

The Belvedere

5–7 Church Street & 42 Donald Street, Nelson Bay

Integrated Water Management Plan

Fortezza Group

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EXECUTIVE SUMMARY

ADG Engineers (Aust.) Pty Ltd has been engaged by Fortezza Group to prepare an Integrated Water Management Plan suitable for submission to the New South Wales government in support of a Planning Secretary's Environmental Assessment application associated with a proposed development located at 5 – 7 Church Street & 42 Donald Street, Nelson Bay NSW 2315.

The proposed development as described on the Architectural Plans by HAL Architects will consist of a multi-storey residential tower over two (2) levels of basement carparking.

This report aims to provide advice with regard to the proposed development with relation to stormwater quality and quantity. The quality assessment has been undertaken to determine the required stormwater treatment measures to be implemented on site. The quantity assessment has been undertaken to determine if stormwater discharge mitigation is required to regulate peak site discharge to pre-development rates and thus achieve a non-worsening solution.

Port Stephens Council has identified to ADG that the stormwater catchment in which the site is located is considered high risk due to downstream flooding. Insufficient capacity in the downstream stormwater network to carry major storm events results in stormwater overflows along the road (CBD area). The floor level of the shops along Donald Street, Stockton Street, Yacaaba Street is low relative to the level of the street and excessive overland flows along the road has historically flooded properties. Council guidelines subsequently stipulate that a Factor Of Safety of 7 to 10 be applied for the infiltration rates obtained at the site.

An Integrated Water Management Plan is required to comply with the Planning Secretary's Environmental Assessment Requirements. The assessment involves referral to Port Stephens Council for assessment and the design has also been undertaken to achieve compliance with Council development guidelines. Chapter B4 of the Port Stephens Council Development Control Plan also stipulates requirements regarding stormwater treatment. Stormwater treatment is proposed prior to stormwater leaving the site in order to reduce pollutant targets to acceptable levels as defined by the Port Stephens Council Development Control Plan.

In addition to this guideline, Port Stephens Council has previously stipulated that the assessment is to assume that the site is fully pervious in the pre-developed case, resulting in no site discharge due to the high permeability of the site. This significantly limits development across the site and is not representative of actual pre-developed conditions. In the existing case, existing buildings discharge flows via kerb adaptors to Donald Street before infiltration can occur. Standard industry practice is to compare pre-developed flows with post-developed flows and ensure there is no increase as a result of the development for peak storm events up to and including the 1% AEP (Q100) event. The purpose of this objective is to ensure that the existing infrastructure and/or downstream properties are not adversely affected by the development. This objective is proposed to be achieved at the proposed development through the use of on-site stormwater detention, which will capture stormwater and release it slowly over time.

The proposed stormwater quantity and quality solutions are summarised in the following table:

Quantity Mitigation Requirement	Quality Mitigation Requirement
➤ A total detention volume of 100.6m³	➤ 2x Ocean Protect OceanGuard ➤ 2x Ocean Protect StormFilter (690mm PSORB) within a minimum 1.5m² treatment chamber

1 INTRODUCTION

1.1 General

ADG Engineers (Aust.) Pty Ltd has been engaged by Fortezza Group to prepare an Integrated Water Management Plan (IWMP) suitable for submission to New South Wales government in support of a Planning Secretary's Environmental Assessment application associated with a proposed development located at 5 – 7 Church Street & 42 Donald Street, Nelson Bay NSW 2315, henceforth referred to as *the site*.

The proposed development as described on the Architectural Plans by HAL Architects in Appendix A will consist of a multi-storey residential tower over two (2) levels of basement carparking.

Port Stephens Council has previously stipulated that the assessment is to assume that the site is fully pervious in the pre-developed case, resulting in no site discharge due to the high permeability of the site. This significantly limits development across the site and is not representative of actual pre-developed conditions. In the existing case, existing buildings discharge flows via kerb adaptors to Donald Street before infiltration can occur. Standard industry practice is to compare pre-developed flows with post-developed flows and ensure there is no increase as a result of the development for peak storm events up to and including the 1% AEP (Q100) event. The purpose of this objective is to ensure that the existing infrastructure and/or downstream properties are not adversely affected by the development. This objective is proposed to be achieved at the proposed development through the use of on-site stormwater detention, which will capture stormwater and release it slowly over time.

This report aims to assess the proposed development with relation to both stormwater quantity and quality. The quantity assessment is undertaken to confirm there is no actionable nuisance on downstream properties as a result of the proposed development. The quality assessment is undertaken to determine if any stormwater treatment measures need to be implemented on site.

The purpose of this IWMP is to provide advice as to the development proposal detailed in the architectural plans. The works described herein are subject to further approvals and cover works required to service the proposed development regarding stormwater treatment.

1.2 Background Information

This report was compiled using information from the following resources:

- Architectural Plans by HAL Architects (refer to Appendix A);
- Detailed survey plans prepared by CMS Surveyors (refer to Appendix B);
- 'Before You Dig Australia' (BYDA) As-Constructed information (refer to Appendix F).

1.3 Property Details

The site is located at 5 – 7 Church Street & 42 Donald Street, Nelson Bay NSW. The site is bound by Church Street to the west, Donald Street to the south, a residential building to the north and a commercial building to the east. The land titles that make up the site are given in Table 1. Refer to the architectural drawings in Appendix A for further details. Figure 1 displays the site locality.

Table 1 – Property Detail

Title	Lot 15 SEC A on DP5616; Lot A on DP417172; Lot B on DP417172
Street Address	5 – 7 Church Street & 29 Donald Street, Nelson Bay NSW 2315
Site Area	2,203m ²

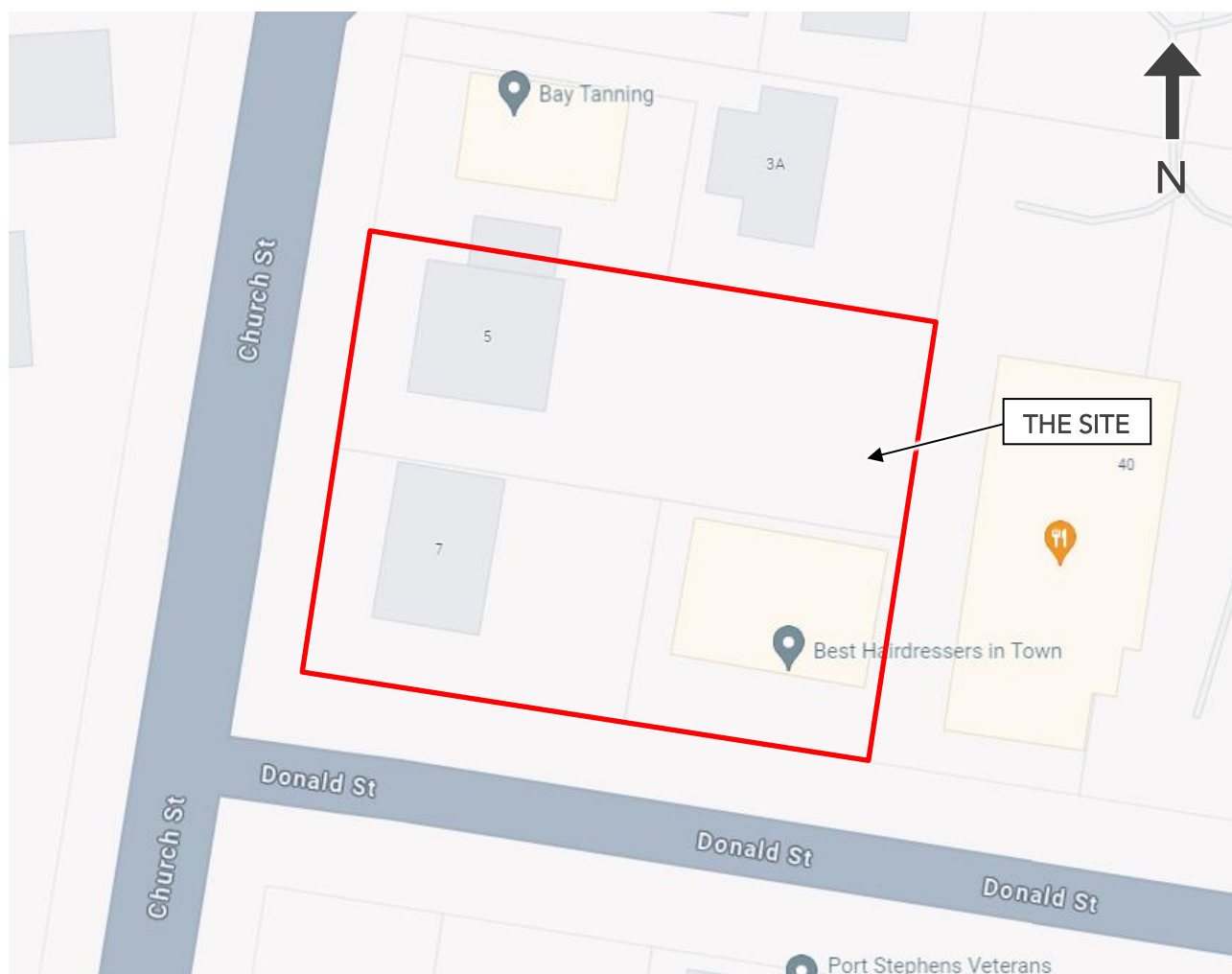


Figure 1 – Locality Map (Accessed 26.08.2024 from Google Maps)

1.4 Existing Site

The proposed development is located at 5 – 7 Church Street & 42 Donald Street, Nelson Bay NSW and is zoned for 'Medium Density Residential' and 'Local Centre' by the Port Stephens Council.

The pre-developed site is occupied by two (2) residential dwellings and one (1) commercial building, along with associated sheds, garages and hardstand areas. The balance of the pre-developed site is characterised by good grass coverage with several trees located across the site. The features described above result in a fraction impervious of 35% for the pre-developed site. Refer to Figure 2 for the pre-developed site condition.

The pre-developed site is comprised of a single stormwater catchment that generally falls south-east towards Donald Street. Grades across the site are in the order of 10-12%. The existing low point of RL 19.05 is located near the south-eastern corner of the site with a high point of RL 26.54 located along the western boundary of the site. Refer to the survey plan prepared by CMS Surveyors in Appendix B for further information.

Refer to the site survey in Appendix B and Figure 2 for further information on the pre-developed site condition.



Figure 2 – Pre-Developed Site Condition (Nearmap image dated – 09.09.2018)

1.5 Existing Stormwater Infrastructure

The following stormwater infrastructure has been identified in the vicinity of the site using the site survey and BYDA information:

- A gully pit located in the development side of Donald Street near the south-western corner of the site;
- A DN375 Reinforced Concrete Pipe (RCP) flows east along the development side of Donald Street from the abovementioned gully pit; and
- Kerb adaptors located in Donald Street opposite the south-east corner of the site facilitate flows from the existing commercial property to the kerb and channel.

Refer to site survey in Appendix B and BYDA information in Appendix F for more details on the existing stormwater infrastructure.

2 PROPOSED DEVELOPMENT

The proposed development as described on the Architectural Plans by HAL Architects in Appendix A will consist of a multi-storey residential tower over two (2) levels of basement carparking. A breakdown of the surface areas exposed to rainfall for the proposed development is presented in Table 2.

Table 2 - Proposed Development Areas

Catchment ID	Land Type	% Impervious	Area (m ²)	Percentage of Total Site Area
C1	Roof	100	100	4%
	Landscape / Planters	0	327	15%
	Deep Planting*	0	455	21%
	Hardstand	100	1,236	56%
	Driveway	100	57	3%
	Pool**	100	28	1%
Total		64%	2,203	100%

* Deep planting areas that will infiltrate have been excluded from the quality treatment areas in the MUSIC model.

** Pool areas have been assumed as impervious for the purposes of stormwater quantity and excluded from the quality treatment areas in the MUSIC model, as the pool overflow is assumed to discharge to the sewer system.

Refer to the Post-Development Stormwater Drainage Catchment Plan DA06 in Appendix C for further information regarding the areas calculated for each land type.

2.1 Lawful Point of Discharge

The Lawful Point of Discharge (LPD) for the site is the existing stormwater infrastructure in Donald Street as described in Section 1.5. Stormwater runoff from the existing site appears to discharge via overland flow to the existing stormwater infrastructure in Donald Street. It is proposed to provide a new stormwater connection to the existing DN375 Reinforced Concrete Pipe (RCP) that flows east along the development side of Donald Street. The primary LPD will thus be the existing stormwater infrastructure in Donald Street.

Refer to Appendix C for the Preliminary Engineering Services Layout Plan DA04 which displays the indicative location of the proposed point of discharge.

2.2 External Catchments

No external catchments of significance have been identified to act on the site.

3 STORMWATER QUANTITY ASSESSMENT

The aim of the stormwater quantity assessment is to ensure that the development shall impose no adverse effects on downstream properties or receiving water bodies and that the conveyance of flows will be in a safe manner with minimal risk of human endangerment as well as the following objectives:

- Address the need for stormwater quantity control measures; and
- Ensure proposed quantity control measures detain and convey flows in accordance with relevant site requirements.

3.1 Proposed Development and Associated Issues

As noted in Section 1.4, the pre-developed fraction impervious is approximately 35% impervious and as noted in Table 2, the proposed development is 64% impervious. In addition, a portion of the pre-developed impervious areas discharge to and infiltrate into the pervious surrounding ground surfaces (refer to Section 3.4.2 for details), further decreasing pre-developed site discharge. The implication of an increase in impervious area is that the total volume and peak flow rate of stormwater run-off from the catchment will generally increase. It is essential that the post-developed peak flows are mitigated to ensure they meet or reduce flows beyond pre-developed levels.

3.2 Groundwater

During the geotechnical investigation of the site by Douglas Partners, five boreholes / cone penetrometer test were performed to a depth of up to 10m and groundwater was not observed.

3.3 Flow Rate Methodology

3.3.1 Design Storm Events

The major and minor storm events were selected as follows:

- Minor Event: 5% AEP event
 - Piped underground drainage infrastructure sized for a 5% AEP event through to point of discharge.
- Major Event: 1% AEP event
 - Detention tanks designed to attenuate flows for each storm event up to and including the 1% AEP event.
 - Surface drainage overflows in events up to and including the 1% AEP event will not present a hazard to people or cause significant damage to property.

3.4 Stormwater Quantity Modelling – DRAINS

A DRAINS model was created to analyse the pre- and post-developed scenarios. The model includes a typical node-link connectivity identifying the catchments and hydraulic parameters. Conceptual modelling was undertaken to determine the required orifice diameter and OSD tank volume to limit discharge to pre-development levels.

3.4.1 DRAINS – Modelling Assumptions and Methodology

The following modelling assumptions were used to create the DRAINS Models:

- Impervious area depression storage = 0.0mm;

- Pervious area depression storage = 0mm;
- Soil type = 3;
- Antecedent Moisture Condition = 3;
- Pre-burst rainfall depth = 0mm; and
- Rainfall data was imported using AR&R 2019.

3.4.2 Pre-Development Case Model

The pre-development model consists of a node representing Catchments R1 and R2 which is the area that was identified to discharge to Donald Street. A second node was created to represent Catchment E1 which is the remaining area of the site that infiltrates into the sandy soil found on the site. Infiltration testing has been carried out by Douglas Partners across the pre-developed site. Infiltration rates across the pre-developed site ranged between 860mm/hr to 1280mm/hr. Refer to Figure 3 below and the Pre-Developed Stormwater Drainage Catchment Plan DA05 in Appendix C for further details.

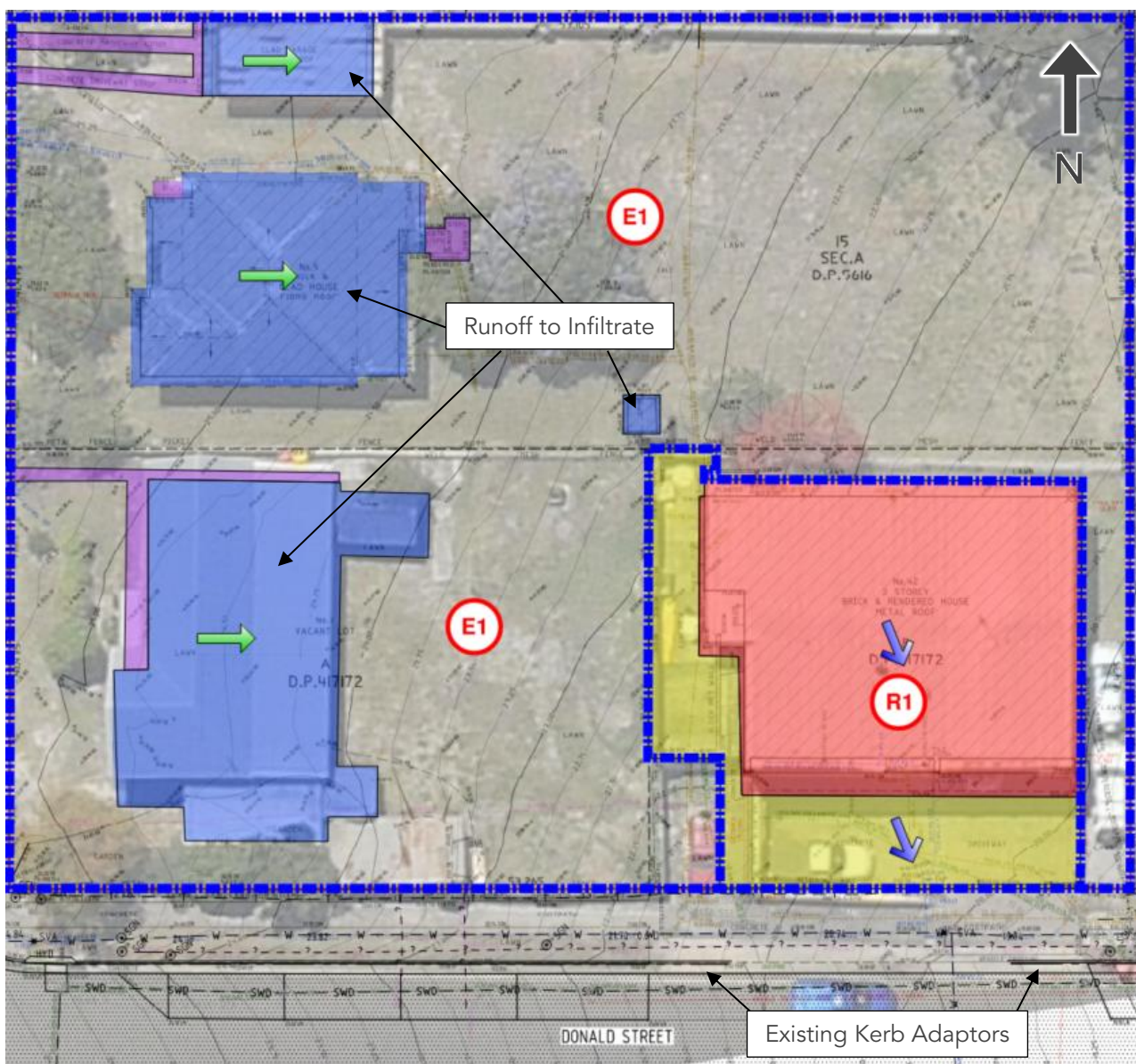


Figure 3 – Pre-Developed Site Flow

3.4.3 Post-Development Case Model

The post development case model consists of the drainage network which collects stormwater from several catchments including roof, driveway and ground areas as shown on the ADG Post Development Stormwater Drainage Catchment Plan DA06 in Appendix C.

The orifice size and OSD volume were adjusted iteratively with the model to achieve the design criteria. All storm events up to and including the 1% AEP storm were modelled to ensure that there was no increase in discharge from the proposed development as compared with the pre-development scenario. The results are shown below.

The proposed OSD tank outlet arrangements are as shown in Table 3.

Table 3 - Detention Outlet Configuration

Low Flow Outlet	Emergency Overflow
85mm diameter orifice at invert of tank	900x900 surcharge outlet 1,950mm above storage invert

The proposed OSD tank subsequently experiences:

- ▶ Catchment C1 OSD Tank: max detained volume of 100.6m³ and a maximum water level of 19.93m, assuming a base area of 60m².

The orifice proposed at the tank invert shall be protected by a screening device to minimise the chance of blockage.

The proposed tank and the above arrangements are shown on civil plan DA07 in Appendix C.

3.5 Results

The following parameters shown in Table 4 below were used in the DRAINS model. Infiltration rates were conservatively based on the minimum tested infiltration rate observed across five (5) infiltration test points performed by the geotechnical engineer. The infiltration rate is high enough to ensure there is no runoff from pervious areas on the pre-developed site. A Factor Of Safety (FOS) of 10 was nominated for the site by Port Stephens Council due to the position of the site in high-risk catchment.

Table 4 - DRAINS Modelling Inputs (Flows to Donald Street)

	Pre-Developed Site	Post-Developed Site
Deep Planting Infiltration Rate (mm/hr)	860	86.0 (FOS x10)
Area Infiltrating (m²)	<i>Catchment E1</i> 1,820 infiltrating either directly to or flowing over the pervious ground	<i>Catchment C2</i> 455 infiltrating into deep planting
Area Discharging to LPD (m²)	<i>Catchment R1</i> 383	<i>Catchment C1</i> 1,748
Total Area (m²)	2,203	2,203

A comparison between the peak discharge values for the areas that will infiltrate in the pre-developed and post-developed scenarios is presented in Table 5.

Table 5 - DRAINS Modelling Results (Areas Infiltrating)

Design Storm (AEP)	Pre-Developed Infiltrating Flow (m ³ /s) <i>Catchment E1</i>	Post-Development Infiltrating Flow (m ³ /s) <i>Catchment C2</i>	Flow Change (m ³ /s)
63%	0.004	0.001	-0.003
39%	0.007	0.002	-0.005
20%	0.011	0.003	-0.008
10%	0.015	0.004	-0.011
5%	0.019	0.005	-0.014
2%	0.024	0.006	-0.018
1%	0.029	0.007	-0.022

A comparison between the peak discharge values for the areas flowing to Donald Street between each of the DRAINS modelled scenarios is presented in Table 6.

Table 6 - DRAINS Modelling Results

Design Storm (AEP)	Pre-Development Flows (m ³ /s) <i>Catchment R1</i>	Post-Development Flows (m ³ /s) <i>Catchment C1</i>	Post-Development Mitigated Flows (m ³ /s) <i>Catchment C1</i>	Flow Change (m ³ /s)
63%	0.007	0.027	0.007	0.000
39%	0.009	0.036	0.009	0.000
20%	0.014	0.053	0.011	-0.003
10%	0.018	0.070	0.013	-0.005
5%	0.022	0.083	0.015	-0.007
2%	0.025	0.097	0.018	-0.007
1%	0.030	0.114	0.019	-0.011

As shown in Table 6, the proposed OSD tank is adequate to mitigate post-development peak discharge such that there is either a reduction in peak flow or negligible change from pre-development rates. For further DRAINS results refer to Appendix E.

3.6 Flooding

NSW Planning Portal's Flood Planning Map overlay indicates the site is not located within an area subject to flooding. The Port Stephens map overlay locates the site outside of both the flood prone land and flood planning area overlays, as seen in Figure 4.

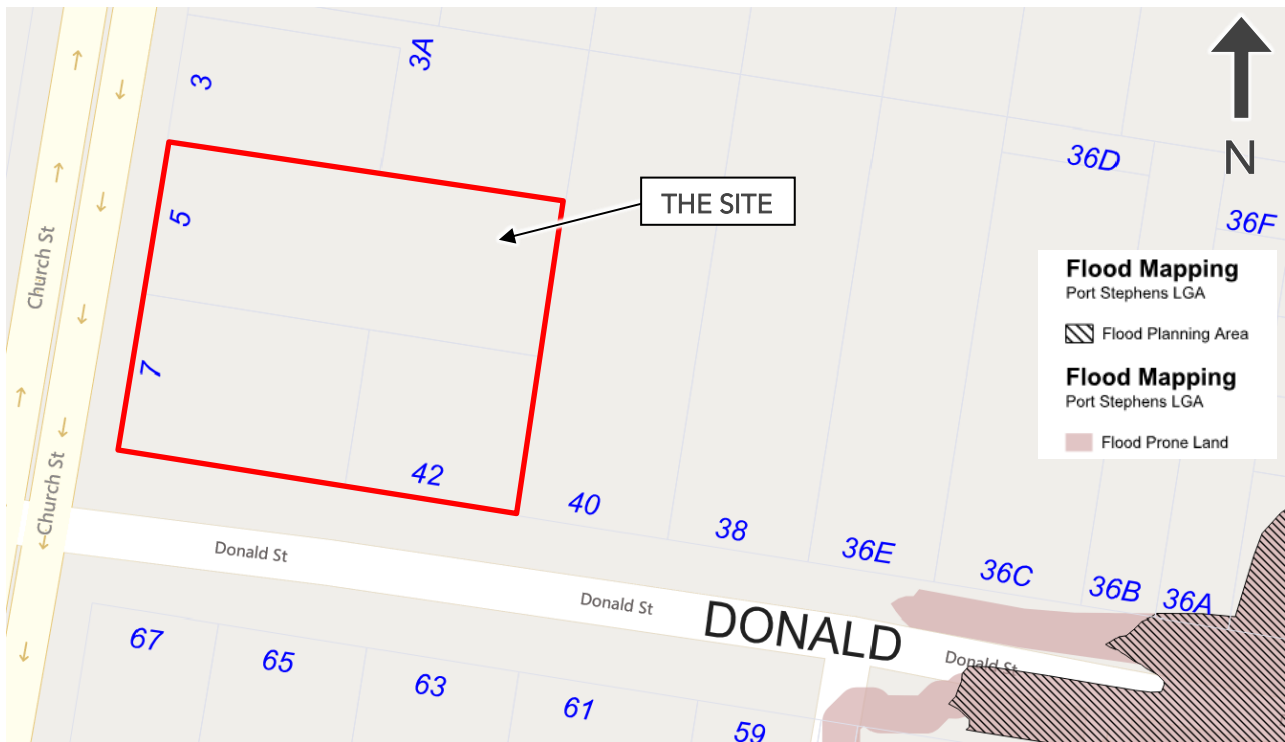


Figure 4 – Port Stephens Flood Mapping

3.7 Recommendation

As demonstrated in Table 6, following the utilisation of the proposed OSD tank there has been either a decrease or negligible change in peak flow discharging from the pre- to post-development sites. It is subsequently anticipated that the proposed development will discharge at a reduced rate compared to the predeveloped site for storm events up to and including the 1% AEP storm event. The pre- and post-development catchment plans can be seen on the DA civil plans in Appendix C.

3.8 Onsite Detention Lifecycle Costs

A lifecycle cost analysis is not a part of the scope of this report. All stormwater infrastructure associated with the development shall be maintained and serviced by the owners of the development at no cost to Council.

4 STORMWATER QUALITY ASSESSMENT

This assessment identifies issues relating to stormwater runoff quality and assesses possible methods of treatment and the subsequent impacts on the drainage strategy. The aim of this section of the report is to determine practical approaches in achieving improvements for the quality of the stormwater run-off from the site as set out by the relevant Council standards for the site area.

4.1 Site Analysis and Design Strategy

The pervious and impervious areas for the proposed development are summarised in Table 2 of this report. Currently no stormwater quality management measures are in place for the site. The proposed development offers the opportunity to provide stormwater quality treatment where none exists at present.

A MUSIC model analysis was undertaken to determine the extent of the treatment required for the site. It has been determined that two (2) Ocean Protect StormFilters (690mm PSORB) within a minimum 1.5m² treatment chamber and two (2) Ocean Protect OceanGuards is adequate to achieve the pollutant reduction targets discussed in Section 4.2.

Refer to the Preliminary Engineering Services Layout Plan DA04 in Appendix C for details on the proposed stormwater drainage and treatment layout.

4.2 MUSIC Modelling Results

Stormwater run-off from the site was modelled using MUSIC version 6.3.0. The model utilised version 6.35 of Council's MUSIC-Link data and was configured to the Anna Bay and Nelson Bay catchment with sensitive sandy soils.

The utilised data was over a 10-year timeframe from 01/01/1998 to 31/12/2007. Pollutant export parameters for the catchment's different land use types were applied in accordance with Table 3.8 of the MUSIC Modelling Guidelines. The objective was to achieve the desired target pollutant reduction levels as specified in Chapter B4 of the Port Stephens Council Development Control Plan. The target pollutant reduction targets are as follows:

- 90% Reduction in Total Suspended Solids (TSS);
- 60% Reduction in Total Phosphorus (TP);
- 45% Reduction in Total Nitrogen (TN); and
- 90% Reduction in Gross Pollutants.

The results of the model are shown on the following page in Figure 4 to meet the percent reduction water quality objectives identified by the Port Stephens Council Development Control Plan.

Refer to Appendix D for further information on the MUSIC Model inputs.

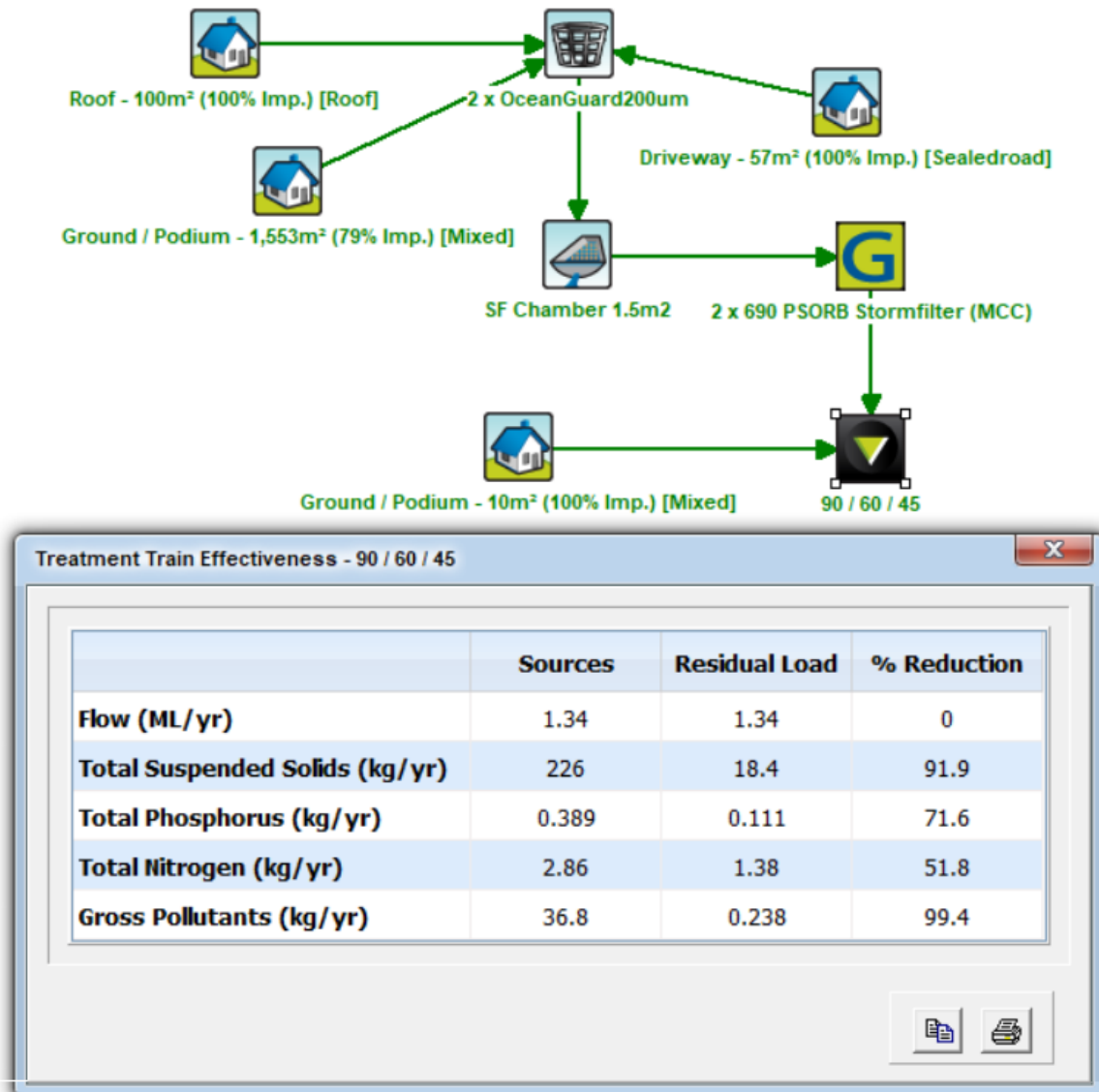


Figure 5 – Treatment Train

4.3 Construction Phase

During the construction phase of this development, there is a higher risk of sedimentation transport during construction due to the large areas of disturbed land. An Erosion and Sediment Control (ESC) plan is required for the lodgement of operational works and the following construction phase of the development.

An ESC is required for the lodgement of operational works and shall be implemented during the construction phase of the development as follows:

Stage 1: Pre-construction

- All ESC devices are to be installed prior to any earth disturbing activities

Stage 2: Construction

- All ESC devices are to be maintained to operational levels, as specified in the management plans and drawings.
- The maintenance plan needs to be in accordance with the Water by Design Construction and Establishment Guidelines.

- ▶ During excavation, the contractor shall provide a temporary sediment basin (sump pit) and pump out stormwater only once the water has settled and has achieved an acceptable quality to Council standards (i.e. no turbidity and acceptable pH levels).

Stage 3: Pre-Operational Stage (all disturbed areas stabilized, 90% of all structures completed)

- ▶ All ESC devices can be removed only if approved by the superintendent and engineers.

4.4 Operational Phase

Once directed to be commissioned by the superintendent and engineers, the Stormwater Quality Improvement Devices (SQIDs) will provide the required level of stormwater quality treatment to runoff from the site prior to discharging into Council's stormwater drainage infrastructure. It is expected that sediment laden runoff and the erosion potential at the site during the operational phase will be minimal. This is due to the high amount of permanent impervious area in the form of roofs, paths, courtyards, driveways and other impervious areas, and the installation of stormwater quality improvement devices. The proposed landscaped areas will be maintained in a manner that will minimise erosion.

4.5 Lifecycle Costs

A lifecycle cost analysis is not a part of the scope of this report. All the recommended water quality treatment infrastructure lies within the development site, and it shall be maintained and serviced by the owners of the development at no cost to Council.

4.6 Maintenance and Water Quality Monitoring

The site operator will be responsible for organising all monitoring and maintenance activities associated with the operation of the proposed treatment devices in accordance with manufacturer specifications where relevant.

Maintenance of the stormwater quality improvement devices is required to ensure the system does not clog and functions correctly for longer. To ensure the system operates as designed, the stormwater quality improvement devices shall be inspected and cleaned out/replaced in accordance with Council guidelines and/or manufacturer recommendations. Any sedimentation or build-up of litter should be monitored to ensure peak functionality.

5 CONCLUSION

Detailed design is to confirm the water quality and quantity recommendations. In preparing this Integrated Water Management Plan, we comply with condition 11 of the Planning Secretary's Environmental Assessment Requirements for the proposed development (SSD-83366960).

To achieve the stormwater quantity objectives, the proposed strategy involves an on-site detention tank capable of detaining a volume of 100.6m³. This report has provided details around the detention tank outlet arrangement in order to retard post-development peak discharge to pre-development rates. The site was *not* identified to be at risk of flooding.

To achieve the stormwater quality objectives, the following stormwater quality improvement devices are proposed:

- ▶ Two (2) Ocean Protect OceanGuard units to pre-treat site flows from the building; and
- ▶ Two (2) Ocean Protect StormFilters cartridges (690mm PSORB) within a minimum 1.5m² treatment chamber.

Detailed engineering diagrams and management requirements for the proposed development are to be completed prior to any works commencing on site with design certification prepared by a qualified stormwater engineer or scientist.

Appendix A Architectural Plans

TOWN PLANNING DRAWINGS - THE BELVEDERE

BUILT FORM & URBAN DESIGN

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TOWN PLANNING

forteazza

GROUP

THE BELVEDERE

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06/06/25

P2

Preliminary

RH

16/05/25

P1

Preliminary

RH

Date

Issue

Details

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Drawing Title

Cover

Scale @ A3

Drawn:

Checked:

1:1.15, 1:2.84RH

EA

Project Number

Drawing Number

Issue

H4700DON

TP100

P2

DEVELOPMENT MATRIX

KEY PROPOSAL STATISTICS - MULTIPLE DWELLING		
Site Area:	2,202 m ² (approx)	
Frontage:	94.55 m (approx)	
Number of Storeys:	09	
Maximum Building Height :	29.7 m AHD (approx)	
Car Spaces - Commercial	2	
Car Spaces - Resident	78	
Car Spaces - Visitor	18	
Total	98	
DWELLING/ OFFICE/ RETAIL SUMMARY		
2 BED	34	
3 BED	22	
OFFICE	1	
TOTAL	57	
GROSS FLOOR AREA		
TOTAL GFA	6,153.41 m ²	
TOTAL FSR	2.8:1	
COMMUNAL OPEN SPACE SUMMARY		
GRAND LOBBY	71.22	
ROOF TERRACE	365.69	
STRETCHING LAWN	44.42	
WELLNESS	112.63	
TOTAL COMMUNAL OPEN SPACE	593.96 m ² (27%)	
LANDSCAPING		
DEEP SOIL	289.82	(14%)
CONTAINERIZED PLANTING	548.72 m ²	(24.9%)

Home Storey	App Number	Apartment Type	# Cars	Internal Area (m2)	POS (m2)
Ground					
	001	2 BED	1	93.60	107.35
	002	2 BED	1	89.04	80.63
	003	2 BED	1	89.08	80.94
	004	2 BED	1	89.08	80.57
	005	2 BED	1	89.08	41.22
	006	2 BED	1	93.83	52.68
	007	2 BED	1	92.57	31.67
	008	MANAGERS OFFICE	2	25.28	
Level 01					
	101	2 BED	1	93.60	15.90
	102	2 BED	1	89.04	14.74
	103	2 BED	1	89.08	16.36
	104	2 BED	1	89.08	16.34
	105	2 BED	1	89.08	14.59
	106	2 BED	1	93.83	15.82
	107	2 BED	1	94.25	31.27
	108	2 BED	1	84.16	16.03
	109	2 BED	1	96.62	32.50
Level 02					
	201	2 BED	1	93.60	15.98
	202	2 BED	1	89.04	14.60
	203	2 BED	1	89.08	16.52
	204	2 BED	1	89.08	16.78
	205	2 BED	1	89.08	15.87
	206	2 BED	1	93.83	15.73
	207	2 BED	1	94.25	32.21
	208	2 BED	1	84.16	15.53
	209	2 BED	1	96.62	32.46
Level 03					
	301	2 BED	1	93.60	15.92
	302	2 BED	1	89.04	14.62
	303	2 BED	1	89.08	16.35
	304	2 BED	1	89.08	16.36
	305	2 BED	1	89.08	14.63

Home Storey	App Number	Apartment Type	# Cars	Internal Area (m2)	POS (m2)
	306	2 BED	1	93.83	15.80
	307	2 BED	1	94.25	31.50
	308	2 BED	1	84.16	19.81
	309	2 BED	1	96.62	32.56
Level 04					
	401	3 BED	2	123.12	15.93
	402	3 BED	2	123.84	50.47
	403	3 BED	2	123.84	50.70
	404	3 BED	2	122.84	15.84
	405	3 BED	2	126.99	43.19
	406	3 BED	2	130.94	47.25
Level 05					
	501	3 BED	2	123.12	15.85
	502	3 BED	2	123.84	26.10
	503	3 BED	2	123.84	26.42
	504	3 BED	2	122.84	15.97
	505	3 BED	2	126.99	29.92
	506	3 BED	2	130.94	29.44
Level 06					
	601	3 BED	2	123.12	16.27
	602	3 BED	2	123.84	26.34
	603	3 BED	2	123.84	25.76
	604	3 BED	2	122.84	15.81
	605	3 BED	2	126.99	29.22
	606	3 BED	2	130.94	29.20
Level 07					
	701	3 BED	2	173.27	57.52
	702	3 BED	2	141.42	22.05
	703	3 BED	2	141.75	22.07
	704	3 BED	2	171.93	56.27
Level 08- Roof Terrace					
	701	3 BED UPPER		22.37	145.81
	704	3 BED UPPER		17.55	145.44
				6,040.78 m²	1,960.68 m²

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06/06/25P2PreliminaryRH

16/05/25P1PreliminaryRH

DateIssueDetailsChecked

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Drawing Title

Development Matrix

Scale @ A31:1.67, 1:1, 1:1.25

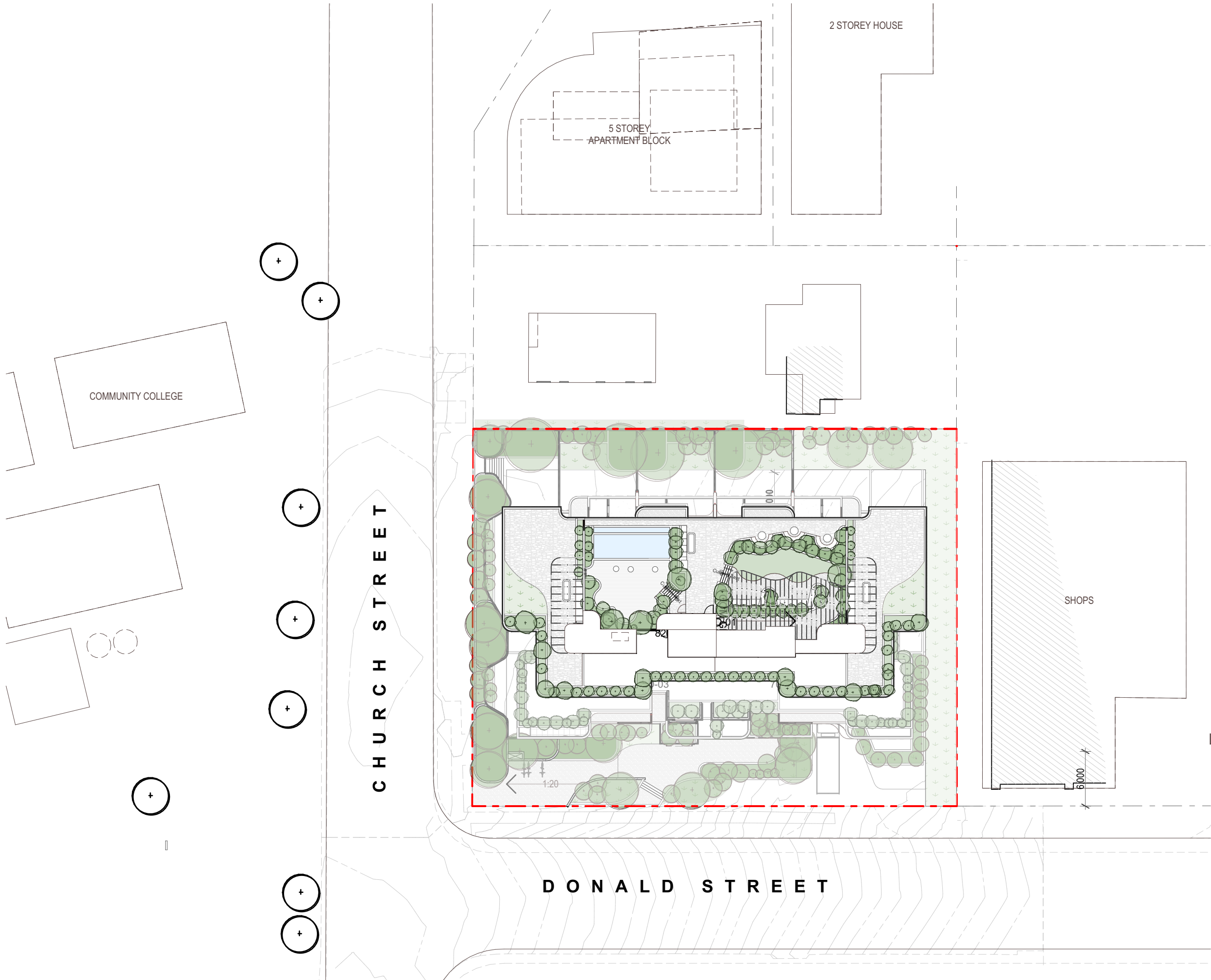
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Checked:EA

Project NumberH4700DON

Drawing NumberTP101

IssueP2



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16/05/25	P1	Preliminary	RH
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Project
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Drawing Title
Site Plan

Scale @ A3	Drawn:	Checked:
1:400	RH	EA
Project Number	Drawing Number	Issue
H4700DON	TP108	P2

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ate	Issue	Details	Checked



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Project

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Drawing Title

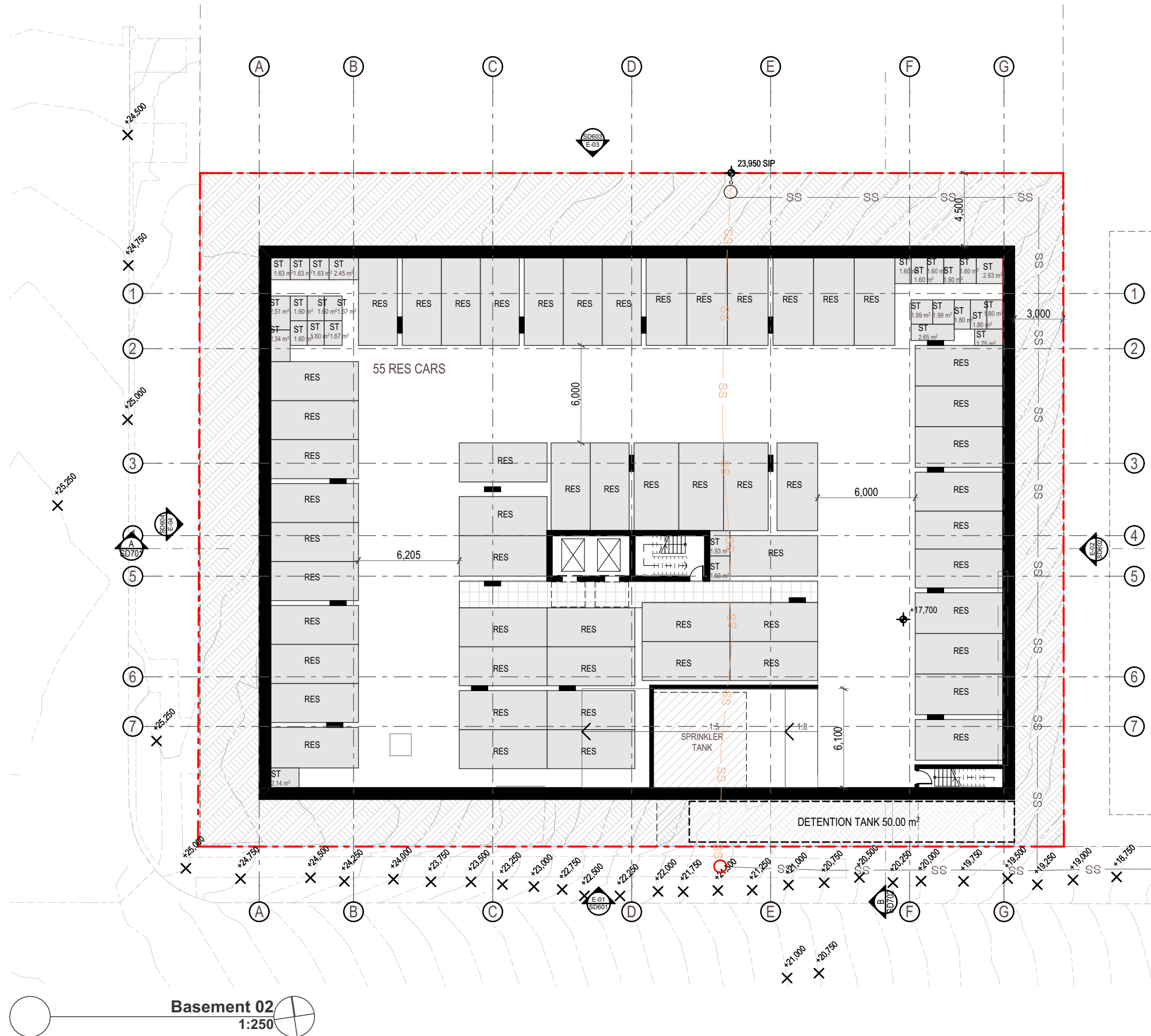
A Plan - Basement 02

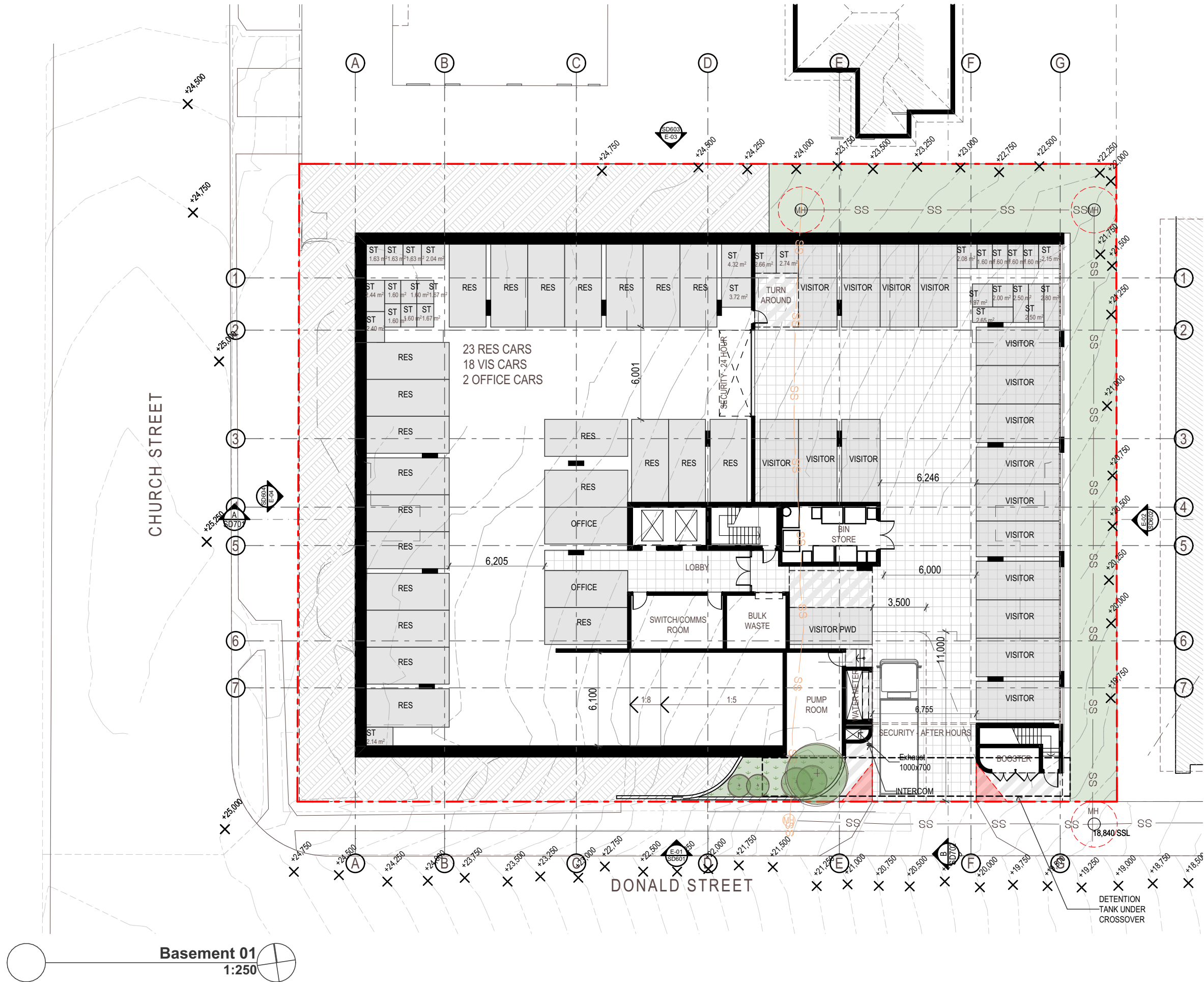
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250	RH	EA
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Project Number	Drawing Number	Issue
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4700DON TP201 P2





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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked



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Project
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Drawing Title
GA Plan - Basement 01

Scale @ A3	Drawn:	Checked:
1:250	RH	EA
Project Number	Drawing Number	Issue
H4700DON	TP202	P2

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Date	Issue	Details	Checked

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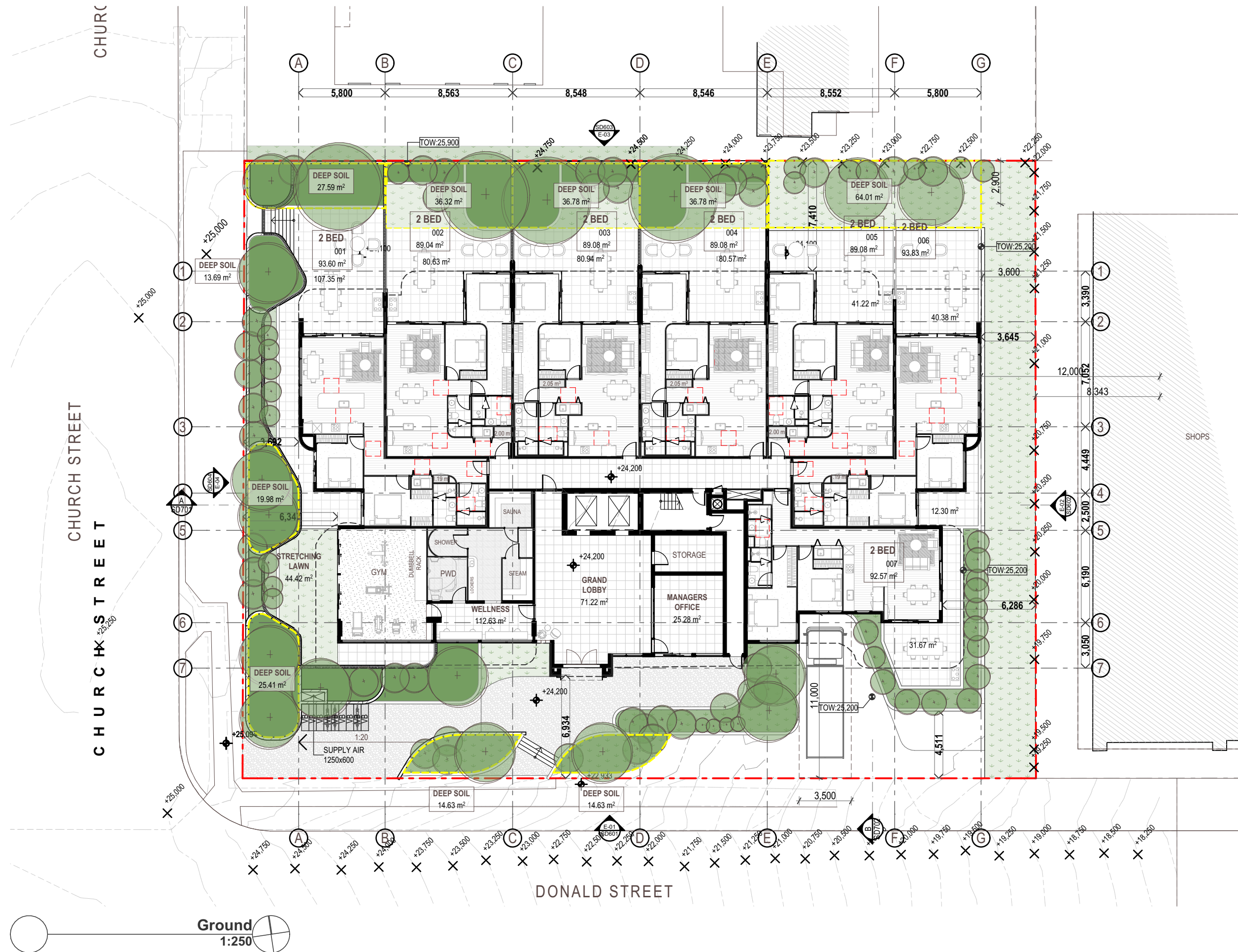


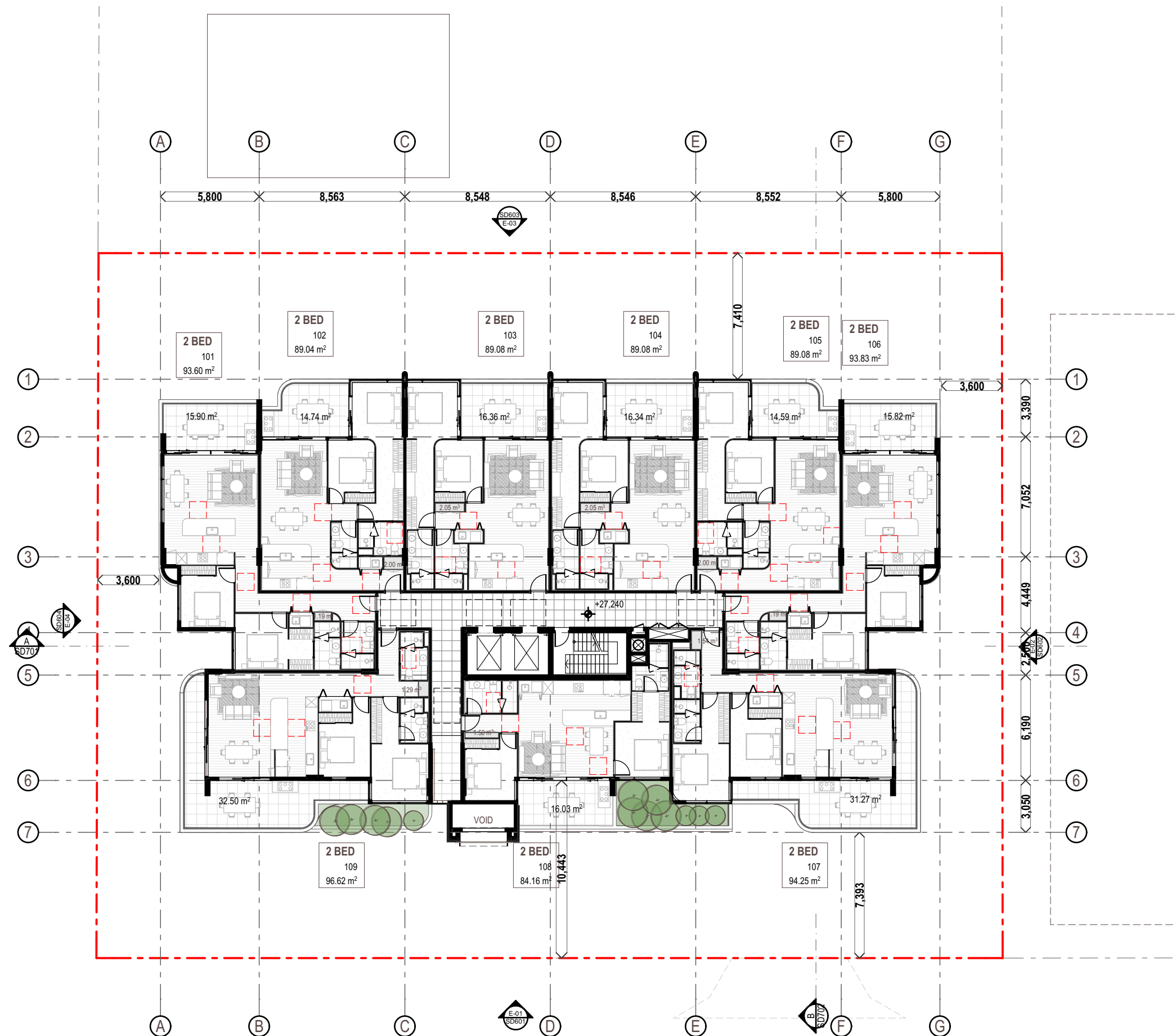
Project
The Belvedere

5-7 Church st, 42 Donald st,
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Drawing Title
GA Plan - Ground

Scale @ A3	Drawn:	Checked:
1:250	RH	EA
Project Number	Drawing Number	Issue
H4700DON	TP203	P2





Level 01
1:250

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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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Drawing Title
GA Plan- Level 01

Scale @ A3	Drawn:	Checked:
1:250	RH	EA
Project Number	Drawing Number	Issue
H4700DON	TP204	P2

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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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Project

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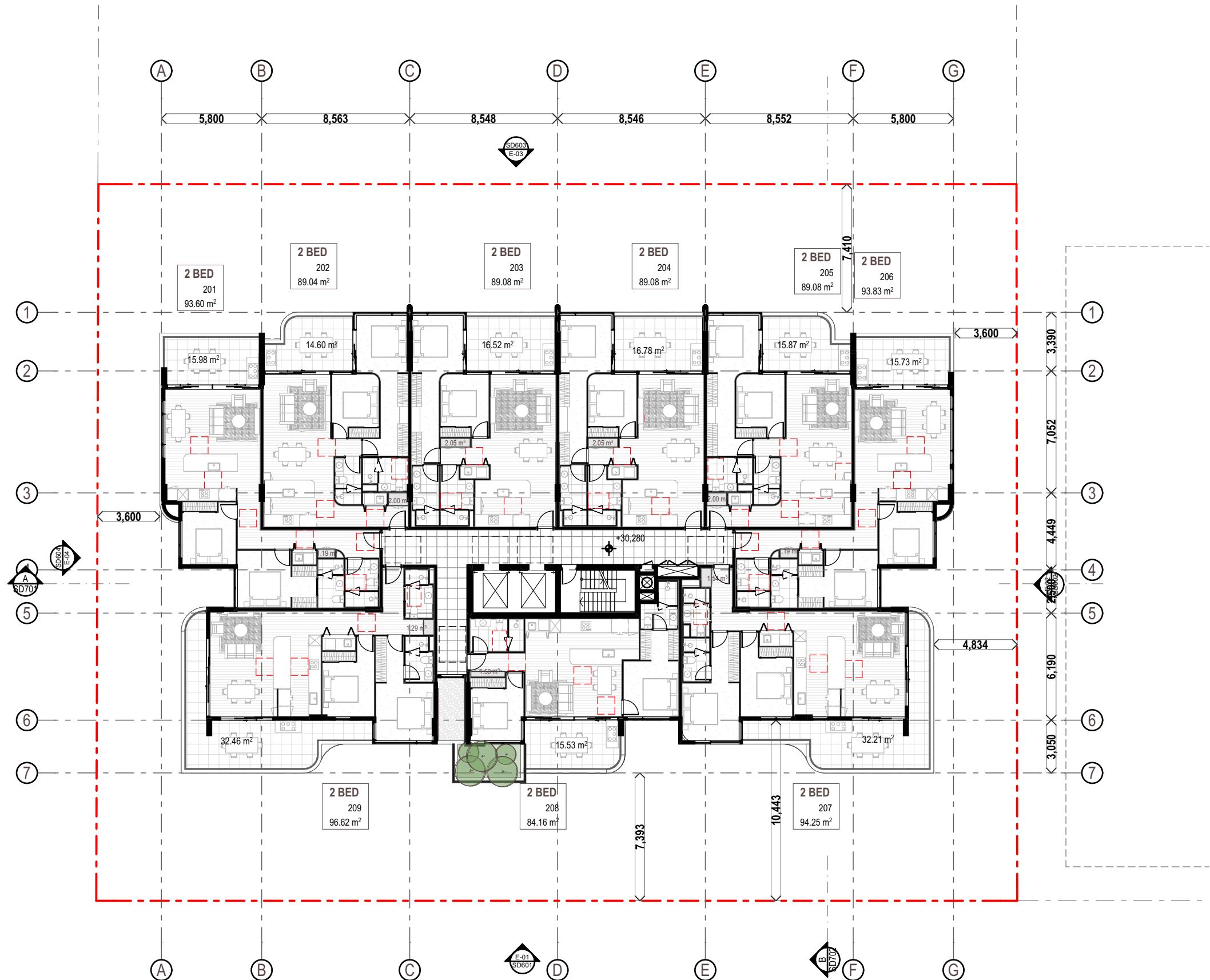
Drawing Title

GA Plan- Level 02

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1:250 RH EA

Project Number Drawing Number Issue

H4700DON TP205 P2

Level 02
 1:250

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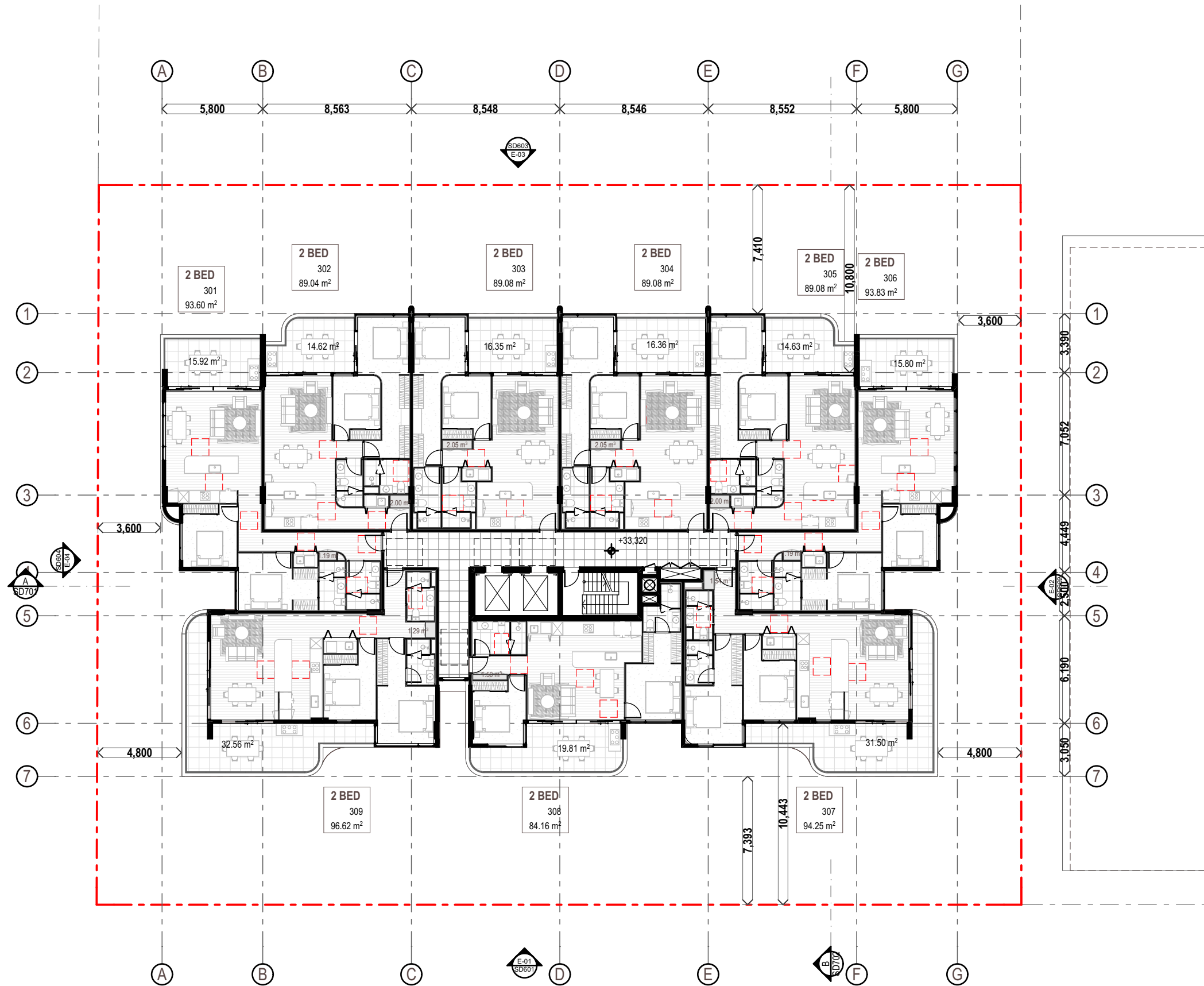
Project The Belvedere

7 Church st, 42 Donald st ,
SW 2315

Drawing Title

A Plan- Level 03

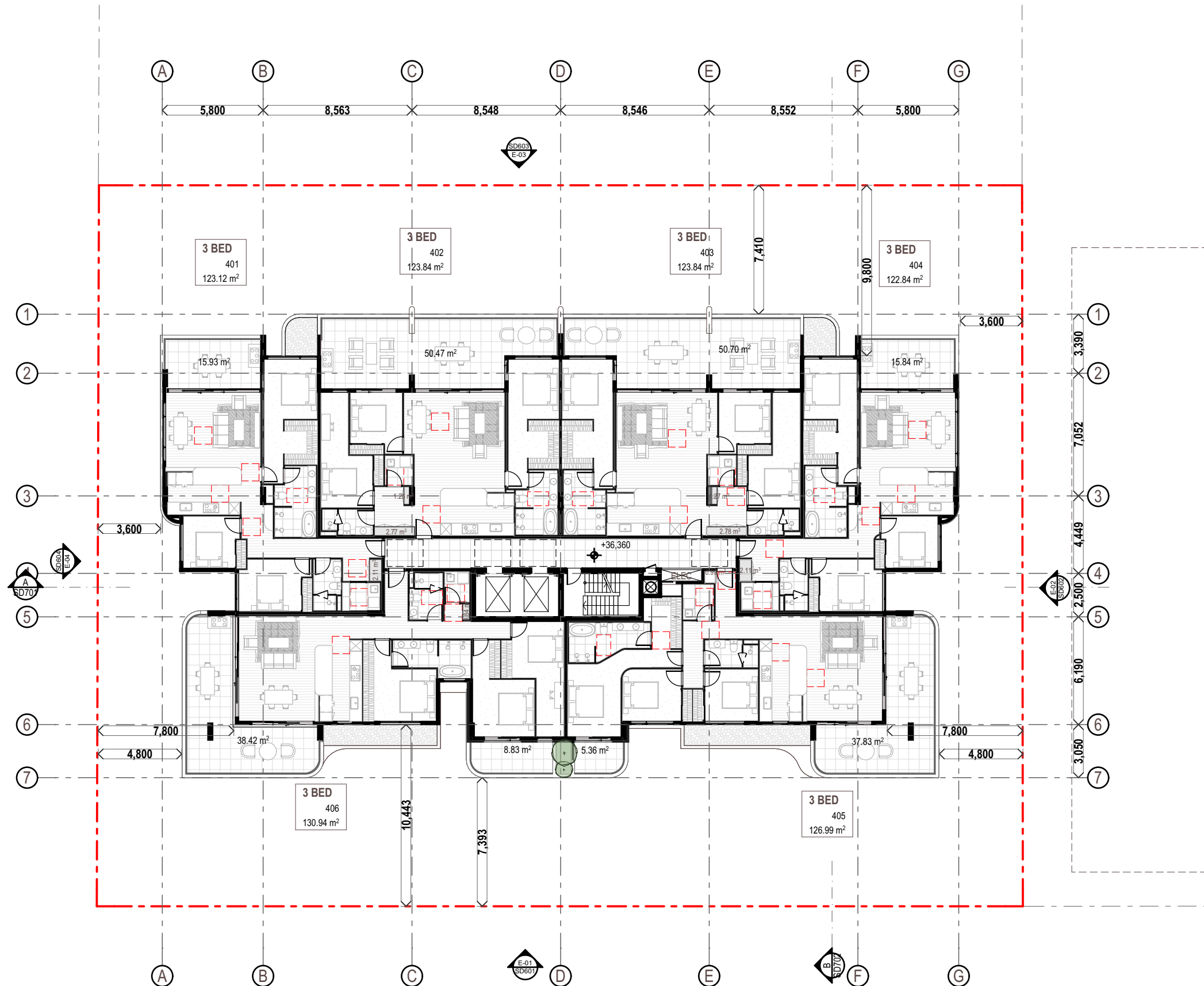
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Project Number	Drawing Number	Issue
4700DON	TP206	P2



Level 03
1:250

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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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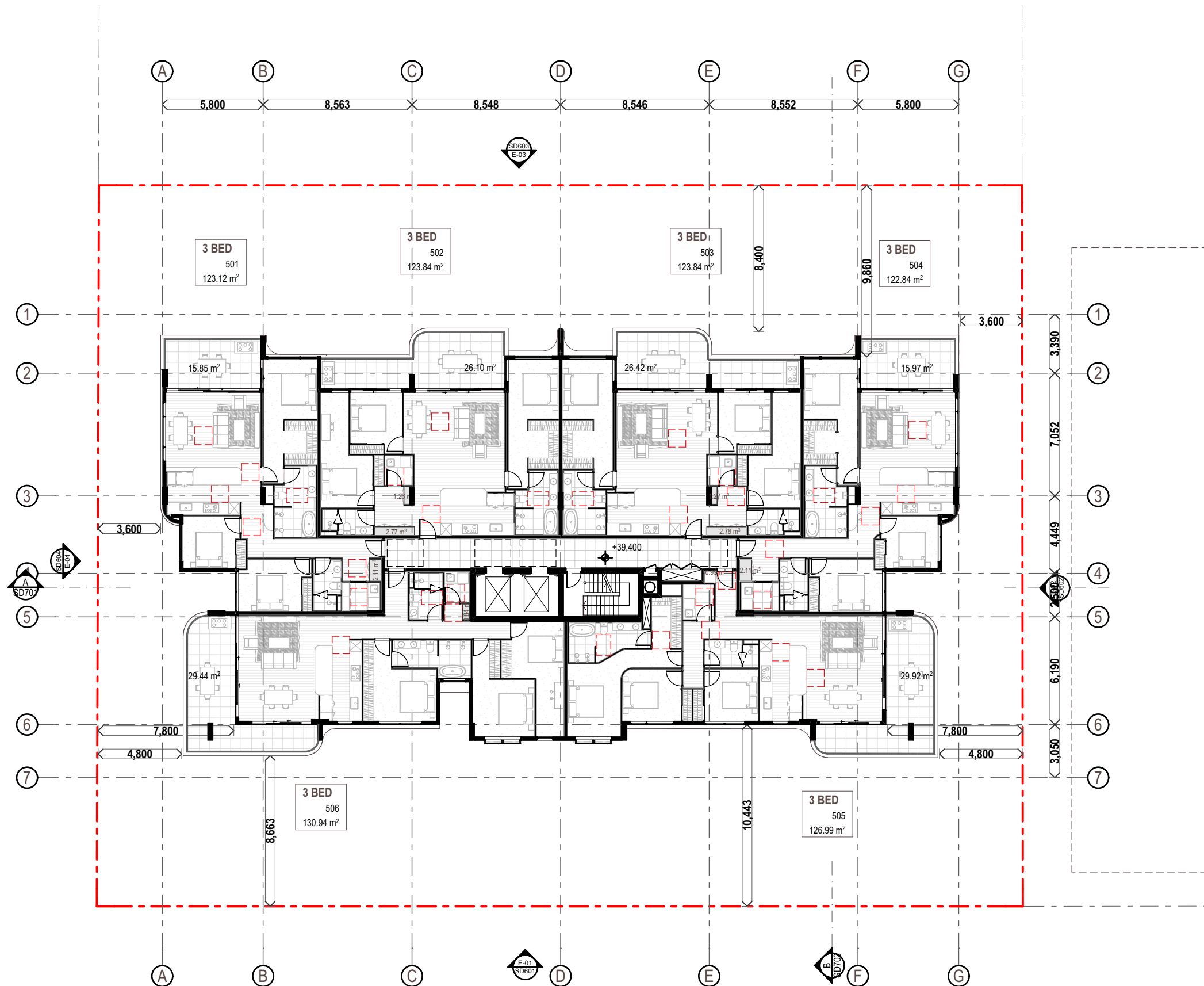
GA Plan- Level 04

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Project Number	Drawing Number	Issue
H4700DON	TP207	P2

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Level 05
1:250

06/06/25	P2	Preliminary	RH
16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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Drawing Title

GA Plan- Level 05

Scale @ A3 Drawn: Checked:

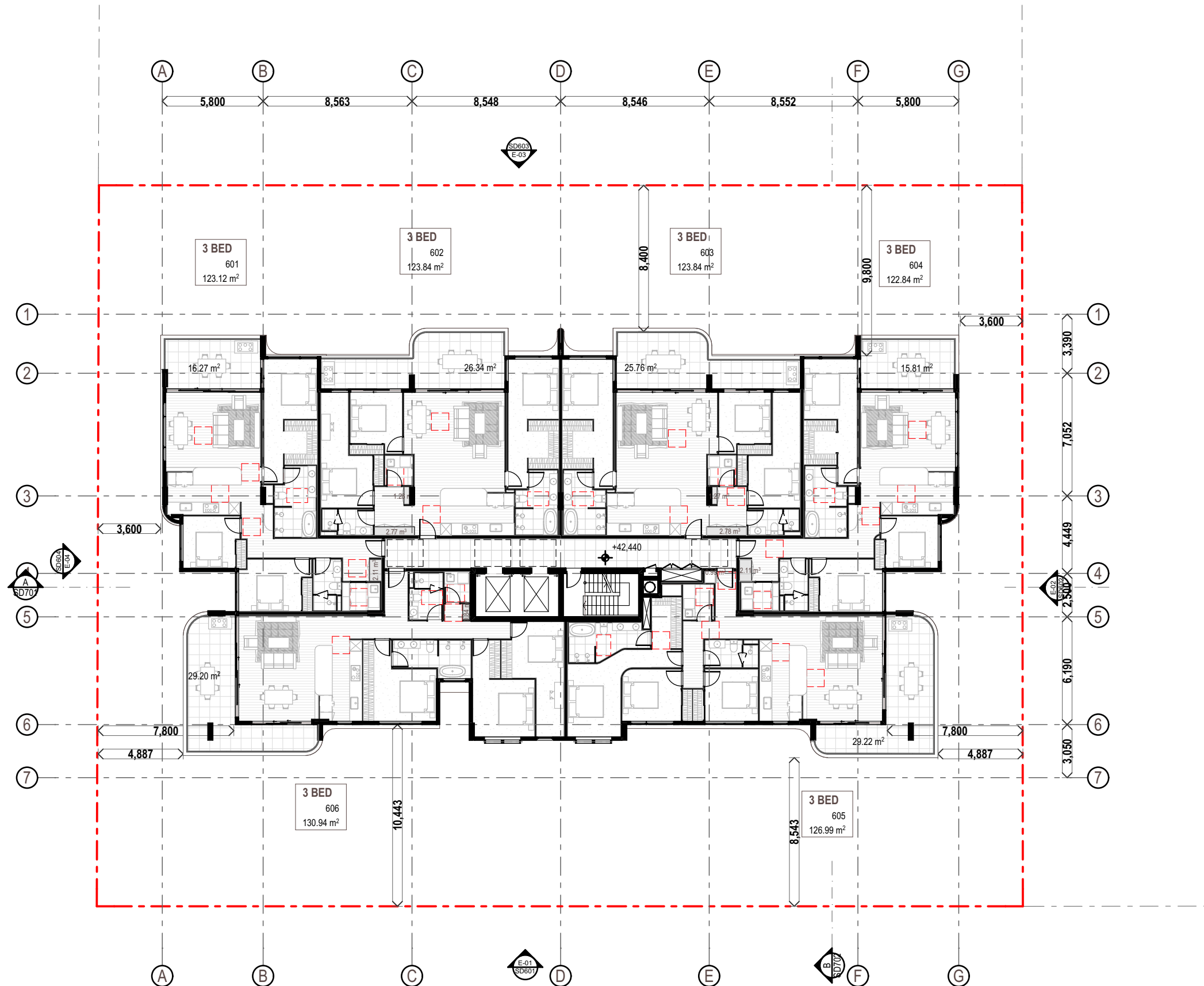
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Project Number Drawing Number Issue

H4700DON TP208 P2

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Level 06
 1:250

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16/05/25	P1	Preliminary	RH
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Drawing Title

GA Plan- Level 06

Scale @ A3 Drawn: Checked:

1:250 RH EA

Project Number Drawing Number Issue

H4700DON TP209 P2

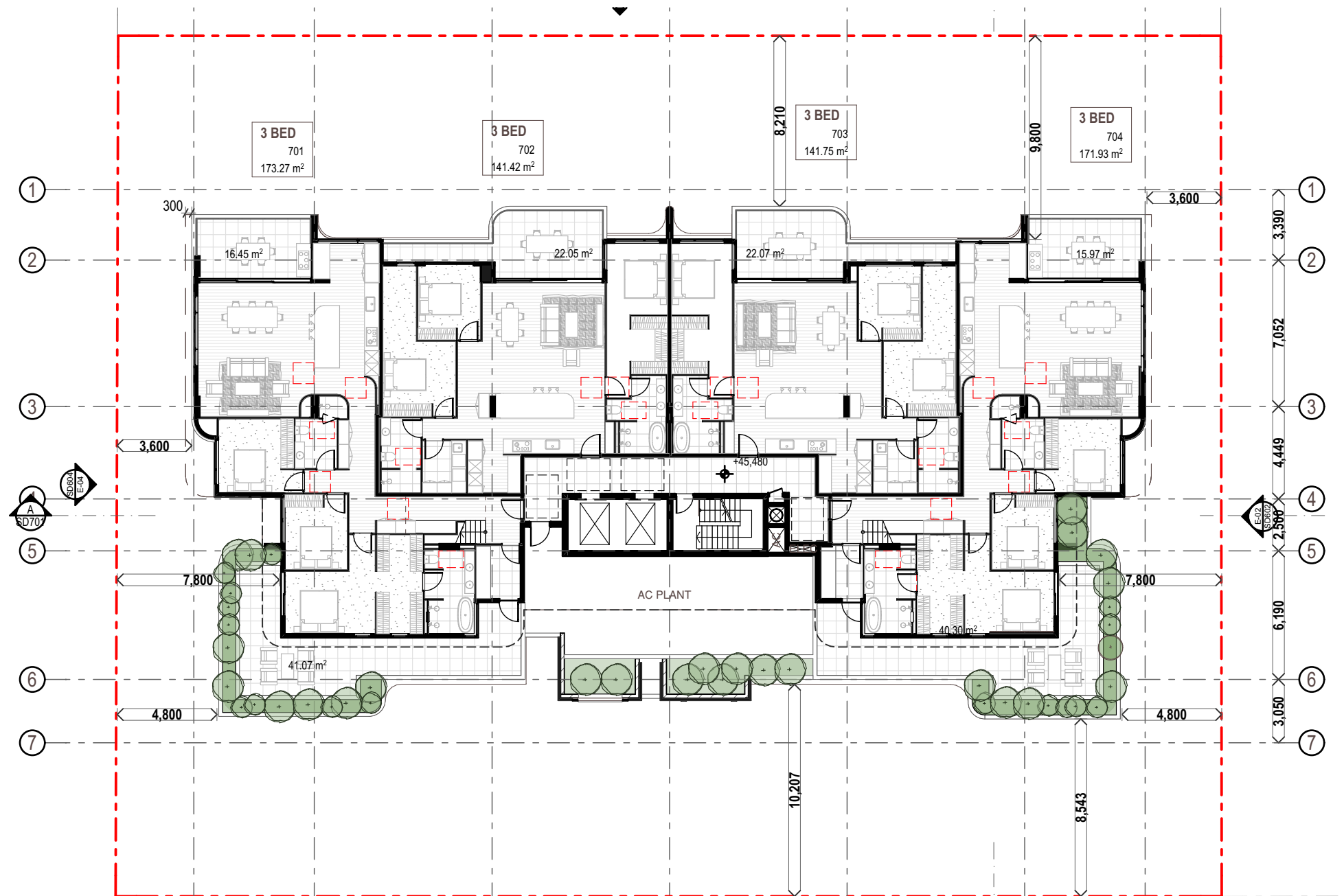
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Level 07

1:250

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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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Project

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Drawing Title

GA Plan- Level 07

Scale @ A3 Drawn: Checked:

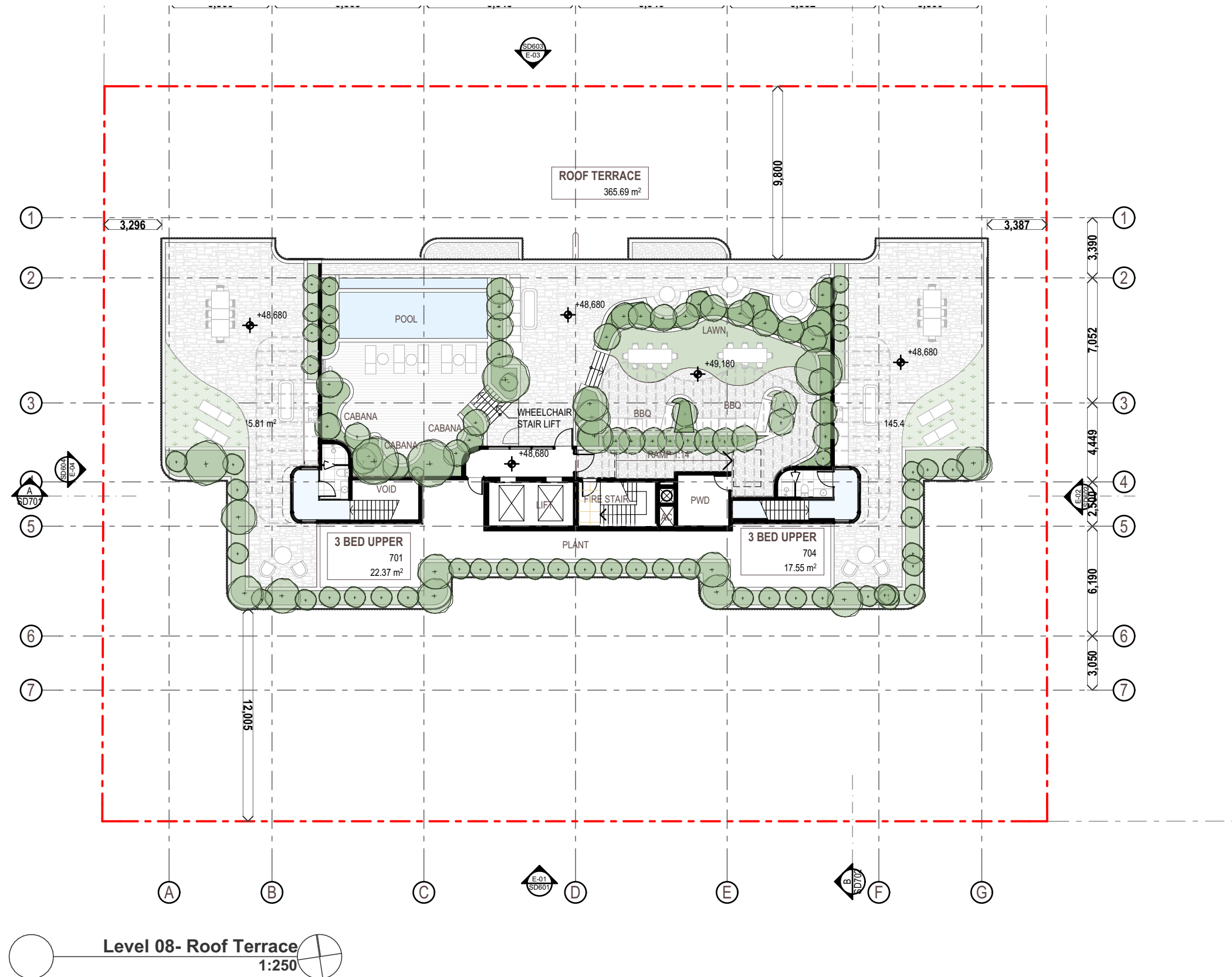
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Project Number Drawing Number Issue

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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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Project

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Drawing Title

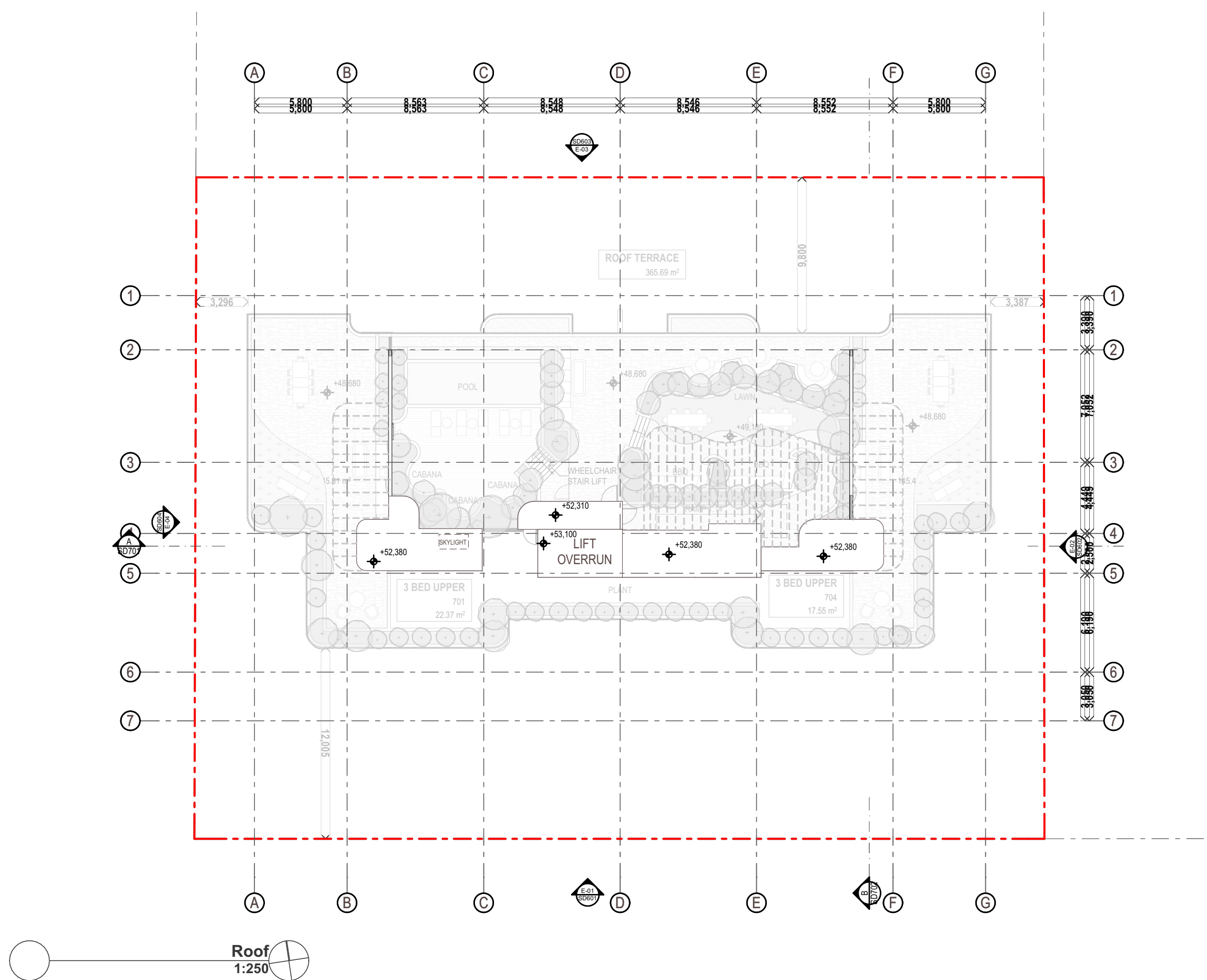
GA Plan - Roof Terrace

Scale @ A3 Drawn: Checked:

1:250 RH EA

Project Number Drawing Number Issue

H4700DON TP211 P2



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16/05/25	P1	Preliminary	RH
Date	Issue	Details	Checked

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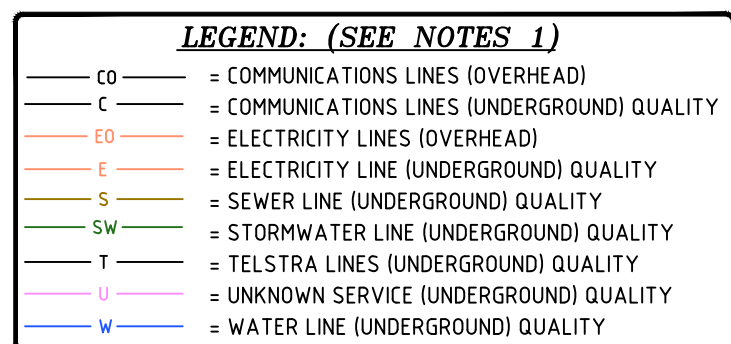


Project
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5-7 Church st, 42 Donald st ,
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Drawing Title
GA Plan - Roof

Scale @ A3	Drawn:	Checked:
1:200, 1:250 RH		EA
Project Number	Drawing Number	Issue
H4700DON	TP212	P2

Appendix B Detailed Site Survey



- THE PURPOSE OF THIS PLAN IS FOR DESIGN ONLY. CURRENT PLANS ISSUED BY SERVICE PROVIDERS THROUGH "BEFORE YOU DIG AUSTRALIA" ARE STILL REQUIRED. CONTRACTORS AND SUBCONTRACTORS WILL NEED TO EXERCISE THEIR OWN "DUTY OF CARE" AND SHOULD MAKE THEIR OWN BEFORE YOU DIG AUSTRALIA ENQUIRY BEFORE EXCAVATION/CONSTRUCTION. YOU MUST ENSURE "BEFORE YOU DIG AUSTRALIA" ARE CURRENT AS THEY HAVE VARYING EXPIRATION DATES, AND MAY REQUIRE RE-ISSUE OTHERWISE THE INFORMATION ON THIS PLAN MAY NO LONGER BE CURRENT.

• **WARNING: UNKNOWN SERVICES MAY EXIST THAT COULD NOT BE ELECTRONICALLY DETECTED. THE DIAGRAMS OF THE SERVICE PROVIDER MAY NOT DEPICT ALL ASSETS WITHIN THEIR NETWORK AND SERVICE PROVIDERS MAY SHARE CONDUITS AND /OR TRENCHES AT THIS LOCATION.**

• WARNING: SINGLE MARKED LINES MAY REPRESENT MULTIPLE CONDUITS, PIPES END/OR CABLES AT THIS LOCATION. THE RECORDING OF DEPTHS AND POSITION OF UTILITIES CANNOT BE GUARANTEED AS CORRECT. WE RECOMMEND NON DESTRUCTIVE DIGGING/POTHOLING TO EXPOSE SERVICES FOR ACCURATE IDENTIFICATION AND DEPTH.

CAUTION: LOCATE DOWN UNDER HAVE SURVEYED AND MARKED OUT EXISTING SERVICES IN THE AREA SPECIFIED BY THE CLIENT. THESE SERVICE LINES HAVE BEEN LOCATED BY ABOVE GROUND SERVICE TRACING METHODS AND HAVE NO BEEN LOCATED BY BELOW GROUND SERVICE TRACING METHODS. **LOCATED DOWN UNDER** THE LOCATION OF THESE MARKED SERVICES ARE APPROXIMATE ONLY. THE POSITION OF THE MARKED SERVICE LINES HAS BEEN MADE WITH REFERENCE TO THE RELEVANT SERVICE AUTHORITY DIAGRAMS. ALL INFORMATION HAS BEEN OBTAINED FROM THE SERVICE AUTHORITY DIAGRAMS. NOT TAKEN FROM UTILITY PROVIDED DIAGRAMS WHERE AVAILABLE. WE RECOMMEND NON DESTRUCTIVE DIGGING/POTHoling TO EXPOSE MARKED SERVICES TO THE SURFACE AND TO VERIFY THE LOCATION OF SERVICE LINES. ALL EARTHWORKS COMMENCING UTILITY LINES PLOTTED ON PLANS SHOULD TERMINATE IN THE SPECIFIED AREA MAY GO TO FEATURES THAT HAVE NOT BEEN SHOWN ON THE BACKGROUND DETAIL SURVEY PROVIDED BY CLIENT. THE RISK REMAINS WITH THE CLIENT AND THE CONTRACTOR AND THEIR RESPONSIBILITY TO EXERCISE CAUTION AT ALL TIMES.

```

      CODE      DEPTH      PIPE
      ↓         ↓         ↓
106.78  SSL      1.31      B Ø100  EOT
  ↑         ↑         ↑
  RL      LOCATION  NOTE
         QUALITY

```

QL-D-
IS THE LOWEST OF THE FOUR QUALITY LEVELS STIPULATED IN A55488. IT IS AN INDICATIVE
POSITION COMPILED FROM EXISTING RECORDS, CURSORY SITE INSPECTION, ANECDOTAL EVIDENCE, ETC.
IT IS THE NEXT LEVEL UP FROM QL-D. A55488 STATES THAT QL-C IS A SURFACE FEATURE
CORRELATION OR AN INTERPRETATION OF THE APPROXIMATE LOCATIONS AND ATTRIBUTES OF A
SURFACE FEATURE USING A COMBINATION OF EXISTING RECORDS, ANECDOTAL EVIDENCE, SONAR
BOOM TECHNIQUES AND A SITE SURVEY OF VISIBLE EVIDENCE.

QL-B-
ELECTRONICALLY TRACED AS PER A55488 (DIRECT CONNECTION, INDUCTION, FLEXITRACE/SONDE,
FLEXTRID/SONDE) WITH AN ESTIMATED POSITIONAL TOLERANCE OF +/-300MM IN PLAN, +/-500MM
IN DEPTH (HIGH CONFIDENCE LEVEL).

QL-A-
IS THE HIGHEST QUALITY LEVEL AS PER A55488 AND CONSISTS OF THE POSITIVE IDENTIFICATION
OF THE ATTRIBUTE AND LOCATION OF A SUBSURFACE UTILITY AT A POINT TO AN ABSOLUTE
TOTAL POSITION TOLERANCE DIMENSIONS THIS CAN BE ACHIEVED AT OPENED PITS AND IN THE
POTHOLES WHERE THE UTILITY IS EXPOSED.

HORIZONTAL AND VERTICAL
TOLERANCE: +/-50MM.

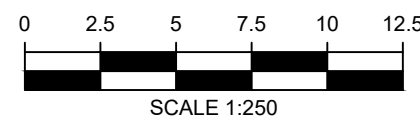
QL-X-
ELECTRONICALLY LOCATED WITH GROUND PENETRATING RADAR OR OTHER ELECTRONIC LOCATING
TECHNIQUES NOT COMPLIANT WITH A55488 (ESTIMATED POSITIONAL TOLERANCE IS +/-300MM IN
PLAN, +/-500MM IN DEPTH (HIGH CONFIDENCE LEVEL).

QL-Y-
ELECTRONICALLY LOCATED BUT WITH REDUCED CONFIDENCE IN PLAN POSITION/DEPTH (MEDIUM
CONFIDENCE LEVEL).

QL-Z-
ELECTRONICALLY LOCATED WITH LOW CONFIDENCE LEVEL IN PLAN POSITION/DEPTH (LOW
CONFIDENCE LEVEL).

HORIZONTAL DATUM:
CO-ORDINATE SYSTEM: MGA 2020 (GROUND)
MARKS ADOPTED: PM 27599 & SSM 82793

VERTICAL DATUM:
 DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
 B.M. ADOPTED: PM 27599
 R.L. 31.192 (CLASS LB)
 SOURCE: S.C.I.M.S. (2/11/2023)



**BELLA BAIA TRUST (THE TRUSTEE
FOR BELLA BAIA TRUST)**

LGA: PORT STEPHENS

**BOUNDARY IDENTIFICATION
AND DETAIL & LEVEL SURVEY OVER
LOTS 15 SEC.A IN DP5616 & LOTS A & B IN DP417172
No.5 & 7 CHURCH STREET & 42 DONALD STREET
NELSON BAY, NSW, 2315**



CMS SURVEYORS PTY LTD
ACN 096 240 201

PO Box 463 Dee Why, NSW, 2099
2/99A South Creek Road, Dee Why, NSW, 2099

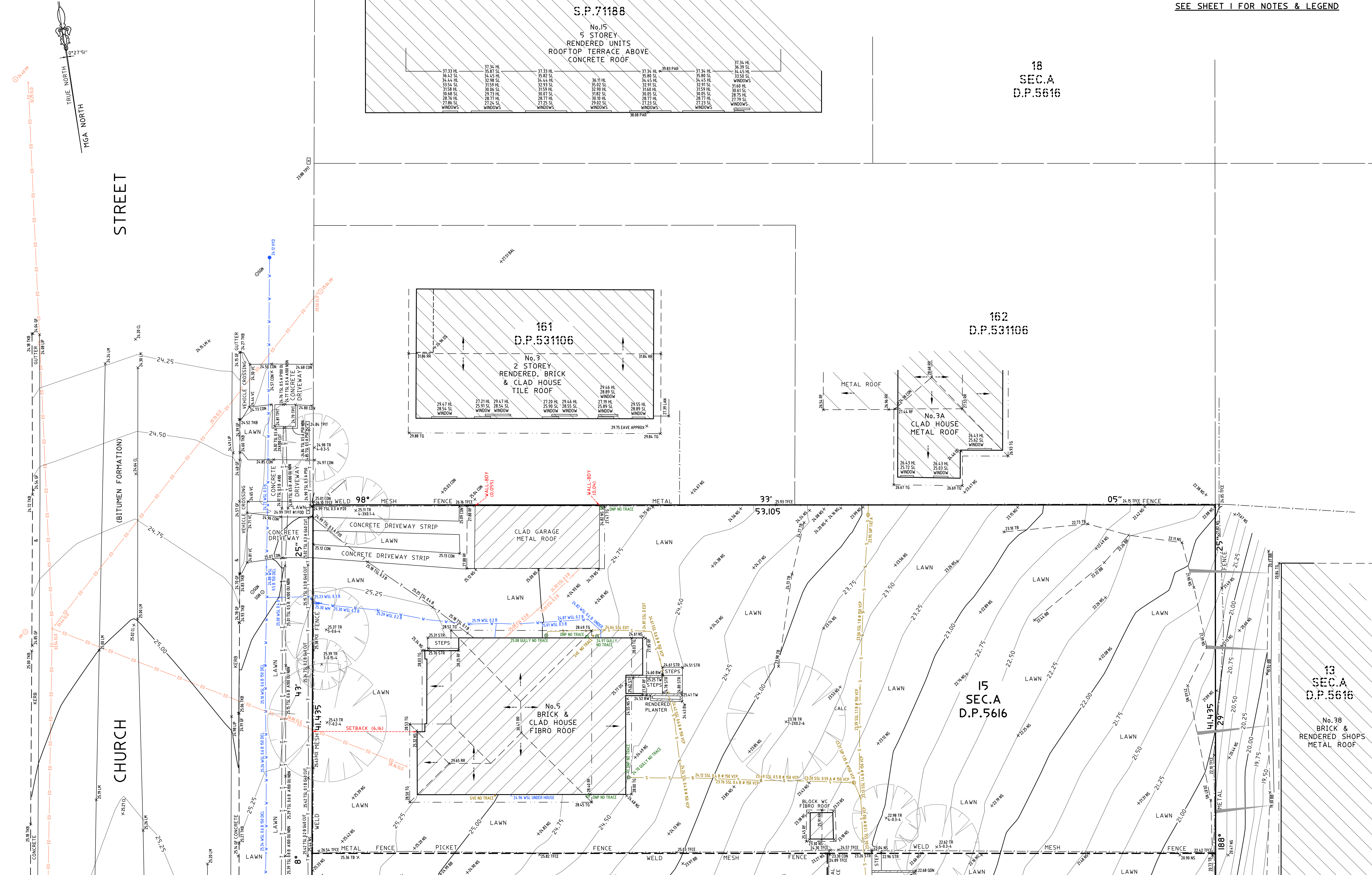
☎ (02) 9971 4802
✉ info@cmssurveyors.com.au
🌐 www.cmssurveyors.com.au

9	SURVEYED TH		DRAWN GP	CHECKED TH	APPROVED RM
	SURVEY INSTRUCTION 22953		SCALE 1:250@A1		DATE OF SURVEY 6/11/2023
	DRAWING NAME 22953detail			SHEET 1 OF 3	ISSUE 1
	CAD FILE 22953detail 1.dwg				

PLATE INDICATES THAT LOT 15 SEC.A IN D.P.5616 IS SUBJECT TO:
AND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND
CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S).

TITLE INDICATES THAT LOT A IN D.P.417172 IS SUBJECT TO:
- LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND
CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S).

TITLE INDICATES THAT LOT B IN D.P.417172 IS SUBJECT TO:
- LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND
CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S).



HORIZONTAL DATUM:
CO-ORDINATE SYSTEM: MGA 2020 (GROUND)
MARKS ADOPTED: PM 27599 & SSM 82793

VERTICAL DATUM:
DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
B.M. ADOPTED: PM 27599
R.L. 31.192 (CLASS LB)
SOURCE: S.C.I.M.S. (2/11/2023)



CLIENT:
BELLA BAIA TRUST (THE TRUSTEE FOR BELLA BAIA TRUST)

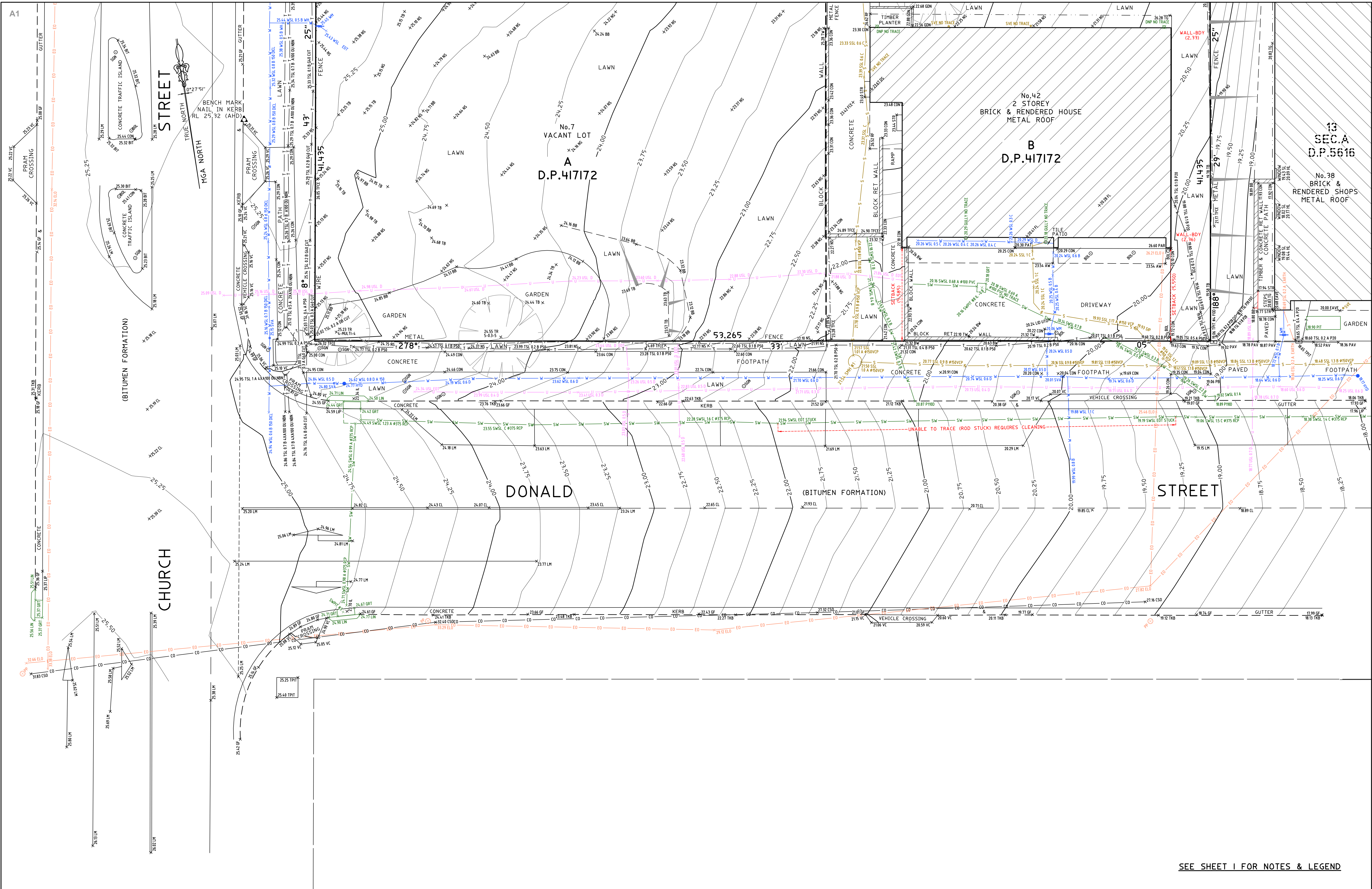
LGA: PORT STEPHENS

BOUNDARY IDENTIFICATION AND DETAIL & LEVEL SURVEY OVER LOTS 15 SEC.A IN DP5616 & LOTS A & B IN DP417172 No.5 & 7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315



CMS SURVEYORS PTY LTD
ACN 096 240 201
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2/99A South Creek Road, Dee Why, NSW, 2099
(02) 9971 4802
info@cmsurveyors.com.au
www.cmsurveyors.com.au

SURVEYED TH	DRAWN GP	CHECKED TH	APPROVED RM
SURVEY INSTRUCTION 22953	SCALE 1:100@A1	DATE OF SURVEY 6/11/2023	
DRAWING NAME 22953detail		SHEET 2 OF 3	ISSUE 1
CAD FILE 22953detail 1.dwg			



SEE SHEET 1 FOR NOTES & LEGEND

				</	
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Appendix C

ADG Preliminary Drawings

LEGEND

- 12.0 — EXISTING SURFACE CONTOURS
- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING NOMINAL KERB LINE / EDGE OF ROAD
- EXISTING EDGE OF BITUMEN
- EXISTING ROAD CENTERLINE
- EXISTING EDGE OF BUILDING
- EXISTING EDGE OF BUILDING EAVE
- SWD — EXISTING STORMWATER DRAINAGE
- S — EXISTING SEWER
- W — EXISTING WATER
- OE — EXISTING OVERHEAD ELECTRICITY
- T — EXISTING TELECOMMUNICATIONS
- C — EXISTING COMMUNICATIONS
- ? — ? — EXISTING UNKNOWN SERVICE
- × × × × × ABANDONED SERVICE
- EXISTING BATTER
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING LINEMARKINGS TO BE REMOVED
- ⊙ SGN EXISTING SIGN
- ⊙ EXISTING TREE TO BE PROTECTED AND RETAINED
- ⊗ EXISTING TREE TO BE REMOVED
- EXISTING ROAD
- EXISTING FOOTPATH
- EXISTING FOOTPATH TO BE DEMOLISHED AND REMOVED FROM SITE
- EXISTING BUILDING/STRUCTURE DEMOLISHED AND REMOVED FROM SITE

NOTE

EXCEPT WHERE NOTED ON PLAN AND ASSOCIATED DESIGN DRAWINGS, ALL IN-GROUND SERVICES WITHIN THE PROPERTY BOUNDARY INCLUDING BUT NOT LIMITED TO: STORMWATER DRAINAGE, SEWERAGE, WATER, GAS, ELECTRICAL AND COMMUNICATIONS TO BE SAFELY DISCONNECTED, REMOVED FROM SITE AND CAPPED OFF AT SITE BOUNDARY. CONTRACTOR TO ARRANGE ALL NECESSARY APPLICATIONS AND PERMITS WITH THE RELEVANT AUTHORITIES. SERVICES TO BE CAPPED IN ACCORDANCE WITH RELEVANT SERVICE PROVIDER SPECIFICATIONS AND STANDARD DETAILS U.N.O.

CAUTION

THE LOCATION AND DEPTH OF EXISTING SERVICES AS SHOWN IS BASED ON INFORMATION OBTAINED FROM CMS SURVEYORS PTY LTD DATED 11/10/2023 AND COUNCIL RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE ACTUAL LOCATION AND DEPTH OF EXISTING SERVICES PRIOR TO CARRYING OUT ANY EXCAVATION, TRENCHING OR TUNNELING WORKS.

WARNING

EXISTING FIBRE OPTIC, ELECTRICAL AND TELECOM CABLES MAY EXIST IN THE VICINITY OF REQUIRED WORKS. FOR ALL WORK WITHIN 2.5m OF MAJOR OPTIC CABLES, THE CONTRACTOR IS REQUIRED TO HAND DIG (POTHOLE) AND EXPOSE THE CABLE/CONDUIT. BEFORE WORK CAN COMMENCE, ON SITE LOCATION SHOULD BE SOUGHT FROM AN ACCREDITED PLANT LOCATOR.



03	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB	
02	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST	
01	23.08.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST	
Rev	Date	Description	By	CHK	

PLOT DATE: 8/25/2025 2:58 PM FILENAME: J:\GLC\27000\27727\04\DWG\DA\27727_DAO1_EXISTING FEATURES LAYOUT PLAN.DWG

fortezza
GROUP

0 2.5 5 7.5m
SCALE 1:125
AT ORIGINAL SIZE (A1)

ADG
T:1300 857 402 E:info@adgco.com W:www.adgco.com
Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title EXISTING FEATURES LAYOUT PLAN
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML
	Project No. 27727	Drawn By MD	Scale at A1 1:125
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			Revision 03

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

LEGEND

- SITE BOUNDARY
--- EXISTING PROPERTY BOUNDARY
--- 12.0 --- EXISTING SURFACE CONTOURS
--- 3.42 --- EARTHWORKS CONTOURS
--- 3.42 --- EXISTING SURFACE LEVEL
--- FINISHED SURFACE LEVEL
--- EXISTING EDGE OF BUILDING
--- EXISTING EDGE OF BUILDING EAVE
--- PROPOSED NOMINAL KERB LINE
--- PROPOSED ROAD CENTRE LINE
--- SWD --- EXISTING STORMWATER DRAINAGE
--- S --- EXISTING SEWER
--- W --- EXISTING WATER
--- OE --- EXISTING OVERHEAD ELECTRICITY
--- T --- EXISTING TELECOMMUNICATIONS
--- C --- EXISTING COMMUNICATIONS
--- ? --- EXISTING UNKNOWN SERVICE
○ SGN --- EXISTING SIGN
- x x x x x - --- ABANDONED SERVICE
--- EXISTING BATTER
--- EXISTING FENCE
--- EXISTING RETAINING WALL
--- PROPOSED RETAINING WALL
--- LIMIT OF WORKS
--- BUILDING OUTLINE
--- PROPOSED EARTHWORKS PAD

- PROPOSED SHORING WALL
REFER STRUCTURAL DRAWINGS FOR DETAILS
--- PROPOSED EARTHWORKS CUT
--- PROPOSED EARTHWORKS FILL

NOTE

FOR SITE SECTIONS REFER DRG No. DA02.

ALL DETAILS SHOWN ARE
SUBJECT TO FURTHER
DETAILED DESIGN

Rev	Date	Description	By	Chk
03	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
02	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	23.08.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST

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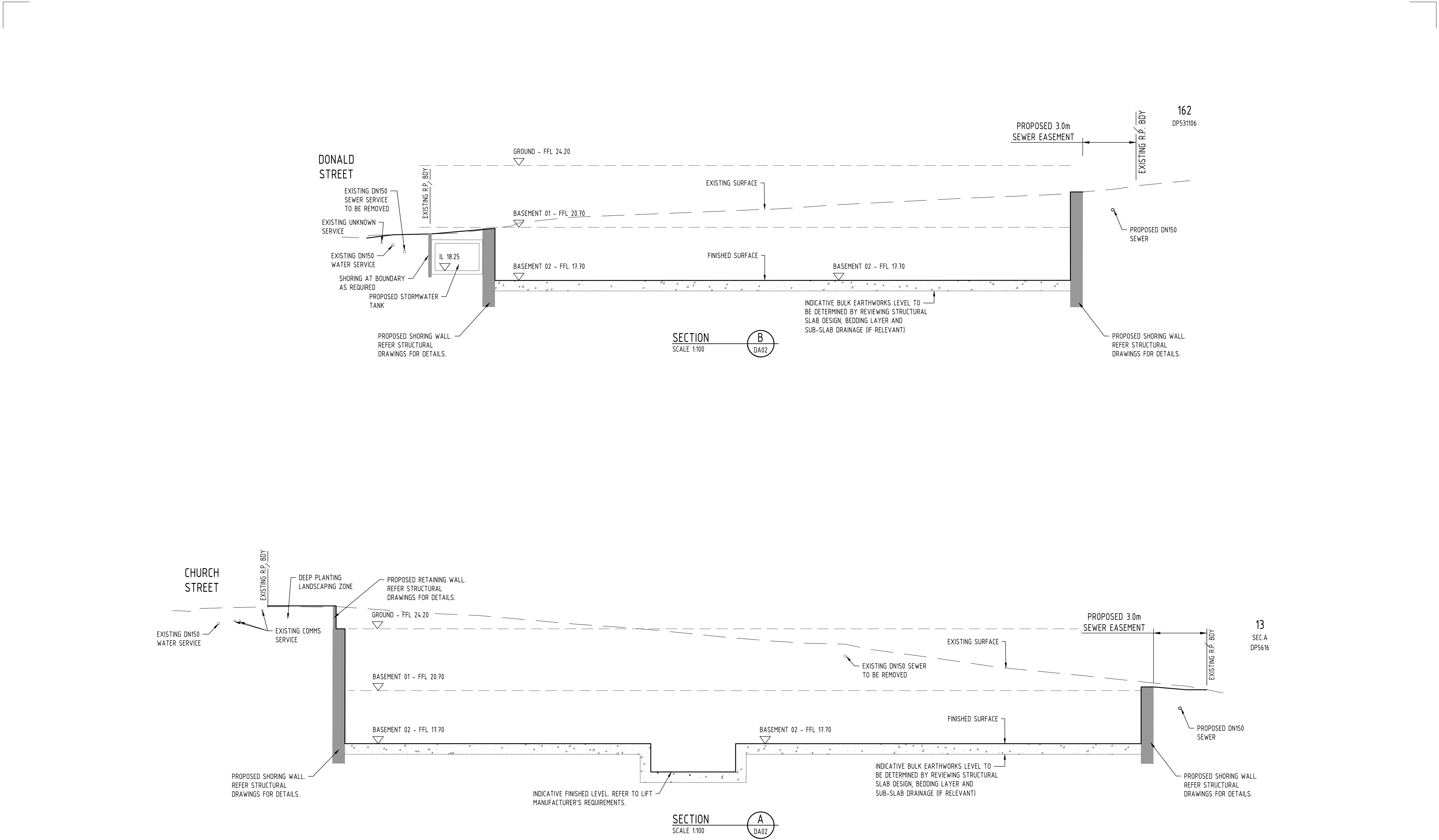


0 2.5 5 7.5m
SCALE 1:125
AT ORIGINAL SIZE (A1)



Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title PRELIMINARY EARTHWORKS LAYOUT PLAN
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML
	Project No. 27727	Drawn By MD	Scale at A1 1:125
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			Revision 03

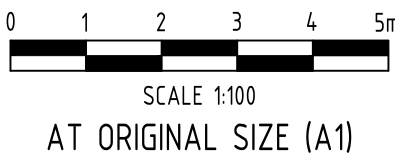
FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm



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DETAILED DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
03	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
02	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	23.08.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST

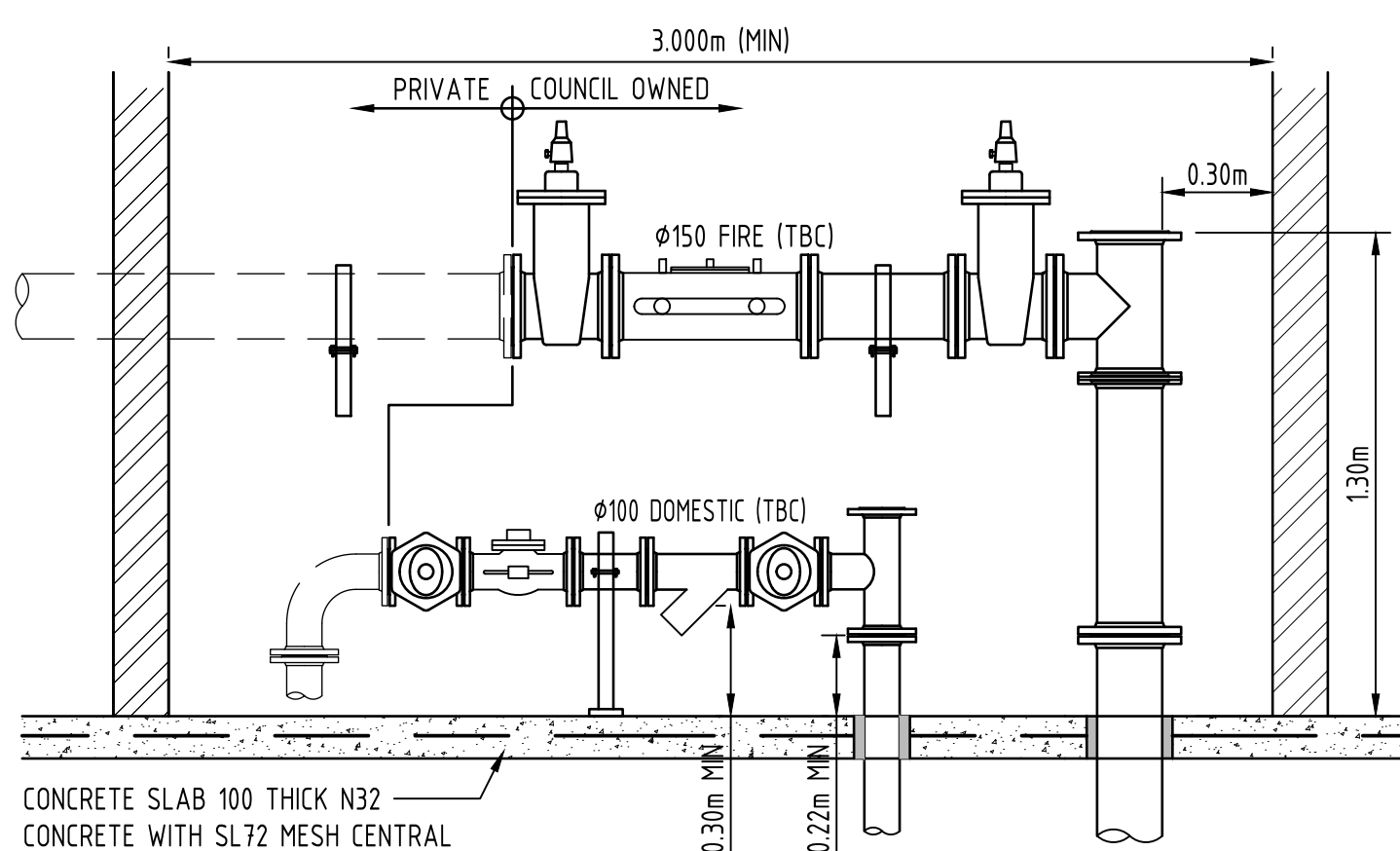


Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title PRELIMINARY EARTHWORKS SITE SECTIONS
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML
	Project No. 27727	Drawn By MD	Scale at A1 1:100
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			Revision 03

	FINISHED SURFACE CONTOURS
	SITE BOUNDARY
	EXISTING PROPERTY BOUNDARY
	EXISTING EASEMENT BOUNDARY
	EXISTING NOMINAL KERB LINE
	EXISTING ROAD CENTERLINE
	EXISTING STORMWATER DRAINAGE
	EXISTING SEWER
	EXISTING WATER
	EXISTING OVERHEAD ELECTRICITY
	EXISTING TELECOMMUNICATIONS
	EXISTING COMMUNICATIONS
	EXISTING UNKNOWN SERVICE
	EXISTING BATTER
	EXISTING FENCE
	EXISTING RETAINING WALL
	LIMIT OF WORKS
	PROPOSED STORMWATER DRAINAGE
	PROPOSED GRAVITY SEWER MAIN
	PROPOSED WATER MAIN
	PROPOSED SLEEPER RETAINING WALL
	EXISTING ROAD
	EXISTING FOOTPATH
	PROPOSED FOOTPATH IN ACCORDANCE WITH PORT STEPHENS COUNCIL STD DRG No. S151.
	PROPOSED DRIVEWAY CROSSOVER
	PROPOSED SHORING WALL REFER STRUCTURAL DRAWINGS FOR DETAILS

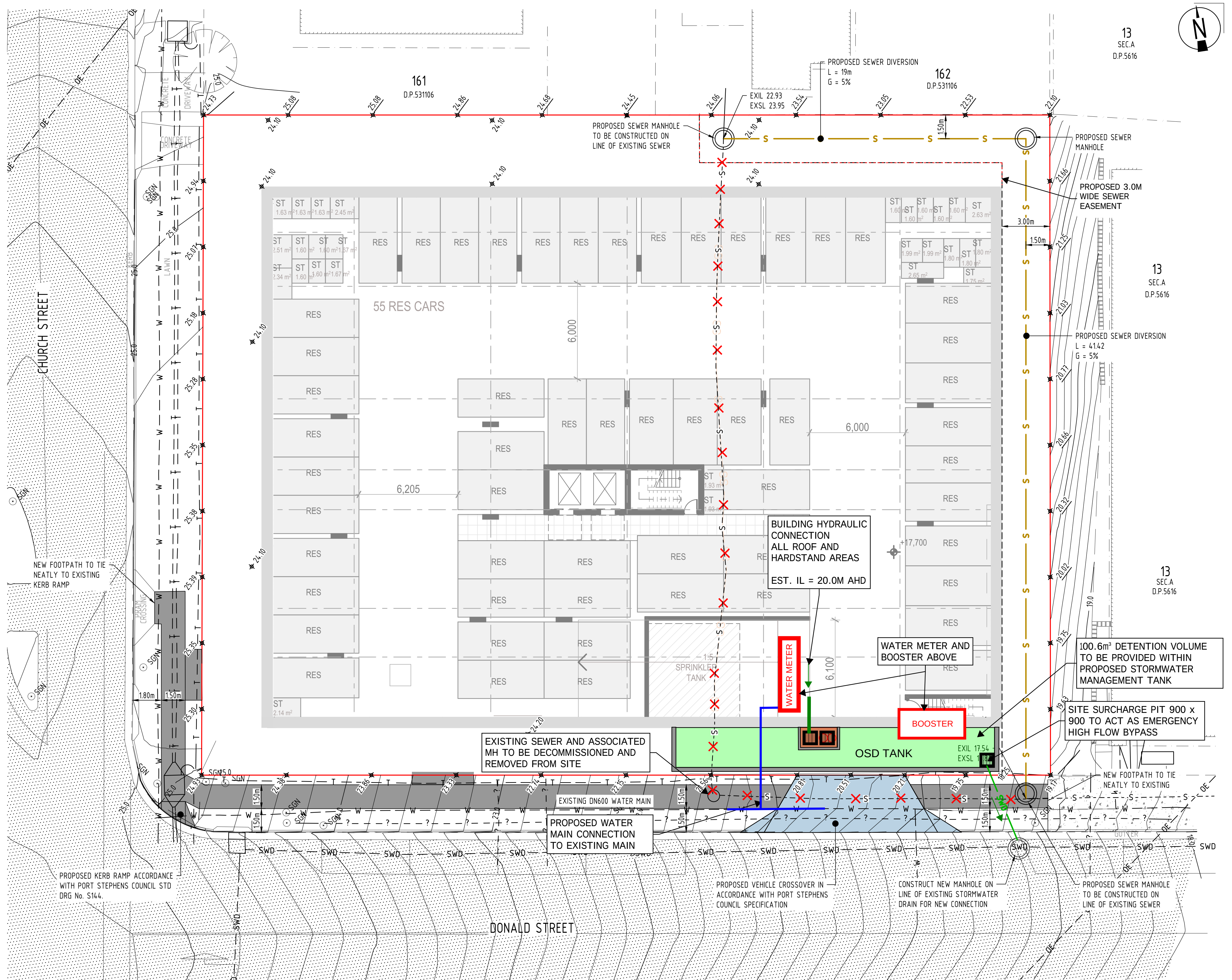
ALL GROUND SURFACE FLOWS TO BE COLLECTED IN STORMWATER DRAINAGE SYSTEM AND DIRECTED TO TREATMENT DEVICES. REFER ADG DRG DA06 FOR CATCHMENT AREAS.

ALL STORMWATER INLET PITS TO BE PROVIDED WITH SPEL "STORMSACKS".



TYPICAL WATER METER DETAIL - VERTICAL STACK

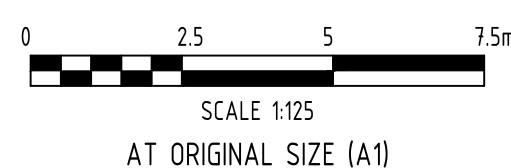
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PRELIMINARY
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07	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
06	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
05	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
04	18.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
03	8.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
02	8.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	23.08.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
Rev	Date	Description	By	Chk

PLOT DATE: 8/25/2025 3:02 PM FILENAME: J:\GLC\27000\27727\CVL\DWG\DA\27727_DA04_PRELIMINARY ENGINEERING SERVICES LAYOUT PLAN.DWG



Client	FORTEZZA GROUP
Project Name	THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315

Discipline CIVIL		Status PRELIMINARY
Designed By TS	Checked By ML	Approved By ML
Project No. 27727	Drawn By MD	Scale at A1 1:125
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Title
PRELIMINARY
ENGINEERING SERVICES
LAYOUT PLAN

Drawing No.	Revision
DA04	07

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LEGEND

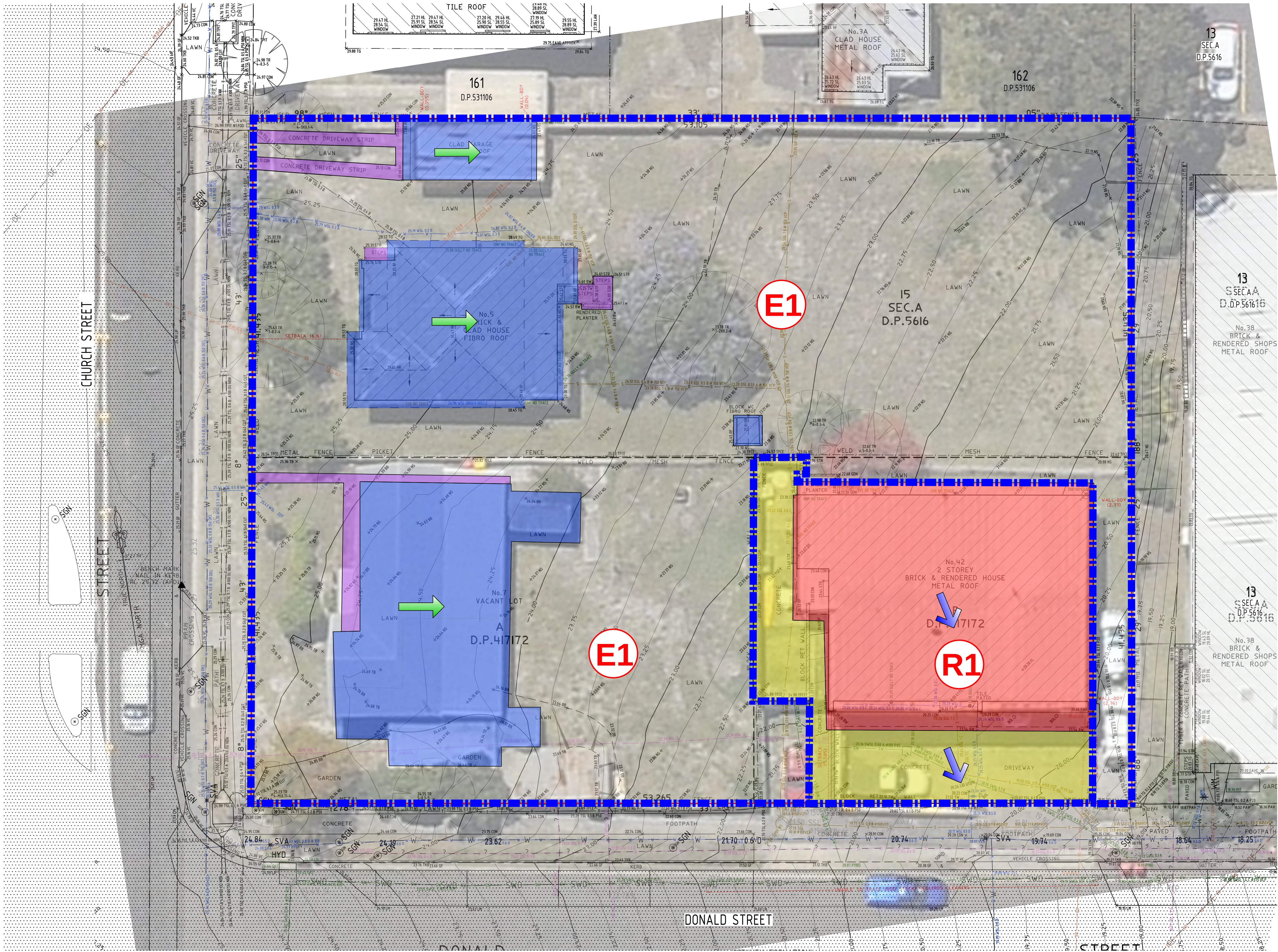
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- EXISTING PROPERTY BOUNDARY
- EXISTING SURFACE CONTOURS
- EXISTING NOMINAL KERB LINE
- EXISTING STORMWATER
- EXISTING STORMWATER (RECORDS)
- CATCHMENT RUNOFF DISCHARGES TO DONALD STREET
- CATCHMENT RUNOFF DISCHARGES TO INFILTRATION

PRE DEVELOPMENT CATCHMENT AREAS - TO STREET

- ROOF = 260m²
- HARDSTAND = 123m²
- TOTAL TO STREET = 383m²

PRE DEVELOPMENT CATCHMENT AREAS - TO INFILTRATION

- ROOF = 340m²
- HARDSTAND = 38m²
- TOTAL TO INFILTRATION = 378m²
- TOTAL LANDSCAPE = 1,442m²
- CATCHMENT BOUNDARY
- CATCHMENT BOUNDARY



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DETAILED DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	MD	ST	By	CHK
04	20.06.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB		
03	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST		
02	18.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST		
01	23.08.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST		

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0 2.5 5 7.5m
SCALE 1:125
AT ORIGINAL SIZE (A1)



Client
FORTEZZA GROUP
Project Name
THE BELVEDERE
5-7 CHURCH STREET &
42 DONALD STREET
NELSON BAY, NSW, 2315

Discipline	CIVIL	Status	PRELIMINARY
Designed By	TS	Checked By	ST
Project No.	27727	Drawn By	MD
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		Scale at A1	1:125

Title
PRELIMINARY
PRE DEVELOPMENT
STORMWATER DRAINAGE
CATCHMENT PLAN

Drawing No.
DA05
Revision
04

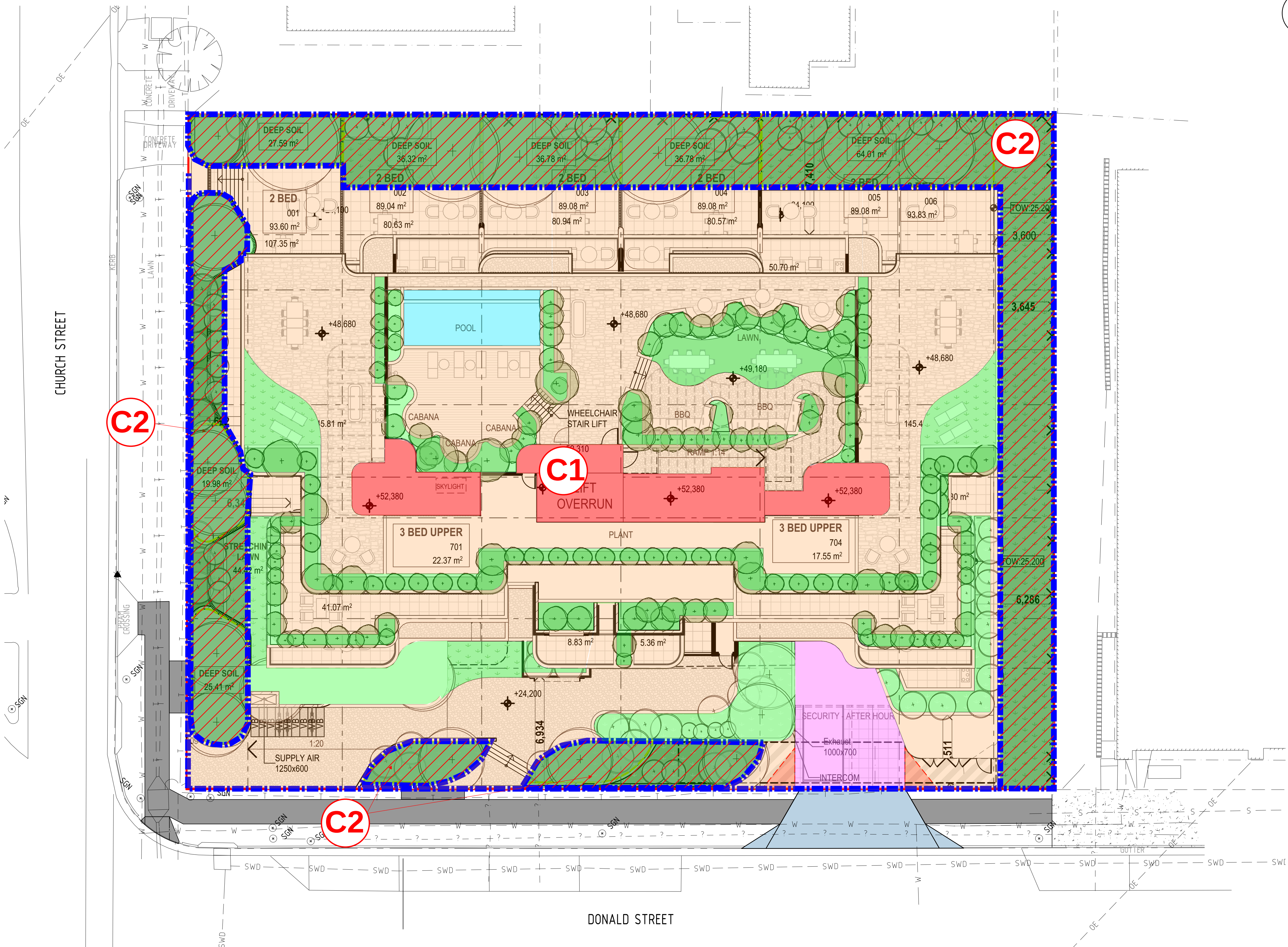
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LEGEND

- 12.0 FINISHED SURFACE CONTOURS
SITE BOUNDARY
EXISTING PROPERTY BOUNDARY
EXISTING NOMINAL KERB LINE
SWD EXISTING STORMWATER
dSWD EXISTING STORMWATER (RECORDS)
SWD PROPOSED STORMWATER DRAINAGE

POST DEVELOPMENT CATCHMENT AREAS

- ROOF = 100m2
HARDSTAND = 1,236m2
PLANTERS = 327m2
DEEP PLANTING = 455m2
DRIVEWAY = 57m2
POOL = 28m2



ALL DETAILS SHOWN ARE
SUBJECT TO FURTHER
DETAILED DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
05	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
04	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
03	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
02	18.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	23.08.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST

PLOT DATE: 8/25/2025 3:14 PM FILENAME: J:\GLC\27000\27727\DA\DWG\DA\SS\250818_01\27727_DA06_PRELIMINARY POST DEVELOPMENT STORMWATER DRAINAGE CATCHMENT PLAN.DWG



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AT ORIGINAL SIZE (A1)



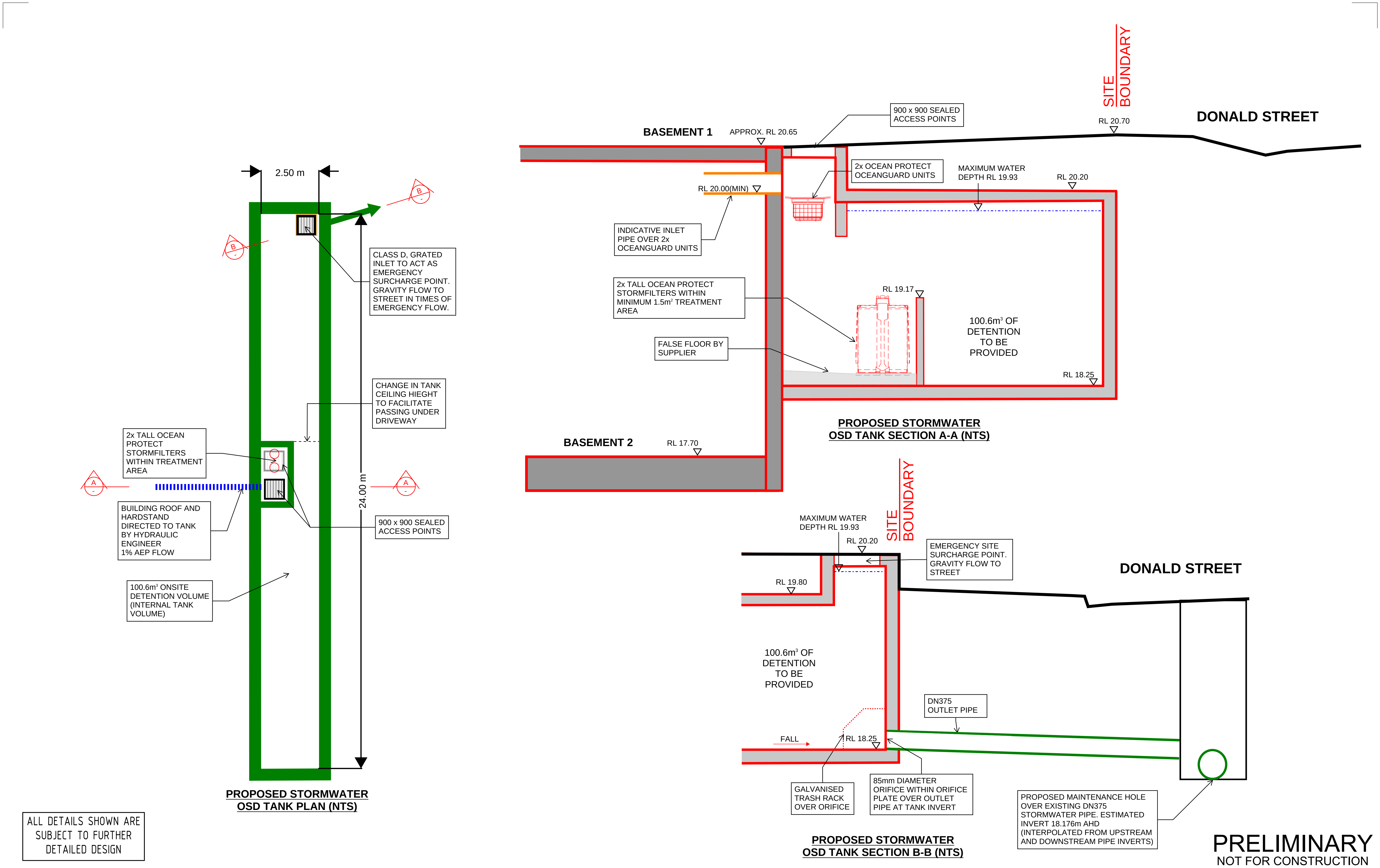
Client
FORTEZZA GROUP
Project Name
THE BELVEDERE
5-7 CHURCH STREET &
42 DONALD STREET
NELSON BAY, NSW, 2315

Discipline	CIVIL	Status	PRELIMINARY
Designed By	TS	Checked By	ML
Project No.	27727	Drawn By	MD
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		Scale at A1	1:125

Title
PRELIMINARY
POST DEVELOPMENT
STORMWATER DRAINAGE
CATCHMENT PLAN

Drawing No.
DA06
Revision
05

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

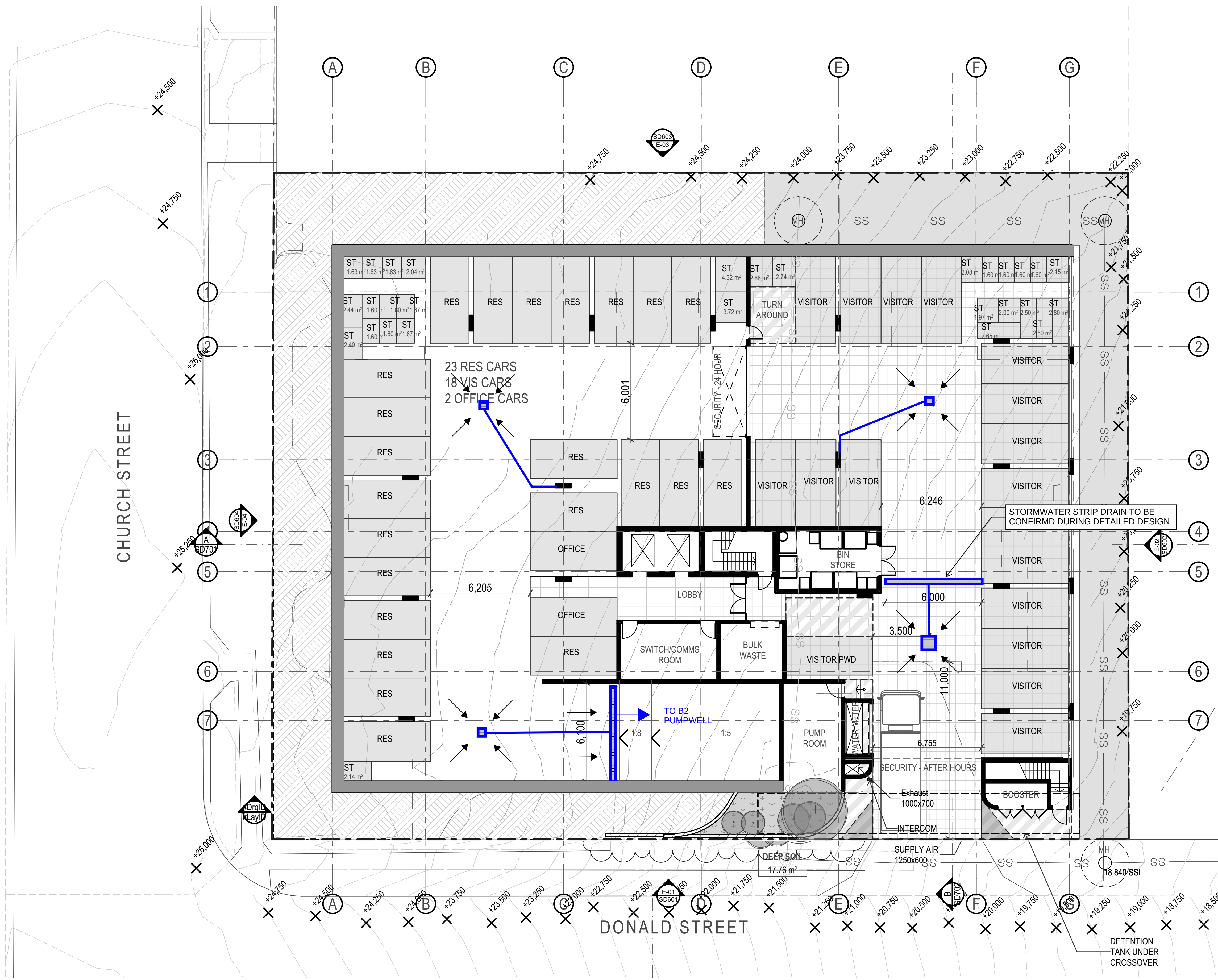


ALL DETAILS SHOWN ARE
SUBJECT TO FURTHER
DETAILED DESIGN

Rev	Date	Description	By	Chk
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03	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
02	20.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	19.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST



Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title PRELIMINARY STORMWATER MANAGEMENT DETAILS
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML
	Project No. 27727	Drawn By MD	Scale at A1 NTS
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			Revision 04



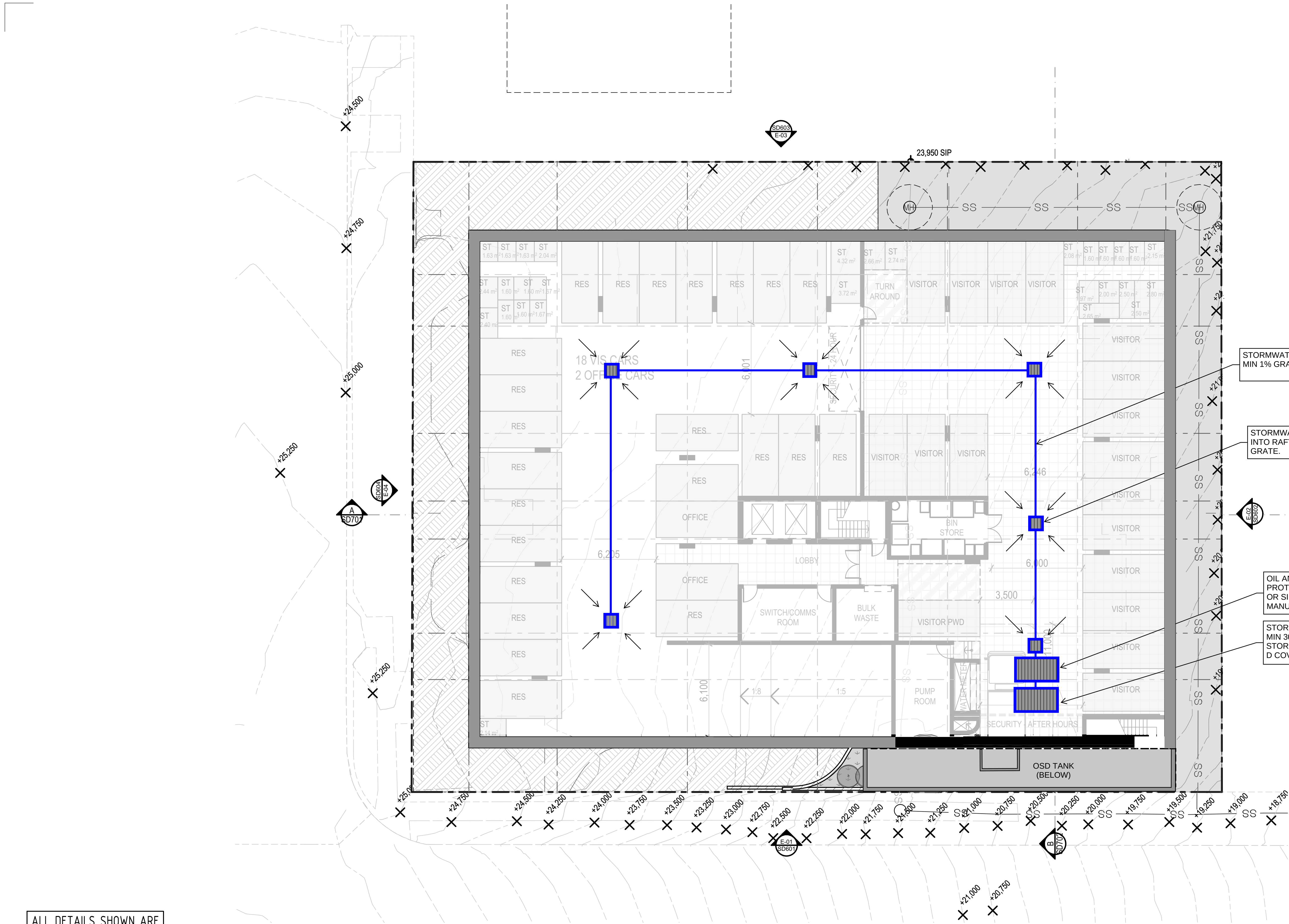
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SUBJECT TO FURTHER
DETAILED DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
03	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
02	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	19.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST



Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title PRELIMINARY STORMWATER DRAINAGE LAYOUT PLAN BASEMENT 1
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML
	Project No. 27727	Drawn By MD	Scale at A1 NTS
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			Revision 03



STORMWATER LINE uPVC SN8 225Ø AT MIN 1% GRADE

STORMWATER PITS 600x900 CAST INTO RAFT SLAB WITH CLASS D GRATE.

OIL AND WATER SEPERATOR. OCEAN PROTECT CASCADE SEPERATOR 1200 OR SIMILAR. INSTALL TO MANUFACTURERS REQUIREMENTS.

STORMWATER PUMPWELL 3000 LITRE MIN 300 BELOW LOWEST INLET. DUAL STORMWATER PUMPS 600x900 CLASS D COVER AND FRAME.

ALL DETAILS SHOWN ARE
SUBJECT TO FURTHER
DETAILED DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	CHK
03	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
02	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	19.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST



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Environmental Management ISO 14001:2015



Client
FORTEZZA GROUP
Project Name
THE BELVEDERE
5-7 CHURCH STREET &
42 DONALD STREET
NELSON BAY, NSW, 2315

Discipline
CIVIL
Designed By
TS
Project No.
27727

Checked By
ML

Drawn By
MD

Status
PRELIMINARY

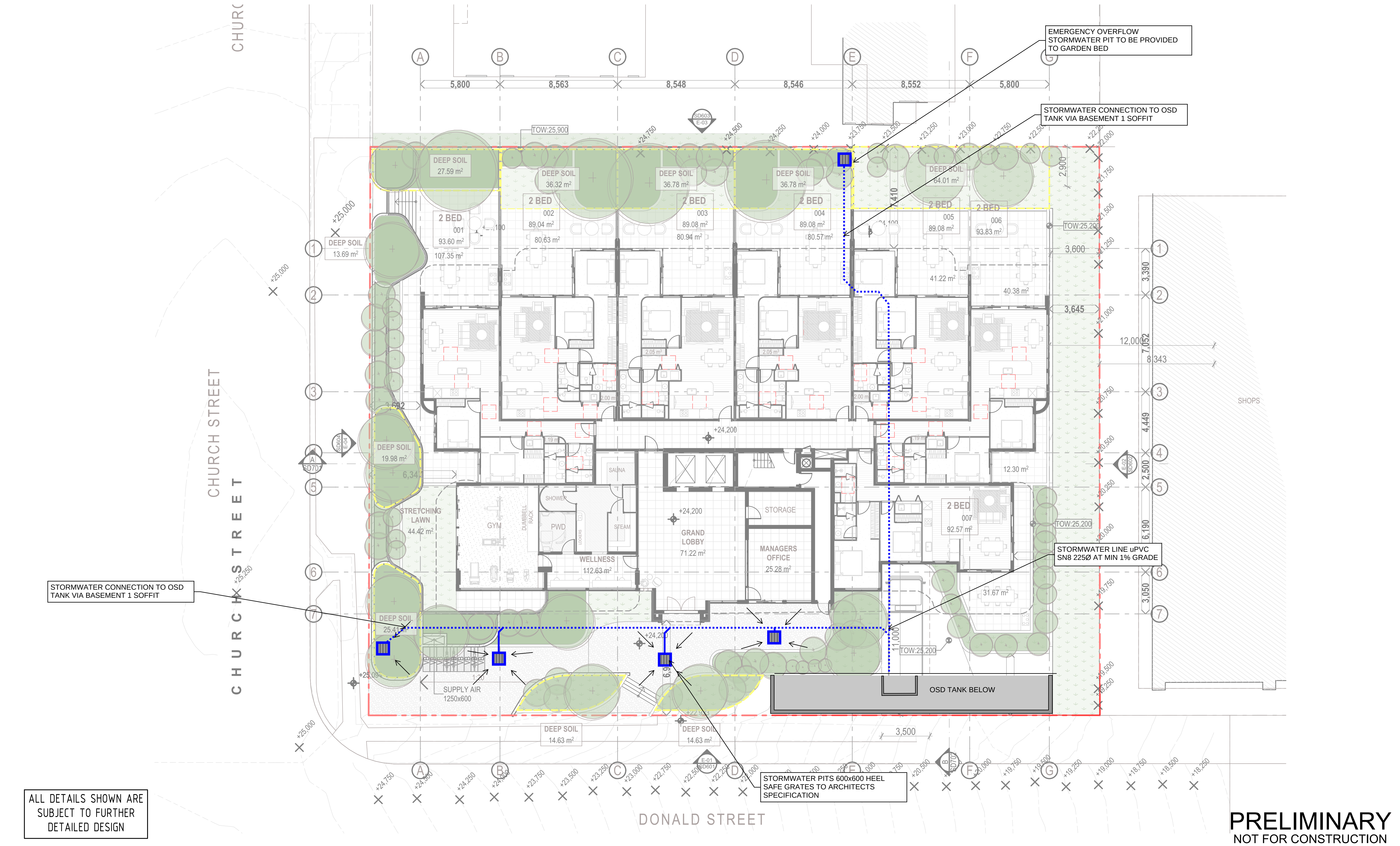
Approved By
ML

Scale at A1
NTS

Title
PRELIMINARY
STORMWATER DRAINAGE
LAYOUT PLAN
BASEMENT 2

Drawing No.
DA09

Revision
03



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PRELIMINARY
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Rev	Date	Description	By	Chk
03	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB
02	22.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST
01	19.11.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST

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Client FORTEZZA GROUP		Discipline CIVIL		Status PRELIMINARY		Title PRELIMINARY STORMWATER DRAINAGE LAYOUT PLAN GROUND FLOOR	
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315		Designed By TS	Checked By ML	Approved By ML	Scale at A1 NTS	Drawing No. DA10	Revision 03
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FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

LEGEND

- 12.0

✖ 3.42

✖ 3.42

SWD

S

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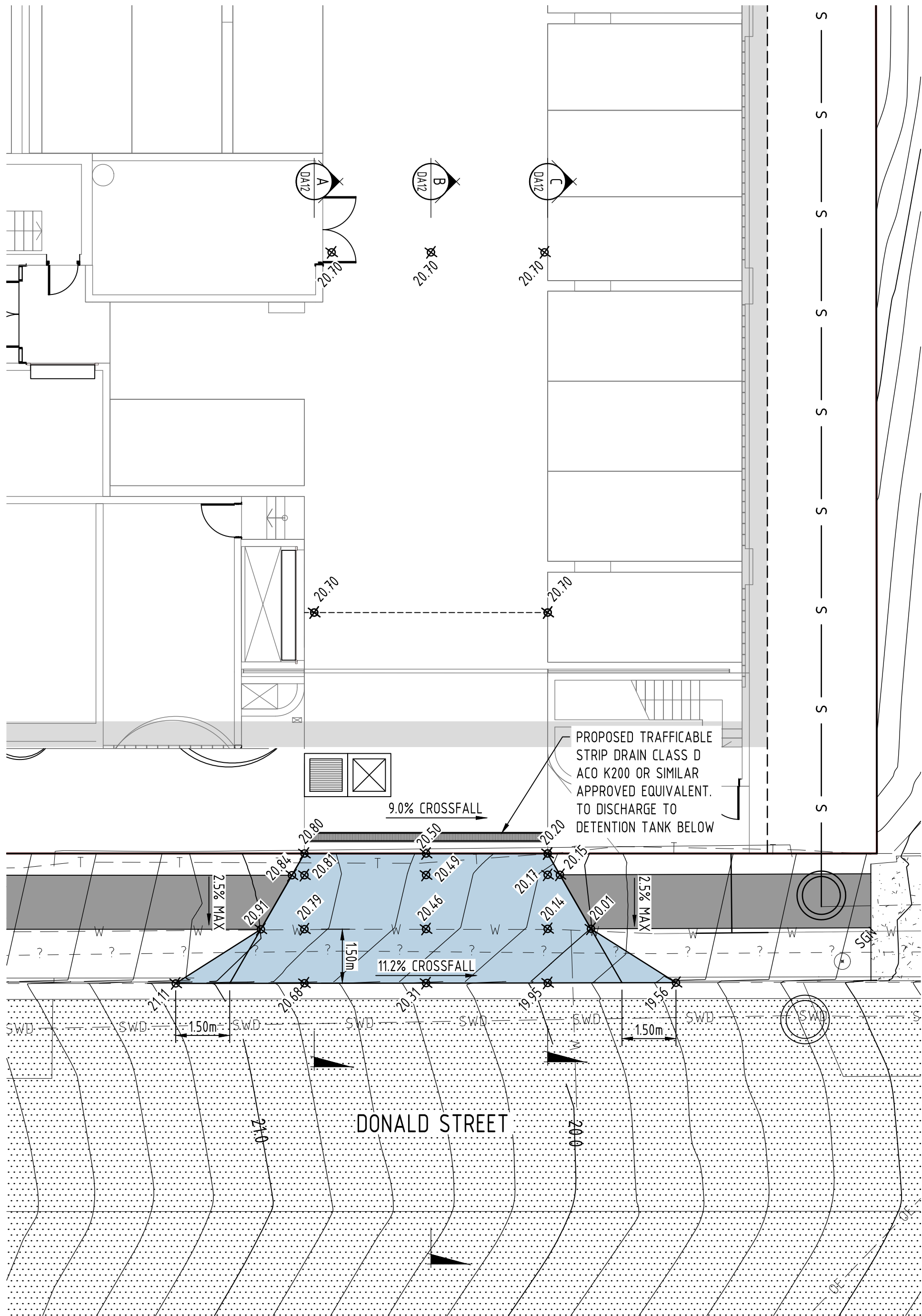
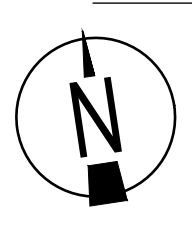
SWD

S

W
- FINISHED SURFACE CONTOURS
- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING SURFACE LEVEL
- FINISHED SURFACE LEVEL
- EXISTING NOMINAL KERB LINE
- EXISTING ROAD CENTERLINE
- EXISTING STORMWATER DRAINAGE
- EXISTING SEWER
- EXISTING WATER
- EXISTING OVERHEAD ELECTRICITY
- EXISTING TELECOMMUNICATIONS
- EXISTING COMMUNICATIONS
- EXISTING UNKNOWN SERVICE
- EXISTING BATTER
- EXISTING FENCE
- EXISTING RETAINING WALL
- LIMIT OF WORKS
- PROPOSED STORMWATER DRAINAGE
- PROPOSED GRAVITY SEWER MAIN
- PROPOSED WATER MAIN
- EXISTING ROAD
- EXISTING FOOTPATH
- PROPOSED 1.5m WIDE FOOTPATH IN ACCORDANCE WITH PORT STEPHENS COUNCIL STD DRG No. S151.
- PROPOSED DRIVEWAY CROSSOVER

NOTE

FOR CROSS SECTIONS REFER DRG No DA12.

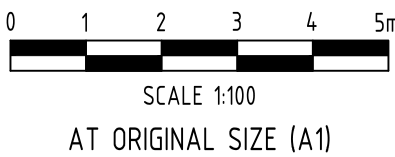


LAYOUT PLAN

SCALE 1:100

PRELIMINARY
NOT FOR CONSTRUCTION

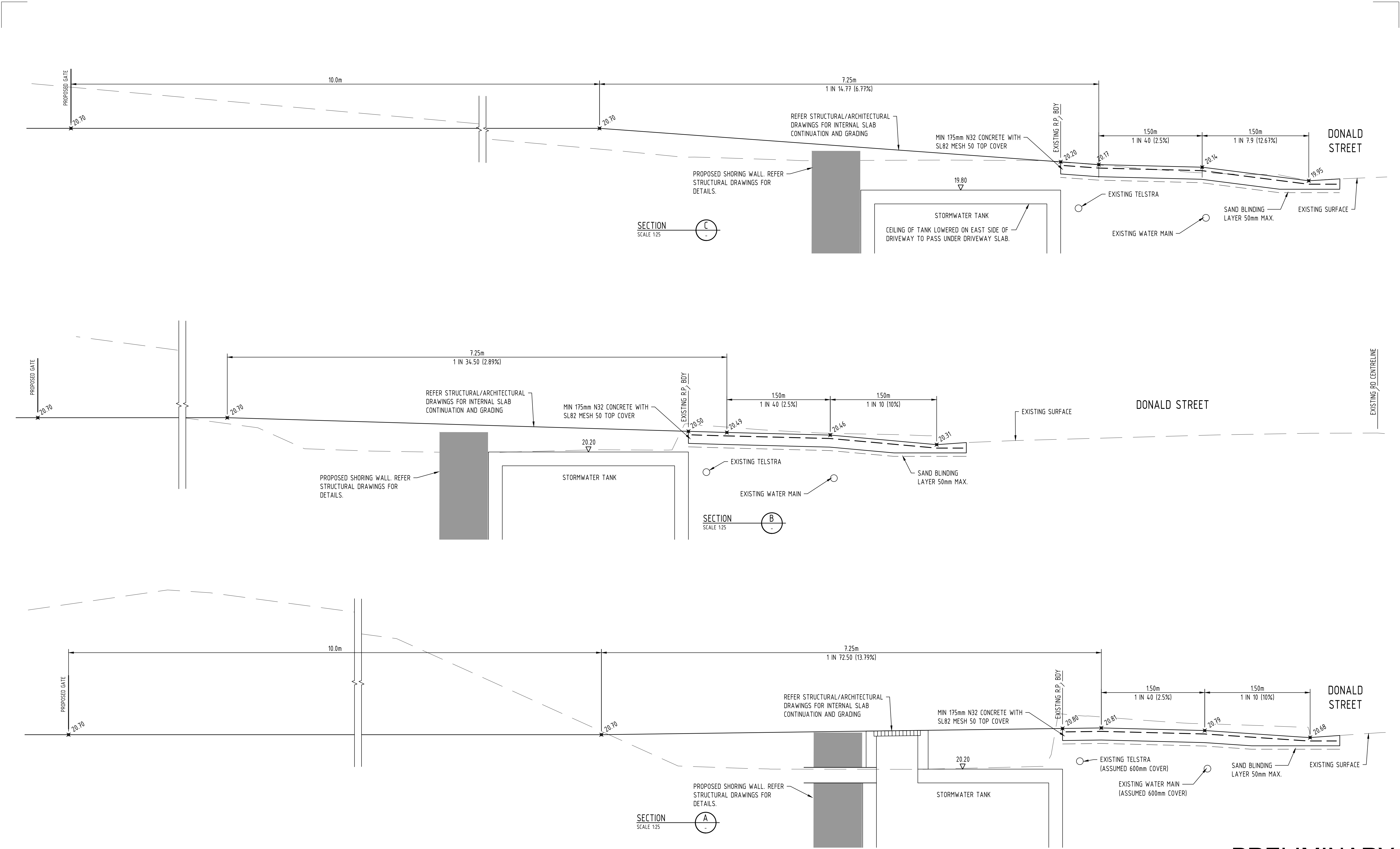
02	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MRB	
01	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST	
Rev	Date	Description	By	Chk	



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Environmental Management ISO 14001:2015



Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title PRELIMINARY DRIVEWAY CROSSOVER LAYOUT PLAN	
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML	
	Project No. 27727	Drawn By MD	Scale at A1 1:100	
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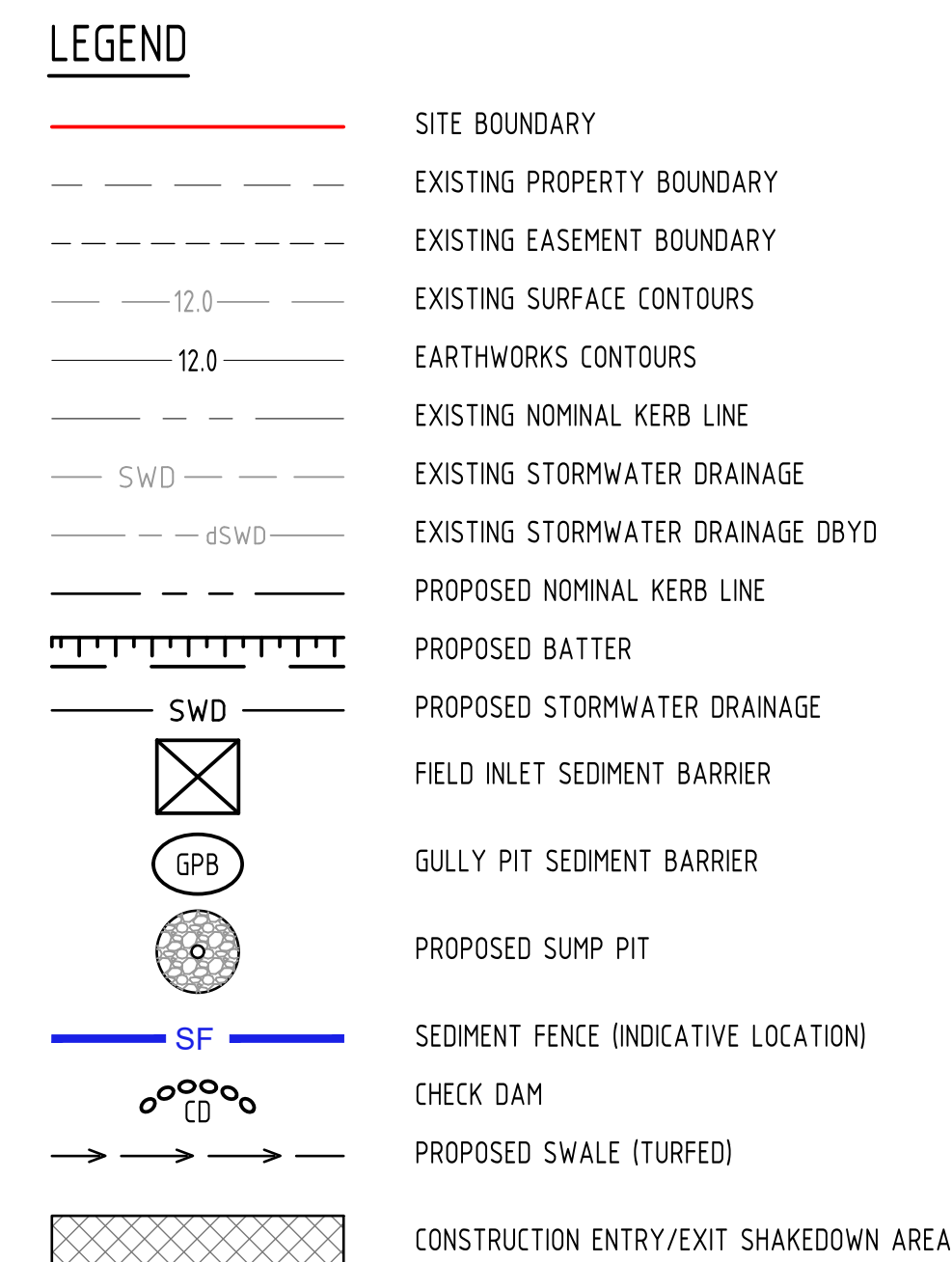


PRELIMINARY
NOT FOR CONSTRUCTION

02	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION	MD	MR8	
01	13.12.24	PRELIMINARY - ISSUED FOR INFORMATION	MD	ST	
Rev	Date	Description	By	Chk	



Client FORTEZZA GROUP	Discipline CIVIL	Status PRELIMINARY	Title PRELIMINARY DRIVEWAY CROSSOVER SECTIONS
Project Name THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315	Designed By TS	Checked By ML	Approved By ML
	Project No. 27727	Drawn By MD	Scale at A1 1:25
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			Revision 02

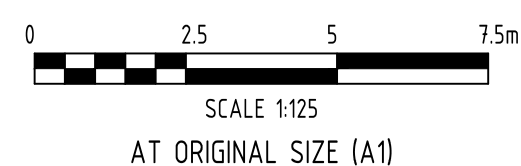


1. ALL RELEASES OF STORMWATER CAPTURED ONSITE, UNLESS OTHERWISE NOTED IN THIS STANDARD, MUST NOT EXCEED THE FOLLOWING LIMITS:
 - a. 50mg/L OF TOTAL SUSPENDED SOLIDS (TSS) AS A MAXIMUM CONCENTRATION;
 - b. TURBIDITY (NTU) VALUE LESS THAN 10% ABOVE BACKGROUND;
 - c. pH VALUE MUST BE IN THE RANGE 6.5 TO 8.5 EXCEPT WHERE, AND TO THE EXTENT THAT, THE NATURAL RECEIVING WATERS LIE OUTSIDE THIS RANGE.
2. THE CONCENTRATION OF TSS RELEASED BY DEWATERING MAY ONLY EXCEED 50mg/L WHERE IT CAN BE DEMONSTRATED AND SUPPORTED THROUGH DOCUMENTATION THAT:
 - a. FURTHER SIGNIFICANT RAINFALL IS FORECAST TO OCCUR BEFORE THE TSS CONCENTRATION IS LIKELY TO BE REDUCED TO 50mg/L;
 - b. RELEASING A HIGHER CONCENTRATION OF TOTAL SUSPENDED SOLIDS WILL RESULT IN A BETTER ENVIRONMENTAL OUTCOME BY PROVIDING STORAGE FOR THE CAPTURE AND TREATMENT OF RUN-OFF FROM THE IMMINENT RAINFALL AND RUN-OFF.
 - c. ALL REASONABLE AND PRACTICABLE STEPS HAVE BEEN TAKEN TO TREAT THE WATER WITHIN BEST-PRACTICE TIME FRAMES;
 - d. FLOCCULENT HAS BEEN APPROPRIATELY APPLIED AND THE CONCENTRATION OF TSS IN THE CAPTURED WATER HAS ALREADY SIGNIFICANTLY DECREASED.
3. FOR ALL OTHER STORMWATER RELEASES, FLOWS AND DISCHARGES FROM THE SITE, THE RELEASE LIMIT PRESCRIBED IN (1a) ABOVE MUST NOT BE EXCEEDED UNLESS THE DEVELOPMENT IS IN FULL COMPLIANCE WITH THIS STANDARD.

NOTE: IT IS RECOMMENDED THAT A SITE-SPECIFIC RELATIONSHIP BETWEEN TURBIDITY AND SUSPENDED SOLIDS IS DETERMINED FOR EACH SEDIMENT BASIN. ONCE A CORRELATION BETWEEN SUSPENDED SOLIDS AND TURBIDITY HAS BEEN ESTABLISHED FOR A SEDIMENT BASIN, TESTING STORMWATER FOR COMPLIANCE WITH RELEASE LIMITS, PRIOR TO RELEASE, CAN BE DONE ON SITE WITH A TURBIDITY TUBE OR CALIBRATED TURBIDITY METER. THIS HAS THE ADVANTAGE OF PROVIDING IMMEDIATE ASSESSMENT TO JUSTIFY A RELEASE RATHER THAN WAITING FOR LABORATORY RESULTS TO CONFIRM CONCENTRATION LEVELS AND COMPLIANCE. NOTE THAT POST-RELEASE TSS VALIDATION IS APPROPRIATE TO DEMONSTRATE THAT THE NTU/TSS CORRELATION IS BEING MAINTAINED.

NOTE: BACKGROUND REFERS TO RECEIVING WATER QUALITY IMMEDIATELY UPSTREAM OF THE SITE LOCATION RELEASE POINT AT THE TIME OF RELEASE, WHERE THERE IS NO IMMEDIATE UPSTREAM RECEIVING WATER AT THE LOCATION AND TIME OF RELEASE, THEN THE TURBIDITY RELEASE LIMIT (NTU) WILL BE EQUAL TO THE RELEASE LIMIT FOR 50mg/L TOTAL SUSPENDED SOLIDS (TSS) BASED UPON THE ONSITE CORRELATION BETWEEN TSS AND NTU.

01	25.08.25	PRELIMINARY - ISSUED FOR INFORMATION			
Rev	Date	Description		By	Ck



Client	FORTEZZA GROUP
Project Name	THE BELVEDERE 5-7 CHURCH STREET & 42 DONALD STREET NELSON BAY, NSW, 2315

Discipline CIVIL		Status PRELIMINARY
Designed By MRB	Checked By ML	Approved By ML
Project No. 27727	Drawn By MD	Scale at A1 1:125
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Title
PRELIMINARY
EROSION AND SEDIMENT CONTROL
LAYOUT PLAN

Drawing No.	Revision
DA13	0

PLOT DATE: 8/25/2025 3:30 PM FILENAME: J:\GLC\27000\27727\Civil\DWG\DA\27727 DA13 PRELIMINARY EROSION AND SEDIMENT CONTROL LAYOUT PLAN.DWG

Full size on original 0 10 20 30 40 50 60 70 80 90 100mm

Appendix D

MUSIC Model Attributes

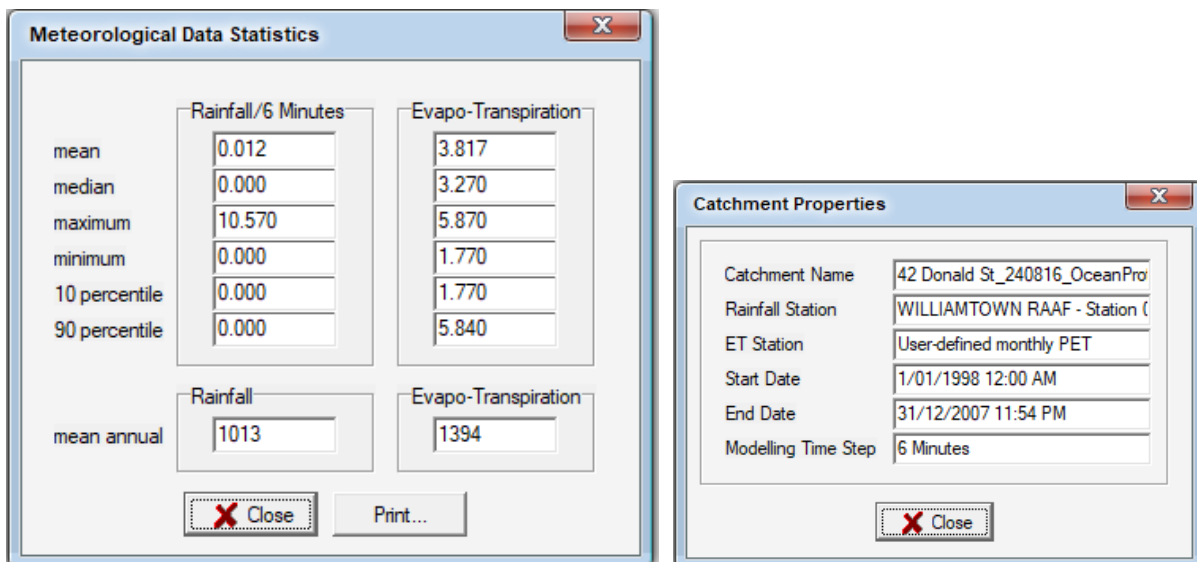
MUSIC Model Information

Introduction:

The quality of stormwater runoff and the impact of the proposed stormwater quality improvement measures were analyzed using MUSIC Version 6.3.0 according to the *MUSIC Modeling Guidelines, Water by Design*. The source nodes in the model are split into various types and a summary of the area breakdown is presented below:

Meteorological Data:

- Stormwater run-off from the site was modelled using MUSIC version 6.3.0.
- The model utilised version 6.35 of Council's MUSIC-Link data and was configured to the Anna Bay and Nelson Bay catchment with sensitive sandy soils.
- The modeling period was 10 years (01/01/1998 – 31/12/2007) with a time step of 6 minutes.
- The mean annual rainfall was 1,013mm and the mean annual evaporation was 1,394mm.



Meteorological Data Statistics

	Rainfall/6 Minutes	Evapo-Transpiration
mean	0.012	3.817
median	0.000	3.270
maximum	10.570	5.870
minimum	0.000	1.770
10 percentile	0.000	1.770
90 percentile	0.000	5.840
mean annual	1013	1394

Buttons: Close, Print...

Catchment Properties

Catchment Name	42 Donald St_240816_OceanPro
Rainfall Station	WILLIAMTOWN RAAF - Station (
ET Station	User-defined monthly PET
Start Date	1/01/1998 12:00 AM
End Date	31/12/2007 11:54 PM
Modelling Time Step	6 Minutes

Buttons: Close

Source Nodes, Fractions Impervious:

The areas of the source nodes were estimated as per DA06 in Appendix C.

Source Nodes - Pollutant Exports:

Rainfall runoff and pollutant export parameters were assigned in accordance with Port Stephens Council recommended MUSIC-link ranges.

Modelled OceanGuard Unit Attributes:

Properties of 2 x OceanGuard200um

Location: 2 x OceanGuard200um

Inlet Properties
Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.04000

Target Element
☒ Gross Pollutants (kg/ML)
☐ Total Suspended Solids (mg/L)
☐ Total Phosphorus (mg/L)
☐ Total Nitrogen (mg/L)

Gross Pollutants (kg/ML)
Transfer Functions
☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
14.7808	0.0000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x OceanGuard200um

Location: 2 x OceanGuard200um

Inlet Properties
Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.04000

Target Element
☐ Gross Pollutants (kg/ML)
☒ Total Phosphorus (mg/L)
☐ Total Suspended Solids (mg/L)
☐ Total Nitrogen (mg/L)

Total Phosphorus (mg/L)
Transfer Functions
☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
10.0000	7.0000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x OceanGuard200um

Location: 2 x OceanGuard200um

Inlet Properties
Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.04000

Target Element
☐ Gross Pollutants (kg/ML)
☒ Total Suspended Solids (mg/L)
☐ Total Phosphorus (mg/L)
☐ Total Nitrogen (mg/L)

Total Suspended Solids (mg/L)
Transfer Functions
☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
20.8000	8.0000
40.3000	14.1000
60.6000	19.3000
79.3000	23.4000
99.9000	26.9000
121.0000	30.0000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x OceanGuard200um

Location: 2 x OceanGuard200um

Inlet Properties
Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.04000

Target Element
☐ Gross Pollutants (kg/ML)
☐ Total Suspended Solids (mg/L)
☒ Total Nitrogen (mg/L)
☐ Total Phosphorus (mg/L)

Total Nitrogen (mg/L)
Transfer Functions
☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
50.0000	39.5000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Modelled SPEL Filter Attributes:

Properties of 2 x 690 PSORB Stormfilter (MCC)

Location: 2 x 690 PSORB Stormfilter (MCC)

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.00180

Target Element

☒ Flow (cubic metres per sec)
☐ Gross Pollutants (kg/ML)
☐ Total Suspended Solids (mg/L)
☐ Total Phosphorus (mg/L)
☐ Total Nitrogen (mg/L)

Flow (cubic metres per sec)

Transfer Functions

☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Inflow	Outflow
0.0000	0.0000
10.0000	10.0000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
----------------------------	-----------

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x 690 PSORB Stormfilter (MCC)

Location: 2 x 690 PSORB Stormfilter (MCC)

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.00180

Target Element

☐ Flow (cubic metres per sec)
☐ Gross Pollutants (kg/ML)
☐ Total Suspended Solids (mg/L)
☒ Total Phosphorus (mg/L)
☐ Total Nitrogen (mg/L)

Total Phosphorus (mg/L)

Transfer Functions

☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
10.0000	1.3900

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x 690 PSORB Stormfilter (MCC)

Location: 2 x 690 PSORB Stormfilter (MCC)

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.00180

Target Element

☐ Flow (cubic metres per sec)
☒ Gross Pollutants (kg/ML)
☐ Total Suspended Solids (mg/L)
☐ Total Phosphorus (mg/L)
☐ Total Nitrogen (mg/L)

Gross Pollutants (kg/ML)

Transfer Functions

☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
14.9393	0.0000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x 690 PSORB Stormfilter (MCC)

Location: 2 x 690 PSORB Stormfilter (MCC)

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.00180

Target Element

☐ Flow (cubic metres per sec)
☐ Gross Pollutants (kg/ML)
☐ Total Suspended Solids (mg/L)
☐ Total Phosphorus (mg/L)
☒ Total Nitrogen (mg/L)

Total Nitrogen (mg/L)

Transfer Functions

☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
100.0000	44.1000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Properties of 2 x 690 PSORB Stormfilter (MCC)

Location: 2 x 690 PSORB Stormfilter (MCC)

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 0.00180

Target Element

☐ Flow (cubic metres per sec)
☐ Gross Pollutants (kg/ML)
☒ Total Suspended Solids (mg/L)
☐ Total Phosphorus (mg/L)
☐ Total Nitrogen (mg/L)

Total Suspended Solids (mg/L)

Transfer Functions

☒ Concentration Based Capture Efficiency
☐ Flow Based Capture Efficiency
☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
1000.0000	66.0000

Flow Based Capture Efficiency

Inflow (m ³ /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes... Notes...

Cancel Back Finish

Modelled Filter Chamber Attributes:

Properties of SF Chamber 1.5m2

Location: SF Chamber 1.5m2

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.00000
High Flow By-pass (cubic metres per sec): 100.0000

Storage Properties

Surface Area (square metres): 1.1
Extended Detention Depth (metres): 0.77
Permanent Pool Volume (cubic metres): 0.0
Initial Volume (cubic metres): 0.00
Exfiltration Rate (mm/hr): 0.00
Evaporative Loss as % of PET: 0.00

Estimate Parameters

Outlet Properties

Equivalent Pipe Diameter (mm): 33
Overflow Weir Width (metres): 2.0
Notional Detention Time (hrs): 0.106

☐ Use Custom Outflow and Storage Relationship

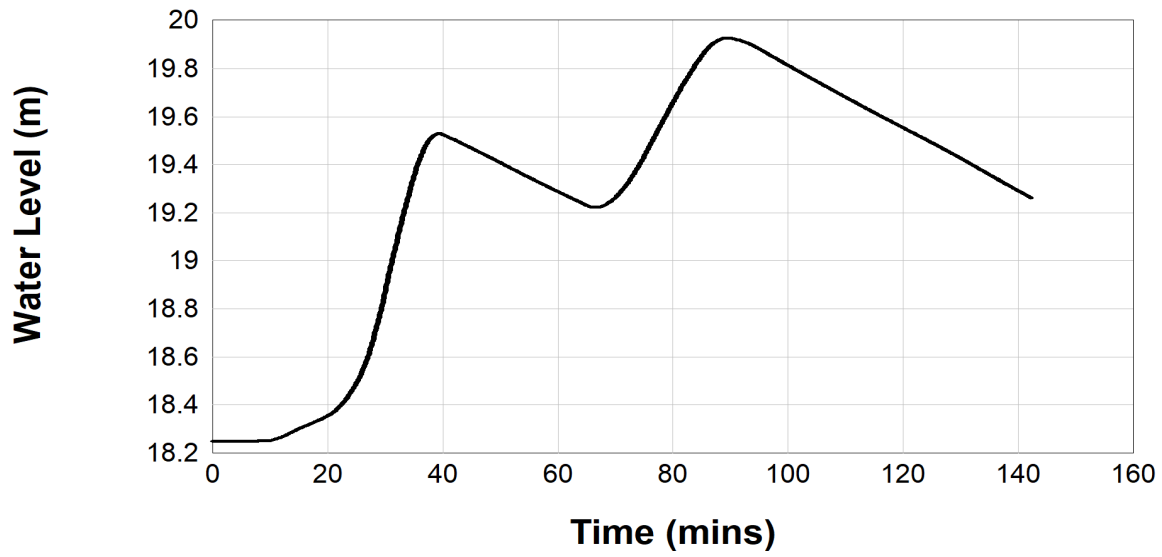
Define Custom Outflow and Storage: Not Defined

Re-use... Fluxes... Notes... More

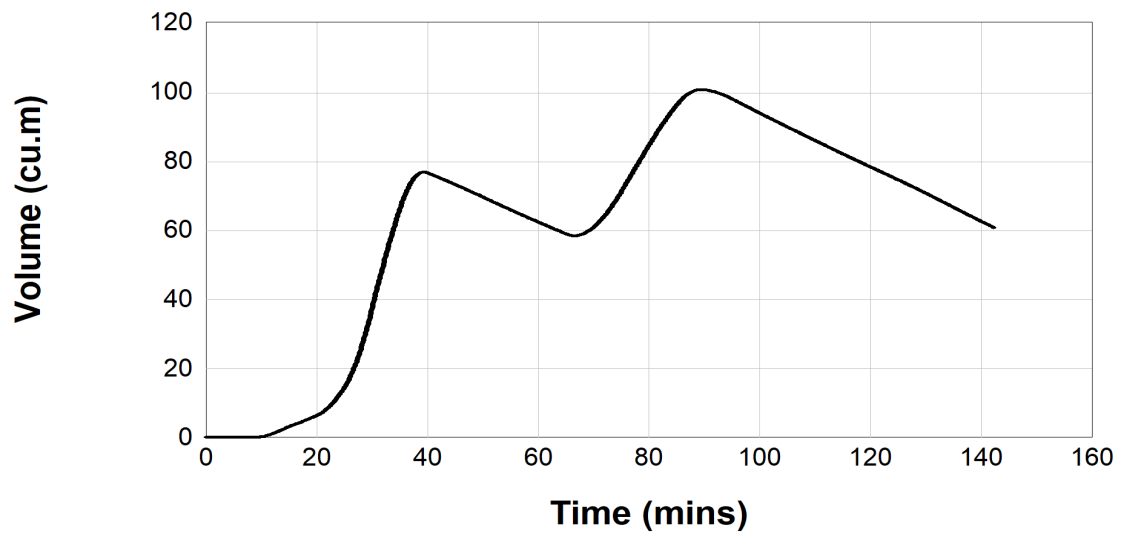
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Appendix E DRAINS Outputs

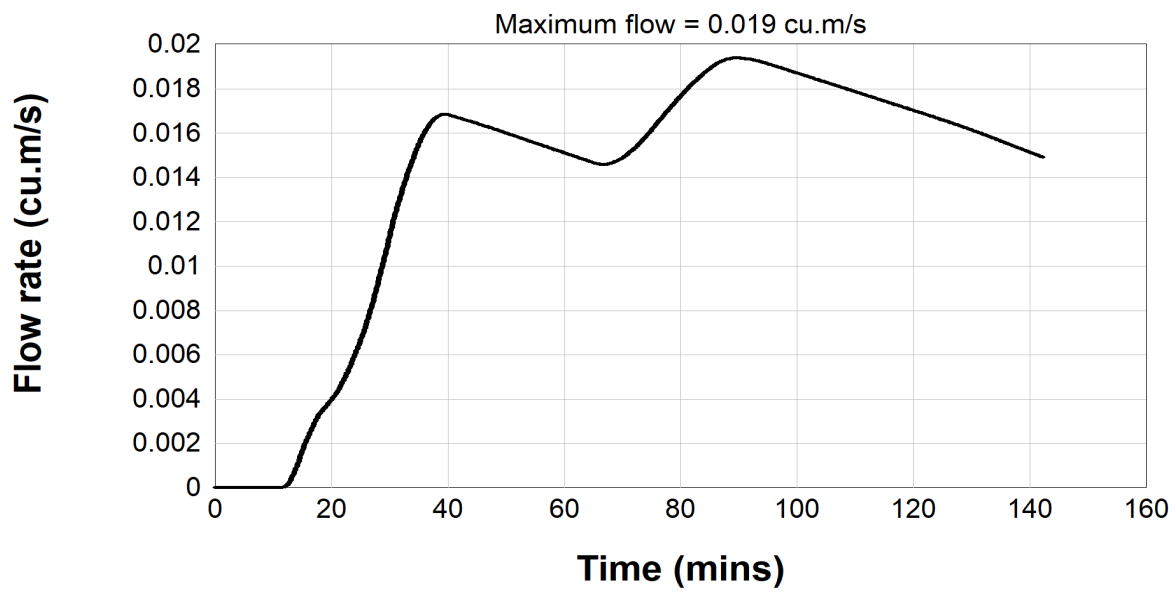
Water Level vs Time



Volume vs Time



Post-Developed Mitigated Flow (Q100) vs Time



Appendix F BYDA

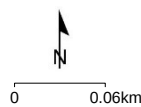
Hunter Water Corporation DBYD Asset Legend

Electrical Assets	Water Assets		RecycledWater Assets	Sewer Assets	StormWater Assets	Land Details
 High Voltage	 Contol Valve	 HWC Rain Gauge	 Air Valve	 Air Valve	 StormWater Assets	 Area of Interest
 Low Voltage	 Hydrant Control Valve	 HWC Stream Flow Gauge	 Reflux Valve Open	 Stop/Butterfly/Ball Valve	 StormWater Network Structure	 Easement Non HWC
 Electrical Pole	 Reflux Valve	 Radio Base	 Stop Valve Open	 Gate Valve	 StormWater Mains	 Fence Line
 Distribution Transformer	 Stop/Scour Valve	 Weather Station	 RecycledWater Hydrant	 Manhole	 Mains Abandon	 Non-HWC Easement
 Air Break Switch	 Tee & Stop Valve	 Piezometer	 Cluster Box	 Cap		 HWC Easement
 Circuit Breaker	 Hydrant	 Bore Site	 End Cap	 Dead End		 Parcel
 High Voltage	 Cluster Box		 Flushing Tap	 Flushing Tank		 Road
 Low Voltage	 End Cap		 Manhole	 H&V Bend		 Water Parcels
	 Flushing Tap		 Scour	 Junction Connection		 Hazardous Material
	 Manhole		 RecycledWater Meter	 Outfall		 Map Sheet Index
	 Scour		 RecycledWater Network Structure	 Overflow		
	 Water Meter		 Other Main	 Sewer/Valve Pit		
	 Water Network Structure		 Reticulation Main	 Tangent Point		
	 Other Main		 Reticulation Main Encased/Conduit	 Sewer Meter		
	 Trunk Main		 Trunk Main	 Sewer Vent		
	 Reticulation Main		 Trunk Main Encased/Conduit	 Sewer Network Structure		
	 Water Encased Mains		 RecycledWater Encased Mains	 Other Main		
	 Water Prelaid Service		 RecycledWater Prelaid Service	 Gravity Main		
				 Pressure/Vacuum Main		
				 Effluent Main		
				 Outfall		
				 Overflow Main		
				 Rising Main		
				 Sewer Encased Mains		



Overview Map

Sequence No: 243786154
7 Church Street Nelson Bay



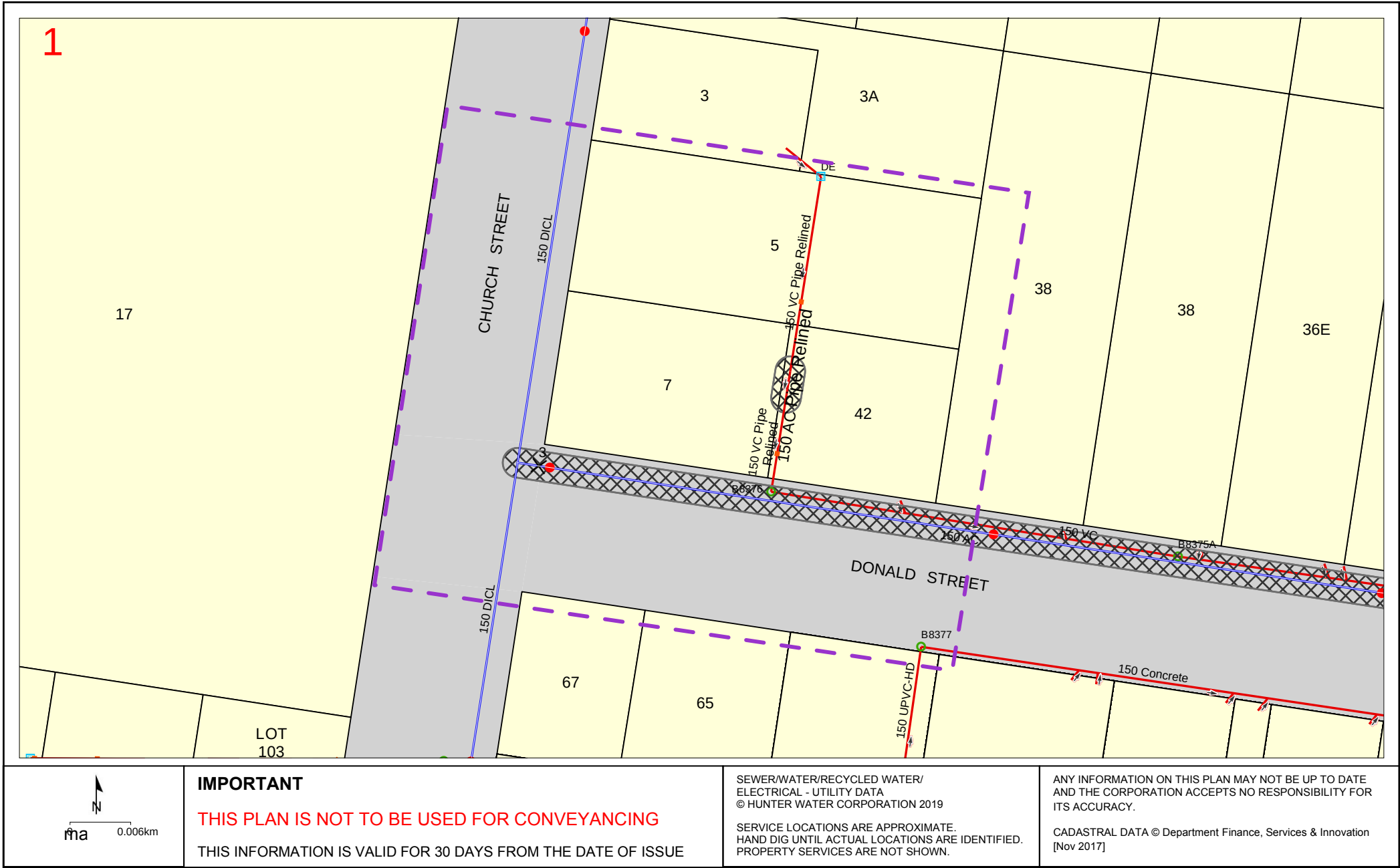
LEGEND:





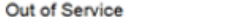
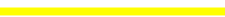
Map 1

Sequence No: 243786154



Ausgrid Underground Map Symbology

NOTE: Please note symbology is subject to change. This document provides underground (UG) related objects only. In cases where you are unsure of the data presented, please contact Ausgrid's BYDA for clarification *prior* to any planning/excavation works.

Object		Symbol
HV Cable	HV (High Voltage) 5kV-22kV	In Service  Out of Service 
	TR (Transmission) 33kV – 330kV	In Service  Out of Service 
LV Cable (Low Voltage)	Mains (Dark blue)	In Service  Out of Service 
	Street Lighting (Green) Note: Mains Connector also used as Street Lighting (dark blue)	In Service  Out of Service 
	Service (Light blue)	In Service  Out of Service 
	Stars are used to highlight At Risk cables	In Service Risk  In Service Risk  In Service Risk 
	Unknown	
Auxiliary Cable	Data	In Service  Out of Service 
	Comms	
	Telco	
	Protection	
	Fibre Optic	
	Pilot	

Object		Symbol
HV UG Joint	Straight Through, Parallel Branch or Tee	
	Switchgear, End Box or Transition	
HV UG Termination	Sealed end	
	Pot End	
	UGOH	
HV Cable Repair	5kV-330kV (HV & TR)	
LV UG Joint	Straight Through, Parallel Branch, Tee or Service	
	Network Box	
LV UG Termination	Switchgear, End Box or Transition	
	Sealed end	
	Pot End	
	UGOH	

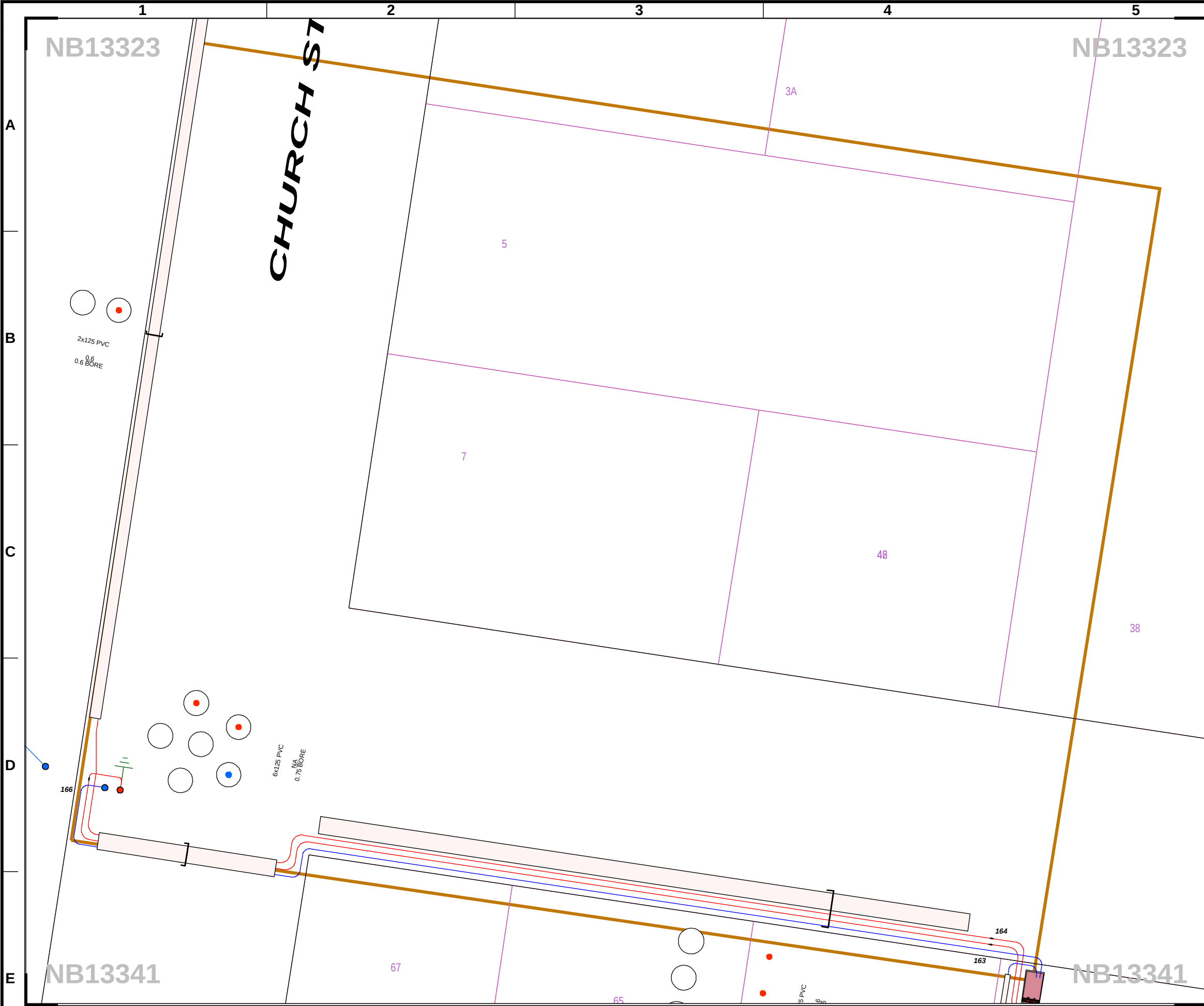
Object		Symbol
Auxiliary Fix	Pilot Window	
Auxiliary Joint	Straight Through, Parallel Branch or Tee	
Auxiliary Termination	UGOH or Pole Termination	
	Pilot	
	UGOP-ADSS Termination	
Cable Pit (Can be various shapes)	Auxiliary	
	Distribution	
	Transmission	
LV Pillar	Distribution	
	Switch	 1-3 WAY  4+WAY
	SL Pillar	 NO SLCP  SLCP
	SL Cubicle	
	Fargo	
	Private	
LV Auxiliary Pillar	All Types	
LV Link Box	2 Way & 4 Way	

Ausgrid Underground Map Symbology

Object	Symbol
Substation	Cottage & Chamber
	Ground & Subtransmission Ground
	Kiosk & Subtransmission Kiosk
	Zone
	Transmission
	Bulk Supply Point
	Metering Station & Subtransmission Metering
Switching Station	Isolating & Earth
	Other – OH & UG
	Ring Main Unit
Earthing	UG Earth Cable
	Earth Point
Frequency Marker	Distribution and Transmission Power
	Auxiliary Communications
	Distribution and Transmission Power
	Auxiliary Communications

Object	Symbol
Trench	Centreline
Conduit (Can be various shapes)	Coverage (Distribution)
	Coverage (Transmission)
	Coverage (Underbore – cross hatched)
Cross Section	Marker (Staple)
	User Line
Measurement Point	
Miscellaneous Point Feature	Cable Clamp
	Cable Core split (Trifurcation)
	Cable Marker
	Electrolysis Point
	End Of Pipe
	Frequency Injection Unit
	Gas Charger
	Gas Control Cabinet
	Gas Control Kiosk
	Gas Control Point
	Gas Control Valve
	Gatic Pit lid

Object	Symbol
Miscellaneous Point Feature	Inspection Box
	Link point
	Oil Control Valve
	Oil Gauge
	Oil Tank
	Sniffer Box
	Thermocouple Box
	Transmission Cable Marker
Miscellaneous Linear Feature	Transmission Link Point
Map Note	All Geometries
	Location & Text
Dimension Feature	Placement Change
Lead Cable	Oil/Gas/Thermocouple
	Bonding
	Electrolysis



JOINT DETAIL REPORT
No. _____ Bk/Pg _____ P/Cvr _____ Joint Location _____
Map: NB133
163
164
166

ISG GRID		
NB13312	NB13321	NB13322
NB13314	NB13323	NB13324
NB13332	NB13341	NB13342

N

Scale 1:317
0 10 metres

Distr + Trans - 243786153
GMLA3

INFORMATION ON THIS PLAN ONLY VALID
FOR 30 DAYS FROM ISSUE DATE:

26 Aug 2024

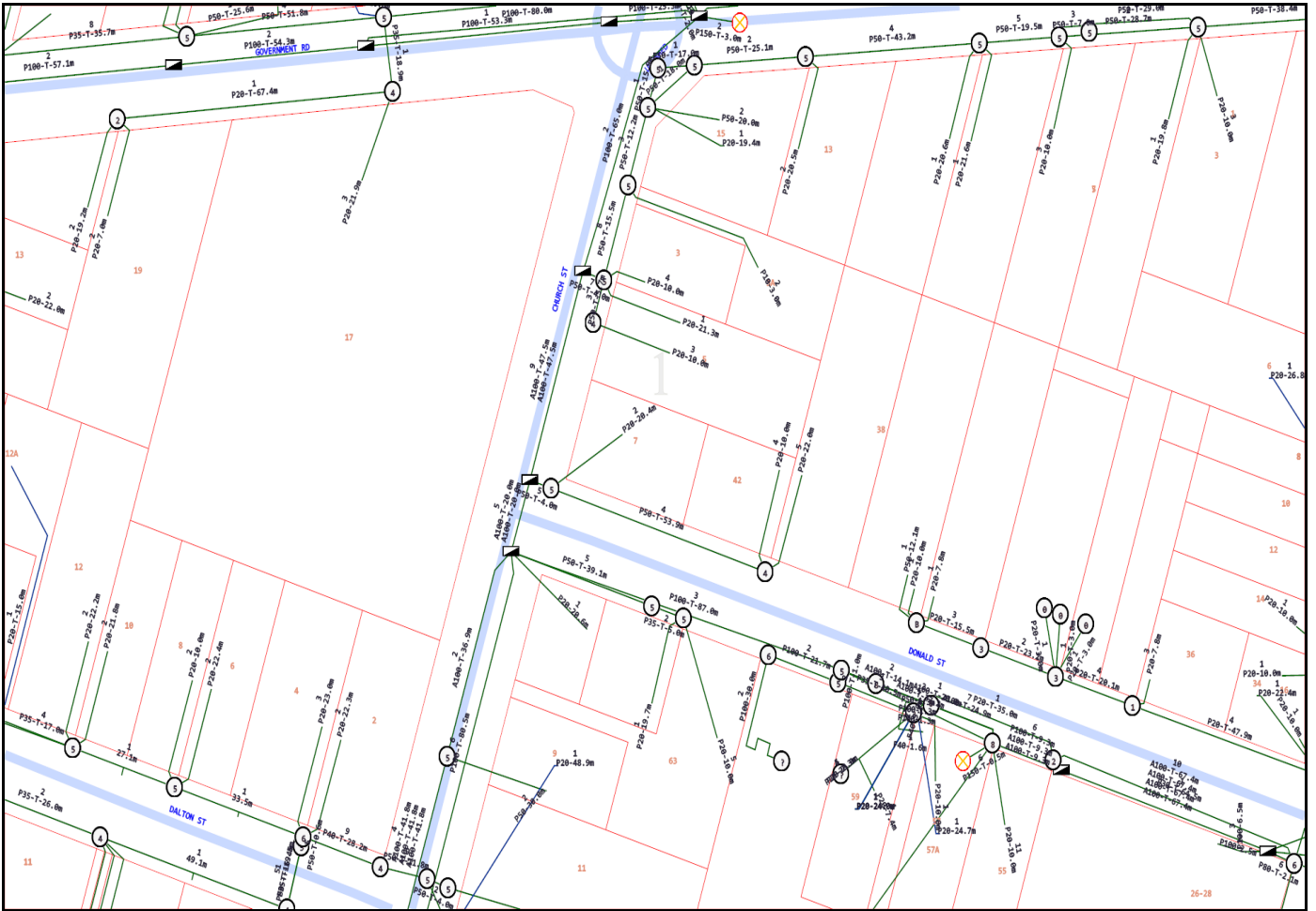
W A R N I N G : Ausgrid's plans show the position of assets at the time of installation and may not account for subsequent changes to road alignments, fences or buildings. The plans show no more than the presence or absence of Ausgrid assets in the street. Persons working near electricity networks must exercise care and will be held responsible for any damage caused. You must excavate by hand or use vacuum excavation to establish the location of Ausgrid underground cables and associated assets. Underground: Working near a cable may result in electric shock even if no contact is made. Any work in the vicinity of any cable should only be performed using safe work methods developed in accordance with the recommendations included in Safework NSW Code of Practice for Excavation and Safework NSW Guide for Work Near Underground Assets as well as recommendations of Ausgrid's Network Standard NS156. Overhead: Do not excavate near poles or towers until the stability of the foundation has been assessed by Ausgrid. Cables or earth conductors may be present close to substations, poles or towers. Workers must maintain safe approach distances and follow applicable Safework NSW Codes of Practice. NOTE: 1. You must keep Ausgrid plans on site during excavation works. If the people actually performing the excavation works do not know how to read and interpret Ausgrid's plans, then the work must be directed by a person who knows how to read and interpret the plans. 2. This information includes data from the NSW Digital Cadastral Database by Land and Property Information (c) 2016, used under Creative Commons licence version 4.0.



LEGEND



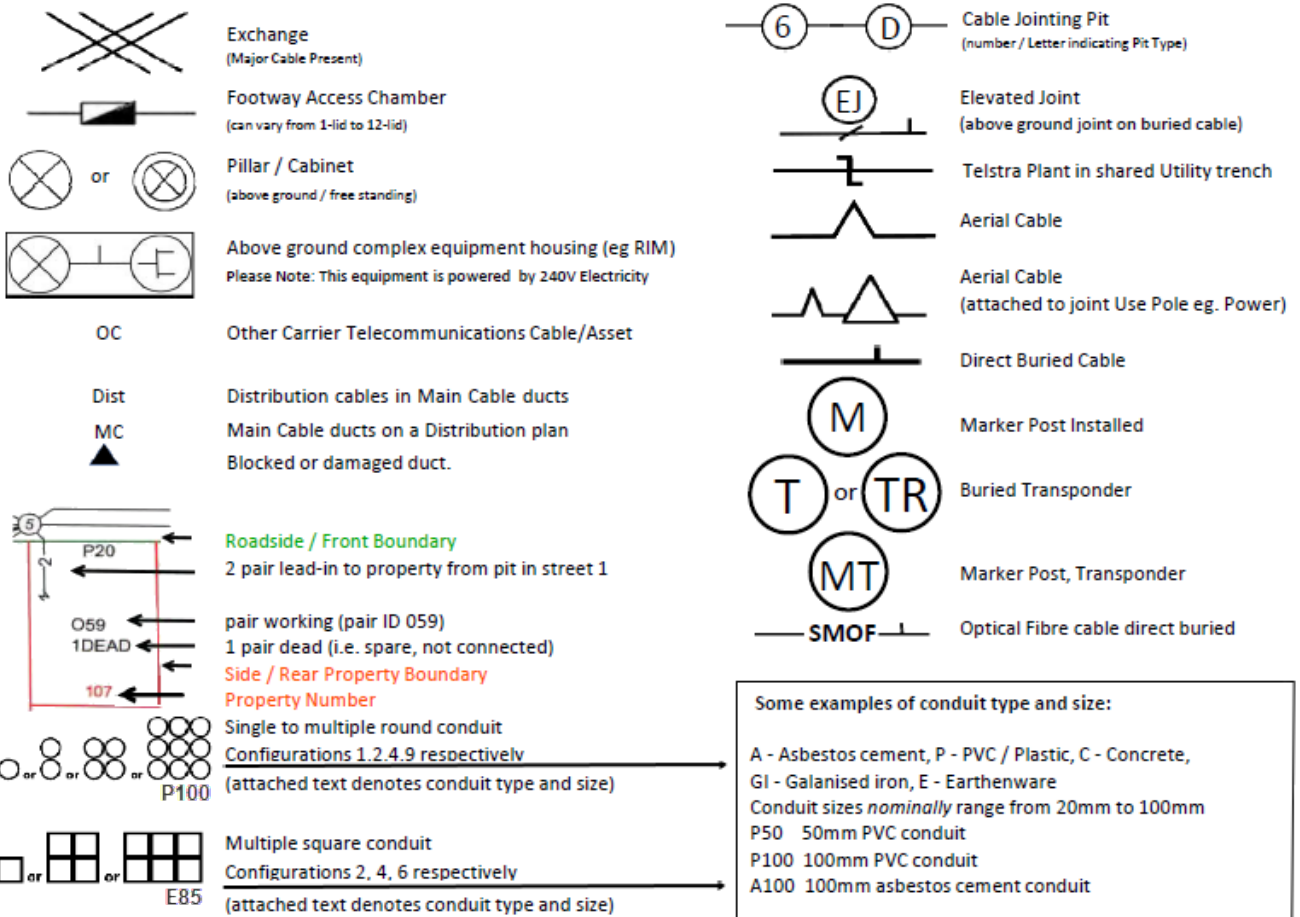
	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
	2 Direct buried cables between pits of sizes, "5" and "9" are 10.0m apart.
	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m



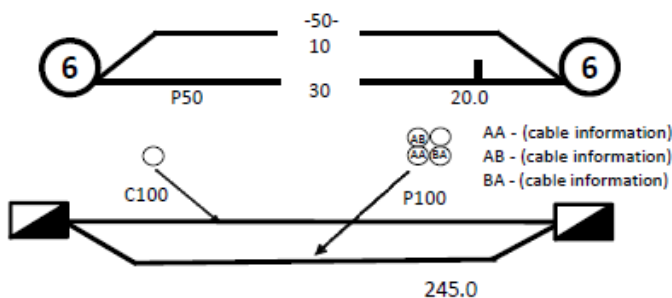
Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

LEGEND



Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, approximately 20.0m apart, with a direct buried 30-pair cable along the same route

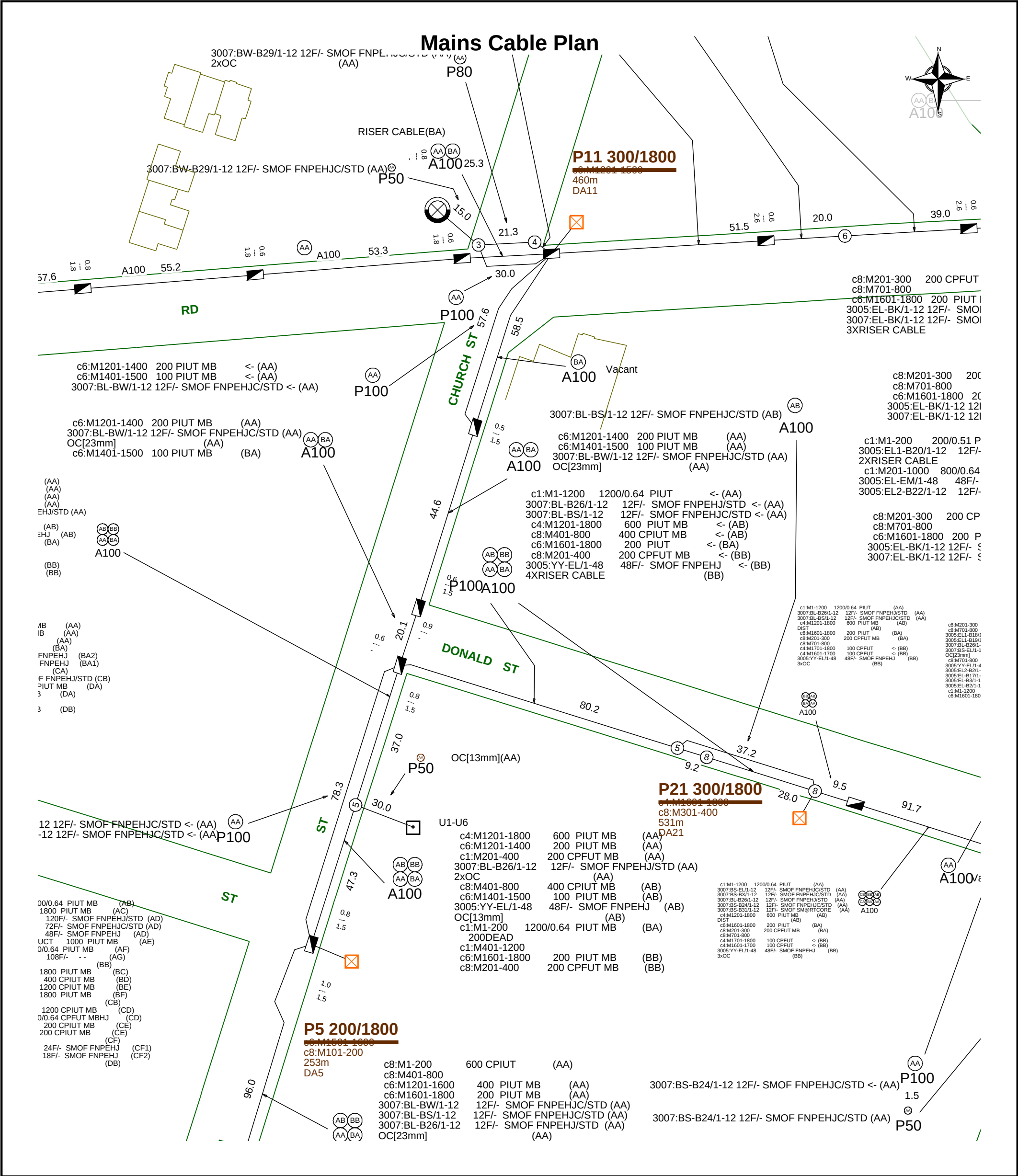
Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along

Protect our Network:

by maintaining the following distances from our assets:

- 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
- 500mm Vibrating Plate or Wacker Packer Compactor
- 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant.
- 1.0m Jackhammers/Pneumatic Breakers
- 2.0m Boring Equipment (in-line, horizontal and vertical)

For more info contact a [Certified Locating Organisation](#) or Telstra Plan Services 1800 653 935





Report Damage: <https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment>

Ph - 13 22 03

Email - Telstra.Plans@team.telstra.com

Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

Sequence Number: 243786155

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 26/08/2024 15:11:10

WARNING

Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy. Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work. A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.



WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. Optus Plans and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed, please raise a new enquiry.

Sequence Number: 243786156

Date Generated: 26 Aug 2024



For all Optus DBYD plan enquiries –
 Email: Fibre.Locations@optus.net.au
 For urgent onsite assistance contact 1800 505 777
 Optus Limited ACN 052 833 208



Appendix G

Planning Secretary's Environmental Assessment Requirements

Development details

Application number	SSD-83366960
Project name	The Belvedere, Nelson Bay
Location	42 Donald Street, 5 Church Street, 7 Church Street, Nelson Bay
Applicant	Fortezza Group
Date of issue	7 May 2025

Content and guidance

The Environmental Impact Statement (EIS) must meet the minimum form and content requirements as prescribed by Part 8 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and the *State Significant Development Guidelines*. The EIS must also address the issues set out below.

Relevant policies, guidelines and planning circulars can be found at <https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines>.

Key issues and supporting documentation

Issue and Assessment Requirements	Supporting Documentation
1. Statutory Context - Address all relevant legislation, environmental planning instruments (EPIs) (including drafts), plans, policies, guidelines and planning circulars. - Identify compliance with applicable development standards and provide a detailed justification for any non-compliances. - Provide an explanation of how the development as described in the EIS is consistent with the development as was described in the request for SEARs (including any components that were not SSD) and provide a justification for any differences. - Address the requirements of any approvals applying to the site, including any concept approval, any endorsed or draft master plan, precinct plan or any recommendation from Gateway determination.	<u>If required:</u> Clause 4.6 Variation Request (for any non-compliances with applicable development standards)

¹ Industry-specific SEARs only apply to SSD applications other than those that:

- would be designated development but for the Act, section 4.10(2), or
- are partly prohibited by an environmental planning instrument (EPI), or
- are wholly prohibited by an EPI, to the extent permitted by the Act, section 4.38(5), or
- are a concept development application for State significant development.

Planning Secretary's Environmental Assessment Requirements



Housing

Issue and Assessment Requirements	Supporting Documentation
- Provide an accurate summary of the detailed assessment of the impacts of the project and integrate the findings and recommendations of technical reports into the justification and evaluation of the project as a whole. - If affordable housing is being proposed, provide the name and ABN of the registered community housing provider that will be responsible for managing the affordable housing component, along with documentation confirming the provider's agreement to this responsibility.	
2. Estimated Development Cost and Employment - Provide the estimated development cost (EDC) of the development prepared in accordance with the relevant planning circular using the Standard Form of EDC Report. - As applicable, the EDC Report must separately specify the EDC of: - the residential component of the development. - the tenant component of the built-to-rent development. - the seniors housing component of the development.	EDC Report
3. Contributions and Public Benefit - Address the requirements any relevant contribution plan(s), planning agreement or EPI requiring a monetary contribution, dedication of land and/or works-in-kind agreement. and include details of any proposal for further material public benefit. - Where a voluntary planning agreement is proposed, prepare a draft planning agreement in accordance with the <i>Planning agreements – Practice note- February 2021</i>.	Address in EIS <u>If required:</u> Draft planning agreement
4. Engagement - Demonstrate that engagement and consultation activities have been undertaken in accordance with the <i>Undertaking Engagement Guidelines for State Significant Projects</i> and identify how issues raised, and feedback received have been considered in the design of the project. - If the development would have required an approval or authorisation under another Act but for the application of s 4.41 of the EP&A Act or requires an approval or authorisation under another Act to be applied consistently by s 4.42 of the EP&A Act, the agency relevant to that approval or authorisation must be consulted.	Engagement Report
5. Design Quality - Demonstrate how the development will achieve: - design excellence in accordance with any applicable EPI provisions. - good design in accordance with the seven objectives for good design in Better Placed. - Demonstrate that the development:	Design Excellence Strategy (where design excellence is required by an EPI) Competition Report (where a competitive design process has been held)

Planning Secretary's Environmental Assessment Requirements



Housing

Issue and Assessment Requirements	Supporting Documentation
- where required by an EPI or concept approval, or where proposed, has been subject to a competitive design process, carried out in accordance with an endorsed brief and Design Excellence Strategy; or - in all other instances, has been reviewed by the State Design Review Panel (SDRP) where required under the NSW SDRP: Guidelines for Project Teams. - Recommendations of the jury and Design Integrity Panel (where a competitive design process has been held) or the SDRP are to be addressed prior to lodgement.	Design Review Report (where the project has been reviewed by the SDRP)
6. Built Form and Urban Design - Demonstrate how the proposed built form (layout, height, bulk, scale, separation, setbacks, interface and articulation) addresses and responds to the context, site characteristics, streetscape and existing and future character of the locality. Where relevant explain and illustrate the application of any bonuses under an EPI. - If relevant, provide an assessment of the development against: - the design principles for seniors housing set out in Schedule 8 of <i>State Environmental Planning Policy (Housing) 2021</i> (Housing SEPP) and the <i>Seniors Housing Design Guide</i>. - the design principles for residential apartment development set out in Schedule 9 of the Housing SEPP and the <i>Apartment Design Guide</i> (ADG). This should include a table which demonstrates how each dwelling (including affordable dwellings) performs against the ADG design criteria. - If affordable housing is proposed, provide a floorplan outlining the gross floor area and dwellings that are provided as affordable housing.	Architectural Drawings Design Report Survey Plan Schedule of Colours, Materials and Finishes Design Verification Statement
7. Environmental Amenity - Assess amenity impacts on the surrounding locality, including solar access, visual privacy, view loss and view sharing, as well as wind, lighting and reflectivity impacts. A high level of environmental amenity for any surrounding residential or other sensitive land uses must be demonstrated. - Provide a solar access analysis of the overshadowing impacts of the development within the site, on surrounding properties and public spaces (during winter solstice) at hourly intervals between 9am and 3pm, comparing the proposed development, existing situation and where applicable, a development with no bonuses applied.	Shadow Diagrams Chapter 4 Housing SEPP Assessment (ADG) <u>If required:</u> View Impact Analysis
8. Visual Impact - Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development. - If the proposal would result in significant visual impact not anticipated by the planning controls, provide a visual impact assessment that addresses the visual impacts of the development on the existing catchment.	Visual Impact Analysis <u>If required:</u> Visual Impact Assessment

Planning Secretary's Environmental Assessment Requirements



Housing

Issue and Assessment Requirements	Supporting Documentation
9. Transport - Provide a Transport Impact Assessment (TIA) in accordance with the processes and methodology recommended in the <i>Guide to Transport Impact Assessment</i> (GITA) published by TfNSW. - If the construction of the development would cause interruptions to regular pedestrian and transport routes (including public transport, active transport or general traffic), a preliminary Construction Traffic (or Transport) Management Plan (CTMP) should be prepared as part of the TIA to mitigate any such impacts.	Transport Impact Assessment <u>If required:</u> Preliminary Construction Traffic (or Transport) Management Plan
10. Noise and Vibration Provide a noise and vibration impact assessment prepared in accordance with the relevant NSW Environment Protection Authority (EPA) guidelines. The assessment must detail construction and operational noise and vibration impacts on nearby sensitive receivers and structures and outline the proposed management and mitigation measures that would be implemented.	Noise and Vibration Impact Assessment
11. Water Management - Detail the proposed drainage design and servicing infrastructure to be incorporated as part of the development (stormwater and wastewater). - Demonstrate how the development complies with council's drainage requirements and identify proposed stormwater treatment and water quality management measures to minimise adverse environmental impacts.	Integrated Water Management Plan
12. Ground and Groundwater Conditions - Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site and including soil erosion. - Where required provide a Groundwater Impact Assessment in accordance with relevant Groundwater Guidelines. If the proposed development is on land identified as having high salinity or acid sulfate soil potential in an EPI provide a Salinity Management Plan or Acid Sulfate Soil Management Plan that includes appropriate management measures and strategies.	Geotechnical Assessment <u>If required:</u> Groundwater Impact Assessment Salinity Management Plan Acid Sulfate Soils Management Plan
13. Contamination and Remediation In accordance with Chapter 4 of the <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i>, assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.	Preliminary Site Investigation Report <u>If required:</u> Detailed Site Investigation Remedial Action Plan

Planning Secretary's Environmental Assessment Requirements



Housing

Issue and Assessment Requirements	Supporting Documentation
	Preliminary Long-term Environmental Management Plan
14. Trees and Landscaping - Provide a landscape plan, that: - details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage (as a percentage of the site area). - provides evidence that opportunities to retain significant trees have been explored and/or inform the plan. - If the proposal involves impacts to trees, provide an Arboricultural Impact assessment that assesses the number, location, condition and significance of trees to be removed and retained including: - any existing canopy coverage to be retained on-site. - tree root mapping. if the proposal involves significant impacts to tree-protection zones of retained trees identified as being significant	Landscape Plan <u>If required:</u> Arboricultural Impact Assessment
15. Ecologically Sustainable Development (ESD) - Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development. - Where relevant, provide an assessment of the development against the standards for non-residential development set out in Chapter 3 of <i>State Environmental Planning Policy (Sustainable Buildings) 2022</i>.	ESD Report BASIX Certificate
16. Biodiversity - Unless a waiver has been granted, provide a Biodiversity Development Assessment Report (BDAR) that assesses any biodiversity impacts associated with the development in accordance with the <i>Biodiversity Conservation Act 2016</i> and the <i>Biodiversity Assessment Method 2020</i>. OR - If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the proposed development is consistent with the relevant biodiversity measure conferred by the biodiversity certification.	Biodiversity Development Assessment Report or BDAR Waiver
17. Waste Management - Provide the measures to be implemented to manage, reuse, recycle and safely dispose of waste, including in accordance with any council waste management requirements. - Identify appropriately sited waste storage areas, collection access paths/roads, and appropriate servicing arrangements for the site.	Waste Management Plan
18. Social Impact	Address in EIS

Planning Secretary's Environmental Assessment Requirements



Housing

Issue and Assessment Requirements	Supporting Documentation
The EIS must consider social impacts and, should any significant social impacts be identified, a Social Impact Assessment must be prepared in accordance with the <i>Social Impact Assessment Guideline for State Significant Projects</i>.	<u>If required:</u> Social Impact Assessment in accordance with the guidelines
19. Flood Risk - Identify the flood planning area and level as set out in the relevant EPI and other supporting documents to determine; - The flood extent and velocity up to the Probable Maximum Flood and risk on-site having regard to adopted flood studies and, floodplain risk management studies and plans - The site access and egress routes - the potential effects of climate change, - any relevant provisions of the <i>NSW Flood Risk Management Manual</i>, and any other relevant guidelines - Where the development is occurring on flood prone land a flood impact and risk assessment (FIRA) must be prepared having regard to the <i>Flood Impact and Risk Assessment – Flood Risk Management Guide LU01</i>. When determining the scope and category of the FIRA the requirements outlined in the FIRA guide must be considered. - Detail any flood risk management measures that are to be incorporated as part of the development having regard to relevant guidelines (including any design solutions, flood modification measures, property modification measures, operational procedures or Flood Emergency Response Plan).	<u>If required:</u> Flood Impact and Risk Assessment (FIRA)
20. Bush Fire Risk If the development is on mapped bush fire prone land, or a bush/grass fire threat is identified on or adjoining the site, provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with <i>Planning for Bush Fire Protection</i>.	<u>If required:</u> Bush Fire Assessment
21. Aboriginal Cultural Heritage - Where there is known, or reasonably likely, to be Aboriginal cultural heritage on or near the site demonstrate that impacts have been adequately investigated and assessed by: - Identifying that an appropriate prior planning process has already considered these impacts, e.g. a rezoning or development application, or - Providing an initial assessment of the potential impacts. - If potential impacts are significant, provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) which: - Identifies, describes and assesses any impacts to Aboriginal cultural heritage sites or values associated with the site.	<u>If required:</u> Aboriginal Cultural Heritage Assessment Report

Planning Secretary's Environmental Assessment Requirements



Housing

Issue and Assessment Requirements	Supporting Documentation
○ Is prepared in accordance with relevant guidelines.	
22. Environmental Heritage • Where there is potential for direct or indirect impacts on environmental heritage, provide a Statement of Heritage Impact and Archaeological Assessment (where required), in accordance with the relevant guidelines.	<u>If required:</u> Statement of Heritage Impact Archaeological Assessment
23. Public Space • If public space is proposed as part of the development, demonstrate how the development: ○ maximises the amount, access to and quality of public spaces (including open space, public facilities and streets/plazas within and surrounding the site), reflecting relevant design guidelines and advice from the local council and the Department. ○ provides accessible public space. ○ maximises permeability and connectivity. ○ maximises the amenity of public spaces in line with their intended use, such as through adequate facilities, solar access, shade and wind protection. ○ maximises street activation. ○ minimises potential vehicle, bicycle and pedestrian conflicts.	<u>If required:</u> Public Space Plan
24. Hazards and Risks • If the development is affected by above ground dangerous goods storages from the surrounding developments and/or underground high-pressure dangerous goods pipelines in the vicinity of proposal location: ○ Report on any consultation outcomes with operators. ○ Consider whether the development would cause these storages non-compliance with <i>Australian Standards</i>. • Where applicable, provide a Hazard Analysis in line with relevant guidelines and planning circular.	<u>If required:</u> Hazard Analysis

Adelaide
Level 6, 19 Grenfell Street
Adelaide SA 5000
Phone: 1300 657 402
Email: info@adgce.com

Brisbane
596 Milton Road
Toowong, QLD 4066
Postal: PO Box 1492 Toowong
BC QLD 4066
Phone: 1300 657 402
Email: info@adgce.com

Canberra
Level 1, 68 Northbourne Avenue
Canberra, ACT, 2600, Australia
Phone: 1300 657 402
Email: info@adgce.com

Darwin
Suite G01, Manunda Place
38 Cavenagh Street
Darwin, NT 0800
Phone: 1300 657 402
Email: info@adgce.com

Gold Coast
Level 6, 12 – 14 Marine Parade
Southport, QLD 4215
Postal: PO Box 208
Southport, QLD 4215
Phone: 1300 657 402
Email: info@adgce.com

Hobart
Tenancy 1B, Level 1,
199 Collins Street
Hobart TAS 7000
Phone: 1300 657 402
Email: info@adgce.com

Melbourne
321 / 838 Collins Street
Docklands, VIC 3008
Phone: 1300 657 402
Email: info@adgce.com

Perth
Suite 4, Level 1, 6 Centro Avenue,
Subiaco WA 6008
Phone: 1300 657 402
Email: info@adgce.com

Sunshine Coast
Level 3, 2 Emporio Place
Maroochydore, QLD 4558
Postal: PO Box 5014
Maroochydore BC,
QLD 4558
Phone: 1300 657 402
Email: info@adgce.com

Sydney
Suite 22.02, Level 22,
111 Pacific Highway,
North Sydney, NSW, 2060
Phone: 1300 657 402
Email: info@adgce.com

Toowoomba
Tenancy 8, 158 Margaret Street
Toowoomba QLD 4350
Phone: 1300 657 402

