FLOOD RISK ASSESSEMENT REPORT

No 20-26 Avon Rd, Dee Why NSW 2099

Prepared for: Gannet Developments
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30 June 2021

REV	DATE
A	14-09-2021
B	02-02-2022

Job No: 21066
Prepared for: ACN 647 465 236 PTY LTD
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Re: Flood Impact Assessment of 20-26 Avon Rd, Dee Why

SECTION 1 – Introduction

1.1 - Work Outline

Rise Consulting Engineers have been commissioned to undertake a Flood Risk Assessment Report and prepare stormwater drainage concept plan for the Proposed development at 20-26 Avon Rd, Dee Why NSW 2099.

As identified by council, the site is flood prone. The site's location is classified as a high-risk flood planning precinct. This means mitigating measures must be implemented to minimize any losses from flooding. Such mitigating measures include: the use of flood compatible materials in construction, the preparation of a flood evacuation plan and the installation of a flood warning system.

Northern Beaches Council has undertaken the hydrologic and hydraulic assessment and has provided 'depth x velocity' transects for the properties pertaining to the existing condition (attached Appendix 'E'). This report has been prepared as supporting documentation in the assessment of the proposed works with respect to the requirements of the Warringah Development Control Plan (2011) – Chapter E11 – Flood Prone Land.

SECTION 2 – Site information

2.1 – Site Location

The proposed development site is located within Northern Beaches Council and is identified as 20-26 Avon Rd, Dee Why NSW 2099. The subject site has two street frontages; Richmond Avenue to the North and Avon Road to the east. The site has a total site area of approximately 1535 m². Figure 1 shows the site's location and the overland flow path (in red arrows).

Figure 1– Approximate Location of Site and overland flow path

2.2 – Proposed Development

Reference to architectural plans prepared for the development by Walsh Architects (Rev.: 'E', Dated: 27/01/2022) depicts the works to consist of the demolition of all structures on the sites, and the construction of a four-storey residential flat building with a single-level of basement.

Vehicular access to the basement is via a driveway ramp and crossover to Richmond Avenue in the north-western corner of the site. The podium level has been elevated with respect to adjacent existing natural ground levels. The building footprint features a 4.5 metre setback to the western boundary, and a 2.0-meter clear setback to the south.

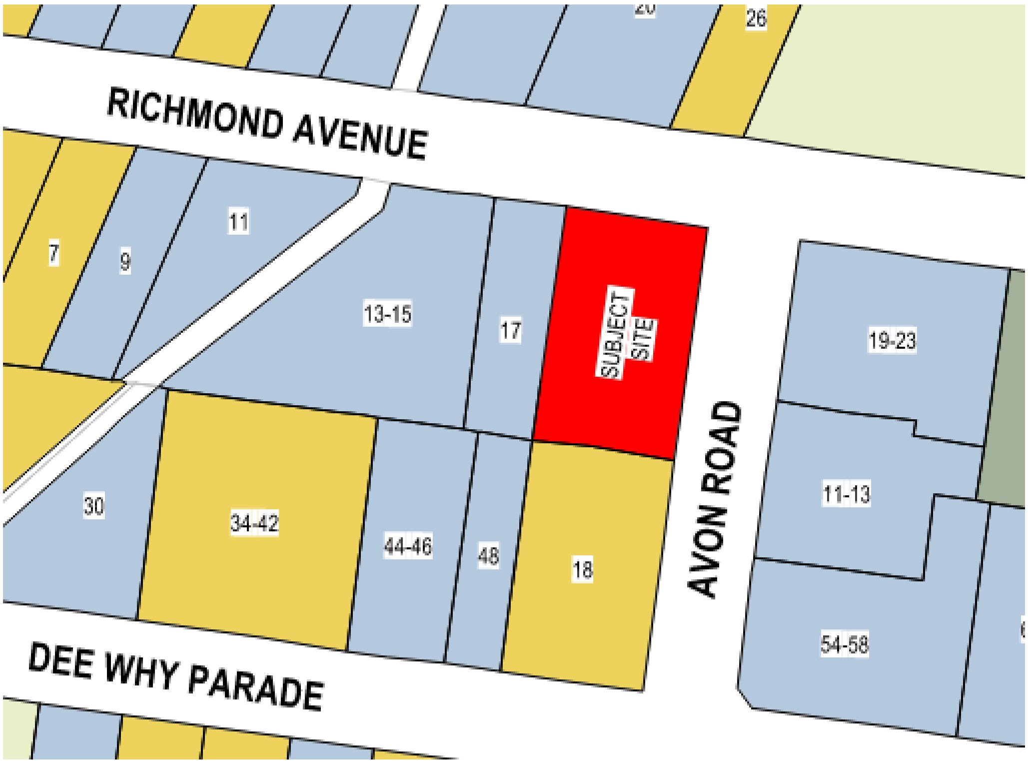

Figure 2 – Proposed Site Plan

SECTION 3 – Flood Information Background

3.1 – Council has identified that the site is located in a known flood affected area.

3.2 – Council Flood Map indicates that the site is inundated during the 1% Annual Exceedance Probability (1% AEP) and Probable Maximum Flood (PMF).

3.3 – Council has classified the site to be in a “High Risk Flood Planning Precinct”.

3.4 – Council has advised the 100 year flood depths. Refer to Appendix. B.

3.5 – Council has advised that the Flood Planning Level (FPL) for all new habitable floors for this site shall be adopted as 500mm above the relevant 100 year flood level. Based on the Warringah Development Control Plan E11 Flood Prone Land Clause D. Car Parking: all enclosed car parks (including basement carparks) must be protected from inundation up to the Flood Planning Level. All access, ventilation, driveway crests and any other potential water entry points to any enclosed car parking shall be above the Flood Planning Level.

SECTION 4 – HYDROLOGY

Hydrologic and hydraulic assessment for the existing condition were undertaken by Northern Beaches Council, and *'depth x velocity'* transects were given at a number of locations throughout the property.

The *'depth x velocity'* data provided by Council was plotted and integrated using numerical methods (trapezoidal rule) to derive flow rates through the site for the 1% Annual Exceedance Probability (AEP) storm event. The flow rates provided were for the catchment to the south-west of the site. A steady inflow hydrograph of 1.32m^3/s was derived from the Council data and used for subsequent hydraulic modelling as presented in Figure '3' below.

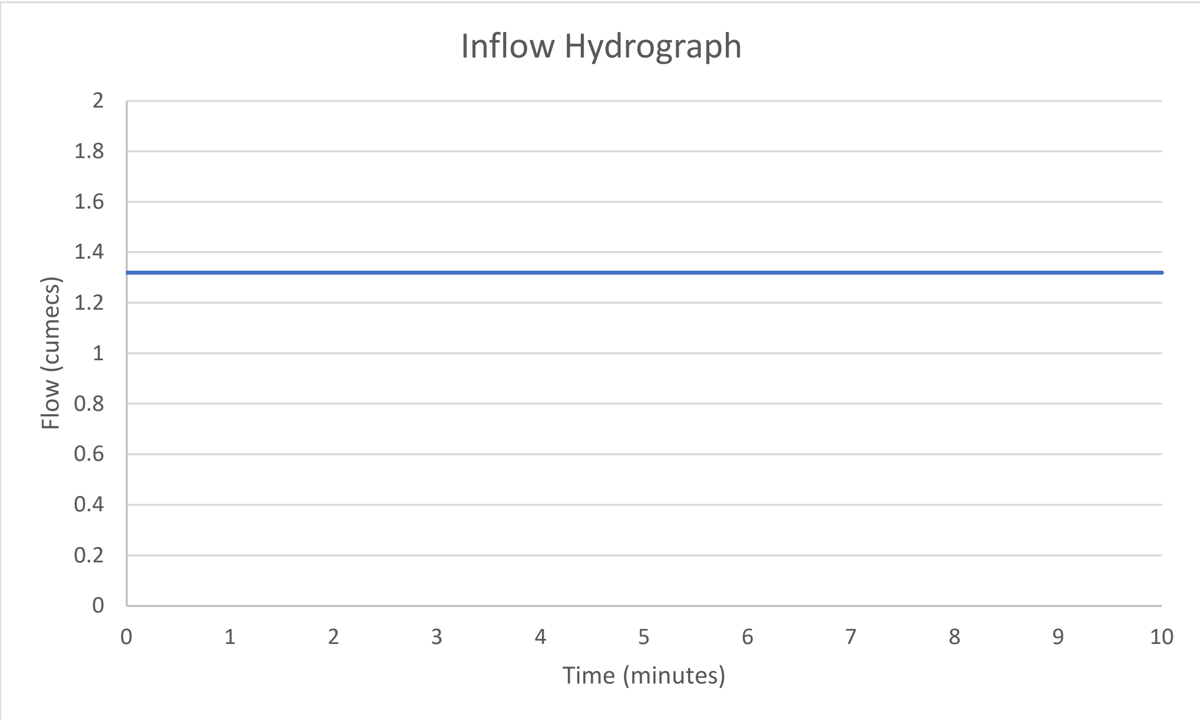

Figure 3: Inflow hydrograph

SECTION 5 – Hydraulic Modelling & Analysis

HEC-RAS 6.0.1 software was used in developing the 1D and 2D hydraulic models. HEC-RAS, developed by the U.S Army Corps of Engineers Hydrologic Engineering Centre is internationally recognised as one of the leading specialised analysis suites in performing two-dimensional unsteady flow calculations. HEC-RAS solves the full, dynamic Saint Venant equation using an implicit, finite difference method.

5.1 – Inflow Hydrograph Model

The peak inflow as derived from the Council data was used for subsequent hydraulic modelling. The inflow was introduced upstream of the site, and maintained for a 10-minute simulation period. A one-by-one metre mesh spacing was used for the two-dimensional grid, however, mesh refinement regions with half-metre grid spacing were introduced in areas of interest.

Table '1' depicts the Manning's roughness applied in this model to various surfaces.

Table 1: Manning's 'n'

Surface Type	Manning's 'n'
General Urban Environment	0.05
Structures	Complete blockage to flow

Reference to concept stormwater drainage plans prepared by Rise Consulting Engineers (Job No.: 21066, Rev.: 'E', Dated: 02/02/2022) highlights significant drainage assets proposed as a part of the works in catering to overland flows in the western setback of the proposed development. Whilst these assets have ample hydraulic capacity to deal with piping of overland flow for more frequent storm events, these assets have not been considered in the modelling of the 1% AEP storm. This is an inherently conservative approach as pits and pipes may readily become blocked by moving debris during large flood events.

The existing dwellings, garages and outbuildings on the site were modelled as complete blockages to flow by modifying the underlying Digital Elevation Model (DEM). Similarly, structures on neighbouring properties were also modelled as blockages with their location derived from a combination of survey data and aerial imagery.

The proposed residential flat building was modelled as a blockage by modifying the underlying DEM. Two grassed swales were also modelled in the western and southern boundaries of the proposed development. The swales were modelled with a half-percent fall at the base, draining to the north and west respectively. These swales have been introduced as overland flow paths in mitigating any adverse impact as a result of the development. A flood wall was also modelled, located adjacent the western boundary and limited to the north-west of the site.

5.2– Model Results

The developed HEC-RAS model was used in determining the flood levels and flood extents for the 1% AEP storm event for the pre- and post-development conditions. The flood maps for flooding depth, flood velocities and depth *x* velocity coefficients for the pre- and post-development conditions have been presented in Appendix 'E' of this report. Flood hazard categorisation mapping has also been provided for both pre- and post-development conditions. Flood difference mapping has also been provided comparing changes to flood levels for the pre- versus post-development conditions.

5.3 – Flood Hazard Category

The flood hazard category, as dictated by the New South Wales Floodplain Development Manual (2005) is a function of both flood depth and flow velocity. A plot showing the relationship between these two variables and the various hazard categories is presented in figure '4'.

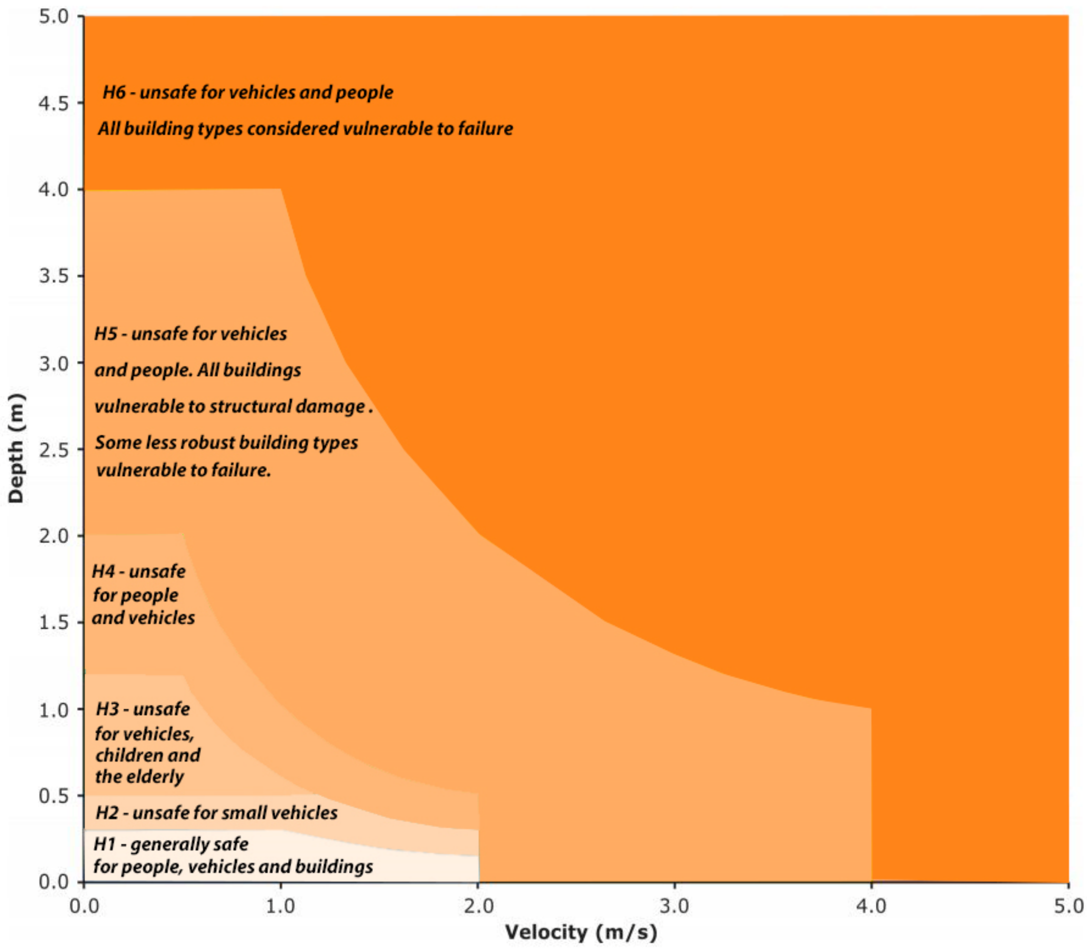

Figure 4: Provisional Hydraulic Hazard Categories

This figure has been derived from the Australian Rainfall & Runoff *A Guide to Flood Estimation* (2019) and outlines various hazard categories.

Reference to flood hazard mapping provided for the post-development scenario in Appendix 'A' readily highlights that flood hazards are generally limited on the site and are a **H1** category. This category is generally deemed safe for people, vehicles and buildings. A limited region of the site, over the line of the proposed swale in the western setback features a **H2** flood hazard category.

SECTION 6 – Flood Risk Management

The proposed *residential* flat building has been assessed with respect to the requirements of the Warringah Development Control Plan (2011) – Chapter E11 – *Flood Prone Land.*

The site is inundated by the 1% AEP storm event, however does not exhibit high hydraulic hazards; as such it is deemed a *Medium Flood Risk Precinct.*

Development Control		Proposed
Flood effects caused by Development	A1	Reference to pre-development versus post-development flood difference mapping presented in Appendix 'A' of this report readily highlights that no *significant* increase in flood levels is anticipated on neighbouring allotments as a result of the development. Increases less than 20mm are generally deemed acceptable as they fall within the error tolerance of 2D hydraulic modelling as per Australian Rainfall and Runoff Guidelines (AR&R 2019). Significant (> 20mm) increases in flood levels in the public domain are observed in both Richmond Avenue and Avon Road at the point of discharge of the proposed swales. However notably, there is also significant decreases in the flood levels on Avon Road to the east. The flow regime observed in the pre-development results depicts flows entering the site from the south-west, and predominantly traversing east through setbacks between the existing dwellings to Avon Road. This is generally to be anticipated as the fall of the site is greater in the east-west direction than the north-south. The post-development condition sees the majority of flows directed to the north in the overland flow path in the western setback of the proposed residential flat building.
	A2	Given than 2D hydraulic modelling has been used in the preparation of flood difference mapping, and no *significant* increase of flood levels are anticipated on neighbouring dwellings, there is no net loss of flood storage associated with the proposed development. This is to be

Development Control		Proposed
		expected as cutting of natural ground levels has been proposed in facilitating the swales in the western and southern setbacks.
Buildings Components and Structural Soundness	B1	The proposed residential flat building shall be constructed of flood compatible materials as outlined in section 7.2.3 of this report up to the specified Flood Planning Level (FPL) of 7.10m AHD. The proposed basement shall be suitably waterproofed to this level.
	B2	A suitably qualified and practising structural engineer shall prepare a report providing details of hydraulic forces caused by floodwater, debris and buoyancy up to and including the FPL specified. The proposed report shall include certification explicitly dictating that the proposed structure is able to withstand such forces and is to be issued prior to construction.
	B3	All electrical and mechanical equipment and other services are to be constructed in accordance with the recommendations outlined in section 7.2 of this report up to the specified Flood Planning Level of 7.10m AHD
Floor Levels	C1	A *minimum* habitable floor level or **Flood Planning Level of 7.10m AHD** shall be adopted for the development which includes 500mm freeboard to the upstream 1% AEP flood level of 6.60m AHD.
	C3	The proposed development footprint has been sited with sufficient setbacks to the western and southern boundaries to allow conveyance of flood waters. Reference to flood difference mapping highlights no adverse impact associated with flood afflux or loss of flood storage is anticipated as a result of the proposed development.
	C4	Not applicable
	C6	Not applicable
Car Parking	D1	Not applicable – no open carparks areas or carports are proposed as a part of the development
	D2	Not applicable
	D3	Not applicable
	D4	Not applicable
	D5	Not applicable
	D6	A defensive crest shall be provided to the access ramp to the proposed basement carpark with a **crest level of 6.30m AHD** which includes 500mm freeboard to the relevant upstream 1% AEP flood level of 5.80m AHD.
Emergency Response	E1	The property exhibits a flood hazard category of **H2** and thus a Flood Emergency Assessment is not required. Flooding on the site is generally limited in hazard and evacuation for storm events up to the 1% AEP is unlikely. Given the multi-storey nature of the proposed development, refuge may readily be sought by occupants on upper floors of the building which are accessible via internal stair wells.
Fencing	F1	All fencing is to be of pool-style or louvre-style construction up to the relevant 1% AEP flood level, with the exception of the flood wall as denoted in Appendix 'C' of this report.
Storage of Goods	G1	Not applicable
Pools	H1	Not applicable

6.1 – Building Components and Method

All structures of the proposed residential flat building development are to be constructed of flood compatible building components below the specified Flood Planning Level.

6.1.1 – Electrical & Mechanical Equipment

Main power supply subject to the approval of the relevant authority the incoming main commercial power service equipment, including all metering equipment, shall be located above the relevant flood level. Means shall be available to easily disconnect the dwelling from the main power supply. ·

All wiring, power outlets, switches, etc., should, to the maximum extent possible, be located above the relevant flood level. All electrical wiring installed below the relevant flood level should be suitable for continuous submergence in water and should contain no fibrous components. Earth core leakage systems (or safety switches) are to be installed. Only submersible-type splices should be used below the relevant flood level. All conduits located below the relevant designated flood level should be so installed that they will be self-draining if subjected to flooding.

All equipment installed below or partially below the relevant flood level should be capable of disconnection by a single plug and socket assembly. Should any electrical device and/or part of the wiring be flooded it should be thoroughly cleaned or replaced and checked by an approved electrical contractor before reconnection.

6.1.2 – Heating & Air-conditioning Systems

Heating and air conditioning systems should, to the maximum extent possible, be installed in areas and spaces of the house above the relevant flood level. When this is not feasible every precaution should be taken to minimise, the damage caused by submersion according to the following guidelines.

Heating systems using gas or oil as a fuel should have a manually operated valve located in the fuel supply line to enable fuel cut-off. The heating equipment and fuel storage tanks should be mounted on and securely anchored to a foundation pad of sufficient mass to overcome buoyancy and prevent movement that could damage the fuel supply line. All storage tanks should be vented to an elevation of 600 millimetres above the relevant flood level.

All ductwork located below the relevant flood level should be provided with openings for drainage and cleaning. Self-draining may be achieved by constructing the ductwork on a suitable grade. Where ductwork must pass through a water-tight wall or floor below the relevant flood level, the ductwork should be protected by a closure assembly operated from above relevant flood level.

6.1.3 – Flood Compatible Materials

Building Component	Flood Compatible Material
Flooring & Subfloor Structure	— Suspended reinforced concrete slab — Monolithic slab on grade construction
Floor Covering	— Clay tiles — Concrete, precast or in-situ — Concrete tiles — Epoxy, formed in place — Mastic flooring, formed in place — Rubber sheets or riles with chemical set adhesives — Silicone floors formed in-place — Vinyl sheets or tiles with chemical set adhesives — Ceramic tiles, fixed with mortar or chemical set adhesives — Asphalt tiles, fixed with water resistant adhesive.
Wall Structure	— Solid brickwork, blockwork, reinforced concrete or mass concrete.
Roofing structure (for situations where the relevant flood level is above the ceiling)	— Reinforced concrete construction — Galvanised metal construction
Doors	— Solid panel with waterproof adhesive — Flush door with marine ply filled with closed cell foam — Painted metal construction — Aluminium or galvanised steel frame.
Wall & Ceiling lining	— Fibro-cement board — Brick, face or glazed — Clay tile glazed in waterproof mortar — Concrete — Concrete block — Steel with waterproof applications — Stone, natural solid or veneer with waterproof grout — Glass blocks — Glass — Plastic sheeting or wall with waterproof adhesives.
Insulation Windows	— Foam (closed cell type) — Aluminium frame with stainless steel rollers or similar corrosion and water resistant materials.
Nails, Bolts, Hinges & Fittings	— Brass, nylon or stainless steel — Removable pin hinges — Hot dipped galvanised steel wire nails or similar.

6.2 – Flood Planning Levels

All precautions within the planning and design stages of the proposed development should be taken to ensure that the risks of flood impacts are minimised.

The minimum floor levels for the proposed development have been set to meet the requirements of Northern Beaches Council.

Table 2 below shows the minimum floor level for the proposed development in accordance with Council's DCP.

Building Element	Design Requirement	100-year ARI Level/Flood Planning Level	Average Free board	Design Finish Floor Level
Minimum Habitable Floor Level	100-year ARI plus 0.5m freeboard (Based on Council DCP)	Lot 20 – 6.84m Lot 24 – 6.50m Lot 26 – 5.54m	1.056m	7.35m
Minimum Driveway Crest Level	Flood Planning Level plus 0.10m freeboard	6.04m	0.1m	6.14m

Table 2 – Proposed Planning Levels

6.3 – Emergency Management

Early evacuation is the preferred management strategy for the proposed development in this area. The residents shall be warned as soon as possible and made aware of rising water levels so they can evacuate early to a place of refuge above the PMF flood waters, in the surrounding area. Residents shall evacuate to higher ground at Short Street, towards south from the site.

Up to the 100-year ARI storm event, the occupants can seek refuge within the development being above the flood water by a 500mm freeboard.

It is recommended that adequate warning signs shall be placed in areas which are visible to ensure occupants are educated with regards to evacuation locations and procedures. All residential tenancies within the subject site are also to be made aware and educated about flood evacuation requirements and procedures. Further details are given in the attached Flood Evacuation Plan, Stormwater Drainage Plan and Details.

Residents should also familiarise with the following emergency contact numbers:

General SES helpline: 132 500
Critical emergency: 000 for Police or Ambulance

SECTION 7 – Conclusions & Recommendations

This report has considered the impacts of overland flooding with respect to the proposed residential flat building development at 20-26 Avon Road Dee Why. Considerations include flood related requirements adopted by Northern Beaches Council, as well as potential impacts on neighbouring properties.
Hydrologic data was obtained from Northern Beaches Council and subsequently used for hydraulic 2D modelling using HEC-RAS. One metre DEM data of the catchment was obtained and utilised in the analysis.
A number of hydraulic control structures were incorporated into the development including swales adjacent the southern and western boundaries, as well as a flood wall in line with the north-western fence. No adverse impacts associated with the development and changes to the flood regime of the overland flow path are anticipated.

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C.P.Eng, N.E.R, APEC Engineer IntPE(Aus), Building Practitioner VBA, RPEQ
Director

APPENDIX – A

Development architectural plans

ARTIST IMPRESSION WITH VEGETATION SHOWN 'GOASTED'

ISSUE FOR DEVELOPMENT APPLICATION

COMPLIANCE TABLE

ADG	OBJECTIVE	COMPLIES?
3E-1(1)	DEEP SOIL	YES
3F-1(1)	BUILDING SEPARATION	YES
4A-1(1)	2 HOUR SOLAR ACCESS	YES
4A-1(3)	NO SUN	YES
4B-2(1)	CROSS VENTILATION	YES
4C-1(1)	CEILING HEIGHTS	YES
4D-1(1)	APARTMENT AREAS	YES
4D-3(1-4)	ROOM SIZES	YES
4E-1(1)	POS SIZES	YES
4G-1(1)	STORAGE	YES

LEP	CLAUSE	COMPLIES?
4.3	HEIGHT OF BUILDINGS	NO
5.3	DEVELOPMENT NEAR ZONE BOUNDARIES	YES
6.1	ACID SULFATE SOILS	YES
6.2	EARTHWORKS	YES
6.3	FLOOD PLANNING	YES
6.4	DEVELOPMENT ON SLOPING LAND	YES

DCP	CLAUSE	COMPLIES?
B2	NUMBER OF STORIES	YES
B5	SIDE BOUNDARY SETBACKS - SOUTH BASEMENT	YES
B5	SIDE BOUNDARY SETBACKS - SOUTH BUILDING	YES
B5	SIDE BOUNDARY SETBACKS - WEST BASEMENT	YES
B5	SIDE BOUNDARY SETBACKS - WEST BUILDING	YES
B7	FRONT BOUNDARY SETBACKS - RICHMOND RD	YES
B7	SECONDARY FRONT BOUNDARY - AVON RD	YES
D1	LANDSCAPED OPEN SPACE	NO

DRAWING SHEETS

SHEET NUMBER	SHEET NAME	REVISION
DA000	COVER PAGE	D
DA010	SITE ANALYSIS	A
DA015	HEIGHT MAP	A
DA016	CONTEXT ANALYSIS	A
DA020	DEMOLITION PLAN	A
DA090	PROPOSED SITE PLAN	B
DA100	BASEMENT PLAN	D
DA101	GROUND FLOOR PLAN	E
DA102	LEVEL 1 PLAN	D
DA103	LEVEL 2 PLAN	D
DA104	ATTIC PLAN	C
DA105	ROOF PLAN	D
DA201	SECTIONS	E
DA202	SECTIONS	E
DA203	SECTIONS	C
DA300	ELEVATIONS	E
DA301	ELEVATIONS	D
DA401	AREA CALCULATIONS - LANDSCAPE	D
DA500	SHADOW DIAGRAMS - 9AM JUNE 21ST	C
DA502	SHADOW DIAGRAMS - 12PM JUNE 21ST	C
DA503	SHADOW DIAGRAMS - 3PM JUNE 21ST	C
DA550	VIEWS FROM SUN - JUNE 21ST	C
DA551	VIEWS FROM SUN - JUNE 21ST	C
DA552	VIEWS FROM SUN - JUNE 21ST	C
DA555	OVERSHADOWING - 17 RICHMOND AVE	A
DA901	ADG COMPLIANCE	C
DA910	EXTERNAL FINISHES	C

20-26 AVON ROAD, DEE WHY

APARTMENT BUILDING - 23 APARTMENTS

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APARTMENT BUILDING - 23 APARTMENTS
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Scale
1 : 200 @ A1
1 : 400 @ A3

Sheet Name
SITE ANALYSIS

Number
DA010

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21

Rev.
A

3-STOREY BUILDINGS		4-STOREY BUILDINGS	
6 RICHMOND AVE	33 DEE WHY PARADE	3 RICHMOND AVE	44 HOWARD AVE
8 RICHMOND AVE	39 DEE WHY PARADE	5 RICHMOND AVE	48 HOWARD AVE
9 RICHMOND AVE	44-46 DEE WHY PARADE	7 RICHMOND AVE	50 HOWARD AVE
11 RICHMOND AVE	48 DEE WHY PARADE	10 RICHMOND AVE	68 HOWARD AVE
12 RICHMOND AVE	54-58 DEE WHY PARADE	26 RICHMOND AVE	
13-15 RICHMOND AVE	60 DEE WHY PARADE	5 CLARENCE AVE	
14 RICHMOND AVE	64 DEE WHY PARADE	16 AVON ROAD	
16 RICHMOND AVE	52 HOWARD AVE	18 AVON ROAD	
17 RICHMOND AVE	64 HOWARD AVE	27 DEE WHY PARADE	
20 RICHMOND AVE	66 HOWARD AVE	28 DEE WHY PARADE	
19-23 RICHMOND AVE		35 DEE WHY PARADE	
29 RICHMOND AVE		37 DEE WHY PARADE	
49 AVON ROAD		41 DEE WHY PARADE	
11-13 AVON ROAD		34-42 DEE WHY PARADE	
20 DEE WHY PARADE		45 DEE WHY PARADE	
26 DEE WHY PARADE		47 DEE WHY PARADE	
30 DEE WHY PARADE		51-53 DEE WHY PARADE	
TOTAL = 27 x 3-STOREY SITES **51.9% OF CONTEXT ANALYSED**		**TOTAL = 21 x 4-STOREY SITES** **40.4% OF CONTEXT ANALYSED**	

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
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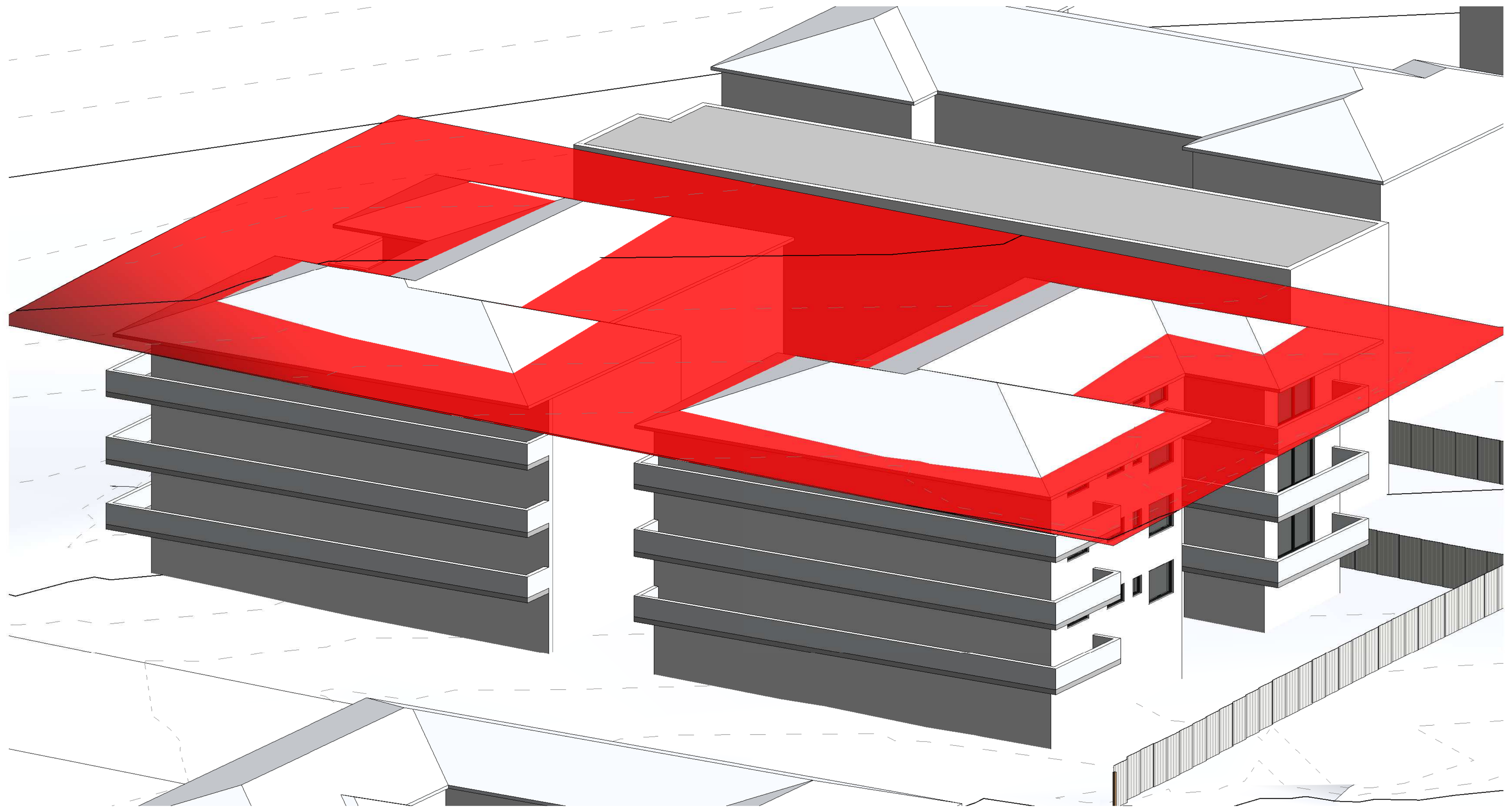
Scale
1 : 1000 @ A1
1 : 2000 @ A3

Sheet Name
HEIGHT MAP

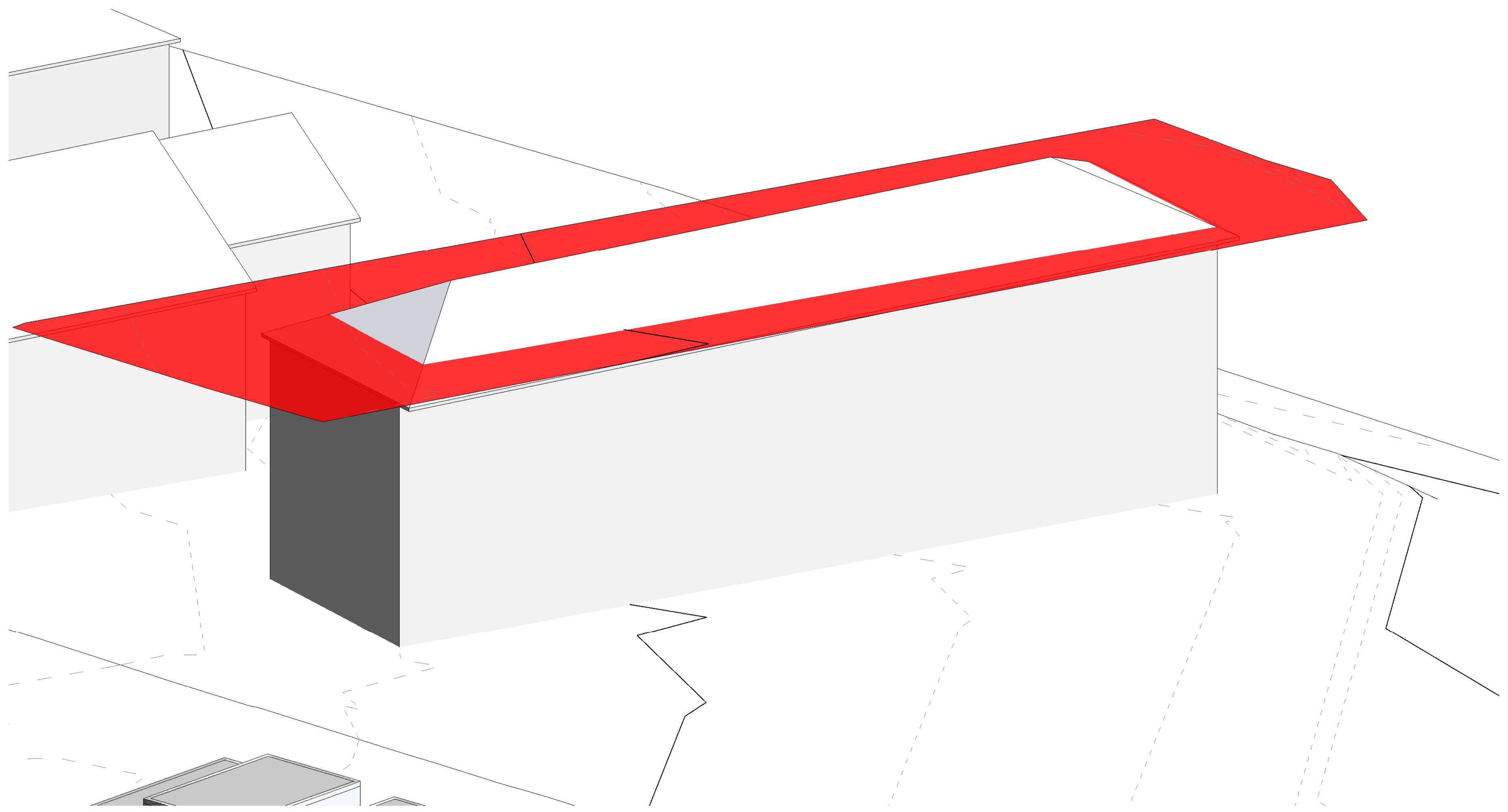
Number
DA015

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21

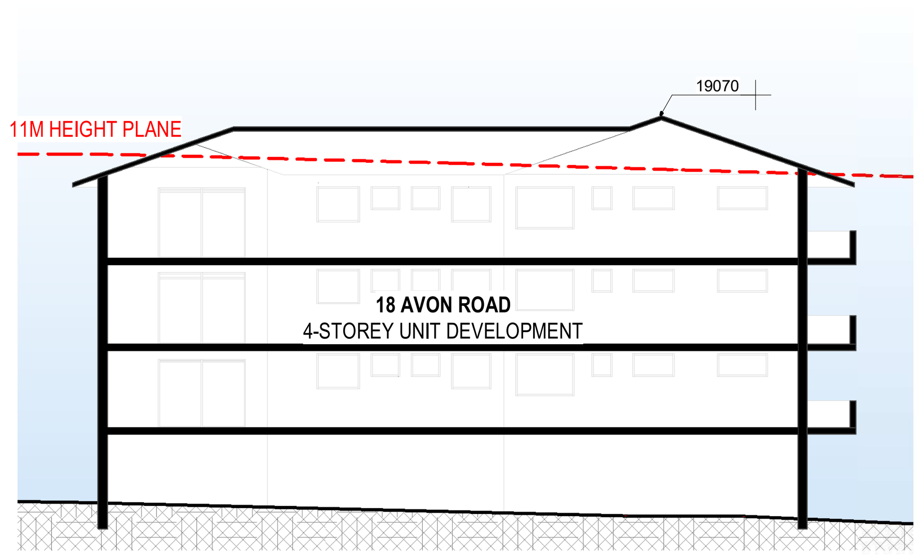
Rev.
A



1 **11m HEIGHT - 18 AVON RD**
DA016 @ A1



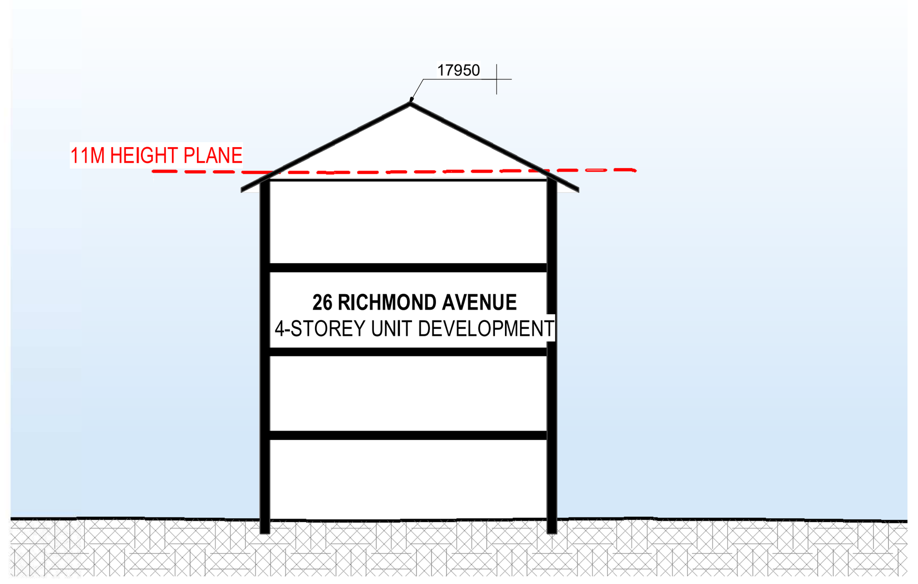
2 **11m HEIGHT - 26 RICHMOND AVE**
DA016 @ A1



A **SECTION A**
DA016 1 : 200 @ A1

PHOTO OF 18 AVON RD

PHOTO OF 26 RICHMOND AVE



B **SECTION B**
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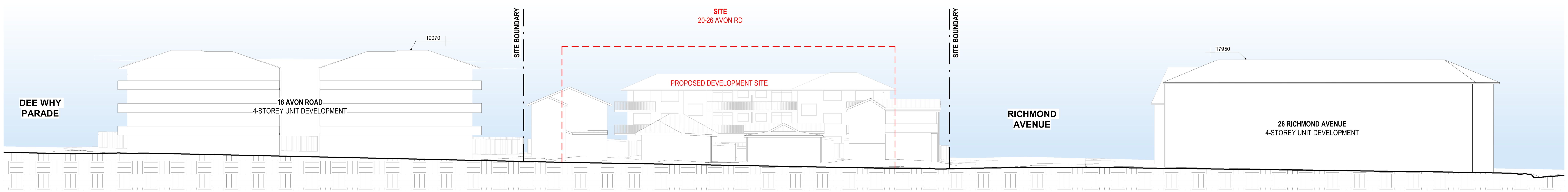

3 **AVON ROAD ELEVATION**
DA016 1 : 250 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 26 APARTMENTS
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Scale
As indicated @ A1
As indicated @ A3

Sheet Name
CONTEXT ANALYSIS

Number
DA016

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21

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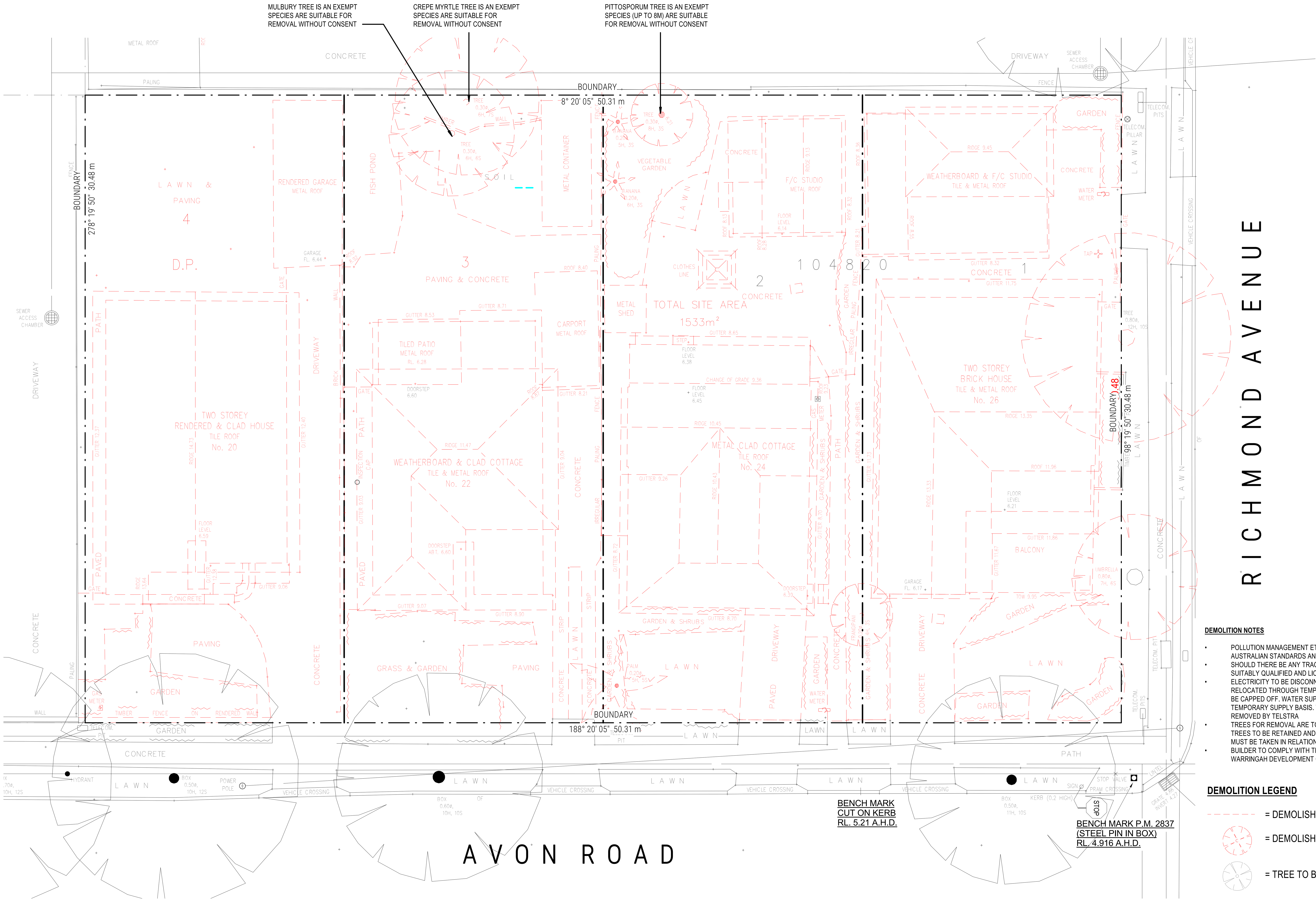

DEMOLITION NOTES

- POLLUTION MANAGEMENT ETC DURING DEMOLITION AND CONSTRUCTION AS PER AUSTRALIAN STANDARDS AND NSW POLLUTION CONTROL LAWS.
- SHOULD THERE BE ANY TRACE OF ASBESTOS IT SHOULD BE DISPOSED OF BY A SUITABLY QUALIFIED AND LICENSED PERSON AS PER AUSTRALIAN STANDARDS
- ELECTRICITY TO BE DISCONNECTED AS PER ENTITY REQUIREMENTS AND RELOCATED THROUGH TEMPORARY SUPPLY. SEWERAGE AND STORMWATER TO BE CAPPED OFF. WATER SUPPLY TO BE TERMINATED AND CONNECTED ON A TEMPORARY SUPPLY BASIS. TELEPHONE TO BE DISCONNECTED AND THE LINE REMOVED BY TELSTRA
- TREES FOR REMOVAL ARE TO BE REMOVED WITHOUT DISTURBANCE TO THOSE TREES TO BE RETAINED AND TAKEN TO THE APPROPRIATE AREA OF THE TIP. CARE MUST BE TAKEN IN RELATION TO OVER-HEAD POWER LINES
- BUILDER TO COMPLY WITH THE WASTE MANAGEMENT PLAN IN ACCORDANCE WITH WARRINGAH DEVELOPMENT CONTROL PLAN – PART C9 WASTE MANAGEMENT

DEMOLITION LEGEND

= DEMOLISHED STRUCTURE

= DEMOLISHED TREE

= TREE TO BE RETAINED

Project: 20-26 AVON ROAD, DEE WHY APARTMENT BUILDING - 23 APARTMENTS Client: ACN 647 465 236 PTY LTD	Walsh Architects Registered Architect ACT 2624 NSW 10366 scott@walsharchitects.com.au 0466 049 880	Scale 1 : 100 @ A1	Sheet Name DEMOLITION PLAN	Number DA020	Rev. A

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21

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Scale
1 : 200 @ A1
1 : 400 @ A3

Sheet Name
PROPOSED SITE PLAN

Number
DA090

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS FOR LEC	27.01.22

Rev.
B

SEPP65 PARKING RATES			
UNIT TYPE	NUMBER OF UNITS	GUIDE TO TRAFFIC GEN PARKING RATE	VISTOR PARKING RATE
1 BED	3	1.8	0.6
2 BED	9	8.1	1.8
3 BED	10	14	2
STUDIO	1	0.6	0.2
	23	24.5	4.6

TOTAL PROVIDED - 26 RESIDENTIAL & 5 VISITOR PARKING SPACES

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
BASEMENT PLAN

Number
DA100

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	02.12.21
C	PLANS WITHOUT PREJUDICE	10.12.21
D	PLANS FOR LEC	27.01.22

Rev.
D

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
GROUND FLOOR PLAN

Number
DA101

No.	Description	Date
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	02.12.21
D	PLANS WITHOUT PREJUDICE	10.12.21
E	PLANS FOR LEC	27.01.22

Rev.
E

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
LEVEL 1 PLAN

Number
DA102

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	10.12.21
D	PLANS FOR LEC	27.01.22

Rev.
D

Project: **20-26 AVON ROAD, DEE WHY**
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
LEVEL 2 PLAN

Number
DA103

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	10.12.21
D	PLANS FOR LEC	27.01.22

Rev.
D

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
ATTIC PLAN

Number
DA104

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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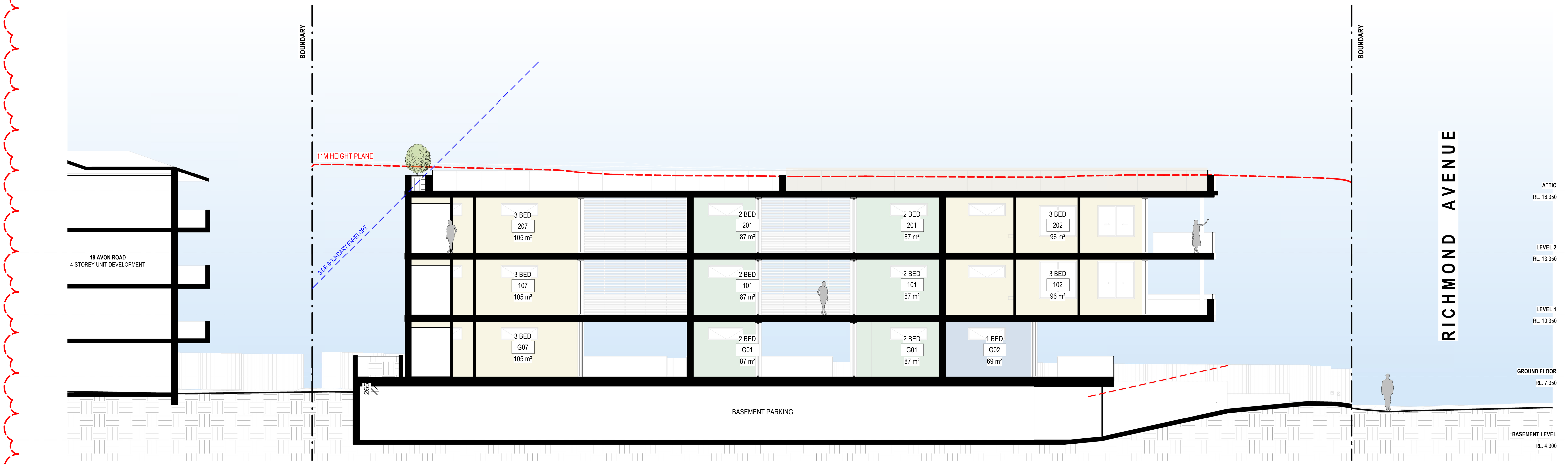
Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
ROOF PLAN

Number
DA105

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	10.12.21
D	PLANS FOR LEC	27.01.22

Rev.
D



1 LONG SECTION 1
DA201 1 : 100 @ A1

2 LONG SECTION 2
DA201 1 : 100 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

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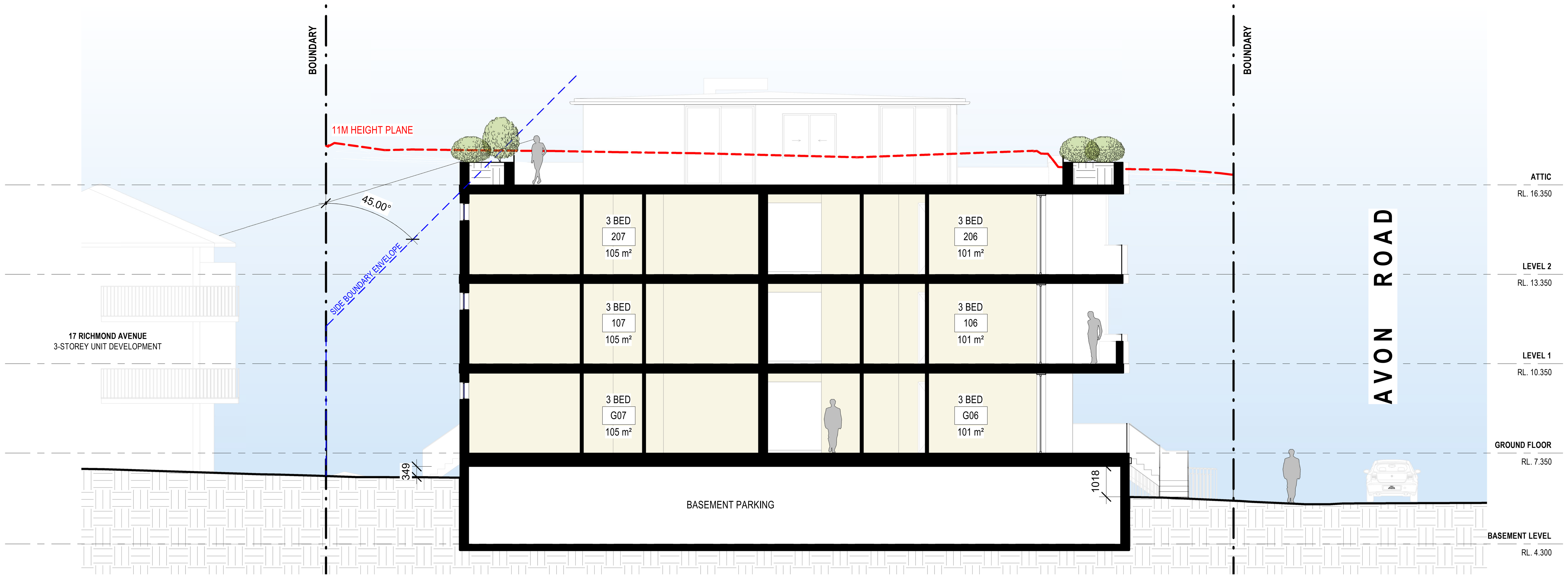
Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
SECTIONS

Number
DA201

No.	Description	Date
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	02.12.21
D	PLANS WITHOUT PREJUDICE	10.12.21
E	PLANS FOR LEC	27.01.22

Rev.
E



1 CROSS SECTION 1
DA202 1 : 100 @ A1

2 CROSS SECTION 2
DA202 1 : 100 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

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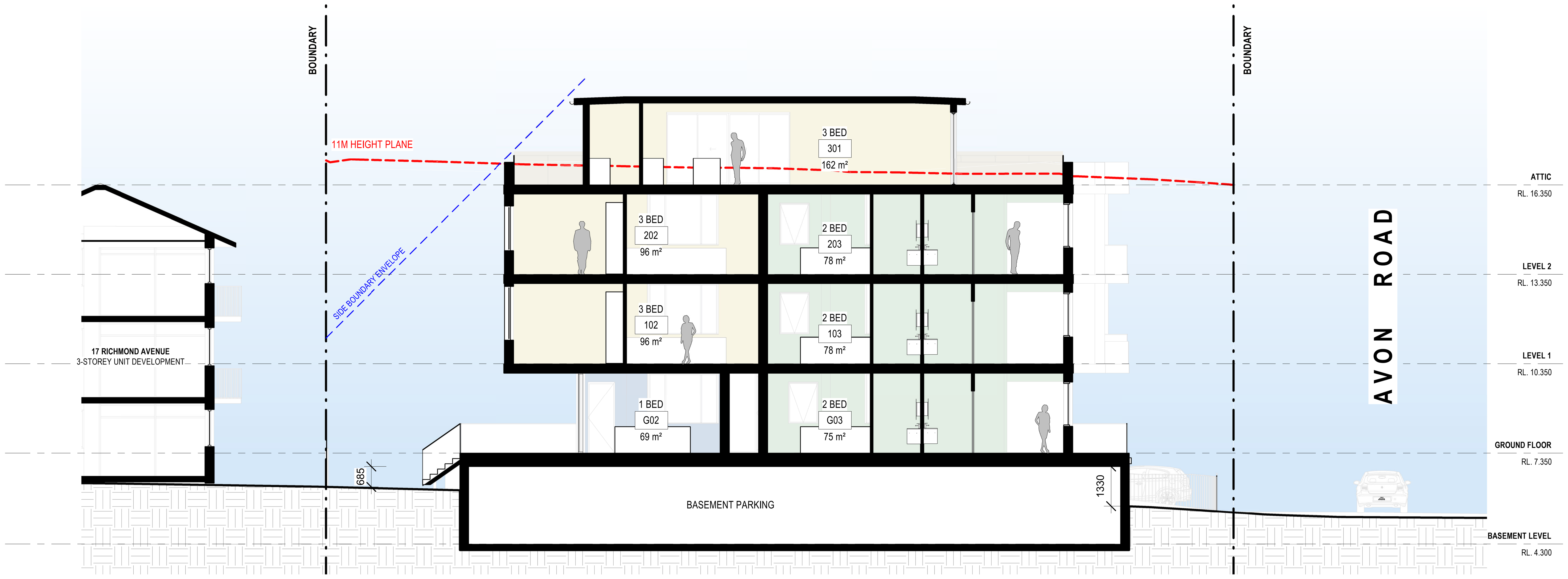
Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
SECTIONS

Number
DA202

No.	Description	Date
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	02.12.21
D	PLANS WITHOUT PREJUDICE	10.12.21
E	PLANS FOR LEC	27.01.22

Rev.
E



1 CROSS SECTION 3
DA203 1 : 100 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
SECTIONS

Number
DA203

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C

1 EASTERN ELEVATION - AVON ROAD
DA300 1 : 100 @ A1

2 NORTHERN ELEVATION - RICHMOND AVENUE
DA300 1 : 100 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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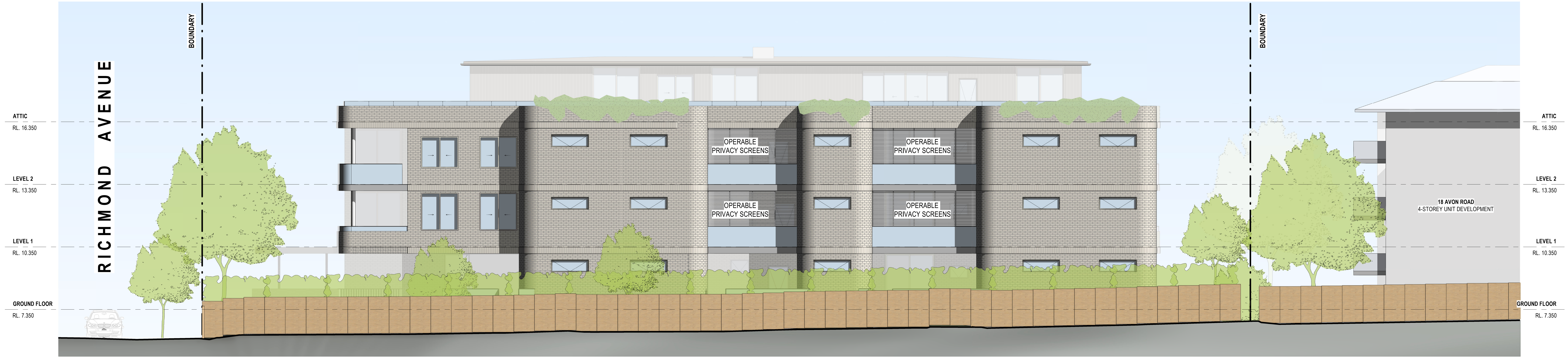
Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
ELEVATIONS

Number
DA300

No.	Description	Date
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	02.12.21
D	PLANS WITHOUT PREJUDICE	10.12.21
E	PLANS FOR LEC	27.01.22

Rev.
E



1 WESTERN ELEVATION
DA301 1 : 100 @ A1

2 SOUTHERN ELEVATION
DA301 1 : 100 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

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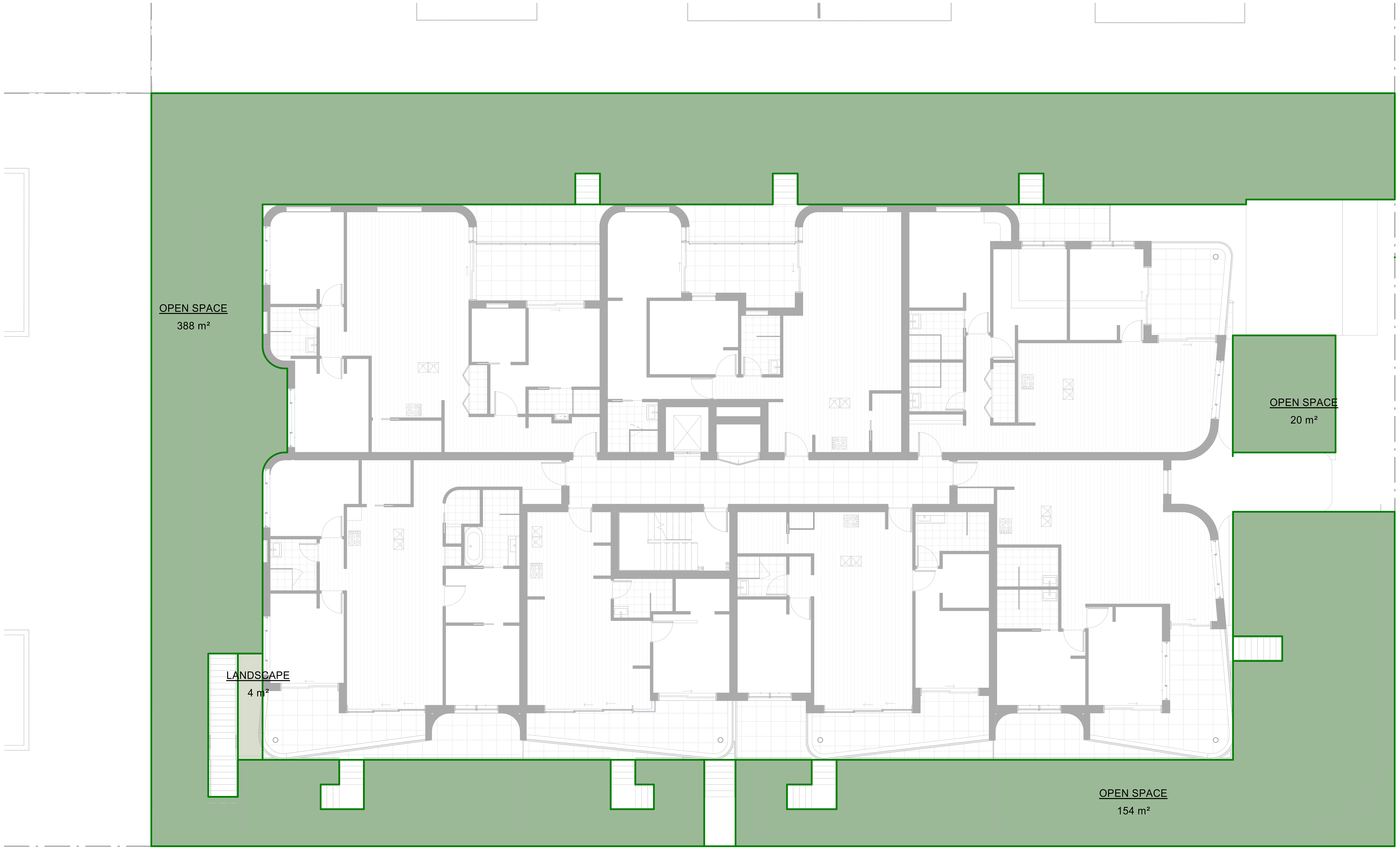
Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
ELEVATIONS

Number
DA301

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS WITHOUT PREJUDICE	10.12.21
D	PLANS FOR LEC	27.01.22

Rev.
D



LANDSCAPE AREAS		
TYPE	AREA	% OF SITE AREA
LANDSCAPE	4 m²	0.3%
OPEN SPACE	562 m²	36.6%
	566 m²	36.9%

AREA INCLUDES PLANTERS OVER BASEMENT. PREVIOUS DA ON THIS SITE (DA 2017/0198) WAS APPROVED ON **38.8%**

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
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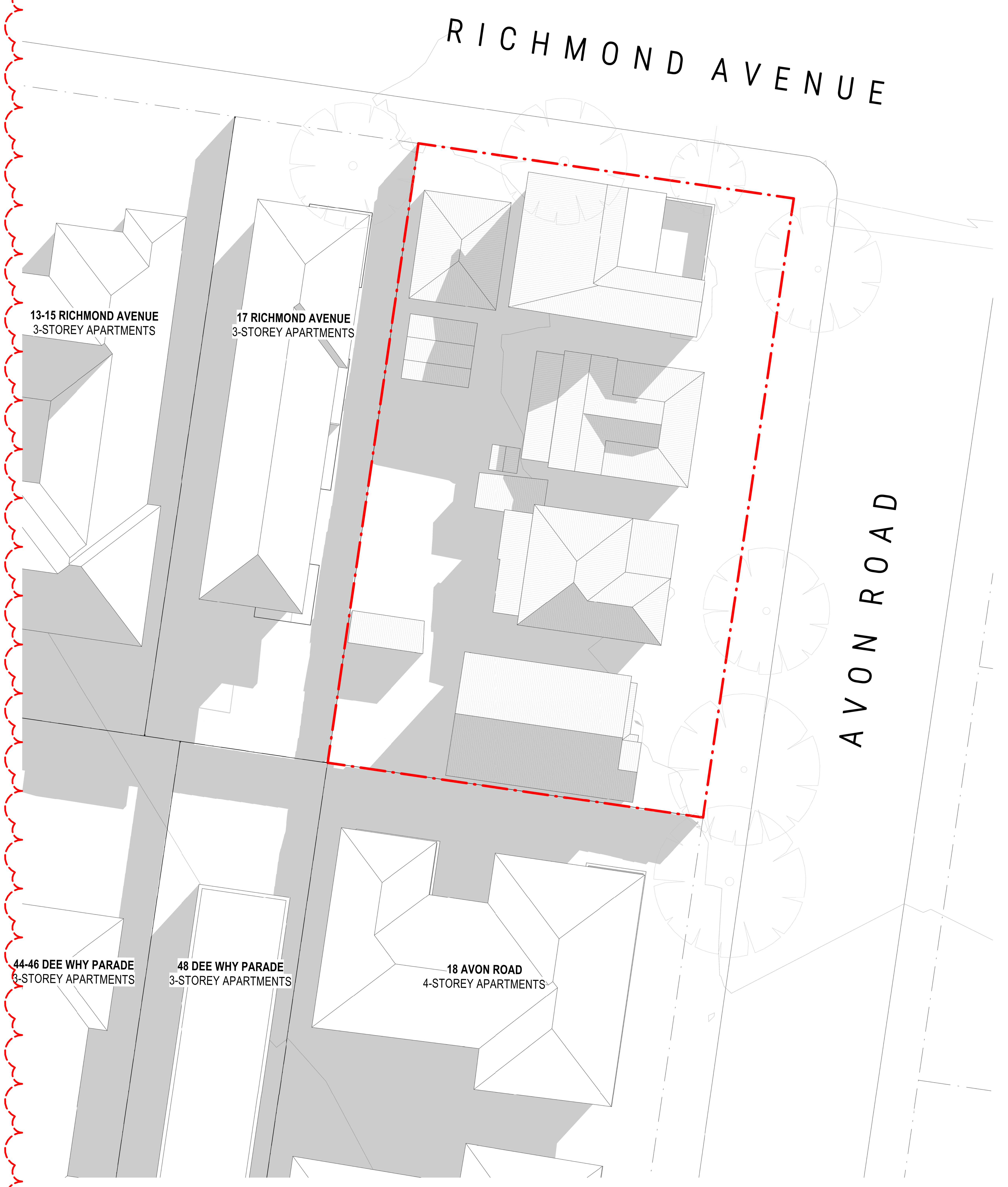
Scale
1 : 100 @ A1
1 : 200 @ A3

Sheet Name
AREA CALCULATIONS - LANDSCAPE

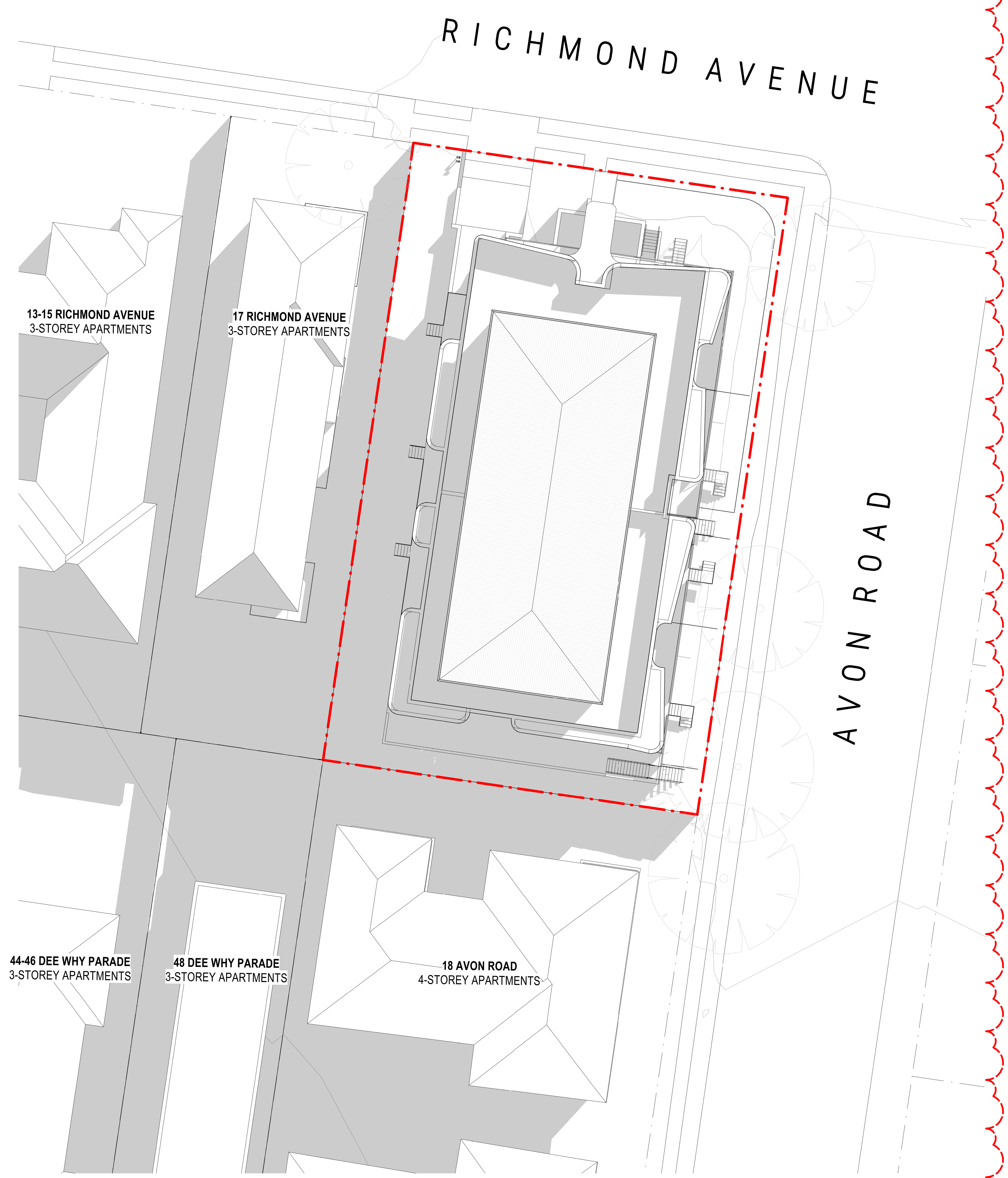
Number
DA401

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	02.12.21
C	PLANS WITHOUT PREJUDICE	10.12.21
D	PLANS FOR LEC	27.01.22

Rev.
D



1 EXISTING SHADOW DIAGRAM - 9AM JUNE 21ST
DA500 1 : 200 @ A1



2 PROPOSED SHADOW DIAGRAM - 9AM JUNE 21ST
DA500 1 : 200 @ A1

Project: 20-26 AVON ROAD, DEE WHY
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Client: ACN 647 465 236 PTY LTD

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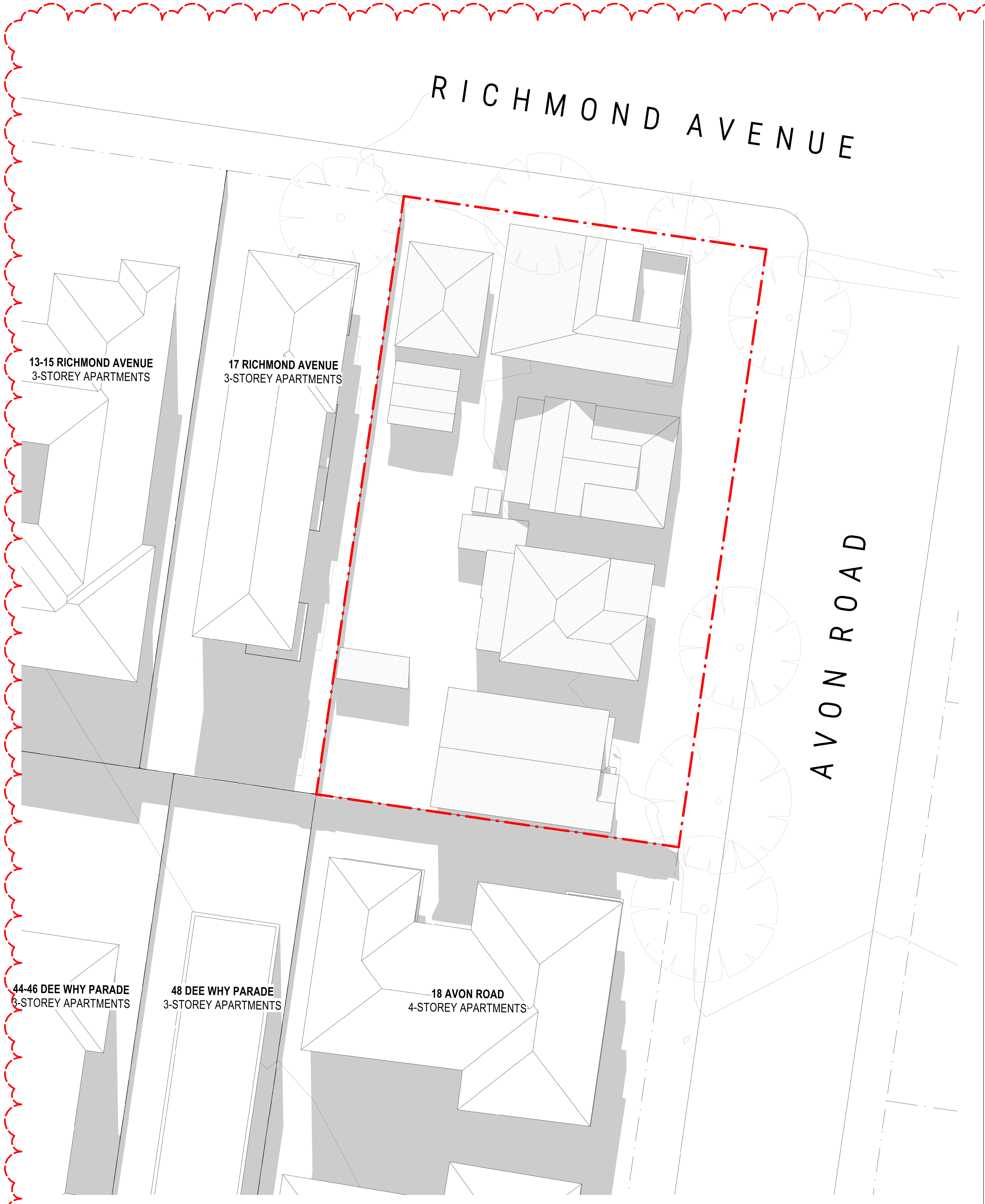
Scale
1 : 200 @ A1
1 : 200 @ A3

Sheet Name
SHADOW DIAGRAMS - 9AM JUNE 21ST

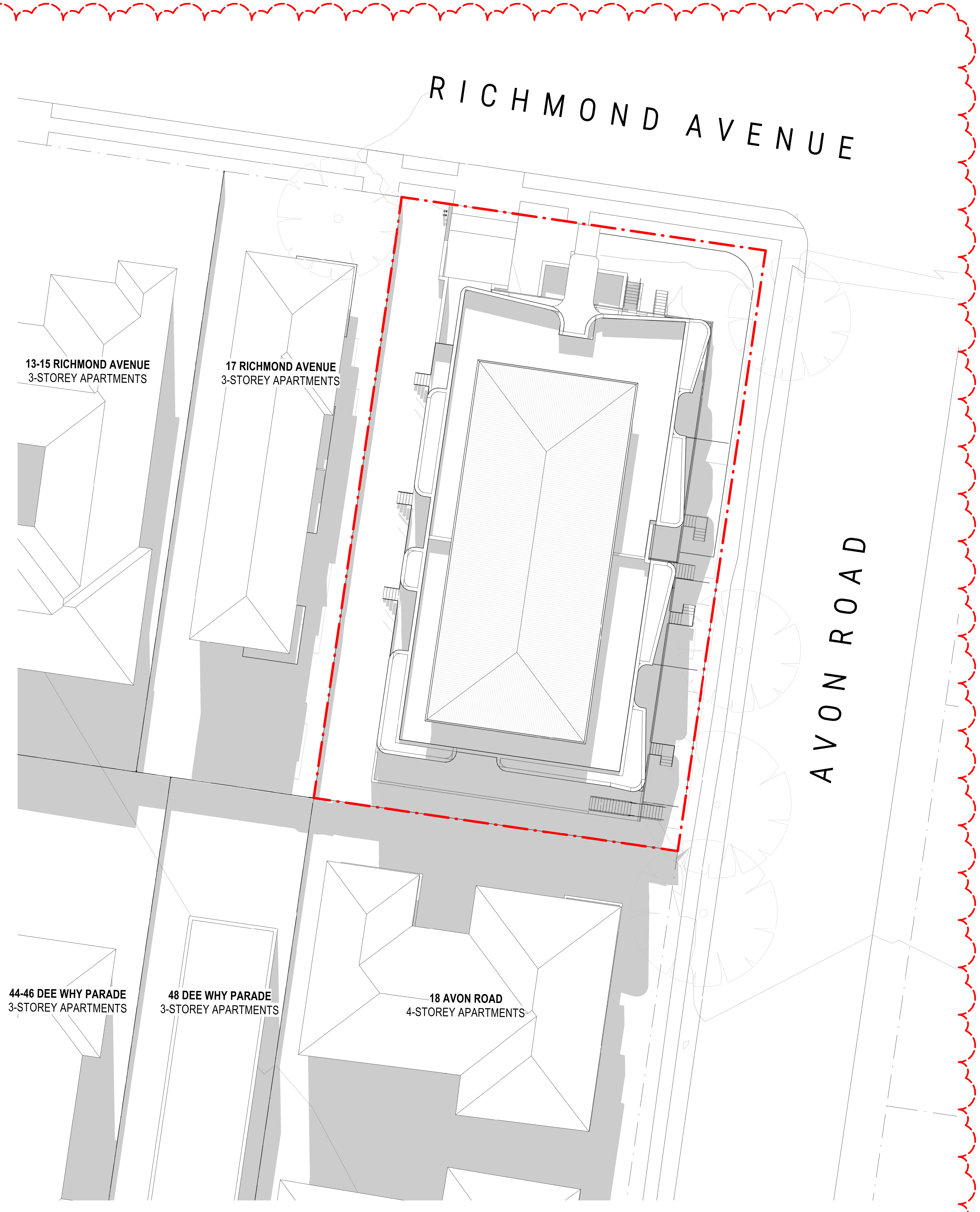
Number
DA500

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C



1 EXISTING SHADOW DIAGRAM - 12PM JUNE 21ST
DA502 1 : 200 @ A1



2 PROPOSED SHADOW DIAGRAM - 12PM JUNE 21ST
DA502 1 : 200 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

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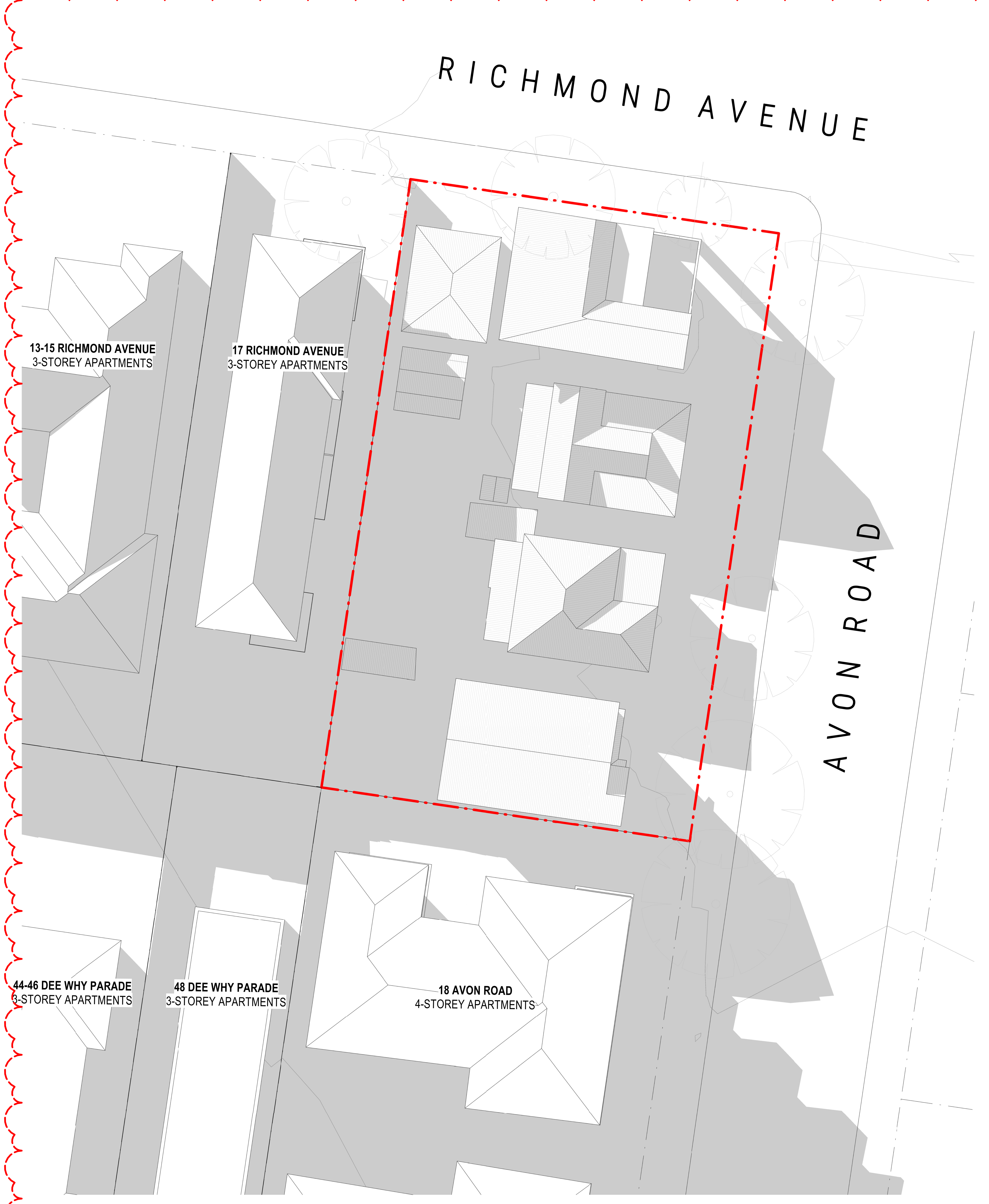
Scale
1 : 200 @ A1
1 : 200 @ A3

Sheet Name
SHADOW DIAGRAMS - 12PM JUNE 21ST

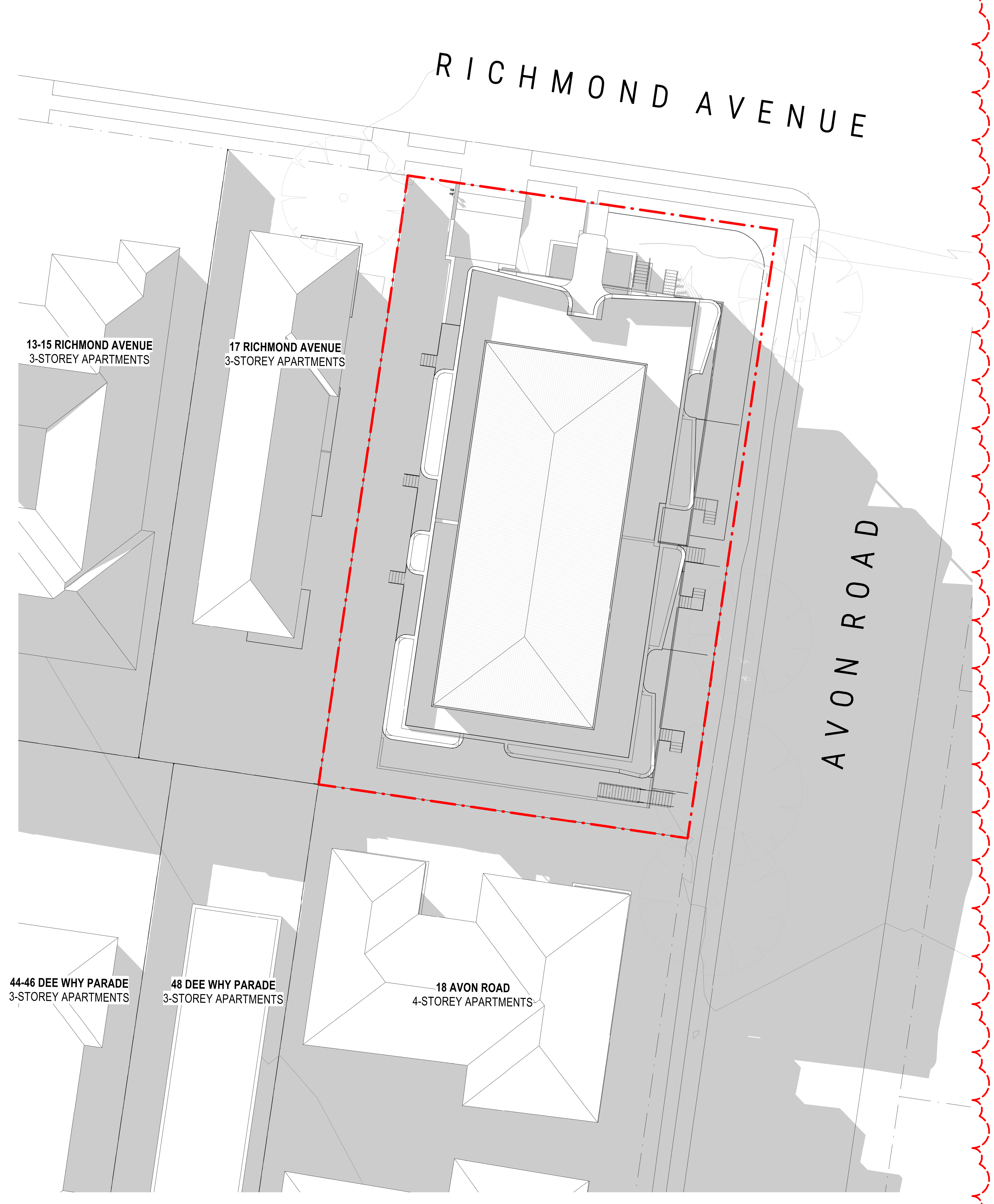
Number
DA502

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C



1 EXISTING SHADOW DIAGRAM - 3PM JUNE 21ST
DA503 1 : 200 @ A1



2 PROPOSED SHADOW DIAGRAM - 3PM JUNE 21ST
DA503 1 : 200 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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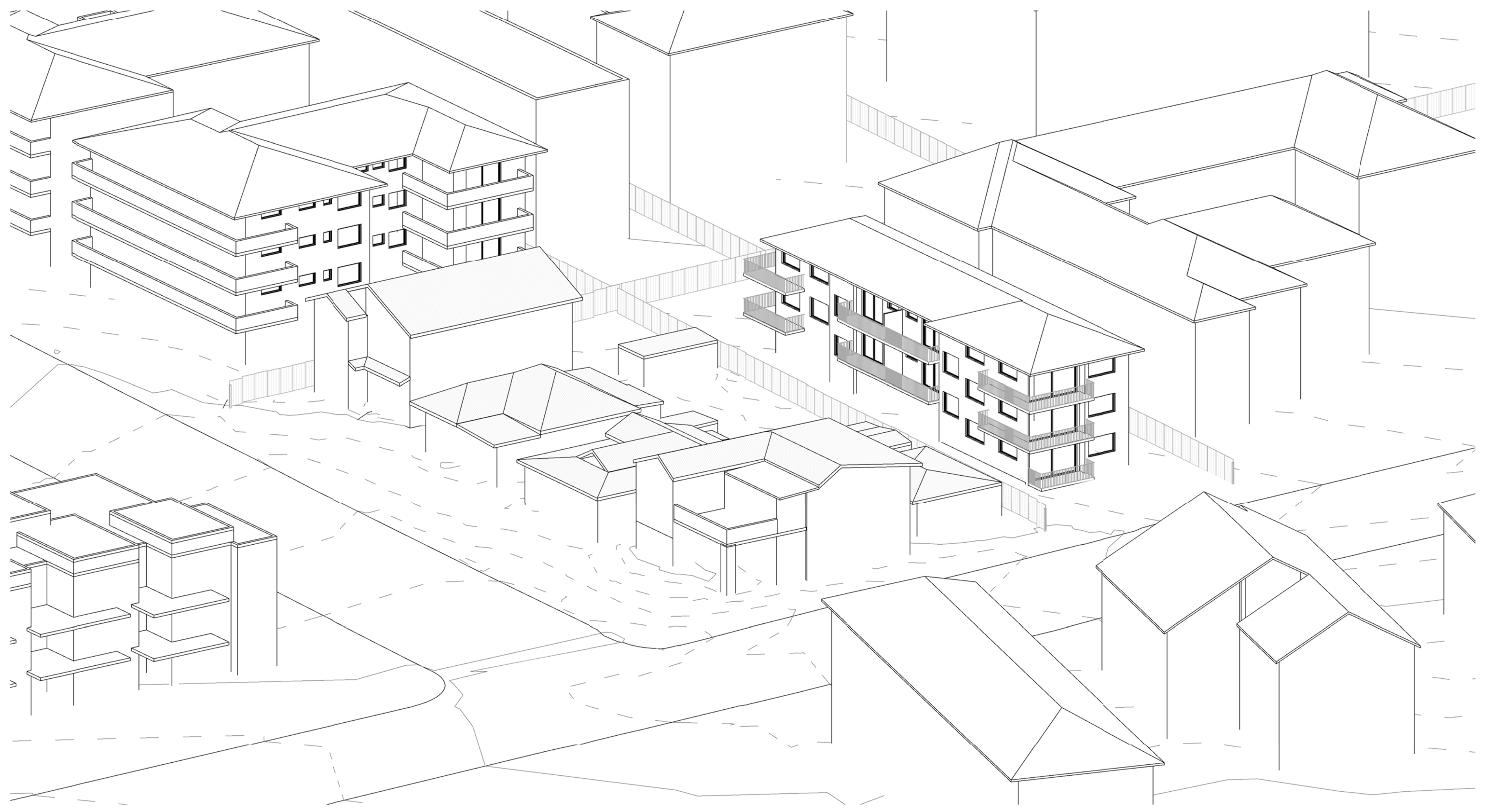
Scale
1 : 200 @ A1
1 : 200 @ A3

Sheet Name
SHADOW DIAGRAMS - 3PM JUNE 21ST

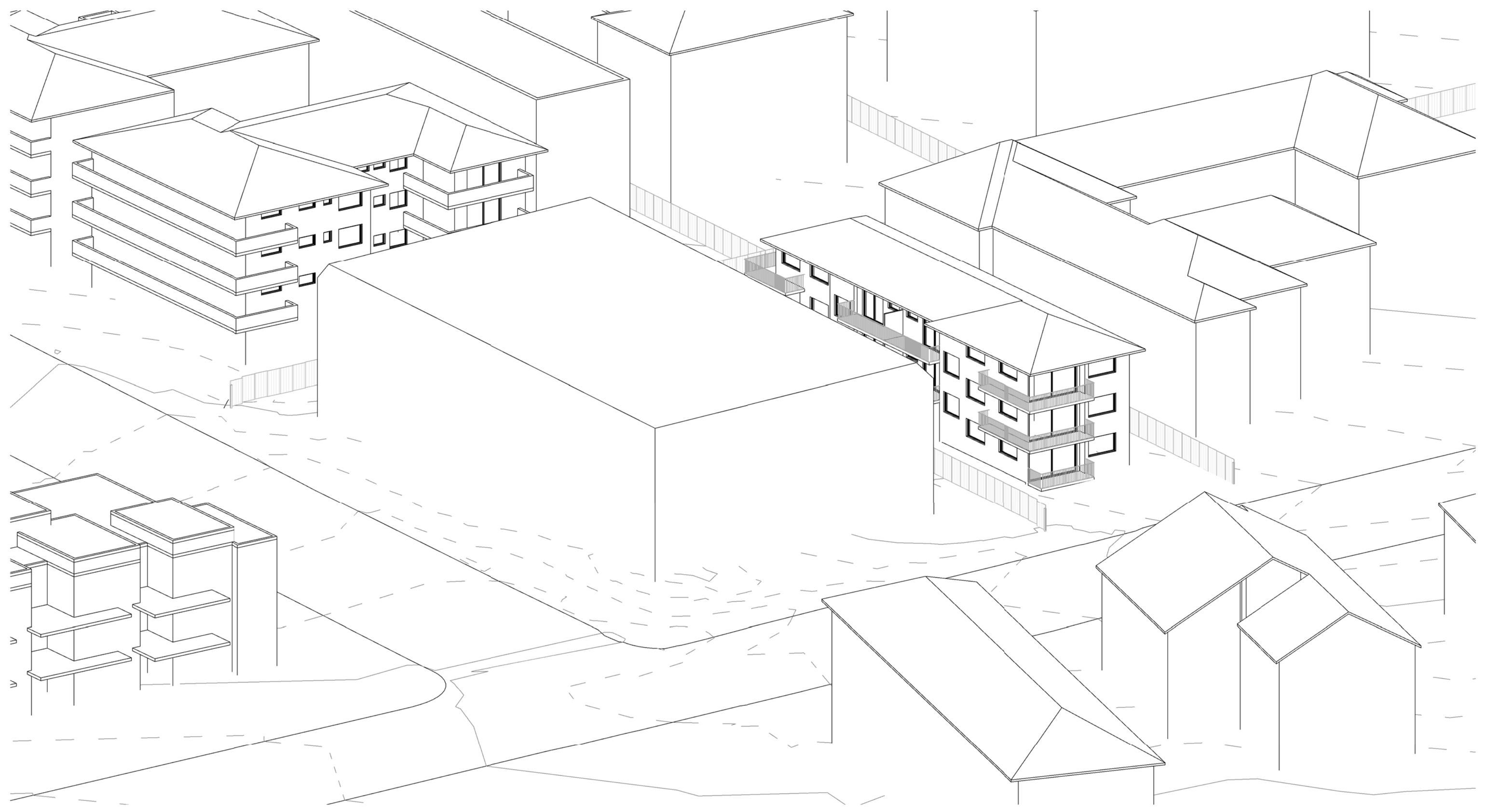
Number
DA503

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C

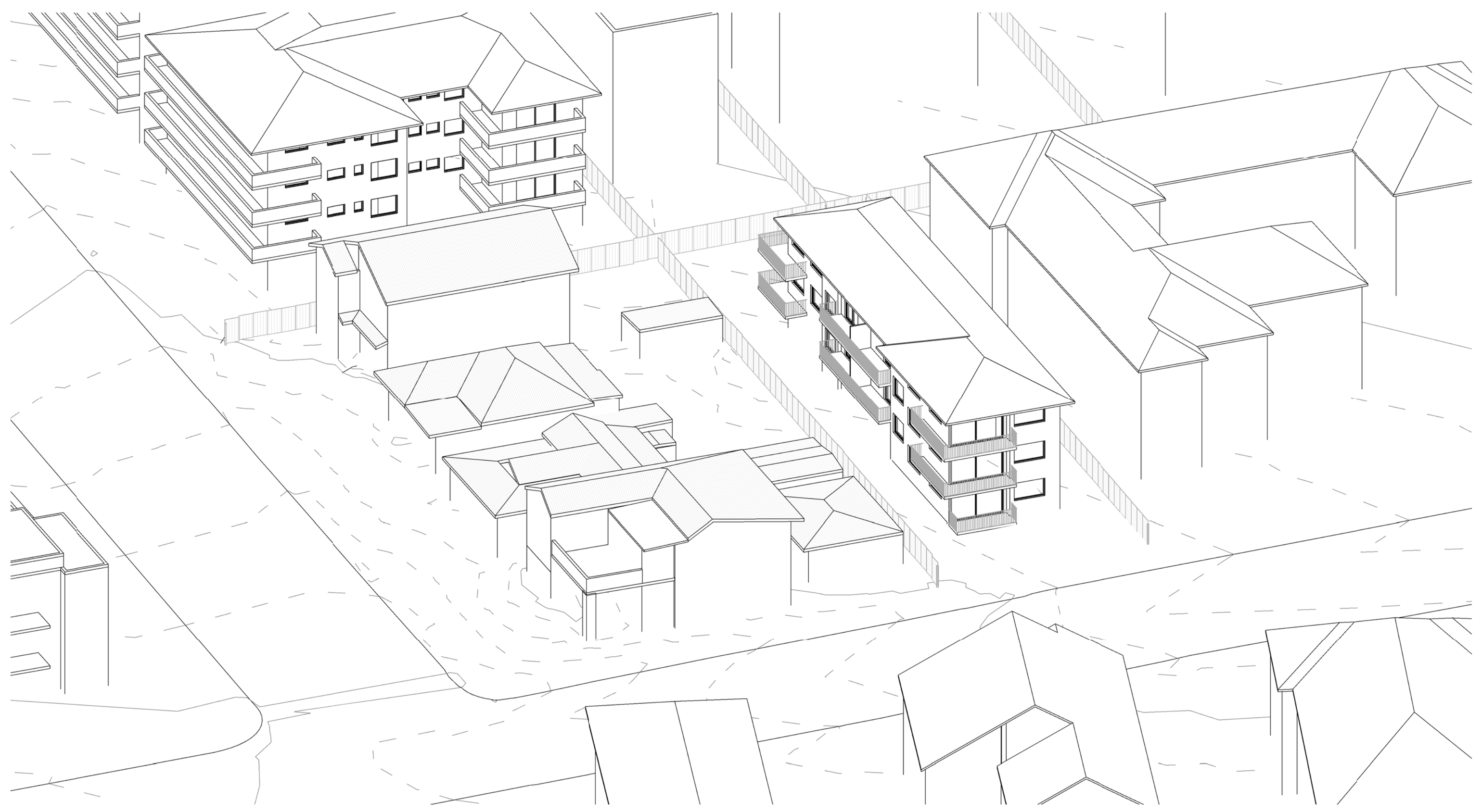


1 VIEW FROM SUN - JUNE 21 - 9AM EXISTING
DA550 @ A1

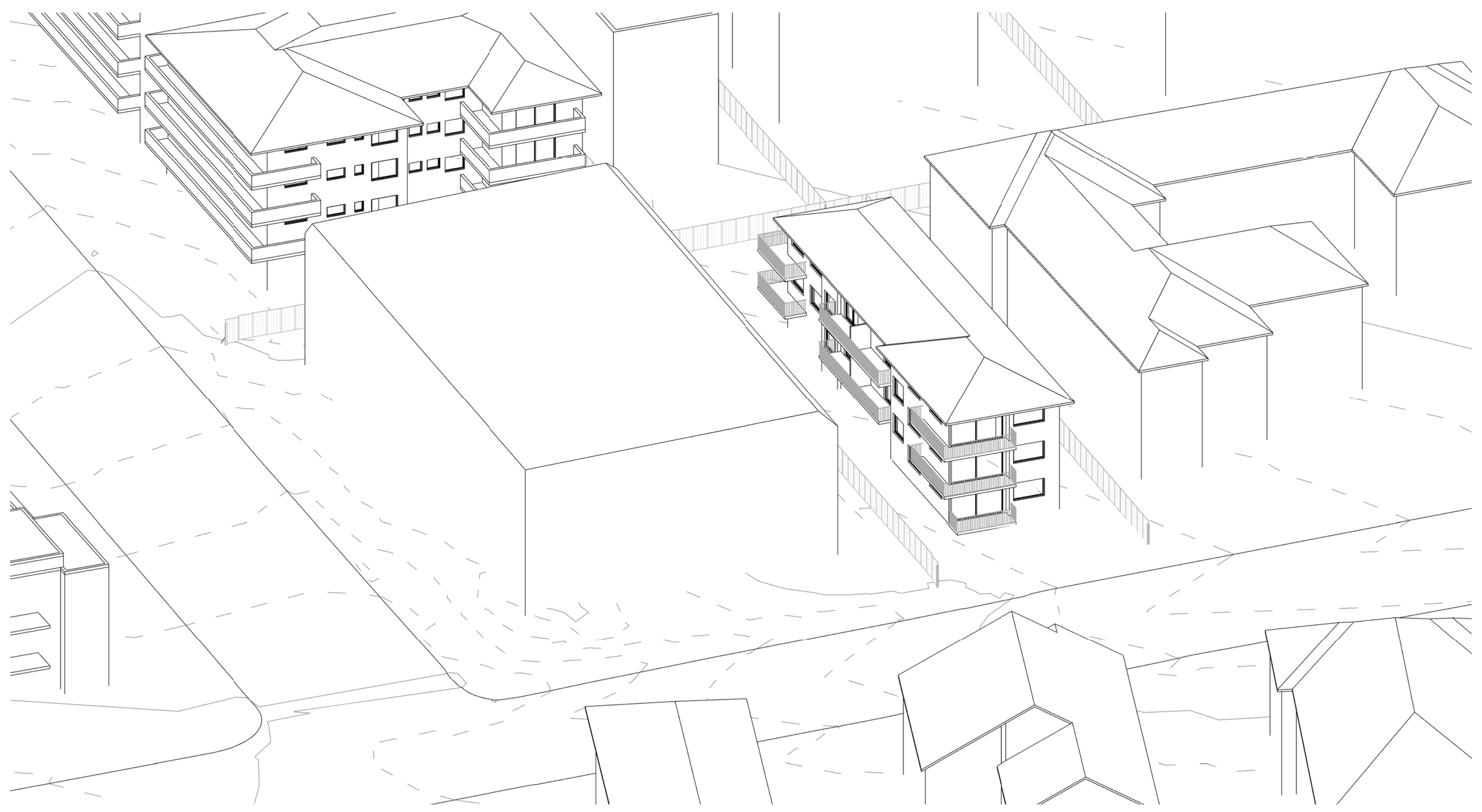


2 VIEW FROM SUN - JUNE 21 - 9AM BUILDING ENVELOPE
DA550 @ A1

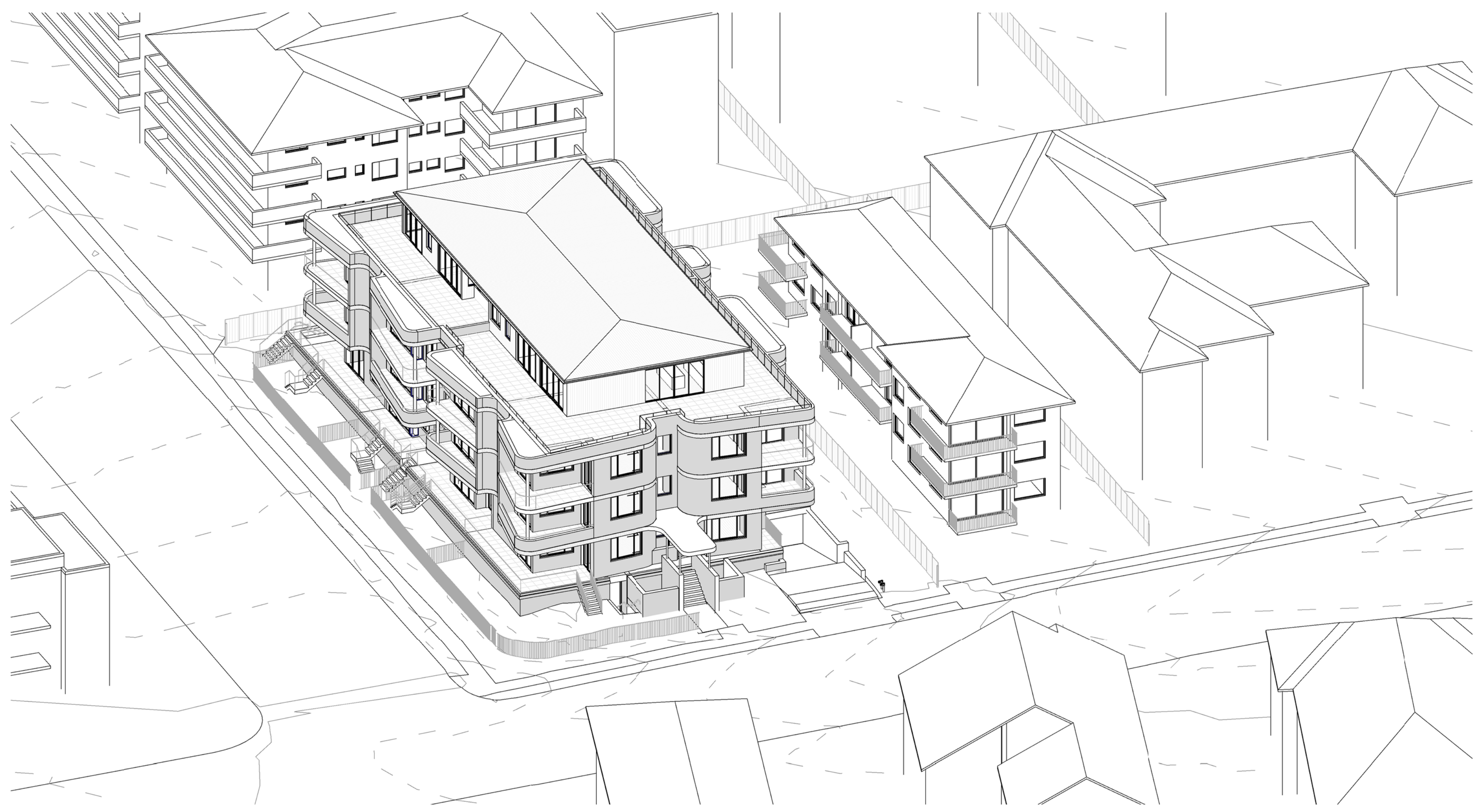
3 VIEW FROM SUN - JUNE 21 - 9AM PROPOSED
DA550 @ A1



4 VIEW FROM SUN - JUNE 21 - 10AM EXISTING
DA550 @ A1



5 VIEW FROM SUN - JUNE 21 - 10AM BUILDING ENVELOPE
DA550 @ A1



6 VIEW FROM SUN - JUNE 21 - 10AM PROPOSED
DA550 @ A1

7 VIEW FROM SUN - JUNE 21 - 11AM EXISTING
DA550 @ A1

8 VIEW FROM SUN - JUNE 21 - 11AM BUILDING ENVELOPE
DA550 @ A1

9 VIEW FROM SUN - JUNE 21 - 11AM PROPOSED
DA550 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS

Client: ACN 647 465 236 PTY LTD

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Scale
@ A1
NTS @ A3

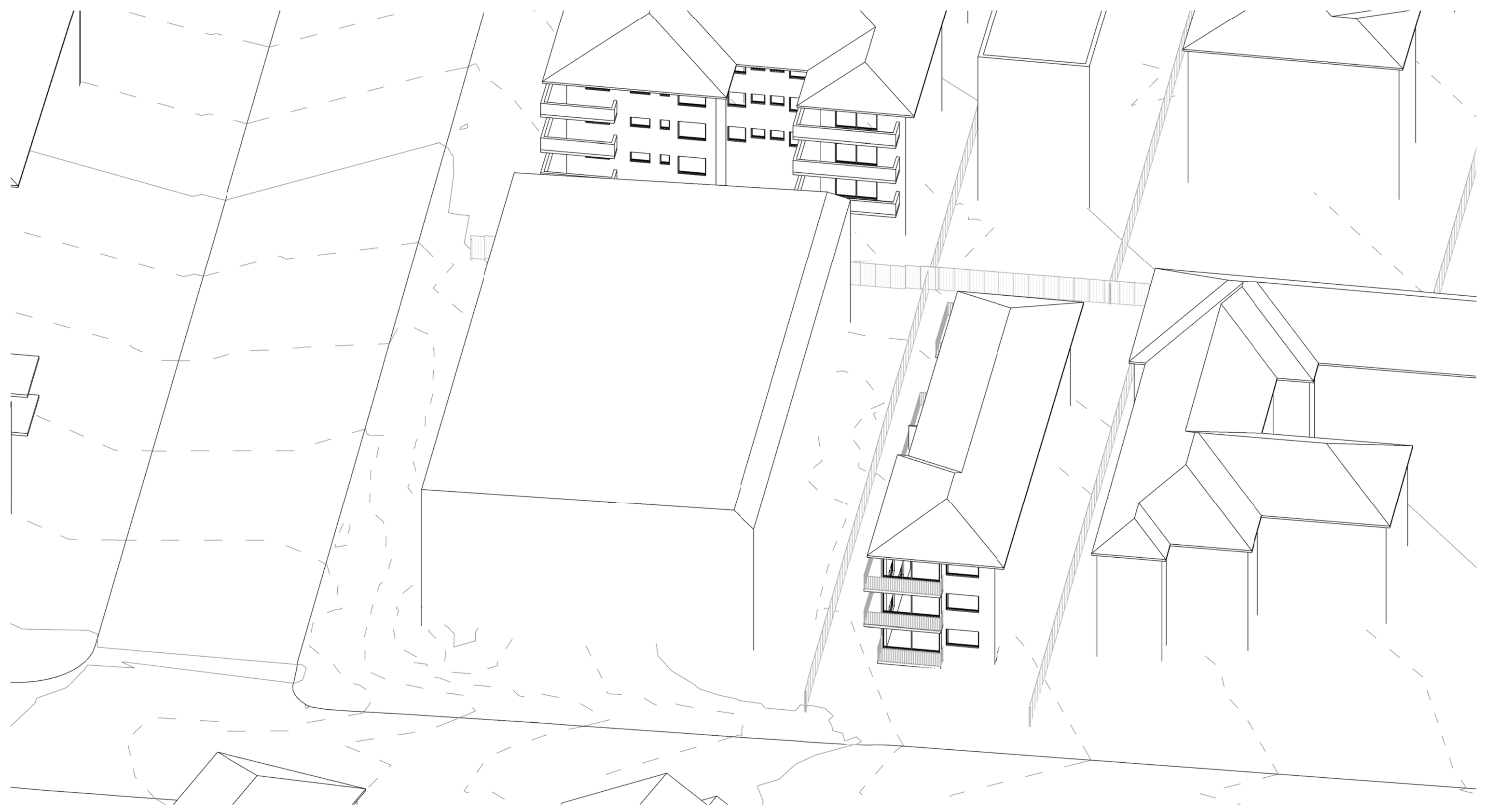
Sheet Name
VIEWS FROM SUN - JUNE 21ST

Number
DA550

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

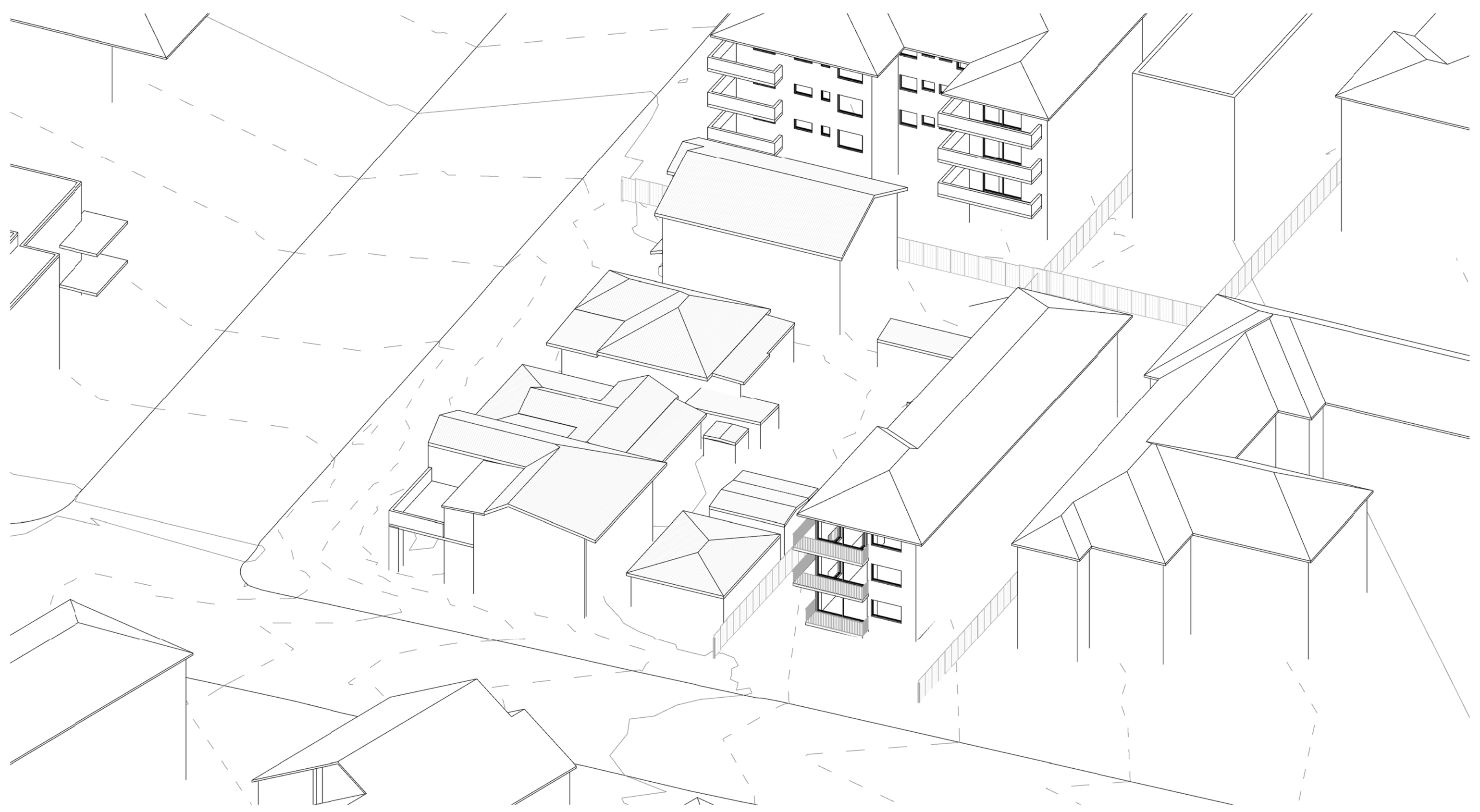
Rev.
C

1 VIEW FROM SUN - JUNE 21 - 12PM EXISTING
DA551 @ A1

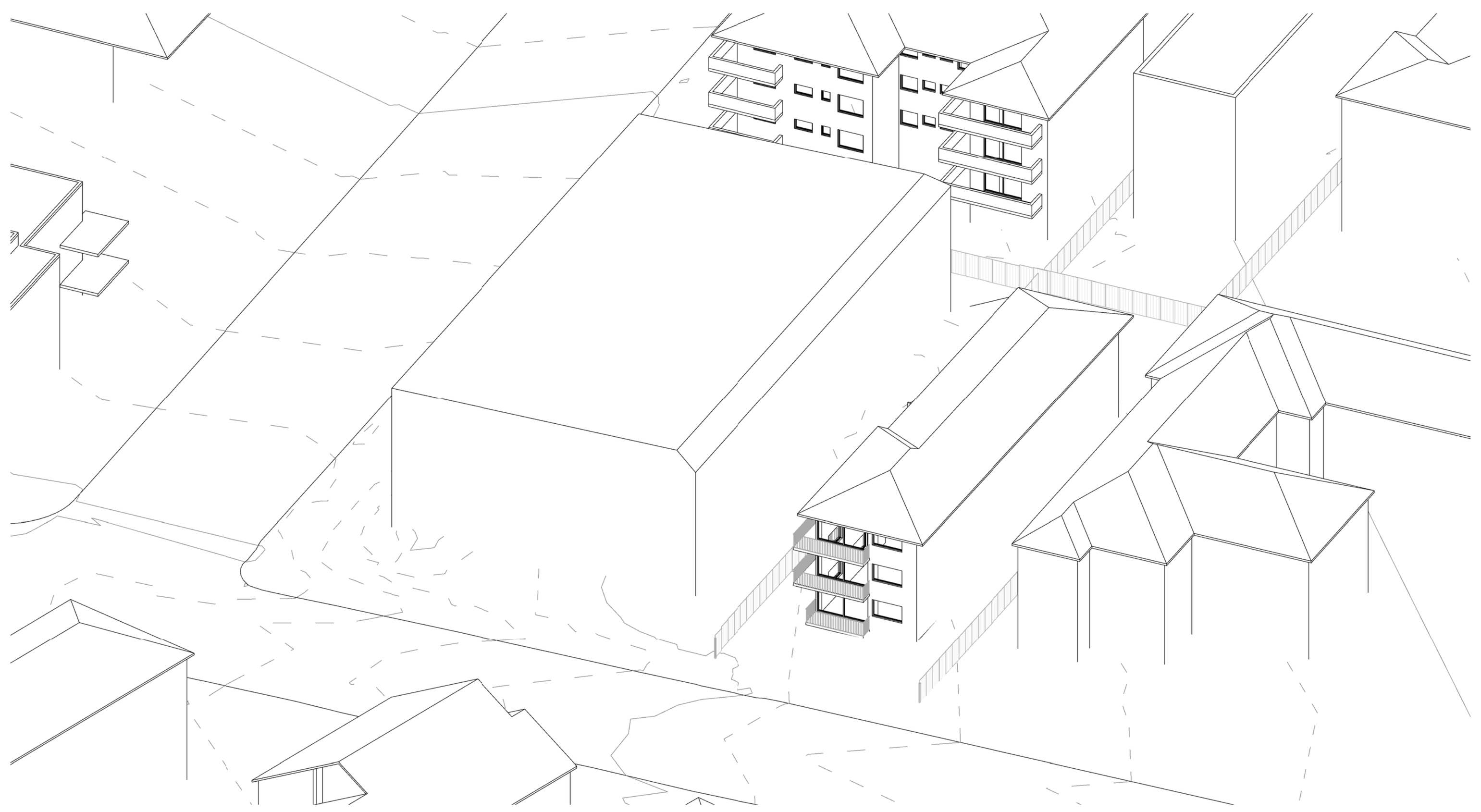


2 VIEW FROM SUN - JUNE 21 - 12PM BUILDING ENVELOPE
DA551 @ A1

3 VIEW FROM SUN - JUNE 21 - 12PM PROPOSED
DA551 @ A1

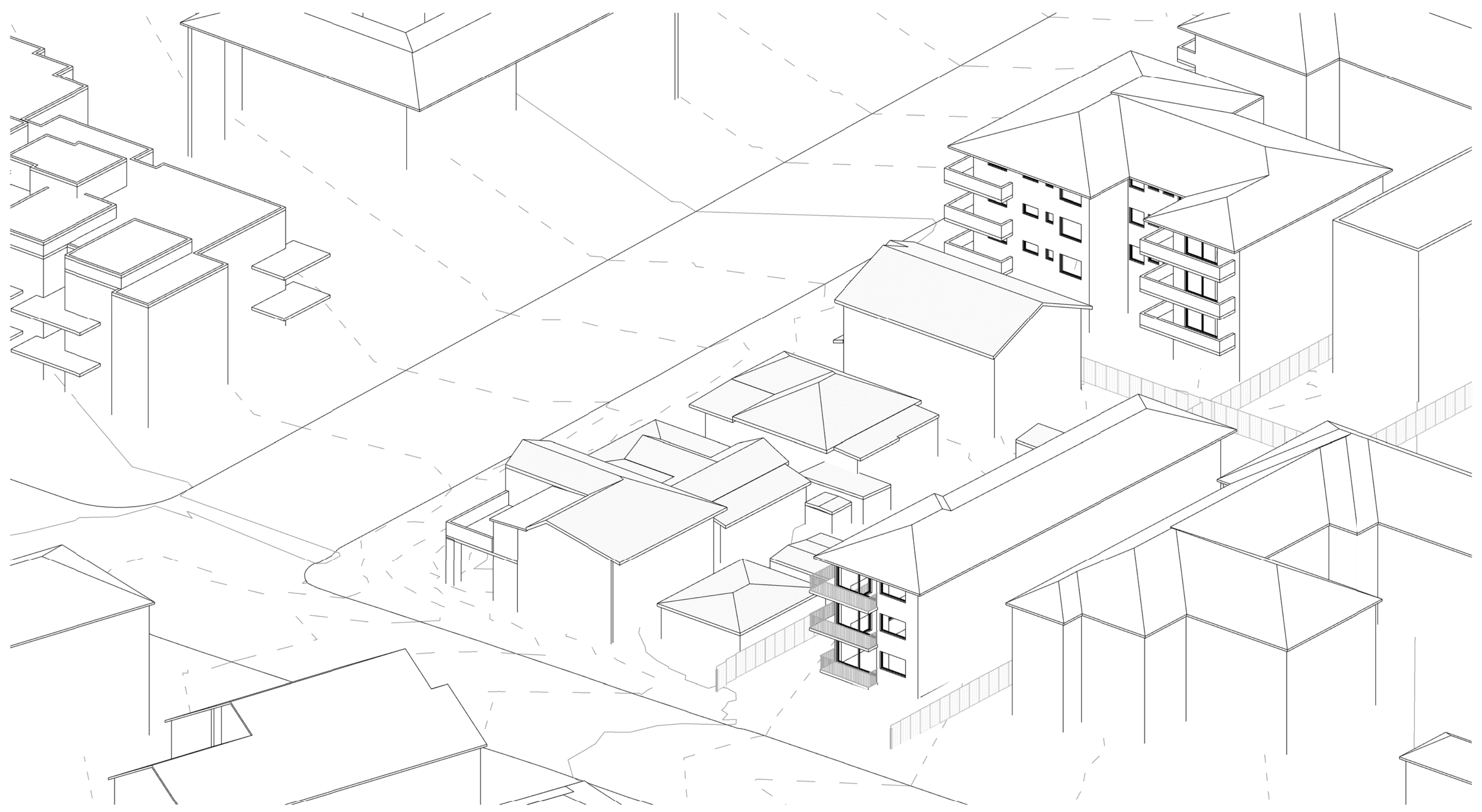


4 VIEW FROM SUN - JUNE 21 - 1PM EXISTING
DA551 @ A1

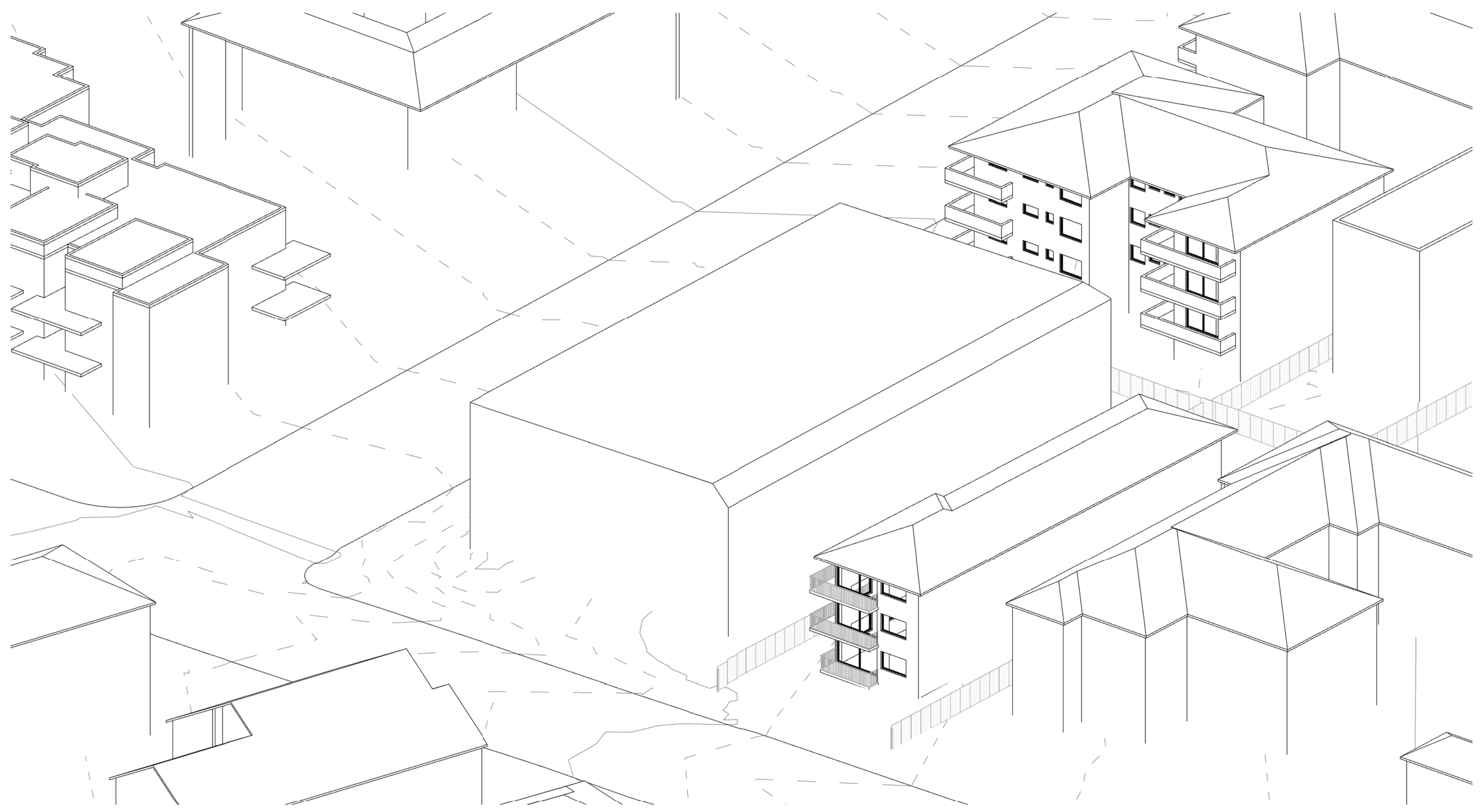


5 VIEW FROM SUN - JUNE 21 - 1PM BUILDING ENVELOPE
DA551 @ A1

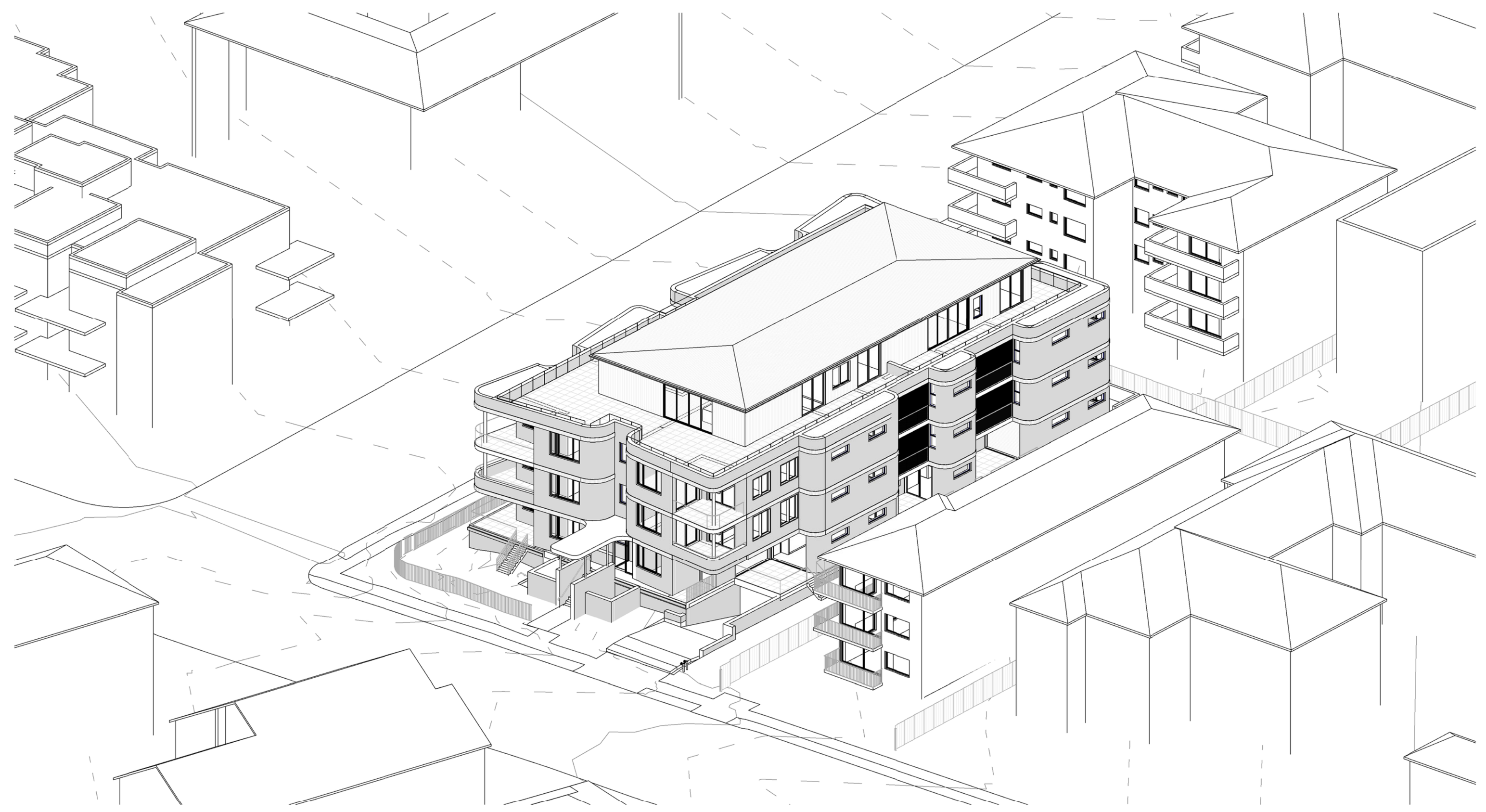
6 VIEW FROM SUN - JUNE 21 - 1PM PROPOSED
DA551 @ A1



7 VIEW FROM SUN - JUNE 21 - 2PM EXISTING
DA551 @ A1



8 VIEW FROM SUN - JUNE 21 - 2PM BUILDING ENVELOPE
DA551 @ A1



9 VIEW FROM SUN - JUNE 21 - 2PM PROPOSED
DA551 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

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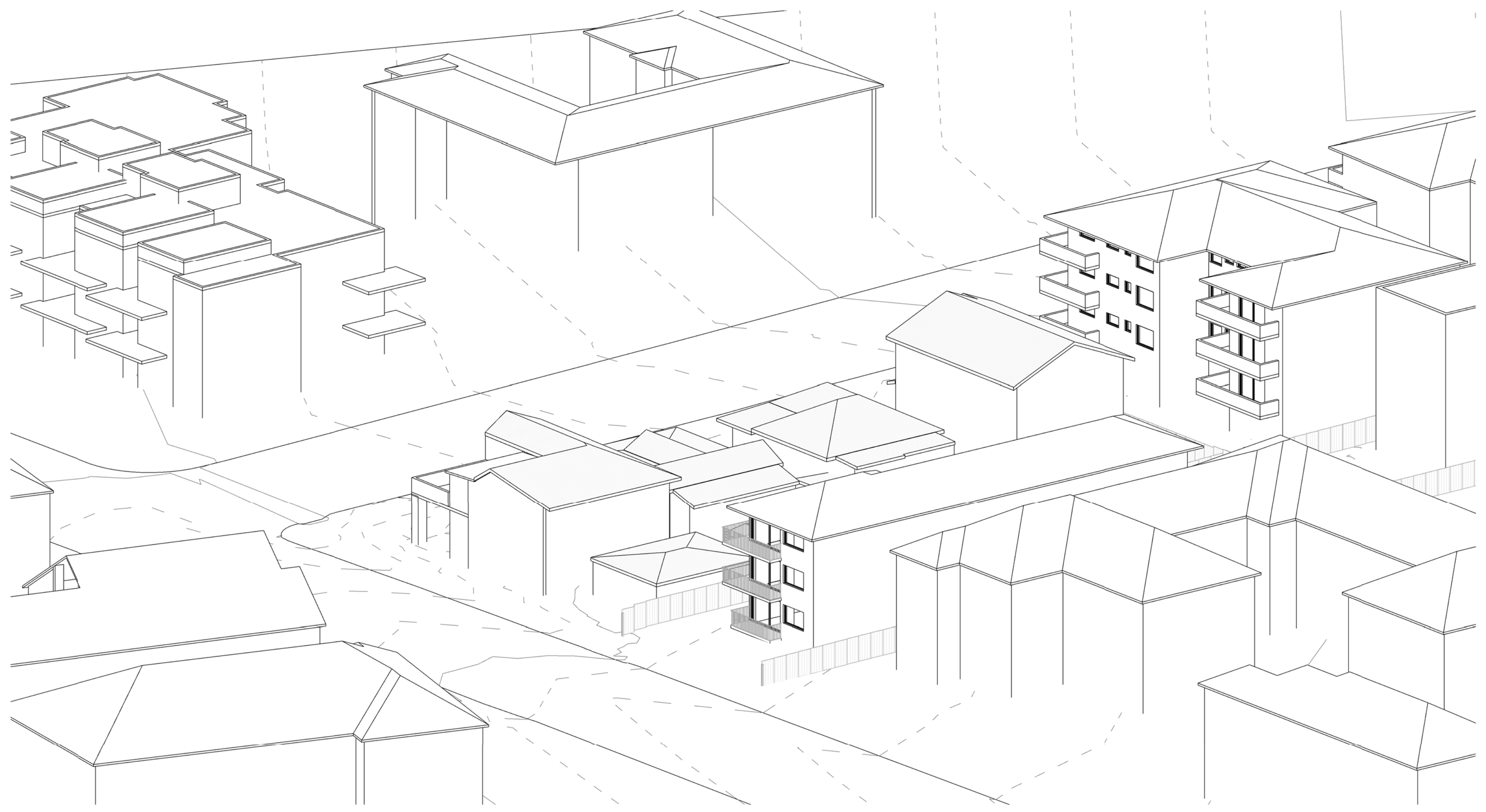
Scale
@ A1
NTS @ A3

Sheet Name
VIEWS FROM SUN - JUNE 21ST

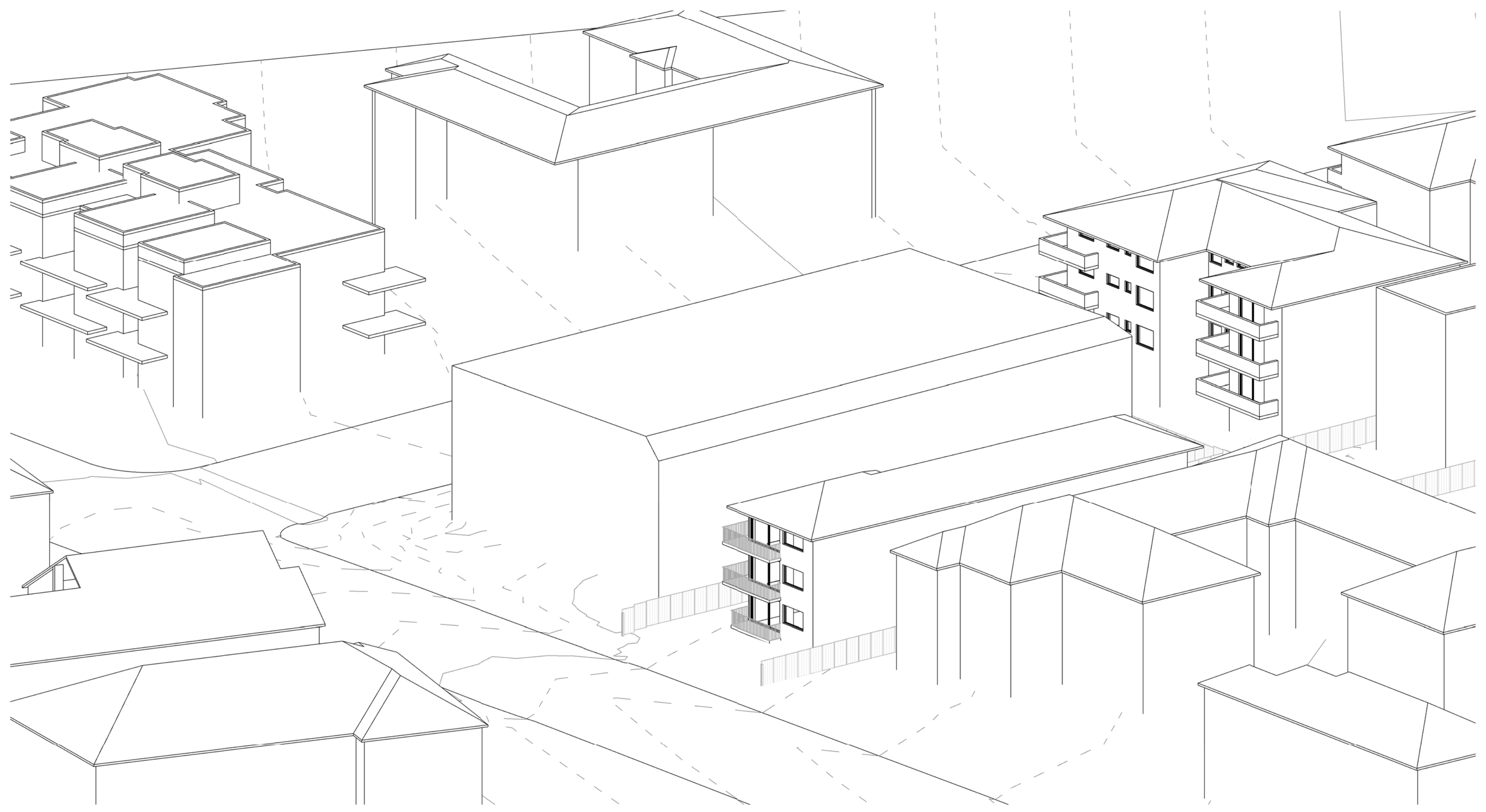
Number
DA551

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

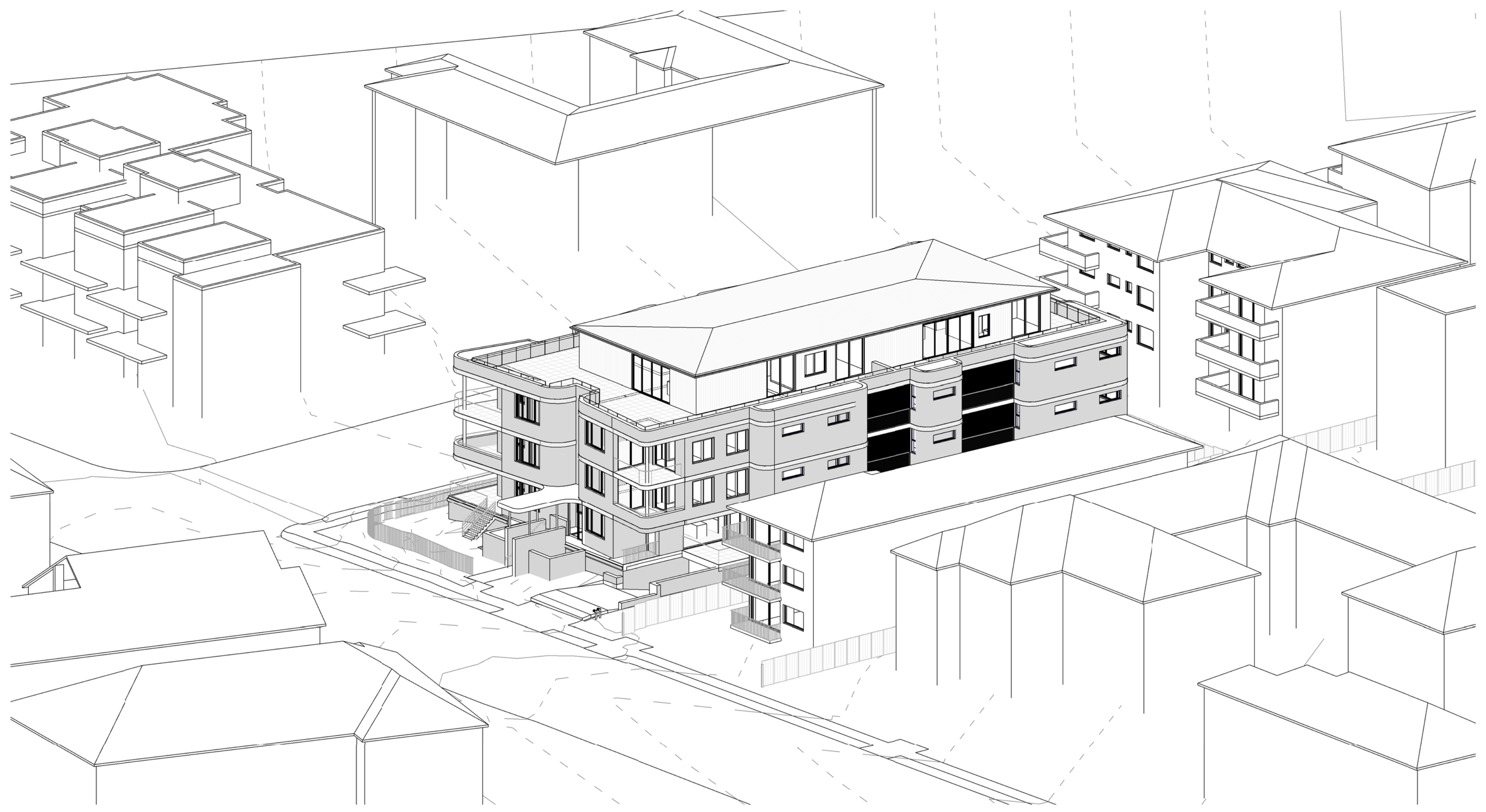
Rev.
C



1 VIEW FROM SUN - JUNE 21 - 3PM EXISTING
DA552 @ A1



2 VIEW FROM SUN - JUNE 21 - 3PM BUILDING ENVELOPE
DA552 @ A1



3 VIEW FROM SUN - JUNE 21 - 3PM PROPOSED
DA552 @ A1

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

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Scale
@ A1

Sheet Name
VIEWS FROM SUN - JUNE 21ST

Number
DA552

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C

1 JUNE 21- 9AM EXISTING
DA555

2 JUNE 21- 9AM PROPOSED
DA555

3 JUNE 21-930AM EXISTING
DA555

4 JUNE 21-930AM PROPOSED
DA555

5 JUNE 21-10AM EXISTING
DA555

6 JUNE 21-10AM PROPOSED
DA555

7 JUNE 21-1030AM EXISTING
DA555

8 JUNE 21-1030AM PROPOSED
DA555

9 JUNE 21-11AM EXISTING
DA555

10 JUNE 21-11AM PROPOSED
DA555

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

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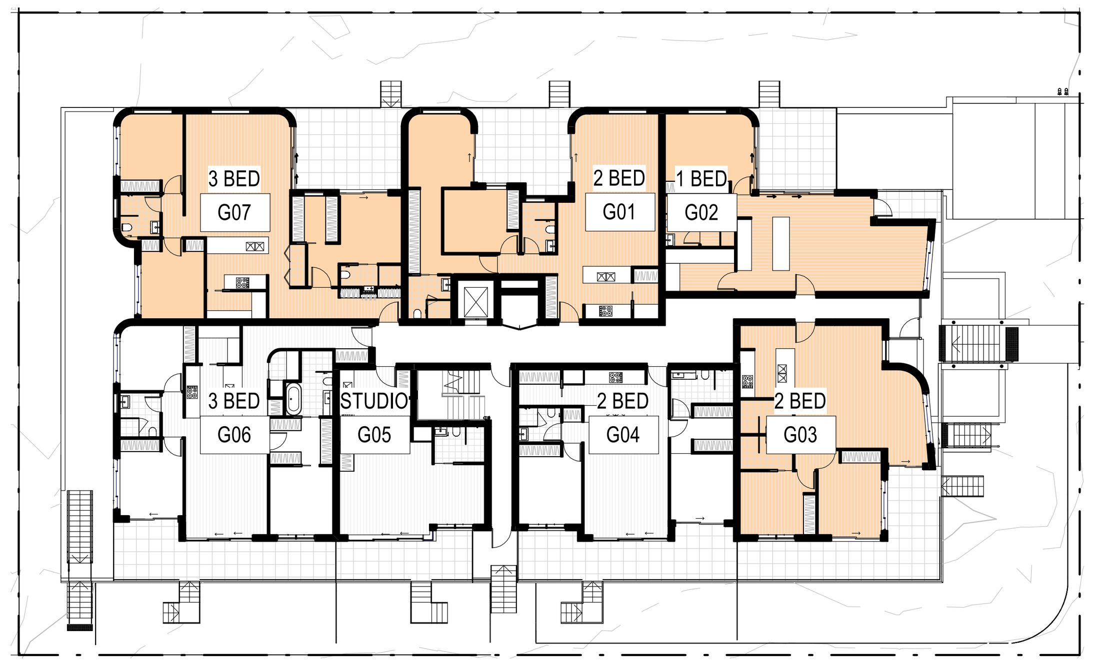
Scale @ A1

Sheet Name
OVERSHADOWING - 17 RICHMOND AVE

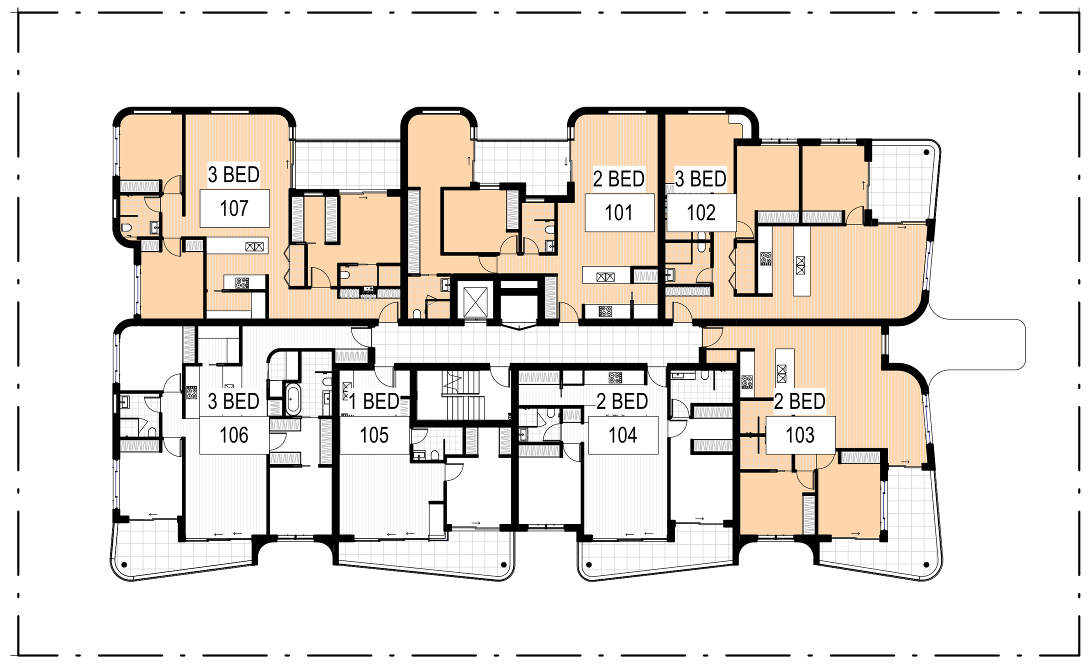
Number DA555

No.	Description	Date
A	PLANS FOR LEC	27.01.22

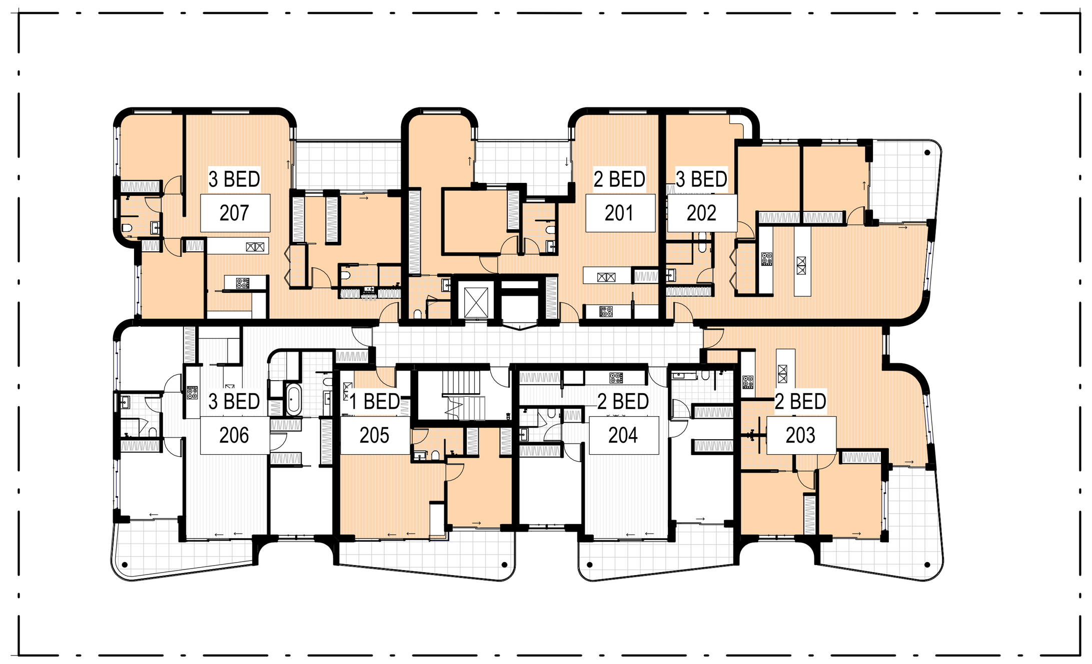
Rev. A



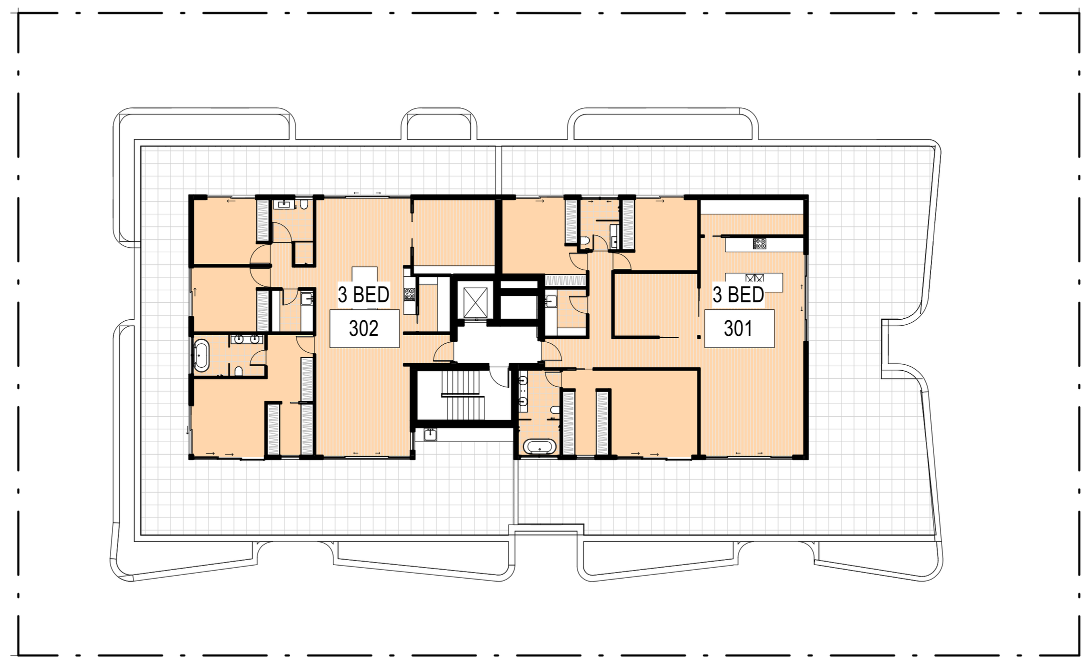
1 SOLAR - GROUND FLOOR PLAN
DA901 1 : 300 @ A1



2 SOLAR - LEVEL 1 FLOOR PLAN
DA901 1 : 300 @ A1



3 SOLAR - LEVEL 2
DA901 1 : 300 @ A1



4 SOLAR - ATTIC
DA901 1 : 300 @ A1

2 HOUR SOLAR ACCESS	
SOLAR ACCESS	NUMBER
No	8
Yes	15

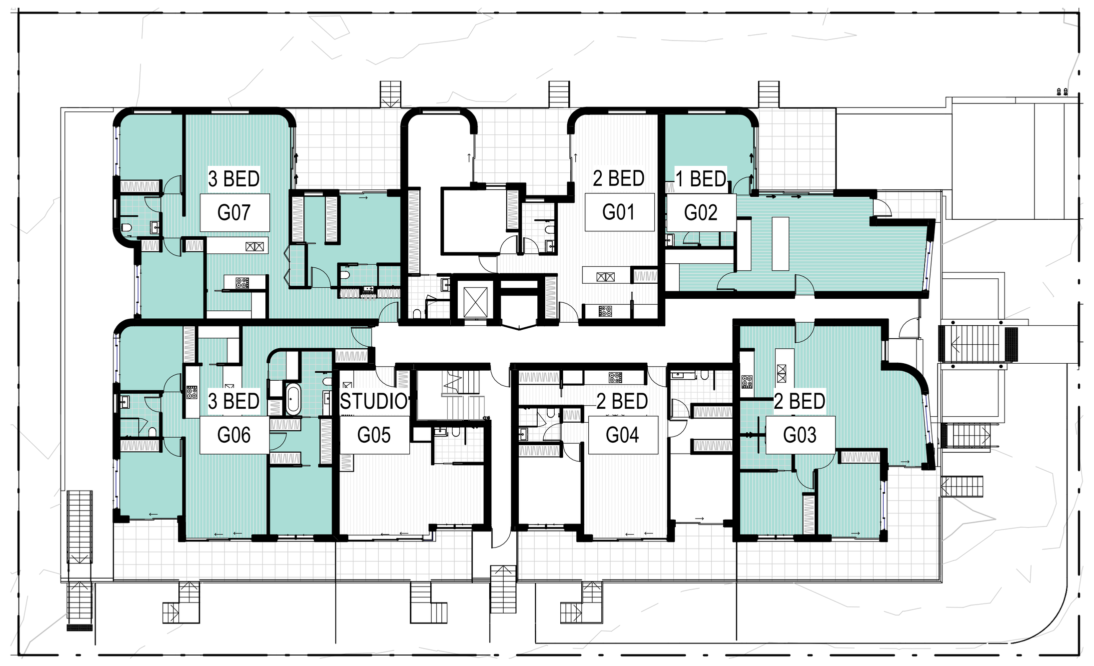
OBJECTIVE 4A-1

DESIGN CRITERION 1
- 2 HOURS OF SOLAR ACCESS TO 70% OF DWELLINGS 9-3PM
- 15/23 = 65% OF APARTMENTS COMPLY

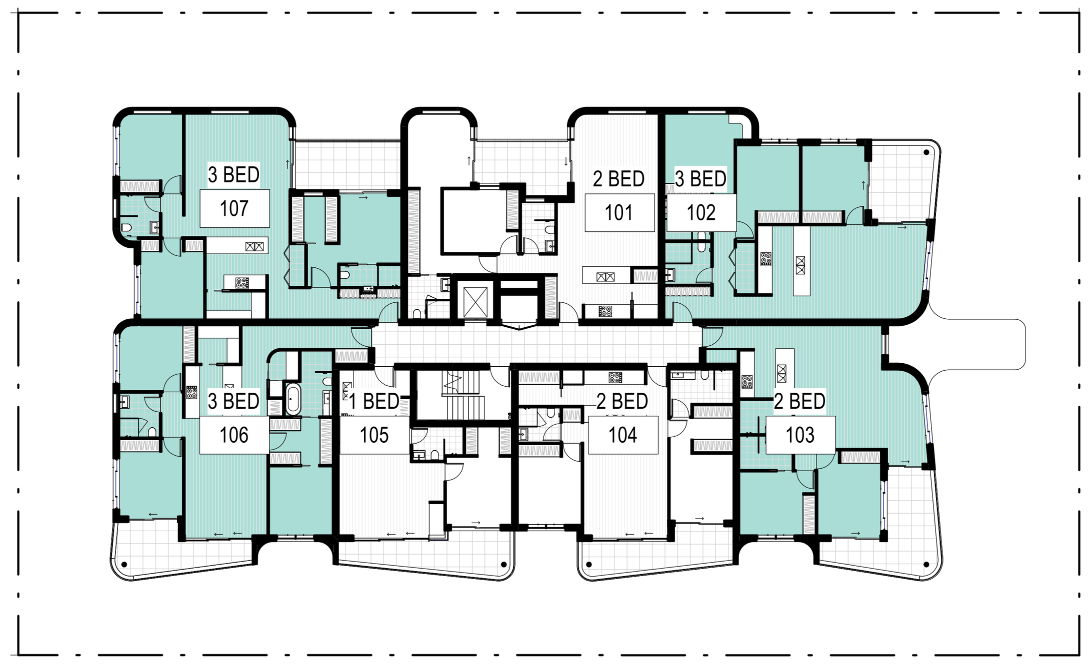
DESIGN CRITERION NOT SATISIFED BUT COUNCIL REQUIRE LIVING TO BE SET BACK ON EASTERN FACADES WHICH DOES NOT FOLLOW SPACE PLANNING TO MAXIMISE SOLAR ACCESS. THIS IS A DISCRITIONARY STANDARD AND THE BUILDING STILL MEETS THE GUIDANCE.

DESIGN CRITERION 3
- MAXIMUM 15% OF APARTMENTS RECIEVE LESS THAN 15 MINUTES OF SUN
- 0/26 = 0% OF APARTMENTS RECIEVE LESS THAN 15 MINUTES OF SUN

DESIGN CRITERION FULLY SATISIFED.

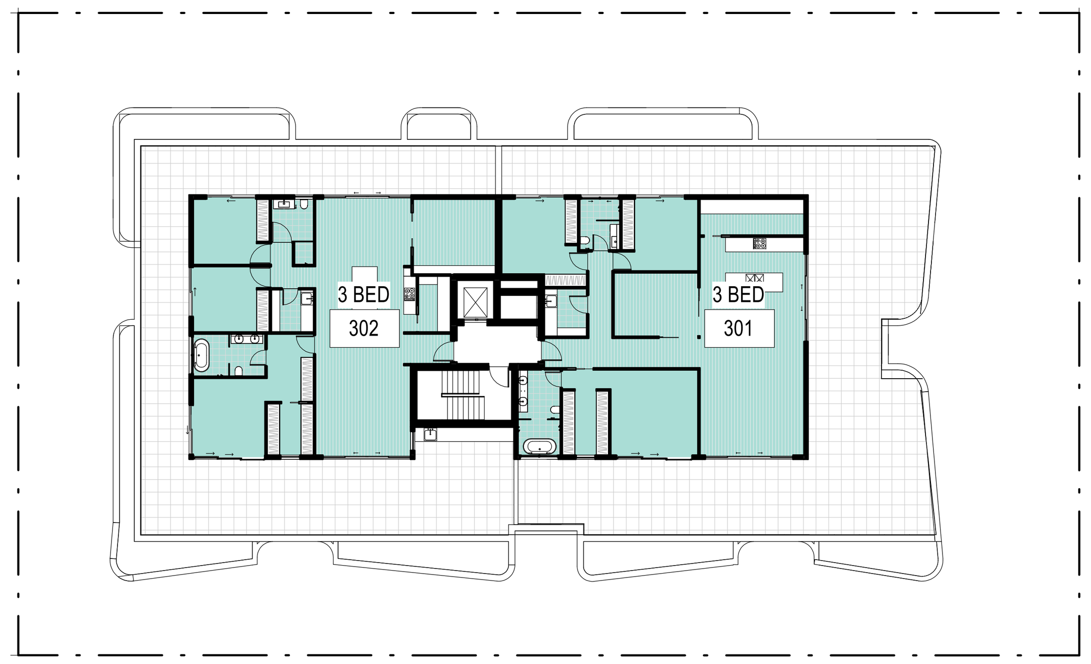


5 VENTILATION - GROUND FLOOR PLAN
DA901 1 : 300 @ A1



6 VENTILATION - LEVEL 1 FLOOR PLAN
DA901 1 : 300 @ A1

7 VENTILATION - LEVEL 2
DA901 1 : 300 @ A1



8 VENTILATION - ATTIC
DA901 1 : 300 @ A1

CROSS VENTILATION	
CROSS VENTILATION	NUMBER
No	9
Yes	14

OBJECTIVE 4B-3

DESIGN CRITERION 1
- AT LEAST 60% OF APARTMENTS ARE NATURALLY CROSSVENTILATED
- 14/23 = 60.8% ARE CROSS VENTILATED.

DESIGN CRITERION FULLY SATISIFED.

DESIGN CRITERION 2
- MAXIMUM DEPTH OF CROSS OVER/THROUGH APARTMENTS IS 18M.
- NO UNITS ARE CROSS OVER/THROUGH.

DESIGN CRITERION FULLY SATISIFED.

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

Walsh Architects
Registered Architect
ACT 2624 NSW 10366
scott@walsharchitects.com.au
0466 049 880

Scale
1 : 300 @ A1
1 : 600 @ A3

Sheet Name
ADG COMPLIANCE

Number
DA901

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	10.12.21
C	PLANS FOR LEC	27.01.22

Rev.
C

1. BRICK CLADDING - AUSTRAL WHITEHAVEN OR SIMILAR
USED ON FACADE OF GROUND TO LEVEL 2

2. GLASS BALUSTRADES
ALL BALCONIES EITHER FULL HEIGHT OR ABOVE BRICKWORK

3. PEARL WHITE DETAILING
BALUSTRADES, WINDOWS, GUTTERS, FENCING, ETC

4. METAL ROOFING - LYSAGHT KLIPLOK DUNE OR SIMILAR
ROOFING AND ATTIC WALLS

5. SPLIT FACE SANDSTONE OR SIMILAR
FENCING AND ENTRY WALLS

Project: 20-26 AVON ROAD, DEE WHY
APARTMENT BUILDING - 23 APARTMENTS
Client: ACN 647 465 236 PTY LTD

Walsh Architects

Registered Architect
ACT 2624 NSW 10366
scott@walsharchitects.com.au
0466 049 880

Scale
1 : 200 @ A1
1 : 400 @ A3

Sheet Name
EXTERNAL FINISHES

Number
DA910

No.	Description	Date
A	ISSUE FOR DEVELOPMENT APPLICATION	21.06.21
B	PLANS WITHOUT PREJUDICE	19.11.21
C	PLANS FOR LEC	27.01.22

Rev.
C

APPENDIX – B

Flood Information From Council

FLOOD INFORMATION REQUEST – COMPREHENSIVE

Property: 20 Avon Road DEE WHY NSW 2099
Lot DP: Lot 4 DP 104820
Issue Date: 31/05/2021
Flood Study Reference: Dee Why South Catchment Flood Study 2013, Cardno

---

Flood Information for lot [1]:

Flood Risk Precinct – See Map A

Flood Planning Area – See Map A

Maximum Flood Planning Level (FPL) [2, 3, 4]: 7.35 m AHD

1% AEP Flood – See Flood Map B

1% AEP Maximum Water Level [2, 3]: 6.85 mAHD

1% AEP Maximum Depth from natural ground level[3]: 0.33 m

1% AEP Maximum Velocity: 1.85 m/s

1% AEP Hydraulic Categorisation: Floodway **See Flood Map D**

Probable Maximum Flood (PMF) – See Flood Map C

PMF Maximum Water Level [4]: 7.80 m AHD

PMF Maximum Depth from natural ground level: 1.11 m

PMF Maximum Velocity: 3.48 m/s

PMF Hydraulic Categorisation: Floodway **See Flood Map E**

FLOOD LEVEL POINTS

Note: Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why South Catchment Flood Study 2013, Cardno) and aerial photography (Source: NearMap 2014) are indicative only.

Flood Levels

ID	5% AEP Max WL (m AHD)	5% AEP Max Depth (m)	1% AEP Max WL (m AHD)	1% AEP Max Depth (m)	1% AEP Max Velocity (m/s)	Flood Planning Level (m)	PMF Max WL (m AHD)	PMF Max Depth (m)	PMF Max Velocity (m/s)
1	N/A	N/A	6.8	0.02	0.68	7.3	7.13	0.33	0.31
2	N/A	N/A	6.84	0.21	0.49	7.34	7.60	0.97	1.43
3	N/A	N/A	N/A	N/A	N/A	N/A	6.72	0.33	0.32
4	N/A	N/A	N/A	N/A	N/A	7.3	7.34	0.29	1.90

WL – Water Level
PMF – Probable Maximum Flood
N/A = no peak water level/depth/velocity available in flood event

Climate Change Flood Levels (30% Rainfall intensity and 0.9m Sea Level Rise)

ID	CC 1% AEP Max WL (m AHD)	CC1 % AEP Max Depth (m)
1	N/A	N/A
2	6.91	0.28
3	N/A	N/A
4	N/A	N/A

WL – Water Level
PMF – Probable Maximum Flood
N/A = no peak water level/depth/velocity available in flood event.

A variable Flood Planning Level might apply. Freeboard is generally 0.5m above the maximum 1% AEP water level. However for overland flow with a depth less than 0.3m and a VelocityxDepth product less than 0.3m^2/s, a freeboard of 0.3m may be able to be justified.

FLOOD INFORMATION REQUEST – COMPREHENSIVE

Property: 24 Avon Road DEE WHY NSW 2099
Lot DP: Lot 2 DP 104820
Issue Date: 31/05/2021
Flood Study Reference: Dee Why South Catchment Flood Study 2013, Cardno

---

Flood Information for lot [1]:

Flood Risk Precinct – See Map A

Flood Planning Area – See Map A

Maximum Flood Planning Level (FPL) [2, 3, 4]: 7.0 m AHD

1% AEP Flood – See Flood Map B

1% AEP Maximum Water Level [2, 3]: 6.5 mAHD

1% AEP Maximum Depth from natural ground level[3]: 0.58 m

1% AEP Maximum Velocity: 1.72 m/s

1% AEP Hydraulic Categorisation: Floodway **See Flood Map D**

Probable Maximum Flood (PMF) – See Flood Map C

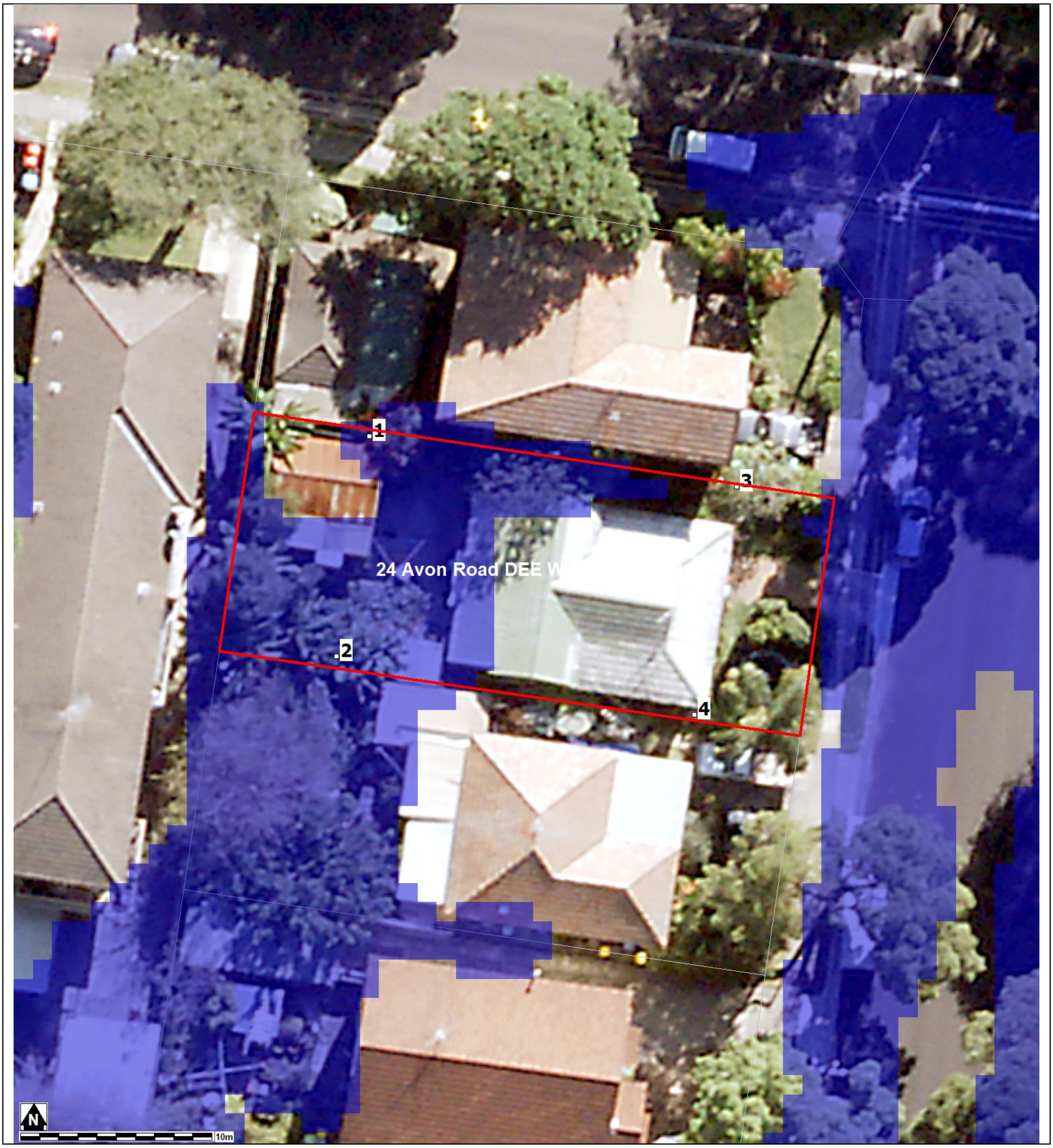
PMF Maximum Water Level [4]: 7.35 m AHD

PMF Maximum Depth from natural ground level: 1.38 m

PMF Maximum Velocity: 3.19 m/s

PMF Hydraulic Categorisation: Floodway **See Flood Map E**

FLOOD LEVEL POINTS



Note: Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why South Catchment Flood Study 2013, Cardno) and aerial photography (Source: NearMap 2014) are indicative only.

Flood Levels

ID	5% AEP Max WL (m AHD)	5% AEP Max Depth (m)	1% AEP Max WL (m AHD)	1% AEP Max Depth (m)	1% AEP Max Velocity (m/s)	Flood Planning Level (m)	PMF Max WL (m AHD)	PMF Max Depth (m)	PMF Max Velocity (m/s)
1	N/A	N/A	6.5	0.21	0.04	7.0	7.13	0.63	0.10
2	6.36	0.33	6.5	0.48	0.38	7.0	7.3	1.27	1.06
3	N/A	N/A	N/A	N/A	N/A	6.05	6.34	0.38	2.71
4	N/A	N/A	N/A	N/A	N/A	6.01	6.36	0.49	0.36

WL – Water Level
PMF – Probable Maximum Flood
N/A = no peak water level/depth/velocity available in flood event

Climate Change Flood Levels (30% Rainfall intensity and 0.9m Sea Level Rise)

ID	CC 1% AEP Max WL (m AHD)	CC1 % AEP Max Depth (m)
1	6.58	0.25
2	6.58	0.56
3	N/A	N/A
4	N/A	N/A

WL – Water Level
PMF – Probable Maximum Flood
N/A = no peak water level/depth/velocity available in flood event.

A variable Flood Planning Level might apply. Freeboard is generally 0.5m above the maximum 1% AEP water level. However for overland flow with a depth less than 0.3m and a VelocityxDepth product less than $0.3m^2/s$, a freeboard of 0.3m may be able to be justified.

FLOOD INFORMATION REQUEST – COMPREHENSIVE

Property: 26 Avon Road DEE WHY NSW 2099
Lot DP: Lot 1 DP 104820
Issue Date: 18/06/2021
Flood Study Reference: Dee Why South Catchment Flood Study 2013, Cardno

Flood Information for lot [1]:

Flood Risk Precinct – See Map A

Flood Planning Area – See Map A

Maximum Flood Planning Level (FPL) [2, 3, 4]: 7.0 m AHD

1% AEP Flood – See Flood Map B

1% AEP Maximum Water Level [2, 3]: 6.5 mAHD

1% AEP Maximum Depth from natural ground level[3]: 0.32 m

1% AEP Maximum Velocity: 1.35 m/s

1% AEP Hydraulic Categorisation: Floodway **See Flood Map D**

Probable Maximum Flood (PMF) – See Flood Map C

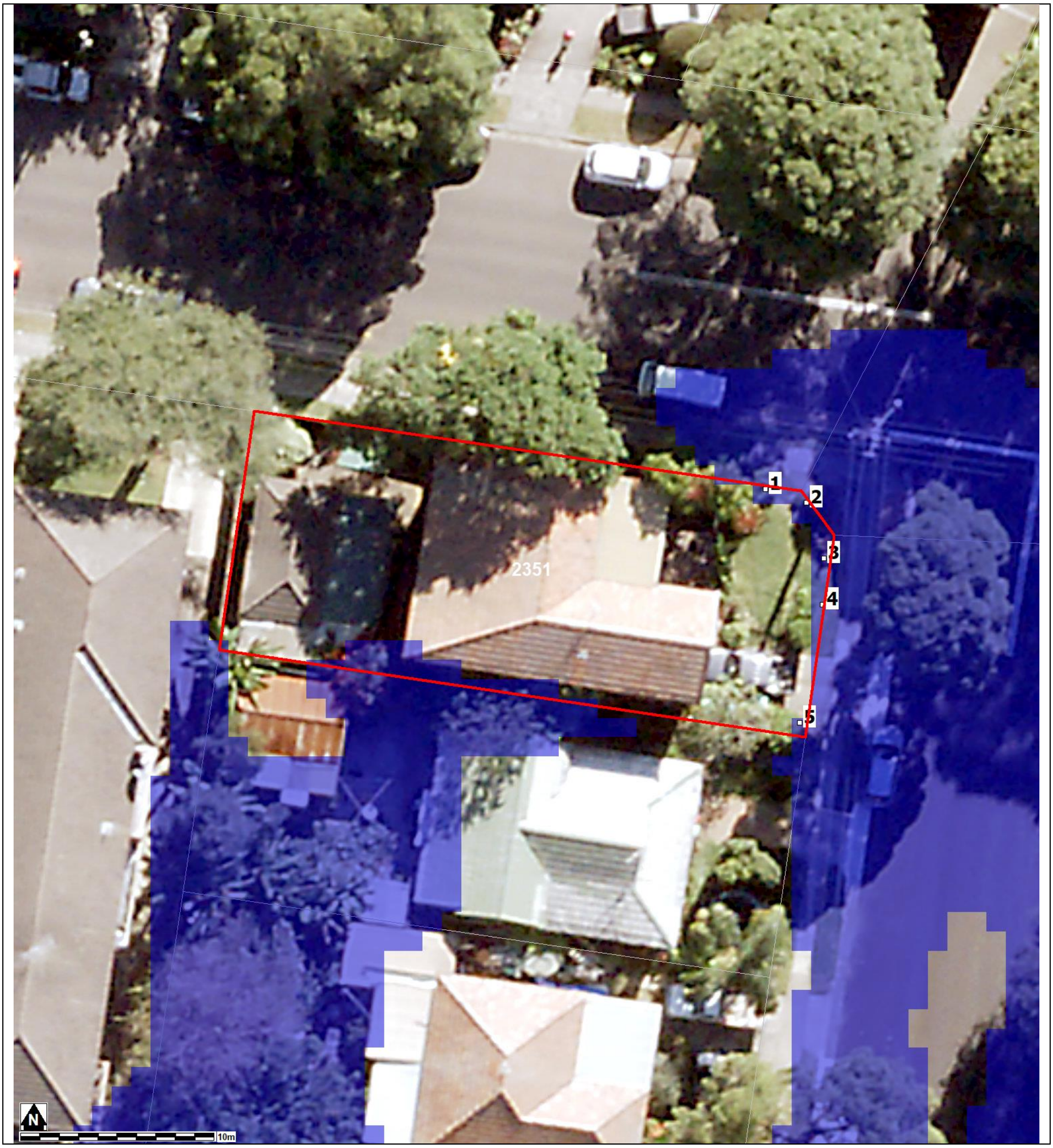
PMF Maximum Water Level [4]: 7.35 m AHD

PMF Maximum Depth from natural ground level: 0.85 m

PMF Maximum Velocity: 2.21 m/s

PMF Hydraulic Categorisation: Floodway **See Flood Map E**

FLOOD LEVEL POINTS



Note: Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why South Catchment Flood Study 2013, Cardno) and aerial photography (Source: NearMap 2014) are indicative only.

Flood Levels

ID	5% AEP Max WL (m AHD)	5% AEP Max Depth (m)	1% AEP Max WL (m AHD)	1% AEP Max Depth (m)	1% AEP Max Velocity (m/s)	Flood Planning Level (m)	PMF Max WL (m AHD)	PMF Max Depth (m)	PMF Max Velocity (m/s)
1	N/A	N/A	5.54	0.16	0.27	6.04	6.04	0.66	0.65
2	N/A	N/A	5.50	0.24	0.60	6.00	6.05	0.79	0.72
3	N/A	N/A	5.48	0.20	0.30	5.98	6.05	0.77	0.62
4	N/A	N/A	5.47	0.16	0.17	5.97	6.06	0.75	0.91
5	N/A	N/A	5.49	0.17	1.35	5.99	6.16	0.85	1.87

WL – Water Level
PMF – Probable Maximum Flood
N/A = no peak water level/depth/velocity available in flood event

Climate Change Flood Levels (30% Rainfall intensity and 0.9m Sea Level Rise)

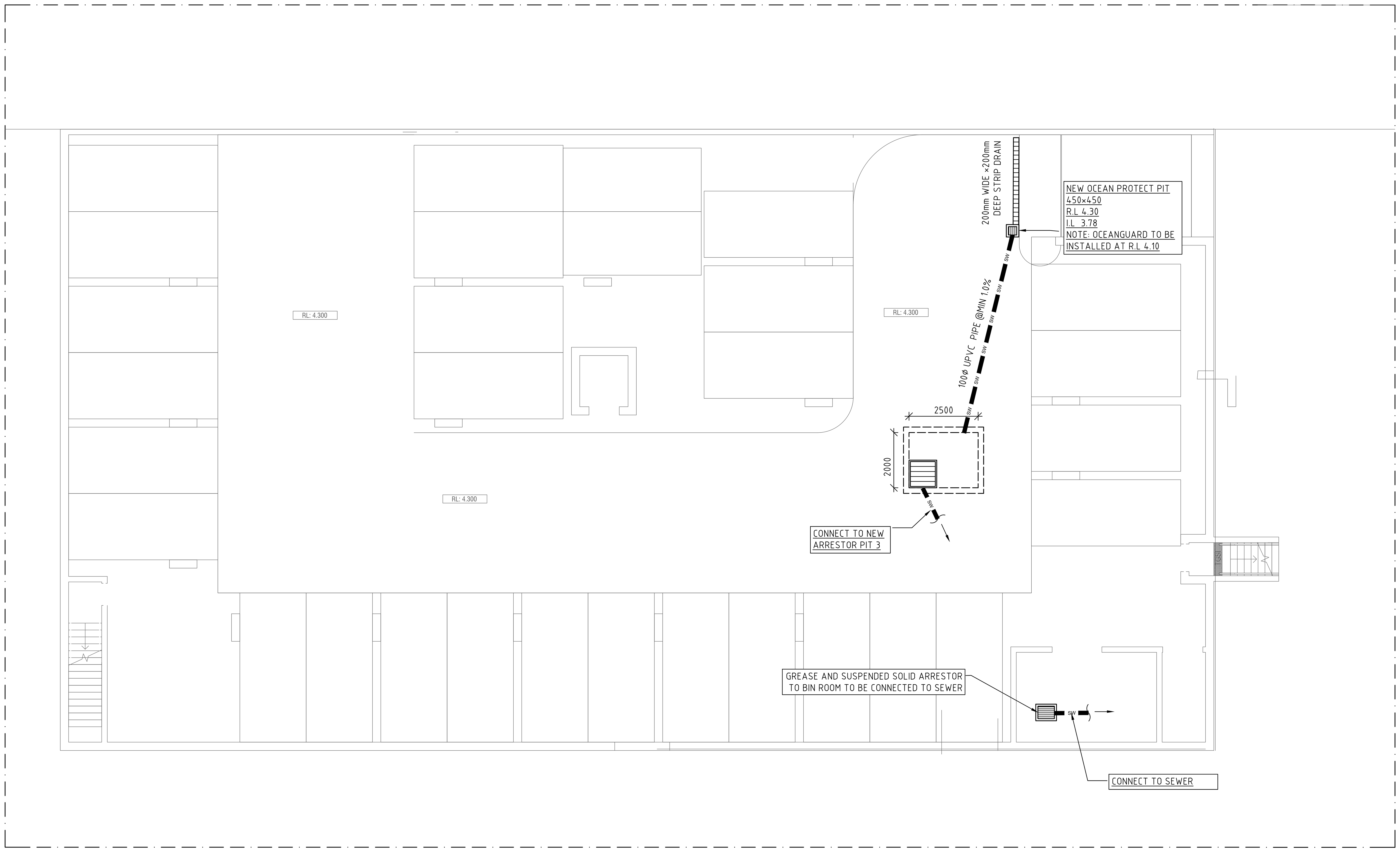
ID	CC 1% AEP Max WL (m AHD)	CC1 % AEP Max Depth (m)
1	5.56	0.18
2	5.53	0.27
3	5.54	0.26
4	5.54	0.23
5	5.55	0.23

WL – Water Level
PMF – Probable Maximum Flood
N/A = no peak water level/depth/velocity available in flood event.

A variable Flood Planning Level might apply. Freeboard is generally 0.5m above the maximum 1% AEP water level. However for overland flow with a depth less than 0.3m and a VelocityxDepth product less than 0.3m^2/s, a freeboard of 0.3m may be able to be justified.

APPENDIX – C

Stormwater drainage concept plan



BOUNDARY

BOUNDARY

BASEMENT STORMWATER DRAINAGE CONCEPT PLAN

SCALE 1:100

NOTES:

1. ALL DOWNPIPE LOCATIONS TO BE CHECKED BY ARCHITECT AND CONTRACTOR PRIOR TO CONSTRUCTION.

COLOURS:

"DANGER" AND BACKGROUND	WHITE
ELLIPTICAL AREA	RED
RECTANGLE CONTAINING ELIPSE	BLACK
OTHER LETTERING AND BORDER	BLACK
MATERIALS	POLYPROPYLENE

CONFINED SPACE WARNING SIGN

SCALE: N.T.S.

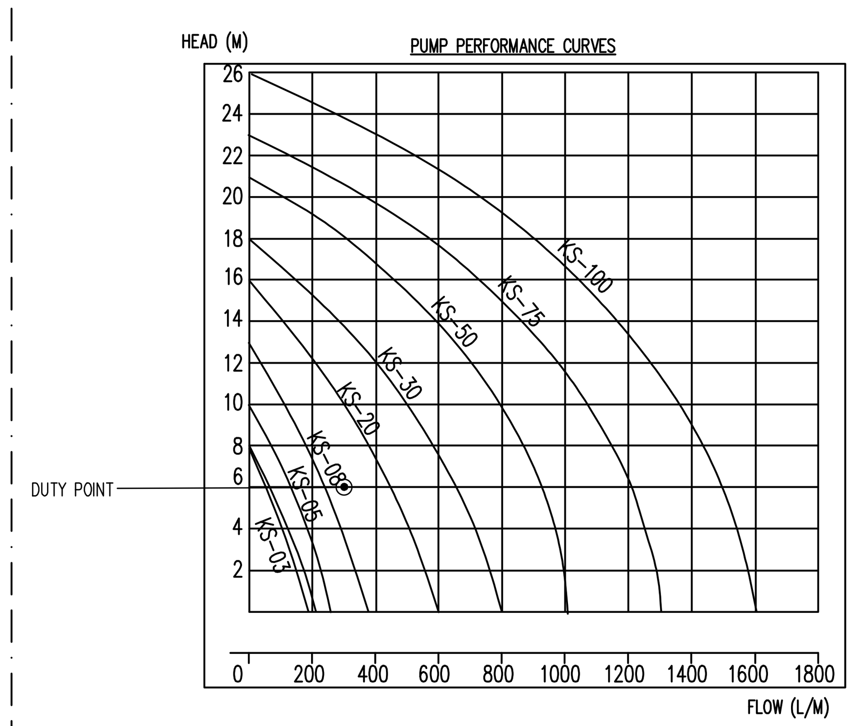
LEGEND

- FLOW DIRECTION
- PROPOSED STORMWATER PIPES
- GRATED INLET PIT
- GRATE DRAIN

DIAL 1100 BEFORE YOU DIG

PUMP OUT DETAILS:

DUAL KS-20 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMPS TO OPERATE ALTERNATIVELY ON HIGH LEVEL ALARMS AT 4.0 L/s (PER PUMP) AT 6.0m HEAD.



STORMWATER DRAINAGE NOTES

1. ALL LINES ARE TO BE MIN. 100Φ UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 300mm COVER IF LOCATED WITHIN PROPERTY (MEASURED FROM THE CROWN OF THE PIPE).
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3:2015 AND COUNCIL SPECIFICATIONS.
6. LOCATION OF DOWNPIPES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, HYDRAULIC, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
9. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES.
10. ALL PITS WITH DEPTH MORE THAN 1M MUST HAVE IRON STEPS.

PUMP SPECIFICATIONS
STANDARD PUMP-OUT NOTES

THE PUMP-OUT SYSTEM IS DESIGNED TO WORK IN THE FOLLOWING MANNER -

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY SO AS TO ALLOW BOTH PUMPS TO HAVE EQUAL OPERATION LOAD & PUMP LIFE.
2. A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE & DRAIN THE TANK TO THE LEVEL OF THE LOW LEVEL FLOAT.
4. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING & ACTIVATE THE ALARM.
5. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT & A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.

Type	Output		Outlet		Rated Head Capacity		Maximum		Weigh	Dimension		
							Head	Capacity				
	HP	kW	mm	Inch	M	LPM	M	LPM	Kg	L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

PUMP OUT CALCULATION

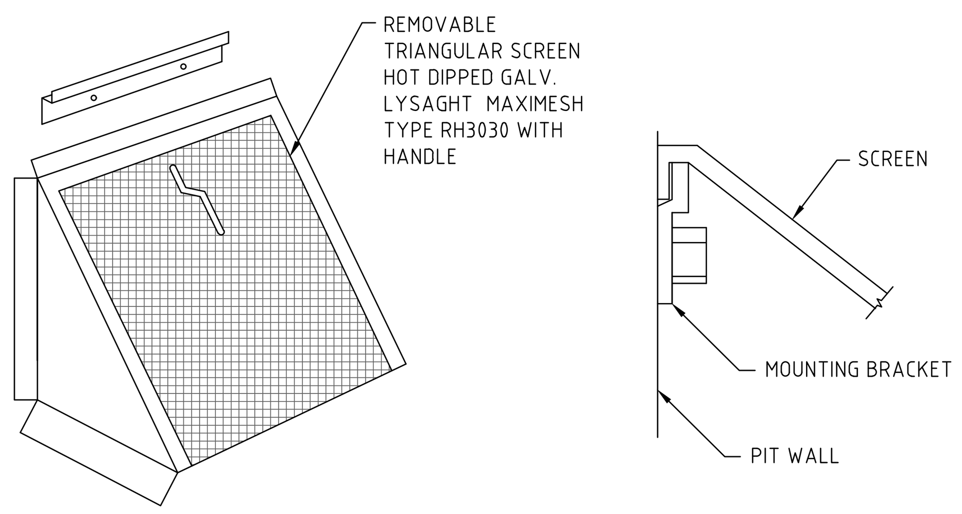
1. PUMP OUT REQUIREMENT:

DESIGN ARI:	100YRS
EXPOSED AREA DRAINING TO PUMP:	$35.5m^2$
MINIMUM STORAGE CAPACITY(V_c): (2HRS, 10YRS ARI)	$35.5 \times (62.3/1000) \times 2 = 4.5m^3$
MINIMUM DISCHARGE RATE (Q_c): (6MIN, 100 YRS ARI)	$35.5 \times 207/3600 = 2.5L/s$

2. DESIGNED PUMP OUT SYSTEM:

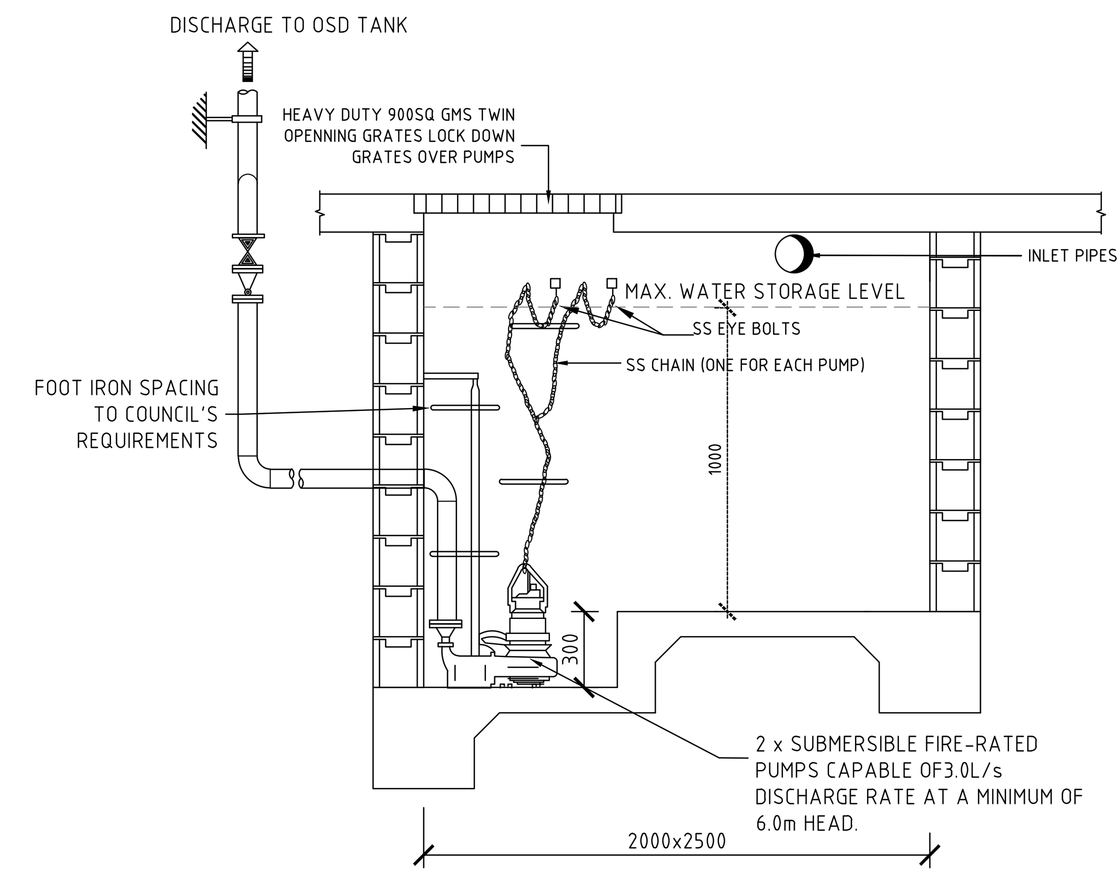
PROPOSED PUMP PIT:	$5m^3$
PROPOSED PUMP OUT RATE:	3L/s (MIN RATE REQUIRED AS PER AS3500.3 IS 10L/s)
PUMP OUT HYDRAULIC HEAD:	6m

PUMP OPERATION HOURS IS BE RESTRICTED BETWEEN 11:00pm AND 3.00 am.



SILT FILTER SCREEN

SCALE: NTS



TYPICAL SECTION TROUGH PUMP PIT

SCALE: NTS

REV.	BY	Date	Description	APPD
E	A.M.	02.02.22	CONCEPT DA	O.S.
D	A.M.	06.10.21	CONCEPT DA	O.S.
C	A.M.	14.09.21	CONCEPT DA	O.S.
B	A.M.	26.08.21	CONCEPT DA	O.S.
A	A.M.	30.06.21	CONCEPT DA	O.S.

REVISIONS

N

CLIENT
ACN 647 465 236 PTY LTD

ARCHITECT
WALSH ARCHITECTS

RISE ENGINEERS
A: G03 15-19 ATCHISON STREET, ST LEONARDS NSW 2073
E: admin@riseengineers.com.au
P: (02) 8057 9109
RISE CONSULTING ENGINEERS PTY.LTD.

DRAWN	A.M.
DESIGNED	A.M.
CHECKED	O.S.
SCALE	As indicated
SIZE	A1

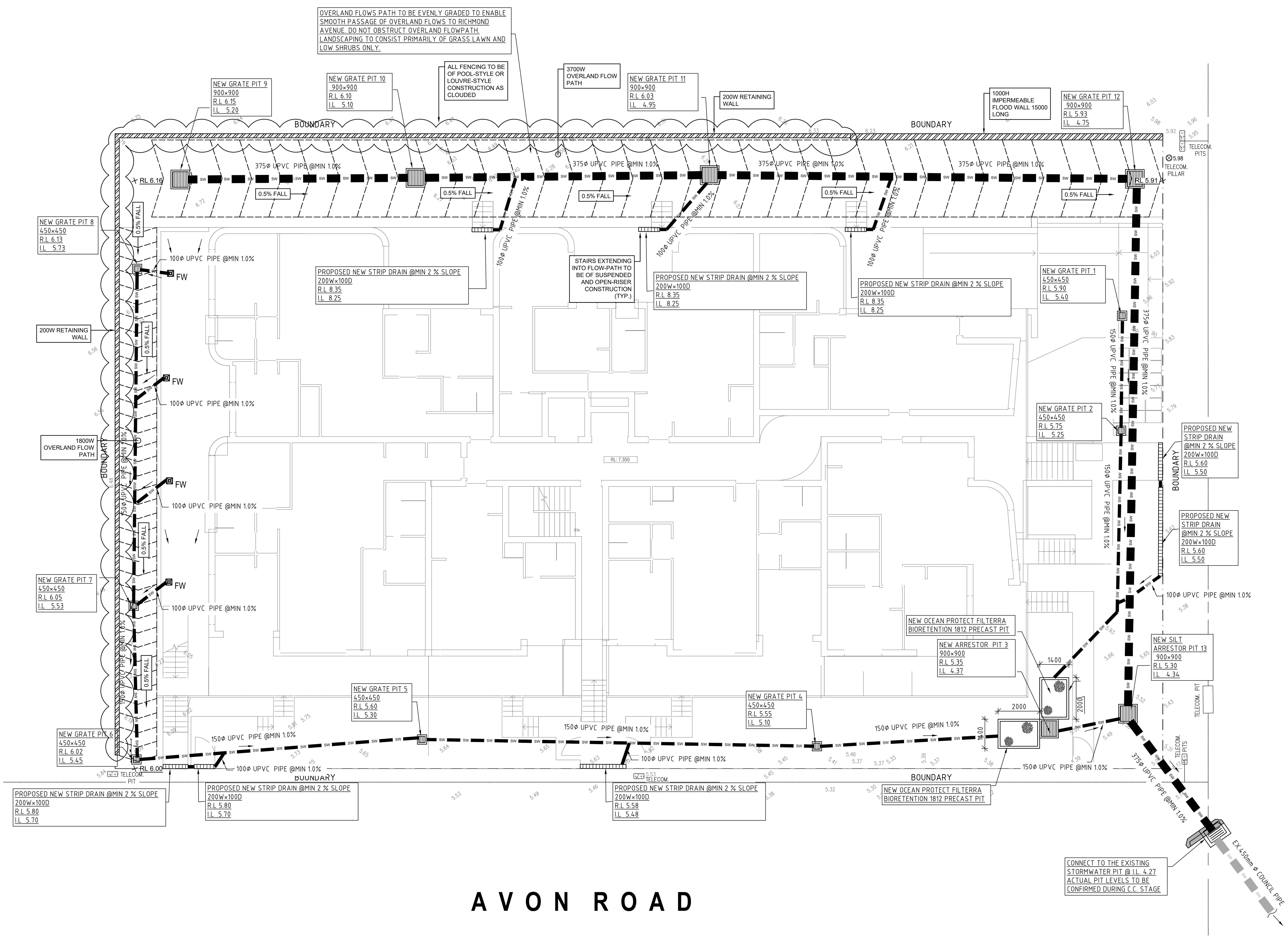
PROJECT
PROPOSED APARTMENT BUILDING
NO.20-26 AVON ROAD, DEE WHY, NSW 2099

DRAWING TITLE
BASEMENT STORMWATER DRAINAGE CONCEPT PLAN

DRAWING No D.010

REV E

JOB No 21066



LEGEND

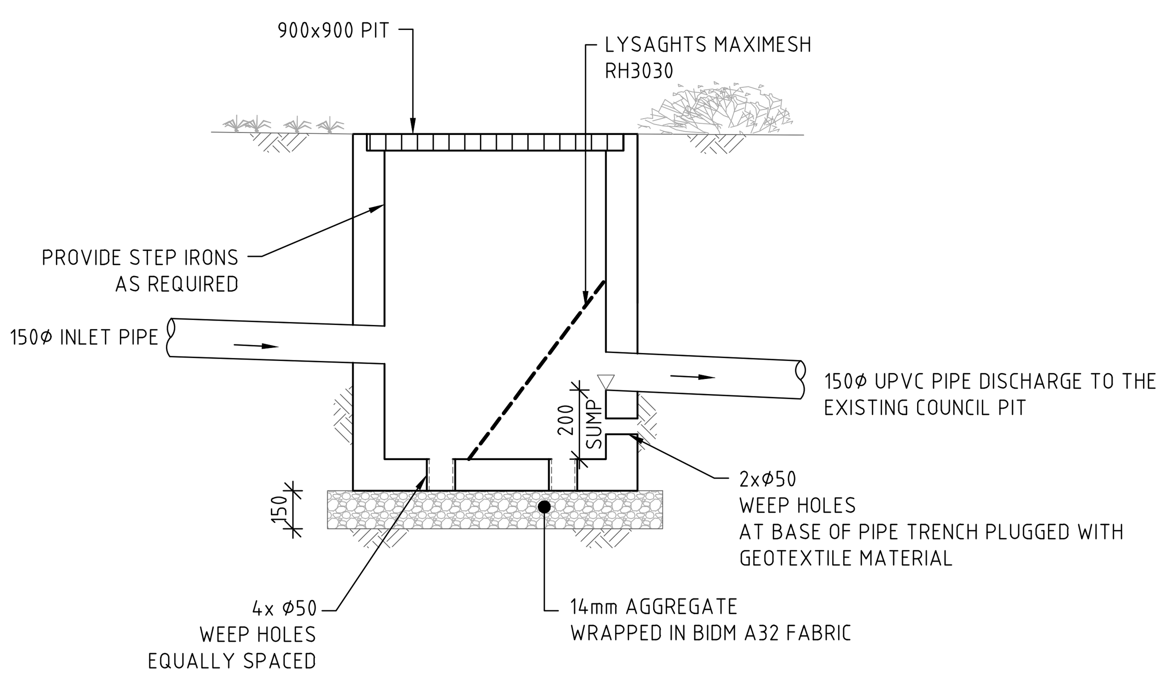
- FLOW DIRECTION
- PROPOSED STORMWATER PIPES
- GRATED INLET PIT
- GRATE DRAIN

GROUND FLOOR STORMWATER DRAINAGE CONCEPT PLAN

SCALE 1:100

NOTES:

1. ALL DOWNPIPE LOCATIONS TO BE CHECKED BY ARCHITECT AND CONTRACTOR PRIOR TO CONSTRUCTION.



SILT ARRESTOR PIT 3

SCALE: NTS

DIAL 1100 BEFORE YOU DIG

REV.	BY	Date	Description	APPD
E	A.M.	02.02.22	CONCEPT DA	O.S.
D	A.M.	06.10.21	CONCEPT DA	O.S.
C	A.M.	14.09.21	CONCEPT DA	O.S.
B	A.M.	26.08.21	CONCEPT DA	O.S.
A	A.M.	30.06.21	CONCEPT DA	O.S.

REVISIONS

N

CLIENT: ACN 647 465 236 PTY LTD

ARCHITECT: WALSH ARCHITECTS

RISE ENGINEERS
RISE CONSULTING ENGINEERS PTY.LTD.
A: G03 15-19 ATCHISON STREET, ST LEONARDS NSW 2073
E: admin@riseengineers.com.au
P: (02) 8057 9109

DRAWN	A.M.
DESIGNED	A.M.
CHECKED	O.S.
SCALE	As indicated
SIZE	A1

PROJECT: PROPOSED APARTMENT BUILDING NO.20-26 AVON ROAD, DEE WHY, NSW 2099

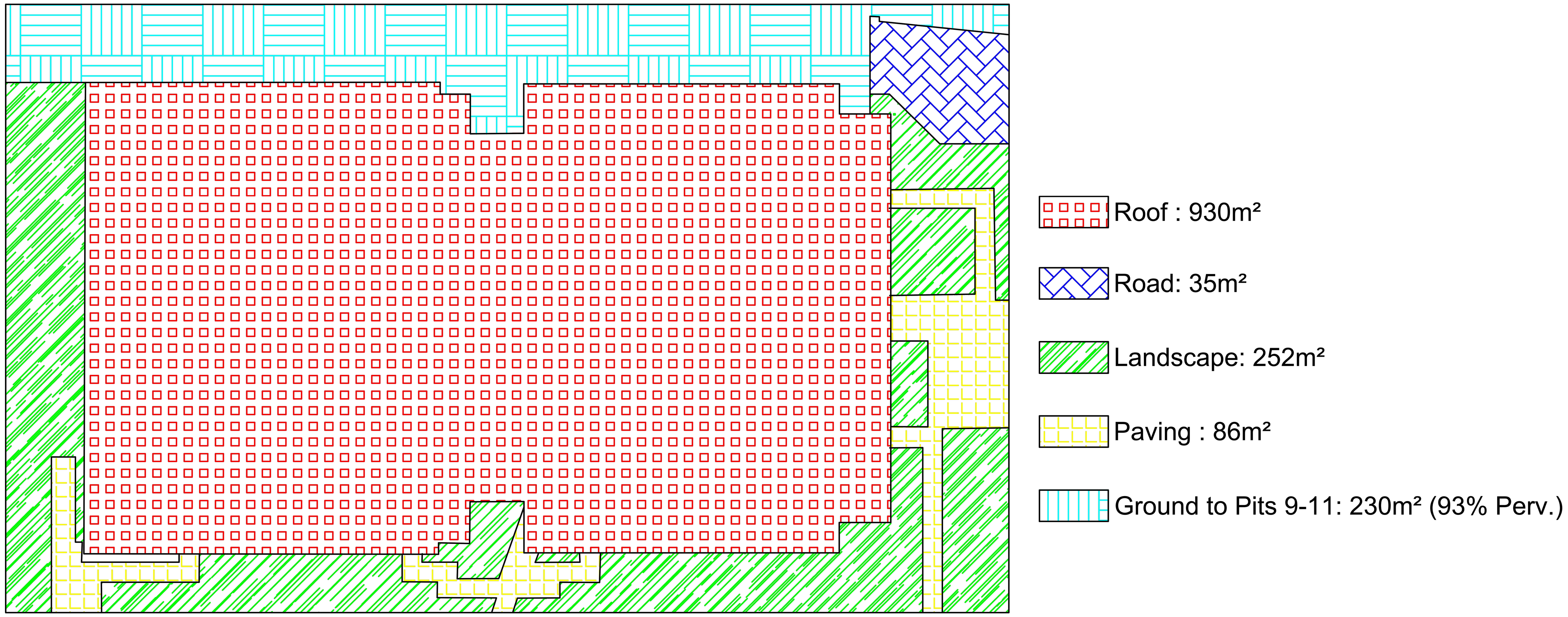
DRAWING TITLE: STORMWATER DESIGN AND SECTION DETAILS

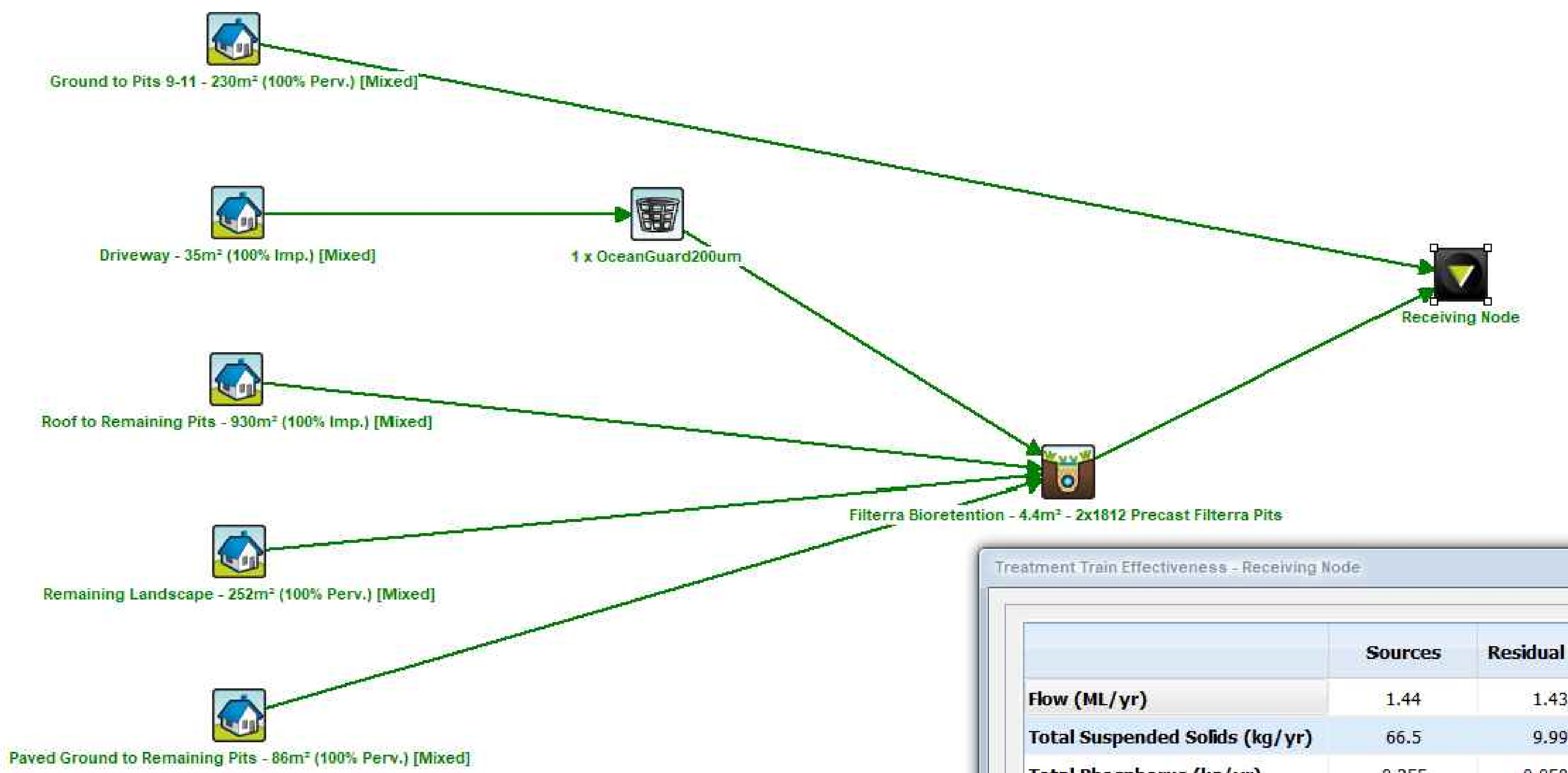
DRAWING No: D.020

REV: E

JOB No: 21066

MUSIC Model Site Area Breakup





Treatment Train Effectiveness - Receiving Node

	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.44	1.43	0.7
Total Suspended Solids (kg/yr)	66.5	9.99	85
Total Phosphorus (kg/yr)	0.255	0.0582	77.2
Total Nitrogen (kg/yr)	2.97	1.13	62
Gross Pollutants (kg/yr)	32.4	0	100

REVISIONS

REV.	BY	Date	Description	APPD
B	A.M.	06.10.21	CONCEPT DA	O.S.
A	A.M.	14.09.21	CONCEPT DA	O.S.

N

CLIENT
ACN 647 465 236 PTY LTD

ARCHITECT
WALSH ARCHITECTS

RISE ENGINEERS
RISE CONSULTING ENGINEERS PTY.LTD.

A: G03 15-19 ATCHISON STREET,
ST LEONARDS NSW 2073
E: admin@riseengineers.com.au
P: (02) 8057 9109

DRAWN	A.M.
DESIGNED	A.M.
CHECKED	O.S.
SCALE	As indicated
SIZE	A1

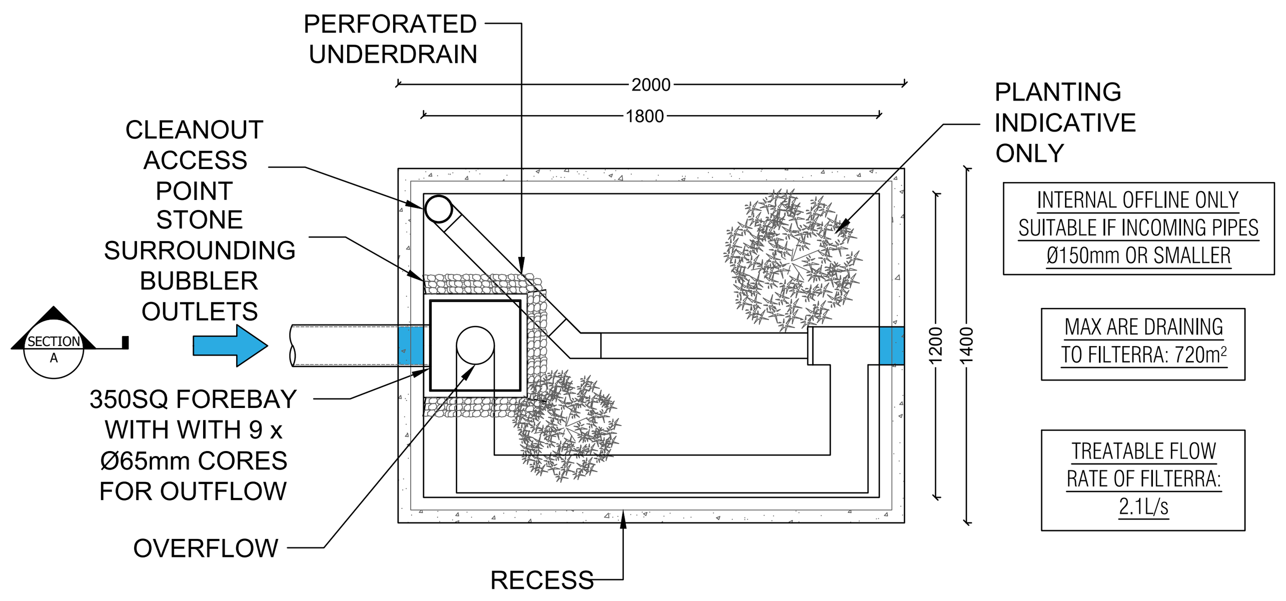
PROJECT
PROPOSED APARTMENT BUILDING
NO.20-26 AVON ROAD, DEE WHY, NSW 2099

DRAWING TITLE
MUSIC CATCHMENT PLAN

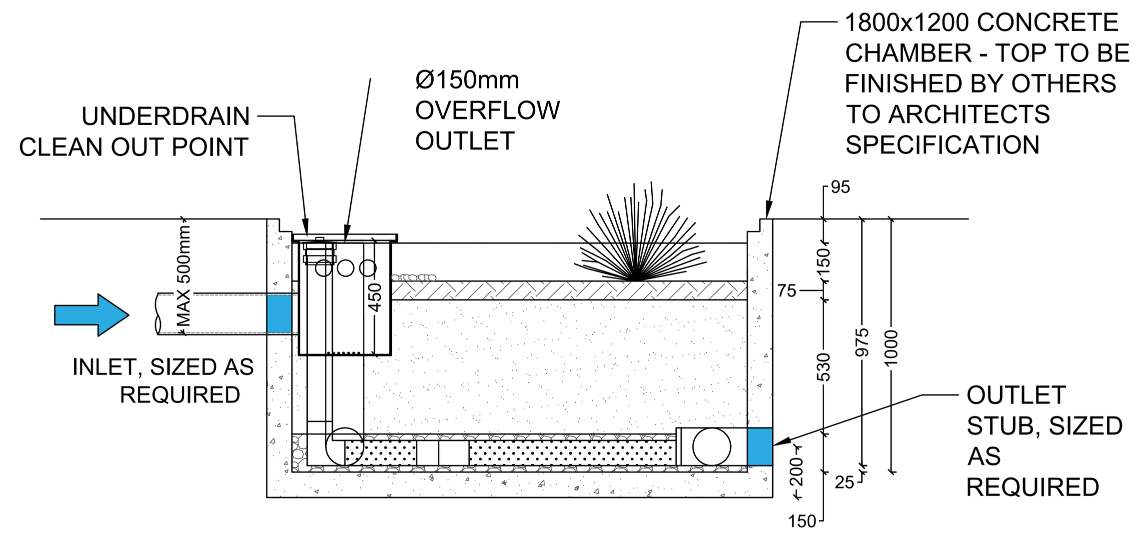
DRAWING No
D.030

REV
B

JOB No
21066

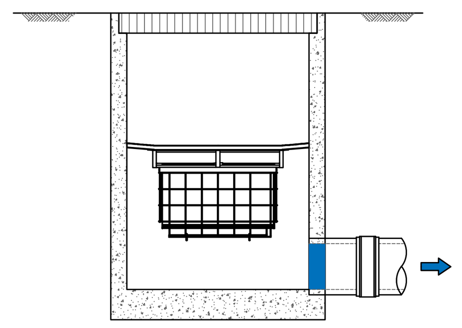


PLAN VIEW



SECTION A

TYPICAL FILTERRA BIORETENTION 1812 PRECAST PIT



TYPICAL OCEANGUARD PIT ARRANGEMENT

REV.	BY	Date	Description	APPD
B	A.M.	06.10.21	CONCEPT DA	O.S.
A	A.M.	14.09.21	CONCEPT DA	O.S.

REVISIONS

N

CLIENT
ACN 647 465 236 PTY LTD

ARCHITECT
WALSH ARCHITECTS

RISE ENGINEERS
A: G03 15-19 ATCHISON STREET, ST LEONARDS NSW 2073
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RISE CONSULTING ENGINEERS PTY.LTD.

DRAWN	A.M.
DESIGNED	A.M.
CHECKED	O.S.
SCALE	As indicated
SIZE	A1

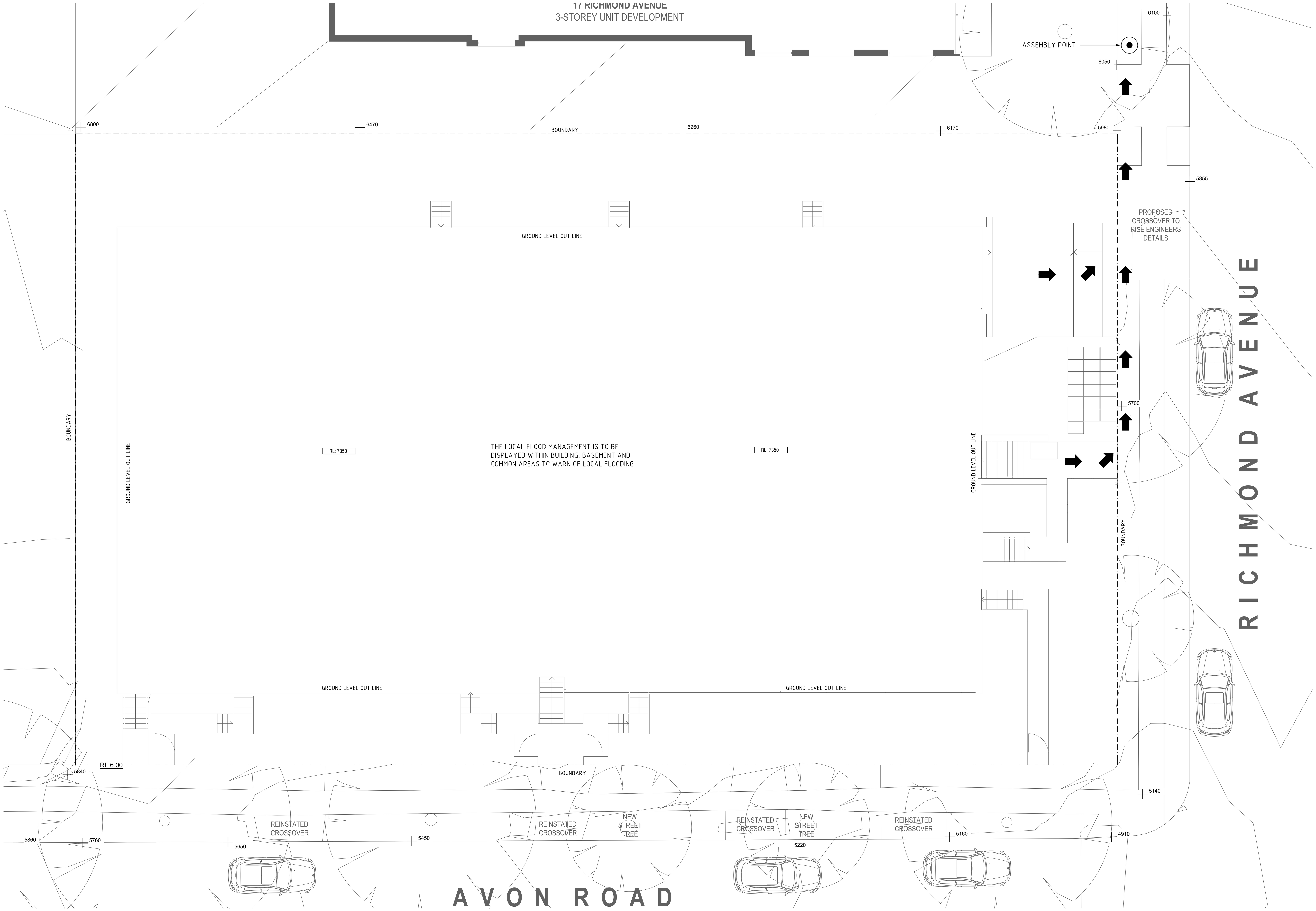
PROJECT
PROPOSED APARTMENT BUILDING
NO.20-26 AVON ROAD, DEE WHY, NSW 2099

DRAWING TITLE
SECTION DRAWINGS

DRAWING No D.040
REV B
JOB No 21066

APPENDIX – D

Flood evacuation plan



FLOOD EVACUATION PLAN
SCALE 1:100

LEGEND

- ASSEMBLY POINT
- EMERGENCY ROUTE FOR PEDESTRIANS
- WL: xxx — 1% AEP PREDICTED FLOOD LEVELS(CARDNO REPORT 2013) OBTAINED FROM COUNCIL

HOW THE STATE EMERGENCY SERVICE CAN HELP YOU

THE STATE EMERGENCY SERVICE (SES) IS RESPONSIBLE FOR DEALING WITH FLOODS IN NSW. THIS INCLUDES PLANNING FOR FLOODS AND EDUCATING PEOPLE ABOUT HOW TO PROTECT THEMSELVES AND THEIR PROPERTY.

DURING FLOODS, THE SES IS RESPONSIBLE FOR FLOOD INFORMATION, SAFETY ADVICE, EVACUATION, RESCUE AND PROVIDING ESSENTIALS TO PEOPLE CUT OFF BY FLOOD WATERS.

FOR EMERGENCY HELP IN FLOODS AND STORMS CALL THE SES ON 13 2500
SES WEBSITE
BUREAU OF METEOROLOGY WARRINGAH SHIRE COUNCIL
WWW.SES.NSW.GOV.AU
WWW.SOM.GOV.AU
WWW.WARRINGAH.NSW.GOV.AU

DIAL 1100 BEFORE YOU DIG

REVISIONS

REV.	BY	Date	Description	APPD
B	A.M.	01.02.22	CONCEPT DA	O.S.
A	A.M.	30.06.21	CONCEPT DA	O.S.

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ARCHITECT: WALSH ARCHITECTS

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PROJECT: PROPOSED APARTMENT BUILDING
NO.20-26 AVON ROAD, DEE WHY, NSW 2099

DRAWING TITLE: FLOOD EVACUATION PLAN

DRAWING No: F.010
REV: B
JOB No: 21066

NORTHERN ELEVATION
SCALE

FLOOD WARNING ADVICE

A. KNOW YOUR AREA'S FLOOD HISTORY
COUNCIL HAS ADVISED THAT THE SITE IS AFFECTED BY THE 1 % AEP OVERLAND FLOOD.
COUNCIL COMMISSIONED A STUDY ON POTENTIAL FLOODING IN THE AREA.
DURING THE 1 % AEP, THE FLOOD LEVEL FOR THE SITE WILL REACH 6.91m AHD AT THE FAR SOUTH EAST CORNER.
THE FLOOD PLANNING LEVEL FOR THIS SITE IS SET AT 6.04m AHD.
DURING THE PROBABLE MAXIMUM FLOOD (PMF), THE FLOOD LEVEL WILL ABOVE 6.04m AHD.
FLOOD LEVELS FOR THE 1 % AEP AND PMF ARE SHOWN ON THE MAP.

B. HEED WEATHER REPORTS AND WARNINGS
FOLLOWING A FLOOD WARNING FOR YOUR AREA, TYPICAL ACTIONS YOU SHOULD TAKE INCLUDE:
1. MOVE VALUABLE/PERSONAL ITEMS TO A SAFE PLACE ABOVE EXPECTED FLOOD LEVEL.
2. OPEN DOORS OF REFRIGERATORS AND OTHER HEAVY AIRTIGHT ITEMS THAT COULD FLOAT, TIP OVER AND BE DAMAGED.
3. SWITCH OFF ELECTRICITY AND GAS AT SUPPLY POINTS TO THE BUILDING.
4. PROTECT/RELOCATE STOCK AND EQUIPMENT IN COMMERCIAL/INDUSTRIAL PREMISES.
5. THE EARLIER YOU ACT, THE BETTER YOU WILL BE PREPARED. BOTH DURING AND AFTER A FLOOD, KEEP TUNED TO YOUR RADIO. WHERE POSSIBLE, YOU WILL BE KEPT UP TO DATE WITH THE LIKELY DURATION AND LEVEL OF FLOODING AND WHEN IT IS OVER YOU WILL RECEIVE ADVICE FROM LOCAL AUTHORITIES ON WHERE TO OBTAIN MEDICAL CARE, ASSISTANCE WITH FOOD, CLOTHING, SHELTER AND HOW BEST TO HELP YOURSELF RECOVER. HAVE A BACK-UP PORTABLE RADIO WITH FRESH BATTERIES IN CASE THE POWER IS CUT BY FLOOD WATER

C. PREPARATION FOR FLOOD EVENT
ASK YOUR COUNCIL OR STATE EMERGENCY SERVICE (SES) ABOUT LOCAL FLOOD PLANS (OR RECORDS) WHICH DETAIL PROBLEM AREAS AND EVACUATION ROUTES AND CENTRES. IF YOUR AREA IS FLOOD-PRONE, CONSIDER ALTERNATIVES TO CARPETS (EG REMOVABLE RUGS).
IN GROUND-LEVEL ROOMS, TILED WALLS ARE LESS LIKELY TO BE DAMAGED THAN OTHERS AND ARE MORE EASILY CLEANED. HAVE AN EMERGENCY KIT ON HAND WHICH INCLUDES A PORTABLE RADIO, TORCH, AND SPARE BATTERIES; STOCK OF CANNED FOOD AND FRESH WATER; FIRST AID KIT AND MANUAL AND GARDEN GLOVES; WATERPROOF BAGS FOR CLOTHING AND VALUABLES.
KEEP A LIST OF EMERGENCY PHONE NUMBERS ON DISPLAY:
1. STATE EMERGENCY SERVICE
2. POLICE
3. NORTHERN BEACHES COUNCIL

WHEN YOU HEAR A FLOOD WARNING OR IF FLOODING APPEARS LIKELY:
1. TUNE TO YOUR LOCAL RADIO FOR WARNINGS AND ADVICE.
2. PREPARE TO MOVE VEHICLES, OUTDOOR EQUIPMENT, GARBAGE, CHEMICALS, AND POISONS TO HIGHER LOCATIONS.
3. PLAN WHICH INDOOR ITEMS YOU WILL RAISE OR EMPTY IF WATER THREATENS TO ENTER YOUR HOME.
4. CHECK YOUR EMERGENCY KIT AND REMEMBER YOUR PETS.

IF YOU NEED TO EVACUATE:
1. IF YOU LEAVE OF YOUR OWN ACCORD, TELL POLICE OR STATE EMERGENCY SERVICE, AND YOUR NEIGHBORS.
2. FIRSTLY, PACK WARM CLOTHING, ESSENTIAL MEDICATION, VALUABLES, PERSONAL PAPERS, PHOTOS AND MEMENTOS IN WATERPROOF BAGS, TO BE TAKEN WITH YOUR EMERGENCY KIT.
3. RAISE FURNITURE, CLOTHING AND VALUABLES ONTO BEDS, TABLES AND INTO ROOF SPACE (ELECTRICAL ITEMS HIGHEST).
4. EMPTY FREEZERS AND REFRIGERATORS, LEAVING DOORS OPEN (TO AVOID DAMAGE OR LOSS IF THEY FLOAT ABOUT). TURN OFF POWER, WATER AND GAS AND TAKE YOUR MOBILE PHONE.
5. WHETHER YOU LEAVE OR STAY, PUT SANDBAGS IN THE TOILET BOWL AND OVER ALL LAUNDRY/BATHROOM DRAIN-HOLES TO PREVENT SEWAGE BACK-FLOW.
6. LOCK YOUR HOME AND TAKE RECOMMENDED EVACUATION ROUTES FOR YOUR AREA.
7. DON'T DRIVE INTO WATER OF UNKNOWN DEPTH AND CURRENT.

IF YOU STAY, OR ON YOUR RETURN
1. STAY TUNED TO LOCAL RADIO FOR UPDATED ADVICE.
2. DON'T ALLOW CHILDREN TO PLAY IN, OR NEAR, FLOOD WATERS.
3. AVOID ENTERING FLOOD WATERS. IF YOU MUST, WEAR SOLID SHOES AND CHECK DEPTH AND CURRENT WITH A STICK.
4. STAY AWAY FROM CREEKS, DRAINS, CULVERTS AND WATER OVER KNEE-DEEP.
5. DON'T USE GAS OR ELECTRICAL APPLIANCES WHICH HAVE BEEN IN FLOOD WATER UNTIL CHECKED FOR SAFETY.
6. DON'T EAT FOOD WHICH HAS BEEN IN FLOOD WATERS.
7. BOIL TAP WATER UNTIL SUPPLIES HAVE BEEN DECLARED SAFE.

REVISIONS

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A	A.M.	30.06.21	CONCEPT DA	O.S.

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PROJECT
PROPOSED APARTMENT BUILDING
NO.20-26 AVON ROAD, DEE WHY, NSW 2099

DRAWING TITLE
FLOOD EVACUATION PLAN

DRAWING No
F.020

REV
B

JOB No
21066

APPENDIX – E

VD Transects

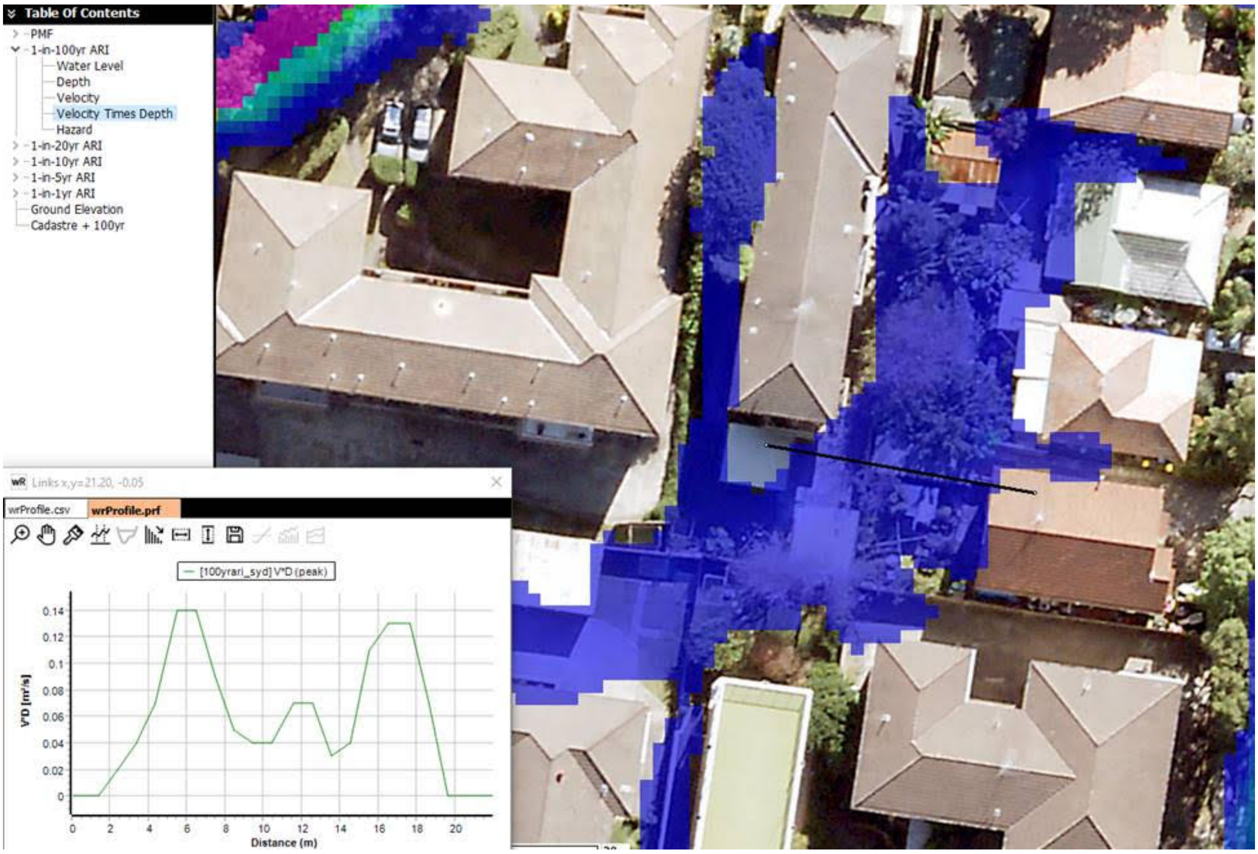
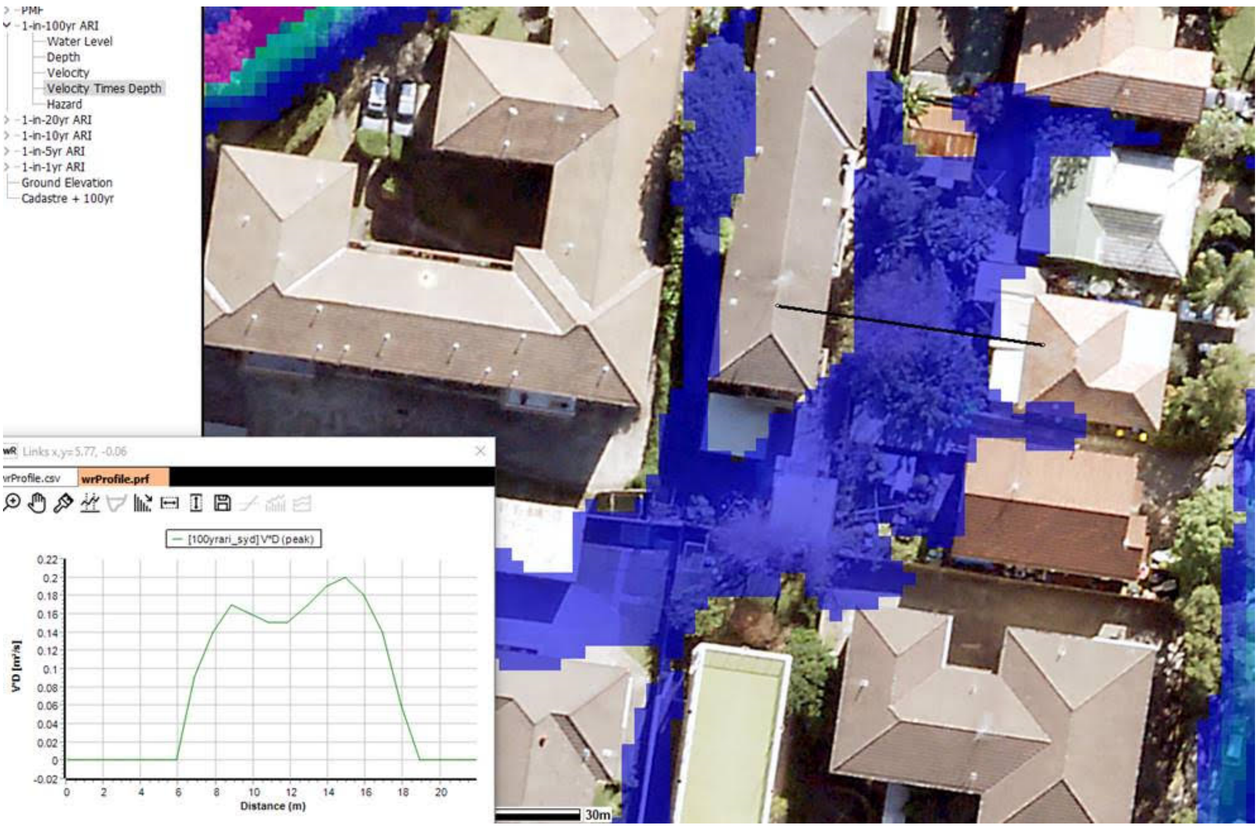


Table Of Contents
PMF
1-in-100yr ARI
Water Level
Depth
Velocity
Velocity Times Depth
Hazard
1-in-20yr ARI
1-in-10yr ARI
1-in-5yr ARI
1-in-1yr ARI
Ground Elevation
Cadastre + 100yr
Links x,y=21.20, -0.05
wrProfile.csv
wrProfile.prf
[100yrari_syd] V*D (peak)
V*D [m²/s]
Distance (m)


PMF
1-in-100yr ARI
Water Level
Depth
Velocity
Velocity Times Depth
Hazard
1-in-20yr ARI
1-in-10yr ARI
1-in-5yr ARI
1-in-1yr ARI
Ground Elevation
Cadastre + 100yr
Links x,y=5.77, -0.06
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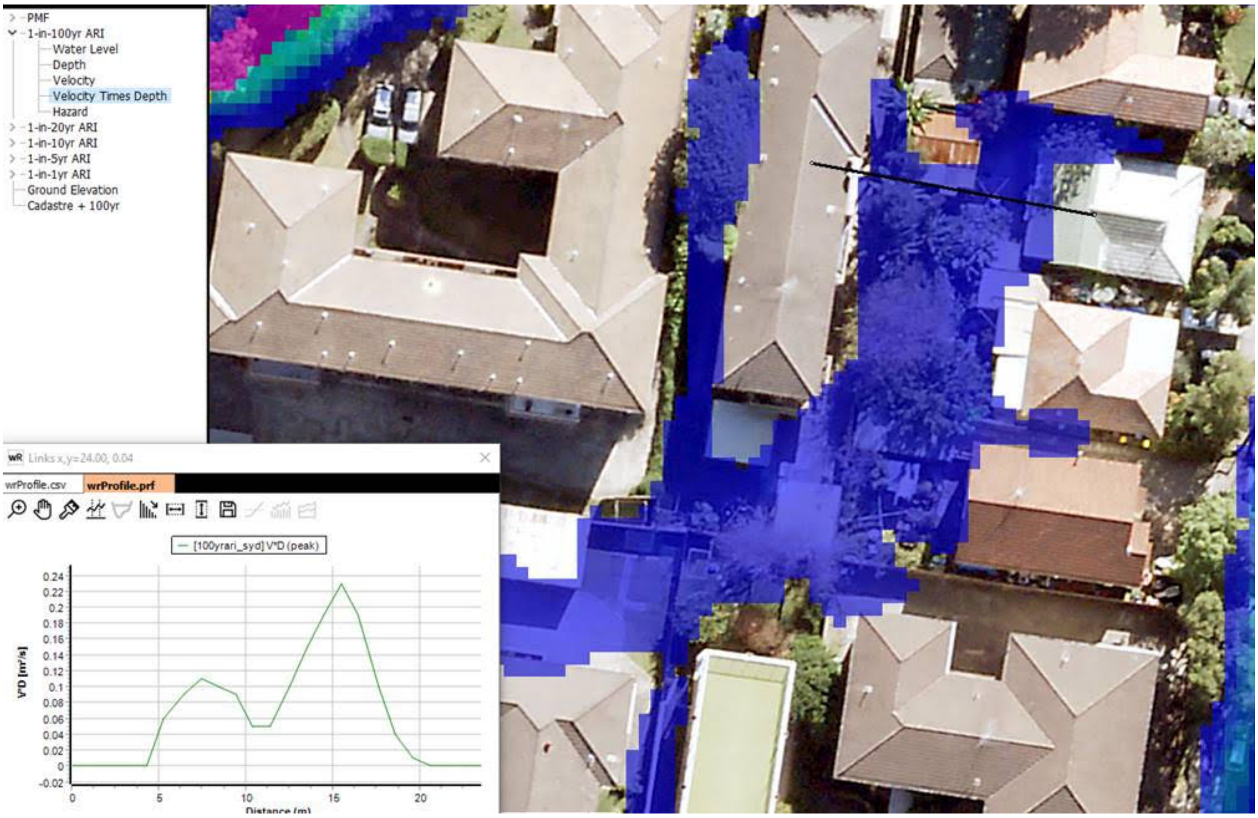
wrProfile.prf
[100yrari_syd] V*D (peak)
V*D [m²/s]
Distance (m)
30m


PMF
1-in-100yr ARI
Water Level
Depth
Velocity
Velocity Times Depth
Hazard
1-in-20yr ARI
1-in-10yr ARI
1-in-5yr ARI
1-in-1yr ARI
Ground Elevation
Cadastre + 100yr
Links x,y=24.00, 0.04
wrProfile.csv
wrProfile.prf
[100yrari_syd] V*D (peak)
V*D [m²/s]
Distance (m)