Annexure 3

Engineering Services Report

Engineering Services Report

Gurner TM

69 – 73 Murphy Street

Port Douglas

Job Reference Number – 9283

Date: 11 March 2022

Document Status

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			Name	Signature	Date	RPEQ #
01	Adam Iervese	Daniel Gibson				
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05	Adam Iervese	Emma Clements	Emma Clements		11/03/22	8614

Distribution

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APPENDICES

1 Introduction

1.1. Purpose and Scope

Inertia Engineering has been commissioned by Gurner TM to prepare an Engineering Services Report for the proposed development at 69 – 73 Murphy Street, Port Douglas (the subject site). This report will support the development application submitted for the proposed development. The site layout and elevations are shown on the architectural plans in Appendix A.

This report addresses stormwater management (quality and quantity) during the construction and operational phases of the proposed development. It also demonstrates conceptually how the development can be serviced by water and sewer.

The required detailed design for the service infrastructure will be subject to the conditions (if any) attached to the Development Approval to be provided by Council and any nominated referral agencies.

This report has been prepared in accordance with the *State Planning Policy* (SPP, 2017), *Queensland Urban Drainage Manual Fourth Edition 2016 - Provisional* (QUDM, 2018) and Far North Queensland Regional Organisation of Councils Regional Development Manual (2017).

Throughout this report the developable area is referred to as the 'site' which is lot 516 PTD 2094 and 2 RP 724386.

1.2. Report Limitations

This report has been prepared by Inertia Engineering Pty Ltd for Gurner TM and may only be used and relied on by Gurner TM for the purpose agreed between Inertia Engineering and Gurner TM as detailed within this report.

Inertia Engineering otherwise disclaims responsibility to any person other than Gurner TM arising in connection with this report. Inertia Engineering also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by Inertia Engineering in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Inertia Engineering has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by Inertia Engineering described in this report. Inertia Engineering disclaims liability arising from any of the assumptions being incorrect.

Inertia Engineering has prepared this report on the basis of information provided by Gurner TM and others who provided information to Inertia Engineering (including Government authorities), which Inertia Engineering has not independently verified or checked beyond the agreed scope of work. Inertia Engineering does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2 Site Characteristics

The land contained within the site is described as follows:

Title Details:	Lot 516 PTD 2094 and 2 RP 724386
Street Address:	69 – 73 Murphy Street, Port Douglas
Area:	Total: 2833m^2

Refer to Appendix B for Survey Plan / DBYD information.

2.1. Location

The subject site is located in Port Douglas, located approximately 53km north-west of Cairns Airport. The site lies within a Tourist Accommodation zone according to the Douglas Shire Planning Scheme 2018. The site is bound by residential dwellings to the South and West, Murphy Street to the North and Four Mile Beach to the East.

Figure 2-1 – Location Plan

2.2. Topography

The site grades away from Murphy Street and towards the southern property boundary. The average grade across the site is 23% with a high point of 21.2m AHD along the northern boundary and a low point of 3.6m AHD along the southern boundary.

2.3. Existing Services

Detailed survey by RPS Australia East, 'Dial Before You Dig' (DBYD) data and as-constructed data covering the existing infrastructure services and utilities for the site and surrounding area has been obtained to determine any infrastructure required for the development. This existing infrastructure is outlined in the following sections.

2.3.1. Stormwater

The existing property has an existing 450mm stormwater drainage pipe running parallel and adjacent to the southern boundary. An existing stormwater manhole is located inside the western boundary of the property. All existing site runoff currently drains as sheet flow across the South-Western boundary into the downstream properties.

2.3.2. Sewer

An existing 150mm AC sewer reticulation main currently traverses the site which connects to a sewer manhole located on-site. Further details of the proposed sewer works will be provided in later sections of this report.

2.3.3. Water

No current water service connection is provided to the subject site, with the closest water reticulation main located within Macrossan Street and Murphy Street. Further details on the proposed water service connection will be provided in later sections of this report.

2.3.4. Electrical/Gas/Telecommunications

Existing telecommunication and electrical infrastructure located along Murphy Street is currently used to service the property.

Gas infrastructure is currently located in the vicinity of the property, however, no service connection is currently located on-site.

Note that the location of infrastructure external to the site has been determined from DBYD data.

3 Proposed Development

The development consists of a 4 residential dwelling development.

For further details refer to Warren and Mahoney, *Proposed Site Plan (ref: 9663-DA03.001 -F) included as* Appendix A.

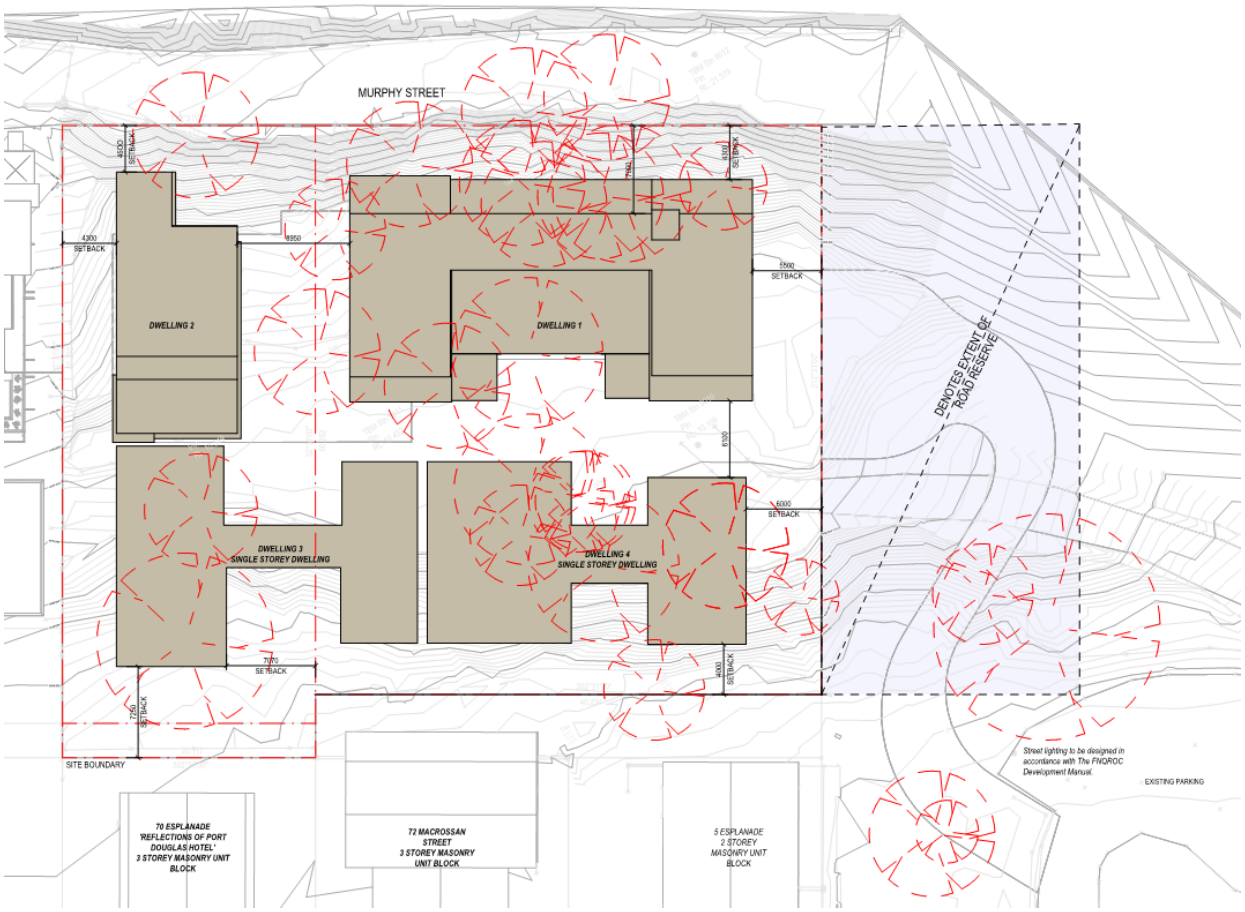


Figure 3-1 – Development Layout

4 Flooding

The subject site is not subject to any flooding overlays but is recognised to potentially be affected by Storm Tide flooding due to proximity to the coastline. Figure 4-1 below indicates that the subject site is outside of council's flooding overlays.

Figure 4-1 - Current Flood and Storm Tide Overlay

According to the Cairns Region Storm Tide Inundation Study (2013) the applicable flood level, accounting for a 0.8m Sea Level Rise, for a development that is situated within the wave runup zone in Port Douglas is 3.87m AHD. This information has been extracted from the full report (Table 5-2) and presented in Table 4-1 below for reference.

Table 4-1 – Projected 2100 1% AEP Storm Tide Flood Levels

	Projected 2100 1% AEP Storm Tide including Wave Effects (m AHD)	
Location / AEP	0.8m SLR	1.1m SLR
Bramston Beach	3.58	3.88
Cairns North Beach	4.04	4.34
Trinity Beach	3.86	4.16
Oak Beach	3.85	4.15
Port Douglas	3.87	4.17
Wonga Beach	4.04	4.34
Thornton Beach	3.74	4.04

Table 8.2.4.3.a from the DSC Planning Scheme (2018) states that any development situated within the Flood and Strom Tide hazards overlay is required to provide immunity to the defined inundation event plus a free board of 300mm. This requires the proposed development to have a minimum immunity to 2100 1% AEP flood levels.

A portion of the existing site is considered to be located within the wave runup zone, which is assumed by council to be all land within 200m of the shoreline. Due to the limited understanding of the impacts of wave effects on these properties, the Cairns Region Storm Tide Inundation Study has proposed a minimum freeboard of 1m above the Storm Tide level identified above.

Council has advised that a new dynamic storm tide flood study has been commissioned and the results are expected to recommend a lesser freeboard.

To ensure the development achieves acceptable flood immunity the minimum floor level is to be RL 4.200m AHD, which is >300mm above the applicable 2100 1% AEP Storm Tide level.

5 Filling and Excavation

5.1. Earthworks

High level investigation into the construction methodology for the proposed earthworks pad has been carried out with input from geotechnical, structural and architectural consultants. The preferred design methodology proposed for the earthworks works involves a combination the following:

- Traditional retaining wall systems with temporary cut batters up to 1:3 slope
- Localised treatment where required to remediate scour/stability issues.

The proposed building pad level on site will be situated between 11.80m AHD and 11.10m AHD. Filling will be required along the access driveway to achieve these levels.

The proposed open space, landscaping and driveway areas will be shaped to tie in with the surrounding natural ground.

Refer to Appendix C which shows a schematic of the earthworks proposed for the site.

In all situations where earthworks are proposed and any ground is disturbed by construction works, sediment and erosion control measures will be implemented in accordance with the following documents:

- Relevant DSC sediment and erosion control guidelines;
- International Erosion Control Association (IECA) Sediment and Erosion Control Guidelines; and
- Australian Standards AS 3798-2007.

Given that the site is below RL 20m AHD, the proposed development is considered to be prospective land for the existence of acid sulphate soils (ASS). Further investigations may be required subject to geotechnical advice.

5.2. Erosion and Sediment Control Measures

5.2.1. Pre-Development

Prior to construction, the following sediment and erosion control measures will be implemented to minimise disturbance and ensure water quality is maintained;

- Set out transport routes to ensure minimal vegetation disturbance;
- Construct entry/exit areas that comprise a designed gravel pad or hardwood logs in accordance with the IECA (2008);
- Install sediment fences around the proposed bulk earthworks site (along toe of batter alignment); and
- Install dust control fences adjacent to the proposed bulk earthworks site.

5.2.2. Bulk Earthworks

- Earthworks areas are to be protected against wind and water erosion;
- Silt fences are to be erected around the base of the earthworks and material stockpiles;
- Stockpiles and construction material are not permitted to be stored within the road reserve; and,
- Diversion drains to be provided at upstream catchments to reduce flows onto earthworks areas.

5.2.3. Construction

The following measures will be undertaken to mitigate water quality impacts during the construction phase:

- Sediment fences to be erected at the base of all batters and stockpiles to prevent sediment transportation off site;
- Grass filter strips to be placed along all road verges;
- All sediment control structures to be maintained in an effective manner and inspected after each storm event. No structure is to accumulate sediment above 40% of its capacity;
- Dust producing areas to be swept to remove silt/dust and wetting of roads is only permitted where sweeping has failed;
- At least one bin or litter trap is to be provided for waste material.

5.2.4. Post-Development-Maintenance Period

Silt fences are to remain in place during the maintenance period until the landscaping has established and accepted “On-Maintenance” by DSC.

5.3. Performance Objectives and Indicators

The DSC Guideline on identifying and applying water quality objectives in the Douglas Shire region should be in accordance with those set out in the *BCC water quality management guidelines (2000)* which states that stormwater runoff during the construction phase must be in accordance within the concentration ranges shown in Table 5.1 below.

Table 5-1 - Construction Phase Pollutant Objectives

Pollutant	Criteria
Total Suspended Solids	90th %tile < 100mg/L for wet weather periods 15mg/L for combined wet and dry periods
pH	6.5 – 8.5
Total Nitrogen (mg/L)	0.65
Total Phosphorous (mg/L)	0.07
Dissolved Oxygen	80 to 105 percent saturation
Oils and Grease	No visible films or odours
Litter	No anthropogenic material greater than 5mm

5.4. Monitoring and Maintenance

The following monitoring and maintenance procedures are to be undertaken by the site supervisor during all phases of the development:

- Restrict all work activities to designated construction areas;
- Earthworks and site cleaning are undertaken in accordance with the Erosion and Sediment Control plans;
- Inspections of Stormwater and Sediment and Erosion Controls are to be conducted at the end of each construction day and after each rainfall event (>25mm); and
- Any failure to the stormwater system shall be immediately rectified to prevent uncontrolled discharge from the site.

6 Stormwater Management

6.1. Objectives

The hydrologic objectives have been set in accordance with QUDM (2018) and FNQROC Development Manual (2017), including but not limited to:

- The proposed development shall ensure that all stormwater drainage is directed to a lawful point of discharge in accordance with QUDM Section 3.9 (2018);
- No adverse impact on adjoining or downstream properties; and
- Best practice solution with regards to water quality has been designed and certified by an RPEQ.

6.2. Lawful Point of Discharge

The nominated lawful point of discharge for the site is the existing stormwater gully pit located outside of the south-eastern property boundary. All site runoff will drain through Council's stormwater network and discharge directly into the Pacific Ocean via a headwall located on Four Mile Beach.

6.3. Stormwater Quantity Calculations

The Rational Method was used to estimate the site flow for the developed site and external catchments to assist in assessing the suitability of existing downstream infrastructure to take site flows which do not, under existing conditions, enter the piped drainage network until they reach Macrossan St.

6.3.1. Developed Conditions

Under developed conditions, there are two internal catchments:

- C1 –Roof area – 1,756m^2
- C2 –Remaining ground and landscape – 1,025m^2

The total fraction impervious of the developed catchment is 69%. Note that the developed catchment includes the site only and does not include any external areas.

Table 6-1 – Developed Site Flows

Parameters	Units	Design Storm Event (yr ARI)						
		1	2	5	10	20	50	100
Catchment Area	ha	0.278						
Time of Concentration	min	5.0						
Runoff Coefficient (Cy)		0.68	0.72	0.81	0.85	0.89	0.98	1.00
Rainfall Intensity (Iy)	mm/hr	133.96	170.22	209.54	232.34	164.12	305.93	338.08
Peak Flow	L/s	69.7	94.1	129.5	151.1	180.4	225.4	252.7

6.3.2. External Upstream Catchments

The upstream catchment for the site has been taken as one large external catchments as per Figure 6.1 below. Council's Ben Armbrust has advised that an existing diversion drain has been implemented as shown below by the blue line, which diverts all upstream flows towards Owen Street. This information has been relied upon to determine the total external catchment area as described in Table 6.2.

Figure 6-1- External Upstream Catchment

Table 6-2 – Greater Catchment Flows

Parameters	Units	Design Storm Event (yr ARI)						
		1	2	5	10	20	50	100
Catchment Area	ha	1.244						
Time of Concentration	min	8.2						
Runoff Coefficient (Cy)		0.66	0.70	0.78	0.72	0.86	0.94	0.98
Rainfall Intensity (Iy)	mm/hr	114.66	145.77	179.67	193.31	226.64	262.72	290.55
Peak Flow	L/s	260.0	351.1	483.7	564.8	574.4	856.2	988.1

6.3.3. Downstream Drainage Capacity

As all of the post-developed roofwater runoff is proposed to drain to the existing field inlet located outside of the south-eastern property boundary, a pipe capacity assessment was undertaken on the existing 450mm pipe immediately downstream.

The existing 450mm pipe, laid at a slope of 1 in 48, has a capacity of 411.5L/s and therefore conveys Q10 flows from the contributing external catchment (under post-development conditions) with an effectiveness of 73%.

Under pre-development conditions, contributing catchment flows are marginally less due to a higher pervious ground area and the existing pipe conveys Q10 flows with 77% effectiveness.

It is observed that the change of catchment conditions is minor, despite the development presenting an increased impervious surface area, the pre-development catchment slope is significant, leading to a short Time of Concentration for rainfall events.

As surcharge flows will not present a risk to any downstream or nearby properties, it is recommended that the existing downstream stormwater infrastructure is sufficient pending future discussions with Council at the detailed design stage.

7 Operational Stormwater Quality Management

7.1. Introduction

The operational phase of the management plan focuses on appropriate consideration of Stormwater Quality Improvement Devices and Water Sensitive Urban Design (WSUD) principles to be incorporated into the total water cycle management of the developed site.

The State Planning Policy (2017) states for a proposed material change of use that involves a site area greater than 2500m^2 and will result in an impervious area greater than 25% a Site Based Stormwater Quality Management Plan is required.

7.2. Pollutants

Pollutants typically generated during the operational phase of the development are shown below (BCC, 2015).

Table 7-1 – Pollutants typically generated during the operational phase

Pollutant	Sources
Litter	Construction, construction, food waste materials
Sediment	Exposed soils and stockpiles
Oxygen demanding substances	Organic or chemical matter
Nutrients (N & P)	Nitrogen, phosphorus
Pathogens / Faecal coliforms	Sewerage
Hydrocarbons	Fuel and oil spills
Heavy metals (with fine sediment)	Sediment runoff
Surfactants	Detergents from car washing, cleansing agents
Organochlorines & organophosphates	Pesticides, herbicides
Thermal pollution	Heat (ie runoff from impervious areas)
pH altering substances	Washwaters

7.3. Water Quality Objectives

The FNQROC Development Manual – Stormwater Quality Management (2019) sets out the following water quality objectives for Far North Queensland in order to protect downstream receiving waters:

- Total Suspended Solids (TSS) 80% reduction
- Total Phosphorus (TP) 60% reduction
- Total Nitrogen (TN) 40% reduction
- Gross Pollutant (>5mm) 90% reduction

The percent reductions listed above are the target reductions for comparing mitigated site annual pollutant loads with unmitigated site annual pollutant loads. The proposed treatment strategy selected for the development will ensure these objectives are met for all pollutants.

7.4. Proposed Treatment Strategy

The proposed treatment strategy that can achieve Councils water quality objective (please refer to Section 7.3 for details) will incorporate the following;

- 2 OceanGuards with 200micron mesh bags (OG-200)
- A 7 x 690mm PSorb cartridge StromFilter system within a precast manhole

Please refer to Appendix C for the conceptual design drawings.

7.5. Water Quality Modelling

The proposed treatment strategy above has been modelled using MUSIC version 6.3.

Rainfall, catchment properties and pollutant characteristics have been sourced from Water By Design's 'MUSIC Modelling Guidelines' (2010).

The rainfall data uses rainfall station 31011 (Cairns), 6 minute time step from 01/01/1975 to 31/12/1984 and all source and treatment nodes parameters have sourced from Water By Design's 'MUSIC Modelling Guidelines' (2010).

The model source node parameter values and pollutant concentration parameters are shown in the tables below.

Table 7-2 - MUSIC Source Node Parameters

Rainfall Runoff Parameters	Values
Rainfall Threshold (mm/day)	1.00
Soil Storage Capacity (mm)	500
Initial Storage (% of capacity)	10
Field Capacity (mm)	200
Infiltration Capacity Coefficient – a	211
Infiltration Capacity Exponent – b	5
Initial Depth (mm)	50
Daily Recharge rate (%)	28
Daily Baseflow Rate (%)	27
Daily Deep Seepage (%)	0

Table 7-3 - MUSIC Pollutant Concentration Parameters – Urban Residential

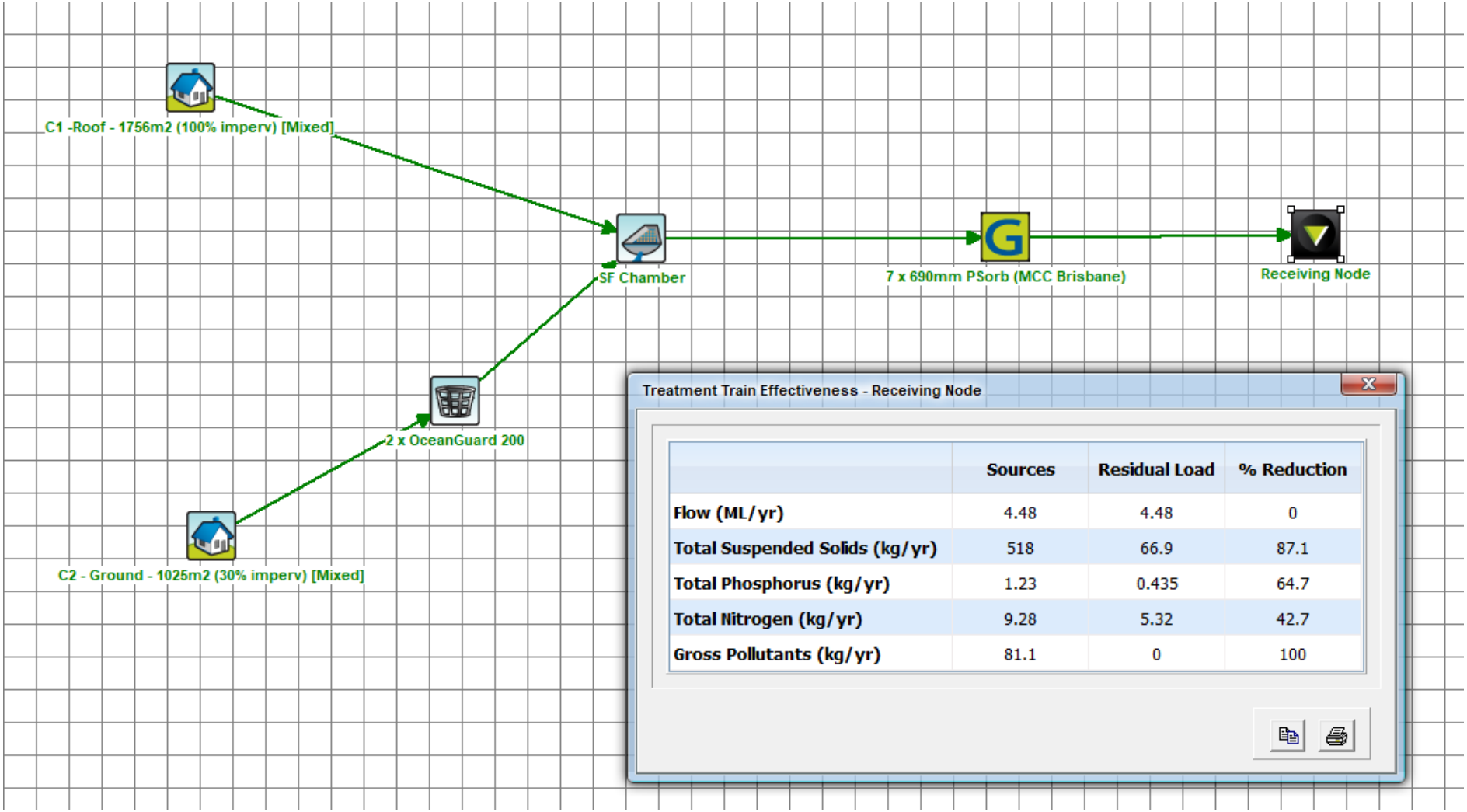
		TSS		TP		TN	
		Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow
Roof	Mean (Log mg/L)	N/A	1.30	N/A	-0.89	N/A	0.26
	Std Dev (Log mg/L)	N/A	0.39	N/A	0.31	N/A	0.23
Ground	Mean (Log mg/L)	1.00	2.18	-0.97	-0.47	0.20	0.26
	Std Dev (Log mg/L)	0.34	0.39	0.31	0.31	0.20	0.23

The subject site has been split into the following areas for the purposes of the MUSIC modelling;

Table 7-4 - Music Model Areas

Land Type	Area (m^2)
Roof (100% Impv)	1,756m^2
Ground (30% Impv)	1,025m^2

The configuration of the model and results are shown in Figure 7-1 below. This demonstrates that the water quality objectives can be achieved by incorporating the proposed treatment strategy into the development.



	Sources	Residual Load	% Reduction
Flow (ML/yr)	4.48	4.48	0
Total Suspended Solids (kg/yr)	518	66.9	87.1
Total Phosphorus (kg/yr)	1.23	0.435	64.7
Total Nitrogen (kg/yr)	9.28	5.32	42.7
Gross Pollutants (kg/yr)	81.1	0	100

Figure 7-1 MUSIC Model Configuration

8 Services, Works and Infrastructure

8.1. Policies

The internal sewerage and water reticulation works proposed within the development will comply with the following documents:

- AS 3500.2 Plumbing and Drainage – Sanitary plumbing and drainage
- AS 3500.1 Plumbing and Drainage – Water Services.

All privately owned water supply infrastructure will be designed in accordance with the relevant plumbing and drainage standards to ensure adequate connection to the DSC owned water reticulation main. Any live works will comply with the following documents:

- Relevant DSC development guidelines & standard drawings
- SEQ WS&S D&C Code – Amendment to Sewerage Code of Australia
- Water Association of Australia (WSAA) Sewerage Code of Australia guidelines and standard drawings

8.2. Sewerage Reticulation

A 150mm sewer connection has been proposed to service the property.

As the existing sewer reticulation on site is higher than the lower floor levels, the current proposal is to remove the existing pipework in favour of a gravity sewer reticulation main extension from the existing pump station located on the Esplanade , subject to DSC approval.

An alternative, pump-out solution can be explored as part of the detailed design phase subject to further discussions with council.

Detailed sewer reticulation drawings will be provided as part of the future Operational Works for civil works application once the development application has been approved by Council. Any relevant 'build over' asset applications will be submitted to council for approval.

Refer to the concept engineering drawings in Appendix C for details.

8.3. Water Reticulation

An extension to the existing water reticulation main currently located on Macrossan Street is proposed as part of this development including a new service and meter to the subject site.

Note that the suitability of this proposed connection point is subject to discussions with DSC to be undertaken at the Operational Works stage.

Any works connections to the existing water main shall be carried out by DSC at the cost of the applicant unless written permission is granted for connection to be made by a nominated contractor. The contractor shall take all precautions to minimise inconvenience to the residences serviced by the existing water infrastructure.

Detailed water reticulation drawings will be provided as part of a future Operational Works for civil works application once the development application has been approved by Council.

Refer to the concept engineering drawings in Appendix C for details.

8.4. Electricity, Communications and Gas

Electricity, gas and telecommunication infrastructure is available in the near vicinity of the subject site. Although the capacity of these existing services has not been determined, it is anticipated that the availability of these services and the required capacity for the proposed development should not pose an issue to the completion of the project.

The developer or services consultant should contact the NBN during the Operational Works phase to confirm their requirements for the development.

9 Conclusions and Recommendations

This Engineering Services Report has assessed the stormwater management, earthworks and service infrastructure for the proposed development at 69 – 73 Murphy Street, Port Douglas.

Earthworks, erosion and sediment control solutions required on site can be performed using common and accepted methods. It is noted that the proposed earthworks will trigger retaining works which have been investigated with input from geotechnical and structural engineering consultants.

The subject site is not affected by any flooding overlays, but is recognised that the lower end of the site has the potential to be affected by Storm Tide flooding due to proximity to the coastline. Based on available flooding information to ensure the development achieves acceptable flood immunity, the minimum floor level is to be RL 4.200m AHD.

The lowest floor level is 10.8m, so the development is not subject flood risk from storm tide.

The stormwater management strategy has the following components:

- All runoff will discharge to the existing stormwater field inlet located just outside of the south-east property boundary.
- The existing downstream stormwater infrastructure will not require to be upgraded as there will be no further surcharge flows cause by the proposed development.
- Proprietary stormwater quality treatment incorporating 2 OceanGuards and a 7 x 690mm PSorb cartridge StromFilter system within a precast manhole

Service supply points for water and sewer reticulation, electricity, telecommunications and gas are located within close proximity to the proposed development and should not present any major connection issues.

Vehicle access and manoeuvring, as well as pedestrian needs have been considered during architectural design and have been reflected within the development layout safely.

This report has demonstrated that the proposed development proposal provides an acceptable solution for all engineering services and has been designed to comply with *DSC Planning Scheme (2018).*

10 References

AS/NZS (2003) Australian Standards/New Zealand Standards, 'Plumbing and Drainage – Part 1: Water Services', 2003

AS/NZS (2003) Australian Standards/New Zealand Standards, 'Plumbing and Drainage – Part 2: Sanitary Plumbing and Drainage', 2003

Department of State Development, Infrastructure and Planning (2017), State Planning Policy

Douglas Shire Council, Douglas Shire Planning Scheme (2018)

Far North Queensland Regional Organisation of Councils, FNQROC Development Manual (2019)

Institute of Public Works Engineering Australasia, Queensland Division (2016), Queensland Urban Drainage Manual Fourth Edition 2016 – Provisional

SEQ WS&S D&C Code (2013), 'South East Queensland Water Supply & Sewer Design & Construction Codes – Amendments to Water & Sewerage Codes of Australia, 2013

RPS Australia East Pty Ltd (2020) Detail Survey of 69-73 Murphy Street, Port Douglas 1-Oct-20

WSAA (2002) Water Services Association of Australia, 'Water Supply Code of Australia – Part 1: Planning and Design', 2002

WSAA (2002) Water Services Association of Australia, 'Sewerage Code of Australia – Part 1: Planning and Design', 2002

Appendices

Appendix A – Architectural Plans

69 - 73 MURPHY STREET | PORT DOUGLAS

DEVELOPMENT APPLICATION

MARCH 2022

DA DRAWING LIST

DA00.001	COVER SHEET	E	DA30.001	TYPICAL SECTIONS	J
			DA30.002	TYPICAL SECTIONS	F
DA01.001	SITE CONTEXT	D	DA30.003	POOL SECTIONS	A
DA01.002	SITE IMAGERY	D			
DA01.003	SITE IMAGERY	D	DA50.001	DEVELOPMENT SUMMARY - GFA	E
DA01.004	SITE ANALYSIS	D	DA50.002	DEVELOPMENT SUMMARY - SITE COVER	E
DA01.005	SITE SURVEY	D	DA50.003	DEVELOPMENT SUMMARY - LANDSCAPE	E
DA01.006	SITE SURVEY	D			
DA01.007	INTERPOLATED SURVEY	E	DA80.001	SOLAR ANALYSIS - JUNE 21	E
			DA80.002	SOLAR ANALYSIS - DECEMBER 21	E
DA03.001	PROPOSED SITE PLAN	F			
DA03.002	SITE ACCESS PLAN	B	DA90.001	MATERIALS	C
			DA90.011	PERSPECTIVES - STREET VIEW 01	D
DA010.01	GROUND FLOOR PLAN	J	DA90.012	PERSPECTIVES - STREET VIEW 02	B
DA010.02	L01 FLOOR PLAN	J	DA90.013	PERSPECTIVES - STREET VIEW 03	B
DA010.03	L02 FLOOR PLAN	J	DA90.014	PERSPECTIVES - STREET VIEW 04	B
DA010.04	L03 FLOOR PLAN	J	DA90.020	PERSPECTIVES - EX. TREE CANOPY	B
DA010.05	ROOF PLAN	H	33		
DA20.001	NORTH ELEVATION	G			
DA20.002	EAST ELEVATION	G			
DA20.003	SOUTH ELEVATION	G			
DA20.004	WEST ELEVATION	F			

Issue Status & No

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DEVELOPMENT APPLICATION

ExRL +00.000	EXISTING RL - REFER TO SURVEY
RL +00.000	PROPOSED LEVEL
	INDICATIVE SITE FILL

ORIGINAL DRAWING IN COLOUR

Consultants

—

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

—

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Level 4, 141 Flinders Lane
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Australia
Phone + 61 3 8547 6977

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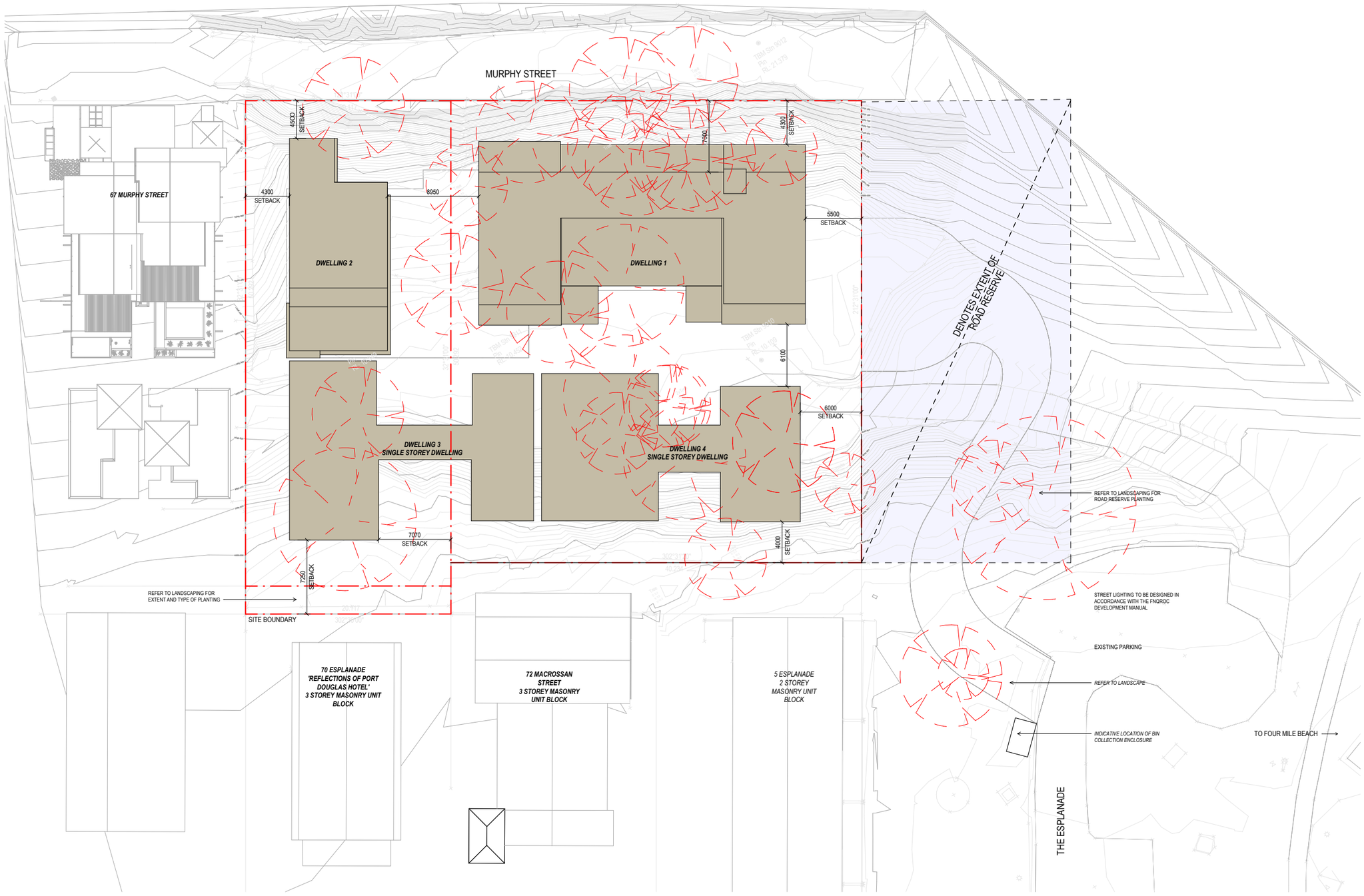

Revisions

A	03/09/21	FOR CLIENT COMMENT
B	09/09/21	FOR CONSULTANT COORDINATION
C	15/09/21	FOR INFORMATION
D	22/09/21	DRAFT DA
E	04/10/21	ISSUE FOR DA
F	10/03/22	ISSUE RFI 01

Notes

TREES TO BE REMOVED

PROJECT NORTH

TRUE NORTH

Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

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Warren and Mahoney Architects Australia Pty Ltd
Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

Registered Architects and Designers
www.warrenandmahoney.com

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

PROPOSED SITE PLAN

Drawing Status

DEVELOPMENT APPLICATION

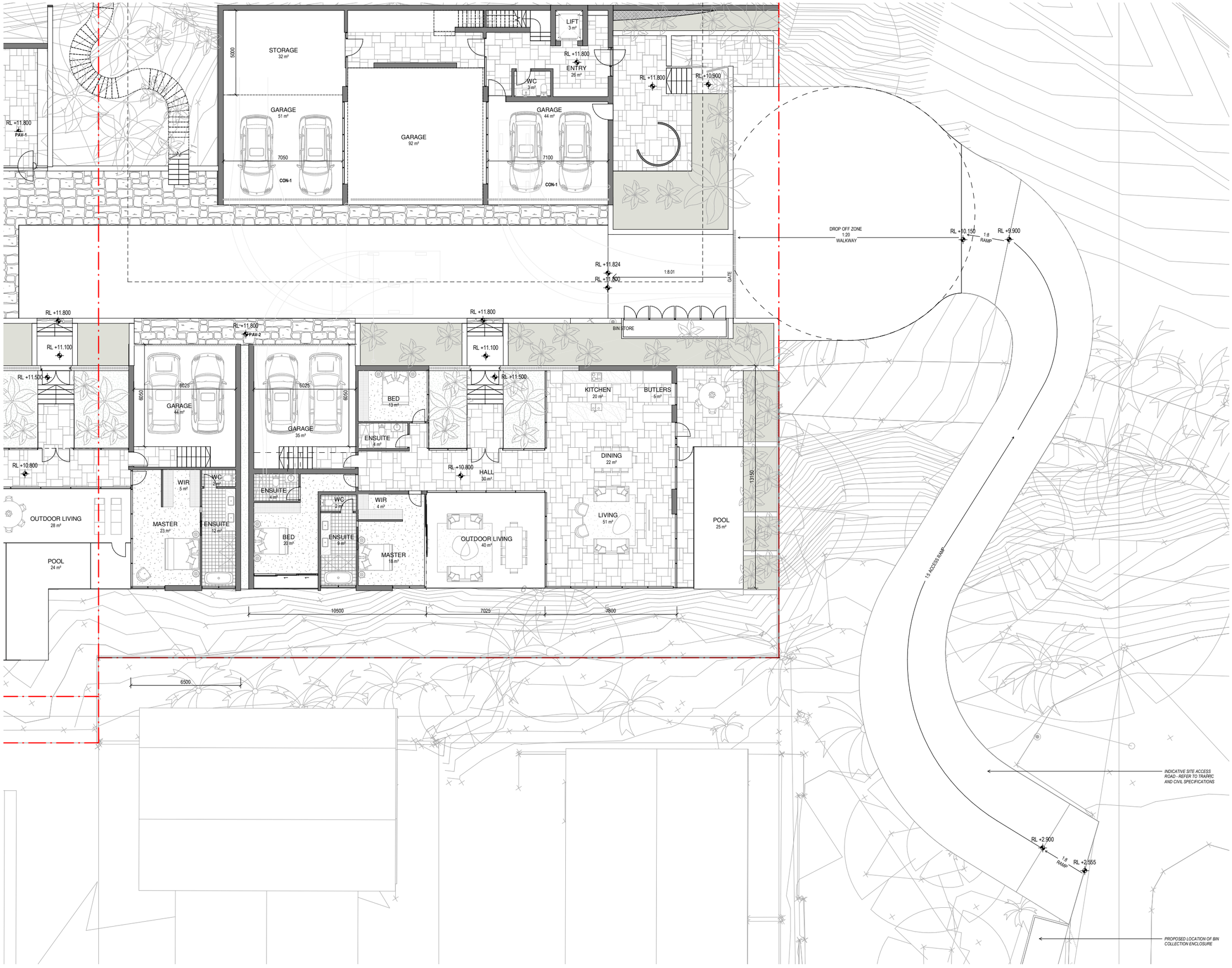
Drawing Details

Scale	1 : 200@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA03.001

Revision F

WARREN AND MAHONEY

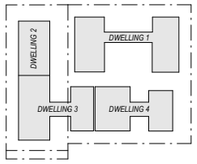


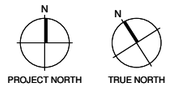
Revisions

A	18/02/22	FOR INFORMATION
B	10/03/22	ISSUE RFI 01

Notes

CODE	DESCRIPTION
BAL-1	FRAMELESS GLAZED BALUSTRADE 1200mm
CON-1	IN-SITU CONCRETE
FEN-1	TIMBER FENCING
GLZ-1/PC-3	CLEAR GLAZING / LIGHT GREY OR SIMILAR
PAV-1	TILED PAVING
PAV-2	COBBLED STONE PAVING OR STAMPED CONCRETE OR SIMILAR
PAV-3	CRUSHED ROCK
REN-1	TEXTURED RENDER FINISH
ST-1	STACKED STONE WALL
TC-1	TIMBER CLADDING OR FC SHEET, OR SIMILAR





Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

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Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

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www.warrenandmahoney.com

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

SITE ACCESS PLAN

Drawing Status

DEVELOPMENT APPLICATION

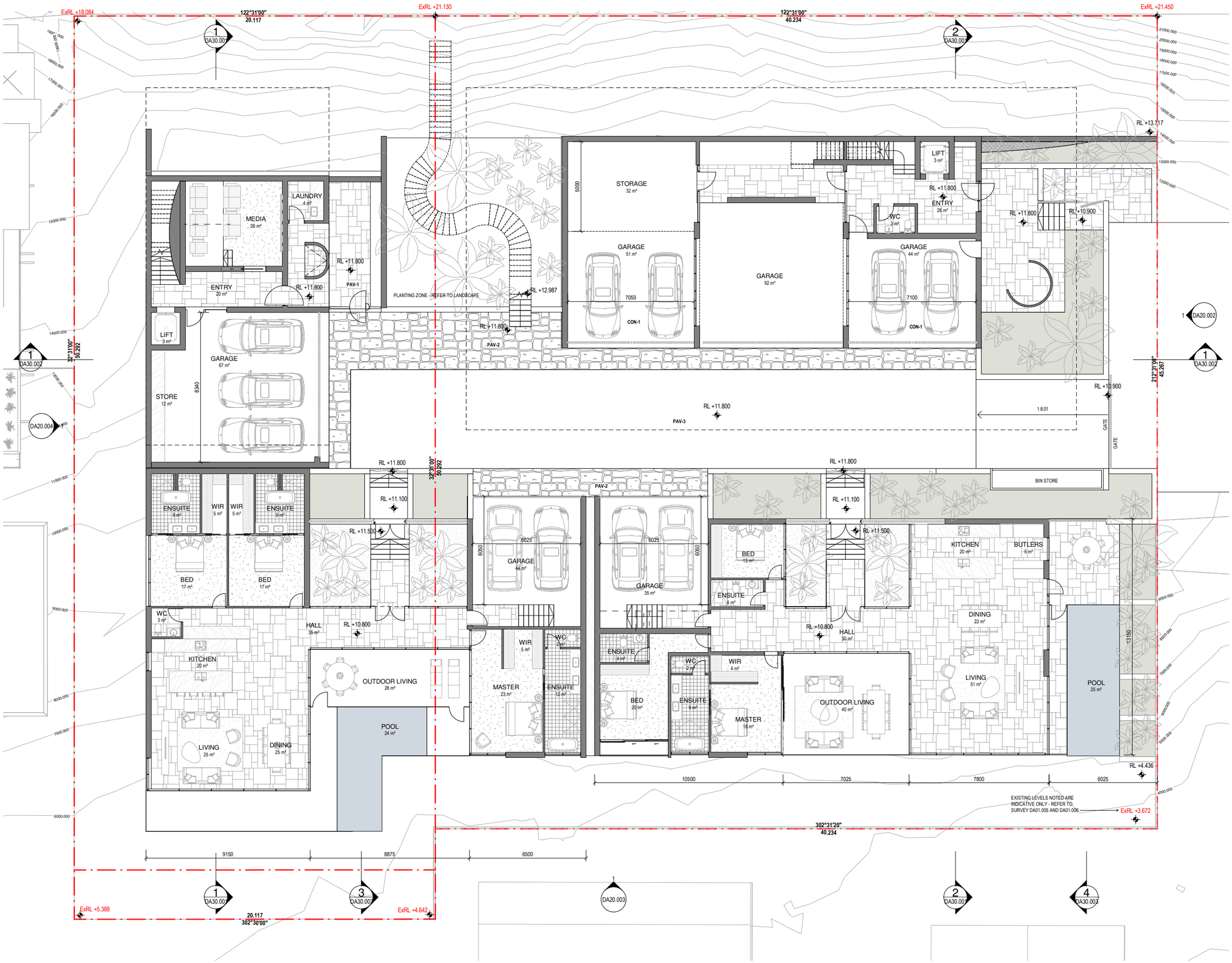
Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA03.002

Revision B

WARREN AND MAHONEY®



Revisions

B	09/09/21	FOR CONSULTANT COORDINATION
C	15/09/21	FOR INFORMATION
D	17/09/21	FOR INFORMATION
E	21/09/21	FOR COORDINATION
F	22/09/21	DRAFT DA
G	04/10/21	ISSUE FOR DA
H	18/02/22	FOR INFORMATION
J	10/03/22	ISSUE RFI 01

Notes

CODE	DESCRIPTION
BAL-1	FRAMELESS GLAZED BALUSTRADE 1200mm
CON-1	IN-SITU CONCRETE
FEN-1	TIMBER FENCING
GLZ-1PC-3	CLEAR GLAZING / LIGHT GREY OR SIMILAR
PAV-1	TILED PAVING
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PAV-3	CRUSHED ROCK
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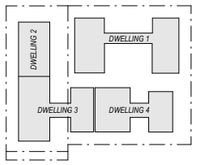
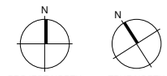
ST-1	STACKED STONE WALL
TC-1	TIMBER CLADDING OR FC SHEET, OR SIMILAR





Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

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GURNER™

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Australia
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Registered Architects and Designers
www.warrenandmahoney.com

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

GROUND FLOOR PLAN

Drawing Status

DEVELOPMENT APPLICATION

Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA010.01

Revision J

WARREN AND MAHONEY®

Revisions

B	09/09/21	FOR CONSULTANT COORDINATION
C	15/09/21	FOR INFORMATION
D	17/09/21	FOR INFORMATION
E	21/09/21	FOR COORDINATION
F	22/09/21	DRAFT DA
G	04/10/21	ISSUE FOR DA
H	18/02/22	FOR INFORMATION
J	10/03/22	ISSUE RFI 01

Notes

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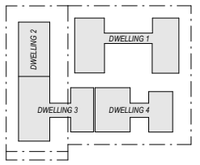

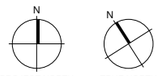

Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

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GURNER™

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Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

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Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

L01 FLOOR PLAN

Drawing Status

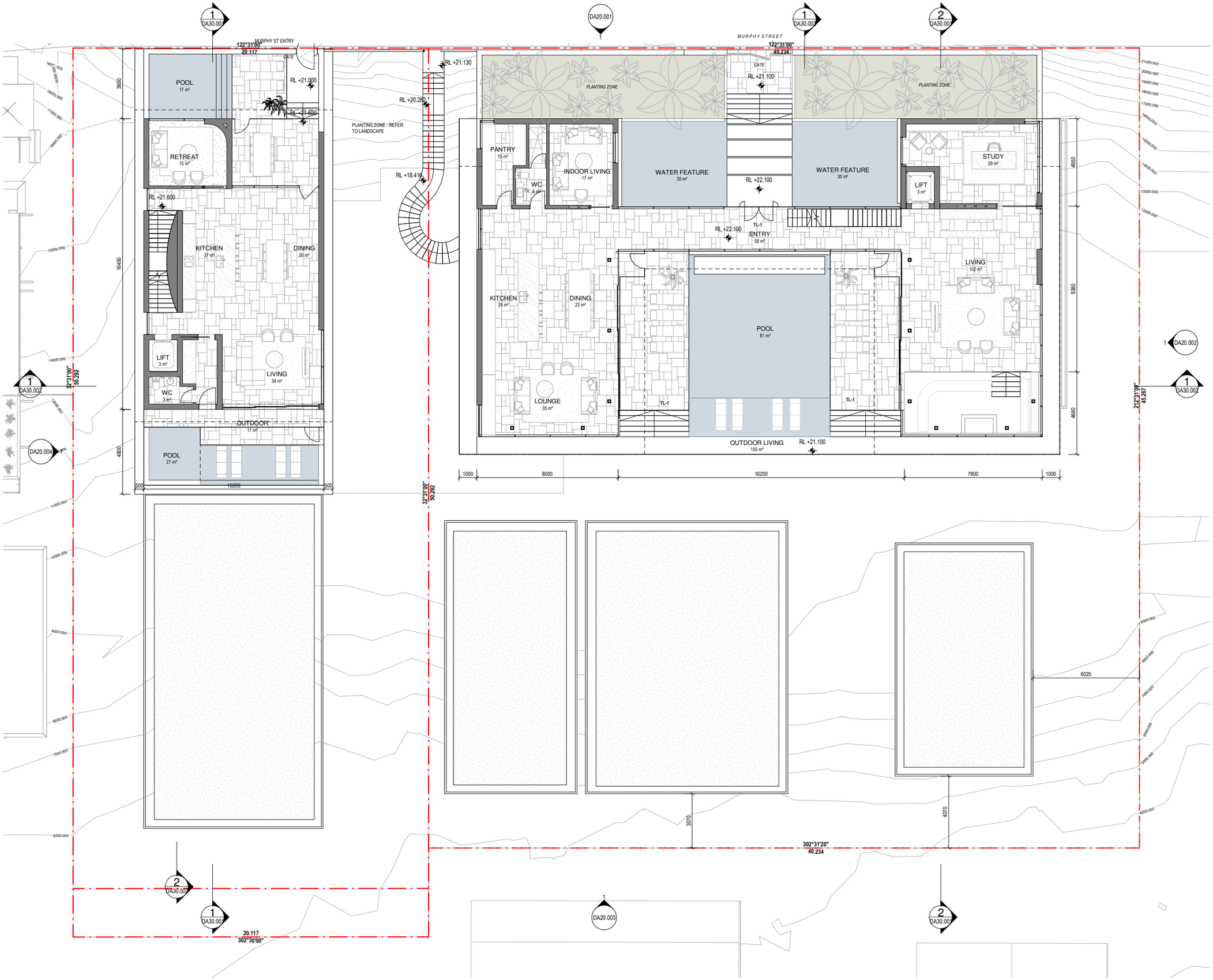
DEVELOPMENT APPLICATION

Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA010.02 **Revision** J

WARREN AND MAHONEY



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Revisions

B	09/09/21	FOR CONSULTANT COORDINATION
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E	21/09/21	FOR COORDINATION
F	22/09/21	DRAFT DA
G	04/10/21	ISSUE FOR DA
H	18/02/22	FOR INFORMATION
J	10/03/22	ISSUE RFI 01

Notes

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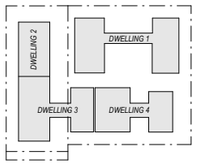

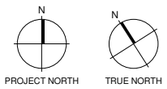

Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

GURNER™

Warren and Mahoney Architects Australia Pty Ltd

Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

Registered Architects and Designers
www.warrenandmahoney.com

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

L02 FLOOR PLAN

Drawing Status

DEVELOPMENT APPLICATION

Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA010.03

Revision J

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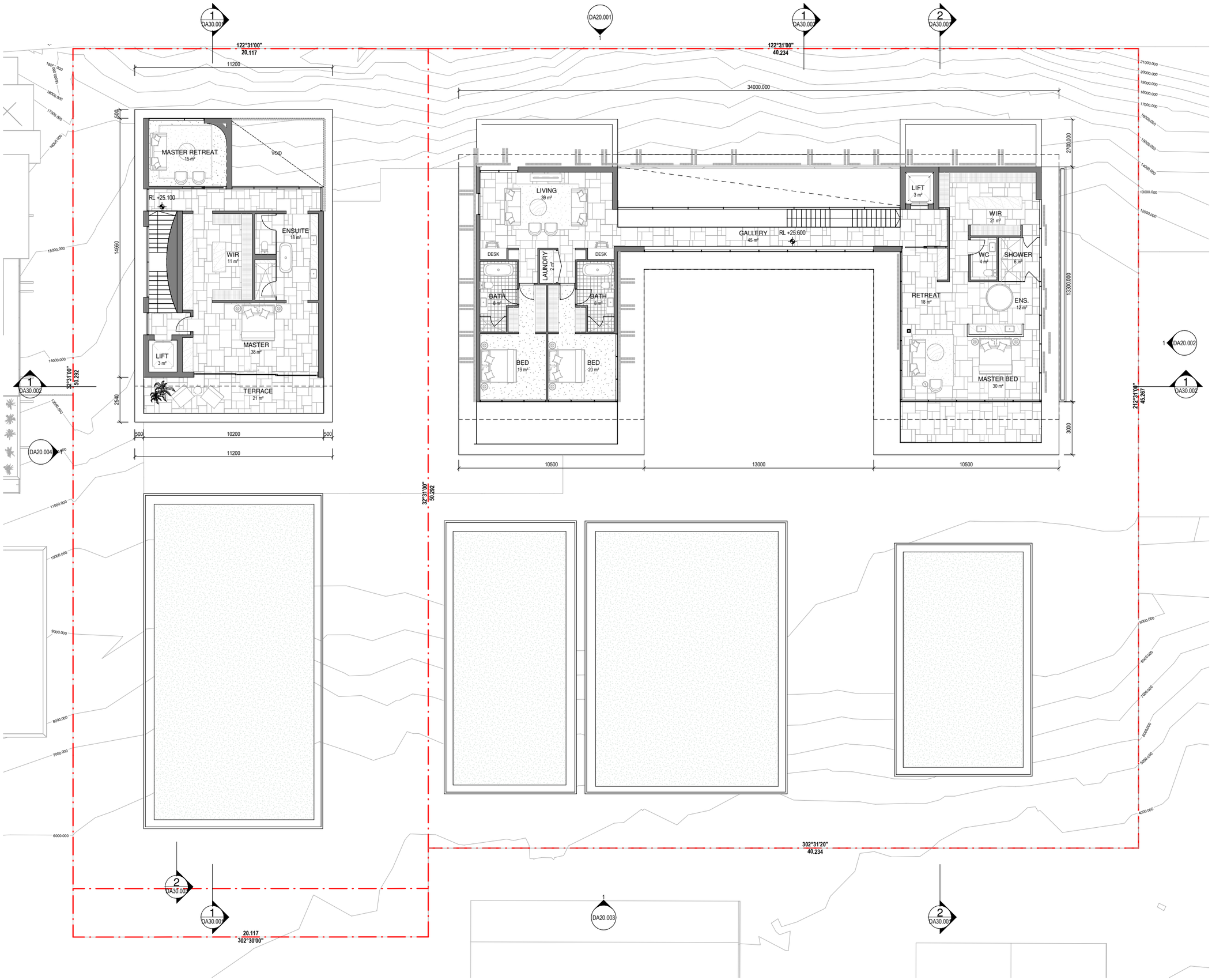

Revisions

B	09/09/21	FOR CONSULTANT COORDINATION
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E	21/09/21	FOR COORDINATION
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G	04/10/21	ISSUE FOR DA
H	18/02/22	FOR INFORMATION
J	10/03/22	ISSUE RFI 01

Notes

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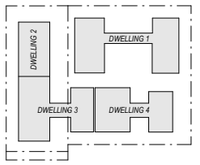

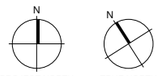

Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

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Warren and Mahoney Architects Australia Pty Ltd

Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

Registered Architects and Designers
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Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

L03 FLOOR PLAN

Drawing Status

DEVELOPMENT APPLICATION

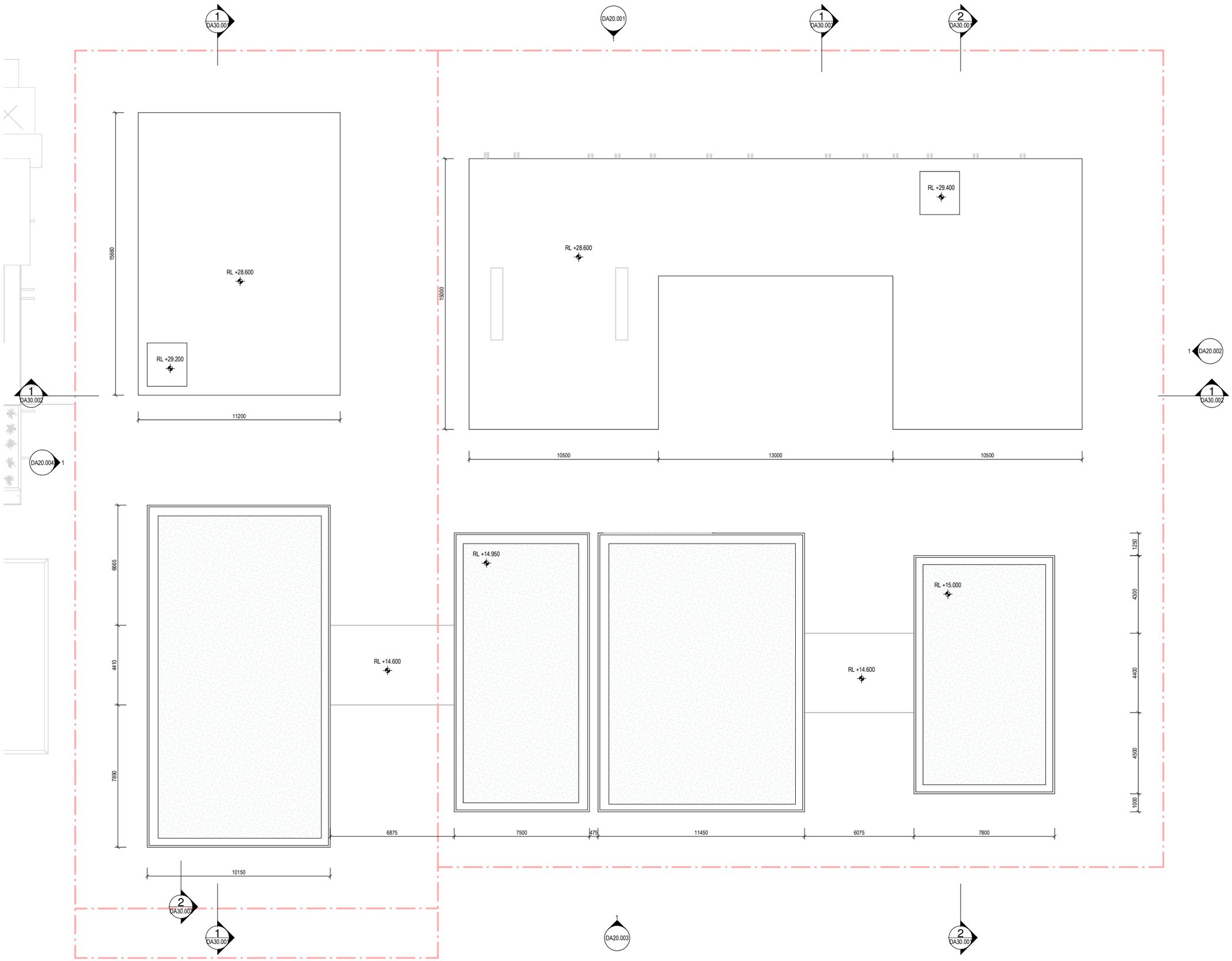
Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA010.04

Revision J

WARREN AND MAHONEY®



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Revisions

A	03/09/21	FOR CLIENT COMMENT
B	15/09/21	FOR INFORMATION
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D	21/09/21	FOR COORDINATION
E	22/09/21	DRAFT DA
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G	18/02/22	FOR INFORMATION
H	10/03/22	ISSUE RFI 01

Notes

CODE	DESCRIPTION
BAL-1	FRAMELESS GLAZED BALUSTRADE 1200mm
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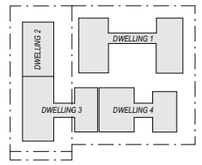
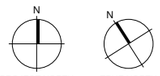




Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

GURNER™

Warren and Mahoney Architects Australia Pty Ltd

Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

Registered Architects and Designers
www.warrenandmahoney.com

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

ROOF PLAN

Drawing Status

DEVELOPMENT APPLICATION

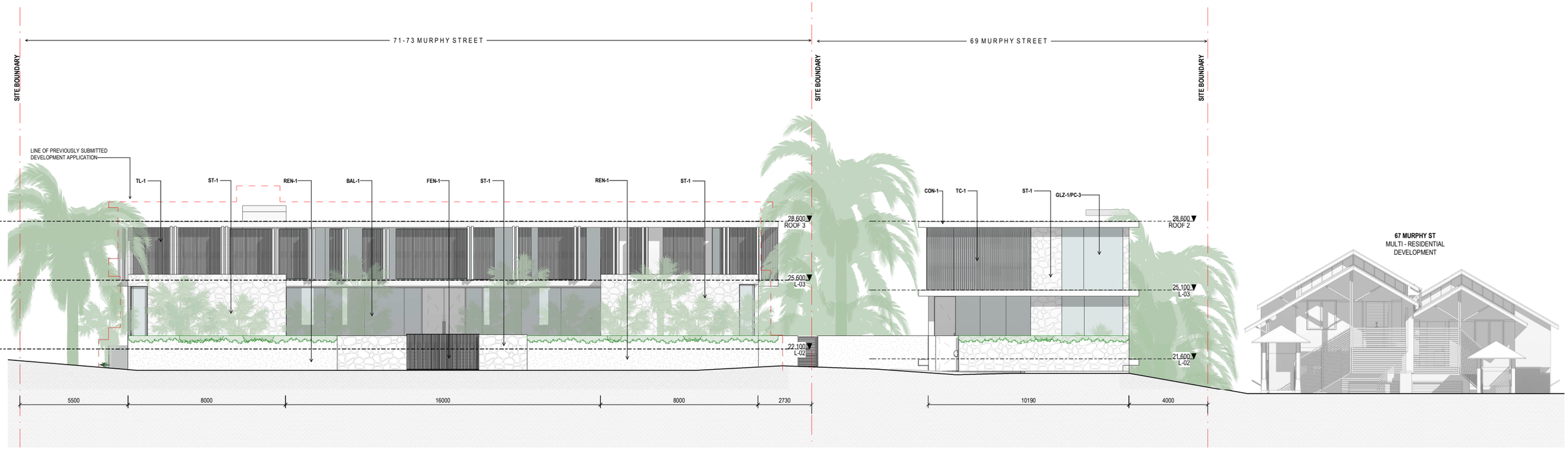
Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA010.05

Revision H

WARREN AND MAHONEY®



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—
Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

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Revisions
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A	03/09/21	FOR CLIENT COMMENT
B	15/09/21	FOR INFORMATION
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D	22/09/21	DRAFT DA
E	04/10/21	ISSUE FOR DA
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G	10/03/22	ISSUE RFI 01

CODE	DESCRIPTION
BAL-1	FRAMELESS GLAZED BALUSTRADE 1200mm
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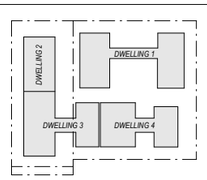
Notes
—

ExRL +00.000 EXISTING RL - REFER TO SURVEY

RL +00.000 PROPOSED LEVEL

INDICATIVE SITE FILL



Consultants
—

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client
—
GURNER TM

GURNER™

Project Title
—
69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title
—
NORTH ELEVATION

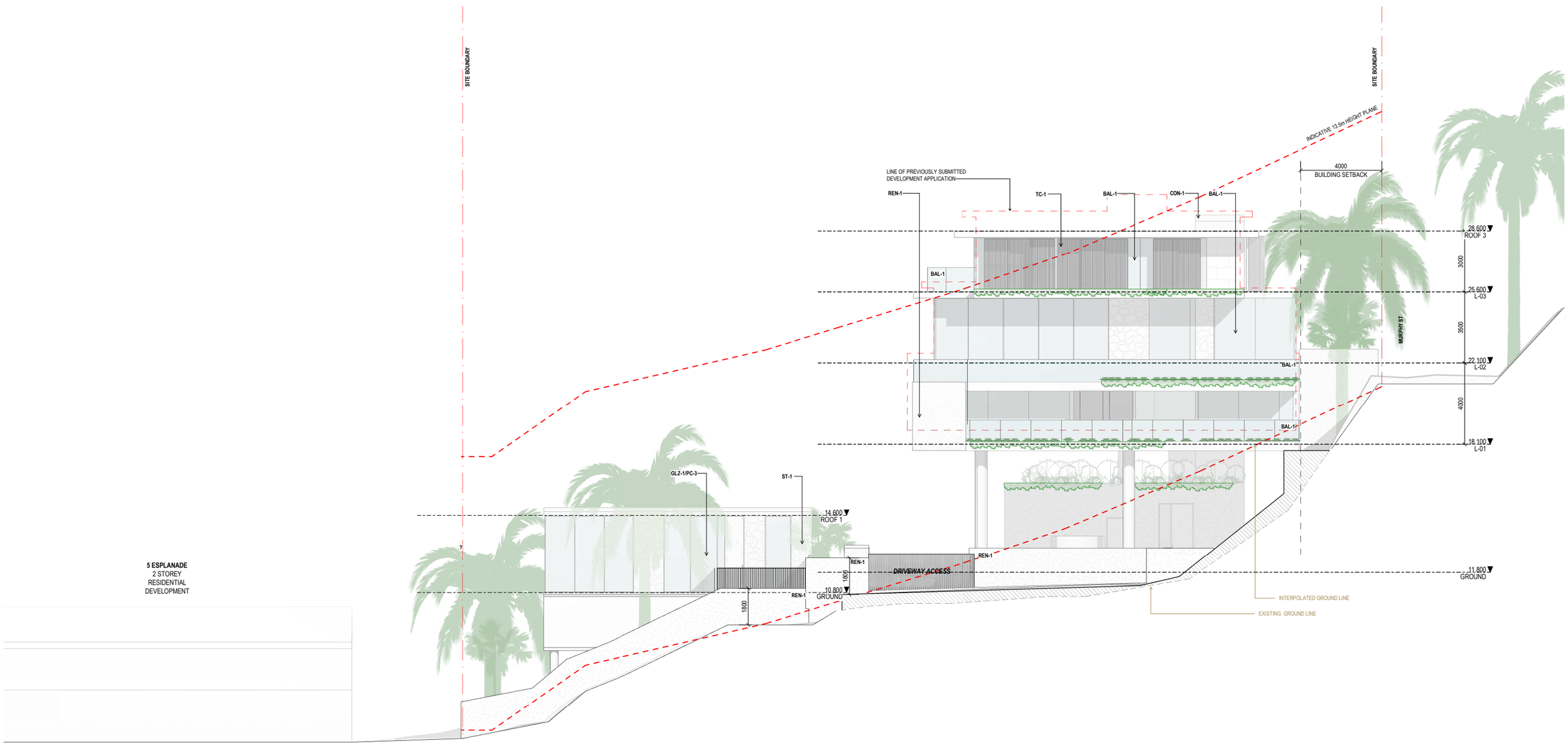
Drawing Status
DEVELOPMENT APPLICATION

Drawing Details
—

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No
—
DA20.001

Revision
G



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Melbourne VIC 3000
Australia
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Revisions

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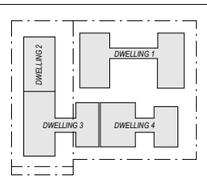
Notes

ExRL +00.000 EXISTING RL - REFER TO SURVEY
RL +00.000 PROPOSED LEVEL
INDICATIVE SITE FILL



Consultants

Project Manager
Structural Engineer
Mechanical Engineer
Fire Engineer
Electrical Engineer

Client

GURNER TM

GURNER™

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

EAST ELEVATION

Drawing Status

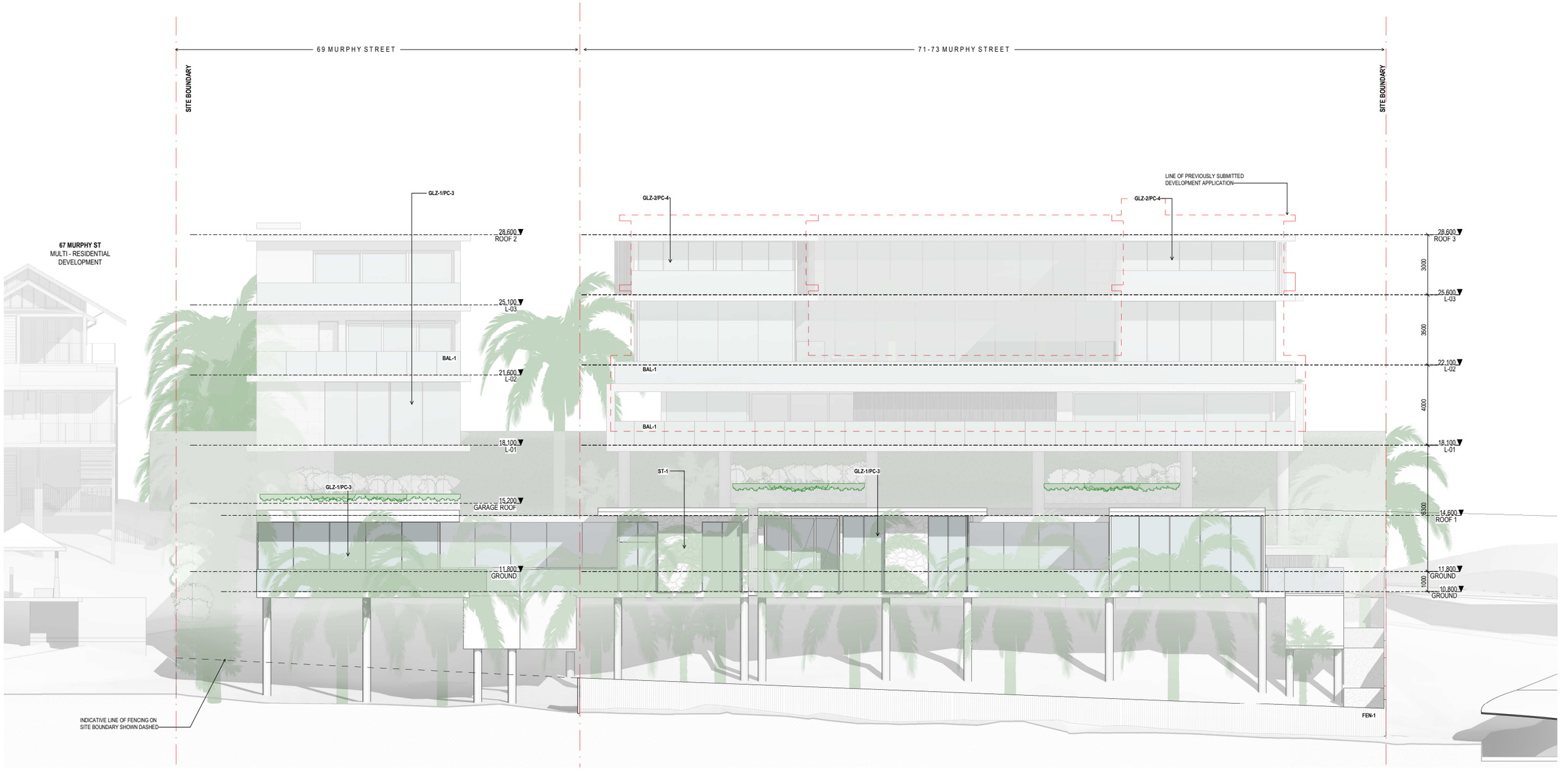
DEVELOPMENT APPLICATION

Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No DA20.002

Revision G



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Notes
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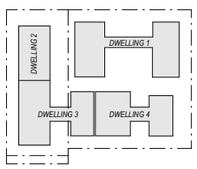


Consultants
—
Project Manager
Structural Engineer
Mechanical Engineer
Fire Engineer
Electrical Engineer

Client
—
GURNER TM
GURNER™

Project Title
—
69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title
—
SOUTH ELEVATION

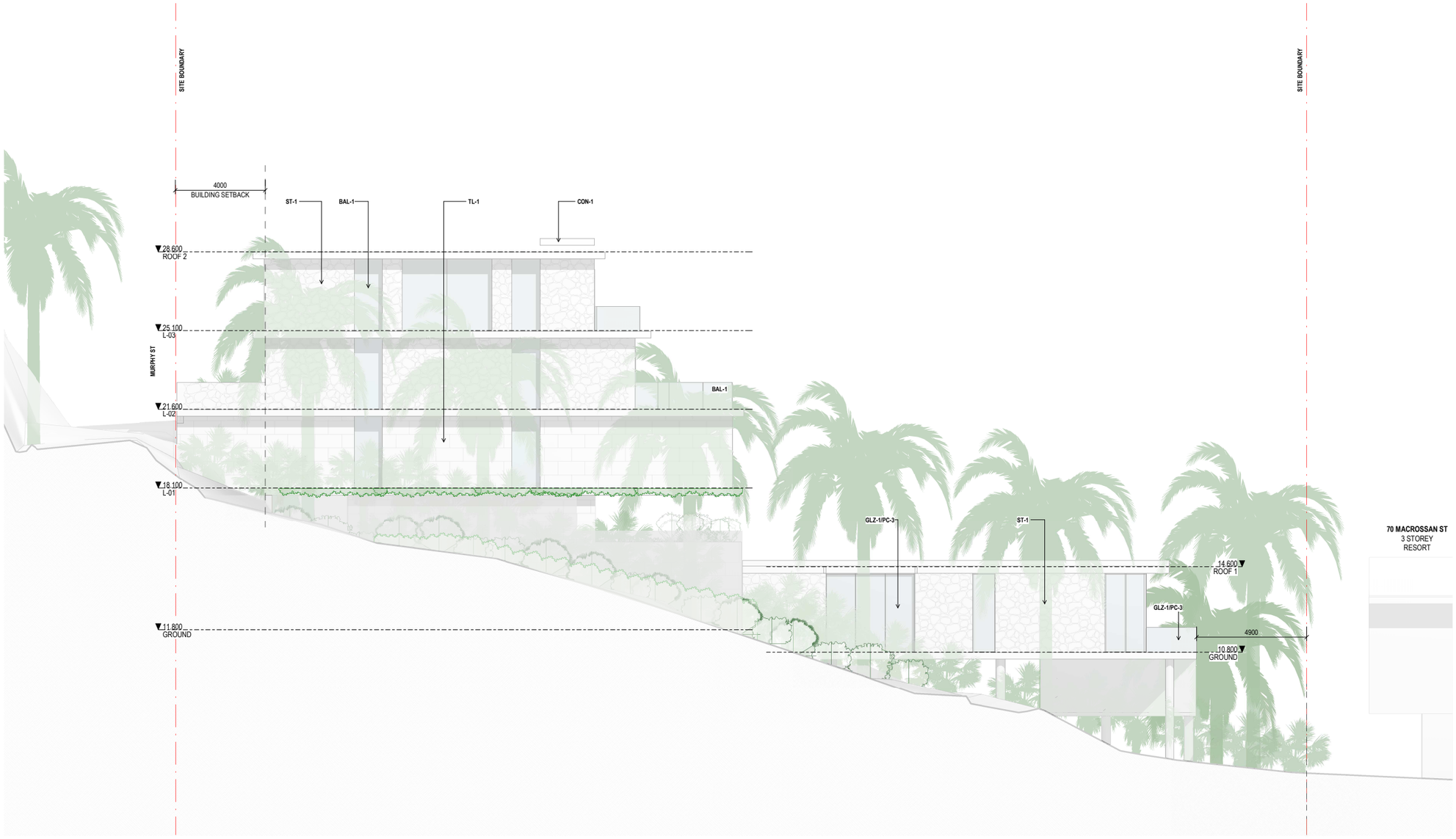
Drawing Status
DEVELOPMENT APPLICATION

Drawing Details
—

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No
—
DA20.003

Revision
G



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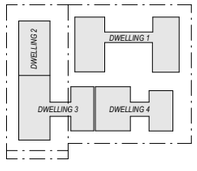
B	15/09/21	FOR INFORMATION
C	17/09/21	FOR INFORMATION
D	22/09/21	DRAFT DA
E	04/10/21	ISSUE FOR DA
F	10/03/22	ISSUE RFI 01

CODE	DESCRIPTION
BAL-1	FRAMELESS GLAZED BALUSTRADE 1200mm
CON-1	IN-SITU CONCRETE
FEN-1	TIMBER FENCING
GLZ-1/PC-3	CLEAR GLAZING / LIGHT GREY OR SIMILAR
PAV-1	TILED PAVING
PAV-2	COBBLED STONE PAVING OR STAMPED CONCRETE OR SIMILAR
PAV-3	CRUSHED ROCK
REN-1	TEXTURED RENDER FINISH
ST-1	STACKED STONE WALL
TC-1	TIMBER CLADDING OR FC SHEET, OR SIMILAR

Notes



Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

GURNER™

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

WEST ELEVATION

Drawing Status

DEVELOPMENT APPLICATION

Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No

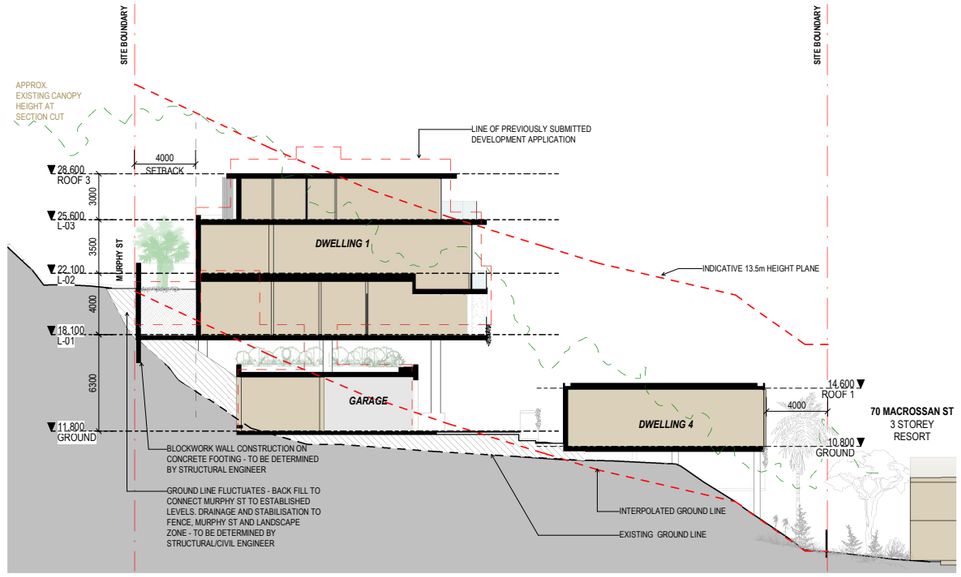
DA20.004

Revision

F

SECTION 1

1 : 200



SECTION 2

1 : 200

Warren and Mahoney Architects Australia Pty Ltd
—
Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

—
Registered Architects and Designers
www.warrenandmahoney.com
WARREN AND MAHONEY®

Revisions

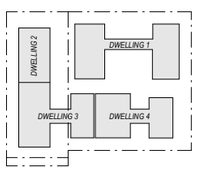
B	09/09/21	FOR CONSULTANT COORDINATION
C	15/09/21	FOR INFORMATION
D	17/09/21	FOR INFORMATION
E	21/09/21	FOR COORDINATION
F	22/09/21	DRAFT DA
G	04/10/21	ISSUE FOR DA
H	18/02/22	FOR INFORMATION
J	10/03/22	ISSUE RFI 01

Notes

ExRL +00.000 — EXISTING RL - REFER TO SURVEY

RL +00.000 — PROPOSED LEVEL

INDICATIVE SITE FILL



Consultants

Project Manager

Structural Engineer

Mechanical Engineer

Fire Engineer

Electrical Engineer

Client

GURNER TM

GURNER™

Project Title

69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title

TYPICAL SECTIONS

Drawing Status

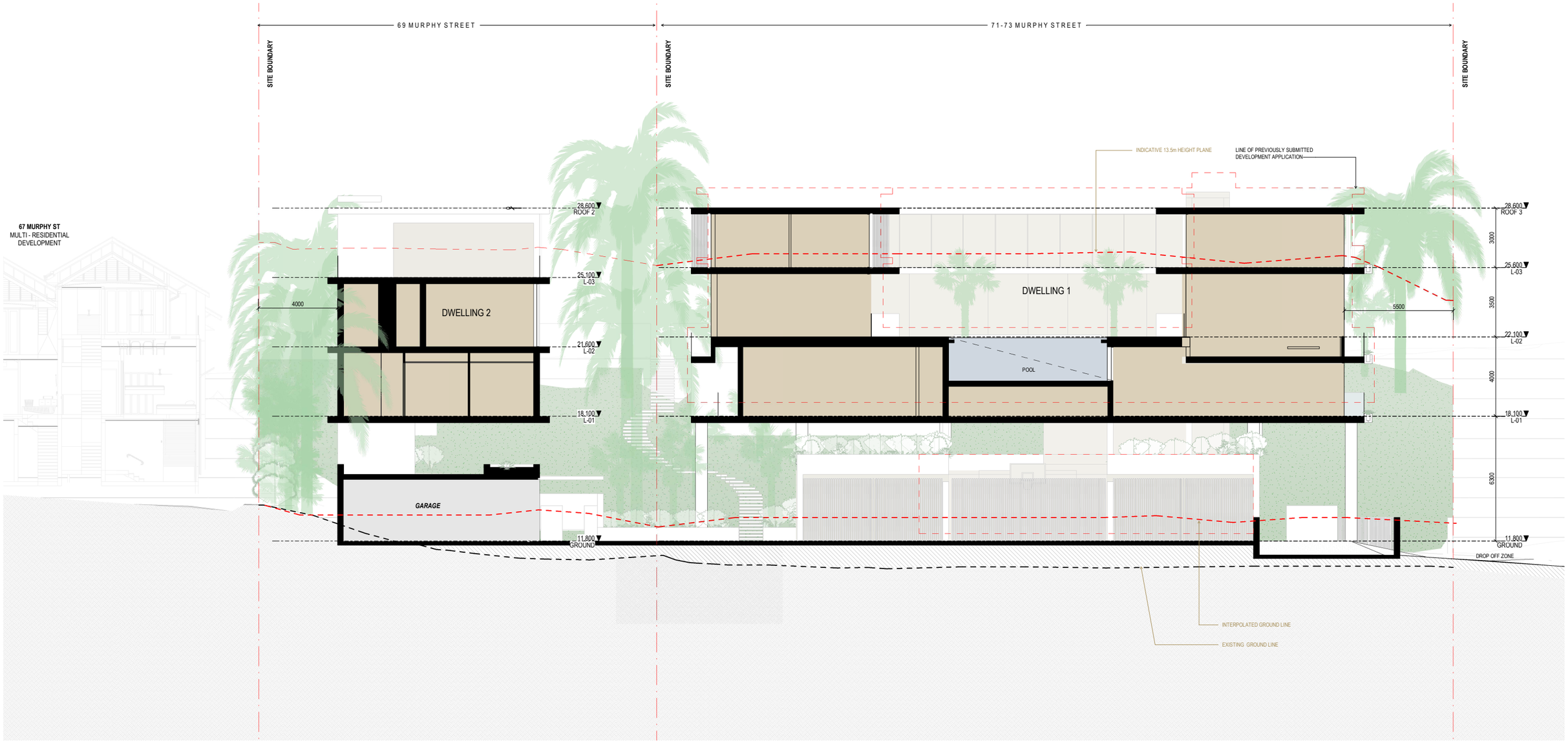
DEVELOPMENT APPLICATION

Drawing Details

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No — DA30.001

Revision — J



Warren and Mahoney Architects Australia Pty Ltd
—
Level 4, 141 Flinders Lane
Melbourne VIC 3000
Australia
Phone + 61 3 8547 6977

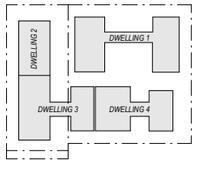
—
Registered Architects and Designers
www.warrenandmahoney.com
WARREN AND MAHONEY®

Revisions
—

A	03/09/21	FOR CLIENT COMMENT
B	15/09/21	FOR INFORMATION
C	17/09/21	FOR INFORMATION
D	22/09/21	DRAFT DA
E	04/10/21	ISSUE FOR DA
F	10/03/22	ISSUE RFI 01

Notes
—

ExRL +00.000 EXISTING RL - REFER TO SURVEY
RL +00.000 PROPOSED LEVEL
INDICATIVE SITE FILL



Consultants
—
Project Manager
Structural Engineer
Mechanical Engineer
Fire Engineer
Electrical Engineer

Client
—
GURNER TM
GURNER™

Project Title
—
69-73 MURPHY STREET
PORT DOUGLAS

Drawing Title
—
TYPICAL SECTIONS

Drawing Status
DEVELOPMENT APPLICATION

Drawing Details
—

Scale	As indicated@ A1
Date	10/03/22
Job No	9663
Drawn	SG
Checked	ND

Drawing No
—
DA30.002

Revision
F

Appendix B – Survey Plan

LEGEND

Bollard		Telstra Pit	
Electrical Pillar		Fire Hydrant	
Sewer Manhole		Stop Valve	
Change of Grade		Field Inlet Pit	
Top of Bank		Drainage Manhole	
Toe of Bank		Gas Valve	
Edge of Track		Light Pole	
Edge of Bitumen		Power Pole	
Road Crown		Sign	
IL of Conc. Lined Drain		Overhead Electricity	
Back of Kerb		Underground Electricity (from records)	
Edge of Vegetation		Underground Telstra (from records)	
Edge of Garden		Underground Water (from records)	
Fence		Underground Sewer (from records)	
Underground Drainage		Underground Gas (from records)	

IMPORTANT NOTE

1. This plan was prepared for the sole purposes of the client for the specific purpose of producing a detail plan. This plan is strictly limited to the purpose and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter. The plan is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party") and may not be relied on by Third Party.

2. RPS Australia East Pty Ltd will not be liable (in negligence or otherwise) for any direct or indirect loss, damage, liability or claim arising out of or incidental to:
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   C. any inaccuracies or other faults with information or data sourced from a Third Party;
   D. RPS Australia East Pty Ltd relying on surface indicators that are incorrect or inaccurate;
   E. the Client or any Third Party not verifying information in this plan where recommended by RPS Australia East Pty Ltd;
   F. lodgement of this plan with any local authority against the recommendation of RPS Australia East Pty Ltd;
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4. Scale shown is correct for the original plan and any copies of this plan should be verified by checking against the bar scale.

5. The title boundaries as shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on this plan. Where such records either do not exist or are inadequate a notation has been made hereon.

6. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

NOTES

Level Datum: AHD
Origin of Levels: PM123510
RL: 5.659

Contour Interval: 0.2
Index: 1.0

Origin of Coordinates: PM123510
E: 2037.072
N: 4970.476

Meridian: SP183017

Field/Level Book: N/A

0 10 20
metres

SCALE 1:200 IS APPLICABLE ONLY TO THE ORIGINAL SHEET SIZE (A1).
(1:400 @ A3)

AMENDMENTS	PROJECT MANAGER	DGP	
	SURVEYED	MJW	30/09/20
	DRAWN	1/10/20	
CHECKED	CAD REF	147352-105.mjo	SHEET 1 OF SHEETS 2
DRAFTING CHECKED			SHEET SIZE A1

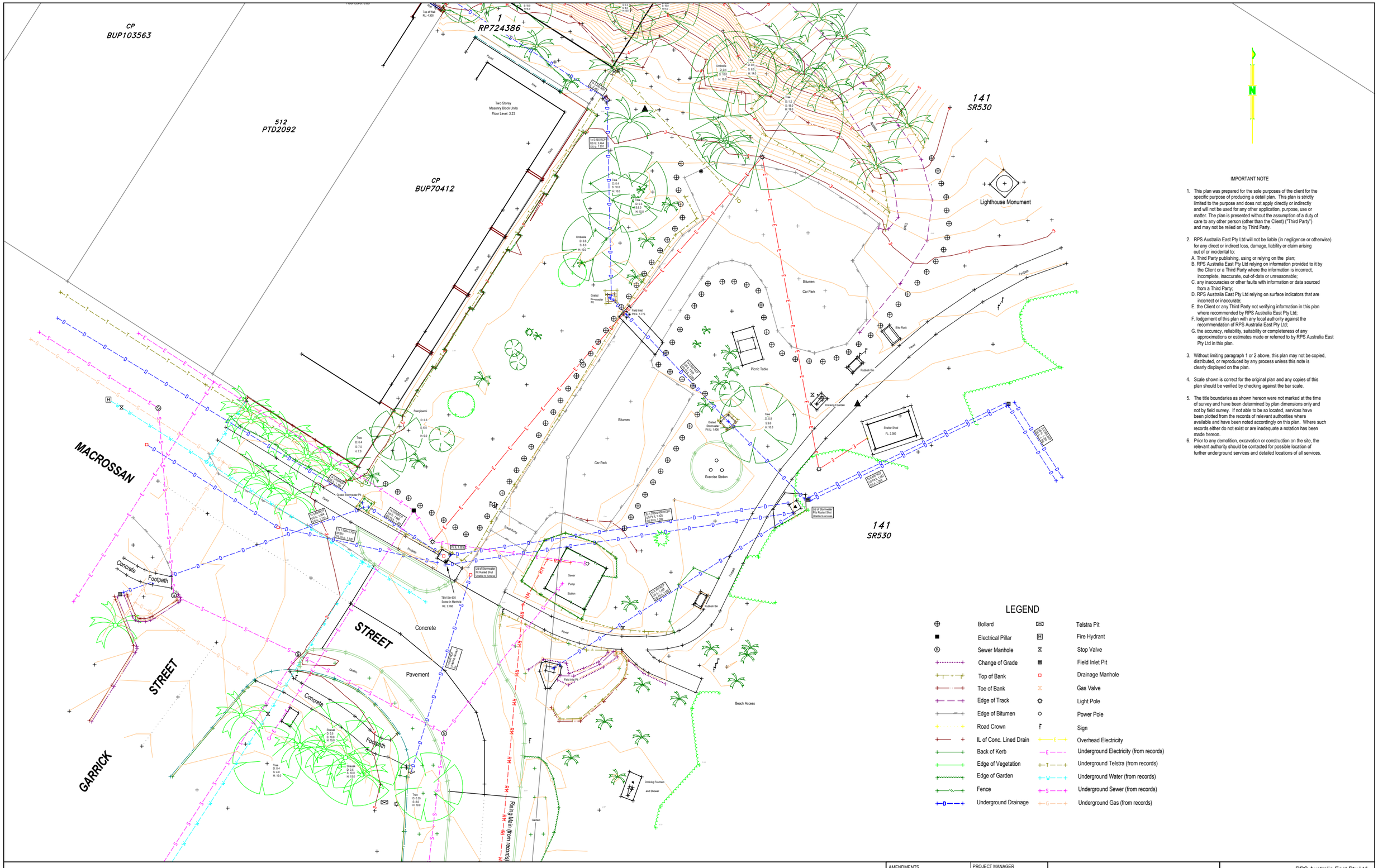
Gurner TM Nominees Pty Ltd

Detail and Contour Survey
Lot 2 on RP724386 and Lot 516 on PTD2094
Cnr Murphy Street and The Esplanade
Port Douglas
Queensland

RPS Australia East Pty Ltd
ACN 140 292 762
5954 Captain Cook Highway
Port Douglas Qld 4877
PO Box 91
Port Douglas Qld 4877

T +61 7 4098 1148
F +61 7 4031 2942
W rpsgroup.com.au

SCALE	DATE	DRAWING NO.	ISSUE
1:200	1/10/20	147352-2	



LEGEND

- Bollard
- Electrical Pillar
- Sewer Manhole
- Change of Grade
- Top of Bank
- Toe of Bank
- Edge of Track
- Edge of Bitumen
- Road Crown
- IL of Conc. Lined Drain
- Back of Kerb
- Edge of Vegetation
- Edge of Garden
- Fence
- Underground Drainage
- Telstra Pit
- Fire Hydrant
- Stop Valve
- Field Inlet Pit
- Drainage Manhole
- Gas Valve
- Light Pole
- Power Pole
- Sign
- Overhead Electricity
- Underground Electricity (from records)
- Underground Telstra (from records)
- Underground Water (from records)
- Underground Sewer (from records)
- Underground Gas (from records)

IMPORTANT NOTE

1. This plan was prepared for the sole purposes of the client for the specific purpose of producing a detail plan. This plan is strictly limited to the purpose and does not apply directly or indirectly and will not be used for any other application, purpose, use or matter. The plan is presented without the assumption of a duty of care to any other person (other than the Client) ("Third Party") and may not be relied on by Third Party.

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   A. Third Party publishing, using or relying on the plan;
   B. RPS Australia East Pty Ltd relying on information provided to it by the Client or a Third Party where the information is incorrect, incomplete, inaccurate, out-of-date or unreasonable;
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   D. RPS Australia East Pty Ltd relying on surface indicators that are incorrect or inaccurate;
   E. the Client or any Third Party not verifying information in this plan where recommended by RPS Australia East Pty Ltd;
   F. lodgement of this plan with any local authority against the recommendation of RPS Australia East Pty Ltd;
   G. the accuracy, reliability, suitability or completeness of any approximations or estimates made or referred to by RPS Australia East Pty Ltd in this plan.

3. Without limiting paragraph 1 or 2 above, this plan may not be copied, distributed, or reproduced by any process unless this note is clearly displayed on the plan.

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5. The title boundaries as shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on this plan. Where such records either do not exist or are inadequate a notation has been made hereon.

6. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

NOTES

Level Datum: AHD
Origin of Levels: PM123510
RL: 5.659

Contour Interval: 0.2
Index: 1.0

Origin of Coordinates: PM123510
E: 2037.072
N: 4970.476

Meridian: SP183017

Field/Level Book: N/A

0 10 20
metres

SCALE 1:200 IS APPLICABLE ONLY
TO THE ORIGINAL SHEET SIZE (A1).
(1:400 @ A3)

AMENDMENTS	PROJECT MANAGER: DGP		
	SURVEYED: MJW 30/09/20		
	DRAWN: MJW		
CHECKED	CAD REF: 147352-105.mjo	SHEET OF SHEETS: 2 OF 2	
DRAFTING CHECKED		SHEET SIZE: A1	

Gurner TM Nominees Pty Ltd

Detail and Contour Survey
Lot 2 on RP724386 and Lot 516 on PTD2094
Cnr Murphy Street and The Esplanade
Port Douglas
Queensland

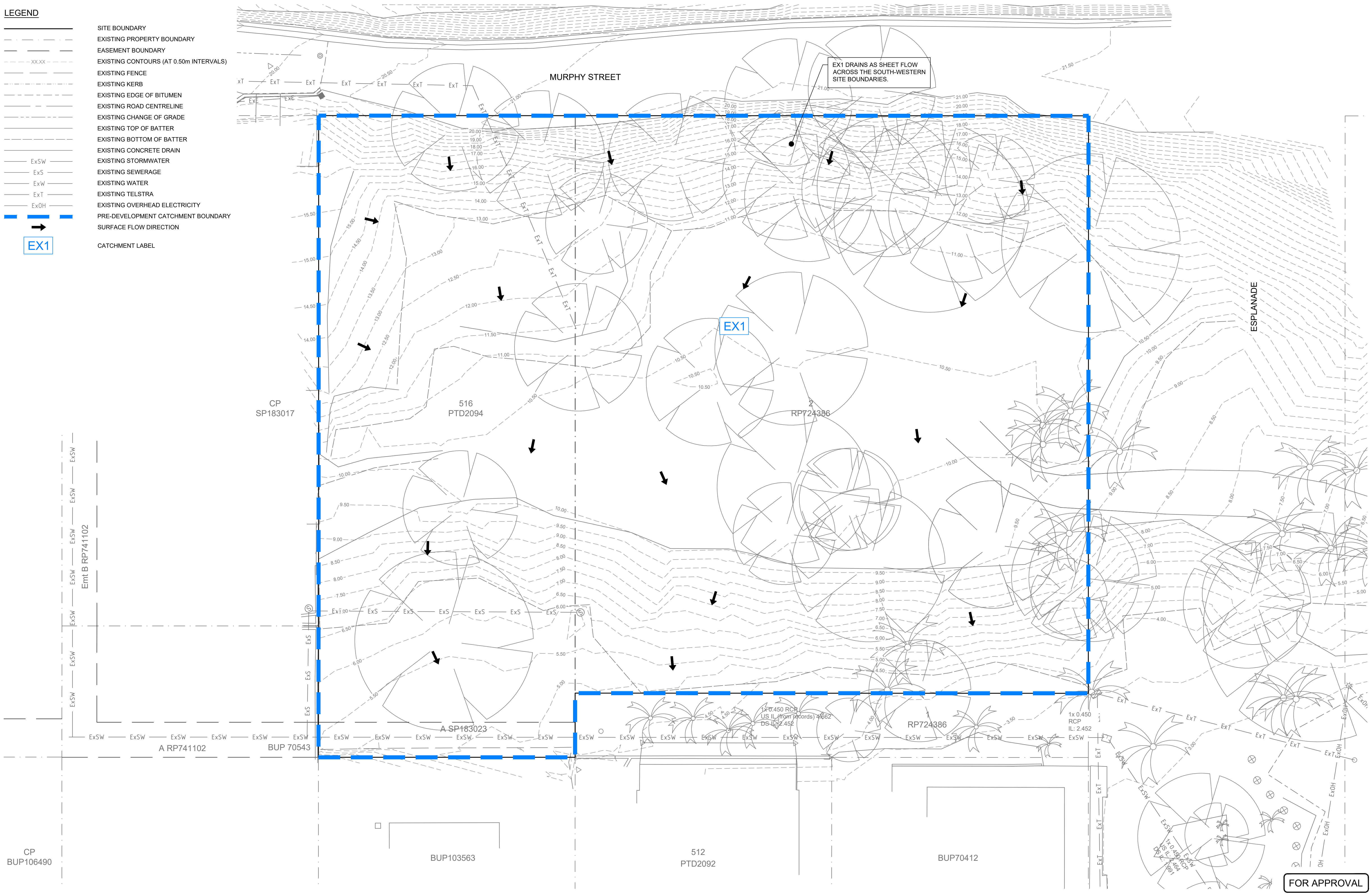
RPS Australia East Pty Ltd
ACN 140 292 762

5954 Captain Cook Highway
Port Douglas Qld 4877
PO Box 91
Port Douglas Qld 4877

T +61 7 4098 1148
F +61 7 4031 2942
W rpsgroup.com.au

SCALE	DATE	DRAWING NO.	ISSUE
1:200	1/10/20	147352-2	

Appendix C – Civil Works Drawings



REV	DESCRIPTION	DATE	DRAWN	APPROVED
D	ISSUED FOR APPROVAL - UPDATED LAYOUT	11.03.22	CF	
C	ISSUED FOR APPROVAL - UPDATED LAYOUT	19.11.20	IE	
B	ISSUED FOR APPROVAL	29.10.20	IE	
A	PRELIMINARY ISSUE	23.10.20	IE	

NORTH POINT: N

ARCHITECT: WOLVERIDGE ARCHITECTS

CLIENT: GURNER TM

Inertia
ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road
Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS: 0 3 6 9m
SCALE 1:150 @ A1

PROJECT: PROPOSED DEVELOPMENT 69-73 MURPHY ST, PORT DOUGLAS, QLD, 4877.

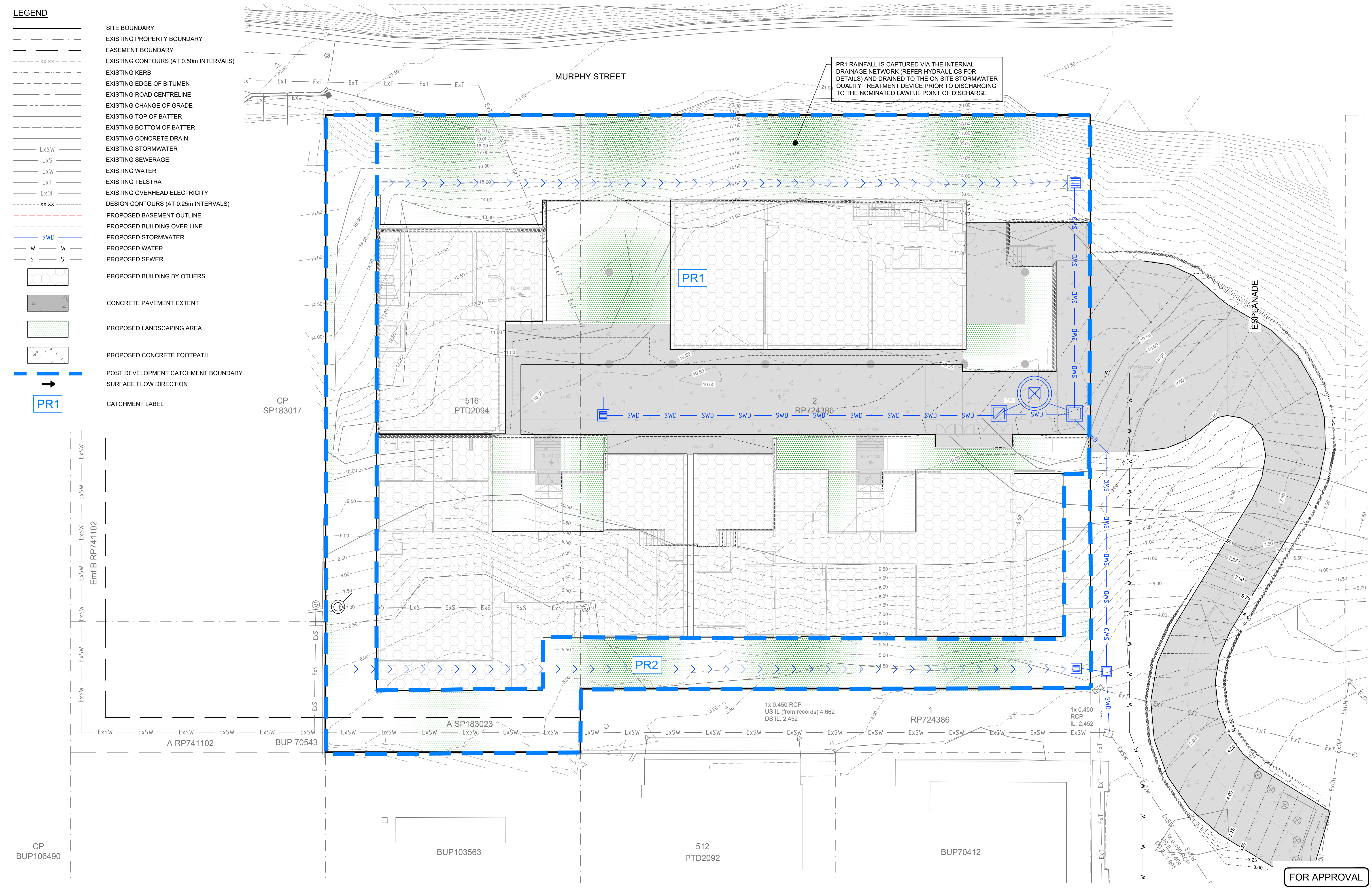
DRAWING TITLE: STORMWATER DRAINAGE PRE DEVELOPMENT CATCHMENT LAYOUT PLAN

DESIGNED: IERNST
APPROVED:
RPEQ No.

JOB No. 9283

DWG. No. SK001

REVISION D


LEGEND
SITE BOUNDARY
EXISTING PROPERTY BOUNDARY
EASEMENT BOUNDARY
EXISTING CONTOURS (AT 0.50m INTERVALS)
EXISTING KERB
EXISTING EDGE OF BITUMEN
EXISTING ROAD CENTRELINE
EXISTING CHANGE OF GRADE
EXISTING TOP OF BATTER
EXISTING BOTTOM OF BATTER
EXISTING CONCRETE DRAIN
EXISTING STORMWATER
EXISTING SEWERAGE
EXISTING WATER
EXISTING TELSTRA
EXISTING OVERHEAD ELECTRICITY
DESIGN CONTOURS (AT 0.25m INTERVALS)
PROPOSED BASEMENT OUTLINE
PROPOSED BUILDING OVER LINE
PROPOSED STORMWATER
PROPOSED WATER
PROPOSED SEWER
PROPOSED BUILDING BY OTHERS
CONCRETE PAVEMENT EXTENT
PROPOSED LANDSCAPING AREA
PROPOSED CONCRETE FOOTPATH
POST DEVELOPMENT CATCHMENT BOUNDARY
SURFACE FLOW DIRECTION
PR1
CATCHMENT LABEL
MURPHY STREET
PR1 RAINFALL IS CAPTURED VIA THE INTERNAL DRAINAGE NETWORK (REFER HYDRAULICS FOR DETAILS) AND DRAINED TO THE ON SITE STORMWATER QUALITY TREATMENT DEVICE PRIOR TO DISCHARGING TO THE NOMINATED LAWFUL POINT OF DISCHARGE
PR1
PR2
ESPLANADE
CP
SP183017
516
PTD2094
2
RP724386
Emt B RP741102
A RP741102
BUP 70543
A SP183023
1x 0.450 RCP
US IL (from records) 4.662
DS IL: 2.452
1
RP724386
1x 0.450
RCP
IL: 2.452
CP
BUP106490
BUP103563
512
PTD2092
BUP70412
FOR APPROVAL

REV	DESCRIPTION	DATE	DRAWN	APPROVED
D	ISSUED FOR APPROVAL - UPDATED LAYOUT	11.03.22	CF	
C	ISSUED FOR APPROVAL	19.11.20	IE	
B	ISSUED FOR APPROVAL	29.10.20	IE	
A	PRELIMINARY ISSUE	23.10.20	IE	

NORTH POINT:

ARCHITECT: WOLVERIDGE ARCHITECTS

CLIENT: GURNER TM

Inertia

ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road
Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS: 0 3 6 9m
SCALE 1:150 @ A1

PROJECT: PROPOSED DEVELOPMENT 69-73 MURPHY ST, PORT DOUGLAS, QLD, 4877.

DRAWING TITLE: STORMWATER DRAINAGE POST DEVELOPMENT CATCHMENT LAYOUT PLAN

DESIGNED: IERNST
APPROVED:
RPEQ No.

JOB No. 9283

DWG. No. SK002

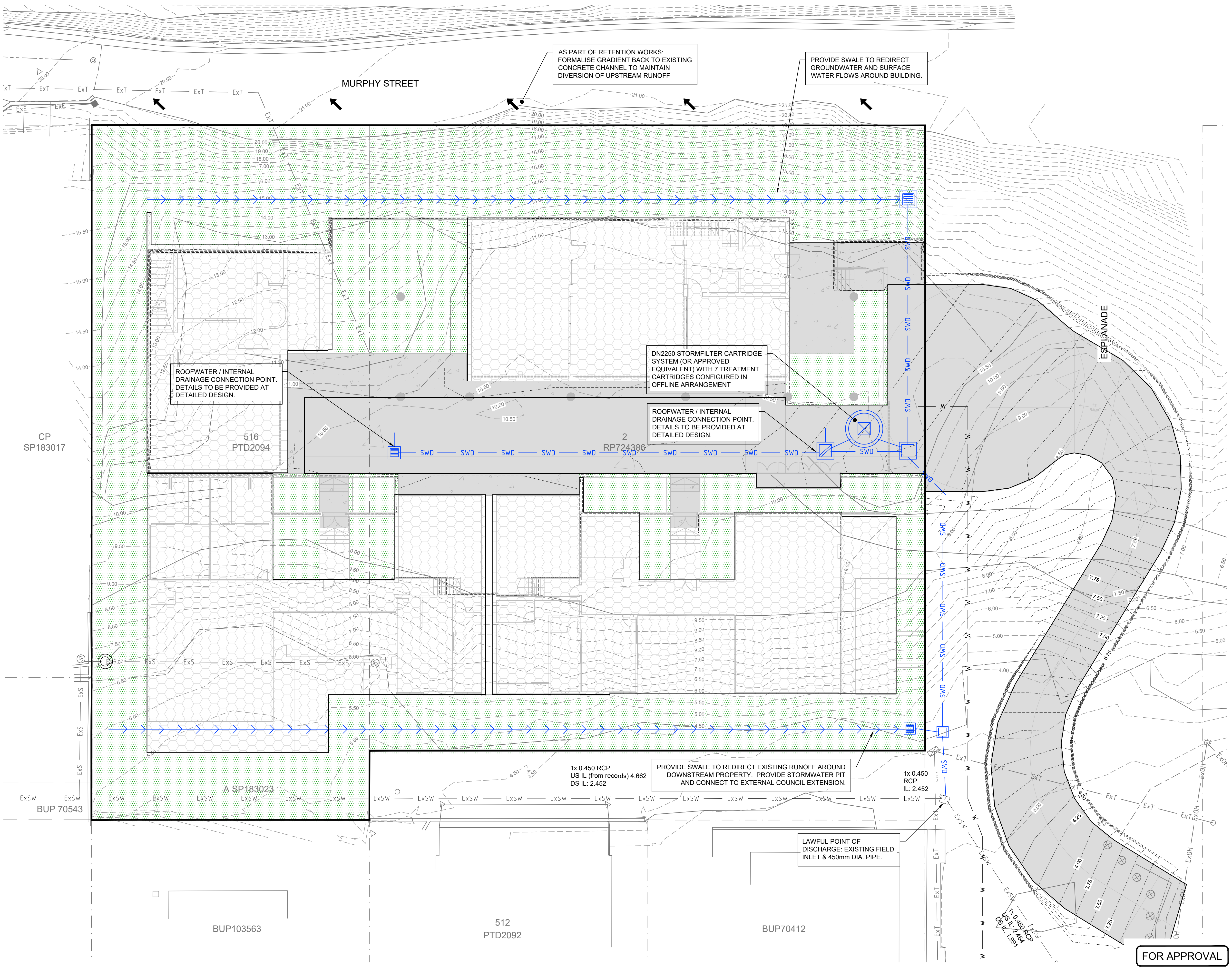
REVISION D

LEGEND

	SITE BOUNDARY
	EXISTING PROPERTY BOUNDARY
	EASEMENT BOUNDARY
XX.XX	EXISTING CONTOURS (AT 0.50m INTERVALS)
	EXISTING KERB
	EXISTING EDGE OF BITUMEN
	EXISTING ROAD CENTRELINE
	EXISTING CHANGE OF GRADE
	EXISTING TOP OF BATTER
	EXISTING BOTTOM OF BATTER
	EXISTING CONCRETE DRAIN
ExSW	EXISTING STORMWATER
ExS	EXISTING SEWERAGE
ExW	EXISTING WATER
ExT	EXISTING TELSTRA
ExOH	EXISTING OVERHEAD ELECTRICITY
XX.XX	DESIGN CONTOURS (AT 0.25m INTERVALS)
	PROPOSED BASEMENT OUTLINE
	PROPOSED BUILDING OVER LINE
SWD	PROPOSED STORMWATER
W W	PROPOSED WATER
S S	PROPOSED SEWER
	SURFACE FLOW DIRECTION
	PROPOSED BUILDING BY OTHERS
	CONCRETE PAVEMENT EXTENT
	PROPOSED LANDSCAPING AREA
	PROPOSED CONCRETE FOOTPATH

DRAINAGE NOTES

1. ALL SURFACE DRAINAGE PIPES ARE uPVC SN8 UNLESS NOTED OTHERWISE.
2. ALL uPVC PIPE CONNECTIONS ARE BENDS AND ARE TO BE CONSTRUCTED USING PRODUCTS READILY AND CURRENTLY AVAILABLE ON THE MARKET.
3. REFER HYDRAULICS DESIGN DRAWINGS FOR DETAILS OF ROOFWATER PIPES.
4. ALL SETTING OUT IS THE RESPONSIBILITY OF THE CONTRACTOR. PRIOR TO WORKS COMMENCING ON SITE, THE SUPERINTENDENT'S SURVEYOR SHALL PEG ALL ALLOTMENT BOUNDARIES, PROVIDE COORDINATE INFORMATION TO THESE PEGS AND PLACE BENCH MARKS. THE CONTRACTOR SHALL SET OUT THE WORKS FROM AND MAINTAIN THESE PEGS.
5. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF SERVICE CONDUITS WITH THE SUPERINTENDENT PRIOR TO LAYING STORMWATER DRAINAGE. ALL TRENCH EXCAVATION AND CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 2011.
6. REMOVE ANY REDUNDANT DRAINAGE OUTLETS FROM THE KERB AND CHANNEL INCLUDING ANY ASSOCIATED PIPE WORK ACROSS THE FOOTWAY AND REINSTATE THE KERB AND CHANNEL AND THE FOOTWAY AREA IN ACCORDANCE WITH THE COUNCIL GUIDELINES.



FOR APPROVAL

REV	DESCRIPTION	DATE	DRAWN	APPROVED
D	ISSUED FOR APPROVAL - UPDATED LAYOUT	11.03.22	CF	
C	ISSUED FOR APPROVAL	19.11.20	IE	
B	ISSUED FOR APPROVAL	29.10.20	IE	
A	PRELIMINARY ISSUE	23.10.20	IE	

NORTH POINT:

ARCHITECT: WOLVERIDGE ARCHITECTS

CLIENT: GURNER TM

Inertia
ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS: 0 3 6 9m — SCALE 1:150 @ A1

PROJECT: PROPOSED DEVELOPMENT 69-73 MURPHY ST, PORT DOUGLAS, QLD, 4877.

DRAWING TITLE: STORMWATER DRAINAGE LAYOUT PLAN

DESIGNED: IERNST | APPROVED: | RPEQ No.

JOB No. 9283

DWG. No. SK003 | REVISION D

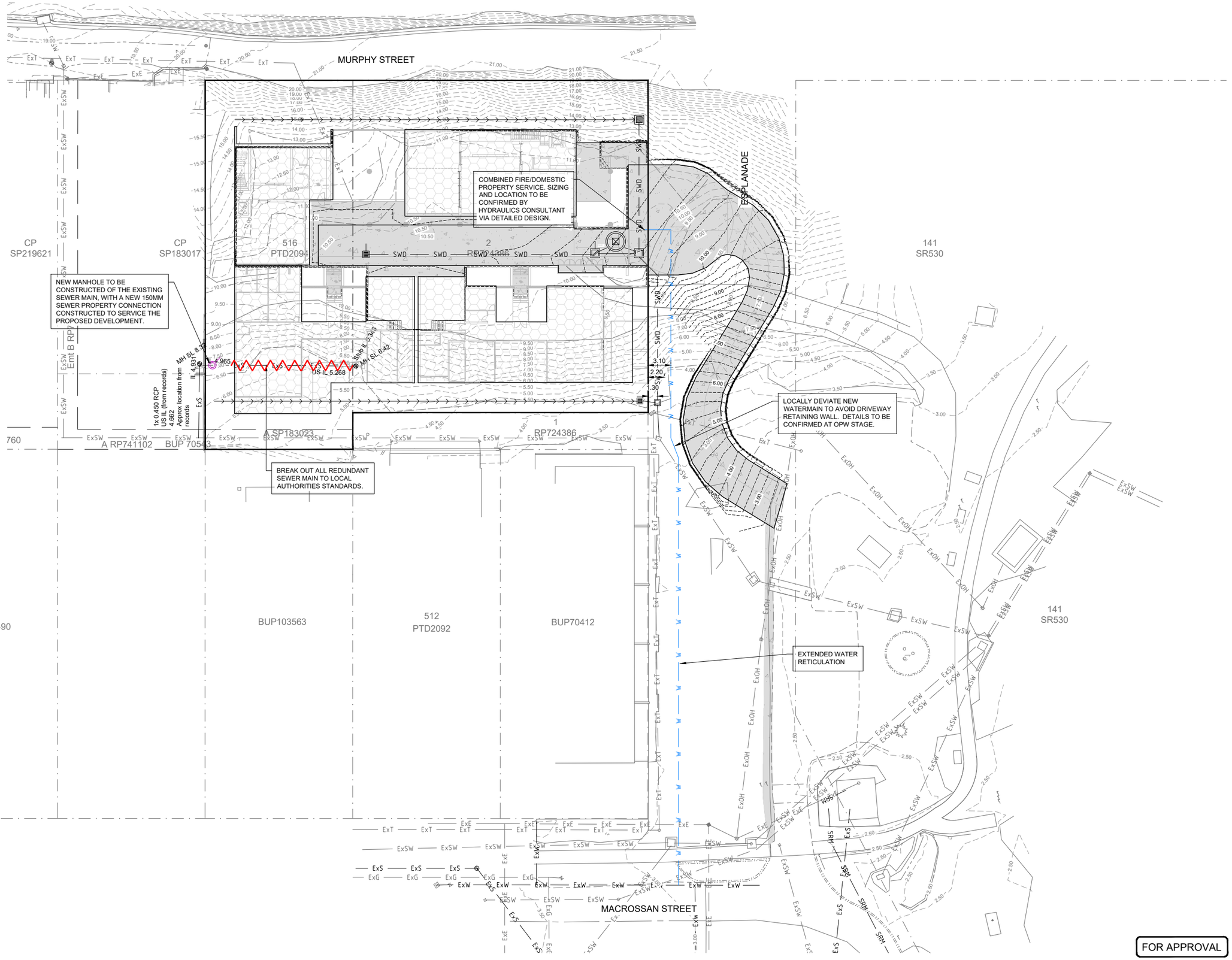
LEGEND

- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EASEMENT BOUNDARY
- EXISTING CONTOURS (AT 0.50m INTERVALS)
- EXISTING KERB
- EXISTING EDGE OF BITUMEN
- EXISTING ROAD CENTRELINE
- EXISTING CHANGE OF GRADE
- EXISTING TOP OF BATTER
- EXISTING BOTTOM OF BATTER
- EXISTING CONCRETE DRAIN
- ExSW — EXISTING STORMWATER
- ExS — EXISTING SEWERAGE
- SRM — EXISTING SEWER RISING MAIN
- ExW — EXISTING WATER
- ExT — EXISTING TELSTRA
- ExOH — EXISTING OVERHEAD ELECTRICITY
- ExE — EXISTING UNDERGROUND ELECTRICITY
- DESIGN CONTOURS (AT 0.25m INTERVALS)
- PROPOSED BASEMENT OUTLINE
- PROPOSED BUILDING OVER LINE
- SWD — PROPOSED STORMWATER
- S — PROPOSED SEWER
- W — PROPOSED WATER
- REMOVED SEWER MAIN

- PROPOSED BUILDING BY OTHERS
- CONCRETE PAVEMENT EXTENT
- PROPOSED CONCRETE FOOTPATH

EXISTING SERVICES NOTE

EXISTING SERVICES MAY BE PLOTTED FROM BCC RECORDS AND 'D.B.Y.D'. LOCATION OF ALL EXISTING SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION. CONTRACTOR TO CONTACT 'DIAL BEFORE YOU DIG' FOR THE LOCATION OF EXISTING PUBLIC UTILITIES PRIOR TO EXCAVATION. ANY DAMAGE TO EXISTING SERVICES WILL BE REPAIRED BY AUTHORITIES AT THE CONTRACTORS EXPENSE.



FOR APPROVAL

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C	ISSUED FOR APPROVAL	19.11.20	IE	
B	ISSUED FOR APPROVAL	29.10.20	IE	
A	PRELIMINARY ISSUE	23.10.20	IE	

NORTH POINT:

ARCHITECT: WOLVERIDGE ARCHITECTS

CLIENT: GURNER TM

Inertia
ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road
Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS: 0 2 4 6 8 10 12m
SCALE 1:250 @ A1

PROJECT: PROPOSED DEVELOPMENT 69-73 MURPHY ST, PORT DOUGLAS, QLD, 4877.

DRAWING TITLE: CONCEPT SERVICES LAYOUT PLAN

DESIGNED: IERNST | APPROVED: RPEQ No.

9283 JOB No.

SK004 DWG. No. | D REVISION

LEGEND

(line)	SITE BOUNDARY
(line)	EXISTING PROPERTY BOUNDARY
(line)	EASEMENT BOUNDARY
XX.XX	EXISTING CONTOURS (AT 0.50m INTERVALS)
(line)	EXISTING KERB
(line)	EXISTING EDGE OF BITUMEN
(line)	EXISTING ROAD CENTRELINE
(line)	EXISTING CHANGE OF GRADE
(line)	EXISTING TOP OF BATTER
(line)	EXISTING BOTTOM OF BATTER
(line)	EXISTING CONCRETE DRAIN
ExSW	EXISTING STORMWATER
ExS	EXISTING SEWERAGE
ExW	EXISTING WATER
ExT	EXISTING TELSTRA
ExOH	EXISTING OVERHEAD ELECTRICITY
XX.XX	DESIGN CONTOUR (INTERVAL 0.10m)
XX.XXXm ✖	FINISHED SURFACE ELEVATION LABEL
XX.XXXm ✖	EXISTING SURFACE ELEVATION LABEL
XX.XXXm ✖	PROPOSED RETAINING WALL HEIGHT

EARTHWORKS LEVELS

1. PRELIMINARY EARTHWORKS VOLUMES AND LEVELS BASED ON DESIGN SURFACE LEVEL. REFER STRUCTURAL DESIGN DRAWINGS AT DETAILED DESIGN STAGE FOR FINAL PAD THICKNESS.
2. ALL RETAINING WALL HEIGHTS ARE TO EARTHWORKS SURFACE LEVELS AND TO NEAREST 100mm HEIGHT.

EARTHWORKS VOLUMES

(EXISTING SURFACE TO DESIGN SURFACE)

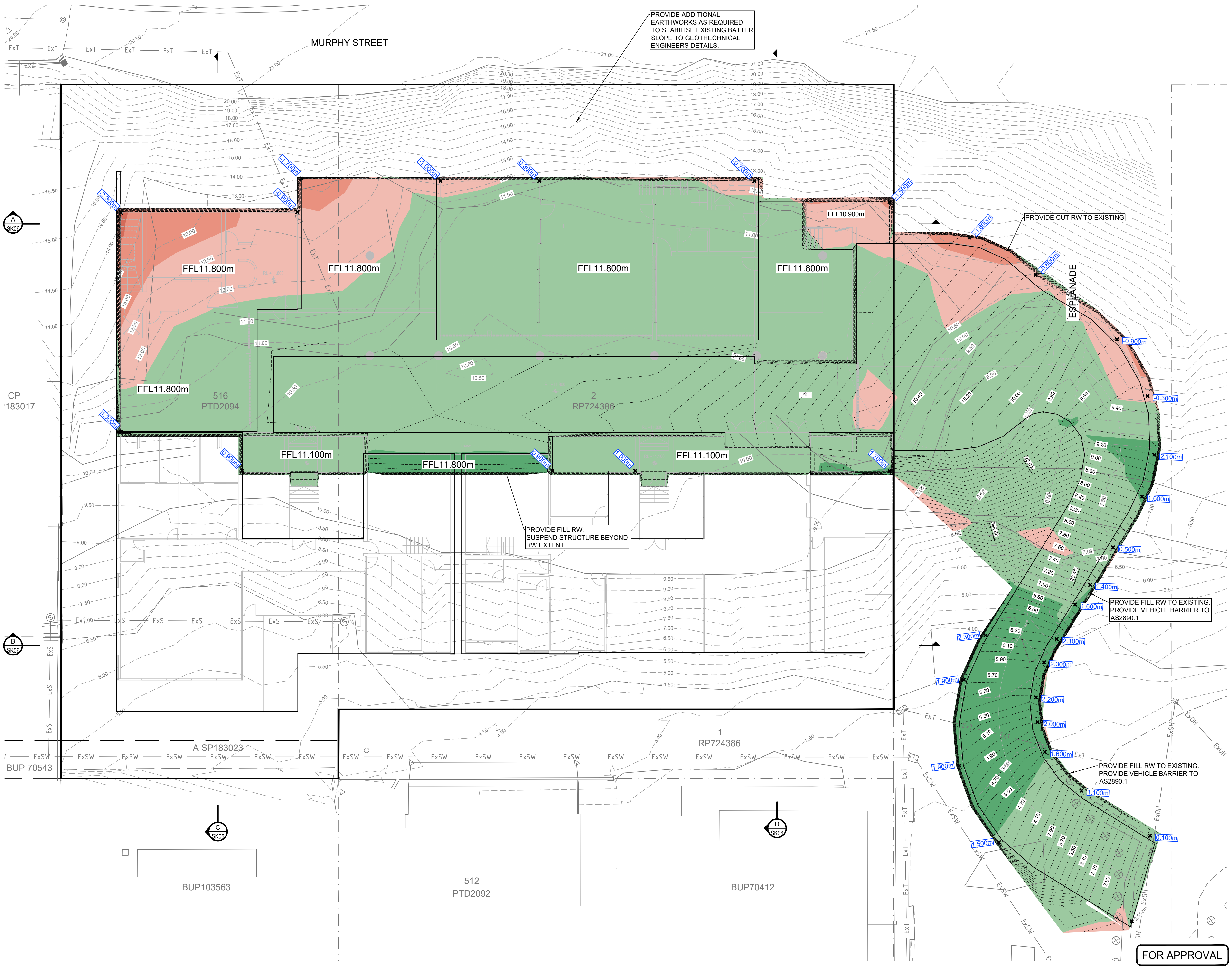
TOTAL CUT	150m³
TOTAL FILL	1,520m³
TOTAL BALANCE (IMPORTED FILL)	1,370m³

CUT & FILL LEGEND

MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOUR
-4.000m	-3.000m	
-3.000m	-2.000m	
-2.000m	-1.000m	
-1.000m	0.000m	
0.000m	1.500m	
1.500m	3.000m	

NOTES:

- CUT AND FILL IS PROVIDED FOR GUIDANCE ONLY AND DENOTES LEVEL DIFFERENCE BETWEEN EARTHWORKS SURFACE AND EXISTING SURFACE .
- AREAS NOT REQUIRING EARTHWORKS ARE TO REMAIN UNDISTURBED.
- CUT/FILL IS TO ULTIMATE FINISHED INCLUDING TOPSOIL AND ROAD SURFACE AND DOES NOT CONSIDER EXCAVATION NEEDED FOR ROAD PAVEMENTS, TOPSOIL ETC.
- FINAL EXTENTS OF CUT/FILL ARE TO BE DETERMINED BY THE CONTRACTOR ON SITE IN CONJUNCTION WITH THE CONTRACTOR'S EARTHWORKS DESIGN.



FOR APPROVAL

REV	DESCRIPTION	DATE	DRAWN	APPROVED
C	ISSUED FOR APPROVAL - UPDATED LAYOUT	11.03.22	CF	
B	ISSUED FOR APPROVAL	19.11.20	IE	
A	ISSUED FOR APPROVAL	29.10.20	IE	

NORTH POINT:

ARCHITECT: WOLVERIDGE ARCHITECTS

CLIENT: GURNER TM

Inertia
ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road
Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS: 0 3 6 9m — SCALE 1:150 @ A1

PROJECT: PROPOSED DEVELOPMENT 69-73 MURPHY ST, PORT DOUGLAS, QLD, 4877.

DRAWING TITLE: CONCEPT EARTHWORKS LAYOUT PLAN

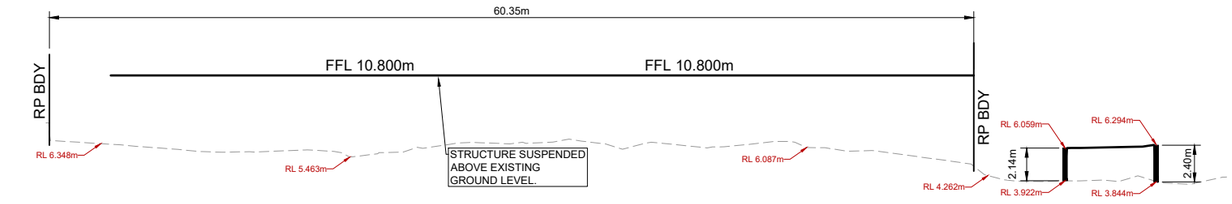
DESIGNED: IEARNST | APPROVED: | RPEQ No.

JOB No. 9283

DWG. No. SK005 | REVISION C

LEGEND

- DESIGN SURFACE
- BULK EARTHWORKS SURFACE
- DATUM LINE
- EXISTING SURFACE
- PROPOSED RETAINING WALL



SECTION B
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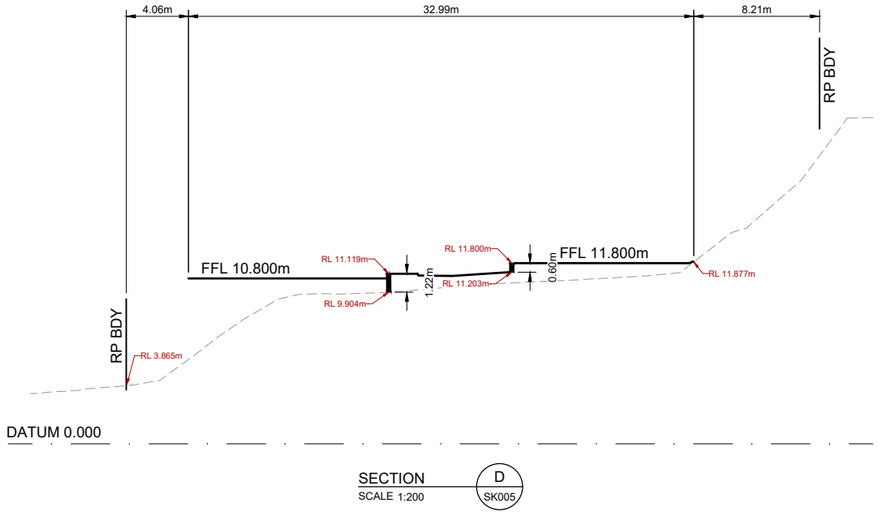
SK005



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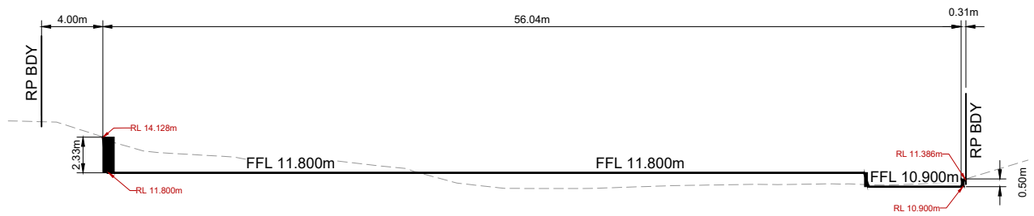
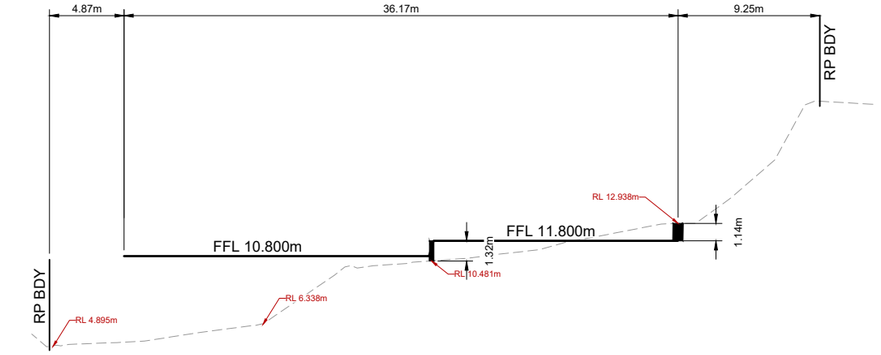


SECTION A
SCALE 1:200
SK005



SECTION C
SCALE 1:200
SK005

FOR APPROVAL

REV	DESCRIPTION	DATE	DRAWN	APPROVED
C	ISSUED FOR APPROVAL - UPDATED LAYOUT	11.03.22	CF	
B	ISSUED FOR APPROVAL	19.11.20	IE	
A	ISSUED FOR APPROVAL	29.10.20	IE	

NORTH POINT:

ARCHITECT:
WOLVERIDGE ARCHITECTS

CLIENT:
GURNER TM

Inertia
ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road
Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS:
0 4 8 12m
SCALE 1:200 @ A1

PROJECT:
PROPOSED DEVELOPMENT
69-73 MURPHY ST,
PORT DOUGLAS,
QLD, 4877.

DRAWING TITLE:
CONCEPT EARTHWORKS SITE SECTIONS

DESIGNED: IERNST
APPROVED:
RPEQ No.

9283
JOB No.

SK006
DWG. No.

C
REVISION

LEGEND

- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EASEMENT BOUNDARY
- XX.XX EXISTING CONTOURS (AT 0.50m INTERVALS)
- EXISTING KERB
- EXISTING EDGE OF BITUMEN
- EXISTING ROAD CENTRELINE
- EXISTING CHANGE OF GRADE
- EXISTING TOP OF BATTER
- EXISTING BOTTOM OF BATTER
- EXISTING CONCRETE DRAIN
- ExSW EXISTING STORMWATER
- ExS EXISTING SEWERAGE
- SRM EXISTING SEWER RISING MAIN
- ExW EXISTING WATER
- ExT EXISTING TELSTRA
- ExOH EXISTING OVERHEAD ELECTRICITY
- ExE EXISTING UNDERGROUND ELECTRICITY
- XX.XX DESIGN CONTOUR (INTERVAL 0.10m)
- PROPOSED CHANGE OF GRADE
- SWD PROPOSED STORMWATER
- W PROPOSED WATER
- S PROPOSED SEWER
- CONCRETE PAVEMENT EXTENT
- PROPOSED CONCRETE FOOTPATH
- XX.XXXm PROPOSED SURFACE LEVEL
- X.X% PROPOSED SURFACE SLOPE

CAUTION:
EXISTING SERVICES IN ESPLANADE VERGE TO BE PROTECTED AT ALL TIMES. ANY DAMAGE TO EXISTING SERVICES TO BE REPAIRED AT CONTRACTORS EXPENSE.

MURPHY STREET

ESPLANADE

FFL11.800m
FFL10.900m
FFL11.100m
FFL10.800m

CP SP183017
516 PTD2094
141 SR530
Emt B RP741102
Emt C RP732760
A RP741102
BUP 7054
A SP183023
1 RP724386
CP BUP106490
BUP103563
512 PTD2092
BUP70412

FOR APPROVAL

REV	DESCRIPTION	DATE	DRAWN	APPROVED
C	ISSUED FOR APPROVAL - UPDATED LAYOUT	11.03.22	CF	
B	ISSUED FOR APPROVAL	19.11.20	IE	
A	ISSUED FOR APPROVAL	29.10.20	IE	

NORTH POINT:

ARCHITECT: WOLVERIDGE ARCHITECTS

CLIENT: GURNER TM

Inertia
ABN 82 115 498 023
E-mail: info@inertiaeng.com.au
Unit 5B/85 Hudson Road
Albion, QLD 4010
Phone: 3857 7868
Fax: 3262 7359

SCALE BARS: 0 4 8 12m
SCALE 1:200 @ A1

PROJECT: PROPOSED DEVELOPMENT 69-73 MURPHY ST, PORT DOUGLAS, QLD, 4877.

DRAWING TITLE: ACCESS & GRADING LAYOUT PLAN

DESIGNED: IERNST | APPROVED: | RPEQ No.

JOB No. 9283

DWG. No. SK007

REVISION C

C:\Users\Chris\Dropbox (Personal)\Work\Inertia\08-73 Murphy Street, Port Douglas\Designer Issues_CURRENT CAD FILES\X_CAD Drawings\X2 Production Drawings\SK007 Access & Grading Layout.dwg

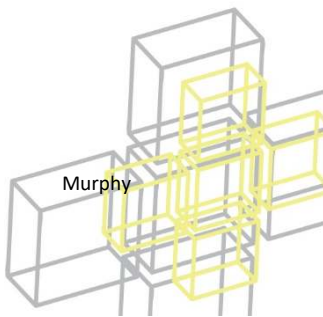
INERTIA ENGINEERING PTY LTD

5B 85 Hudson Rd, ALBION QLD 4010

P I 07 3857 7868 F I 07 3262 7359 E I info@inertiaeng.com.au

Annexure 4

Traffic Engineering Report



Traffix Group

Traffic Engineering Assessment

Proposed Residential Development

69-73 Murphy Street, Port Douglas

Prepared for
Gurner™

March 2022

G29056R-02C

Level 28, 459 Collins St
Melbourne Victoria 3000

T: 03 9822 2888
admin@traffixgroup.com.au

Traffix Group Pty Ltd
ABN: 32 100 481 570

traffixgroup.com.au

Document Control

Our Reference: G29056R-02C

Issue No.	Type	Date	Prepared By	Approved By
A	Draft	10/03/22	S.Goh	C.Morello
C	Final	16/03/22	S.Goh	C.Morello

Table of Contents

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List of Tables

No table of figures entries found.

List of Appendices

1. Introduction

Traffix Group has been engaged by Gurner to undertake a Traffic Engineering Assessment for a Proposed Residential Development at 69-73 Murphy Street, Port Douglas.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposed development.

In the course of undertaking this assessment, we undertook desktop investigations (due to COVID travel restrictions), reviewed development plans and background material, and assessed the car parking and traffic impacts of the proposal.

Our assessment is as follows.

2. Existing Conditions

2.1. Subject Site Location

The subject site is located on the southern side at the eastern end of Murphy Street, in Port Douglas.

A locality plan and an aerial image of the subject site is provided at Figure 1 and Figure 2, respectively.

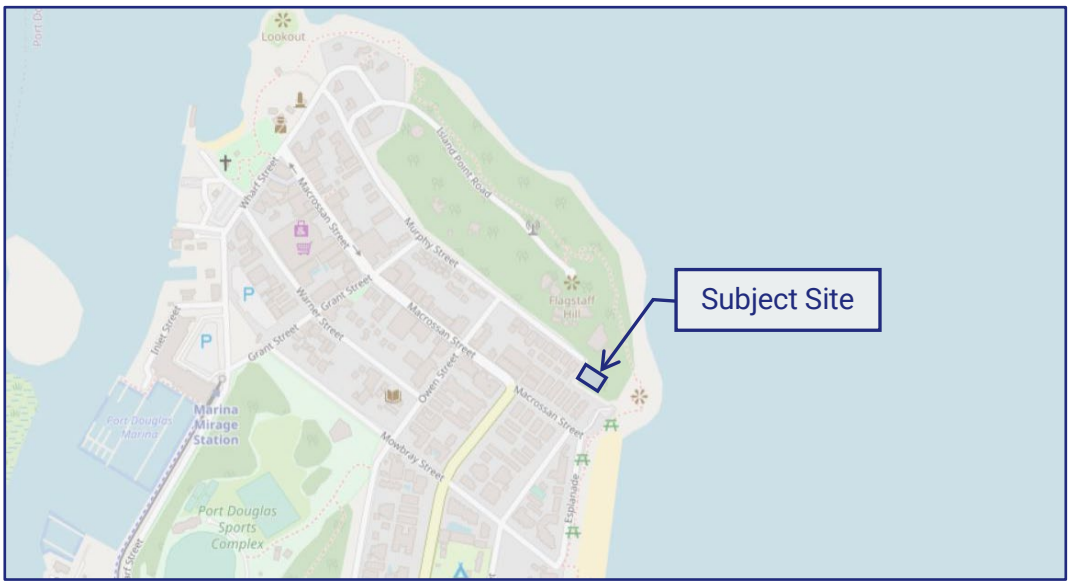


Figure 1: Locality Map

2.2. Subject Site and Existing Use

The subject land is generally rectangular in shape, consisting two parcels of land and has a total site area of approximately 3,000 square metres with a frontage to the Murphy Street road reserve (and gravel road/access) of approximately 60 metres.

The eastern boundary of the site abuts The Esplanade Road Reserve, however the road reserve is primarily vegetation and landscaping with the exception of an existing accessway which serves Julan Park and a small associated parking area.

The site abuts existing residential development to the west and a short term accommodation to the south.

The site is currently vacant.

Figure 2, shows an aerial image with the existing property boundaries and road reserves (in yellow).

Figure 2: Aerial Image – Courtesy of Queensland Globe

2.3. Planning Scheme Zones & Surrounding Uses

The subject site currently has a land use classification of 'Tourist Accommodation' under the Douglas Shire Planning Scheme, as shown in the zoning map provided in Figure 4.

The site is located to the east of the Port Douglas Town Centre and is on the border (but outside) the Precinct 1 area.

Existing land use in the immediate vicinity of the subject site is a mixture of residential, short term accommodation and nature park.

Notable land uses in the nearby area include:

- **Four Mile Beach**, located approximately 100 metres south-east of the site,
- **Julan Park**, located to the immediate south-east.
- **Trinity Bay Lookout**, beginning approximately 200 metres north of the site, and
- **Flagstaff Hill Lighthouse**, located approximately 750 metres north-west of the site.

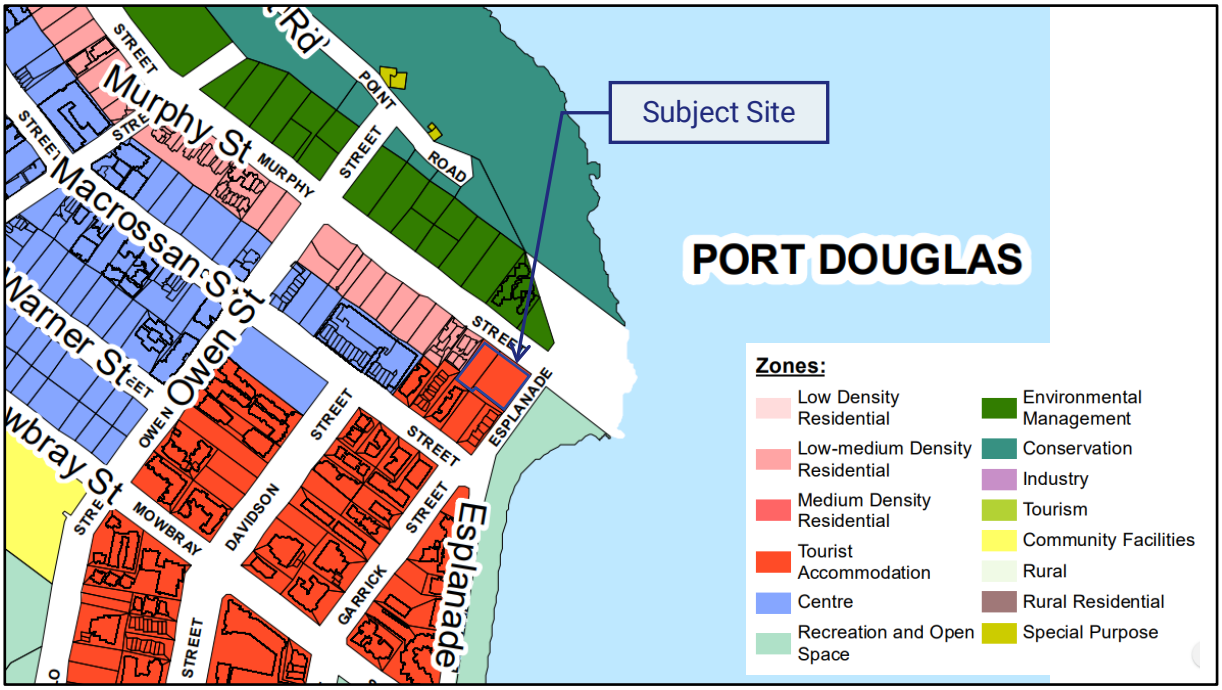


Figure 3: Planning Scheme Zoning Map – Douglas Shire

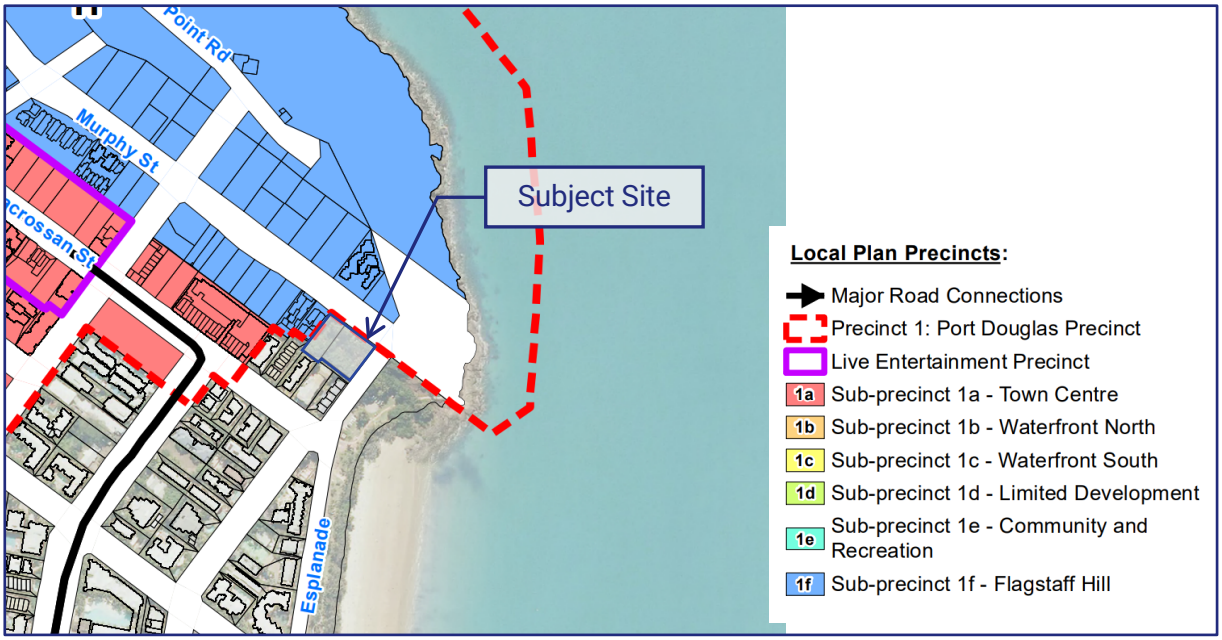


Figure 4: Port Douglas Precinct Map– Douglas Shire

2.4. Road Network

Murphy Street is aligned in a north-west to south-east direction between Wharf Street (at the west) and the 4-Mile beach lookout to the east. It is nominated in Council's Planning Scheme as an Access Road and runs along the northern boundary of the site.

West of the site, Murphy Street is paved and operates two-way providing local access to the abutting properties. Along the subject site boundary, it continues as a gravel road providing limited vehicle access.

The **Esplanade** operates generally north-south along the coastline between Mowbray Street and Macrossan Street. To the north of Macrossan Street, the Esplanade road reserve connects to Murphy Street, abutting the eastern boundary of the site, however a formal public road is not provided through this road reserve.

South of Macrossan Street, The Esplanade is classified as a Collector Road, forming a connection from the south with the Town Centre to the west via Macrossan Street.

The majority of the existing Esplanade road reserve north of Macrossan Street is vegetated land, however the eastern portion is occupied by the car park access driveway for Julan Park. The driveway has an existing paved width of approximately 4.5-5.0 metres and provides access to 90-degree angled parking on the eastern side a turnaround area to the north-east. Half of the road is located within the Esplanade Road Reserve, whilst the other half is located in the Julan Park reserve.

Bollards restrict access from the existing access driveway and the access to Macrossan Street is provided via a driveway crossover.

Macrossan Street is a local Council road which is aligned in a north-west to south-east direction between Wharf Street in the north-west and Esplanade in the south-east. It is classified in the Planning Scheme as a Collector Street.

In the vicinity of the site, Macrossan Street has a carriageway width of approximately 12 metres accommodating a traffic lane, a bicycle lane and kerbside parking in each direction.

The Planning Scheme Transport Road Hierarchy map is provided at Figure 5.

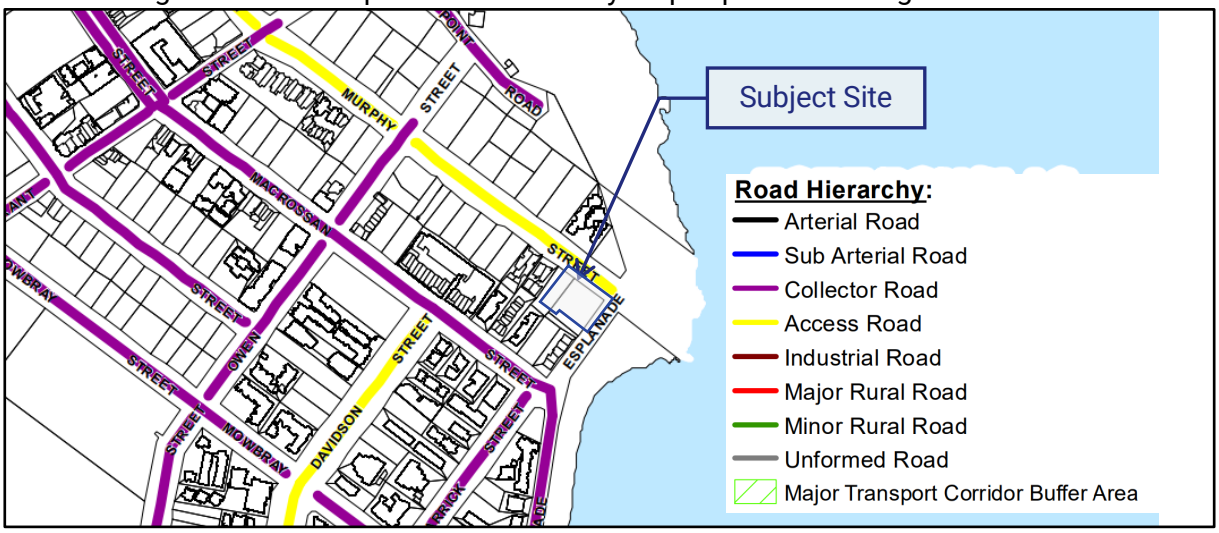


Figure 5: Douglas Shire Planning Scheme Transport Road Hierarchy

2.5. Sustainable Modes of Transport

The site is located approximately 800 metres walk from the Port Douglas Town Centre and is immediately proximate to a number of beaches and proximate leisure activities and destinations.

There is limited public transport around Port Douglas Town Centre, however local tourist buses, hotel shuttle buses and regional bus connections between Cairns and Port Douglas are available in the area.

Macrossan Street is nominated within the Douglas Shire Planning Scheme as a Principle Cycle and Pedestrian Route as shown in Figure 6.

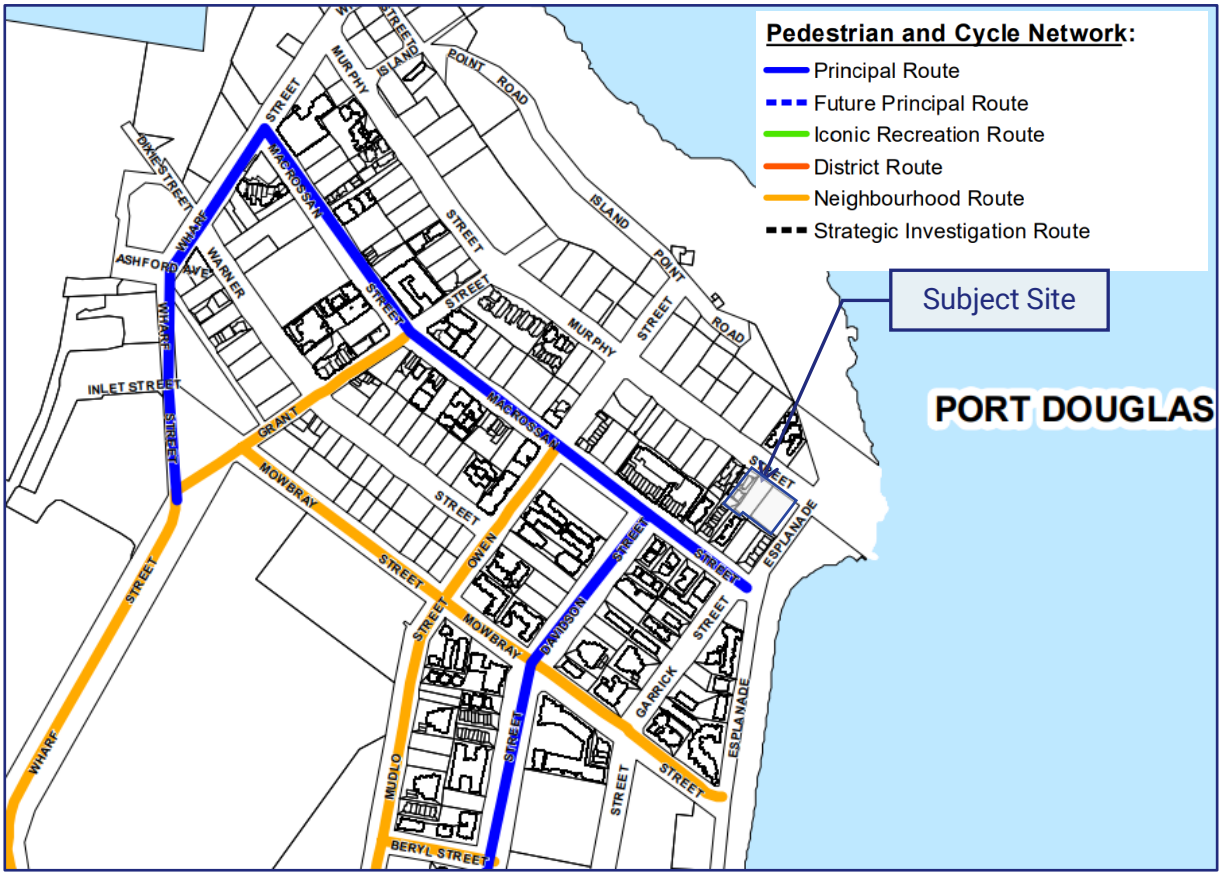


Figure 6: Douglas Shire Planning Scheme Transport Pedestrian and Cycle Network

3. Previous Permit

A Planning Permit was issued in 2013 at the direction of the Planning and Environment Court (ref Number 110 of 2011) allowing for the development of the site for the purposes of six residential units.

The permit included a number of conditions, including relating specifically to traffic and access, requiring access be provided via The Esplanade (and/or Julan Park subject to State Approval).

Condition 9 of the Judgement Document required the following:

"9. Undertake the following works external to the land at no cost to Council:

a. Design and construct access to the site by either:

i. the extension of the Esplanade Road;

OR

ii. The road opening through Julan Park, in accordance with the requirements of department of Natural Resources and Mines should it be approved.

The construction of the access to the site shall be to a standard of an access street standard in accordance with Council's FNQROC Development Manual…."

The permit has since expired, however it is relevant in establishing an appropriate access location for the subject land.

4. Proposal

The application proposes to develop the site for the purposes of a residential development comprising 4 residential dwellings with individual private garage parking.

Vehicular access to the site is proposed from the south-east via a new ramped driveway that connects to the existing access driveway which extends north from Macrossan Street and currently provides access to the Julan Park car parking area.

The new ramped access will provide access to the ground level car parking area.

All dwellings are provided with garaged parking, which are configured as either double or triple width garages. All garages are located on ground level with stair or lift access into each dwelling.

The car parking garages are also sufficient to house bicycles if desired.

5. Design Considerations

5.1. General

The car park layout, access and loading arrangements have been developed with design advice provided to the project architect (Wolveridge Architects) and is considered to principally meet the relevant requirements of the Douglas Shire Planning Scheme, being design in accordance with AS2890.1/2/3.

5.2. Proposed Access Ramp (AS2890.1 and AS2890.2)

The proposal intends to take access via a new ramped driveway which is to extend north-west from the existing Julan Park car park driveway.

A passing area is proposed to be provided at the bottom of the access ramp, with a minimum width of 6.1 metres and length of 6.0 metres to allow for two-way access as demonstrated by B99 vehicle passing swept paths at Appendix B. This complies with the requirements of AS2890.1-2004.

The ramp has been designed with grades that meet AS2890.1-2004 requirements for transitions and maximum grades for a conventional passenger vehicle. This includes maximum grade of 1 in 5 (as the ramp is longer than 20 metres) with transitions not exceeding 1 in 8 for not less than 2.0 metres.

Whilst the proposed ramp will sit within the existing Esplanade Road Reserve boundary, we understand that there aren't plans to connect Murphy Street or The Esplanade in a road form.

This access arrangement is also consistent with what was contemplated for the previously permitted access.

The location of the proposed site access is as shown in Figure 7.

Figure 7: External Vehicular Site Access

5.3. General Car Parking Layout (AS2890.1 & AS2890.6)

An assessment of the car parking layout reveals:

- AS2890.1:2004 requires double width garages to have a minimum width of 5.4 metres and triple width garages to have a minimum width of 7.8 metres with minimum parking length of 5.4 metres for any garage parking.
- The plans show garage parking at:
  - a minimum width of 6.0 metres and minimum length of 5.4 metres for the double garages, and
  - a minimum width of 8.3 metres and minimum length of 5.4 metres for the triple garage.

  Accordingly, the proposed garage parking has been designed in excess with minimum requirements of AS2890.1:2004 being satisfactory.
- A minimum headroom clearance of 2.2 metres is provided within all trafficable areas, satisfying the requirements of the Australian Standard.

Swept paths have been undertaken demonstrating access into critical spaces and are provided at Appendix A.

6. Parking Provisions

6.1. Car Parking Assessment

6.1.1. Statutory Requirements – Code 9.4.1

The car parking requirements for the proposed development are outlined under Code 9.4.1-Access, Parking and Service Code of the Douglas Shire Planning Scheme.

The Code 9.4.1 statutory car parking requirements for the proposal requires 1.5 spaces to be allocated to each dwelling.

The proposed development has provision for a minimum of 2 spaces per dwelling as private garaged parking, meeting the statutory requirement of Code 9.4.1.

Based on the preceding, the application satisfies the statutory car parking requirements under Code 9.4.1, and a permit is not required.

6.2. Bicycle Parking

Code 9.4.1 of the Douglas Shire Planning Scheme specifies the bicycle parking requirement for new developments.

Code 9.4.1 requires residential developments to provide bicycle parking rate as follows:

- 1 space per 3 dwellings for residents
- 1 space per 12 dwellings for visitors

The development comprises 4 residential dwellings and therefore is required to provide a minimum of 2 bicycle spaces.

It is noted that all garages are at least 6 metres in length with additional internal spaces to comfortably accommodate a bike space.

Accordingly, we are of view that the bicycle arrangements for the application is considered appropriate.

7. Traffic Considerations

7.1. Existing Traffic Volumes

Due to COVID restrictions and limitations of tourist travel and seasons, relevant and 'up-to-date' traffic counts have not been undertaken or sourced in the vicinity of the subject site.

The following assessment reviews the expected traffic generation of the proposal and impact of that traffic on the localised network.

7.2. Proposed Traffic Generation

Residential traffic generation varies dependent on the size of the dwellings, location in relation to leisure, employment and retail services and access to public and alternative transport modes.

In the case of this proposal, some (if not all) of the residential apartments are likely to be holiday residences, whereby they are occupied at lower rates than typical residential housing on average across the year.

In consideration of the location of the site and the access to services both on the site, and within walking and cycling distance from the site, we will adopt an average daily traffic generation rate of 5 vehicle movements per dwelling. This is inclusive of an average of 0.5 movements per dwelling in peak hours.

This is consistent with the NSW RMS (formerly RTA) Guide to Traffic Generating Developments which identifies rates of between 4-6.5 daily vehicle trips per dwelling for *"medium density residential flat buildings"*.

Adopting the rate above to the 4 dwellings results in a traffic generation of 20 daily vehicle movements and up to 2 peak hour movements.

7.3. Traffic Impact

The peak hour traffic generation of in the order of 2 vehicle movements is considered low in traffic engineering terms and equates to an average of 1 vehicle being generated every 30 minutes to the network within a typical peak hour.

This will be further split between inbound and outbound movements and then left and right turning movements.

Ultimately the volumes are sufficiently low that further detailed intersection analysis is not necessary and we are comfortable that the expected traffic volumes can be adequately accommodated in the existing road network. Appropriate passing area is provided at the site access, which allows vehicles to enter and exit the site comfortably.

It is also important to note that the current proposal is 2 dwellings lesser than the scheme approved under the previous permit.

Accordingly, the proposed development is considered appropriate from a traffic perspective and it will not have any material impact to the road network in the vicinity of the site.

8. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed residential development at 69-73 Murphy Street, Port Douglas, we are of the opinion that:

a. The proposed parking layout and access arrangements can be made to accord with the requirements of AS2890.1, AS2890.2, AS2890.3 and AS890.6 as stipulated by the Douglas Shire Planning Scheme.

b. The car parking provision and the design of the basement carpark and dwelling garages are in accordance with Code 9.4.1 of the Douglas Shire Planning Scheme and a permit is not required.

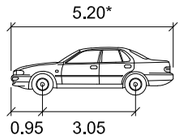
c. Bicycle parking can be provided to meet the requirements set out under Code 9.4.1of the Douglas Shire Planning Scheme.

d. The traffic impact of the proposal is manageable and the proposed access arrangements will suitably cater for the traffic generation of the site.

Appendix A
Swept Paths

VEHICLE PROFILE

VEHICLE USED IN SIMULATION



99th percentile
(AS/NZS 2890.1:2004)

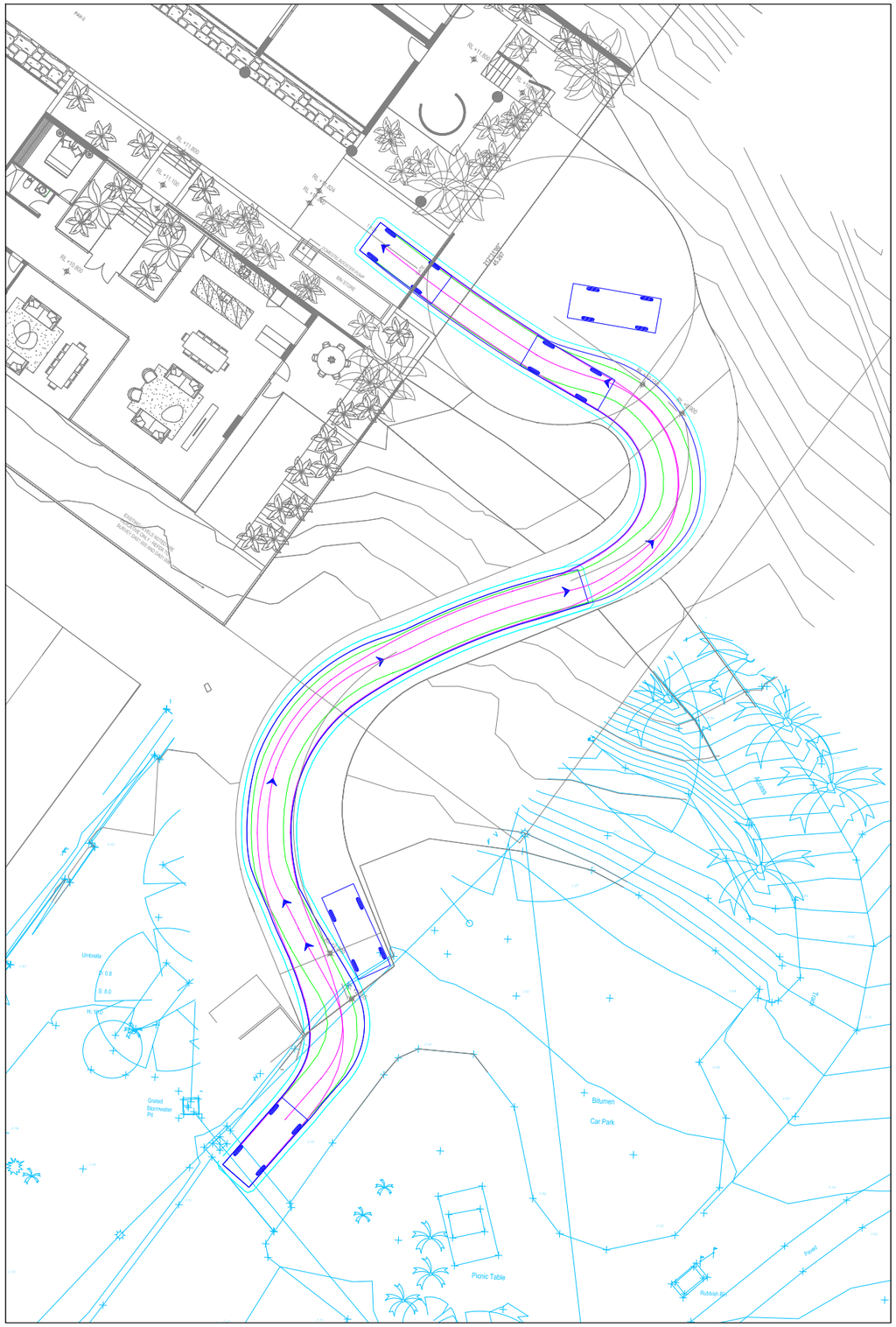
Width	: 1.94
Track	: 1.84
Kerb to Kerb Radius	: 12.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out In Section B2.1 of AS/NZS 2890.1:2004

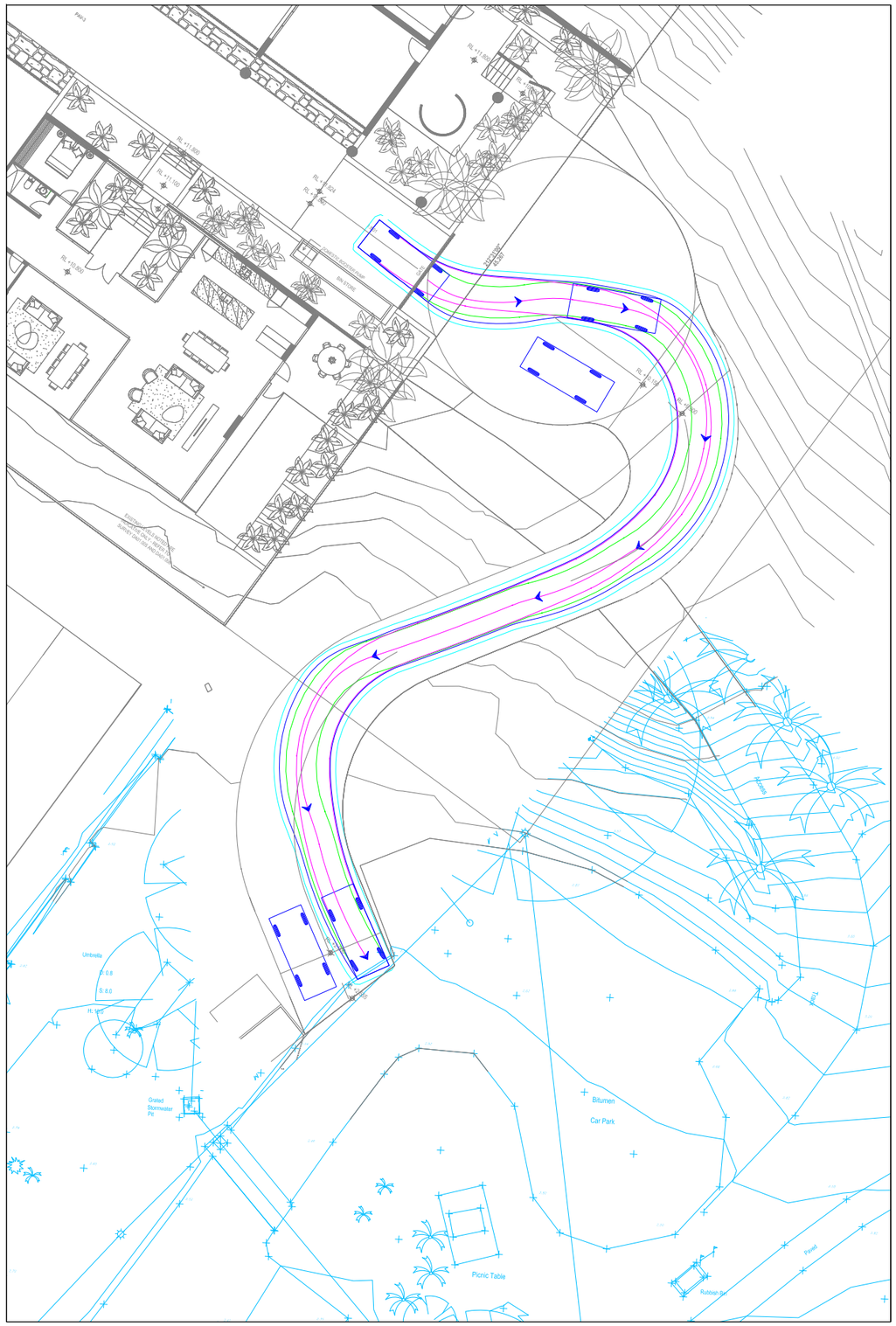
LEGEND

REAR WHEELS
FRONT WHEELS
VEHICLE BODY
BODY CLEARANCE

B99 SITE ACCESS - INGRESS



B99 SITE ACCESS - EGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	16/03/2022	TOWN PLANNING	S.GOH	C.MORELLO

69-73 MURPHY STREET, PORT DOUGHLAS

PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:

BASE FILES FROM WARREN & MAHONEY
DATED MARCH 2022

FILE NAME: G29056-03

SHEET NO.: 01

N

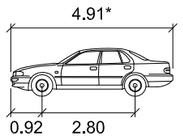
SCALE:
1:300 (A3)

0 3 6

Traffix Group
Level 28, 459 Collins St, MELBOURNE VIC 3000
T: (03) 9822 2888
www.traffixgroup.com.au

VEHICLE PROFILE

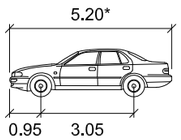
VEHICLE USED IN SIMULATION



85th percentile
(AS/NZS 2890.1:2004)

Width	: 1.87m
Track	: 1.77m
Kerb to Kerb Radius	: 11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004



99th percentile
(AS/NZS 2890.1:2004)

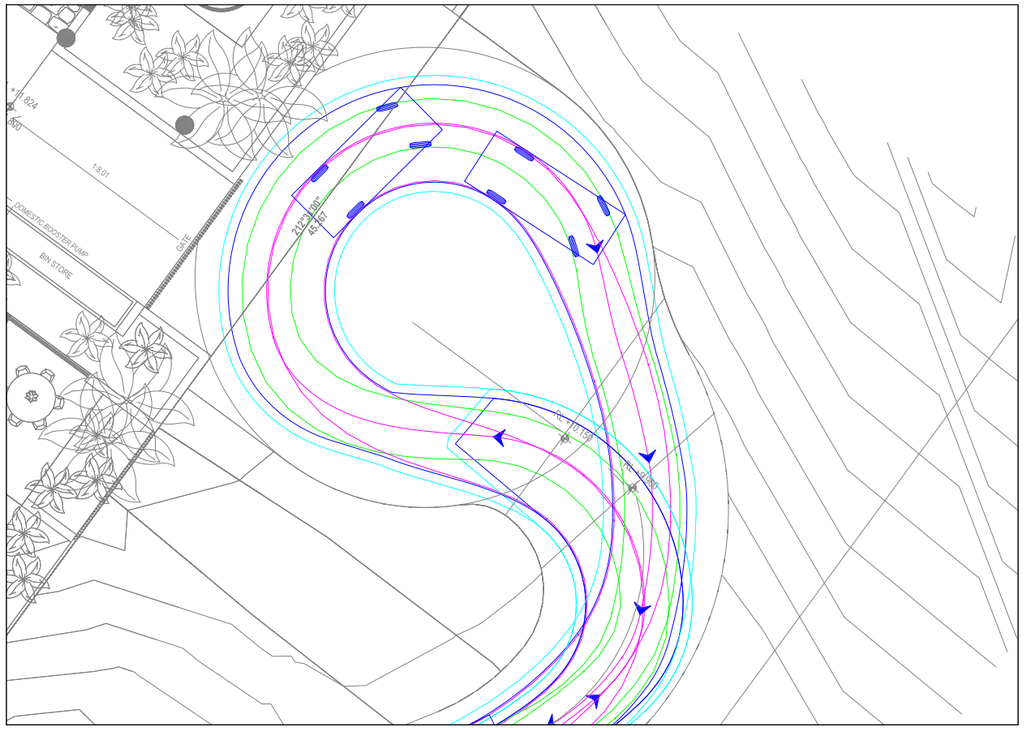
Width	: 1.94
Track	: 1.84
Kerb to Kerb Radius	: 12.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

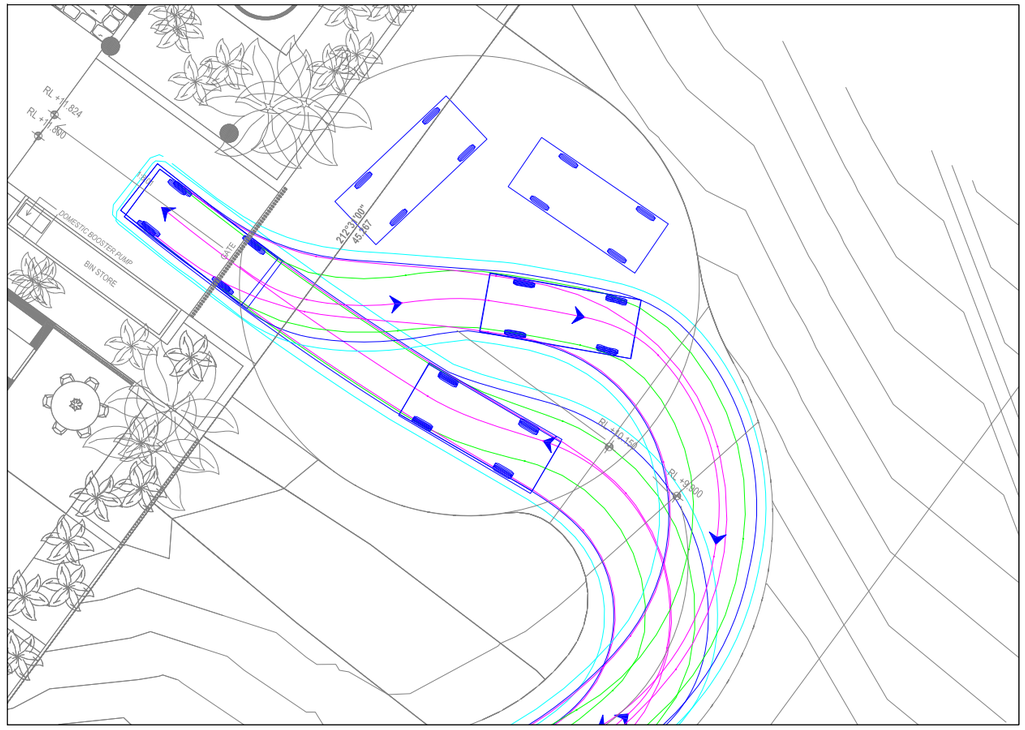
LEGEND

REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

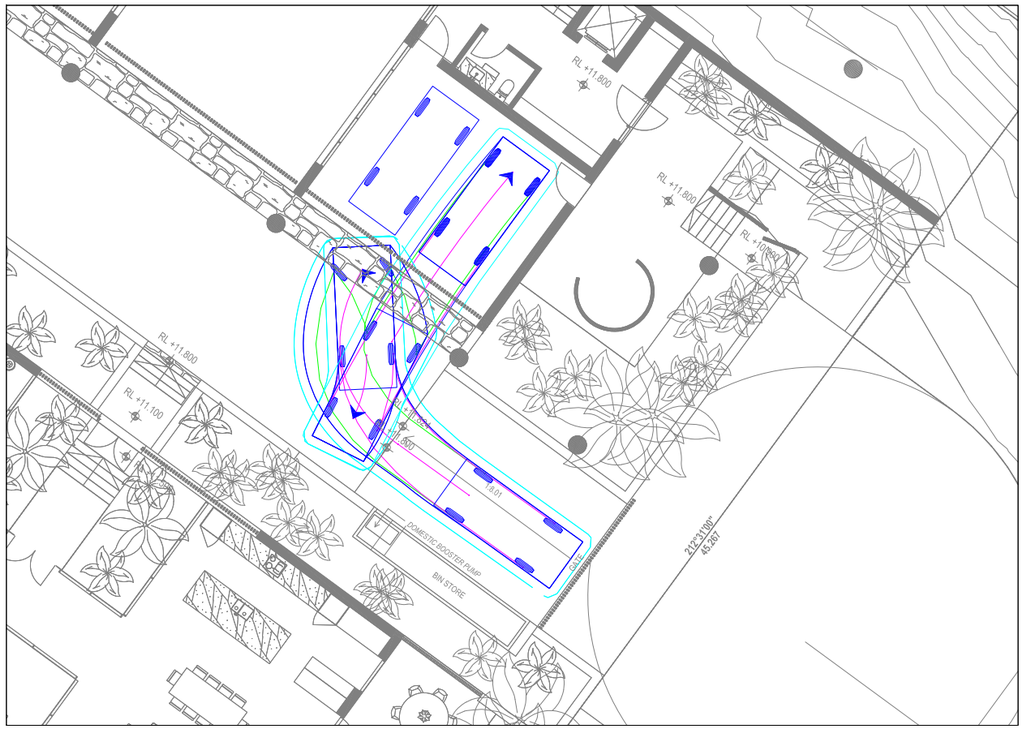
B99 TURNAROUND AREA CIRCULATION



B99 TURNAROUND AREA PASSING



B85 GARAGE PARKING 01 - INGRESS



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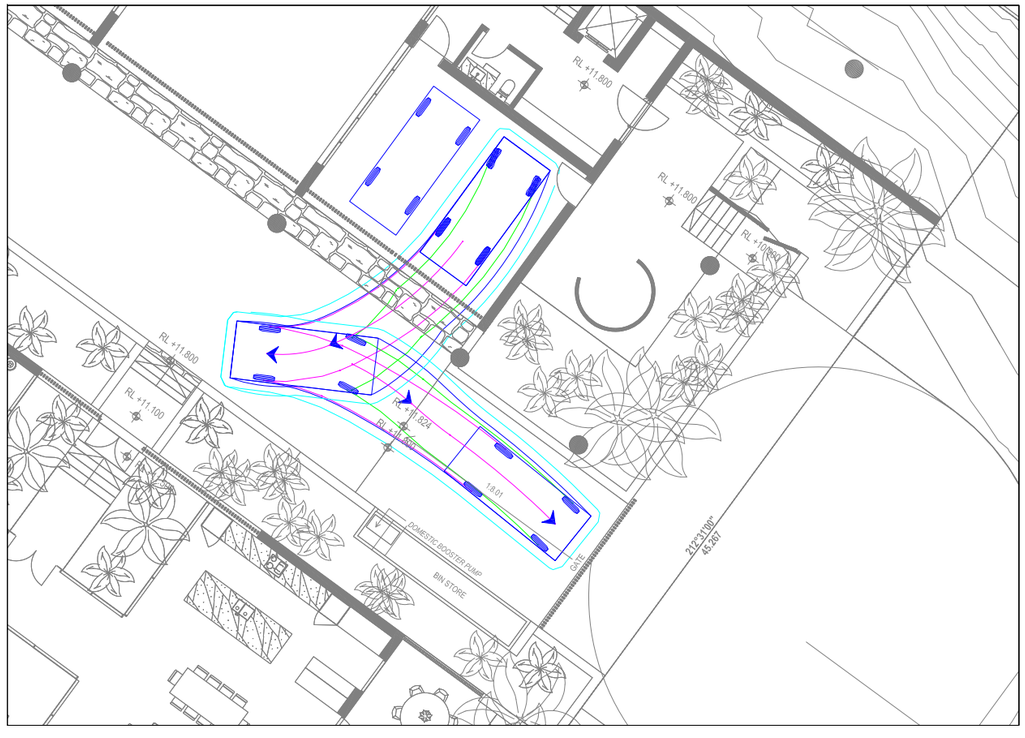


REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	16/03/2022	TOWN PLANNING	S.GOH	C.MORELLO

69-73 MURPHY STREET, PORT DOUGHLAS
PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:

BASE FILES FROM WARREN & MAHONEY
DATED MARCH 2022

FILE NAME: G29056-03
SHEET NO.: 02

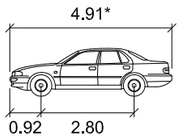
N

SCALE:
1:200 (A3)
0 2 4

Traffix Group
Level 28, 459 Collins St, MELBOURNE VIC 3000
T: (03) 9822 2888
www.traffixgroup.com.au

VEHICLE PROFILE

VEHICLE USED IN SIMULATION



85th percentile
(AS/NZS 2890.1:2004)

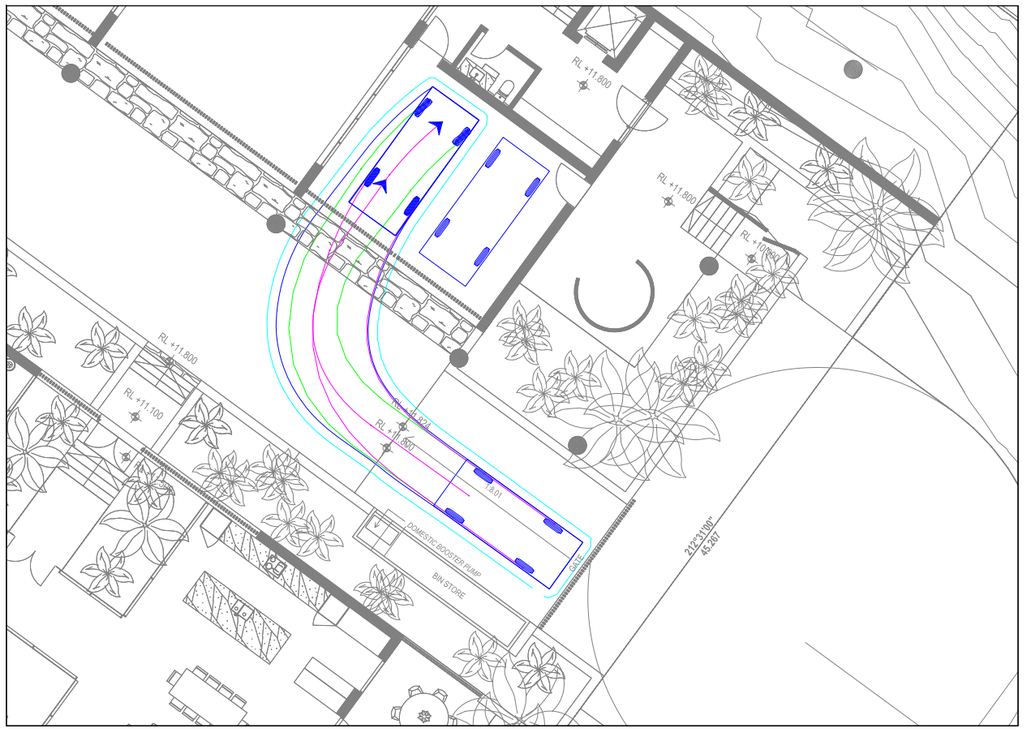
Width	: 1.87m
Track	: 1.77m
Kerb to Kerb Radius	: 11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

B85 GARAGE PARKING 02 - INGRESS



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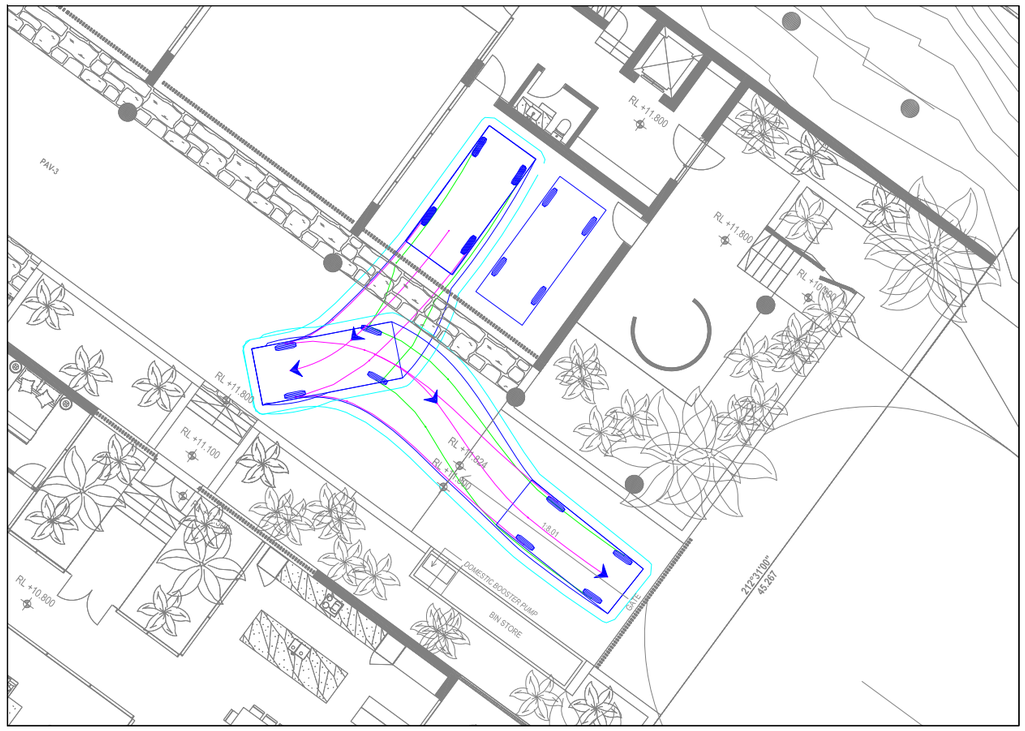

B85 GARAGE PARKING 03 - INGRESS

B85 GARAGE PARKING 03 - EGRESS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	16/03/2022	TOWN PLANNING	S.GOH	C.MORELLO

69-73 MURPHY STREET, PORT DOUGHLAS
PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:

BASE FILES FROM WARREN & MAHONEY
DATED MARCH 2022

FILE NAME: G29056-03
SHEET NO.: 03

N

SCALE: 1:200 (A3)
0 2 4

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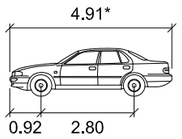
VEHICLE PROFILE

VEHICLE USED IN SIMULATION



85th percentile
(AS/NZS 2890.1:2004)

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Track	:	1.77m
Kerb to Kerb Radius	:	11.5m

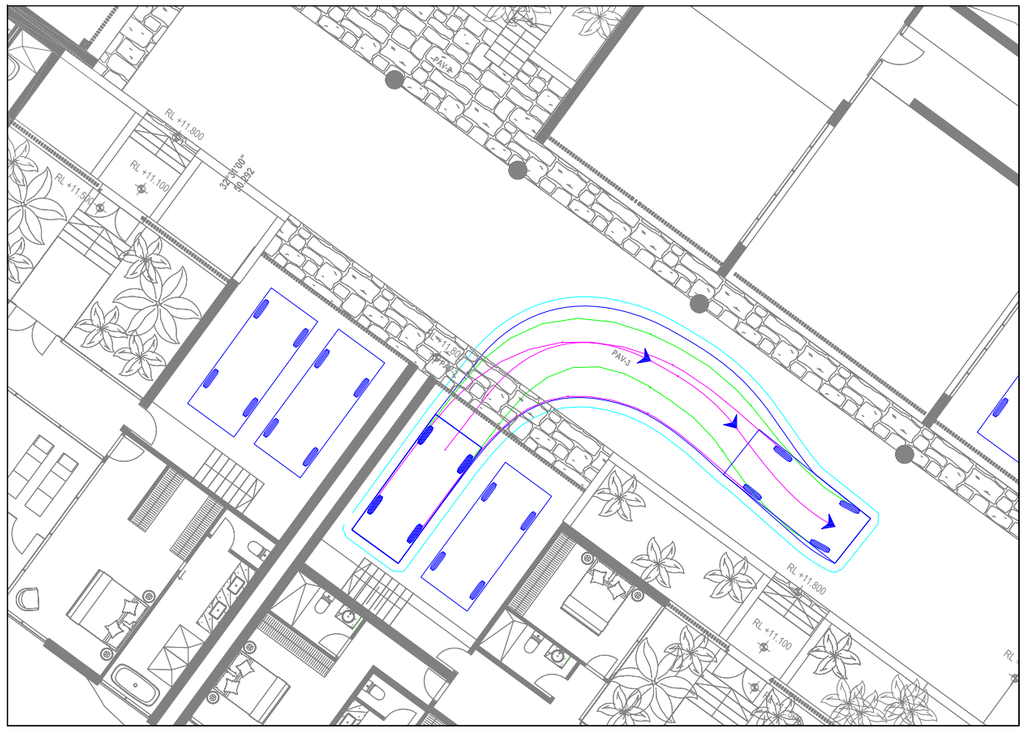
* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

B85 GARAGE PARKING 04 - INGRESS

B85 GARAGE PARKING 04 - EGRESS



B85 GARAGE PARKING 05 - INGRESS

B85 GARAGE PARKING 05 - EGRESS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	16/03/2022	TOWN PLANNING	S.GOH	C.MORELLO

69-73 MURPHY STREET, PORT DOUGHLAS
PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:

BASE FILES FROM WARREN & MAHONEY
DATED MARCH 2022

FILE NAME: G29056-03
SHEET NO.: 04

N

SCALE: 1:200 (A3)
0 2 4

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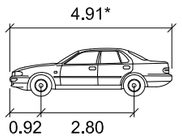
VEHICLE PROFILE

VEHICLE USED IN SIMULATION



85th percentile
(AS/NZS 2890.1:2004)

Width	:	1.87m
Track	:	1.77m
Kerb to Kerb Radius	:	11.5m

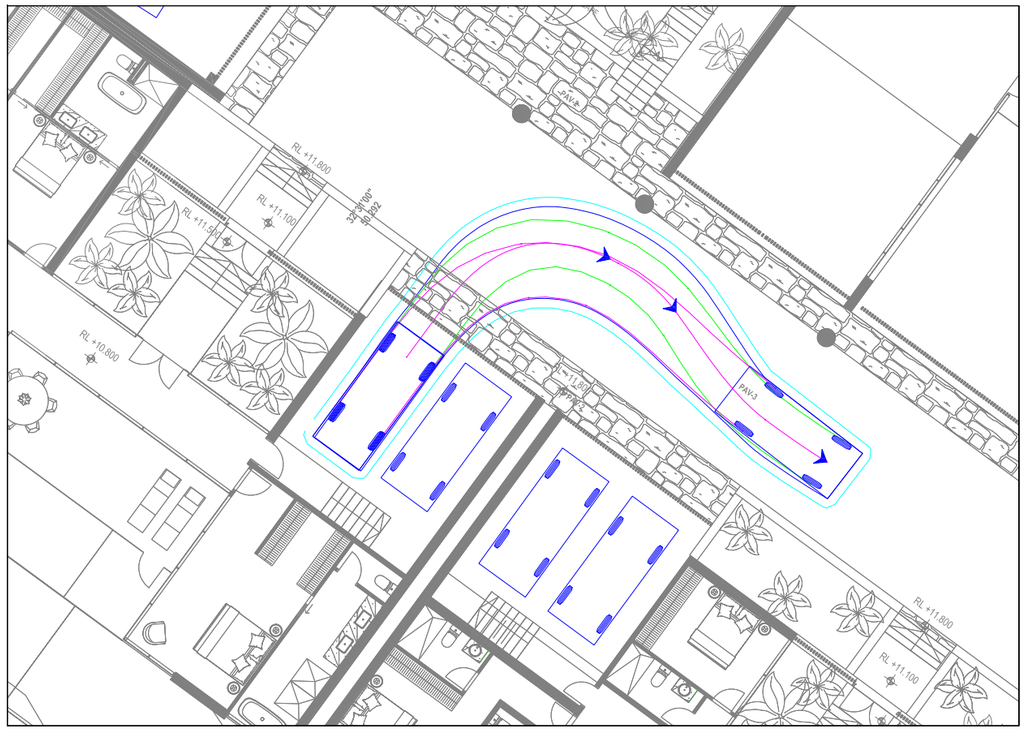
* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

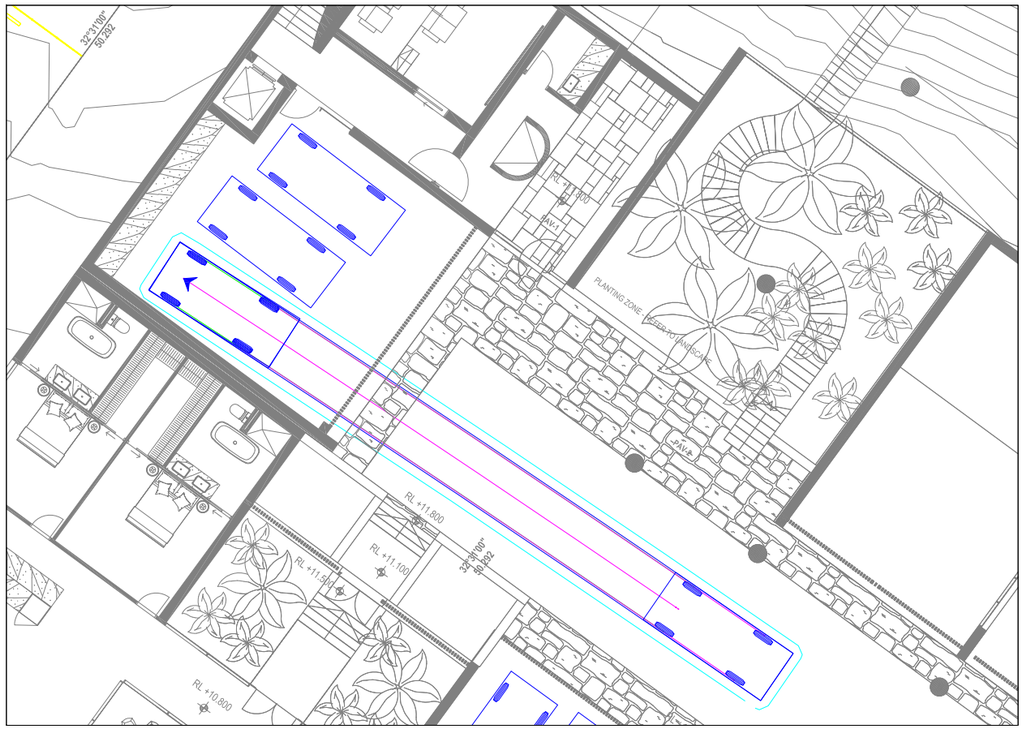
REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

B85 GARAGE PARKING 06 - INGRESS

B85 GARAGE PARKING 06 - EGRESS



B85 GARAGE PARKING 07 - INGRESS



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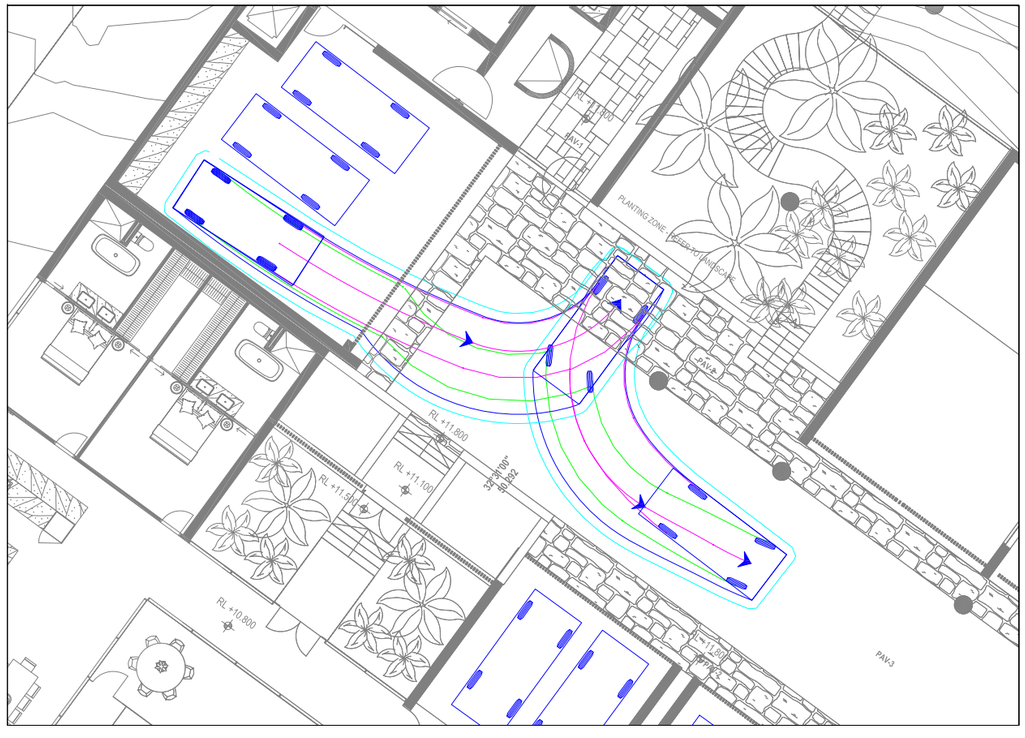

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	16/03/2022	TOWN PLANNING	S.GOH	C.MORELLO

69-73 MURPHY STREET, PORT DOUGHLAS
PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:

BASE FILES FROM WARREN & MAHONEY
DATED MARCH 2022

FILE NAME: G29056-03
SHEET NO.: 05

N

SCALE:
1:200 (A3)
0 2 4

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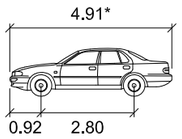
VEHICLE PROFILE

VEHICLE USED IN SIMULATION



85th percentile
(AS/NZS 2890.1:2004)

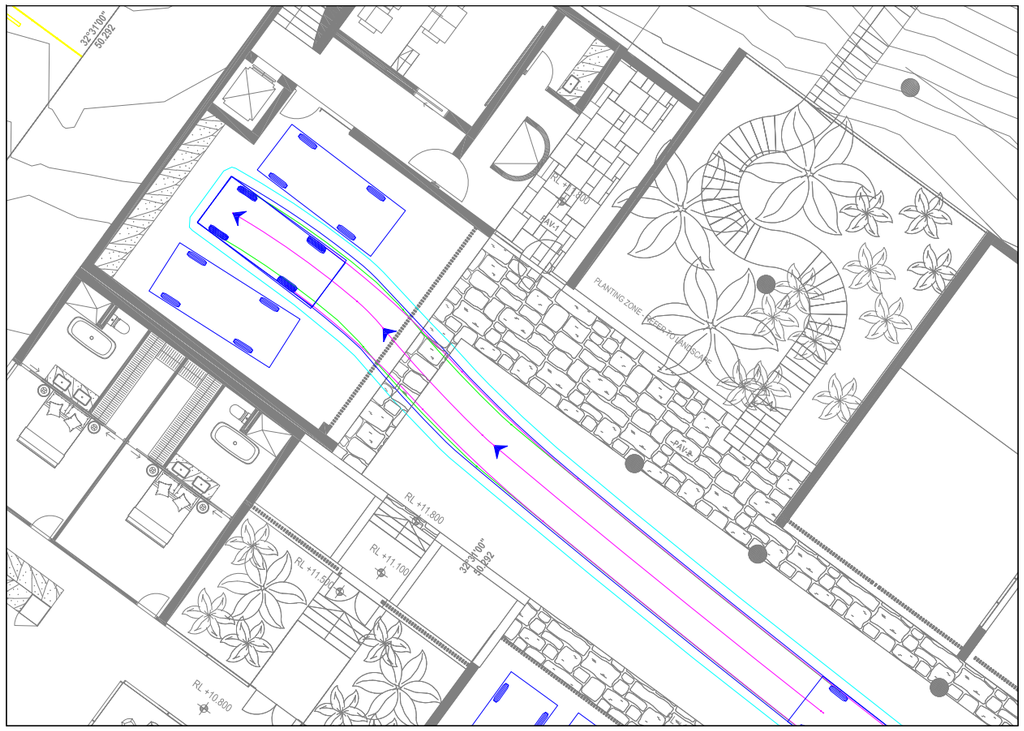
Width	:	1.87m
Track	:	1.77m
Kerb to Kerb Radius	:	11.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

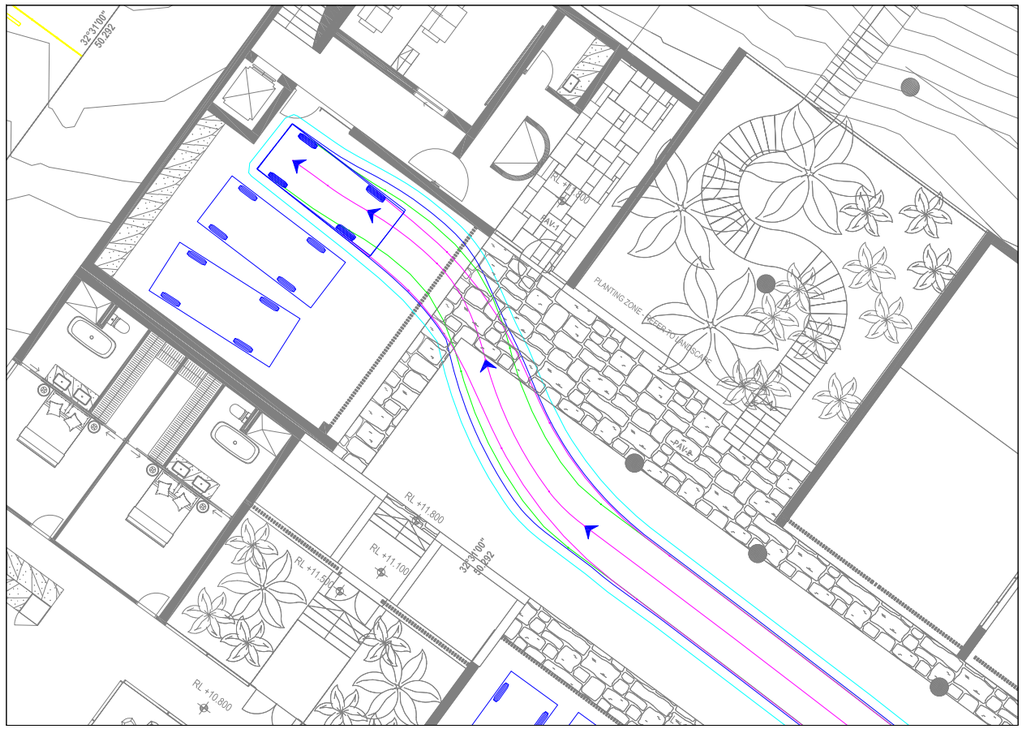
REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

B85 GARAGE PARKING 08 - INGRESS



B85 GARAGE PARKING 08 - EGRESS

B85 GARAGE PARKING 09 - INGRESS



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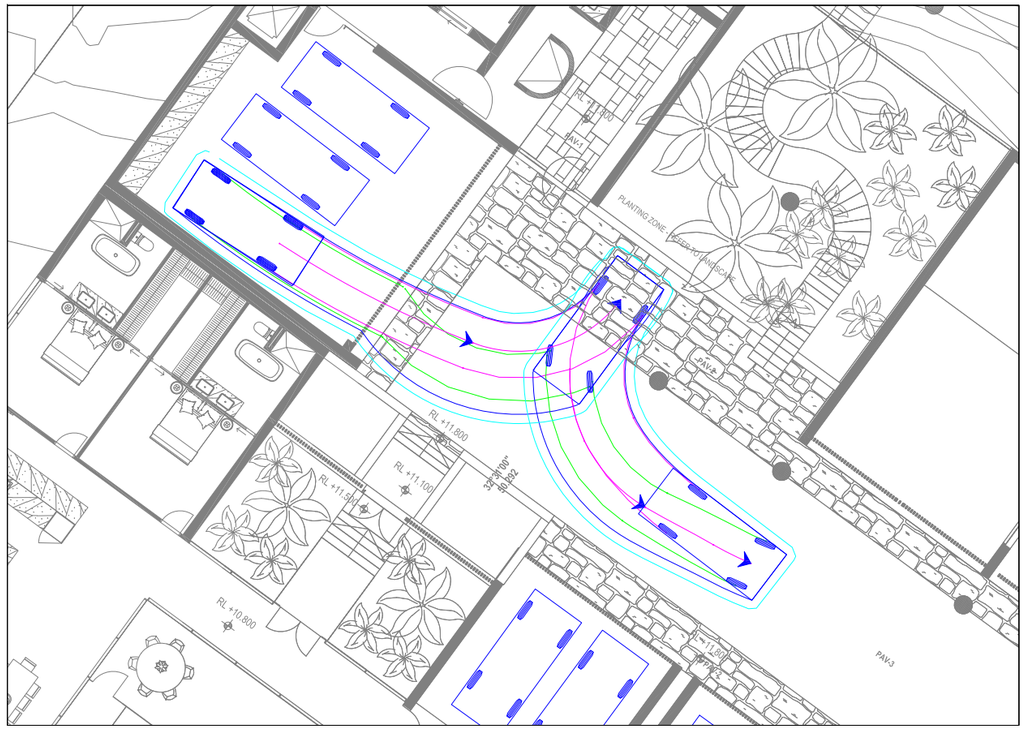

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	16/03/2022	TOWN PLANNING	S.GOH	C.MORELLO

69-73 MURPHY STREET, PORT DOUGHLAS
PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:

BASE FILES FROM WARREN & MAHONEY
DATED MARCH 2022

FILE NAME: G29056-03
SHEET NO.: 06

N

SCALE: 1:200 (A3)
0 2 4

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T: (03) 9822 2888
www.traffixgroup.com.au

Annexure 5

Landscape Plan

69 - 73 MURPHY STREET

PORT DOUGLAS

GENERAL NOTES

- ALL LANDSCAPE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECT'S AND ADDITIONAL CONSULTANT'S DRAWINGS, SPECIFICATIONS AND REPORTS
- ALL PUBLIC UTILITY SERVICES ARE TO BE LOCATED ON SITE BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORKS. THE LOCATION, PRESENCE AND EXTENT OF SERVICES SHOWN ARE NOT GUARANTEED COMPLETE OR CORRECT
- PERFORM EXCAVATION IN THE VICINITY OF UNDERGROUND UTILITIES WITH CARE AND IF NECESSARY, BY HAND. THE CONTRACTOR BEARS FULL RESPONSIBILITY FOR THIS WORK AND DISRUPTION OR DAMAGE TO UTILITIES SHALL BE REPAIRED IMMEDIATELY AT NO EXPENSE TO THE OWNER
- NO TREES PROTECTED UNDER THE LOCAL COUNCIL'S TREE PRESERVATION ORDER ARE TO BE REMOVED UNLESS APPROVED BY DEVELOPMENT CONSENT OR PERMIT OBTAINED FROM COUNCIL
- ALL PAVING IS INDICATIVE, TO BE TO FUTURE SPECIFICATION, AND SET OUT ON SITE
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE LOCAL COUNCIL'S APPROVAL, STANDARDS AND CODES
- THE CONTRACTOR IS TO ENSURE THAT ALL THE WORKS ARE CARRIED OUT IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY ACT
- MBD TO REVIEW PLANT MATERIALS AT SOURCE OR BY PHOTOGRAPHS PRIOR TO PURCHASE AND DELIVERY
- EXACT LOCATIONS OF NEW PLANT MATERIAL TO BE SETOUT AND APPROVED BY THE MBD ONSITE PRIOR TO INSTALLATION. MBD RESERVES THE RIGHT TO ADJUST PLANTS TO EXACT LOCATION ONSITE

DRAINAGE AND IRRIGATION NOTES

- REFER TO CIVIL ENGINEER'S UTILITY AND DRAINAGE PLANS FOR UTILITY LOCATION AND DRAINAGE INFORMATION.
- REQUIREMENTS FOR LANDSCAPE DRAINAGE TO BE CONFIRMED ONSITE UNLESS OTHERWISE SHOWN ON THE LANDSCAPE PLANS
- TREE PITS THAT HAVE BEEN EXCAVATED INTO HEAVY EARTH OR STONE TO CONTAIN A RING OF AG PIPE LAID AT THE INVERT OF THE PIT WITHIN A MINIMUM 200mm LAYER OF FREE DRAINING MATERIAL. AG PIPE TO BE CONNECTED TO A DRAINAGE OUTLET (REFER TO TYPICAL TREE PIT DRAINAGE SECTION)
- ALL POTS TO HAVE AN IRRIGATION ALLOWANCE (SHRUBBLERS OR DRIP)
- FOR POTS LOCATED ON PAVED SURFACES, TYPICAL PAVING IRRIGATION DETAIL TO BE USED AS SHOWN
- POTS ADJACENT TO GARDEN BEDS TO BE IRRIGATED VIA IN GARDEN IRRIGATION SYSTEM
- ALL LAWN AREAS TO HAVE POPUP ROTORS
- ALL GARDEN BEDS TO HAVE FIXED SOLID RISERS WITH SPRAYS

DRAWING SCHEDULE

MYLES BALDWIN DESIGN
8 Maddison Lane, Redfern, NSW 2016 Australia
PH +61 2 9699 2622 | www.mylesbaldwin.com

PROJECT:
69-73 MURPHY STREET

CLIENT:
GURNER

AMENDMENT

ISSUE	DATE	DETAILS
A	16.03.22	ISSUE FOR DA

MBD MUST BE PRESENT ON-SITE FOR THE POSITIONING OF ALL PLANTS.
CONTACT MBD IF DISCREPANCIES OCCUR BETWEEN LANDSCAPE AND CONSULTANTS DOCUMENTS.
BUILDER TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION.

DRAWING:
COVER PAGE

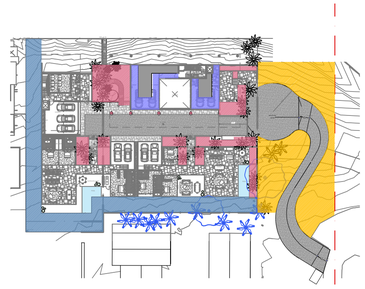
DWG No: 511_DA_01
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A

PLANT SCHEDULE

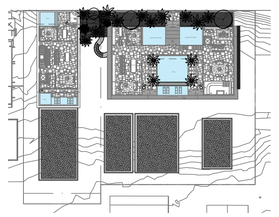
TREES												
CODE	BOTANIC NAME	COMMON NAME	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	TOTAL	POT SIZE	MATURE HEIGHT
CA	Cupaniopsis anacardioides	Tuckeroo	4	8						12	Mature	12m
CI	Calophyllum inophyllum	Beach calophylum	3	4				2		9	Mature	12m
CN	Cocos nucifera	Coconut Palm	11	9	22			15		57	Mature	6-10m
FI	Ficus lyrata	Fiddle Leaf Fig				●	●	●	●		400mm	3m
GF	Glochidion ferdinandi	Cheese Tree	5	3						8	Mature	8m
LD	Livistona decipens	Ribbon Fan Palm	3	12						15	Mature	6-10m
Lg	Licuala grandis	Ruffled Fan Palm			●			●			400mm	2-3m
PS	Plumeria species	Frangipani	1					2		3	300L	6m
RF	Randia fitzalanii	Native Gardinia	3	8						11	300L	3m
SA	Schefflera arboricola	Umbrella Tree	4	3						7	Mature	9m
SP	Schizolobium parahyba	Brazilian Fire Tree			●			●			200L	6-8m
WF	Waterhousea floribunda	Weeping Lilly Pilly	●	●							200L	3-5m
SHRUBS & PERENNIALS												
CODE	BOTANIC NAME	COMMON NAME	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7		POT SIZE	MATURE HEIGHT
Am	Alocasia macrorrhiza	Giant Taro	●		●			●			400mm	1.5-2.5m
Ach	Acmena hemilampra	Broad leaved lilly pilly	●	●							300mm	4m
Ac	Alpinia caerulea	Native Ginger	●	●							400mm	3m
Az	Alpinia zerumbet	Shell Ginger	●	●	●			●			200mm	2-3m
Cm	Carissa macrocarpa 'Emerald star'	Natal Plum			●	●	●	●			300mm	0.6m
Fm	Ficus microcarpa 'Green island'	Greenlisland Fig			●	●	●	●	●		300mm	0.6m
Mc	Molineria capitulata	Palm Grass	●	●							140mm	0.8m
Md	Monstera deliciosa	Delicious Monster	●	●	●	●		●			400mm	3m
Mp	Murraya paniculata	Orange Jasmine	●	●							400mm	1-3m
Px	Philodendron 'Xanadu'	Philodendron			●	●		●			300mm	0.8m
Re	Rhapis excelsa	Broadlead lady palm	●	●	●			●			300mm	4m
FERNS												
CODE	BOTANIC NAME	COMMON NAME	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7		POT SIZE	MATURE HEIGHT
Am	Asparagus densiflorus 'Myersii'	Foxtail Asparagus	●	●		●					200mm	0.7m
Aa	Asplenium antiquum	Birdsnest Fern	●	●		●					200mm	1m
Bg	Blechnum gibbum	Silver Lady Fern	●	●		●					200mm	1m
Md	Microsorum diversifolium	Kangaroo Fern	●	●		●					140mm	0.4m
GROUNDCOVERS & CLIMBERS												
CODE	BOTANIC NAME	COMMON NAME	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7		POT SIZE	MATURE HEIGHT
Cf	Chonemorpha fragrans	Frangipani Vine			●						140mm	Climber
Fp	Ficus pumila	Creeping fig	●	●	●			●			140mm	Climber
Hc	Hedera canariensis	The Canarian Ivy		●	●		●	●	●		100mm	Cascading Groundcover
Hs	Hibbertia scandens	Guinea flower	●	●							140mm	Groundcover
Rc	Rhaphidophora cryptantha	Shingle Plant		●	●						140mm	Climber
Ve	Tarlmounia elliptica	Curtain creeper				●	●	●	●		140mm	Cascading
Vo	Viola odorata	Native violet	●	●	●	●		●			140mm	Groundcover

NOTES

- IF SPECIFIED POT SIZES ARE NOT READILY AVAILABLE, PLEASE CONTACT MBD TO CLARIFY SUBSTITUTE SIZES AND CHANGES TO QUANTITIES
- ALL MATURE TREES TO BE SOURCED AND SUPPLIED BY MYLES BALDWIN DESIGN
- THE PLANT SCHEDULE IS CALCULATED BASED OFF THE LANDSCAPE PLANS PROVIDED BY MBD. ADDITIONAL PLANTS OUTSIDE OF THIS SCHEDULE MAY BE REQUIRED TO REACH THE DESIRED PLANT DENSITIES ONSITE
- ALL PLANT MATERIAL TO BE SETOUT ONSITE BY MYLES BALDWIN DESIGN PRIOR TO INSTALLATION



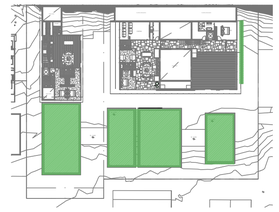
GROUND FLOOR
PLANTING KEY PLAN



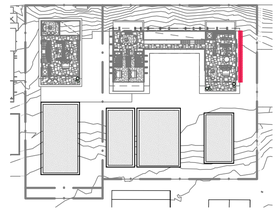
LVL 2
PLANTING KEY PLAN

LEGEND

- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4
- ZONE 5
- ZONE 6
- ZONE 7



LVL 1
PLANTING KEY PLAN



LVL 3
PLANTING KEY PLAN

TREES

Beach calophyllum
Calophyllum inophyllum

Coconut Palm
Cocos nucifera

Tuckeroo
Cupaniopsis anacardioides

Umbrella Tree
Schefflera arboricola

Cheese Tree
Glochidion ferdinandi

Fiddle Leaf Fig
Ficus lyrata

Ruffled Fan Palm
Licuala grandis

Ribbon Fan Palm
Livistona decipens

Frangipani
Plumeria obtusa

Native Gardinia
Randia fitzalanii

Brazilian Fire Tree
Schizolobium parahyba

Weeping Lilly Pilly
Waterhousea floribunda

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PROJECT:
69-73 MURPHY STREET

CLIENT:
GURNER

AMENDMENT

ISSUE	DATE	DETAILS
A	16.03.22	ISSUE FOR DA

MBD MUST BE PRESENT ON-SITE FOR THE POSITIONING OF ALL PLANTS.
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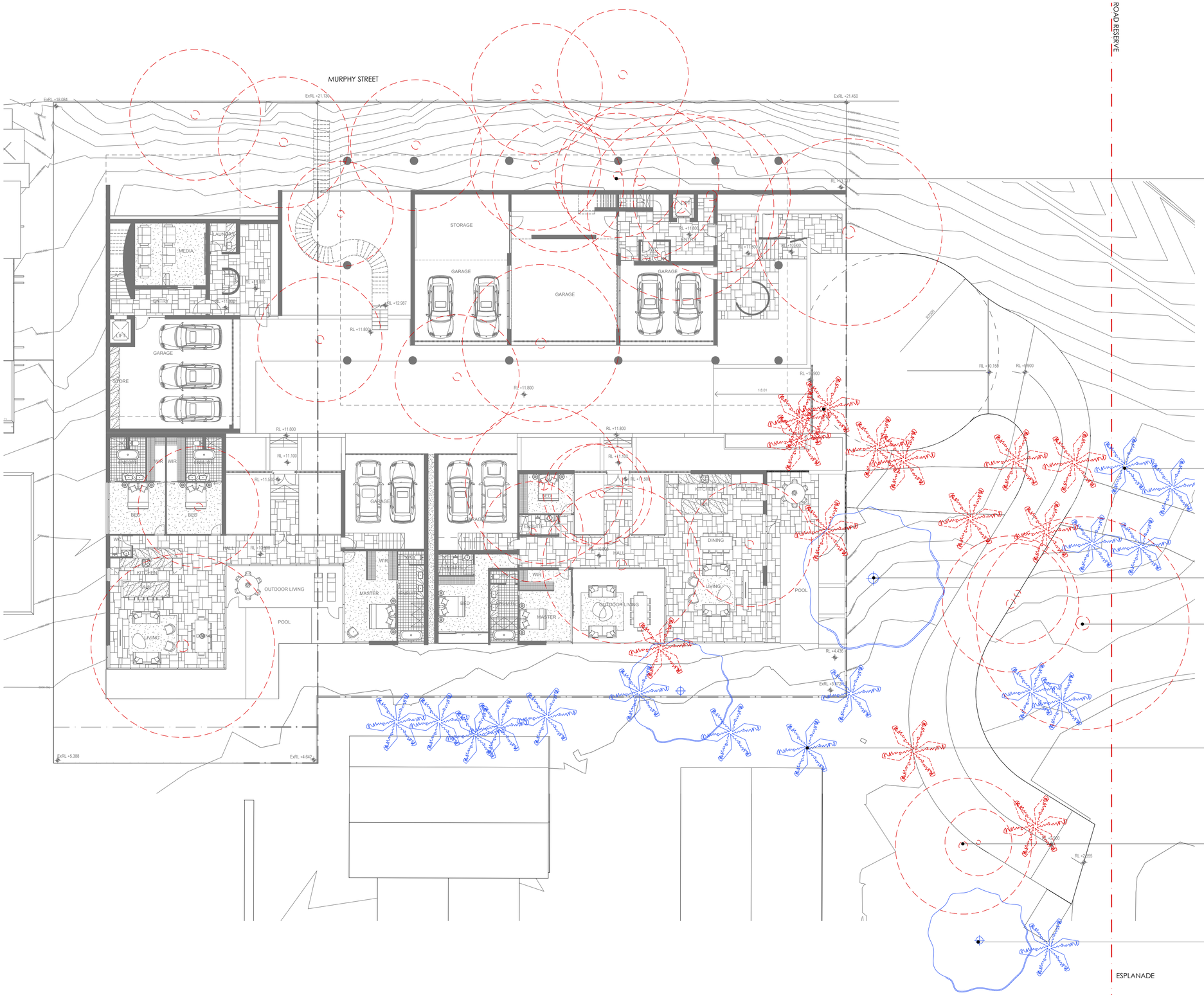
DRAWING:
PLANT SCHEDULE 1/2

DWG No: 511_DA_02
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A



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AMENDMENT

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DRAWING:
TREE RETENTION & REMOVAL

DWG No: 511_DA_04
SCALE: 1:150 @ A1
DRAWN: RM
CHECKED: LM
ISSUE: A

SHRUBS, PERENNIALS & FERNS


Giant Taro
Alocasia macrorrhiza

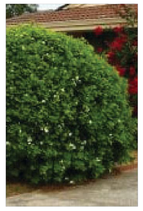

Shell Ginger
Alpinia zerumbet


Natal Plum
Carissa macrocarpa 'Emerald Star'

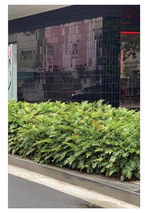

Green Island Fig
Ficus microcarpa 'Green Island'


Native Ginger
Alpinia caerulea


Palm grass
Molineria capitulata




Orange Jasmine
Murraya paniculata




Philodendron
Philodendron 'Xanadu'


Broadlead Lady Palm
Rhapis excelsa


Broad-leaved lilly pilly
Acmena hemilampra


Foxtail Asparagus
Asparagus densiflorus 'Myersii'


Birdsnest Fern
Asplenium antiquum


Silver Lady Fern
Blechnum gibbum


Kangaroo Fern
Microsorum diversifolium

CLIMBERS, HANGING PLANTS & GROUNDCOVERS

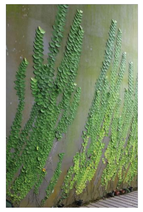

Frangipani Vine
Chonemorpha fragrans


Creeping Fig
Ficus pumila


Curtain Creeper
Vernonia elliptica


Swiss Cheese Plant
Monstera adansonii


Delicious monster
Monstera deliciosa




Shingle Plant
Rhaphidophora cryptantha

Native violet
Viola odorata

Canarian Ivy
Hedera canariensis

Guinea flower
Hibbertia scandens

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PROJECT:
69-73 MURPHY STREET

CLIENT:
GURNER

AMENDMENT

ISSUE	DATE	DETAILS
A	16.03.22	ISSUE FOR DA

MBD MUST BE PRESENT ON-SITE FOR THE POSITIONING OF ALL PLANTS.
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BUILDER TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION.

DRAWING:
PLANTING SCHEDULE 2/2

DWG No: 511_DA_03
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A

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DRAWING:
LANDSCAPE PLAN - LVL 1 & GARAGE MEZZANINE

DWG No: 511_DA_12
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A

RETAIN EXISTING LANDSCAPE AND MAKE GOOD WHERE NEEDED

PROPOSED Calophylum inophylum

PROPOSED CLUSTER OF Cocos nucifera

PROPOSED CLUSTER OF Cocos nucifera

EXISTING CLUSTER OF Cocos nucifera TO BE RETAINED

PROPOSED CLUSTER OF Livistona decpiens

PROPOSED Glochidion ferdinandi

EXISTING Scheflera arboricola TO BE RETAINED

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 2 PLANTING

PROPOSED MATURE TREES TO WESTERN BOUNDARY:
Livistona decipens
Cocos nucifera
Cupaniopsis anacardioides
Randia fitzalanii
Waterhousia floribunda

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 1 PLANTING

PROPOSED DRIVEWAY TO TRAFFIC AND CIVIL ENGINEERS DETAILS

PROPOSED LOCATION OF BIN COLLECTION ENCLOSURE.
TO ARCHITECTS DETAILS

LEGEND

- PROPOSED TREE
- EXISTING TREE
- GARDEN BED

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DRAWING:
LANDSCAPE PLAN - ENTRY RD AND WESTERN BOUNDARY

DWG No: 511_DA_10
SCALE: 1:150 @ A1
DRAWN: RM
CHECKED: LM
ISSUE: A

PRIVATE STAIR ACCESS FROM MURPHY STREET TO RESIDENCES. TO FUTURE DETAIL

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 6 PLANTING

PROPOSED MATURE Cocos nucifera AND Glochidion ferdinandi TO BE PLANTED BETWEEN DWELLING 1 & 2

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 6 PLANTING

PROPOSED MATURE Plumeria obtusa

PROPOSED MATURE Cocos nucifera

MURPHY STREET

ENTRY GATE AND FRONT WALL TO ARCHITECTS DETAIL AND SPECIFICATION

POOL TO ARCHITECTS DETAILS

PAVING TO ARCHITECTS SPECIFICATION

FEATURE POTS TO FUTURE SPECIFICATION

1.2m HIGH GLASS POOL FENCE AND GATE. TO COMPLY WITH AS 1926.1

PROPOSED MATURE Cocos nucifera IN PAVING

PROPOSED MATURE Cocos nucifera IN PAVING

FEATURE POTS ON BALCONY TO FUTURE SPECIFICATION

1.2m HIGH GLASS POOL FENCE AND GATE. TO COMPLY WITH AS 1926.1

POOL TO ARCHITECTS DETAILS

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 6 PLANTING

PROPOSED MATURE Plumeria obtusa

PROPOSED MATURE Cocos nucifera

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 6 PLANTING

CUSTOM GRC PLANTER FOR CASCADING PLANT MATERIAL. TO FUTURE DETAIL

FEATURE POTS ON BALCONY TO FUTURE SPECIFICATION

PROPOSED MATURE Cocos nucifera IN PAVING

1.2m HIGH GLASS POOL FENCE AND GATE. TO COMPLY WITH AS 1926.1

POOL TO ARCHITECTS DETAILS

PAVING TO ARCHITECTS SPECIFICATION

PROPOSED MATURE Cocos nucifera IN PAVING

FEATURE POTS TO FUTURE SPECIFICATION

1m GLASS BALUSTRADE TO ARCHITECTS DETAILS

LEGEND

PROPOSED TREE

EXISTING TREE

GARDEN BED

SCALE 1:100

0 1 2 3 4 5 10

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DRAWING:
LANDSCAPE PLAN - LVL 2

DWG No: 511_DA_13
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 3 PLANTING

STAIRCASE TO FUTURE DETAIL

PROPOSED CLUSTER OF MATURE Cocos nucifera

PROPOSED MATURE Cocos nucifera IN PAVING

PLANTING POCKETS FOR GREENERY TO CLIMB UP PILLARS OF ARCHITECTURE

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 3 PLANTING

PROPOSED CLUSTER OF MATURE Cocos nucifera

FEATURE POTS TO FUTURE SPECIFICATION

POOL TO ARCHITECTS DETAIL

FEATURE POTS TO FUTURE SPECIFICATION

PROPOSED CLUSTER OF MATURE Cocos nucifera

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 3 PLANTING

PAVING TO ARCHITECTS SPECIFICATION

WALL AND GATE TO ARCHITECTS DETAIL AND SPECIFICATION

GRAVEL BALLAST ON GREEN ROOF ABOVE GARAGE

PROPOSED MATURE Cocos nucifera IN PAVING

STEEL EDGE BETWEEN PLANTING AND GRAVEL BALLAST

PROPOSED CLUSTER OF MATURE Cocos nucifera

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 4 PLANTING

PLANTING POCKETS FOR GREENERY TO CLIMB UP PILLARS OF ARCHITECTURE

DRIVEWAY TO TRAFFIC AND CIVIL ENGINEERS DETAILS

ENTRY GATE TO ARCHITECTS DETAIL

PROPOSED CLUSTER OF MATURE Cocos nucifera

EASTERN BOUNDARY WALL / FENCE TO ARCHITECTS DETAILS

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 3 PLANTING

PROPOSED MATURE Cocos nucifera

FEATURE POTS TO FUTURE SPECIFICATION

POOL TO ARCHITECTS DETAIL

FEATURE POTS TO FUTURE SPECIFICATION

REFER TO DRAWING 10 FOR LANDSCAPE PLAN

LEGEND

PROPOSED TREE

EXISTING TREE

GARDEN BED

SCALE 1:100

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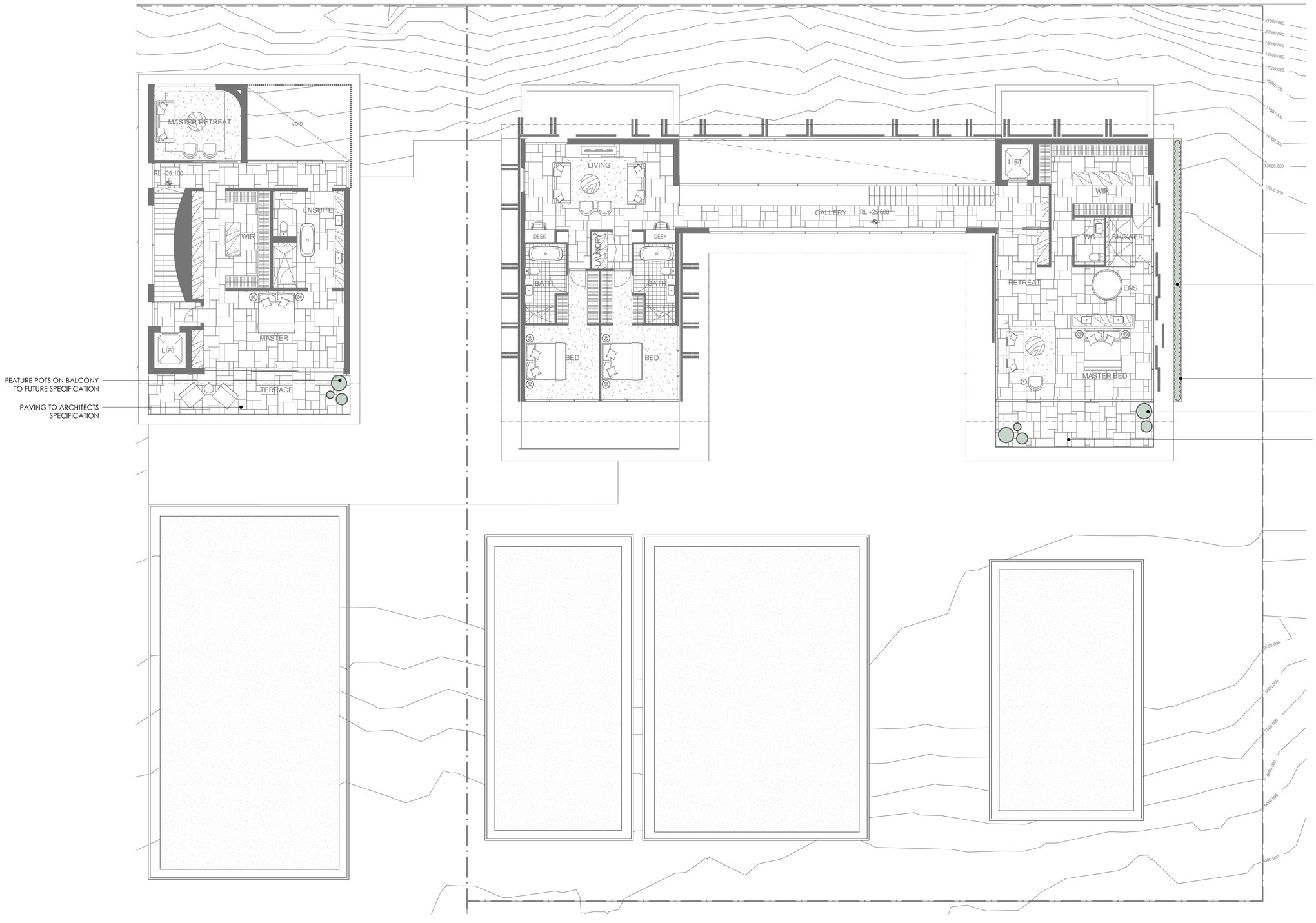
DRAWING:
LANDSCAPE PLAN - GROUND LEVEL

DWG No: 511_DA_11
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A



FEATURE POTS ON BALCONY TO FUTURE SPECIFICATION

PAVING TO ARCHITECTS SPECIFICATION

REFER TO THE PLANT SCHEDULE ON DRAWING 02 FOR ZONE 7 PLANTING

CUSTOM GRC PLANTER FOR CASCADING PLANT MATERIAL. TO FUTURE DETAIL

FEATURE POTS ON BALCONY TO FUTURE SPECIFICATION

PAVING TO ARCHITECTS SPECIFICATION

LEGEND

PROPOSED TREE

EXISTING TREE

GARDEN BED

SCALE 1:100

0 1 2 3 4 5 10

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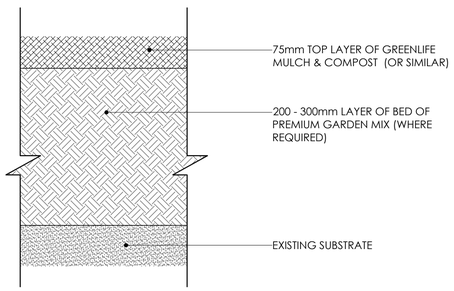
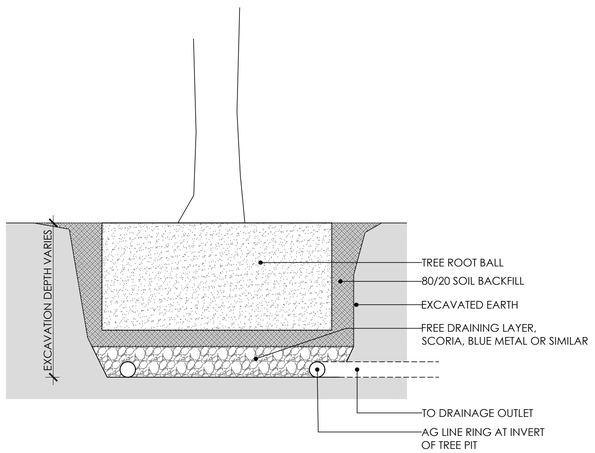
DRAWING:
LANDSCAPE PLAN - LVL 3

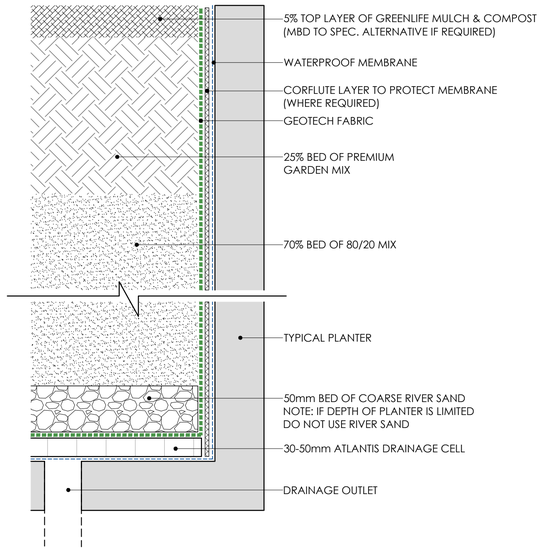
DWG No: 511_DA_14
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A



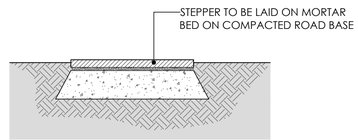
TYPICAL GARDEN SOIL PROFILE
SCALE: 1:5 @ A1



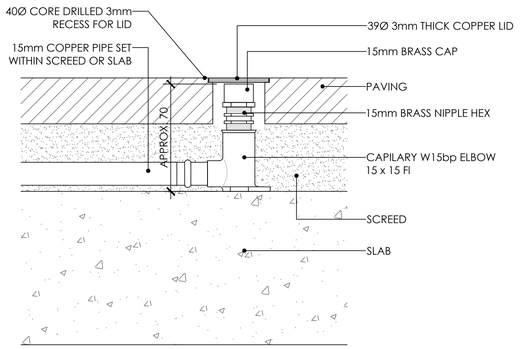
TYPICAL TREE PIT DRAINAGE
SCALE 1:20 @ A1



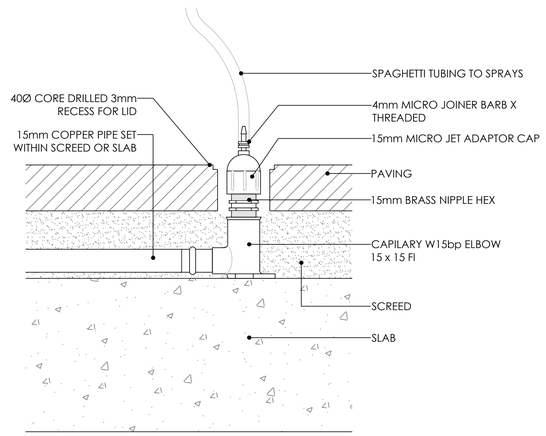
TYPICAL PLANTER SOIL PROFILE
SCALE: 1:5 @ A1



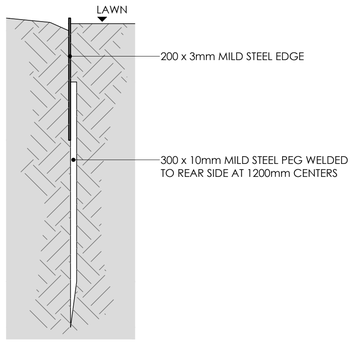
TYPICAL GARDEN STEPPER
SCALE: 1:10 @ A1



TYPICAL PAVING IRRIGATION CLOSED
SCALE 1:2 @ A1



TYPICAL PAVING IRRIGATION OPEN
SCALE 1:2 @ A1



TYPICAL STEEL EDGE
SCALE 1:5 @ A1

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DRAWING:
TYPICAL DETAILS

DWG No: 511_DA_35
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A

GENERAL SPECIFICATION NOTES

1.0 STANDARDS

1.1 SOILS

- AS 4419: Soils for Landscaping and Garden Use
- AS 3743: Potting Mixes
- AS 4454: Composts, Soil Conditioners and Mulches

1.2 Plants

- AS 2303: Tree Stock for Landscape Use
- AS 4970: Protection of Trees on Development Sites

2.0 PRODUCTS

2.1 MATERIAL

Topsoil

- Source: Provide topsoil, which contains organic matter, is free from stones, contaminants and weeds
- Site: If available, provide material recovered from the site

Turf

- Supplier: Obtain turf from a specialist grower of cultivated turf
- Quality: Provide turf of even thickness, free from weeds and other foreign matter

Fertiliser

- General: Provide proprietary fertilisers, delivered to the site in sealed bags marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses and application rates

Plants

- Health: Supply plants with foliage size, texture and colour at time of delivery consistent with the size, texture and colour shown in healthy specimens of the nominated species
- Vigour: Supply plants with extension growth consistent with that exhibited in vigorous specimens of the species nominated
- Damage: Supply plants free from damage and from restricted habit due to growth in nursery rows
- Pests and disease: Supply plants with foliage free from pest attack or disease
- Substitutes: Plant substitution (species or quantities) is not acceptable unless approved by Myles Baldwin Design.

3.0 EXECUTION

3.1 SITE PREPARATION

Weed eradication

- Herbicide: Eradicate weeds with a non-residual glyphosate herbicide in any of its registered formulae, at the recommended maximum rate
- Earth mounds
- Placing: Place clean filling in layers approximately 150 mm thick compacted to 85% of the dry density ratio of the surrounding soil as determined by AS 1289.5.4.1. Minimise slumping and further internal packing down

Edges

- Construct changes in grade over a minimum width of 500 mm to smooth, gradual and rounded profiles with no distinct joint

Existing trees

- Tree protection zones (TPZ) shall be established around all trees to be retained and in accordance of AS 4970. The area within the fence shall be mulched and maintained at 75mm depth
- No excavation, construction activity, grade changes, storage of materials, stock piling, siting of sheds, preparation of mixes or cleaning of tolls is permitted within the TPZ

Planting beds

- Excavated: Excavate to bring the subsoil to at least 300 mm below finished design levels. Shape the subsoil to fall to subsoil drains where applicable. Break up the subs to a further depth of 100 mm
- Unexcavated: Remove weeds, roots, building rubble and other debris. Bring the planting bed to 75 mm below finished design levels
- Services and roots: Do not disturb services or tree roots; if necessary, cultivate these areas by hand

Placing topsoil

- General: Spread the topsoil on the prepared subsoil and grade evenly, making the necessary allowances to permit the following:
- Required finished levels and contours may be achieved after light compaction
- Grassed areas may be finished flush with adjacent hard surfaces such as kerbs, paths and mowing strips

Topsoil depths

- General: Spread topsoil to the following typical depths:
- Excavated planting areas: If using organic soil, 300 mm. Refer to typical soil profile detail
- Irrigated grassed areas generally: 150 mm
- Irrigated grassed areas, heavy use (e.g. playing fields, playgrounds, and public parks): 200 mm

Sediment and Erosion Control

- Sediment and erosion control measures are required during the construction of all developments and building works. It shall be the contractor's responsibility that works are carried out in accordance with a sediment and erosion control plan and council/approving authority's requirements.

3.2 TURFING

General

- Supply: Deliver the turf within 24 hours of cutting, and lay it within 36 hours of cutting. Prevent the turf from drying out between cutting and laying. If it is not laid within 36 hours of cutting, roll it out on a flat surface with the grass up, and water as necessary to maintain a good condition
- Laying: Lay the turf in the following manner:
- In stretcher pattern with the joints staggered and close butted
- Parallel with the long sides of level areas, and with contours on slopes
- To finish flush, after tamping, with adjacent finished surfaces of ground, paving edging, or grass seeded areas
- Tamping: Lightly tamp to an even surface immediately after laying. Do not use a roller
- Fertilising: Mix the fertiliser thoroughly into the topsoil before placing the turf. Apply lawn fertiliser at the completion of the first and last mowings, and at other times as required to maintain healthy grass cover
- Watering: Water immediately after laying until the topsoil is moistened to its full depth. Continue watering to maintain moisture to this depth
- Levels: Where levels have deviated from the design levels after placing and watering, lift turf and re-grade topsoil to achieve design levels

3.3 PLANTING

General

- Individual plantings in grassed areas: Excavate a hole twice the diameter of the root ball and at least 100 mm deeper than the root ball. Break up the base of the hole to a further depth of 100 mm, and loosen compacted sides of the hole to prevent confinement of root growth
- Watering: Thoroughly water the plants before planting, immediately after planting, and as required to maintain growth rates free of stress
- Placing: Remove the plant from the container with minimum disturbance to the root ball, ensure that the root ball is moist and place it in its final position, in the center of the hole and plumb, and with the top soil level of the plant root ball level with the finished surface of the surrounding soil
- Fertilising plants: In planting beds and individual plantings, place fertiliser pellets around the plants at the time of planting
- Backfilling: Backfill with topsoil mixture. Lightly tamp and water to eliminate air pockets

3.4 TREES

General

- All trees must be planted by an AQF Level 3 Qualified Arborist, Landscape Gardener or Horticulturalist

Clay Soils

- The base of each tree pit within clay soils shall be laid with 100mm deep scoria. A 90mm ag line ring shall sit within the scoria and drain directly to a suitable location. Lay geo-textile fabric evenly above the scoria, prior to tree placement and backfilling with 80/20 mineral soil

3.5 MULCHING

Placing mulch

- General: Place mulch to the required depth, clear of plant stems, and rake to an even surface flush with the surrounding finished levels. Spread and roll mulch so that after settling, or after rolling, it is smooth and evenly graded between design surface levels sloped towards the base of plant stems in plantation beds, and not closer to the stem than 50 mm in the case of gravel mulches.
- Garden beds: Greenlife Mulch and Compost
- Tree mulch ring: Mushroom compost
- Depths: Spread organic mulch to a depth of 75 mm, and gravel mulch to a depth of 50 mm

3.6 STAKES AND TIES

Stakes

- Material: Hardwood, straight, free from knots or twists, pointed at one end
- Installation: Drive stakes into the ground at least one third of their length, avoiding damage to the root system

Ties

- General: Provide 50 mm hessian webbing ties fixed securely to the stakes, one tie at half the height of the main stem, others as necessary to stabilise the plant

3.7 WATERING

Establishment

- Extent: Available soil moisture content of grass areas and garden beds to be monitored on a weekly basis using an approved moisture probe and water applied on a demand basis. Readings should be taken at a depth of 250mm
- All grass areas and garden beds should be maintained within a range of 50-80% available soil moisture. Under no circumstance should areas under irrigation fall below a level of 30% available soil moisture
- No visible signs of wilting of leaves or stems, with all plants fully turgid at all times.
- No sign of over-watering such as constantly wet soil, brown leaf margins, stem rot or brown spots on foliage

3.8 LANDSCAPE SUBSOIL DRAINAGE

General

- Include subsoil drainage behind retaining walls, along path edges and in mass planting beds, including lawn areas. Maintenance access points shall be every 15m

Materials

- Geotextile fabric: shall consist of a woven or a non-woven type to be manufactured from synthetic materials other than polyamide
- Aggregate: shall be a single size with a nominal dimension of 10-40mm
- Subsoil pipe: shall be 90 mm diameter corrugated flexible slotted PVC pipe in a geofabric sock, or 100mm µPVC if under pavement. All pipes to requirements of AS 1254. Where vehicle loads are encountered, reinforced concrete pipe shall be used only

Construction

- Trenches to be minimum 300mm wide and extend 500mm below the subgrade level or 150mm if into bed rock
- Trenches to be lined with geotextile fabric and backfilled with aggregate. Pipe to be laid 50mm above trench floor
- Prior to backfilling the trench, drainage and connection to stormwater is to be approved by the site manager

3.9 COMPLETION

Cleaning

- Stakes and ties: Remove those no longer required at the end of the planting establishment period
- Temporary fences: Remove temporary protective fences at the end of the planting establishment period

4.0 ESTABLISHMENT & DEFECTS LIABILITY

4.1 ESTABLISHMENT

General

- All landscaping works will have an establishment period of 26 weeks in which the subcontractor will be responsible for the maintenance and upkeep of the contracted scope, unless otherwise noted in the project documentation. If applicable refer to the project manager / builder for confirmation

4.2 DEFECTS LIABILITY PERIOD

General

- All landscaping works will be subject to a defects liability period of 52 weeks, commencing from the date of Practical Completion, unless otherwise noted in the project documentation. If applicable refer to the project manager / builder for confirmation

4.3 FAILED PLANTINGS

General

- Photographic images of plants shall be approved by Myles Baldwin Design prior to procurement of replacement plant and tree stock

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DRAWING:
GENERAL SPECIFICATION

DWG No: 511_DA_50
SCALE: AS NOTED
DRAWN: RM
CHECKED: LM
ISSUE: A

Annexure 6

Pressure and Flow Test Certificate

GILBOY HYDRAULIC SOLUTIONS

GJ & TL GILBOY PTY LTD / ACN: 105 215 432 / ABN: 85 105 215 432

4/131 Scott Street, Bungalow.
PO Box 857N, North Cairns. 4870
Phone: (07) 4051 5116 Mobile: 0439 664623
Email: reception@gilboy.com.au

FIRE HYDRANT FLOW AND PRESSURE TEST CERTIFICATE

PROPERTY LOCATION:	**69 MURPHY STREET**
HYDRANT LOCATION NO: 1	**MACROSSAN STREET**
HYDRANT LOCATION NO: 2	**MURPHY STREET**
TEST CONDUCTED FOR:	**STANTEC AUSTRALIA PTY LTD**
DATE:	**11TH MARCH 2022**
TIME:	**TEST 1: 11:52am TEST 2: 12:13pm**
TEST RESULTS	
FIRE HYDRANT NO: 1	**REFER TO ATTACHMENT FOR LOCATION**
STATIC PRESSURE:	**550 kPa**
FLOW RESULTS:	**5lit/sec: 475kPa** **10lit/sec: 400kPa** **14it/sec: 350kPa** **15lit/sec: 325kPa** **20lit/sec: 225kPa** **22lit/sec: 200kPa** **25lit/sec: 90kPa** **FULL FLOW 27lit/sec : 40kPa**
FIRE HYDRANT NO: 2	**REFER TO ATTACHMENT FOR LOCATION**
STATIC PRESSURE:	**360 kPa**
FLOW RESULTS	**3lit/sec: 350kPa** **5lit/sec: 290kPa** **9lit/sec: 200kPa** **10lit/sec: 160kPa** **FULL FLOW 14lit/sec: 0kPa**

Comments:
Fire Hydrant Flow Rate and Residual Pressures in Mains

Name of Person Signing: **Gregory Gilboy** **QBCC: 1243525**

Position: **Managing Director**

Signature: 

Date: 14th March 2022

GILBOY HYDRAULIC SOLUTIONS

GJ & TL GILBOY PTY LTD / ACN: 105 215 432 / ABN: 85 105 215 432
4/131 Scott Street, Bungalow.
PO Box 857N, North Cairns. 4870
Phone: (07) 4051 5116 Mobile: 0439 664623
Email: reception@gilboy.com.au