



CONDAMINE STREET VIEW

DEVELOPMENT APPLICATION
BOARDINGHOUSE

No. 255 CONDAMINE STREET

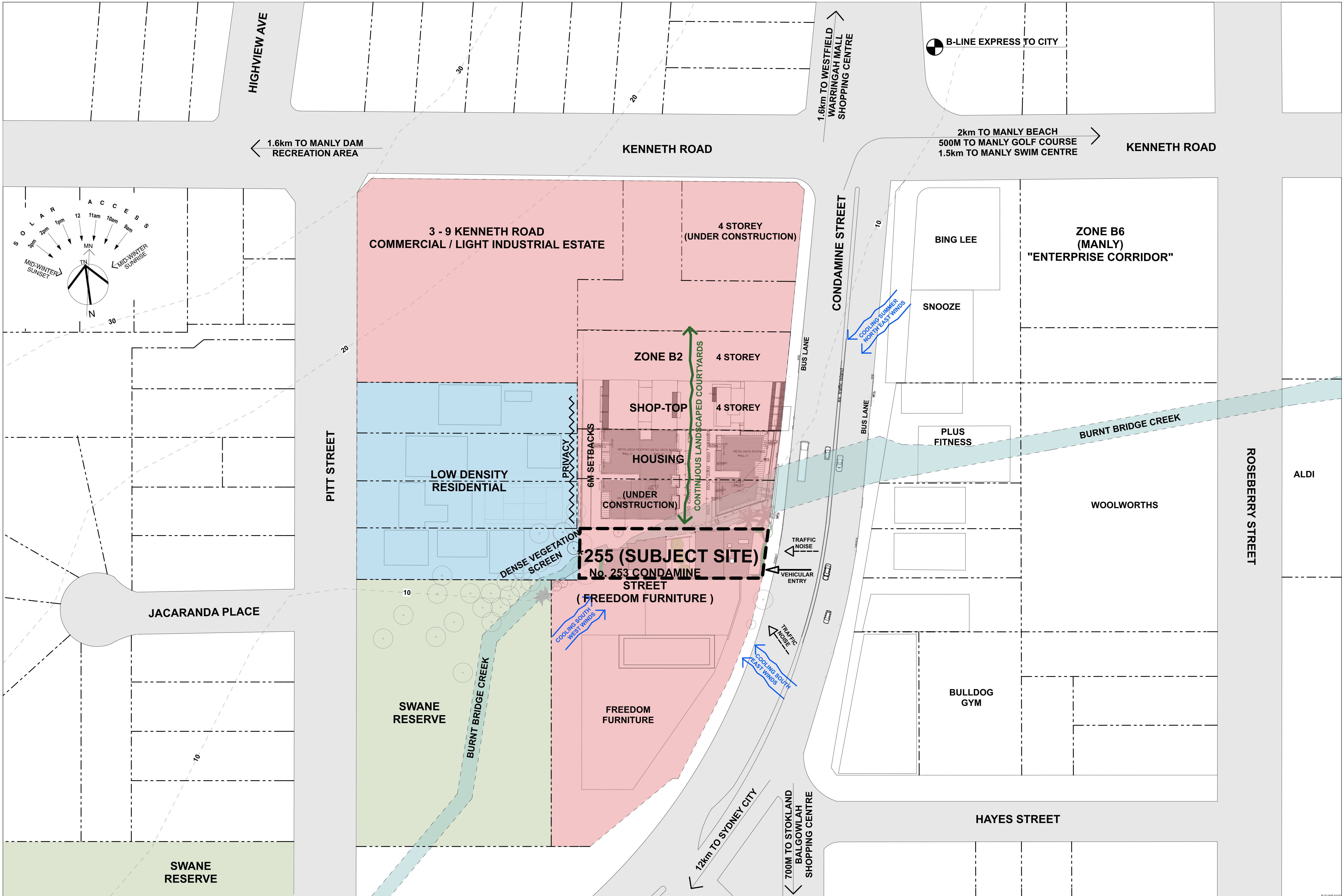
DEVELOPMENT APPLICATION DRAWING LIST

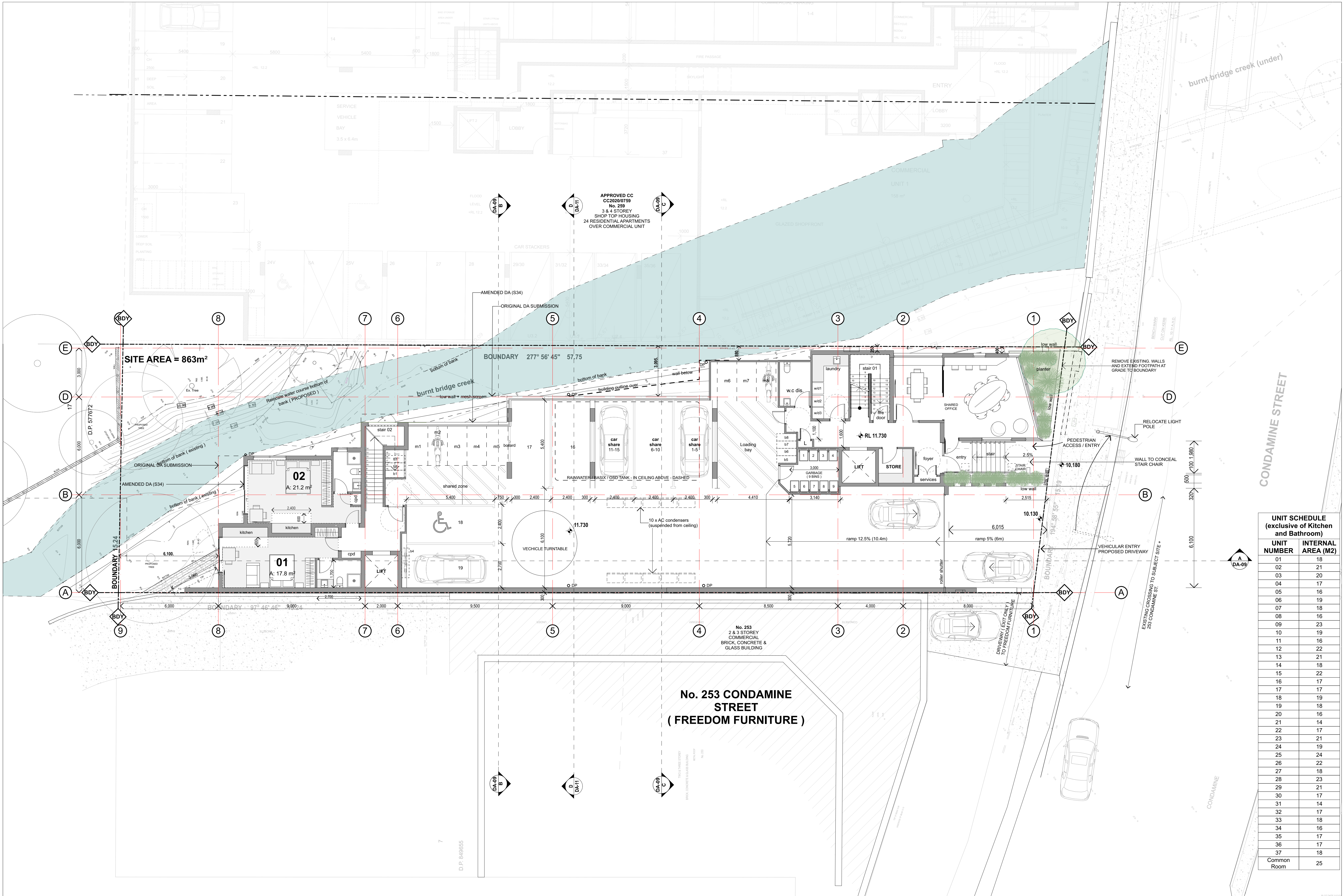
NO.	DRAWING NAME	SCALE:
DA-00	COVER SHEET	
DA-01	SITE PLAN	1:200
DA-02	SITE ANALYSIS PLAN	1:500
DA-03	SUB GROUND FLOOR PLAN	1:100
DA-04	GROUND FLOOR PLAN	1:100
DA-05	FIRST FLOOR PLAN	1:100
DA-06	SECOND FLOOR PLAN	1:100
DA-07	THIRD FLOOR PLAN	1:100
DA-08	ROOF PLAN	1:100
DA-09	SECTIONS A + B + C	1:100
DA-10	ELEVATION SOUTH + EAST	1:100
DA-11	ELEVATION WEST + NORTH + SECTION D	1:100
DA-12	SHADOW DIAGRAMS	1:500
DA-13	PERSPECTIVE VIEW A	
DA-14	PERSPECTIVE VIEW B	
DA-15	PERSPECTIVE VIEW C	
DA-16	PERSPECTIVE VIEW D	
DA-17	PERSPECTIVE VIEW E	
DA-18	PERSPECTIVE VIEW F	
DA-19	PERSPECTIVE VIEW G	
DA-20	PERSPECTIVE VIEW H	
DA-21	EXTERNAL COLOURS + MATERIALS	
LA-01	LANDSCAPE PLAN - SUB GROUND + GROUND	1:100

LOCATION PLAN



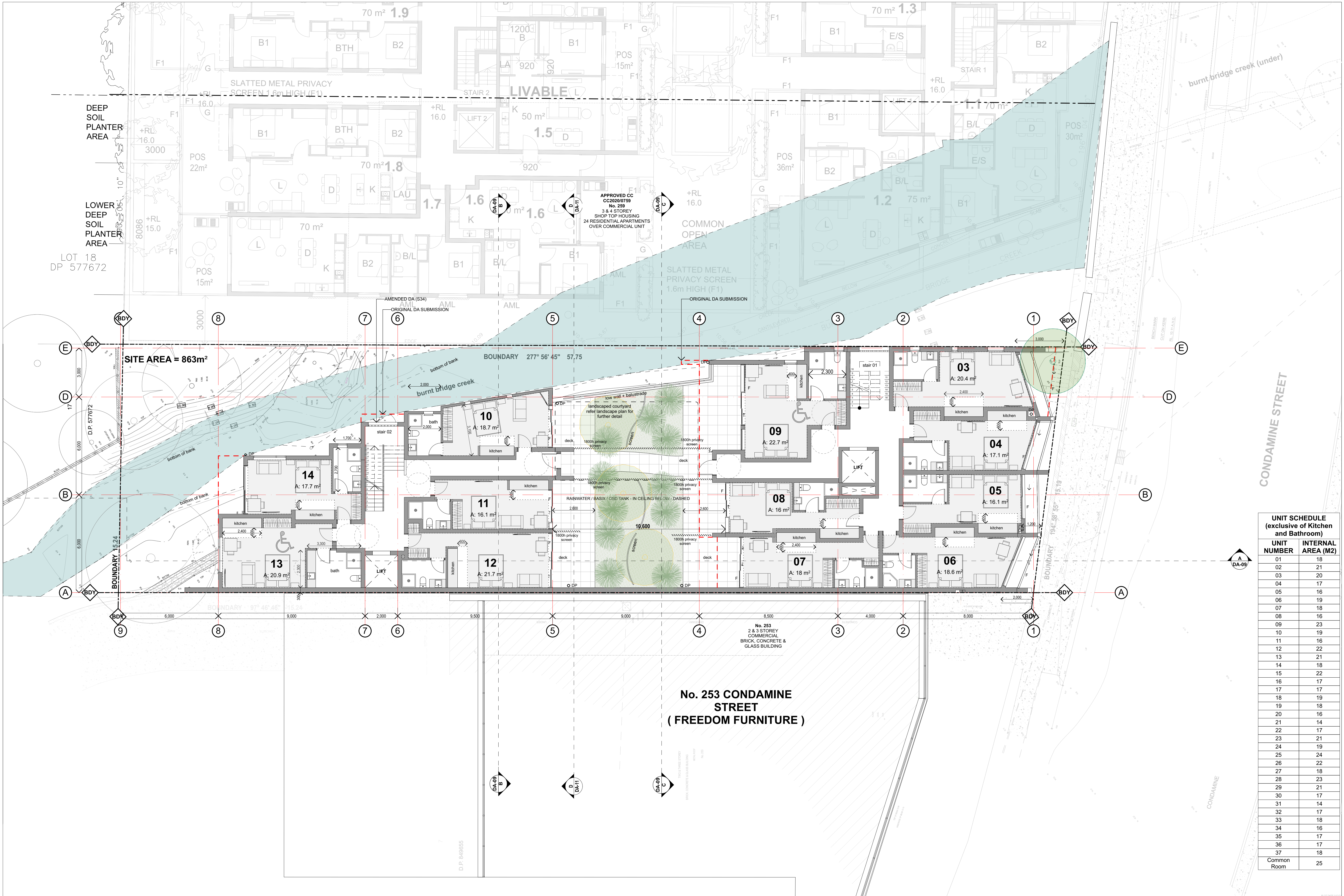




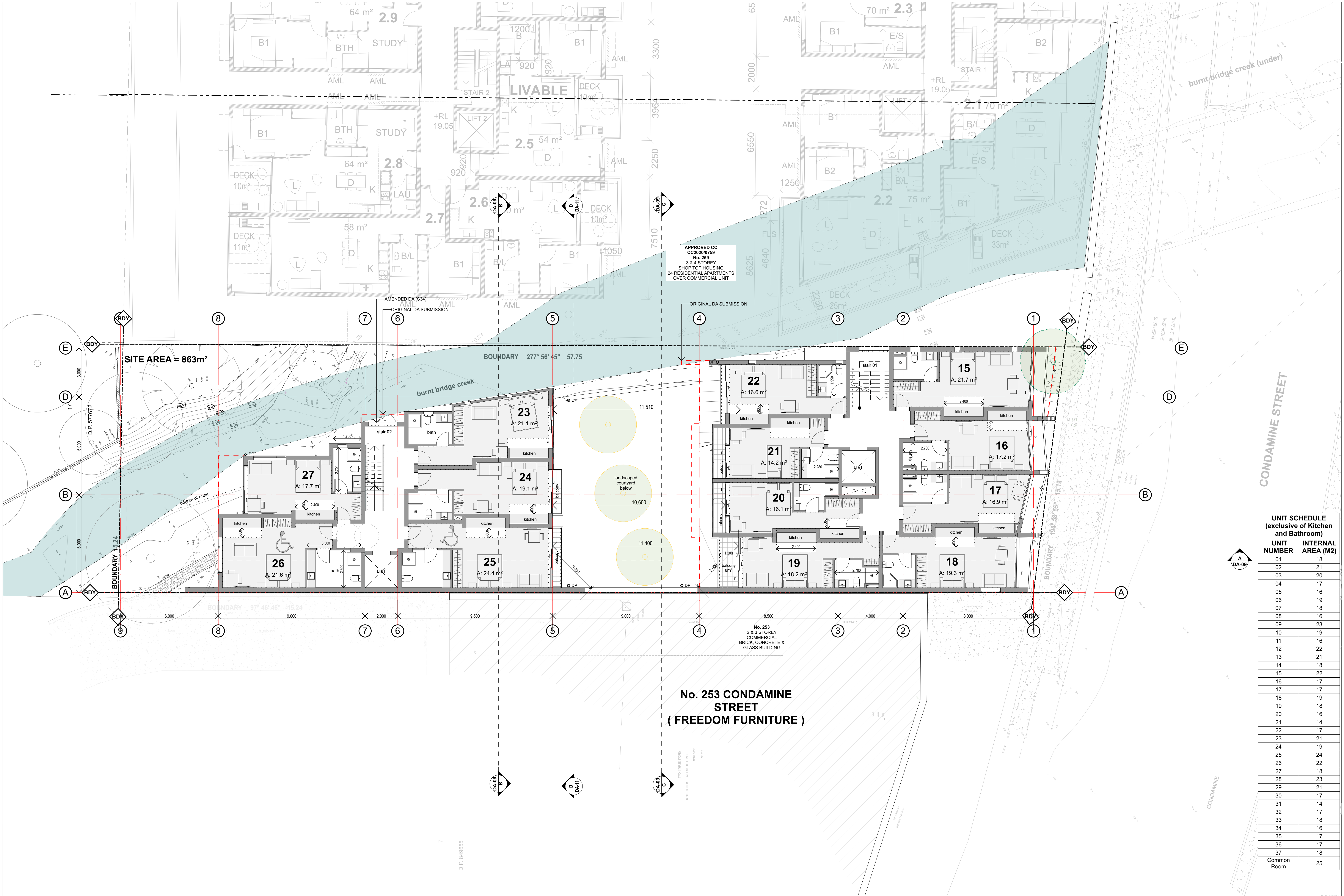


UNIT SCHEDULE
(exclusive of Kitchen
and Bathroom)

UNIT NUMBER	INTERNAL AREA (M2)
01	18
02	21
03	20
04	17
05	16
06	19
07	18
08	16
09	23
10	19
11	16
12	22
13	21
14	18
15	22
16	17
17	17
18	19
19	18
20	16
21	14
22	17
23	21
24	19
25	24
26	22
27	18
28	23
29	21
30	17
31	14
32	17
33	18
34	16
35	17
36	17
37	18
Common Room	25



UNIT SCHEDULE (exclusive of Kitchen and Bathroom)		
UNIT NUMBER	INTERNAL AREA (M2)	
01	18	
02	21	
03	20	
04	17	
05	16	
06	19	
07	18	
08	16	
09	23	
10	19	
11	16	
12	22	
13	21	
14	18	
15	22	
16	17	
17	17	
18	19	
19	18	
20	16	
21	14	
22	17	
23	21	
24	19	
25	24	
26	22	
27	18	
28	23	
29	21	
30	17	
31	14	
32	17	
33	18	
34	16	
35	17	
36	17	
37	18	
Common Room	25	



UNIT SCHEDULE (exclusive of Kitchen and Bathroom)		
UNIT NUMBER	INTERNAL AREA (M2)	
01	18	
02	21	
03	20	
04	17	
05	16	
06	19	
07	18	
08	16	
09	23	
10	19	
11	16	
12	22	
13	21	
14	18	
15	22	
16	17	
17	17	
18	19	
19	18	
20	16	
21	14	
22	17	
23	21	
24	19	
25	24	
26	22	
27	18	
28	23	
29	21	
30	17	
31	14	
32	17	
33	18	
34	16	
35	17	
36	17	
37	18	
Common Room	25	



VIEW OF 12 A PITT ROAD

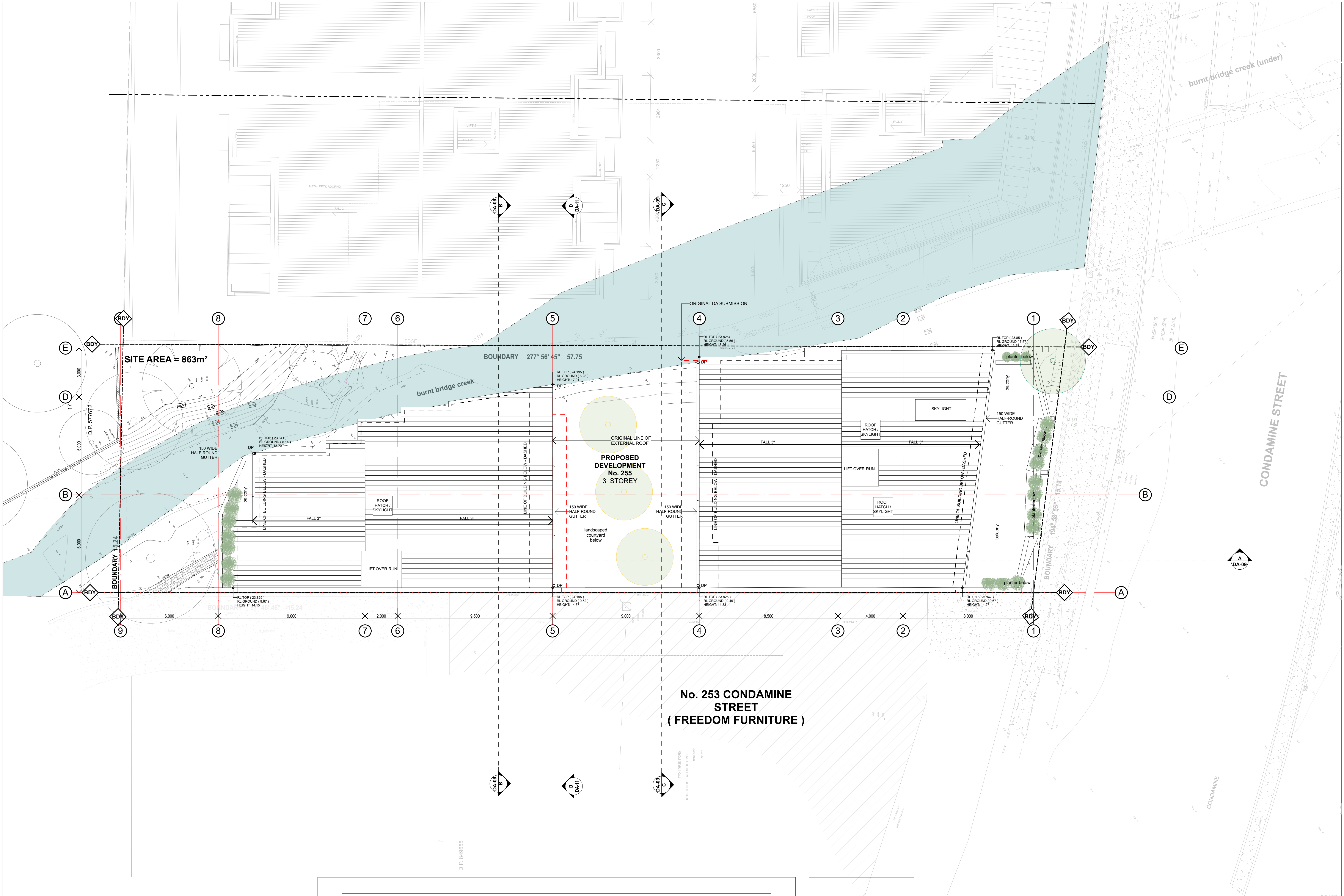


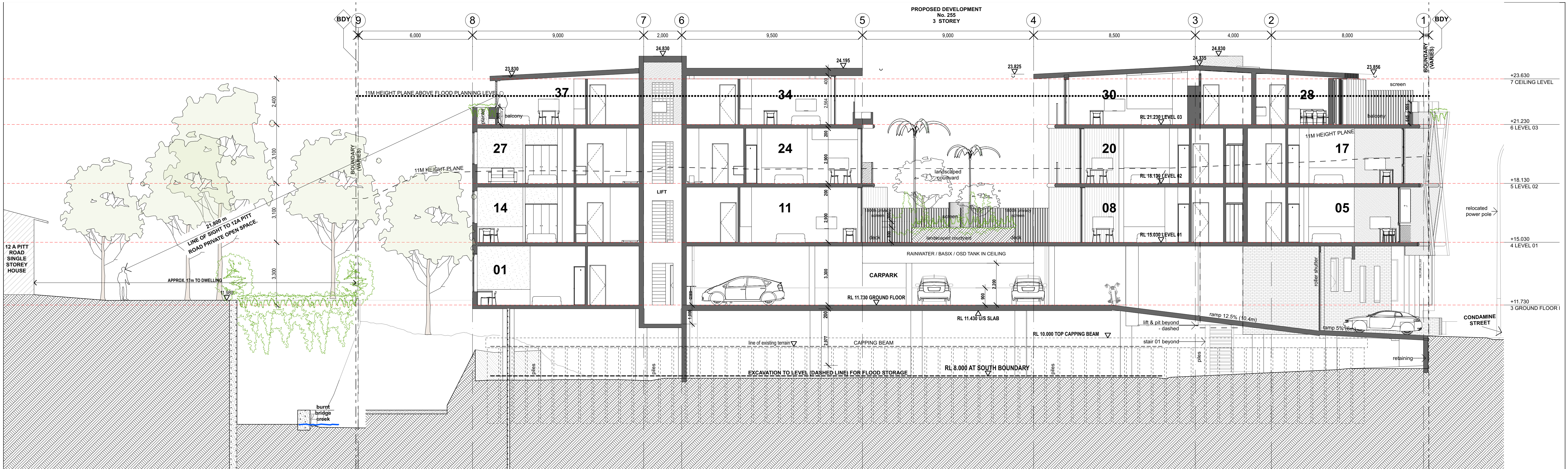
VIEW OF 12 A PITT ROAD



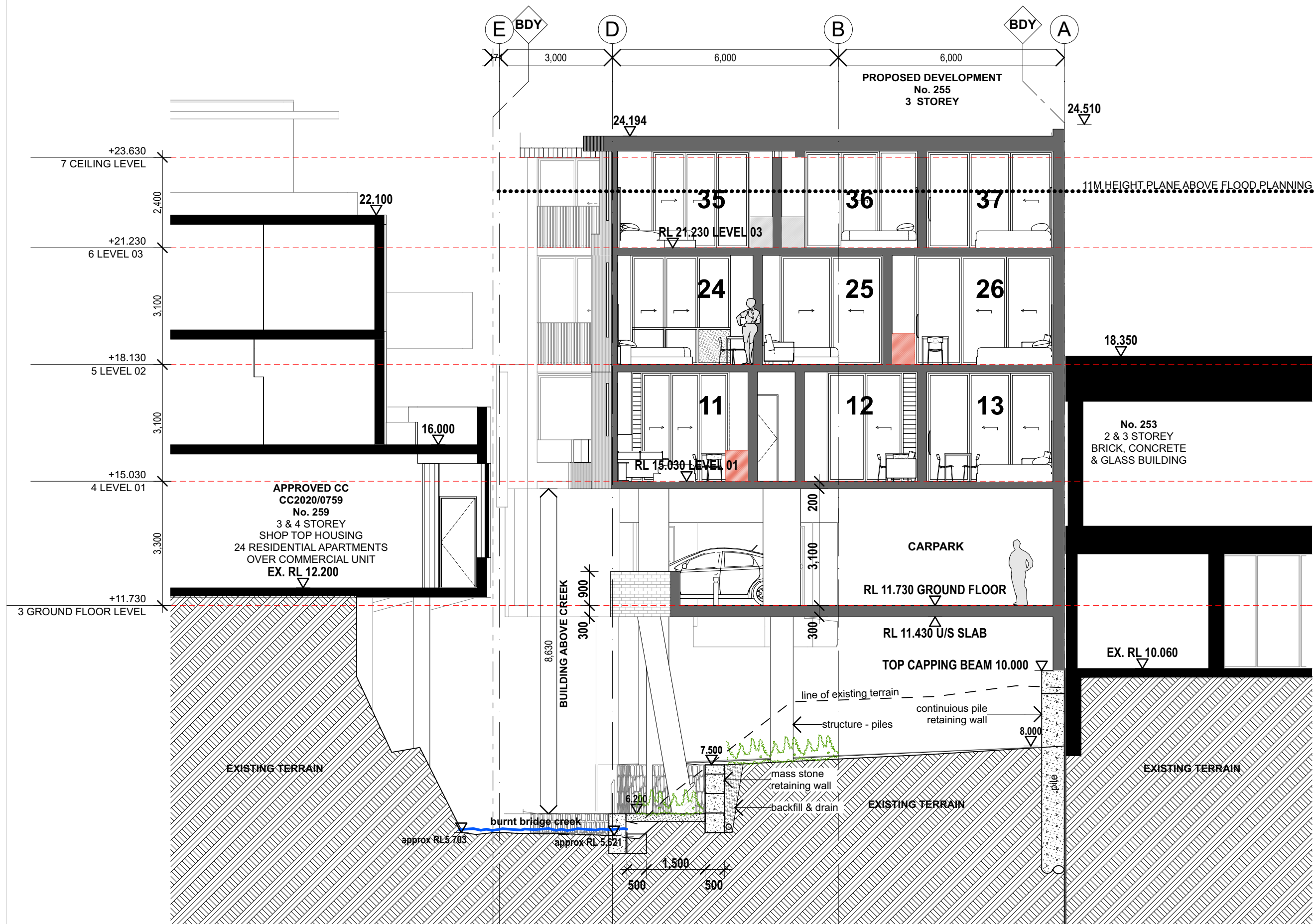
UNIT SCHEDULE
(exclusive of Kitchen
and Bathroom)

UNIT NUMBER	INTERNAL AREA (M2)
01	18
02	21
03	20
04	17
05	16
06	19
07	18
08	16
09	23
10	19
11	16
12	22
13	21
14	18
15	22
16	17
17	17
18	19
19	18
20	16
21	14
22	17
23	21
24	19
25	24
26	22
27	18
28	23
29	21
30	17
31	14
32	17
33	18
34	16
35	17
36	17
37	18
Common Room	25

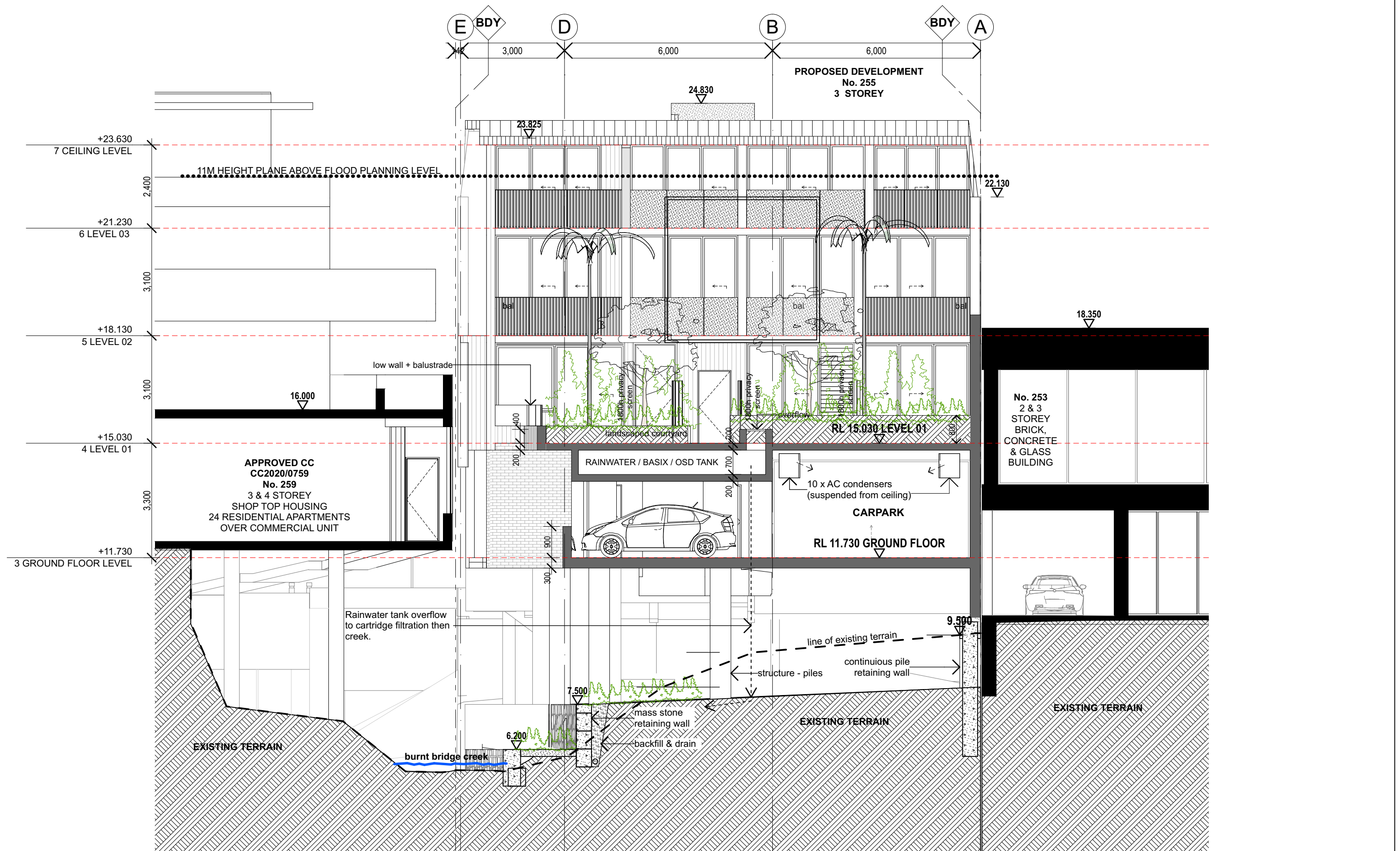




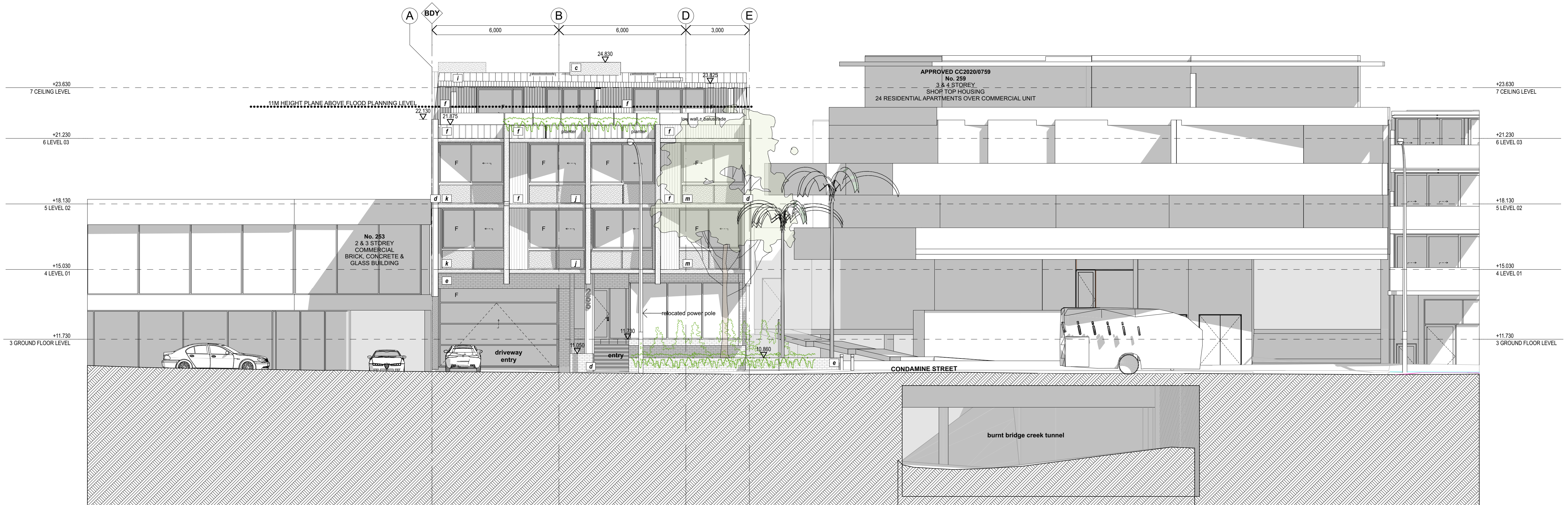
01 SECTION A



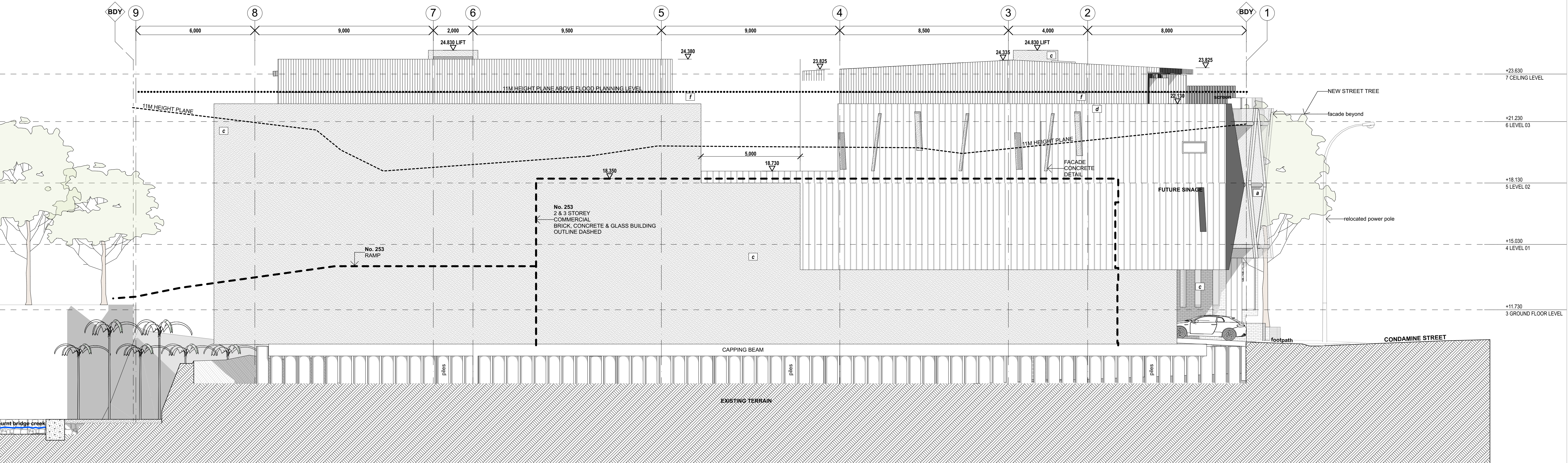
02 SECTION B



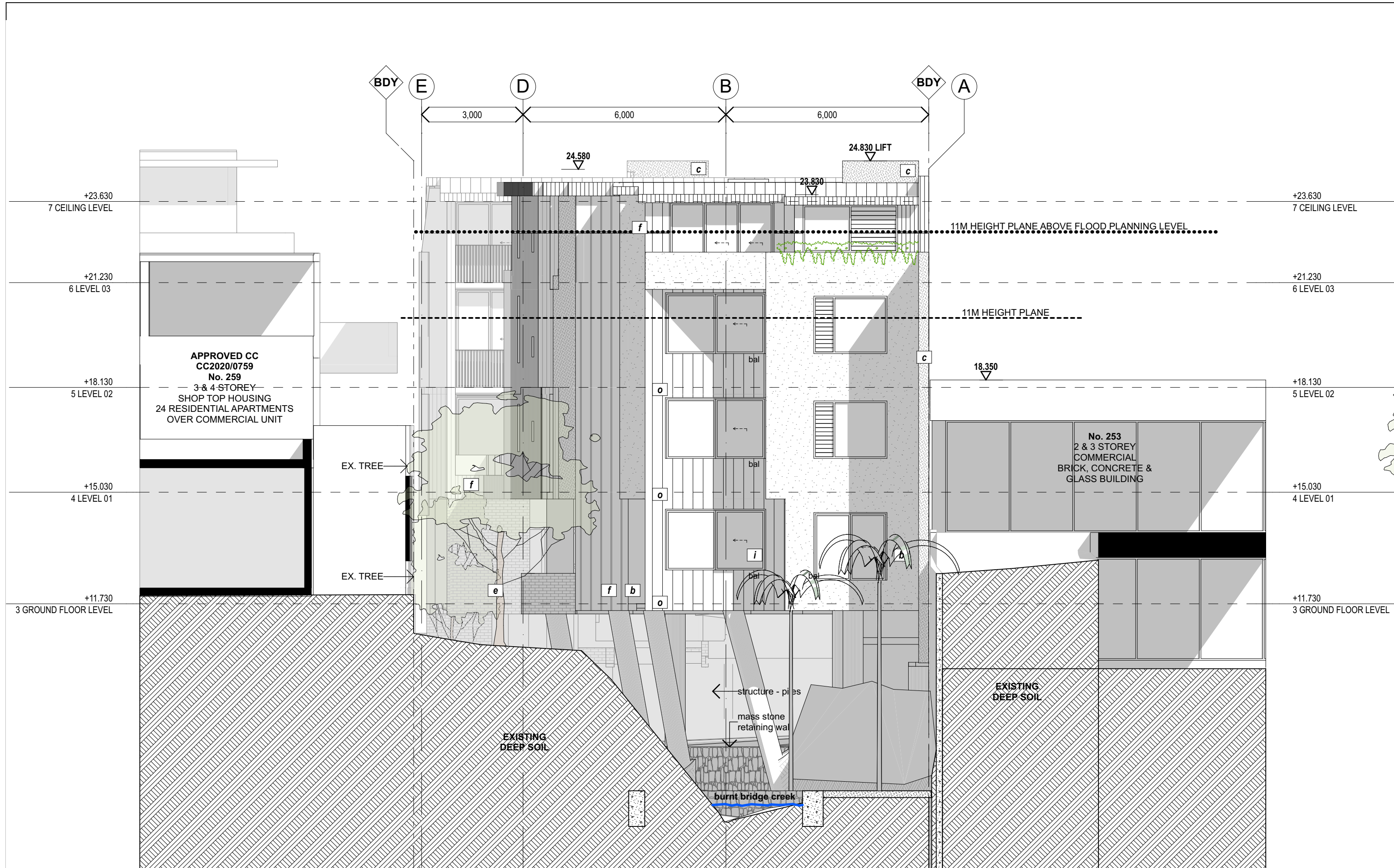
03 SECTION C + ELEVATION COURTYARD EAST



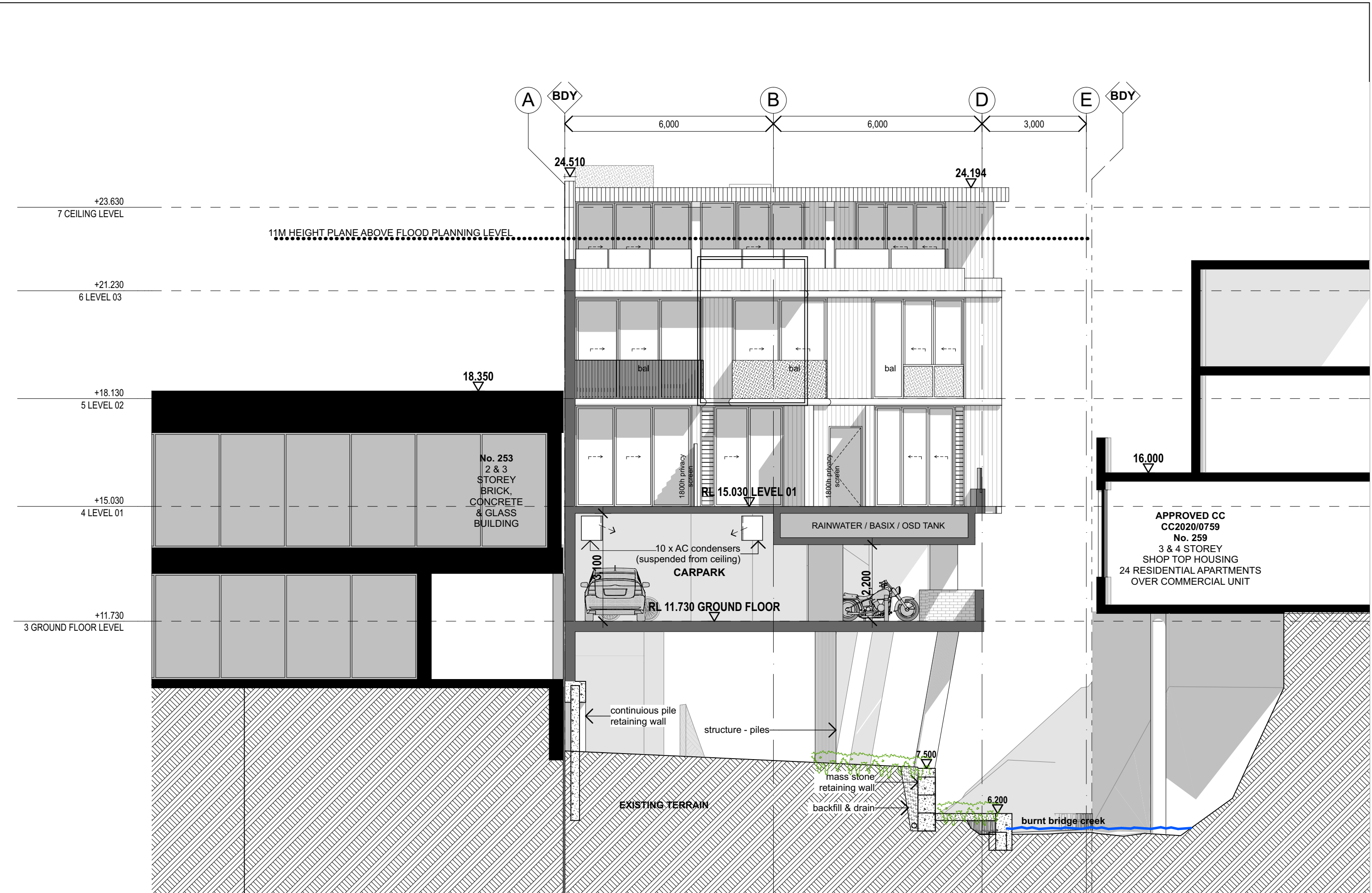
ELEVATION EAST [CONDAMINE STREET]



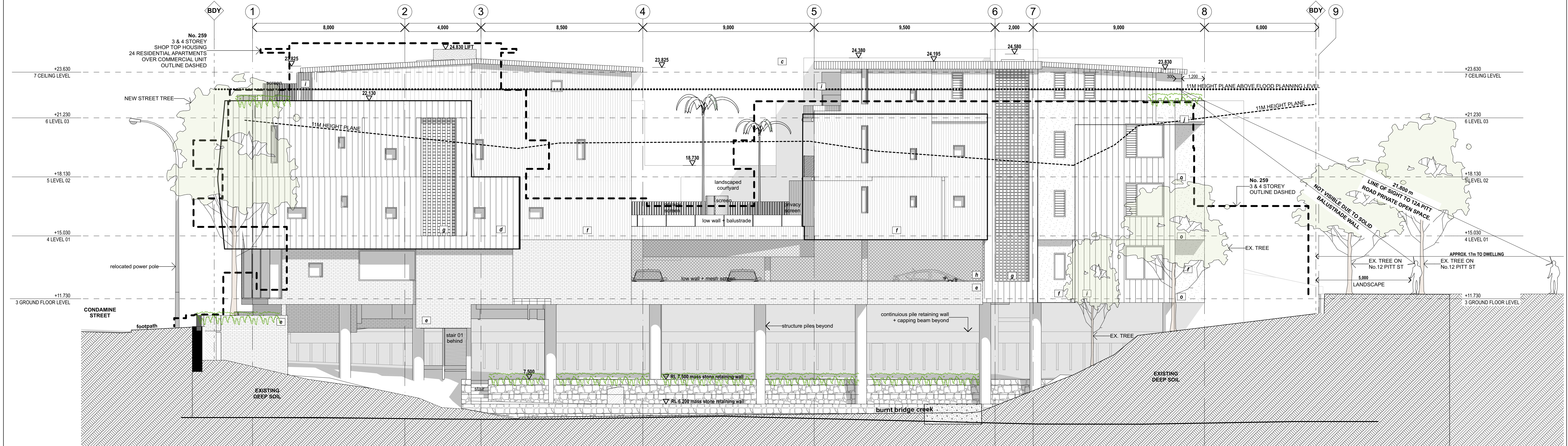
ELEVATION SOUTH



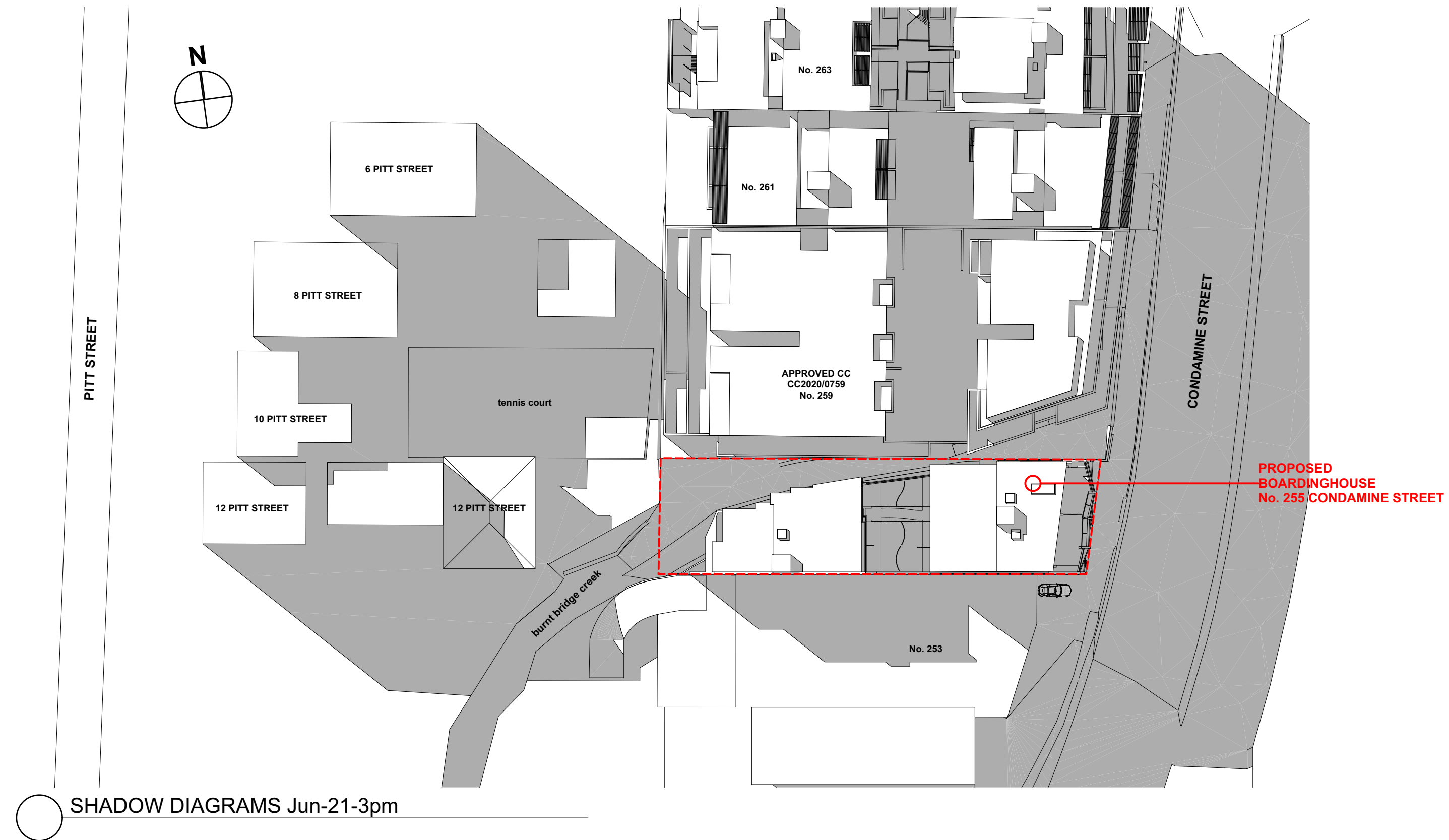
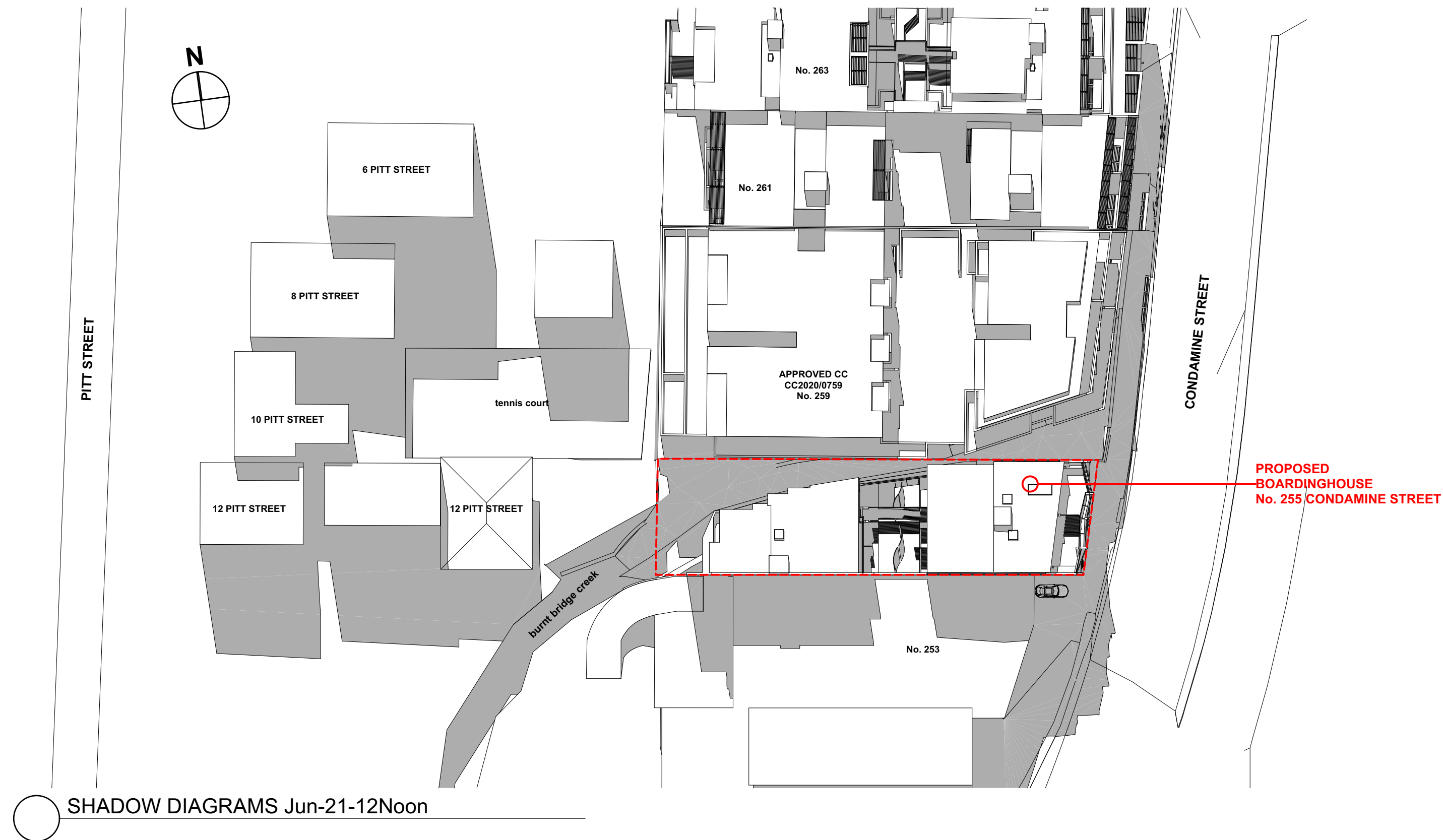
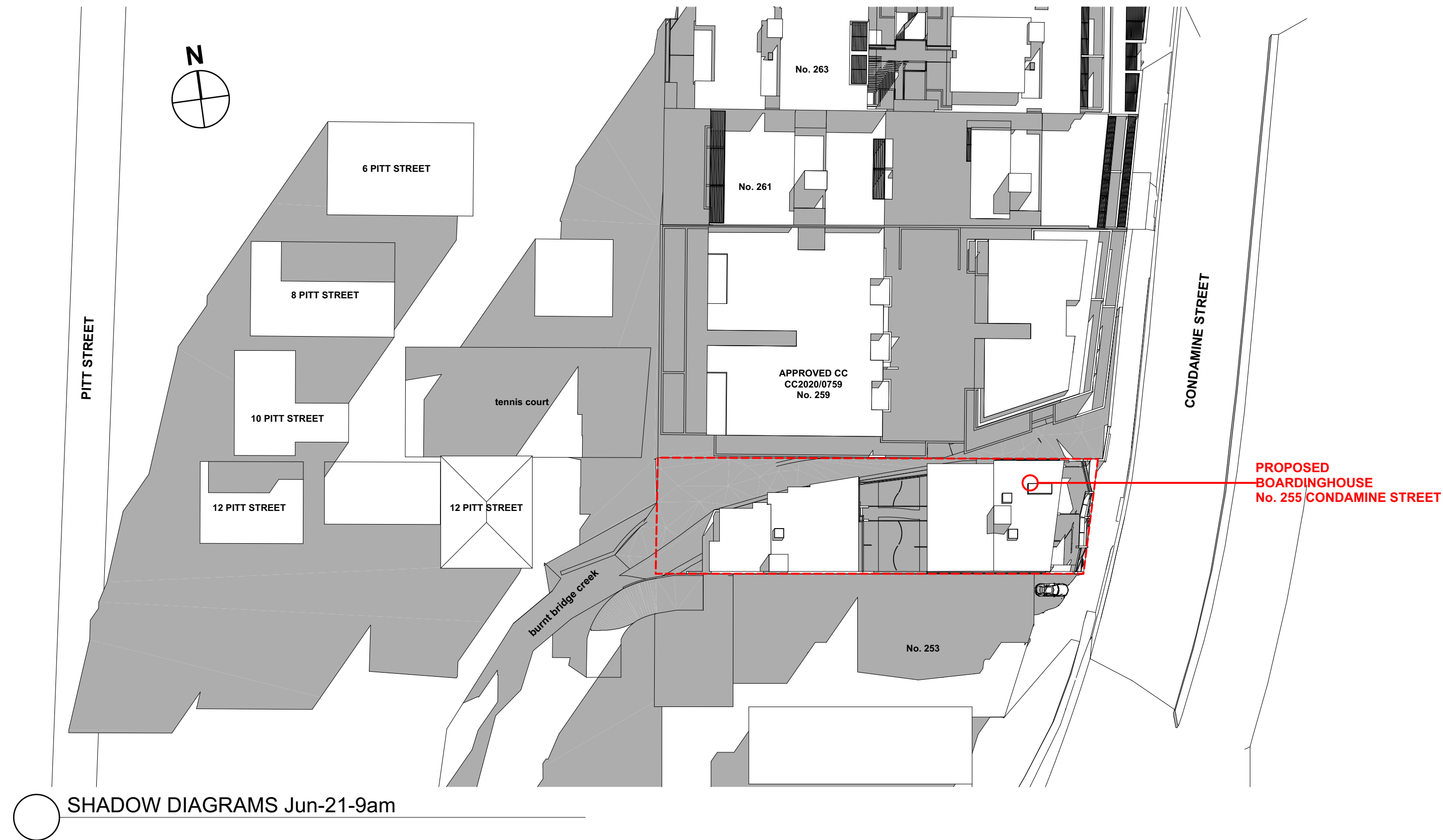
ELEVATION WEST



03 SECTION D + COURTYARD SECTION WEST



ELEVATION NORTH



Certification of Shadow Diagrams
I hereby certify that the shadow diagrams submitted with the proposal
a) are in accordance with the survey
b) indicate shadows cast at 9 am, 12 noon and 3 pm on 21 June & 21 December
c) indicate shadows cast by existing structures

Sean Gartner
(Registered Architect #6072 NSW)

Sean Gartner



CONDAMINE STREET VIEW A



CONDAMINE STREET VIEW B

CONDAMINE STREET VIEW D (ISSUE 20.09.21)



CONDAMINE STREET VIEW D (ISSUE B - 18.10.21)

A 47/90 MONLY VALE ROAD
RD BOX 1122
MONLY VALE NSW 2100
P 021 3 9079 4411
F 021 3 9079 4422
E GYA@GARTNEROVATO.COM.AU

CONDAMINE STREET VIEW D (ISSUE 20.09.21)



CONDAMINE STREET VIEW C (ISSUE B - 18.10.21)



CONDAMINE STREET VIEW E



No. 259 COURTYARD



VIEW ABOVE No.259



VIEW ABOVE No.259 NW



No. 12 PITT STREET REAR GARDEN VIEW



REAR SITE VIEW



REAR SITE VIEW HIGH SW



CONDAMINE STREET VIEW



NORTH ELEVATION

EXTERIOR FINISHES LEGEND

- A** TEXTURED RENDER WITH PAINT FINISH - EQUAL TO RESENE BARELY THERE

B TEXTURED RENDER WITH PAINT FINISH - EQUAL TO RESENE DOUBLE GRAVEL

C CONCRETE WALL IN-SITU / PRECAST WALL NATURAL GREY FINISH

D PRECAST CONCRETE OFF-SHUTTER TIMBERBOARD FINISH

E RUSTIC BRICK 'RECYCLED LOOK'

F EMBOSSED 'TIMBER LOOK' METAL CLADDING ON METAL FRAMING

G GLASS BRICKS - FIRE RATED

H METAL MESH SCREEN - DARK GREY POWDERCOATED FINISH

I METAL DECK ROOFING - COLOUR: COLORBOND WINDSPRAY

J LAMINATED GLASS COLOURBACK SPANDREL PANEL - 'BLACK CORAL'
- K** LAMINATED GLASS COLOURBACK SPANDREL PANEL - 'OCHRE'

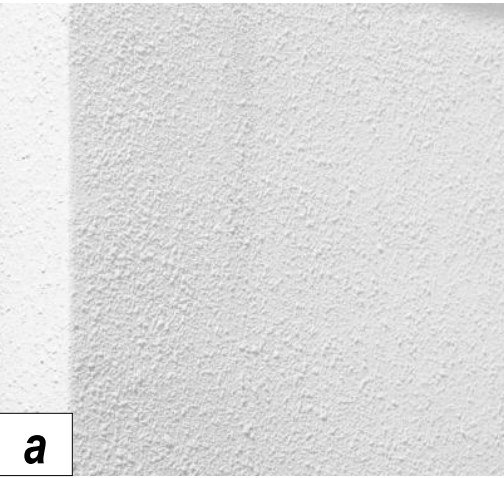
M LAMINATED GLASS COLOURBACK SPANDREL PANEL - 'SILVER'

N EMBOSSED 'TIMBER LOOK' METAL CLADDING ON METAL FRAMING

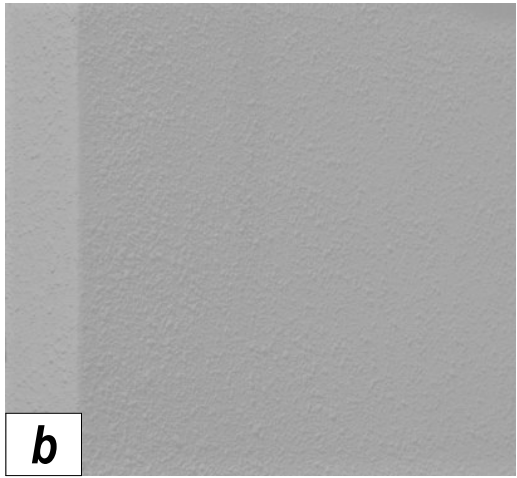
O LAMINATED GLASS BALUSTRADE - TINTED DARK GREY

NOTE: FINISHES AND IMAGES SHOWN ARE INDICATIVE OF DESIGN INTENT ONLY

TEXTURED RENDERED FINISH

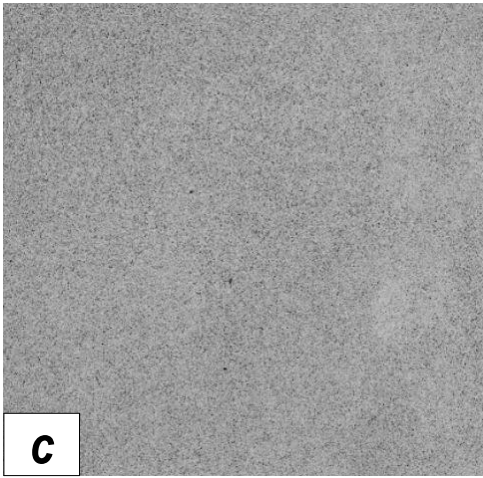


a



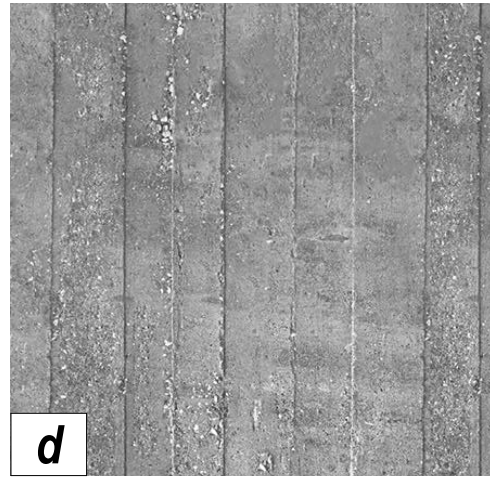
b

CONCRETE PRECAST



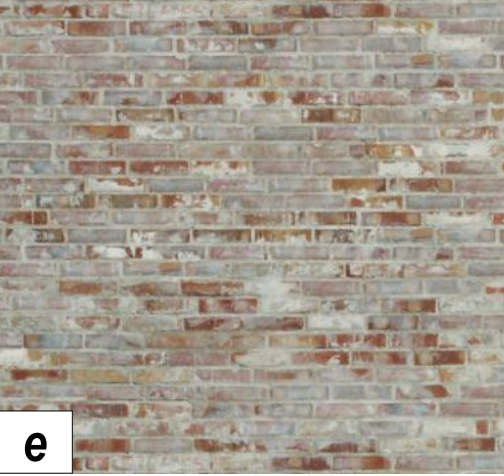
c

CONCRETE OFF-FORM FINISH



d

BRICK 'RECYCLED LOOK'



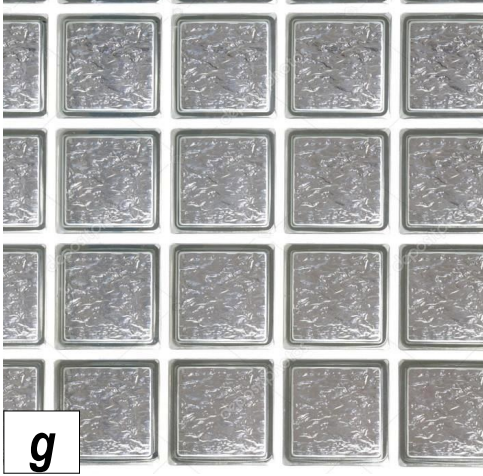
e

ALU. CLADDING EMBOSSED 'TIMBER LOOK'



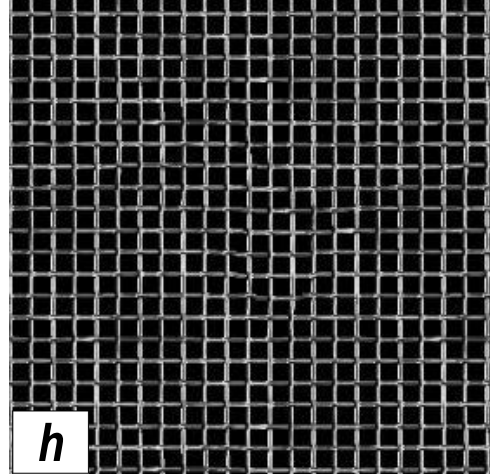
f

GLASS BRICKS



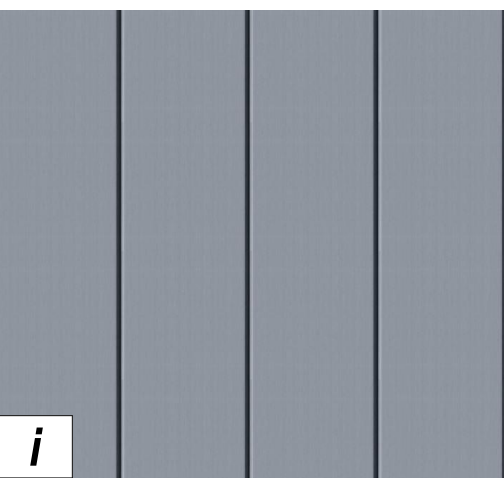
g

MESH SCREEN



h

METAL DECK ROOF & CLADDING



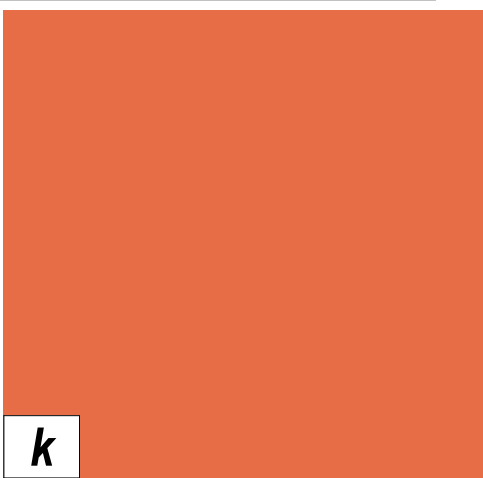
i

GLASS SPAND' PANEL BLACK CORAL



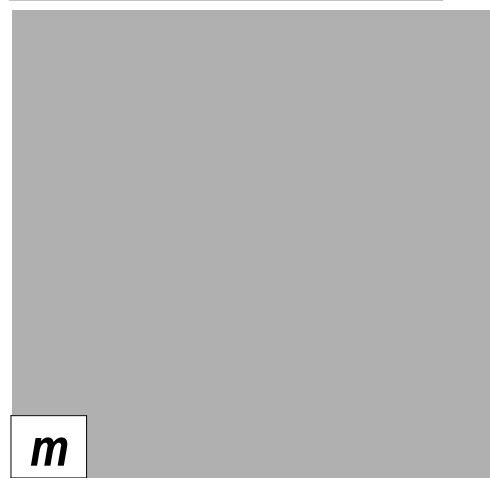
j

GLASS SPANDREL PANEL OCHRE



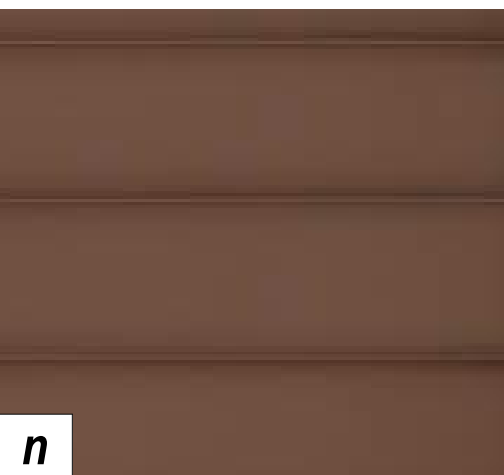
k

GLASS SPANDREL PANEL SILVER



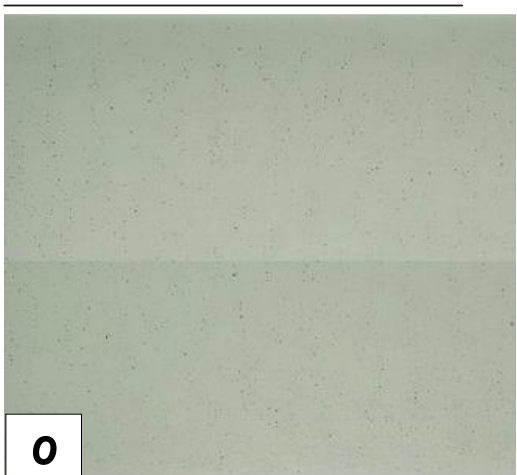
m

ALU. CLADDING 'TIMBER LOOK'

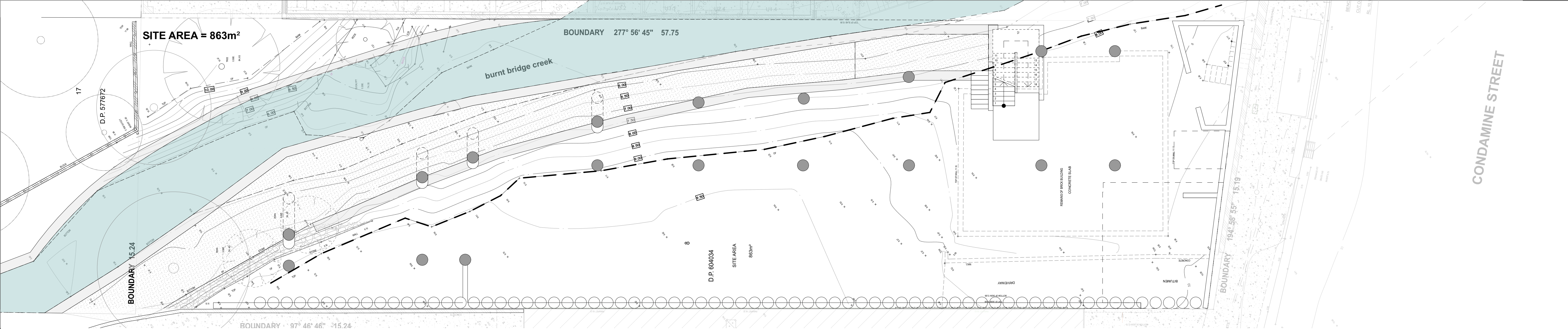


n

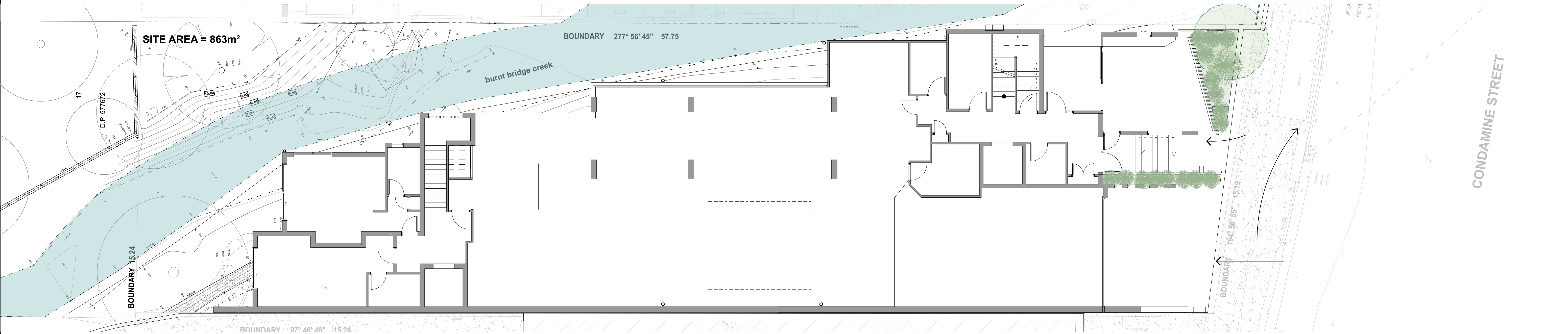
GLASS BALUSTRADE DARK / GREY



o



BASEMENT + CARPARK LEVEL



GROUND FLOOR LEVEL

TREES



SCREEN SHRUBS



SMALL SHRUBS



SUCCULENTS

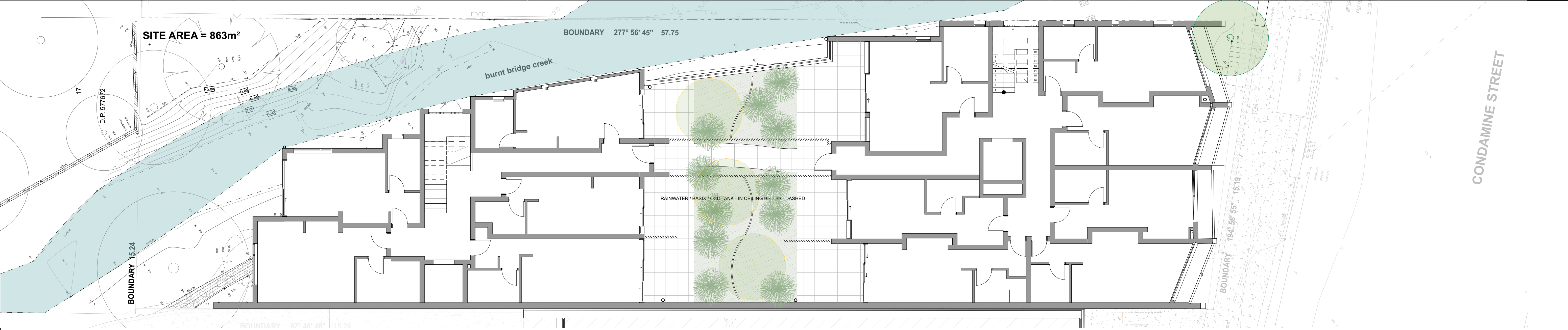


GROUND COVERS



Key	Botanical name	Common name	Mature size (h x w/m)
Trees			
Cma	Corymbia maculata ST1 "Lowanna"	Spotted gum (medium height cultivar)	10m (h) x 7m (w)
Cc	Corymbia citriodora	Lemon scented gum	10m (h) x 7m (w)
Ecu	Elaeocarpus eumundi	Bush quandong	8m (h) x 4m (w)
Ere	Elaeocarpus reticulatus	Blueberry Ash	8m (h) x 4m (w)
Gfe	Glochidion ferdinandi	Cheese tree	8m (h) x 5m (w)
Hfo	Howea Forsteriana	Kentia Palm	8m (h) x 4m (w)
Sol	Syzygium oleosum	Blue cherry	7m (h) x 4m (w)
Lar	Livistona Australis	Cabbage Tree	7m (h) x 3m (w)
Screen shrubs			
Slu	Syzygium lueanum	Small leaf Lillypillly	7m(h) X 3m(w)
Sau	Syzygium australe "Elegance" PBR	Compact Lillypillly	2m (h) X 1.5m(w)
Vod	Viburnum odoratissimum	Sweet Viburnum	3m (h) X 2m (w)
Gwh	Grevillea whiteana	Moonlight	4m (h) X 2m (w)
Small shrubs			
Aze	Alpinia zerumbet	Shell ginger	1.5m (h) x 1.5m (w)
Ani	Asplenium nidus	Birds nest fern	1m (h) x 1.5m (w)
Bca	Blechnum cartilagineum	Gristle fern	1.5m (h) x 1.5m (w)
Bgl	Blechnum gibbum	"Silver Lady" fern	1m (h) X 1m (w)
Cal	Correa alba	White correa	1m (h) X 1m (w)
Cmi	Clivia miniata	Kaffir lily	0.5m (w) x 0.5m (h)
Cst	Cordyline stricta	Slender palm lily	3m (h) x 1.5m (w)
Dex	Doranthus excelsa	Symea lily	2m (h) x 2m (w)
Dio	Dianella longifolia	Flax lily	1m (h) X 1m (w)
Lmu	Liriope muscari "Evergreen Giant"	Giant turf lily	0.5m (w) x 0.5m (h)
Mco	Macrozamia communis	Burrawang palm	1.5m (h) x 1.5m (w)
Pco	Philodendron "Xanadu"	Dwarf philodendron	1m (h) x 1m (w)
Sra	Strelitzia reginae	Bird of paradise	1m (h) X 1m (w)
Tma	Thsanolaena maxima	Tiger grass	2.5m (h) x 1m (w)
Wfa	Westringia fruticosa	Coast rosemary	1.5m (h) x 1.5m (w)
Rex	Raphis Excelsia	Lady Palm	2m (h) x 2m (w)
Gma	Grevillea Mantle	Royal mantie	0.5m (h) x 2m (w)
Gil	Gazania linearis	Gazania	1m (h) X 1m (w)
Ground covers			
Gto	Gazania tomentosa	Silver gazania	0.2m (h) x 1m (w)
Tja	Trachelospermum jasminoides	Star jasmine	4m (h) x 3m (w)

Succulents			
Aat	Agave attenuata	Blue money plant	1m (h) X 1m (w)
Car	Crassula arborescens	Pig face	0.2m (h) x 1m (w)
Cgl	Carpobrotus glaucescens	Silver falls dichondra	0.1m (h) x 1.8m (w)
Dar	Dichondra argentea	Hen and chickens	0.1m (h) x 0.4m (w)
Eel	Echeveria elegans	Blue chalk sticks	0.2m (h) x 1m (w)
Sse	Senecio serpens		
Turf			
Turf	Stenotaphrum secundatum	Sir Walter Buffalo	
Mulch and edging			
WRG	Washed river gravel mulch		
CPM	Cypress pine mulch		
CSA	Curved steel angle edging		
Paving			
600 x 900 precast concrete pavers laid on sand			



LEVEL 01



LEVEL 03

TREES



SCREEN SHRUBS



SMALL SHRUBS



SUCCULENTS

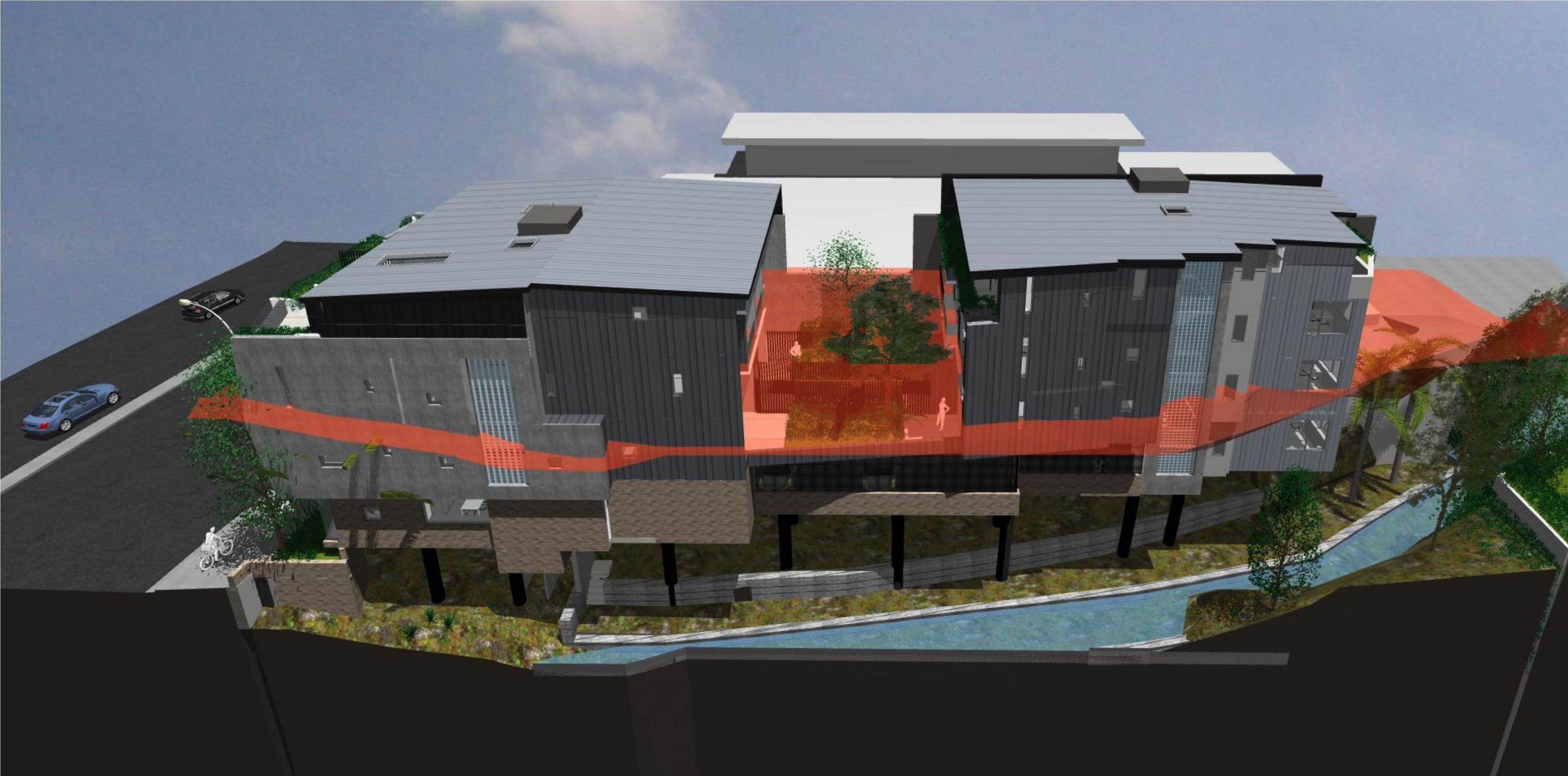


GROUND COVERS

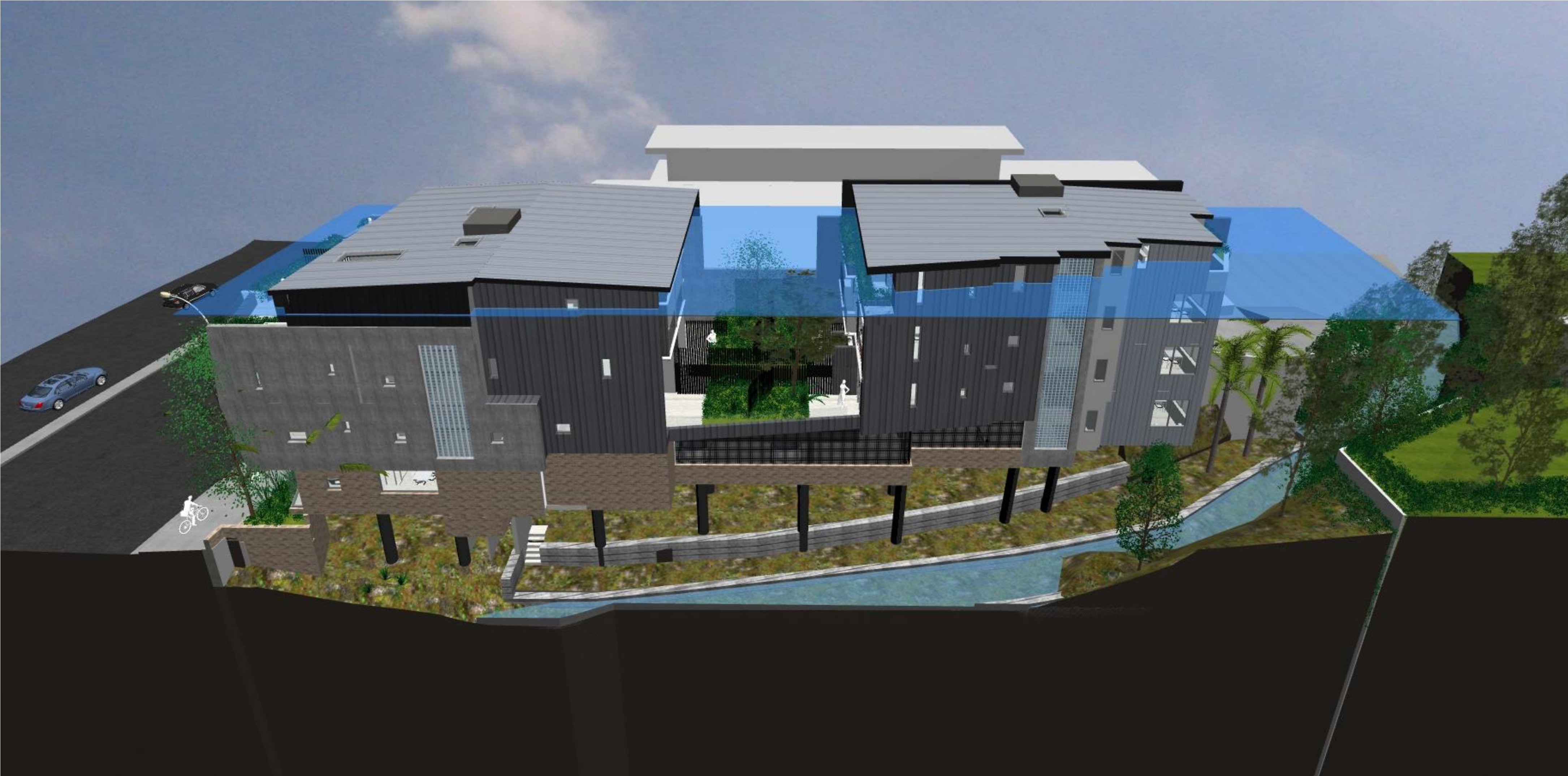


Key	Botanical name	Common name	Mature size (h x w)m
Trees			
Cma	Corymbia maculata ST1 "Lowanna"	Spotted gum (medium height cultivar)	10m (h) x 7m (w)
Cc	Corymbia citriodora	Lemon scented gum	10m (h) x 7m (w)
Eco	Elaeocarpus eumundi	Bush quandong	8m (h) x 4m (w)
Eri	Elaeocarpus reticulatus	Blueberry Ash	8m (h) x 4m (w)
Gfe	Glochidion ferdinandi	Cheese tree	8m (h) x 5m (w)
Hfo	Howea Forsteriana	Kentia Palm	8m (h) x 4m (w)
Sol	Syzygium oleosum	Blue cherry	7m (h) x 4m (w)
Lar	Livistona Australis	Cabbage Tree	7m (h) x 3m (w)
Screen shrubs			
Slu	Syzygium lueaninii	Small leaf Lillypill	7m(h) X 3m(w)
Sau	Syzygium australe "Elegance" PBR	Compact Lillypill	2m (h) X 1.5m(w)
Vod	Viburnum odoratissimum	Sweet Viburnum	3m (h) X 2m (w)
Gwh	Grevillea whiteana	Moonlight	4m (h) X 2m (w)
Small shrubs			
Aze	Alpinia zerumbet	Shell ginger	1.5m (h) x 1.5m (w)
Ani	Asplenium nidus	Birds nest fern	1m (h) x 1.5m (w)
Bca	Blechnum cartilagineum	Gristle fern	1.5m (h) x 1.5m (w)
Bg	Blechnum gibbum	"Silver Lady" fern	1m (h) X 1m (w)
Cal	Correa alba	White correa	1m (h) X 1m (w)
Cmi	Clivia miniata	Kaffir lily	0.5m (w) x 0.5m (h)
Cst	Cordyline stricta	Slender palm lily	3m (h) x 1.5m (w)
Dex	Doranthus excelsa	Symea lily	2m (h) x 2m (w)
Dio	Dianella longifolia	Flax lily	1m (h) X 1m (w)
Lmu	Liriope muscari "Evergreen Giant"	Giant turf lily	0.5m (w) x 0.5m (h)
Mco	Macrozamia communis	Burrawang palm	1.5m (h) x 1.5m (w)
Poa	Philodendron "Xanadu"	Dwarf philodendron	1m (h) x 1m (w)
Sra	Strelitzia reginae	Bird of paradise	1m (h) X 1m (w)
Tma	Thsanolaena maxima	Tiger grass	2.5m (h) x 1m (w)
Wfa	Westringia fruticosa	Coast rosemary	1.5m (h) x 1.5m (w)
Rex	Raphis Excelsia	Lady Palm	2m (h) x 2m (w)
Gma	Grevillea Mantle	Royal mantie	0.5m (h) x 2m (w)
Gil	Gazania linearis	Gazania	1m (h) X 1m (w)
Ground covers			
Gto	Gazania tomentosa	Silver gazania	0.2m (h) x 1m (w)
Tja	Trachelospermum jasminoides	Star jasmine	4m (h) x 3m (w)

Succulents			
Aat	Agave attenuata	Blue money plant	1m (h) X 1m (w)
Car	Crassula arborescens	Pig face	0.2m (h) x 1m (w)
Cgl	Carpobrotus glaucescens	Silver falls dichondra	0.1m (h) x 1.8m (w)
Dar	Dichondra argentea	Hen and chickens	0.1m (h) x 0.4m (w)
Eel	Echeveria elegans	Blue chalk sticks	0.2m (h) x 1m (w)
Sse	Senecio serpens		
Mulch and edging			
WRG	Washed river gravel mulch		
CPM	Cypress pine mulch		
CSA	Curved steel angle edging		
Paving			
600 x 900 precast concrete pavers laid on sand			



11M HEIGHT PLANE ABOVE GROUND LEVEL (EXISTING)



11M HEIGHT PLANE ABOVE FLOOD PLANNING LEVEL (FPL)



11M HEIGHT PLANE ABOVE GROUND LEVEL (EXISTING)

STATUS:	
SECTION 34	
SCALE:	DATE:
1:100 @ A1	DEC 2021
DRAWN:	CHECKED:
R.H	R.F

LEGEND & SCHEDULE

NOTES:

1. ALL FINAL PLANT QUANTITIES INDICATED ON PLANS SHALL BE CHECKED AND VERIFIED BY SUCCESSFUL LANDSCAPE CONTRACTOR.

2. ANY PLANT SUBSTITUTES REQUIRED DUE TO UNAVAILABILITY SHALL BE RECOMMENDED BY THE LANDSCAPE CONTRACTOR TO BEST MATCH SUBSTITUTED PLANTS AND APPROVED PRIOR TO PURCHASING BY THE LANDSCAPE ARCHITECT.

3. WORKS CERTIFIED FOR FINAL OCCUPANCY CERTIFICATE ARE TO MATCH APPROVED LANDSCAPE PLANS.

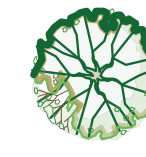
4. LANDSCAPE CONTRACTOR SHALL LOCATE AND AVOID SITE STORM WATER & DRAINAGE SERVICES. LOCATE TREES A MINIMUM 1.25M FROM PITS

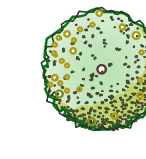
5. ALL PLANTING AROUND EXISTING TREES SHALL BE ADJUSTED TO AVOID DAMAGE AND CLASHING WITH SURFACE ROOTS

6. THE NATURE STRIP (STREET FRONTAGE) FOR THE SITE IS PUBLIC LAND, AND ONLY AUTHORIZED WORKS MAY OCCUR HERE. EXISTING CONDITIONS SUCH AS STREET TREES, COUNCIL PLANTING ETC SHALL BE RETAINED AND PROTECTED DURING CONSTRUCTION, UNLESS SPECIFIC APPROVAL HAS BEEN GRANTED FOR NEW WORK IN THIS AREA.

7. SPECIES MARKED WITH (★) SELECTED FROM NATIVE RIPARIAN SPECIES IN SYDNEY REGION.

TREES

- 

Botanical Name: *Melaleuca quinquenervia* ★
Common Name: Broad-leaved paperbark (Native)
Pot size: 100Lt
Mature H x S: 15m x 9m
Qty Required: 1
- 

Botanical Name: *Waterhouisia floribunda*
Common Name: Weeping Lilly Pilly (Native)
Pot size: 100Lt
Mature H x S: 10m x 6m
Qty Required: 1

SHADE & FERNS

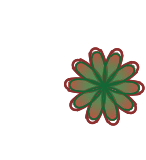
- 

Botanical Name: *Cyathea australis* ★
Common Name: Rough Tree Fern (Native)
Pot size: 45L (Min 1m trunk)
Mature H x S: 2.5-5m x 3m
Qty Required: 6
- 

Botanical Name: *Dicksonia antarctica*
Common Name: Australian Tree Fern (Native)
Pot size: 45L (Min 1m trunk)
Mature H x S: 2.5-5m x 3m
Qty Required: 6
- 

Botanical Name: *Pholidendron 'Xanadu'*
Common Name: Xanadu Plant (Exotic)
Pot size: 200mm
Mature H x S: 0.7m x 0.7m
Qty Required: 30

ACEENTS

- 

Botanical Name: *Alcantarea imperialis 'Rubra'*
Common Name: Ruby Imperial Bromeliad (Exotic)
Pot size: 300mm
Mature H x S: 0.8m x 0.9m
Qty Required: 5

GRASSES + GROUNDCOVERS

- Native riparian species groundcover Mix A:**
- Asplenium australasicum* ★
 - Imperata cylindrica* ★
 - Fimbristylis diandra* ★
 - Juncus usitatus* ★
 - Doodia aspera* ★
 - Pandorea pandorana* ★
 - Dianella caerulea* ★
- Pot size:** Tubestock
Mature H x S: < 0.6m
Qty Required: 4/m² (134.5m² total)
- Native shade species groundcover Mix B:**
- Doodia aspera* ★
 - Asplenium australasicum* ★
 - Dichondra repens*
 - Viola hederacea*
 - Adiantum formosum* ★
 - Calochlaena dubia* ★
 - Blechnum cartilagineum* ★
- Pot size:** Tubestock
Mature H x S: < 0.6m
Qty Required: 4/m² (40.5m² total)

SAMPLE IMAGES

Images are diagrammatic only, and final planting species may vary, as determined by Council Approval



GENERAL NOTE:

Figured dimensions take preference to scale readings. Verify all dimensions on site. If any dimension is found to be incorrect, the Designer shall be responsible for any and all costs, damage, harm or injury whether material, consequential, direct or indirect, suffered by you or any other person as a result of your use of this drawing.

Copyright Statement: This drawing is the property of the Designer. All rights are reserved. It is to be used for the project only and is not to be reproduced, stored, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the Designer.

If the State of this drawing is not signed off by the Designer, it may be subject to change, deletion or amendment at the discretion of the Designer.

www.dialbeforeyoudig.com.au

DIAL 1100 BEFORE YOU DIG

ALA Associate

Bar Scale

0 2 4 6 8 10m

ORIENTATION

North Arrow

ARCHITECT:

GARTNER TROVATO ARCHITECTS

LANDSCAPE ARCHITECT:

Conzept Landscape Architects

Suite 101, 526 Miller Street, CAMMERAY NSW 2062

Phone: 9622 5312
Fax: 9209 4962
Mobile: 0413 861 551

www.conzept.net.au
enquiries@conzept.net.au

COUNCIL:

NORTHERN BEACHES

CLIENT:

MY MANLY VALE PTY LTD

REV DATE NOTATION/AMENDMENT

A	22.10.2021	Preliminary plan prepared for review
B	01.12.2021	Coordinate with architectural updates

PROJECT:

PROPOSED BOARDING HOUSE DEVELOPMENT

255 CONDOMINE STREET

BALGOWLAH

TITLE:

LANDSCAPE PLAN [SUB GROUND FLOOR & GROUND FLOOR]

DWG No: LPS34 22 - 153

PAGE NUMBER: 2

STATUS:

SECTION 34

SCALE: 1:100 @ A1

DATE: DEC 2021

DRAWN: R.H

CHECKED: R.F

LEGEND & SCHEDULE

NOTES:

1. ALL FINAL PLANT QUANTITIES INDICATED ON PLANS SHALL BE CHECKED AND VERIFIED BY SUCCESSFUL LANDSCAPE CONTRACTOR.

2. ANY PLANT SUBSTITUTES REQUIRED DUE TO UNAVAILABILITY SHALL BE RECOMMENDED BY THE LANDSCAPE CONTRACTOR TO BEST MATCH SUBSTITUTED PLANTS AND APPROVED PRIOR TO PURCHASING BY THE LANDSCAPE ARCHITECT.

3. WORKS CERTIFIED FOR FINAL OCCUPANCY CERTIFICATE ARE TO MATCH APPROVED LANDSCAPE PLANS.

4. LANDSCAPE CONTRACTOR SHALL LOCATE AND AVOID SITE STORM WATER & DRAINAGE SERVICES. LOCATE TREES A MINIMUM 1.25M FROM PITS.

5. ALL PLANTING AROUND EXISTING TREES SHALL BE ADJUSTED TO AVOID DAMAGE AND CLASHING WITH SURFACE ROOTS.

6. THE NATURE STRIP (STREET FRONTAGE) FOR THE SITE IS PUBLIC LAND, AND ONLY AUTHORIZED WORKS MAY OCCUR HERE. EXISTING CONDITIONS SUCH AS STREET TREES, COUNCIL PLANTING ETC SHALL BE RETAINED AND PROTECTED DURING CONSTRUCTION, UNLESS SPECIFIC APPROVAL HAS BEEN GRANTED FOR NEW WORK IN THIS AREA.

TREES

- Botanical Name:** *Waterhousia floribunda*
Common Name: Weeping Lilly Pilly (Native)
Pot size: 100Lt
Mature H x S: 10m x 6m
Qty Required: 1
- Botanical Name:** *Backhousia myrtifolia*
Common Name: Grey Myrtle (Native)
Pot size: 100Lt
Mature H x S: 4-6m x 2-4m
Qty Required: 2

SHRUBS AND HEDGES

- Botanical Name:** *Callistemon 'Better John'*
Common Name: Better John Bottlebrush (Native)
Pot size: 200mm
Mature H x S: 1m x 0.9m
Qty Required: 3
- Botanical Name:** *Banksia 'Birthday Candles'*
Common Name: Banksia Birthday Candles (Native)
Pot size: 200mm
Mature H x S: 0.6m x 0.9m
Qty Required: 6

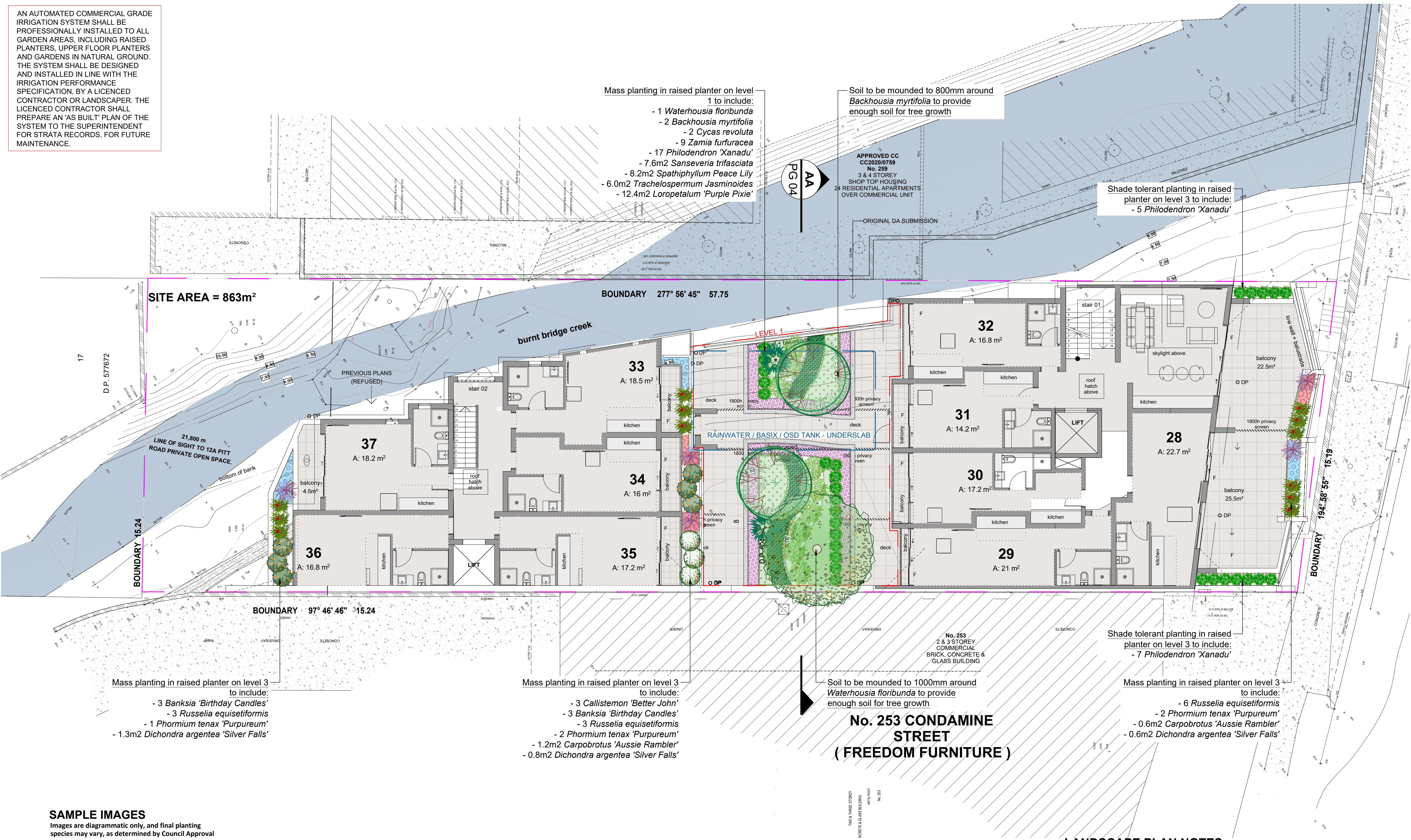
ACCENT PLANTS

- Botanical Name:** *Cycas revoluta*
Common Name: Sago Palm (Native)
Pot size: 1m trunks
Mature H x S: 3m x 3m
Qty Required: 2
- Botanical Name:** *Zamia furfuracea*
Common Name: Cardboard Palm (Exotic)
Pot size: 200mm
Mature H x S: 1m x 1.25m
Qty Required: 9
- Botanical Name:** *Phormium tenax 'Purpureum'*
Common Name: New Zealand Flax (Exotic)
Pot size: 300mm
Mature H x S: 0.9m x 0.9m
Qty Required: 5
- Botanical Name:** *Russelia equisetiformis*
Common Name: Firecracker (Exotic)
Pot size: 200mm
Mature H x S: 1m x 1.2m
Qty Required: 12
- Botanical Name:** *Philodendron 'Xanadu'*
Common Name: Xanadu Plant (Exotic)
Pot size: 200mm
Mature H x S: 0.7m x 0.7m
Qty Required: 29

GRASSES + GROUNDCOVERS

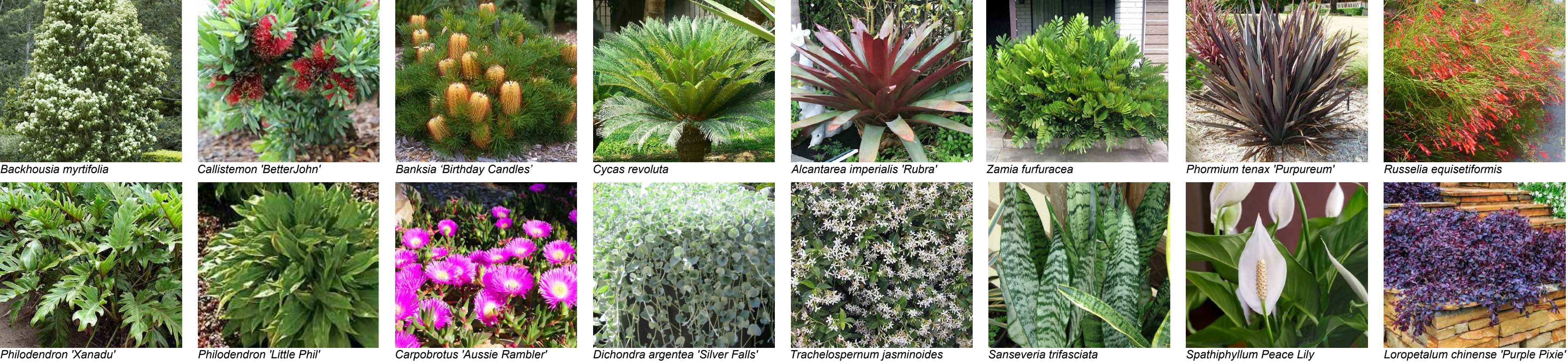
- Botanical Name:** *Carpobrotus 'Aussie Rambler'*
Common Name: Aussie Rambler Pigface (Native)
Pot size: 140mm
Mature H x S: 0.25m x spreading
Qty Required: 7/m2 (1.8m2 total)
- Botanical Name:** *Dichondra argentea 'Silver Falls'*
Common Name: Silver Falls Dichondra (Exotic)
Pot size: 140mm
Mature H x S: 0.15m x spreading
Qty Required: 9/m2 (2.7m2 total)
- Botanical Name:** *Trachelospermum Jasminoides*
Common Name: Star Jasmine (Exotic)
Pot size: 140mm
Mature H x S: 0.3m x 0.6m
Qty Required: 5/m2 (6.0m2 total)
- Botanical Name:** *Sanseveria trifasciata*
Common Name: Snake Plant (Exotic)
Pot size: 140mm
Mature H x S: 0.8m x 0.5m
Qty Required: 5/m2 (7.6m2 total)
- Botanical Name:** *Spathiphyllum Peace Lily*
Common Name: Peace Lily (Native)
Pot size: 140mm
Mature H x S: 0.4m x 0.5m
Qty Required: 7/m2 (8.2m2 total)
- Botanical Name:** *Loropetalum chinense 'Purple Pixie'*
Common Name: Purple Pixie (Exotic)
Pot size: 140mm
Mature H x S: 0.5m x 0.8m
Qty Required: 5/m2 (12.4m2 total)

AN AUTOMATED COMMERCIAL GRADE IRRIGATION SYSTEM SHALL BE PROFESSIONALLY INSTALLED TO ALL GARDEN AREAS, INCLUDING RAISED PLANTERS, UPPER FLOOR PLANTERS AND GARDENS IN NATURAL GROUND. THE SYSTEM SHALL BE DESIGNED AND INSTALLED IN LINE WITH THE IRRIGATION PERFORMANCE SPECIFICATION, BY A LICENCED CONTRACTOR OR LANDSCAPER. THE LICENCED CONTRACTOR SHALL PREPARE AN 'AS BUILT' PLAN OF THE SYSTEM TO THE SUPERINTENDENT FOR STRATA RECORDS, FOR FUTURE MAINTENANCE.



SAMPLE IMAGES

Images are diagrammatic only, and final planting species may vary, as determined by Council Approval



LANDSCAPE PLAN NOTES

This plan should be read in conjunction with the architectural and hydraulics plans. Work specific to these plans should be prepared in accordance to these plans, including specification and details prior to the installation of landscaping, and should not be altered or compromised during landscape construction. **Retaining wall details to engineers design.**

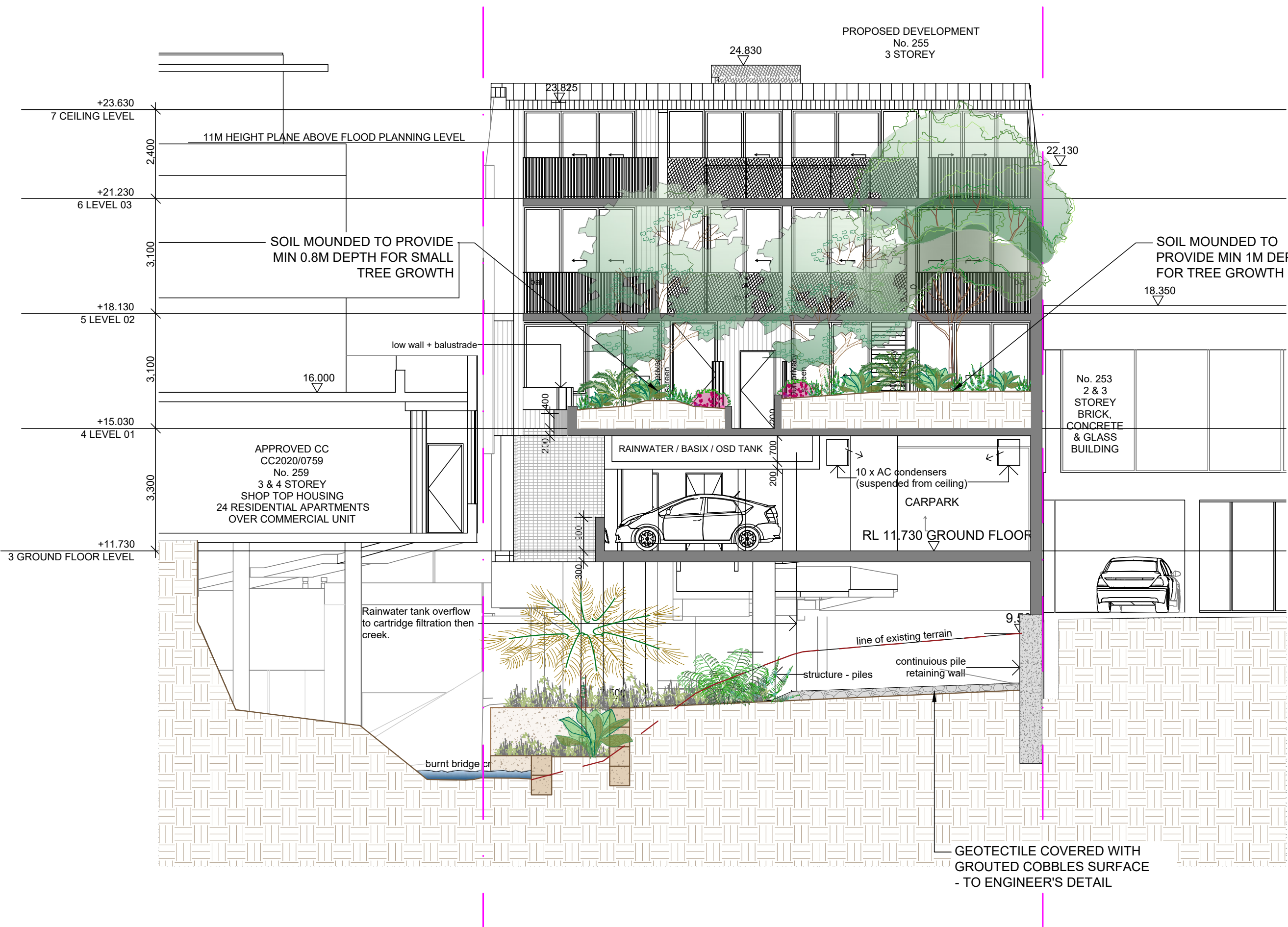
Elements such as drainage swales may be incorporated in garden bed areas (using non-floatable mulch) without compromising the capacity or form.

This plan has been prepared for Section 34 approval only, not for construction.

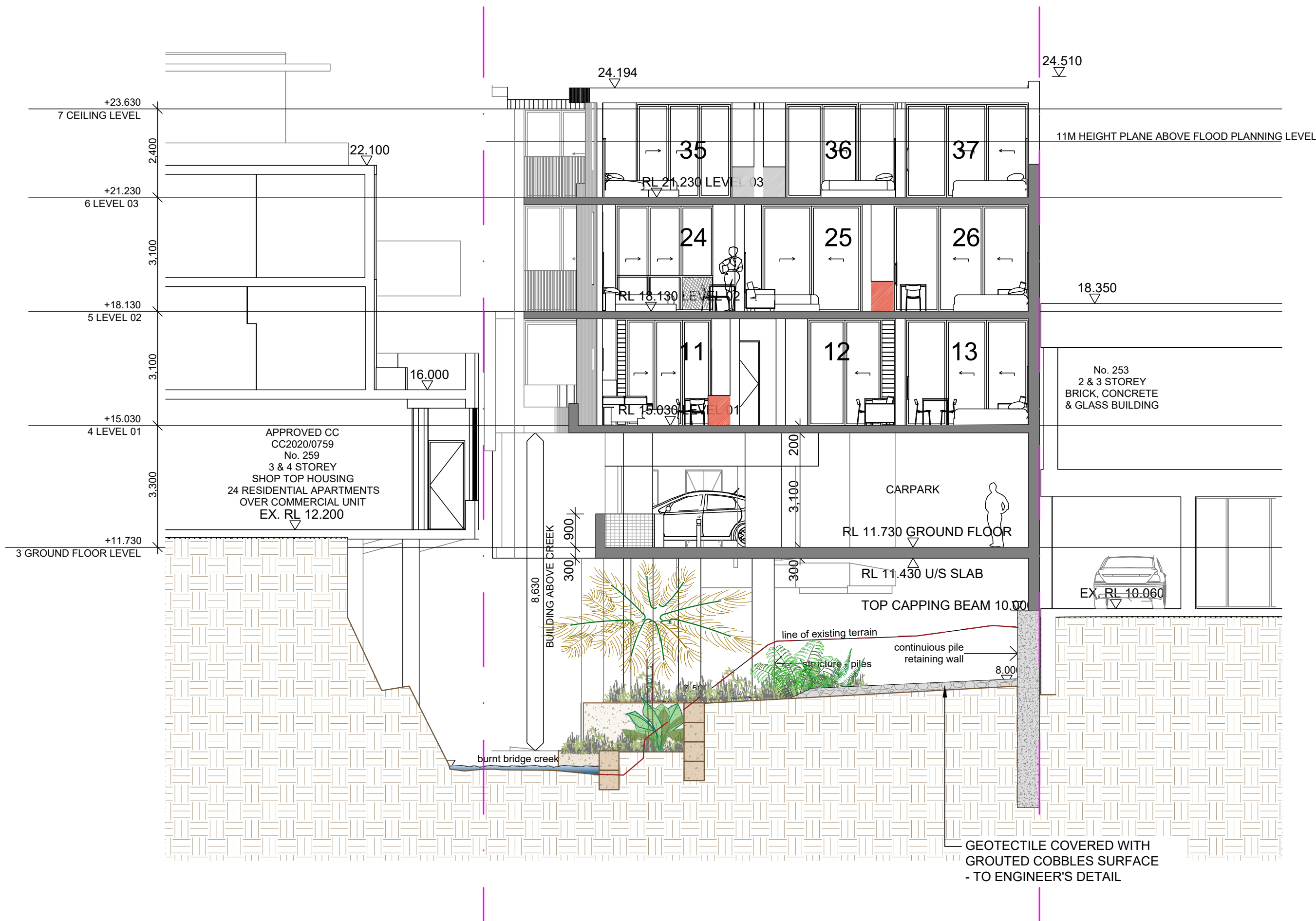
This plan has been prepared with reference to **NORTHERN BEACHES** Landscaping Guidelines & requirements. Planting proposed using commercially available plant species selected from local planting lists and the BASIX local plant list and from Sydney Waters "Plant Selector" web site one-drip rated native plants (**acceptable for BASIX planting**).

The Design & location of new letter boxes shall be in accordance with Australia Post's "Requirements for Delivery of Mail to Residential Premises" published Feb '97. All noxious weeds listed in Councils weed lists & located on the site shall be continually removed & suppressed. Reinstall all boundary fencing in poor condition with Council approved 1.8m fencing to rear of building line, rake to 1m forward of BL. Pollution, sediment & erosion control devices as specified shall be in place, and maintained for the duration of the construction period. Proposed excavation near existing established trees to be supervised by arborist.

NORTHERN BEACHES approved landscape plan's are required to be constructed as approved to obtain occupancy certificate. **Permeable areas may be indicated to achieve site coverage restrictions & should be constructed as drawn on this plan.**



SECTION AA
SCALE: 1:100

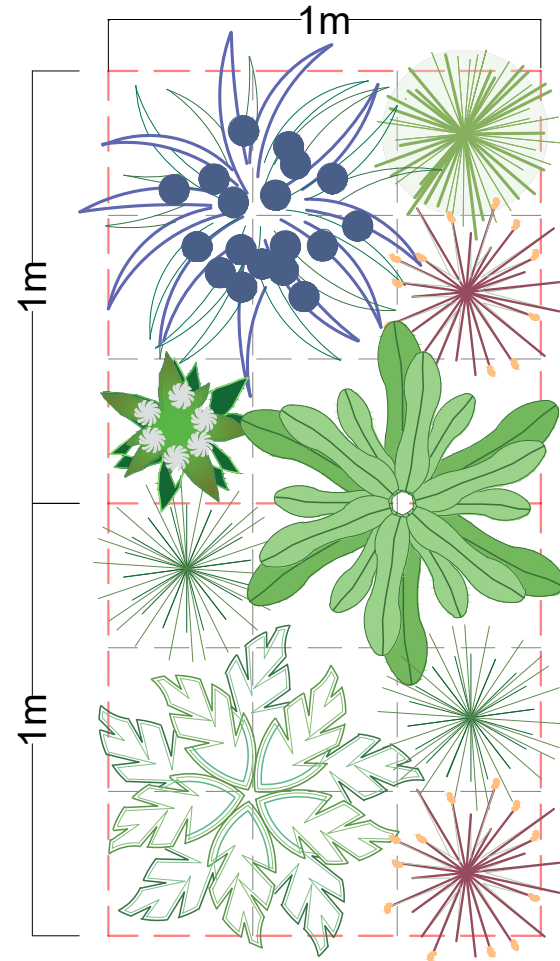


SECTION BB
SCALE: 1:100

NATIVE RIPARIAN SPECIES GROUNDCOVER MIX A

KEY	Botanical Name	Common Name
	<i>Asplenium australasicum</i>	Birds Nest Fern
	<i>Imperata cylindrica</i>	Cogon Grass
	<i>Fincia nodosa</i>	Knobby Club Rush
	<i>Juncus usitatus</i>	Common Rush
	<i>Doodia aspera</i>	Prickly Rasp Fern
	<i>Pandorea pandorana</i>	Wonga Wonga Vine
	<i>Dianella caerulea</i>	Blue Flax Lily

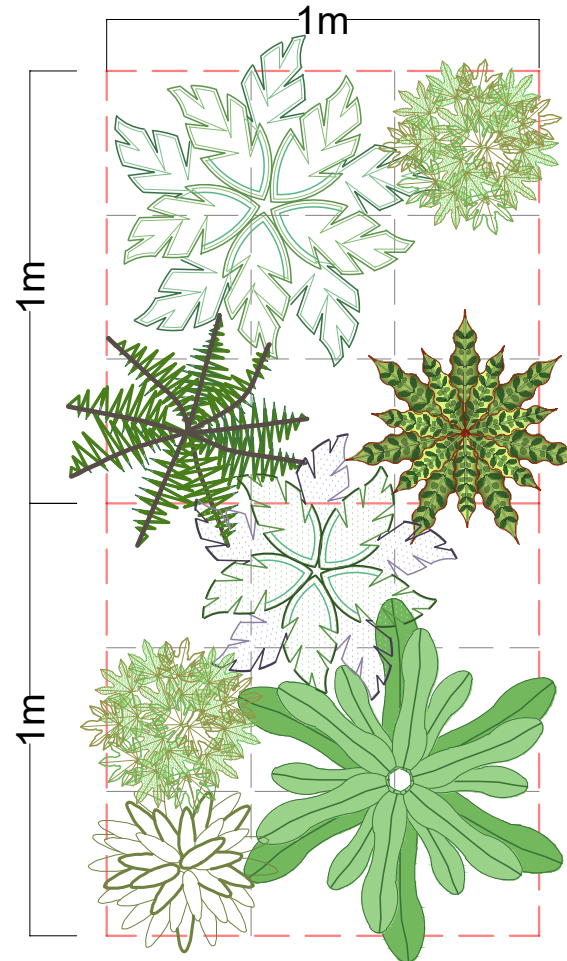
Note: ALL SPECIES IN TUBE STOCK SIZE



NATIVE SHADE GROUNDCOVER MIX B

KEY	Botanical Name	Common Name
	<i>Doodia aspera</i>	Prickly Rasp Fern
	<i>Asplenium australasicum</i>	Birds Nest Fern
	<i>Dichondra repens</i>	Kidney Weed
	<i>Viola hederacea</i>	Sweet Violet
	<i>Adiantum formosum</i>	Black Stem
	<i>Calochlaena dubia</i>	Soft Bracken
	<i>Blechnum cartilagineum</i>	Gristle Fern

Note: ALL SPECIES IN TUBE STOCK SIZE



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, project arborist's assessment, 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 landscape works and handover pour.
 - 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 in accordance with (AS14870-Protection of trees on development sites as well as in accordance with the tree protection measures prepared by project arborist.

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 bales & geotextile sediment filter.
 - Exposed banks shall be pegged with an approved Jute matting in preparation for mass planting

Refer to "Stitewise 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, clay 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 (TO GARDEN OUTSIDE OF TREE PROTECTION ZONES OF TREES RECOMMENDED TO BE RETAINED)

Note: No level changes (Cut or Fill), soil ripping within the Tree Protection Zones of trees to be retained

a) Testing

All testing is to be conducted in accordance with AS 1289 Methods for testing soils for engineering purposes. Site soil shall be given a pH test prior to modifying to ensure conditions are appropriate for planting as stated above. Tests shall be taken in several areas where planting is proposed, and the pH shall be adjusted accordingly with sulphur or lime to suit.

Note that a soil test conducted by the "Sydney Soil Lab" or approved equal shall be required for all commercial, industrial and multi-unit residential sites. The successful landscape contractor shall implement the recommendations of this test.

b) Set Out of Individual Trees & Mass Planting Areas

All individual tree planting positions and areas designated for mass planting shall be set out with stakes or another form of marking, ready for inspection and approval. Locate all services.

c) Establishing Subgrade Levels outside of tree protection zones of trees to be retained

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.

d) 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 fifth. Grade subgrades to provide falls to surface and subsurface drains, prior to the placement of the final specified soil mix.

e) 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.

f) 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 fifth 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 provide 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 AS 2303:2018 'TREE STOCK FOR LANDSCAPE USE' Certification that trees have been grown to AS 2303:2018 is to be provided upon request of Council's Tree Management Officer.

Below - 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. 3 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 1800mm x 50mm x 50mm Hardwood timber, or as per council specification where is available. 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 for general planter bed 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. Mulch for bio-retention/vain garden area where is required shall be non-flammable materials that could include crushed rock, gravel, coarse river sand, scoria or river pebbles. 4-7mm screenings or similar.

e) Turf

Turf for project site shall be soft leaf Buffalo or Zoysia macrantha 'Nana' or equivalent unless stated otherwise), free from any weeds and other grasses, and be in a healthy growing condition. Re-turfing to nature strip where is required shall use species that match existing on street.

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 for general planter bed 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. Mulch for bio-retention/vain garden area where is required shall be non-flammable materials that could include crushed rock, gravel, scoria or river pebbles. 4-7mm screenings or similar.

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) XXXXXXX

Where is required, the Contractor shall install xxxxxx as detailed 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. However, no edging shall be used within the Structural Root Zone (SRZ) of trees to be retained.

g) Earth retaining structure

All walls which form part of drainage works must be built as detailed by the hydraulic engineer. All walls exceeding 800mm shall be of cast in situ concrete construction materials, construction details to be provided by a qualified engineer. Install wall to suit site levels and to manufacturer's specification.

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 brought 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 owners 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)

New irrigation systems to planting areas shall be a Commercial Grade Irrigation System conforming to all relevant Australian standards, including AS 3500 & the Electrical Safety Act 2002, Workplace Health & Safety Act 2011, & the latest Sydney Water Code

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, NORTHERN BEACHES 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.

CONSOLIDATION AND MAINTENANCE

6.01 GENERAL

The consolidation and maintenance period shall be either:

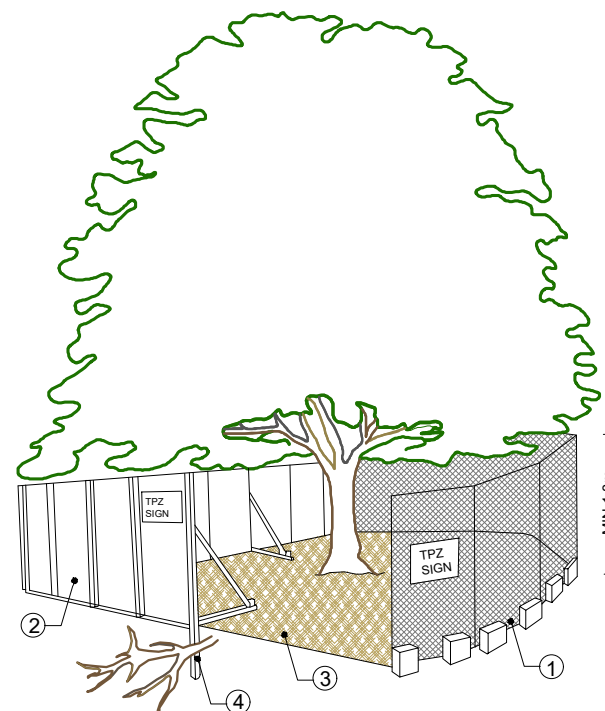
- 6 months beginning from the approved completion of the specified construction work (Practical Completion)
- as agreed to in the landscape contractors contractual obligations.
- or as specified by Council in the Determination.

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 as required:

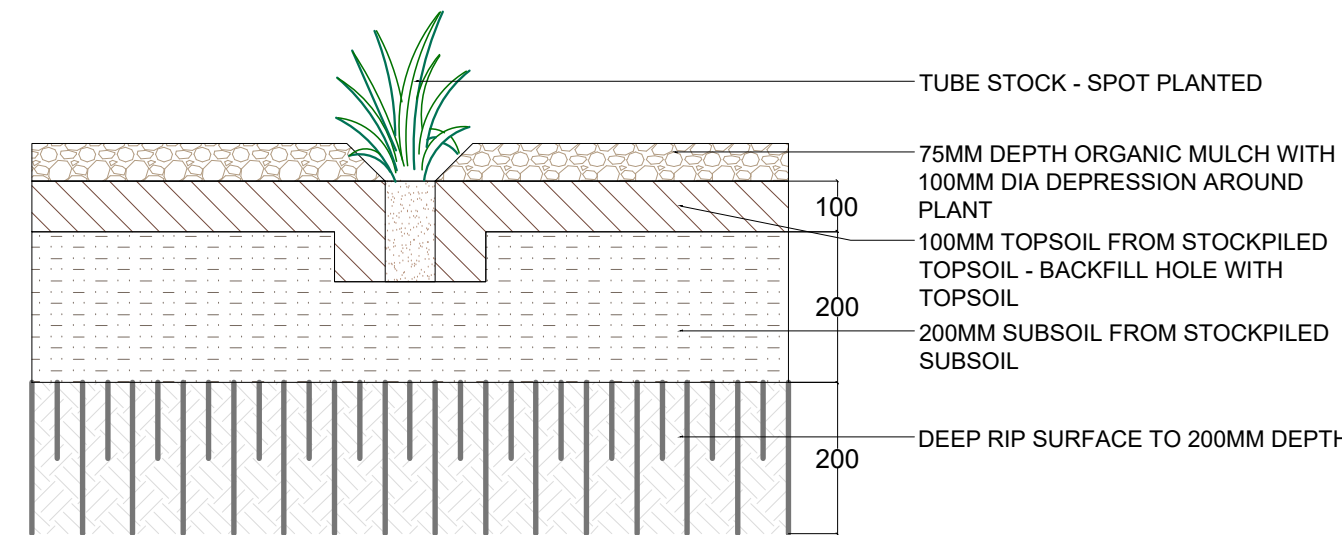
- Watering all planting and lawn areas / irrigation maintenance.
- Cleaning filter and other debris from landscaped areas.
- Removing weeds, pruning and general plant maintenance.
- Replacement of damaged, stolen or unhealthy plants.
- Make good areas of soil subsidence or erosion.
- Topping up of mulched 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.

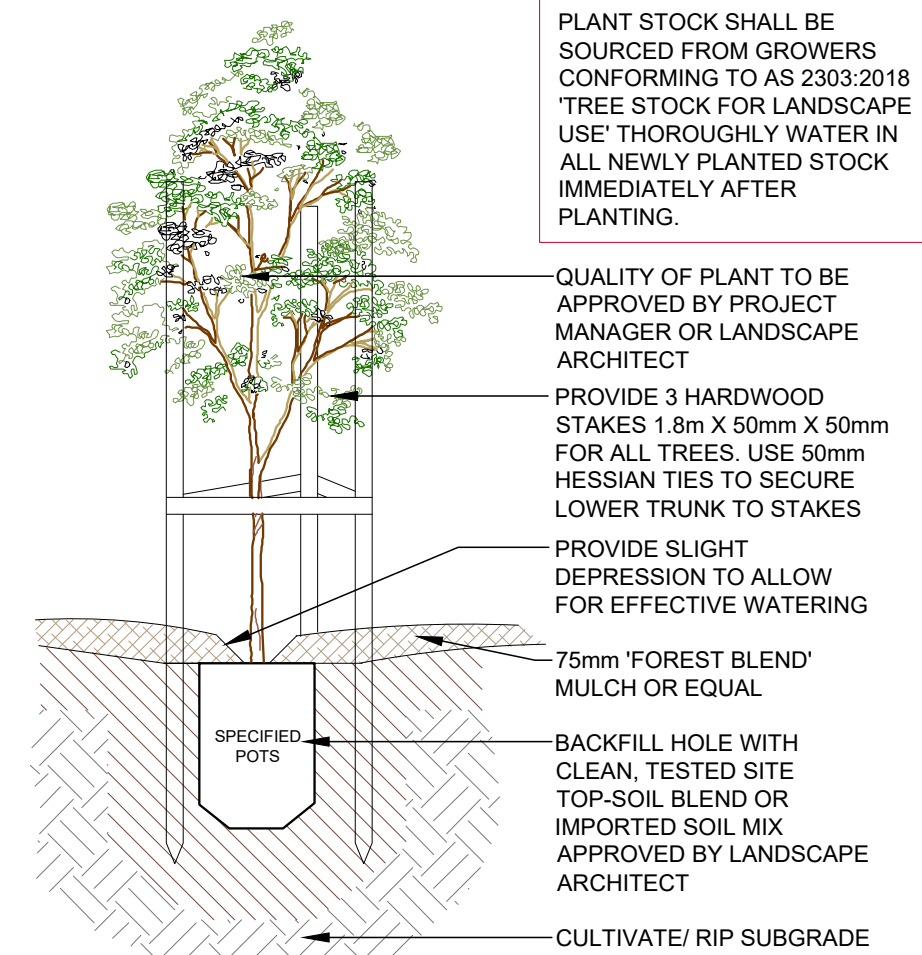


PROVIDE FENCING AS DETAILED TO ALL TREES PROPOSED TO BE RETAINED ON THE SUBJECT SITE. FENCING TO BE LOCATED TO THE DRIP LINE OF TREES OR AS INDICATED ON PLANS OR DIRECTED ON-SITE BY ARBORIST. NO STOCKPILING WITHIN FENCE PERIMETERS.

TREE PROTECTION ZONE
N.T.S



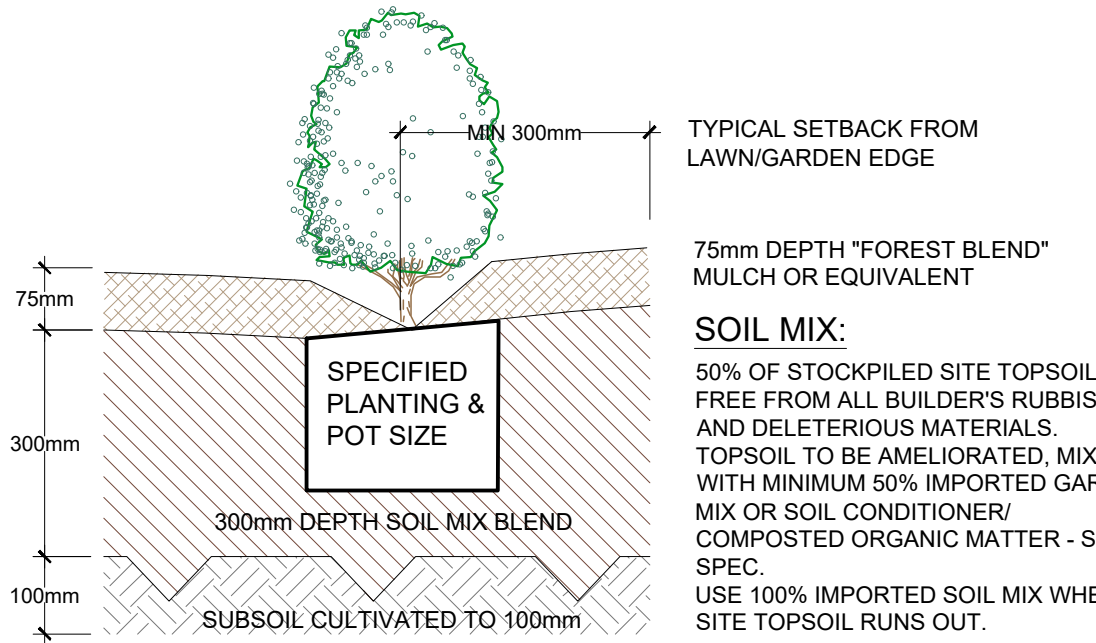
TUBE STOCK PLANTING DETAIL
SCALE 1:10



TREE PLANTING DETAIL

SCALE: 1:10

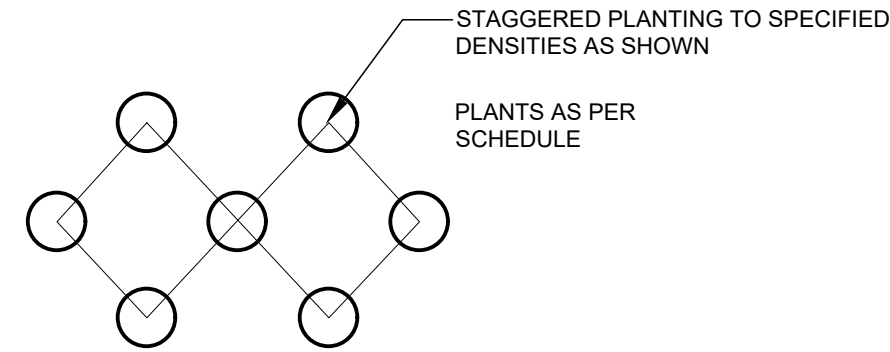
(ONLY APPLICABLE FOR PLANTING AREA OUTSIDE TREE PROTECTION ZONE OF TREES TO BE RETAINED. NO CHANGES ARE TO OCCUR TO EXISTING LEVELS, INCLUDING RIPPING/CULTIVATING OF THE SOIL WITHIN THE TPZ OF TREES TO BE RETAINED ON SITE)



TYPICAL GARDEN PREPARATION DETAIL

SCALE 1:10

(ONLY APPLICABLE FOR PLANTING AREA OUTSIDE TREE PROTECTION ZONE OF TREES TO BE RETAINED. NO CHANGES ARE TO OCCUR TO EXISTING LEVELS, INCLUDING RIPPING/CULTIVATING OF THE SOIL WITHIN THE TPZ OF TREES TO BE RETAINED ON SITE)



MASS PLANTING SETOUT
N.T.S



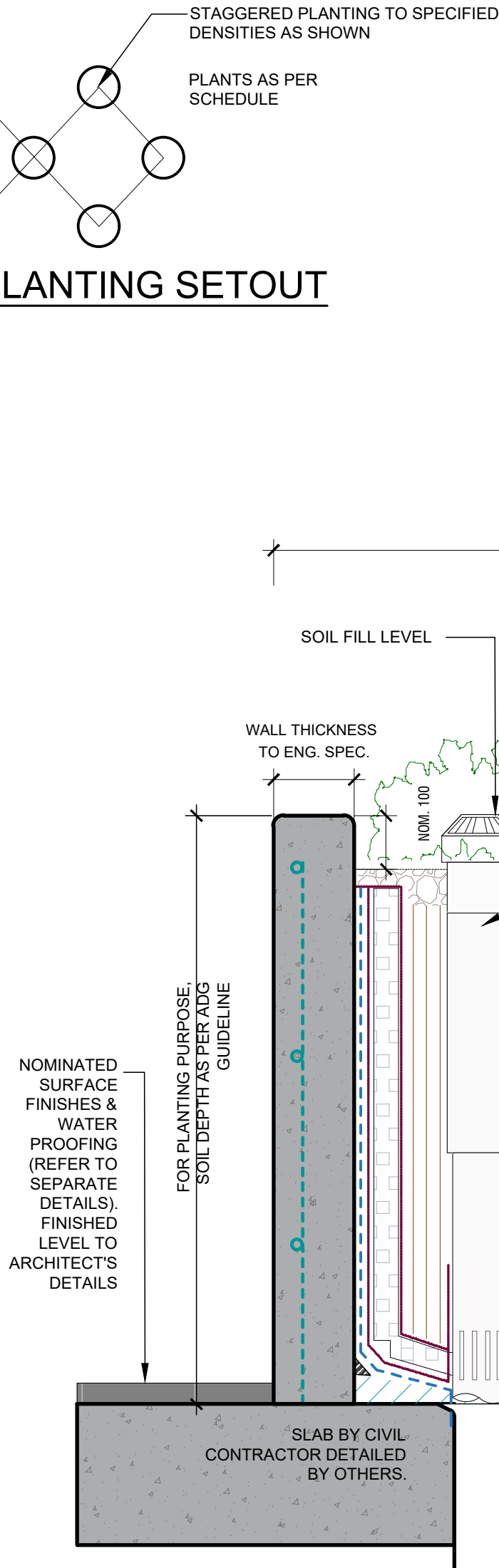
OVERFLOW (TO SUPPLIER'S SPECIFICATION)

NOTE (BCA COMPLIANCE). WHERE NO EXTERNAL BALUSTRADE IS PROPOSED. THE INTERNAL PLANTER WALL FACE MUST BE NON-CLIMBABLE TO A HEIGHT TO MEET AS & BCA COMPLIANCE.

NOTE (DRAINAGE & WATER PROOFING). DRAINAGE PITS AND LAYOUT TO BE NOMINATED BY HYDRAULIC ENGINEER TO WORK WITH STRUCTURAL DESIGN AND LANDSCAPE.

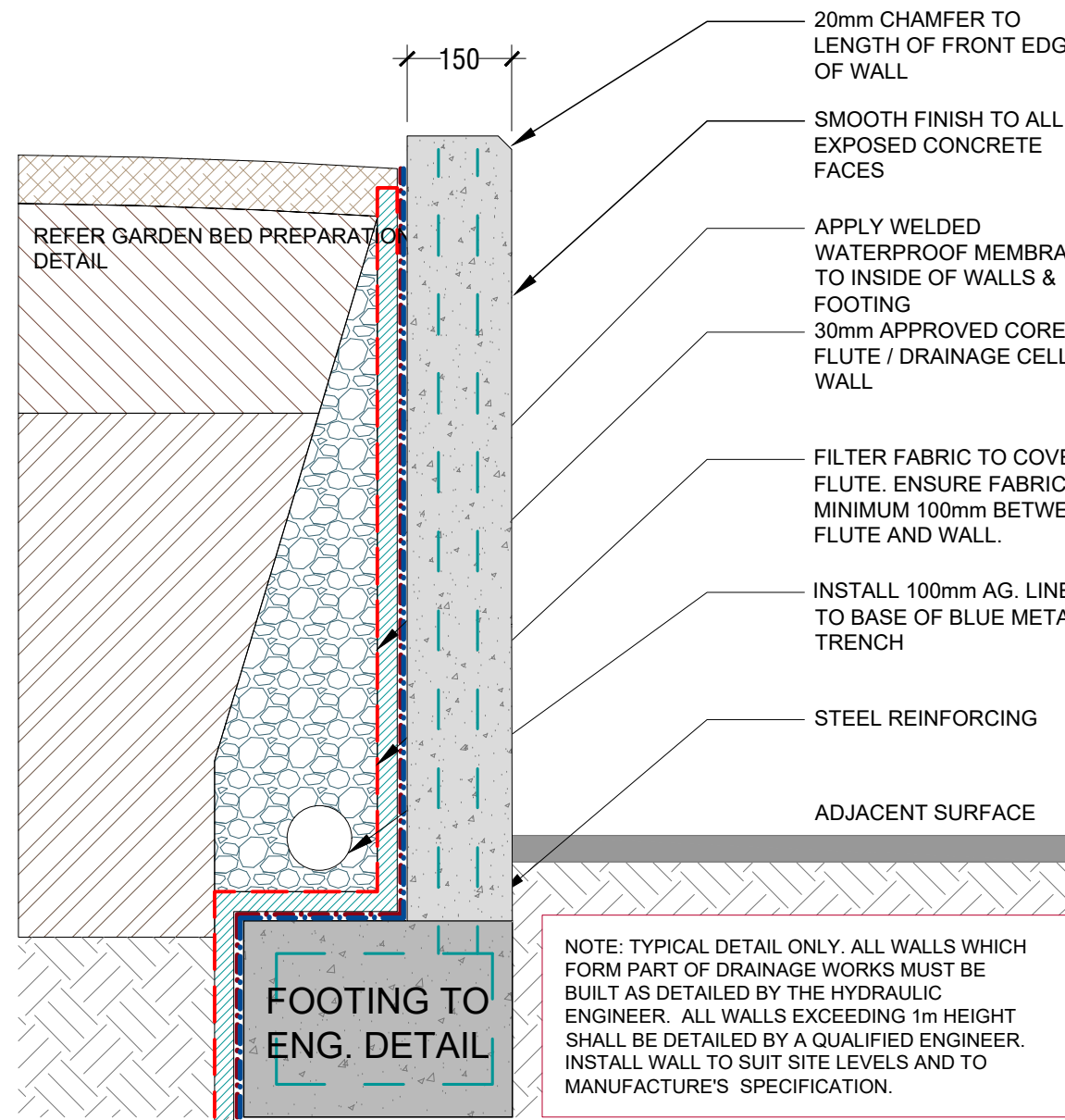
THE WATERPROOFING, APPROVED DRAINAGE CELL AND SPECIFIED GEOFABRIC LAYER IN THIS DETAIL ARE INDICATIVE ONLY AND SHOULD BE DETAILED BY THE RELEVANT PROFESSIONAL ENGINEER FOR CONSTRUCTION.

UNDER THE CONSTRUCTION PRACTITIONER BILL, STRUCTURAL WATER-PROOFING SHALL BE DOCUMENTED BY A HYDRAULIC ENGINEER



INSITU CONCRETE PLANTER ON SLAB DETAIL

SCALE: 1:10



TYPICAL IN SITU RETAINING WALL DETAIL

SCALE 1:10

GENERAL NOTE:

Figured dimensions take preference to scale readings. Verify all dimensions on drawings. If any dimension is shown in green, it is a critical dimension. If any dimension is shown in red, it is a critical dimension. If any dimension is shown in blue, it is a critical dimension. If any dimension is shown in yellow, it is a critical dimension. If any dimension is shown in orange, it is a critical dimension. If any dimension is shown in purple, it is a critical dimension. If any dimension is shown in pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension. If any dimension is shown in light pink, it is a critical dimension. If any dimension is shown in light blue, it is a critical dimension. If any dimension is shown in light green, it is a critical dimension. If any dimension is shown in light yellow, it is a critical dimension. If any dimension is shown in light orange, it is a critical dimension. If any dimension is shown in light purple, it is a critical dimension.

PROJECT: **PROPOSED BOARDING HOUSE**

PLANSET: **STORMWATER MANAGEMENT PLAN**

CLIENT: MY MANLY VALE PTY LTD

DRAWING LIST		
DWG NO.	REV	DWG TITLE
GENERAL		
PS06-A000	A	COVER SHEET
DRAINAGE		
PS06-E100	A	DRAINAGE LAYOUT FOR SUBGROUND FLOOR
PS06-E101	A	DRAINAGE LAYOUT FOR GROUND FLOOR
PS06-E102	A	DRAINAGE LAYOUT FOR FIRST FLOOR
PS06-E200	A	TYPICAL SECTION OF BIORETENTION BASIN & RAINWATER TANK
PS06-E700	A	WATER QUALITY CATCHMENT PLANS, MODELS & RESULTS



LOCALITY PLAN
NOT TO SCALE

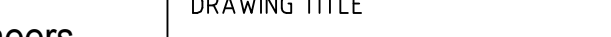
LGA: NORTHERN BEACHES COUNCIL

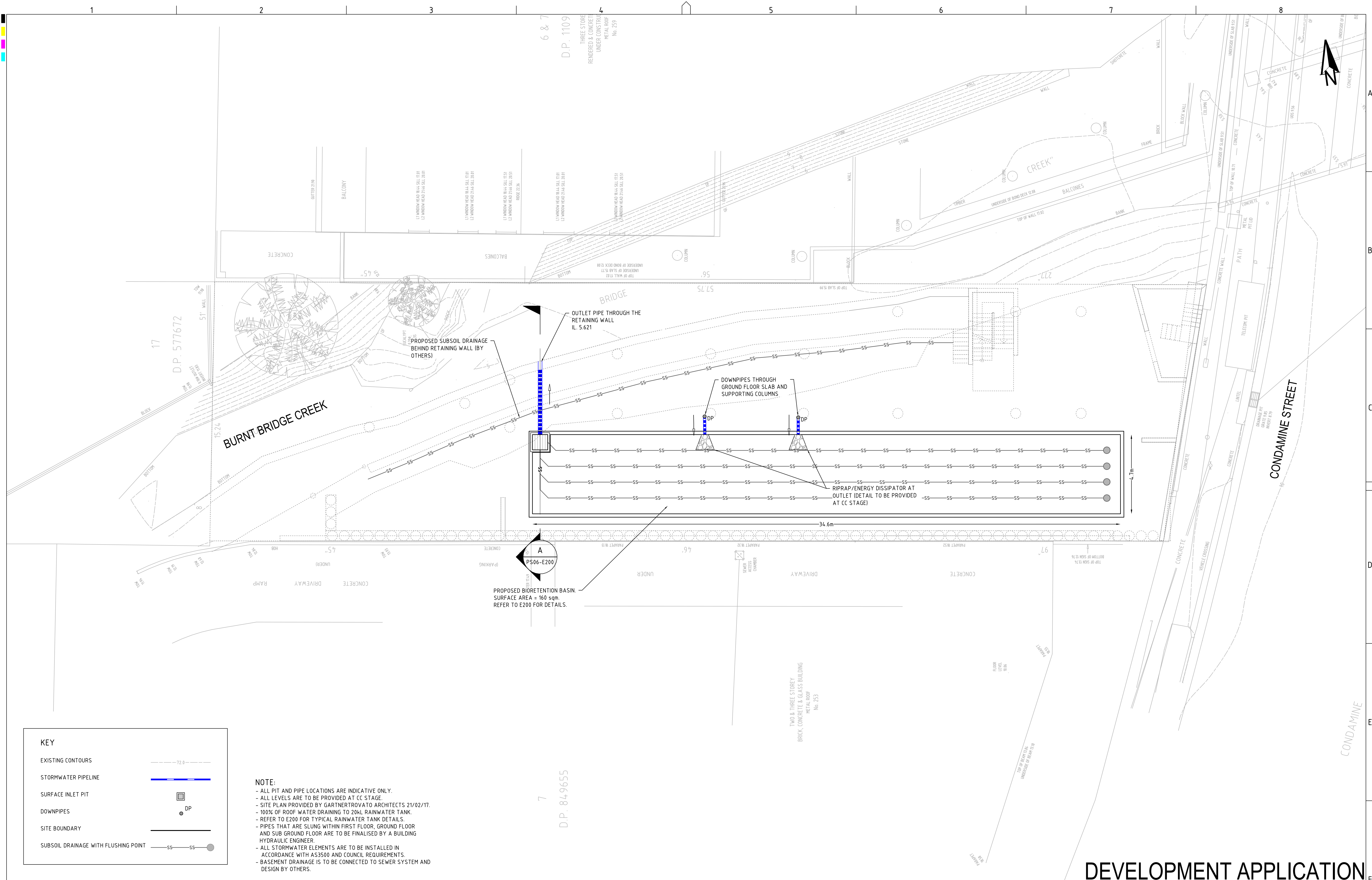
255 CONDOMINE STREET, MANLY VALE NSW
LOT 8 DP 604034

GENERAL NOTES:

1. THIS PLAN IS FOR DEVELOPMENT APPLICATION PURPOSE AND NOT FOR CONSTRUCTION. DESIGN TO BE REVIEWED AND UPDATED FOR CONSTRUCTION CERTIFICATE.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH, AND THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE RELEVANT AUSTRALIAN STANDARDS, COUNCIL SPECIFICATIONS, AND ALL PROJECT CONSULTANT'S PLANS AND REPORTS.
3. INTERNAL SURVEY INFORMATION SHOWN BASED ON SURVEY INFORMATION PROVIDED BY LAND & ENGINEERING SURVEYORS 20/09/2016.
4. EXTERNAL SITE BOUNDARY BASED ON INFORMATION PROVIDED BY AUSTRALIAN SURVEY SOLUTIONS.
5. LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
6. FINAL SURFACE CONTOURS ARE BASED ON PROPOSED AND EXISTING AND LIDAR SURFACE.

DEVELOPMENT APPLICATION

REV		DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au		DRAWING TITLE				
A		INITIAL RELEASE	03/08/2021	JS	EZ	SA	AN		---	---	AN	MY MANLY VALE PTY LTD			COVER SHEET				
												PROJECT NAME/PLANSET TITLE			PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
												PROPOSED BOARDING HOUSE			P1605609	PS06	R01	PS06-A000	A
												STORMWATER MANAGEMENT PLAN							
												255 CONDOMINE STREET, MANLY VALE NSW							
DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd (C) Copyright Martens & Associates Pty Ltd																			
PRINTED: --- USER: SOURCE X1 / A3 LANDSCAPE (A1/L v02.0.01)														DRAWING ID: P16055609-PS06-R01-A000					



KEY

EXISTING CONTOURS

STORMWATER PIPELINE

SURFACE INLET PIT

DOWNPIPES

SITE BOUNDARY

SUBSOIL DRAINAGE WITH FLUSHING POINT

72.0

DP

NOTE:

- ALL PIT AND PIPE LOCATIONS ARE INDICATIVE ONLY.

- ALL LEVELS ARE TO BE PROVIDED AT CC STAGE.

- SITE PLAN PROVIDED BY GARTNERTROVATO ARCHITECTS 21/02/17.

- 100% OF ROOF WATER DRAINING TO 20KL RAINWATER TANK.

- REFER TO E200 FOR TYPICAL RAINWATER TANK DETAILS.

- PIPES THAT ARE SLUNG WITHIN FIRST FLOOR, GROUND FLOOR AND SUB GROUND FLOOR ARE TO BE FINALISED BY A BUILDING HYDRAULIC ENGINEER.

- ALL STORMWATER ELEMENTS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500 AND COUNCIL REQUIREMENTS.

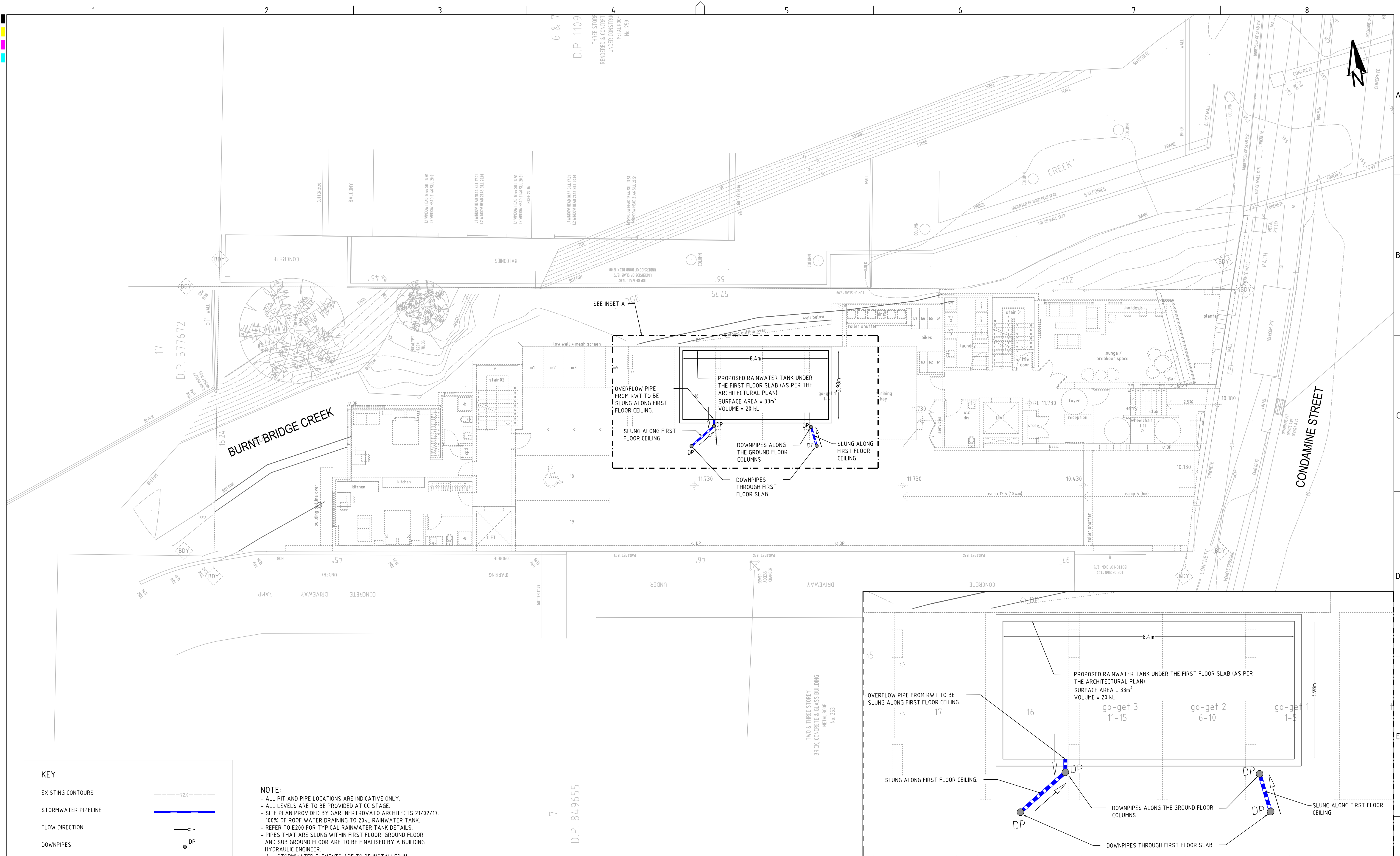
- BASEMENT DRAINAGE IS TO BE CONNECTED TO SEWER SYSTEM AND DESIGN BY OTHERS.

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	martens & Associates Pty Ltd		Consulting Engineers		DRAWING TITLE	
A	INITIAL RELEASE	03/08/2021	JS	EZ	SA	AN	A1 (A3) 1:100 (1:200)	MGA	mAHD	AN	MY MANLY VALE PTY LTD	PROJECT NAME/PLANSET TITLE		Environment Water Geotechnical Civil		DRAINAGE LAYOUT FOR SUBGROUND FLOOR	
											PROPOSED BOARDING HOUSE	255 CONDOMINE STREET, MANLY VALE NSW		Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au		PROJECT NO. P1605609	
														PLANSET NO. PS06		RELEASE NO. R01	
														DRAWING NO. PS06-E100		REVISION A	

PRINTED: 11/08/2021 11:00:00 AM

A1 / A3 LANDSCAPE (A1LC_02.0.01)

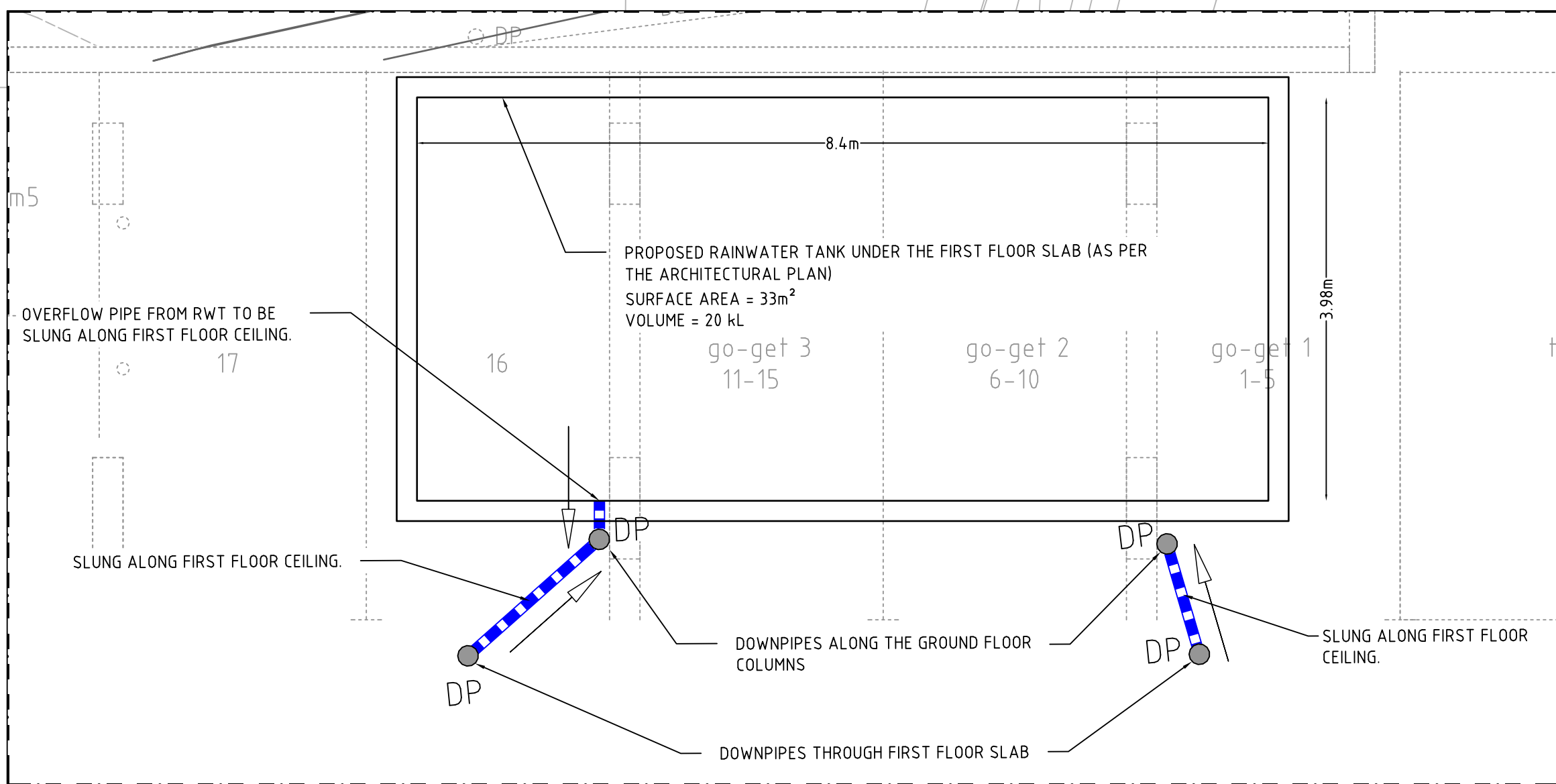
DRAWING ID: P1605609-PS06-R01-E100



- KEY**
- EXISTING CONTOURS
 - STORMWATER PIPELINE
 - FLOW DIRECTION
 - DOWNPINES
 - SITE BOUNDARY

NOTE:

- ALL PIT AND PIPE LOCATIONS ARE INDICATIVE ONLY.
- ALL LEVELS ARE TO BE PROVIDED AT CC STAGE.
- SITE PLAN PROVIDED BY GARTNERTROVATO ARCHITECTS 21/02/17.
- 100% OF ROOF WATER DRAINING TO 20kL RAINWATER TANK.
- REFER TO E200 FOR TYPICAL RAINWATER TANK DETAILS.
- PIPES THAT ARE SLUNG WITHIN FIRST FLOOR, GROUND FLOOR AND SUB GROUND FLOOR ARE TO BE FINALISED BY A BUILDING HYDRAULIC ENGINEER.
- ALL STORMWATER ELEMENTS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500 AND COUNCIL REQUIREMENTS.
- BASEMENT DRAINAGE IS TO BE CONNECTED TO SEWER SYSTEM AND DESIGN BY OTHERS.



INSET A DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT		Consulting Engineers Environment Water Geotechnical Civil	DRAWING TITLE				
A	INITIAL RELEASE	03/08/2021	JS	EZ	SA	AN	A1 (A3) 1:100 (1:200)	MGA	mAHD	AN	MY MANLY VALE PTY LTD			DRAINAGE LAYOUT FOR GROUND FLOOR				
											PROJECT NAME/PLANSET TITLE			PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
											PROPOSED BOARDING HOUSE STORMWATER MANAGEMENT PLAN			P1605609	PS06	R01	PS06-E101	A
											255 CONDOMINE STREET, MANLY VALE NSW							
														Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au				
														DRAWING ID: P1605609-PS06-R01-E101				

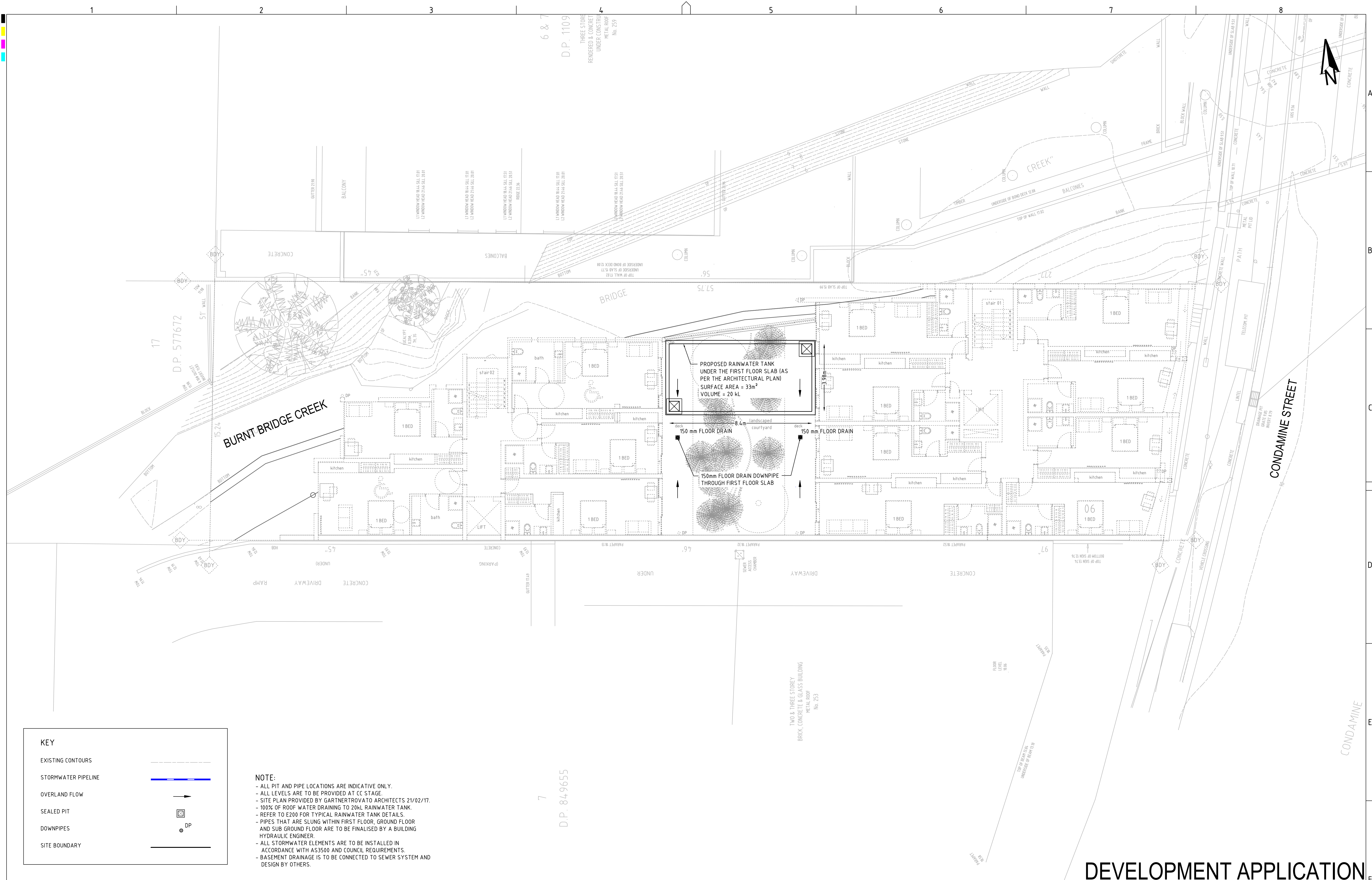
DISCLAIMER & COPYRIGHT

This plan must not be used for construction unless signed as approved by principal certifying authority.

All measurements in millimetres unless otherwise specified.

This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.

(C) Copyright Martens & Associates Pty Ltd



- KEY**
- EXISTING CONTOURS
 - STORMWATER PIPELINE
 - OVERLAND FLOW
 - SEALED PIT
 - DOWNPIPES
 - SITE BOUNDARY

NOTE:

- ALL PIT AND PIPE LOCATIONS ARE INDICATIVE ONLY.
- ALL LEVELS ARE TO BE PROVIDED AT CC STAGE.
- SITE PLAN PROVIDED BY GARTNERTROVATO ARCHITECTS 21/02/17.
- 100% OF ROOF WATER DRAINING TO 20kL RAINWATER TANK.
- REFER TO E200 FOR TYPICAL RAINWATER TANK DETAILS.
- PIPES THAT ARE SLUNG WITHIN FIRST FLOOR, GROUND FLOOR AND SUB GROUND FLOOR ARE TO BE FINALISED BY A BUILDING HYDRAULIC ENGINEER.
- ALL STORMWATER ELEMENTS ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500 AND COUNCIL REQUIREMENTS.
- BASEMENT DRAINAGE IS TO BE CONNECTED TO SEWER SYSTEM AND DESIGN BY OTHERS.

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
A	INITIAL RELEASE	03/08/2021	JS	EZ	SA	AN

SCALE
A1 (A3) 1:100 (1:200)

GRID
MGA
DATUM
mAHD
PROJECT MANAGER
AN
CLIENT
MY MANLY VALE PTY LTD
PROJECT NAME/PLANSET TITLE
PROPOSED BOARDING HOUSE
STORMWATER MANAGEMENT PLAN
255 CONDOMINE STREET, MANLY VALE NSW
DISCLAIMER & COPYRIGHT
This plan must not be used for construction unless signed as approved by principal certifying authority.
All measurements in millimetres unless otherwise specified.
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.
(C) Copyright Martens & Associates Pty Ltd

Consulting Engineers
Environment
Water
Geotechnical
Civil
martens & Associates Pty Ltd
Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

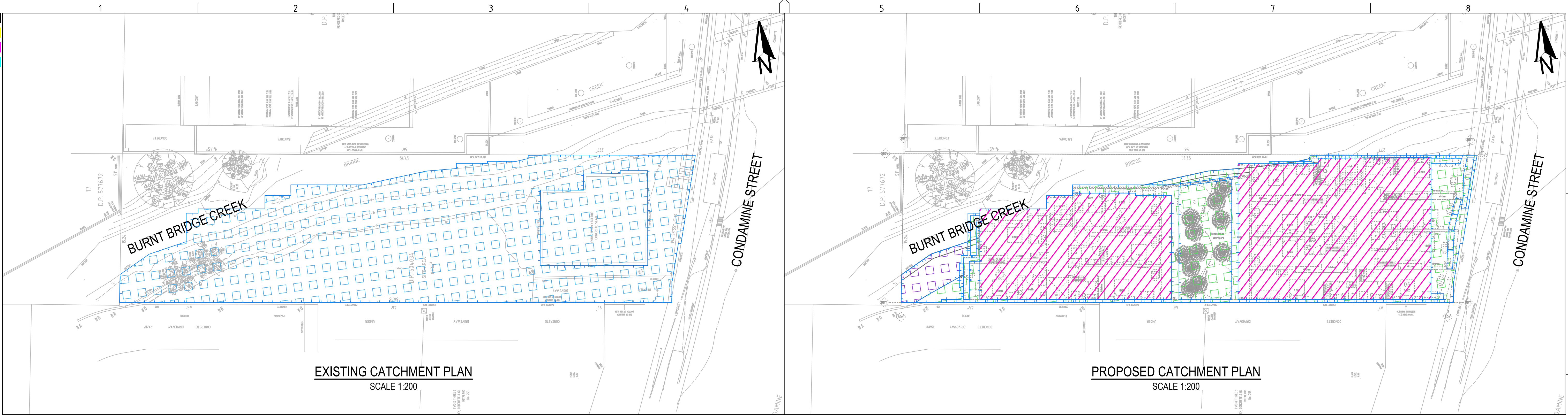
DRAWING TITLE				
DRAINAGE LAYOUT FOR FIRST FLOOR				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS06	R01	PS06-E102	A

DEVELOPMENT APPLICATION



- ## DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPROVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	DRAWING TITLE TYPICAL SECTION OF BIORETENTION BASIN & RAINWATER TANK PROJECT NO. PLANSET NO. RELEASE NO. DRAWING NO. REVISION
A	INITIAL RELEASE	03/08/2021	JS	EZ	SA	AN		---	---	AN	MY MANLY VALE PTY LTD		
								DISCLAIMER & COPYRIGHT			PROJECT NAME/PLANSET TITLE		
								This plan must not be used for construction unless signed as approved by principal certifying authority.			PROPOSED BOARDING HOUSE		
								All measurements in millimetres unless otherwise specified.			STORMWATER MANAGEMENT PLAN		
								This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd			255 CONDOMINE STREET, MANLY VALE NSW		
A1 / A3 LANDSCAPE (A1/LC_V02.0.0)								(C) Copyright Martens & Associates Pty Ltd					



EXISTING CATCHMENT PLAN
SCALE 1:200

PROPOSED CATCHMENT PLAN
SCALE 1:200

Treatment Train Effectiveness - Receiving Node			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.735	0.178	75.7
Total Suspended Solids (kg/yr)	38.5	2.41	93.7
Total Phosphorus (kg/yr)	0.131	0.0457	65
Total Nitrogen (kg/yr)	1.61	0.788	51
Gross Pollutants (kg/yr)	18.9	0.307	98.4

MUSIC MODELLING RESULTS TTE (P1605609MUS05V01)

Mean Annual Loads - Post-Development Node		
	Inflow	
	Pre	Post
Flow (ML/yr)	0.364	0.238
Total Suspended Solids (kg/yr)	38.1	27.1
Total Phosphorus (kg/yr)	84.1E-3	53.7E-3
Total Nitrogen (kg/yr)	0.652	0.492
Gross Pollutants (kg/yr)	5.01	3.99

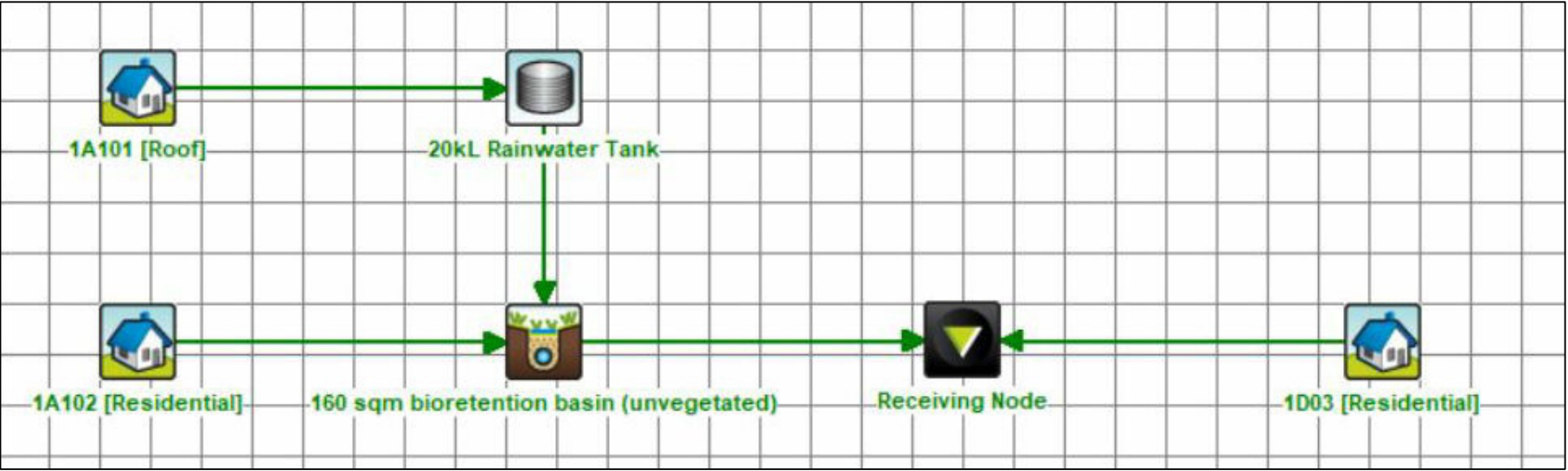
MUSIC MODELLING RESULTS NORBE (P1605609MUS05V01)

PRE DEVELOPMENT MUSIC CATCHMENT DETAILS (P1605609MUS01V05)					
KEY	DESCRIPTION	MUSIC NODE ID	AREA (ha)	IMPERVIOUS %	MUSIC NODE REFERENCE
	COMMERCIAL	1E01	0.070	14	NORTHERN BEACHES COUNCIL WSUD & MUSIC MODELLING GUIDELINES 2016
	TOTAL SITE				
		TOTAL - OVERALL		0.070	= 100 % OF OVERALL AREA
		TOTAL - IMPERVIOUS		0.010	= 14 % OF OVERALL AREA
		TOTAL - PERVIOUS		0.060	= 86 % OF OVERALL AREA

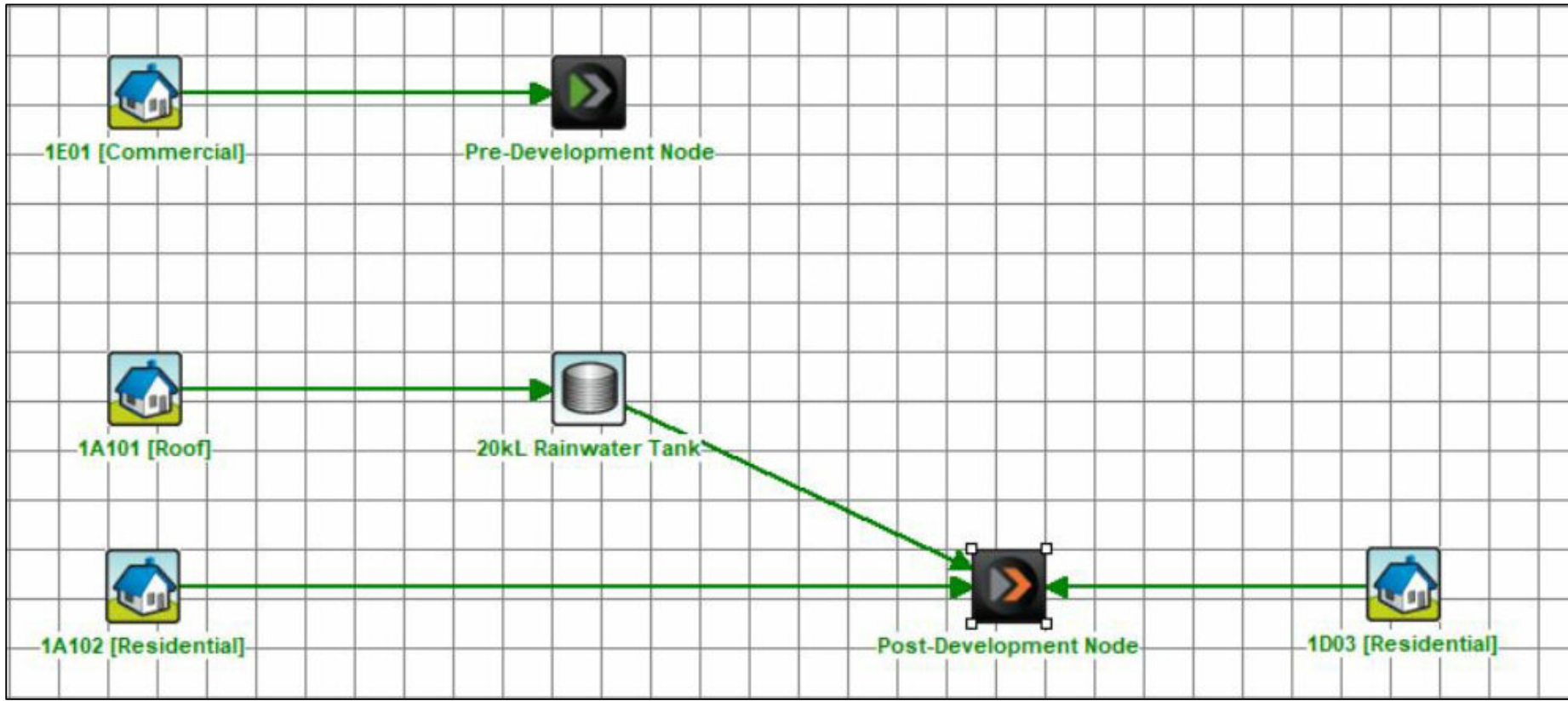
POST DEVELOPMENT MUSIC CATCHMENT DETAILS (P1605609MUS01V05)					
KEY	DESCRIPTION	MUSIC NODE ID	AREA (ha)	IMPERVIOUS %	MUSIC NODE REFERENCE
	ROOF	1D01	0.048	100	NORTHERN BEACHES COUNCIL WSUD & MUSIC MODELLING GUIDELINES 2016
	RESIDENTIAL	1D02	0.019	50	NORTHERN BEACHES COUNCIL WSUD & MUSIC MODELLING GUIDELINES 2016
	RESIDENTIAL	1D03	0.002	35	NORTHERN BEACHES COUNCIL WSUD & MUSIC MODELLING GUIDELINES 2016
	BYPASSING BASIN				
	TOTAL SITE				
		TOTAL - OVERALL		0.070	= 100 % OF OVERALL AREA
		TOTAL - IMPERVIOUS		0.058	= 83 % OF OVERALL AREA
		TOTAL - PERVIOUS		0.012	= 17 % OF OVERALL AREA

Notes:

- Land that is not considered part of the development has been excluded from the MUSIC model
- Roof runoff will be directed to a 20 kL rainwater tank for internal reuse



MUSIC MODELLING LAYOUT TTE (P1605609MUS05V01)



MUSIC MODELLING LAYOUT NORBE (P1605609MUS05V01)

DEVELOPMENT APPLICATION

REV DESCRIPTION		DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE 	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	DRAWING TITLE			
A	INITIAL RELEASE	03/08/2021	JS	EZ	SA	AN		MGA	mAHD	AN	MY MANLY VALE PTY LTD		WATER QUALITY CATCHMENT PLANS, MODELS & RESULTS			
DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd							PROJECT NAME/PLANSET TITLE PROPOSED BOARDING HOUSE STORMWATER MANAGEMENT PLAN 255 CONDOMINE STREET, MANLY VALE NSW									
		PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION										
		P1605609	PS06	R01	PS06-E700	A										
DRAWING ID: P1605609-PS06-R01-E700																

21 April, 2021

Upstate
Attn: Peter Mosedale
By email

Dear Peter,

**RE: PROPOSED BOARDING HOUSE DEVELOPMENT 255 CONDAMINE STREET MANLY VALE
NSW – RESPONSE TO NATURAL ENVIRONMENT AND WATER MANAGEMENT OFFICER
COMMENTS**

Martens and Associates Pty Ltd (MA) have prepared this letter to address the comments from Council's Natural Environment and Water Management officers dated 1 April and 6 April 2021 (Attachment A) at 255 Condamine Street, Manly Vale, NSW (the site). This letter details the response to the comments in relation to flooding, water management, and riparian management. This letter is to be read in conjunction with the MA Flood Assessment (P1605609JR05V02), MA Stormwater Management Plan (P1605609JR07V01), and MA Waterway Impact Assessment (P1605609JR08V02).

Table 1 demonstrates that flooding, riparian, and water management comments have been addressed, and complies with Council's requirements.

Please call our offices if you have any further queries regarding this matter.

For and on behalf of

MARTENS & ASSOCIATES PTY LTD



PAUL DINH

BEng(Civil)
Civil Engineer

World Class Sustainable Engineering Solutions

Environmental

EIS & REF
Streams & rivers
Coastal
Groundwater
Catchments
Bushfire
Monitoring

Geotechnics

Foundations
Geotechnical survey
Contamination
Hydrogeology
Mining
Terrain analysis
Waste management

Water

Supply & storage
Flooding
Stormwater & drainage
Wetlands
Water quality
Irrigation
Water sensitive design

Wastewater

Treatment
Re-use
Biosolids
Design
Management
Monitoring
Construction

Civil

Earthworks
Excavations
Pipelines
Roads
Pavements
Parking
Structures

Head Office

Suite 201, 20 George St
Hornsby NSW 2077, Australia
Ph 02 9476 9999 Fax 02 9476 8767

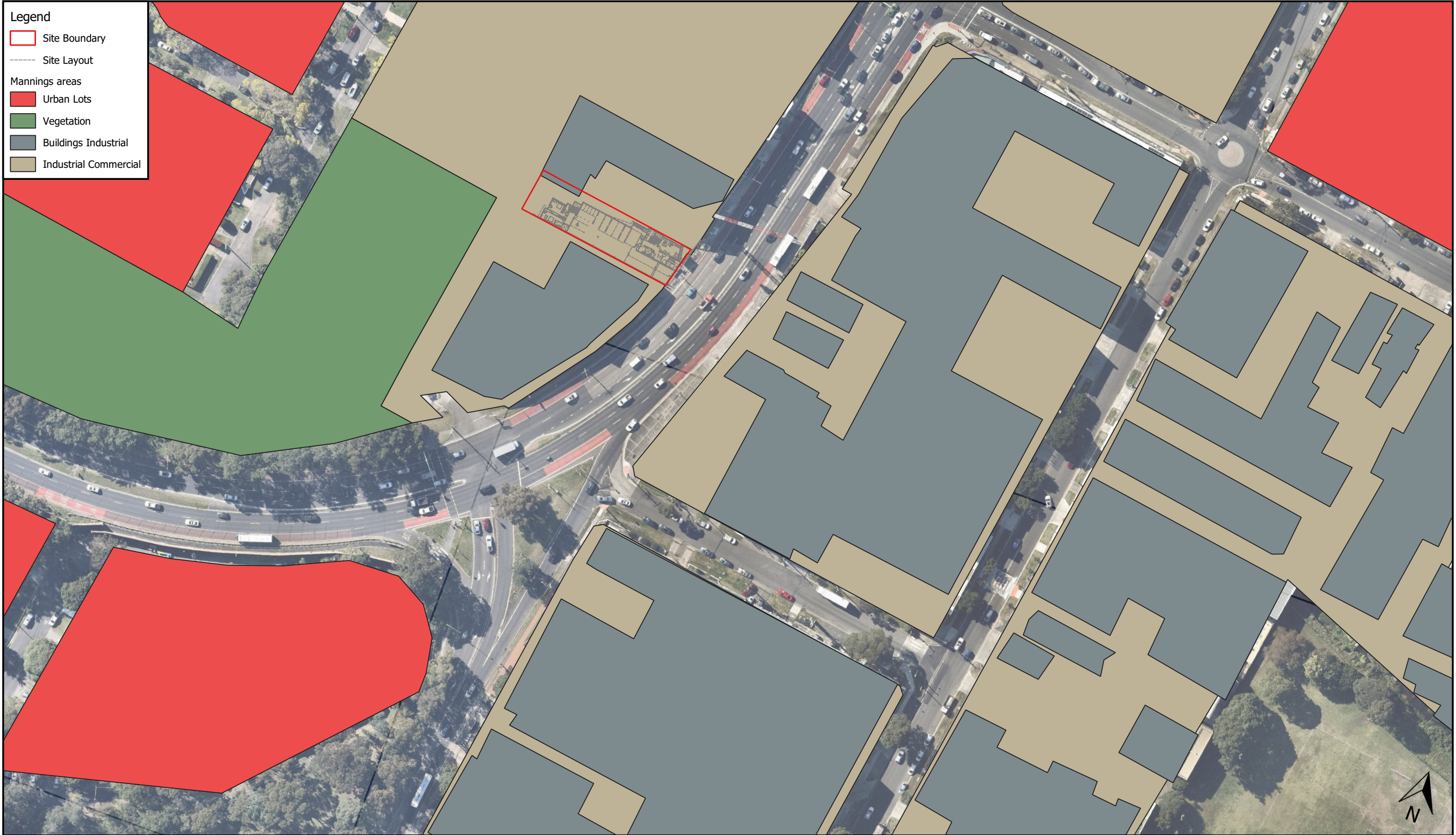
> mail@martens.com.au
www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

Table 1: Summary of response to issues raised by Council's Natural Environment and Water Management Units

Reference	Issue Raised	Response
Natural Environment Referral Response – Flood	The proposed development is for a multi-level boarding house. The flood modelling output, specifically Map 16 of the Attachment F in the Flood Assessment Report shows post-development increases in the PMF velocities on private property (lot to the south of the subject site) of greater than 10%. The development cannot result in potential adverse flood impacts of more than 10% increase of PMF velocity on private land.	PMF velocity increases in excess of 10% are generally confined to the main road (where these do not result in unacceptable velocities or scour), or are the result of very minor absolute velocity increases (velocity increase from 0.05 m/s to 0.08 m/s to the south of the site, and from 0.2 m/s to 0.4 m/s to the east). As none of these increases result in unacceptable erosion risks, combined with the rarity of the PMF event, we note these velocity increases are acceptable despite them exceeding the arbitrary 10% threshold.
	More information is required to show the flood model set up, this includes how existing buildings have been modelled in the lots to the north and south of the subject site. It appears the modelling conducted by the flood consultant does not include neighbouring existing buildings in the model. The flood impact assessment for the development should factor in buildings in the assessment.	Model setup is consistent with Council's Manly Lagoon Flood Model (2013) in relation to building setup. Buildings are modelled with a Manning's roughness of 2.0. Refer to Attachment A Map 1. The building to the north of the site (259 Condamine Street) is suspended over Burnt Bridge Creek and is modelled as a layered flow constriction. Refer to Attachment A Map 12.
	1% AEP and PMF Water Level and Velocity afflux mapping must be provided for a greater area around the site (extent of 100-150m upstream and downstream of the site to shown proposed flood impacts on surrounding properties).	Refer to Attachment A Maps 3–5. We note that there is a general trend of water levels dropping in the proximity of the site. This is due to the extra conveyance and storage provided by the cut under the building.
	The Air Conditioning condensers must be positioned completely above the 1% AEP due to risk of damage in a 1% AEP flood. Justification must be provided as to why the base of the western lift must be located below the 1% AEP flood level. Without adequate justification it must be raised above the 1% AEP flood level.	Air conditioning unit to be relocated above the 1% AEP event. Western lift is entirely enclosed below the ground floor level, and therefore flood proofed to the 1% AEP event.
Natural Environment Referral Response – Riparian	The Waterway Impact Statement is missing from the documentation and must be supplied.	The Waterway Impact Assessment (P1605609JR08V02) is attached.
Water Management Referral Response	The MUSIC model must be supplied for Council review.	Provided.
	The bio-swale details is not showing extended detention depth and is lacking details.	As shown in Table 4 and the table in Attachment A of the Stormwater Management Plan, the proposed bioretention system (unvegetated) was modelled with an extended detention depth of 0.3 m.
	The location of the biofiltration is too close to the creek flow path (elevation and location) with risk of damages (erosion of filter material a deposition of sediment from the creek).	Following discussions with the client, the proposed bioretention option to be adopted has been changed. Option 3 as described in the Stormwater Management Plan is to be adopted. This locates the bioretention system beneath the suspended building slab. Refer to Section 4.3.1.4 of the Stormwater Management Plan for details of the (now) proposed solution.

Reference	Issue Raised	Response
		The relocated bioretention system is now considerably higher and further from the creek. Therefore, the risk of damage has been reduced as much as is possible on the site.
	Access for maintenance is also an issue including risk of falls with 1.25m from top of wall to bioretention base.	The bioretention has been relocated to the upper tier area to allow easy access for maintenance of the system. Identified maintenance access issues are considered resolved by this change.

ATTACHMENT A – ADDITIONAL FLOODING INFORMATION MAPSET



Map Title / Figure:
Model Setup - Mannings Zones

Legend

- Site Boundary
- Lot
- Site Layout
- 259 Condamine Street Layered Flow Construction



0 10 20 30 40 50 m

1:1250 @ A3

Model Setup - 259 Condamine Street Layered Flow Constriction



0 10 20 30 40 50 m

1:1250 @ A3

Notes:
Areas coloured white represent negligible change.
Areas coloured blue represent water level reduction.
Areas coloured yellow/red represent water level increase.

Map Title / Figure:
**Proposed Conditions 1% AEP Event
Water Level Afflux (m)**

Map 03	Map
255 Condamine Street, Manly Vale, NSW	Site
Proposed Boarding House Development	Project
Response to Council Comments	Sub-Project
MY Manly Vale Pty Ltd	Client
21/04/2021	Date



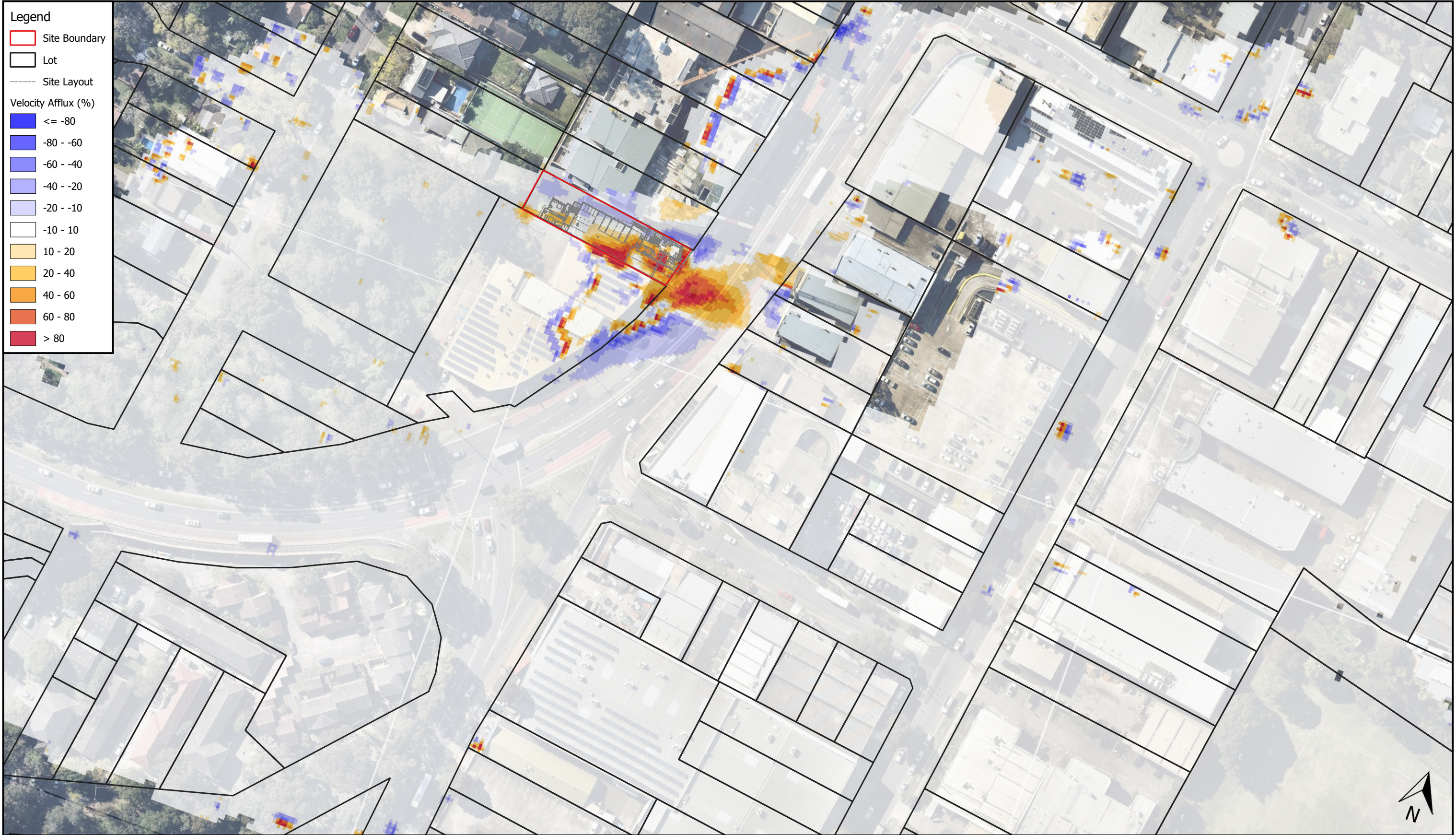
0 10 20 30 40 50 m

1:1250 @ A3

Notes:
Areas coloured white represent negligible change.
Areas coloured blue represent water level reduction.
Areas coloured yellow/red represent water level increase.

Map Title / Figure:
**Proposed Conditions PMF Event
Water Level Afflux (m)**

Map 04	Map
255 Condamine Street, Manly Vale, NSW	Site
Proposed Boarding House Development	Project
Response to Council Comments	Sub-Project
MY Manly Vale Pty Ltd	Client
21/04/2021	Date



0 10 20 30 40 50 m

1:1250 @ A3

Notes:
Areas coloured white represent negligible change.
Areas coloured blue represent velocity reduction.
Areas coloured yellow/red represent velocity increase.

Map Title / Figure:
**Proposed Conditions PMF Event
Velocity Impact (%)**

Map 05	Map
255 Condamine Street, Manly Vale, NSW	Site
Proposed Boarding House Development	Project
Response to Council Comments	Sub-Project
MY Manly Vale Pty Ltd	Client
21/04/2021	Date

2 December 2021

McKees Legal Solutions
Att: Graham McKee
(by email)

Dear Graham,

RE: FURTHER INSPECTION OF CREEK, 255 CONDAMINE STREET, BALGOWLAH, NSW

As requested, we have undertaken a further inspection of Burnt Bridge Creek at the above site on 17 November 2021 to consider the following issues:

- Creek bank location
- Southern bank condition and stability
- Northern bank condition and stability
- Amended concept creek management plan

Creek Bank Location

In our Waterway Assessment Report prepared 26/3/2021 (ref: P1605609JR08V02) we had observed that the active creek bank was at a level of around 0.5 - 0.7 m above the permanent creek water line, with the balance of material above this level within the Site consisting of a historical fill embankment.

During the 17/11/2021 inspection I observed this level as an active floodplain at the western end of the site and within the adjoining property. The floodplain and creek bank are shown in Figure 1, Figure 2 and Figure 3, confirming the following:

1. Creek bank: The creek bank is approximately 0.5 - 0.7 m above the permanent water line. The bank is expressed as a clear break in slope between the near vertical slope to the water's edge and the flat grade of the adjoining floodplain. The creek bank was comprised of largely sandy materials held together with plant roots and some clay content.
2. Floodplain: There is a distinctly developed floodplain behind the creek bank. This is variably expressed depending on location, being widest upslope of the site (where it reaches > 5 m width). The floodplain is characterised by sandy sediment which has been deposited by floods (refer to Figure 4). Floodplain vegetation to the west of the site is well established and consists largely of non-endemic species including trees, understorey and ground cover.

By contrast, the fill embankment within the site is entirely anthropogenic, containing a range of fill and waste materials (refer to Figure 5 and Figure 6), likely having been placed near to the time that the existing derelict building was constructed.

World Class Sustainable Engineering Solutions

Environmental

EIS & REF
Streams & rivers
Coastal
Groundwater
Catchments
Bushfire
Monitoring

Geotechnics

Foundations
Geotechnical survey
Contamination
Hydrogeology
Mining
Terrain analysis
Waste management

Water

Supply & storage
Flooding
Stormwater & drainage
Wetlands
Water quality
Irrigation
Water sensitive design

Wastewater

Treatment
Re-use
Biosolids
Design
Management
Monitoring
Construction

Civil

Earthworks
Excavations
Pipelines
Roads
Pavements
Parking
Structures

Head Office

Suite 201, 20 George St
Hornsby NSW 2077, Australia
Ph 02 9476 9999 Fax 02 9476 8767

> mail@martens.com.au
www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

Southern bank condition and stability

In our Waterway Assessment Report prepared 26/3/2021 (ref: P1605609JR08V02) we had observed that the fill embankment within the site was over steepened and unstable and had been subject to various slippages. We had recommended that the bank and fill embankment be stabilised as part of the site development works.

During the 17/11/2021 inspection I observed that the bank had continued to fail, with evidence of several recent slope failures. These have led over time to portions of the anthropogenic fill being transported to the creek bank below and into the creek (refer to Figure 6 and Figure 7). Implementation of the recommendations contained within our Waterway Assessment Report will provide the means of stabilising the southern creek bank.

Northern bank condition and stability

During the 17/11/2021 inspection we had the opportunity to undertake a more detailed examination of the northern creek bank and embankment, and based on this, reconsider the approach to bank management. The following was observed during the inspection:

1. The bank is not a natural bank but rather has been constructed by soil and rock excavation.
2. The bank is impacted by anthropogenic filling, including concrete over pours (refer to Figure 8).
3. The bank is unstable with evidence of recent bank instability (refer to Figure 9 and Figure 10). In particular, there has been a boulder slide with movement of two large boulders into the creek, likely caused by erosion of unconsolidated material below and around the boulders. These materials are likely to continue to move into the creek and obstruct flow in coming high flow / flood events, this leading to further bank erosion. Bank stabilisation and reconstruction is recommended.

Amended Concept Creek Management Plan

A copy of the amended concept creek management plan is provided in Figure 11. Key elements are:

1. Northern bank: The works include stabilisation of the northern bank and embankment. This includes removal of boulders and debris that has moved into the creek, bank stabilisation and revegetation to correct current instabilities and removal anthropogenic materials.
2. Southern bank: The works include bank protection and stabilisation, as well as revegetation. The works also include construction of a low floodplain on the southern bank within the western portion of the site by repositioning the creek on the inside bend in the order of 2-3 m. This would create a habitat similar to that observed immediately upstream of the site.

The site inspection of 17/11/2021 has confirmed that both the northern and southern creek banks and fill embankments are unstable and require rectification works.

We are of the view that the amended concept creek management plan is consistent with the objectives Waterway Assessment Report and would serve to ensure the long-term enhancement and protection of the current creek corridor.

Please call our offices if you have any further queries regarding this matter.

For and on behalf of

MARTENS & ASSOCIATES PTY LTD



DR DANIEL MARTENS

LLB(Hons1), BSc(Hons1), MEngSc, PhD, FIEAust, CPEng, NER, RPEQ, APEC Eng, IntPE(Aus)

Managing Director & Principal Engineer

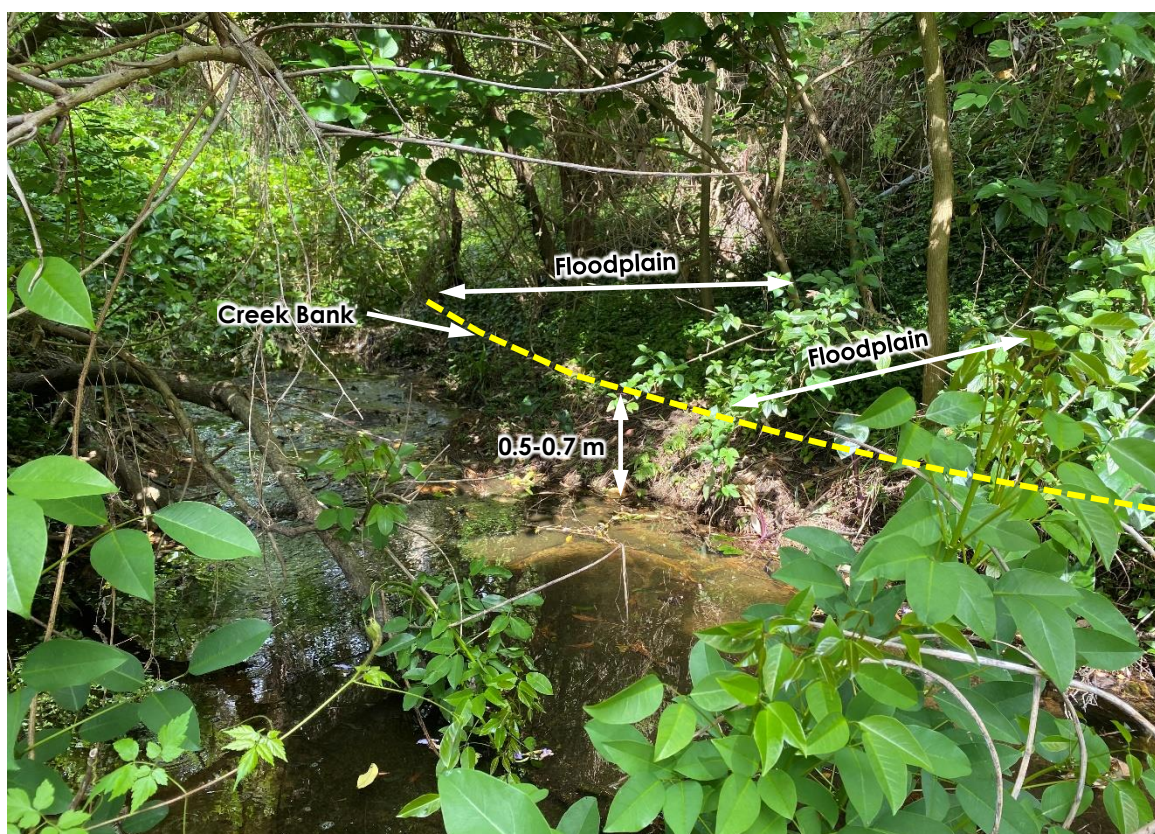


Figure 1: Northern creek bank and floodplain upstream of site looking west (17 November 2021).

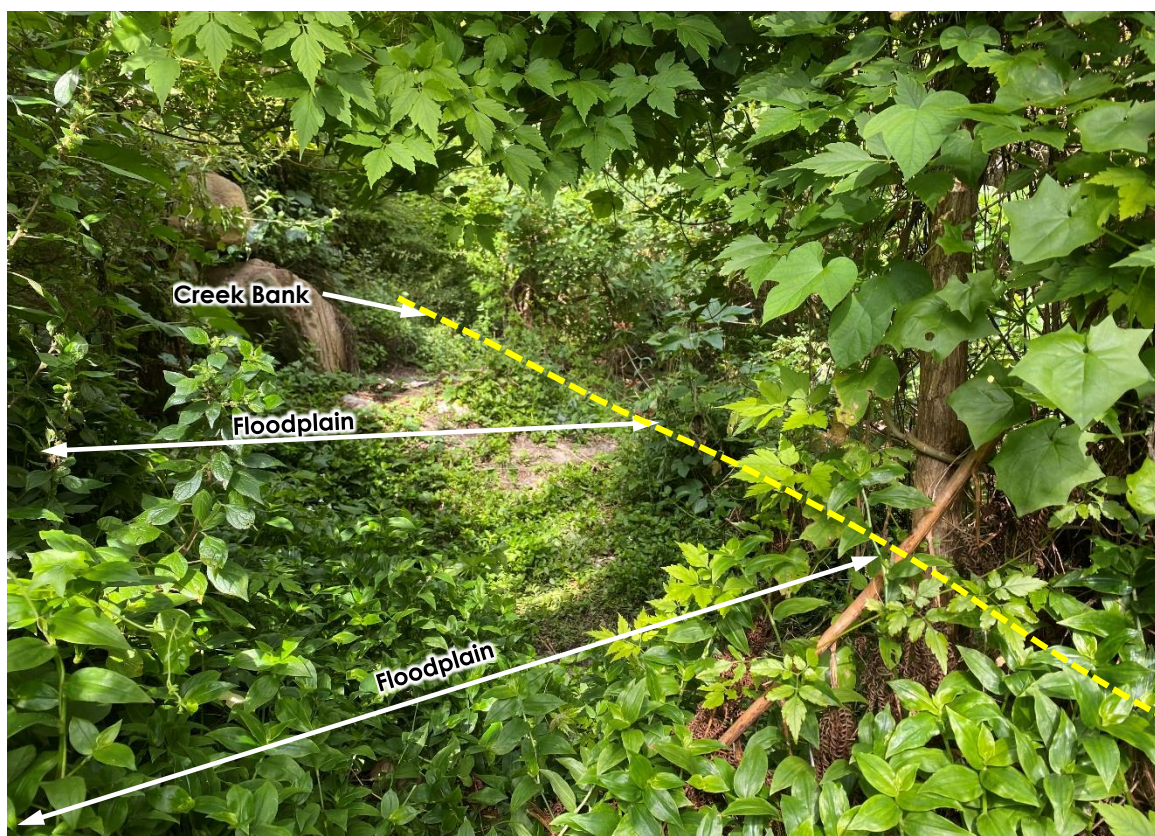


Figure 2: Southern creek bank and floodplain upstream of site looking west (17 November 2021).

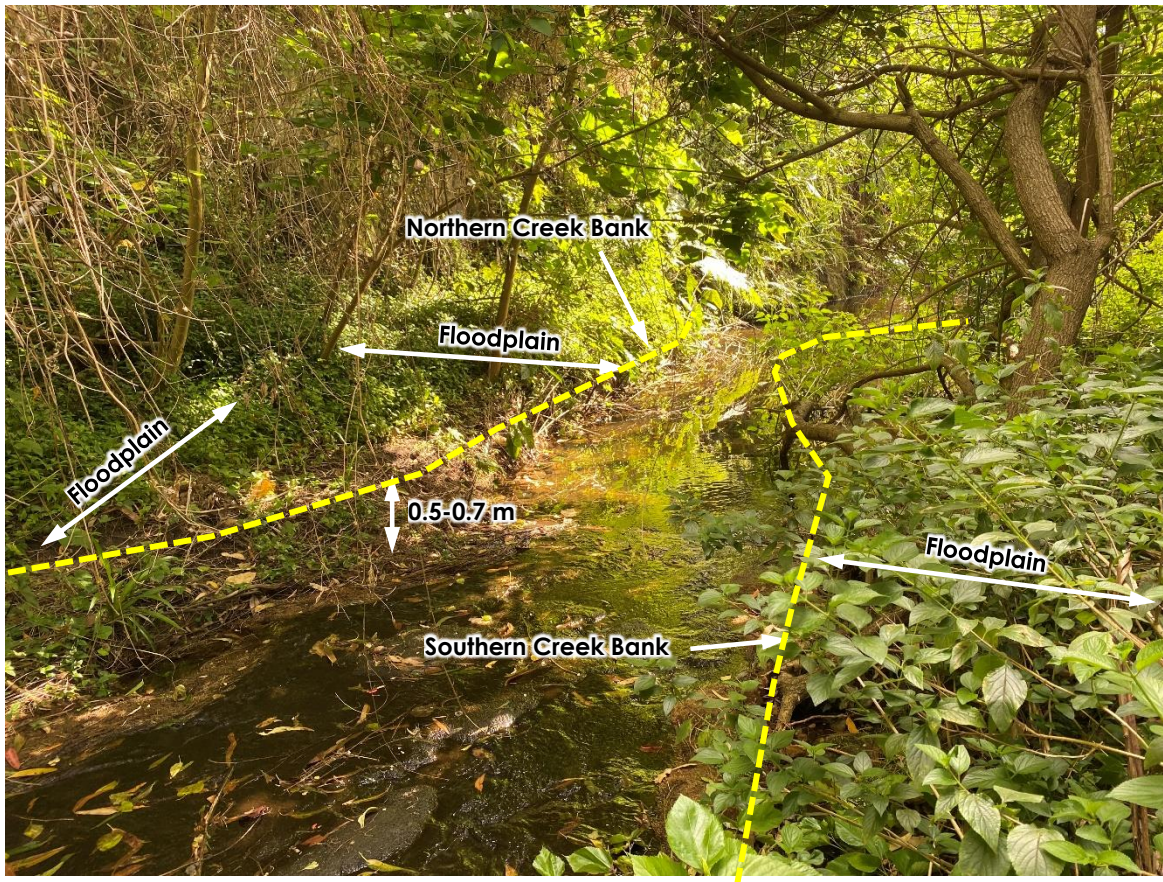


Figure 3: Creek banks and floodplain upstream of site looking east (17 November 2021).



Figure 4: Sandy floodplain sediment on southern bank (17 November 2021).



Figure 5: Fill embankment behind creek bank within site (17 November 2021).



Figure 6: Fill embankment adjacent to derelict building within site (17 November 2021).

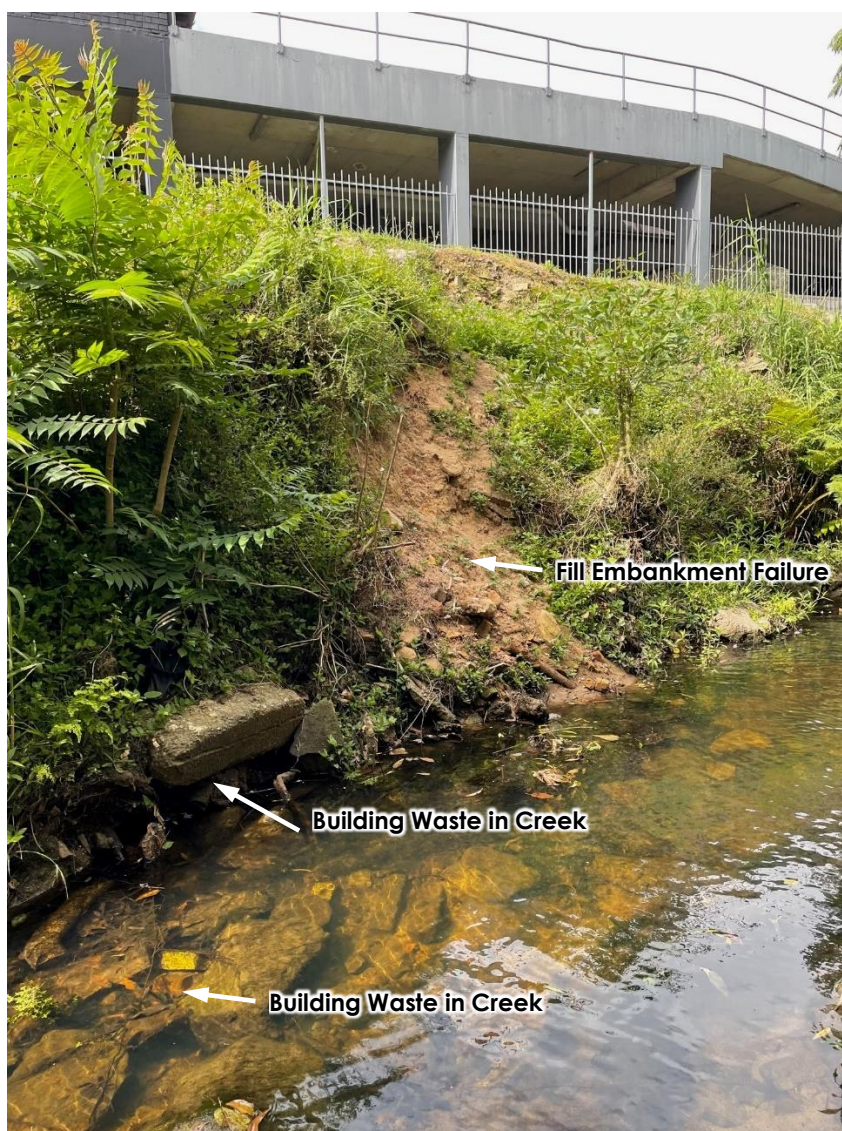


Figure 7: Fill embankment failure and waste in creek within site (17 November 2021).



Figure 8: Northern Creek bank and embankment within site (17 November 2021).

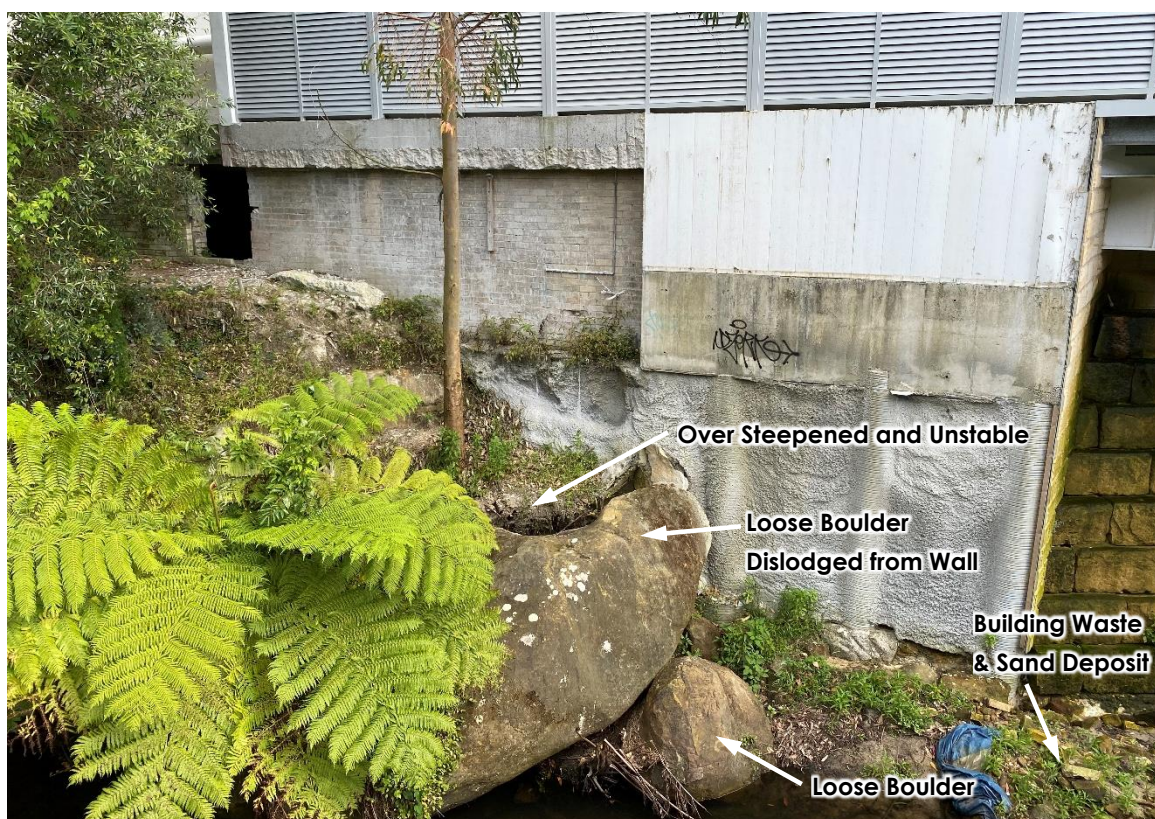


Figure 9: Northern Creek bank and embankment within site (17 November 2021).



Figure 10: Northern Creek bank and embankment showing bank failure (17 November 2021).

25th October 2021

**The Trustee for My Manly Vale Unit Trust trading as My Manly
Vale Pty Ltd
Land and environment Court proceedings 2021/153523
Addendum Statement of Environmental Effects/
Updated clause 4.6 variation request – Height of buildings
Proposed Boarding House
255 Condamine Street, Manly Vale**

This addendum Statement of Environmental Effects and updated clause 4.6 variation request have been prepared in support of amended architectural plans DA01(B) to DA20(B) prepared by Gartner Trovato Architects. The amendments, when compared to the plans filed in these proceedings, are summarised as follows:

- An adjustment in the building alignment relative to the modified creek line to remove overhanging building elements.
- The modification of the floor plan layouts to accommodate the above building alignment adjustment.
- The introduction of angled columns adjacent to the creek bank.
- Modification to the layout and northern building façade alignment of rooms 9, 22 and 32 to achieve greater spatial separation to the adjoining balconies at No. 259 Condamine Street whilst maintaining an appropriate privacy interface.
- The reconfiguration of the bin storage area to accommodate 27 bins.
- The reconfiguration of the bin storage area to accommodate a passing bay within the adjacent driveway.
- The provision of increased contextually appropriate and consistent front setbacks to Condamine Street at Levels 1 and 2.
- The provision of an increased compliant 5 metre front setback to the uppermost level.
- The provision of increased setbacks to the blade walls on the northern boundary.
- The introduction of vertical concrete façade detailing and glass blocks to the south exposed boundary wall to provide visual interest and reduce perceived bulk and scale address bulk and scale.
- The provision of an increased front setback to the southern ground floor boundary wall to improve vehicular sightlines.

- The modification of floor plans and room area calculations to ensure calculations exclude a 600mm wide circulation space adjacent kitchens including the reconfiguration of the rear stairs.
- The introduction of a vehicular turntable to enable all cars to enter and exit the site in a forward direction without relying on the loading bay.
- The relocation of AC condenser to ground floor.
- The introduction of increased soil depth to the courtyard planter to achieve 800mm deep on-slab planting opportunity. This soil depth is sufficient for the establishment of screen tree plantings.
- The nomination of room No. 28 for use by the on-site manager and the renumbering of plans on Level 3 to indicate 37 not 38 rooms.

This submission is also accompanied by an updated clause 4.6 variation request in support of the building height variation at Attachment 1.

The project Architects has adopted alternative approach to the Council front setbacks of nil to ground and first floors and 5 metres to the floors above to address bulk and scale and has done so in a way that achieves high architectural merit. In this regard, the accompanying Architect design statement contains the following commentary:

- *The approach provides a more highly skilled level of façade modulation to reduce bulk and scale, by providing a significant setback to the ground floor and includes a landscaped area to soften and screen the built form over all levels. No other building on Condamine Street offers up a ground level landscaped setback. The setback also breaks the building into parts vertically, rather than a robust 2 storey elevation with a nil setback, the design gives depth, light and shade and a transparency to the lower floors.*
- *The fluctuating blades both vertically and horizontally over levels 1 and 2 break the façade into a number of smaller elements, rather than a long straight line of wall or balustrade that maximise floor area within the development. To increase the level of theatre in the façade, the angles of the slabs, blades and exterior walls all differ over the 2 mid-levels of the façade creating interest and variation, not likeness, boredom and bulk. Variation in colour completes the multi-faceted detailing and ‘fine grain’ of the façade.*
- *The top floor slab projection has minimal boundary setbacks, to create sight lines that mask the top floor setback at 5 metres. The building effectively has a 3 -storey appearance to the street which would disappear and create a fourth level if the slab edge was reduced back to the 5m setback, effectively creating a wedding cake effect and increasing the perception of bulk and scale by exposing the top storey to the streetscape.*

In relation to the shared ground floor office, we confirm that this space is provided for use by the occupants of the boarding house and to that extent represents a small office/ home office (SOHO) type use which provides for an appropriate level of street activation and office space for the use of boarding house residents. Such outcome is consistent with the zone objectives in that it provides for a ground floor use which serves the office space needs of people who live in the local area.

Such outcome is also consistent with the clause F1 Local and Neighbourhood Centres provisions of Warringah Development Control Plan (WDGP) relating to the Manly Vale/ Condamine Street precinct in that the ground floor office use and associated architectural and landscape detailing will enhance the streetscape with the *design of the building and the use of the land maintaining activity at street level and creating a cohesive and attractive streetscape*.

Please do not hesitate to contact me to discuss any aspect of this correspondence.

Yours sincerely

BOSTON BLYTH FLEMING PTY LIMITED

A handwritten signature in black ink, appearing to read 'Greg Boston', with a stylized flourish at the end.

Greg Boston

B Urb & Reg Plan (UNE) MPIA

B Env Hlth (UWS)

Director

Attachment 1

Updated clause 4.6 variation request – Height of buildings Proposed Boarding House 255 Condamine Street, Manly Vale

1.0 Introduction

This clause 4.6 variation has been prepared having regard to the Land and Environment Court judgements in the matters of *Wehbe v Pittwater Council* [2007] NSWLEC 827 (*Wehbe*) at [42] – [48], *Four2Five Pty Ltd v Ashfield Council* [2015] NSWCA 248, *Initial Action Pty Ltd v Woollahra Municipal Council* [2018] NSWLEC 118, *Baron Corporation Pty Limited v Council of the City of Sydney* [2019] NSWLEC 61, and *RebelMH Neutral Bay Pty Limited v North Sydney Council* [2019] NSWCA 130.

2.0 Warringah Local Environmental Plan 2011 (WLEP)

2.1 Clause 4.3 - Height of buildings

Pursuant to Clause 4.3 of Warringah Local Environmental Plan 2011 (WLEP) the height of a building on the subject land is not to exceed 11 metres in height. The objectives of this control are as follows:

- a) *to ensure that buildings are compatible with the height and scale of surrounding and nearby development,*
 - b) *to minimise visual impact, disruption of views, loss of privacy and loss of solar access,*
 - c) *to minimise any adverse impact of development on the scenic quality of Warringah's coastal and bush environments,*
 - d) *to manage the visual impact of development when viewed from public places such as parks and reserves, roads and community facilities.*
- Building height is defined as follows:*

Building height is defined as follows:

building height (or height of building) means the vertical distance between ground level (existing) and the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like

Ground level existing is defined as follows:

ground level (existing) means the existing level of a site at any point.

It has been determined that the proposed development has a variable building height as measured above ground level (existing), which includes the bed of Burnt Bridge Creek, of between 14.15 and 18.7 metres representing a non-compliance of between 3.15 metres (28.6%) and 7.7 metres (70%). The extent of building height variation at each of the 8 corners of the roof forms is depicted in the following height blanket diagrams and roof plan extracts at Figures 1, 2, 3 and 4 below and over page.



Figure 1 - Height blanket diagram showing extent of 11 metre building height breach when measured above ground level (existing)



Figure 2 - Contextual height blanket diagram showing the relationship of the proposed building to the height established by the adjoining properties

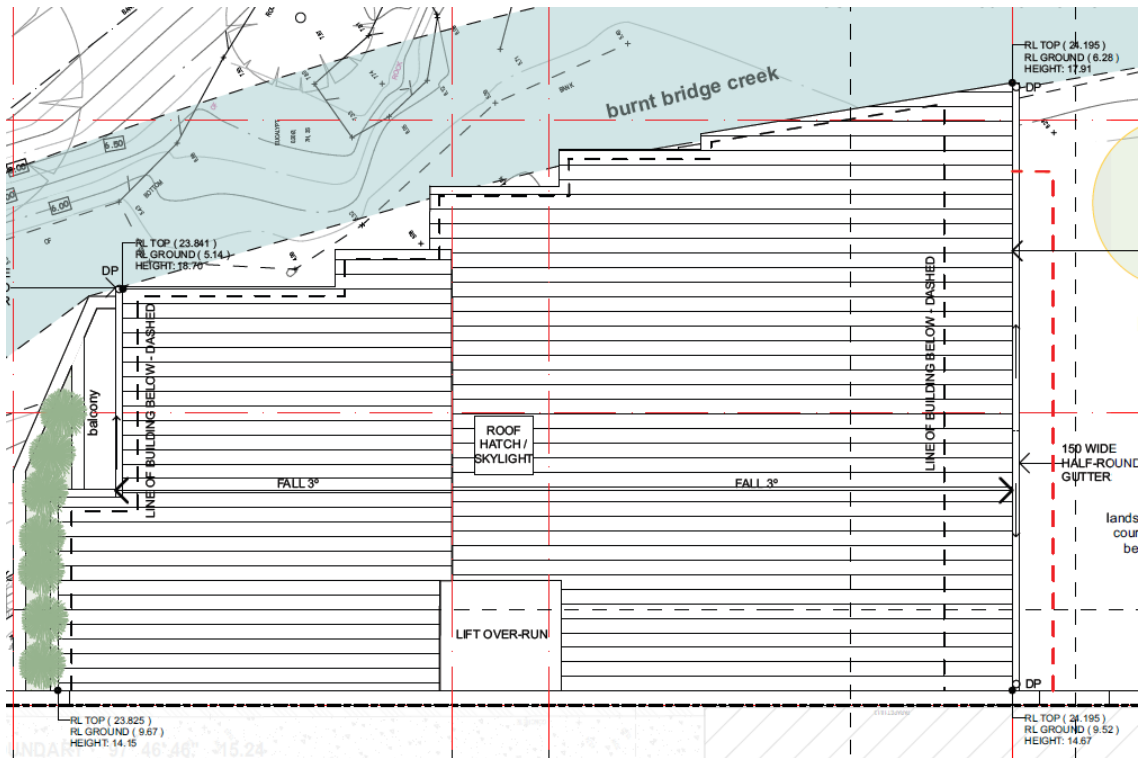


Figure 3 - Roof plan extract DA-08(B) showing height of roof form relative to ground level (existing) as established by survey levels

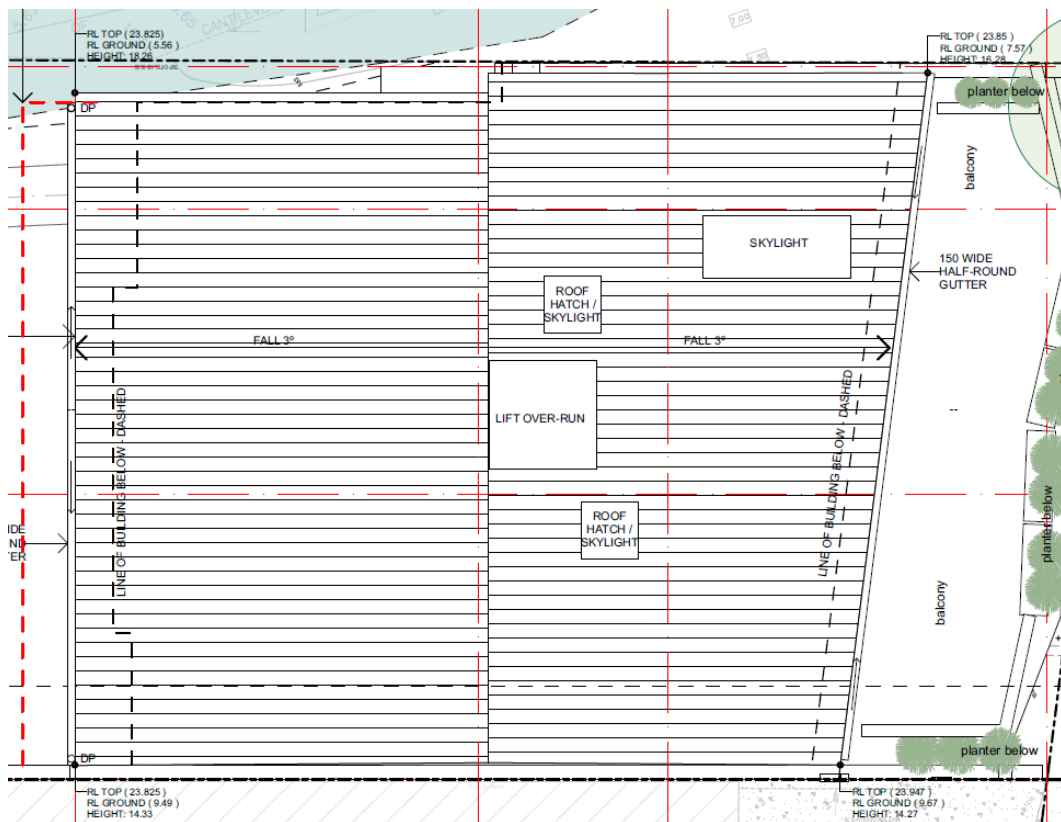


Figure 4 - Roof plan extract DA-08(B) showing height of roof form relative to ground level (existing) as established by survey levels

Whilst not itself determinative, I note that the extent of non-compliance is significantly reduced when the 11 metre building height standard is applied above the flood planning level (FPL) noting that it is the FPL that establishes the required ground floor level of the development. The extent of building height breach when assessed above the FPL is detailed in Figure 52 below.

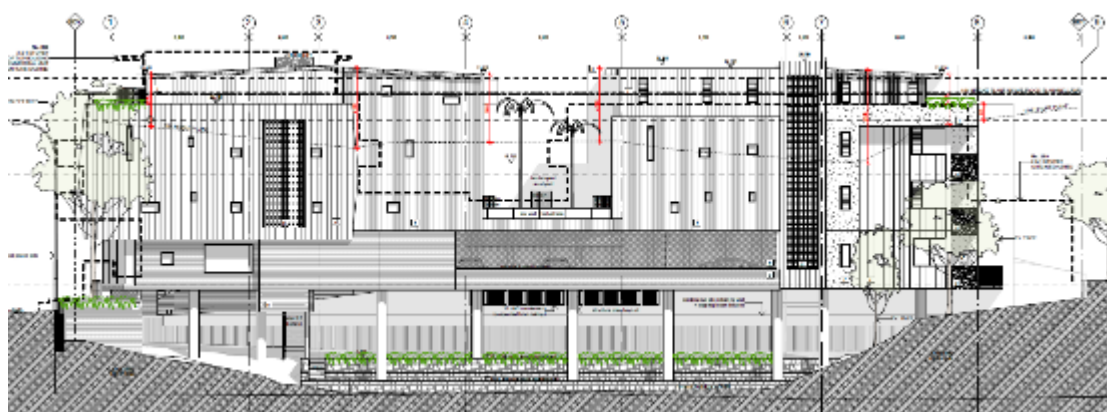


Figure 5 - Elevation showing building height breaching elements when the 11 metre height standard is projected above the FPL

2.2 Clause 4.6 – Exceptions to Development Standards

Clause 4.6(1) of WLEP provides:

(1) *The objectives of this clause are:*

- (a) *to provide an appropriate degree of flexibility in applying certain development standards to particular development, and*
- (b) *to achieve better outcomes for and from development by allowing flexibility in particular circumstances.*

The decision of Chief Justice Preston in *Initial Action Pty Ltd v Woollahra Municipal Council* [2018] NSWLEC 118 (“Initial Action”) provides guidance in respect of the operation of clause 4.6 subject to the clarification by the NSW Court of Appeal in *RebelMH Neutral Bay Pty Limited v North Sydney Council* [2019] NSWCA 130 at [1], [4] & [51] where the Court confirmed that properly construed, a consent authority has to be satisfied that an applicant’s written request has in fact demonstrated the matters required to be demonstrated by cl 4.6(3).

Initial Action involved an appeal pursuant to s56A of the Land & Environment Court Act 1979 against the decision of a Commissioner. At [90] of *Initial Action* the Court held that:

“In any event, cl 4.6 does not give substantive effect to the objectives of the clause in cl 4.6(1)(a) or (b). There is no provision that requires compliance with the objectives of the clause. In particular, neither cl 4.6(3) nor (4) expressly or impliedly requires that development that contravenes a development standard “achieve better outcomes for and from development”. If objective (b) was the source of the Commissioner’s test that non-compliant development should achieve a better environmental planning outcome for the site relative to a compliant development, the Commissioner was mistaken. Clause 4.6 does not impose that test.”

The legal consequence of the decision in *Initial Action* is that clause 4.6(1) is not an operational provision and that the remaining clauses of clause 4.6 constitute the operational provisions.

Clause 4.6(2) of WLEP provides:

- (2) *Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument.*

However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.

This clause applies to the clause 4.3 WLEP Height of Buildings Development Standard.

Clause 4.6(3) of WLEP provides:

- (3) *Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:*
- (a) *that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
 - (b) *that there are sufficient environmental planning grounds to justify contravening the development standard.*

The proposed development does not comply with the height of buildings provision at 4.3 of WLEP which specifies a maximum building height however strict compliance is considered to be unreasonable or unnecessary in the circumstances of this case and there are considered to be sufficient environmental planning grounds to justify contravening the development standard.

The relevant arguments are set out later in this written request.

Clause 4.6(4) of WLEP provides:

- (4) *Development consent must not be granted for development that contravenes a development standard unless:*
 - (a) *the consent authority is satisfied that:*
 - (i) *the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and*
 - (ii) *the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and*
 - (b) *the concurrence of the Director-General has been obtained.*

In *Initial Action* the Court found that clause 4.6(4) required the satisfaction of two preconditions ([14] & [28]). The first precondition is found in clause 4.6(4)(a). That precondition requires the formation of two positive opinions of satisfaction by the consent authority. The first positive opinion of satisfaction (cl 4.6(4)(a)(i)) is that the applicant's written request has adequately addressed the matters required to be demonstrated by clause 4.6(3)(a)(i) (*Initial Action* at [25]).

The second positive opinion of satisfaction (cl 4.6(4)(a)(ii)) is that the proposed development will be in the public interest ***because*** it is consistent with the objectives of the development standard and the objectives for development of the zone in which the development is proposed to be carried out (*Initial Action* at [27]). The second precondition is found in clause 4.6(4)(b). The second precondition requires the consent authority to be satisfied that that the concurrence of the Secretary (of the Department of Planning and the Environment) has been obtained (*Initial Action* at [28]).

Under cl 64 of the *Environmental Planning and Assessment Regulation 2000*, the Secretary has given written notice dated 5th May 2020, attached to the Planning Circular PS 18-003 issued on 5th May 2020, to each consent authority, that it may assume the Secretary's concurrence for exceptions to development standards in respect of applications made under cl 4.6, subject to the conditions in the table in the notice.

Clause 4.6(5) of WLEP provides:

- (5) *In deciding whether to grant concurrence, the Director-General must consider:*
- (a) *whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
 - (b) *the public benefit of maintaining the development standard, and*
 - (c) *any other matters required to be taken into consideration by the Director-General before granting concurrence.*

As these proceedings are the subject of an appeal to the Land & Environment Court, the Court has the power under cl 4.6(2) to grant development consent for development that contravenes a development standard, if it is satisfied of the matters in cl 4.6(4)(a), without obtaining or assuming the concurrence of the Secretary under cl 4.6(4)(b), by reason of s 39(6) of the Court Act. Nevertheless, the Court should still consider the matters in cl 4.6(5) when exercising the power to grant development consent for development that contravenes a development standard: *Fast Buck\$ v Byron Shire Council* (1999) 103 LGERA 94 at 100; *Wehbe v Pittwater Council* at [41] (*Initial Action* at [29]).

Clause 4.6(6) relates to subdivision and is not relevant to the development. Clause 4.6(7) is administrative and requires the consent authority to keep a record of its assessment of the clause 4.6 variation. Clause 4.6(8) is only relevant so as to note that it does not exclude clause 4.3 of WLEP from the operation of clause 4.6.

3.0 Relevant Case Law

In *Initial Action* the Court summarised the legal requirements of clause 4.6 and confirmed the continuing relevance of previous case law at [13] to [29]. In particular the Court confirmed that the five common ways of establishing that compliance with a development standard might be unreasonable and unnecessary as identified in *Wehbe v Pittwater Council* (2007) 156 LGERA 446; [2007] NSWLEC 827 continue to apply as follows:

17. *The first and most commonly invoked way is to establish that compliance with the development standard is unreasonable or unnecessary because the objectives of the development standard are achieved notwithstanding non-compliance with the standard: Wehbe v Pittwater Council at [42] and [43].*
18. *A second way is to establish that the underlying objective or purpose is not relevant to the development with the consequence that compliance is unnecessary: Wehbe v Pittwater Council at [45].*
19. *A third way is to establish that the underlying objective or purpose would be defeated or thwarted if compliance was required with the consequence that compliance is unreasonable: Wehbe v Pittwater Council at [46].*
20. *A fourth way is to establish that the development standard has been virtually abandoned or destroyed by the Council's own decisions in granting development consents that depart from the standard and hence compliance with the standard is unnecessary and unreasonable: Wehbe v Pittwater Council at [47].*
21. *A fifth way is to establish that the zoning of the particular land on which the development is proposed to be carried out was unreasonable or inappropriate so that the development standard, which was appropriate for that zoning, was also unreasonable or unnecessary as it applied to that land and that compliance with the standard in the circumstances of the case would also be unreasonable or unnecessary: Wehbe v Pittwater Council at [48]. However, this fifth way of establishing that compliance with the development standard is unreasonable or unnecessary is limited, as explained in Wehbe v Pittwater Council at [49]-[51].*

The power under cl 4.6 to dispense with compliance with the development standard is not a general planning power to determine the appropriateness of the development standard for the zoning or to effect general planning changes as an alternative to the strategic planning powers in Part 3 of the EPA Act.

22. *These five ways are not exhaustive of the ways in which an applicant might demonstrate that compliance with a development standard is unreasonable or unnecessary; they are merely the most commonly invoked ways. An applicant does not need to establish all of the ways. It may be sufficient to establish only one way, although if more ways are applicable, an applicant can demonstrate that compliance is unreasonable or unnecessary in more than one way.*

The relevant steps identified in *Initial Action* (and the case law referred to in *Initial Action*) can be summarised as follows:

1. Is clause 4.3 of WLEP a development standard?
2. Is the consent authority satisfied that this written request adequately addresses the matters required by clause 4.6(3) by demonstrating that:
 - (a) compliance is unreasonable or unnecessary; and
 - (b) there are sufficient environmental planning grounds to justify contravening the development standard
3. Is the consent authority satisfied that the proposed development will be in the public interest because it is consistent with the objectives of clause 4.3 and the objectives for development for in the zone?
4. Has the concurrence of the Secretary of the Department of Planning and Environment been obtained?
5. Where the consent authority is the Court, has the Court considered the matters in clause 4.6(5) when exercising the power to grant development consent for the development that contravenes clause 4.3 of WLEP?

4.0 Request for variation

4.1 Is clause 4.3 of WLEP a development standard?

The definition of “development standard” at clause 1.4 of the EP&A Act includes a provision of an environmental planning instrument or the regulations in relation to the carrying out of development, being provisions by or under which requirements are specified or standards are fixed in respect of any aspect of that development, including, but without limiting the generality of the foregoing, requirements or standards in respect of:

- (c) *the character, location, siting, bulk, scale, shape, size, height, density, design or external appearance of a building or work,*

Clause 4.3 WLEP prescribes a fixed height provision that seeks to control the height of certain development. Accordingly, clause 4.3 WLEP is a development standard.

4.2 Clause 4.6(3)(a) – Whether compliance with the development standard is unreasonable or unnecessary

The common approach for an applicant to demonstrate that compliance with a development standard is unreasonable or unnecessary are set out in *Wehbe v Pittwater Council* [2007] NSWLEC 827.

The first option, which has been adopted in this case, is to establish that compliance with the development standard is unreasonable and unnecessary because the objectives of the development standard are achieved notwithstanding non-compliance with the standard.

Consistency with objectives of the height of buildings standard

An assessment as to the consistency of the proposal when assessed against the objectives of the standard is as follows:

- (a) *to ensure that buildings are compatible with the height and scale of surrounding and nearby development,*

Comment: Development within the site’s visual catchment, and within the 11 metre height precinct, is eclectic in nature and in transition with a number of older one and two storey commercial and mixed use buildings being replaced with more contemporary 4 storey shop top housing building forms.

The height of development also varies significantly with 1, 2, 3 and 4 storey commercial and shop top housing development defining the visual character of the area and site context. Figures 6 and 7 depict such context it being noted that the examples of 4 storey shop top housing development are located within the 11 metre height area and are grouped in such a manner as to establish a clear street wall height and existing/ desired future character and along this section of Condamine Street.



Figure 6 – View looking north-west towards adjoining properties to the north No. 259 Condamine Street



Figure 7 – Existing 4 storey shop top housing development further to the north along Condamine Street

The consideration of building compatibility is dealt with in the Planning Principle established by the Land and Environment Court of New South Wales in the matter of *Project Venture Developments v Pittwater Council* [2005] NSWLEC 191 (*Project Venture*). At paragraph 23 of the judgment Roseth SC provided the following commentary in relation to compatibility in an urban design context:

22 *There are many dictionary definitions of compatible. The most apposite meaning in an urban design context is capable of existing together in harmony. Compatibility is thus different from sameness. It is generally accepted that buildings can exist together in harmony without having the same density, scale or appearance, though as the difference in these attributes increases, harmony is harder to achieve.*

The question is whether the building height breaching elements contribute to the height and scale of the development to the extent that the resultant building forms will be incompatible with the height and scale of surrounding and nearby development. That is, will the non-compliant building height breaching elements result in a built form which is incapable of coexisting in harmony with surrounding and nearby development to the extent that it will appear inappropriate and jarring in a streetscape and urban design context.

I note that the Level 3 building facade maintains an appropriate setback to Condamine Street such that it will be recessive in a streetscape context consistent with that of other recently approved and constructed shop top housing development along Condamine Street. The upper level, representing the majority of the building height breach particularly as viewed from Condamine Street, will not be perceived as inappropriate or jarring in a streetscape context with the height consistent with that of adjoining properties to the north. The 4 storey stepped and pavilion style building form will be complimentary and compatible with development within the site's visual catchment notwithstanding the building height breach sought.

In this regard, I have formed the considered opinion that the non-compliant building elements will not contribute to the height and scale of the development to the extent that the resultant building forms will be incompatible with the height and scale of surrounding and nearby development. That is, the non-compliant building height breaching elements will not result in a built form which is incapable of coexisting in harmony with surrounding and nearby development to the extent that it will appear inappropriate or jarring in a streetscape and urban design context. As indicated in *Project Venture* development does not have to be the same height to be considered compatible.

Consistent with the conclusions reached by Senior Commissioner Roseth in *Project Venture* I have formed the considered opinion that most observers would not find the proposed development by virtue of its height, particularly the building elements breaching the height standard, offensive, jarring or unsympathetic in a streetscape and urban context. In this regard, it can be reasonably concluded that, notwithstanding the building height breaching elements, the development is compatible with the height and scale of surrounding and nearby development and accordingly the proposal achieves this objective.

- (b) *to minimise visual impact, disruption of views, loss of privacy and loss of solar access,*

Comment: Having undertaken a detailed site and context analysis and identified available view lines over the site I have formed the considered opinion that the height of the development, and in particular the non-compliant height components, will not give rise to any visual privacy or solar access impacts with appropriate spatial separation maintained to adjoining properties.

In this regard, I rely on the shadow diagrams at Attachment 1 and the fact that all boarding rooms and associated balconies are orientated to the front or rear of the site, or alternatively into the internalised courtyard area, where the upper-level boarding rooms associated with the non-compliant building height will not give rise to unacceptable privacy impacts.

Having inspected the site and its immediate surrounds to identify potential view lines I am satisfied that the building height breaching elements will not give rise to any unacceptable view loss with the form and massing of the development, particularly those elements located above the height limit, will not giving rise to any inappropriate or jarring visual impacts to surrounding development.

The proposal achieves this objective.

- (c) *to minimise any adverse impact of development on the scenic quality of Warringah's coastal and bush environments,*

Comment: The non-compliant building height elements will not be discernible as viewed from any coastal or bushland environments. This objective is achieved.

- (d) *to manage the visual impact of development when viewed from public places such as parks and reserves, roads and community facilities.*

Comment: The non-compliant building height will not be visually prominent as viewed from the street or any public area. Consistent with the conclusions reached by Senior Commissioner Roseth in the *Project Venture* I have formed the considered opinion that most observers would not find the proposed development, in particular the non-compliant portions of the building, offensive, jarring or unsympathetic in a streetscape context.

Having regard to the above, the non-compliant component of the building will achieve the objectives of the standard to at least an equal degree as would be the case with a development that complied with the building height standard. Given the developments consistency with the objectives of the height of buildings standard strict compliance has been found to be both unreasonable and unnecessary under the circumstances.

Consistency with zone objectives

The subject property is zoned B2 Local Centre pursuant to WLEP 2011. The developments consistency with the stated objectives of the B2 zone are as follows:

- *To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area.*

Response: I note that boarding houses are permissible with consent in the zone and to that extent will provide affordable rental accommodation with ancillary ground level office space that will serve the needs of people who live in the local area.

The shared ground floor office space is provided for use by the occupants of the boarding house and to that extent represents a small office/ home office (SOHO) type use which provides for an appropriate level of street activation and office space for the use of boarding house residents. Such outcome is consistent with the zone objectives in that it provides for a ground floor use which serves the office space needs of people who live in the local area.

The proposal is not antipathetic to this objective.

- *To encourage employment opportunities in accessible locations.*

Response: The proposed boarding house will generate temporary and permanent employment opportunities associated with the day-to-day management and maintenance of the facility. The proposal is not antipathetic to this objective.

- *To maximise public transport patronage and encourage walking and cycling.*

Response: The development provides appropriately for vehicle, motorcycle and bicycle parking to achieve this objective.

- *To provide an environment for pedestrians that is safe, comfortable and interesting;*

Response: the proposed building is of exceptional design quality with the ground level front façade designed to provide an appropriate level of Street level activation. The proposed breaching height elements are not antipathetic to this objective.

- *To create urban form that relates favourably in scale and in architectural and landscape treatment to neighbouring land uses and to the natural environment;*

Response: The proposal building scale and landscape treatments proposed provide for urban and landscape form that relates favourably in scale and in architectural and landscape treatment to neighbouring land uses and to the natural environment. This objective is achieved notwithstanding the building height non-compliant elements.

- *To minimise conflict between land uses in the zone and adjoining zones and ensure amenity of any adjoining or nearby residential land uses.*

Response: The property adjoins the R2 Low Density Residential zone to the west of the site with particular attention given to ensuring the maintenance of appropriate amenity to the properties within this adjoining zone in relation to privacy and solar access.

The design response adopted, including the maintenance of appropriate spatial separation and the incorporation of fixed planter box privacy attenuation measures to the upper-level of the development where the building exceeds the height standard and is orientated towards the zone boundary interface, minimises conflict between land uses in the zone and adjoining zones and ensure amenity of any adjoining or nearby residential land uses. This objective is achieved notwithstanding the building height non-compliant elements.

The proposed development, notwithstanding the height breaching elements, achieve the objectives of the zone.

The non-compliant component of the development, as it relates to building height, demonstrates consistency with objectives of the zone and the height of building standard objectives. Adopting the first option in *Wehbe* strict compliance with the height of buildings standard has been demonstrated to be unreasonable and unnecessary.

4.3 Clause 4.6(4)(b) – Are there sufficient environmental planning grounds to justify contravening the development standard?

In Initial Action the Court found at [23]-[24] that:

23. *As to the second matter required by cl 4.6(3)(b), the grounds relied on by the applicant in the written request under cl 4.6 must be “environmental planning grounds” by their nature: see Four2Five Pty Ltd v Ashfield Council [2015] NSWLEC 90 at [26]. The adjectival phrase “environmental planning” is not defined, but would refer to grounds that relate to the subject matter, scope and purpose of the EPA Act, including the objects in s 1.3 of the EPA Act.*
24. *The environmental planning grounds relied on in the written request under cl 4.6 must be “sufficient”. There are two respects in which the written request needs to be “sufficient”. First, the environmental planning grounds advanced in the written request must be sufficient “to justify contravening the development standard”. The focus of cl 4.6(3)(b) is on the aspect or element of the development that contravenes the development standard, not on the development as a whole, and why that contravention is justified on environmental planning grounds.*

The environmental planning grounds advanced in the written request must justify the contravention of the development standard, not simply promote the benefits of carrying out the development as a whole: see Four2Five Pty Ltd v Ashfield Council [2015] NSWCA 248 at [15]. Second, the written request must demonstrate that there are sufficient environmental planning grounds to justify contravening the development standard so as to enable the consent authority to be satisfied under cl 4.6(4)(a)(i) that the written request has adequately addressed this matter: see Four2Five Pty Ltd v Ashfield Council [2015] NSWLEC 90 at [31].

Sufficient Environmental Planning Grounds

There are sufficient environmental planning grounds to justify the variation sought it being noted that the finished heights proposed, relative to the level of Condamine Street, will be complimentary and compatible with the height of adjoining development to the north and development generally along this section of Condamine Street. In this regard, the non-compliant building elements ensure that the building achieves an appropriate contextual “fit” have regard to the desired future streetscape character of 4 storey development established on the western side of Condamine Street.

The depression through the site created by the creek line distorts any reasonable assessment of building height on the site when expressed in metres above ground level (existing). Accordingly, the assessment contained within this report assesses the acceptability of the finished building heights proposed against the finished building heights established by existing and approved development along this section of Condamine Street. This represents an appropriate environmental planning consideration for development on this particular site.

It can also be argued that the 11 metre height standard has been effectively abandoned along this particular section of Condamine Street in favour of a consistent and cohesive streetscape and urban design outcome.

Strict compliance would require the deletion of the upper 2 floors of the development and result in a 2 storey form that would appear inconsistent with the height and cohesive streetscape established by recently approved and constructed shop top housing development along this section of Condamine Street. The building is of exceptional design quality with the variation facilitating a height and floor space that provides for contextual built form compatibility, the delivery of affordable housing and the orderly and economic use and development of the land consistent with objectives 1.3(c) (d) and (g) of the Act.

It is noted that in *Initial Action*, the Court clarified what items a Clause 4.6 does and does not need to satisfy. Importantly, there does not need to be a "better" planning outcome:

87. The second matter was in cl 4.6(3)(b). I find that the Commissioner applied the wrong test in considering this matter by requiring that the development, which contravened the height development standard, result in a "better environmental planning outcome for the site" relative to a development that complies with the height development standard (in [141] and [142] of the judgment). Clause 4.6 does not directly or indirectly establish this test.

The requirement in cl 4.6(3)(b) is that there are sufficient environmental planning grounds to justify contravening the development standard, not that the development that contravenes the development standard have a better environmental planning outcome than a development that complies with the development standard.

That said, I note that the proposed revised clause 4.6 provisions as recently identified by the Department of Planning indicates that the clause 4.6 provisions may be changed such that the consent authority must be directly satisfied that the applicant's written request demonstrates the following essential criteria in order to vary a development standard:

- *the proposed development is consistent with the objectives of the relevant development standard and land use zone; **and***
- *the contravention will result in an improved planning outcome when compared with what would have been achieved if the development standard was not contravened. In deciding whether a contravention of a development standard will result in an improved planning outcome, the consent authority is to consider the public interest, environmental outcomes, social outcomes or economic outcomes.*

In this particular instance, I am satisfied that the proposed development is consistent with the objectives of the relevant development standard and land use zone and the contravention of the standard will result in an improved planning outcome when compared with what would have been achieved if the development standard was not contravened.

There are sufficient environmental planning grounds to justify contravening the development standard.

4.4 Clause 4.6(a)(iii) – Is the proposed development in the public interest because it is consistent with the objectives of clause 4.3 and the objectives of the B2 Local Centre zone

The consent authority needs to be satisfied that the proposed development will be in the public interest if the standard is varied because it is consistent with the objectives of the standard and the objectives of the zone.

Preston CJ in Initial Action (Para 27) described the relevant test for this as follows:

“The matter in cl 4.6(4)(a)(ii), with which the consent authority or the Court on appeal must be satisfied, is not merely that the proposed development will be in the public interest but that it will be in the public interest because it is consistent with the objectives of the development standard and the objectives for development of the zone in which the development is proposed to be carried out.

It is the proposed development’s consistency with the objectives of the development standard and the objectives of the zone that make the proposed development in the public interest. If the proposed development is inconsistent with either the objectives of the development standard or the objectives of the zone or both, the consent authority, or the Court on appeal, cannot be satisfied that the development will be in the public interest for the purposes of cl 4.6(4)(a)(ii).”

As demonstrated in this request, the proposed development is consistent with the objectives of the development standard and the objectives for development of the zone in which the development is proposed to be carried out.

Accordingly, the consent authority can be satisfied that the proposed development will be in the public interest if the standard is varied because it is consistent with the objectives of the standard and the objectives of the zone.

4.5 Secretary's concurrence

By Planning Circular dated 5th May 2020, the Secretary of the Department of Planning & Environment advised that consent authorities can assume the concurrence to clause 4.6 request except in the circumstances set out below:

- Lot size standards for rural dwellings;
- Variations exceeding 10%; and
- Variations to non-numerical development standards.

The circular also provides that concurrence can be assumed when an LPP is the consent authority where a variation exceeds 10% or is to a nonnumerical standard, because of the greater scrutiny that the LPP process and determination are subject to, compared with decisions made under delegation by Council staff.

Notwithstanding that the Court can stand in the shoes of the consent authority and assume the concurrence of the Secretary, the Court would be satisfied that the matters in clause 4.6(5) are addressed because the contravention does not raise any matter of significance for regional or state planning given that the building height breaching elements facilitate better environmental and urban design outcomes with the result that there is no public benefit in maintaining the standard in the particular circumstances of this case.

5.0 Conclusion

Pursuant to clause 4.6(4)(a), the consent authority is satisfied that the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3) being:

- (a) *that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
- (b) *that there are sufficient environmental planning grounds to justify contravening the development standard.*

As such, I have formed the highly considered opinion that there is no statutory or environmental planning impediment to the granting of a height of buildings variation in this instance.

Boston Blyth Fleming Pty Limited

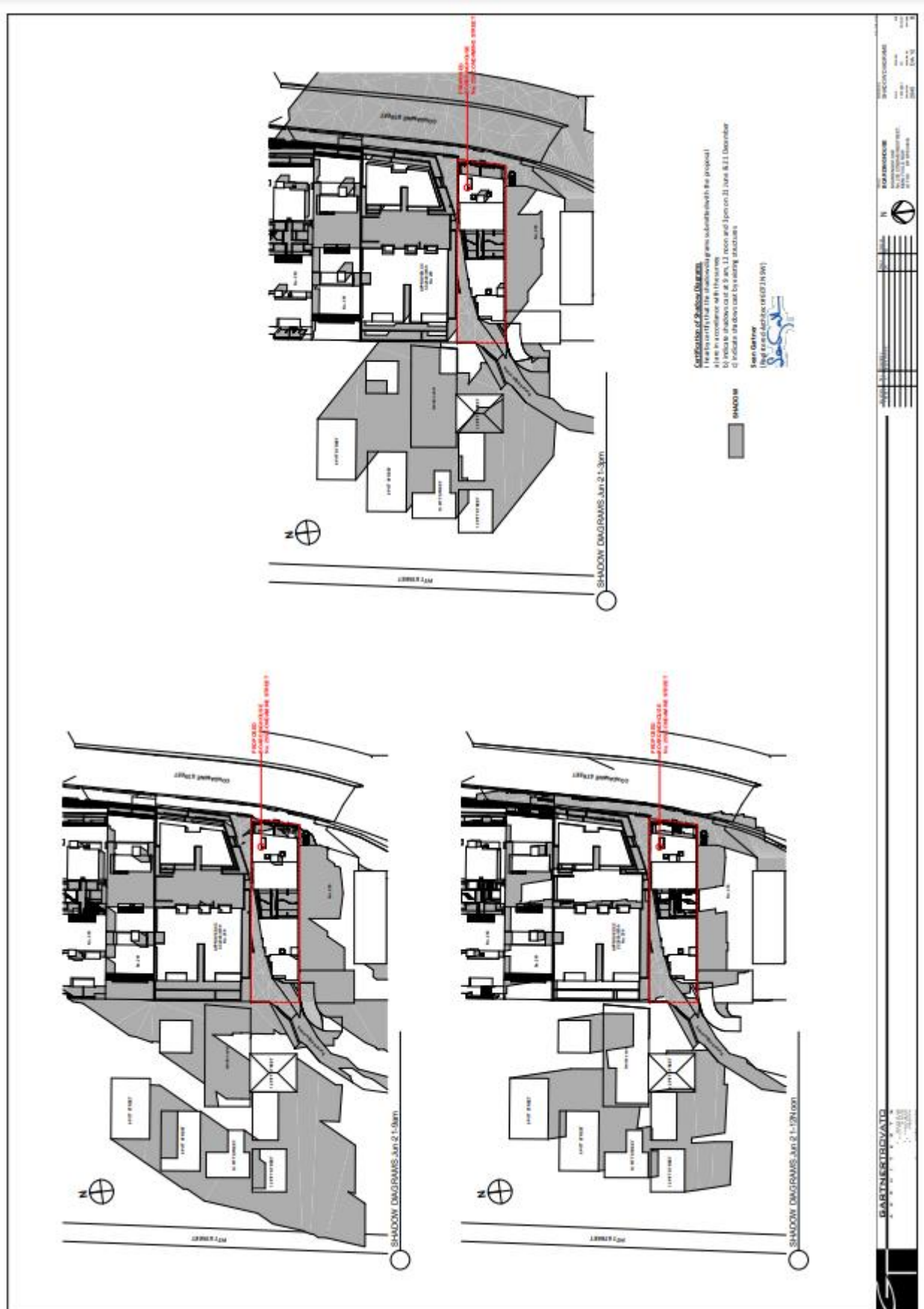
A handwritten signature in black ink, appearing to read 'Greg Boston', with a stylized flourish at the end.

Greg Boston

B Urb & Reg Plan (UNE) MPIA

Director

Attachment 1 Shadow diagrams



CLIENT: MY MANLY VALE PTY LTD

DRAWING LIST		
DWG NO.	REV	DWG TITLE
GENERAL		
P507-A000	B	COVER SHEET
CONSTRUCTION MANAGEMENT WORKS		
P507-B300	B	SEDIMENT AND EROSION CONTROL AND DEMOLITION PLAN
P507-B350	A	SEDIMENT AND EROSION DETAILS
EARTHWORKS		
P507-C100	B	EARTHWORKS PLAN
P507-C500	B	EARTHWORKS CUT-FILL ANALYSIS PLAN
P507-C600	B	EARTHWORKS SECTIONS SHEET 1
P507-C601	B	EARTHWORKS SECTIONS SHEET 2
P507-C602	B	EARTHWORKS SECTIONS SHEET 3



LOCALITY PLAN
NOT TO SCALE

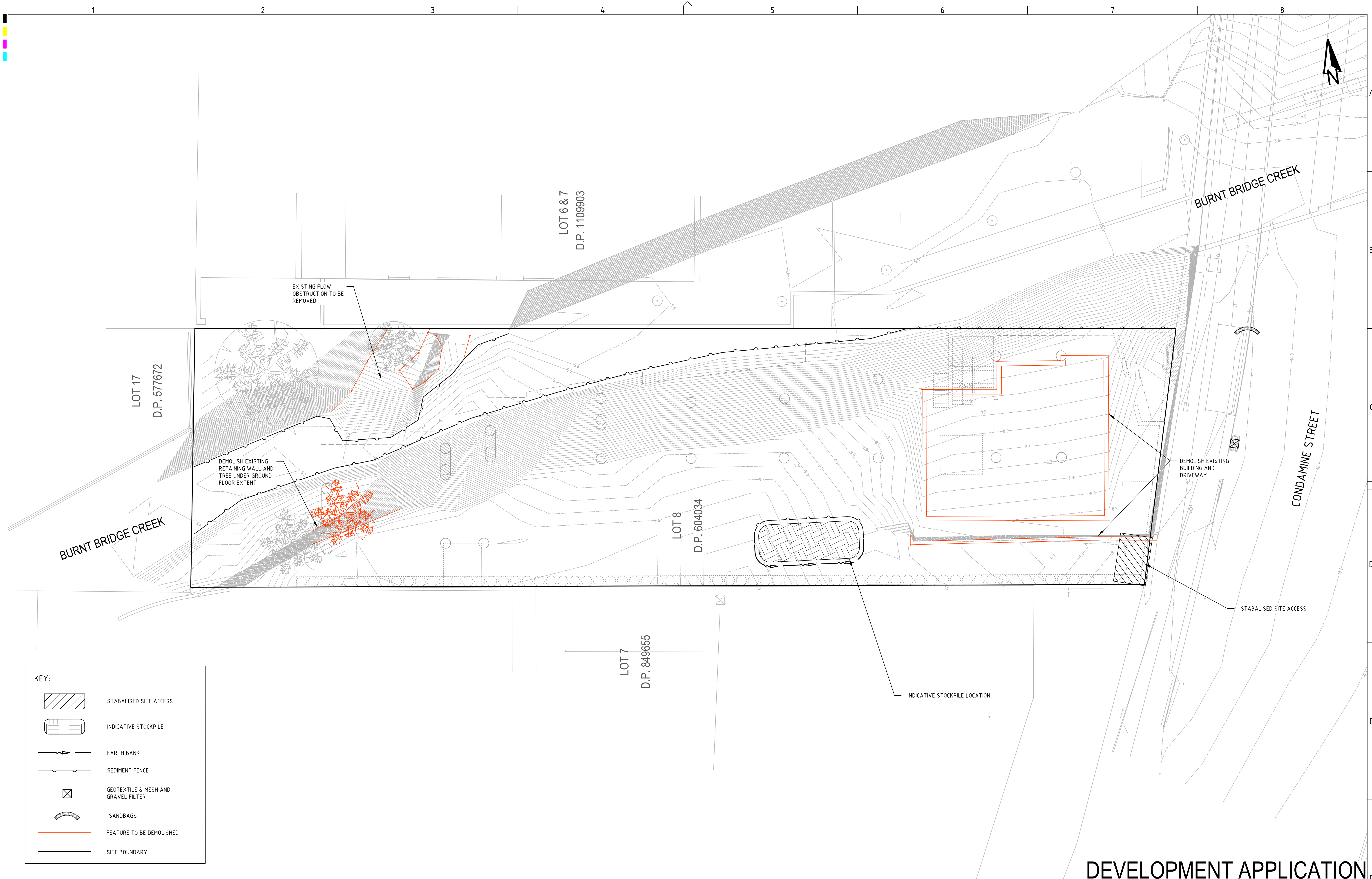
255 CONDRAMINE STREET, MANLY VALE, NSW
LOT 8 DP 604034

GENERAL NOTES:

1. THIS PLAN IS FOR DEVELOPMENT APPLICATION PURPOSE AND NOT FOR CONSTRUCTION. DESIGN TO BE REVIEWED AND UPDATED FOR CONSTRUCTION CERTIFICATE.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH, AND THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE RELEVANT AUSTRALIAN STANDARDS, COUNCIL SPECIFICATIONS, AND ALL PROJECT CONSULTANT'S PLANS AND REPORTS.
3. INTERNAL SURVEY INFORMATION AND EXTERNAL SITE BOUNDARY SHOWN BASED ON SURVEY INFORMATION PROVIDED BY BEE & LETHBRIDGE 15/09/2020.
4. ARCHITECTURAL INFORMATION SHOWN BASED ON DESIGN BY GARTNER TROVATO ARCHITECTS 21/09/2020.
5. LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
6. FINAL SURFACE CONTOURS ARE BASED ON DESIGN AND EXISTING SURVEY AND LIDAR SURFACES.

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	DRAWING TITLE									
B	REVISED FOLLOWING S34	28/10/2021	NN	CG	DD	GT				GT	MY MANLY VALE PTY LTD	 Consulting Engineers Environment Water Geotechnical Civil	COVER SHEET								
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT					PROJECT NAME/PLANSET TITLE						PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
											PROPOSED BOARDING HOUSE						P1605609	PS07	R02	PS07-A000	B
											CHANNEL DESIGN PLAN										
											255 CONDOMINIUM STREET, MANLY VALE, NSW LOT 8 DP 604034										
PRINTED: ---- - USER: INK240 A17 A3 LANDSCAPE 1481x 1022 0.001								DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd (C) Copyright Martens & Associates Pty Ltd		Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au		DRAWING ID: P1605609-PS07-R02-A000									



DEVELOPMENT APPLICATION

[illegible]

SCALE

0 1 2 3 4 5 6 7 8 9 10

A1 (A3) 1:100 (1:200) METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	GT
DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd		

CLIENT	MY MANLY VALE PTY LTD
PROJECT NAME/PLANSET TITLE	PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN
	255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034



martens
& Associates Pty Ltd

Consulting Engineers
Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE				
SEDIMENT AND EROSION CONTROL AND DEMOLITION PLAN				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-B300	B

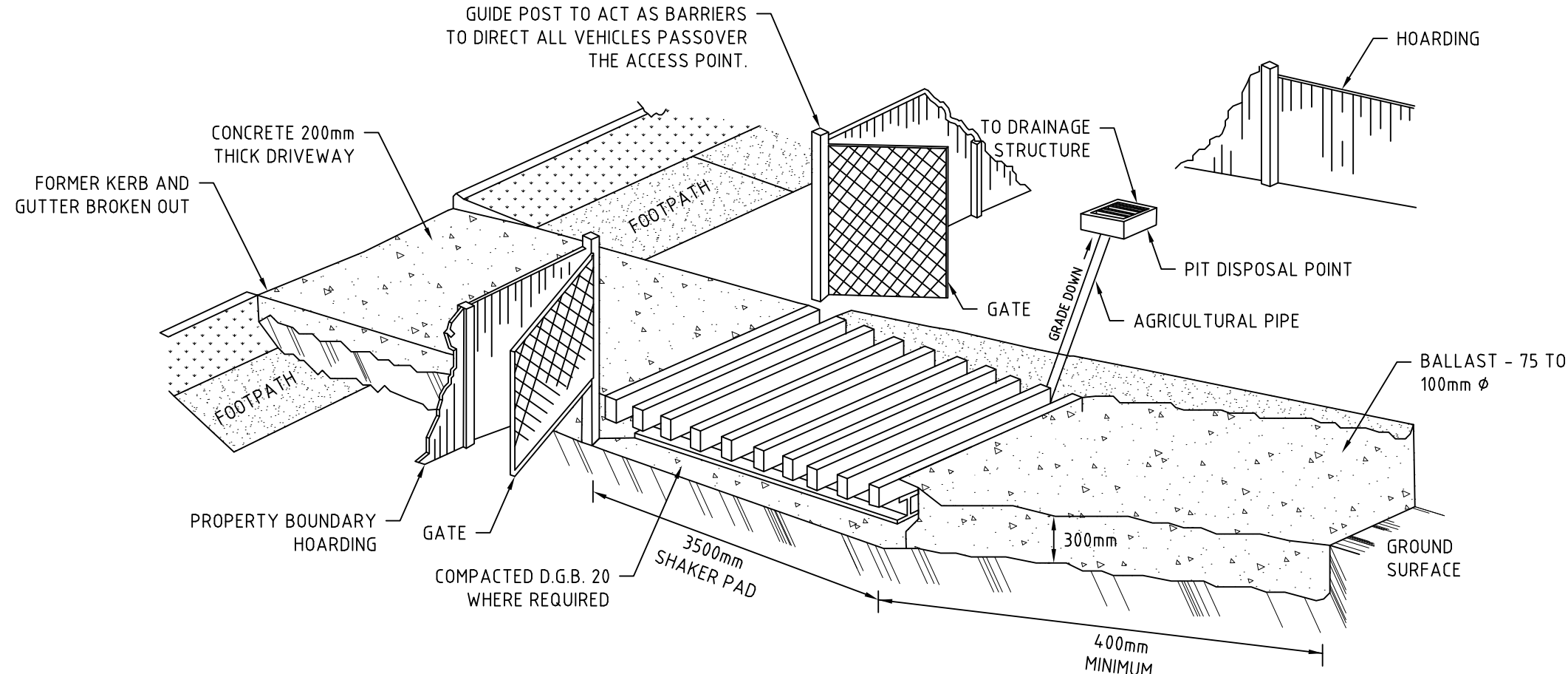
DRAWING ID: P1605609-PS07-R02-B300

STABILISED ACCESS POINT

TYPE II SAP

THE TYPE II SAP DESIGN IS MORE DEFINED IN THAT IT REQUIRES AN AREA OF BALLAST WITHIN THE SITE COMBINED WITH A SHAKER PAD; ADJACENT THE SHAKER PAD AND IN THE PUBLIC WAY IS A TEMPORARY (CONCRETE) VEHICULAR CROSSING. (SEE DIAGRAM)

STABILISED ACCESS POINT - TYPE 2



IN BOTH TYPE I AND TYPE II SAP'S, THE TEMPORARY VEHICULAR CROSSING MUST:

- CONNECT TO AN EXISTING GUTTER LAYBACK (WHERE THE KERB AND GUTTER EXIST). IF A GUTTER LAYBACK DOES NOT EXIST THEN THE CONNECTION MUST BE MADE TO THE GUTTER BY REMOVING THE ADJACENT KERB SECTION ONLY.
- CONNECT TO A DISH CROSSING (WHERE KERB AND GUTTER DOES NOT EXIST). IF A DISH CROSSING DOES NOT EXIST, THEN IT MUST BE CONSTRUCTED IN ACCORDANCE WITH DETAILS CONTAINED IN COUNCIL'S ISSUED FOOTPATH CROSSING LEVELS.

IT SHOULD BE NOTED THAT THESE TYPES OF SAPS ARE CONSIDERED TO BE APPLICABLE FOR THE MAJORITY OF ACTIVITIES HOWEVER SOME SITES MAY REQUIRE SPECIAL CONSIDERATION.

SHAKER PAD (CATTLE GRID)

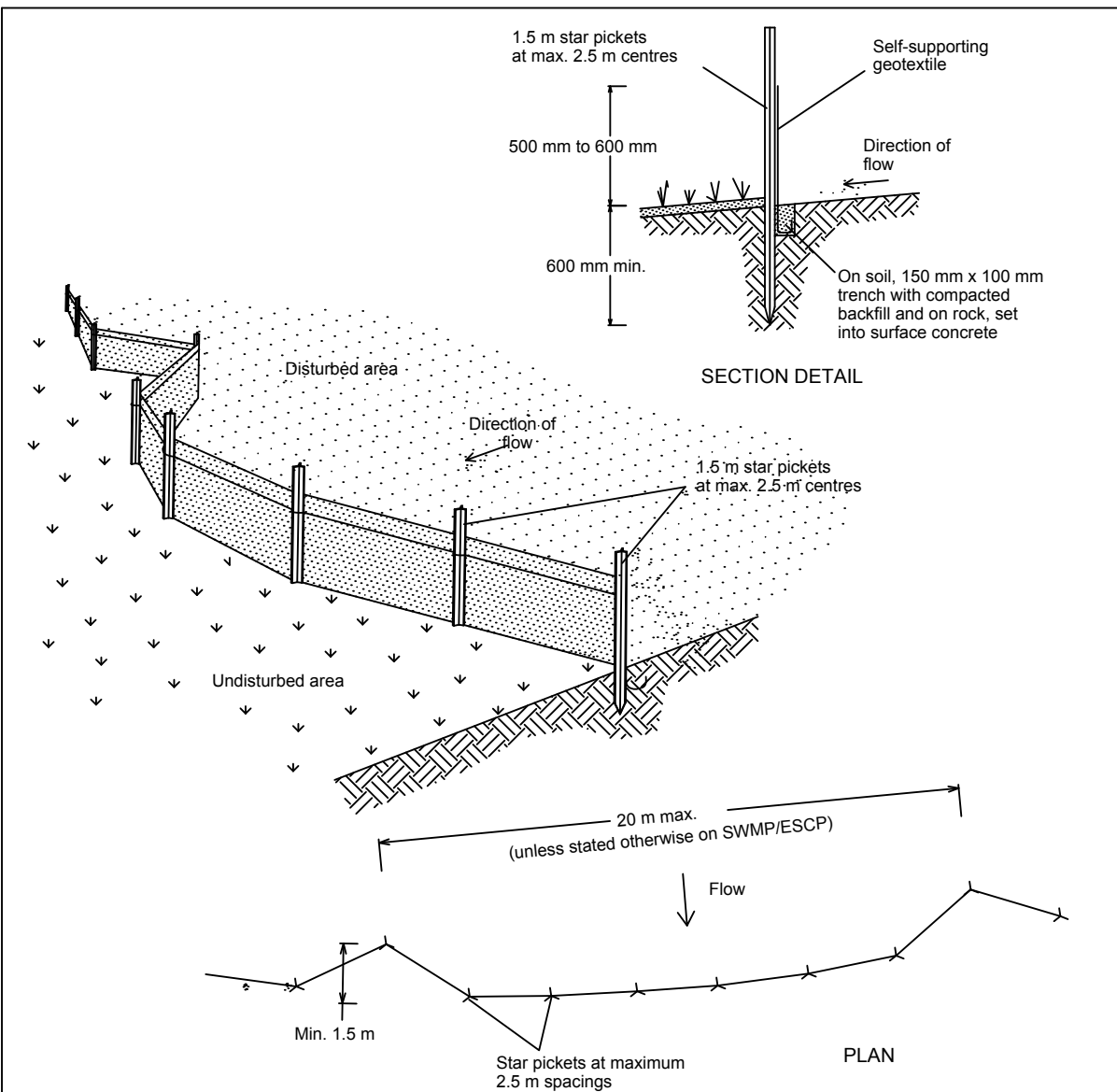
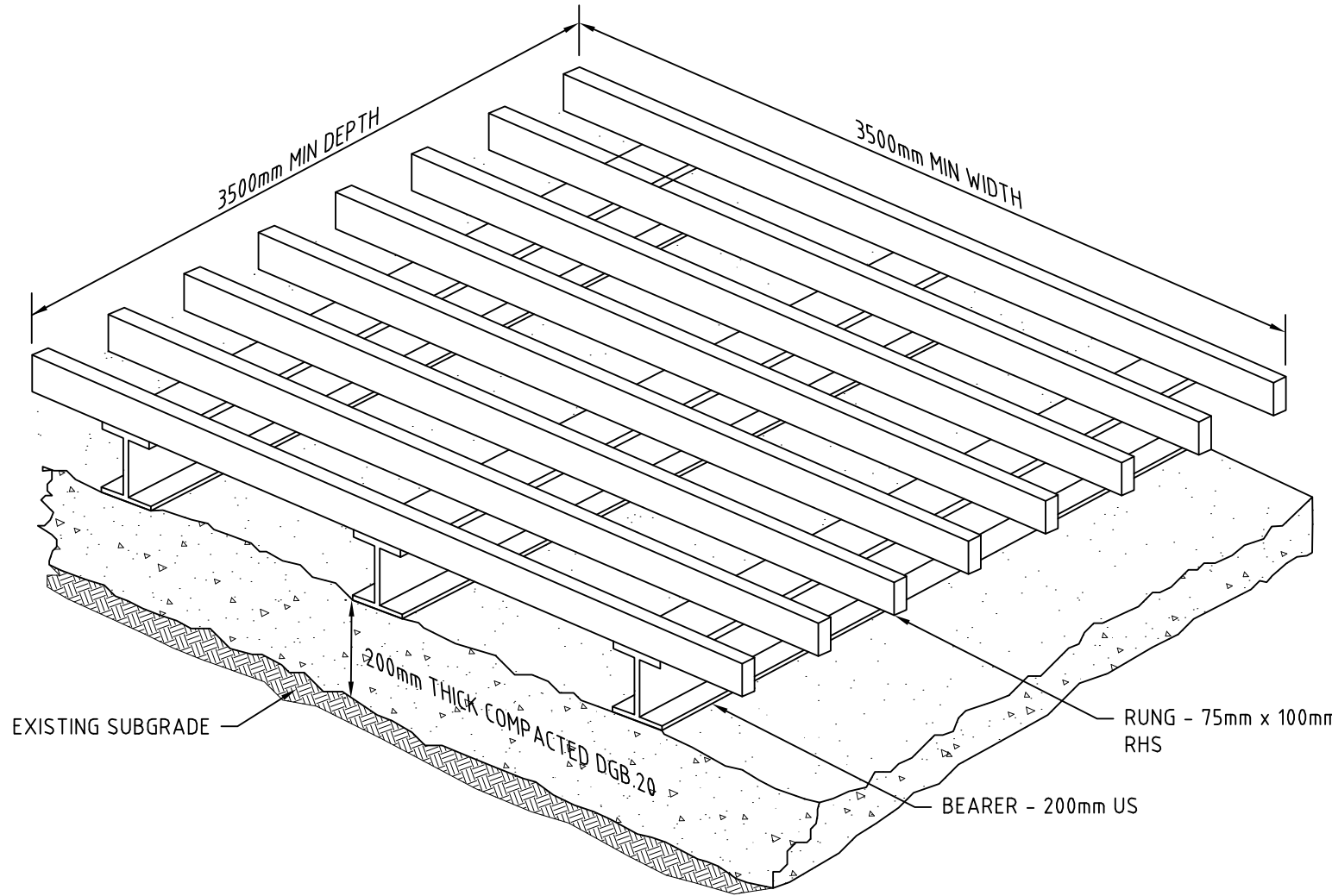
A CORRECTLY DESIGNED AND INSTALLED SHAKER PAD WILL ASSIST IN PREVENTING SEDIMENT TRANSFER FROM A SITE. ANY STABILISED ACCESS POINT (SAP) CAN BE DESIGNED WITH A SHAKER PAD (COMPULSOPRY IN TYPE II SAP'S)

SHAKER PADS CAN BE DESIGNED AND CONSTRUCTED TO ENABLE RE-USE ON FUTURE PROJECTS.

THE SHAKER PAD:

- MUST BE DESIGNED AND CERTIFIED BY A PRACTICING STRUCTURAL ENGINEER. THE CERTIFIED DESIGN SHOULD BE SUBMITTED WITH THE RELEVANT APPLICATION.
- CAN BE CONSTRUCTED FROM ANY SUITABLE MATERIAL.
- MUST BE LOCATED ON A SUITABLY PREPARED AND COMPACTED SUB-GRADE/BASE MATERIAL.
- MUST BE SITUATED SUCH THAT THE RUNGS OF THE SHAKER PAD ARE LEVEL WITH THE ADJOINING NATURAL SURFACE.
- MUST BE A MINIMUM OF 3.5m IN LENGTH.
- MUST BE A MINIMUM OF 3.5m IN WIDTH.
- MUST HAVE CLEAR SPACING BETWEEN RUNGS OF 200 - 250mm.
- RUNGS MUST HAVE A MAXIMUM WIDTH (BEARING AREA) OF 75mm.
- MUST HAVE A MINIMUM CLEAR DEPTH OF 300mm IE FORM THE ROP OF THE RUNG TO THE FINISHED SUB-GRADE/BASE LEVEL.

THE SHAKER PAD MUST BE PROVIDED WITH SUITABLE BARRIERS AT THE SIDES TO ENSURE THAT ALL TYERS OF VEHICLES LEAVING THE SITE TRAVERSE THE DEVICE.

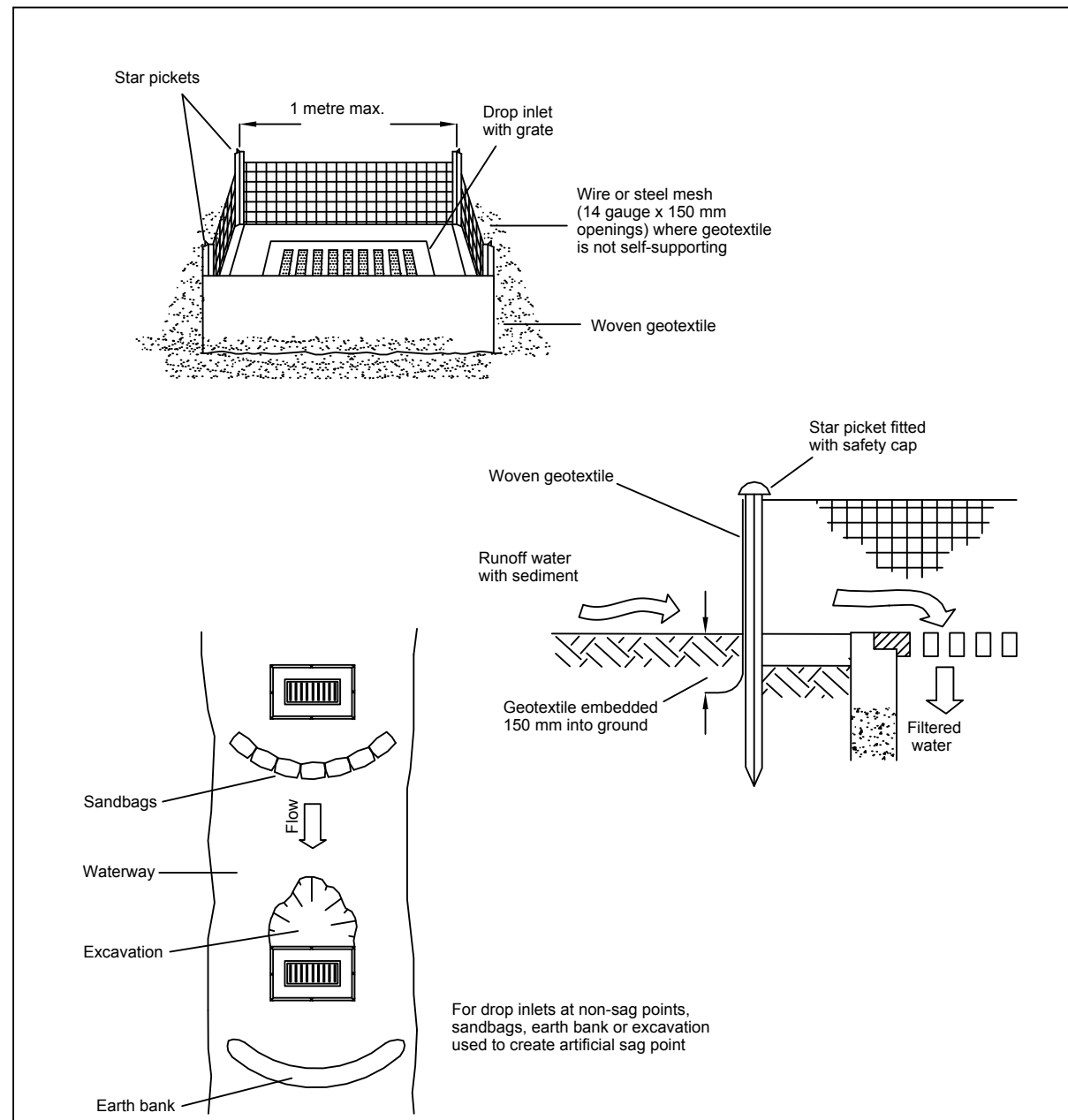


Construction Notes

- Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
- Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
- Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
- Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
- Join sections of fabric at a support post with a 150-mm overlap.
- Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE

SD 6-8

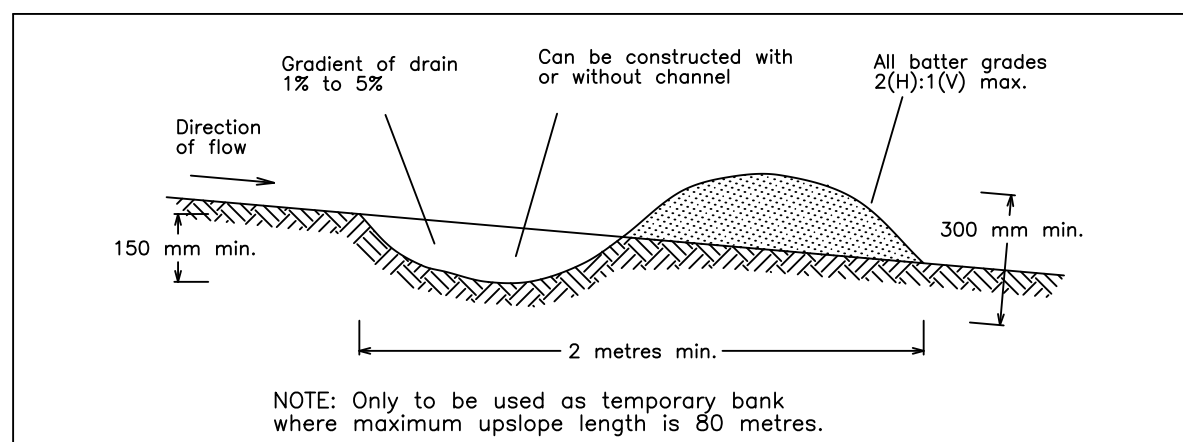


Construction Notes

- Fabricate a sediment barrier made from geotextile or straw bales.
- Follow Standard Drawing 6-7 and Standard Drawing 6-8 for installation procedures for the straw bales or geofabric. Reduce the picket spacing to 1 metre centres.
- In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing.
- Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

GEOTEXTILE INLET FILTER

SD 6-12

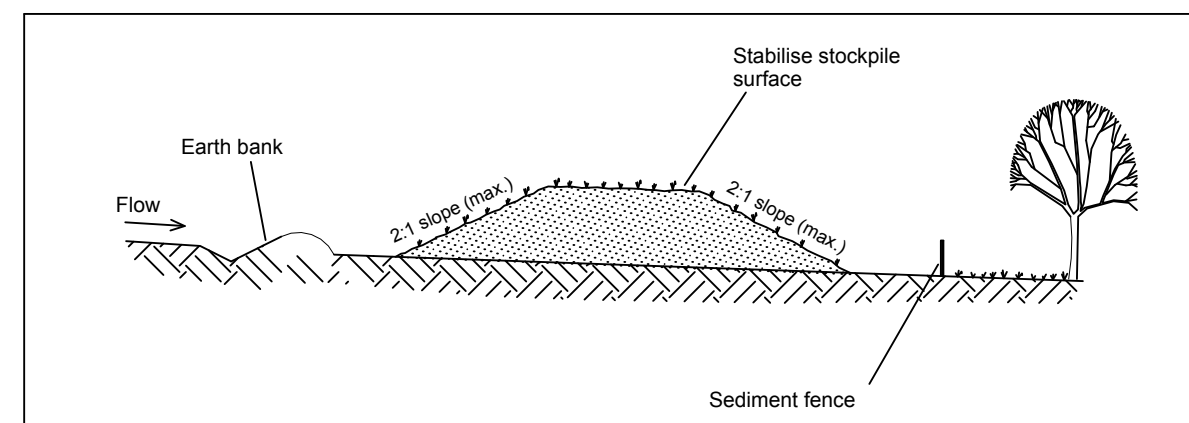


Construction Notes

- Build with gradients between 1 percent and 5 percent.
- Avoid removing trees and shrubs if possible - work around them.
- Ensure the structures are free of projections or other irregularities that could impede water flow.
- Build the drains with circular, parabolic or trapezoidal cross sections, not V shaped.
- Ensure the banks are properly compacted to prevent failure.
- Complete permanent or temporary stabilisation within 10 days of construction.

EARTH BANK (LOW FLOW)

SD 5-5



Construction Notes

- Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
- Construct on the contour as low, flat, elongated mounds.
- Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
- Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
- Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

STOCKPILES

SD 4-1

DEVELOPMENT APPLICATION

PRINTED: 11/03/2021 11:03:21 AM

A1 / A3 LANDSCAPE (A1LC_v02.0.01)

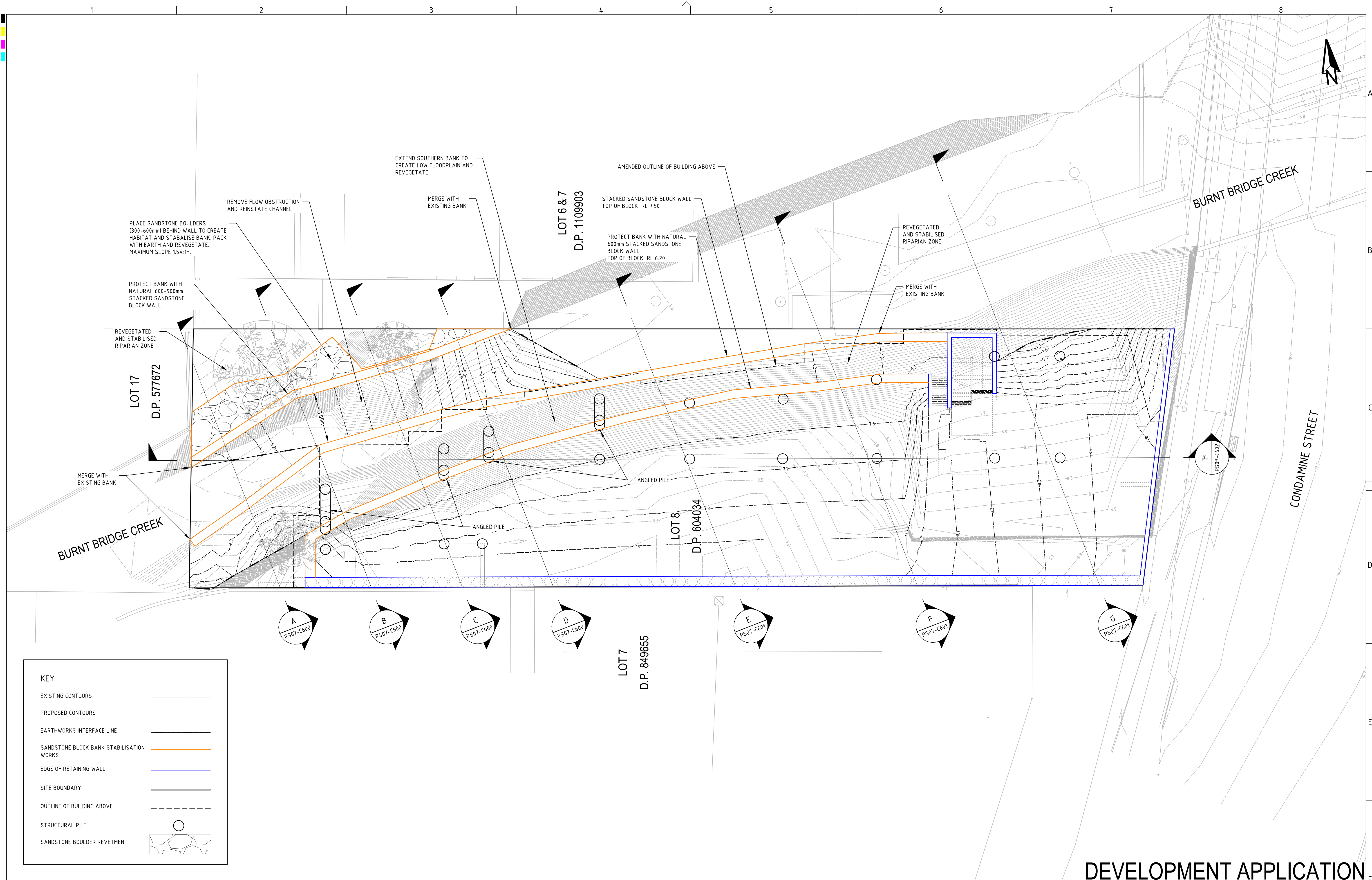
REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT	

GRID	DATUM	PROJECT MANAGER	CLIENT
		GT	MY MANLY VALE PTY LTD
DISCLAIMER & COPYRIGHT		PROJECT NAME/PLANSET TITLE	
This plan must not be used for construction unless signed as approved by principal certifying authority.		PROPOSED BOARDING HOUSE	
All measurements in millimetres unless otherwise specified.		CHANNEL DESIGN PLAN	
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.		255 CONDOMINE STREET, MANLY VALE, NSW	
(C) Copyright Martens & Associates Pty Ltd		LOT 8 DP 604034	

		Consulting Engineers	
		Environment Water Geotechnical Civil	
Suite 201, 20 George St, Hornsby, NSW 2077 Australia		Phone: (02) 9476 9999 Fax: (02) 9476 8767	
		Email: mail@martens.com.au Internet: www.martens.com.au	

DRAWING TITLE				
SEDIMENT AND EROSION DETAILS				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-B350	A

DRAWING ID: P1605609-PS07-R02-B350



KEY

EXISTING CONTOURS

PROPOSED CONTOURS

EARTHWORKS INTERFACE LINE

SANDSTONE BLOCK BANK STABILISATION WORKS

EDGE OF RETAINING WALL

SITE BOUNDARY

OUTLINE OF BUILDING ABOVE

STRUCTURAL PILE

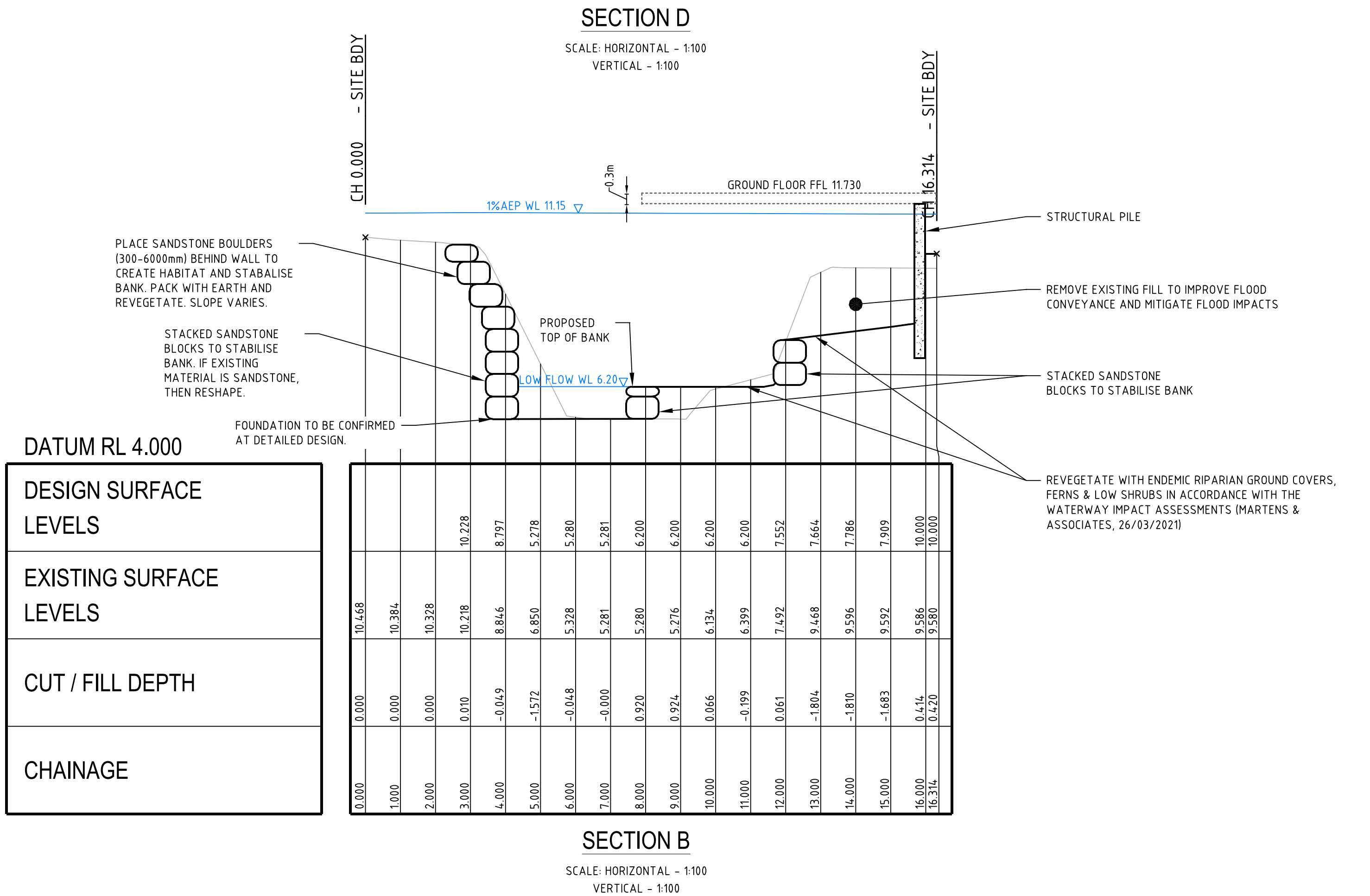
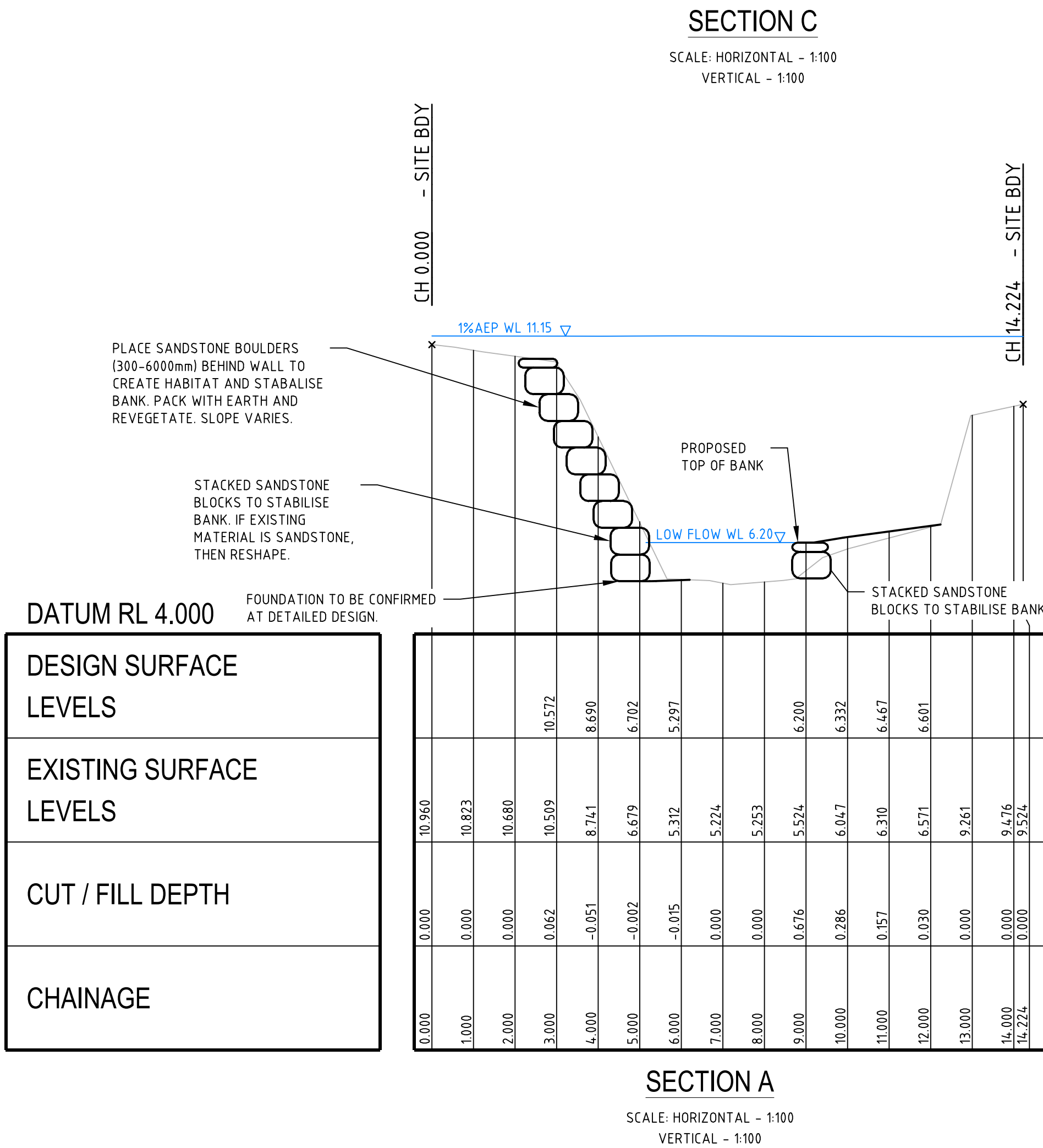
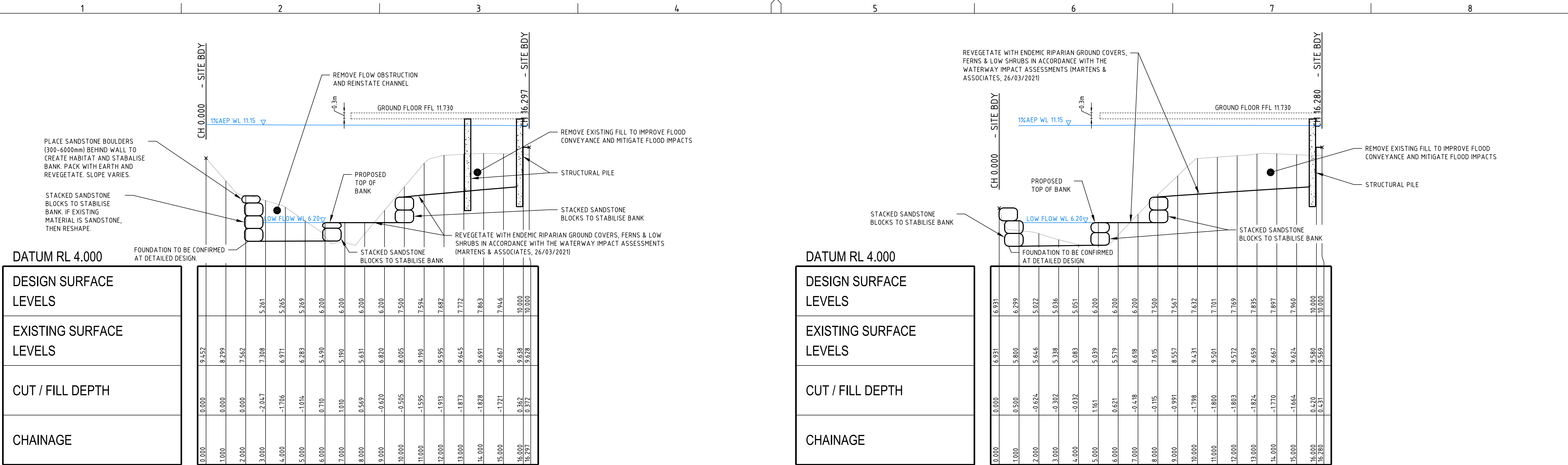
SANDSTONE BOULDER REVETMENT

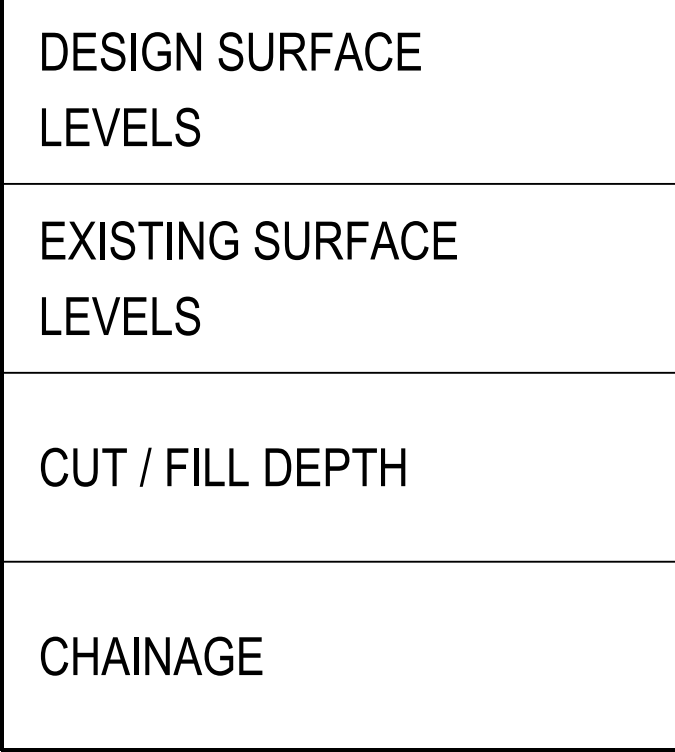
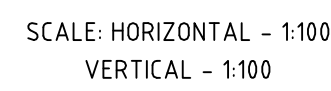
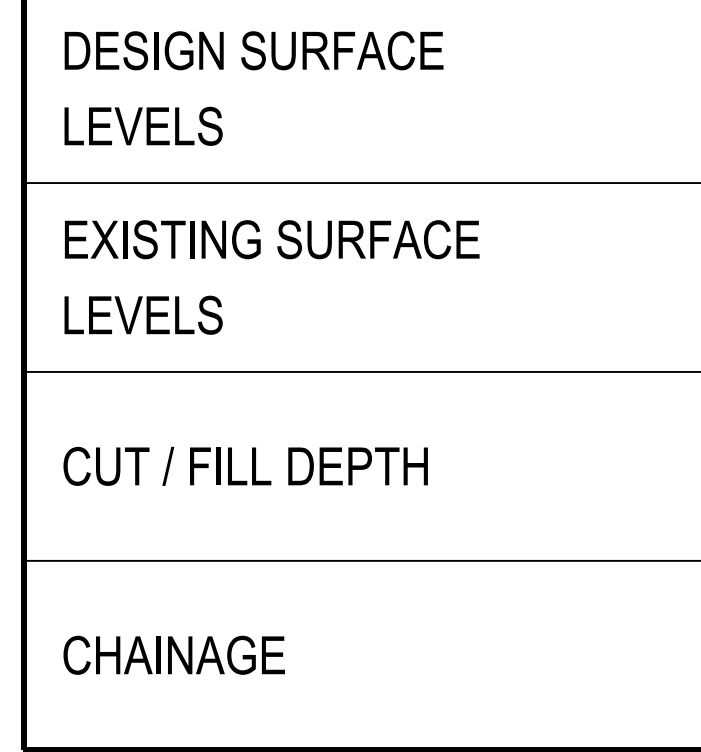
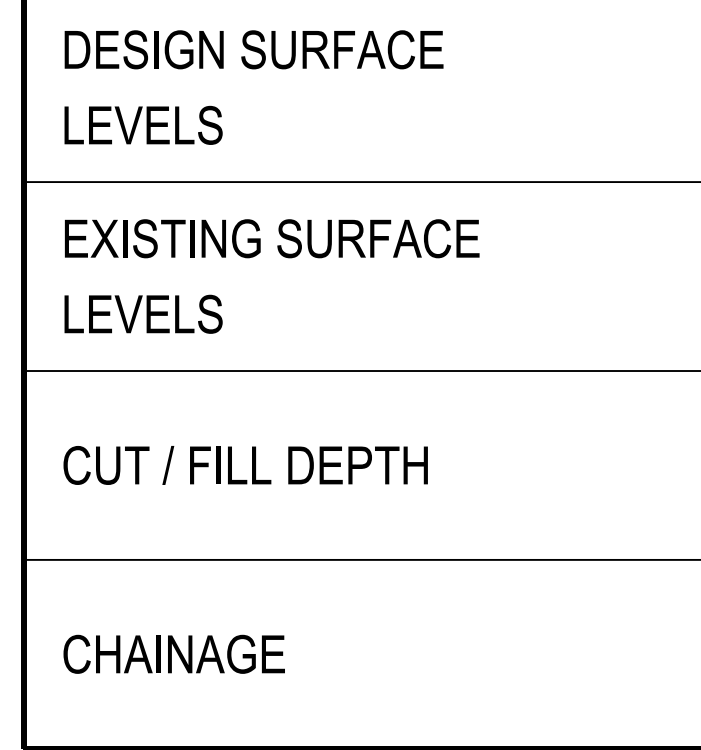
REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE 	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	DRAWING TITLE					
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT		MGA	mAHD	GT	MY MANLY VALE PTY LTD		PROJECT NAME/PLANSET TITLE PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN 255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034	EARTHWORKS PLAN				
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT								PROJECT NO. PLANSET NO. RELEASE NO. DRAWING NO. REVISION				
														P1605609	PS07	R02	PS07-C100	B
														DRAWING ID: P1605609-PS07-R02-C100				



CUT-FILL DEPTH DESIGN TO EXISTING		
LESS THAN	-3.000 m	
-3.000 to	-2.250 m	
-2.250 to	-1.500 m	
-1.500 to	-0.750 m	
-0.750 to	-0.150 m	
-0.150 to	0.150 m	
0.150 to	0.750 m	
0.750 to	1.500 m	
1.500 to	2.250 m	
2.250 to	3.000 m	
GREATER THAN	99999 m	

PRINTED: 2021/10/20 14:00:00 USER: MARY20	<table><tr><th>REV</th><th>DESCRIPTION</th><th>DATE</th><th>DRAWN</th><th>DESIGNED</th><th>CHECKED</th><th>APPRVD</th></tr><tr><td>B</td><td>REVISED FOLLOWING S34</td><td>20/10/2021</td><td>NN</td><td>CG</td><td>DD</td><td>GT</td></tr><tr><td>A</td><td>WITHOUT PREJUDICE DRAFT FOR S34</td><td>28/09/2021</td><td>NN</td><td>CG</td><td>DD</td><td>GT</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>	REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT	A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT																																											<table><tr><th>SCALE</th></tr><tr><td>A1 (A3) 1:100 (1:200)</td></tr></table>	SCALE	A1 (A3) 1:100 (1:200)	<table><tr><th>GRID</th><th>DATUM</th><th>PROJECT MANAGER</th><th>CLIENT</th></tr><tr><td>MGA</td><td>mAHD</td><td>GT</td><td>MY MANLY VALE PTY LTD</td></tr></table>	GRID	DATUM	PROJECT MANAGER	CLIENT	MGA	mAHD	GT	MY MANLY VALE PTY LTD	<table><tr><td colspan="2">DISCLAIMER & COPYRIGHT</td></tr><tr><td colspan="2">This plan must not be used for construction unless signed as approved by principal certifying authority.</td></tr><tr><td colspan="2">All measurements in millimetres unless otherwise specified.</td></tr><tr><td colspan="2">This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.</td></tr><tr><td colspan="2">(C) Copyright Martens & Associates Pty Ltd</td></tr></table>	DISCLAIMER & COPYRIGHT		This plan must not be used for construction unless signed as approved by principal certifying authority.		All measurements in millimetres unless otherwise specified.		This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.		(C) Copyright Martens & Associates Pty Ltd		<table><tr><td colspan="2">PROJECT NAME/PLANSET TITLE</td></tr><tr><td colspan="2">PROPOSED BOARDING HOUSE</td></tr><tr><td colspan="2">CHANNEL DESIGN PLAN</td></tr><tr><td colspan="2">255 CONDOMINE STREET, MANLY VALE, NSW</td></tr><tr><td colspan="2">LOT 8 DP 604034</td></tr></table>	PROJECT NAME/PLANSET TITLE		PROPOSED BOARDING HOUSE		CHANNEL DESIGN PLAN		255 CONDOMINE STREET, MANLY VALE, NSW		LOT 8 DP 604034		Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	<table><tr><th colspan="5">DRAWING TITLE</th></tr><tr><td colspan="5">EARTHWORKS CUT-FILL ANALYSIS PLAN</td></tr><tr><td>PROJECT NO.</td><td>PLANSET NO.</td><td>RELEASE NO.</td><td>DRAWING NO.</td><td>REVISION</td></tr><tr><td>P1605609</td><td>PS07</td><td>R02</td><td>PS07-C500</td><td>B</td></tr></table>	DRAWING TITLE					EARTHWORKS CUT-FILL ANALYSIS PLAN					PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION	P1605609	PS07	R02	PS07-C500	B
REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD																																																																																																																		
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT																																																																																																																		
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT																																																																																																																		
SCALE																																																																																																																								
A1 (A3) 1:100 (1:200)																																																																																																																								
GRID	DATUM	PROJECT MANAGER	CLIENT																																																																																																																					
MGA	mAHD	GT	MY MANLY VALE PTY LTD																																																																																																																					
DISCLAIMER & COPYRIGHT																																																																																																																								
This plan must not be used for construction unless signed as approved by principal certifying authority.																																																																																																																								
All measurements in millimetres unless otherwise specified.																																																																																																																								
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.																																																																																																																								
(C) Copyright Martens & Associates Pty Ltd																																																																																																																								
PROJECT NAME/PLANSET TITLE																																																																																																																								
PROPOSED BOARDING HOUSE																																																																																																																								
CHANNEL DESIGN PLAN																																																																																																																								
255 CONDOMINE STREET, MANLY VALE, NSW																																																																																																																								
LOT 8 DP 604034																																																																																																																								
DRAWING TITLE																																																																																																																								
EARTHWORKS CUT-FILL ANALYSIS PLAN																																																																																																																								
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION																																																																																																																				
P1605609	PS07	R02	PS07-C500	B																																																																																																																				





DRAWING TITLE	EARTHWORKS SECTIONS SHEET 2
---------------	--------------------------------

DRAWING ID: P1605609-PS07-R02-C601

A1 / A3 LANDSCAPE (A1LC_v02.0.01)

SCALE

0 1 2 3 4 5 6 7 8 9 10
Δ1 (Δ3) 1:100 (1:200) METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	GT
DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd		

CLIENT	MY MANLY VALE PTY LTD
PROJECT NAME/PLANSET TITLE	PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN
	255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034

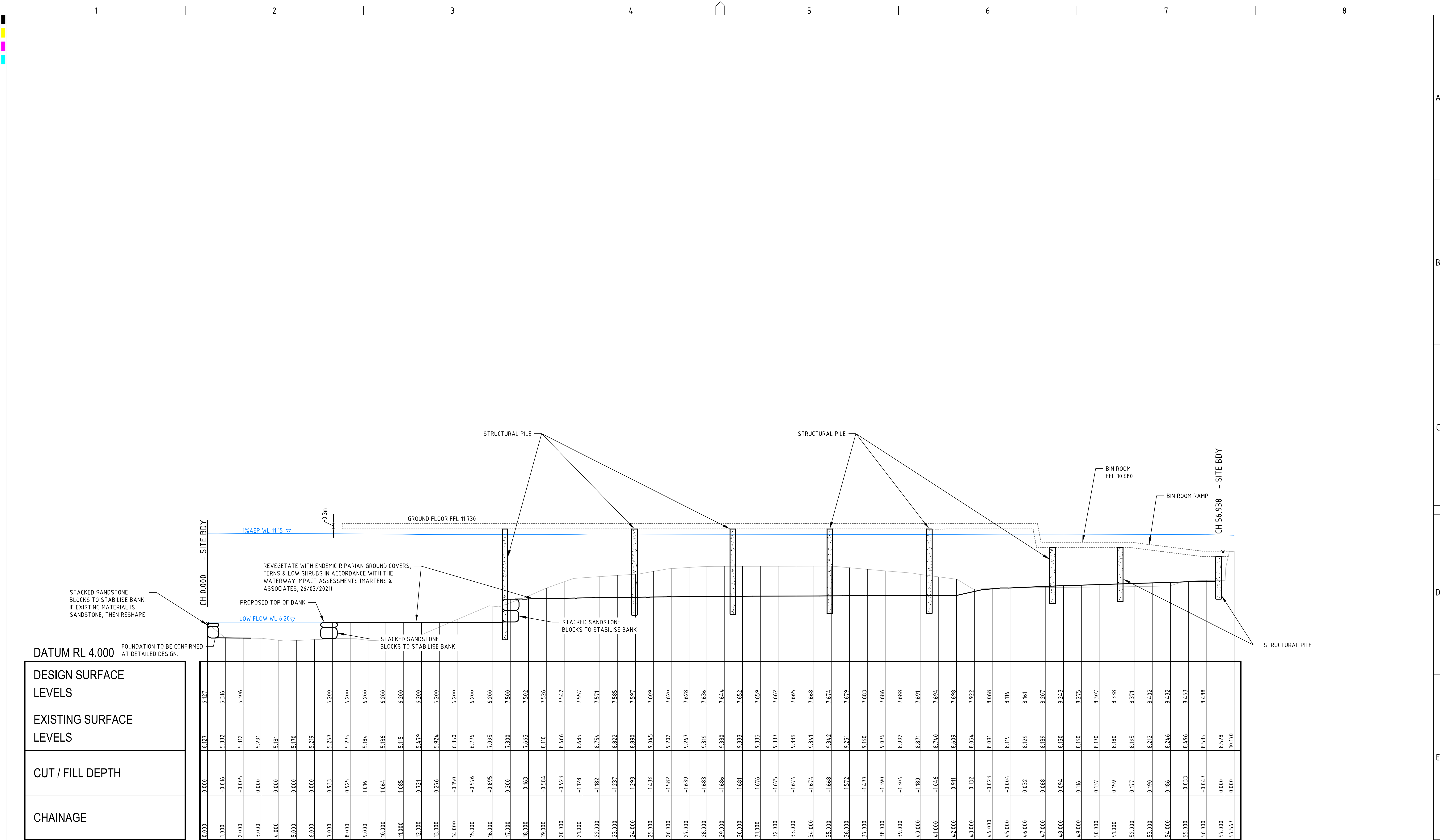
martens
& Associates Pty Ltd

Consulting Engineers

Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

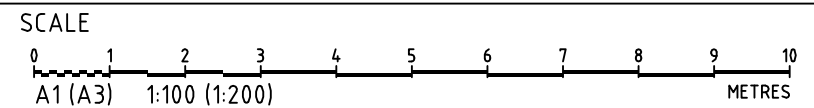
DRAWING TITLE				
EARTHWORKS SECTIONS SHEET 2				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C601	B



SECTION H

SCALE: HORIZONTAL - 1:100
VERTICAL - 1:100

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT



GRID	DATUM	PROJECT MANAGER	CLIENT
MGA	mAHD	GT	MY MANLY VALE PTY LTD
DISCLAIMER & COPYRIGHT			
This plan must not be used for construction unless signed as approved by principal certifying authority.			
All measurements in millimetres unless otherwise specified.			
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd			
(C) Copyright Martens & Associates Pty Ltd			

PROJECT NAME/PLANSET TITLE
PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN
255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034

Consulting Engineers

Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE				
EARTHWORKS SECTIONS SHEET 3				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C602	B

DEVELOPMENT APPLICATION



PROPOSED BOARDING HOUSE DEVELOPMENT

255 CONDAMINE STREET, MANLY VALE

Traffic and Parking Assessment Report

3rd December 2021

Ref: 20080

Prepared by

Terraflow Pty Ltd
Traffic and Parking Consultants



TABLE OF CONTENTS

1. INTRODUCTION	1
2. PARKING ASSESSMENT	8
3. TRAFFIC ASSESSMENT	20

APPENDICES

APPENDIX A	PROPOSED GROUND FLOOR LEVEL
APPENDIX B	ACCESS DRIVEWAY SWEPT PATH ANALYSIS
APPENDIX C	TfNSW CORRESPONDENCE AND SRV SWEPT PATH

LIST OF ILLUSTRATIONS

FIGURE 1	LOCATION
FIGURE 2	SITE
FIGURE 3	ROAD HIERARCHY
FIGURE 4	EXISTING TRAFFIC AND PARKING CONTROLS

Copyright and Disclaimer

This report has been prepared for the sole purposes of the client and for the specific purpose for which it was prepared and may not be used for any other application or purpose. The purpose for which this report may be used and relied upon is limited for that which it was commissioned.

Apart from fair dealing for the purposes of private study, research, criticism or review as permitted under the Copyright Act, no part of this report, its attachments or appendices may be reproduced by any process without the written consent of Terraflow Pty Ltd. Copyright in the whole and every part of this document belongs to Terraflow Pty Ltd and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person without the prior written consent of Terraflow Pty Ltd.



1. INTRODUCTION

This report has been prepared to accompany a Development Application (DA) to Northern Beaches Council for a proposed boarding house development at 255 Condamine Street, Manly Vale (Figures 1 and 2).

The proposed development site is located on the western side of Condamine Street approximately 120m south of Kenneth Road. It has a total site area of 863m² with a frontage of 15.19m to Condamine Street.

The site contains the remains of a former building that gained vehicular access to Condamine Street via a 2.6m wide driveway located adjacent to the southern site boundary.

The development proposal involves the construction of a new 37 room boarding house development comprising 36 boarding rooms and a manager's room. The development has been designed in accordance with SEPP (Affordable Rental Housing) 2009.

The proposed development is served by a total of 7 off-street car parking spaces comprising:

- 3 x resident spaces (including a disabled space)
- 1 x manager's parking space, and
- 3 x car share vehicle spaces

The proposed 3 share vehicles will be maintained by management and will only be made available to the residents of the proposed boarding house.

In addition, the proposed development is served by 8 motorcycle spaces and 8 bicycle spaces in compliance with the requirements of the SEPP.

A turntable is proposed to facilitate vehicular access to spaces 17, 18 and 19 and a loading bay is also proposed to accommodate small waste collection vehicles and deliveries by courier vans similar to the Australian Standard B99 Vehicle. As directed by TfNSW, all waste will be collected on-site by a private waste collector.



Vehicular access to the proposed development is off Condamine Street via a two-way 6.1m wide combined entry/exit driveway located adjacent to the southern site boundary. The existing power pole adjacent to the existing crossing will be relocated northerly as depicted on the architectural plans.

A copy of the Ground Floor Plan prepared by Gartner Trovato Architects is reproduced in Appendix A.

Public Transport Accessibility

The subject site has convenient access to the following bus service operated by Sydney Buses:



Local Bus Services

- | | |
|------------------|---|
| Route B1 | B-Line Mona Vale to City Wynyard via Warriewood, Narrabeen, Collaroy, Dee Why, Brookvale, Manly Vale, Mosman and Neutral Bay (operates daily) |
| Route 142 | Pittwater Place Shopping Centre to Kamaroi Rudolf Steiner School (operates morning peak only) |
| Route 145 | Warringah Mall to Seaforth via Manly Vale (operates weekdays only) |



Route 154X	Dee Why to Milsons Point (Express Service) via Brookvale, Manly Vale, Mosman, Neutral Bay and North Sydney Station (operates weekday peaks)
Route 172X	Warringah Mall to City Wynyard (Express Service) via Brookvale, Manly Vale, Balgowlah, North Balgowlah, Seaforth, Mosman, Cremorne and Neutral Bay (operates daily)
Route 173X	Warringah Mall to City Wynyard (Express Service) via Brookvale, Manly Vale, Balgowlah, Mosman, Cremorne and Neutral Bay (operates daily)
Route 174X	Narraweena to City Wynyard (Express Service) via Allambie Heights, Manly Vale, Cremorne and Neutral Bay (operates weekday peaks only)
Route 176X	Dee Why to City Wynyard (Express Service) via North Curl Curl Brookvale, Manly Vale, Cremorne and Neutral Bay (operates weekday peaks only)
Route 177X	Dee Why to City Wynyard (Express Service) via Wingala, North Curl Curl Brookvale, Manly Vale, Cremorne and Neutral Bay (operates weekday peaks only)
Route 180X	Collaroy Plateau to City Wynyard (Express Service) via Dee Why, Brookvale, Manly Vale and Neutral Bay (operates weekday peaks only)
Route 181X	Narrabeen to City Wynyard (Express Service) via Collaroy, Dee Why, Brookvale, Manly Vale, Mosman and Neutral Bay (operates weekday peaks only)
Route 190X	Avalon Beach to City Wynyard (Express Service) via Newport, Mona Vale, Narrabeen, Mosman and Neutral Bay (operates weekday peaks only)

Bus Stations are located on Condamine Street on the northern side of Kenneth Road. There is a 150m walk to the Bus Station serving the northbound routes and a 175m walk to the Bus Station serving the southbound routes. There are a set of traffic lights to provide for safe pedestrian access to the southbound routes.

The convenient location of the site to the B-Line Bus Stations meets and exceeds the criteria of an “Accessible Area” as per the following definition in Clause 4 of the SEPP (Affordable Rental Housing) 2009:



accessible area means land that is within -

- (c) 400 metres walking distance of a bus stop used by a regular bus service (within the meaning of the Passenger Transport Act 1990) that has at least one bus per hour servicing the bus stop between 06.00 and 21.00 each day from Monday to Friday (both days inclusive) and between 08.00 and 18.00 on each Saturday and Sunday.

Northern Beaches Council' Shared Transport Policy

The provision of shared vehicles on the site is consistent with the following objectives of Northern Beaches Council's *Shared Transport Policy*:

- Support the implementation of well-managed, accessible Shared Transport schemes that integrate effectively with the transport network, encourage healthy lifestyle and provide alternative transport and accessibility options for residents and visitors alike.
- Provide the policy that enhances the provision of Bike Sharing, Car Sharing, On-Demand Transport schemes and new shared transport innovation.
- Establish minimum standards through the development of Guidelines to support the current and future services of Bike Sharing, Car Sharing, On-Demand Transport schemes and new shared transport innovation approved for public use.
- This will also include standards for Council for the administrative support of growing and approving Shared Transport networks as may be required by future measures of demand.
- Provide a systematic framework for Shared Transport management to reduce street clutter, dumping of bikes or the illegal parking of vehicles in inappropriate areas or other safety issues caused due to unregulated Shared Transport schemes. This framework will also provide the direction for the allocation of road reserve space, parking allocation and other infrastructure required to efficiently and safety provide the services for the community.

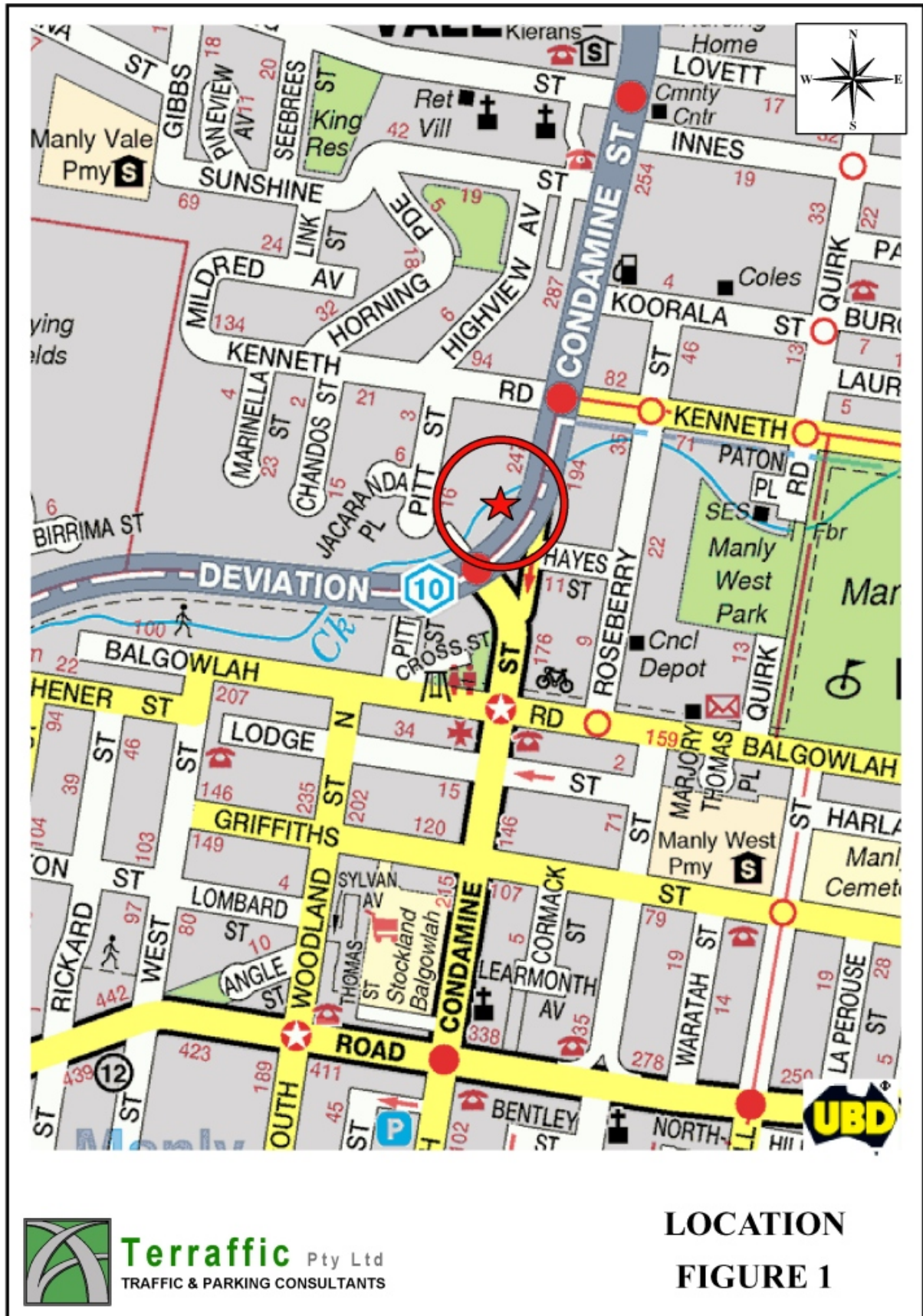


- Overall increase the adoption of these modes amongst the local community and set guidelines for Council to work with operators to grow these services in line with increasing demand.

As this policy is implemented over time, and bike sharing, car sharing, on-demand transport schemes and new shared transport services increase, the reliance on car ownership is highly likely to decrease.

The proposed private car share system is one of these new services which form part of an integrated system to address the demand for cars generated by the proposed development and within the local area.

The purpose of this report is to assess the traffic and parking implications of the proposed development.







2. PARKING ASSESSMENT

SEPP (ARH) Off-Street Parking Requirement

The parking requirements in the State Environmental Planning Policy (Affordable Rental Housing) 2009 specify the following parking requirements for boarding houses:

Clause 29 Standards that cannot be used to refuse consent

(2) A consent authority must not refuse consent to development to which this Division applies on any of the following grounds:

(e) parking

if:

- (i) in the case of development carried out by or on behalf of a social housing provider in an accessible area—at least 0.2 parking spaces are provided for each boarding room, and
- (ii) in the case of development carried out by or on behalf of a social housing provider not in an accessible area—at least 0.4 parking spaces are provided for each boarding room, and
- (iia) in the case of development not carried out by or on behalf of a social housing provider—at least 0.5 parking spaces are provided for each boarding room, and
- (iii) in the case of any development—not more than 1 parking space is provided for each person employed in connection with the development and who is resident on site,

As the proposed boarding house is not being carried out on behalf of a social housing provider, the parking requirements specified in (iia) and (iii) will apply. Application of these parking rates to the proposed development yields a total requirement of 19 spaces calculated as follows:

36 boarding rooms @ 0.5 spaces per room	18 spaces
1 x manager's room @ 1 space per manager	1 space
Total required	19 spaces

As noted in the foregoing, the proposed development is served by 7 off-street car parking spaces comprising 4 resident spaces (including a manager's space) and 3 car share vehicle spaces.



Council has approved car share spaces in a number of previous DA's and Court Cases and advised the client during the Pre-Lodgement phase of the development that 1 car share space equates to 5 car spaces. To that end, the 3 car share vehicles will satisfy the same demand as 15 parking spaces as follows:

3 x car share vehicles @ 5 spaces per car 15 parking spaces

Based on this allowance by Council, the proposed parking provision will satisfy the 19 spaces required by the SEPP as follows:

3 x car share vehicles	15 parking spaces
Resident parking	3 parking spaces
Manager's parking	1 parking space
Total provided	19 parking spaces

It should be noted that the non-refusal standards under cl 29(2) of SEPP ARH do not mandate compliance, they are qualitative and quantitative criteria that merely set thresholds that when met, remove a discretionary basis for refusal of consent. There is no standard under cl 29(2)(e)(ia) requiring the proposal to provide 19 car parking spaces.

Justification for Variation to SEPP Requirements

The proposed development is located in an ideal location to support a variation to the SEPP parking requirements. This variation is primarily due its accessibility to regular multiple public transport services and the proximity (walking distance) to nearby retail outlets and supermarkets. The parking provision should be considered on a merit-based approach that takes into account the following:

- The site is located opposite 2 large supermarkets and numerous retail outlets including Woolworths, Aldi, KFC, Dan Murphy's, BWS Liquor, gyms and cafe's. The proximity of these facilities reduces the need for vehicle travel
- The site is also located on a major transport corridor



- Bus Stations are located on Condamine Street on the northern side of Kenneth Road. There is a 150m walk to the Bus Station serving the northbound routes and a 175m walk to the Bus Station serving the southbound routes
- B1 buses operate every 6 to 10 minutes in both directions (ie south towards the city and north to Warringah Mall and beyond) throughout the day, 7 days a week. Services increase to a bus every 2-6 minutes during peak times
- In addition to the B1 service, there are 11 other individual bus services providing multiple options from these bus stops
- Unlike the parking requirement for “*social housing providers*”, the SEPP parking requirement for “*non-social housing providers*” does not take into the account the accessibility of the site. The SEPP has a flat rate of 0.5 spaces per room throughout all of NSW. This rate not only applies to our site, but it applies to sites which provide for a single, hourly public transport service
- When comparing the parking requirement to Boarding Houses in the former Manly LGA, the provision of only 1 share car and 6 parking spaces would satisfy the Manly DCP’s assessment of the likely demand for parking
- The provision of 3 private share cars would be very attractive to residents with limited funds and would be a positive factor in people choosing to reside in this particular development. By removing the need to own their own vehicle, they can use those extra funds to increase their savings or enjoy a better lifestyle.
- The provision of shared vehicles on the site is consistent with the objectives of Northern Beaches Council’s *Shared Transport Policy*. The Policy also states, “*Council will work with operators to seek expansion of services to new areas which may meet qualifying demographic or usage characteristics*”. The proposed private car share operation on this site achieves new services to meet demographic and usage characteristics.



Northern Beaches DCP Parking Requirements

Part C3 of the Warringah Development Control Plan 2011 sets out the following requirements when calculating the parking provision of a development:

2. Off street parking is to be provided within the property demonstrating that the following matters have been taken into account:
 - the land use;
 - the hours of operation;
 - the availability of public transport;
 - the availability of alternative car parking; and
 - the need for parking facilities for courier vehicles, delivery / service vehicles and bicycles.

4. Carparking is to be provided in accordance with Appendix 1 which details the rate of car parking for various land uses. Where the carparking rate is not specified in Appendix 1 or the WLEP, carparking must be adequate for the development having regard to the objectives and requirements of this clause. The rates specified in the Roads and Traffic Authority's Guide to Traffic Generating Development should be used as a guide where relevant.

Appendix 1 in Part H of the Warringah Development Control Plan 2011 specifies the following parking requirement:

Use	Requirement
Backpackers' accommodation, Boarding house, Group home	Comparisons must be drawn with developments for a similar purpose

As the development site is located directly adjoining the former Manly Council Local Government Area, it is reasonable in assessing the merits of this parking provision, that a comparison be drawn from the requirements specified in the Manly Development Control Plan 2013. Part 4.4.9.4 of the DCP specifies the following with regards to Boarding House developments:



4.4.9.4 Parking

- a) This DCP provides parking requirements for boarding houses (see Schedule 3 Part A) for development where Section 29(2)(f) of State Environmental Planning Policy (Affordable Rental Housing) 2009 does not otherwise apply. For example, in Manly this Policy does not apply to boarding houses in LEP Zone R2 Low Density Residential unless the land is within an accessible area.

Note: Section 29(2)(e) of State Environmental Planning Policy (Affordable Rental Housing) 2009 can be interpreted in the Manly context as follows:

Boarding houses less than 800m walking distance of Manly Wharf or 400m walking distance of a bus stop used by a regular bus service:

- 1 space for every 5 boarding rooms
- 1 space for on site manager and/or any other employee residing on the premises

Boarding houses greater than 800m walking distance of Manly Wharf or 400m walking distance of a bus stop used by a regular bus service:

- 2 spaces for every 5 boarding rooms
- 1 space for on site manager and/or any other employee residing on the premises

Note: The meaning of a ‘regular bus service’ in this paragraph is consistent with section 4(c) State Environmental Planning Policy (Affordable Rental Housing) 2009 meaning a service within the Passenger Transport Act 1990 that has at least 1 bus per hour between 6am and 9pm Weekdays and 8am and 6pm Weekends.

As noted in the foregoing, the subject site is located less than 200m from the Bus Stations serving the B1 B-Line. To that end, the rate of 1 space per 5 boarding rooms plus 1 space for the on site manager would apply.

Application of these rates to the proposed development yields a parking requirement of only 8 spaces calculated as follows:

36 boarding rooms @ 1 space per 5 rooms	7.2 spaces
1 managers room @ 1 space per room	1.0 space
Total Required	8.2 spaces (rounded to 8 spaces)



As noted in the foregoing, the proposed development will be meeting the demand generated by 7 off-street car parking spaces comprising 3 resident spaces, 1 manager's space and 3 car share vehicle spaces.

By reducing the number of car share vehicles to just one (1) vehicle, the proposal would still exceed the Manly DCP requirement by 3 spaces calculated as follows:

- 1 x car share vehicle (equivalent to 5 parking spaces)
- 5 x resident parking spaces
- 1 x manager's parking space
- 7 spaces provided – equivalent to 11 parking spaces**

As can be seen, this parking arrangement would clearly exceed the 8 spaces required by the Manly DCP.

Comparison to a Similarly Approved Development

The following Land and Environment Court appeals relate to Boarding House developments that have been recently approved in close proximity to major transport corridors such as the B1 Line, the Illawarra Railway Line and the Sydney Light Rail network.

233-237 Military Road, Cremorne

On the 24th November 2021, the Land and Environment Court of NSW upheld an appeal for a boarding house development at 233-237 Military Road, Cremorne (Clusterduck Pty Ltd as Trustee for the Empty Biscuit Tin Unit Trust (ACN 629 244 560) v North Sydney Council [2021] NSWLEC 1718).

The approved development (DA/111/2021) comprises the construction of a 4 storey boarding house comprising 30 boarding rooms plus an on-site manager's room. The approved boarding house is served by only 2 off-street car parking spaces representing a provision of 1 space per 30 boarding rooms plus a manager's space.



The approved boarding house while located on the B1 bus route, is located some 470m from the B1 bus stops on Military Road at Wycombe Road.

30 Firth Street, Arncliffe

On the 29th November 2021, the Land and Environment Court of NSW upheld an appeal for a mixed use development at 30 Firth Street, Arncliffe (Zervos v Bayside Council [2021] NSWLEC 1729).

The approved development (DA2019/354) comprises the construction of a mixed use development comprising 2 retail shops on ground level with a combined floor area of 95m² and 13 boarding rooms including an on-site manager's room. The approved boarding house is served by only 2 off-street car parking spaces with 1 space allocated to the retail component and 1 space allocated to the 13 boarding rooms.

The approved boarding house is located directly opposite Arncliffe Railway Station on the Illawarra Railway Line.

18-26 Ascot Street, Kensington

On the 11th June 2021, the Land and Environment Court of NSW upheld an appeal for the construction of a 9 storey boarding house containing 149 rooms at 18-26 Ascot Street, Kensington (Scape Australia Swanston Pty Ltd v Randwick City Council [2021] NSWLEC 1344).

The approved development (DA717/2018) is only served by 4 off-street car parking spaces comprising 1 loading space, 1 car share space, 1 manager's space and 1 accessible space. The car share space could be operated by a commercial operator (such as GoGet) or operated by the boarding house owner/operator.

The approved boarding house is located approximately 200m from the Kensington Light Rail Station on Anzac Parade.



In the circumstances, the proposal to provide parking for 3 car share vehicles, 3 resident vehicles and 1 manager's vehicle would clearly exceed the likely demand generated by the proposed 37 room Boarding House on Condamine Street, Manly Vale.

Motorcycle and Bicycle Parking Requirements

Clause 30 in Part 2/Division 3 of the State Environmental Planning Policy (Affordable Rental Housing) 2009 specifies the following parking requirements that apply to the subject development:

30 Standards for boarding houses

(1) A consent authority must not consent to development to which this Division applies unless it is satisfied of each of the following:

(h) at least one parking space will be provided for a bicycle, and one will be provided for a motorcycle, for every 5 boarding rooms.

Application of these parking rates to the proposed development yields a total requirement of 8 spaces for each mode of transport as follows:

37 boarding rooms @ 1 bicycle space per 5 rooms	7.4 bicycle spaces
37 boarding rooms @ 1 motorcycle space per 5 rooms	7.4 motorcycle spaces

The proposed development satisfies this requirement with the provision of 8 bicycle racks and 8 motorcycle parking spaces. The motorcycle spaces are 2.5m long x 1.2m wide and comply with the dimensional requirements of Clause 2.4.7 of AS/NZS2890.1:2004.

Carpark and Vehicular Access Compliance

The basement carpark and accessway have been designed to satisfy the following requirements of the Australian Standard AS/NZS2890.1-2004 – “Off-Street Car Parking”:

- Parking spaces are a minimum 5.4m long and 2.4m wide
- An additional 0.3m has been provided for spaces adjacent to a wall or obstruction
- A blind aisle extension 1.0m wide has been provided as per Figure 2.3 of the Standard
- The access/manoeuvring aisle is a minimum 5.8m wide



-
- Pavement cross-falls at parking spaces do not exceed 5% (1 in 20)
 - Maximum ramp grades do not exceed 12.5% (1 in 8)
 - The first 6.0m into the site has a maximum downgrade of 5% (1 in 20)
 - The single lane section of the accessway is 3.6m wide comprising a 3.0m roadway and 2 x 300mm wide kerbs
 - The dual lane section of the accessway is 6.1m wide comprising a 5.5m roadway and 2 x 300mm wide kerbs
 - A minimum headroom clearance of 2.2m has been provided throughout the basement carpark
 - The required 2.5m x 2.0m pedestrian sight line triangles have been provided

The disabled parking space has also been designed in accordance with the Australian Standard AS/NZS2890.6:2009 – “*Off-street parking for people with disabilities*” as follows:

- A 5.4m long x 2.4m wide dedicated (*non-shared*) parking space
- An adjacent *shared* area that is also 5.4m long x 2.4m wide
- A minimum headroom of 2.5m above the disabled spaces
- Pavement cross-falls in disabled spaces do not exceed 2.5% (1 in 40) in any direction

As noted in the Introduction of this report, a vehicle turntable is proposed to facilitate vehicular access to spaces 17, 18 and 19.

Access Driveway Width

As noted above, vehicular access to the proposed basement is off Condamine Street via a 5.5m wide driveway (between kerbs). The width of the access driveway complies with the following criteria for a “*Category 1*” driveway as described Tables 3.1 and 3.2 of AS/NZS2890.1:2004:

1. The parking facilities are classified “Class 1A” for resident parking (refer to Table 1.1)
2. The development has less than 25 spaces
3. The development site is located on an Arterial Road

A copy of Tables 3.1 and 3.2 of the Standard is reproduced below for convenience.



As can be seen, reference to Table 3.2 reveals that “*Category 1*” access driveways can have a combined entry and exit width of between 3.0m and 5.5m. With a width of 5.5m, the proposed access driveway satisfies the requirements of the Standard.

TABLE 3.1
SELECTION OF ACCESS FACILITY CATEGORY

Class of parking facility (see Table 1.1)	Frontage road type	Access facility category				
		Number of parking spaces (Note 1)				
		<25	25 to 100	101 to 300	301 to 600	>600
1,1A	Arterial	1	2	3	4	5
	Local	1	1	2	3	4
2	Arterial	2	2	3	4	5
	Local	1	2	3	4	4
3,3A	Arterial	2	3	4	4	5
	Local	1	2	3	4	4

NOTES:

- 1 When a car park has multiple access points, each access should be designed for the number of parking spaces effectively served by that access.
- 2 This Table does not imply that certain types of development are necessarily suitable for location on any particular frontage road type. In particular, access to arterial roads should be limited as far as practicable, and in some circumstances it may be preferable to allow left-turn-only movements into and out of the access driveway.

TABLE 3.2
ACCESS DRIVEWAY WIDTHS

metres			
Category	Entry width	Exit width	Separation of driveways
1	3.0 to 5.5	(Combined) (see Note)	N/A
2	6.0 to 9.0	(Combined) (see Note)	N/A
3	6.0	4.0 to 6.0	1 to 3
4	6.0 to 8.0	6.0 to 8.0	1 to 3
5	To be provided as an intersection, not an access driveway, see Clause 3.1.1.		

NOTE: Driveways are normally combined, but if separate, both entry and exit widths should be 3.0 m min.

Access Driveway Swept Path Analysis

By ability of entering and exiting to pass within the site was also tested using the Autodesk Vehicle Tracking software. The following swept paths are reproduced in Appendix B:

1. B99 vehicle entering and waiting for a B85 vehicle to pass when exiting



2. B85 vehicle entering and waiting for a B99 vehicle to pass when exiting

As can be seen on the graphics, both scenarios enable entering vehicles to turn off Condamine Street and provide sufficient space for a departing vehicle to pass within the site.

Furthermore, Chapter 3 will reveal that the proposed boarding house will only generate 3 vehicle trips per hour during peak periods. The queuing analysis in Chapter 3 will also confirm that the driveway will operate safely with the 98th percentile queue comfortably accommodated on-site.

On-Site Waste Collection

On the 5th November 2021, TfNSW notified Council that the collection of waste along Condamine Street is not supported as it is deemed detrimental to network safety and efficiency. A copy of the TfNSW letter to Council is reproduced in Appendix C.

Based on this advice, waste collection will be carried out by a private company that uses vehicles similar to the Garwood Miner Hino 300 Series truck. This vehicle is similar in length to the Australian Standard 6.4m long Small Rigid Vehicle (SRV) however it has a maximum height of 2.1m which allows the vehicle to access most basement car parks.

The specifications for the Miner truck and swept path of the SRV accessing the site are also reproduced in Appendix C. As can be seen, this vehicle can comfortably enter and exit the site in a forward direction.

In the circumstances, it can be concluded that the proposed development has no unacceptable parking or safety implications.



Photograph of the Veolia Miner Truck



3. TRAFFIC ASSESSMENT

Existing Road Network

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3 and comprises the following:

State Roads

Burnt Bridge Creek Deviation – Condamine Street
Sydney Road

Regional Roads

Kenneth Road (east of Condamine Street)
Condamine Street (between Burnt Bridge Creek Deviation and Sydney Road)

Condamine Street is a classified *State Road* performing an arterial road function. It forms part of the Metroad 10 system that links the northern suburbs to the lower north shore and ultimately the Sydney CBD. Condamine Street carries 6 lanes of traffic with the kerbside lanes reserved as Bus Lanes during peak periods.

The existing traffic and parking controls on the road network serving the site are illustrated on Figure 4 and include:

- The TRAFFIC SIGNALS at the intersection of Condamine Street and Kenneth Road
- The MEDIAN ISLAND on Condamine Street
- The BUS ZONES and peak period BUS LANES on Condamine Street
- The NO STOPPING restriction along the Condamine Street frontage of the site

Projected Traffic Generation Potential

The Roads and Maritime Services *Guide to Traffic Generating Developments* does not contain a generic traffic generating rate for boarding houses. As an alternative, the 2013



Technical Direction TDT 2014/04 provides the following traffic generation rates for High Density Residential Flat Buildings:

Weekday Rates	Sydney Average
AM peak (1 hour) vehicle trips per unit	0.19
AM peak (1 hour) vehicle trips per car space	0.15
AM peak (1 hour) vehicle trips per bedroom	0.09
PM peak (1 hour) vehicle trips per unit	0.15
PM peak (1 hour) vehicle trips per car space	0.12
PM peak (1 hour) vehicle trips per bedroom	0.07
Daily vehicle trips per unit	1.52
Daily vehicle trips per car space	1.34
Daily vehicle trips per bedroom	0.72

The most relevant traffic generation rates to use for the proposed boarding house development are the rates based on the number of car spaces and bedrooms.

Based on these rates, the proposal will generate in the order of 3vtph during the morning peak and evening peak period calculated as follows:

AM Peak	7 car spaces @ 0.15vtph per unit	1.1vtph
AM Peak	37 bedrooms @ 0.09vtph per unit	3.3vtph
Maximum AM Peak		3.3vtph (rounded to 3vtph)
PM Peak	7 car spaces @ 0.12vtph per unit	0.8vtph
PM Peak	37 bedrooms @ 0.07vtph per unit	2.6vtph
Maximum PM Peak		2.6vtph (rounded to 3vtph)

It will be readily appreciated that the traffic generated by the proposed development is very minor (3vtph) which will not have any noticeable or unacceptable effect on the road network serving the site in terms of road network capacity or traffic-related environmental effect.

Traffic Queuing Analysis

This assessment has been carried out using Basic Queuing Theory to determine the length of queue on entry to the carpark. The 2 main factors in determining the queue is the “Arrival



Rate” (how many vehicles are entering the site in an hour) and the “Service Rate” (how many vehicles can access the site through the security roller door).

As noted in the foregoing, the RMS Guidelines indicate that 3 vehicles will access the site during peak periods. Being a residential development, it is anticipated that these vehicles will depart in the morning peak and return in the evening peak. To that end, the “Arrival Rate” is 3 vehicles during the evening peak.

Appendix B of the Australian Standard AS/NZS2890.1:2004 lists capacity provisions at entry and exits at large car parks. The Standard notes the following lane capacities:

- (a) Free flow – 600 vehicles/hour/lane
- (b) Card reader – 400 vehicles/hour/lane
- (c) Automatic ticket issue and boom gate – 300 vehicles/hour/lane
- (d) Manually controlled – 250 vehicles/hour/lane

For the purposes of providing a conservative assessment, a capacity of 60 vehicles per hour (1 per minute) will be used as the Service Rate (r). This rate would comfortably enable a car to drive into the site and stop, for the roller door to rise and the car to drive through to the carpark.

Based on these elements, the queuing theory assessment predicts that there will be 0.25% chance that the queue will exceed 1 vehicle in the evening peak as follows:

1. Arrival Rate (r) is 3 vehicles per hour
2. Service Rate (s) is 60 vehicles per hour
3. The Utilisation Factor (p) = r / s

$$(p) = 3 / 60$$

$$(p) = 0.050$$

4. The expected (mean) number of vehicles in the queue is calculated as follows:



$$E(n) = r / (s - r)$$

$$E(n) = 3 / (60-3)$$

$$E(n) = 3 / 57 = 0.052 \text{ vehicles in queue}$$

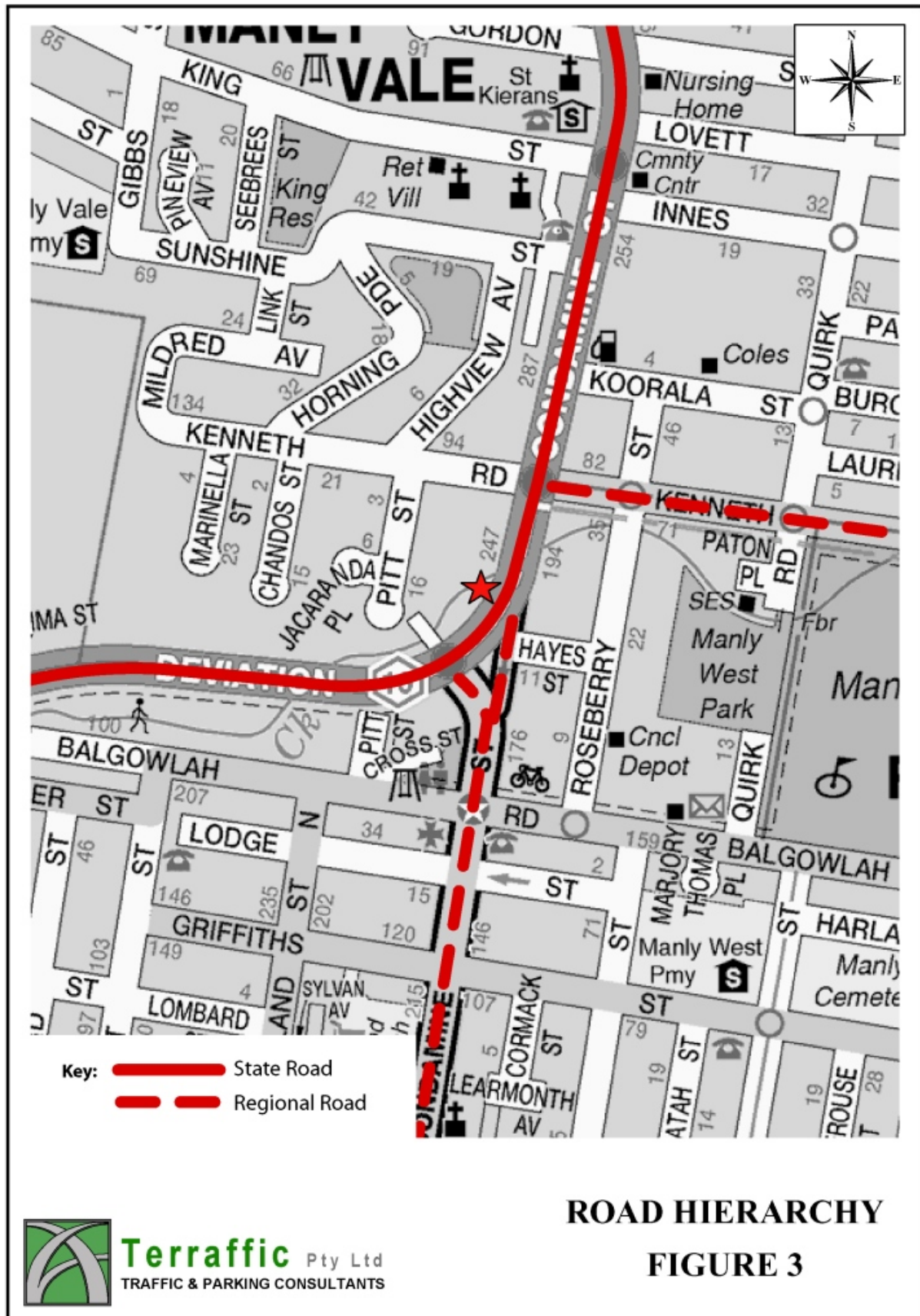
5. The probability that the queue will extend further than 1 vehicle can be calculated as follows:

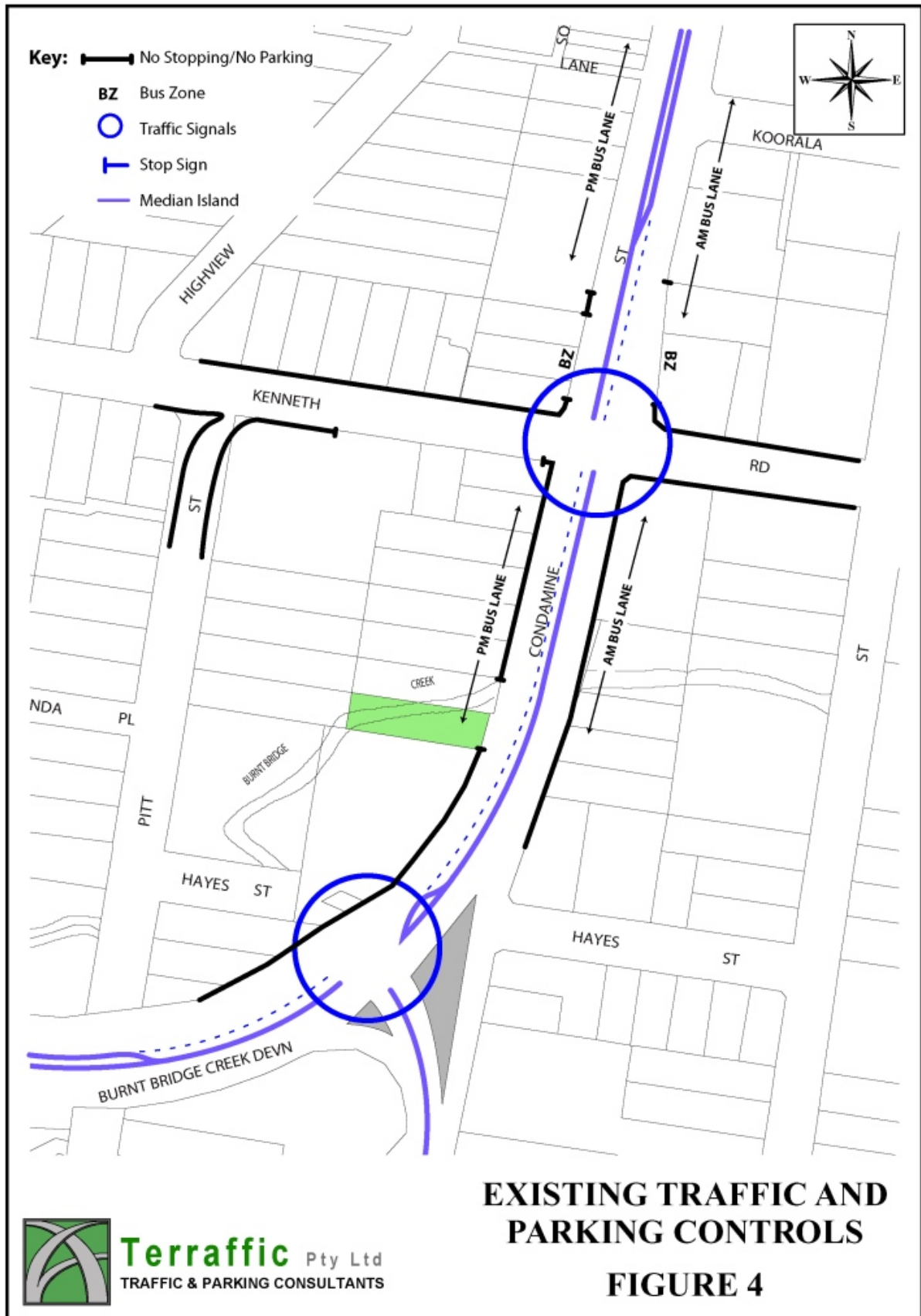
$$P(n>1) = p^{1+1}$$

$$P(n>1) = 0.050^2 = 0.0025 = 0.25\% \text{ chance}$$

Based on this equation, there will be a 0.25% chance of there being more than 1 vehicle in the queue. Therefore, it can be determined that the 98th percentile queue will not exceed 1 vehicle.

In the circumstances, it can be concluded that the proposed development has no unacceptable traffic or access implications.

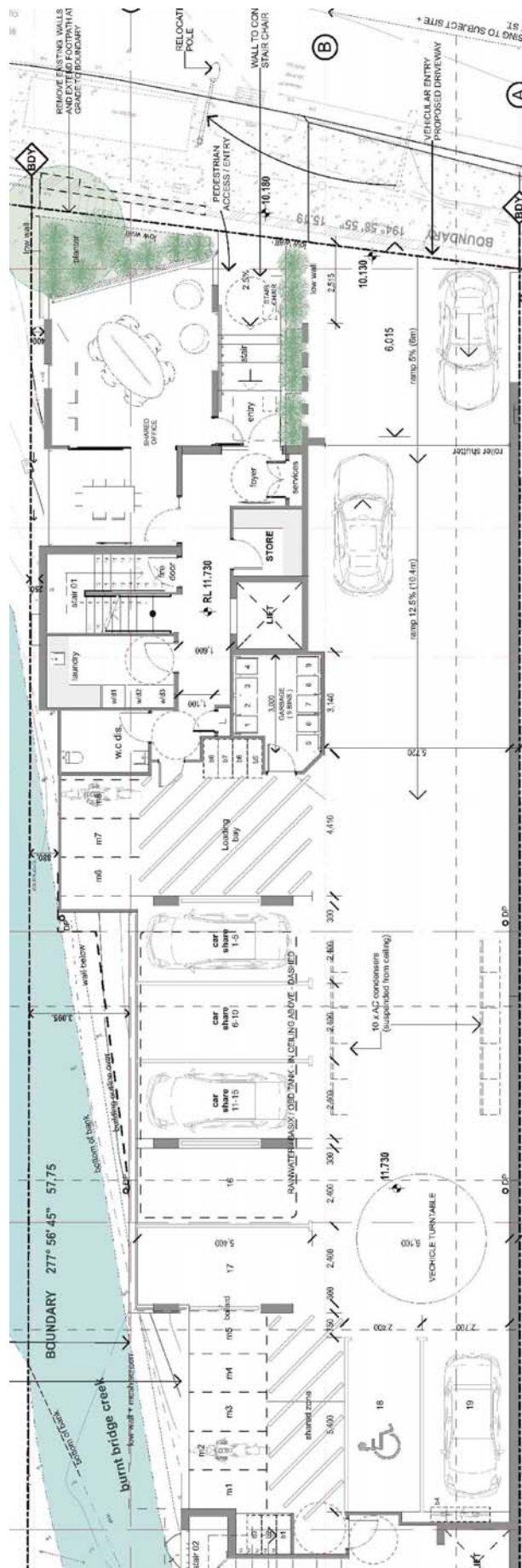






APPENDIX A

PROPOSED GROUND FLOOR LEVEL

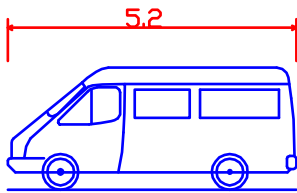
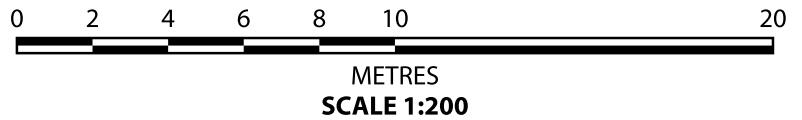




APPENDIX B

ACCESS DRIVEWAY SWEPT PATH ANALYSIS

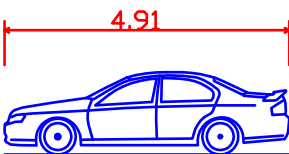
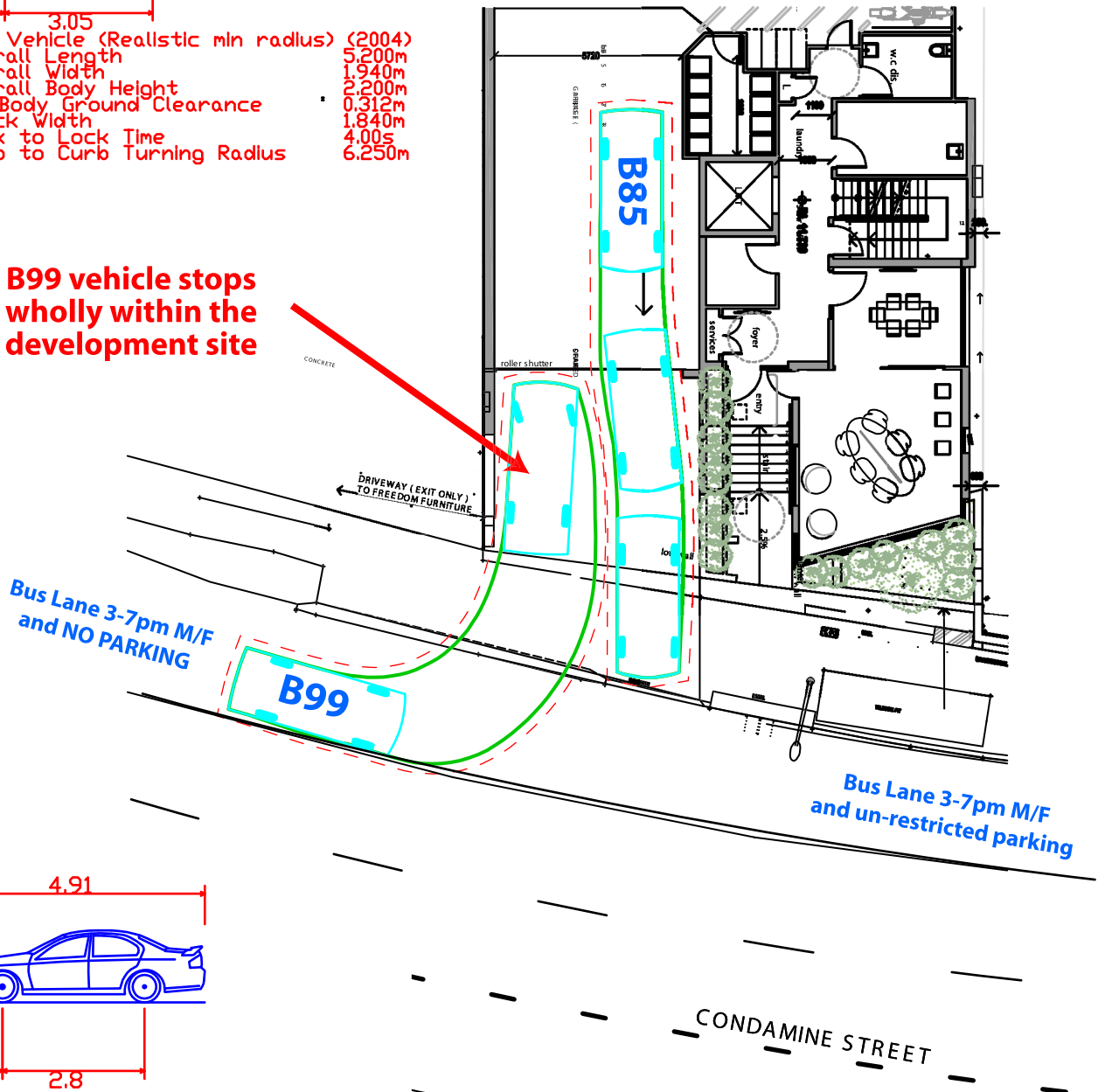
**Path prepared using
Autodesk Vehicle Tracking**



B99 Vehicle (Realistic min radius) (2004)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 2.200m
Min Body Ground Clearance 0.312m
Track Width 1.840m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 6.250m

Vehicle Path
300mm Clearance Path

**B99 vehicle stops
wholly within the
development site**



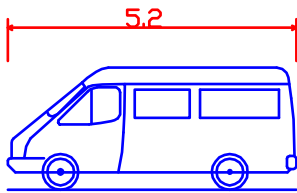
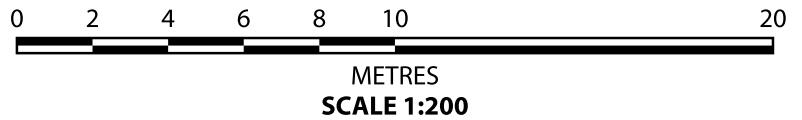
B85 Vehicle (Realistic min radius) (2004)
Overall Length 4.910m
Overall Width 1.870m
Overall Body Height 1.421m
Min Body Ground Clearance 0.159m
Track Width 1.770m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 5.750m

**Manoeuvring Path of Australian
Standard AS/NZS2890.1:2004
B99 Vehicle Entering Site and
Waiting for B85 to Exit**



Terraflow Pty Ltd
TRAFFIC & PARKING CONSULTANTS

**Path prepared using
Autodesk Vehicle Tracking**



B99 Vehicle (Realistic min radius) (2004)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 2.200m
Min Body Ground Clearance 0.312m
Track Width 1.840m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 6.250m

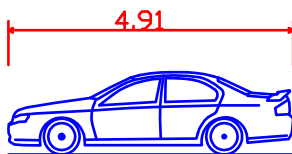
Vehicle Path
300mm Clearance Path

**B85 vehicle stops
wholly within the
development site**

**Bus Lane 3-7pm M/F
and NO PARKING**

B85

**Bus Lane 3-7pm M/F
and un-restricted parking**



B85 Vehicle (Realistic min radius) (2004)
Overall Length 4.910m
Overall Width 1.870m
Overall Body Height 1.421m
Min Body Ground Clearance 0.159m
Track Width 1.770m
Lock to Lock Time 4.00s
Curb to Curb Turning Radius 5.750m

CONDAMINE STREET



Terraflow Pty Ltd
TRAFFIC & PARKING CONSULTANTS

**Manoeuvring Path of Australian
Standard AS/NZS2890.1:2004
B85 Vehicle Entering Site and
Waiting for B99 to Exit**



APPENDIX C

TfNSW CORRESPONDENCE AND SRV SWEEP PATH



Transport
for NSW

5 November 2021

TfNSW Reference: SYD21/00329/02
Council Reference: DA2021/0179 (CNR-19464)

Mr Ray Brownlee
General Manager
Northern Beaches Council
PO Box 1336
DEE WHY NSW 2099

Attention: Rebecca Englund

Dear Mr Brownlee,

**CONSTRUCT BOARDING HOUSE
255 CONDAMINE STREET, MANLY VALE**

Reference is made to Council's correspondence dated 26 October 2021, regarding the abovementioned application which was referred to Transport for NSW (TfNSW) for concurrence in accordance with section 138 of the *Roads Act, 1993*.

TfNSW has reviewed the amended plans and is unable to provide concurrence under section 138 of the *Roads Act 1993*, for the following reasons:

- The collection of waste along the classified roads is not supported by TfNSW as it is detrimental to network safety and efficiency. This is due to the potential increase of the rear-end collisions and the frequent stopping and starting of waste collection vehicles negatively impacts traffic flow.
- Generally, classified roads generally have 'No Stopping' or 'Clearway/Bus Lane' restrictions along them. As such, waste collection vehicles are not legally allowed to stop on such roads to collect bins.
- Additionally, at this location, TfNSW advises that the subject property is within a broad area for transport improvements. Noting that 24-hour northbound bus lane finishes near the subject property where it then becomes Bus Lane 1500 to 1900. If a potential extension to the current bus lane operating hours outside the property occur, subject to the outcome of the investigation, if implemented would not permit garbage collection along Condamine Street.

TfNSW reiterates that all refuse operations of the subject development should occur internally onsite to ensure the ongoing safety and efficiency of the transport network is maintained.

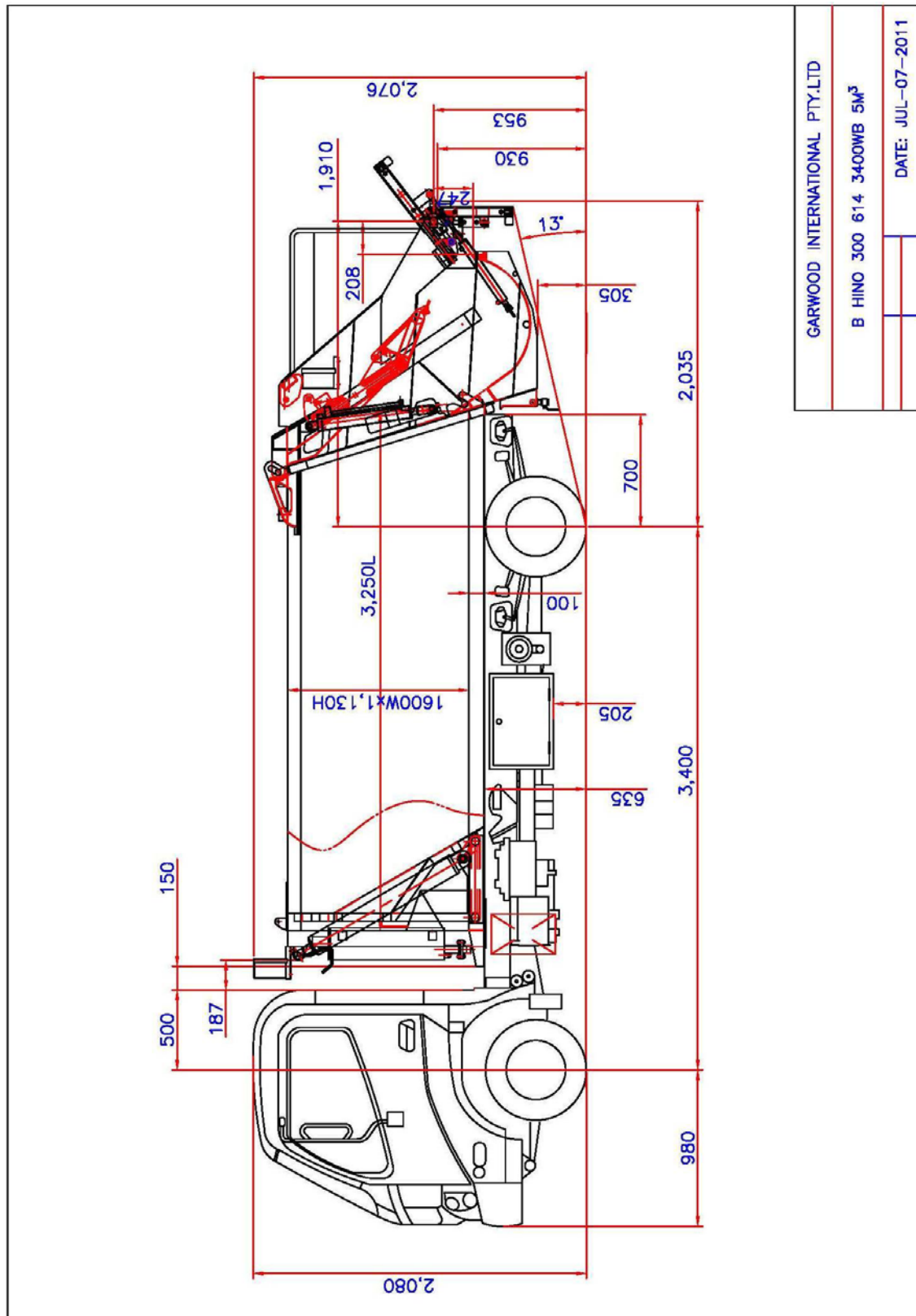
Should you have any further enquiries in relation to this matter, please do not hesitate to contact Brett Morrison, Development Assessment Officer, by email at development.sydney@transport.nsw.gov.au.

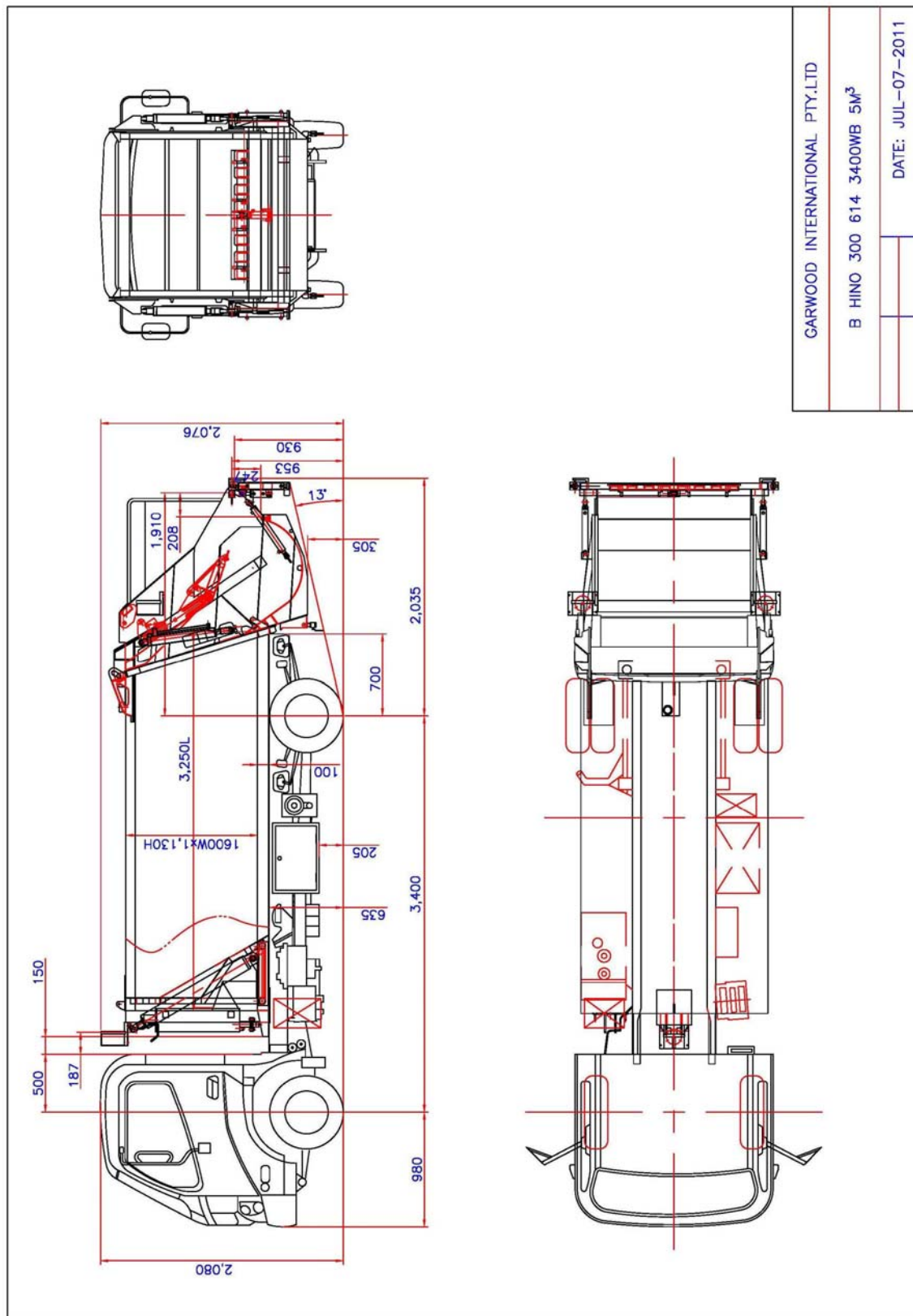
Yours sincerely,

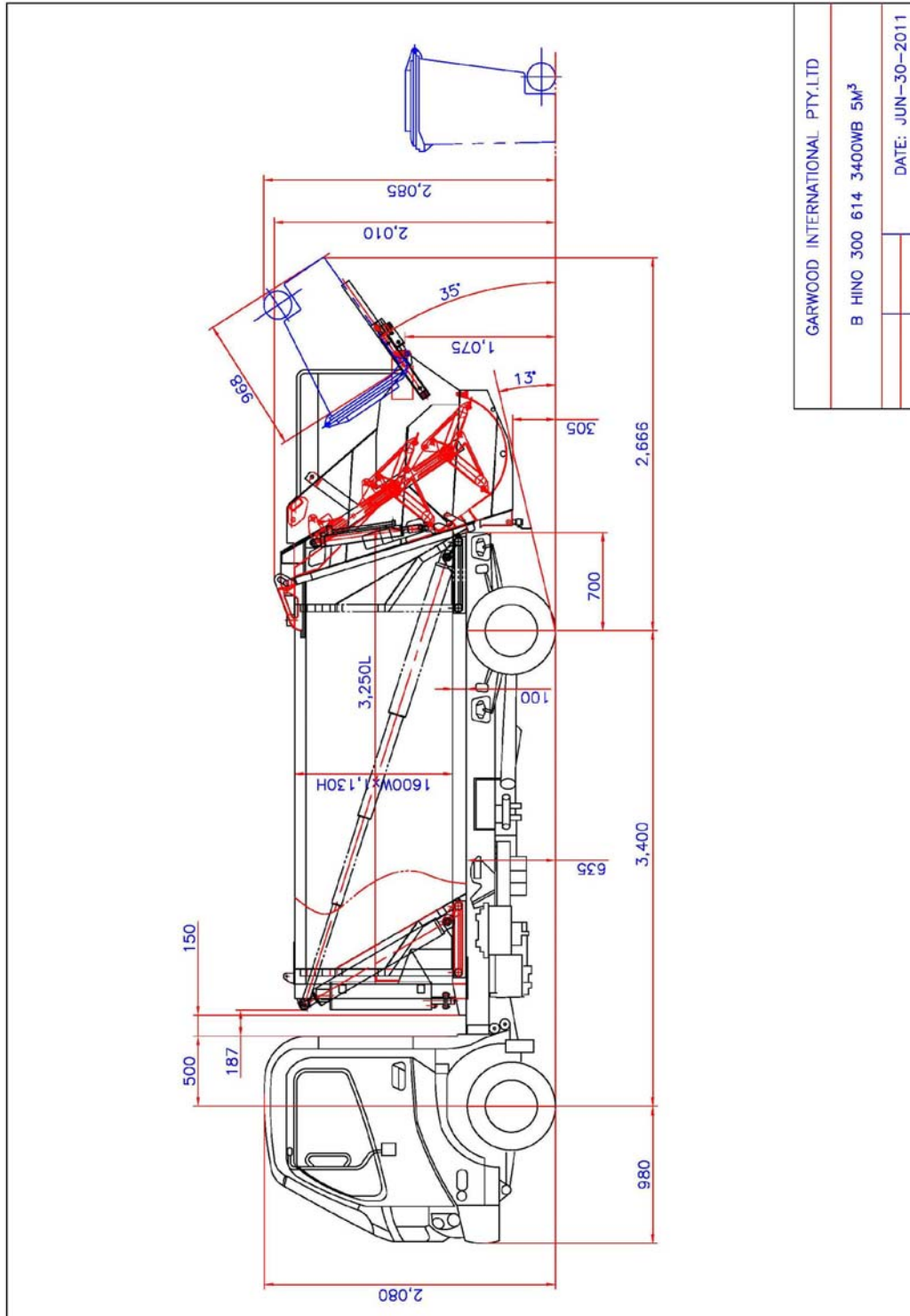
Brendan Pegg
Senior Land Use Planner
Planning and Programs, Greater Sydney Division

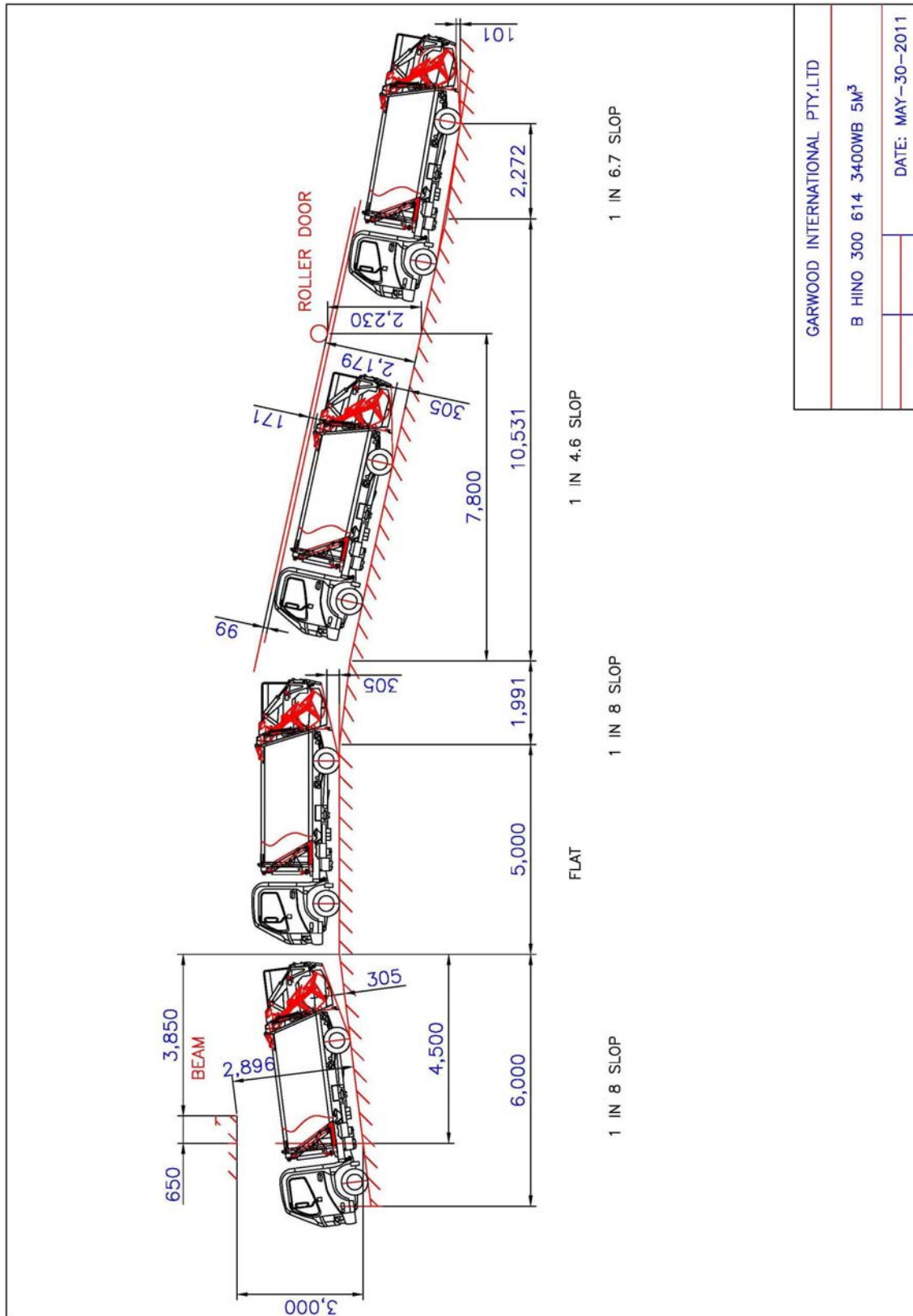
Transport for NSW

27 Argyle Street, Parramatta NSW 2150 | Locked Bag 5085, Parramatta NSW 2124
P (02) 8849 2666 | W transport.nsw.gov.au | ABN 18 804 239 602

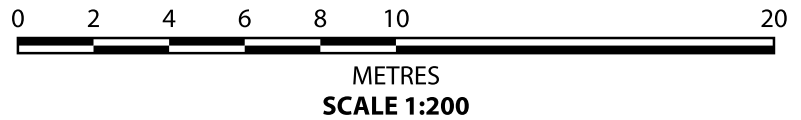




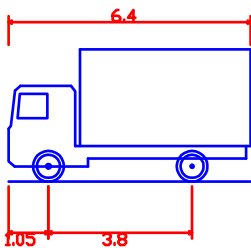
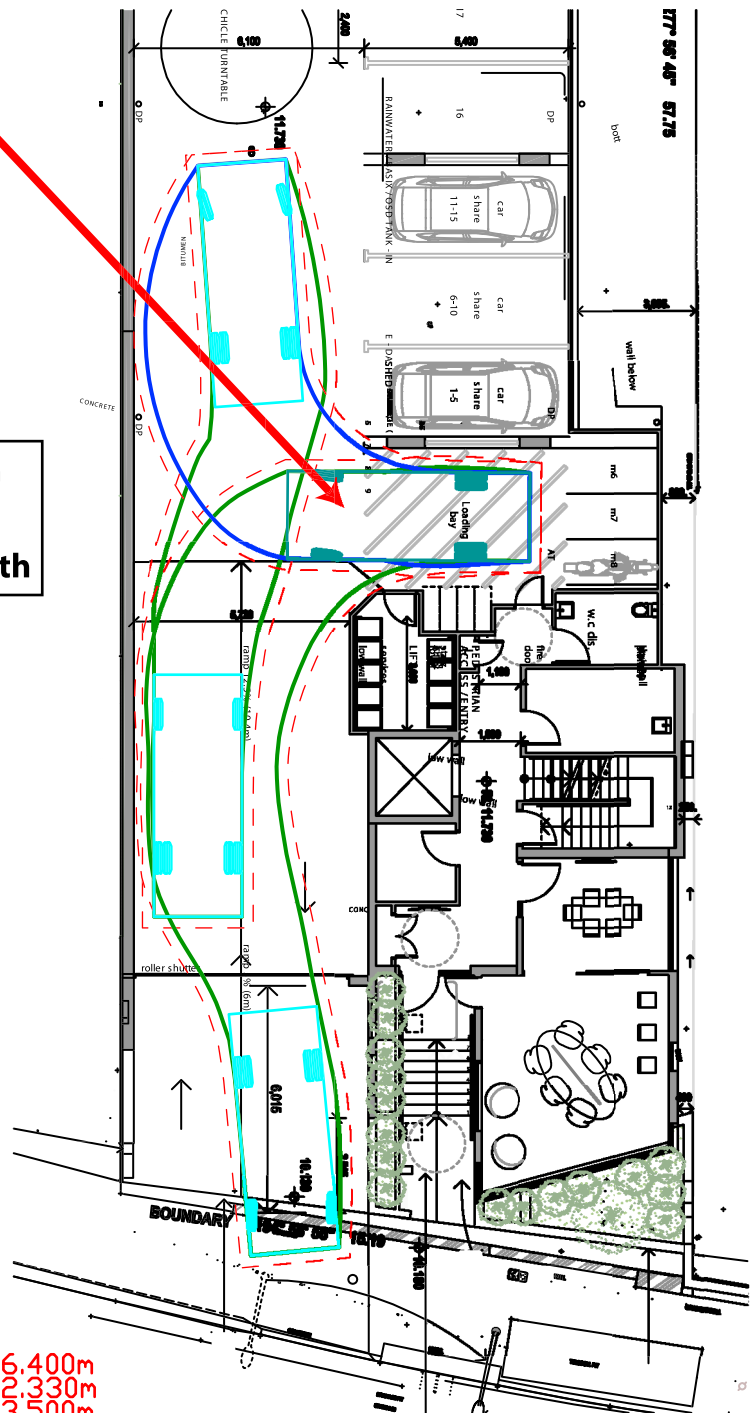




Path prepared using
Autodesk Vehicle Tracking



Truck collects waste
from loading bay



SRV - Small Rigid Vehicle
 Overall Length 6.400m
 Overall Width 2.330m
 Overall Body Height 3.500m
 Min Body Ground Clearance 0.398m
 Track Width 2.330m
 Lock to Lock Time 4.00s
 Curb to Curb Turning Radius 7.100m

**Manoeuvring Path of Australian
 Standard AS2890.2:2018
 6.4m Small Rigid Vehicle (SRV)
 Collecting Waste From Site**



Terraflow Pty Ltd
 TRAFFIC & PARKING CONSULTANTS

NORTHERN BEACHES COUNCIL

Waste Management Plan

(For development in the area of WLEP 2011 and WLEP 2000)

This plan is to be completed
in accordance with Council's

Waste Management Guidelines

(For development in the area of WLEP 2011 and WLEP 2000)

Effective Date: 25 October 2016

TABLE OF CONTENTS

Purpose of the Waste Management Plan	2
Structure of the Waste Management Plan	2
Applicant and Project Details	3
Section 1 – Demolition	5
Section 2 – Construction	7
Section 3 – On-going waste management for one or two dwellings.....	9
Section 4 – On-going waste management for three or more dwellings.....	10
Section 5 – On-going waste management for non-residential developments	11
Section 6 – Private roadway developments.....	12

Purpose of the Waste Management Plan

This *Waste Management Plan (WMP)* will detail the arrangements for waste management during all stages of development and occupation.

The WMP must be completed in accordance with the Waste Management Guidelines (Guidelines).

A completed WMP is a mandatory requirement for any Development Application (DA) submitted under WLEP 2011 or WLEP 2000. DAs that are submitted without a completed WMP will be rejected or refused by Council.

Structure of the Waste Management Plan

All applicants are required to complete the 'Applicant and Project Details' part of the WMP and include it with the relevant Sections that apply to their proposed development.

The WMP is divided into Sections and applicants are only required to complete the relevant Sections in accordance with the Guidelines. The table below identifies which Sections are relevant to which development types.

For example, if the proposed development was to include demolition of an existing structure and construction of a single dwelling, the relevant Sections would be Sections 1, 2 and 3.

Section	Development Type [^]
Section 1 – Demolition	All
Section 2 – Construction	All
Section 3 – On-going waste management for one or two dwellings	One or two dwelling developments Mixed-use developments containing one or two dwellings
Section 4 – On-going waste management for three or more dwellings	Three or more dwelling developments Mixed-use developments containing three or more dwellings
Section 5 – On-going waste management for non-residential and mixed use developments	Commercial developments Industrial developments Mixed-use developments
Section 6 – Private roadway developments	Private roadways

[^]Note: the definitions of the development types are provided in Section vi of the Introduction to the Guidelines

Applicant and Project Details

Complete this page and the relevant Sections that apply to your proposed development.

Applicants' Details

Name: (must be the same as the DA form)	MY Manly Vale Pty Ltd C/- Gartner Trovato Architects
Address: (must be the same as the DA form)	PO Box 1122 Mona Vale NSW 1660
Phone Number:	9979 4411
Email Address:	sean@g-t.com.au

Property Details

Lot No: Deposited Plan (DP) No: or Strata Plan (SP) No:	Lot 8 DP 604034
Unit No: House No: Street: Suburb: Postcode:	255 Condamine Street Manly Vale NSW 2093

Project Details

Description of proposed development:	Construction of a new 37 room boarding house development with ground level parking and landscape
Structures to be demolished:	NIL

Applicant Declaration

I declare that:

1. This plan has been completed in accordance with the Waste Management Guidelines
2. To the best of my knowledge, the details on this form are accurate and correct

I understand that:

1. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as Council, NSW Environment Protection Authority or WorkCover NSW.
2. A bond in accordance with Council's fees and charges may apply to this development and must be paid to Council prior to any works commencing.
3. The bond will only be refunded when Council is satisfied that all waste outlined in this plan has been managed as per the plan, and evidence such as photos, receipts and statutory declarations must be supplied where appropriate.

Signature of Applicant:  _____ Date: 06/12/21

Section 1 – Demolition

This section must be completed in accordance with ‘Chapter 1 – Demolition’ of the Waste Management Guidelines

MATERIALS ON SITE	DESTINATION <i>Evidence such as weighbridge dockets and invoices for waste disposal or recycling must be retained on site for inspection</i>					
	REUSE AND RECYCLING (MOST FAVOURABLE)				DISPOSAL (LEAST FAVOURABLE)	
Types of Waste Material	Estimated Volume (m ³) or Weight (t)	ONSITE RE-USE ✓ Specify how material will be reused on site	OFFSITE RECYCLING ✓ Recycling Outlet (RO) ✓ Waste Transport Contractor (WTC)		OFFSITE DISPOSAL ✓ Specify landfill site (LS) ✓ Specify Waste Transport Contractor (WTC)	
			WTC	RO	WTC	LS
Excavated Material	Nil					
Garden Organics	Nil					
Bricks	Nil				OPTION NOT AVAILABLE: These materials must be re-used or separated on or off site and sent for recycling.	
Tiles	Nil					
Concrete	Nil					
Timber	Nil					
Plasterboard	Nil					
Metals	Nil					
Asbestos	Nil					
Other waste (please specify)	Nil					
Estimated Total % Recovered	Nil					

Refer to the estimation tables in ‘Chapter 1 – Demolition’ of the Guidelines for assistance in completing this table.

The applicant must submit a Site Plan showing the structures to be demolished and storage areas for waste and construction materials (if the development also includes construction).

WMP Checklist

Have you included the following:	Applicant Tick
A site plan showing: • The structures to be demolished. • Storage areas for waste to be reused, recycled, or disposed of. • Materials storage (if the development also includes construction)	☒
The table on the previous page, completed in accordance with 'Chapter 1 – Demolition' in the guidelines.	☒

Section 2 – Construction

This section must be completed in accordance with 'Chapter 2 – Construction' of the Waste Management Guidelines

MATERIALS ON SITE	DESTINATION <i>Evidence such as weighbridge dockets and invoices for waste disposal or recycling must be retained on site for inspection</i>					
	REUSE AND RECYCLING (MOST FAVOURABLE)				DISPOSAL (LEAST FAVOURABLE)	
Types of Waste Material	Estimated Volume (m ³) or Weight (t)	ONSITE RE-USE ✓ Specify how material will be reused on site	OFFSITE RECYCLING ✓ Specify recycling outlet (RO) ✓ Specify Waste Transport Contractor (WTC)		OFFSITE DISPOSAL ✓ Specify landfill site (LS) ✓ Specify Waste Transport Contractor (WTC)	
* Please specify			WTC	RO	WTC	LS
Excavated Material	600	Nil		✓		✓
Garden Organics	Nil					
Bricks	Nil				OPTION NOT AVAILABLE: These materials must be re-used or separated on or off site and sent for recycling.	
Tiles	Nil					
Concrete	20	Crushed - subfloor aggregate				
Timber*	Nil					
Plasterboard	2	Nil	✓			
Metals*	Nil					
Asbestos	Nil					
Other waste*	Nil					
Estimated Total % Recovered	15					

Refer to the estimation tables in 'Chapter 2 – Construction' of the Guidelines for assistance in completing this table.

The applicant must submit a Site Plan showing the structures to be demolished and storage areas for waste and construction materials (if the development also includes construction).

WMP Checklist

Have you included the following:	Applicant Tick
A site plan showing: • The structures to be demolished. • Potential storage areas for waste to be reused, recycled, or disposed of. • Materials storage	☒
The table on the previous page, completed in accordance with 'Chapter 2 – Construction' in the guidelines.	☒

Section 3 – On-going waste management for one or two dwellings

This section is to be completed in accordance with 'Chapter 3 – On-going waste management for one or two dwellings' of the Waste Management Guidelines.

Type of development: _____

Number of dwellings: _____

WMP Checklist

Do your architectural and landscape plans include the following:	Applicant Tick
Waste Storage Area design requirements (Chapter 3.2.)	☐
Waste Storage Area location requirements (Chapter 3.3.)	☐

Section 4 – On-going waste management for three or more dwellings

This section is to be completed in accordance with 'Chapter 4 – On-going waste management for three or more dwellings' of the Waste Management Guidelines.

Type of development: Boarding House

Number of dwellings: 37 rooms

WMP Checklist and Applicant Declaration

Do your architectural/landscape plans include the following:	Applicant Tick	N/A
Waste Storage Area design requirements (Chapter 4.2.)	☒	-
Waste Storage Area location requirements (Chapter 4.3.)	☒	-
Pathway, access and door requirements (Chapter 4.4.)	☒	-
Clean-up waste requirements (Chapter 4.5.)	☒	☐
Kerbside (on-street) waste collection requirements (Chapter 4.6.)	☒	☐
On-site (off-street) waste collection requirements (Chapter 4.7.)	☐	☒

Section 5 – On-going waste management for non-residential and mixed use developments

This section is to be completed in accordance with ‘Chapter 5 – On-going waste management for non-residential developments’ and ‘Chapter 6 – On-going waste management for mixed use developments’ of the Waste Management Guidelines.

Type of development: _____

Number of commercial premises: _____

Number of Waste Storage Areas: _____

WMP Checklist

Do your architectural/landscape plans include the following:	Applicant Tick	N/A
Waste Storage Area design requirements (Chapter 5.2.)	☐	-
Waste Storage Area location requirements (Chapter 5.3.)	☐	-

Section 6 – Private roadway developments

This section is to be completed in accordance with 'Chapter 7 – Private roadway developments' of the Waste Management Guidelines.

Type of development: _____

Number of dwellings: _____

(Only applicable for sub-divisions)

WMP Checklist and Applicant Declaration

Do your sub-division plans include the following:	Applicant Tick	N/A
Council's waste vehicle design requirements (Chapter 7.2.)	☐	☐
Waste Storage Area requirements (Chapter 7.3.)	☐	☐

BOARDING HOUSE MANAGEMENT PLAN

FOR

37 ROOM BOARDING HOUSE

AT

255 CONDAMINE STREET
MANLY VALE

December 2021

1.0 OBJECT OF THIS PLAN

The primary purpose of this plan is to ensure the proposed boarding house maintains a high level of amenity for neighbouring properties and for all lodgers residing the premises. To achieve this, the following matters have been considered:

- General site management
- Amenity of occupants
- Discouraging behaviour of occupants which may cause neighbour's amenity to be reduced
- General amenity of adjoining neighbours
- House rules and the enforcement of said rules
- Fire safety of the premises including Emergency Management and Evacuation
- Occupational Health and Safety
- Internal and external cleanliness and appearance, including communal areas and individual units
- Complaints register
- Maintenance and the appearance and condition of the premises

A full and current copy of all current development consents for the operation of the premises and the boarding house management plan must be kept on-site and made available to Police or Council Officers upon request.

2.0 SITE MANAGEMENT

The boarding house is to be managed by a Managing Agent appointed by the owner who will be responsible for ensuring that the site is regularly monitored.

The management plan shall be displayed in a common area of the building at all times

The owner/ Managing Agent will be responsible for ensuring that an on-site Boarding House Manager is available by mobile phone 24 hours per day and should the on-site manager not

be available for any reason such phone number is redirected to the owner or Managing Agent.

The on-site Manager's role is defined as follows:

- Responsible for ensuring the House rules are adhered to outside business hours, in replacement of the Agent
- 24/7 contact for any emergencies at the building in the absence of the Agent, outside of hours
- Act as a contact in absence of Manager, to maintain the general ongoing management premises
- Advise Manager of any issues created by lodgers on the premises
- Ensuring cleaning and maintenance of the premises is maintained to a high standard and provide regular updates to the Manager
- Assist in resolving conflict, where possible, in absence of Manager

If any lodgers do not respect the House Rules this will be cause for termination of use/ Occupancy Agreement.

Business and after hours contact details will be provided to all lodgers and will be displayed on signage in an accessible location on the premises for public and resident information.

The Managing Agent will require a photo ID (e.g. typically either passport or driver's license). Where the person is an Australian and does not hold a drivers license then alternative ID which may not hold a photo can be accepted.

At no time is any room to be advertised as or made available for short stay accommodation such as that associated with back packer hostels, motels, hotels, or the like.

Each lodger of the premises is required to sign an Occupancy Agreement and House Rules Agreement upon occupation of the boarding house. The Occupancy Agreement is to be for a minimum term of 3 months.

Upon arrival lodgers will be issued with an information sheet. This document will provide general information about the premises including the Managing Agents details, on-site Manager's details, after hours contact details, emergency contact numbers for essential services such as fire, ambulance, police and utilities such as gas, electricity, plumbing, house rules as well as a note that there are residential neighbours and accordingly lodgers need to take the neighbours interests/ amenity into account when leaving and entering.

All lodgers are to be provided with a pamphlet outlining the fire evacuation procedures for the boarding house. The pamphlet is to contain details of the fire exits, fire hydrants and fire warning devices installed in the boarding house.

All lodgers will be registered in an electronic accommodation register. This register will provide details of the length of stay and the maximum number of all lodgers in each room. The register will be made available immediately upon demand at the request of Council and/or the Police.

The site management will be responsible for the logging of any complaints in a “Complaints and Incident Register” and the resolution of those complaints which is also to be documented. The Complaints and Incidence Register will be made available immediately upon demand at the request of Council and/or the Police.

The premises will be checked annually to ensure that fire safety and essential fire safety measures in the building are maintained and that all required exits and egress paths are clear and free of obstructions. Inspection times are to be logged into an “Inspections Log” and made available on demand at the request of Council officers and/or the Police.

3.0 CONTRACT CLEANING AND MAINTENANCE STAFF

Cleaning contractors will be responsible for the ongoing cleaning internal and external common and communal areas including waste room, parking area, corridors, stairs, lift, laundry and communal bathroom.

Tenants will be responsible for cleaning their boarding room and transporting waste from their room to the waste storage area.

Common areas and the laundry facilities shall be appropriately constructed, maintained and controlled against vermin. These areas shall be regularly inspected by an authorised pest control company once every 12 months.

Building maintenance/repairs is to occur when required.

The owner/ manager of the building must ensure that the surroundings of the building including road reserve and gutters are kept clean and free of litter at all times.

The owner/ manager of the site must be responsible for the removal of all graffiti from the building within 48 hours of its application.

4.0 BOARDING ROOM OCCUPANCY

Not more than two (2) person shall occupy any of the boarding rooms which are to contain no more than two (2) beds. This limit does not apply to children below the age of eight (8). There may only be 1 child where 2 adults are occupying a single room.

Room 28 is to be permanently occupied by an appointed Boarding House Manager.

Rooms 9, 13, 25 and 26 are to be made available for persons with a disability.

The total number of persons residing in the boarding house at any one time shall not exceed 74 inclusive of the Boarding House Manager.

5.0 CAR PARKING AND CAR SHARE

Car parking will be provided as 3 regular car parking spaces, 1 disabled space and 3 spaces for house cars with arrangements as set out in annexure 'A'.

The share cars will be available to the lodgers of the boarding house subject to making a booking. The share cars will be maintained at all times with a full tank of petrol and will be usable at no charge to the lodger on the basis that the cars are returned with a full tank of petrol.

The share cars will at all times be maintained in good working condition. The cars will be maintained in accordance with the maintenance schedule of the manufacturer of the cars. The vehicle will be cleaned on a fortnightly basis.

All lodgers will be made aware of the existence of the share cars at the time of occupation and will be made aware of how the booking system for the car operates and that the car is available for use at no cost (other than petrol).

6.0 SHARED OFFICE

Given the change in working arrangements post COVID, the shared office provides a space for lodgers, separate from their boarding rooms, to work. The shared office will provide computer portals and a computer which can be used by the lodgers to book a share care.

7.0 VISITORS

Any lodger inviting guests to the premises must take full responsibility for them and their behaviour.

Visitors must obey the rules of the boarding house and must leave the premises by 10:30pm daily.

Any visitor not obeying the rules whilst on the premises, may be removed from the property.

Any visitor must not cause nuisance when arriving or vacated the premises at any time that may cause disruption to neighbouring boarding rooms, or neighbouring properties.

6.0 USE OF OUTDOOR COMMUNAL AREA

The use of open air common areas is not permitted between 10:30pm and 7:00am,

seven days per week.

No amplified music is permitted at ANY time within the outdoor communal areas.

7.0 SAFETY AND SECURITY

Access to Premises

Arrangements for initial access to the premises will be through the Managing Agent.

Swipe Card Access to Entrance

New lodgers will only be permitted to have initial access to the boarding house between 9:00am and 6:00pm, Monday to Saturday through the Managing Agent. Access to all rooms will be controlled by a swipe card provided to each lodger.

All accessible doors will have swipe card access. The swipe cards provide access to the rooms for the period the boarder has lodgings. Once the tenancy has expired the card is rendered useless.

The system used will allow management to read all locks to see which card has been used recently on the lock, further increasing security. The relevant readers will be located at the correct height for disabled guests.

These cards, for security reasons, shall not be transferred to any other persons other than the authorized boarders.

Perimeter Lighting

Perimeter lighting shall be provided to ensure that there are no areas of concealment when entering or leaving the property.

General

Smoke detectors/alarms are checked annually in accordance with the applicable legislation and are maintained in working order at all times.

8.0 ROOM FURNISHINGS

Combustible furnishings and fittings, such as lounges, desks and display boards are not permitted in public corridors and egress routes from sleeping rooms as they may restrict the safe means of egress from the building and reduce the level of fire safety in the building.

Mattresses, curtains and furniture will be of materials that resist the spread of fire, and limit the generation of smoke and heat.

The premises will be checked regularly to ensure that fire safety and essential fire safety measures in the building are maintained and that all required exits and egress

paths are clear and free of obstructions.

Each room shall be provided with the following room furnishings:

- Bed (including base, a mattress with a minimum dimension of 800mm x 1900mm and a mattress protector)
- Wardrobe
- Mirror
- Table & chair
- A night light or other approved illumination device for each bed
- Waste container
- An approved latching device on the door
- Curtains, blinds or similar privacy device
- A kitchenette to include sink and food preparation bench, storage and microwave

9.0 LAUNDRY FACILITIES

The laundry is to be supplied with the following, a minimum of:

- 3 x 5kg capacity automatic washing machine with minimum 3.5 star energy rating; and
- 3x domestic dryer with minimum 3.5 star energy rating.

10.0 HOUSE RULES

House rules will be displayed at entrance of the property, behind each entry door of each room and in all indoor and outdoor common areas. House Rules as well as the Occupancy Agreement will be signed by each lodger on initial entry to the property. No signature, no entry policy applies.

Lodgers are to respect other lodgers and neighbouring residents and to keep noise at a reasonable level.

Access Key

The access key to the boarding house shall not be given to anybody other than the occupant(s).

Alcohol

Alcohol is not permitted to be consumed in the indoor or outdoor communal areas.

Smoking

Smoking will not be permitted indoors.

Drugs

The boarding house policy is that the use, sale or possession of illegal drugs or any suspicion of such acts being performed in or about the premises or any person found using drugs shall be immediately reported to the Police.

Misconduct

Any boarder failing to observe the rules and any cases of serious misconduct will be dealt with by the Managing Agent who may require the lodger to vacate the premises.

Examples of serious misconduct include, but are not limited to: drug or alcohol abuse, sexual, racial or religious harassment, theft, or violence. Boarders are instructed to call the police if the boarder is performing illegal acts on the property.

Any lodger must allow the Owner or Manager to inspect their room at least once a month or at other times as requested, with reasonable notice.

Any lodger must notify the Manager immediately when there is reason to believe that the behaviour or action of the other lodgers may cause harm or endanger lives or may cause damage to their premises/property or surrounding properties

Visitor Policy

Lodgers staying at the premises may entertain friends in their room. Visitors must obey the rules and leave the premises by 10:30pm.

Any lodgers inviting visitors to the premises must accept full responsibility for them and their behaviour. In the event of any serious misconduct by the visitor of a lodger, the lodger may also be asked to vacate the premises and be asked to pay for damages, where required.

Noise

Live music will not be permissible on the premises at ANY time.

No amplified music is permitted at ANY time within the outdoor communal areas.

Recorded and/or amplified music is permissible indoors during daylight hours between 8:00am and 8:00pm Monday to Thursday and between 8:00am and 10:00pm Friday

to Sunday.

Disposing of Waste

Lodgers are to ensure all rubbish and recycling is to be deposited within the respective bins provided in the garbage room.

Pets

No pets are allowed within the boarding house at ANY time.

Nuisance

The carrying out of activities likely to cause a nuisance to other lodgers, the management or neighbours will not be tolerated. This may include, but not limited to theft, use of illegal drugs, violence or noise generating activities outside permissible times.

Any lodger failing to observe the rules and/or involved in serious misconduct will be dealt with by the boarding house manager and may result in the termination of the occupancy agreement.

11.0 WASTE POLICY

Behind each room door there will be a sign encouraging guest to recycle. The bins in the waste bin area will be separated for:

- Paper, cardboard;
- General waste; and
- Aluminum cans, glass and plastic bottles.

12.0 FIRE SAFETY

Evacuation Plan

Building layout indicating, position of lodger rooms relative to the rest of the development, location of fire exits and firefighting equipment and emergency evacuation procedures shall be displayed in all rooms and common areas.

Maintenance

Emergency systems are maintained as part of a maintenance contract by a qualified company. All equipment will be tested and checked in accordance with the relevant Australian Standards. Any faults are documented and rectified immediately. These checks take place, weekly, monthly, bi-annually or annually depending on the required frequency.

Annual Certification

Annual certification of Fire Safety Equipment and preparation of the Form 15a is carried out by a fire consultant. Annual certification required of any of the equipment is overseen by the owners.

13.0 OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

The Managing Agent and staff must be aware of their responsibilities under such legislation as the OHS Act 2000, OHS Regulation 2001, and the Innkeepers Act.

The WorkCover website lists the OHS Act and Regulations and other helpful information – visit www.workcover.nsw.gov.au for boarding houses NSW.

The following safety guidelines will be observed in the premises and employees must abide by them:-

- All hazards (e.g. broken chairs, loose carpets, missing lights) should be removed, repaired or replaced in consultation with the Managing Agent;
- No item of plant or machinery may be operated unless the safeguards provided are correctly in place, secured and operating effectively and the staff member and/or contract services personnel have been trained;
- Dangerous chemicals are to be handled properly, labeled (MSDS), and locked in a secure storage area when not in use;
- Work areas are to be kept clean and tidy;
- Passageways and aisles are to be kept clear at all times;
- Materials or products are not to be stacked higher than what is considered to be safe;
- Rubbish bins must be used to dispose of all rubbish;
- Excessive alcohol consumption or drugs not prescribed by a doctor are forbidden on the premises; and
- All no smoking rules are to be observed.

14.0 STORAGE OF CHEMICALS

All chemicals and other substances stored for use in workplaces will meet the requirements of certain Acts and Regulations. Chemicals or substances that are labeled Hazardous Goods will have a Materials Safety Data Sheet on site.

All hazardous chemicals/substances are to be securely stored when not in use.

15.0 PUBLIC LIABILITY

The owners will maintain appropriate public liability cover.

16.0 COMPLAINTS AND INCIDENT REGISTER

The Managing Agent will be available between the hours 9:00am to 6:00pm, Monday to Saturday, to deal with any complaints or incidents that occur on the premises. The register will contain:-

- Complaint/Incident date and time
- Name of person/police/council making the complaint or notifying of the incident
- Contact details
- Nature of the complaint/incident
- Action taken (by whom and when)
- Outcome and/or further action required

All complaints shall be dealt with by management with 24 hours of notification.

The complaints register is to be made available to Council, Police or a Special Investigator upon request.

17.0 VARIATIONS TO THE PLAN OF MANAGEMENT

This Plan of Management may be varied from time to time by an Authorised officer of the Council, on the application of the owner or the Agent, without the need for modification of the development consent.

18.0 AUTHORISATION BY COUNCIL

This plan was endorsed by:

Name of Authorised Council Officer:.....

Position of Officer:.....

Signature of Officer:.....

Date:

Annexure “A”

House Car

The Applicant has confirmed that it will purchase and operate 3 House Cars for the shared use of the lodgers only, to minimise car ownership rates and parking demands generally. Car sharing is becoming increasingly popular in Sydney and is encouraged by numerous Councils (including Northern Beaches Council) to reduce private car ownership rates, resulting in a sustainable transport outcome.

Induction & Car Booking

- The manager of the development will be required to set-up an online booking system either via phone app or website, where lodgers will be able to schedule House Car bookings.
- The online booking system will enable transparency amongst lodgers of when a House Car is available and allow the car to be booked in advanced as required.
- If a website is established for the online booking system, a computer could potentially be set up in the communal room/shared office to enable lodgers to schedule a booking.
- It shall be the responsibility of the Managing Agent or on-site Manager to induct all new lodgers of the development on use of the online booking system and House Cars.
- It shall be the responsibility of the on-site Manager to ensure that the House Cars operate efficiently in terms of bookings and is maintained, cleaned and deemed fit-for-use by lodgers.

Costs & Insurances

- Set up / establishment costs associated with the House Cars and online booking system will be paid for by the owner of the development.
- The owner of the development shall maintain comprehensive car insurance covering all lodgers who hold a driver's licence.

Vehicle Location & Tracking

- Lodgers are required to return the House Car back to the on-site car space at the end of their booking with a full tank of fuel.
- A key lockbox will be provided along with the House Cars, ensuring that the keys are in a nearby and known location at all times.
- The House Cars will be fitted with a GPS tracking system to ensure that the location of the vehicle is known in the case of vehicle emergencies, management of bookings etc.

Waterway Impact Assessment

255 Condamine St., Manly Vale, NSW



Prepared for Upstate Group

Report P1605609JR08

December 2021

Final Report

Project Details

Project Item	Detail
Report Title	Waterway Impact Assessment, 255 Condamine Street, Manly Vale, NSW
Client	Upstate Group
Project Number	P1605609
Document ID	P1605609JR08V03
Director	A. Norris
Manager	A. Norris
Principal Author	D. Martens

Document History

Issue	Issue Date	Status	Description / Comment	Author	Reviewer	Approved
1	26/3/2021	Final	Development Application	DMM	MD	ASN
2	7/12/2021	Final	Development Application - update	DMM	MD	ASN

All enquiries regarding this project are to be directed to the Project Manager.

© Copyright Martens & Associates Pty Ltd
 Suite 201, 20 George St, Hornsby, NSW 2077, Australia
 ACN 070 240 890 ABN 85 070 240 890
 P +61-2-9476-9999 | mail@martens.com.au | www.martens.com.au

Copyright Statement

Martens & Associates Pty Ltd (Publisher) is the owner of the copyright subsisting in this publication. Other than as permitted by the Copyright Act and as outlined in the Terms of Engagement, no part of this report may be reprinted or reproduced or used in any form, copied or transmitted, by any electronic, mechanical, or by other means, now known or hereafter invented (including microcopying, photocopying, recording, recording tape or through electronic information storage and retrieval systems or otherwise), without the prior written permission of Martens & Associates Pty Ltd. Legal action will be taken against any breach of its copyright. This report is available only as book form unless specifically distributed by Martens & Associates in electronic form. No part of it is authorised to be copied, sold, distributed or offered in any other form.

The document may only be used for the purposes for which it was commissioned. Unauthorised use of this document in any form whatsoever is prohibited. Martens & Associates Pty Ltd assumes no responsibility where the document is used for purposes other than those for which it was commissioned.

Limitations Statement

The sole purpose of this report and the associated services performed by Martens & Associates Pty Ltd is to prepare a waterway impact assessment in accordance with the scope of services set out in the contract / quotation between Martens & Associates Pty Ltd and Upstate Group (the Client). That scope of works and services were defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

Martens & Associates Pty Ltd derived the data in this report primarily from a number of sources which may include for example site inspections, correspondence regarding the proposal, examination of records in the public domain, interviews with individuals with information about the site or the project, and field explorations conducted on the dates indicated. The passage of time, manifestation of latent conditions or impacts of future events may require further examination / exploration of the site and subsequent data analyses, together with a re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, Martens & Associates Pty Ltd may have relied upon and presumed accurate certain information (or absence thereof) relative to the site. Except as otherwise stated in the report, Martens & Associates Pty Ltd has not attempted to verify the accuracy of completeness of any such information (including for example survey data supplied by others).

The findings, observations and conclusions expressed by Martens & Associates Pty Ltd in this report are not and should not be considered an opinion concerning the completeness and accuracy of information supplied by others. No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings and conclusions are based solely upon site conditions, information and drawings supplied by the Client etc. in existence at the time of the investigation.

This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with the provisions of the agreement between Martens & Associates Pty Ltd and the Client. Martens & Associates Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

Executive Summary

This report has assessed the impact of a proposed boarding house development at 255 Condamine St., Manly Vale (the Site) on a waterway known as Burnt Bridge Creek within the Site. The assessment has been conducted in accordance with Warringah Council's Guidelines for Preparing a Waterways Impact Statement. The following findings and conclusions are made.

1. **Proposed Development:** The proposed structure consists of boarding house and ancillary car parking supported on piers suspended over flood affected land.
2. **Existing Creek Conditions:** The existing Creek within the Site is highly modified and degraded, having been historically relocated to its current position, and being largely channelised with a near vertical sandstone retaining wall on its northern bank and a structural fill embankment on its southern bank. The Creek bed is bedrock controlled with a limited bed sediments including sands and various refuse from the urban catchment. The western part of the northern bank is formed from a historical rock and soil cutting which is presently unstable. The southern bank is also presently unstable, receiving slumped material from failing sections of the existing fill embankment. For several hundred metres downstream of the Site the Creek is completely channelised by a series of culverts and concrete channel sections.
3. **Riparian Corridor Rehabilitation Works:** The Proposal seeks to rehabilitate the existing riparian corridor by: stabilising and remediating the existing western portion of the northern bank; stabilising the existing southern bank; and managing riparian vegetation through weed removal and replanting. These works will ensure long-term retention and enhancement of riparian land, by improving habitat and ecological processes, delivering bank stability, and providing riparian vegetation and improved water quality by managing and treating stormwater prior to release.
4. **Construction Requirements:** A riparian vegetation management plan and a sediment erosion control plan will be prepared as part of the construction certificate process. These documents will guide the works and ensure that the desired riparian management outcomes are achieved.
5. **Impact on Waterway:** The Proposal will deliver a material benefit to the existing riparian corridor by providing Creek bank stability, improved riparian vegetation and improved water quality. The Proposal is consistent with the objectives of the NRAR Waterway Guidelines, the objectives of the NBLEP and relevant design objectives provided in the NBDGP.

Contents

1	Introduction	6
1.1	Overview and Scope	6
1.2	Development Controls and Guidelines	6
1.3	About the Author	7
2	Existing Riparian Conditions	8
2.1	Existing Development.....	8
2.2	Council Assessment.....	8
2.3	Channel Modifications.....	8
2.4	Water Quality.....	9
2.5	Bank Conditions	9
2.5.1	Bank Location and Floodplain.....	9
2.5.2	General Condition.....	10
2.5.3	Southern Bank Stability.....	10
2.5.4	Northern Bank Stability.....	11
2.6	Aquatic Ecology	11
3	Riparian Management.....	12
3.1	Design Principles and Outcomes	12
3.2	Mitigation Measures	13
4	Assessment.....	15
4.1	Proposed Works	15
4.2	Environmental Impacts	16
4.3	NRAR Guidelines	18
4.4	Northern Beaches LEP.....	19
4.5	Northern Beaches DCP.....	20
5	Conclusions.....	23
	Attachment A – Figures.....	24
	Attachment B - Creek Protection Works Plans	39

Tables

Table 1: Assessment of environmental impact on the waterway.....	16
Table 2: Assessment of waterway works against the NBLEP.....	19
Table 3: Assessment of waterway works against the NBDCP controls.....	20

Figures

Figure 1: Overview of Site condition.	25
Figure 2: Burnt Bridge Creek channel treatment.....	26
Figure 3: Burnt Bridge Creek below Condamine Street bridge.	27
Figure 4: Burnt Bridge Creek culvert below 206 Condamine St.	27
Figure 5: Diversion and piping of Burnt Bridge Creek.	28
Figure 6: Burnt Bridge Creek immediately upstream of Site.	28
Figure 7: Existing bank conditions with the Site.	29
Figure 8: Northern creek bank and floodplain upstream of site looking west.	29
Figure 9: Southern creek bank and floodplain upstream of site looking west.	30
Figure 10: Creek banks and floodplain upstream of site looking east.	31
Figure 11: Sandy floodplain sediment on southern bank.	31
Figure 12: Fill embankment behind creek bank within site looking east.....	32
Figure 13: Fill embankment adjacent to derelict building within site.	32
Figure 14: Creek condition overview (21/1/2020).	33
Figure 15: Fill embankment failure with the Site (28/9/2020).....	33
Figure 16: Fill embankment adjacent to derelict building within site (17/11/2021). ..	34
Figure 17: Fill embankment failure and waste in creek within site (17/11/2021).	35
Figure 18: Northern Creek bank and embankment within site (17/11/2021).....	36
Figure 19: Northern Creek bank and embankment within site (17/11/2021).....	36
Figure 20: Northern Creek bank and embankment showing failure (17/11/2021). ...	37
Figure 21: Concept creek works plan.....	38

1 Introduction

1.1 Overview and Scope

This waterway impact assessment has been prepared to support a boarding house development application (the **Proposal**) at 255 Condamine Street, Manly Vale, NSW known as Lot 8 in DP 604034 (the **Site**). This report updates an earlier version of the report due to slight amendments to the Proposal.

The Site maintains a total area of approximately 863 m² and contains a waterway known as Burnt Bridge Creek. We understand that the Proposal includes the following:

1. Demolition of existing structures.
2. Increase of available flood storage to mitigate potential flood impacts.
3. Construction of multi-level boarding house.
4. Rehabilitation of the riparian corridor within the Site.

The scope of work covered by this report includes:

1. Description of existing riparian conditions.
2. Review of riparian management objectives.
3. Assessment of waterway impact.

1.2 Development Controls and Guidelines

The following development controls and design principles have been considered in this assessment:

1. Northern Beaches (Warringah) Council (2014) Waterways Impact Statement Guidelines (the **NB Waterway Guidelines**).
2. Northern Beaches (Warringah) Council Development Control Plan 2011 (the **NBDCP**).
3. Northern Beaches (Warringah) Council Local Environment Plan 2011 (the **NBLEP**).
4. Northern Beaches (Warringah) Council (2004) Creek Management Study.

5. Natural Resources Access Regulator (2012) Guidelines for Riparian Corridors on Waterfront Land (the **NRAR Guidelines**).

1.3 About the Author

This report has been prepared by Dr Daniel Martens who has both environmental and engineering qualifications. Dr Martens has worked with a range of surface water systems such as creeks, rivers, wetlands, lakes and estuaries for more than 30 years including: the identification and description of surface water systems; modelling of hydrological regimes including flood assessments; assessment of the environmental impacts of development on watercourses; and the development of watercourse management plans. Dr Martens holds an Honours (First Class) degree in fluvial geomorphology, a Masters degree in environmental engineering, and a PhD in Environmental Engineering.

2 Existing Riparian Conditions

2.1 Existing Development

At the time of preparing this report, much of the Site was clear of vegetation and development. A derelict brick building with ancillary driveway and concrete access stairs was present in the eastern portion of the Site. The balance of the Site consisted of grassed fill materials, with fill batters currently unstable as evidenced by various batter slumps. The waterway was located near the northern Site boundary, this being partially built over by development to the north at 257-259 Condamine St. An overview of Site conditions is provided in Figure 1.

2.2 Council Assessment

The Warringah Council Creek Management Study (2004) provides the following description in respect of Burnt Bridge Creek with the Site:

1. The Creek is classified as a Group C waterway.
2. The Creek maintains little ecological value.
3. The Creek catchment is highly developed.
4. The Creek is of low recreational value.

2.3 Channel Modifications

Significant modifications have been made to Burnt Bridge Creek upstream and downstream of the Site, with an overview of channel treatments provided at Figure 2. The following is noted:

1. Burnt Bridge Creek within the site is not a natural channel because the creek has previously been diverted through the site and built as a constructed channel. Downstream of the Site, the channel is bedrock controlled on the bed and concrete lined on the banks under the Condamine Street bridge (refer to Figure 3) and then completely concrete enclosed and piped under 206 Condamine Street and 31 and 28-34 Roseberry Street downslope of the bridge (refer to Figure 2 and Figure 4).
2. Upstream of the Site the channel has been historically realigned (refer to Figure 5 for position of historical alignment), with the northern bank

being cut into rock and soil to form near vertical embankments (refer to Figure 6).

2.4 Water Quality

Present water quality within the Creek is relatively poor with nutrient and suspended sediments likely to be elevated at times in association with historical catchment clearing and urbanisation taking place without appropriate stormwater quality control systems. Our inspection on 28 September 2020 and 17 November 2021 of the Site revealed:

1. Bed sediments contain a mixture of organics, gross pollutants, sands and materials sourced from areas such as road pavements and other wastes.
2. No flow was observed during the Site inspection, indicating an intermittent flow regime which may at times experience elevated pollutant concentrations and low oxygen conditions.

2.5 Bank Conditions

2.5.1 Bank Location and Floodplain

Creek banks are poorly defined within the Site. Inspection of the sandstone block wall forming the northern Creek bank on 257 – 259 Condamine Street showed that flows generally reach depths of up to 0.5 – 0.6 m (refer to Figure 7). Similarly, on the southern bank there is an area below the fill embankment which maintains a level of around 0.5 – 0.7 m above the permanent Creek water level (refer again to Figure 7).

During the 17 November inspection this level was observed as an active floodplain at the western end of the Site and within the adjoining property to the west. The floodplain and creek bank levels are shown in Figure 8, Figure 9 and Figure 10, confirming the following:

1. **Creek bank:** The creek bank is approximately 0.5 - 0.7 m above the permanent water line. The bank is expressed as a clear break in slope between the near vertical slope to the water's edge and the flat grade of the adjoining floodplain. The creek bank was comprised of largely sandy materials held together with plant roots and some clay content.
2. **Floodplain:** There is a distinctly developed floodplain behind the creek bank upslope of the Site. This is variably expressed depending on location, being widest upslope of the site (where it reaches > 5 m width). The floodplain is characterised by sandy sediment which has been

deposited by floods (refer to Figure 11). Floodplain vegetation to the west of the site is well established and consists largely of non-endemic species including trees, understorey and ground cover.

By contrast, the fill embankment within the site is entirely anthropogenic, containing a range of fill and waste materials (refer to Figure 12 and Figure 13), likely having been placed near to the time that the existing derelict building was constructed.

On this basis we conclude that the present active Creek banks are located at a level of between 0.5 – 0.7 m above the permanent Creek water level. The balance of material above this level within the Site is historical fill.

2.5.2 General Condition

An overview of existing Site conditions is shown in Figure 14, which indicates the location of the current creek, types of retaining structures used along the creek and the extent to which the building to the north overhangs the creek. The following is observed:

1. Vegetation along the southern Creek bank was dominated by a range of non-endemic grasses and weed species. Heights were generally low at < 0.5 m. Width of the riparian zone was generally narrow at < 5 m.
2. Vegetation along the northern Creek bank was largely confined to the western 20 m portion of the Site where a range of ferns had colonised the rock cutting and residue sandstone boulders (refer to Figure 6).

2.5.3 Southern Bank Stability

During the 28/9/2020 site inspection the southern fill embankment within the Site was observed to be over steepened and unstable and had been subject to various slippages, both historic and active. In summary:

1. The fill embankment located within the Site adjacent to the southern Creek bank is over-steepened and unstable at a number of locations.
2. In places the fill embankment has failed, and material has been transported downslope to the Creek bank and into the Creek (refer to Figure 15).

During the 17/11/2021 inspection it was observed that the fill embankment had continued to fail, with evidence of several recent slope failures. These have led to portions of the anthropogenic fill being transported to the creek bank below and into the creek (refer to Figure 16 and Figure 17).

Bank stabilisation and reconstruction is required and recommended.

2.5.4 Northern Bank Stability

During the 17/11/2021 inspection a more detailed examination of the northern creek bank and embankment was undertaken. The following was observed during the inspection:

1. The bank is not a natural bank but rather has been constructed by soil and rock excavation.
2. The bank is impacted by anthropogenic filling and waste deposition including concrete over pours (refer to Figure 18).
3. The bank is unstable with evidence of recent bank instability (refer to Figure 19 and Figure 20). In particular there has been a boulder slide with movement of two large boulders into the creek, likely caused by erosion of unconsolidated material below and around the boulders. These materials are likely to continue to move into the creek and obstruct flow in coming high flow / flood events, this leading to further bank erosion.

Bank stabilisation and reconstruction is required and recommended.

2.6 Aquatic Ecology

Based on our inspection of the Creek, we concur with Council's assessment that the Creek within the Site has been heavily impacted by past catchment activities and presently maintains low aquatic ecological value. The western 20 m reach of the northern Creek bank has some ecological habitat. However, this bank is nevertheless degraded and unstable and requires remediation.

We note that the Site Creek is largely transitional in form, being located between unchannelised reaches upstream and completely channelised reaches downstream. Within the Site, the channel is already largely channelised with the northern bank confined by sandstone block retaining structures and a rock cutting, and the southern bank constrained by a large fill embankment (refer to Figure 14). Given the Creek's position and the level of existing channel confinement, there is little opportunity at the Site to materially improve or enhance the aquatic habitat and ecological values.

3 Riparian Management

3.1 Design Principles and Outcomes

We recommend that the following overarching principles be applied to managing the riparian corridor within the Site. These have been derived based on the outcome measures contained within section 3 of the NB Waterway Guidelines

1. **Maintain Natural Features:** Natural features should be retained and improved where possible so that existing habitat areas and ecological processes are preserved and enhanced. This will ensure existing fauna movement routes are not disturbed. We note that there are virtually no natural features within the Site riparian corridor.
2. **Do Not Obstruct Creek Flow:** Ensure that no structures are built within the Creek that would cause an alternation in hydrologic regime or detrimental impact on water quality. We note that the bank failures, particularly the northern bank boulder movements, have obstructed flow within the Creek and need to be removed and remediated.
3. **Revegetate Riparian Zone:** Areas to be dedicated to the riparian corridor should be revegetated with suitable riparian species to promote ecological values. This will encourage natural diversity and will minimise the future risk of introduced plants and animals displacing natural species.
4. **Maintain and Improve Bank Stability:** Areas of existing bank instability should be remediated to preserve the integrity of channel bed and banks and enable establishment of riparian vegetation. Provision of increased flood storage through removal of some of the existing fill will assist in delivering bank stability. These actions will lead to long-term security of waterway processes.
5. **Incorporate WSUD:** Water Sensitive Urban Design (**WSUD**) principles should be incorporated into the Site development, including the use of rainwater tanks, treatment of stormwater prior to release to the Creek and release of stormwater into the Creek so that erosion is prevented. These measures will protect the Creek from nutrient and sediment pollution.
6. **Construction Management:** Prevent sediment movement into the Creek during construction by implementing construction practices such

as sediment and erosion control measures and appropriate construction oversight. These measures will protect natural areas from being exposed to Site based contamination.

3.2 Mitigation Measures

The following specific waterway impact mitigation measures are recommended to be incorporated into the Proposal so that the nominated riparian design principles and outcomes can be achieved:

1. **Remediate Northern Bank:** The northern bank should be stabilised, remediated and revegetated. This will include removing any existing flow obstructions within the channel. Existing larger endemic vegetation should be retained where possible, and where not, replanting should be with similar species.
2. **Undertake Bank Protection Works:** Bank protection works should be undertaken to stabilise the existing banks and provide a suitable substrate for riparian vegetation. This will need to include some bank protection with sandstone blocks and embankment retention and regrading in places.
3. **Implement Riparian Vegetation Management:** A riparian vegetation management plan should be prepared as part of the construction certificate documentation. This should include riparian vegetation establishment and maintenance phases. The establishment phase should detail the process and timing for weed removal, a species planting schedule and any temporary bank protection works (e.g. jute matting). The maintenance phase should describe any requirements and responsible persons for providing sufficient water and weed management to ensure establishment of the riparian vegetation.
4. **Implement Sediment and Erosion Control Plan:** A sediment and erosion control plan should be prepared as part of the construction certificate documentation. The plan should consider impact management of earthworks associated with the flood mitigation strategy, construction of footings [including piers] to support the superstructure, and earthworks required to stabilise the existing southern embankment.
5. **Control Stormwater Quality:** All stormwater generated by the Proposal should be treated using an appropriate stormwater management system so that nutrient and sediment loads released to the Creek are in accordance with Council's requirements.

6. **Mitigate Flood Impacts:** The building footprint, together with any ancillary earthworks and bank stabilisation works, will be designed so that there are no adverse flood impacts on the channel and adjoining properties arising out of the Proposal. [Flood modelling has already been undertaken demonstrating that no significant impacts arise out of the Proposal.]

4 Assessment

4.1 Proposed Works

The proposed works within and near to the riparian area are shown in Figure 21 with detailed creek protection works plans provided at Attachment B. In summary, the following works are to be undertaken:

1. **Building on Piers:** The bulk of the building is proposed to be suspended over flood liable land on piers. Only a small portion of the eastern part of the building will be in direct contact with the ground. No piers are proposed within the watercourse although a small number of piers will be positioned near the southern bank.
2. **Sandstone Block Walls:** Two low height mass sandstone block walls are proposed along the southern bank. The lower approximately 600 mm high wall is positioned to formalise the Creek bank to provide for long-term bank stability. The upper wall will be constructed to create the rear of the local floodplain. The region between the walls will be constructed from natural materials to enable colonisation with riparian flora. The northern bank will be stabilised with a variable height stacked sandstone block wall or revetment.
3. **Stormwater Treatment:** Stormwater will be treated prior to release into the watercourse by a Stormfilter stormwater filtration system.
4. **Stormwater Outlets:** Surplus stormwater generated by the Proposal will be directed to the creek and will be discharged through a headwall with suitable erosion control material placed at the outlet to prevent scour.
5. **Increase Flood Storage:** Some removal of the existing Site fill materials will be undertaken to increase local flood storage and mitigate any potential on or off-site flood related impacts arising out of the development.
6. **Riparian Corridor:** The existing narrow riparian zone will be retained and enhanced through bank stabilisation works, conservation of the northern bank and weed removal as well as revegetation of the southern and northern bank. The proposed rehabilitated riparian corridor extents are shown on Figure 21 with detailed creek protection works plans provided at Attachment B.

7. **Permanent Erosion Control:** Sub-ground floor areas that form part of the expanded floodway but are in areas where light levels may become minimal, will be protected from erosion during high flows by the placement of grouted cobbles over the finished ground surface.

4.2 Environmental Impacts

Our assessment of environmental impacts on the waterway arising out of the Proposal is provided in Table 1. The assessment finds that there will be no significant impacts on the waterway, but rather, existing riparian conditions will be substantially improved through bank stabilisation and revegetation works which will in turn provide improved ecological habitat and long-term waterway security.

Table 1: Assessment of environmental impact on the waterway.

Issue	Impact Assessment
Water quality impacts	No impacts on Creek water quality are anticipated because: • All stormwater generated by the Site will be treated by a stormwater treatment system prior to release to the Creek. • Existing Creek bank instabilities will be rectified through placement of sandstone block retention systems and regrading the bank where necessary. • Sediment and erosion control measures will be implemented during construction works. • The existing riparian corridor will be retained and enhanced through a program of riparian revegetation.
Channel form, erosion and bank stability impacts	No impacts on channel form, erosion or bank stability are anticipated because: • Constrictions in the existing channel form arising from bank instabilities and historical waste placement in the channel will be remediated. • Existing creek bank instabilities will be rectified through placement of sandstone block retention systems and regrading the bank where necessary. • Existing flood storage capacity within the Site will be increased through lowering some of the existing Site fill levels. • All stormwater generated by the Site will be released in a control manner to the Creek so as not to cause bank erosion.

Issue	Impact Assessment
	The existing riparian corridor will be retained and enhanced through a program of riparian revegetation ensuring long-term stability.
Stormwater systems impacts	No impacts on any existing stormwater infrastructure are anticipated because: - The Proposal does not disturb or interfere with any existing stormwater infrastructure. - All stormwater is managed within the Site prior to release to the Creek.
Ecological impacts	No detrimental ecological impacts are anticipated because: - No significant ecological communities will be disturbed by the Proposal. - All stormwater generated by the Site will be treated prior to release to the Creek. - Existing Creek bank instabilities will be rectified through placement of sandstone block retention systems and regrading the bank where necessary. This will improve the viability of existing riparian habitat areas and improve ecological processes within the Site. - The existing riparian corridor will be retained and enhanced through a program of riparian revegetation. This will improve the viability of existing riparian habitat areas and improve ecological processes within the Site.
Landscape impacts	No landscape related impacts are anticipated because: - The Proposal does not disturb or interfere with any existing landscaping. - The Proposal does not involve the removal of any significant trees.
Flood impacts	No flood related impacts are anticipated because: - Existing flood storage capacity within the Site will be increased through by lowering some of the existing Site fill levels. - The proposed building will be constructed on piers and suspended over the flood liable land. - Flood modelling has demonstrated that no significant flood impacts arise from the Proposal.

Issue	Impact Assessment
Impacts on proposed development	The waterway and riparian works will not impact on the proposed development because: • All habitable floors have been located above the relevant flood planning level. • The building will be supported on piers taken to an appropriate level to ensure that any potential future bank erosion would not detrimentally affect building stability. • Existing Creek bank instabilities will be rectified through placement of sandstone block retention systems and regrading the bank where necessary.
Native vegetation impacts	No impacts on native vegetation are anticipated because: • No significant trees are proposed to be removed as part of the Proposal. • The existing riparian corridor is presently over-run with weeds and a range of exotic species. The proposed weeding and rehabilitation / native revegetation works will significantly improve the existing vegetation conditions.
Creek line and overland flow impacts	No impacts on Creek alignment or overland flow paths are anticipated because: • The existing Creek alignment is proposed to be improved by removing existing obstructions arising from current bank instabilities and historical waste placement in the channel. • No overland flows paths will be impacted or significantly modified by the Proposal.

4.3 NRAR Guidelines

We have reviewed the NRAR Guidelines and are of the view that the overarching objective of the guideline, which is to *establish and preserve the integrity of riparian corridors*, is met by the Proposal. Specifically, the following is noted:

1. The Proposal maintains and rehabilitates the existing riparian corridor with native riparian vegetation.
2. The Proposal minimises harm to the riparian corridor and ensures long-term protection of the corridor so that riparian habitats can be preserved and ecological processes be enhanced.

3. The Proposal provides comprehensive treatment of stormwater prior to release to the Creek as well as a controlled release of stormwater to the Creek to ensure that bank erosion risks are mitigated.
4. Whilst the recommended NRAR riparian corridor widths cannot be achieved at the Site due to Site space constraints, a reduction is considered acceptable because: the existing riparian zone widths are very narrow (< 5 m) and will be retained or widened where possible; and the Creek is already largely channelised with near vertical sandstone walls forming much of the northern bank, and over steepened fill embankments adjacent to the southern bank.

4.4 Northern Beaches LEP

We have assessed the waterway works against the relevant NBLEP clauses with a summary of that assessment provided in Table 2. Based on this assessment, we consider that the waterway works are consistent with the objectives of clauses 6.1, 6.2 and 6.3.

Table 2: Assessment of waterway works against the NBLEP.

Clause	Assessment
cl 6.1 Acid sulfate soils	The objectives of this clause are considered satisfied because: - The proposed earthworks and riparian works have been assessed and found to be acceptable in the Martens Preliminary Geotechnical and Acid Sulfate Soils report P1605609JR06 dated January 2021. - All Site works will be undertaken in accordance with the Acid Sulphate Soils Management Plan which has been included in Martens report P1605609JR06.
cl 6.2 Earthworks	The objectives of this clause are considered satisfied because: - Existing drainage patterns will not be disrupted by the Proposal. - The proposed earthworks will not detrimentally affect the future use or redevelopment of the land. - Any fill excavated from the Site will be subject of a waste classification before being removed off-site to an appropriately licensed facility. - The earthworks will not detrimentally affect adjoining property.

Clause	Assessment
	- No material quantities of fill are required for the riparian works except the possible importation of clean soil to rehabilitate the riparian corridor. - No relics are likely to be disturbed. - The Proposal will not adversely affect the Site watercourse because the Creek will be retained and stabilised, with riparian vegetation rehabilitated and stormwater treated and controlled prior to release. - The Site is not located within a drinking water catchment or an environmentally sensitive area.
cl 6.3 Flood planning	The objectives of this clause are considered satisfied because: - The building will be suspended over the flood hazard on piers structurally designed to accommodate flood forces. - The Proposal will not significantly adversely affect flood behaviour, as demonstrated by flood modelling documented in Martens report P1605609JR05.

4.5 Northern Beaches DCP

We have assessed the waterway works against the relevant NBDGP controls with a summary of that assessment provided in Table 3. Based on this assessment, we consider that the waterway works are consistent with the objectives of controls C4-C6, E4-E6, E8 and E11.

Table 3: Assessment of waterway works against the NBDGP controls.

Control	Impact Assessment
C4 - Stormwater	The objectives of this control are considered satisfied because: - Stormwater from the Proposal will be captured, re-used and treated prior to release to the Creek. - The inclusion of OSD and rainwater capture will result in the minimisation of stormwater quantity released to the riparian environment. - The Proposal includes the incorporation of water sensitive urban design elements such as: rainwater capture and re-use; stormwater treatment at source; rehabilitation of riparian corridors; and controlled release of stormwater to the environment. - Councils' stormwater drainage system will not be impacted by the Proposal, which incorporates increases in flood

Control	Impact Assessment
	storage to ensure that potential flood related impact are appropriately mitigated. The Proposal manages all stormwater generated within the Site boundary and does not rely on any off-site Council infrastructure.
C5 – Erosion and sedimentation	The objectives of this control are considered satisfied because: - A detailed sediment and erosion control plan will be prepared as part of the construction certificate documentation to cover all construction related matters such as earthworks, footings and riparian corridor works. - In the long-term, sediment delivered to the Creek from the Site will be managed by the proposed stormwater treatment system and Site vegetation.
C6 – Building over drainage easements	The objectives of this control are considered satisfied because: - The Proposal will not interfere with the drainage of water through the Creek. - The proposed building will be suspended on concrete piers to ensure that there is ready access to the watercourse for maintenance.
E4 – Wildlife corridors	The objectives of this control are considered satisfied because: - The proposed riparian works will ensure that the existing corridor will be retained and enhanced. - The proposed riparian rehabilitation works will mitigate current soil erosion problems and assist in improving water quality within the Creek. - The proposed riparian rehabilitation works will preserve and enhance existing habitats and provide sufficient shade for aquatic species. - The proposed riparian rehabilitation works will enhance native vegetation and ecological functions of the corridor.
E5 – Native vegetation	The objectives of this control are considered satisfied because: The proposed riparian rehabilitation works will include weed removal and management, and replanting the corridor with native riparian species.
E6 – Retaining unique environmental features	The objectives of this control are considered satisfied because: There are no unique environmental features on the Site.

Control	Impact Assessment
E8 – Waterways and riparian lands	The objectives of this control are considered satisfied because: • The proposed riparian works will protect, maintain and enhance the ecology and biodiversity of the Creek and existing riparian corridor. • The building is located such that impacts on the Creek and riparian corridor are substantially mitigated. • The Proposal generally retains the existing watercourse position, mitigates existing bank erosion risks and provides long-term bank and floodway stability protection measures. • The Proposal includes adequate access to the riparian corridor to enable on-going maintenance. • The Proposal seeks to improve the Creeks current Class C status.
E11 – Flood prone land	The objectives of this control are considered satisfied because: • The building will be suspended over the flood hazard on piers structurally designed to accommodate flood forces. • The Proposal includes the provision of additional flood storage to mitigate any on or off-site flood related impacts. • The Proposal will not significantly adversely affect flood behaviour, as demonstrated by flood modelling documented in Martens report P1605609JR05.

5 Conclusions

The following conclusions are provided in respect of the waterway impact assessment:

1. The existing Burnt Bridge Creek within the Site is highly modified and degraded, having been historically relocated to its current position, and being largely channelised with a near vertical sandstone retaining wall on its northern bank and a structural fill embankment on its southern bank.
2. The existing Creek bed is bedrock controlled and contains a limited range of bed sediments including sands and various refuse sourced from the predominantly urban catchment. The western part of the northern bank is formed from a near vertical historical rock cutting and is unstable due to various boulder movements. The southern bank is presently unstable and receives slumped material sourced from various failing sections of the existing fill embankment. For several hundred metres downstream of the Site the Creek is completely channelised by a series of culverts and concrete channel sections.
3. The waterway component of the Proposal seeks to rehabilitate the existing riparian corridor by: stabilising the creek banks and southern fill embankment; and managing riparian vegetation through a program of weed removal and replanting of native vegetation. This work will ensure long-term retention and improvement of current riparian conditions, including improvements to habitat and ecological processes, by ensuring bank stability, adequate vegetation and improved water quality [through improved bank and vegetation rehabilitation and stormwater treatment].
4. As part of the construction certificate documentation process, a riparian vegetation management plan and a sediment erosion control plan will be prepared. These documents will guide the works and ensure that the desired riparian management outcomes are achieved.
5. We conclude that the Proposal will deliver a material benefit to the existing riparian corridor by providing for improved Creek bank stability, riparian vegetation rehabilitation and improved water quality. The Proposal is consistent with the objectives of the NRAR Waterway Guidelines, the objectives of the NBLEP and relevant design objectives provided in the NBDGP.

Attachment A – Figures

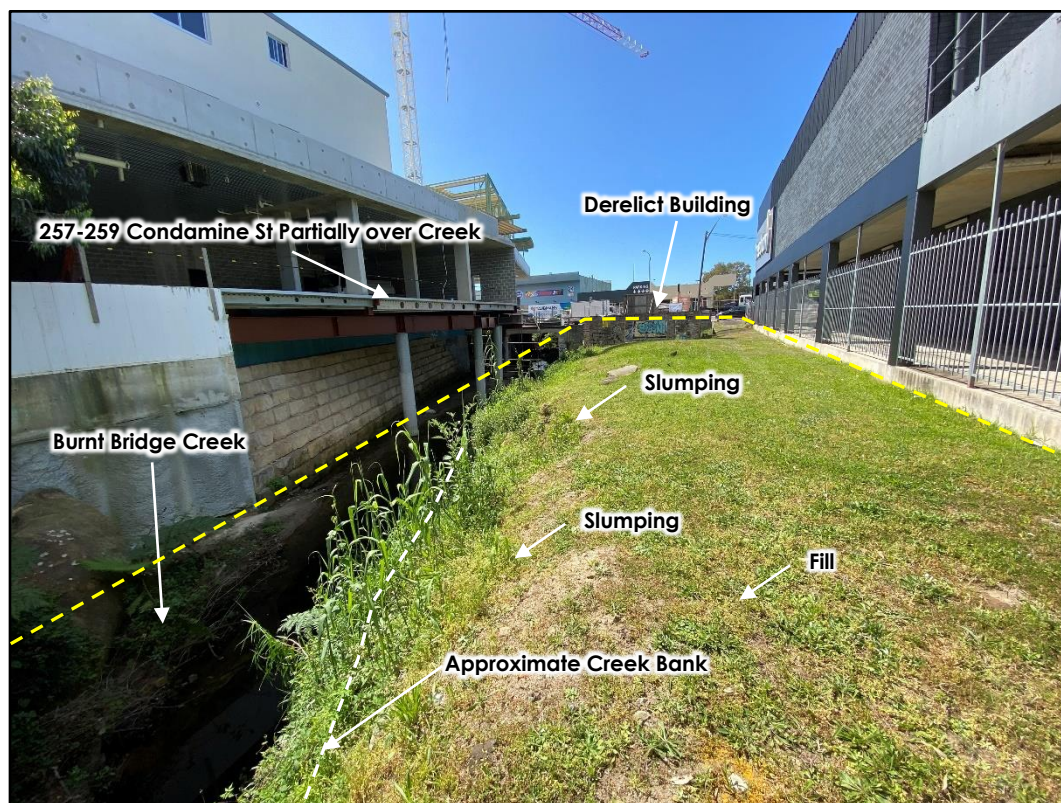


Figure 1: Overview of Site condition.



Figure 2: Burnt Bridge Creek channel treatment.



Figure 3: Burnt Bridge Creek below Condamine Street bridge.



Figure 4: Burnt Bridge Creek culvert below 206 Condamine St.

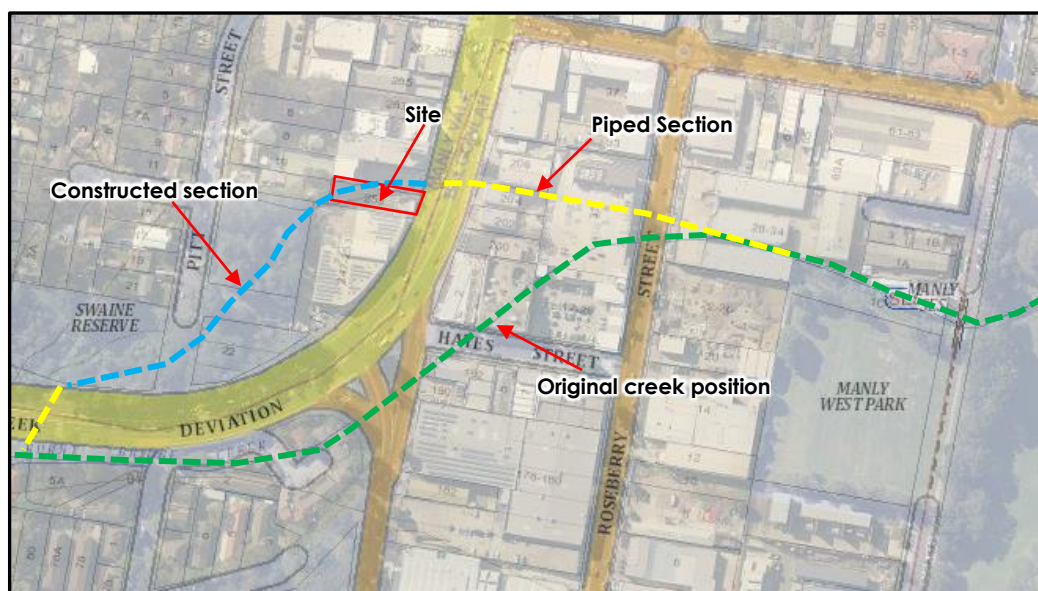


Figure 5: Diversion and piping of Burnt Bridge Creek.



Figure 6: Burnt Bridge Creek immediately upstream of Site.

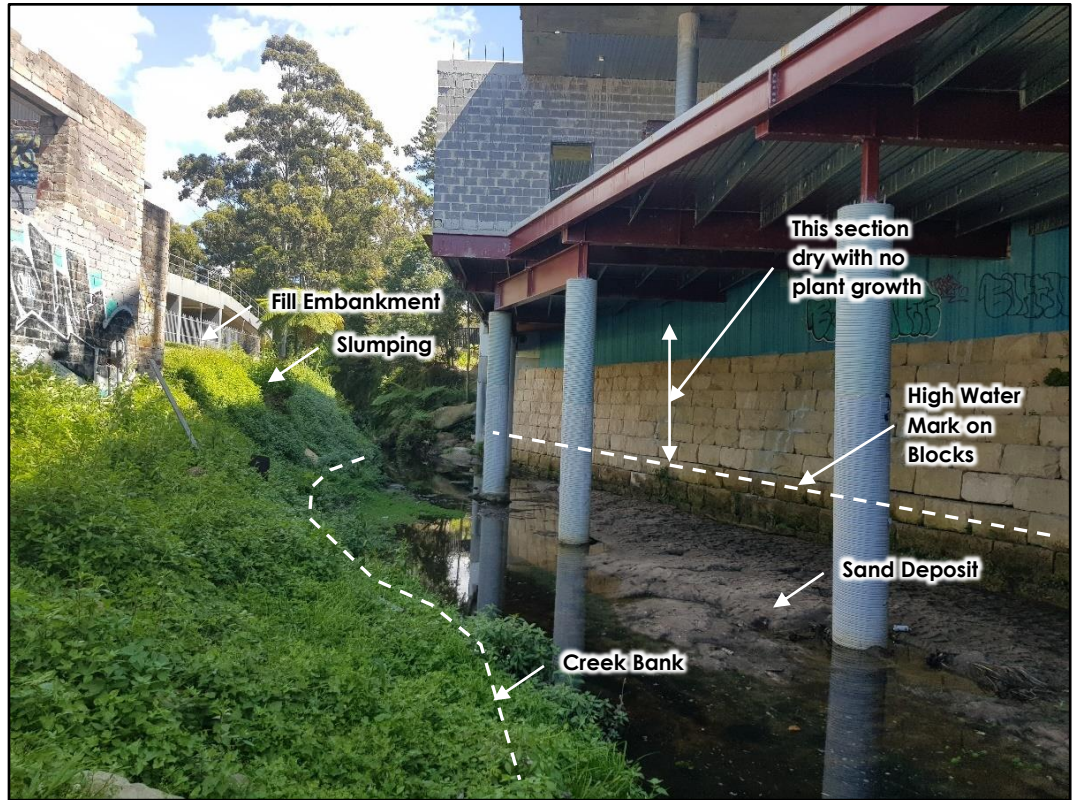


Figure 7: Existing bank conditions with the Site.

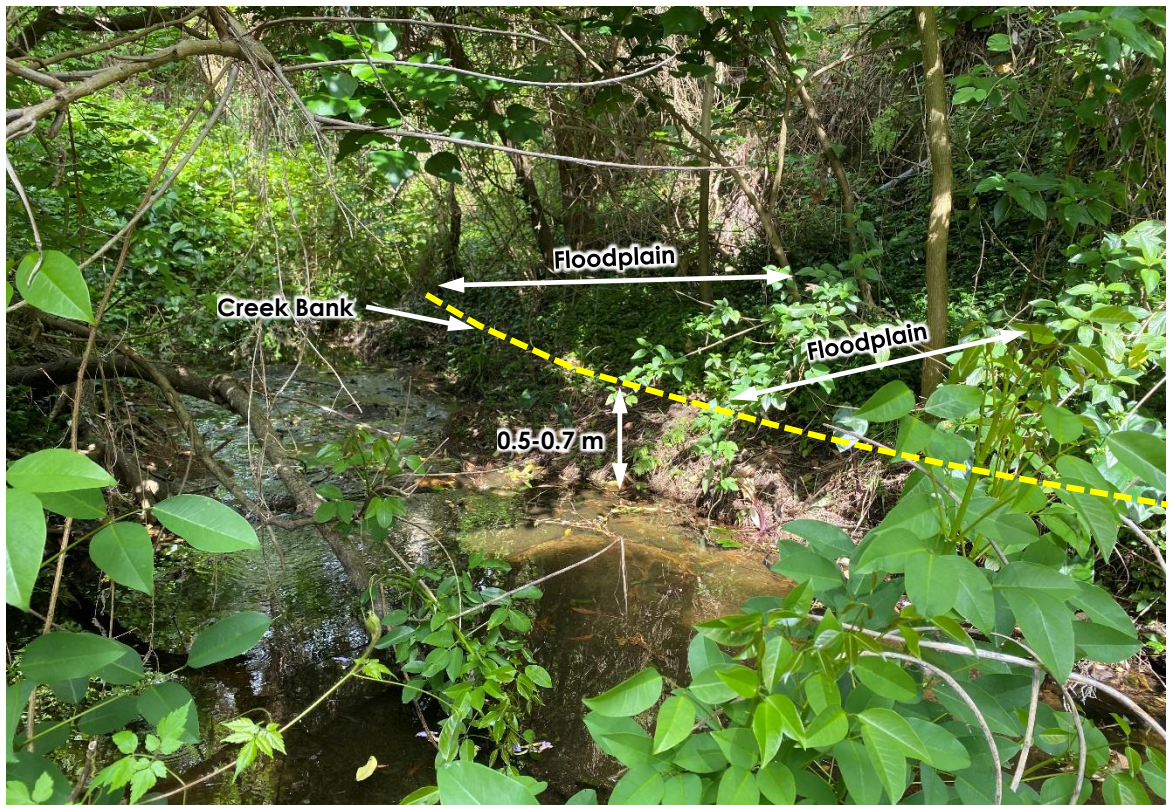


Figure 8: Northern creek bank and floodplain upstream of site looking west.



Figure 9: Southern creek bank and floodplain upstream of site looking west.



Figure 10: Creek banks and floodplain upstream of site looking east.



Figure 11: Sandy floodplain sediment on southern bank.



Figure 12: Fill embankment behind creek bank within site looking east.



Figure 13: Fill embankment adjacent to derelict building within site.

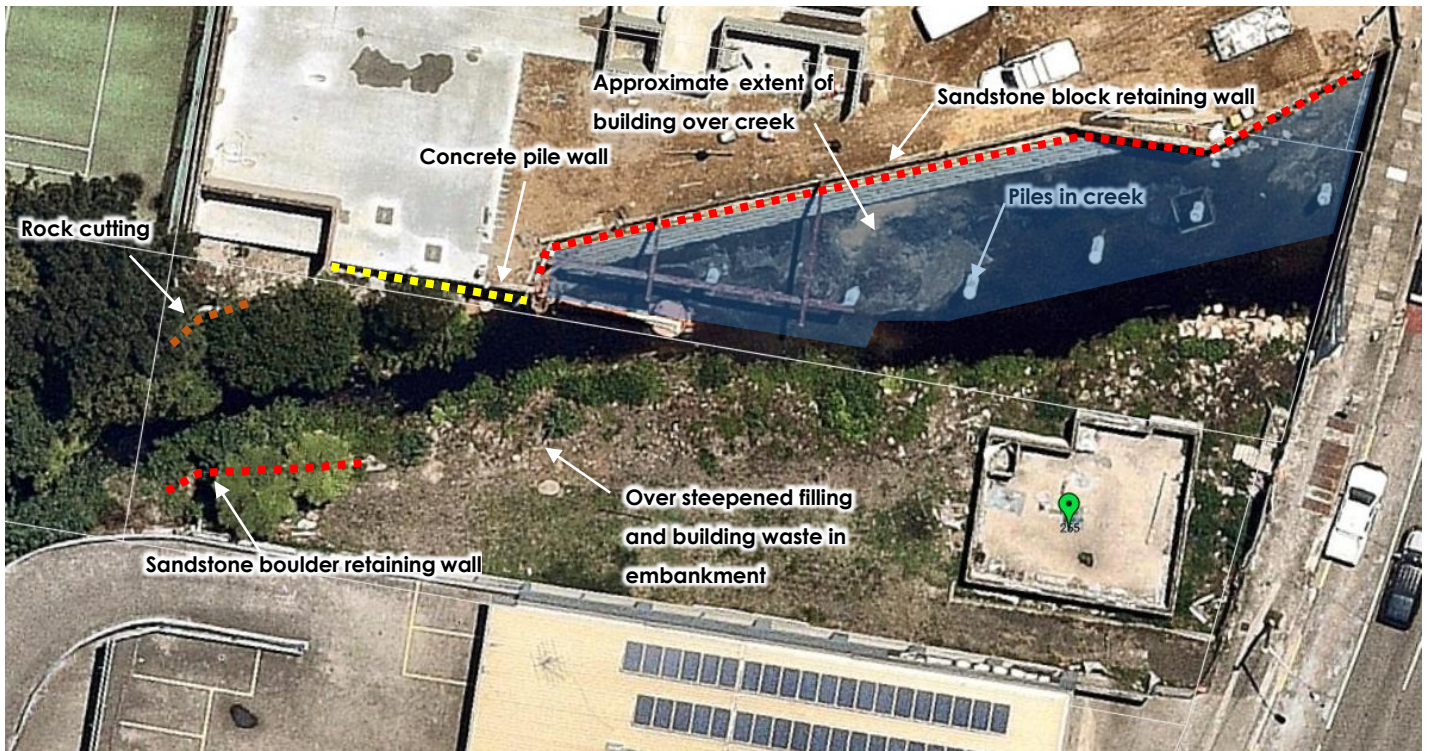


Figure 14: Creek condition overview (21/1/2020).



Figure 15: Fill embankment failure with the Site (28/9/2020).



Figure 16: Fill embankment adjacent to derelict building within site (17/11/2021).

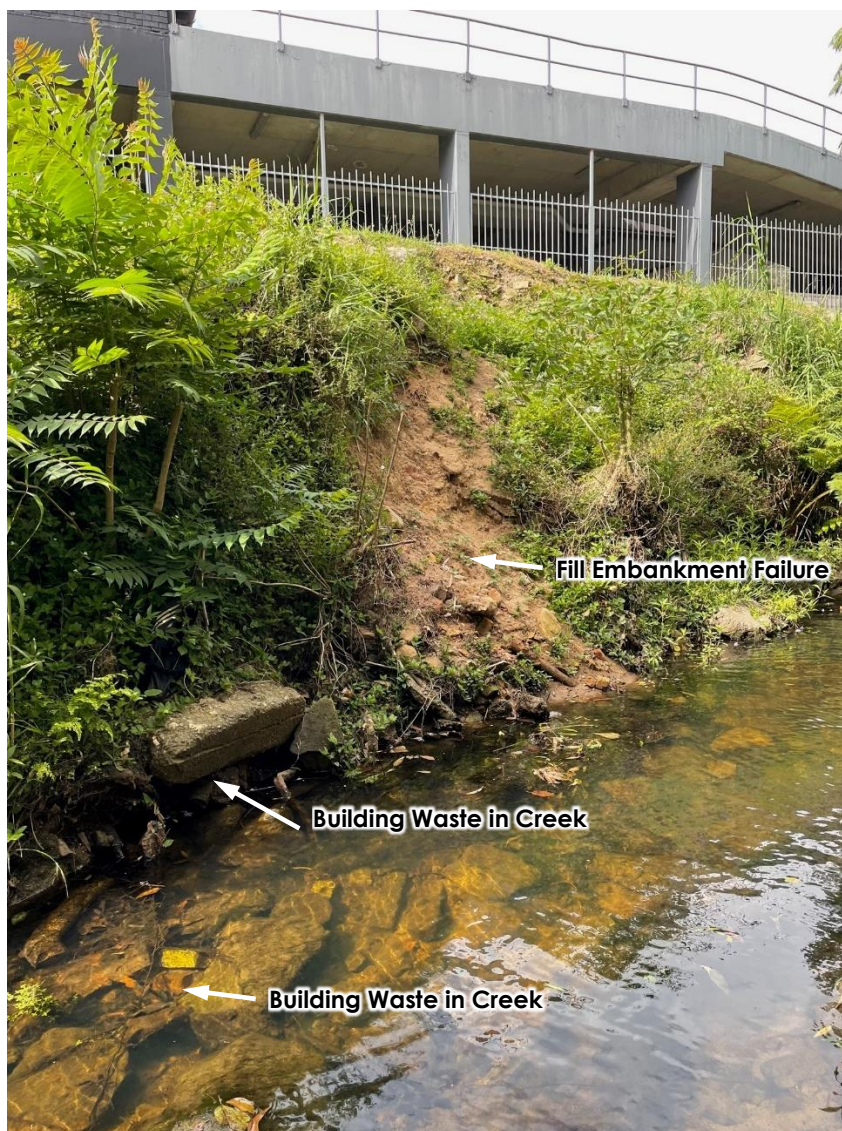


Figure 17: Fill embankment failure and waste in creek within site (17/11/2021).



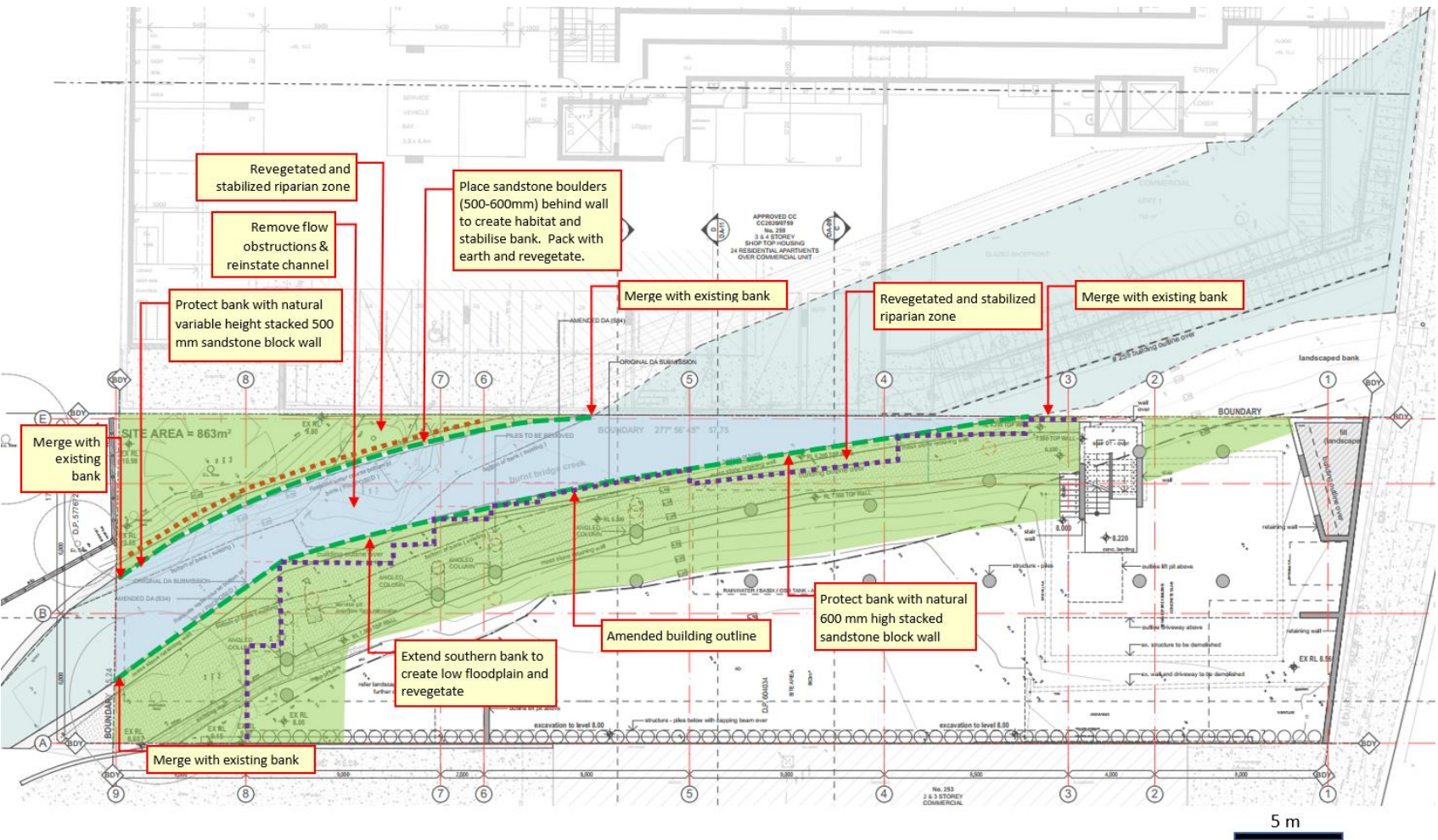
Figure 18: Northern Creek bank and embankment within site (17/11/2021).



Figure 19: Northern Creek bank and embankment within site (17/11/2021).



Figure 20: Northern Creek bank and embankment showing failure (17/11/2021).



Attachment B - Creek Protection Works Plans

PROJECT: PROPOSED BOARDING HOUSE

PLANSET: CHANNEL DESIGN PLAN

CLIENT: MY MANLY VALE PTY LTD

DRAWING LIST		
DWG NO.	REV	DWG TITLE
GENERAL		
PS07-A000	B	COVER SHEET
CONSTRUCTION MANAGEMENT WORKS		
PS07-B300	B	SEDIMENT AND EROSION CONTROL AND DEMOLITION PLAN
PS07-B350	A	SEDIMENT AND EROSION DETAILS
EARTHWORKS		
PS07-C100	B	EARTHWORKS PLAN
PS07-C500	B	EARTHWORKS CUT-FILL ANALYSIS PLAN
PS07-C600	B	EARTHWORKS SECTIONS SHEET 1
PS07-C601	B	EARTHWORKS SECTIONS SHEET 2
PS07-C602	B	EARTHWORKS SECTIONS SHEET 3



LOCALITY PLAN
NOT TO SCALE

- GENERAL NOTES:
- THIS PLAN IS FOR DEVELOPMENT APPLICATION PURPOSE AND NOT FOR CONSTRUCTION. DESIGN TO BE REVIEWED AND UPDATED FOR CONSTRUCTION CERTIFICATE.
 - ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH, AND THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE RELEVANT AUSTRALIAN STANDARDS, COUNCIL SPECIFICATIONS, AND ALL PROJECT CONSULTANT'S PLANS AND REPORTS.
 - INTERNAL SURVEY INFORMATION AND EXTERNAL SITE BOUNDARY SHOWN BASED ON SURVEY INFORMATION PROVIDED BY BEE & LETHBRIDGE 15/09/2020.
 - ARCHITECTURAL INFORMATION SHOWN BASED ON DESIGN BY GARTNER TROVATO ARCHITECTS 21/09/2021.
 - LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
 - FINAL SURFACE CONTOURS ARE BASED ON DESIGN AND EXISTING SURVEY AND LIDAR SURFACES.

LGA: NORTHERN BEACHES COUNCIL

255 CONDAMINE STREET, MANLY VALE, NSW
LOT 8 DP 604034

DEVELOPMENT APPLICATION

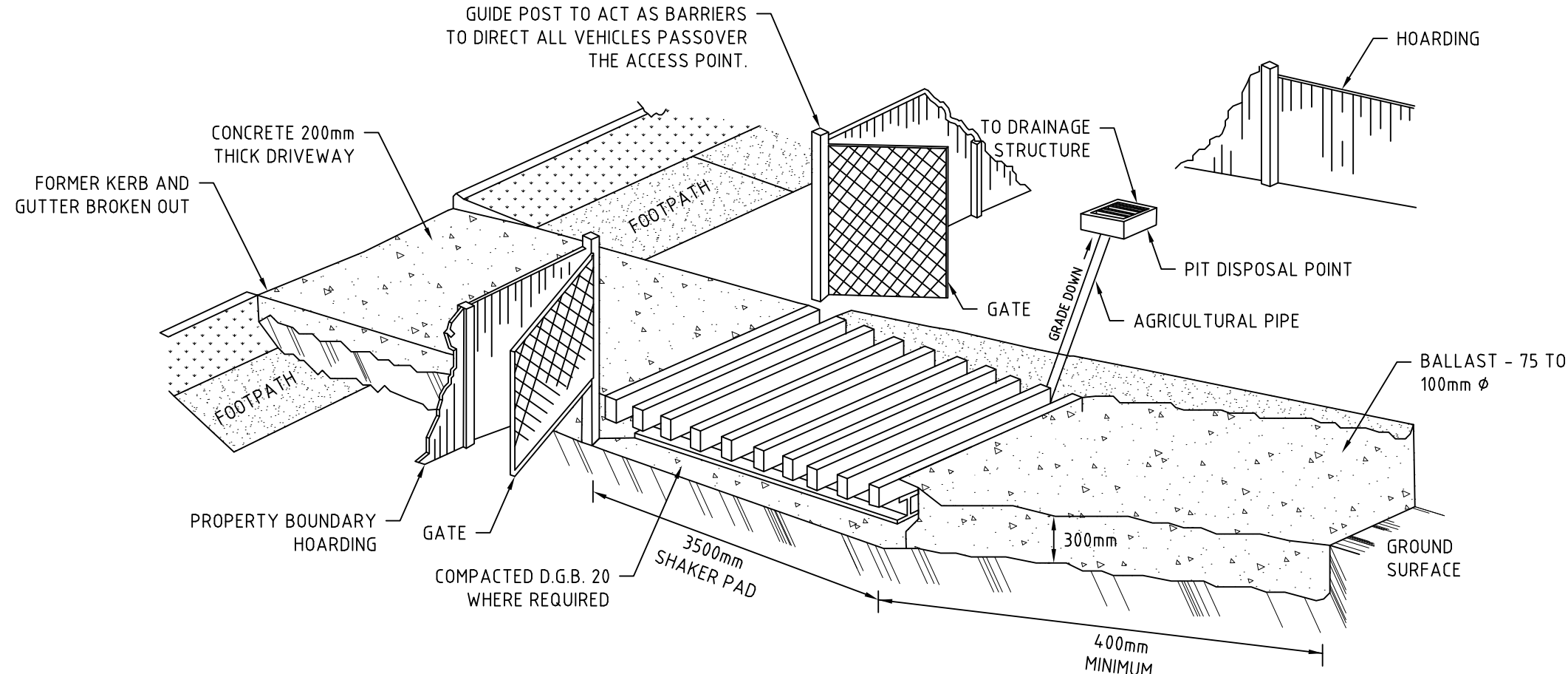
REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE	GRID	DATUM	PROJECT MANAGER	CLIENT	martens & Associates Pty Ltd Consulting Engineers Environment Water Geotechnical Civil	DRAWING TITLE																										
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT			GT		MY MANLY VALE PTY LTD		COVER SHEET																										
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT		DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd				PROJECT NAME/PLANSET TITLE				PROJECT NO.				PLANSET NO.				RELEASE NO.				DRAWING NO.				REVISION							
												PROPOSED BOARDING HOUSE				255 CONDAMINE STREET, MANLY VALE, NSW				Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767				P1605609				PS07				R02				PS07-A000			
								CHANNEL DESIGN PLAN				LOT 8 DP 604034				Email: mail@martens.com.au Internet: www.martens.com.au																							
A1 / A3 LANDSCAPE [A1LC_v02.0.0]																																							

STABILISED ACCESS POINT

TYPE II SAP

THE TYPE II SAP DESIGN IS MORE DEFINED IN THAT IT REQUIRES AN AREA OF BALLAST WITHIN THE SITE COMBINED WITH A SHAKER PAD; ADJACENT THE SHAKER PAD AND IN THE PUBLIC WAY IS A TEMPORARY (CONCRETE) VEHICULAR CROSSING. (SEE DIAGRAM)

STABILISED ACCESS POINT - TYPE 2



IN BOTH TYPE I AND TYPE II SAP'S, THE TEMPORARY VEHICULAR CROSSING MUST:

- CONNECT TO AN EXISTING GUTTER LAYBACK (WHERE THE KERB AND GUTTER EXIST). IF A GUTTER LAYBACK DOES NOT EXIST THEN THE CONNECTION MUST BE MADE TO THE GUTTER BY REMOVING THE ADJACENT KERB SECTION ONLY.
- CONNECT TO A DISH CROSSING (WHERE KERB AND GUTTER DOES NOT EXIST). IF A DISH CROSSING DOES NOT EXIST, THEN IT MUST BE CONSTRUCTED IN ACCORDANCE WITH DETAILS CONTAINED IN COUNCIL'S ISSUED FOOTPATH CROSSING LEVELS.

IT SHOULD BE NOTED THAT THESE TYPES OF SAPS ARE CONSIDERED TO BE APPLICABLE FOR THE MAJORITY OF ACTIVITIES HOWEVER SOME SITES MAY REQUIRE SPECIAL CONSIDERATION.

SHAKER PAD (CATTLE GRID)

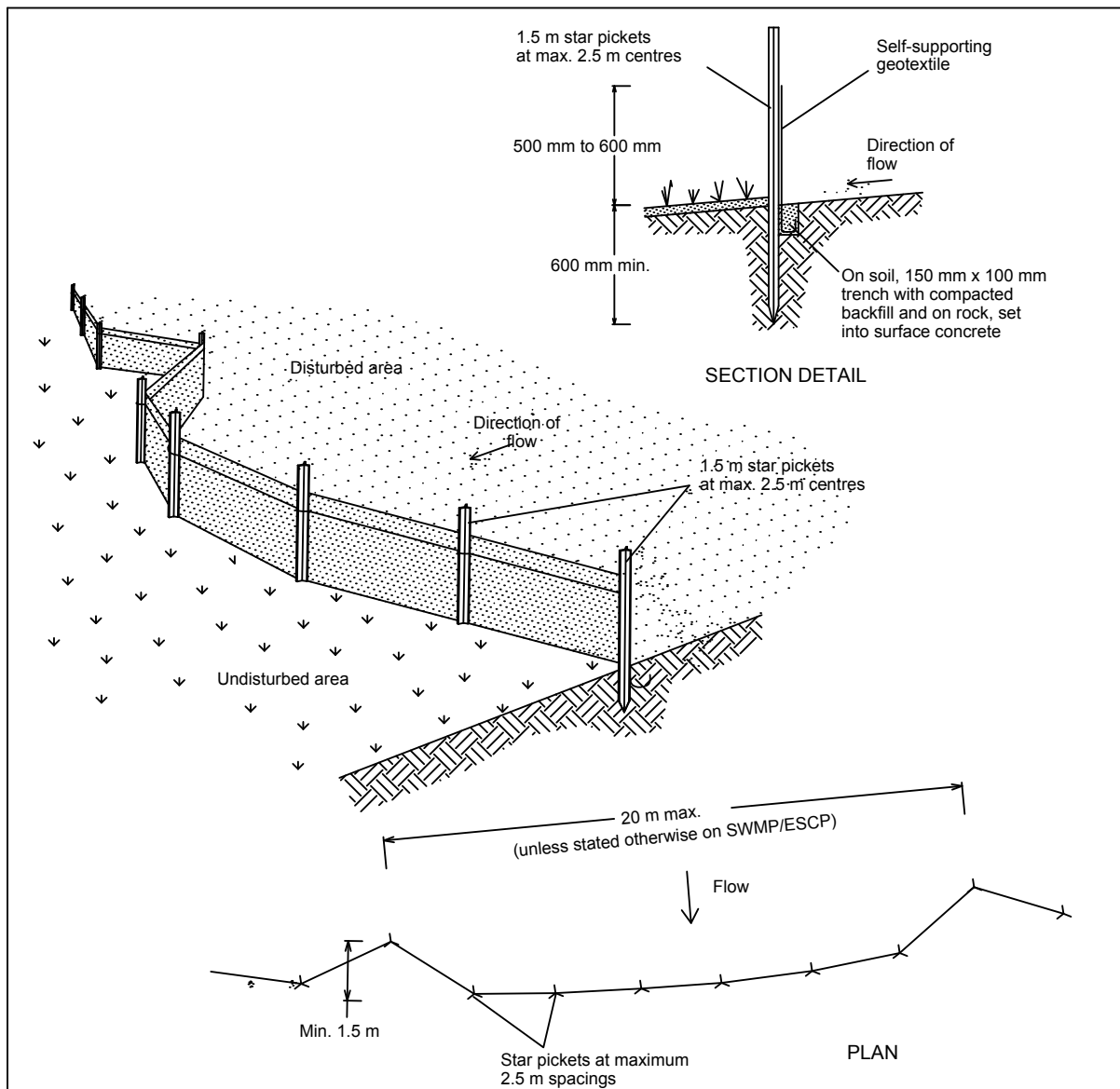
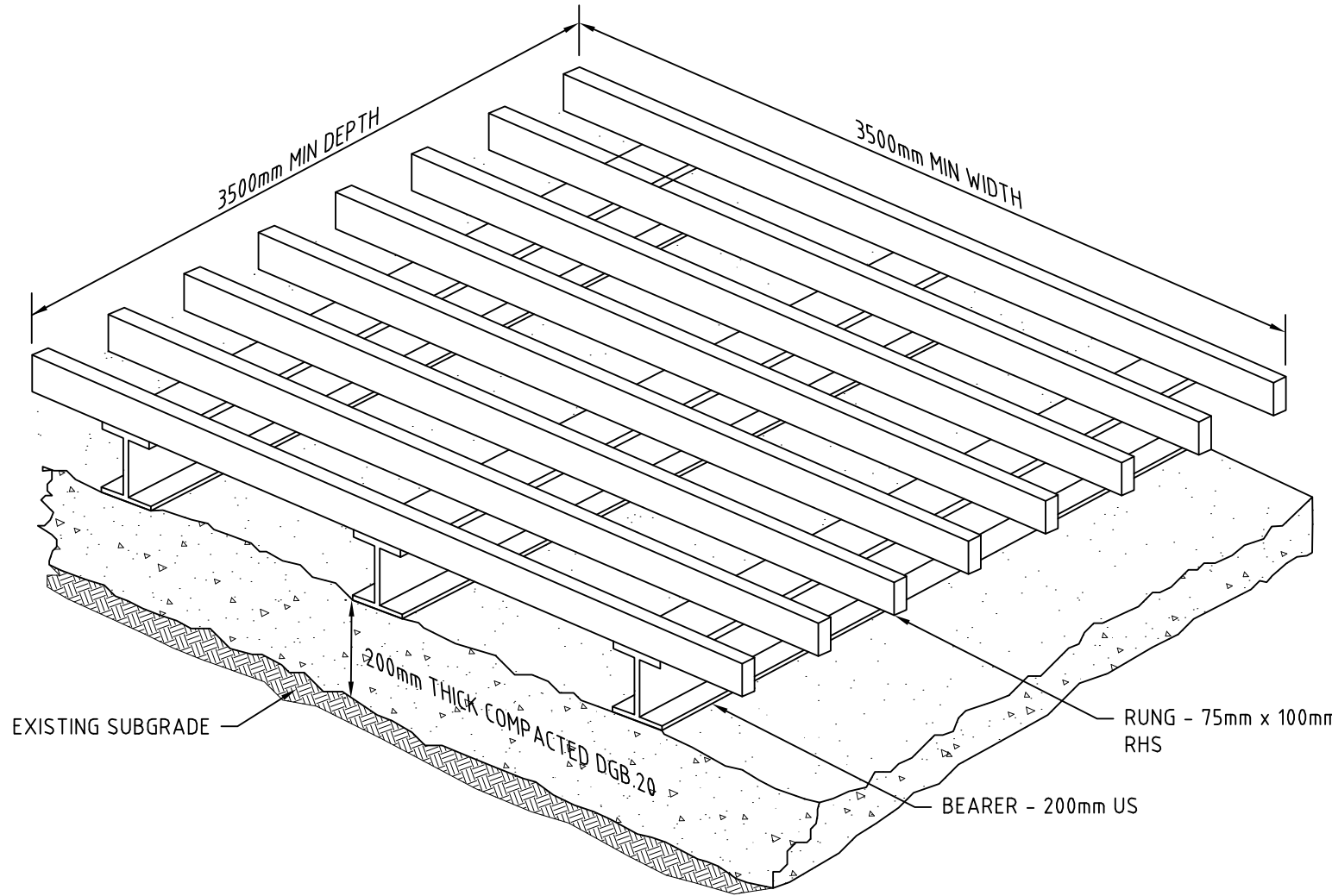
A CORRECTLY DESIGNED AND INSTALLED SHAKER PAD WILL ASSIST IN PREVENTING SEDIMENT TRANSFER FROM A SITE. ANY STABILISED ACCESS POINT (SAP) CAN BE DESIGNED WITH A SHAKER PAD (COMPULSOPRY IN TYPE II SAP'S)

SHAKER PADS CAN BE DESIGNED AND CONSTRUCTED TO ENABLE RE-USE ON FUTURE PROJECTS.

THE SHAKER PAD:

- MUST BE DESIGNED AND CERTIFIED BY A PRACTICING STRUCTURAL ENGINEER. THE CERTIFIED DESIGN SHOULD BE SUBMITTED WITH THE RELEVANT APPLICATION.
- CAN BE CONSTRUCTED FROM ANY SUITABLE MATERIAL.
- MUST BE LOCATED ON A SUITABLY PREPARED AND COMPACTED SUB-GRADE/BASE MATERIAL.
- MUST BE SITUATED SUCH THAT THE RUNGS OF THE SHAKER PAD ARE LEVEL WITH THE ADJOINING NATURAL SURFACE.
- MUST BE A MINIMUM OF 3.5m IN LENGTH.
- MUST BE A MINIMUM OF 3.5m IN WIDTH.
- MUST HAVE CLEAR SPACING BETWEEN RUNGS OF 200 - 250mm.
- RUNGS MUST HAVE A MAXIMUM WIDTH (BEARING AREA) OF 75mm.
- MUST HAVE A MINIMUM CLEAR DEPTH OF 300mm IE FORM THE ROP OF THE RUNG TO THE FINISHED SUB-GRADE/BASE LEVEL.

THE SHAKER PAD MUST BE PROVIDED WITH SUITABLE BARRIERS AT THE SIDES TO ENSURE THAT ALL TYERS OF VEHICLES LEAVING THE SITE TRAVERSE THE DEVICE.

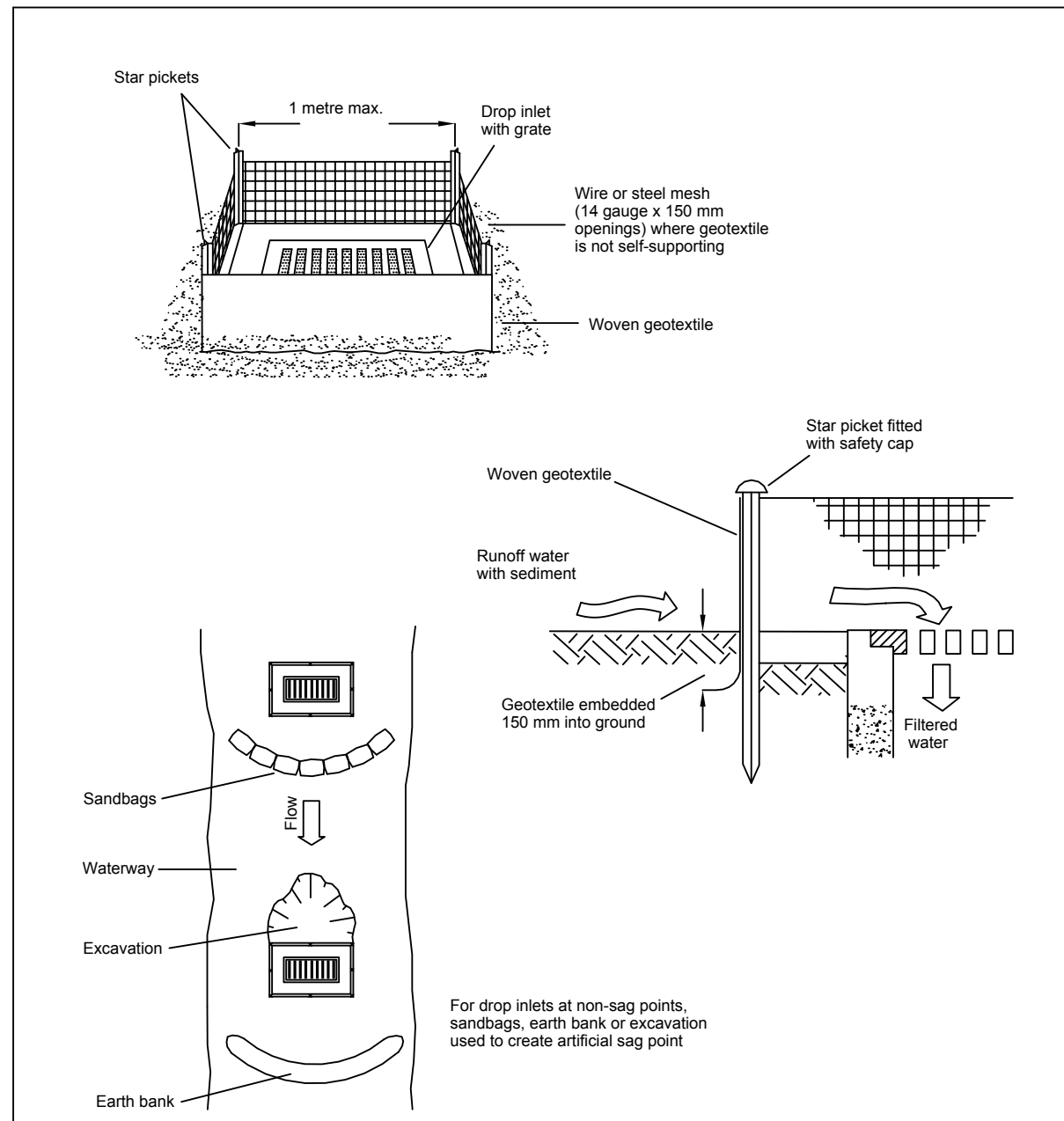


Construction Notes

- Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
- Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
- Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
- Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
- Join sections of fabric at a support post with a 150-mm overlap.
- Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE

SD 6-8



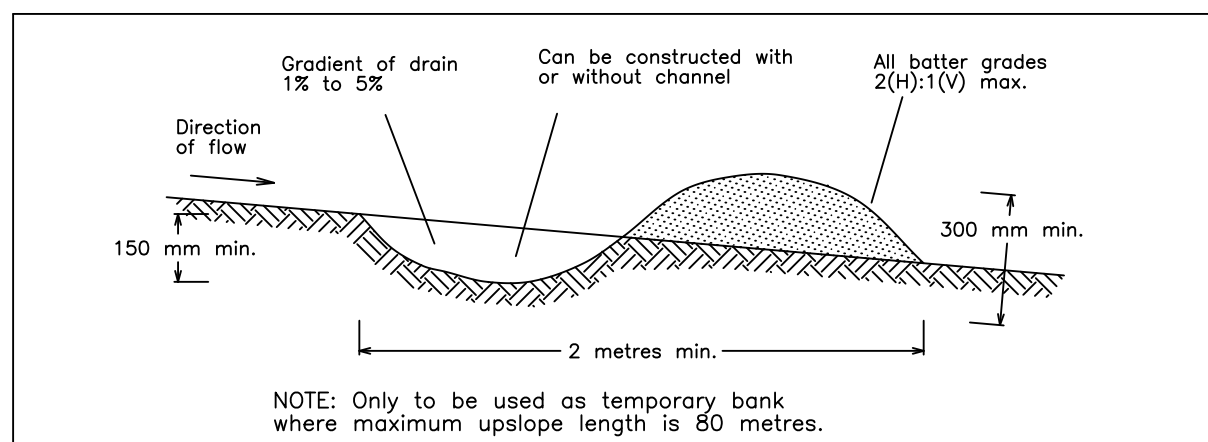
Construction Notes

- Fabricate a sediment barrier made from geotextile or straw bales.
- Follow Standard Drawing 6-7 and Standard Drawing 6-8 for installation procedures for the straw bales or geofabric. Reduce the picket spacing to 1 metre centres.
- In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing.
- Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

GEOTEXTILE INLET FILTER



SD 6-12

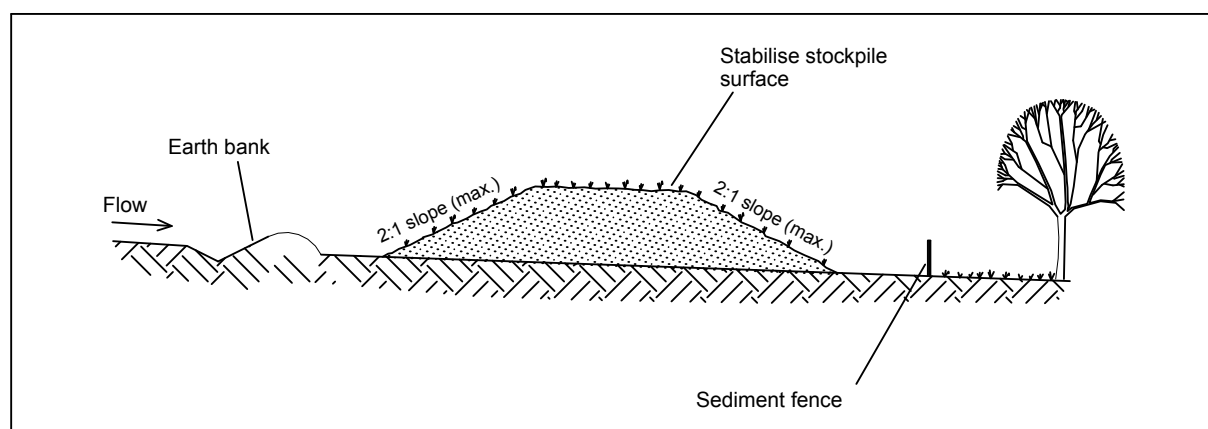


Construction Notes

- Build with gradients between 1 percent and 5 percent.
- Avoid removing trees and shrubs if possible - work around them.
- Ensure the structures are free of projections or other irregularities that could impede water flow.
- Build the drains with circular, parabolic or trapezoidal cross sections, not V shaped.
- Ensure the banks are properly compacted to prevent failure.
- Complete permanent or temporary stabilisation within 10 days of construction.

EARTH BANK (LOW FLOW)

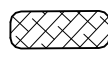
SD 5-5



Construction Notes

- Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
- Construct on the contour as low, flat, elongated mounds.
- Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
- Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
- Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

STOCKPILES



SD 4-1

DEVELOPMENT APPLICATION

PRINTED: 11/05/2021 11:05:20 AM

A1 / A3 LANDSCAPE (A1LC_v02.0.01)

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT	

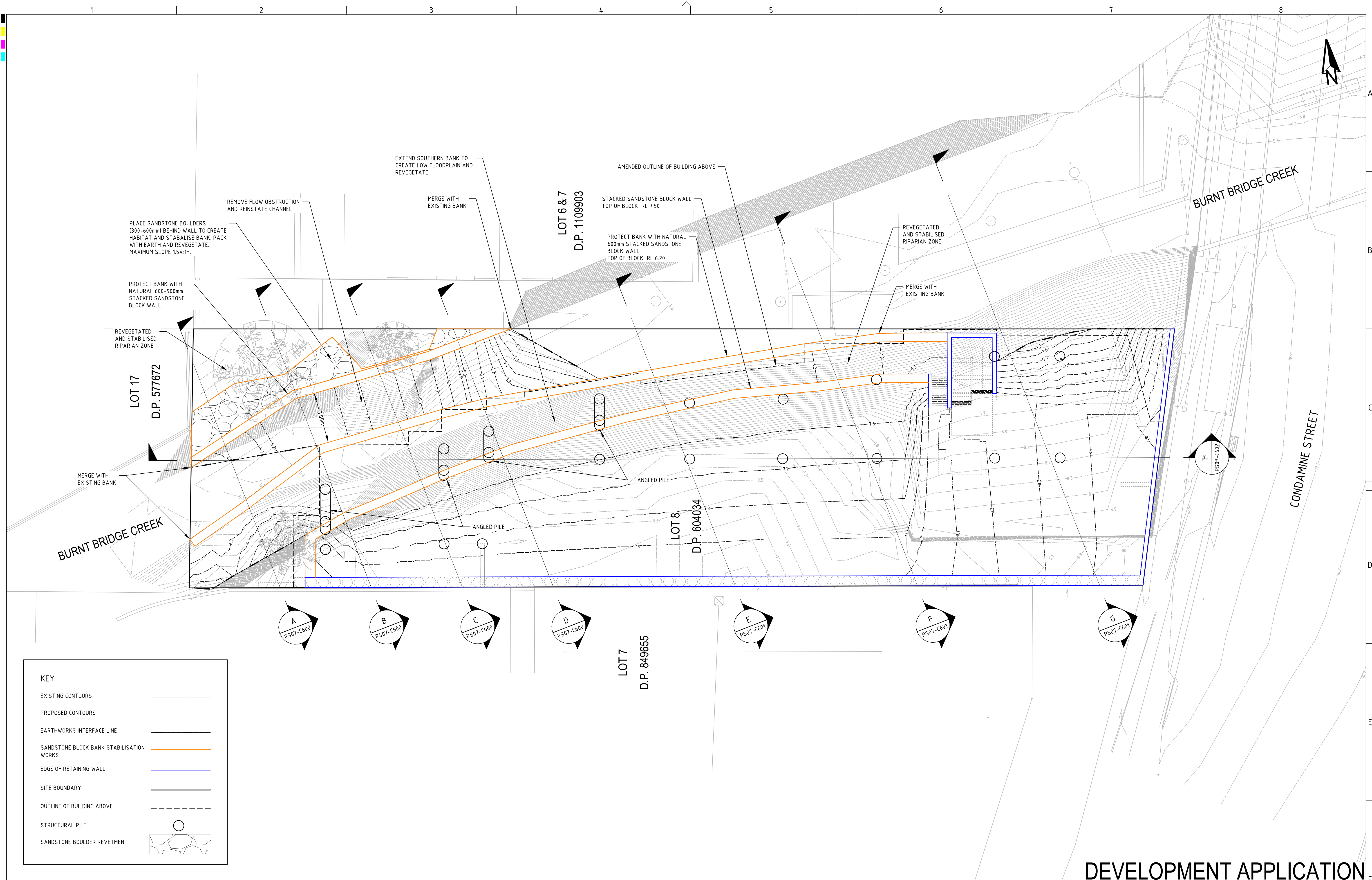
GRID	DATUM	PROJECT MANAGER	CLIENT
		GT	MY MANLY VALE PTY LTD
DISCLAIMER & COPYRIGHT		PROJECT NAME/PLANSET TITLE	
This plan must not be used for construction unless signed as approved by principal certifying authority.		PROPOSED BOARDING HOUSE	
All measurements in millimetres unless otherwise specified.		CHANNEL DESIGN PLAN	
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.		255 CONDOMINE STREET, MANLY VALE, NSW	
(C) Copyright Martens & Associates Pty Ltd		LOT 8 DP 604034	

		Consulting Engineers	
		Environment Water Geotechnical Civil	
Suite 201, 20 George St, Hornsby, NSW 2077 Australia		Phone: (02) 9476 9999 Fax: (02) 9476 8767	
Email: mail@martens.com.au		Internet: www.martens.com.au	

DRAWING TITLE				
SEDIMENT AND EROSION DETAILS				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-B350	A

DRAWING ID: P1605609-PS07-R02-B350

1:10000



KEY

EXISTING CONTOURS

PROPOSED CONTOURS

EARTHWORKS INTERFACE LINE

SANDSTONE BLOCK BANK STABILISATION WORKS

EDGE OF RETAINING WALL

SITE BOUNDARY

OUTLINE OF BUILDING ABOVE

STRUCTURAL PILE

SANDSTONE BOULDER REVETMENT

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE 	GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au	DRAWING TITLE				
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT		MGA	mAHD	GT	MY MANLY VALE PTY LTD		PROJECT NAME/PLANSET TITLE PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN 255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034	EARTHWORKS PLAN			
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT								PROJECT NO. PLANSET NO. RELEASE NO. DRAWING NO. REVISION			
														P1605609 PS07 R02 PS07-C100 B			
														DRAWING ID: P1605609-PS07-R02-C100			



CUT-FILL DEPTH DESIGN TO EXISTING		
LESS THAN	-3.000 m	
-3.000 to	-2.250 m	
-2.250 to	-1.500 m	
-1.500 to	-0.750 m	
-0.750 to	-0.150 m	
-0.150 to	0.150 m	
0.150 to	0.750 m	
0.750 to	1.500 m	
1.500 to	2.250 m	
2.250 to	3.000 m	
GREATER THAN	99999 m	

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT

SCALE
A1 (A3) 1:100 (1:200)
0 1 2 3 4 5 6 7 8 9 10 METRES

GRID	DATUM	PROJECT MANAGER	CLIENT
MGA	mAHD	GT	MY MANLY VALE PTY LTD

DISCLAIMER & COPYRIGHT
This plan must not be used for construction unless signed as approved by principal certifying authority.
All measurements in millimetres unless otherwise specified.
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd.
(C) Copyright Martens & Associates Pty Ltd

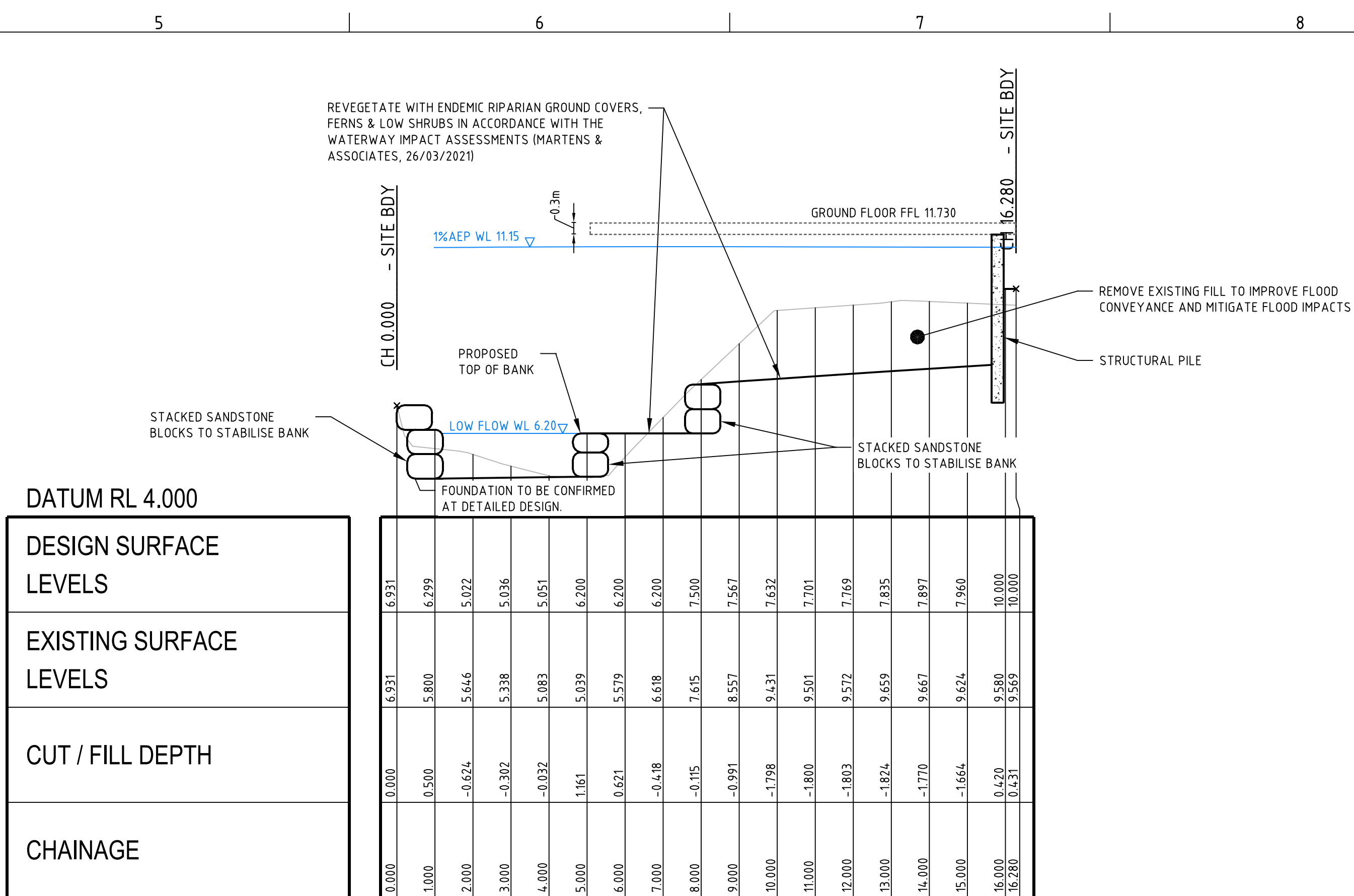
Consulting Engineers
Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE				
EARTHWORKS CUT-FILL ANALYSIS PLAN				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C500	B

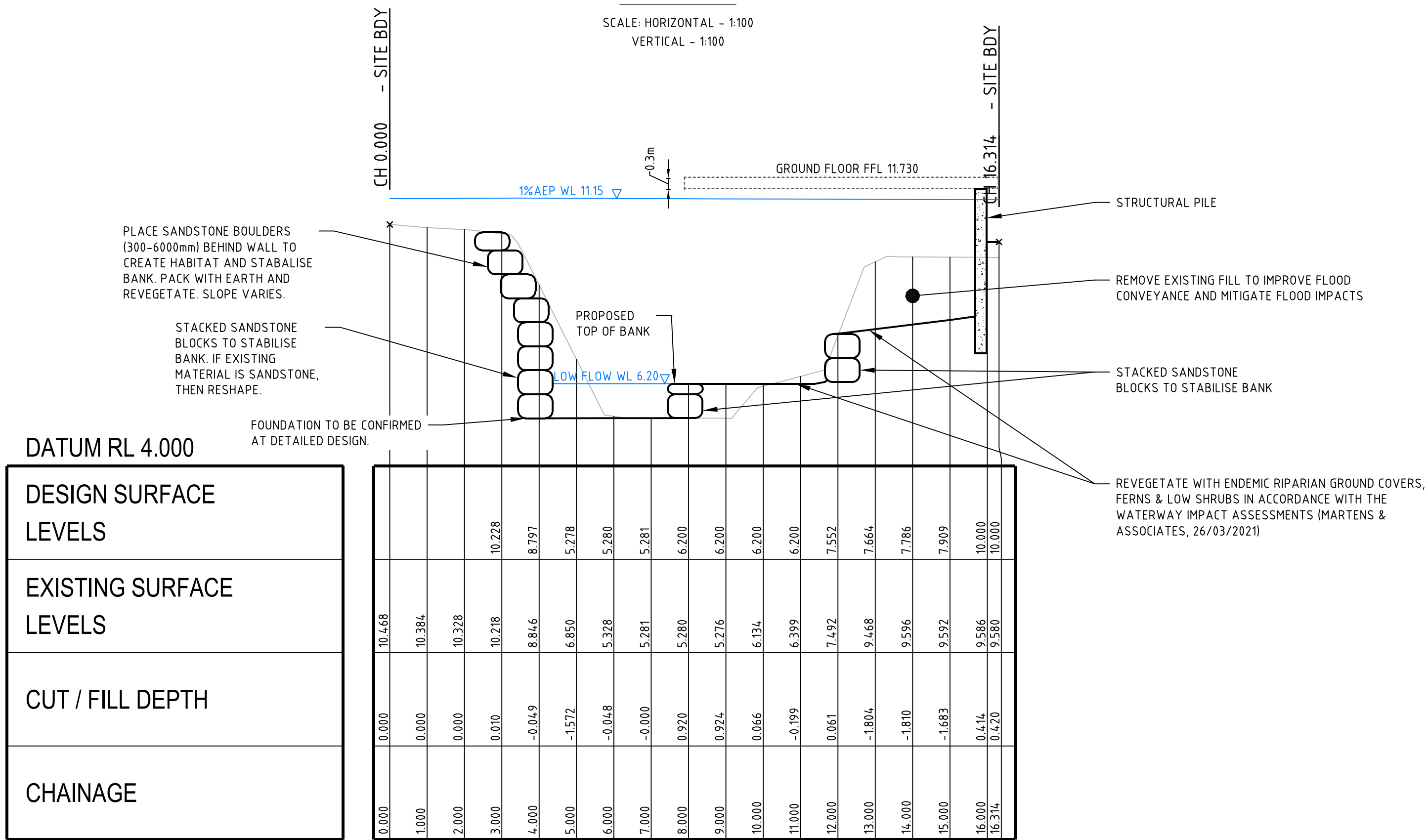
DRAWING ID: P1605609-PS07-R02-C500

DEVELOPMENT APPLICATION



SECTION D

SCALE: HORIZONTAL - 1:100
VERTICAL - 1:100



SECTION B

SCALE: HORIZONTAL - 1:100
VERTICAL - 1:100

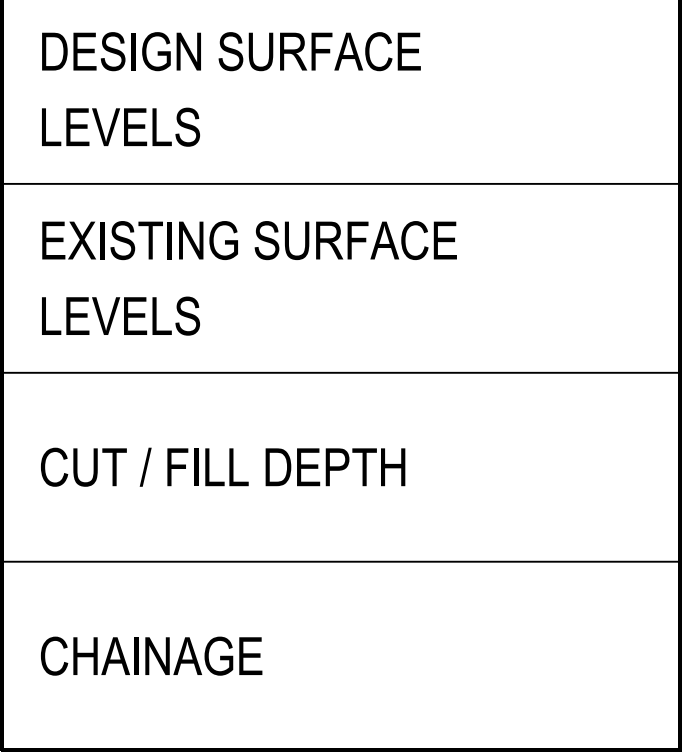
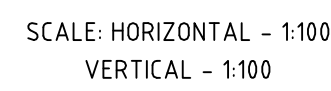
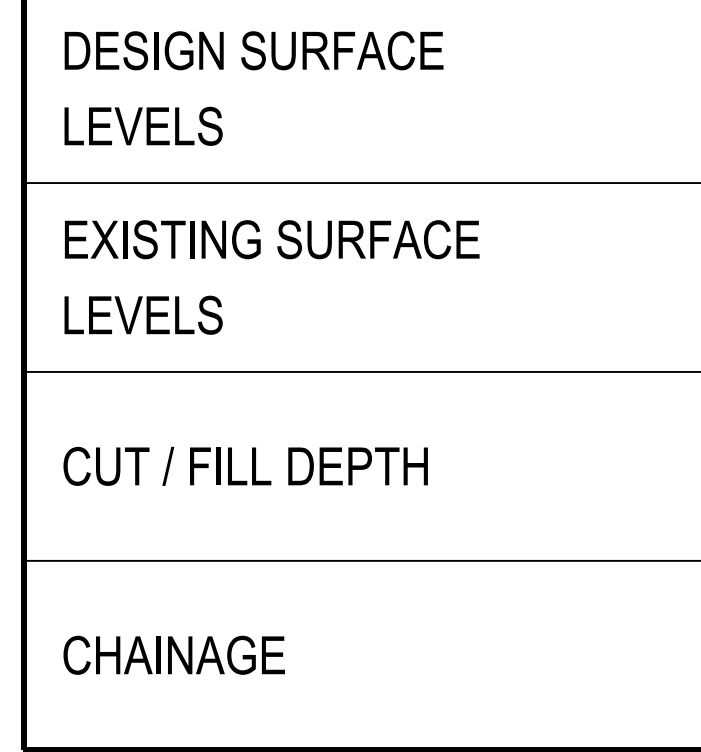
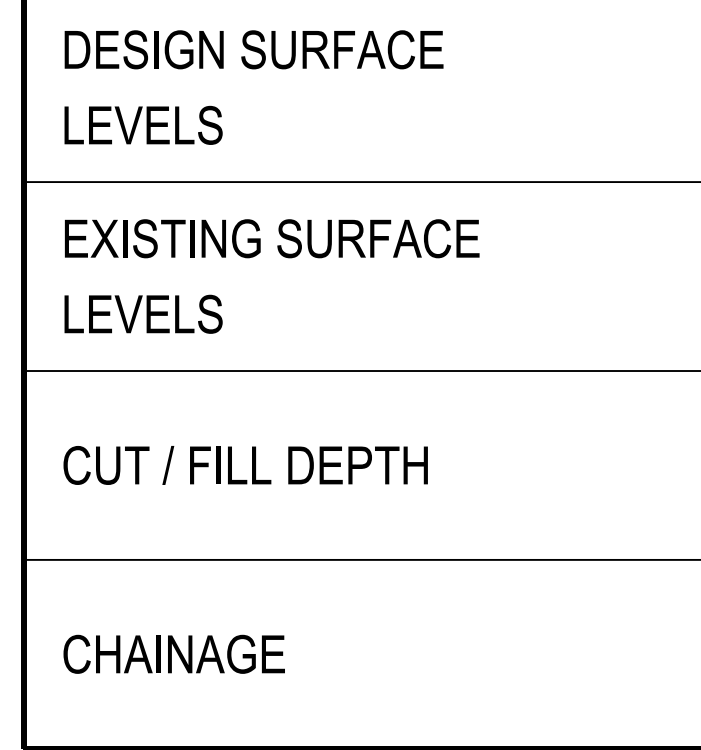
DRAWING TITLE				
EARTHWORKS SECTIONS SHEET 1				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C600	B

DEVELOPMENT APPLICATION

DRAWING TITLE	EARTHWORKS SECTIONS SHEET 1
---------------	--------------------------------

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C600	B

DRAWING ID: P1605609-PS07-R02-C600



DRAWING TITLE	EARTHWORKS SECTIONS SHEET 2
---------------	--------------------------------

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C601	B

[illegible]

SCALE

0 1 2 3 4 5 6 7 8 9 10

A1 (A3) 1:100 (1:200) METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	GT
DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd		

CLIENT	MY MANLY VALE PTY LTD
PROJECT NAME/PLANSET TITLE	PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN 255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034

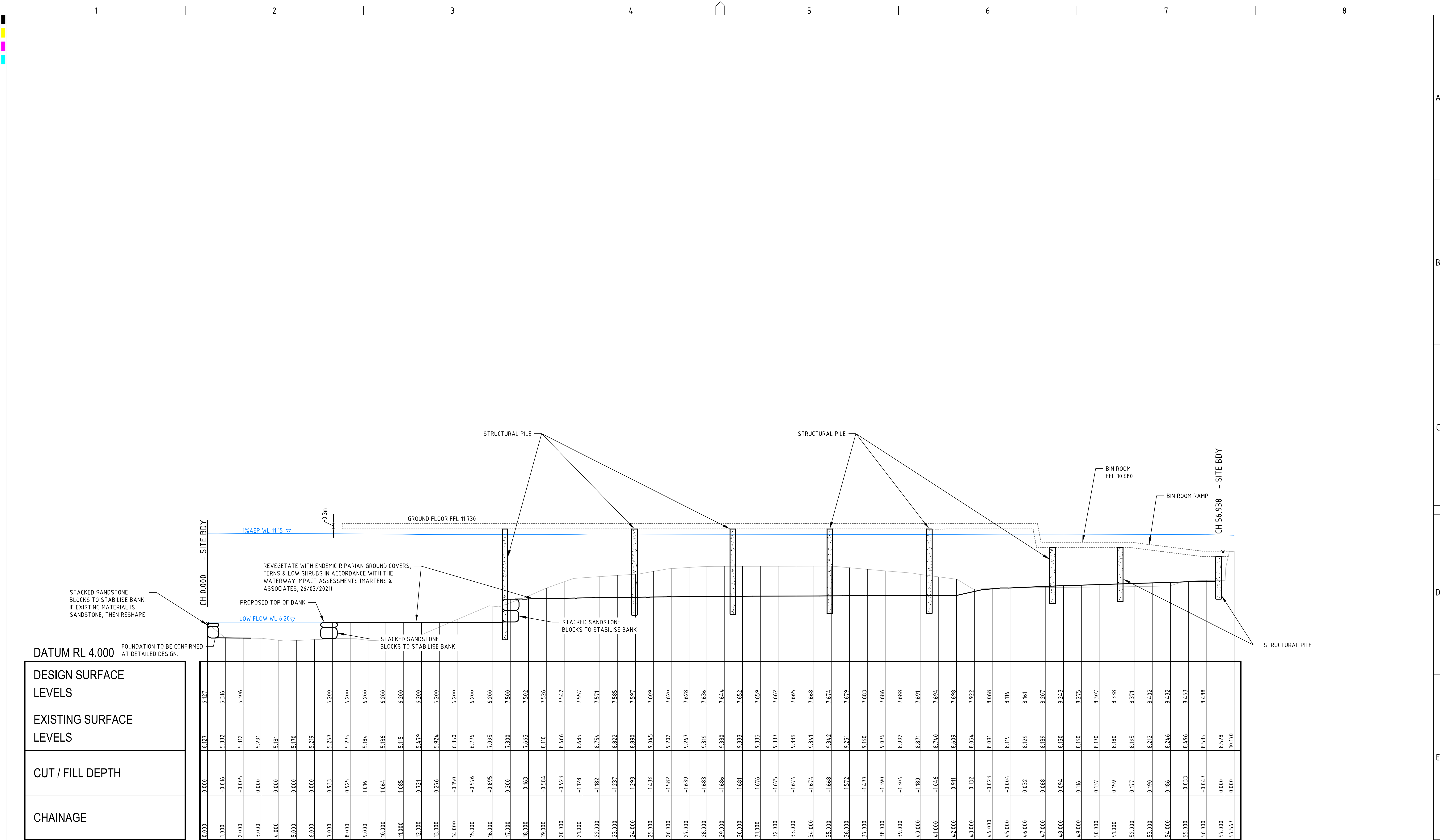
 **martens**
& Associates Pty Ltd

Consulting Engineers

Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

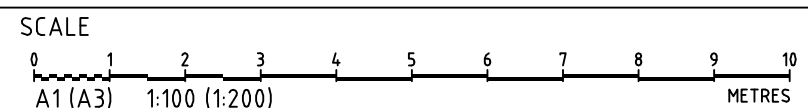
DRAWING TITLE				
EARTHWORKS SECTIONS SHEET 2				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C601	B



SECTION H

SCALE: HORIZONTAL - 1:100
VERTICAL - 1:100

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	REVISED FOLLOWING S34	20/10/2021	NN	CG	DD	GT
A	WITHOUT PREJUDICE DRAFT FOR S34	28/09/2021	NN	CG	DD	GT



GRID	DATUM	PROJECT MANAGER	CLIENT
MGA	mAHD	GT	MY MANLY VALE PTY LTD
DISCLAIMER & COPYRIGHT			
This plan must not be used for construction unless signed as approved by principal certifying authority.			
All measurements in millimetres unless otherwise specified.			
This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd			
(C) Copyright Martens & Associates Pty Ltd			

PROJECT NAME/PLANSET TITLE
PROPOSED BOARDING HOUSE CHANNEL DESIGN PLAN
255 CONDOMINE STREET, MANLY VALE, NSW LOT 8 DP 604034

Consulting Engineers

Environment
Water
Geotechnical
Civil

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE				
EARTHWORKS SECTIONS SHEET 3				
PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1605609	PS07	R02	PS07-C602	B

DEVELOPMENT APPLICATION