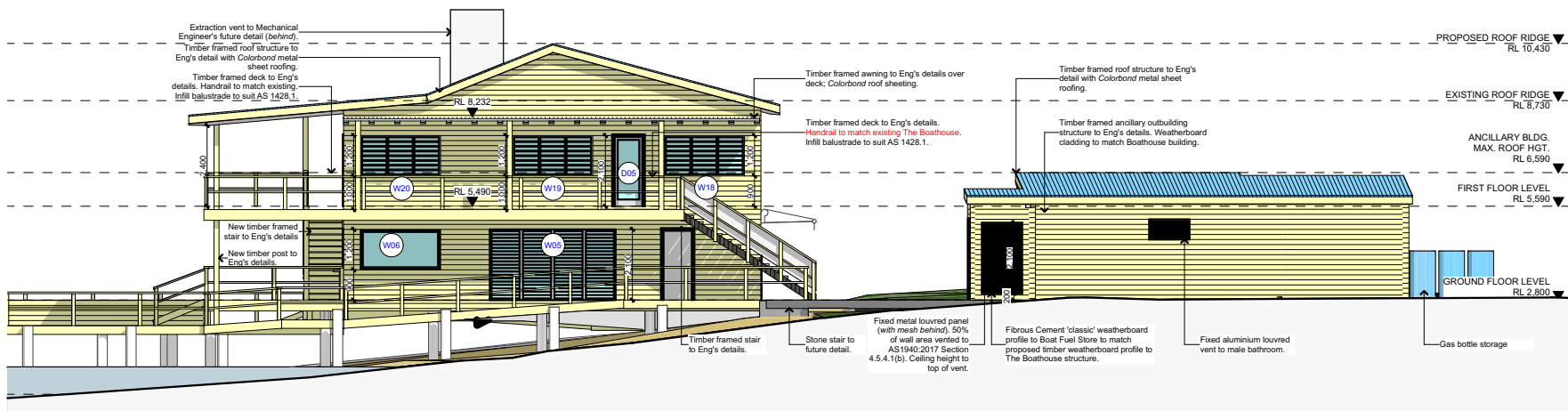
1

NORTH ELEVATION
1:200



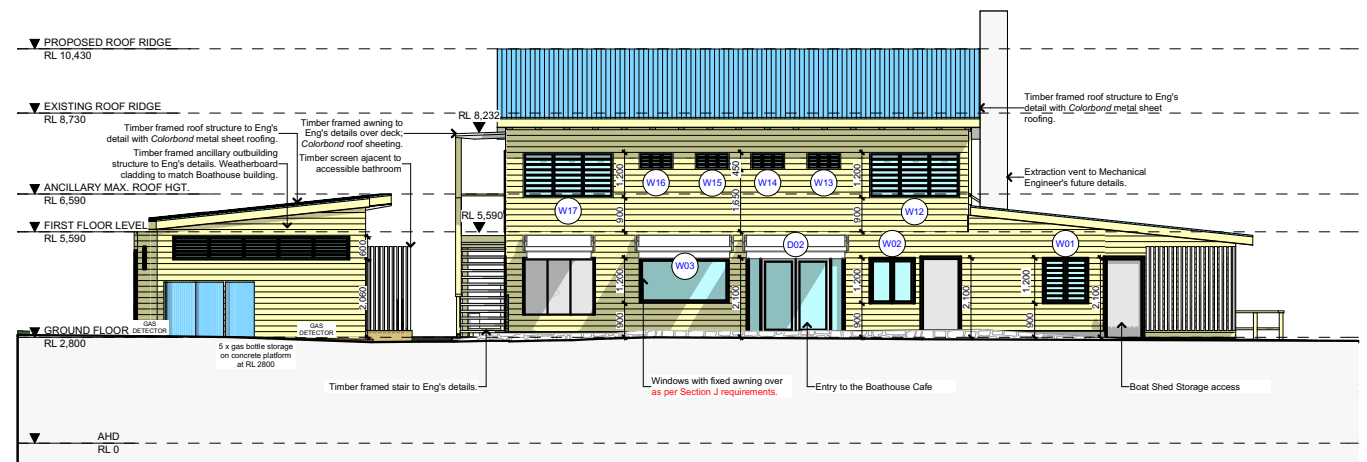
2

WEST ELEVATION
1:200



3

SOUTH ELEVATION
1:200



4

EAST ELEVATION
1:200

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Drawing Name
NOTIFICATION PLANS SHEET
2

Drawing Scale
1:200

Drawn
RM

Layout ID
DA19
30/01/2021 DEVELOPMENT APPLICATION

