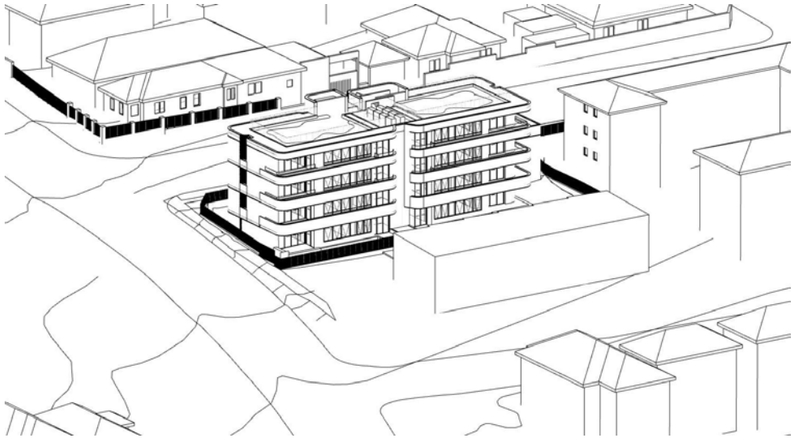
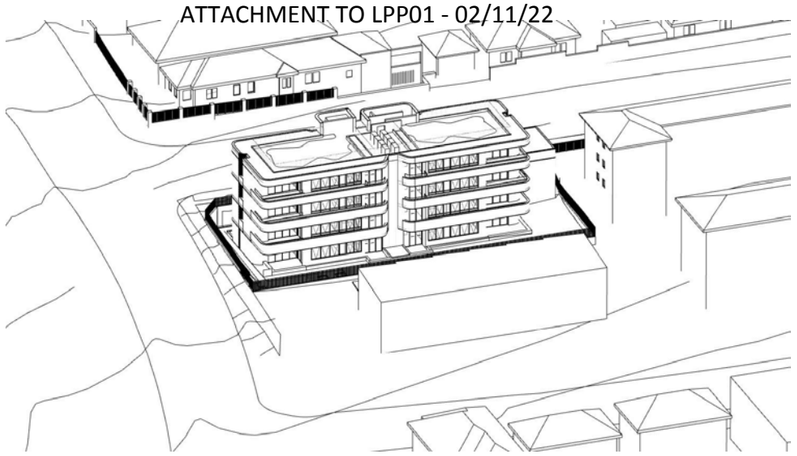
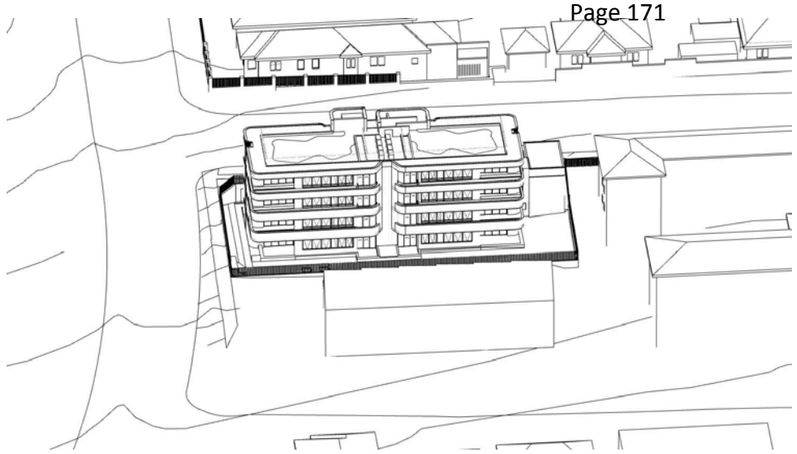


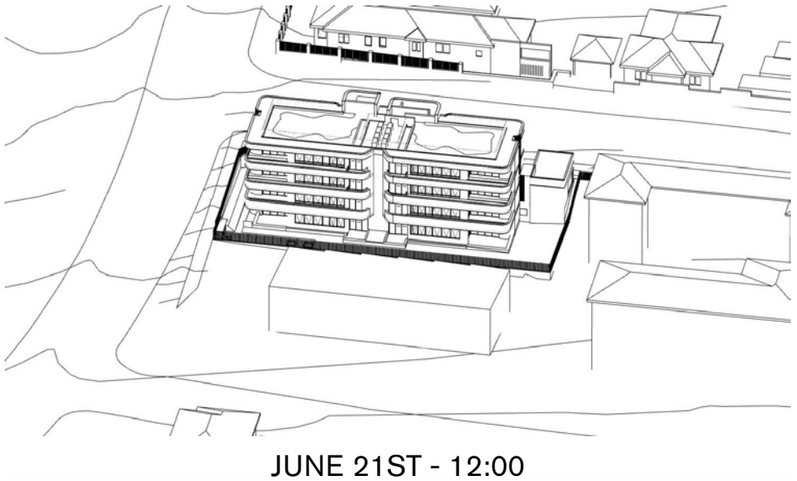
JUNE 21ST - 09:00



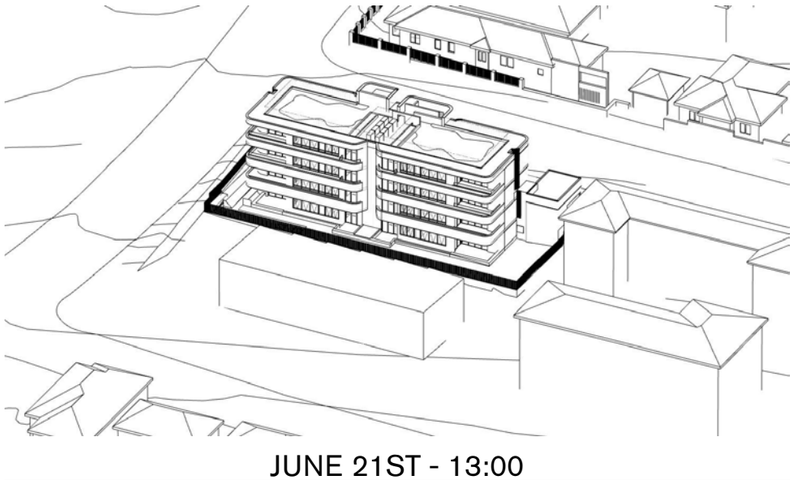
JUNE 21ST - 10:00



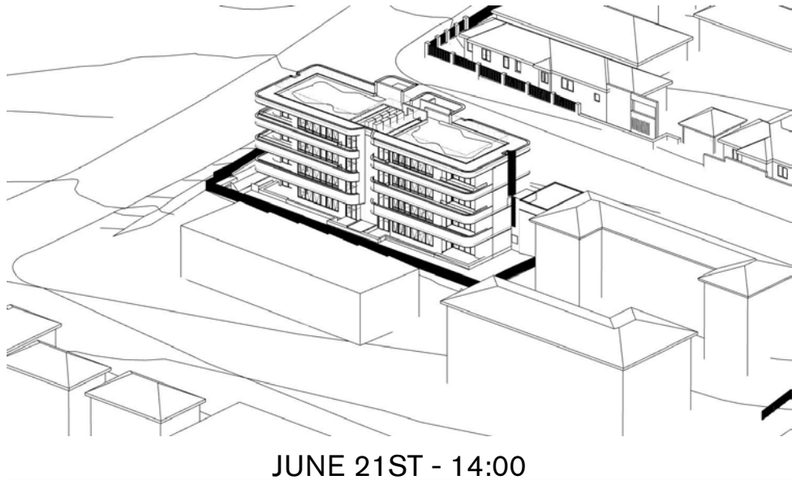
JUNE 21ST - 11:00



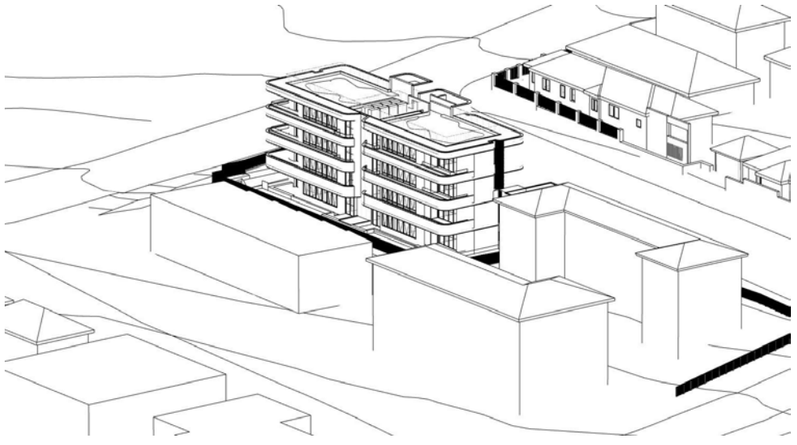
JUNE 21ST - 12:00



JUNE 21ST - 13:00



JUNE 21ST - 14:00



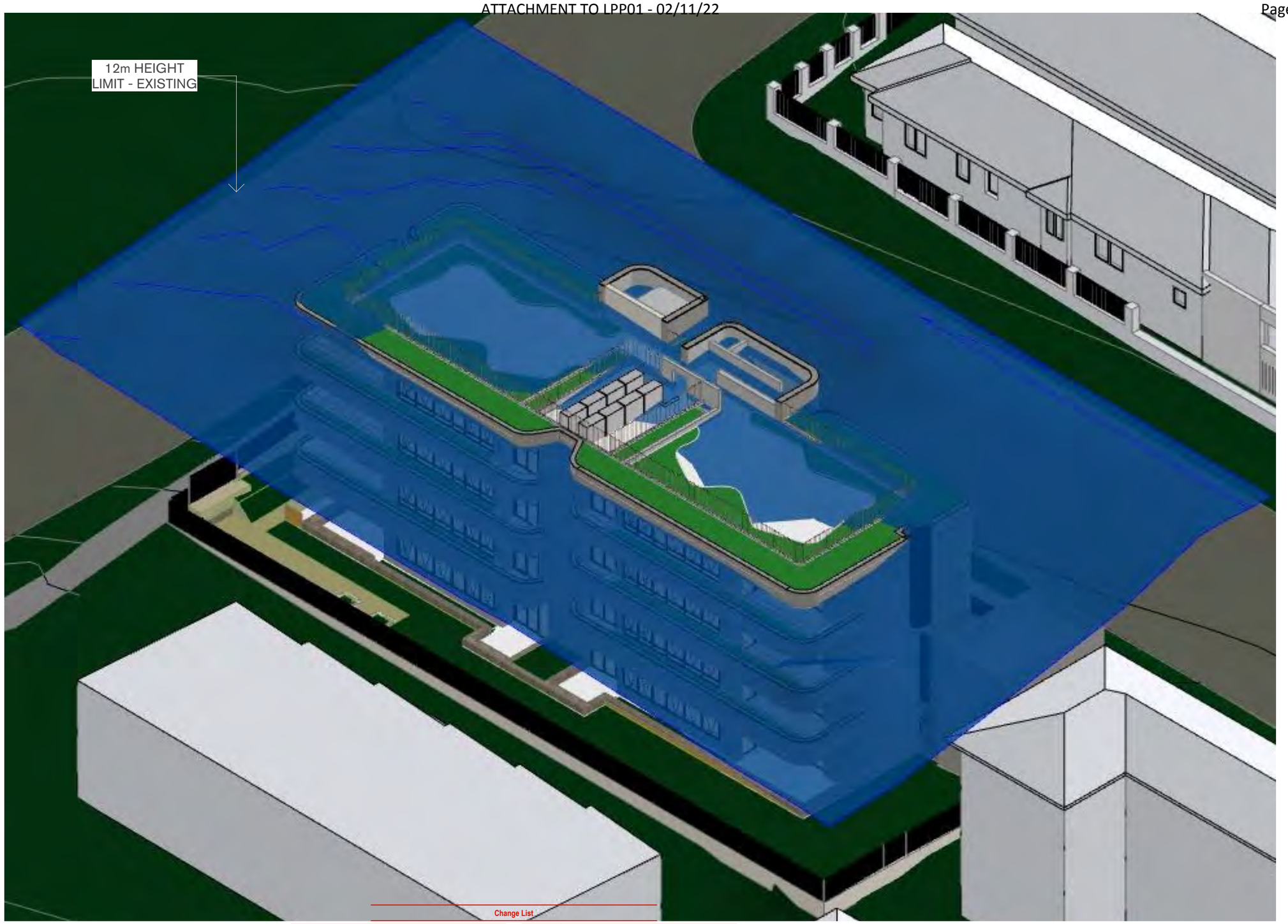
JUNE 21ST - 15:00

EYE OF THE SUN DIAGRAMS

DKO Architecture (NSW) Pty Ltd
42 Davies Street, Surry Hills, NSW 2010
ABN: 81956706590 | T +61 2 8346 4500
info@DKO.com.au |www.DKO.com.au

Rev.	Date	By	Ckd	Description
A	9/05/2022	NT	SO/MR	Development Application
B	22/08/2022	NT	MR	Revised Development Application

Project Name	Millervale
Project Address	18 Vale Street & 560-562 Miller Street, Cammeray, NSW 2062
Client	Ford Land
Project Number	12947
Drawing Name	EYE OF THE SUN DIAGRAMS
Scale	@A3
Date	April 2022
Drawing Number	DA404
Revision	B



Change List

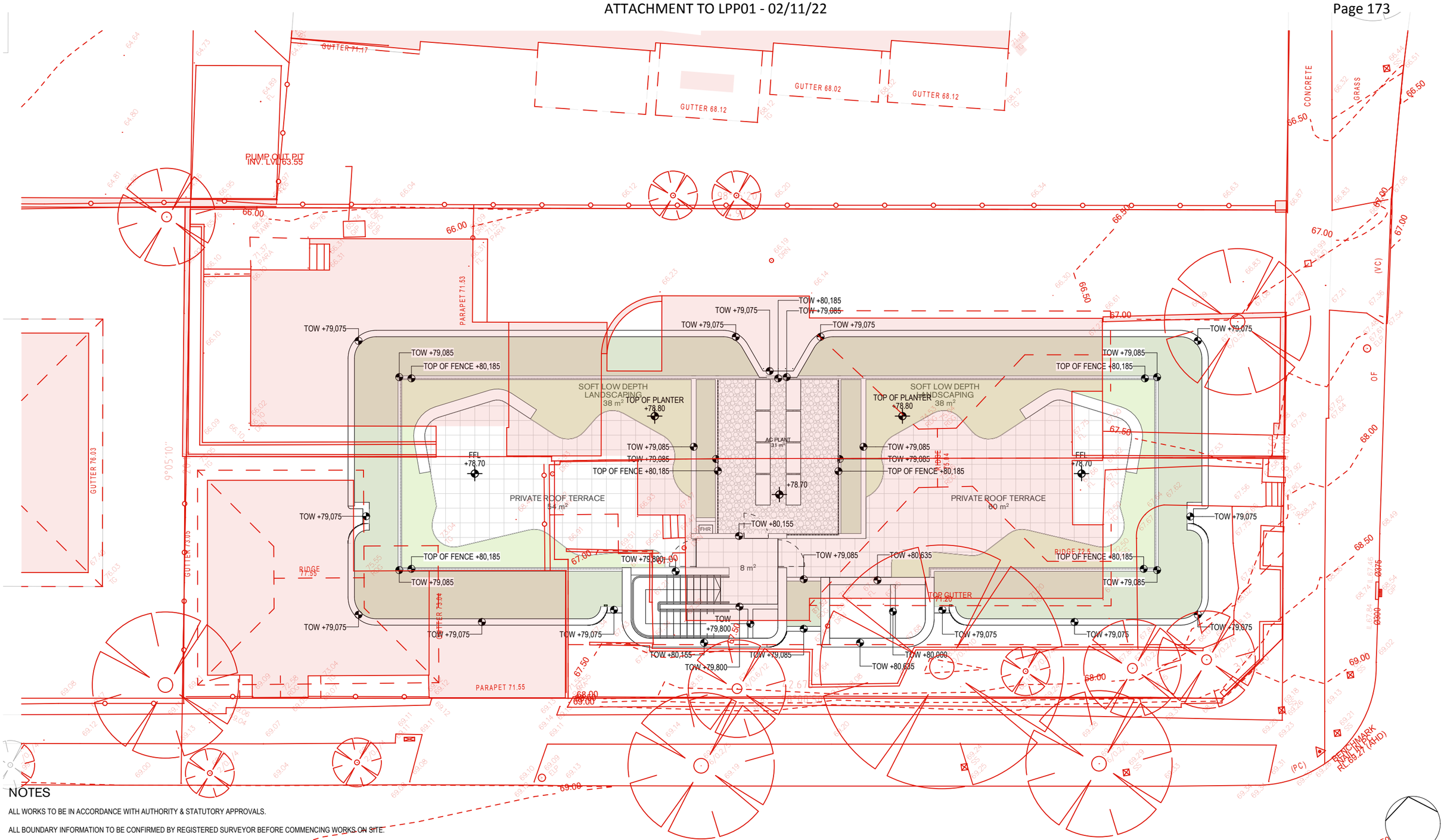
ID	Name
Ch-01	Change of 500mm to southern and northern setback
Ch-02	Change to LG landscaping
Ch-03	Change of basement 1 extent and layout
Ch-04	Addition of basement level
Ch-05	Addition of communal open space
Ch-05	Addition of communal open space
Ch-07	Updated deep soil calculation
Ch-08	Updated un-built upon area calculation
Ch-09	Updated landscape area calculation
Ch-10	Updated landscape area calculation
Ch-11	Clarified Cross Ventilation Calculation

LEP HEIGHT COMPLIANCE

DKO Architecture (NSW) Pty Ltd
42 Davies Street, Surry Hills, NSW 2010
ABN: 81956706590 | T +61 2 8346 4500
info@DKO.com.au |www.DKO.com.au

Rev.	Date	By	Ckd	Description
A	9/05/2022	NT	SO/MR	Development Application
B	21/10/2022	NT	MR	Revised Development Application

Project Name	Millervale
Project Address	18 Vale Street & 560-562 Miller Street, Cammeray, NSW 2062
Client	Ford Land
Project Number	12947
Drawing Name	LEP HEIGHT COMPLIANCE
Scale	@A3
Date	April 2022
Drawing Number	DA405
Revision	B



NOTES

ALL WORKS TO BE IN ACCORDANCE WITH AUTHORITY & STATUTORY APPROVALS.

ALL BOUNDARY INFORMATION TO BE CONFIRMED BY REGISTERED SURVEYOR BEFORE COMMENCING WORKS ON SITE.

REFER TO SITE SURVEY FOR ALL INFORMATION RELATING TO EXISTING SITE CONDITIONS.

REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION & ARBORIST REPORTS FOR ALL INFORMATION RELATING TO TREES AND THEIR RETENTION/REMOVAL AND NEW LANDSCAPE WORKS.

ALL DRAWINGS TO BE READ IN CONJUCTION WITH:
- ALL SPECIFICATIONS & SCHEDULES,
- ALL SPECIALIST CONSULTANTS DOCUMENTATION
- BASIX, NATHERS & SECTION J CERTIFICATES

MINOR CHANGES TO FORM & CONFIGURATION MAY BE REQUIRED AFTER DEVELOPMENT CONSENT WHEN DRAWINGS ARE PREPARED FOR CONSTRUCTION PURPOSES.

ROOF LEVELS

DKO Architecture (NSW) Pty Ltd
42 Davies Street, Surry Hills, NSW 2010
ABN: 81956706590 | T +61 2 8346 4500
info@DKO.com.au |www.DKO.com.au

NSW: Nominated Architects: Koos de Keijzer 5767 | David Randerson 8542

Rev.	Date	By	Ckd	Description
A	22/08/2022	NT	MR	Revised Development Application

Project Name	Millervale
Project Address	18 Vale Street & 560-562 Miller Street, Cammeray, NSW 2062
Client	Ford Land

Project Number	12947
Drawing Name	ROOF LEVELS
Scale	1:150 @A3
Date	April 2022
Drawing Number	**DA406**
Revision	**A**

18 VALE ST & 560-562 MILLER ST CAMMERY, NSW
RE-VISED DEVELOPMENT APPLICATION

2021055: LANDSCAPE ARCHITECTURAL DRAWING LIST

Sheet Number	Sheet Name	Revision
LD-DA-000	COVER SHEET & DESIGN STATEMENT	2
LD-DA-001	PLANTING SCHEDULE & LEGENDS	2
LD-DA-002	LANDSCAPE COMPLIANCE CALCULATIONS	1
LD-DA-100	LOWER GROUND FLOOR LANDSCAPE PLAN	2
LD-DA-101	GROUND FLOOR LANDSCAPE PLAN	2
LD-DA-102	LEVEL 1 & LEVEL 2 TYPICAL PLANTERS	2
LD-DA-110	ROOFTOP LANDSCAPE PLAN	2
LD-DA-200	LOWER GROUND FLOOR OUTLINE PLANTING PLAN	2
LD-DA-201	LOWER GROUND FLOOR OUTLINE PLANTING PLAN	2
LD-DA-400	TYPICAL SITE SECTION A	2
LD-DA-900	TYPICAL DETAILS & OUTLINE SPECIFICATION & MAINTENANCE	2

NOTE:

• DO NOT SCALE FROM DRAWINGS. WRITTEN DIMENSIONS GOVERN. IF IN DOUBT OBTAIN WRITTEN ADVICE FROM LANDFORM OR WHERE APPLICABLE VIA THE PRINCIPAL'S REPRESENTATIVE.

• ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.ALL DIMENSIONS ARE MINIMUM SETTING OUT REQUIREMENTS.

• ALL DIMENSIONS SHOULD BE VERIFIED ON SITE PRIOR TO PROCEEDING WITH THE WORKS. NOTIFY THE PRINCIPALS REPRESENTATIVE IN WRITING OF ANY DISCREPANCIES

.

• ALL LANDSCAPE DRAWINGS MUST BE READ IN CONJUNCTION WITH RELEVANT CONTRACTS, ARCHITECTURAL REPORTS, SCHEDULES AND SPECIFICATIONS AND ALL OTHER CONSULTANT / CONTRACT DOCUMENTATION. NOTIFY THE PRINCIPALS REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN DOCUMENTATION IN WRITING TO OBTAIN CLARIFICATION DIRECTION

.

• INSTALLATION OF SYSTEMS AND PROPRIETARY PRODUCTS TO BE STRICTLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

• ALL WORK TO COMPLY WITH THE NATIONAL CONSTRUCTION CODE INCLUDING RELEVANT AUSTRALIAN STANDARDS AND REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA AND AUSTRALIAN WORK HEALTH AND SAFETY LEGISLATION.

• DESIGN DRAWINGS ARE BASED ON SURVEY INFORMATION. PRIOR TO DETAILED DESIGN AND CONSTRUCTION, THE CONTRACTOR IS TO UNDERTAKE A FULL SURVEY TO VERIFY ALL DIMENSIONS AND CONFIRM LOCATION OF EXISTING SERVICES

LANDSCAPE DA DESIGN STATEMENT

Objectives:
- to increase the number of indigenous species planted in the North Sydney region
- to eliminate the use of noxious weeds of potentially invasive species in developments
- to use plants in such a way to foster energy efficient development that relies on passive energy principles for heating and cooling
- to reduce maintenance and water consumption through appropriate species selection
- to create buffer zones and add to existing areas of remnant vegetation with locally indigenous species.

Principles

- Enhance the appearance and amenity of the proposed residential development by sensitively integrating architecture and landscape through effective site planning and landscape design.
- Consolidate the open space into a coherent landscape treatment that provides visual amenity from above an below.
- Take forward the landscape principles and urban design principles established by the Site specific DCP by North Sydney Council to Establish a visually and environmentally sensitive landscape, complimentary to the architectural vision and greater urban setting, while providing high quality private spaces for residents and visitors.
- Provide new tree planting that ameliorates the building scale and offers environmental benefit through micro climate.

Public Domain & Streetscapes
Provision of additional street trees to reinforce the landscape character of Cammeray

Access, Egress & Connectivity

The through site link acts as the central connectivity spine with finer grain permeability promoted throughout the ground plane maximising access and circulation. All fire exits are located near or adjacent to key pathways, pedestrian links and streetscapes promoting safe egress and evacuation if and when required.

CPTED, Safety & Visibility

All raised edges & planter walls are at seating height or lower allowing clear sight-lines and visibility throughout the ground plane. Trees are used to frame spaces and ensure clear visibility to and from the streetscape at all times. Regular congregation spaces and retail activation enables passive surveillance to all areas, discouraging undesired behaviour and possible blind spots.

Universal Access & DDA Compliance

The ground plane offers full universal accessibility to all reception, lobby and retail areas at maximum 1:20 grades have been implemented to ensure access for all is achieved.

Soil Depths on Podiums & Permanent Planting

All planters have a minimum soil depth of 450mm with a minimum with a slab setdown across the Ground & Lower Ground Floor is achieved throughout all landscaped areas in the development. This allows planter walls to be at seating height with additional 1:3 mounding to achieve soil depth frees where shown on plan as per ADG requirements. All noted planted areas in the design is permanent planting. Approx 41% tree canopy coverage is provided across the site with approx 24.4% deep soil planting provided.

For landscape calculations refer to LD-DA002. For more information on deep soil calculations - refer to architectural design report

NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA	RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION	RI	CR	CR	06.05.22

Note: * indicates signatures on original issue of drawing or last revision of drawing

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client **FORDLAND**
Project **18 VALE ST, CAMMERAY**
Title **COVER SHEET & DESIGN STATEMENT**

Original Size **A1** Drawing No: **LD-DA-000** Rev: **2**

Plot Date: 19 August 2022 - 9:57 AM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg

PLANT SCHEDULE DEVELOPMENT APPLICATION

CODE	SPECIES	COMMON NAME	ORIGIN	POT SIZE	EST. MATURE HT	INSTALL SIZE	SPACING / QTY
	TREES GROUND FLOOR						
EUC pil	Eucalyptus pilularis	Blackbutt	Native	200L	15-20m	2.2x1.0m	4
TRI lau	Tristaniopsis laurina	Water Gum	Native	200L	6-8m	2.2x1.0m	5
EUC pip	Eucalyptus piperita	Peppermint Gum	Native	200L	15-20m	2.2x1.0m	7
CYA coo	Cyathea cooperi	Australian Treen Fern	Native	200L	6-10m	2.5x1.0m	9
EUC pun	Eucalyptus punctata	Grey Gum	Native	200L	15-20m	1.5x1.0m	6
	STREET TREES						
EUC sal	Eucalyptus saligna	Blue Gum	Native	400L	15-20m	2.5x1.0m	3
	MIX TYPE 1 – FULL SUN / PART SHADE						
	SHRUBS						
SYZ smi	Acmena smithii	Hinterland Gold'	Native	45L	3-4m	500mm	As Shown
CAL vim	Callistemon viminalis 'Better John' LJ1'	Bottlebrush	Native	200mm	0.6-1.2m	300mm	As Shown
HEL pet	Helichrysum petiolare 'Limelight'	Licorice Plant	Exotic	300mm	0.5m	300mm	As Shown
BAN spi	Banksia spinulosa	Hairpin Banksia	Native	300mm	2m	300mm	As Shown
BAN rob	Banksia robur	Swamp Banksia	Native	300mm	3-4m	300mm	As Shown
CAL lin	Callistemon linearis	Narrow Leaf Bottlebrush	Native	300mm	1-2m	300mm	As Shown
BAN eric	Banksia ericifolia	Heath Lantern Banksia	Native	300mm	2-4m	300mm	As Shown
WES fru	Westringia fruticosa 'Grey Box' WES04	Coastal Rosemary	Native	300mm	1	300mm	As Shown
	GRASSES						
POA lab	Poa labillardieri 'Eskdale'	Poa	Native	150mm	60cm x 50cm	100mm	3 per m2
PEN naf	Pennisetum alopecuroides 'Nafray'	Foxtail Grass	Native	150mm	60cm x 60cm	100mm	3 per m2
LOM lon	Lomandra longfolia 'LM400	Matt Rush	Native	150mm	60cm x 60cm	200mm	3 per m2
DIA cae	Dianella caerulea	Blue Flax Lily	Native	150mm	0.5m	200mm	3 per m2
LOM tan	Lomandra tanika	Spiny Mat Rush	Native	150mm	1.2m	200mm	3 per m2
							3 per m2
	CLIMBERS + GROUNDCOVERS						
CAR gla	Carpobrotus glaucescens 'CAR10'	Aussie Rambler	Native	150mm	200mm	100mm	4 per m2
CAS gla	Casuarina glauca 'Cousin It'	Cousin It	Native	150mm	150mm	100mm	4 per m2
HIB sca	Hibbertia scandens	Guinea Flower	Native	150mm	0.5m	100mm	4 per m2
GAZ tom	Double Gold™ Gazania hybrid 'GT20'	Gazania	Native	150mm	200mm	100mm	4 per m2
MYO par	Myoporum parvifolium 'Yareena'	Creeping boobialla	Native	150mm	200mm	100mm	4 per m2
TRA jas	Trachelospermum jasminoides	Creeping Jasmine	Exotic	150mm	200mm	100mm	4 per m2
	MIX TYPE 2 – PART SHADE / SHADE TOLERANT						
	SHRUBS						
SYZ smi	Acmena smithii	Hinterland Gold'	Native	45L	3-4m	500mm	As Shown
ALP cae	Alpinia caerulea	Native Ginger	Native	300mm	1-3m	500mm	As Shown
STR jun	Strelitzia juncae	Narrow Leaved Birds of Paradise	Native	300mm	1-3m	500mm	As Shown
COR ter	Cordyline terminalis rubra	Cordyline rubra	Native	200mm	1m x 1.5m	300mm	As Shown
GAR jas	Gardenia jasminoides	Cape Jasmine	Native	200mm	1m x 1m	300mm	As Shown
PHI xan	Philodendron xanadu	Xanadu Philodendron	Native	200mm	1m x 1m	300mm	As Shown
RHA exc	Rhapis excelsa	Broadleaf lady palm	Native	200mm	4m x 2m	300mm	As Shown
STR nic	Strelitzia nicolai	Giant White Bird of Paradise	Native	200mm	6m x 4m	300mm	As Shown
CYC rev	Cycas revoluta	Sago Palm	Native	300mm	1m	300mm	As Shown
	GRASSES						
CLI min	Clivia miniata	Bush Lily	Native	150mm	60cm x 50cm	100mm	3 per m2
PEN naf	Pennisetum alopecuroides 'Nafray'	Foxtail Grass	Native	150mm	60cm x 60cm	100mm	3 per m2
LOM lon	Lomandra longfolia 'LM400	Matt Rush	Native	150mm	60cm x 60cm	200mm	3 per m2
	CLIMBERS + GROUNDCOVERS						
LOM gla	Lomandra glauca	Pale Mat Rush	Native	150mm	0.3m x 0.6m	100mm	4 per m2
PLE par	Plectranthus parviflorus	Cockspur Flower	Native	150mm	0.2m x 0.6m	100mm	4 per m2
LIR mus	Liriope muscari 'Evergreen Giant'	Giant Liriope	Exotic	150mm	0.4m x 0.6m	100mm	4 per m2
PAN jas	Pandorea jasminoides	Bower Plant	Native	150mm	0.2m x 0.6m	100mm	4 per m2
TRA jas	Trachelospermum jasminoides	Creeping Jasmine	Exotic	150mm	0.2m x 5m	100mm	4 per m2
VIO hed	Viola hederacea	Native Violet	Native	150mm	0.2m x 0.5m	100mm	4 per m2
ZOY ten	Zoysia tenuifolia	No - Mow Grass	Native	150mm	0.2m x 0.6m	100mm	4 per m2
	MIX TYPE 3 – ROOFTOP LOW WATER SPECIES						
POA pol	Poa poiformis	Blue Tussock Grass	Native	150mm	0.2m x 0.6m	100mm	3 per m2
THE aus	Themeda triandra	Kangaroo Grass	Native	150mm	0.2m x 0.6m	100mm	3 per m2
DIC dis	Dichtichis distochophylla	Australian Salt-Grass	Native	150mm	0.2m x 0.6m	100mm	3 per m2
SPI ser	Spinifex sericeus	Hariy Spinifex	Native	150mm	0.2m x 0.6m	100mm	3 per m2

LEGEND:

- Site Boundary
- Basement Extents
- Extent of Works
- Proposed trees - refer to planting schedule
- Existing Tree to be retained. Refer to arborist report 08.08.22.
- Existing Tree to be removed. Refer to arborist report 08.08.22.
- +EX 67.85 Existing levels: refer to site survey
- + RL 67.85 Proposed nominal design levels: refer to engineers drawings
- -SSL 65.80 Proposed Structural Slab level
- +TW 450 Proposed top of wall levels (mm)
- +SD 1200 Proposed Total Available Soil Depth (mm)
- PA Proposed planting in ground - refer to planting schedule
- RPA Raised planter area (on slab) with 1:3 mounding to achieve soil depth - Planter Depths to ADG standards
- P1 Paving type 1: Porphyry Paving
- P2 Paving type 2: Steppers in groundcovers
- P3 Paving type 3: Steppers in clumped zoysia
- TD Hardwood Timber Deck
- W1 Wall Type 1: Stone wall
- SE Raised Steel Edge

General Notes:

For Site levels and architectural information refer to Civil and Architects drawings respectively.

For courtyard and overflow drainage refer to Hydraulic engineers drawings

All trees to be retained and are subject to tree protection & management in accordance with relevant Australian standards.

External Lighting and electrical : refer to engineers details.

Contractor to protect all landscape works during construction including but not exclusive to existing verge.

Levels general : contractor to ensure positive drainage to all pavements, turf and planter areas, install subsoil drainage to planter areas as required.

NOTE: PLANTING NUMBERS AND SCHEDULES FOR DA PURPOSES - SUBJECT TO DESIGN DEVELOPMENT

NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA	RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION	RI	CR	CR	06.05.22

Note: * indicates signatures on original issue of drawing or last revision of drawing

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

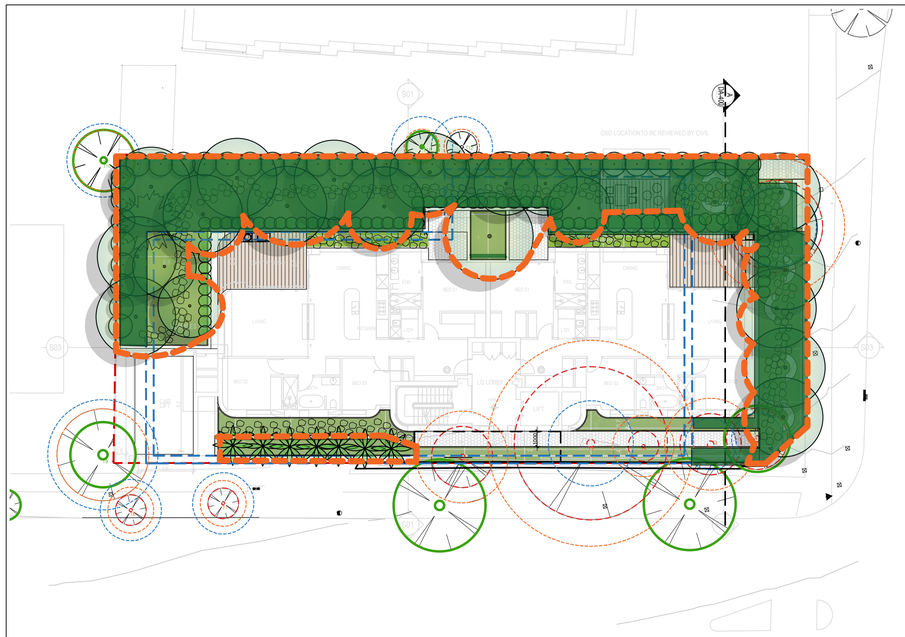
Drawn RI | Designer CR/ RI
Drafting Check CR | Design Check CR
Approved (Project Director)
Date
Scale 1:100

This Drawing must not be used for Construction unless signed as Approved

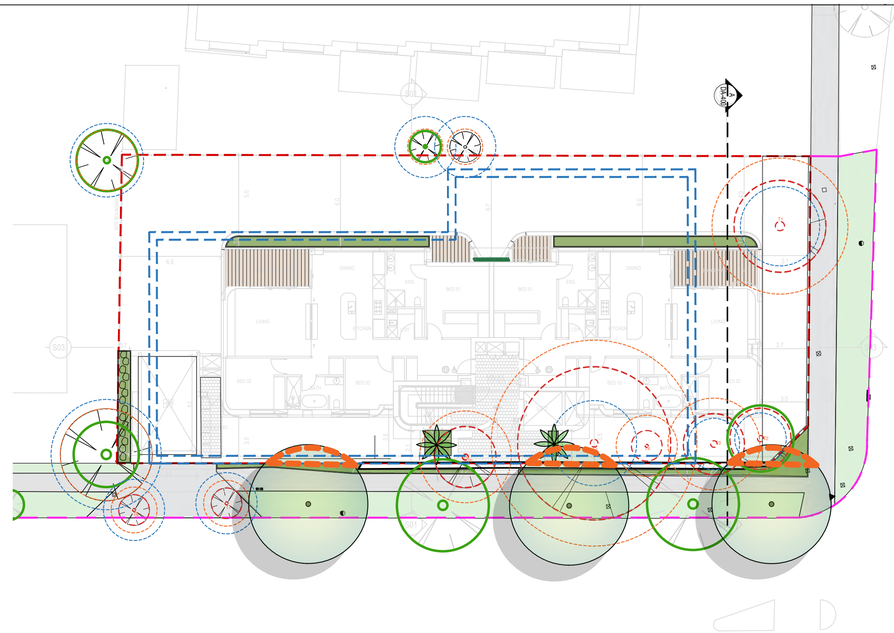
Client FORDLAND
Project 18 VALE ST, CAMMERAY
Title PLANTING SCHEDULE & LEGENDS

Original Size A1
Drawing No: LD-DA-001
Rev: 2

Plot Date: 19 August 2022 - 9:58 AM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg



LOWER GROUND FLOOR



GROUND FLOOR

TOTAL SITE AREA = 902m2

LANDSCAPED AREA CALCULATIONS

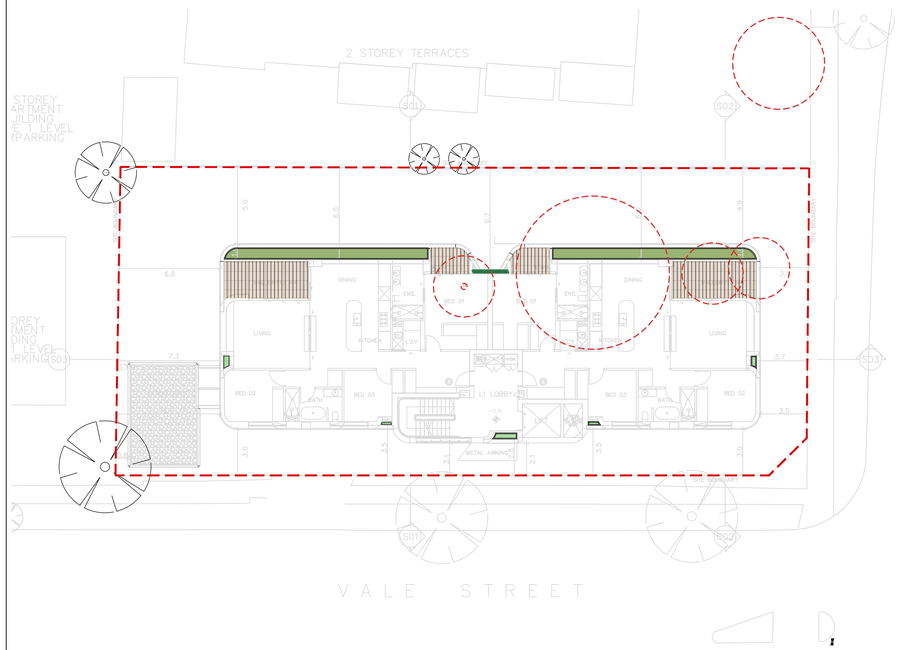
DEEP SOIL PLANTING AREA
= 176.5m2 = 19.6%

ADG REQ = 63.14m2 = 7%
DCP REQ = 360.76m2 = 40%

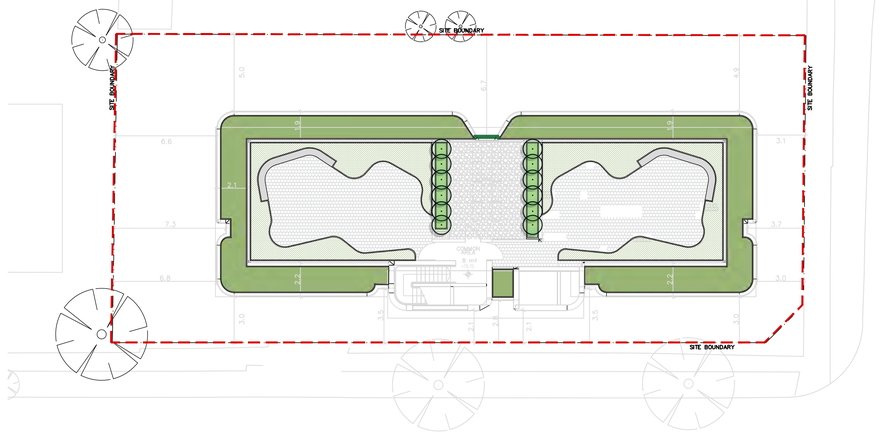
LANDSCAPED AREA ON STRUCTURE
LOWER GROUND = 130m2
GROUND = 21.7m2
LEVELS 1-2 = 29.3m2
ROOFTOP = 208.65m2
VERTICAL GREENERY = 50m2

TOTAL LANDSCAPE COVERAGE
(INCL. DEEP SOIL PLANTING) = 566.12m2 = 62.58%

TREE CANOPY COVERAGE (approx.)
= 370m2 = 41%



TYPICAL LEVELS 1-2



ROOFTOP

NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	RE-VISED DA		RI	CR	CR	09.08.22

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn RI | Designer CR/ RI
Drafting Check CR | Design Check CR
Approved (Project Director)
Date
Scale 1:100

This Drawing must not be used for Construction unless signed as Approved

Client **FORDLAND**
Project **18 VALE ST, CAMMERAY**
Title **LANDSCAPE COMPLIANCE CALCULATIONS**

Original Size **A1**
Drawing No: **LD-DA-002**
Rev: **1**

Plot Date: 19 August 2022 - 3:13 PM
Plotted by: Rohit Iyer
Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg

NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA		RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION		RI	CR	CR	06.05.22

0 1 2 3 4 5

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

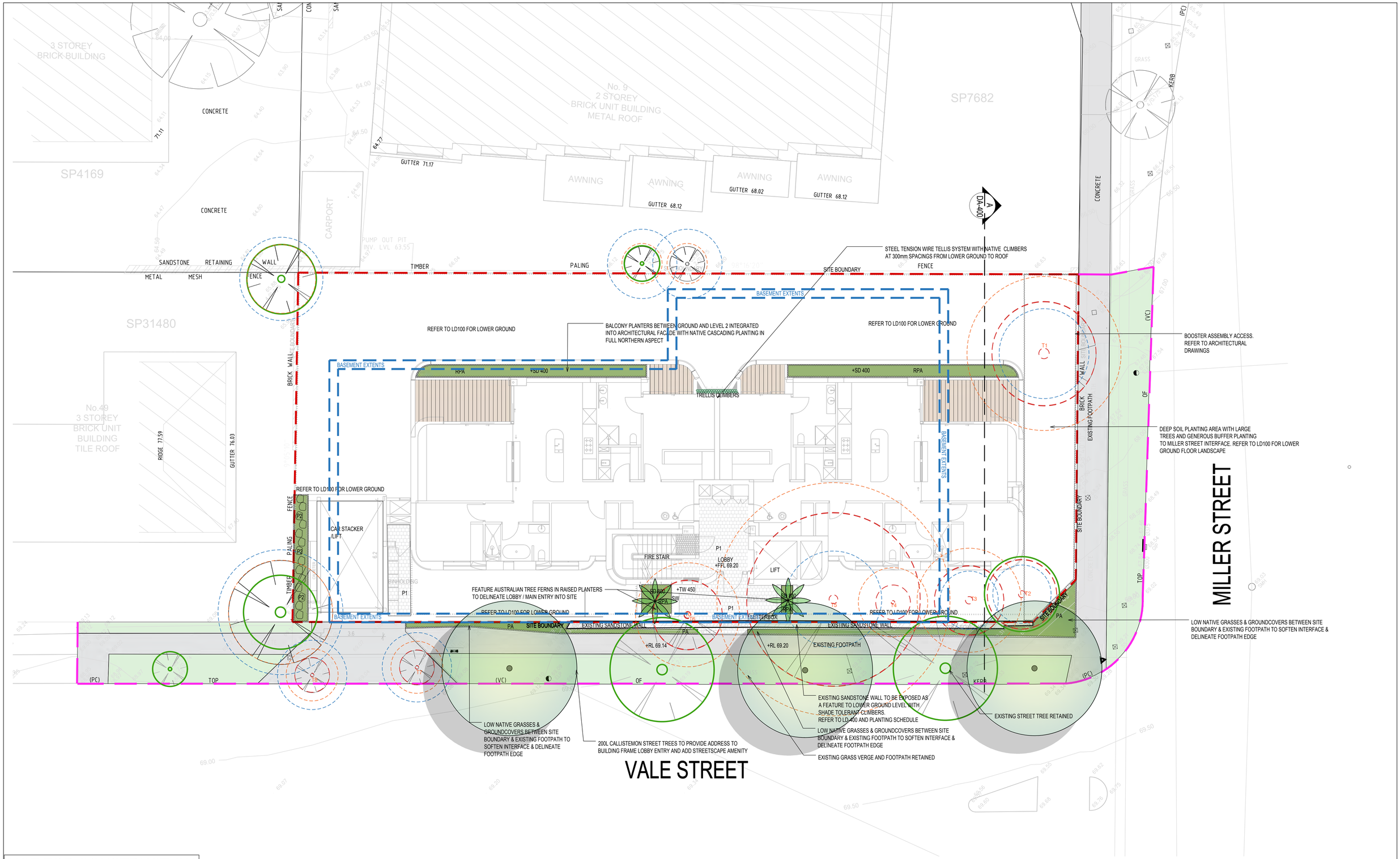
Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client FORDLAND
Project 18 VALE ST, CAMMERAY
Title LOWER GROUND FLOOR LANDSCAPE PLAN

Original Size A1
Drawing No: LD-DA-100
Rev: 2

Plot Date: 19 August 2022 - 3:15 PM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg



NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA	RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION	RI	CR	CR	06.05.22

Note: * indicates signatures on original issue of drawing or last revision of drawing

0 1 2 3 4 5

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

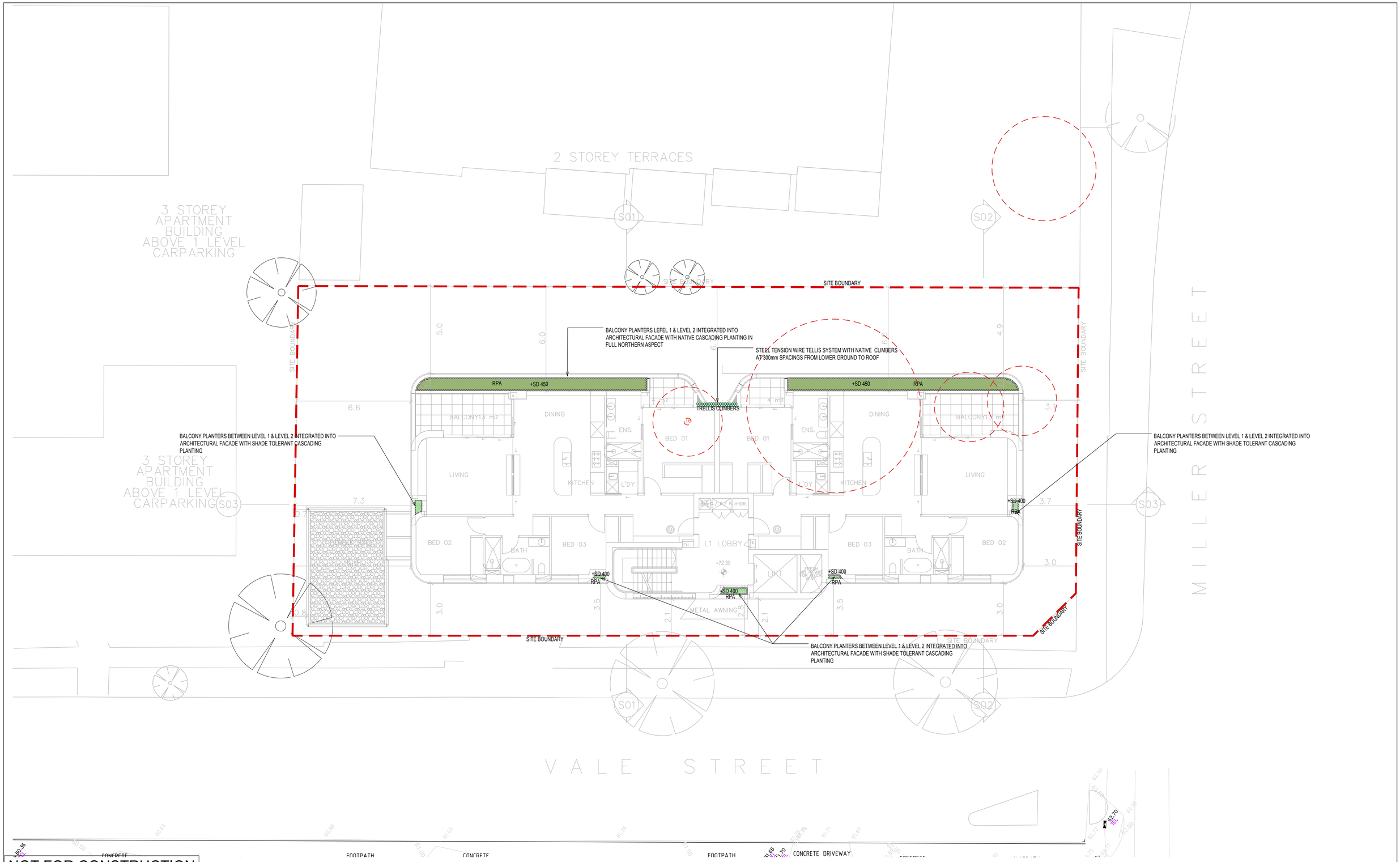
Drawn RI | Designer CR/ RI
Drafting Check CR | Design Check CR
Approved (Project Director)
Date
Scale 1:100

This Drawing must not be used for Construction unless signed as Approved

Client **FORDLAND**
Project **18 VALE ST, CAMMERAY**
Title **GROUND FLOOR LANDSCAPE PLAN**

Original Size **A1**
Drawing No: **LD-DA-101**
Rev: **2**

Plot Date: 19 August 2022 - 3:15 PM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg



NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA		RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION		RI	CR	CR	06.05.22

0 1 2 3 4 5

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client **FORDLAND**
Project **18 VALE ST, CAMMERAY**
Title **LEVEL 1 & LEVEL 2 TYPICAL PLANTERS**

Original Size **A1**
Drawing No: **LD-DA-102**
Rev: **2**

Plot Date: 19 August 2022 - 3:16 PM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg

NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA		RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION		RI	CR	CR	06.05.22

0 1 2 3 4 5

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client **FORDLAND**

Project **18 VALE ST, CAMMERAY**

Title **ROOFTOP LANDSCAPE PLAN**

Original Size **A1**

Drawing No: **LD-DA-110**

Rev: **2**

Plot Date: 19 August 2022 - 3:17 PM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg

NOT FOR CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA	RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION	RI	CR	CR	06.05.22

Note: * indicates signatures on original issue of drawing or last revision of drawing

0 1 2 3 4 5

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

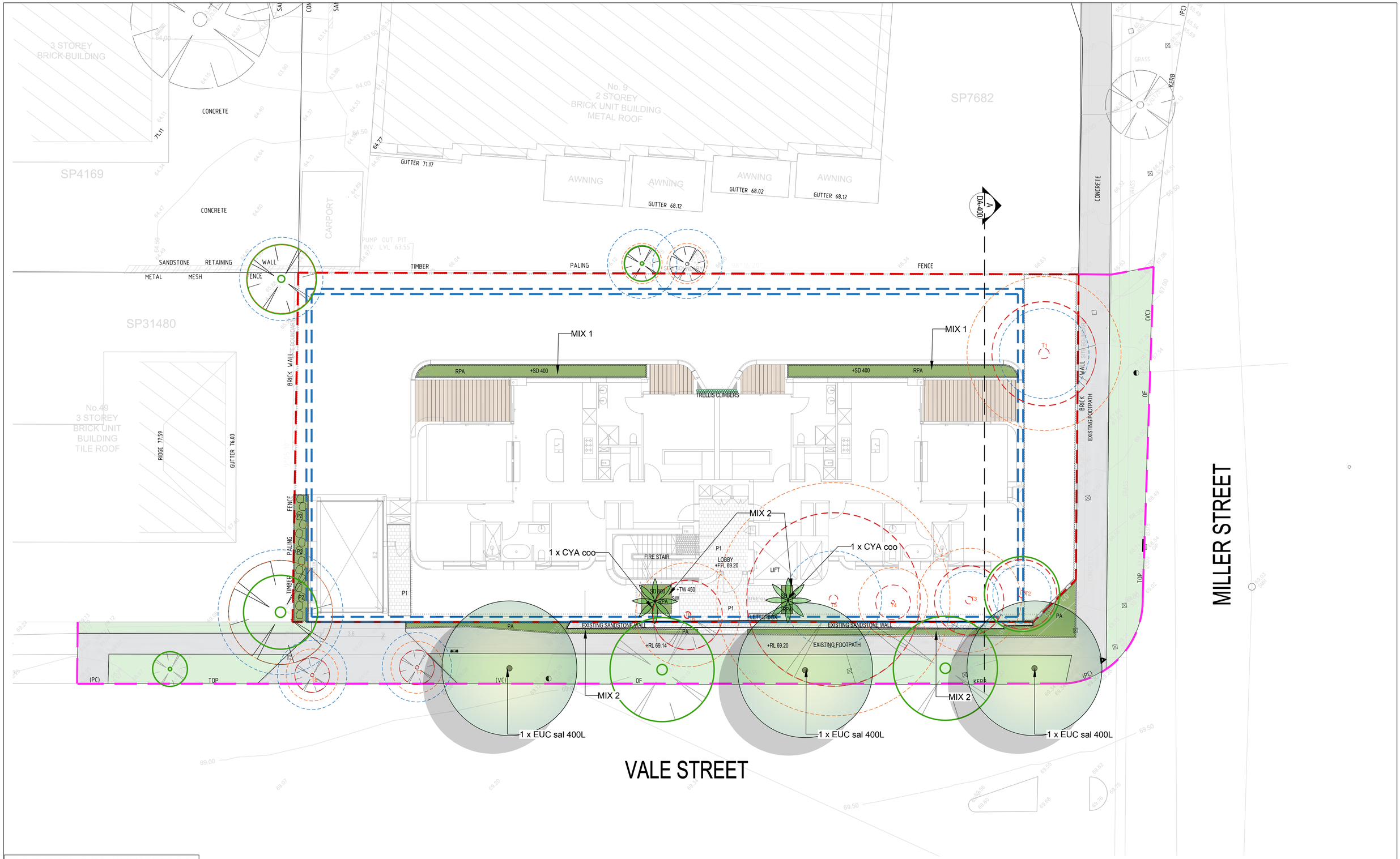
Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client FORDLAND
Project 18 VALE ST, CAMMERAY
Title LOWER GROUND FLOOR OUTLINE PLANTING PLAN

Original Size A1
Drawing No: LD-DA-200
Rev: 2

Plot Date: 19 August 2022 - 10:19 AM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg



NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA		RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION		RI	CR	CR	06.05.22

0 1 2 3 4 5

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client **FORDLAND**

Project **18 VALE ST, CAMMERAY**

Title **GROUND FLOOR OUTLINE PLANTING PLAN**

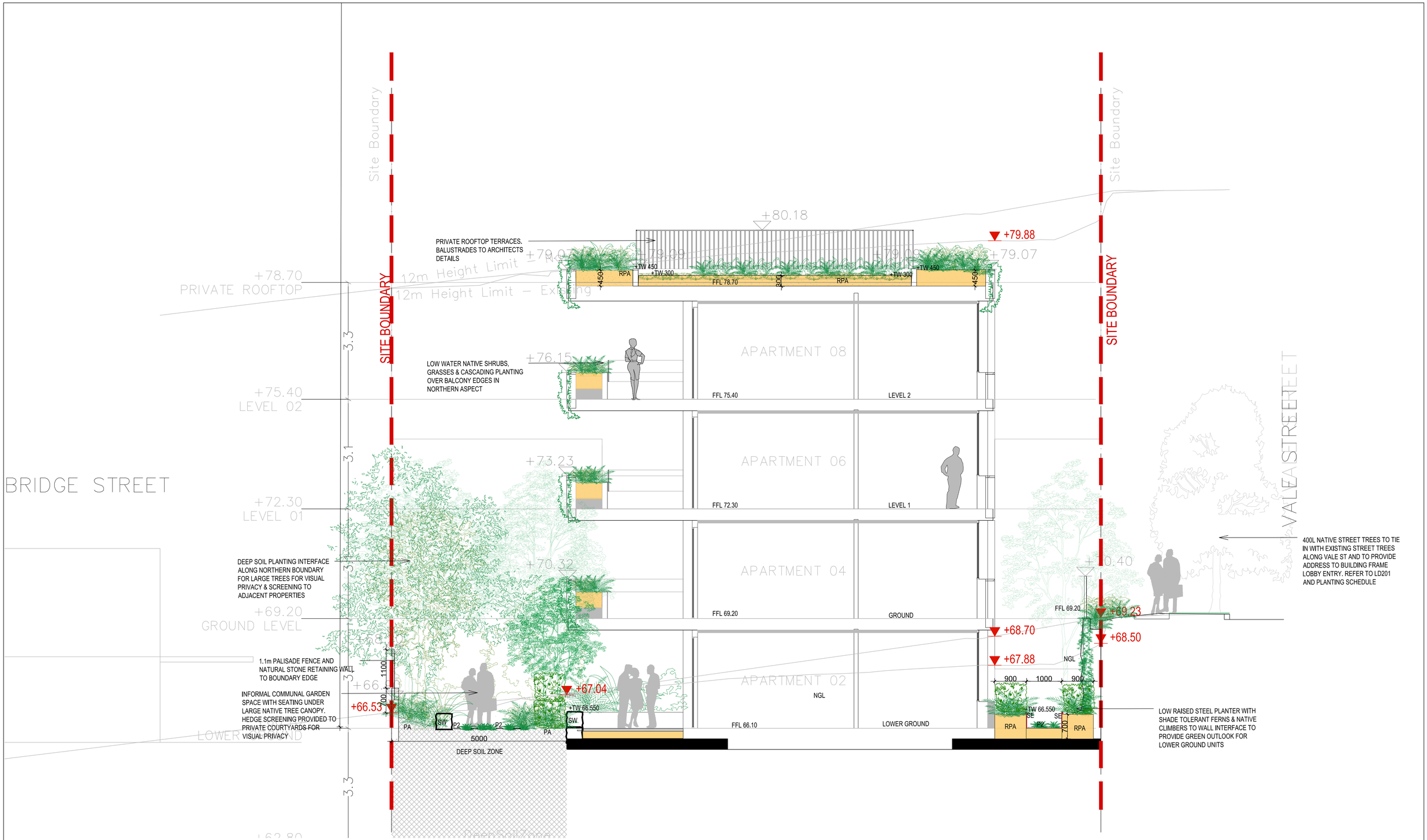
Original Size **A1**

Drawing No: **LD-DA-201**

Rev: **2**

Plot Date: 19 August 2022 - 10:22 AM Plotted by: Rohit Iyer

Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg



A SITE SECTION
1:50

NOT FOR CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA		RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION		RI	CR	CR	06.05.22

CLIENT

FORDLAND

ARCHITECT

DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:50	This Drawing must not be used for Construction unless signed as Approved	

Client FORDLAND
Project 18 VALE ST, CAMMERAY
Title SITE SECTION A

Original Size A1
Drawing No: LD-DA-400
Rev: 2

Plot Date: 19 August 2022 - 3:21 PM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg

LANDSCAPE OUTLINE SPECIFICATION NOTES

GENERAL:
Note the following is an outline specification for DA purposes only.

All works are to be performed by suitably qualified and experienced trades persons in landscape works. All works shall be supervised by a qualified superintendent.

SERVICES IDENTIFICATION
The contractor shall verify the position of all services prior to the commencement of works and take all necessary precautions to protect services during implementation works.

SITE ESTABLISHMENT
The contractor shall establish site access and compound in position agreed with the Superintendent and or subject to Council approval. The Contractor shall be totally responsible for protecting the site works during construction and establishment including vegetation, pedestrian and vehicular management. Implement erosion control and site management practices to secure the site and to comply with all statutory requirements.

EARTHWORKS & DRAINAGE
Bulk earthworks are by the civil contractor. The landscape contractor shall allow for minor earth trimming and profiling to prepare landscape areas to accept the nominated treatment. Protect exposed earthworks with temporary erosion measures and coordinate the on-site disposal of excess spoil with the Superintendent.

SUBSOIL AGRICULTURAL DRAINS:
All tree positions shall be free draining with positive drainage to SW outlets or natural drainage systems. Install 100mm diameter agg. drains including 200mm wide column of 10-20mm crushed drainage gravel and geo-textile fabric - Bidum A24. Seek direction from the site superintendent.

PIT LIDS:
The Contractor is to protect all pit lids during earthworks preperation. Retain Telstra concrete oval covers & pit checker plate steel pit covers, and concrete service pits. New pit lids are to be suitable for paver infill.

HARD LANDSCAPE WORKS

PAVEMENTS:
Modular Pavement Systems - Pedestrian: Stone paving product
Pavements systems shall conform to the approved Public Domain Framework and or Council's streetscape guidelines to the extent defined on the landscape plans. Supply and install pavements to the pattern nominated over concrete base including; base preparation, mortar bedding, placement, mechanical cutting, expansion | control joints, grout jointing and finishing to achieve levels and positive drainage.

ROADWORKS: Refer to Engineers drawings for grading, materials and set-out.

FURNITURE & FIXINGS
Supply and install furniture and fixing in the positions nominated on the plans or as agreed on site with the superintendent. All items are to be installed on concrete base slab or in-ground footings strictly in accordance with the manufacturer's specification. Where necessary, allow for cutting of pavements and or core drilling installation method.
The pavements shall comply with Council and Australian Standards

LIGHTING
Refer to the electrical engineer's plans for lighting circuits and installation. The general layout are nominated on the landscape plans.

SOFT LANDSCAPE WORKS

SOIL MIX:
Imported Soil Mix:
All planter areas shall have a minimum soil depth of 300mm and 100mm to turf | grass areas with landscape quality soil that conforms to AS 4419 Soils for Landscaping and Gardens.

Ameliorated site topsoil mix:
The Contractor is to use stockpiled site topsoil adding soil additives and chemicals; lime gypsum and fertiliser nutrients to achieve AS4419.

SAMPLE & TESTING:
Provide 1kg soil mix test sample and data to of imported or modify site soil , clearly identified and referenced to the test data, prepared by an independent soil laboratory. Submit to the Superintendent for approval prior to supply and placement.

FERTILISER: Apply slow release Oganic fertiliser at the time of planting with pellets to advanced tree positions strictly in accordance with the manufacturers specification and with regard to season, soil mix, watering regimes and sub grade conditions.

PLANT MATERIALS:
Refer to the plant schedule. The contractor shall ensure that all plant materials are secured immediately upon award of contract. Failure to do so will not give rise to substitutions or extensions of time. All stock shall be grown in open areas which are exposed to the sun and wind to promote vigorous plant growth and to harden plants off. All plant material shall be pest and disease free. All plant material shall not be root bound or damaged. Plant densities shall reflect accepted industry standards and Councils guidelines for Landscape Works and be sourced from an accredited nursery. The Contractor will be responsible for purchasing and coordination of delivery to satisfy the construction program. It is the Contractor's responsibility to check trees at the supply source and to accept delivery of the trees at site, ensuring that the trees are supplied in accordance with the specification and are in good health. The Contractor shall allow for unloading and placement of all advanced tree materials.

All bag stock shall conform to the specification and must be secured from an Accredited Nursery. The current Natspec Guide "Purchasing Landscape Trees" is a **guide only** for quality tree production. All trees must be able to be planted without the use of tree stakes. Any trees requiring staking to be held vertical shall be rejected.

ADVANCED TREES:
Plant stock shall have a well developed straight stem with tri-branching structure and healthy canopy typical to the species and to the minimum sizes scheduled.

Excavate a hole a minimum 2X wider than the root ball and deep enough to accept a minimum 200mm of topsoil below. Break up the base of the hole to a further depth of 200mm, and loosen compacted sides of the hole as necessary to prevent confinement of root growth to the hole. Loosen sides of root ball to promote growth. Backfill with nominated soil mix, lightly tamp and water to eliminate air pockets. Ensure positive drainage to all tree positions.

Supply and install root barrier as nominated and staking as detailed on plans.

IRRIGATION SYSTEM: Supply and install an automatically controlled system to landscape areas identified on the plans to achieve 25mm/week precipitation rate. This system shall have a rain switch and have backflow prevention devices fitted in accordance with Councils regulations.

MAINTENANCE PERIOD:

General
Planting maintenance period: the planting maintenance period will be 52 weeks and will commence from the date of practical completion. Of each phase of planting works (hereby specified to be a separable part of the works). It is anticipated that planting works will be undertaken in one phase
Planting maintenance program: 2 weeks prior to practical completion, furnish a proposed planting establishment program, and amend it as required. Such proposal should contain details of the types and frequency of maintenance activities involved with the establishment of plants and grassed areas. Comply with the approved program.
Planting maintenance log book: keep a log book recording when and what maintenance work has been done and what materials, including approved toxic materials, have been used. Log book must be signed off by the client's representative after each maintenance visit. Maintain log book in location nominated by superintendent. All entries are to be initialled by person nominated by superintendent. Log book to contain a copy of the approved planting establishment program.
Product warranty: submit the supplier's written statement certifying that plants are true to the required species and type, and are free from diseases, pests and weeds.
Insurance: the contractor is to ensure suitable insurance cover and / or bank guarantee is in place for the theft and / or damage of all works executed under this contract for the plant maintenance period.

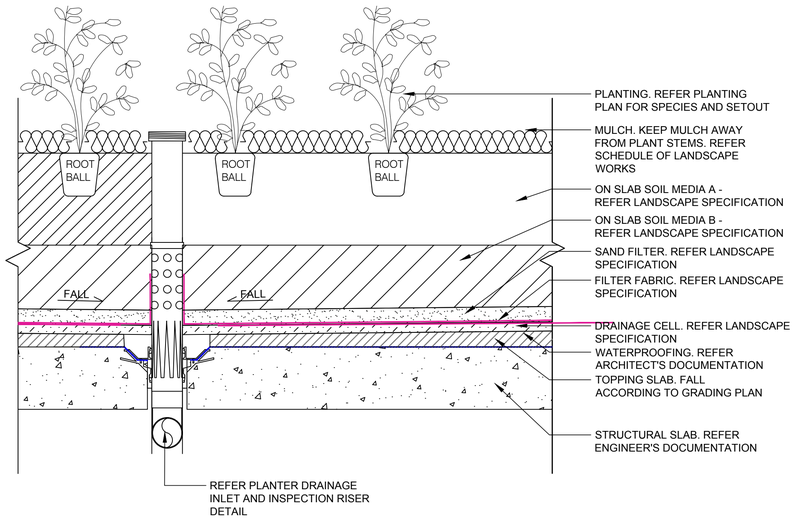
All Drawings To Be Read In Conjunction With Structural, Mechanical, Hydraulic and Electrical Engineers' Detail Drawings And Specifications.

****** ALL WORKS WITHIN THE PUBLIC DOMAIN IN ACCORDANCE WITH NORTH SYDNEY COUNCIL SPECIFICATION AND DETAILS****

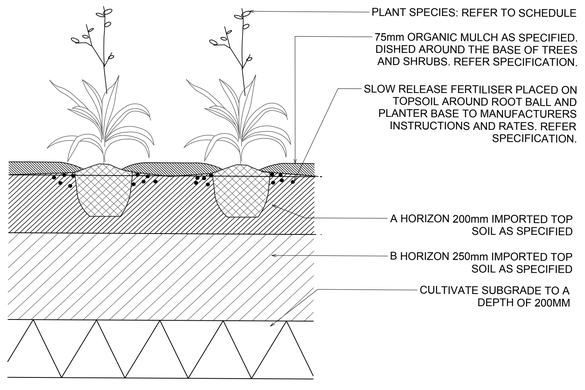
All Levels Indicated Taken To Australian Height Datum (AHD)

Refer to Detail Drawings For Typical Details.

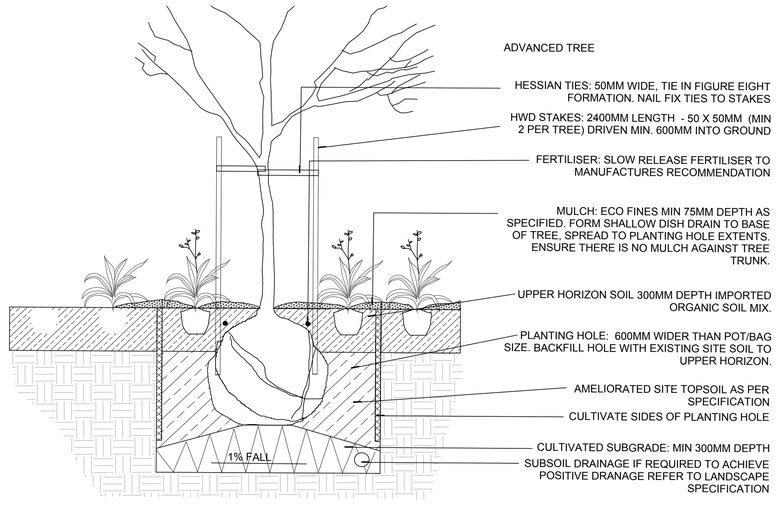
Generally All Materials & Construction to Comply To AS 3700



1 TYPICAL DETAIL: PLANTER ON SLAB
1:10



2 TYPICAL DETAIL: PLANTER ON GRADE
1:10



3 TYPICAL DETAIL: TREE PLANTING ON GRADE
1:20

NOT FOR CONSTRUCTION

No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
2	RE-VISED DA	RI	CR	CR	19.08.22
1	DEVELOPMENT APPLICATION	RI	CR	CR	06.05.22

CLIENT
FORDLAND

ARCHITECT
DKO

LAND AND FORM

DO NOT SCALE

Conditions of Use.
This document may only be used by the client (and any other person who the client has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.

Drawn	RI	Designer	CR/ RI
Drafting Check	CR	Design Check	CR
Approved (Project Director)			
Date			
Scale	1:100	This Drawing must not be used for Construction unless signed as Approved	

Client **FORDLAND**
Project **18 VALE ST, CAMMERAY**
Title **OUTLINE SPECIFICATION & TYPICAL DETAILS**

Original Size **A1**
Drawing No: **LD-DA-900**
Rev: **2**

Plot Date: 19 August 2022 - 10:27 AM Plotted by: Rohit Iyer Cad File No: C:\Users\rohit\Landform Studios\Company Files - Documents\2021\2021055 Vale St Cammeray\Drawings\CAD\2021055_LD_DA100[3].dwg

ANNEXURE C

Clause 4.6 Variation -
Building Height

Clause 4.6 Variation Statement – Height of Buildings (Clause 4.3)

1. INTRODUCTION

This Variation Statement has been prepared in accordance with Clause 4.6 of North Sydney Local Environmental Planning Plan 2013 to accompany the DA which seeks consent to demolish the existing structures to enable the construction of a 4 storey residential flat building with basement parking at Nos. 18 Vale Street and 560-562 Miller Street, Cammeray ('the site').

2. PROPOSED VARIATION

Clause 4.3 of NSLEP 2013 prescribes the maximum building height for the site and refers to the *Height of Buildings Map.* The relevant map indicates that the maximum building height permitted at the subject site is 12m. Building height is defined as:

> *" **building height** (or **height of building**) means:*
>
> *(a) in relation to the height of a building in metres—the vertical distance from ground level (existing) to the highest point of the building, or*
>
> *(b) in relation to the RL of a building—the vertical distance from the Australian Height Datum to 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.."*

The maximum height control is a "development standard" to which exceptions can be granted pursuant to clause 4.6 of the LEP.

As indicated in the sections within the architectural plans and the height blanket diagram included in **Figure 17** below, portions of the lift overrun, stair access walls/roof, balustrades, roof services, and landscape planters are above the 12m height line.

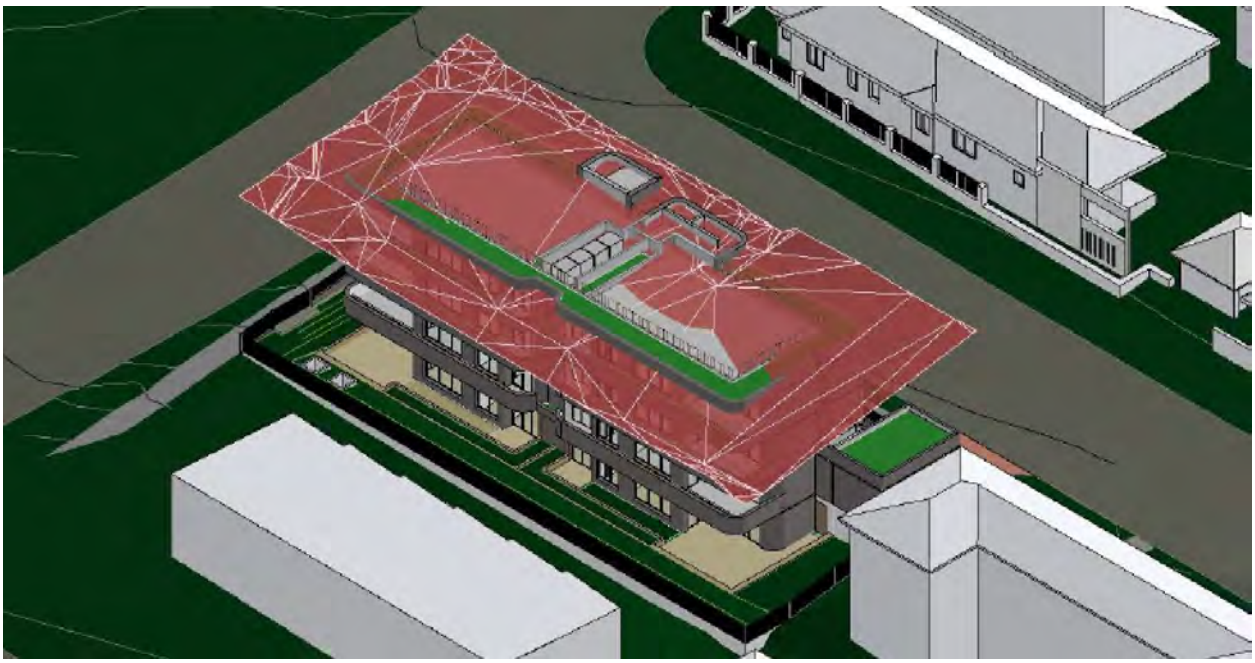


Figure 17 Height blanket diagram

As shown in Section 01 within the architectural plans (**Figure 18**), the proposed development reaches a maximum building height of 13.73m (RL80.18) to the balustrades at the rear of the roof terraces, which equates to a maximum variation of 1.73m (14.4%). Notably, the terrace balustrades are setback from the edges of the building, with the variations at the edges of the building at the rear reaching a maximum height of 0.71m to the landscape planter.

Furthermore, due to the topography of the site and the existing ground level, the remaining portions of the balustrading vary in building height from 12.4m to 12.94m along Section 02 (**Figure 19**), and 12.58m to 13.36m along Section 03 (**Figure 20**).

Lesser height breaches include; the lift overrun, reaching a height of 13.63m (RL80.63) when measured from the existing ground level, equating to a height variation of 1.63m (13.5%); the roof services, sitting at a maximum height of 12.85m (79.80); and the stair access walls reaching a height of 12.73m (RL80.15) at the front building line, and increasing to 12.76 (RL79.80) further into the site.

The roof terrace itself will comply with the 12m height limit, siting at RL78.70, with the exception of a small portion of the Apartment 7 Terrace which exceeds the height limit by 150mm.

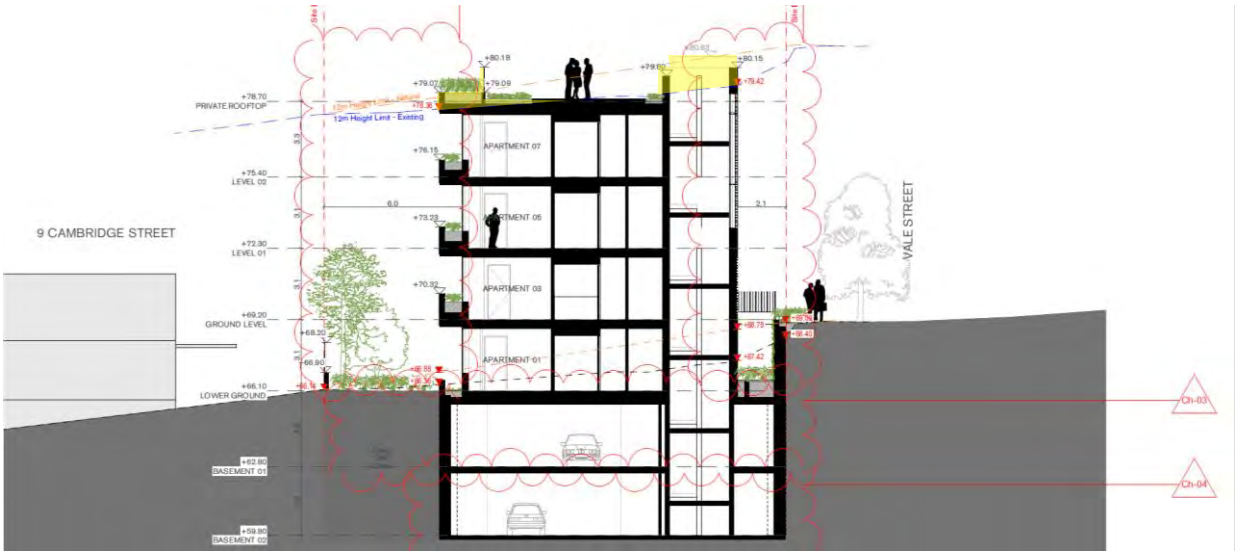


Figure 18 Section 01 of the proposed development, with height breaches highlighted yellow.

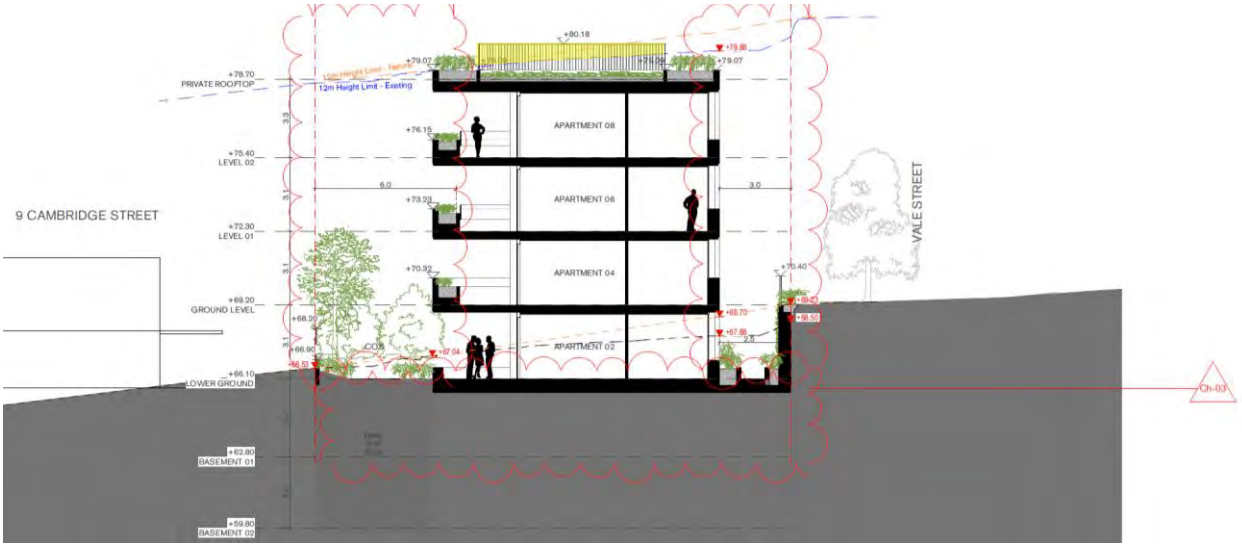


Figure 19 Section 02 of the proposed development, with height breaches highlighted yellow.

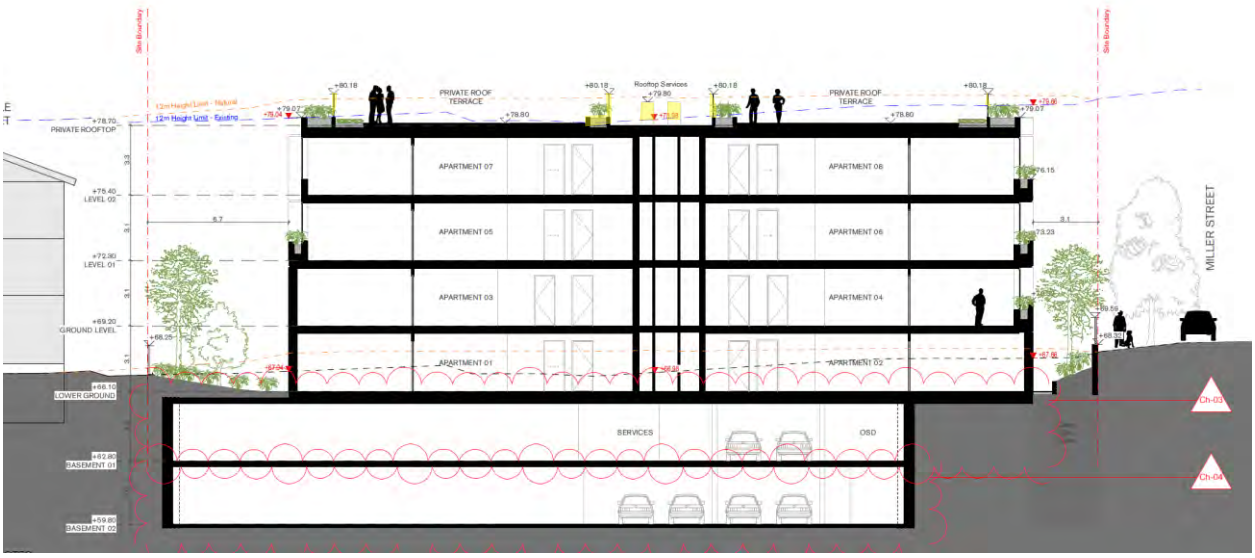


Figure 20 Section 03 of the proposed development, with height breaches highlighted yellow.

An exception is requested to the maximum building height standard under Clause 4.6 of the LEP.

3. OBJECTIVES AND PROVISIONS OF CLAUSE 4.6

The objectives and provisions of Clause 4.6 are as follows:

> ***"4.6 Exceptions to development standards***
>
> *(1) The objectives of this clause are as follows:*
>
> *(a) to provide an appropriate degree of flexibility in applying certain development standards to particular development,*
>
> *(b) to achieve better outcomes for and from development by allowing flexibility in particular circumstances.*
>
> *(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.*
>
> *(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.*
>
> *(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 Secretary has been obtained.

(5) In deciding whether to grant concurrence, the Secretary 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 Secretary before granting concurrence.

(6) Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if:

(a) the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or

(b) the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.

Note.

When this Plan was made it did not include all of these zones.

(7) After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).

(8) This clause does not allow development consent to be granted for development that would contravene any of the following:

(a) a development standard for complying development,

(b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,

(c) clause 5.4,

(ca) in relation to land identified as "Land in St Leonards" on the Exceptions to Development Standards Map—clause 4.3 (2) by more than 3 metres (excluding plant rooms and similar structures),

(cb) clause 6.3 (2) (a) and (b).

(8A) Subclause (8) (ca) ceases to apply on 31 December 2015.

The development standards in clause 4.3 are not "expressly excluded" from the operation of clause 4.6.

Objective 1(a) of Clause 4.6 is satisfied by the discretion granted to a consent authority by virtue of Subclause 4.6(2) and the limitations to that discretion contained in subclauses (3) to (8). This submission will address the requirements of Subclauses 4.6(3) & (4) in order to demonstrate to the consent authority that the exception sought is consistent with the exercise of "an appropriate degree of flexibility" in applying the development standard, and is therefore consistent with objective 1(a). In this regard, the extent of the discretion afforded by Subclause 4.6(2) is not numerically limited, in contrast with the development standards referred to in, Subclause 4.6(6).

4. THAT COMPLIANCE WITH THE DEVELOPMENT STANDARD IS UNREASONABLE OR UNNECESSARY IN THE CIRCUMSTANCES OF THE CASE (CLAUSE 4.6(3)(a))

In *Wehbe V Pittwater Council* (2007) NSW LEC 827 Preston CJ sets out ways of establishing that compliance with a development standard is unreasonable or unnecessary. This list is not exhaustive. It states, inter alia:

> *"An objection under SEPP 1 may be well founded and be consistent with the aims set out in clause 3 of the Policy in a variety of ways. The 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."*

The judgement goes on to state that:

> *" The rationale is that development standards are not ends in themselves but means of achieving ends. The ends are environmental or planning objectives. Compliance with a development standard is fixed as the usual means by which the relevant environmental or planning objective is able to be achieved. However, if the proposed development proffers an alternative means of achieving the objective strict compliance with the standard would be unnecessary (it is achieved anyway) and unreasonable (no purpose would be served)."*

Preston CJ in the judgement then expressed the view that there are 5 different ways in which an objection may be well founded and that approval of the objection may be consistent with the aims of the policy, as follows (with emphasis placed on number 1 for the purposes of this Clause 4.6 variation [our underline]):

1. *The objectives of the standard are achieved notwithstanding non-compliance with the standard;*
2. *The underlying objective or purpose of the standard is not relevant to the development and therefore compliance is unnecessary;*
3. *The underlying object or purpose would be defeated or thwarted if compliance was required and therefore compliance is unreasonable;*
4. *The development standard has been virtually abandoned or destroyed by the Council's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable;*
5. *The zoning of the particular land is unreasonable or inappropriate so that a development standard appropriate for that zoning is also unreasonable and unnecessary as it applies to the land and compliance with the standard that would be unreasonable or unnecessary. That is, the particular parcel of land should not have been included in the particular zone.*

Relevantly, in *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118* (paragraph 16), Preston CJ makes reference to *Wehbe* and states:

"…Although that was said in the context of an objection under State Environmental Planning Policy No 1 – Development Standards to compliance with a development standard, the discussion is equally applicable to a written request under cl 4.6 demonstrating that compliance with a development standard is unreasonable or unnecessary."

Compliance with the maximum building height development standard is considered to be unreasonable and unnecessary as the objectives of that standard are achieved for the reasons set out in Section 7 of this statement. For the same reasons, the objection is considered to be well-founded as per the first method underlined above.

Notably, under Clause 4.6(4)(a)(ii) a consent authority must now be satisfied that the contravention of a development standard 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. Clause 4.6(4)(a)(ii) is addressed in Section 6 below.

5. SUFFICIENT ENVIRONMENTAL PLANNING GROUNDS (CLAUSE 4.6(3)(b))

Having regard to Clause 4.6(3)(b) and the need to demonstrate that there are sufficient environmental planning grounds to justify contravening the development standard, the following planning grounds are submitted to justify contravening the maximum building height:

1. The proposed height non-compliance relates to a minor portion of the building and does not significantly increase the bulk of the development when viewed from the streetscape and from the adjoining sites. Indeed, when viewed from the street or natural level, the height variation will not be readily perceivable by the casual observer and the proposal will appear as a height compliant development, with the no real impacts perceived.

2. It is a superior outcome to provide services and quality private open space on the roof of the building, in order to maximise utilisation of the already built upon area and take advantage of the northern aspect and views afforded to the site.

3. As a result of the proposed building separation distances, which exceed those required by the ADG, the non-compliant elements at the roof level are setback from the side boundaries where the site adjoins other residential development. Therefore the non-compliances will not be highly visible from the adjoining properties, and any visual bulk which may occur as a result of the building height non-compliance is significantly reduced.

4. The additional shadowing that will be caused by the height non-compliance is negligible, the minor portion of shadows for the subject roof structures over the height limit are insignificant and acceptable.

5. It is considered that there is an absence of any material impacts of the proposed non-compliance on the amenity of the environmental values of the locality, the amenity of future building occupants and on area character

6. The height non-compliance is partially a function of the 2.8m fall across the consolidated site from south to north.

7. The breach will not result in any adverse impacts on neighbouring properties in relation to privacy as the roof top terrace areas proposed are well setback from the site boundaries, screened by fencing and plantings, and do not result in any direct sightlines to the adjoining developments since they sit at a lower height. The terrace areas make quality use of space and are considered to be an innovative and smart design outcome given the solar access and views enjoyed as a result of the northern orientation.

8. Despite the minor non-compliance, the objectives of the building height clause have been achieved.

9. The variation to building height does not impact on views or outlook, the streetscape appearance is not adversely impacted by the variation and does not result in any adverse impacts to neighbouring properties beyond that which is otherwise permissible under the controls.

10. The proposed development achieves the objects in Section 1.3 of the EPA Act, specifically:

    a. The proposal promotes the orderly and economic use and development of land through the redevelopment of an underutilised site for residential uses(1.3(c));

    b. The proposed developed promotes good design and amenity of the built environment through a well considered design which is responsive to its setting and context (1.3(g)).

The above environmental planning grounds are not general propositions, they are unique circumstances to the proposed development. The additional height has several benefits specific to the site and the development as addressed above, with little to no adverse impacts on the residential developments surrounding the site.

It is noted that in *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118,* Preston CJ 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:

> *86. The second way is in an error because it finds no basis in cl 4.6. Clause 4.6 does not directly or indirectly establish a test that the non-compliant development should have a neutral or beneficial effect relative to a compliant development. This test is also inconsistent with objective (d) of the height development standard in cl 4.3(1) of minimising the impacts of new development on adjoining or nearby properties from disruption of views or visual intrusion. Compliance with the height development standard might be unreasonable or unnecessary if the non-compliant development achieves this objective of minimising view loss or visual intrusion. It is not necessary, contrary to what the Commissioner held, that the non-compliant development have no view loss or less view loss than a compliant development.*
>
> *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.*

As outlined above, it is considered that in many respects, the proposal will provide for a better planning outcome than a strictly compliant development. At the very least, there are sufficient environmental planning grounds to justify contravening the development standard.

6. CLAUSE 4.6(4)(a)

Preston CJ in *Initial Action Pty Ltd v Woollahra Municipal Council* details how Clause 4.6(4)(a) needs to be addressed (paragraphs 15 and 26 are rephrased below):

The first opinion of satisfaction, in clause 4.6(4)(a)(i), is that a written request seeking to justify the contravention of the development standard has adequately addressed the matters required to be demonstrated by clause 4.6(3). These matters are twofold: first, that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case (clause 4.6(3)(a)) and, secondly, that there are sufficient environmental planning grounds to justify contravening the development standard (clause 4.6(3)(b)). This written request has addressed Clause 4.6(3)(a) in Section 4 above (and furthermore in terms of meeting the objectives of the development standard, this is addressed in 7a below). Clause 4.6(3)(b) is addressed in Section 5 above.

The second opinion of satisfaction, in clause 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 particular development standard that is contravened and the

objectives for development for the zone in which the development is proposed to be carried out. The second opinion of satisfaction under cl 4.6(4)(a)(ii) differs from the first opinion of satisfaction under clause 4.6(4)(a)(i) in that the consent authority, or the Court on appeal, must be directly satisfied about the matter in clause 4.6(4)(a)(ii), not indirectly satisfied that the applicant's written request has adequately addressed the matter in clause 4.6(4)(a)(ii). The matters in Clause 4.6(4)(a)(ii) are addressed in Section 7 below.

7. 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 (CLAUSE 4.6(4((a)(ii))

7a. Objectives of Development Standard

The objectives of clause 4.3 height of buildings are as follows:

(a) to promote development that conforms to and reflects natural landforms, by stepping development on sloping land to follow the natural gradient,

(b) to promote the retention and, if appropriate, sharing of existing views,

(c) to maintain solar access to existing dwellings, public reserves and streets, and to promote solar access for future development,

(d) to maintain privacy for residents of existing dwellings and to promote privacy for residents of new buildings,

(e) to ensure compatibility between development, particularly at zone boundaries,

(f) to encourage an appropriate scale and density of development that is in accordance with, and promotes the character of, an area.

In order to address the requirements of subclause 4.6(4)(a)(ii), the relevant objectives of clause 4.3 are addressed in turn below.

OBJECTIVE (A)

The proposed development has been designed to reflect the natural landform and steps down the site, which, notably, falls 2.8m from the southern Vale Street frontage to the northern rear boundary. As a result of the proposal stepping down the site, when viewed from Vale Street, the development appears as a three storey building, and the fourth storey is only visible at the rear of the site. By stepping down the site the proposal reduces the visual bulk of the development, whilst also respecting the natural topography of the land.

Therefore, it is considered that the proposal satisfies Objective (a).

OBJECTIVE (B):

Objective (b) seeks to protect existing views. In terms of views, the height of the building will not result in any significant additional view loss compared with a compliant building, with no views currently enjoyed over the subject site given the scale of development on the southern side of Vale Street. Furthermore, impact on existing views has been analysed in detail at Section 4.3.5.2 of this SEE. Where it was found that the proposed development will not result in any loss of views or outlook when compared to a building with a compliant height and compliant building envelope

It is considered that the proposal satisfies Objective (b).

OBJECTIVE (C):

Objective (c) seeks to allow maintain levels of solar access to existing dwellings, public reserves and streets, and to promote solar access for future development.

In terms of daylight access to existing dwellings and the public domain, the proposed height non-compliance does not contribute towards any significant additional overshadowing of adjoining development. A detailed analysis of solar access is provided in Section 4.3.5.1 of this SEE.

The site has a north-south orientation and as such, the majority of shadows fall within the site and to the street. The shadow diagrams provided with the plans demonstrate that the only overshadowing caused by the proposed development during midwinter is at 9am to a small portion of the sites on the southern side of Vale Street, with all overshadowing falling over the street for the remainder of the day. The small portion of the building which is non-compliant with the height control does not result in overshadowing of surrounding residential properties beyond a compliant building given the site orientation

OBJECTIVE (D):

Objective (d) seeks to maintain privacy for residents of existing dwellings and to promote privacy for residents of new buildings. In terms of privacy, the non-compliance will not have any additional impacts on adjoining properties as the bulk of the non-compliance relates to the lift overrun, landscape planters and services. A small portion of the height variation does relate to the roof top terrace and associated fencing. Given the terrace area is setback 2m from the building edges, and more than 7m from site boundaries shared with residential development, the separation provided, along with the planters and fencing, are considered more than acceptable to combat any privacy issues that may result from the roof top terrace. Furthermore, the adjoining developments sit below the proposed roof terrace, and therefore no direct sightlines are enabled to living areas. In relation to overlooking of private open spaces, balconies of the adjoining properties are oriented to the street away from the proposed development, and therefore the roof terrace is not capable of looking into these existing spaces.

Overall, the proposal has been sensitively designed in regards to the adjoining apartments and dwellings to ensure privacy to dwellings and their private open space is retained.

OBJECTIVE (E)

Objective (e) refers to being “compatible” with development. It is considered that “compatible” does not promote “sameness” in built form but rather requires that development fits comfortably with its urban context. Of relevance to this assessment are the comments of Roseth SC in Project Venture Developments Pty Ltd v Pittwater Council [2005] NSWLEC 191:

> *“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 siting and scale of the proposed development has been designed to distribute building mass in a manner that best minimises impact on adjoining development and achieves good levels of solar access and separation from neighbouring dwellings. The overall building height will be perceived as 3 and 4 storeys which is the typical type and scale of building emerging in the area and anticipated by the building height control. It will therefore be a built form which is reasonably anticipated in the locality.

The proposed development is in line with the desired future character of the locality and provides high quality residential accommodation that responds to the site topography. The proposed development is a high quality, well designed scheme sited within in a landscaped setting and is thus consistent with the vision for development in the R4 zone.

Accordingly, it is considered that the scale of the buildings is compatible with the desired future character of the locality and the site context. The height breach does not offend this compatibility in any noticeable way. The proposal therefore satisfies Objective (e).

OBJECTIVE (F)

Objective (f) seeks to encourage an appropriate scale and density of development that is in accordance with, and promotes the character of, an area.

It is considered that the architectural treatment of the building in terms of setbacks, materials and viewing points from which the non-compliances would be seen, visual impacts will be minimal. The site is located adjacent to a four storey residential flat building to the west and diagonal to a four storey residential flat building to the north west. As such, the proposal is consistent with the density of development within the immediate vicinity of the site, and is compatible with the character of the area as a R4 High Density residential zone, where four storey flat buildings are not only anticipated by encouraged as the desired future character.

The density and scale of the building is consistent with emerging built form in the locality. Accordingly, the proposal satisfies Objective (d).

Overall, the proposal will not compromise the use and enjoyment of neighbouring properties. The examination of the proposal in this report demonstrates that there will be no unreasonable detrimental impact to privacy and daylight access for neighbouring properties as a result of the non-compliant part of the building, nor will it be noticeable from any public space.

The proposed development is therefore consistent with the objectives for maximum height, despite the numeric non-compliance.

7b. Objectives of the Zone

Clause 4.6(4)(a)(ii) also requires that the consent authority be satisfied that the development is in the public interest because it is consistent with relevant zone objectives. The objectives of Zone R4 are as follows:

- *To provide for the housing needs of the community within a high density residential environment.*
- *To provide a variety of housing types within a high density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To encourage the development of sites for high density housing if such development does not compromise the amenity of the surrounding area or the natural or cultural heritage of the area.*
- *To ensure that a reasonably high level of residential amenity is achieved and maintained.*

The proposed development is demonstrably consistent with the relevant zone objectives in that it provides a quality 3 bedroom apartments, including the provision of two adaptable apartments, within a high quality development envisaged by the controls for the R4 High Density Residential zone.

For these reasons the development proposal meets the objectives for development in Zone R4.

The height variation is not antipathetic to the objectives for the zone and for that reason the proposed variation is acceptable.

8. THE CONCURRENCE OF THE SECRETARY HAS BEEN OBTAINED (CLAUSE 4.6(4)(b)

The second precondition in cl 4.6(4) that must be satisfied before the consent authority can exercise the power to grant development consent for development that contravenes the development standard is that the concurrence of the Planning Secretary (of the Department of Planning and the Environment) has been obtained (cl 4.6(4)(b)). Under cl 64 of the Environmental Planning and Assessment Regulation 2000, the Planning Secretary has given written notice dated 21 February 2018, attached to the Planning Circular PS 18-003 issued on 21 February 2018, to each consent authority, that it may assume the Planning 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.

9. WHETHER CONTRAVENTION OF THE DEVELOPMENT STANDARD RAISES ANY MATTER OF SIGNIFICANCE FOR STATE OR REGIONAL ENVIRONMENTAL PLANNING (CLAUSE 4.6(5)(a))

Contravention of the maximum height development standard proposed by this application does not raise any matter of significance for State or regional environmental planning.

10. THE PUBLIC BENEFIT OF MAINTAINING THE DEVELOPMENT STANDARD (CLAUSE 4.6(5)(b))

As detailed in this submission there are no unreasonable impacts that will result from the proposed variation to the maximum building height. As such there is no public benefit in maintaining strict compliance with the development standard. Whilst the proposed building (entirely the roof structures) exceeds the maximum permitted on the site, 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. 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.

11. CONCLUSION

Having regard to all of the above, it is our opinion that compliance with the maximum height development standard is unreasonable and unnecessary in the circumstances of this case as the development meets the objectives of that standard and the zone objectives. The proposal has also demonstrated sufficient environmental planning grounds to support the breach.

Therefore, insistence upon strict compliance with that standard would be unreasonable. On this basis, the requirements of Clause 4.6(3) are satisfied and the variation supported.

SPARKS +PARTNERS CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE

PO Box 979
Level 1, 91 George Street
PARRAMATTA NSW 2150
Office 02 9891 5033
Fax 02 9891 3898
admin@sparksandpartners.com.au
sparksandpartners.com.au
ABN 95 161 152 969

10 May 2022
Job No: 22023

North Sydney Council
C/o Ford Land Company
3-5 West Street
North Sydney NSW 2060

Re: Proposed Residential Flat building, 560-562 Miller St and 18 Vale St, Cammeray – Stormwater Drainage Design Summary for DA Submission

Attention North Sydney Council,

We Sparks & Partners consulting engineers have been engaged to provide civil engineering services for the proposed residential development at 560-562 Miller Street and 18 Vale Street, Cammeray. The engineering services include the design and documentation of the stormwater drainage infrastructure for the development.

Existing Site

The existing site conditions consist of three (3) individual residential developments each occupying the individual lots of 18 Vale St, 560 and 562 Miller St, Cammeray. The sites are generally flat in the east to west direction and have a general fall towards the north. A survey of the existing sites is provided in attachment A for reference.

Proposed Development

The proposed development consists of a residential flat building over the three lots, which will be consolidated as part of the development proposal. Detailed architectural plans have been prepared by DKO detailing the proposal and are to be read in conjunction with this design summary and stormwater engineering plans provided in attachment B.

Consent Authority

North Sydney Council being the approval authority requires Water Sensitive Urban Design (WSUD) measures and On-Site Detention (OSD) to be incorporated into the site stormwater management. The stormwater management has been in accordance with the following council documents:

- North Sydney DCP 2013 (NSDCP)
- North Sydney Council Performance Guide for engineering and construction (NSCPG).

Water Quality

As per (NSDCP) Part B, Section 1.6.8 Stormwater management the development must demonstrate how site run-off will be improved as per provision P3 and P7. To ensure the quality of stormwater leaving the site meets these requirements, water quality treatment

measures have been employed. The treatment measure used to treat the collected stormwater run-off consist of a StormFilter chamber with one (1) filter cartridge.

Modelling of the existing site conditions and developed site with the proposed treatment measures has been undertaken using the MUSICX software based on the catchment plan provided in attachment B. The modelling results of the water quality for both existing and proposed are detailed in Table 1 below, along with a figure of the prepared model.

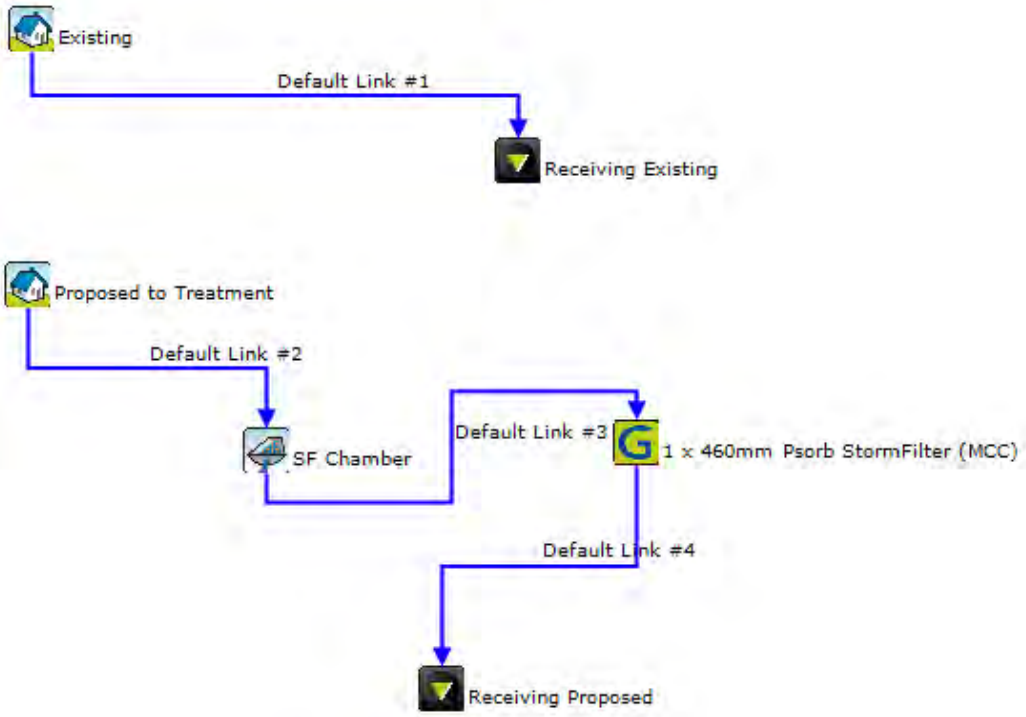


Figure 1 - MUSICX Model

Pollutant	Existing Load	Developed Load	Reduction (%)
Total Suspended Solids (kg/yr)	145.1	115.70	51.18
Total Phosphorus (kg/yr)	0.24	0.20	49.52
Total Nitrogen (kg/yr)	1.80	1.45	32.94
Gross Pollutants (kg/yr)	20.31	17.15	100.00

Table 1 - MUSICX Modelling Results

The modelling demonstrates the treatment train improves the stormwater quality in comparison to the pre-development conditions and satisfies provision P7 of section 1.6.8 as per NSDCP. No water quality report has been provided as the gross floor area is less than 2,000m2 in accordance with provision P14 of section 1.6.8 in NSDCP.

Water Quantity

As per (NSDCP) Part B, Section 1.6.8 Stormwater management the development must demonstrate how site discharge will be less than existing as per provision P6. In this regard On-site Stormwater Detention (OSD) has been implemented within the development. The hydrological and hydraulic software DRAINS has been used to size the OSD and demonstrate the post development flow is less than the pre-development/existing site stormwater discharge for all storms ranging from the 1yr ARI through to the 100yr ARI. The modelling is based on the catchment plan provided in attachment B with a summary table and comparison graph of the modelling results provided in table 1 and figure 2 below.

ARI (Yr)	Storm Event (AEP)	Existing Q (L/s)	Development Q (L/s)			
			Orifice	Weir	Bypass	Total
1	1EY	18	15	0	0	15
2	0.5EY	23	21	0	0	21
5	0.2EY	30	27	0	0	27
10	10%	38	33	0	0	33
20	5%	44	38	0	0	38
50	2%	51	45	0	0	45
100	1%	58	51	0	0	51

Table 2 - DRAINS Modelling Summary

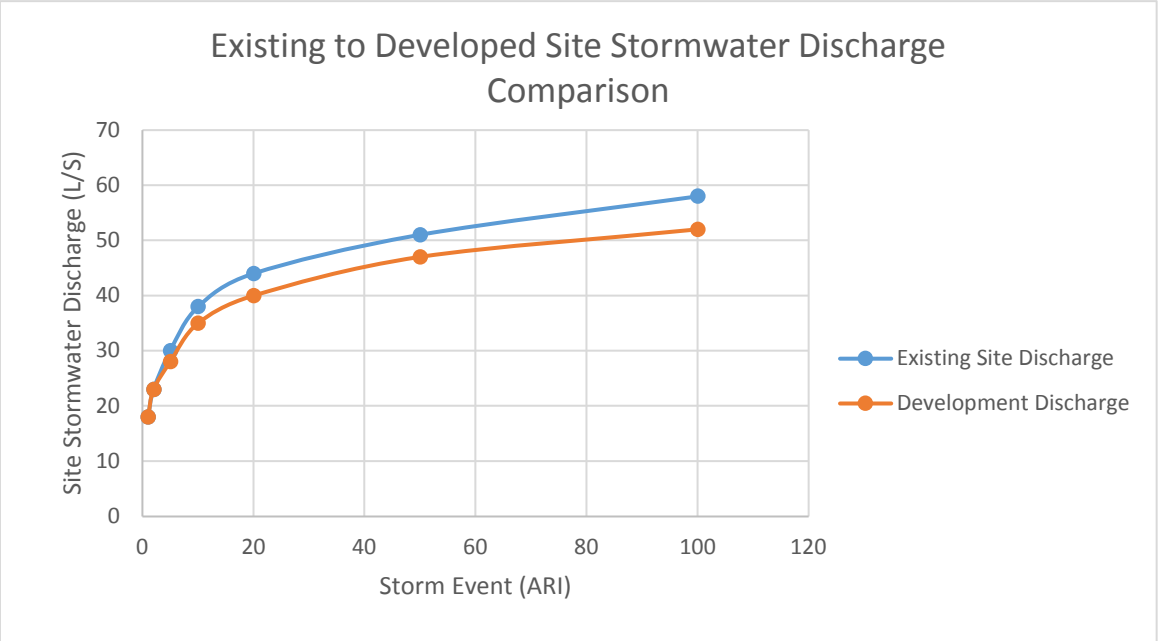


Figure 2 - Site Discharge Comparison Graph

Flooding

The site has been identified as not affected by main stream flooding, as per the flood study by WMA Water (Ref Feb 2017).

Stormwater Disposal

The site is currently serviced by an existing Council drainage system along Miller Street. Due to site levels and the requirement to implement OSD for the proposed development a section of the existing 375dia drainage located in Miller St is proposed to be re-laid at 1%. A Hydraulic Grade Line (HGL) analysis has been undertaken to demonstrate the capacity of the stormwater system and that the proposed modifications will not impact the operation of the drainage system. The HGL longitudinal section is provided in attachment B for reference.

Conclusion

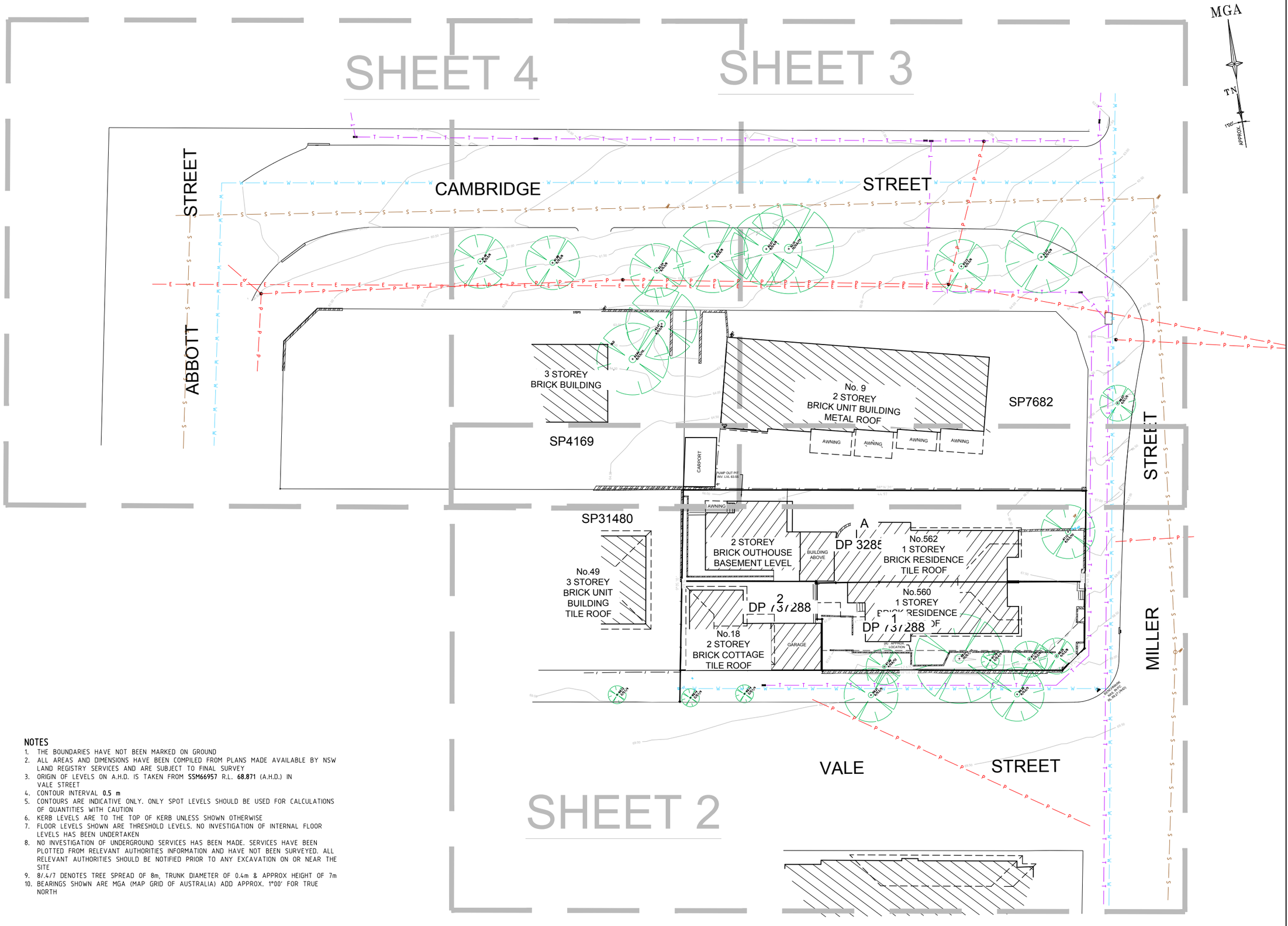
Based on the provision of the prepared engineering plans and detailed DRAINS and MUSICX modelling it is demonstrated that the proposed development will reduce stormwater discharge from the site to less than the pre-development flows and will improve the quality of stormwater discharge by reducing the discharged pollutant load when compared to pre-development levels, in accordance with the provision of Section 1.6.8 Stormwater management of Part B of the NSDCP.

Should you have any questions with regard to the above please do not hesitate to contact the undersigned.

Yours Faithfully,

Morgan Walter
Civil Engineering Manager
Sparks & Partners Consulting Engineers
morgan@sparksandpartners.com.au

APPENDIX A. SURVEY



LEGEND

BENCH MARK	▲
ELECTRIC LIGHT POLE	ELP
PIT WITH METAL LID	MLID
TELSTRA PIT	TEL
STREET SIGN	SS
KERB INLET PIT	KIP
DRAIN	DRN
SEWER MANHOLE	SMH
STOP VALVE	SV
WATER METER	WM
GAS VALVE	GAS
PIT WITH METAL LID	MLID
POWER POLE	PP
GRATED INLET PIT	GIP
STORMWATER MANHOLE	SWMH
ELECTRICITY (U'GROUND)	E
GAS	G
TELSTRA	T
WATER	W
SEWER	S
ELECTRICITY (OVERHEAD)	P

NOTES

1. THE BOUNDARIES HAVE NOT BEEN MARKED ON GROUND
2. ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY NSW LAND REGISTRY SERVICES AND ARE SUBJECT TO FINAL SURVEY
3. ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM **SSM66957** R.L. **68.871** (A.H.D.) IN VALE STREET
4. CONTOUR INTERVAL **0.5 m**
5. CONTOURS ARE INDICATIVE ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION
6. KERB LEVELS ARE TO THE TOP OF KERB UNLESS SHOWN OTHERWISE
7. FLOOR LEVELS SHOWN ARE THRESHOLD LEVELS. NO INVESTIGATION OF INTERNAL FLOOR LEVELS HAS BEEN UNDERTAKEN
8. NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. SERVICES HAVE BEEN PLOTTED FROM RELEVANT AUTHORITIES INFORMATION AND HAVE NOT BEEN SURVEYED. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE
9. 8/.4/7 DENOTES TREE SPREAD OF 8m, TRUNK DIAMETER OF 0.4m & APPROX HEIGHT OF 7m
10. BEARINGS SHOWN ARE MGA (MAP GRID OF AUSTRALIA) ADD APPROX. 1°00' FOR TRUE NORTH

(A) EASEMENT FOR SEWERAGE PURPOSES OVER EXISTING LINE OF PIPES (DP737288)

DIAL BEFORE YOU DIG www.1100.com.au

GDA2020

0 2 4 6 8 10
SCALE 1: 100 @ A1

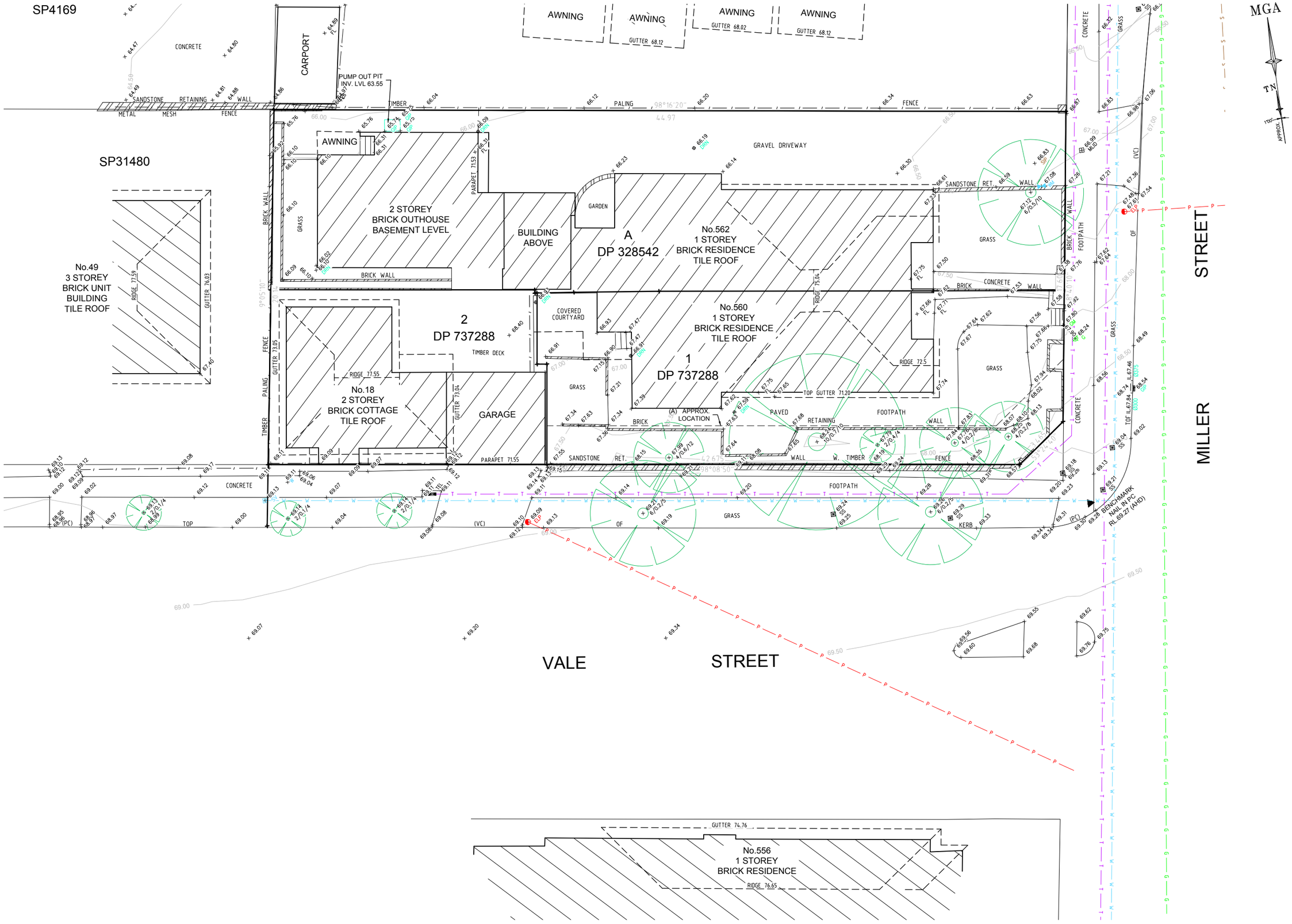
Revision	Date	Description	Reference
H	00/00/00	–	00
G	00/00/00	–	00
F	00/00/00	–	00
E	00/00/00	–	00
D	00/00/00	–	00
C	00/00/00	–	00
B	00/00/00	–	00
A	02/03/22	ADDITIONAL DETAIL SURVEY ADDED	02

LTS CONFIDENCE TOGETHER
www.ltsl.com.au | P 1300 587 000

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:
.....
Registered Surveyor NSW

Client - FORD LAND COMPANY PTY LTD
Drawing title
PLAN OF DETAIL AND LEVELS OVER LOTS 1 & 2 IN DP737288 AND LOT A IN DP328542 ALSO KNOWN AS 18 VALE STREET & 560-562 MILLER STREET CAMMERAY

datum AHD
site Area 901.9m²
LGA NORTH SYDNEY
reference number 51543 001DT
scale 1:200 @A1
date of survey 22/10/2021
SHEET 1 OF 5



DIAL BEFORE YOU DIG www.1100.com.au

GDA2020

0 2 4 6 8 10

SCALE 1:100 @ A1

Revision	Date	Description	Reference
H	00/00/00	--	00
G	00/00/00	--	00
F	00/00/00	--	00
E	00/00/00	--	00
D	00/00/00	--	00
C	00/00/00	--	00
B	00/00/00	--	00
A	02/03/22	ADDITIONAL DETAIL SURVEY ADDED	02

LTS CONFIDENCE TOGETHER
www.ltsl.com.au | P 1300 587 000

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

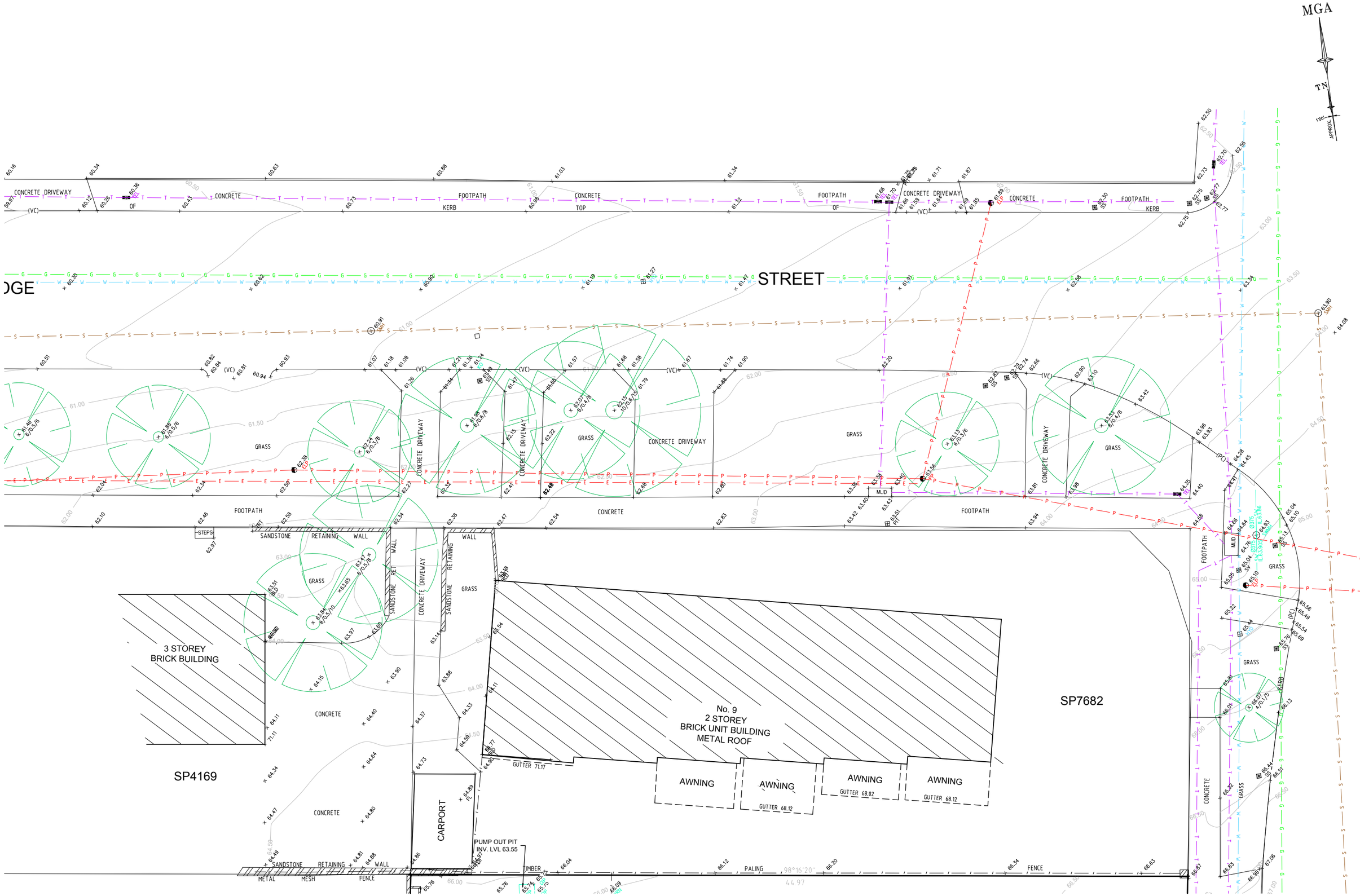
.....
Registered Surveyor NSW

Client - FORD LAND COMPANY PTY LTD

Drawing title
PLAN OF DETAIL AND LEVELS OVER LOTS 1 & 2 IN DP737288 AND LOT A IN DP328542 ALSO KNOWN AS 18 VALE STREET & 560-562 MILLER STREET CAMMERAY

datum AHD
site Area 901.9m²
LGA NORTH SYDNEY

reference number 51543 001DT
scale 1:100 @A1
date of survey 22/10/2021
SHEET 2 OF 5



DIAL BEFORE YOU DIG www.1100.com.au

GDA2020

0 2 4 6 8 10
SCALE 1:100 @ A1

Revision	Date	Description	Reference
H	00/00/00	–	00
G	00/00/00	–	00
F	00/00/00	–	00
E	00/00/00	–	00
D	00/00/00	–	00
C	00/00/00	–	00
B	00/00/00	–	00
A	02/03/22	ADDITIONAL DETAIL SURVEY ADDED	02

LTS CONFIDENCE TOGETHER
www.ltsi.com.au | P 1300 587 000

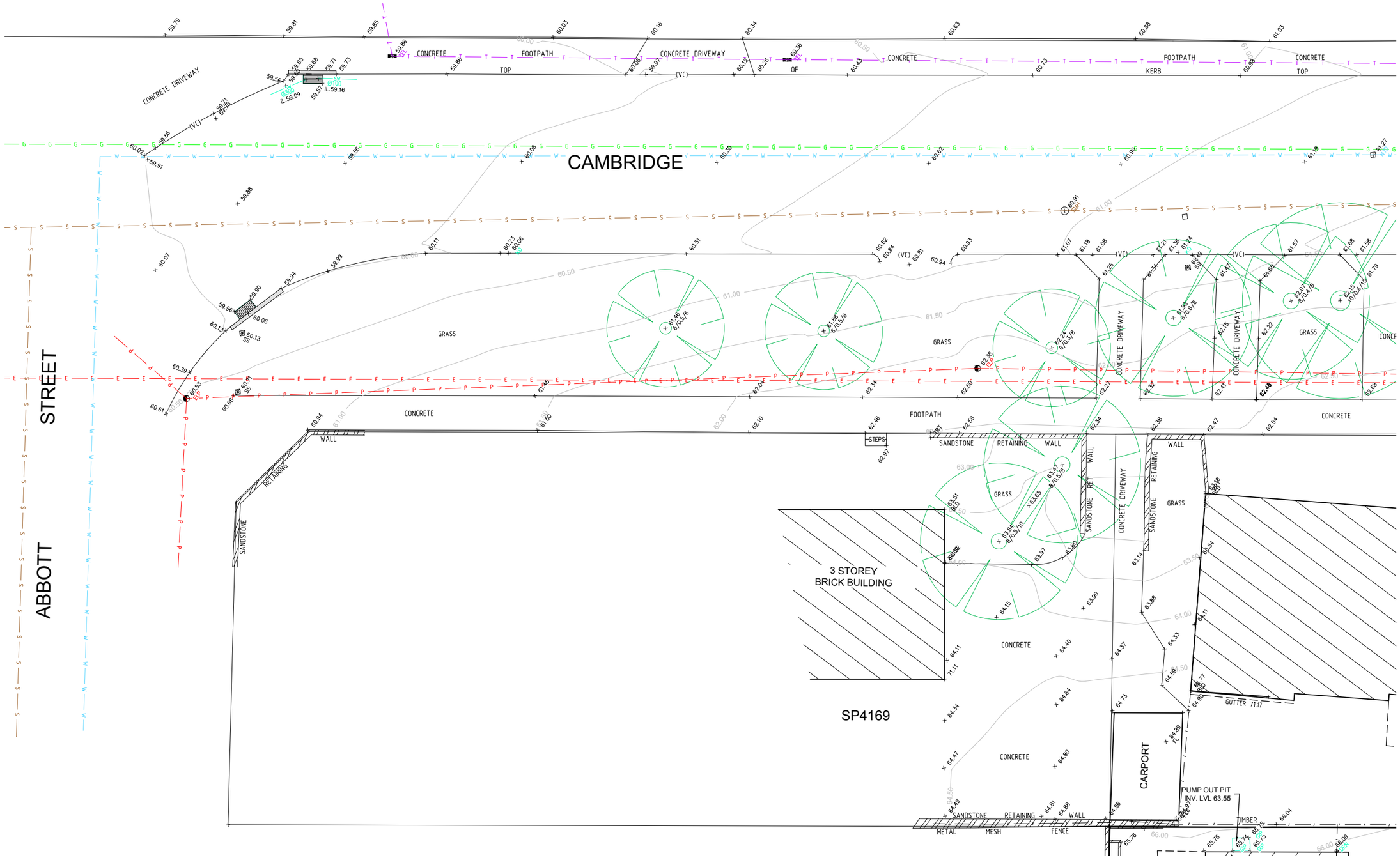
THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

Registered Surveyor NSW

Client - FORD LAND COMPANY PTY LTD

Drawing title
PLAN OF DETAIL AND LEVELS OVER LOTS 1 & 2 IN DP737288 AND LOT A IN DP328542 ALSO KNOWN AS 18 VALE STREET & 560-562 MILLER STREET CAMMERAY

datum AHD
site Area 901.9m²
LGA NORTH SYDNEY
reference number 51543 001DT
scale 1:100 @A1
date of survey 22/10/2021
SHEET 3 OF 5



DIAL BEFORE YOU DIG www.1100.com.au

GDA2020

0 2 4 6 8 10

SCALE 1:100 @ A1

Revision	Date	Description	Reference
H	00/00/00	–	00
G	00/00/00	–	00
F	00/00/00	–	00
E	00/00/00	–	00

Revision	Date	Description	Reference
D	00/00/00	–	00
C	00/00/00	–	00
B	00/00/00	–	00
A	02/03/22	ADDITIONAL DETAIL SURVEY ADDED	02

LTS CONFIDENCE TOGETHER
www.ltsl.com.au | P 1300 587 000

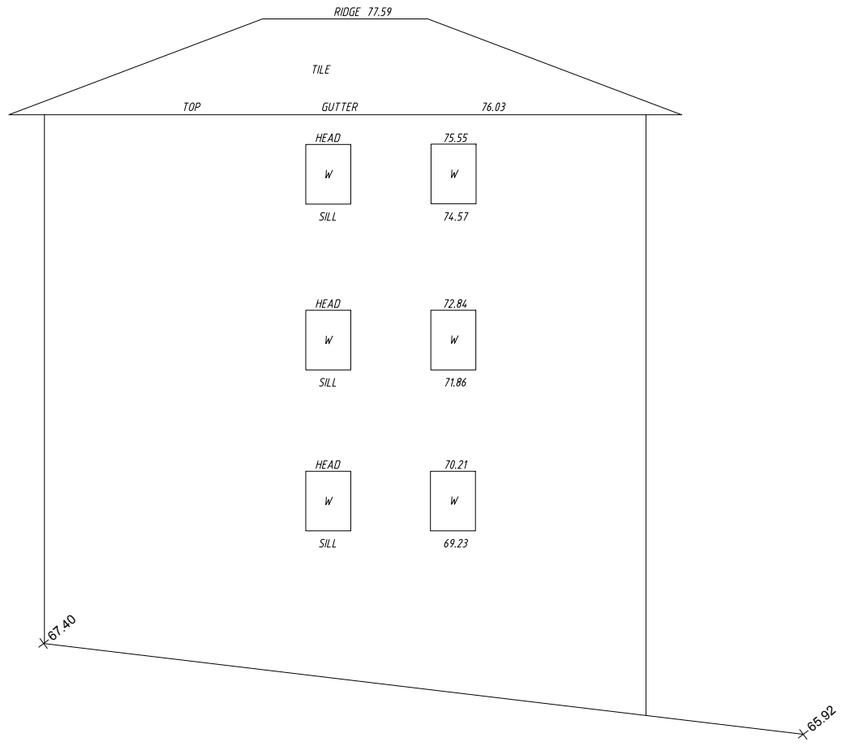
THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

.....
Registered Surveyor NSW

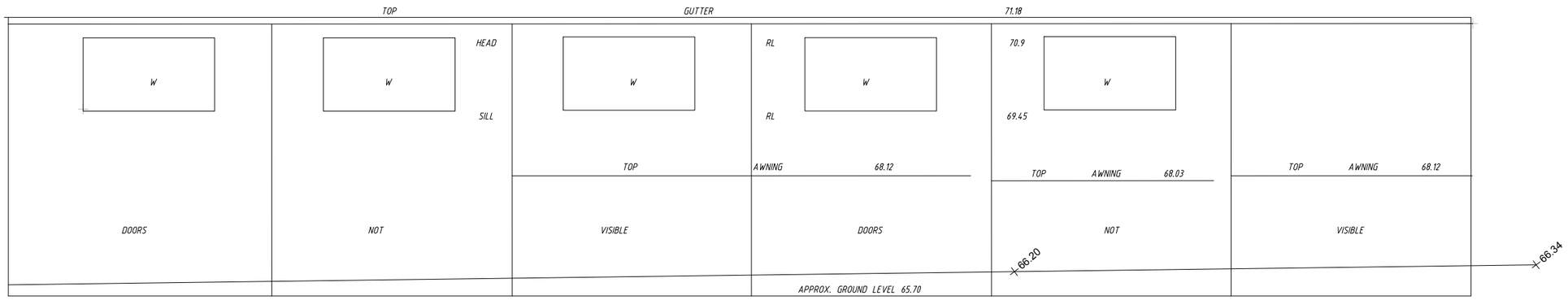
Client - FORD LAND COMPANY PTY LTD

Drawing title
PLAN OF DETAIL AND LEVELS OVER LOTS 1 & 2 IN DP737288 AND LOT A IN DP328542 ALSO KNOWN AS 18 VALE STREET & 560-562 MILLER STREET CAMMERAY

datum	AHD
site Area	901.9m²
LGA	NORTH SYDNEY
reference number	51543 001DT
scale	1:100 @A1
date of survey	22/10/2021
SHEET	OF 5 | 4



EASTERN ELEVATION No.49 ABBOTT STREET



SOUTH ELEVATION No.9 CAMBRIDGE STREET

DIAL BEFORE YOU DIG www.1100.com.au

GDA2020

0 2 4 6 8 10
SCALE 1:100 @ A1

Revision	Date	Description	Reference
H	00/00/00	–	00
G	00/00/00	–	00
F	00/00/00	–	00
E	00/00/00	–	00

Revision	Date	Description	Reference
D	00/00/00	–	00
C	00/00/00	–	00
B	00/00/00	–	00
A	02/03/22	ADDITIONAL DETAIL SURVEY ADDED	02

LTS CONFIDENCE TOGETHER
www.ltsl.com.au | P 1300 587 000

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

Registered Surveyor NSW

Client - FORD LAND COMPANY PTY LTD

Drawing title
PLAN OF DETAIL AND LEVELS OVER LOTS 1 & 2 IN DP737288 AND LOT A IN DP328542 ALSO KNOWN AS 18 VALE STREET & 560-562 MILLER STREET CAMMERAY

datum AHD
site Area 901.9m²
LGA NORTH SYDNEY
reference number 51543 001DT
scale 1:50 @A1
date of survey 22/10/2021
SHEET 5 OF 5

APPENDIX B. CONCEPT STORMWATER DRAINAGE PLANS

PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY
CONCEPT STORMWATER MANAGEMENT PLAN

LOCALITY PLAN
NOT TO SCALE - COURTESY OF SIX MAPS

DRAWING SCHEDULE

DA1101	COVER PAGE & DRAWING SCHEDULE
DA1201	SPECIFICATION SHEET
DA2101	CONCEPT SEDIMENT & EROSION CONTROL PLAN & DETAILS
DA4101	CONCEPT STORMWATER & GRADING PLAN LOWER GROUND
DA4102	CONCEPT STORMWATER & GRADING PLAN BASEMENT
DA4201	CONCEPT STORMWATER ROOF PLAN
DA4301	CONCEPT STORMWATER CATCHMENT PLAN
DA4501	STORMWATER DRAINAGE LONGITUDINAL SECTION
DA4701	CONCEPT STORMWATER MANAGEMENT DETAILS
DA4711	OSD TANK DETAILS

NOT TO SCALE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL –
MECHANICAL –
ELECTRICAL –
CIVIL –

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C10/16-18 Macarthur Street Ultimo NSW 2007 Telephone +61 2 8346 4500

SPARKS + PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/
FPA AUSTRALIA Fire Protection Association Australia CORPORATE MEMBER
DNV·GL ISO 9001
HCAA

DEVELOPMENT APPLICATION ISSUE

DRAWING TITLE
CIVIL DESIGN
COVER PAGE & DRAWING SCHEDULE

DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

SCALE	SIZE	REVISION
NTS	A1	2

PROJECT No 22023
DRAWING No DA1101

W:\2 - PROJECTS\22023\2023 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\B-CIVIL\22023_DA1101X.DWG

SURVEY

1. LEVELS BASED ON SURVEY PREPARED BY:
   LTS, REFERENCE NUMBER 51543 001DT, DATED 22/10/21

SITE WORKS - GENERAL

1. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH LOCAL COUNCIL, AUSTRALIAN AND AUTHORITY STANDARDS.
2. ALL TRENCHING WORKS ARE TO BE RESTORED TO ORIGINAL CONDITION.
3. THE INTEGRITY OF ALL EXISTING AND NEW SERVICES IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. ALL PLANS ARE TO BE READ IN CONJUNCTION WITH APPROVED ARCHITECTS, STRUCTURAL ENGINEERS AND OTHER CONSULTANT'S PLANS. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER FOR CLARIFICATION.
5. THE ENGINEER SHALL BE GIVEN A MIN. OF 48 HOURS NOTICE FOR ALL STORMWATER DRAINAGE AND PAVEMENT INSPECTIONS. CONCRETE SHALL NOT BE DELIVERED UNTIL ENGINEERS APPROVAL IS OBTAINED.

SITE WORKS - ACCESS AND SAFETY

1. ALL WORKS ARE TO BE UNDERTAKEN IN A SAFE MANNER IN ACCORDANCE WITH ALL STATUTORY AND INDUSTRIAL RELATION REQUIREMENTS.
2. ACCESS TO ADJACENT BUILDINGS AND PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
3. WHERE NECESSARY SAFE PASSAGE SHALL BE PROVIDED FOR VEHICLES AND PEDESTRIANS THROUGH OR ADJACENT TO THE SITE.

STORMWATER DESIGN CRITERIA

1. DESIGN CRITERIA.
   - 1.1. ROOF DRAINAGE - REFER TO HYDRAULIC PLANS
   - 1.2. PIPED DRAINAGE - 1:20YR ARI
   - 1.3. OVERLAND FLOWS - GAP FLOW BETWEEN 1:20YR ARI & 1:100YR ARI

APPROVAL AUTHORITY

1. CIVIL DESIGN IS SUBJECT TO APPROVAL FROM THE FOLLOWING AUTHORITIES:
   - 1.1. PENRITH CITY COUNCIL

DEVELOPMENT APPLICATION (DA) STAGE

1. DOCUMENTS ARE PROVIDED FOR DA APPROVAL PURPOSES ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION
2. STORMWATER DESIGN SHOWN IS CONCEPTUAL ONLY AND SUBJECT TO FINAL DESIGN AT CONSTRUCTION CERTIFICATE STAGE
3. FINISHED LEVELS SHOWN ARE CONCEPTUAL ONLY AND SUBJECT TO DETAILED DESIGN AT CONSTRUCTION CERTIFICATE STAGE. FINAL FINISHED LEVELS TO BE ±0.5m FROM LEVELS SHOWN

DESIGN GUIDES

1. COUNCIL GUIDELINE NORTH SYDNEY COUNCIL PERFORMANCE GUIDE FOR ENGINEERING & CONSTRUCTION
2. COUNCIL DCP NORTH SYDNEY DCP 2013 PART B SECTION 1
3. AS1428.1:2009 DESIGN FOR ACCESS AND MOBILITY, PART 1: GENERAL REQUIREMENTS FOR ACCESS – NEW BUILDING WORK
4. AS2032:2006 INSTALLATION OF PVC PIPE SYSTEMS
5. AS2865:2009 CONFINED SPACES
6. AS2890.1:2004 PARKING FACILITIES, PART 1: OFF-STREET CAR PARKING
7. AS2890.6:2009 PARKING FACILITIES, PART 6: OFF-STREET PARKING FOR PEOPLE WITH DISABILITIES
8. AS3500.3:2018 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE
9. AS3725:2007 DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES

SEDIMENT AND EROSION CONTROL

1. THE CONTRACTOR SHALL INSTIGATE ALL SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH COUNCIL AND THE "BLUE BOOK" (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION, PRODUCED BY THE DEPARTMENT OF HOUSING). THESE MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED.
2. THE SEDIMENT & EROSION CONTROL PLAN PRESENTS CONCEPTS ONLY, THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT & MANAGEMENT OF A DETAILED SCHEME MEETING COUNCIL'S DESIGN, AND ALL OTHER REGULATORY AUTHORITY REQUIREMENTS.
3. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHALL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
   a. INSTALL ALL TEMPORARY SEDIMENT FENCES AND BARRIER FENCES. WHERE FENCES ARE ADJACENT TO EACH OTHER THE SEDIMENT FENCE CAN BE INCORPORATED INTO THE BARRIER FENCE.
   b. CONSTRUCT TEMPORARY STABILISED SITE ACCESS. INCLUDING SHAKE DOWN AND WASH PAD.
   c. INSTALL SEDIMENT CONTROL MEASURES AS OUTLINED ON THESE SEDIMENT AND CONTROL PLANS (ONCE APPROVED)
4. THE CONTRACTOR SHALL UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF MINIMUM WORKABLE SIZE.
5. AT ALL TIMES AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. TACIFIERS MAY BE USED TO CONTROL DUST DURING EXTENDED PERIODS OF DRY WEATHER.
6. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) SHALL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
7. WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN STABILISED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED OUT.
8. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED / REHABILITATED.
9. THE CONTRACTOR SHALL ALLOW FOR THE ESTABLISHMENT OF ANY OTHER EROSION PROTECTION MEASURES (IF APPLICABLE).
10. THE CONTRACTOR SHALL REGULARLY INSPECT (MINIMUM TWICE PER WEEK) ALL EROSION AND SEDIMENT CONTROL MEASURES TO ENSURE THEY ARE OPERATING EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.
11. ACCEPTABLE RECEPTORS SHALL BE USED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER. WASTE FROM THESE RECEPTORS SHALL BE DISPOSED OF IN ACCORDANCE WITH REGULATORY AUTHORITY REQUIREMENTS. PAY ALL FEES AND PROVIDE EVIDENCE OF SAFE DISPOSAL.

EXISTING UTILITIES

1. UTILITY INFORMATION SHOWN ON PLAN DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE BASED ON AVAILABLE DOCUMENTARY EVIDENCE
2. THE PRESENCE OF A UTILITY SERVICE, SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION PRIOR TO THE COMMENCEMENT OF ROAD WORKS, AND THE RELATED UTILITY PLANS OBTAINED BY DIALING 110 OR FAX 130 652 077 (DIAL BEFORE YOU DIG)
3. UTILITY LOCATION,SIZE AND DEPTH TO BE CONFIRMED BY SERVICE LOCATING OR NON-DESTRUCTIVE EXCAVATION PRIOR TO CONSTRUCTION. ALL CLASHES WITH PROPOSED SERVICES ARE TO BE RESOLVED
4. CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE RELEVANT SERVICES AUTHORITIES OF THE WORKS AND VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITIES COMMENCING
6. THE CONTRACTOR SHALL LIAISE AND COORDINATE THE TIMING OF THE CONSTRUCTION OF THE WORKS WITH THE RELEVANT SERVICES CONCURRENTLY AT THIS SITE
7. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED TO EXISTING SERVICES AS A RESULT OF THE CONSTRUCTION WORKS

FINISHED LEVELS

1. LEVELS BASED ON SITE SURVEY INFORMATION. THE CONTRACTOR SHALL VERIFY LEVELS PRIOR TO CONSTRUCTION COMMENCEMENT, ANY DISCREPANCIES SHALL BE NOTIFIED TO THE ENGINEER OR SUPERINTENDENT FOR CLARIFICATION
2. CARPARK & SERVICE AREA LAYOUT AND GRADES TO COMPLY WITH AS2890.
3. DRIVEWAY LAYOUT AND DESIGN TO COMPLY WITH APPROVAL AUTHORITY ACCESS DRIVEWAY DESIGN AND CONSTRUCTION SPECIFICATION.
4. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
5. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
6. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE.
7. ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS U.N.O

STORMWATER

1. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS AS2032, AS3500 AND AS3725 AS A MINIMUM.
2. ALL PIPES LESS THAN OR EQUAL TO Ø300mm IN SIZE ARE TO BE SOLVENT WELD-JOINTED uPVC CLASS SN4 U.N.O.
3. ALL PIPES Ø375mm OR GREATER IN SIZE ARE TO BE MIN. CLASS 2 REINFORCED CONCRETE PIPE (RCP) WITH SPIGGOT AND SOCKETED JOINT OR VANTAGE PIPE PLUS (VPIPE+) FIBRE REINFORCED CONCRETE (FRC) WITH VANTAGE PIPE PLUS JOINT U.N.O.
4. ALL PIPES ARE TO BE LAID AT MIN. 1.0% GRADE U.N.O.
5. PIPE BEDDING IS TO BE HS2 UNDER ROADS AND TRAFFICKED AREAS AND SHALL BE H2 IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS U.N.O.
6. ALL PIPE BENDS AND JUNCTIONS ARE TO BE MADE WITH EITHER PURPOSE MADE FITTINGS OR STORMWATER DRAINAGE PITS.
7. MINIMUM COVER FROM THE OBVERT OF THE STORMWATER PIPE OF 300mm IS TO BE PROVIDED IN LANDSCAPED AREAS AND 300mm IN VEHICULAR TRAFFICKED AREAS U.N.O.
8. WHERE MINIMUM COVER CANNOT BE ACHIEVED, CONCRETE ENCASEMENT OF THE AFFECTED PIPE MAY BE UNDERTAKEN WITH 20MPa CONCRETE WITH A MIN. COVER OF 150mm TO ALL SIDES OF THE PIPE. THE CONTRACTOR SHALL CONFIRM THIS REQUIREMENT WITH THE ENGINEER OR SUPERINTENDENT.
9. LAID PIPELINES ARE TO HAVE THE FOLLOWING CONSTRUCTED TOLERANCES:
   a. HORIZONTAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT;
   b. VERTICAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT.
10. ALL DRAINAGE PITS ARE TO BE CAST IN-SITU. PRECAST DRAINAGE PITS MAY BE USED WITH APPROVAL FROM THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PRECAST PIT INSTALLATION WORK METHOD STATEMENT FOR ASSESSMENT BY THE ENGINEER FOR APPROVAL.
11. DRAINAGE PIT COVERS ARE TO BE EITHER GALVANISED STEEL OR CAST IRON CLASS 'B' IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS AND CLASS 'D' IN ALL VEHICULAR TRAFFICKED AREAS U.N.O.
12. DRAINAGE PIT COVERS ARE TO BE 'HEELSAFE' TYPE IN ALL PEDESTRIAN TRAFFICKED AREAS U.N.O.
13. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED PRIOR TO COMMENCING WORKS ON SITE.
14. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
15. DOWN PIPES CONNECTED DIRECT TO PIPES TO BE CONNECTED AT 45° TO THE FLOW DIRECTION WITH A CLEANING EYE PROVIDED AT GROUND LEVEL.

DESIGN SUMMARY

1. OSD REQUIREMENTS:
   SITE AREA = 902m²

   THE OSD HAS BEEN DESIGNED USING THE COUNCIL DCP AND ENGINEERING GUIDELINES.

   REFER TO THE OSD SUMMARY TABLE BELOW FOR POST DEVELOPMENT FLOW CALCULATIONS AND MINIMUM OSD STORAGE TO BE PROVIDED TO MEET COUNCIL'S REQUIREMENTS.

REQUIRED OSD VOLUME SUMMARY					
STORM EVENT (ARI)	PRE-DEVELOPMENT PEAK Q (L/s)	POST DEVELOPMENT PEAK Q (L/s)			TOTAL POST DEVELOPMENT PEAK Q (L/s)
		OSD	WEIR	BYPASS	
1	18	15	0	0	15
2	23	21	0	0	21
5	30	27	0	0	27
10	38	33	0	0	33
20	44	38	0	0	38
50	51	45	0	0	45
100	58	51	0	0	51

2. WSUD REQUIREMENTS:
   SITE AREA = 902m²

   TARGETS:
   THE PROPOSED DEVELOPMENT MUST DEMONSTRATE THE POST DEVELOPMENT QUALITY WILL BE IMPROVED COMPARED TO THE PRE DEVELOPMENT QUALITY.

   MUSIC MODEL GENERATED WHICH CONTAINS A TREATMENT TRAIN OF 1x 460mm PSorb OCEANPROTECT CARTRIDGES LOCATED IN THE OSD TANK. THE SUMMARY OF THIS MODEL CAN BE SEEN IN THE TABLE BELOW.

WSUD CALCULATIONS				
	PRE-DEV LOAD (kg/yr)	POST DEV LOAD (kg/yr)	% REDUCTION	COMPLIANCE
TSS	145.1	115.70	51.18	YES
TP	0.24	0.20	49.52	YES
TN	1.8	1.45	32.94	YES
GP	20.31	17.15	100	YES

NOT TO SCALE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL –
MECHANICAL –
ELECTRICAL –
CIVIL –

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C/10 SE 48 Macarthur Street Ultimo NSW 2007 Australia Telephone +61 2 8448 4500

SPARKS +PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

FPA AUSTRALIA Fire Protection Association Australia CORPORATE MEMBER
DNV·GL ISO 9001
HCAA

DRAWING TITLE
CIVIL DESIGN SPECIFICATION SHEET

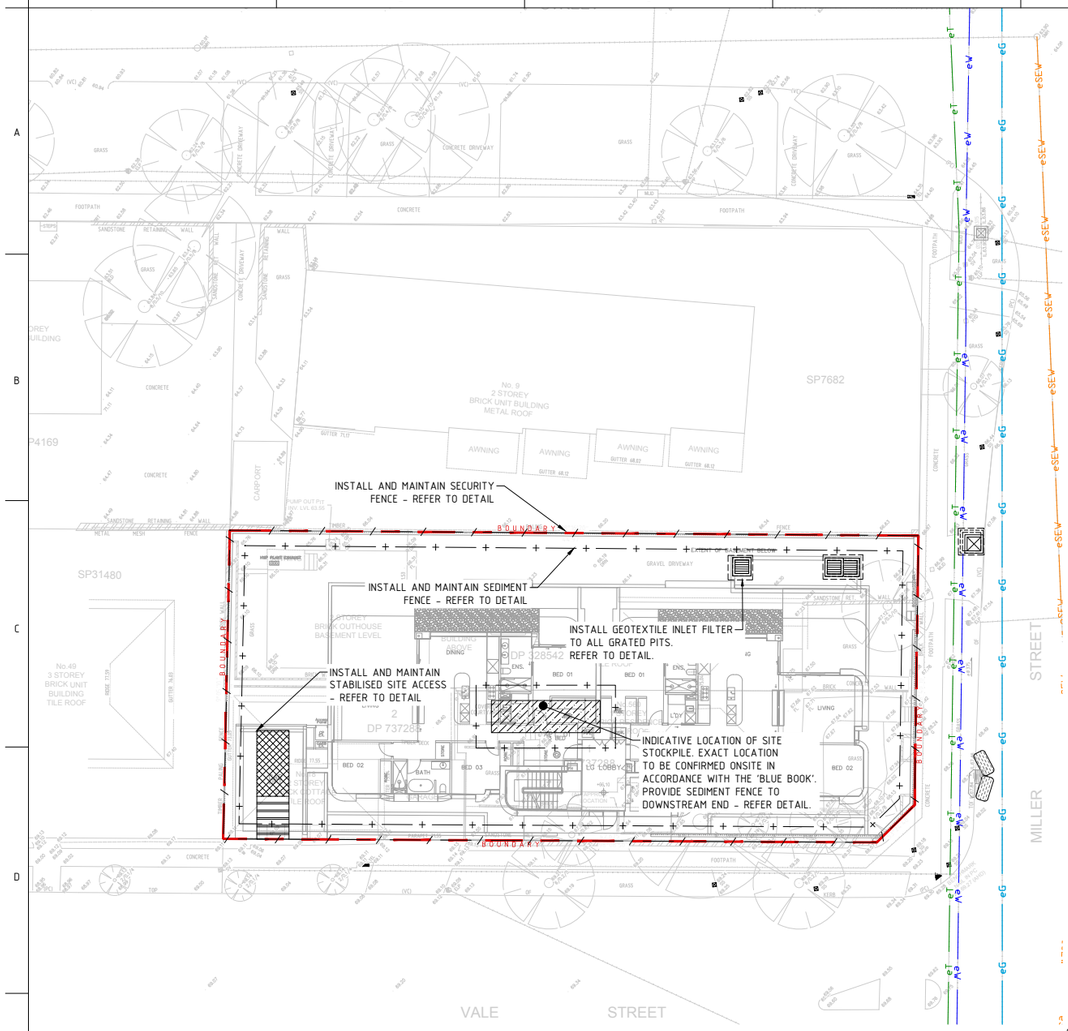
DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

PROJECT No	SCALE	SIZE	REVISION
22023	NTS	A1	2

DRAWING No DA1201

DEVELOPMENT APPLICATION ISSUE

W:\22 - PROJECTS\2022\22023 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\SB-CIVIL\220223_DA1DX.DWG



SEDIMENT & EROSION CONTROL PLAN

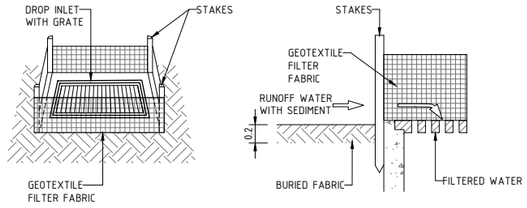
SCALE 1:200

LEGEND

- SITE SECURITY FENCE
- SEDIMENT FENCE
- STABILISED SITE ACCESS
- SITE STOCKPILE
- MESH AND GRAVEL INLET FILTER
- GEOTEXTILE INLET FILTER

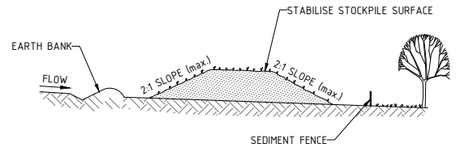
SEDIMENT & EROSION CONTROL NOTES

1. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS



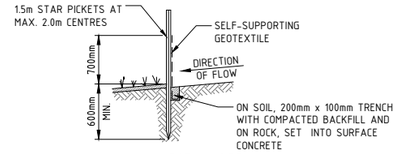
NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.0m LONG STAR PICKETS INTO GROUND AT THE FOUR CORNERS OF PIT WALLS. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. 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.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

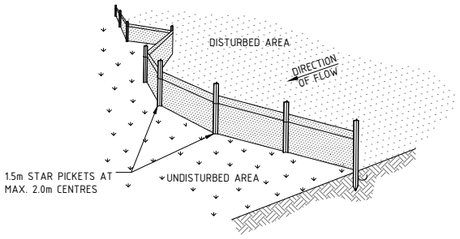


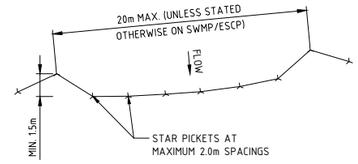
NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. 4. 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.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

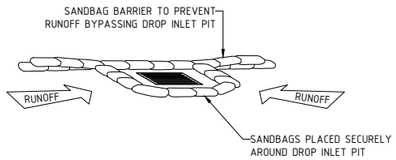


SECTION DETAIL



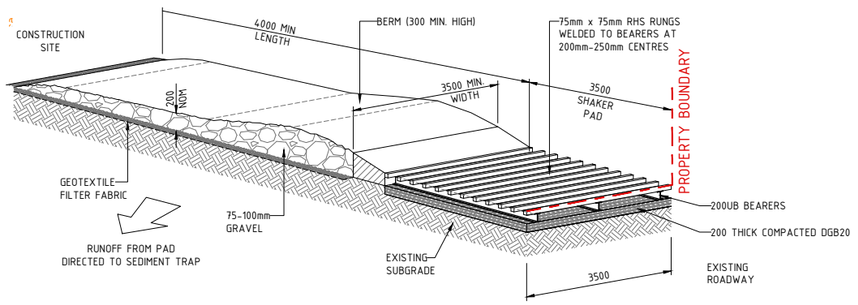


PLAN



NOTE:

GROUND LEVEL AT END OF SANDBAG BARRIER MUST BE HIGHER THAN DROP INLET SANDBAG LAYER.



MAINTENANCE

- THE TEMPORARY ACCESS SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY,
- THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
- INSTALL BARRIER ON EITHER SIDE OF SHAKER PAD TO ENSURE VEHICLES ARE GUIDED ON TO THE PAD.
- INVERT OF SHAKER PAD TO BE DRAINED VIA AGRICULTURAL PIPE WRAPPED IN GEOTEXTILE FABRIC.

NOTES:

1. 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 50L/s IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.0m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. 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.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

AS SHOWN

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT ©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL -
MECHANICAL -
ELECTRICAL -
CIVIL -

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C/19-35 48 Macarthur Street Ultimo NSW 2007 Telephone +61 2 8346 4500

SPARKS + PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

FPA AUSTRALIA Fire Protection Association Australia. CORPORATE MEMBER
HCAA

DRAWING TITLE
CIVIL DESIGN
CONCEPT SEDIMENT & EROSION CONTROL PLAN & DETAILS

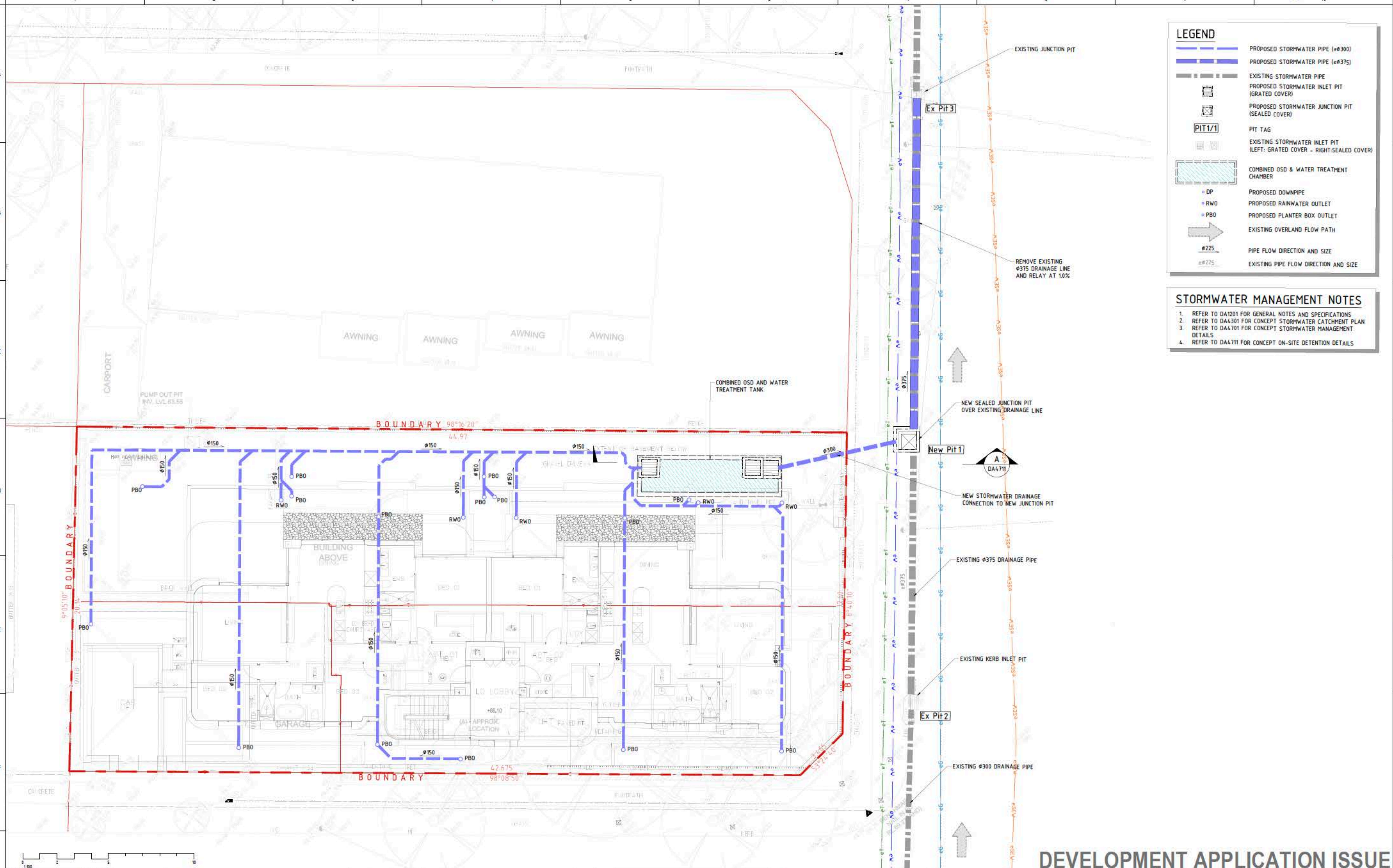
DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

PROJECT No	SCALE	SIZE	REVISION
22023	AS SHOWN	A1	2

DRAWING No DA2101

DEVELOPMENT APPLICATION ISSUE

W:\2 - PROJECTS\22723\23 - 565-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\B-CIVIL\22023_DA21XX.DWG



LEGEND
PROPOSED STORMWATER PIPE (≤ø300)
PROPOSED STORMWATER PIPE (≥ø375)
EXISTING STORMWATER PIPE
PROPOSED STORMWATER INLET PIT (GRATED COVER)
PROPOSED STORMWATER JUNCTION PIT (SEALED COVER)
PIT1/1 PIT TAG
EXISTING STORMWATER INLET PIT (LEFT: GRATED COVER - RIGHT:SEALED COVER)
COMBINED OSD & WATER TREATMENT CHAMBER
DP PROPOSED DOWNPIPE
RWO PROPOSED RAINWATER OUTLET
PBO PROPOSED PLANTER BOX OUTLET
EXISTING OVERLAND FLOW PATH
ø225 PIPE FLOW DIRECTION AND SIZE
ø225 EXISTING PIPE FLOW DIRECTION AND SIZE
STORMWATER MANAGEMENT NOTES
1. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS
2. REFER TO DA4301 FOR CONCEPT STORMWATER CATCHMENT PLAN
3. REFER TO DA4701 FOR CONCEPT STORMWATER MANAGEMENT DETAILS
4. REFER TO DA4711 FOR CONCEPT ON-SITE DETENTION DETAILS
EXISTING JUNCTION PIT
Ex Pit 3
REMOVE EXISTING ø375 DRAINAGE LINE AND RELAY AT 1.0%
COMBINED OSD AND WATER TREATMENT TANK
NEW SEALED JUNCTION PIT OVER EXISTING DRAINAGE LINE
New Pit 1
NEW STORMWATER DRAINAGE CONNECTION TO NEW JUNCTION PIT
EXISTING ø375 DRAINAGE PIPE
EXISTING KERB INLET PIT
Ex Pit 2
EXISTING ø300 DRAINAGE PIPE
BOUNDARY
AWNING
CARPORT
BUILDING ABOVE
GARAGE
PBO
RWO
ø150
ø300
ø375
DEVELOPMENT APPLICATION ISSUE

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

STRUCTURAL -
MECHANICAL -
ELECTRICAL -
CIVIL -

CLIENT

BUILDER

PROJECT: PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

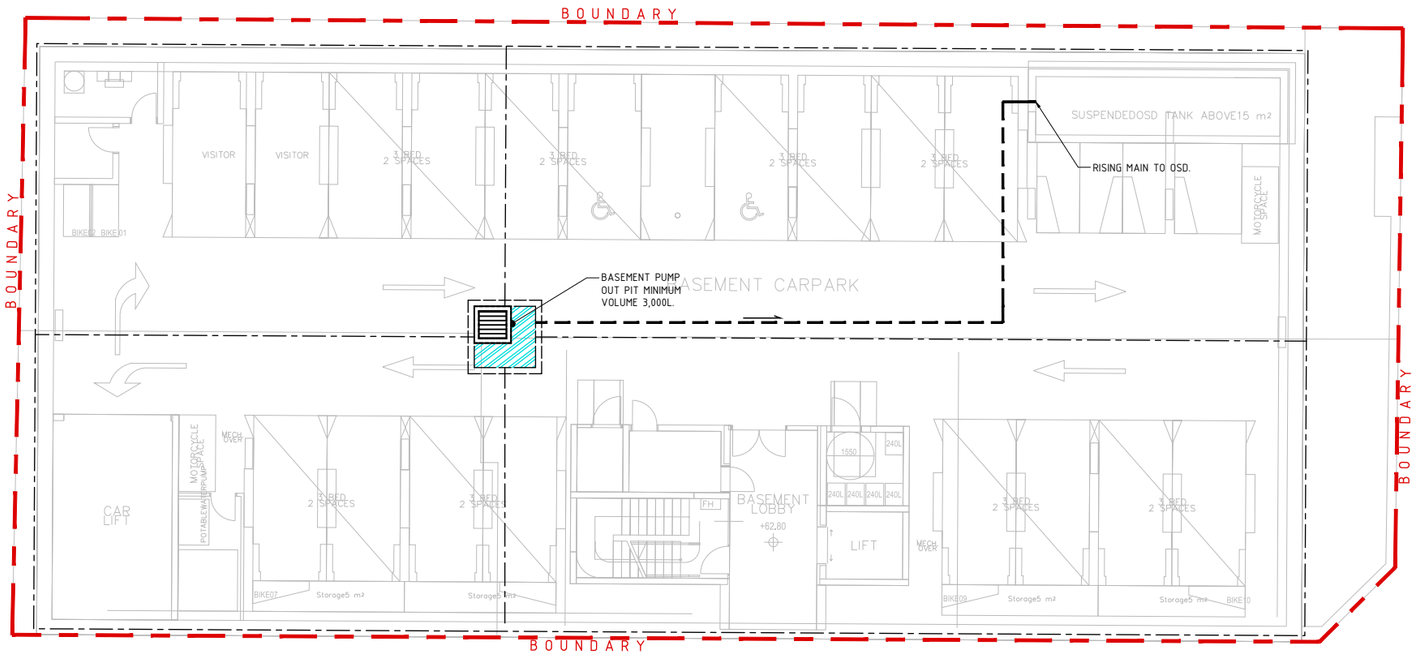
ARCHITECT: DKO

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

DRAWING TITLE: CIVIL DESIGN CONCEPT STORMWATER & GRADING PLAN LOWER GROUND

DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

PROJECT No	SCALE	SIZE	DRAWING No	REVISION
22023	1:100 @ A1	A1	DA4101	2



LEGEND

- PROPOSED STORMWATER INLET PIT (GRATED COVER)
- PROPOSED SUBSOIL DRAINAGE LINE
- BASEMENT PUMP OUT

STORMWATER MANAGEMENT NOTES

1. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS
2. REFER TO DA4101 FOR CONCEPT STORMWATER LOWER GROUND
3. REFER TO DA4701 FOR CONCEPT STORMWATER MANAGEMENT DETAILS
4. REFER TO DA4711 FOR CONCEPT ON-SITE DETENTION DETAILS

1:100

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT.

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL –
MECHANICAL –
ELECTRICAL –
CIVIL –

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C19/35-41 Macarthur Street Ultimo NSW 2007 Australia Telephone +61 2 8346 4500

SPARKS + PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

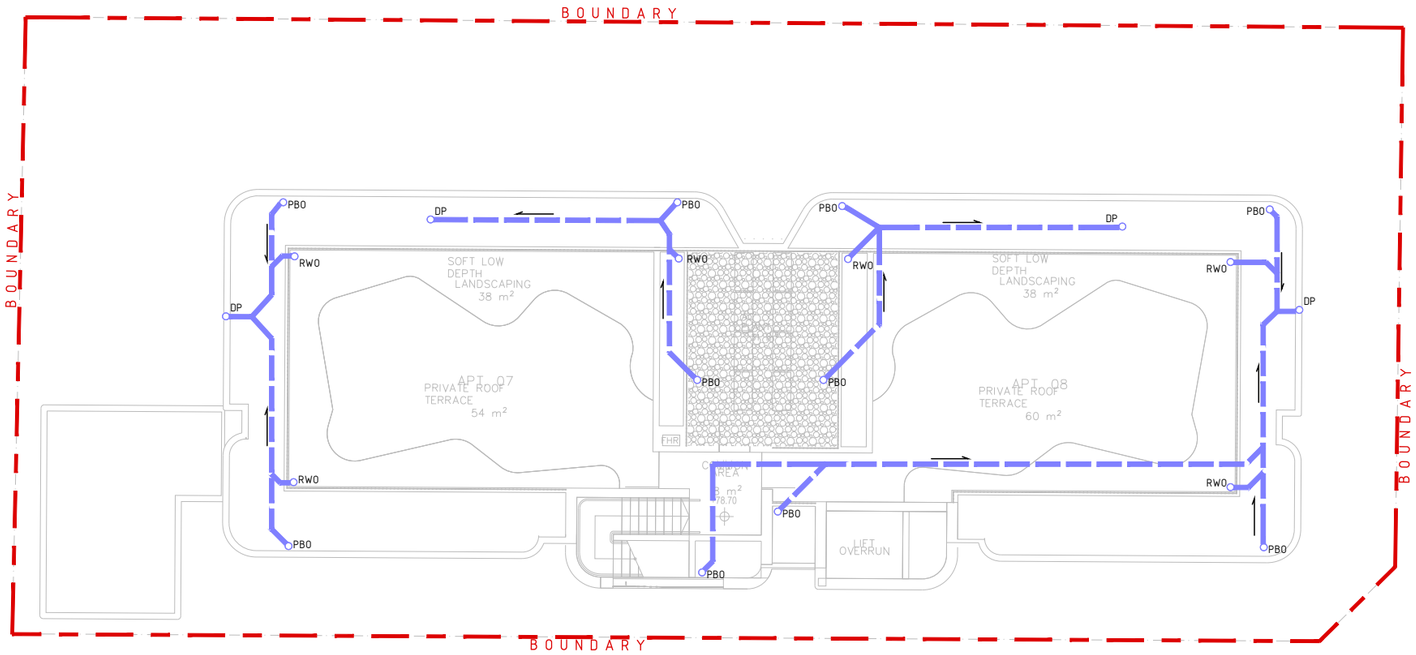
DRAWING TITLE
CIVIL DESIGN
CONCEPT STORMWATER & GRADING PLAN BASEMENT

DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

SCALE	SIZE	REVISION
1:100 @ A1	A1	2

PROJECT No 22023
DRAWING No DA4102

W:\2 - PROJECTS\22722\2323 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\B-CIVIL\22323_DA4101.DWG



LEGEND

DP	PROPOSED DOWNPIPE
RWO	PROPOSED RAINWATER OUTLET
PBO	PROPOSED PLANTER BOX OUTLET
	PROPOSED STORMWATER PIPE (±ø300)
Ø225	PIPE FLOW DIRECTION AND SIZE

STORMWATER MANAGEMENT NOTES

1. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS
2. REFER TO DA4101 FOR CONCEPT STORMWATER LOWER GROUND
3. REFER TO DA4301 FOR CONCEPT STORMWATER CATCHMENT PLAN
4. REFER TO DA4701 FOR CONCEPT STORMWATER MANAGEMENT DETAILS
5. REFER TO DA4711 FOR CONCEPT ON-SITE DETENTION DETAILS

1:100

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT ©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL -
MECHANICAL -
ELECTRICAL -
CIVIL -

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C19/35-41 Macarthur Street Ultimo NSW 2007 Telephone: +61 2 8346 4500

SPARKS +PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

FPA AUSTRALIA Fire Protection Association Australia. CORPORATE MEMBER
DNV·GL
HCAA

DRAWING TITLE
CIVIL DESIGN
CONCEPT STORMWATER ROOF PLAN

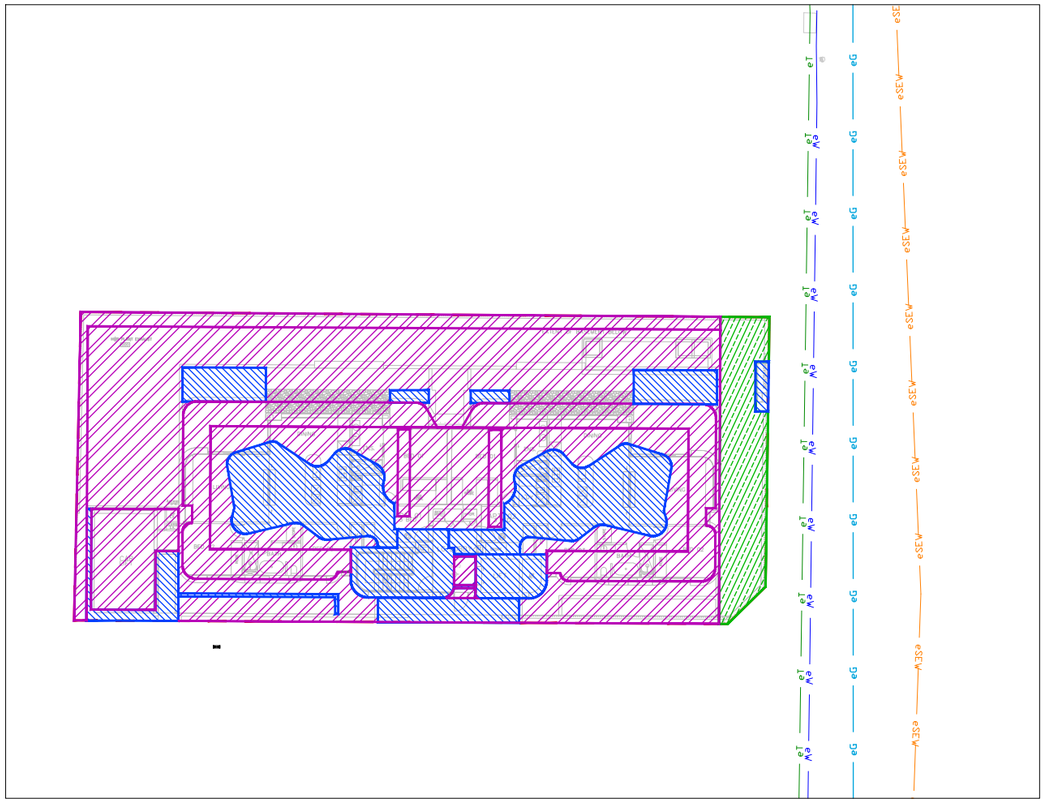
DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

SCALE	SIZE	REVISION
1:100 @ A1	A1	2

PROJECT No 22023
DRAWING No DA4201

W:\2 - PROJECTS\2022\22023 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\B-CIVIL\22023_DA420V.DWG

EXISTING CATCHMENT PLAN
SCALE 1:200



PROPOSED CATCHMENT PLAN
SCALE 1:200

LEGEND

IMPERVIOUS AREA = 669m² (74%)

PERVIOUS AREA = 233m² (26%)

TOTAL AREA = 902m²

LEGEND

PAVED AREAS (IMPERVIOUS) = 213m²

PLANTER BOXES (IMPERVIOUS)* = 632m²

DEEP SPOIL AREA (PERVIOUS) = 57m²

TOTAL AREA = 902m² (85% IMPERVIOUS)

* PLANTER BOX ASSUMED TO BE IMPERVIOUS FOR CONSERVATIVE ESTIMATION OF SITE RUNOFF. ASSUMES WORST CASE SCENARIO OF 5 DAYS OF PRECEDING RAIN RESULTING IN PLANTER BOX SOIL BEING FULLY SATURATED OR 100% FIELD CAPACITY.

1:200
0 4 10 20

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL –
MECHANICAL –
ELECTRICAL –
CIVIL –

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C/19 58-48 Macarthur Street Ultimo NSW 2007 Telephone +61 2 8448 4500

SPARKS +PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

Fire Protection Association Australia CORPORATE MEMBER

DRAWING TITLE
CIVIL DESIGN
CONCEPT STORMWATER
CATCHMENT PLAN

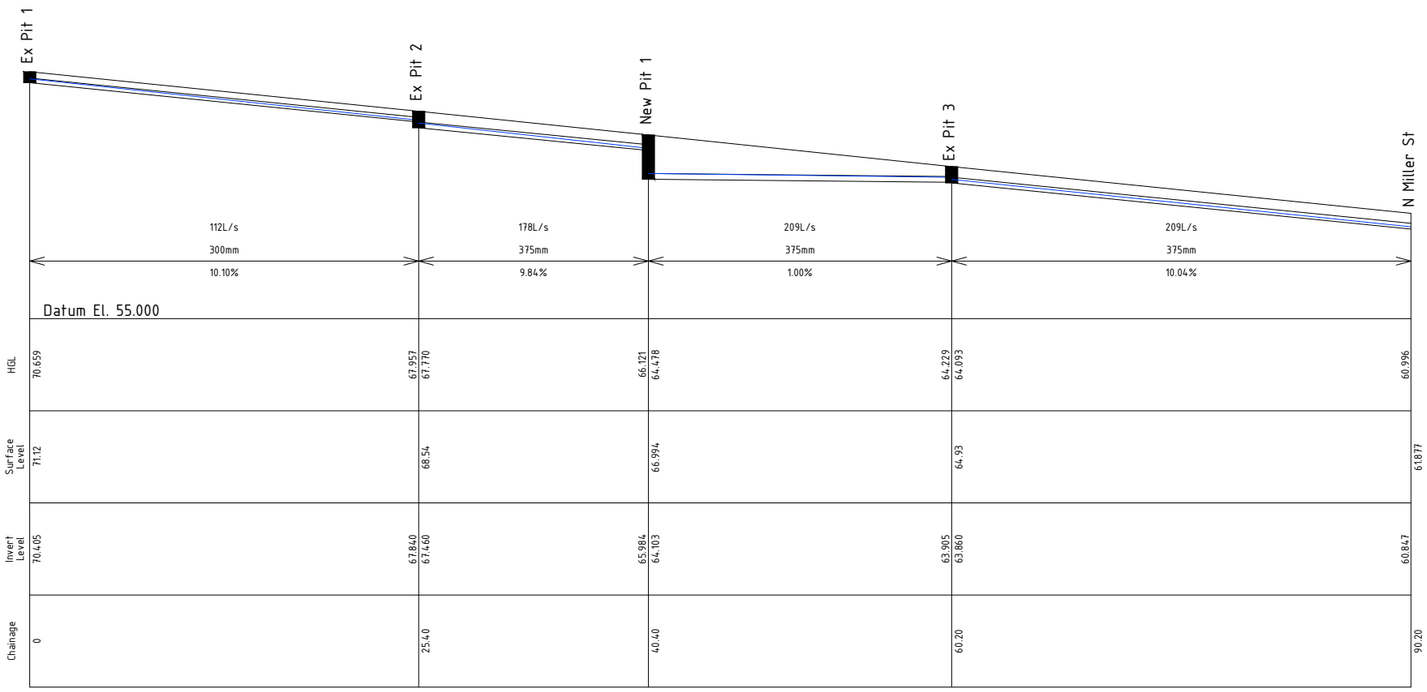
DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

PROJECT No	SCALE	SIZE	REVISION
22023	1:200 @ A1	A1	2

DRAWING No DA4301

DEVELOPMENT APPLICATION ISSUE

W:\2 - PROJECTS\22122\2023 - 566-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\3-CIVIL\22023_DA4301.DWG



STORMWATER LONGITDUNIAL SECTION

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

0 4 10 20
1:200

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL –
MECHANICAL –
ELECTRICAL –
CIVIL –

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C/10 SE 48 Macarthur Street Ultimo NSW 2007 Australia Telephone +61 2 8446 4500

SPARKS +PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

FPA AUSTRALIA Fire Protection Association Australia CORPORATE MEMBER
DNV·GL ISO 9001
HCAA

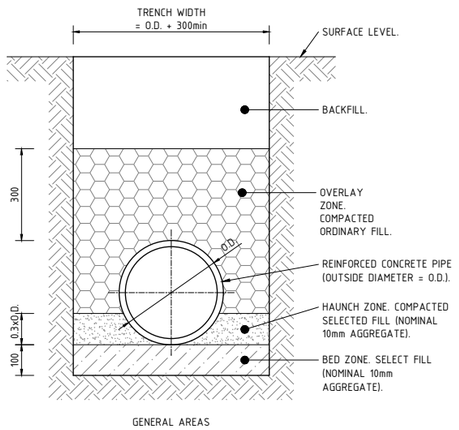
DRAWING TITLE
CIVIL DESIGN
STORMWATER DRAINAGE
LONGITUDINAL SECTION

DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

PROJECT No	SCALE	SIZE	REVISION
22023	1:200 @ A1	A1	2

DRAWING No DA4501

W:\2 - PROJECTS\2022\22023 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\B-CIVIL\22023_DA501X.DWG

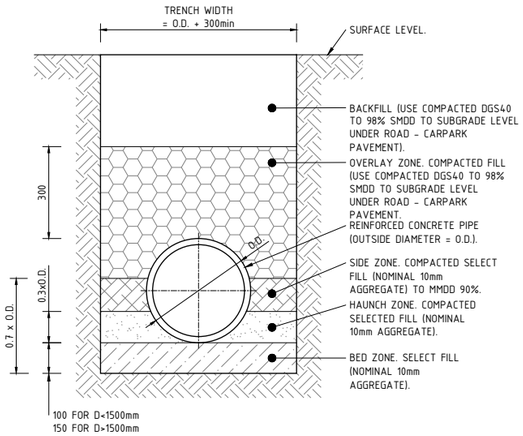


TYPICAL PIPE TRENCH

SCALE 1:10

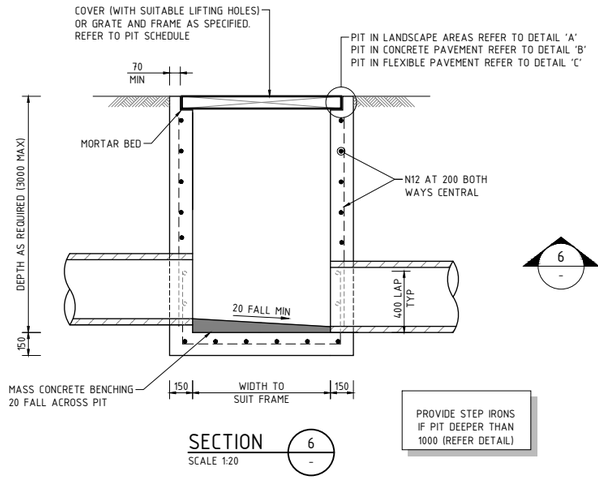
NOTES

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER: NOT UNDER ROADS
   = 300mm (NOT UNDER ROADS)
   = 600mm FOR CLASS 2 PIPES (UNDER ROADS)
3. THE CONTRACTOR SHALL ENSURE THAT THE SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS
   A) TRENCHES UNDER PAVED AREAS & BUILDINGS - 100% SMDD
   B) TRENCHES NOT UNDER PAVEMENTS - 90% SMDD



TYPICAL PIPE TRENCH (UNDER RIGID PAVEMENTS)

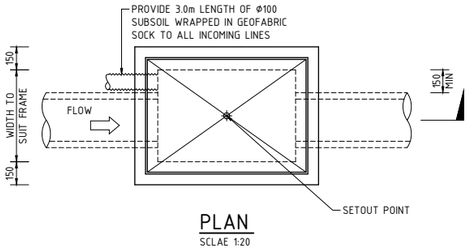
SCALE 1:10



SECTION

SCALE 1:20

6

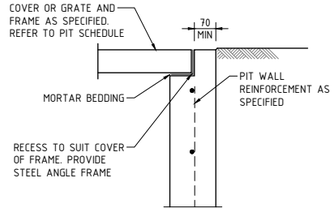


PLAN

SCLAE 1:20

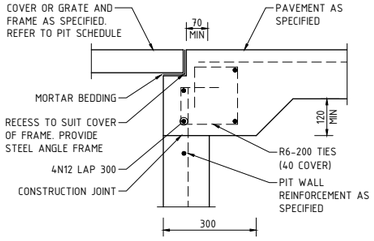
SURFACE INLET / JUNCTION PIT

(PIPE SIZES ≤ ø450)



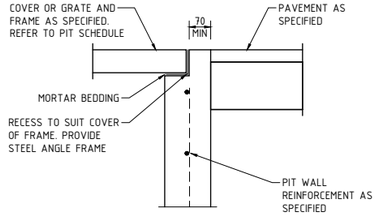
DETAIL 'A'

SCLAE 1:10



DETAIL 'B'

SCLAE 1:10



DETAIL 'C'

SCLAE 1:10

AS SHOWN

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.05.22	DA ISSUE	AS	1
----	----	----	----

DATE	AMENDMENT	INIT	REV

STRUCTURAL -
MECHANICAL -
ELECTRICAL -
CIVIL -

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING, 560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO Sydney C10/16-18 Macarthur Street Ultimo NSW 2007 Telephone +61 2 8340 4500

SPARKS +PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

FPA AUSTRALIA Fire Protection Association Australia CORPORATE MEMBER
DNV·GL ISO 9001
HCAA

DRAWING TITLE
CIVIL DESIGN
CONCEPT STORMWATER MANAGEMENT DETAILS

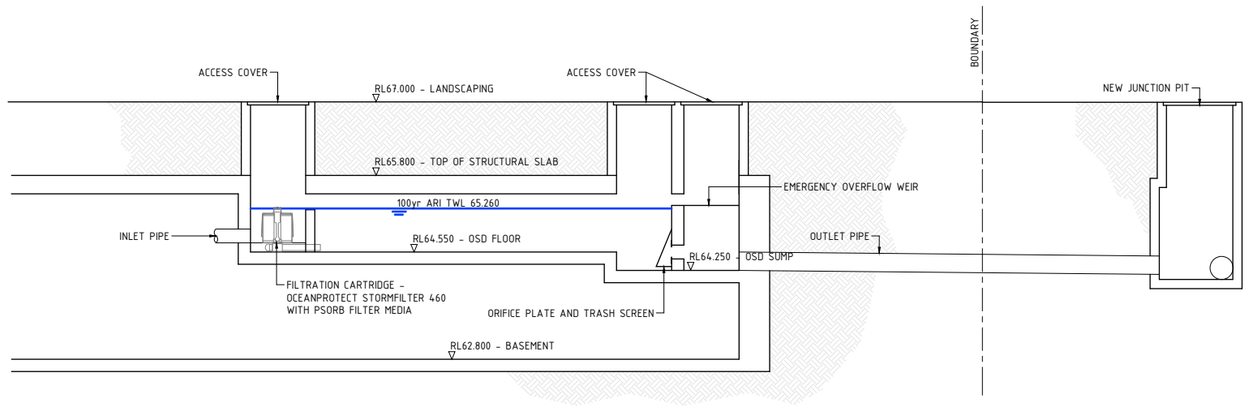
DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

SCALE	SIZE	REVISION
AS SHOWN	A1	1

PROJECT No 22023

DRAWING No DA4701

W:\2 - PROJECTS\2022\22023 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\8-CIVIL\22023_DA4701.DWG



OSD TANK SECTION

SCALE 1:50

A
DA4101

0 1 2.5 5
1:50

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
22.04.22	DRAFT DA ISSUE	AS	1
11.05.22	DA ISSUE	AS	2

DATE	AMENDMENT	INIT	REV

STRUCTURAL
-

MECHANICAL
-

ELECTRICAL
-

CIVIL
-

CLIENT

BUILDER

PROJECT
PROPOSED RESIDENTIAL FLAT BUILDING,
560-562 MILLER STREET & 18 VALE STREET, CAMMERAY

ARCHITECT
DKO
Sydney
C/10 SE 48 Macarthur Street
Ultimo
NSW 2007 AUSTRALIA
Telephone +61 2 8446 4500

SPARKS +PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Level 1, 91 George Street | Parramatta | NSW 2150
P 02 9891 5033 | F 02 9891 3898 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

FPA AUSTRALIA
Fire Protection Association Australia
CORPORATE MEMBER

DNV·GL ISO 9001

HCAA

DRAWING TITLE
CIVIL DESIGN
OSD TANK DETAILS

DATE	DRAWN	DESIGNED	CHECKED
APR 2022	AS	MW	MW

PROJECT No	SCALE	SIZE	REVISION
22023	1:50 @A1	A1	2

DRAWING No
DA4711

W:\2 - PROJECTS\2022\22023 - 560-562 MILLER ST, CAMMERAY\3-DESIGN FILES\A-DESIGN DRAWINGS\B-CIVIL\22023_DA4711X.DWG