

1 SITE PLAN

2 BASIX

Fixtures & Systems	
Hot water	Instantaneous gas
Lighting	Min. 40% LED or CF
Fixtures	Min. 3 stars
Construction	
Insulation (minimum)	Nil
Floor: over building	R1.16
Walls: brick veneer	R1.30
Walls: Framed	Nil
Walls: shared garage	R1.45
Ceiling: flat roof	RFL blanket
Roof:	

Glazing		
Item	Frame & glass type	Shading device
NW1	Alum., Low-E glass	None
NW2	Alum., Low-E glass	Eave >900mm
SW1	Alum., Low-E glass	None
SW2	Alum., Low-E glass	Eave >600mm
NE1	Alum., Low-E glass	Eave >450mm
NE2	Alum., Low-E glass	Eave >600mm
SE1	Alum., Low-E glass	Eave >450mm
SE2	Alum., Low-E glass	Eave >900mm

Pool & Spa	
Rainwater tank	
Size (min.)	1323L
Collection area	75m²
Connected to	1 tap
Pool	
Located	Outdoors
Capacity	50kL
Requirements	Provide pool cover & pump with timber Solar (Gas boosted)
Heating type	
Spa	
Located	Outdoors
Capacity	4kL
Requirements	Provide spa cover & pump with timber Solar (Gas boosted)
Heating type	

3 CALCULATIONS

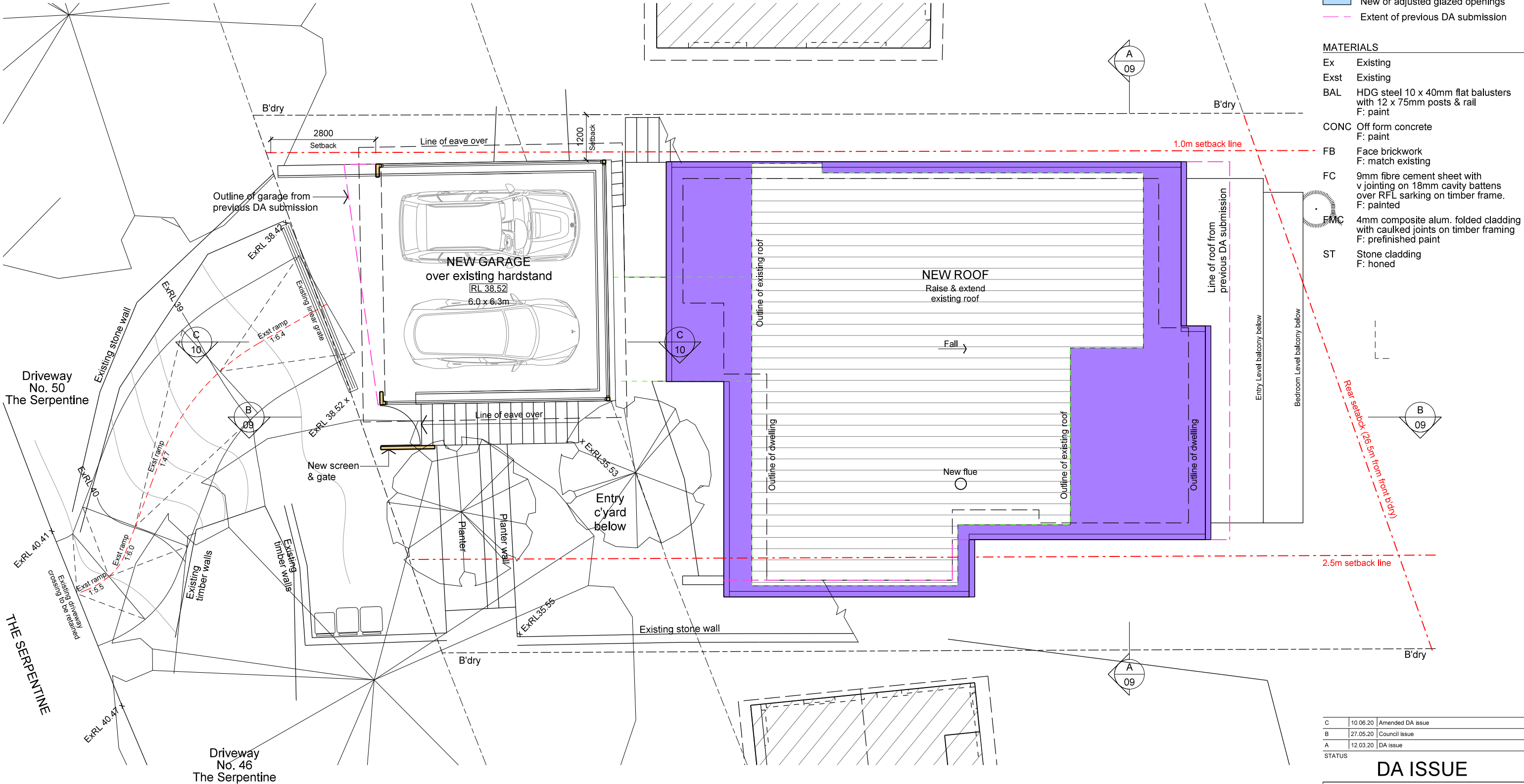
Site Area	716.5m²		
Landscape	Existing	Proposed	Permissible
Hardscape	256.2m² (35.8%)	223.0m² (31.1%)	43.0m² (6%)
Softscape	307.4m² (42.9%)	330.9m² (46.2%)	386.1m² (54%)
Total	563.6m² (78.7%)	553.9m² (77.3%)	429.9m² (60%)
Footprint Area	Existing	Proposed	
Dwelling	156.5m²	164.6m²	

LEGEND	
	Items to be demolished
	Existing walls
	New roof extension
	New dwelling extension (enclosed)
	New balcony / terrace / pool extension
	New facade extension / alterations
	New or adjusted glazed openings
	Extent of previous DA submission

MATERIALS	
Ex	Existing
Exst	Existing
BAL	HDG steel 10 x 40mm flat balusters with 12 x 75mm posts & rail F: paint
CONC	Off form concrete F: paint
FB	Face brickwork F: match existing
FC	9mm fibre cement sheet with v jointing on 18mm cavity battens over RFL sarking on timber frame. F: painted
FMC	4mm composite alum. folded cladding with caulked joints on timber framing F: prefinished paint
ST	Stone cladding F: honed

C	10.06.20	Amended DA issue
B	27.05.20	Council issue
A	12.03.20	DA issue

STATUS			
DA ISSUE			
PROJECT			
Alterations & additions			
48 The Serpentine, Bilgola			
DRAWING			
SITE PLAN			
Bawtree Design			
Architecture + Interiors			
Nerida Bawtree   Architect Reg 6471 NSW			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:200	1811 / 01	C



- LEGEND**
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F: prefinished paint
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F: honed

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STATUS

## DA ISSUE

PROJECT  
Alterations & additions  
48 The Serpentine, Bilgola

DRAWING  
GARAGE LEVEL

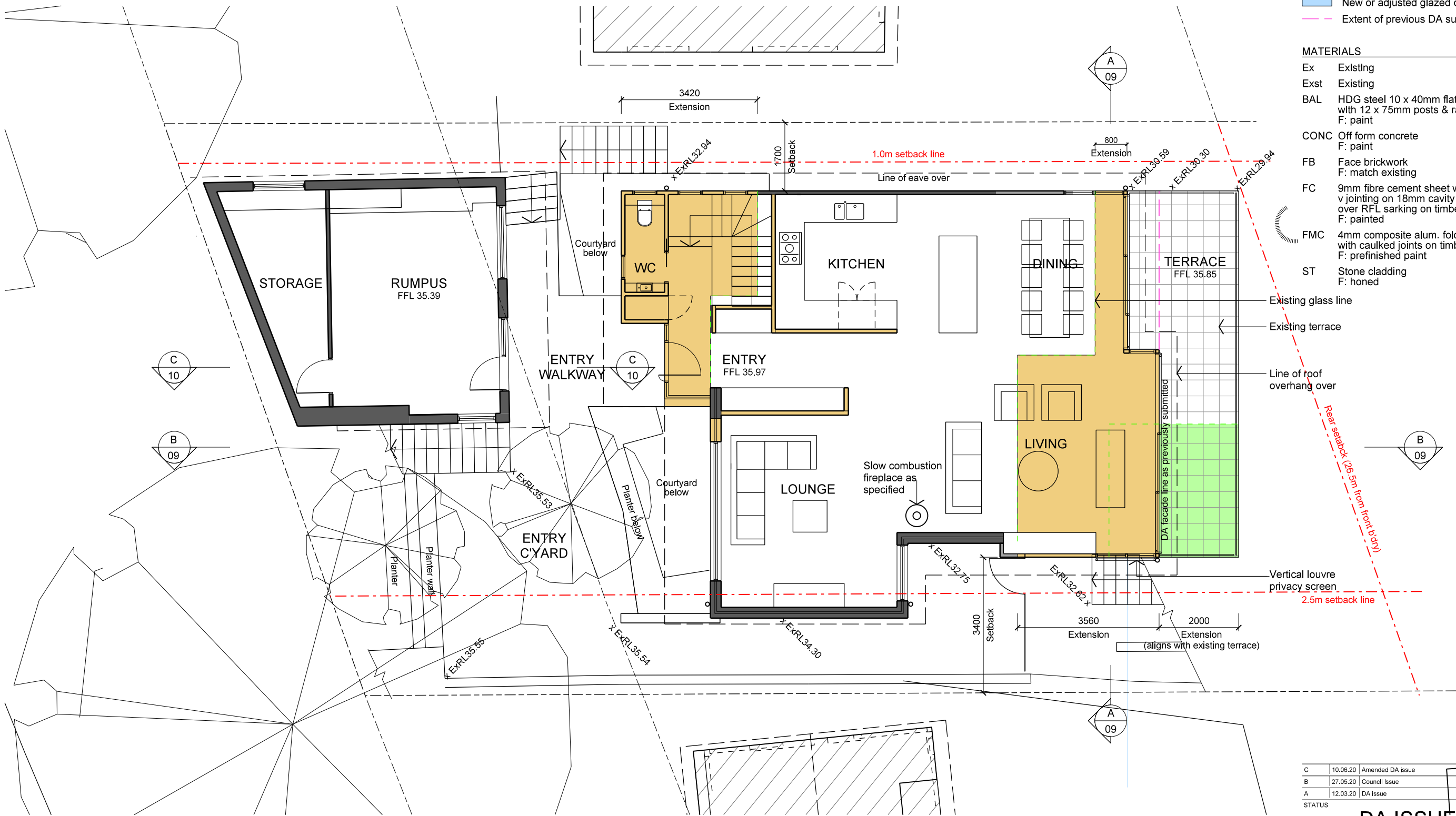
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:100	1811 / 02	C





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F: prefinished paint
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- Existing glass line
- Existing terrace
- Line of roof overhang over
- Vertical louvre privacy screen
- 2.5m setback line
- Rear setback (26.5m from front body)

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**DA ISSUE**

PROJECT  
Alterations & additions  
48 The Serpentine, Bilgola

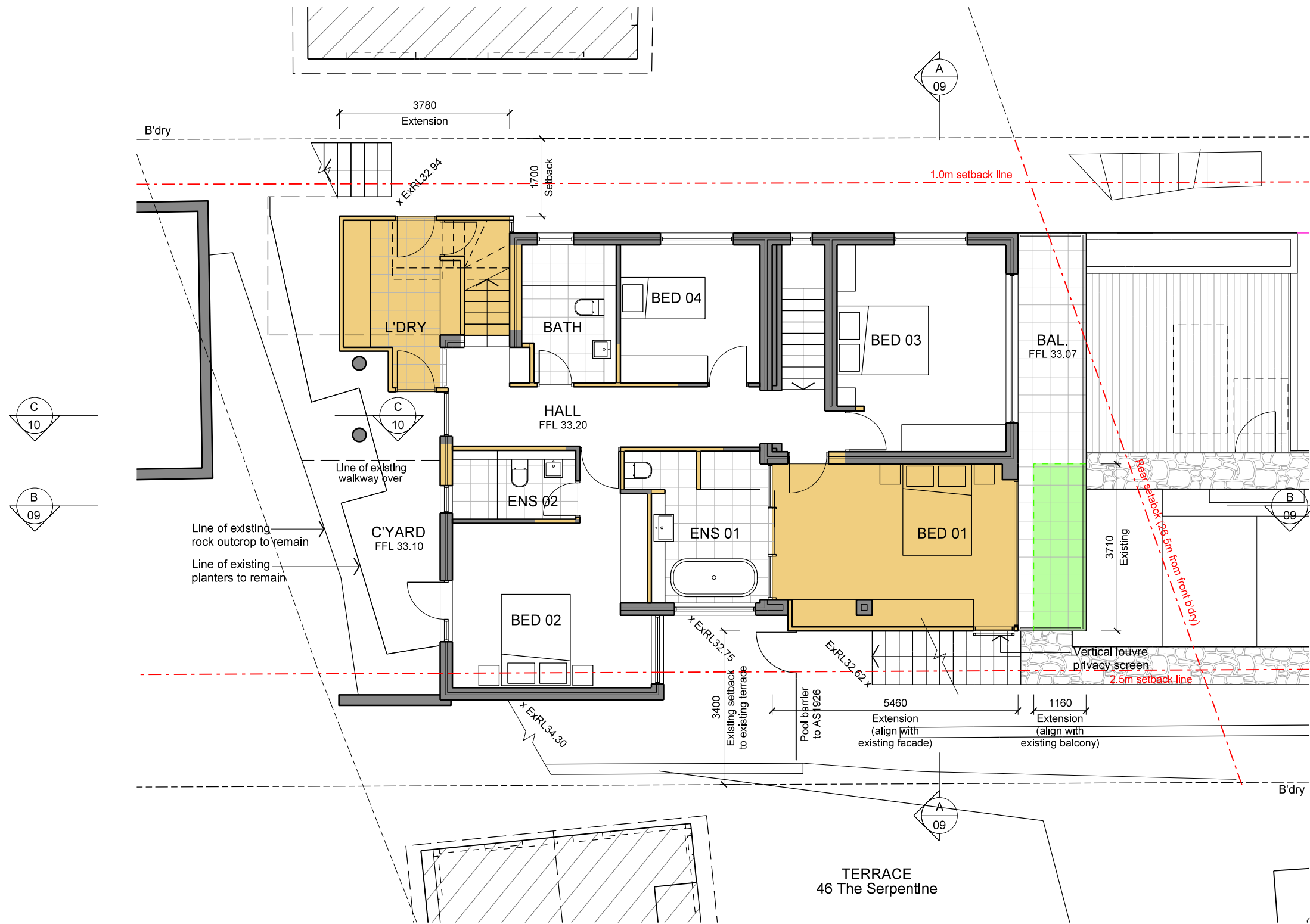
DRAWING  
ENTRY LEVEL

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SHEET	SCALE	DRAWING NO.	ISSUE
A3		1811 / 03	C



1 BEDROOM LEVEL

- LEGEND**
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  - Existing walls
  - New roof extension
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  - New or adjusted glazed openings
  - Extent of previous DA submission

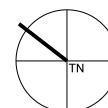
- MATERIALS**
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F: prefinished paint
  - ST Stone cladding  
F: honed

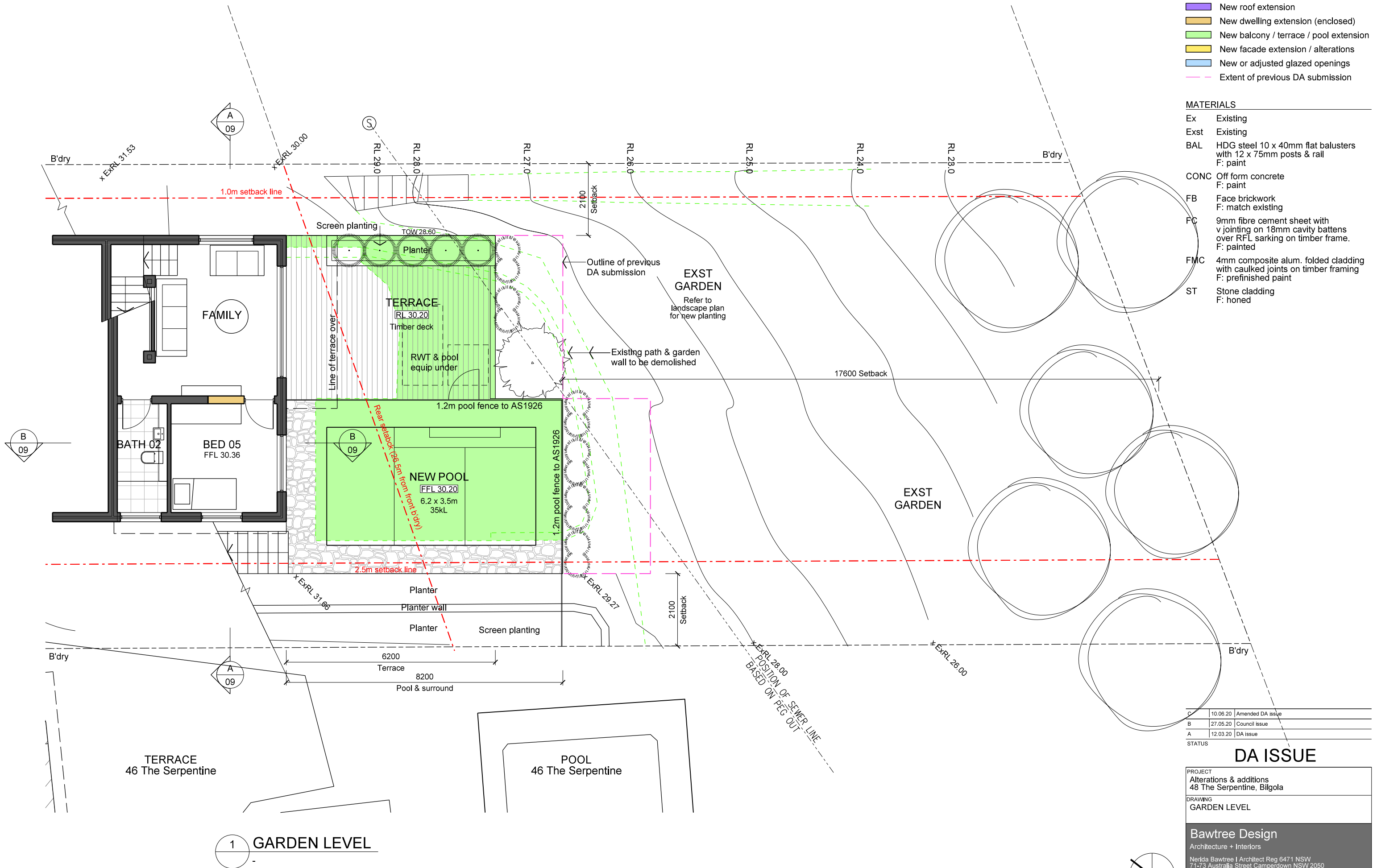
C	10.06.20	Amended DA issue
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A	12.03.20	DA issue

STATUS

## DA ISSUE

PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING BEDROOM LEVEL			
Bawtree Design Architecture + Interiors			
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A3	1:100	1811 / 04	C



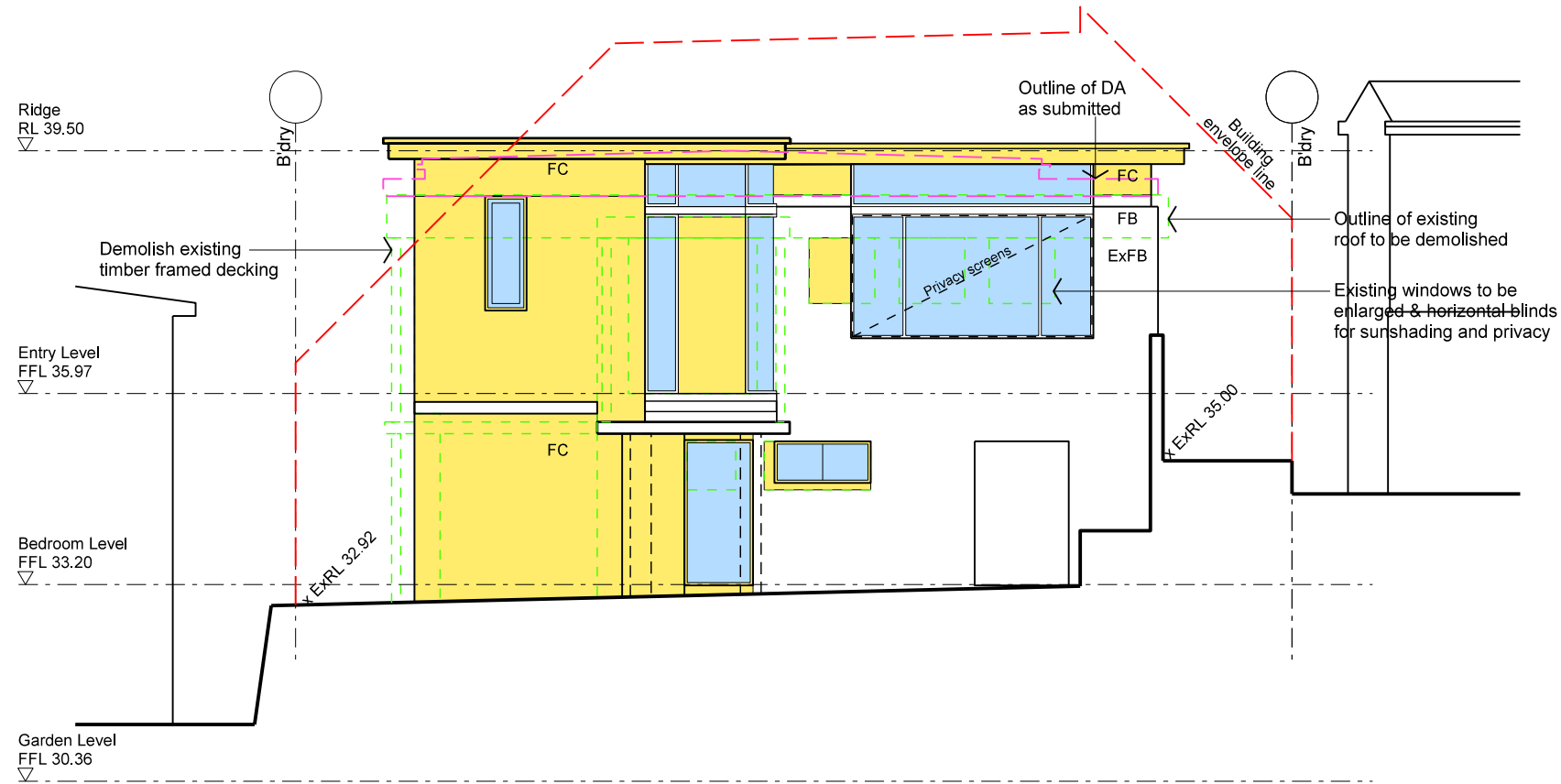


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STATUS		

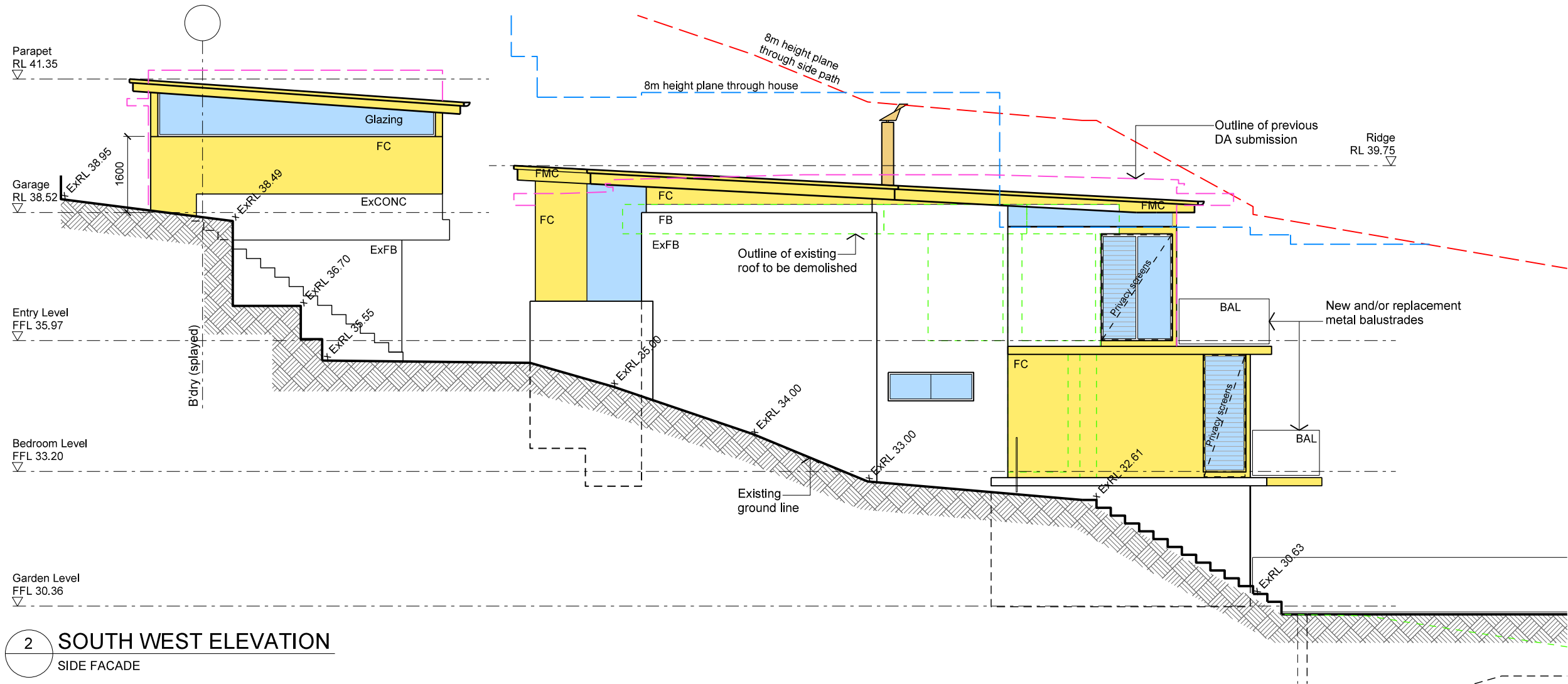
# DA ISSUE

<b>PROJECT</b> <b>Alterations &amp; additions</b> <b>48 The Serpentine, Bilgola</b>			
<b>DRAWING</b> <b>GARDEN LEVEL</b>			
<b>Bawtree Design</b> Architecture + Interiors			
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<b>SHEET</b>	<b>SCALE</b>	<b>DRAWING NO.</b>	<b>ISSUE</b>
<b>A3</b>	<b>1:100</b>	<b>1811 / 05</b>	<b>C</b>





1 NORTH WEST ELEVATION  
STREET FACADE

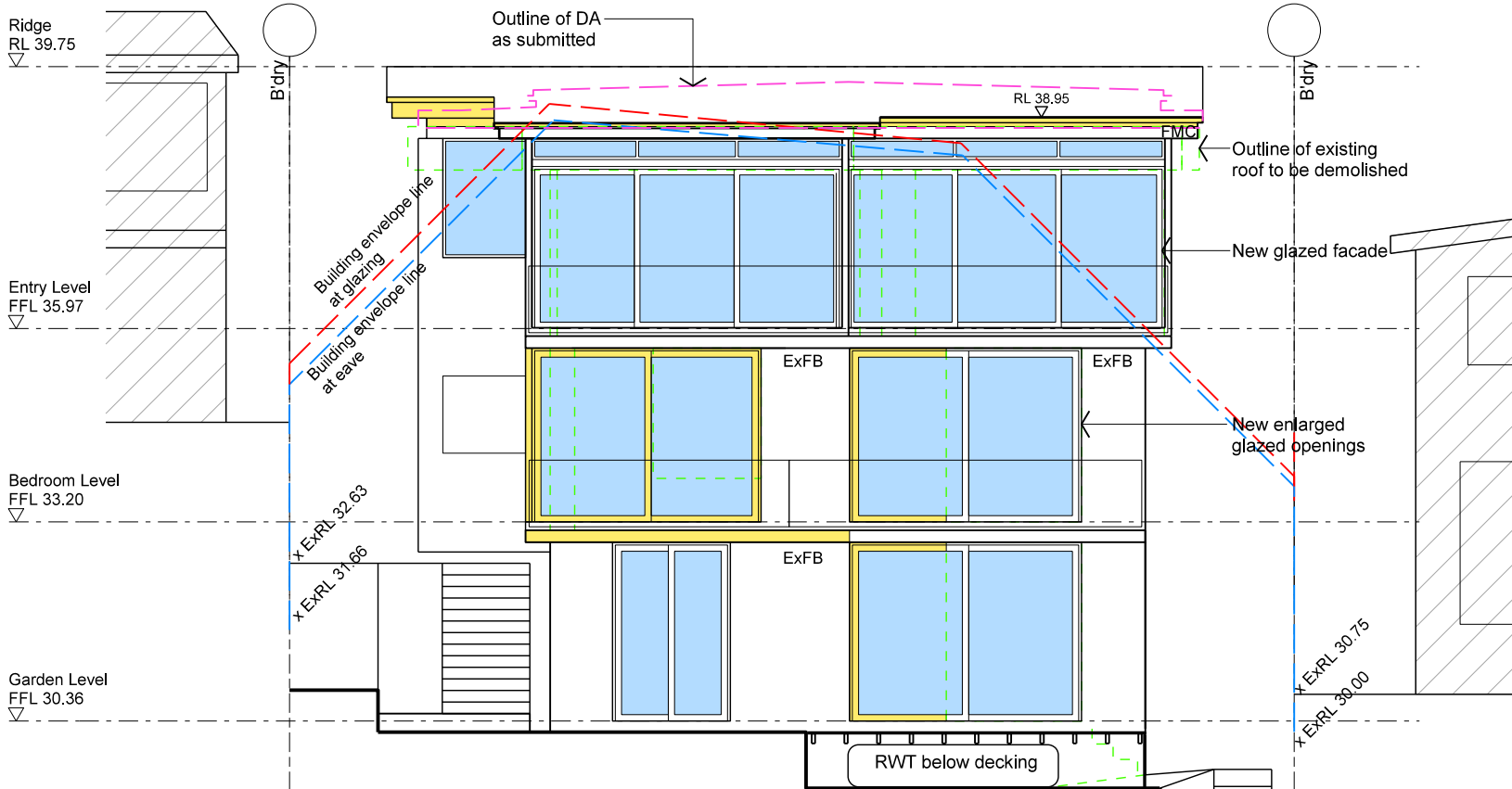


2 SOUTH WEST ELEVATION  
SIDE FACADE

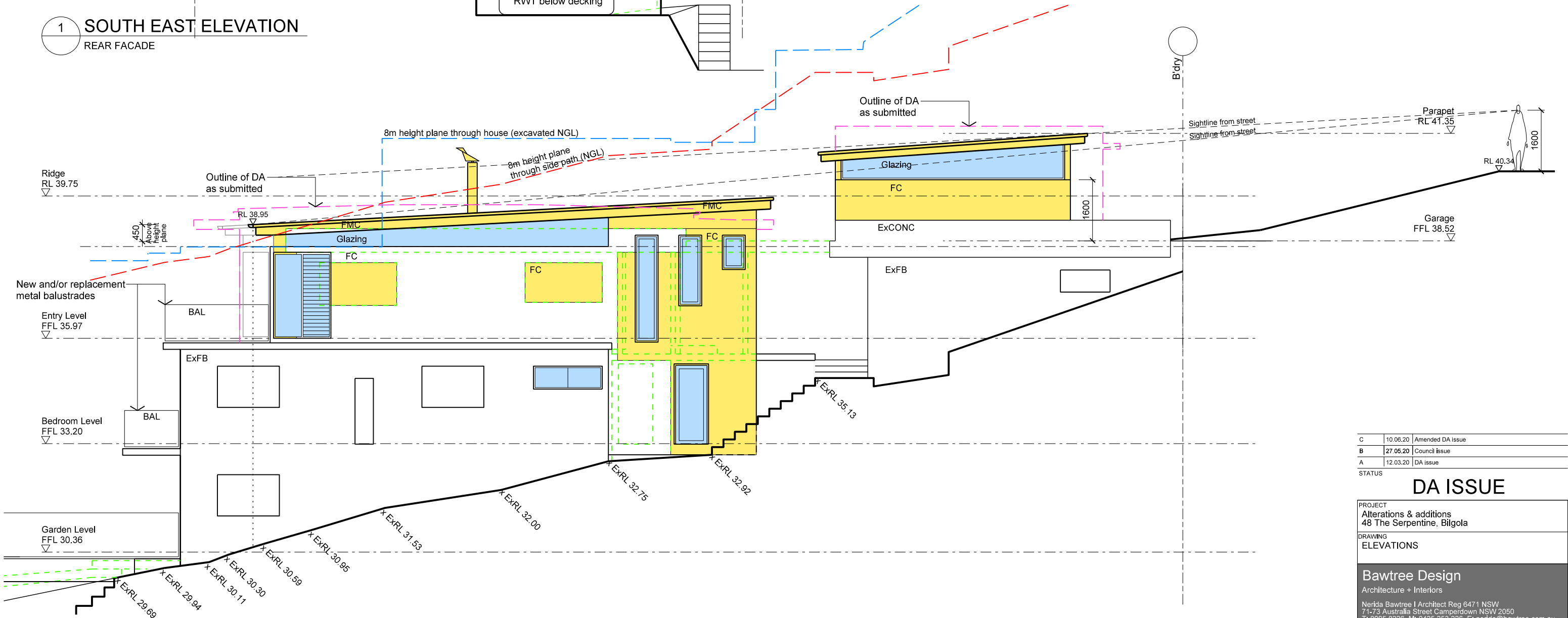
LEGEND	
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<span style="background-color: black; display: inline-block; width: 20px; height: 10px;"></span>	Existing walls
<span style="background-color: purple; display: inline-block; width: 20px; height: 10px;"></span>	New roof extension
<span style="background-color: orange; display: inline-block; width: 20px; height: 10px;"></span>	New dwelling extension (enclosed)
<span style="background-color: lightgreen; display: inline-block; width: 20px; height: 10px;"></span>	New balcony / terrace / pool extension
<span style="background-color: yellow; display: inline-block; width: 20px; height: 10px;"></span>	New facade extension / alterations
<span style="background-color: lightblue; display: inline-block; width: 20px; height: 10px;"></span>	New or adjusted glazed openings
<span style="border: 1px dashed magenta; display: inline-block; width: 20px; height: 10px;"></span>	Extent of previous DA submission

MATERIALS	
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Exst	Existing
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STATUS		
DA ISSUE		
PROJECT Alterations & additions 48 The Serpentine, Bilgola		
DRAWING ELEVATIONS		
Bawtree Design Architecture + Interiors		
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SHEET	SCALE	DRAWING NO.
A3	1:100	1811 / 07
		ISSUE
		C



1 SOUTH EAST ELEVATION  
REAR FACADE



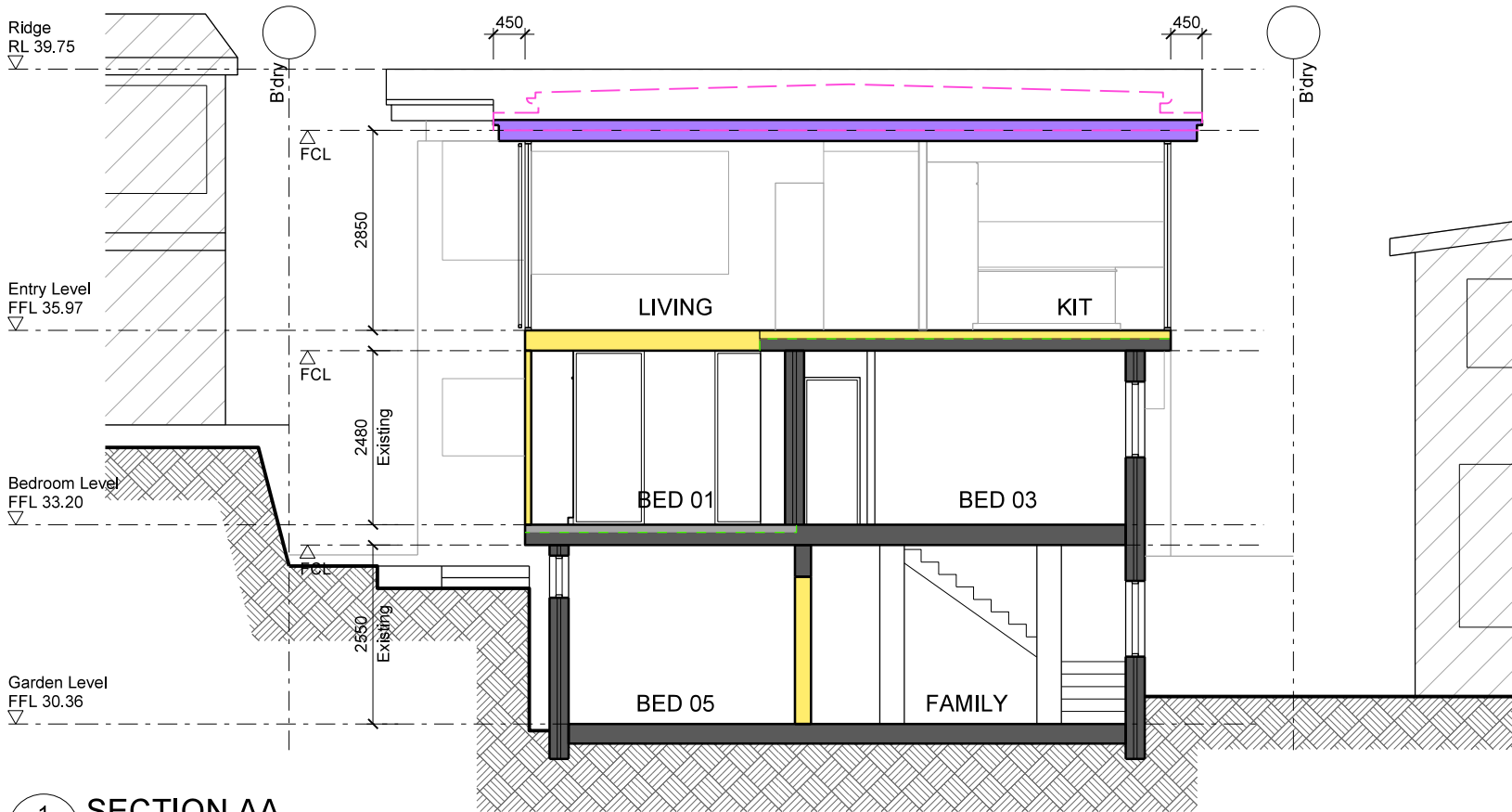
2 NORTH EAST ELEVATION  
SIDE FACADE

LEGEND	
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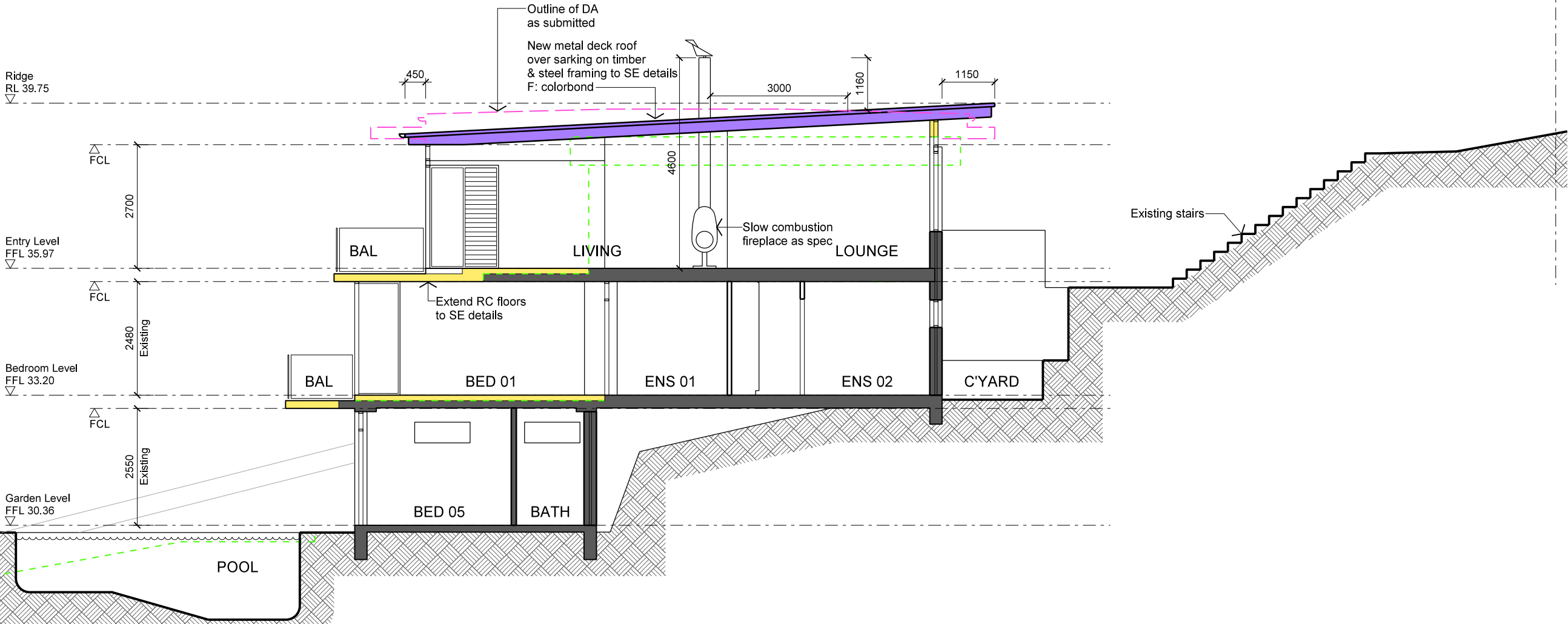
STATUS			
DA ISSUE			
PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING ELEVATIONS			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:100	1811 / 08	C



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- MATERIALS**
- |      |   |
|------|---|
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| ST   | Stone cladding<br>F: honed  |

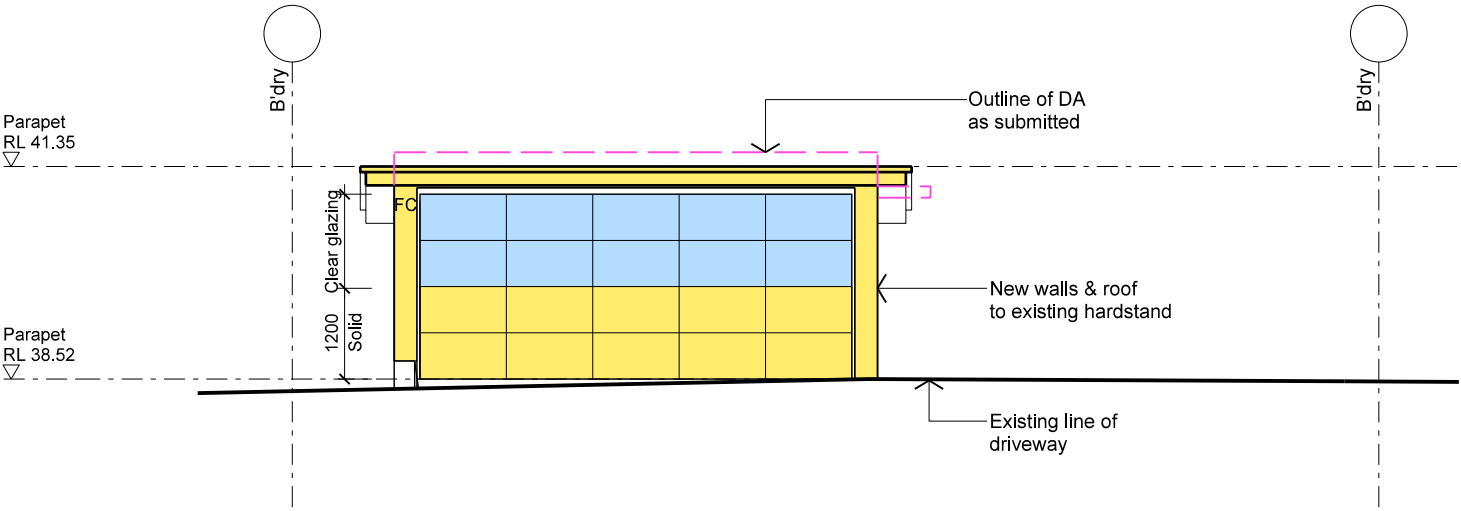
1 SECTION AA



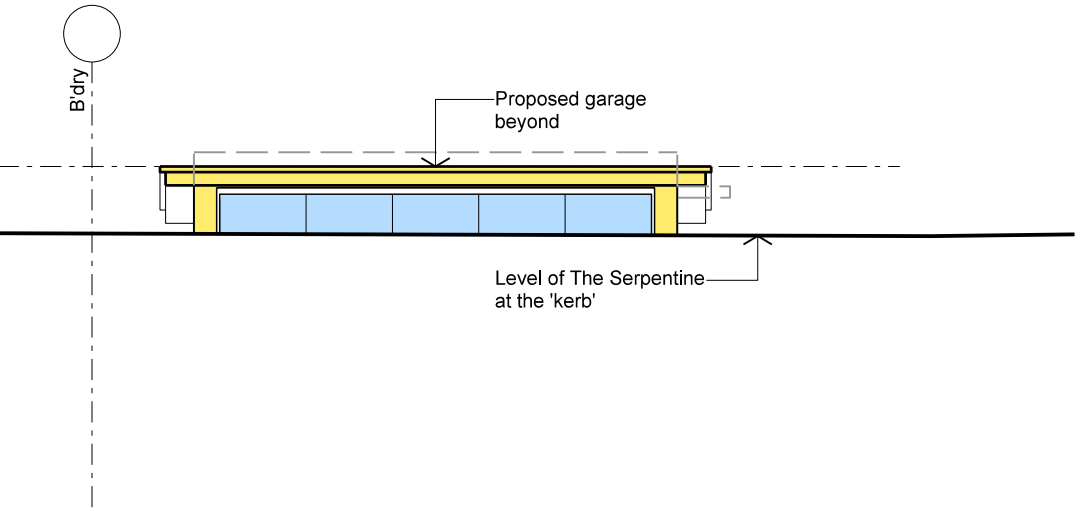
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PROJECT			
Alterations & additions			
48 The Serpentine, Bilgola			
DRAWING			
ELEVATIONS			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:100	1811 / 09	C

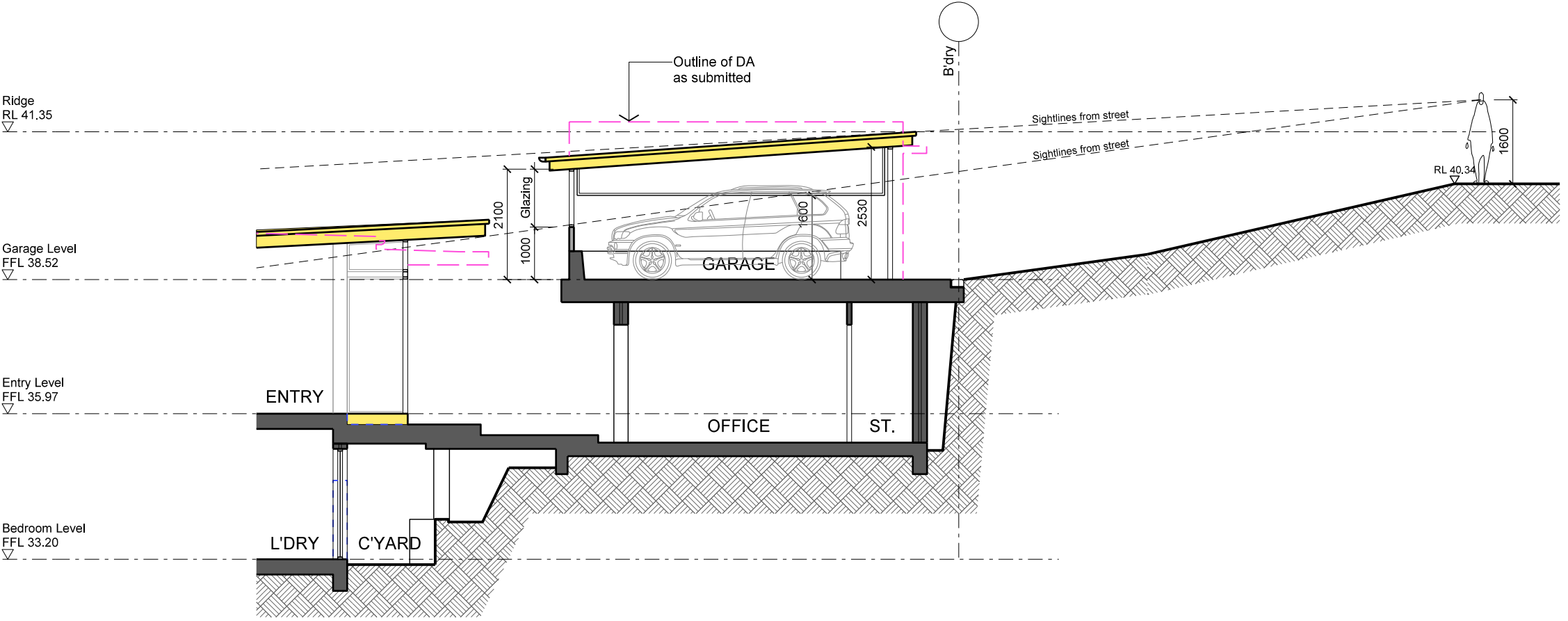




1a NORTH WEST ELEVATION  
Street facade



1b NORTH WEST ELEVATION  
At street level



1 SECTION CC

- LEGEND**
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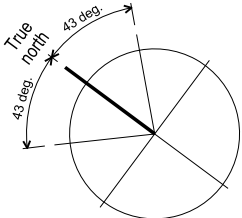
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DA ISSUE			
PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING GARAGE ELEVATION & SECTION			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:100	1811 / 10	C



- EXISTING SHADOWS
- EXISTING SHADOWS (Subject site)
- ADDITIONAL SHADOWS (Subjet site)

NOTE:  
No shadows have been cast for general landscape, mature trees or timber boundary fences



Time	Altitude	Azimuth
9.00am	18 deg.	N43E
12 noon	32 deg.	N
3.00pm	18 deg.	N43W

1 9 am  
Winter solstice

COMMENT - Private open space (rear terrace)  
Sunlit area 11.20m<sup>2</sup>  
Additional overshadowing 6.24m<sup>2</sup> (56%)

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DA ISSUE

PROJECT  
Alterations & additions  
48 The Serpentine, Bilgola

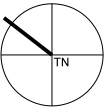
DRAWING  
SHADOW DIAGRAMS

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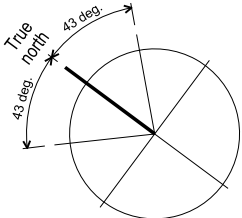
SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:200	1811/ 16a	C





- EXISTING SHADOWS
- EXISTING SHADOWS (Subject site)
- ADDITIONAL SHADOWS (Subjet site)

NOTE:  
No shadows have been cast for general landscape, mature trees or timber boundary fences



Time	Altitude	Azimuth
9.00am	18 deg.	N43E
12 noon	32 deg.	N
3.00pm	18 deg.	N43W

1 12 noon  
Winter solstice

COMMENT - Private open space (rear terrace)  
Sunlit area 13.73m<sup>2</sup>  
Additional overshadowing 5.18m<sup>2</sup> (<38%)

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DA ISSUE

PROJECT  
Alterations & additions  
48 The Serpentine, Bilgola

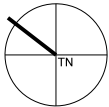
DRAWING  
SHADOW DIAGRAMS

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A3	1:200	1811/ 16b	C

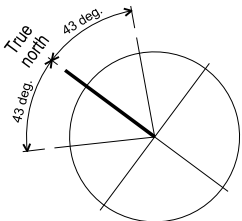






- EXISTING SHADOWS
- EXISTING SHADOWS (Subject site)
- ADDITIONAL SHADOWS (Subjet site)

NOTE:  
No shadows have been cast for general landscape, mature trees or timber boundary fences



Time	Altitude	Azimuth
9.00am	18 deg.	N43E
12 noon	32 deg.	N
3.00pm	18 deg.	N43W

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## DA ISSUE

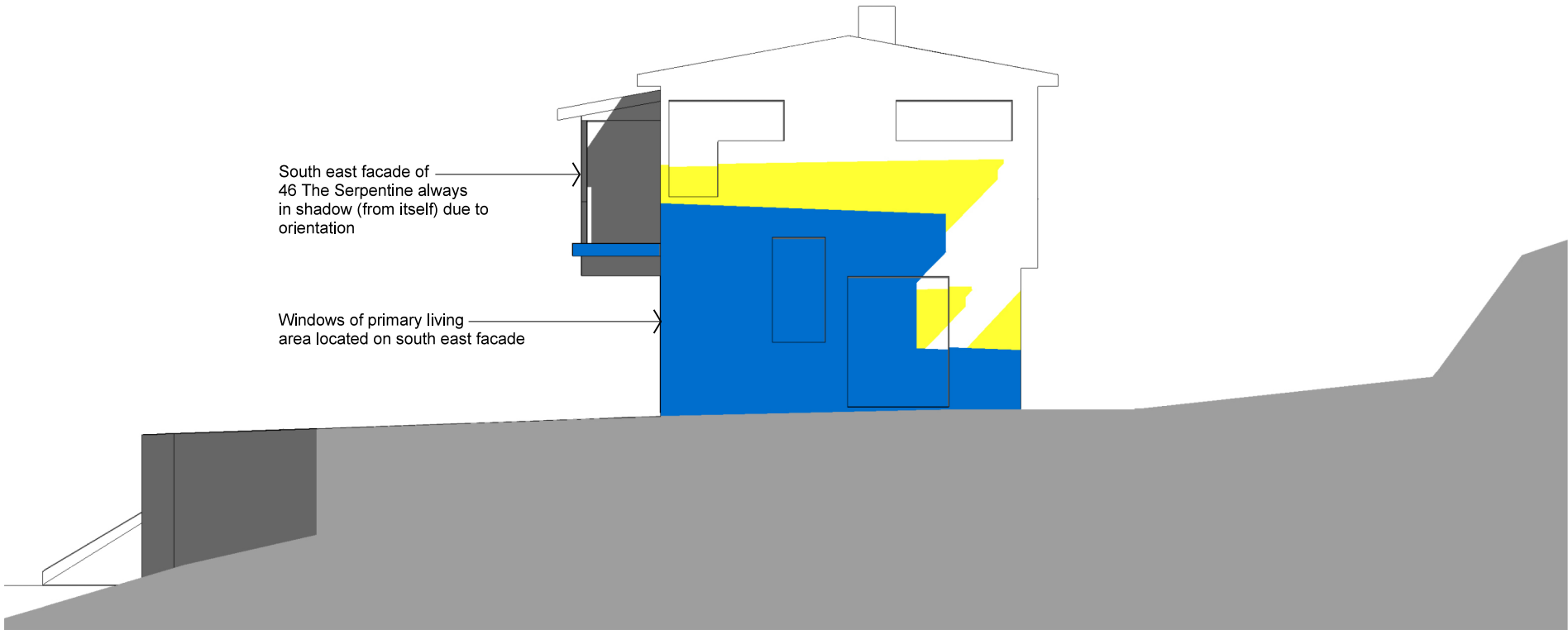
PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING SHADOW DIAGRAMS			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:200	1811/ 16c	C

1

9 am

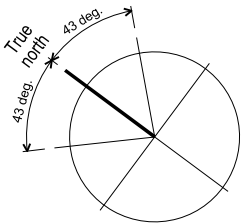
Winter solstice  
46 The Serpentine  
North east facade (side)

COMMENT	
Glazed area	7.94m²
Existing overshadowed	4.23m²
Additional overshadowing	0.80m² (10%)



- EXISTING SHADOWS
- EXISTING SHADOWS (Subject site)
- ADDITIONAL SHADOWS (Subjet site)

NOTE:  
No shadows have been cast for general landscape, mature trees or timber boundary fences

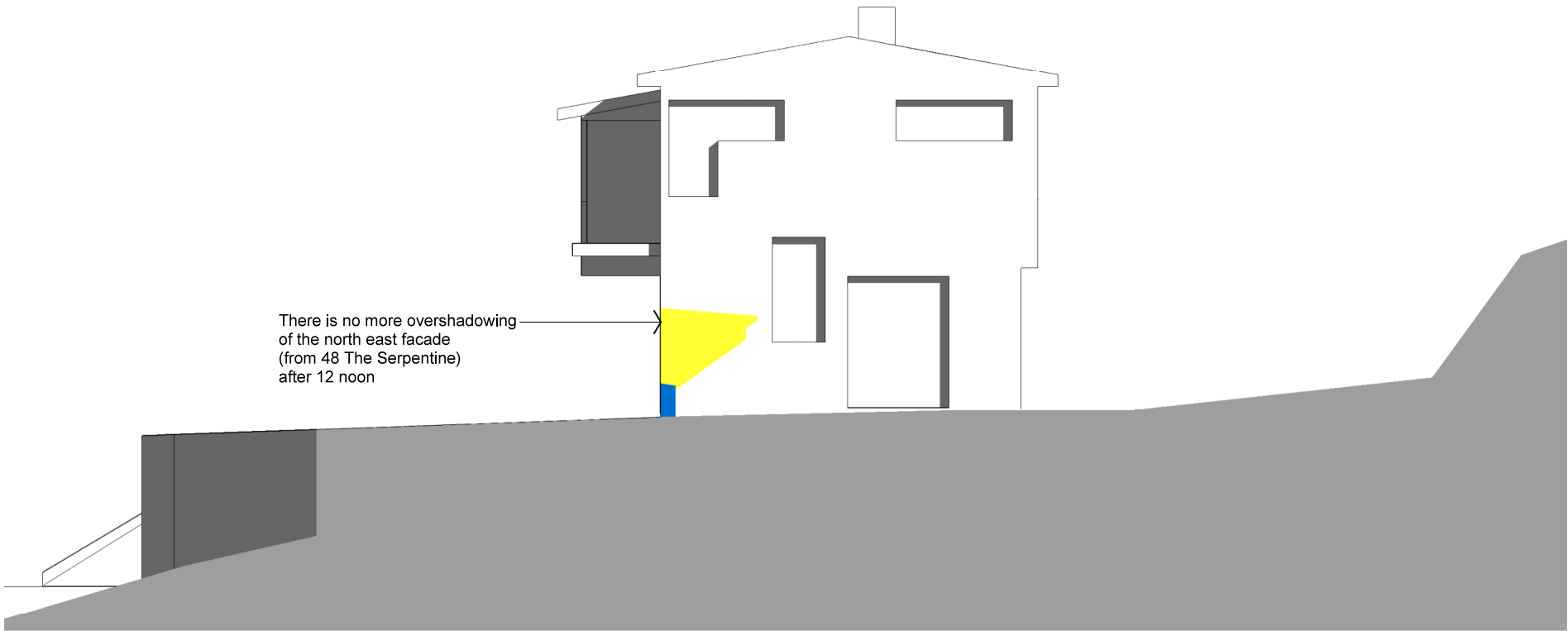


Time	Altitude	Azimuth
9.00am	18 deg.	N43E
12 noon	32 deg.	N
3.00pm	18 deg.	N43W

2

12 noon

Winter solstice  
46 The Serpentine  
North east facade (side)



C	10.06.20	Amended DA issue
B	27.05.20	Council issue
A	12.03.20	DA issue

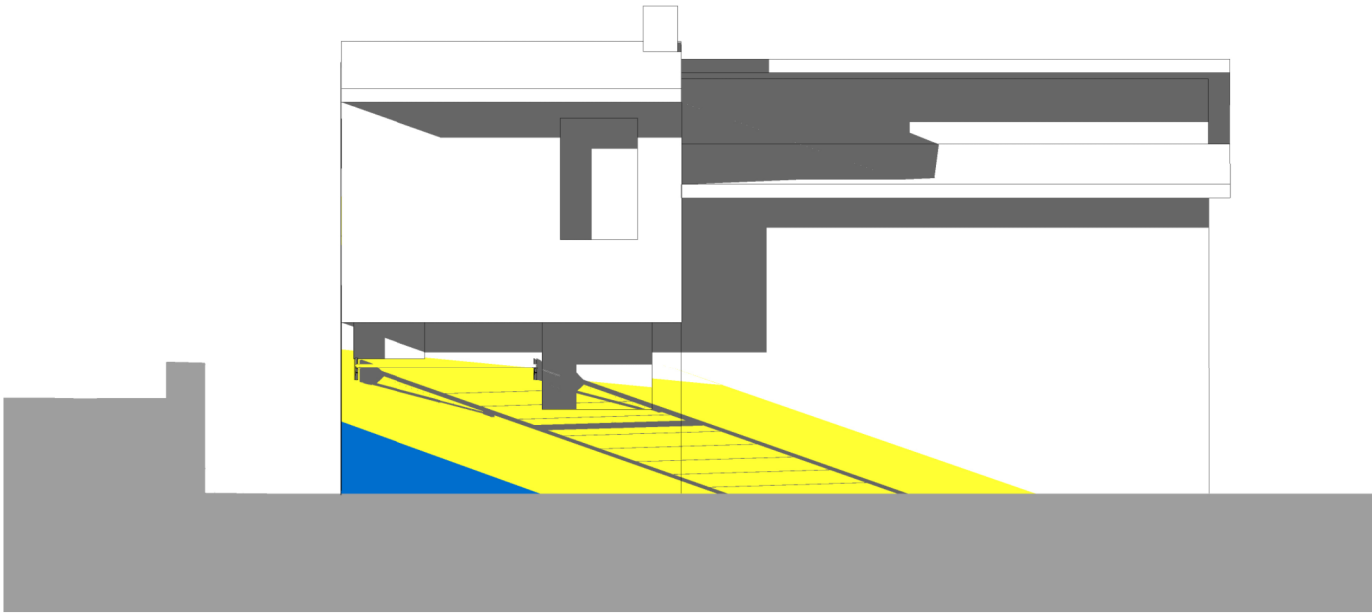
STATUS

## DA ISSUE

PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING SHADOW DIAGRAMS			
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A3	1:100	1811/ 17a	C

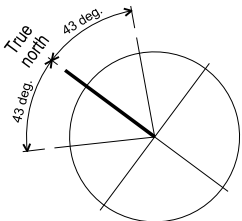
1 9 am  
Winter solstice  
46 The Serpentine  
North west facade (street)

COMMENT  
Clothes line shown  
& shadow cast



- EXISTING SHADOWS
- EXISTING SHADOWS (Subject site)
- ADDITIONAL SHADOWS (Subjet site)

NOTE:  
No shadows have been cast for general  
landscape, mature trees or timber boundary  
fences

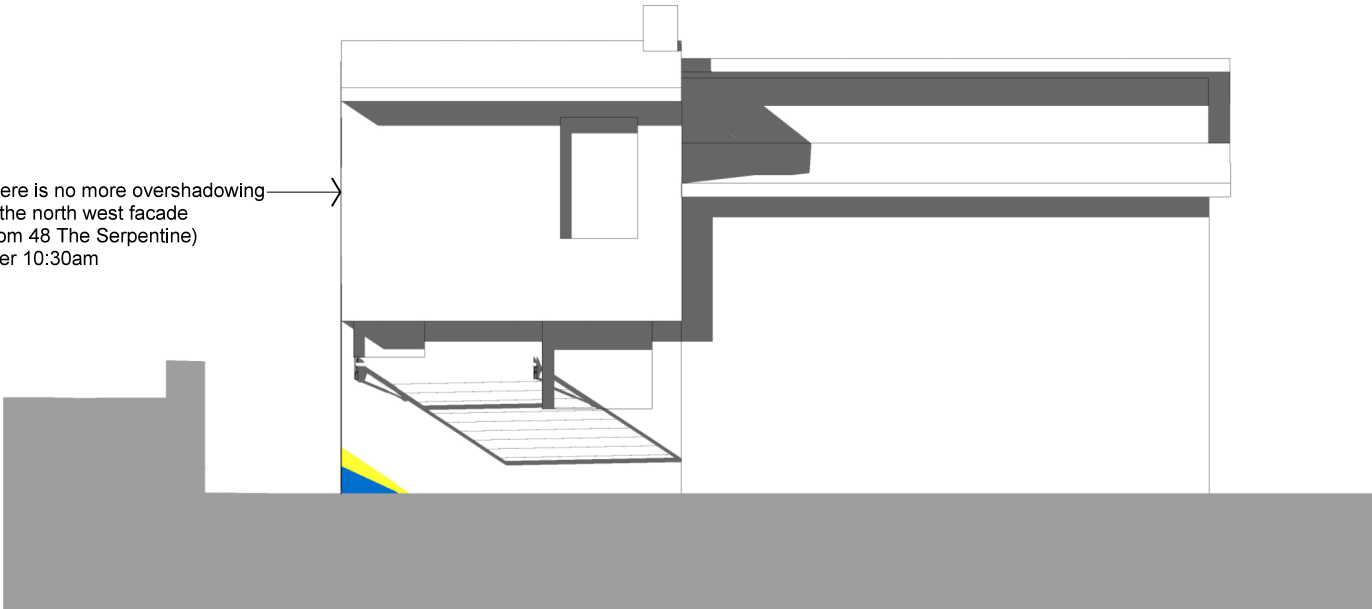


Time	Altitude	Azimuth
9.00am	18 deg.	N43E
12 noon	32 deg.	N
3.00pm	18 deg.	N43W

There is no more overshadowing  
of the north west facade  
(from 48 The Serpentine)  
after 10:30am

2 10:30 am  
Winter solstice  
46 The Serpentine  
North west facade (street)

COMMENT  
No existing or additional shadows  
cast on wall after 10h30



C	10.06.20	Amended DA issue
B	27.05.20	Council issue
A	12.03.20	DA issue

STATUS

## DA ISSUE

PROJECT  
Alterations & additions  
48 The Serpentine, Bilgola

DRAWING  
SHADOW DIAGRAMS

**Bawtree Design**  
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:100	1811/ 17b	C

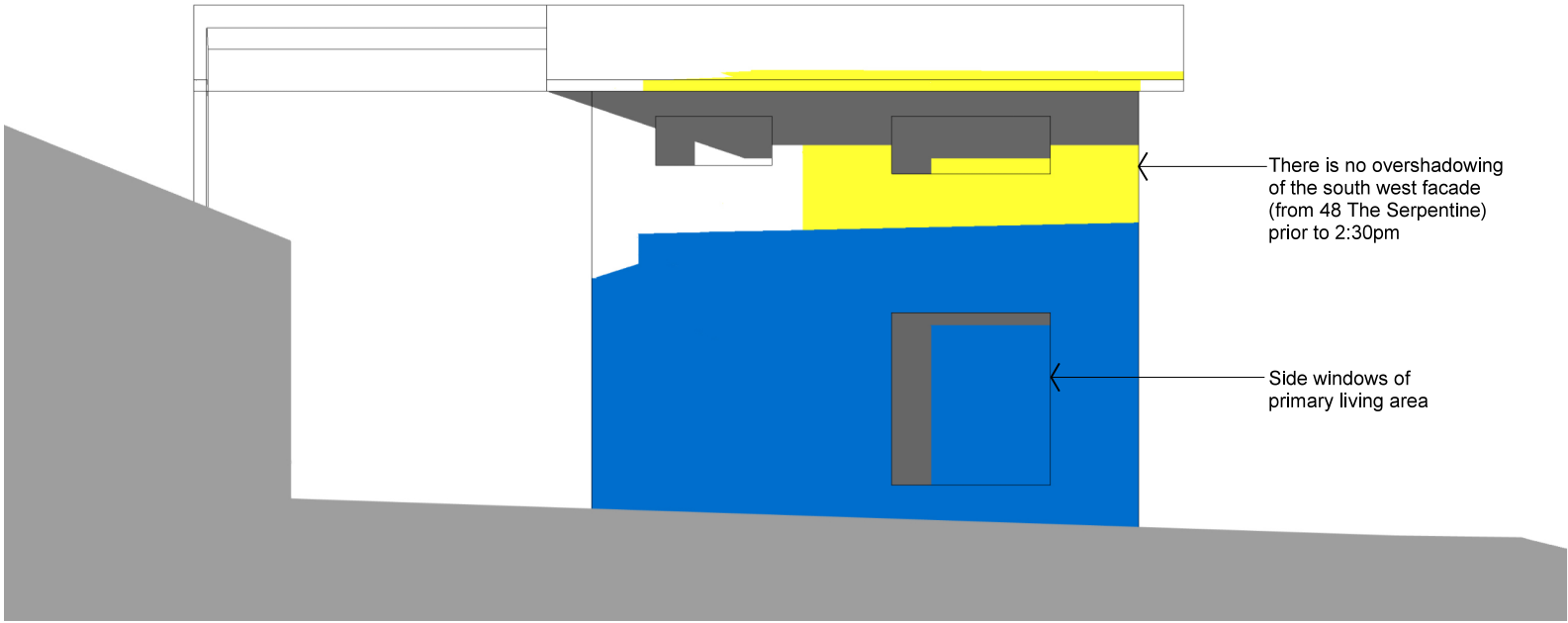


1

3 pm

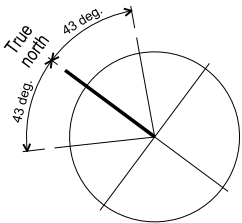
Winter solstice  
50 The Serpentine  
South west facade (side)

COMMENT	
Glazed area	7.61m²
Existing overshadowed	7.09m²
Additional overshadowing	0.33m² (4%)



- EXISTING SHADOWS
- EXISTING SHADOWS (Subject site)
- ADDITIONAL SHADOWS (Subjet site)

NOTE:  
No shadows have been cast for general landscape, mature trees or timber boundary fences



Time	Altitude	Azimuth
9.00am	18 deg.	N43E
12 noon	32 deg.	N
3.00pm	18 deg.	N43W

C	10.06.20	Amended DA issue
B	27.05.20	Council issue
A	12.03.20	DA issue

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## DA ISSUE

PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING SHADOW DIAGRAMS			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3	1:100	1811/ 17c	C



1

VIEW 1

Towards South Bilgola Headland

Proposed garage enclosure, shown ghosted to illustrate portion of view that is being affected.



2

VIEW 2

Towards ocean



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B	27.05.20	Council issue
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STATUS

DA ISSUE

PROJECT Alterations & additions 48 The Serpentine, Bilgola			
DRAWING VIEW ANALYSIS			
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A3	1:200	1811 / 18	C



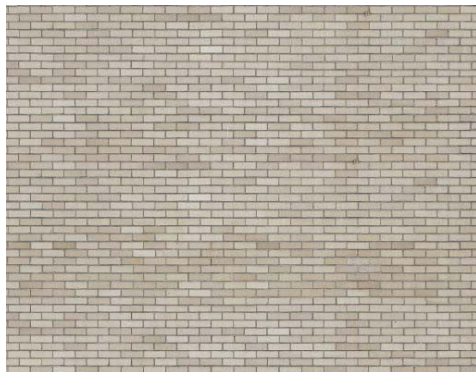
**SCHEDULE OF EXTERNAL MATERIALS AND FINISHES**

48 The Serpentine Bilgola Beach

June 2020

Item	Material / Product	Finish / Colour
FB	Existing face brickwork	Blonde brick to match existing
BAL	Steel balustrade	Colourbond Monument
ST	Stone cladding	Quartzite natural stone
FC	Vertical grooved fibre cement sheet	Colourbond Monument
Soffits & Decking	Spotted Gum hardwood	Natural oil
Roof MR	Prefinished standing seam sheet metal roofing	'Colorbond' Basalt
Doors & window frames, trims	Aluminium & steel commercial framing	Dulux Powdercoat – Matt Monument

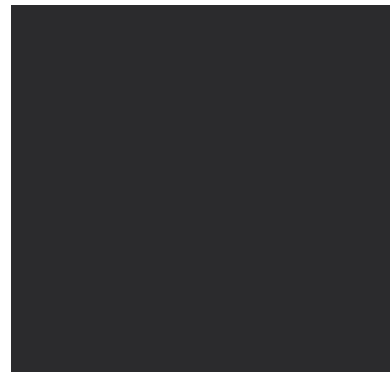
FB ; Existing brickwork



Timber decking &amp; soffits



Colorbond Monument(matt)



FC vertical Cladding



ST : Quartzite stone



MR : Colourbond Basalt (matt)





1 VIEW 1a  
-



3 VIEW 2  
-



2 VIEW 1b  
-

C	10.06.20	Amended DA issue	
B	27.05.20	Council issue	
A	12.03.20	DA issue	
STATUS			
DA ISSUE			
PROJECT			
Alterations & additions 48 The Serpentine, Bilgola			
DRAWING			
PERSPECTIVES			
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SHEET	SCALE	DRAWING NO.	ISSUE
A3		1811 / 20	C



1 VIEW 3  
-



2 VIEW 4  
-



3 VIEW 5  
-

C	10.06.20	Amended DA issue
B	27.05.20	Council issue
A	12.03.20	DA issue

STATUS

## DA ISSUE

PROJECT  
Alterations & additions  
48 The Serpentine, Bilgola

DRAWING  
PERSPECTIVES

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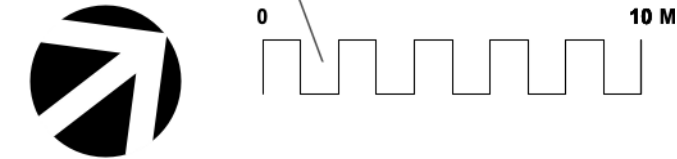
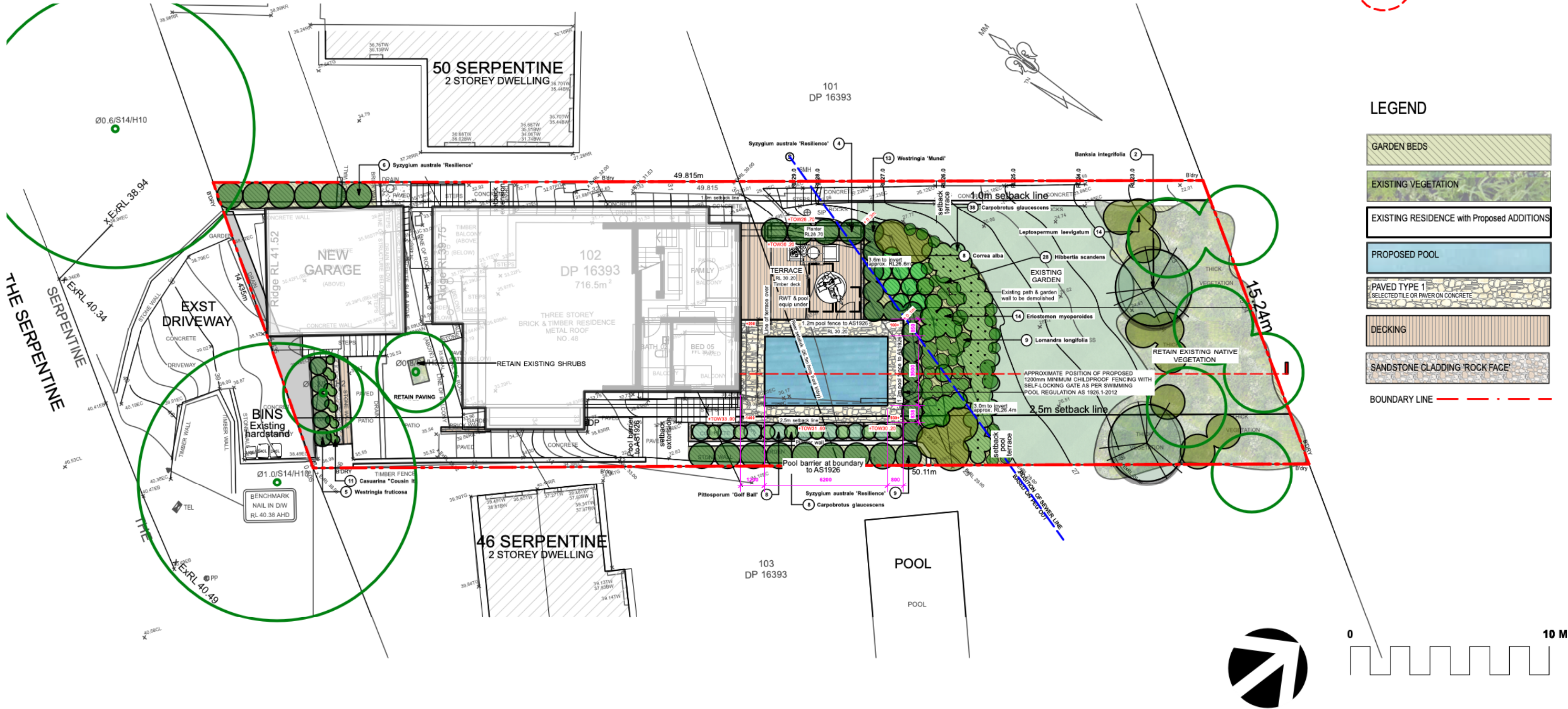
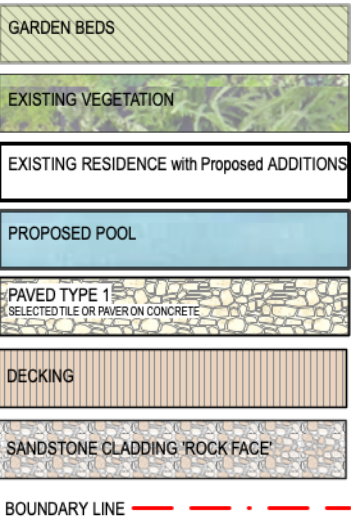


Sheet Number	Sheet Title
L-01	SITE PLANS
L-02	ENTRY LEVEL
L-03	BEDROOM LEVEL
L-04	LOWER GROUND FLOOR
L-05	SECTION A
L-06	PLANTING DETAILS
L-07	NOTES
L-08	SPECIFICATION

EXISTING TREE LEGEND



LEGEND



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Project **Feek Residence**  
Address **48 The Serpentine Bilgola**  
Drawing Title **SITE PLANS**

ISSUE	DATE	COMMENT
E	11/06/20	For Review

AMENDMENTS

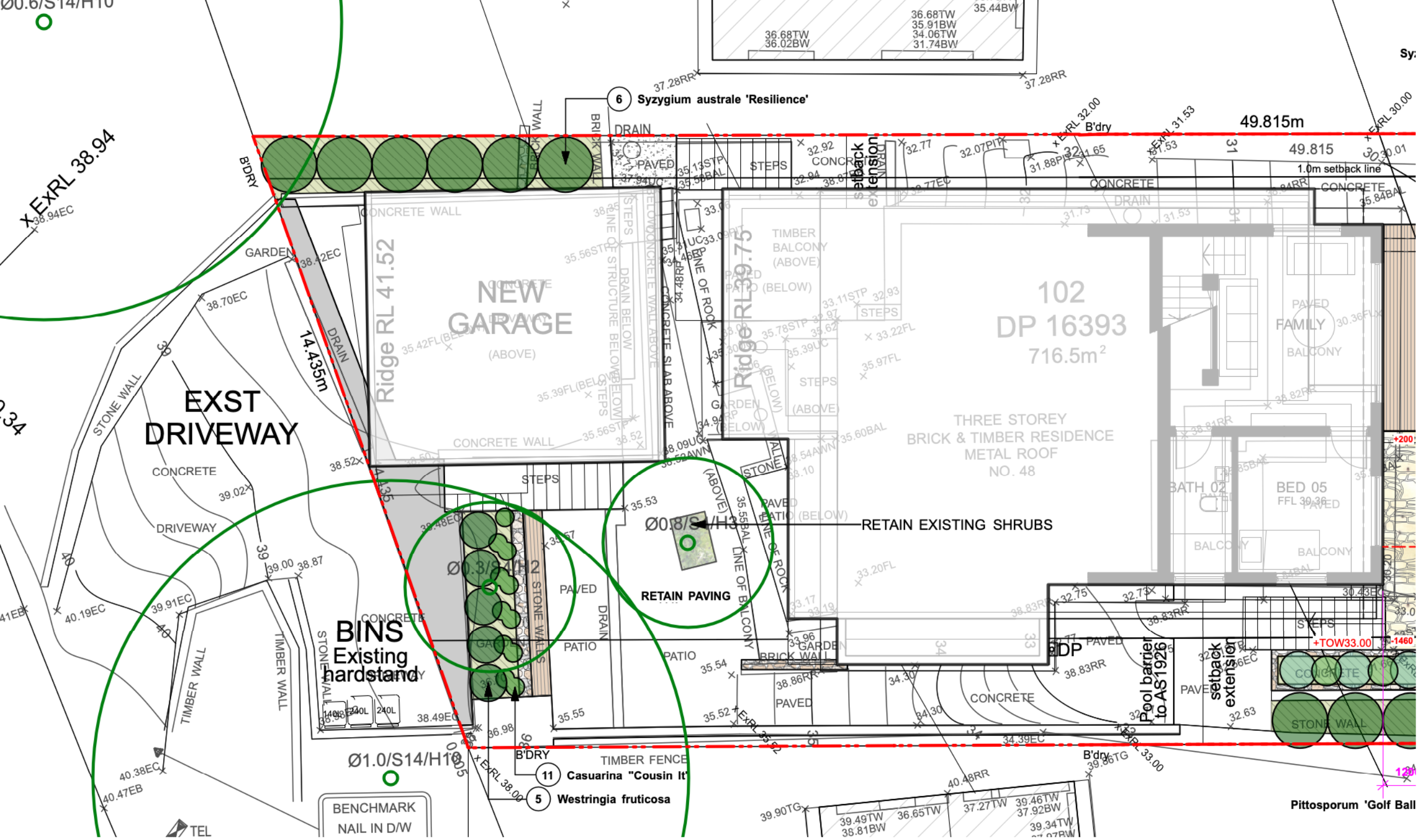
Date **04/09/19**

Scale **1:200@A3**

Drawing No. **1142**

Page  
**L-01**



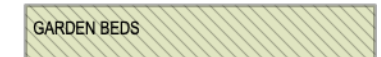



EXISTING TREE LEGEND

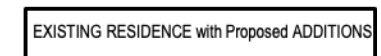
 EXISTING TREES TO BE RETAINED


 TREES TO BE REMOVED


LEGEND

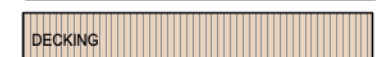
 GARDEN BEDS

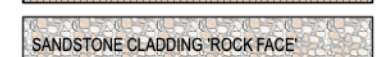
 EXISTING VEGETATION


 EXISTING RESIDENCE with Proposed ADDITIONS

 PROPOSED POOL

 PAVED TYPE 1  
SELECTED TILE OR PAVES ON CONCRETE

 DECKING

 SANDSTONE CLADDING 'ROCK FACE'

 BOUNDARY LINE



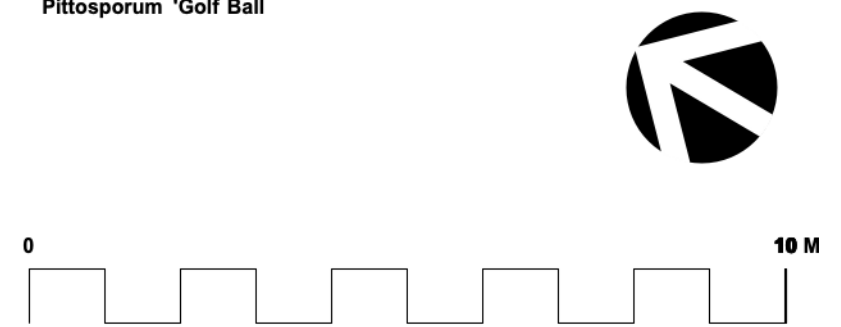
*Crassula arborescens*  
**'Blue Bird'**



*Syzygium Australe-resilience*  
**Lilly Pilly**



*Casuarina 'Cousin it'*  
**Cousin it**



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Project	Feek Residence		
Address	48 The Serpentine Bilgola		
Drawing Title	ENTRY LEVEL		
	Date	04/09/19	
	Scale	1:150@A3	

E	11/06/20	For Review
ISSUE	DATE	COMMENT
AMENDMENTS		

Drawing No. **1142**





EXISTING TREE LEGEND

- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED

LEGEND

- GARDEN BEDS
- EXISTING VEGETATION
- EXISTING RESIDENCE with Proposed ADDITIONS
- PROPOSED POOL
- PAVED TYPE 1  
SELECTED TILE OR PAVES ON CONCRETE
- DECKING
- SANDSTONE CLADDING 'ROCK FACE'
- BOUNDARY LINE



Crassula arborescens  
'Blue Bird'



E	11/06/20	For Review
ISSUE	DATE	COMMENT
AMENDMENTS		

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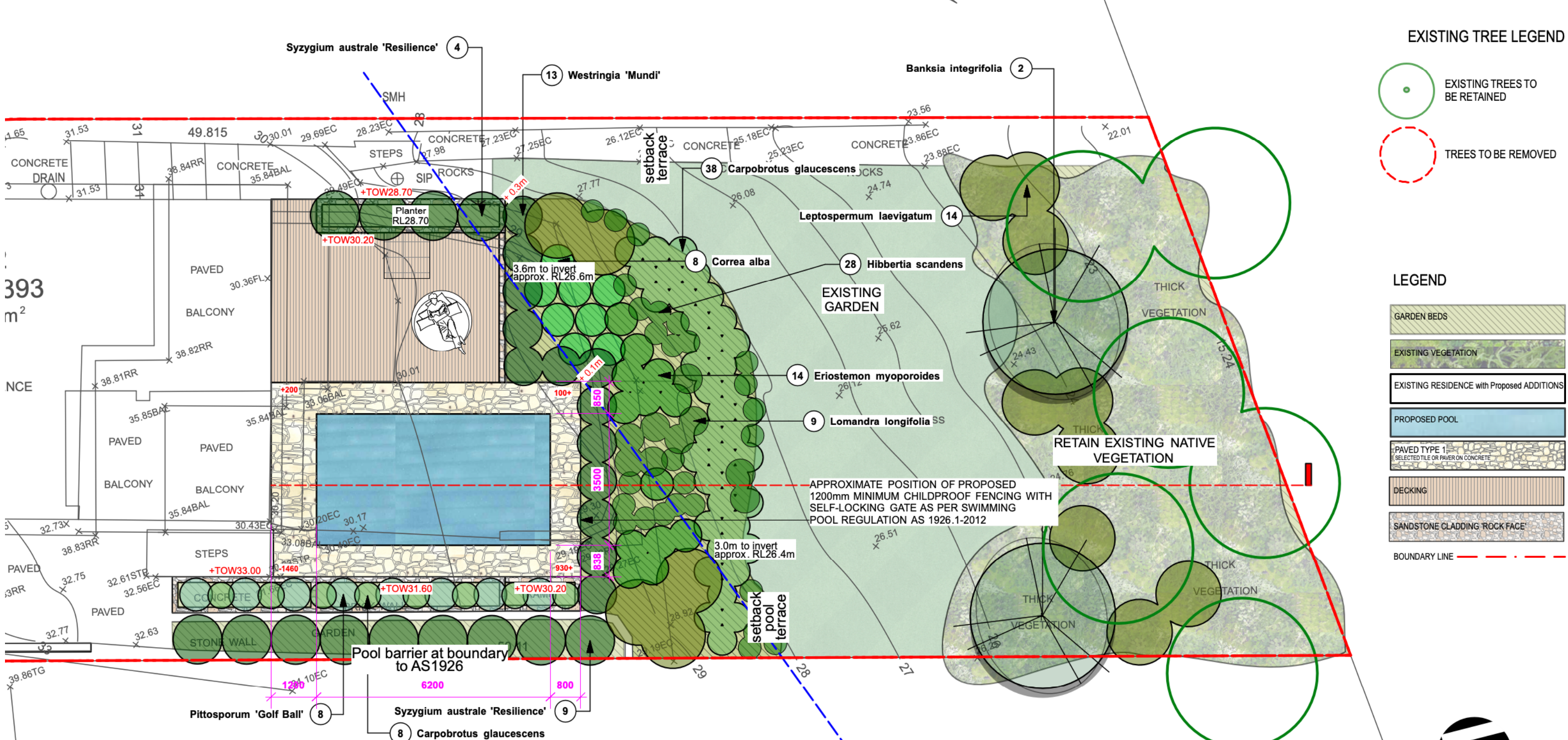
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Address **48 The Serpentine Bilgola**  
Drawing Title **BEDROOM LEVEL**

Date **04/09/19**  
Scale **1:150@A3**

Drawing No. **1142**

Page  
**L-03**





EXISTING TREE LEGEND

- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED

LEGEND

- GARDEN BEDS
- EXISTING VEGETATION
- EXISTING RESIDENCE with Proposed ADDITIONS
- PROPOSED POOL
- PAVED TYPE 1  
SELECTED TILE OR PAVES ON CONCRETE
- DECKING
- SANDSTONE CLADDING 'ROCK FACE'
- BOUNDARY LINE



*Pittosporum tenuifolium* 'Golf Ball'   *Carpobrotus glaucescens* Pgs Face   *Syzygium Australe-resilience* Lilly Pilly   *Correa alba* White correa   *Westringia fruticosa* Coastla Rosemary   *Banksia integrifolia* Coastal Banksia

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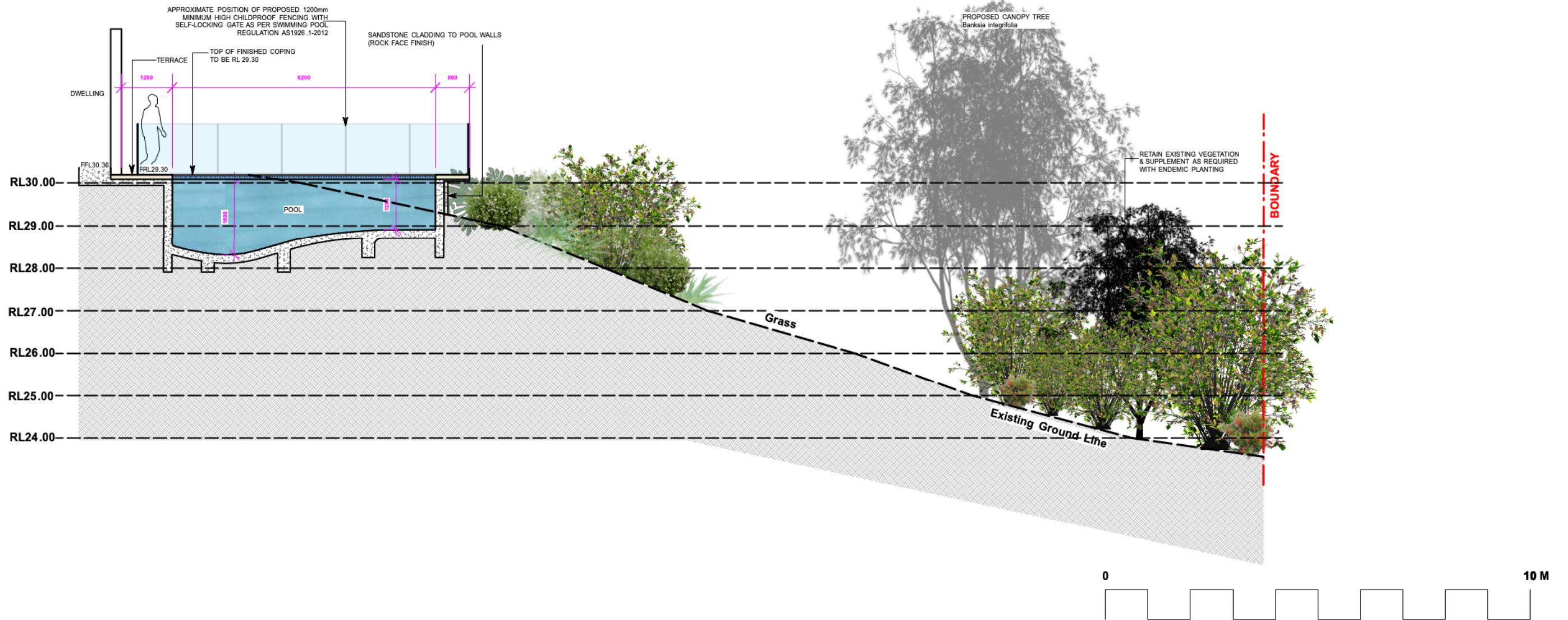
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Project **Feek Residence**  
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Drawing Title **LOWER GROUND FLOOR**

E	11/06/20	For Review
ISSUE	DATE	COMMENT
AMENDMENTS		

Page  
**L-04**  
Date **04/09/19**  
Scale **1:150@A3**  
Drawing No. **1142**





E	11/06/20	For Review
ISSUE	DATE	COMMENT
AMENDMENTS		

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Project	Feek Residence	
Address	48 The Serpentine Bilgola	
Drawing Title	SECTION A	Date 04/09/19
		Scale 1:100@A3
Drawing No. 1142		

Page  
**L-05**





**Banksia integrifolia**  
Coastal Banksia



**Correa alba**  
White correa



**Pittosporum tenuifolium**  
'Golf Ball'



**Syzygium Australe-resilience**  
Lilly Pilly



**Westringia 'Mundi'**  
Dwarf coastal rosemary



**Carpobrotus glaucescens**  
Pgs Face



**Casuarina 'Cousin it'**  
Cousin it



**Crassula arborescens**  
'Blue Bird'



**Westringia fruticosa**  
Coastla Rosemary



**Eriostemon myoporoides**  
Wax Flower



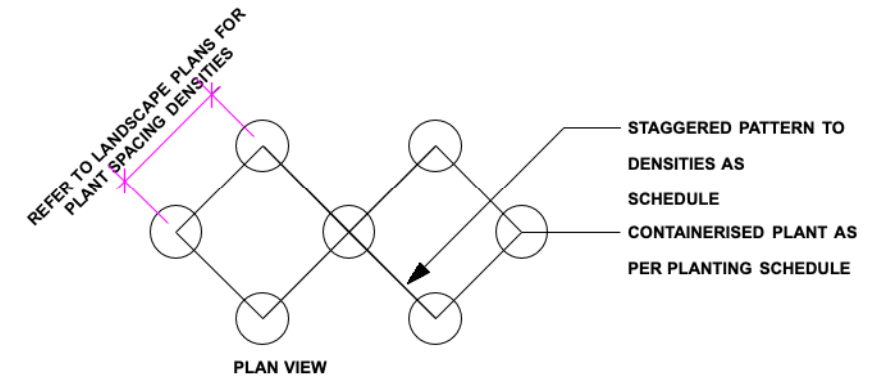
**Leptospermum laevigatum**  
Coast tea tree



**Hibbertia scandens**  
Golden guinea flower

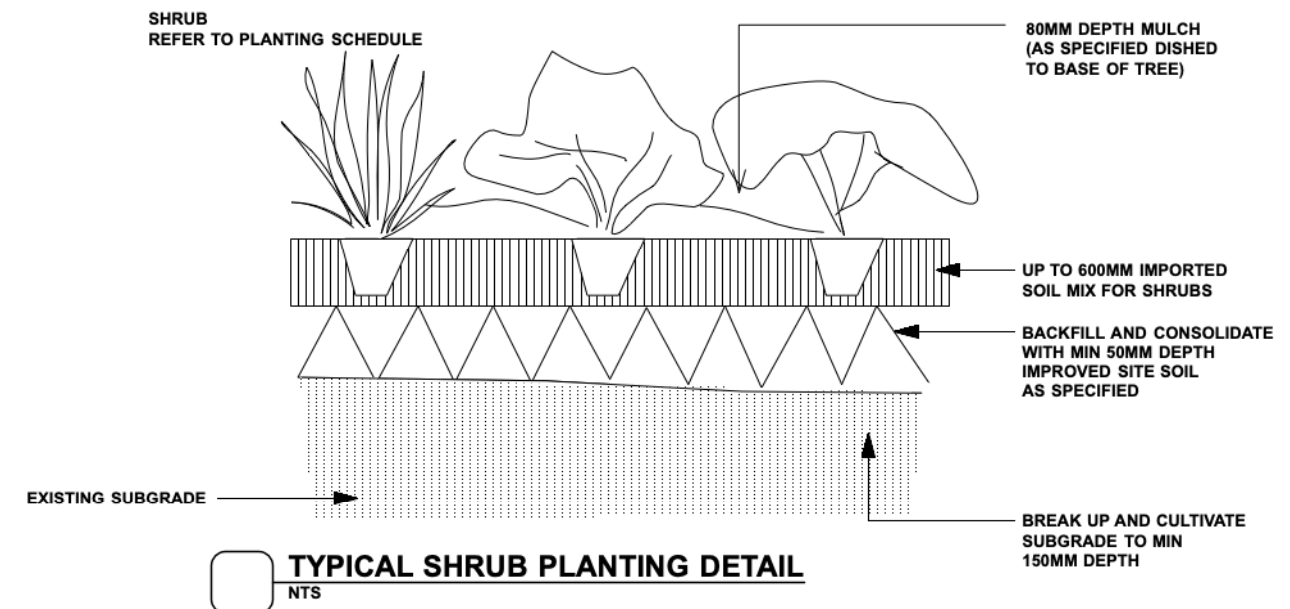


**Lomandra longifolia**  
Mat Rush



## Plant List

ID	Botanical Name	Common Name	Scheduled Size	Mature Height	Mature Spread	Qty
<b>Trees</b>						
Ban-int	Banksia integrifolia	Coastal Banksia	45L	10m	3m	2
<b>Shrubs</b>						
Cor-alb	Correa alba	White Correa	200mm	0.9m	0.9 - 1.2m	8
eri-my	Eriostemon myoporoides	Wax Flower	200mm	0.6 - 1.2m	0.6m	14
LL	Leptospermum laevigatum	Coast Tea-Tree	300mm	1.5 - 4m	1.2 - 2.0m	14
pit 'gb'	Pittosporum 'Golf Ball'	Pittosporum	200mm	0.6m	0.9m	8
syz-au're'	Syzygium australe 'Resilience'	Lilly Pilly	200mm	1 - 2.5m	1.5m	19
Wes-mun	Westringia 'Mundi'	Dwarf Coastal Rosemary	200mm	0.8m	0.9m	13
Wes-fru	Westringia fruticosa	Coastal Rosemary	200mm	1m	0.9m	5
<b>Ground Covers</b>						
Car-gla	Carpobrotus glaucescens	Coastal Moonflower, Pigface, Iceplant	150mm	0.2m	1.2 - 2.0m	46
cas'ci'	Casuarina "Cousin It'	Casuarina "Cousin It'	150mm	0.3m	1.2 - 2.0m	11
Cra-arb	Crassula arborescens 'Bluebird'	'Blue Bird'	150mm	0.6m	0.3 - 0.6m	5
Hib-sca	Hibbertia scandens	Snake Vine	150mm	0.3m	1.2m	28
<b>Grasses</b>						
Lom-lon	Lomandra longifolia	Spiny-headed Mat-Rush	150mm	0.6m	0.8m	9



**GENERAL NOTES**

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Project **Feek Residence**

Address **48 The Serpentine Bilgola**

Drawing Title **PLANTING DETAILS**

**E** **11/06/20** **For Review**

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AMENDMENTS

Date **04/09/19**

Scale **N.T.S@A3**

Drawing No. **1142**

Page  
**L-06**



## POOL COMPLIANCE NOTES

<p>The design of the swimming pool and associated equipment must comply with the following requirements:</p> <p>i) The Swimming Pools Act &amp; Regulations .</p> <p>ii) Australian Standard 1926 Swimming Pool Safety as prescribed under the Building Code of Australia .</p> <p>iii) The pump and associated equipment must be sound insulated and/or isolated so that the noise emitted does not exceed an LAeq (15min) of not more than 5 dB(A) above the background level in any octave band from 31.5Hz to 8KHz centre frequencies inclusive at the boundary of the site</p> <p>The swimming pool excavation and/or swimming pool must be provided with a suitable barrier to prevent a risk of falling into the excavation or pool at all times throughout the construction phase.</p> <p>Note:</p> <p>-The measurement of sound must be carried out in accordance with Australian Standard 1055.1.</p> <p>-Additional information is available from Sutherland Shire Swimming Pool Environmental Specification .</p> <p>-Landscaping and ancillary structures must not intrude into the child-resistant barrier Non-Climbable Zone.</p> <p>-Only structures associated with the pool may be located within the pool area.</p> <p>-Clothes lines, barbeque, sheds, entertainment structure, outside toilets or any other non pool-related structures are not permitted within the pool area.</p> <p>Before the issue of any Occupation Certificate;</p> <p>i) The child resistant barrier must be installed in accordance with A above .</p> <p>ii) The swimming pool is to be registered in the NSW Swimming Pool Register .</p> <p>The pump and associated equipment must be maintained and operated in accordance with the noise levels described above.</p> <p>ii) The child resistant barrier must be maintained in accordance with the Australian Standard as described above.</p>
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## LANDSCAPE MAINTENANCE NOTES

MONTH	MOWING EDGING BLOWING	FERTILISING (SEASOL)	CHECK IRRIGATION	HAND WEED REMOVAL	PRUNING	WEED SPRAYING	WATERING/ IRRIGATION	PLANT REPLACEMENT IF REQUIRED
DEC	W	M	M	W	F	M	D	W
JAN	W	M	M	W	F	M	D	W
FEB	W	M	M	W	F	M	D	W
MAR	F	M	M	F	M	M	D	W
APR	F	N/A	M	F	M	M	D	W
MAY	F	N/A	M	M	M	M	D	W
JUNE	M	N/A	M	M	N/A	N/A	2ND D	W
JULY	M	N/A	M	M	N/A	N/A	2ND D	W
AUG	M	N/A	M	M	N/A	N/A	2ND D	W
SEP	M	M	M	M	N/A	N/A	2ND D	W
OCT	F	F	M	F	M	M	D	W
NOV	F	F	M	F	M	M	D	W
PLANTING ESTABLISHMENT PERIOD - 12 MONTHS LANDSCAPE MATERIAL ESTABLISHMENT - 12 MONTHS KEY D-DAILY, W-WEEKLY, F-FORTNIGHT, M-MONTHLY, 2ND DAY,								

## MAINTENANCE GENERAL NOTES

### SECTION C: LANDSCAPE MAINTENANCE SPECIFICATION 1.0 SCOPE

#### 1.1 PERIOD

The 52 week Planting Establishment Period commences at the date of registration of the repective plan. The contractor is to also allow for maintenance from the date of Practical Completion to the start date of the 52 week Planting Establishment Period. The allowance shall be for a weekly rate which will then be implemented until the formal maintenance period commences .

#### 1.2 PROGRAM

Furnish a proposed planting maintenance program with the tender .

#### 1.3 MAINTENANCE LOGBOOK

Contractor to keep a maintenance record of works carried out on a monthly basis. Log should include but not limited to: - Activities carried out during each attendance;

- Irregularities encountered and actions taken;

NB: Maintenance payments will be evaluated on submission of monthly logbooks .

#### 1.4 RECURRENT WORKS

Throughout the Planting Establishment Period, continue to carry out recurrent works of a maintenance nature including , but not limited to, watering , mowing , weeding , rubbish removal , fertilising , pest and disease control , staking and tying , replanting , cultivating , pruning and keeping the site neat and tidy. All rubbish related to landscape works shall be removed by the landscape contractor before it is allowed to accumulate .

#### 1.5 PLANTING

Commence recurrent planting maintenance works at the completion of planting . Ensure the stock arriving on site is protected and maintained for healthy growth .

#### 1.6 REPLACEMENTS

Continue to replace failed , damaged or stolen plants for the extent of the Planting Establishment Period .

#### 1.7 MULCHED SURFACES

Maintain the surface in a clean and tidy condition and reinstate the mulch as necessary .

#### 1.8 GRASSED AREAS

Commence grass maintenance works at the completion of turfing , and continue to carry out grass maintenance throughout the contract and Planting Establishment Period , maintaining healthy weed free growth .

#### 1.9 STAKES AND TIES

Adjust or replace as required . Remove those not required at the end of the Planting Establishment Period .

#### 1.10 WATERING/ IRRIGATION

An irrigation system is to be installed to all mass planted beds and new tree planting , conncted to a pump and the rainwater tank /OSD tank . Install one tap near the front boundary (Wurrook Circuit) and one tap on the rear (eastern) boundary . This system shall be installed and maintained for the duration of the maintenance period (52 weeks) and in perpetuity of the development . All irrigation works shall be performed by a licensed irrigation contractor . Materials to be used are to be submitted to the site superintendent for approval . The contractor shall provide design drawings and material specifications/samples prior to commencing work . All works are to be conducted to all current and relevant Australian Standards .

The contractor is to be completely responsible for the coordination of the installation of the irrigation system with other services throughout the site. Recommended flow rates: The system shall be set up on a trial basis and them adjusted to suit the local requirements and conditions . Once the system is satisfactorily adjusted the contractor shall make fortnightly visits within the establishment period to ensure satisfactory performance of the system and to adjust the watering periods as required . A minimum even coverage of 25mm of water per week is recommended .

#### 2.0 REPORTS

##### 2.1 LANDSCAPE MAINTENANCE REPORT

'Landscape Maintenance Reports' shall be submitted to the Principle Certifying Authority by the contractor verifying that satisfactory maintenance of the landscape works has been undertaken and that any necessary rectification measures have been carried out to a high professional standard . This documentation is to be submitted through the plant establishment period .

## EXTERNAL LIGHTING - (AMENITY)

To ensure that any lighting on the site does not cause a nuisance to neighbours or motorists on nearby roads:

### Design

All lighting must be designed in accordance with Australian Standard AS4282 - Control of the Obtrusive Effects of Outdoor Lighting.

### Ongoing

All lighting must be operated and maintained in accordance with the Standard above.

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Project	Feek Residence		
Address	48 The Serpentine	Bilgola	Date 04/09/19
Drawing Title	NOTES		Scale N.T.S@A3

Drawing No. **1142**

**E** **11/06/20** **For Review**  
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#### AMENDMENTS

Page  
**L-07**



# LANDSCAPE WORK SPECIFICATION

## PRELIMINARIES

### 1.01 GENERAL

The following general conditions should be considered prior to the commencement of landscape works:

The landscape plans should be read in conjunction with the architectural plans, hydraulic plans, service plans and survey prepared for the proposed development.

All services including existing drainage should be accurately located prior to the commencement of landscape installation. Any proposed tree planting which falls close to services will be relocated on site under the instruction of the landscape architect.

Installation of conduit for required irrigation, electrical and other services shall be completed prior to the commencement of hardscape works and hardstand pours.

All outdoor lighting specified by architect or client to be installed by qualified electrician

Anomalies that occur in these plans should be brought to our immediate attention.

Where an Australian Standard applies for any landscape material testing or installation technique, that standard shall be followed.

### 1.02 PROTECTION OF ADJACENT FINISHES

The Contractor shall take all precautions to prevent damage to all or any adjacent finishes by providing adequate protection to these areas / surfaces prior to the commencement of the Works

### 1.03 PROTECTION OF EXISTING TREES

Existing trees identified to be retained shall be done so in accordance with NATSPEC Guide 2 "A Guide to Assessing Tree Quality". Where general works are occurring around such trees, or pruning is required, a qualified Arborist shall be engaged to oversee such works and manage tree health.

Existing trees designated on the drawing for retention shall be protected at all times during the construction period. Any soil within the drip-line of existing trees shall be excavated and removed by hand only. No stockpiling shall occur within the root zone of existing trees to be retained.

Any roots larger in diameter than 50mm shall only be severed under instruction by a qualified arborist. Roots smaller than 50mm diameter shall be cut cleanly with a saw.

Temporary fencing shall be installed around the base of all trees to be retained prior to the commencement of landscape works. Where possible this fencing will be located around the drip line of these trees, or a minimum of 3m from the trunk. The fencing shall be maintained for the full construction period.

### 1.04 EROSION & POLLUTION CONTROL

The Contractor shall take all proper precautions to prevent the erosion of soil from the subject site. The contractor shall install erosion & sediment control barriers and as required by council, and maintain these barriers throughout the construction period. Note that the sediment control measures adopted should reflect the soil type and erosion characteristics of the site.

Erosion & pollution control measures shall incorporate the following:

- Construction of a sediment trap at the vehicle access point to the subject site.

- Sediment fencing using a geotextile filter fabric in the location indicated on the erosion control plan or as instructed on site by the landscape architect.

- Earth banks to prevent scour of stockpiles

- Sandbag kerb sediment traps

- Straw bale & geotextile sediment filter.

- Exposed banks shall be pegged with an approved Jute matting in preparation for mass planting

Refer to "Sitewise Reference Kit" as prepared by DLWC & WSROC (1997) for construction techniques

## SOIL WORKS

### 2.01 MATERIALS

#### Specified Soil Conditioner (Generally to improve site soil)

The specified soil conditioner for site top-soil improvement shall be an organic mix, equal to "Botany Humus", as supplied by ANL. Note that for sites where soil testing indicates toxins or extremes in pH, or soils that are extremely poor, allow to excavate and supply 300mm of imported soil mix.

#### New gardens & proposed Planting

New garden and planting areas shall consist of a 50/50 mix of clean site soil (refer d) below) and imported "Organic Garden Mix" as supplied by ANL or approved equal. All mixes are to comply with AS 4419 Soils for landscaping & garden use, & AS 4454 Composts, Soil conditioners & mulches.

#### Specified Soil Mix - Turf

The specified soil mix for all turf areas shall be a min 75mm layer of imported soil mix consisting of 80% washed river sand (reasonably coarse), and 20% composted organic matter equivalent to mushroom compost or soil conditioner, or other approved lawn top dress.

#### Site Topsoil

Site topsoil is to be clean and free of unwanted matter such as gravel, cXXlay lumps, grass, weeds, tree roots, sticks, rubbish and plastics, and any deleterious materials and materials toxic to plants. The topsoil must have a pH of between 5.5 and 7. Use 100% imported soil mix when site when site topsoil runs out.

### 2.02 INSTALLATION

#### a) Establishing Subgrade Levels

Subgrade levels are defined as the finished base levels prior to the placement of the specified material (i.e. soil conditioner). The following subgrade levels shall apply:

Mass Planting Beds - 300mm below existing levels with specified imported soil mix.

Turf areas - 100mm below finished surface level.

Note that all subgrades shall consist of a relatively free draining natural material, consisting of site topsoil placed previously by the Civil Contractor. No builders waste material shall be acceptable.

#### b) Subgrade Cultivation

Cultivate all subgrades to a minimum depth of 100mm in all planting beds and all turf areas, ensuring a thorough breakup of the subgrade into a reasonably coarse tilth. Grade subgrades to provide falls to surface and subsurface drains, prior to the placement of the final specified soil mix.

#### c) Drainage Works

Install surface and subsurface drainage where required and as detailed on the drawing. Drain subsurface drains to outlets provided, with a minimum fall of 1:100 to outlets and / or service pits.

#### d) Placement and Preparation of Specified Soil Conditioner & Mixes.

Trees in turf & beds - Holes shall be twice as wide as root ball and minimum 100mm deeper - backfill hole with 50/50 mix of clean site soil and imported "Organic Garden Mix" as supplied by ANL or approved equal.

Mass Planting Beds - Install specified soil conditioner to a compacted depth of 100mm

Place the specified soil conditioner to the required compacted depth and use a rotary hoe to thoroughly mix the conditioner into the top 300mm of garden bed soil. Ensure thorough mixing and the preparation of a reasonably fine tilth and good growing medium in preparation for planting.

Turf Areas - Install specified soil mix to a minimum compacted depth of 75mm.

Place the specified soil mix to the required compacted depth and grade to required finished soil levels, in preparation for planting and turfing.

## PLANTING

### 3.01 MATERIALS

#### a) Quality and Size of Plant Material

All trees supplied above a 25L container size must be grown and planted in accordance with *Clarke, R 1996 Purchasing Landscape Trees: A guide to assessing tree quality, Natspec Guide No. 2*. Certification that trees have been grown to Natspec guidelines is to be provided upon request of Council's Tree Management Officer.

*Above - Ground Assessment:*

The following plant quality assessment criteria should be followed:

*Plant true to type, Good vigour and health, free from pest & disease, free from injury, self-supporting, good stem taper, has been pruned correctly, is apically dominant, has even crown symmetry, free from included bark & stem junctions, even trunk position in pot, good stem structure*

*Below - Ground Assessment:*

*Good root division & direction, rootball occupancy, rootball depth, height of crown, non-suckering* For further explanation and description of these assessment criteria, refer to Ross Clark's book.

All Plant material shall be to the type and size specified. No substitutions of plant material shall be permitted without written prior approval by the Landscape Architect. No plant shall be accepted which does not conform to the standards listed above.

#### b) Stakes and Ties

Provide min. 2 No. Stakes and ties to all plants identified as trees in the plant schedule. Stakes shall be sound, unpainted, straight hardwood, free of knots and pointed at one end. They shall be 2200mm x 50mm x 50mm Hardwood, or approved alternative. Ties shall be 50mm wide hessian webbing material.

#### c) Fertilisers

Fertilisers shall be approved slow release fertilisers suitable for the proposed planting types. Note that for native plants, specifically Proteaceae family plants including Grevillea species, low phosphorus fertilizers shall be used.

#### d) Mulch

Mulch shall be an approved equal to "Forest Blend" as supplied by ANL. Mulch shall be completely free from any soil, weeds, rubbish or other debris.

#### e) Turf

Turf shall be "Sir Walter" Buffalo or equivalent (unless stated otherwise), free from any weeds and other grasses, and be in a healthy growing condition.

### 3.02 INSTALLATION

#### a) Setting Out

All planting set out shall be in strict accordance with the drawings, or as directed. Note that proposed tree planting located near services should be adjusted at this stage. Notify Landscape Architect for inspection for approval prior to planting.

#### b) Planting

All plant material shall be planted as soon after delivery as possible. Planting holes for trees shall be excavated as detailed and specified. Plant containers shall be removed and discarded, and the outer roots gently teased from the soil mass.

Immediately set plant in hole and backfill with specified soil mix, incorporating the approved quantity of fertiliser for each plant type. Ensure that plants are set plumb vertically and root balls set to the consolidated finished grades detailed on the drawings. Compact the backfilled soil and saturate by hand watering to expel any remaining air pockets immediately after planting.

#### c) Staking and Tying

Staking and tying shall be in strict accordance with the drawings and shall occur immediately following plant placement and soil backfilling. All plants identified as "Trees" on the planting schedule shall be staked with a min. 3 stakes.

#### d) Mulching

Mulch should be spread so that a compacted thickness of 75mm is achieved after settlement in all planting beds and around each individual plant. Apply immediately following planting and watering in, ensuring that a 50mm radius is maintained around the trunk of each plant. There shall be no mixing of soil and mulch material.

#### e) Turfing

Moisten soil prior to the turf being laid. Turf shall be neatly butt jointed and true to grade to finish flush with adjacent surfaces. Incorporate a lawn fertilizer and thoroughly water in. Keep turf moist until roots have taken and sods/rolls cannot be lifted. Keep all traffic off turf until this has occurred. Allow for top dressing of all turf areas. All turf shall be rolled immediately following installation.

#### f) Steel Garden Edging

The Contractor shall install stone edging as shown on the drawings, to all mass planting beds adjoining turf or gravel mulched areas, and where required. The resultant edge shall be true to line and flush with adjacent surfaces.

## HARDSCAPE WORKS

### 4.01 GENERAL

The Contractor shall undertake the installation of all hardscape works as detailed on the drawing, or where not detailed, by manufacturers specification.

Paving - refer to typical details provided, and applicable Australian Standards. *Permeable paving may be used as a suitable means of satisfying Council permeable surface requirements, while providing a useable, hardwearing, practical surface.* In most instances, the client shall nominate the appropriate paving material to be used.

Australian Standards shall be adhered to in relation to all concrete, masonry & metal work. Some details are typical and may vary on site. All hardscape works shall be setout as per the drawings, and inspected and approved by the Landscape Architect prior to installation. All workmanship shall be of the highest standard. Any queries or problems that arise from hardscape variations should be bought to the attention of the Landscape Architect.

Your attention is directed to any obligations or responsibilities under the Dividing Fences Act, 1991 in respect of adjoining property owner/s which may arise from this application. Any enquiries in this regard may be made to the Crown Lands Division on (02) 8836 5332

## IRRIGATION WORKS

### 5.01 GENERAL (PERFORMANCE SPECIFICATION)

An automated drip-irrigation system is to be installed to all gardens, planters and lawn areas in accordance with the approved Irrigation Design.

This system shall be designed and installed by a qualified and licensed irrigation specialist, to the highest industry standards and to maximise the efficient usage of water.

The Installer is required to obtain all approvals necessary for the completion of works in accordance with the Laws of Australia, Laws of the State of NSW, Council By-Laws and Ordinances.

#### Drawings:

- The Landscape Contractor nominated Licensed Irrigation Specialist shall provide irrigation drawings for approval upon engagement.

#### Design Requirements:

- The irrigation system shall be installed prior to all planting works. It shall incorporate a commercially available irrigation system, with sub-surface dripper lines to irrigate all gardens, planters and lawn areas.

- It shall incorporate a suitable back flow prevention device for the scale of works, an in-line filter, check valves, and suitable high and low density poly hose fittings and PVC piping to achieve flow rates suitable for specified planting.

- The irrigation application rate shall not exceed the infiltration rate of the soil or creates run-off.

- The landscape contractor shall check the existing pressure available from the ring mains and size irrigation piping to suit. Supply shall be from local hose cock where available.

- All piping and fittings shall be buried 50mm below the finished soil levels in garden and lawn areas, and secured in position at 500mm centres with galv wire pins.

- Size of pipes shall be selected to ensure the working pressure at the end of the line does not decrease by more than 5%.

#### Services Co-ordination:

- Co-ordination required by Landscape Contractor or Project Manager to provide required conduit, pipe work and penetration through slabs and planter walls for water and power provisions.

- The Landscape Contractor shall be engaged with the Irrigation Specialist to co-ordinate with the Project Manager to identify the preferred service and conduit locations.

- Project Manager and Landscape Contractor to establish area suitable for irrigation control system with required area, power provision and water supply.

#### Testing & Defects:

Upon completion of installation, the system shall be tested, including:

- Main Line Pressure Test: The main line is pressurised to test for leaks. All valves are shut and the pressure is taken over a determined length of time.

- Dripper Pressure Test: Measurement at flushing valves are taken and the pressure gauged to make sure it conforms to the manufacturer recommendations. The inlet pressure is then tested under the same conditions to check it does not exceed 300Kpa.

- All components are to be satisfactorily functional and operational prior to approval. Should any defect develop, or the capacity or efficiency of the system decline during the agreed maintenance system, then these faults shall be immediately rectified.

#### Warranty :

- A full 12 month warranty shall be included to cover labour and all parts.

#### Further Documentation:

- On request, a detailed irrigation performance specification report can be issued.

## 12 MONTH MAINTENANCE

### 6.01 GENERAL

The consolidation and maintenance period shall be 12 months beginning from the approved completion of the specified construction work (Practical Completion). A qualified landscape maintenance contractor shall undertake the required landscape maintenance works. Consolidation and maintenance shall mean the care and maintenance of Contracted works by accepted landscaping or horticultural practices, ensuring that all plants are in optimum growing conditions and appearance at all times, as well as rectifying any defects that become apparent in the contracted works.

This shall include, but not be limited to, the following items where and as required: Watering all planting and lawn areas / irrigation maintenance.

Clearing litter and other debris from landscaped areas.

Removing weeds, pruning and general plant maintenance.

Replacement of damaged, stolen or unhealthy plants. Make good areas of soil subsidence or erosion.

Topping up of mulched areas.

Spray / treatment for insect and disease control.

Fertilizing with approved fertilizers at correct rates.

Mowing lawns & trimming edges each 14 days in summer or 18 days in winter Adjusting ties to Stakes

Maintenance of all paving, retaining and hardscape elements.

On the completion of the maintenance period, the landscape works shall be inspected and at the satisfaction of the superintendent or landscape architect, the responsibility will be signed over to the client.xx

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Drawing Title	SPECIFICATION	
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	Scale	N.T.S@A3

Drawing No. **1142**

Page  
**L-08**

E	11/06/20	For Review
ISSUE	DATE	COMMENT

## AMENDMENTS