



BUSHFIRE THREAT ASSESSMENT

FOR
A PROPOSED
TWO STAGED SUBDIVISION OF TWO
LOTS

AT

LOT 265-266 SPRINGFIELD DRIVE,
LOCHINVAR NSW 2321

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Disclaimer

Notwithstanding the precautions adopted within this report, it should always be remembered that bushfires burn under a wide range of conditions. An element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.



Executive Summary

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Hunterland for a proposed two-staged subdivision between Lot 265 & Lot 266 Springfield Drive, Lochinvar NSW 2321. Stage 1 involves a 3-lot subdivision with two street frontage lots and a third rear lot. Stage 2 involves the third rear lot subdivision into 3 lots. The result of this proposal will be 5 residential lots and 1 community title lot for access.

The report forms part of the supporting documentation for a DA to be submitted to Maitland City Council (MCC) because the site is mapped as Bushfire Prone Land (BPL) under the Environmental Planning & Assessment Act 1979 (s10.3 – Bush fire prone land).

The development is required to satisfy EP&A Act 1979 (Section 9.1 – Ministerial Direction, 4.4 – Planning for Bushfire Protection) for the planning proposal and EP&A Act 1979 (Section 4.46 – What is Integrated Development) for the residential subdivision. Council will refer the BAR to the NSW RFS to satisfy the gateway determination for the proposal and then need to satisfy the Rural Fire Act 1997 (s100B) for the subdivision.

This Report demonstrates how the development conforms with the document titled 'Planning for Bushfire Protection' (PBP). The aim of PBP is to provide for the protection of human life and minimise the impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment (p.10).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

- 1. Asset Protection Zone (APZ) - The APZ provides space and reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and to prevent direct flame contact.**

To achieve a Bushfire Attack Level (BAL) of **BAL-12.5** for proposed Unit 1, 4 and 5, and **BAL-LOW** for proposed Unit 2 and 3, the following land is to be managed as an APZ:

- The areas of the site outside development will be managed as an Inner Protection Area (IPA).

These distances are to be managed as described under 'Planning for Bushfire Protection (Appendix 4 – Asset Protect Zone Requirements)' and the document titled 'Standards for Asset Protection Zones'.



2. Perimeter Roads - Access standards provide for emergency evacuation and firefighting operations

- N/A – perimeter roads are not proposed. The public road network is existing and complies with PBP 2019.

3. Construction Standards – Construction standards seek to increase the protection of the habitable buildings from bushfire. The shorter the APZ (distance between the external wall of the habitable building and the unmanaged vegetation), then the higher the construction standard, which is referred to as the BAL

The proposed Unit 1, 4 and 5 in the proposed building envelope will be assessed as BAL-12.5 based on the abovementioned APZs. The proposed Unit 2 and 3 will be assessed as BAL-LOW based on the abovementioned APZs.

4. Landscaping – The type, location and ongoing maintenance of landscaping is considered a necessary BPM

- The identified APZs are to be managed in accordance with accordance with PBP (Appendix 4);
- A clear area of low-cut lawn or pavement is maintained adjacent to the dwellings; and
- Fencing details in accordance with PBP (7.6 – Fences and gates)

This report provides the above required information to assist Council and the RFS in determining compliance in accordance with the PBP 2019 and AS 3959-2018.



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Terms & Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419 -2017	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BFPL Map	Bush Fire Prone Land Map
BPMs	Bush Fire Protection Measures
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
<i>EPA Act</i>	<i>NSW Environmental Planning and Assessment Act 1979</i>
FFDI	Forest Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
MCC	Maitland City Council
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection 2019
PoM	Plan of Management
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation



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I INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Hunterland for a proposed two-staged subdivision between Lot 265 and Lot 266 Springfield Drive, Lochinvar NSW 2321, hereafter referred to as the “site” (refer to Figure 1-1 for site locality). Refer to Appendix A for Proposed Site Plans.

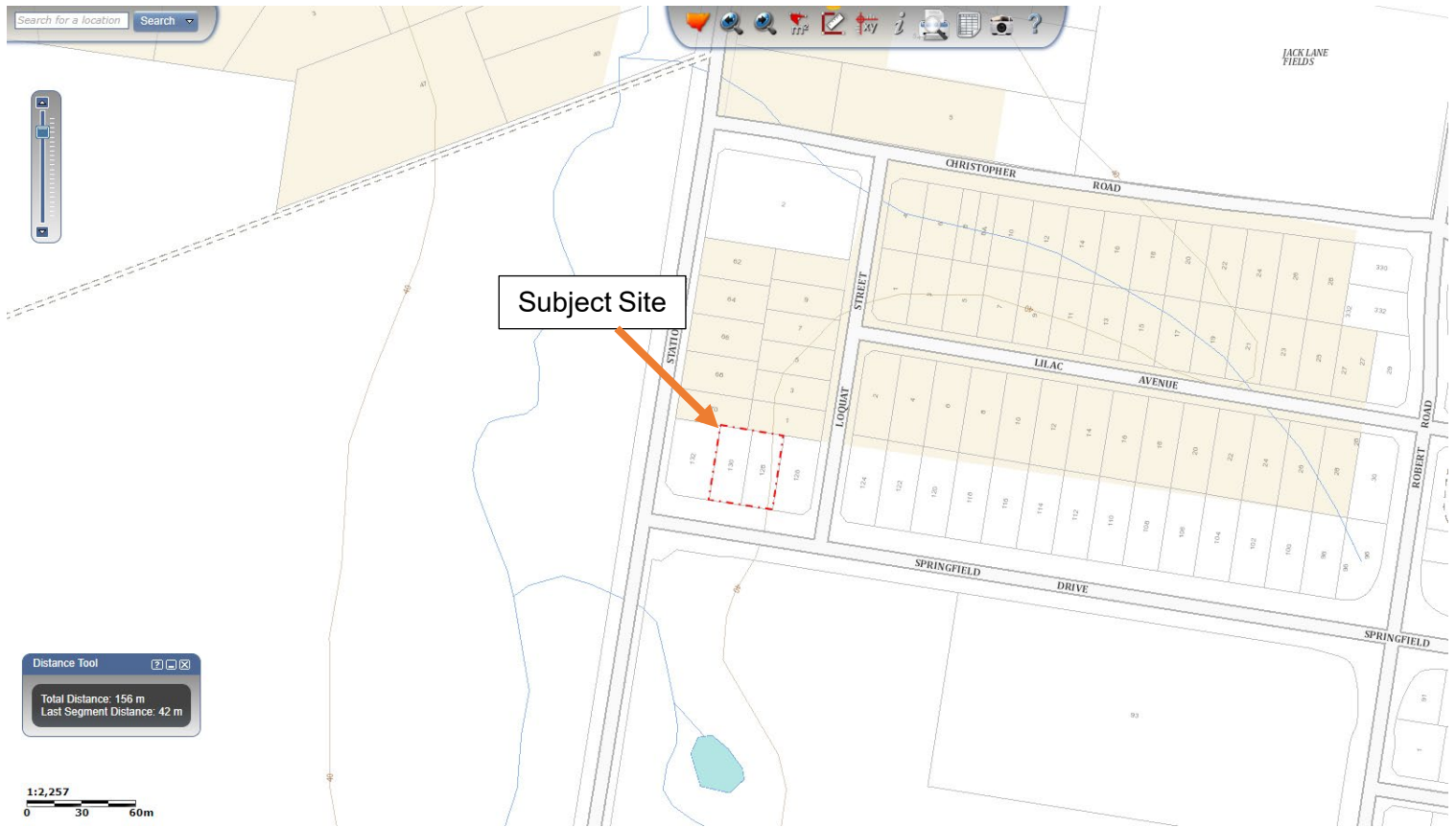
This BTA is suitable for submission with a Development Application (DA) and provides information on measures that will enable the development to comply with ‘Planning for Bushfire Protection’ (NSW RFS, 2019), hereafter referred to as PBP (RFS, 2019).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007 and the Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007).

I.1 Site Particulars

Locality:	Lot 265 and Lot 266 Springfield Drive, Lochinvar NSW 2321
LGA:	Maitland City Council
Current Land Use:	Vacant lot
Forest Danger Index:	100 FFDI

Figure 1-1: Site Location





I.2 Description of the Proposal

This DA relates to the proposal for a two-staged subdivision between Lot 265 and Lot 266 Springfield Drive, Lochinvar. Refer to Appendix A for proposed plans.

I.3 Legislative Requirements

The Site has been mapped as Bush Fire Prone Land Map (BFPLM) by MCC.

This report forms part of the supporting documentation for a Development Application (DA) to be submitted to MCC.

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

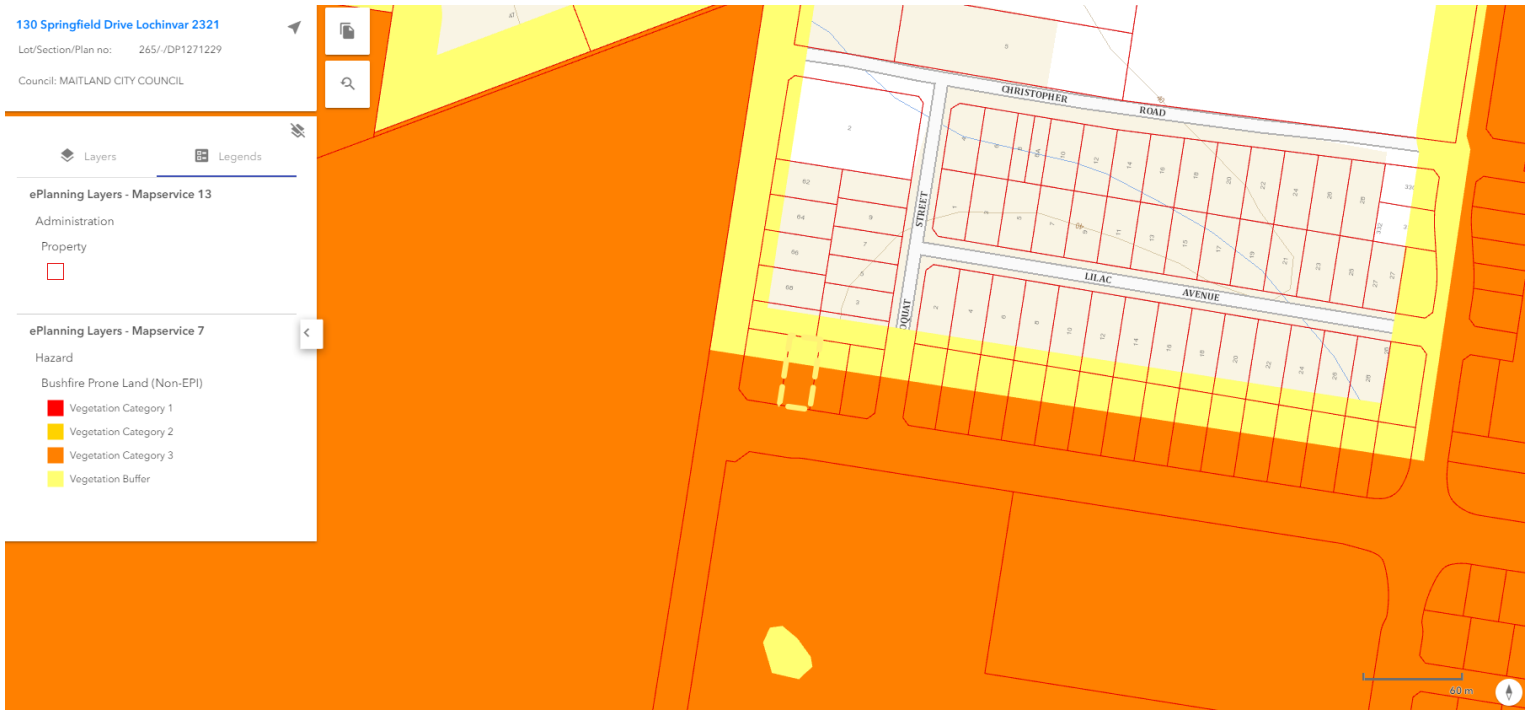
- PBP (RFS, 2019); and
- AS3959-2018 Construction of Buildings in Bushfire Prone Area.

I.4 Objectives of Assessment

This report has been prepared to address the requirements of Clause 44 of the Rural Fires Regulation. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ (and their components being Inner Protection Areas (IPA's) and Outer Protection Areas (OPA's));
- Sitting and design of the proposal;
- Construction standards;
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services; and
- Suitable landscaping, to limit fire spreading to a building.

Figure 1-2 Bushfire Prone Land Map





2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent
- Confirmation of the vegetation assemblage typology present.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 2m.



3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2019).

3.1 Vegetation & Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site. This assessment is depicted in Table 3-1.

In accordance with PBP (RFS 2019), an assessment of the slope beneath the vegetation considered a bushfire hazard was undertaken and the results are presented in Table 3-1 below.

Table 3-1: Vegetation Classification for Proposed Unit 1

Direction	Vegetation Type	Distance from Site Boundary	Slope Vegetation occurs on
North	Managed Land – Residential Development	>100m	N/A
East	Managed Land – Residential Development	>100m	N/A
South	Grassland vegetation	>53m	Cross slope / Flat
West	Grassland vegetation	>46m	Flat

Table 3-2: Vegetation Classification for Proposed Unit 2

Direction	Vegetation Type	Distance from Site Boundary	Slope Vegetation occurs on
North	Managed Land – Residential Development	>100m	N/A
East	Managed Land – Residential Development	>100m	N/A
South	Grassland vegetation	>56m	Cross slope / Flat
West	Grassland vegetation	>57m	Flat

Table 3-3: Vegetation Classification for Proposed Unit 3

Direction	Vegetation Type	Distance from Site Boundary	Slope Vegetation occurs on
North	Managed Land – Residential Development	>100m	N/A
East	Managed Land – Residential Development	>100m	N/A
South	Grassland vegetation	>53m	Cross slope / Flat
West	Grassland vegetation	>72m	Flat

Table 3-4: Vegetation Classification for Proposed Unit 4

Direction	Vegetation Type	Distance from Site Boundary	Slope Vegetation occurs on
North	Managed Land – Residential Development	>100m	N/A
East	Managed Land – Residential Development	>100m	N/A
South	Grassland vegetation	>34m	Cross slope / Flat
West	Grassland vegetation	>46m	Flat

Table 3-5: Vegetation Classification for Proposed Unit 5

Direction	Vegetation Type	Distance from Site Boundary	Slope Vegetation occurs on
North	Managed Land – Residential Development	>100m	N/A
East	Managed Land – Residential Development	>100m	N/A
South	Grassland vegetation	>35m	Cross slope / Flat
West	Grassland vegetation	>66m	Flat

4 BUSHFIRE PROTECTION ASSESSMENT

4.1 Asset Protection Zones (APZ)

The PBP (RFS, 2019) guidelines have been used to determine the widths of the APZs required for habitable buildings within the site using the vegetation and slope data identified in Section 3-1 of this report.

The site lies within Maitland Local Government Area and therefore is assessed under an FDI rating of 100. Using the results from the Site Assessment (section 3.1 of this report) the deemed to satisfy APZ requirements for the proposed buildings within the site were determined using Table A1.12.2 in PBP (RFS, 2019). Refer to Table 4-1 for the required APZs for the proposed habitable buildings.

Table 4-1: Recommended APZs for all Proposed Units

Direction from Development	Vegetation classified within 140m	Effective Slope (within 100m)	APZ to be provided
North	Managed Land	N/A	>100m APZ is existing managed land. The areas of the site outside development will be managed as an IPA.
East	Managed Land	N/A	>100m APZ is existing managed land. The areas of the site outside development will be managed as an IPA.
South	Grassland	Cross slope / flat	The areas of the site outside development will be managed as an IPA
West	Grassland	Flat	The areas of the site outside development will be managed as an IPA



5 DWELLING DESIGN & CONSTRUCTION

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2018, and accordingly the designer / architect should be made aware of this recommendation. It may be necessary to have dwelling plans checked by the architect involved to ensure that the proposed dwellings meet the relevant Bushfire Attack Level (BAL) as detailed in AS3959-2018.

The determinations of the appropriate BAL are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the construction level is derived by assessing the:

- Relevant FFDI = 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

The following BAL, based on heat flux exposure thresholds, are used in the standard:

(a) **BAL – LOW** The risk is considered to be **VERY LOW**

There is insufficient risk to warrant any specific construction requirements but there are still some risks.

(b) **BAL – 12.5** The risk is considered to be **LOW**

There is a risk of ember attack.

The construction elements are expected to be exposed to a heat flux not greater than 12.5 k/m².

(c) **BAL – 19** The risk is considered to be **MODERATE**

There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.

The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m².

(d) **BAL-29** The risk is considered to be **HIGH**

There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.



The construction elements are expected to be exposed to a heat flux no greater than 29 kW/m².

(e) **BAL-40** The risk is considered to be **VERY HIGH**

There is much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux no greater than 40 kW/m².

(f) **BAL-FZ** The risk is considered to be **EXTREME**

There is an extremely high risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux greater than 40 kW/m².

5.1 Determination of Bushfire Attack Levels

Using a FFDI of 100, the information relating to vegetation and slope was applied to Table A1.12.5 of PBP 2019 to determine the appropriate BAL ratings. The results from this bush fire risk assessment are detailed below in Table 5-1–Bush Fire Attack Assessment.

Table 5-1: Determination of Required BALs for Proposed Unit 1 within the proposed building envelope

Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
Managed Land to the North	>100m	BAL-12.5	Sect 3 & 5 of AS3959
Managed Land to the East	>100m	BAL-12.5	Sect 3 & 5 of AS3959
Grassland to the South	>53m	BAL-12.5	Sect 3 & 5 of AS3959
Grassland to the West	>46m	BAL-12.5	Sect 3 & 5 of AS3959

Given the information in Table 5-1 above, proposed Unit 1 within the proposed building envelope will be able to comply with AS3959-2018 and has been assessed as BAL-12.5 from all elevations.

Table 5-2: Determination of Required BALs for Proposed Unit 2 within the proposed building envelope

Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
Managed Land to the North	>100m	BAL-LOW	No construction requirements
Managed Land to the East	>100m	BAL-LOW	No construction requirements
Grassland to the South	>56m	BAL-LOW	No construction requirements
Grassland to the West	>57m	BAL-LOW	No construction requirements

Given the information in Table 5-2 above, proposed Unit 2 within the proposed building envelope will be able to comply with AS3959-2018 and has been assessed as BAL-LOW from all elevations.

Table 5-3: Determination of Required BALs for Proposed Unit 3 within the proposed building envelope

Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
Managed Land to the North	>100m	BAL-LOW	No construction requirements
Managed Land to the East	>100m	BAL-LOW	No construction requirements
Grassland to the South	>53m	BAL-LOW	No construction requirements
Grassland to the West	>72m	BAL-LOW	No construction requirements

Given the information in Table 5-3 above, proposed Unit 3 within the proposed building envelope will be able to comply with AS3959-2018 and has been assessed as BAL-LOW from all elevations.

Table 5-4: Determination of Required BALs for Proposed Unit 4 within the proposed building envelope

Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
Managed Land to the North	>100m	BAL-12.5	Sect 3 & 5 of AS3959
Managed Land to the East	>100m	BAL-12.5	Sect 3 & 5 of AS3959
Grassland to the South	>34m	BAL-12.5	Sect 3 & 5 of AS3959
Grassland to the West	>46m	BAL-12.5	Sect 3 & 5 of AS3959

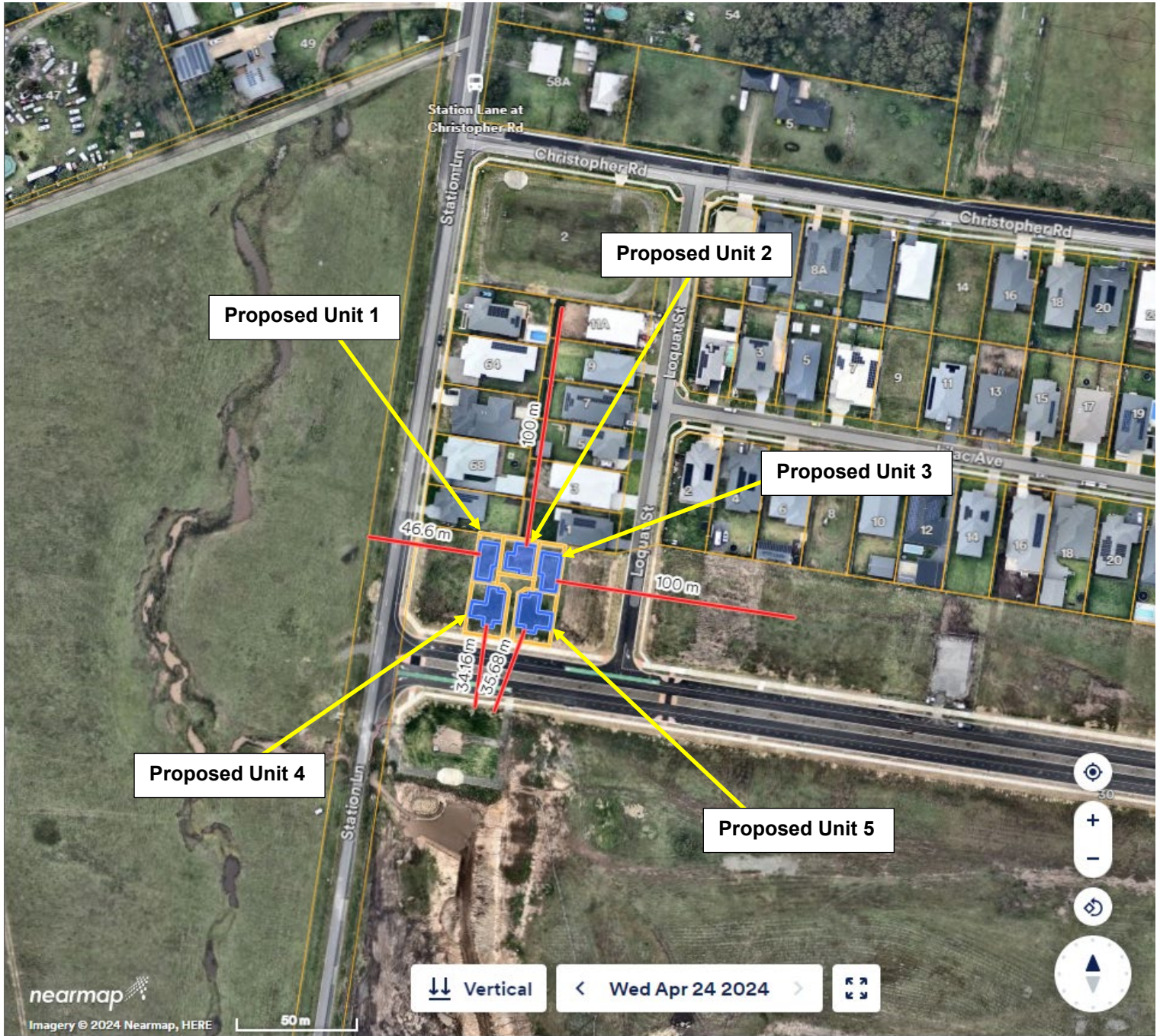
Given the information in Table 5-4 above, proposed Unit 4 within the proposed building envelope will be able to comply with AS3959-2018 and has been assessed as BAL-12.5 from all elevations.

Table 5-5: Determination of Required BALs for Proposed Unit 5 within the proposed building envelope

Vegetation Type & Direction	Separation Distance from vegetation	Bushfire Attack Level (BAL)	Construction Section
Managed Land to the North	>100m	BAL-12.5	Sect 3 & 5 of AS3959
Managed Land to the East	>100m	BAL-12.5	Sect 3 & 5 of AS3959
Grassland to the South	>35m	BAL-12.5	Sect 3 & 5 of AS3959
Grassland to the West	>66m	BAL-12.5	Sect 3 & 5 of AS3959

Given the information in Table 5-5 above, proposed Unit 5 within the proposed building envelope will be able to comply with AS3959-2018 and has been assessed as BAL-12.5 from all elevations.

Figure 5-1: Vegetation Map





6 COMPLIANCE

The proposal is for a two-staged subdivision and therefore development standards apply. Table 6-1 details compliance with Development Standards for Residential and Rural Residential Subdivisions.

Table 6-1: Proposed Subdivision Compliance with Development Standards

Acceptable Solutions	Performance Criteria	Compliance
Asset Protection Zones		
> APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI.	potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m ² on each proposed lot.	Complies with Acceptable Solution – APZs for the site has been provided in accordance with Table A1.12.5 of PBP 2019.
> APZs are managed in accordance with the requirements of Appendix 4.	APZs are managed and maintained to prevent the spread of a fire towards the building.	Complies with Acceptable Solution – APZs on site are to be managed in accordance with Appendix 4 of PBP 2019.
> APZs are wholly within the boundaries of the development site	the APZs is provided in perpetuity	Complies with Acceptable Solution – The areas of the site outside development should be managed as an Inner Protection Area (IPA). APZs for the North and East are already established by managed land.
> APZs are located on lands with a slope less than 18 degrees.	APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	Complies with Acceptable Solution – APZs on site do not occur over land with slope <18°.
Landscaping		
> landscaping is in accordance with Appendix 4; and fencing is constructed in accordance with section 7.6.	landscaping is designed and managed to minimise flame contact and radiant	Complies with Acceptable Solution – All landscaping within the site will meet the requirements of the acceptable solution.



	heat to buildings, and the potential for wind-driven embers to cause ignitions.	
Access (General Requirements)		
<ul style="list-style-type: none"> > property access roads are two-wheel drive, all-weather roads; > perimeter roads are provided for residential subdivisions of three or more allotments; > subdivisions of three or more allotments have more than one access in and out of the development; > traffic management devices are constructed to not prohibit access by emergency services vehicles; > maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient; > all roads are through roads; > dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end; > where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; 	firefighting vehicles are provided with safe, all-weather access to structures.	N/A – Perimeter roads are not proposed. The existing public road network complies with PBP 2019.



<ul style="list-style-type: none"> > where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system; and > one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression. 		
<ul style="list-style-type: none"> > the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating. 	<p>the capacity of access roads is adequate for firefighting vehicles.</p>	<p>N/A - no roads are proposed as part of the subdivision. The existing public road network complies with PBP 2019.</p>
<ul style="list-style-type: none"> > hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; > hydrants are provided in accordance with the relevant clauses of AS 2419.1:2017 - Fire hydrant installations System design, installation and commissioning; and > there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available. 	<p>there is appropriate access to water supply.</p>	<p>Complies with acceptable solution – hydrants occur within 70m of the site.</p>



Perimeter Roads

<ul style="list-style-type: none"> › are two-way sealed roads; › minimum 8m carriageway width kerb to kerb; › parking is provided outside of the carriageway width; › hydrants are located clear of parking areas; › are through roads, and these are linked to the internal road system at an interval of no greater than 500m; › curves of roads have a minimum inner radius of 6m; › the maximum grade road is 15 degrees and average grade of not more than 10 degrees; › the road crossfall does not exceed 3 degrees; and › a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 	<p>access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.</p>	<p>N/A – perimeter roads are not proposed. The existing public road network complies with PBP 2019.</p>
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Non-Perimeter Roads

<ul style="list-style-type: none"> › minimum 5.5m carriageway width kerb to kerb; › parking is provided outside of the carriageway width; › hydrants are located clear of parking areas; 	<p>access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.</p>	<p>N/A – no perimeter roads exist as part of the proposal.</p>
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<ul style="list-style-type: none"> > roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m; > curves of roads have a minimum inner radius of 6m; > the road crossfall does not exceed 3 degrees; and a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 		
Property Access		
<ul style="list-style-type: none"> > There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply: > minimum 4m carriageway width; > in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay; 	<p>firefighting vehicles can access the dwelling and exit the property safely.</p>	<p>Complies with Acceptable Solution – All proposed lots will be able to comply with PBP 2019 and in any case access will be connected to a public road by a driveway or access road <70m.</p>



<ul style="list-style-type: none">› a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;› provide a suitable turning area in accordance with Appendix 3;› curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress;› the minimum distance between inner and outer curves is 6m;› the crossfall is not more than 10 degrees;› maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and› a development comprising more than three dwellings has access by dedication of a road and not by right of way. <p>Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.</p>		
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Water Supplies

<ul style="list-style-type: none"> › reticulated water is to be provided to the development where available; › a static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed; and › static water supplies shall comply with Table 5.3d. 	<p>adequate water supplies are provided for firefighting purposes.</p>	<p>Complies with Acceptable Solution – The site is connected to reticulated water.</p>
<ul style="list-style-type: none"> › fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2017; › hydrants are not located within any road carriageway; and › reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads. 	<p>Water supplies are located at regular intervals; and</p> <p>the water supply is accessible and reliable for firefighting operations.</p>	<p>Complies with Acceptable Solution – hydrants are located within 70m of the site.</p>
<ul style="list-style-type: none"> › fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017. 	<p>flows and pressure are appropriate.</p>	<p>Complies with Acceptable Solution – fire hydrant pressures and flows are assumed to be compliant.</p>
<ul style="list-style-type: none"> › all above-ground water service pipes are metal, including and up to any taps; and › above-ground water storage tanks shall be of concrete or metal. 	<p>the integrity of the water supply is maintained.</p>	<p>Complies with Acceptable Solution – All above ground water service pipes will meet the requirements.</p>



Electricity Services

<ul style="list-style-type: none"> › where practicable, electrical transmission lines are underground; › where overhead, electrical transmission <ul style="list-style-type: none"> › lines are proposed as follows: lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and › no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines. 	<p>location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.</p>	<p>Complies with Acceptable Solution – All proposed dwellings are able to meet the requirements for electricity services.</p>
---	---	--

Gas Services

<ul style="list-style-type: none"> › reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used; › all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; › connections to and from gas cylinders are metal; › polymer-sheathed flexible gas supply lines are not used; and › above-ground gas service pipes are metal, including and up to any outlets. 	<p>location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.</p>	<p>Can Complies with Acceptable Solution – All proposed dwellings are able to meet the requirements for gas services.</p>
---	--	--



7 CONCLUSION & RECOMMENDATIONS

In summary, a Bushfire Risk Assessment has been undertaken for a proposed two-staged subdivision between Lot 265 & Lot 266 Springfield Drive, Lochinvar NSW 2321. Stage 1 involves a 3-lot subdivision with two street frontage lots and a third rear lot. Stage 2 involves the third rear lot subdivision into 3 lots. The result of this proposal will be 5 residential lots and 1 community title lot for access. The report forms part of the supporting documentation for a Development Application (DA) to be submitted to MCC.

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the subdivision. In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

1. **Asset Protection Zone (APZ) - The APZ provides space and reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and to prevent direct flame contact.**

To achieve a Bushfire Attack Level (BAL) of **BAL-12.5** for proposed Unit 1, 4 and 5, and **BAL-LOW** for proposed Unit 2 and 3, the following land is to be managed as an APZ:

- The areas of the site outside development will be managed as an Inner Protection Area (IPA).

These distances are to be managed as described under 'Planning for Bushfire Protection (Appendix 4 – Asset Protect Zone Requirements)' and the document titled 'Standards for Asset Protection Zones'.

5. **Perimeter Roads - Access standards provide for emergency evacuation and firefighting operations**

- N/A – perimeter roads are not proposed. The public road network is existing and complies with PBP 2019.

6. **Construction Standards – Construction standards seek to increase the protection of the habitable buildings from bushfire. The shorter the APZ (distance between the external wall of the habitable building and the unmanaged vegetation), then the higher the construction standard, which is referred to as the BAL**

The proposed Unit 1, 4 and 5 in the proposed building envelope will be assessed as BAL-12.5 based on the abovementioned APZs. The proposed Unit 2 and 3 will be assessed as BAL-LOW based on the abovementioned APZs.

2. **Landscaping – The type, location and ongoing maintenance of landscaping is considered a necessary BPM**



-
- The identified APZs are to be managed in accordance with accordance with PBP (Appendix 4);
 - A clear area of low-cut lawn or pavement is maintained adjacent to the dwellings; and
 - Fencing details in accordance with PBP (7.6 – Fences and gates)

This report provides the above required information to assist Council and the RFS in determining compliance in accordance with the PBP 2019 and AS 3959-2018.



8 BIBLIOGRAPHY

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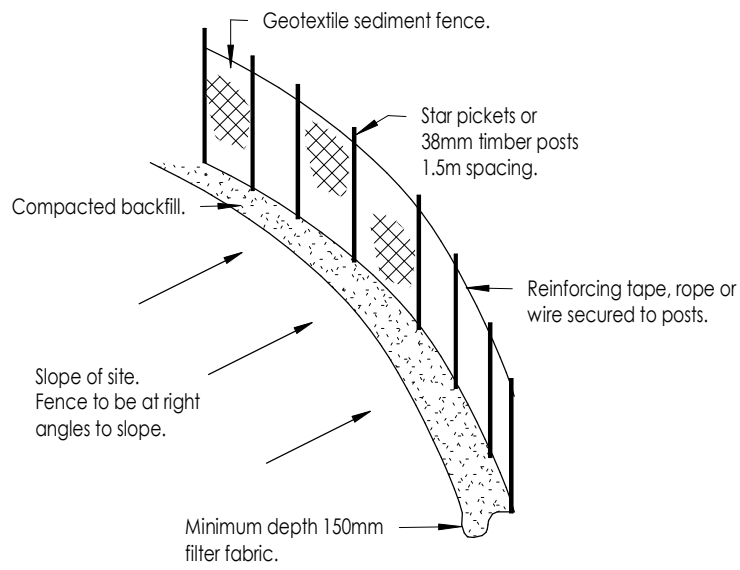
Planning NSW & NSW Rural Fire Service (2001). *Planning for Bushfire Protection – A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*.

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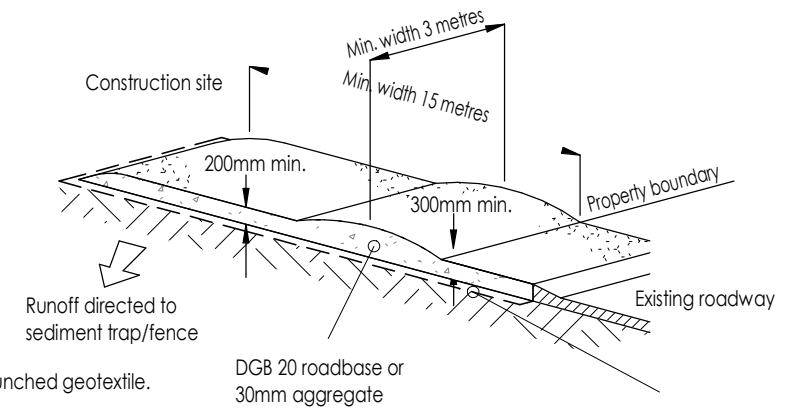
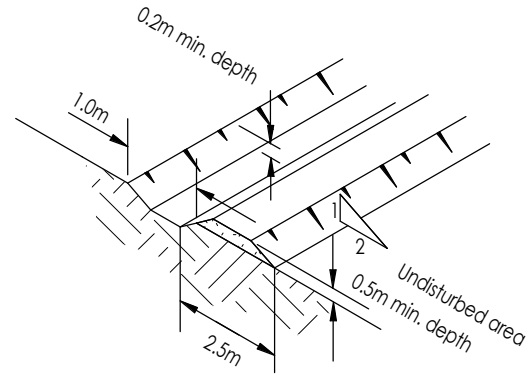
APPENDIX A PROPOSED SITE PLANS



All erosion and sediment control measures required as conditions of building approval to be installed prior to any other work such as cut and fill taking place on site. These measures to be maintained throughout the course of construction and satisfactory stabilisation of the site upon completion of the works.

Control measures to be in accordance with Council's information brochure, and the Department of Conservation and Land Management.

All sediment control techniques including runoff diversion techniques, sediment trapping devices, construction of entrances/exits, buffer zones and revegetation techniques shall be constructed to prevent sediment and other debris leaving the site or entering council drainage system. All such control measures to be maintained in a sound and workable condition and shall not be removed from site until permanent rehabilitation measures have been completed.



Construction Notes

1. Strip topsoil and level site.
2. Compact subgrade.
3. Cover area with needle-punched geotextile.
4. Construct 200mm thick pad over geotextile using roadbase or 300mm aggregate. Minimum length 15 metres or to building alignment. Minimum width 3 metres.
5. Construct hump immediately within boundary to divert water to a sediment fence or other sediment trap.

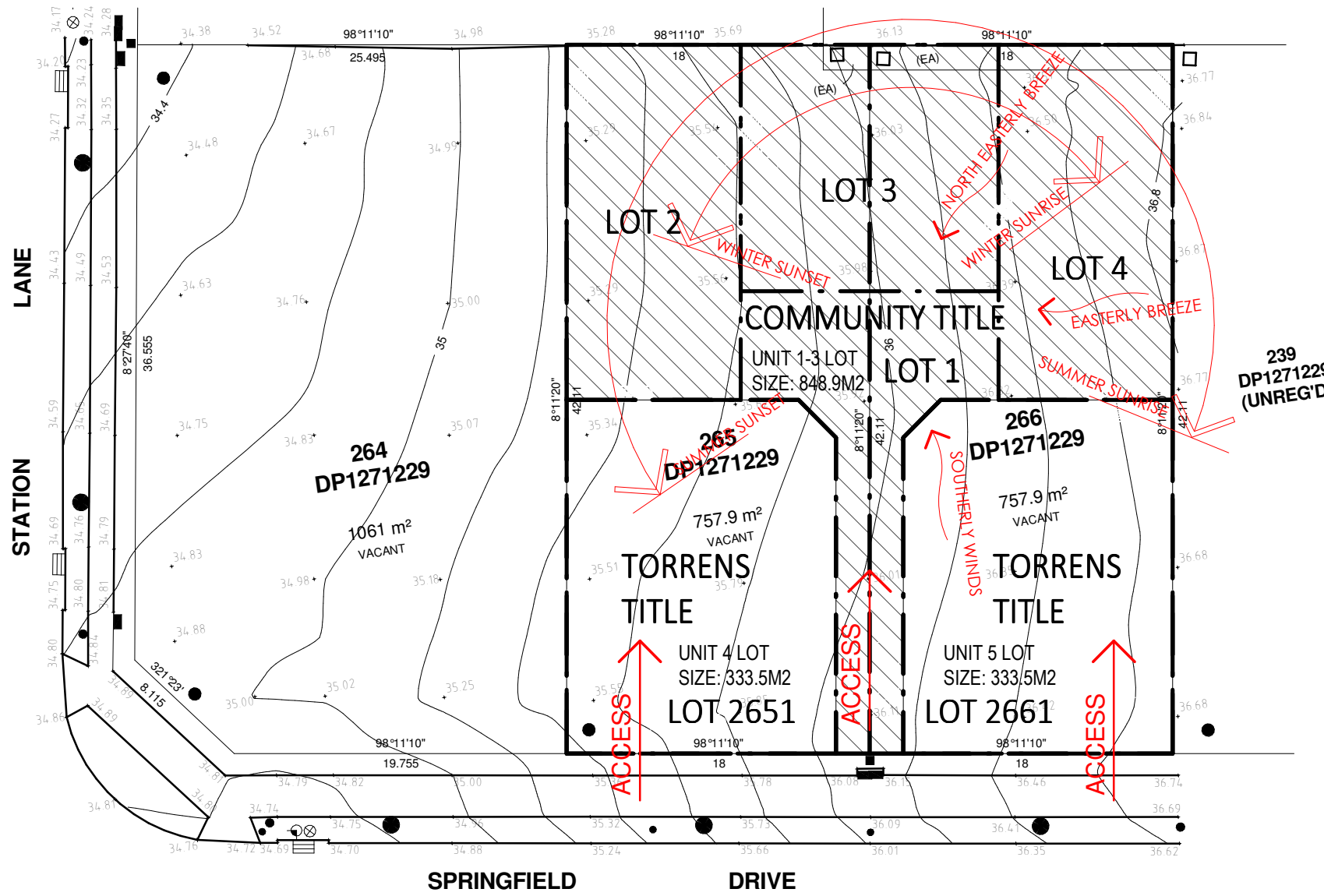
Geotextile fabric designed to prevent intermixing of subgrade and base materials and to maintain good properties of the sub-base layers

Geofabric may be a woven or needle punched product with a minimum CBR burst strength (AS3706.4-90) or 2500 N.

EROSION CONTROL

LEGEND

- BOUNDARY LINE
- ADJACENT BOUNDARY
- 10- CONTOUR LINE
- - - EASEMENT
- TOP & TOE OF BANKS
- LIGHT POLE
- ELECTRICAL PILLAR
- KERB INLET PIT
- DRAINAGE PIT
- HYDRANT
- STOP VALVE
- SEWER MAN HOLE
- TELSTRA PIT
- SIGN
- TREE



STAGE 1:
3 LOT SUBDIVISION
2 FRONT LOTS - TORRENS TITLE

STAGE 2:
3 UNIT COMMUNITY TITLE SUBDIVISION

REFER TO TENDER

TORRENS TITLE SUBDIVISION

COMMUNITY TITLE SUBDIVISION

SITE ANALYSIS PLAN
1 : 350



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A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**

AT: LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
SITE ANALYSIS, EROSION CONTROL

Date	25.10.23	Scale	As indicated
Drawn by	GR	Checked	Design
Checked by Owner	Date	Signed by Builder	Drawing No.

Rev **A**

Drawing No. **24005**

A10.0.1

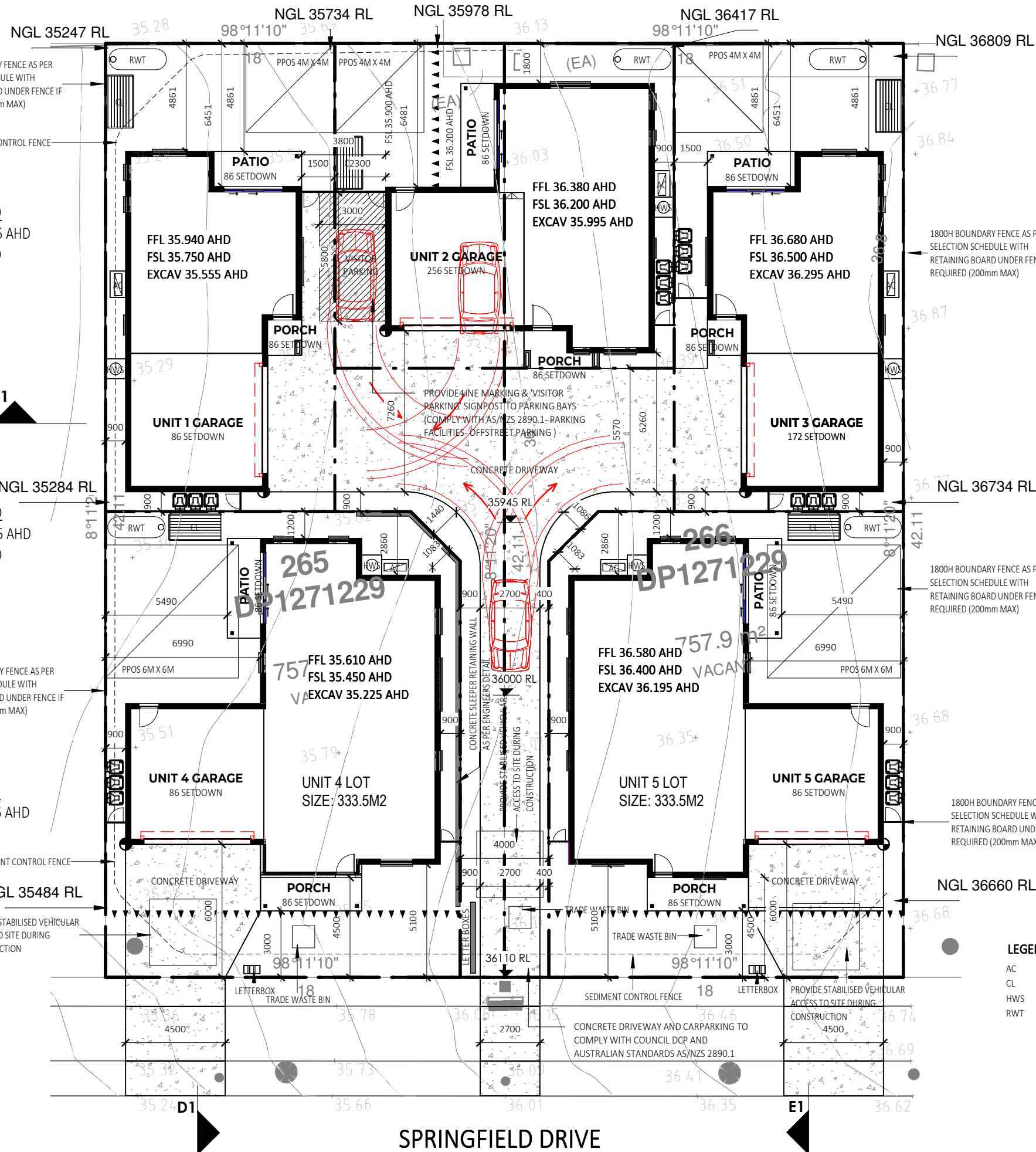
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 EXCAV. LEVEL 34.755 AHD
 FSL 34.960 AHD

F1
 NGL 35284 RL
 FFL 35.290 AHD
 EXCAV. LEVEL 34.905 AHD
 FSL 35.110 AHD

F1
 FFL 35.410 AHD
 EXCAV. LEVEL 35.025 AHD
 FSL 35.230 AHD



SITE PLAN
 1: 200



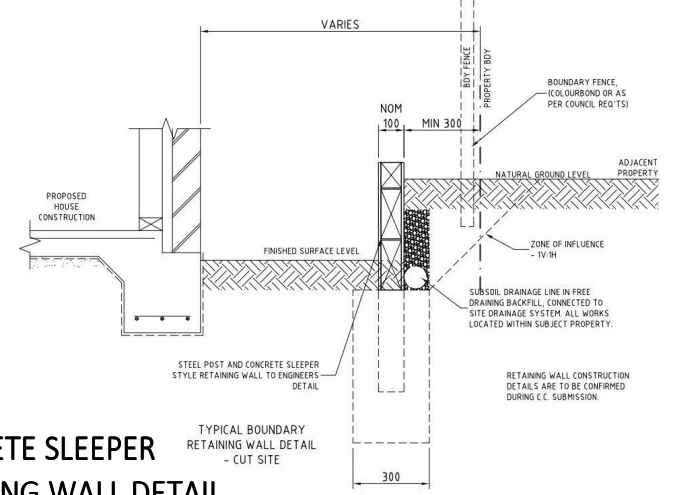
HARDSTAND - UNIT 1 - 3		
HARDSTAND	577.98 m ²	68%
PERMEABLE	270.98 m ²	32%
SITE AREA	848.96 m ²	

HARDSTAND - UNIT 4		
HARDSTAND	202.51 m ²	61%
PERMEABLE	131.00 m ²	39%
SITE AREA	333.51 m ²	

HARDSTAND - UNIT 5		
HARDSTAND	202.51 m ²	61%
PERMEABLE	131.00 m ²	39%
SITE AREA	333.51 m ²	

PRIVATE OPEN SPACE(40m2 REQ/UNIT)	
POS UNIT 1	59.33 m ²
POS UNIT 2	49.96 m ²
POS UNIT 3	59.33 m ²
POS UNIT 4	60.46 m ²
POS UNIT 5	60.46 m ²
TOTAL POS	289.55 m ²

- LEGEND**
- BOUNDARY LINE
 - ADJACENT BOUNDARY
 - CONTOUR LINE
 - - - EASEMENT
 - TOP & TOE OF BANKS
 - LIGHT POLE
 - ELECTRICAL PILLAR
 - KERB INLET PIT
 - DRAINAGE PIT
 - HYDRANT
 - STOP VALVE
 - SEWER MAN HOLE
 - TELSTRA PIT
 - SIGN
 - TREE



CONCRETE SLEEPER
 RETAINING WALL DETAIL

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

- AC AIR CONDITIONING AS SPECIFIED
- CL CLOTHES LINE AS SELECTED
- HWS HOT WATER SYSTEM
- RWT RAINWATER TANK

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

TORRENS TITLE SUBDIVISION

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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**
 AT: LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
 NSW 2321

Sheet Title
SITE SETOUT PLAN (BULK EARTHWORKS)

Date	25.10.23	Scale	As indicated	@ A3
Drawn by	GR	Checked	Design	CUSTOM
Checked by Owner	Date	Signed by Builder	Drawing No.	24005
				A11.0.1

- CONCRETE PATHS
- DRIVEWAY
- DRIVEWAY CROSSOVER
- GARDENS (TREATED PINE GARDEN EDGING)
- LAWN (BUFFALO TURF)
- LAWN (KIKUYU TURF)
- RAIN GARDEN
- RIVER GRAVEL (WEED MAT UNDER)

LANDSCAPED AREAS	
CONCRETE PATHS	33.17 m ²
DRIVEWAY	293.94 m ²
DRIVEWAY CROSSOVER	62.49 m ²
GARDENS (TREATED PINE GARDEN EDGING)	77.79 m ²
LAWN (BUFFALO TURF)	307.29 m ²
LAWN (KIKUYU TURF)	0.00 m ²
RAIN GARDEN	0.00 m ²
RIVER GRAVEL (WEED MAT UNDER)	114.73 m ²
Grand total	889.42 m²

HARDSTAND - UNIT 1 - 3		
HARDSTAND	577.98 m ²	68%
PERMEABLE	270.98 m ²	32%
SITE AREA	848.96 m ²	

HARDSTAND - UNIT 4		
HARDSTAND	202.51 m ²	61%
PERMEABLE	131.00 m ²	39%
SITE AREA	333.51 m ²	

HARDSTAND - UNIT 5		
HARDSTAND	202.51 m ²	61%
PERMEABLE	131.00 m ²	39%
SITE AREA	333.51 m ²	

PRIVATE OPEN SPACE (40m ² REQ/UNIT)	
POS UNIT 1	59.33 m ²
POS UNIT 2	49.96 m ²
POS UNIT 3	59.33 m ²
POS UNIT 4	60.46 m ²
POS UNIT 5	60.46 m ²
TOTAL POS	289.55 m ²

PLANT SCHEDULE (TREES, SHRUBS, GRASSES, GROUNDCOVERS)				
ID	BOTANICAL NAME	QTY	POT SIZE (mm/Ltr)	MATURE SIZE
CA	CALLISTEMON VIMINALIS	1	75L	7 x 4m
CLJ	CALLISTEMON LITTLE JOHN	31	200mm	1.5 x 1.5m
CT	CUPANIOPSIS ANARACIOIDES	1	50L	5-8m
GC	DURANTA MINI GOLD	63	140mm	0.6 x 0.6m
MO	MURRAYA MIN A MIN	36	200MM	1x1 m

Grand total: 132

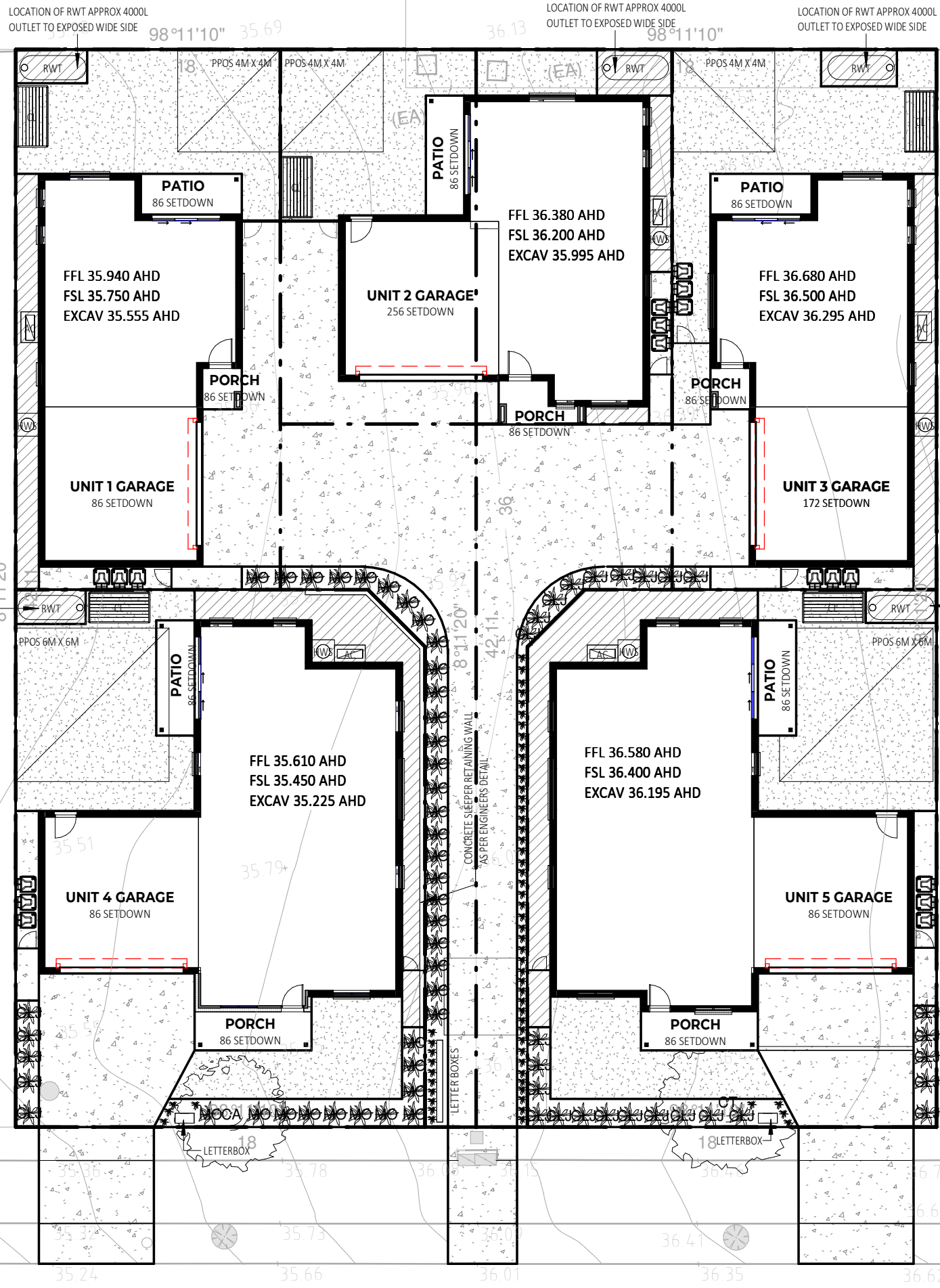
GARDEN 3		
GC	10	DURANTA MINI GOLD
MO	25	MURRAYA MIN A MIN
TOTAL	35	

SITE FIXTURE SCHEDULE		
Description	Keynote	Count

GARDEN 1		
CLJ	5	CALLISTEMON LITTLE JOHN
TOTAL	5	

GARDEN 4		
CLJ	9	CALLISTEMON LITTLE JOHN
GC	45	DURANTA MINI GOLD
TOTAL	54	

GARDEN 2		
CA	1	CALLISTEMON VIMINALIS
GC	4	DURANTA MINI GOLD
MO	11	MURRAYA MIN A MIN
TOTAL	16	



LANDSCAPE PLAN
1 : 200



SPRINGFIELD DRIVE

REFER TO TENDER
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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: GRUGEON

AT: LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title: LANDSCAPE PLAN

Date: 25.10.23

Drawn by: GR Checked: [initials]

Checked by Owner: [initials] Date: [initials] Signed by Builder: [initials]

Scale: As indicated @ A3

Design: CUSTOM Rev: A

Drawing No: 24005 Sheet: A14.0.1



SECTION F
1 : 100

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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
DRIVEWAY PROFILE

Date	25.10.23	Scale	1 : 100	@ A3
Drawn by	GR	Checked	Design	CUSTOM
Checked by Owner	Date	Signed by Builder	Drawing No.	24005
				Rev A
				A18.0.1

LEGEND - KEYNOTES (REFER SPECIFICATIONS)



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FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
SLAB PLAN - UNIT 1

Date
25.10.23

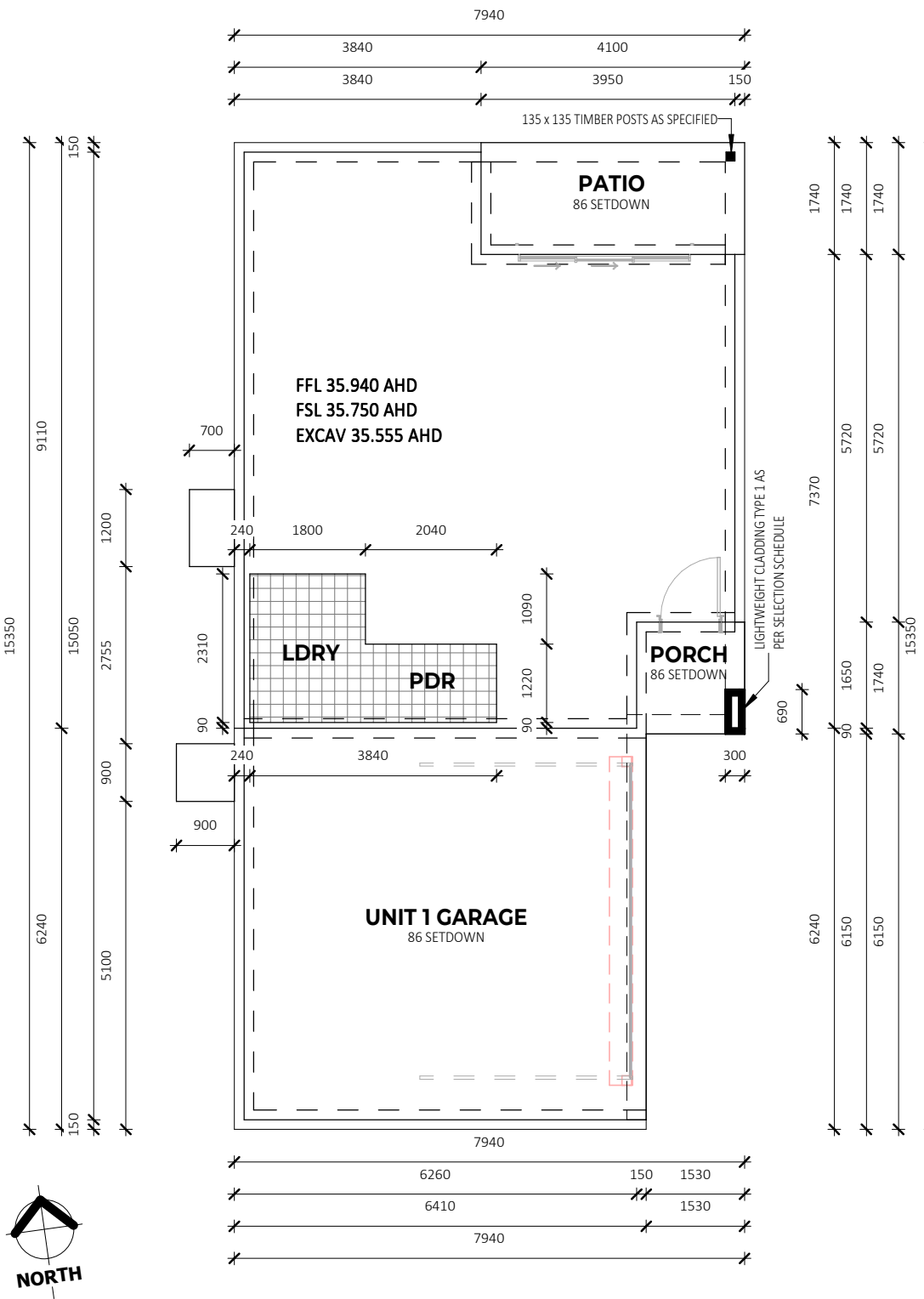
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Checked by Owner	Date	Signed by Builder
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Scale
1 : 100 @ A3

Design	CUSTOM	Rev	A
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Drawing No.	24005	Sheet	A21.0.1
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CONCRETE WAFFLE SLAB TO BE CONSTRUCTED TO THE ENGINEERS DETAILS AND LAYOUT AS SHOWN ON THE WORKING DRAWINGS OR AS SUPPLIED IN ADDITION TO THE DRAWINGS.

45mm SET DOWN IN SLAB FOR WET AREA TILING SHOWN HATCHED.

SLAB PLAN - UNIT 1
1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

FLOOR AREAS UNIT 1

PORCH	2.30 m ²
GARAGE	40.00 m ²
LIVING	63.76 m ²
UPSTAIRS LIVING	74.15 m ²
PATIO	6.28 m ²
TOTAL	186.48 m²

SHELIVING NOTES:
 MELAMINE SHELF AND HANGING RAIL TO ROBES
 BANK OF DRAWNS & SHELVES TO ROBES
 4x MELAMINE SHELVES TO LINEN CUPBOARD

LEGEND - KEYNOTES (REFER SPECIFICATION...

DP	DOWNPIPE AS SPECIFIED
MX	MIXER AS SPECIFIED
SR	SHOWER ROSE AS SPECIFIED
TR	TOWEL RAIL AS SPECIFIED
WC	WATER CLOSET AS SPECIFIED



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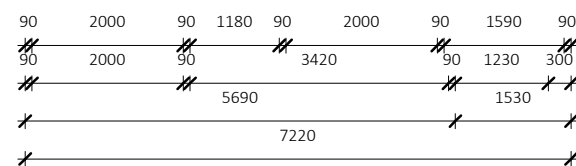
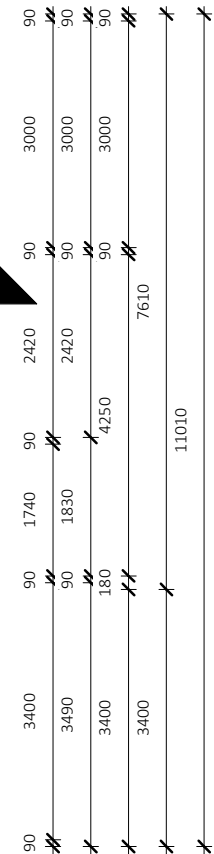
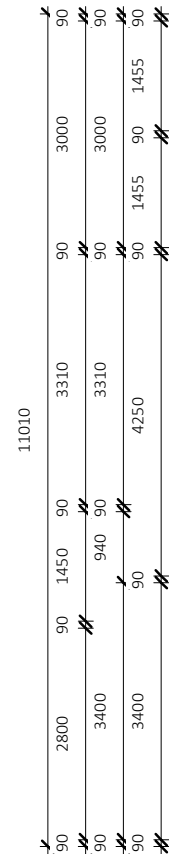
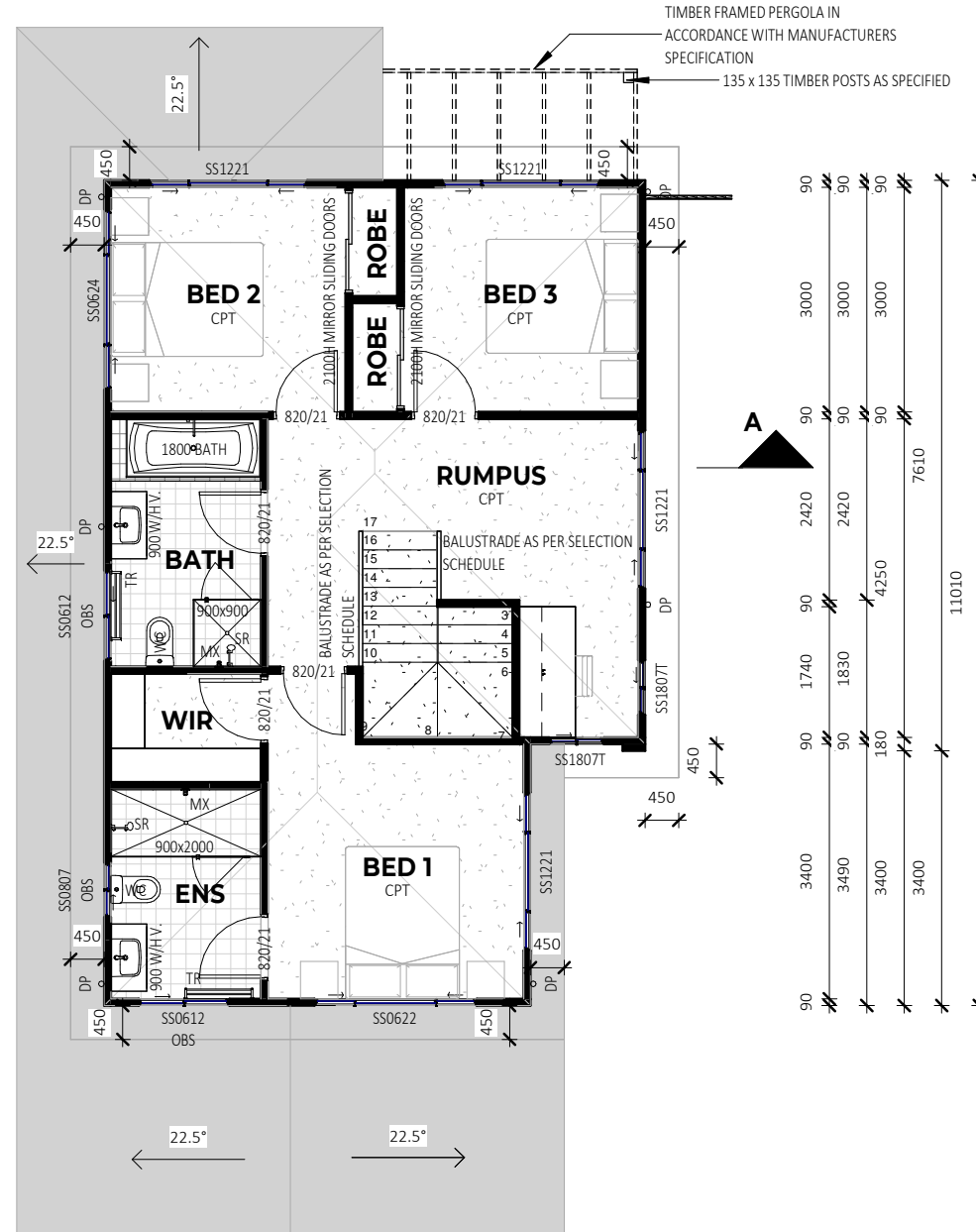
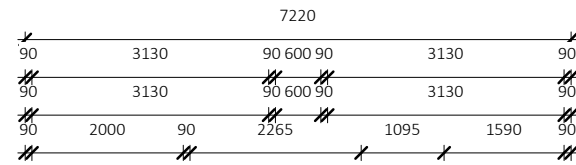
No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
 LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
 NSW 2321

Sheet Title
 LVL 02 FLOOR PLAN - UNIT 1

Date	25.10.23		
Drawn by	GR		Checked
Checked by Owner	Date	Signed by Builder	
Scale	As indicated		@ A3
Design	CUSTOM		Rev A
Drawing No.	24005		Sheet A21.2.1



DOOR LEAF LEGEND:
 XXX/21=2040H LEAF
 XXX/24=2340H LEAF

NOTE -
 ALL UPPER FLOOR WINDOW
 OPENINGS TO BE PERMANENTLY
 RESTRICTED TO 125mm OPENING
 RESTRICTION AS PER NCC/BCA.

REFER TO TENDER

TORRENS TITLE SUBDIVISION



LVL 02 FLOOR PLAN - UNIT 1
 1 : 100

LEGEND - KEYNOTES (REFER SPECIFICATION...



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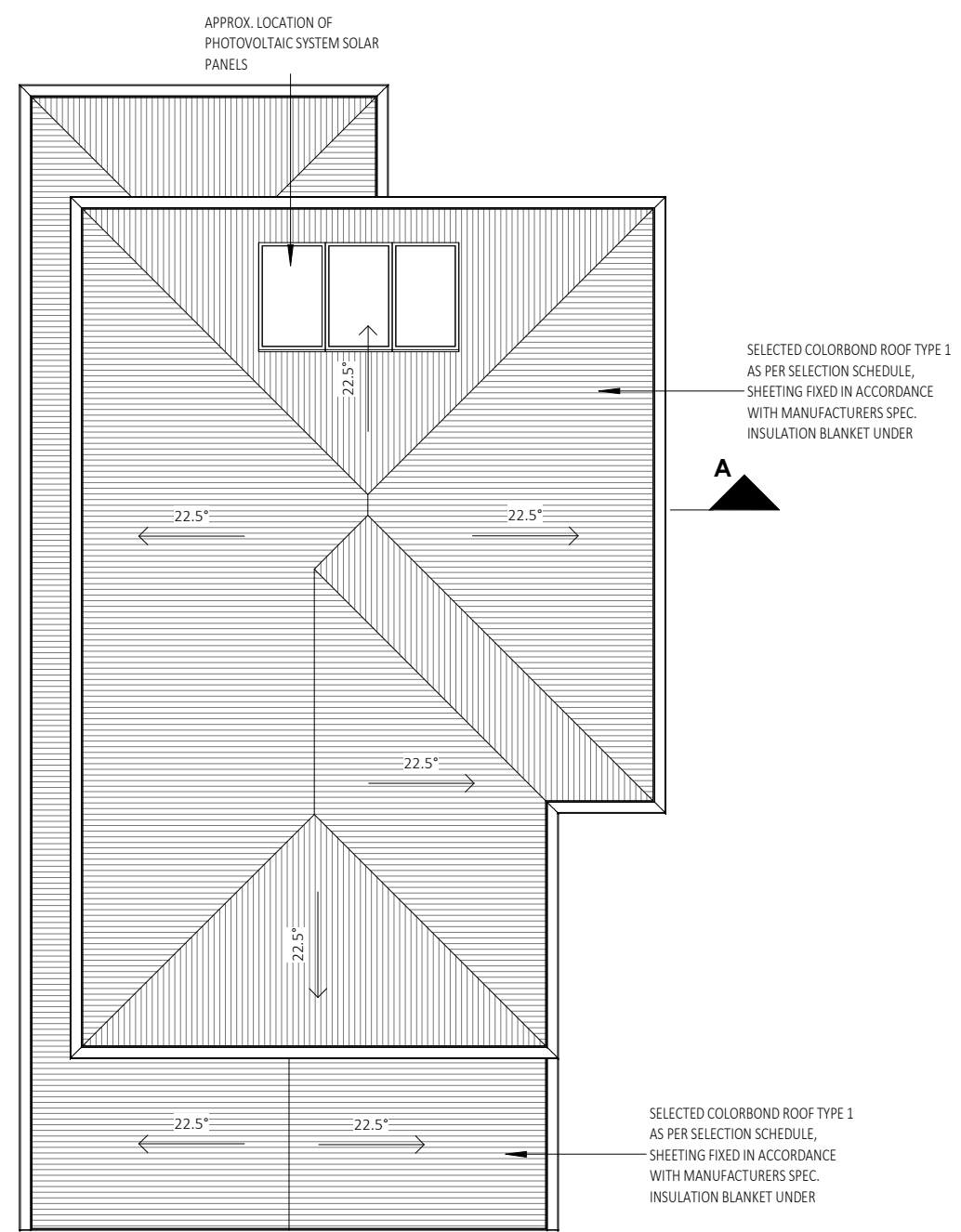
No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
 LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
 NSW 2321

Sheet Title
ROOF PLAN - UNIT 1

Date	25.10.23	
Drawn by	GR	Checked
Checked by Owner	Date	Signed by Builder
Scale	1 : 100	@ A3
Design	CUSTOM	Rev A
Drawing No.	24005	Sheet A21.5.1



ROOF PLAN - UNIT 1
 1 : 100

REFER TO TENDER

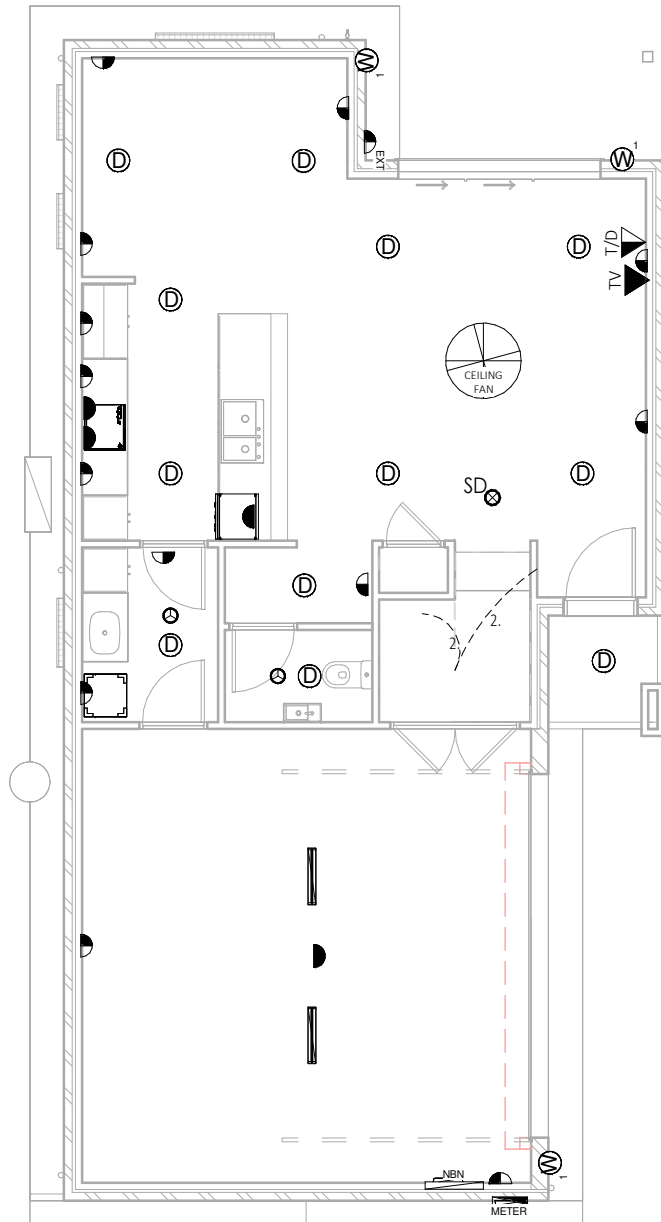
COMMUNITY TITLE SUBDIVISION

LEGEND: AS SPECIFIED

- D^1 LED DOWNLIGHT RECESSED
- D^2 LED DOWNLIGHT DIRECTIONAL
- D^3 LED DOWNLIGHT FIXED
- P^1 PEDANT LIGHT TYPE 1
- P^2 PEDANT LIGHT TYPE 2
- P^3 PEDANT LIGHT TYPE 3
- W^1 EXTERNAL WALL LIGHT
- S SENSOR LIGHT
- HF HEATER FAN LIGHT
- EF EXHAUST FAN LIGHT
- ED EXTERNALLY DUCTED EXHAUST FAN
- FL FLUORESCENT LIGHT SINGLE
- LB LED BATTEN LIGHT
- CF CEILING FAN
- CF/L CEILING FAN WITH LIGHT
- SD LOCATION OF SMOKE ALARM IN ACCORDANCE WITH AS3786.
- G GAS POINT
- GPO^1 GPO SINGLE
- GPO^2 GPO DOUBLE
- $\text{GPO}^{\text{EXT}1}$ GPO SINGLE WATERPROOF
- $\text{GPO}^{\text{EXT}2}$ GPO DOUBLE WATERPROOF
- $\text{GPO}^{\text{E}1000}$ GPO SINGLE ELEVATED 1000
- $\text{GPO}^{\text{E}2000}$ GPO DOUBLE ELEVATED 1000
- NBN NBN CONNECTION BOX
- M ELECTRICAL METER & FUSE BOX
- TV TV POINT
- T/D TELEPHONE / DATA POINT
- DB HARD WIRED DOOR BELL
- LS^1 LIGHT SWITCH SINGLE
- LS^3 LIGHT SWITCH MULTIPLE
- LS^{EXT} LIGHT SWITCH EXTERNAL
- --- 2 WAY SWITCHING
- --- 3 WAY SWITCHING

ELECTRICAL FIXTURE SCHEDULE	
Type	Count
GPO SINGLE	2
GPO SINGLE	1
VH_EXHAUST FAN	2
ELECTRICAL METER & FUSE BOX	1
GPO DOUBLE	13
GPO DOUBLE WP	1
GPO SINGLE	1
NBN CONNECTION BOX	1
SMOKE ALARM	1
TELEPHONE / DATA POINT	1
TV POINT	1
Grand total: 25	25

LIGHTING FIXTURE SCHEDULE	
Type	Count
LED BATTEN LIGHT	2
WALL LIGHT	2
CEILING FAN	1
LED DOWNLIGHT	12
WALL LIGHT	1
Grand total: 18	18



LVL 01 ELECTRICAL PLAN - UNIT 1
1 : 100

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

2.

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION



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www.valleyhomes.com.au

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BUILDERS LIC. No. 5117

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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
LVL 01 ELECTRICAL PLAN - UNIT 1

Date 25.10.23

Drawn by GR Checked

Checked by Owner Date Signed by Builder

Scale 1 : 100 @ A3

Design CUSTOM Rev A

Drawing No. 24005 Sheet A22.1.1

LEGEND: AS SPECIFIED

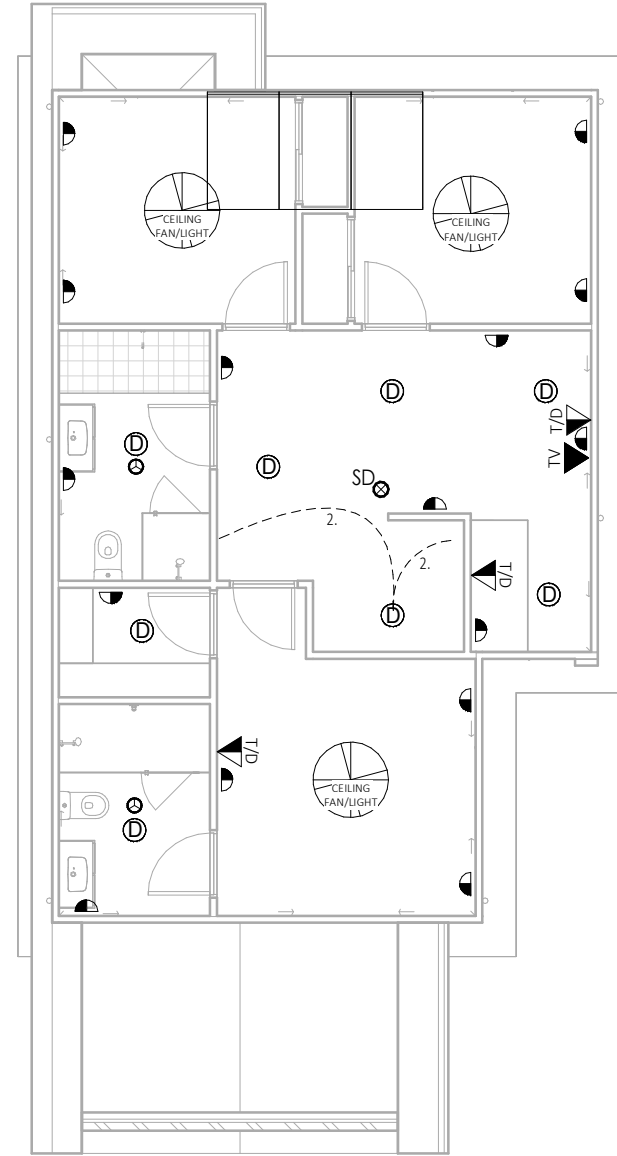
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- ⓓ² LED DOWNLIGHT DIRECTIONAL
- ⓓ³ LED DOWNLIGHT FIXED
- Ⓟ¹ PEDANT LIGHT TYPE 1
- Ⓟ² PEDANT LIGHT TYPE 2
- Ⓟ³ PEDANT LIGHT TYPE 3
- Ⓦ¹ EXTERNAL WALL LIGHT
- Ⓢ SENSOR LIGHT
- ☼ HEATER FAN LIGHT
- ⊗ EXHAUST FAN LIGHT
- ☰ EXTERNALLY DUCTED EXHAUST FAN
- FLUORESCENT LIGHT SINGLE
- ▬ LED BATTEN LIGHT
- ⊠ CEILING FAN
- ⊠⊘ CEILING FAN WITH LIGHT
- SD ⊕ LOCATION OF SMOKE ALARM IN ACCORDANCE WITH AS3786.
- ⬆^G GAS POINT
- ◐ GPO SINGLE
- ◑ GPO DOUBLE
- ◑^{EXT} GPO SINGLE WATERPROOF
- ◑^{EXT} GPO DOUBLE WATERPROOF
- ◑¹⁰⁰⁰ GPO SINGLE ELEVATED 1000
- ◑¹⁰⁰⁰ GPO DOUBLE ELEVATED 1000
- ▭^{NBN} NBN CONNECTION BOX
- Ⓜ^{METER} ELECTRICAL METER & FUSE BOX
- ▾^{TV} TV POINT
- ▾^{T/D} TELEPHONE / DATA POINT
- ▽ HARD WIRED DOOR BELL
- × LIGHT SWITCH SINGLE
- ×³ LIGHT SWITCH MULTIPLE
- ×^{EXT} LIGHT SWITCH EXTERNAL
- ⋯ 2 WAY SWITCHING
- ⋯³ 3 WAY SWITCHING

ELECTRICAL FIXTURE SCHEDULE	
Type	Count
TELEPHONE / DATA POINT	2
VH_EXHAUST FAN	2
GPO DOUBLE	15
SMOKE ALARM	1
TELEPHONE / DATA POINT	1
TV POINT	1
Grand total: 22	22

LIGHTING FIXTURE SCHEDULE	
Type	Count
CEILING FAN LIGHT	3
LED DOWNLIGHT	8
Grand total: 11	11

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

2.



LVL 02 ELECTRICAL PLAN - UNIT 1
1 : 100

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TORRENS TITLE SUBDIVISION



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FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
LVL 02 ELECTRICAL PLAN - UNIT 1

Date 25.10.23

Drawn by GR Checked .
Checked by Owner Date Signed by Builder

Scale 1 : 100 @ A3

Design CUSTOM Rev A

Drawing No. 24005 Sheet A22.2.1

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

TAP TAP AS SPECIFIED



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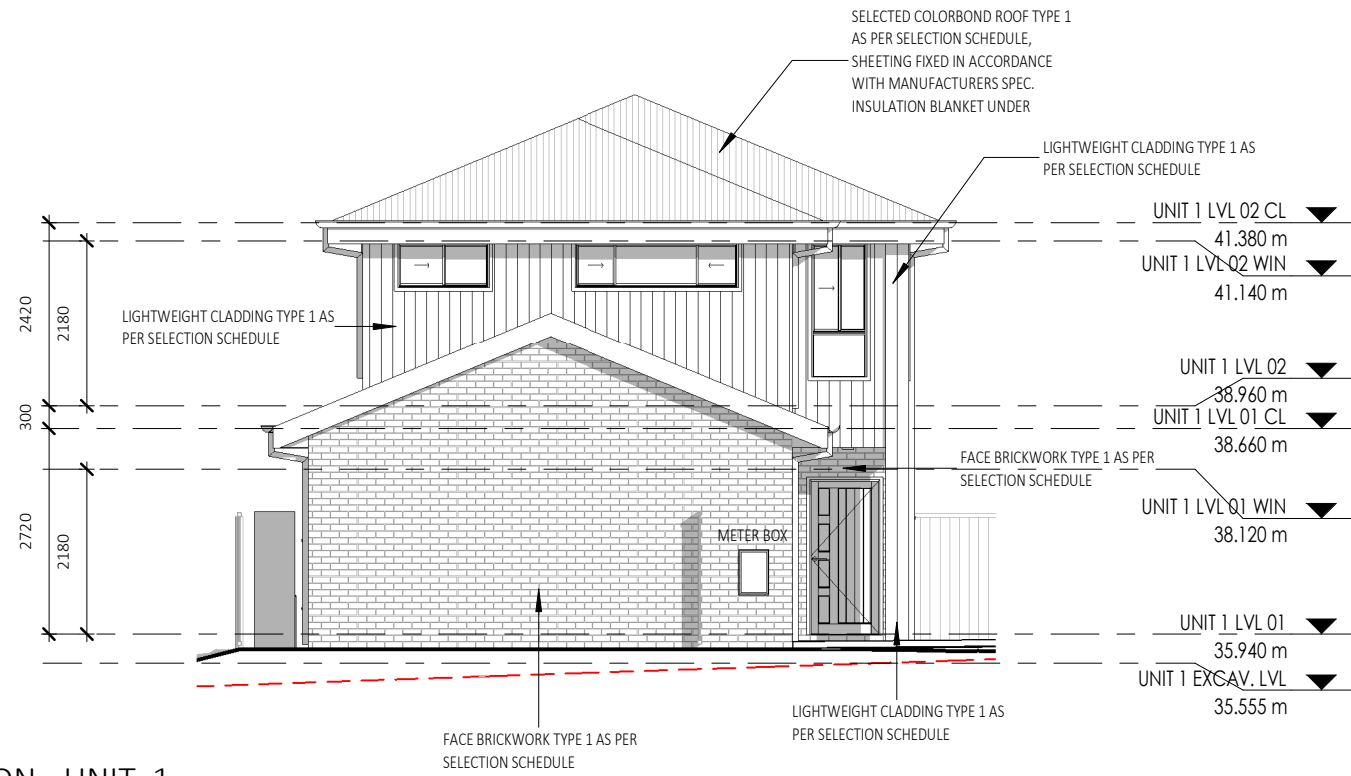
No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: GRUGEON

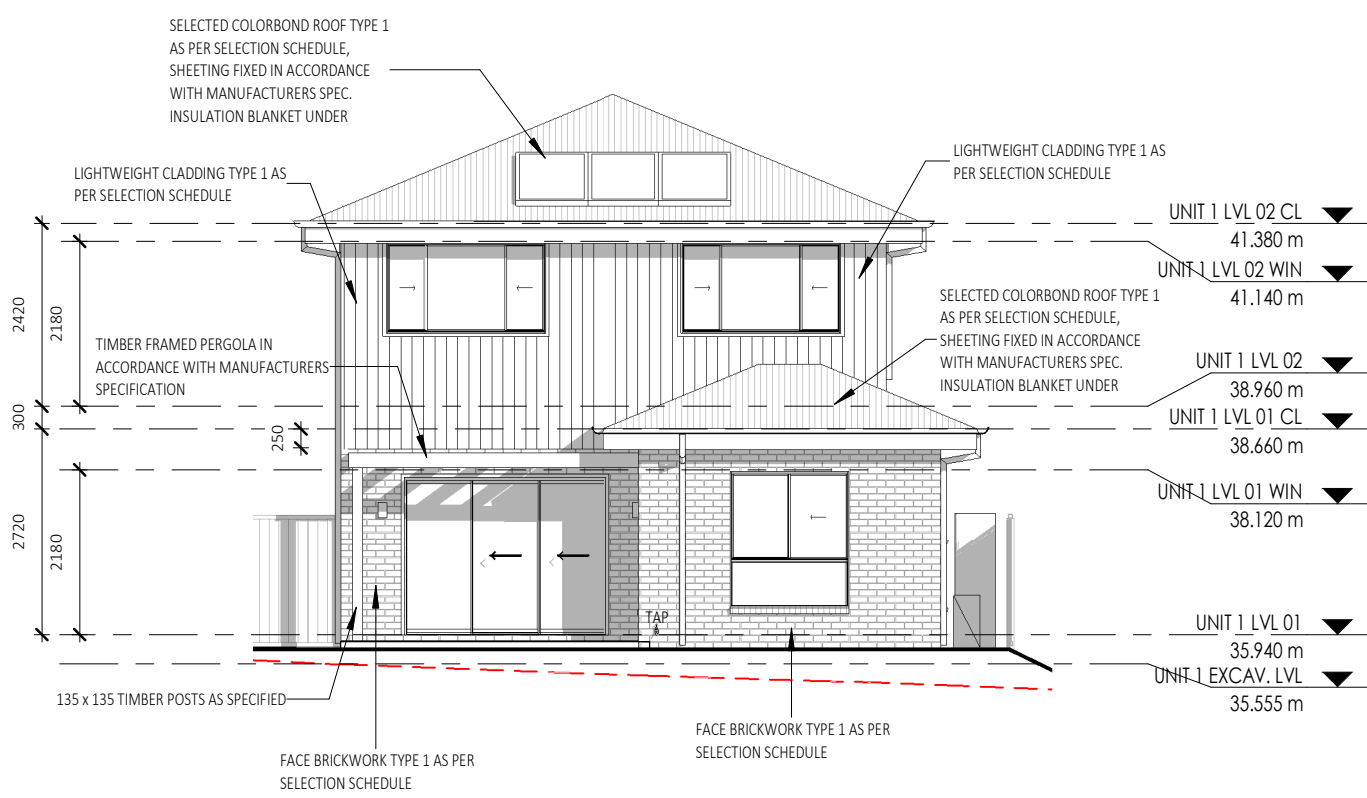
AT: LOT 265 & 266 - DP1271229
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 NSW 2321

Sheet Title
 ELEVATIONS - UNIT 1

Date	25.10.23		
Drawn by	GR	Checked	
Checked by Owner	Date	Signed by Builder	
Scale	1 : 100	@ A3	
Design	CUSTOM	Rev	A
Drawing No.	24005	Sheet	A30.0.1



SOUTH ELEVATION - UNIT 1
 1 : 100



NORTH ELEVATION - UNIT 1
 1 : 100

REFER TO TENDER

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No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ELEVATIONS - UNIT 1

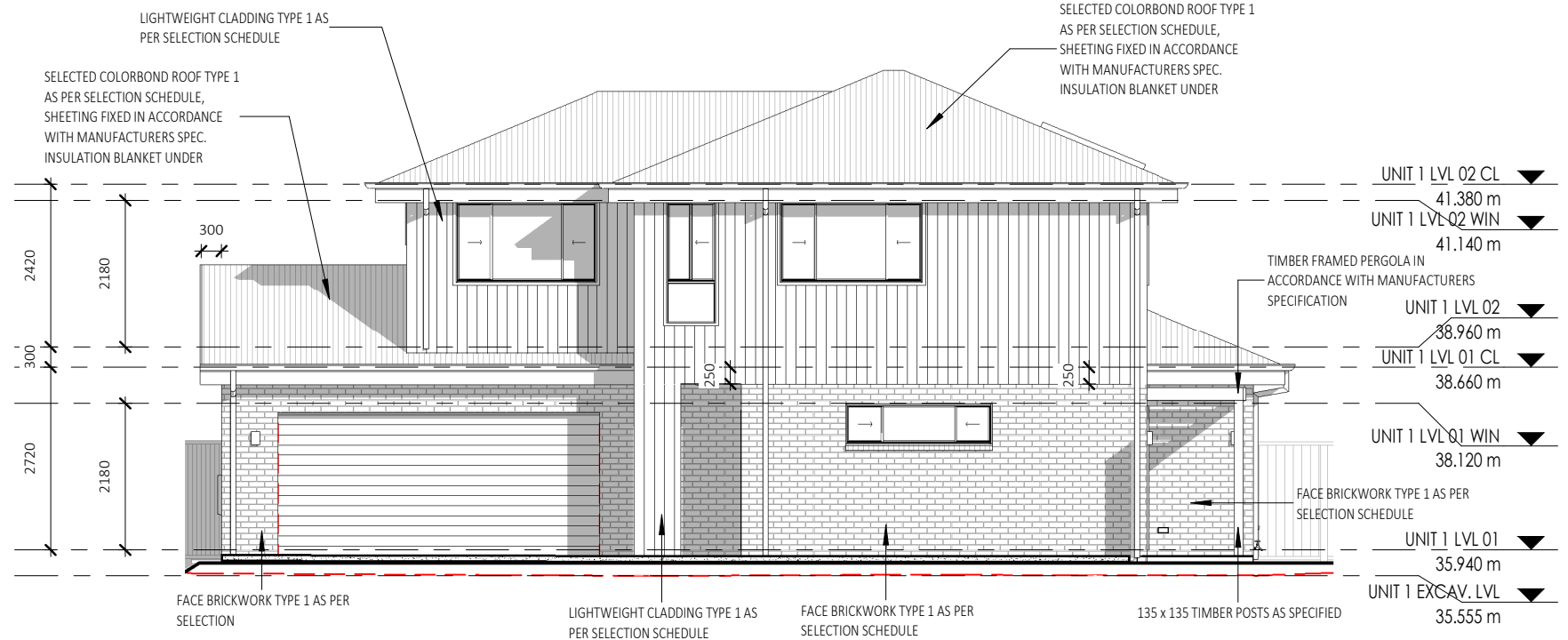
Date 25.10.23

Drawn by GR Checked
Checked by Owner Date Signed by Builder

Scale 1 : 100 @ A3

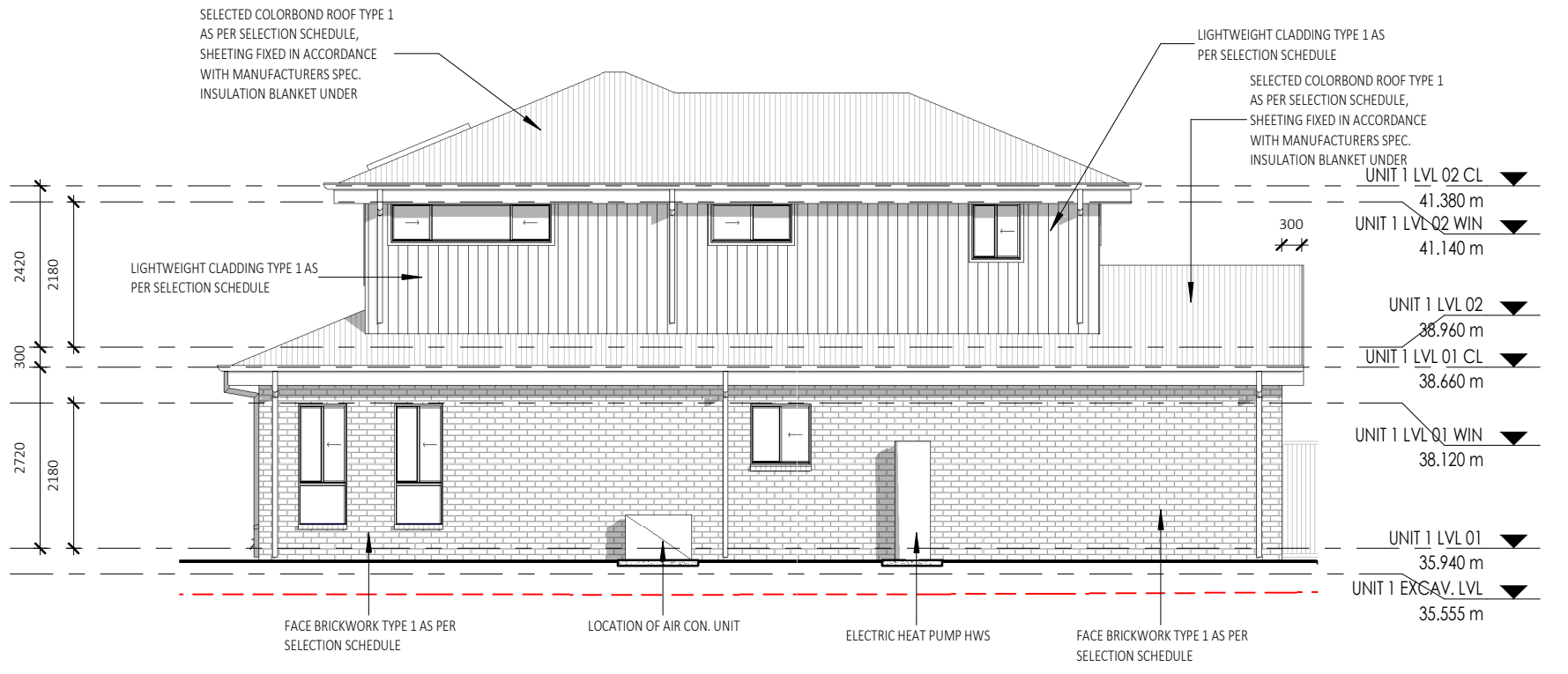
Design CUSTOM Rev A

Drawing No. 24005 Sheet A30.0.2



EAST ELEVATION - UNIT 1
1 : 100

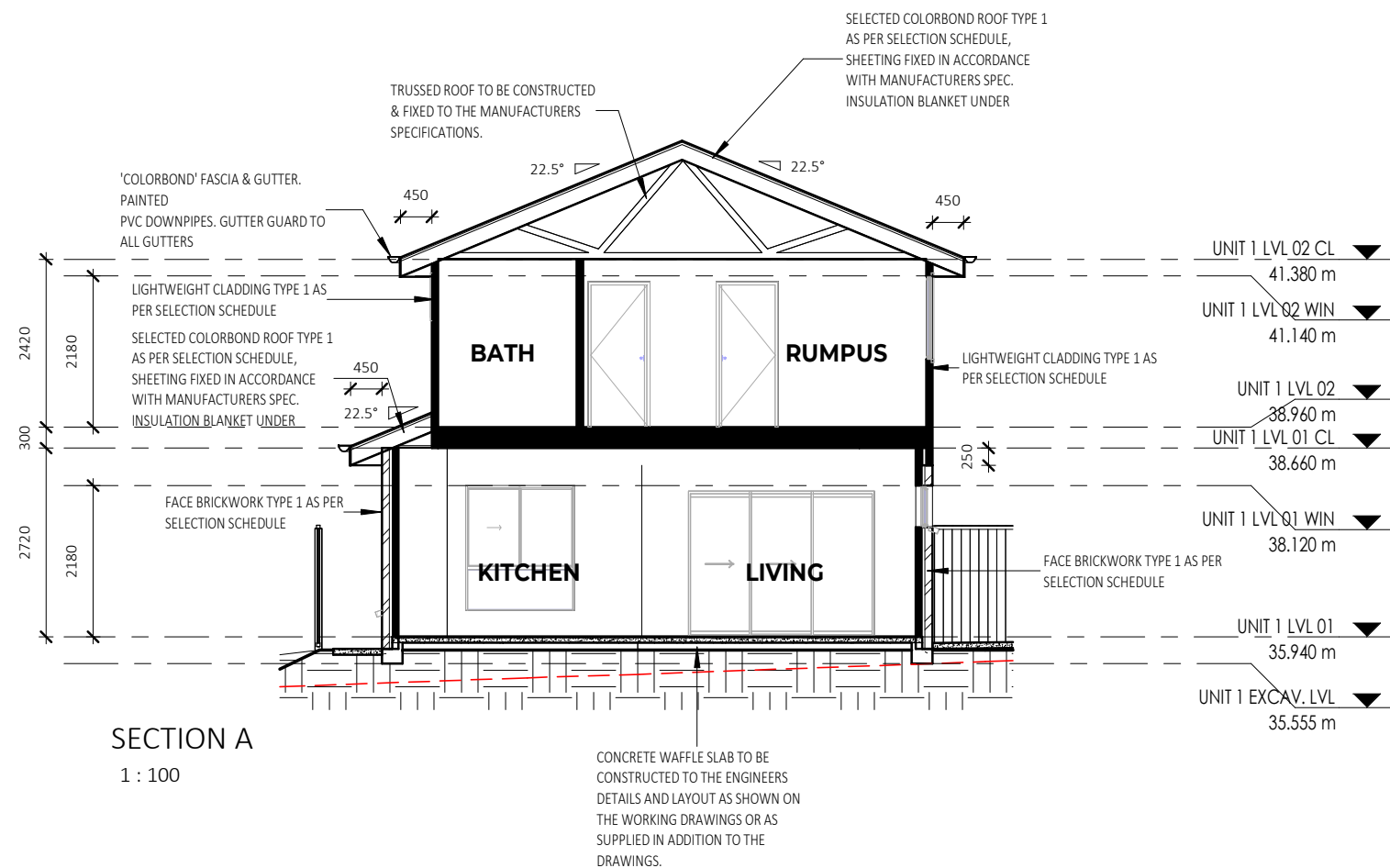
LEGEND - KEYNOTES (REFER SPECIFICATIONS)



WEST ELEVATION - UNIT 1
1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION



SECTION A
1 : 100

ALL BRICKWORK TO BE FULLY ARTICULATED IN ACCORDANCE WITH AS 3700 MASONRY STRUCTURES OR AS4773 MASONRY FOR SMALL BUILDINGS, PARTS 1 AND 2.
 ARTICULATION JOINTS MUST HAVE A WIDTH NOT LESS THAN 10mm AND BE PROVIDED IN FOLLOWING LOCATIONS:
 * FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS UP TO 4m HIGH: EXTERNAL FACE FINISHED MASONRY 5.0m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 4.5m OR
 * FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS FROM 4m-8.5m H: EXTERNAL FACE FINISHED MASONRY 3.5m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 3.2m
 * MAXIMUM SPACING OF ARTICULATION JOINTS IN WALLS WHERE WINDOW OR DOOR OPENINGS MORE THAN 900 x 900mm OCCUR, TO BE NO MORE THAN 5.0m CTRS, AND POSITIONED IN LINE WITH ONE EDGE OF THE OPENING; AND
 * WHERE THE HEIGHT OF THE WALL CHANGES BY MORE THAN 20%, AT THE POSITION OF CHANGE IN HEIGHT; AND
 * WHERE WALLS CHANGE IN THICKNESS; AND
 * AT CONTROL OR CONSTRUCTION JOINTS IN FOOTING SLABS; AND
 * AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MASONRY MATERIALS; AND
 * AT DEEP CHASES (REBATES) FOR SERVICE PIPES.
 * AT A DISTANCE FROM ALL CORNERS NOT GREATER THAN 4500mm AND NOT LESS THAN 470mm FOR CAVITY WALLS OR 230mm FOR VENEER WALLS.

INSULATION NOTES:

R3.5 INSULATION TO CEILINGS (EXCLUDES GARAGES, PORCHES, BALCONIES AND ALFRESCOS).

R2.0 INSULATION TO EXTERNAL WALLS (EXCLUDES GARAGE WALLS)

R2.0 INSULATION TO INTERNAL GARAGE WALLS

UNDER SLAB INSULATION:

REFER TO GEOTECH S/M/H CLASS.

S&M CLASS - 310MM SLAB THICKNESS / 225MM THICK STYROFOAM PODS UNDER SLAB

H CLASS - 385MM SLAB THICKNESS / 300MM THICK STYROFOAM PODS UNDER SLAB

LEGEND - KEYNOTES (REFER SPECIFICATION...

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**

AT:
 LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
 NSW 2321

Sheet Title
SECTION A - UNIT 1

Date	25.10.23	Scale	As indicated	@ A3
Drawn by	GR	Checked	Design	CUSTOM
Checked by Owner	Date	Signed by Builder	Drawing No.	24005
				A40.0.1

FLOOR AREAS UNIT 2

PORCH	4.06 m ²
GARAGE	40.05 m ²
LIVING	76.16 m ²
UPSTAIRS	65.18 m ²
LIVING	
PATIO	7.02 m ²
TOTAL	192.47 m²

SHELVING NOTES:
 MELAMINE SHELF AND HANGING RAIL TO ROBES
 BANK OF DRAWS & SHELVES TO ROBES
 4x MELAMINE SHELVES TO LINEN CUPBOARD

NOTE -
 ALL UPPER FLOOR WINDOW
 OPENINGS TO BE PERMANENTLY
 RESTRICTED TO 125mm OPENING
 RESTRICTION AS PER NCC/BCA.

DOOR LEAF LEGEND:
 XXX/21=2040H LEAF
 XXX/24=2340H LEAF



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No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

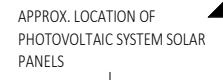
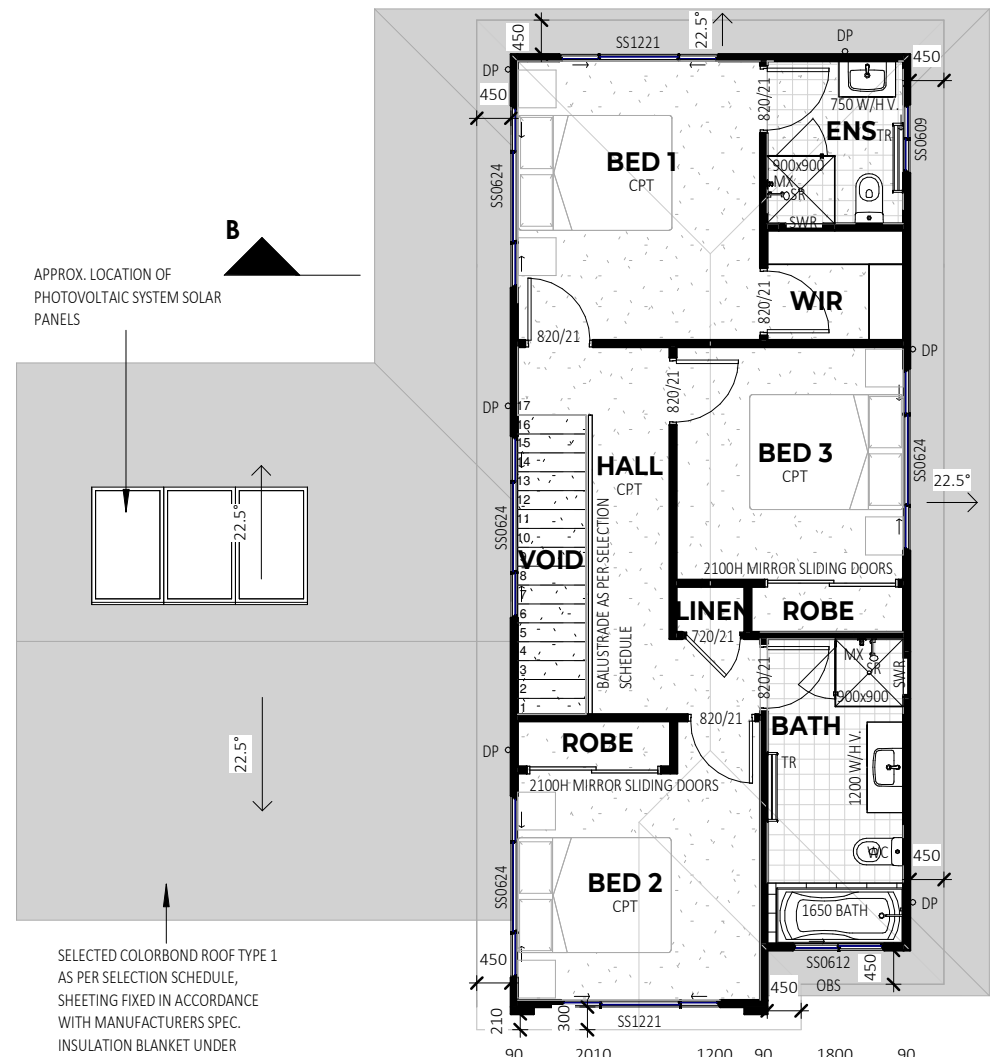
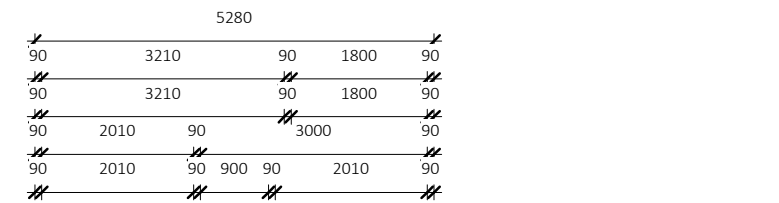
AT:
 LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
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Sheet Title
 LVL 02 FLOOR PLAN - UNIT 2

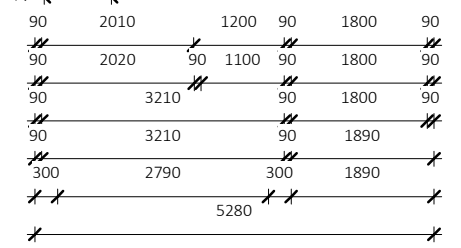
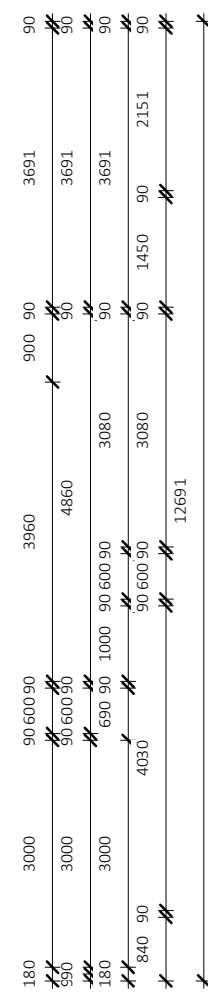
Date
 25.10.23

Drawn by: GR
 Checked: GR
 Checked by Owner: [Date] Signed by Builder: [Date]

Scale: As indicated @ A3
 Design: CUSTOM Rev: A
 Drawing No. 24005 Sheet: B21.2.2



SELECTED COLORBOND ROOF TYPE 1
 AS PER SELECTION SCHEDULE,
 SHEETING FIXED IN ACCORDANCE
 WITH MANUFACTURERS SPEC.
 INSULATION BLANKET UNDER



LEGEND - KEYNOTES (REFER SPECIFICATION...)

- DP DOWNPIPE AS SPECIFIED
- MX MIXER AS SPECIFIED
- SR SHOWER ROSE AS SPECIFIED
- SWR SHOWER WALL RECESS AS SPECIFIED
- TR TOWEL RAIL AS SPECIFIED
- WC WATER CLOSET AS SPECIFIED

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

LVL 02 FLOOR PLAN - UNIT 2
 1 : 100



LEGEND - KEYNOTES (REFER SPECIFICATION...



VALLEY HOMES
SINCE 1971

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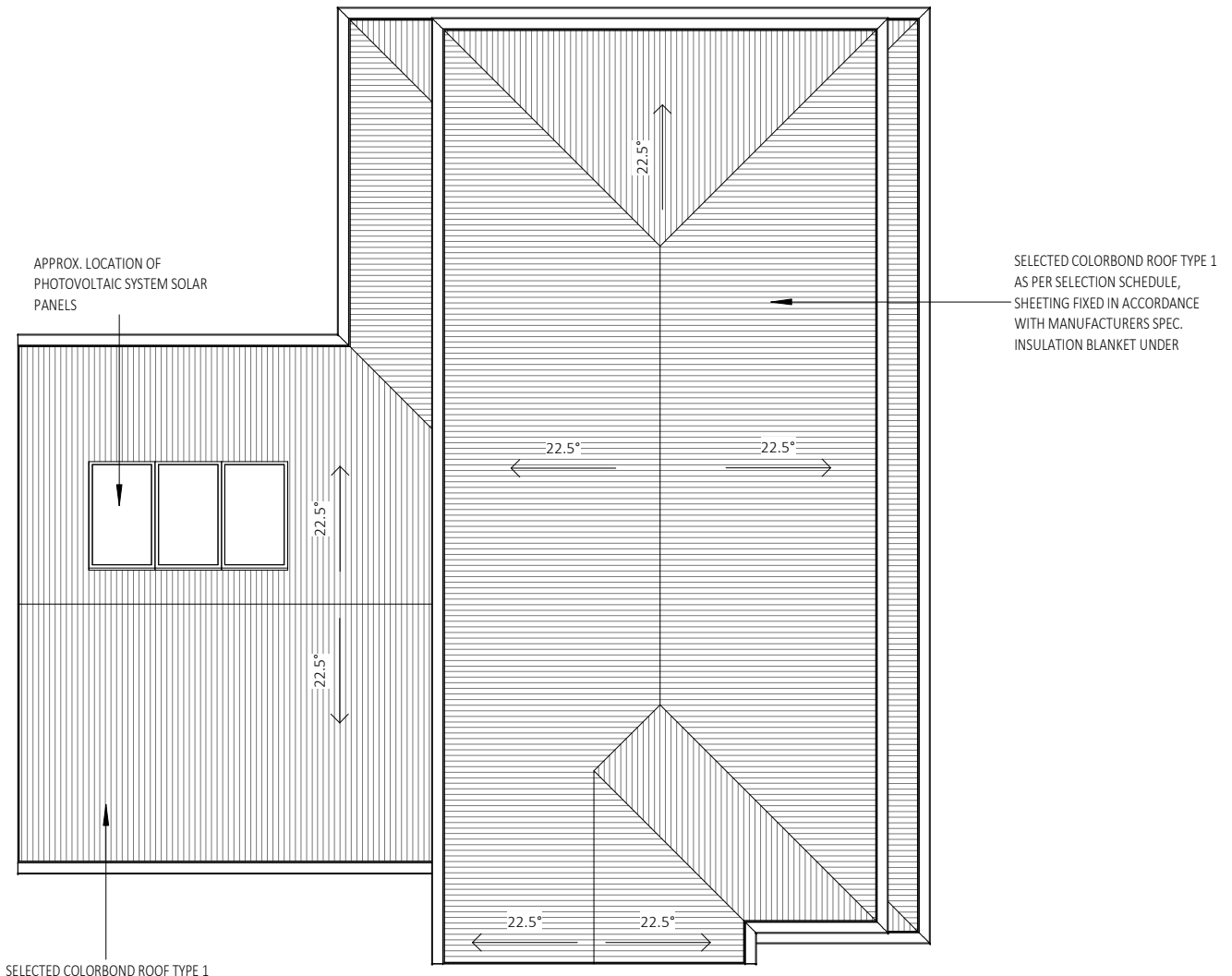
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SELECTED COLORBOND ROOF TYPE 1
AS PER SELECTION SCHEDULE,
SHEETING FIXED IN ACCORDANCE
WITH MANUFACTURERS SPEC.
INSULATION BLANKET UNDER

SELECTED COLORBOND ROOF TYPE 1
AS PER SELECTION SCHEDULE,
SHEETING FIXED IN ACCORDANCE
WITH MANUFACTURERS SPEC.
INSULATION BLANKET UNDER

APPROX. LOCATION OF
PHOTOVOLTAIC SYSTEM SOLAR
PANELS



ROOF PLAN - UNIT 2
1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ROOF PLAN - UNIT 2

Date 25.10.23

Drawn by [blank] Checked GR
Checked by Owner [blank] Date [blank] Signed by Builder [blank]

Scale 1 : 100 @ A3

Design CUSTOM Rev A

Drawing No. 24005 Sheet B21.5.2

LEGEND: AS SPECIFIED

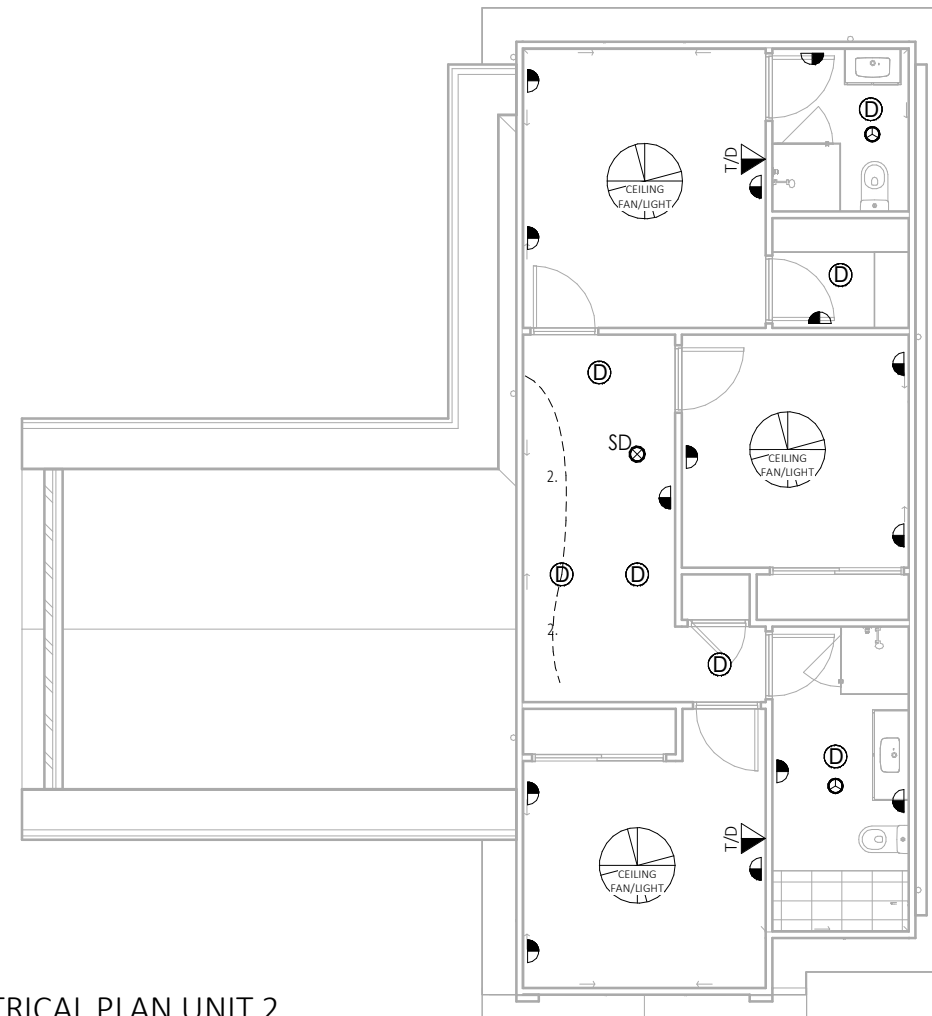
- Ⓓ¹ LED DOWNLIGHT RECESSED
- Ⓓ² LED DOWNLIGHT DIRECTIONAL
- Ⓓ³ LED DOWNLIGHT FIXED
- Ⓟ¹ PEDANT LIGHT TYPE 1
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- Ⓟ³ PEDANT LIGHT TYPE 3
- Ⓜ¹ EXTERNAL WALL LIGHT
- Ⓒ SENSOR LIGHT
- ☼ HEATER FAN LIGHT
- ⊗ EXHAUST FAN LIGHT
- ⌚ EXTERNALLY DUCTED EXHAUST FAN
- FLUORESCENT LIGHT SINGLE
- == LED BATTEN LIGHT
- ⊖ CEILING FAN
- ⊖ CEILING FAN WITH LIGHT
- SD ⊗ LOCATION OF SMOKE ALARM IN ACCORDANCE WITH AS3786.
- g ⊖ GAS POINT
- ⊖ GPO SINGLE
- ⊖ GPO DOUBLE
- EXT ⊖ GPO SINGLE WATERPROOF
- EXT ⊖ GPO DOUBLE WATERPROOF
- 1000 ⊖ GPO SINGLE ELEVATED 1000
- 1000 ⊖ GPO DOUBLE ELEVATED 1000
- NBN NBN CONNECTION BOX
- METER ELECTRICAL METER & FUSE BOX
- TV TV POINT
- T/D TELEPHONE / DATA POINT
- ▽ HARD WIRED DOOR BELL
- × LIGHT SWITCH SINGLE
- ×³ LIGHT SWITCH MULTIPLE
- ×^{EXT} LIGHT SWITCH EXTERNAL
- - - 2 WAY SWITCHING
- - - 3 3 WAY SWITCHING

Type	Count
CEILING FAN LIGHT	3
LED DOWNLIGHT	7
Grand total: 10	10

Type	Count
GPO DOUBLE	14
SMOKE ALARM	1
TELEPHONE / DATA POINT	2
VH_EXHAUST FAN	2
Grand total: 19	19

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

2.



LVL 02 ELECTRICAL PLAN UNIT 2
1 : 100

REFER TO TENDER

TORRENS TITLE SUBDIVISION



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FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
LVL 02 ELECTRICAL PLAN - UNIT
2

Date
25.10.23

Drawn by
GR

Checked by Owner
Date
Signed by Builder

Scale
1 : 100 @ A3

Design
CUSTOM
Rev
A

Drawing No.
24005
Sheet
B22.2.2

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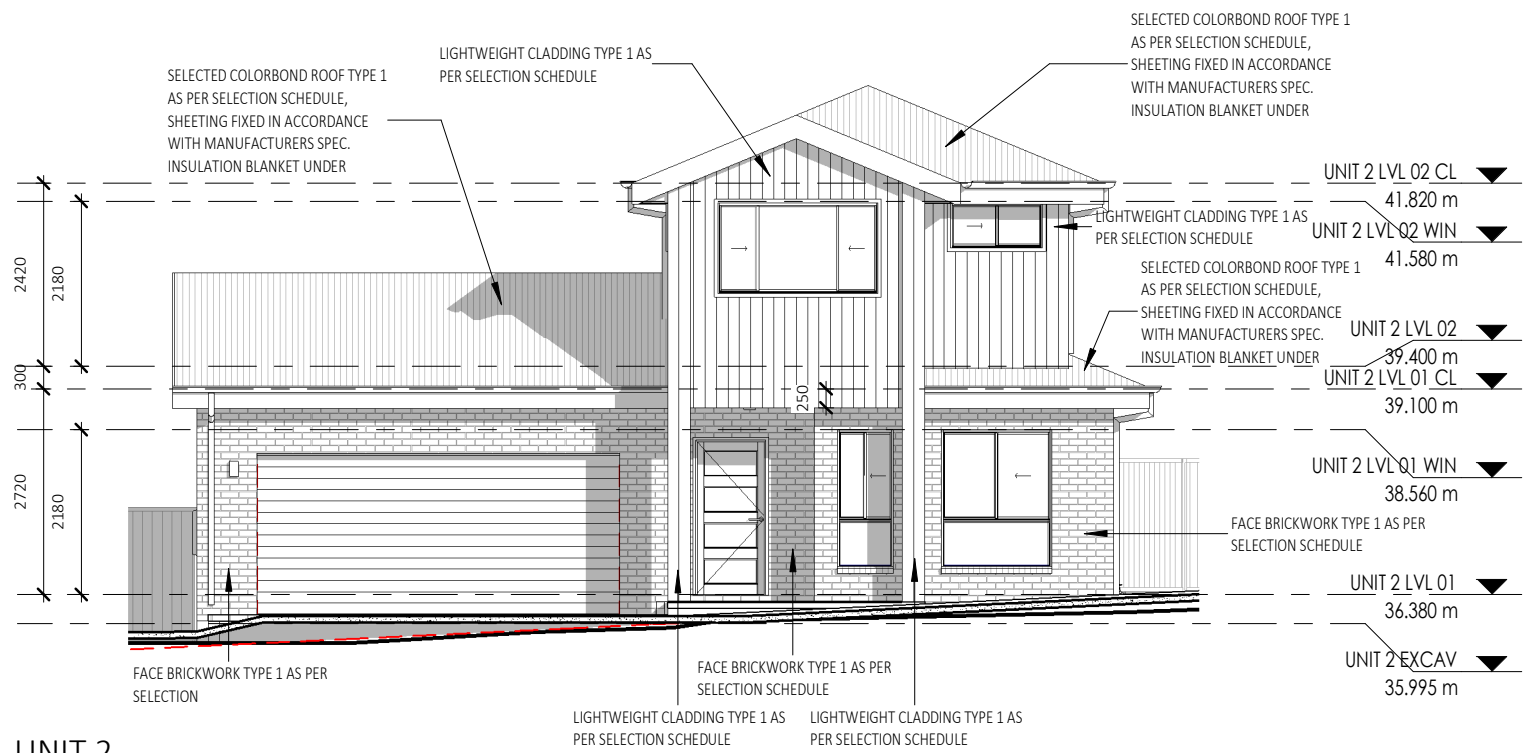
No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ELEVATIONS - UNIT 2

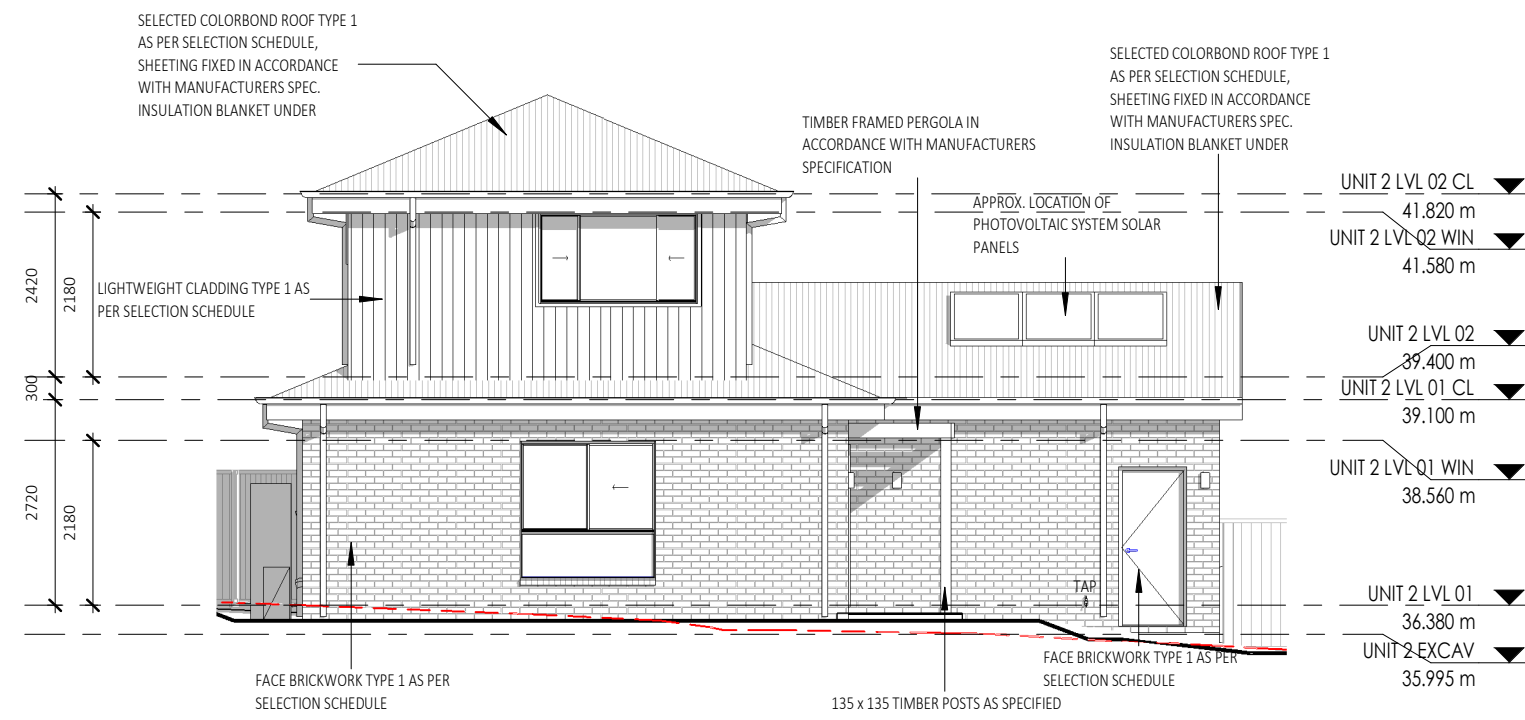
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Drawn by	GR	Checked
Checked by Owner	Date	Signed by Builder
Scale	1 : 100	@ A3
Design	CUSTOM	Rev A
Drawing No.	24005	Sheet B30.0.1



SOUTH ELEVATION - UNIT 2
1 : 100

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

TAP TAP AS SPECIFIED



NORTH ELEVATION - UNIT 2
1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION



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No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ELEVATIONS - UNIT 2

Date
25.10.23

Drawn by
GR

Checked by Owner
Date

Signed by Builder

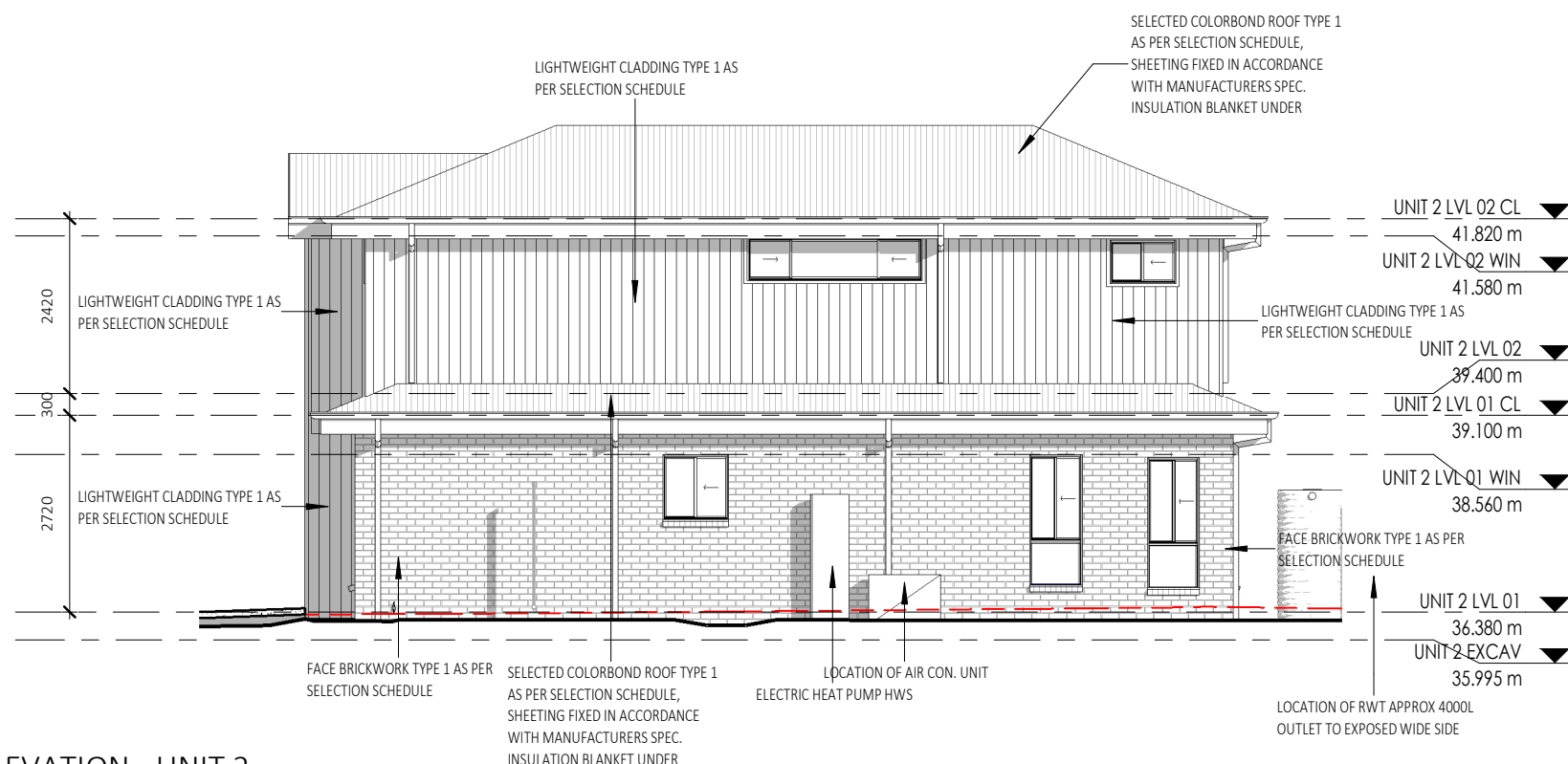
Scale
1 : 100

Design
CUSTOM

Drawing No.
24005

REFER TO TENDER

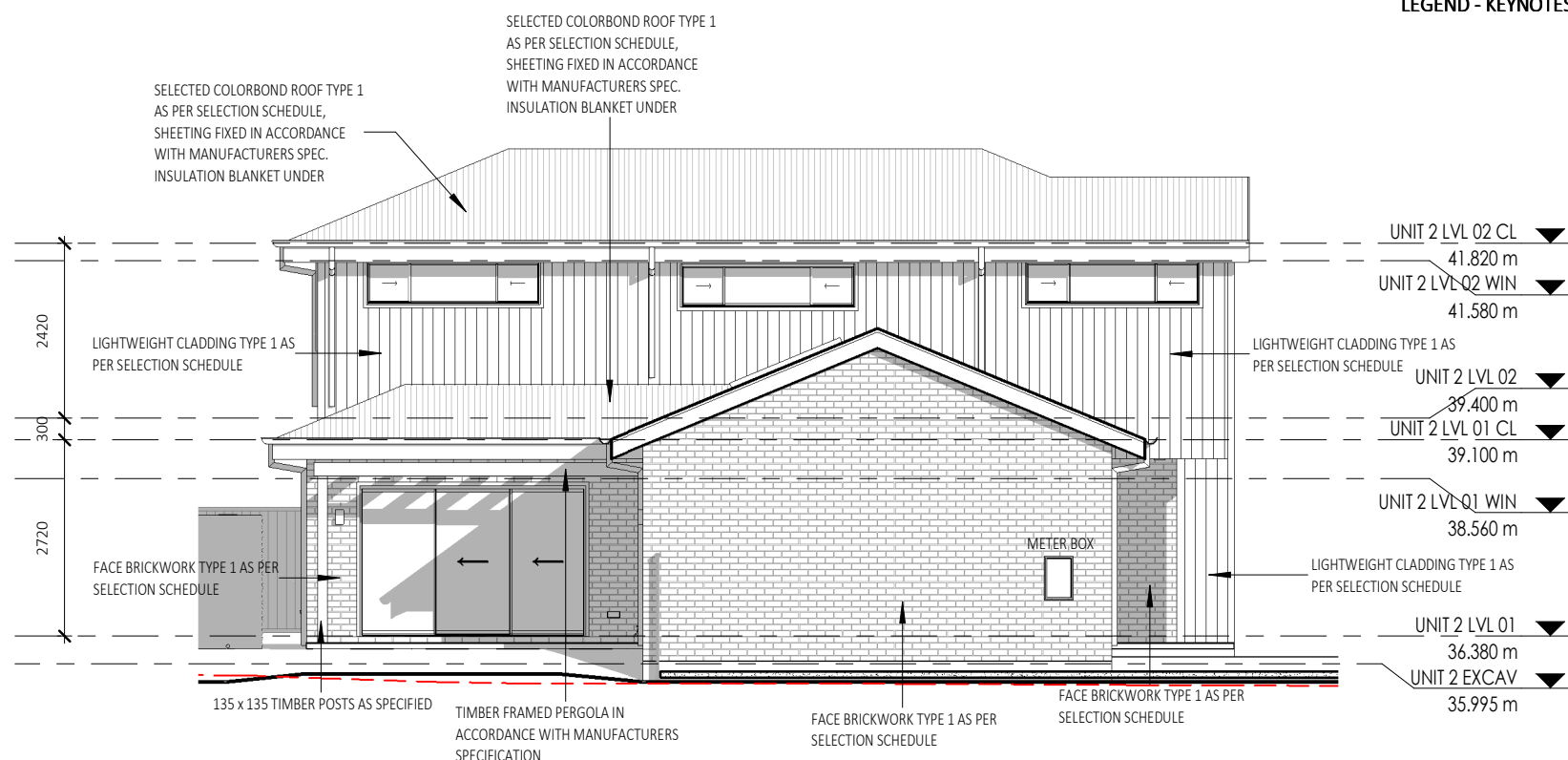
COMMUNITY TITLE SUBDIVISION



EAST ELEVATION - UNIT 2

1 : 100

LEGEND - KEYNOTES (REFER SPECIFICATIONS)



WEST ELEVATION - UNIT 2

1 : 100

Rev	A
Sheet	B30.1.1



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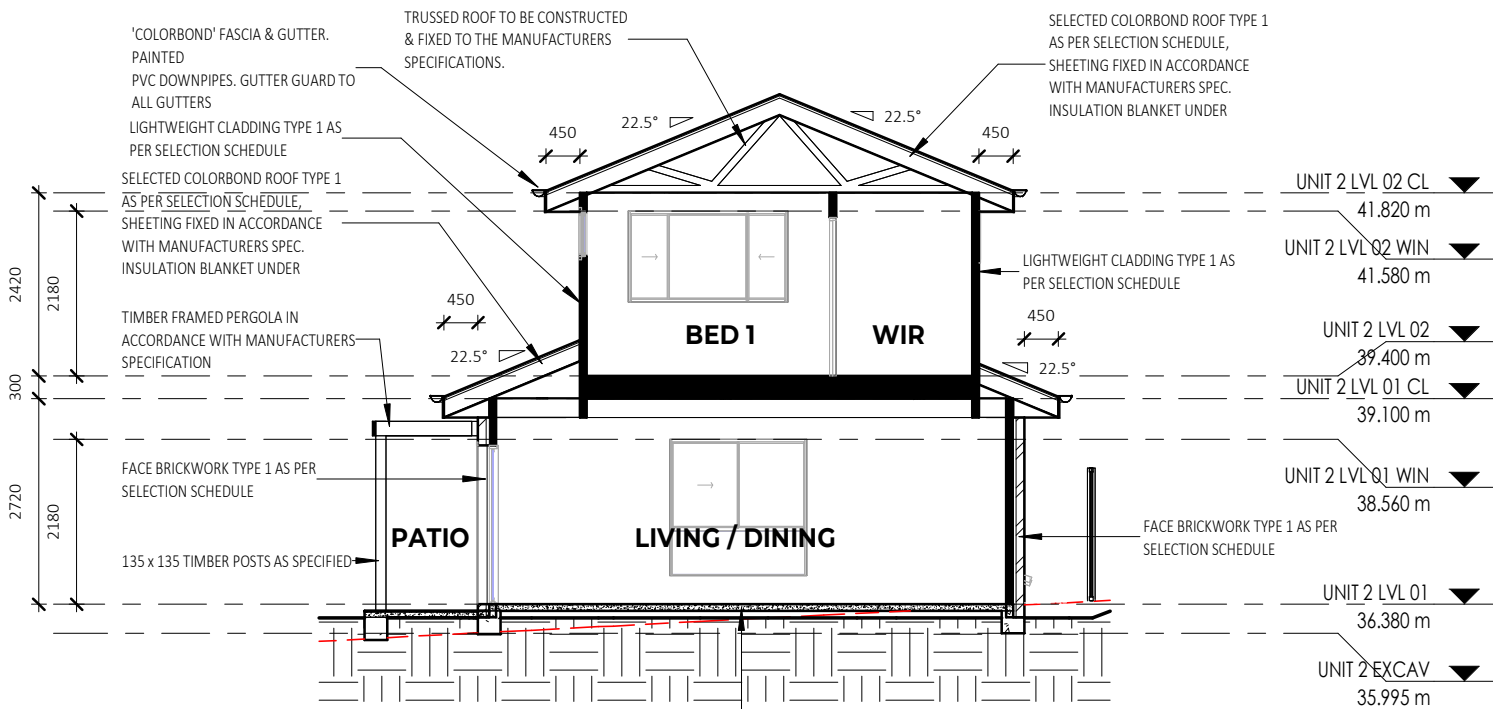
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No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

LEGEND - KEYNOTES (REFER SPECIFICATION...



SECTION B
1 : 100

CONCRETE WAFFLE SLAB TO BE CONSTRUCTED TO THE ENGINEERS DETAILS AND LAYOUT AS SHOWN ON THE WORKING DRAWINGS OR AS SUPPLIED IN ADDITION TO THE DRAWINGS.

ALL BRICKWORK TO BE FULLY ARTICULATED IN ACCORDANCE WITH AS 3700 MASONRY STRUCTURES OR AS4773 MASONRY FOR SMALL BUILDINGS, PARTS 1 AND 2.
ARTICULATION JOINTS MUST HAVE A WIDTH NOT LESS THAN 10mm AND BE PROVIDED IN FOLLOWING LOCATIONS:
* FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS UP TO 4m HIGH: EXTERNAL FACE FINISHED MASONRY 5.0m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 4.5m OR
* FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS FROM 4m-8.5m H: EXTERNAL FACE FINISHED MASONRY 3.5m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 3.2m
* MAXIMUM SPACING OF ARTICULATION JOINTS IN WALLS WHERE WINDOW OR DOOR OPENINGS MORE THAN 900 x 900mm OCCUR, TO BE NO MORE THAN 5.0m CTRS, AND POSITIONED IN LINE WITH ONE EDGE OF THE OPENING; AND
* WHERE THE HEIGHT OF THE WALL CHANGES BY MORE THAN 20%, AT THE POSITION OF CHANGE IN HEIGHT; AND
* WHERE WALLS CHANGE IN THICKNESS; AND
* AT CONTROL OR CONSTRUCTION JOINTS IN FOOTING SLABS; AND
* AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MASONRY MATERIALS; AND
* AT DEEP CHASES (REBATES) FOR SERVICE PIPES.
* AT A DISTANCE FROM ALL CORNERS NOT GREATER THAN 4500mm AND NOT LESS THAN 470mm FOR CAVITY WALLS OR 230mm FOR VENEER WALLS.

INSULATION NOTES:

- R3.5 INSULATION TO CEILINGS (EXCLUDES GARAGES, PORCHES, BALCONIES AND ALFRESCOS).
- R2.0 INSULATION TO EXTERNAL WALLS (EXCLUDES GARAGE WALLS)
- R2.0 INSULATION TO INTERNAL GARAGE WALLS

UNDER SLAB INSULATION:
REFER TO GEOTECH S/M/H CLASS.

- S&M CLASS - 310MM SLAB THICKNESS / 225MM THICK STYROFOAM PODS UNDER SLAB
- H CLASS - 385MM SLAB THICKNESS / 300MM THICK STYROFOAM PODS UNDER SLAB

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

FOR:
GRUGEON

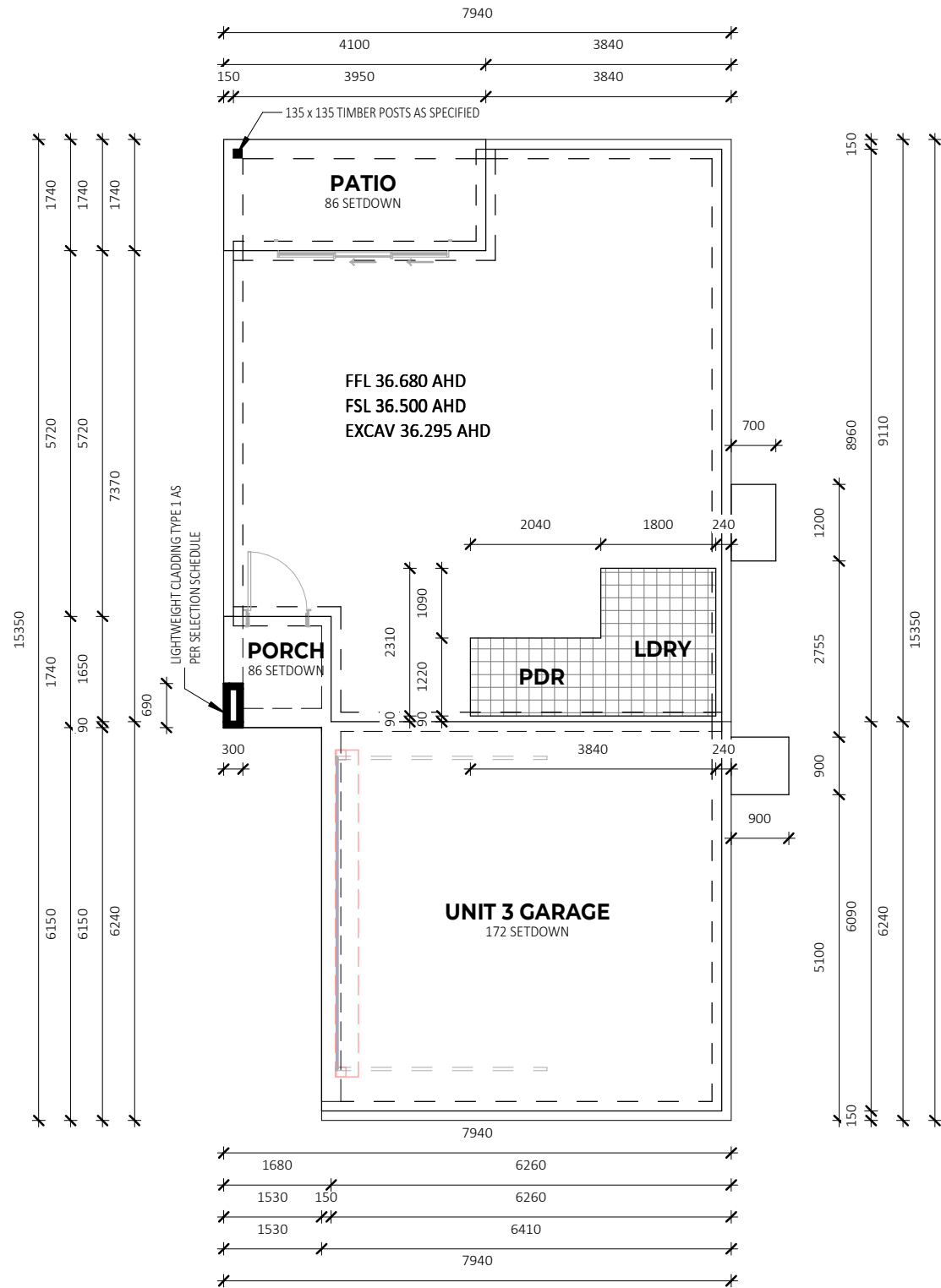
AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
SECTION B - UNIT 2

Date	25.10.23		
Drawn by	GR	Checked	.
Checked by Owner	Date	Signed by Builder	
Scale	As indicated	@ A3	
Design	CUSTOM	Rev	A
Drawing No.	24005	Sheet	B40.0.2

CONCRETE WAFFLE SLAB TO BE CONSTRUCTED TO THE ENGINEERS DETAILS AND LAYOUT AS SHOWN ON THE WORKING DRAWINGS OR AS SUPPLIED IN ADDITION TO THE DRAWINGS.

45mm SET DOWN IN SLAB FOR WET AREA TILING SHOWN HATCHED.



LEGEND - KEYNOTES (REFER SPECIFICATIONS)



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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
 LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
 NSW 2321

Sheet Title
 SLAB PLAN - UNIT 3

Date 25.10.23
 Drawn by GR
 Checked by GR
 Checked by Owner Date Signed by Builder

Scale 1:100 @ A3
 Design CUSTOM Rev A
 Drawing No. 24005 Sheet C21.0.1

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

SLAB PLAN - UNIT 3
 1 : 100

FLOOR AREAS UNIT 3

PORCH	2.30 m ²
GARAGE	40.00 m ²
LIVING	63.76 m ²
UPSTAIRS LIVING	74.15 m ²
PATIO	6.28 m ²
TOTAL	186.48 m²

DOOR LEAF LEGEND:
 XXX/21=2040H LEAF
 XXX/24=2340H LEAF

SHELVING NOTES:
 MELAMINE SHELF AND HANGING RAIL TO ROBES
 BANK OF DRAW & SHELVES TO ROBES
 4x MELAMINE SHELVES TO LINEN CUPBOARD

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

AC	AIR CONDITIONING AS SPECIFIED
BRM	BROOM CLOSET
BS	BASIN
CONC-1	CONCRETE WAFFLE POD SLAB TO ENGRS SPECIFICATION
DP	DOWNPIPE AS SPECIFIED
DW	DISHWASHER AS SPECIFIED
ET-1	EXTERNAL TILE AS SPECIFIED
HWS	HOT WATER SYSTEM
PTY	KITCHEN PANTRY
REF	REFRIGERATOR OPENING AS SPECIFIED
SI	SINK AS SPECIFIED
TAP	TAP AS SPECIFIED
WC	WATER CLOSET AS SPECIFIED
WM	WASHING MACHINE



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FOR:
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AT:
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Sheet Title
 LVL 01 FLOOR PLAN - UNIT 3

Date: 25.10.23

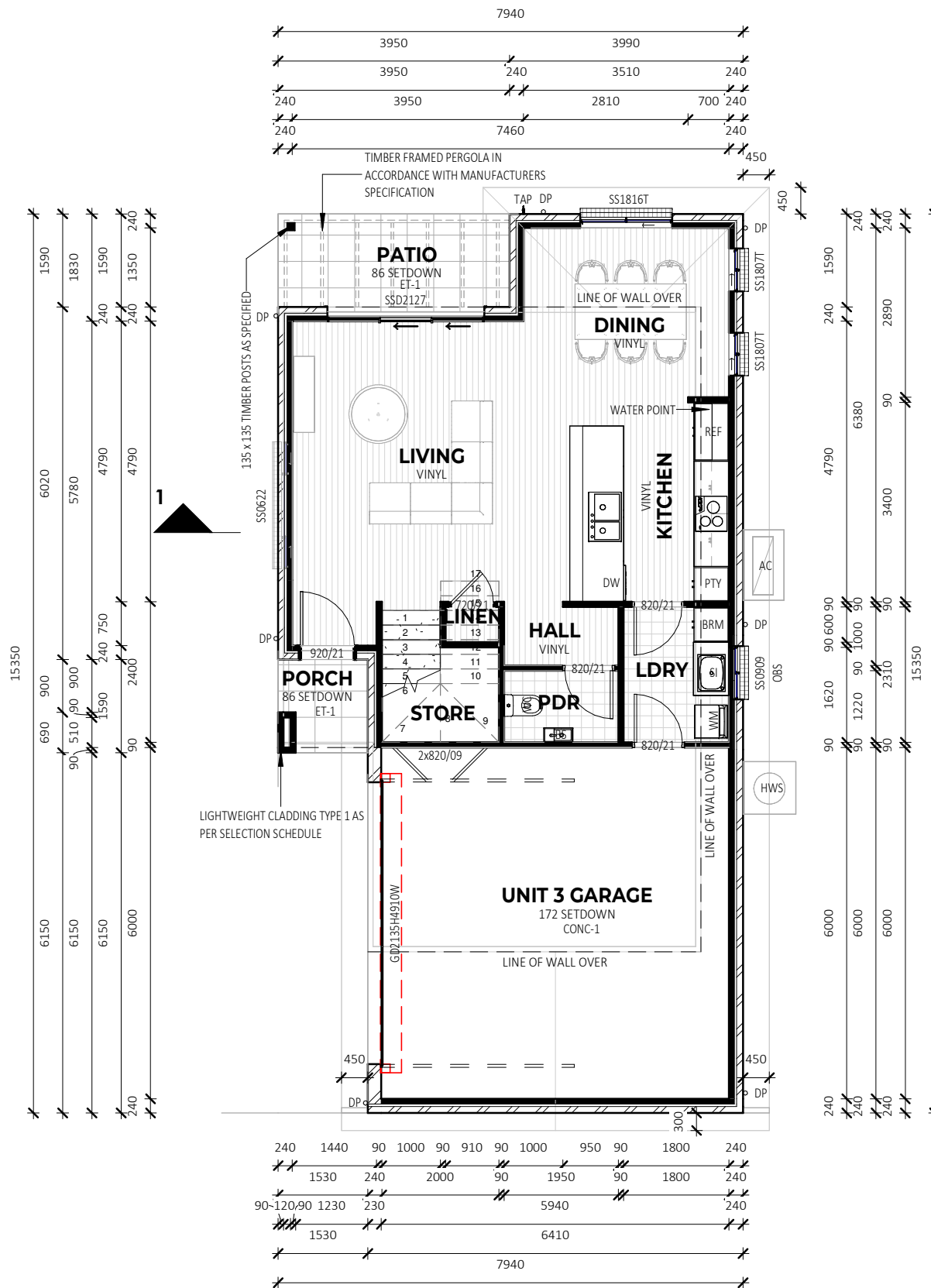
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Checked by Owner: Date Signed by Builder

Scale: As indicated @ A3

Design: CUSTOM Rev A

Drawing No. 24005 Sheet C21.1.1



REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

FLOOR AREAS UNIT 3

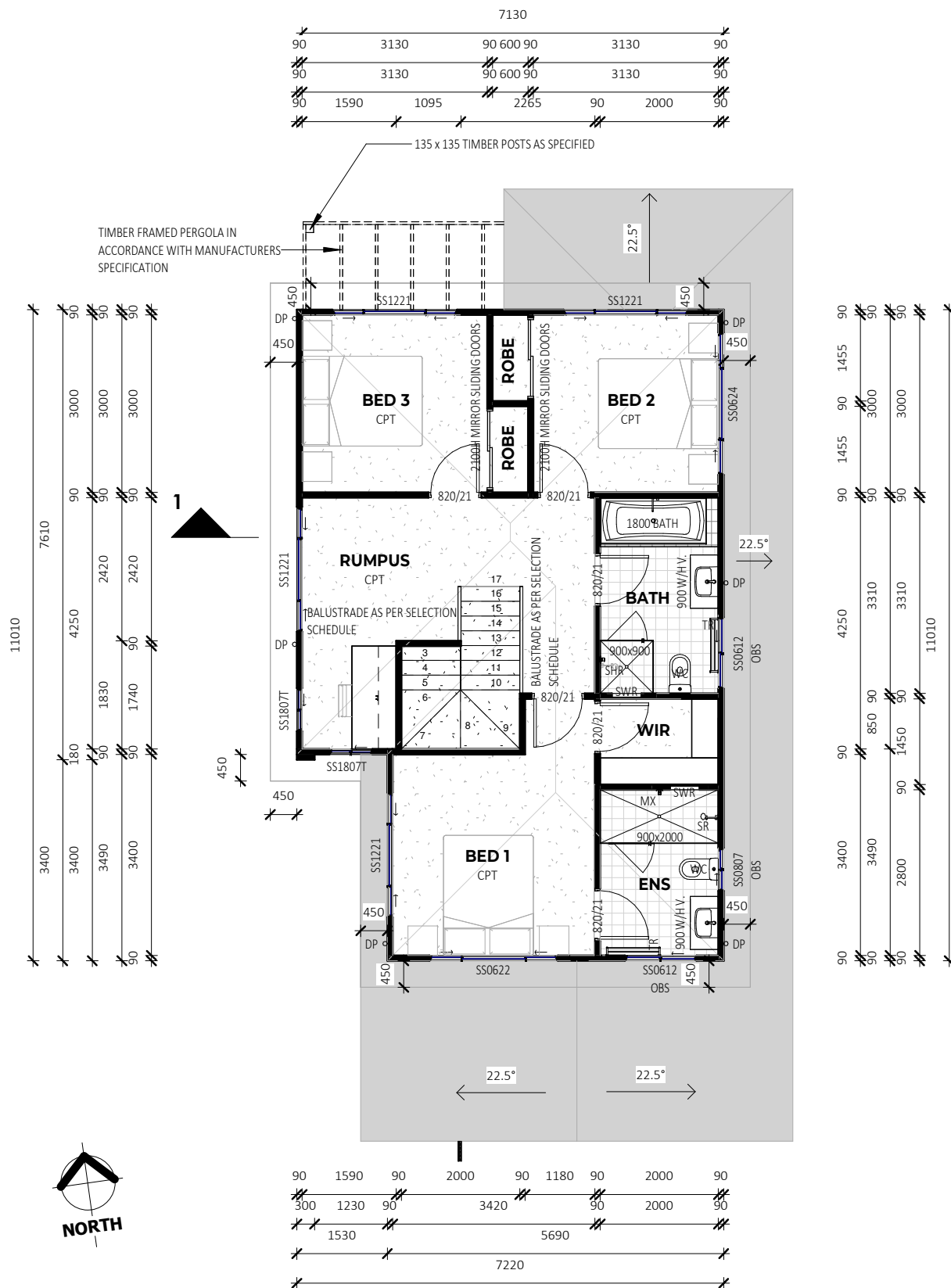
PORCH	2.30 m ²
GARAGE	40.00 m ²
LIVING	63.76 m ²
UPSTAIRS LIVING	74.15 m ²
PATIO	6.28 m ²
TOTAL	186.48 m²

DOOR LEAF LEGEND:
 XXX/21=2040H LEAF
 XXX/24=2340H LEAF

SHELIVING NOTES:
 MELAMINE SHELF AND HANGING RAIL TO ROBES
 BANK OF DRAWS & SHELVES TO ROBES
 4x MELAMINE SHELVES TO LINEN CUPBOARD

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

- DP DOWNPIPE AS SPECIFIED
- MX MIXER AS SPECIFIED
- SHR SHOWER AS SPECIFIED
- SR SHOWER ROSE AS SPECIFIED
- SWR SHOWER WALL RECESS AS SPECIFIED
- TR TOWEL RAIL AS SPECIFIED
- WC WATER CLOSET AS SPECIFIED



LVL 02 FLOOR PLAN - UNIT 3
 1 : 100

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A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
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AT:
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 SPRINGFIELD DRIVE
 LOCHINVAR
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Sheet Title
 LVL 02 FLOOR PLAN - UNIT 3

Date	25.10.23		
Drawn by	GR	Checked	
Checked by Owner	Date	Signed by Builder	
Scale	As indicated @ A3		
Design	CUSTOM	Rev	A
Drawing No.	24005	Sheet	C21.1.2

LEGEND - KEYNOTES (REFER SPECIFICATION...



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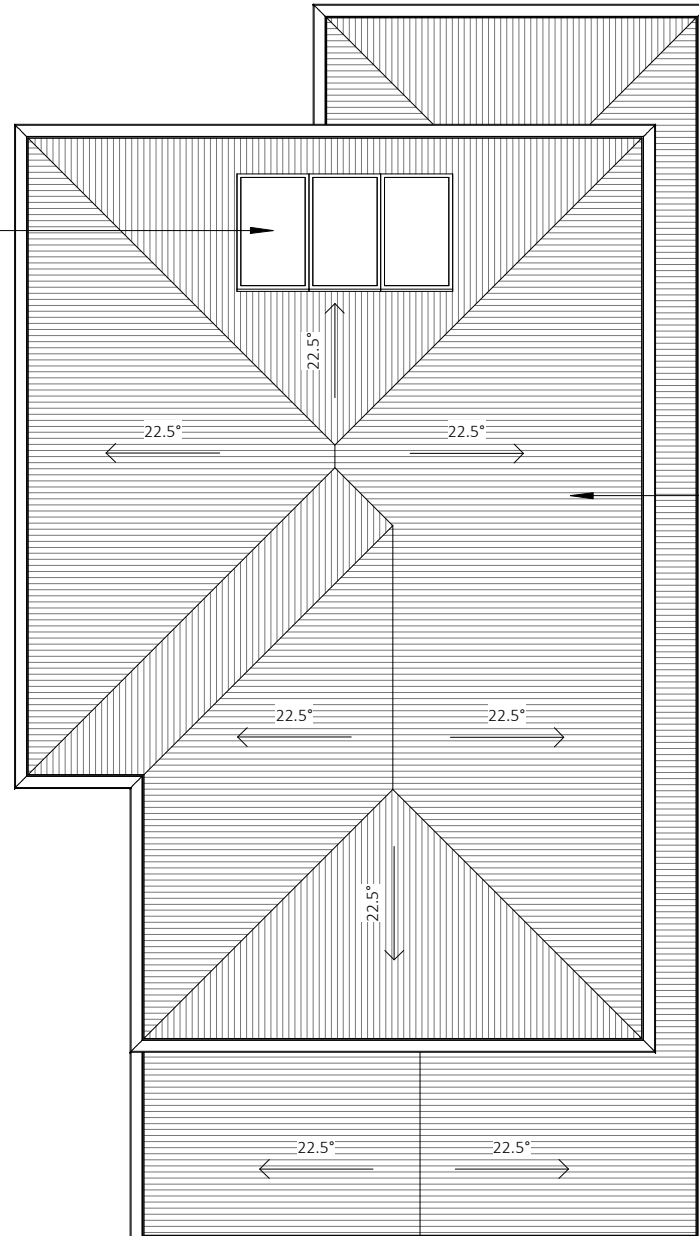
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A	21.03.24	ISSUED FOR DA APPLICATION	GR

APPROX. LOCATION OF PHOTOVOLTAIC SYSTEM SOLAR PANELS



SELECTED COLORBOND ROOF TYPE 1 AS PER SELECTION SCHEDULE, SHEETING FIXED IN ACCORDANCE WITH MANUFACTURERS SPEC. INSULATION BLANKET UNDER



ROOF PLAN - UNIT 3
1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ROOF PLAN - UNIT 3

Date
25.10.23

Drawn by	GR	Checked	
Checked by Owner	Date	Signed by Builder	

Scale
1 : 100 @ A3

Design
CUSTOM Rev A

Drawing No.
24005 C21.5.1

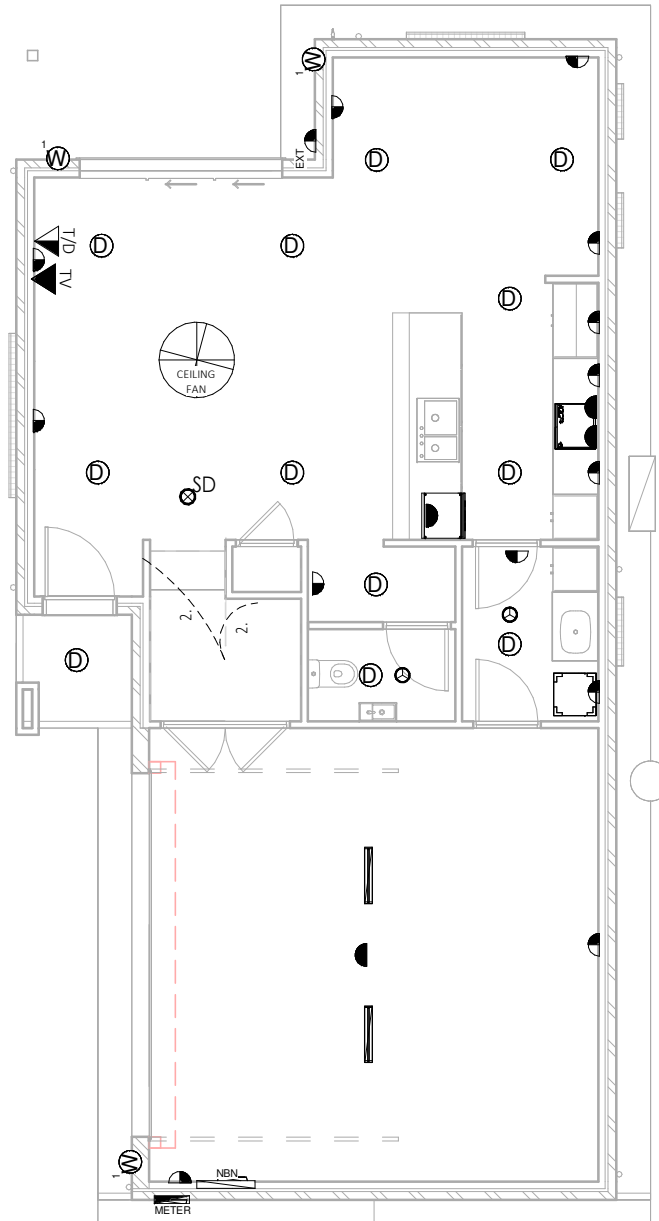
LEGEND: AS SPECIFIED

ELECTRICAL FIXTURE SCHEDULE	
Type	Count
GPO SINGLE	2
GPO SINGLE	1
VH_EXHAUST FAN	2
ELECTRICAL METER & FUSE BOX	1
GPO DOUBLE	13
GPO DOUBLE WP	1
GPO SINGLE	1
NBN CONNECTION BOX	1
SMOKE ALARM	1
TELEPHONE / DATA POINT	1
TV POINT	1
Grand total:	25

LIGHTING FIXTURE SCHEDULE	
Type	Count
LED BATTEN LIGHT	2
WALL LIGHT	2
CEILING FAN	1
LED DOWNLIGHT	12
WALL LIGHT	1
Grand total:	18

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

2.



LVL 01 ELECTRICAL PLAN - UNIT 3
1 : 100

- Ⓧ¹ LED DOWNLIGHT RECESSED
- Ⓧ² LED DOWNLIGHT DIRECTIONAL
- Ⓧ³ LED DOWNLIGHT FIXED
- Ⓧ¹ PEDANT LIGHT TYPE 1
- Ⓧ² PEDANT LIGHT TYPE 2
- Ⓧ³ PEDANT LIGHT TYPE 3
- Ⓧ¹ EXTERNAL WALL LIGHT
- Ⓧ SENSOR LIGHT
- Ⓧ HEATER FAN LIGHT
- Ⓧ EXHAUST FAN LIGHT
- Ⓧ EXTERNALLY DUCTED EXHAUST FAN
- FLUORESCENT LIGHT SINGLE
- LED BATTEN LIGHT
- Ⓧ CEILING FAN
- Ⓧ CEILING FAN WITH LIGHT
- Ⓧ LOCATION OF SMOKE ALARM IN ACCORDANCE WITH AS3786.
- Ⓧ GAS POINT
- Ⓧ GPO SINGLE
- Ⓧ GPO DOUBLE
- Ⓧ^{EXT} GPO SINGLE WATERPROOF
- Ⓧ^{EXT} GPO DOUBLE WATERPROOF
- Ⓧ¹⁰⁰⁰ GPO SINGLE ELEVATED 1000
- Ⓧ¹⁰⁰⁰ GPO DOUBLE ELEVATED 1000
- Ⓧ^{NBN} NBN CONNECTION BOX
- Ⓧ^{METER} ELECTRICAL METER & FUSE BOX
- Ⓧ^{TV} TV POINT
- Ⓧ^{T/D} TELEPHONE / DATA POINT
- ▽ HARD WIRED DOOR BELL
- × LIGHT SWITCH SINGLE
- ×³ LIGHT SWITCH MULTIPLE
- ×^{EXT} LIGHT SWITCH EXTERNAL
- - - 2 WAY SWITCHING
- - -³ 3 WAY SWITCHING



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A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
LVL 01 ELECTRICAL PLAN - UNIT 3

Date	25.10.23		
Drawn by	GR	Checked	
Checked by Owner	Date	Signed by Builder	
Scale	1 : 100	@ A3	
Design	CUSTOM	Rev	A
Drawing No.	24005	Sheet	C22.1.1

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

LEGEND: AS SPECIFIED

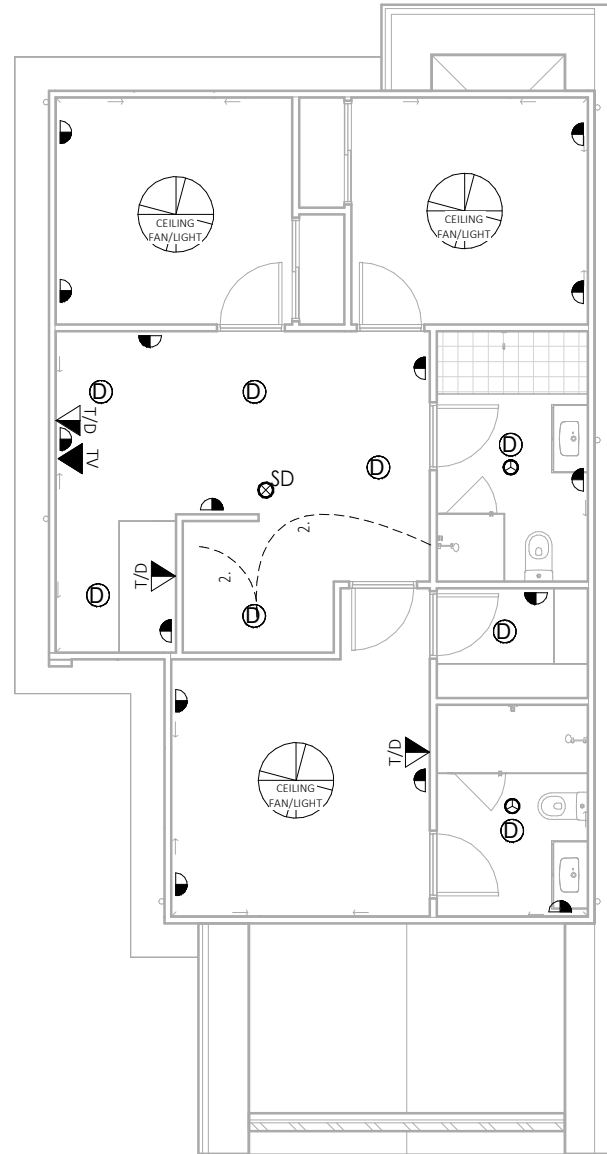
- ⓓ¹ LED DOWNLIGHT RECESSED
- ⓓ² LED DOWNLIGHT DIRECTIONAL
- ⓓ³ LED DOWNLIGHT FIXED
- Ⓟ¹ PEDANT LIGHT TYPE 1
- Ⓟ² PEDANT LIGHT TYPE 2
- Ⓟ³ PEDANT LIGHT TYPE 3
- Ⓜ¹ EXTERNAL WALL LIGHT
- Ⓢ SENSOR LIGHT
- ☀ HEATER FAN LIGHT
- ⊗ EXHAUST FAN LIGHT
- ☯ EXTERNALLY DUCTED EXHAUST FAN
- FLUORESCENT LIGHT SINGLE
- ▬ LED BATTEN LIGHT
- ⊗ CEILING FAN
- ⊗ CEILING FAN WITH LIGHT
- Ⓢⓓ LOCATION OF SMOKE ALARM
IN ACCORDANCE WITH AS3786.
- Ⓜ GAS POINT
- Ⓢ GPO SINGLE
- Ⓢ GPO DOUBLE
- Ⓢ^{EXT} GPO SINGLE WATERPROOF
- Ⓢ^{EXT} GPO DOUBLE WATERPROOF
- Ⓢ¹⁰⁰⁰ GPO SINGLE ELEVATED 1000
- Ⓢ¹⁰⁰⁰ GPO DOUBLE ELEVATED 1000
- ▬^{NBN} NBN CONNECTION BOX
- Ⓜ^{ELECT} ELECTRICAL METER & FUSE BOX
- Ⓜ^{TV} TV POINT
- Ⓜ^{T/D} TELEPHONE / DATA
POINT
- ▽ HARD WIRED DOOR BELL
- × LIGHT SWITCH SINGLE
- ×³ LIGHT SWITCH MULTIPLE
- ×^{EXT} LIGHT SWITCH EXTERNAL
- - - 2 WAY SWITCHING
- - -³ 3 WAY SWITCHING

ELECTRICAL FIXTURE SCHEDULE	
Type	Count
TELEPHONE / DATA POINT	2
VH_EXHAUST FAN	2
GPO DOUBLE	15
SMOKE ALARM	1
TELEPHONE / DATA POINT	1
TV POINT	1
Grand total:	22

LIGHTING FIXTURE SCHEDULE	
Type	Count
CEILING FAN LIGHT	3
LED DOWNLIGHT	8
Grand total:	11

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

2.



LVL 02 ELECTRICAL PLAN - UNIT 3

1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION



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FOR:
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AT:
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LOCHINVAR
NSW 2321

Sheet Title
LVL 02 ELECTRICAL PLAN - UNIT 3

Date
25.10.23

Drawn by GR
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Scale 1 : 100 @ A3

Design CUSTOM Rev A

Drawing No. 24005 Sheet C22.1.2

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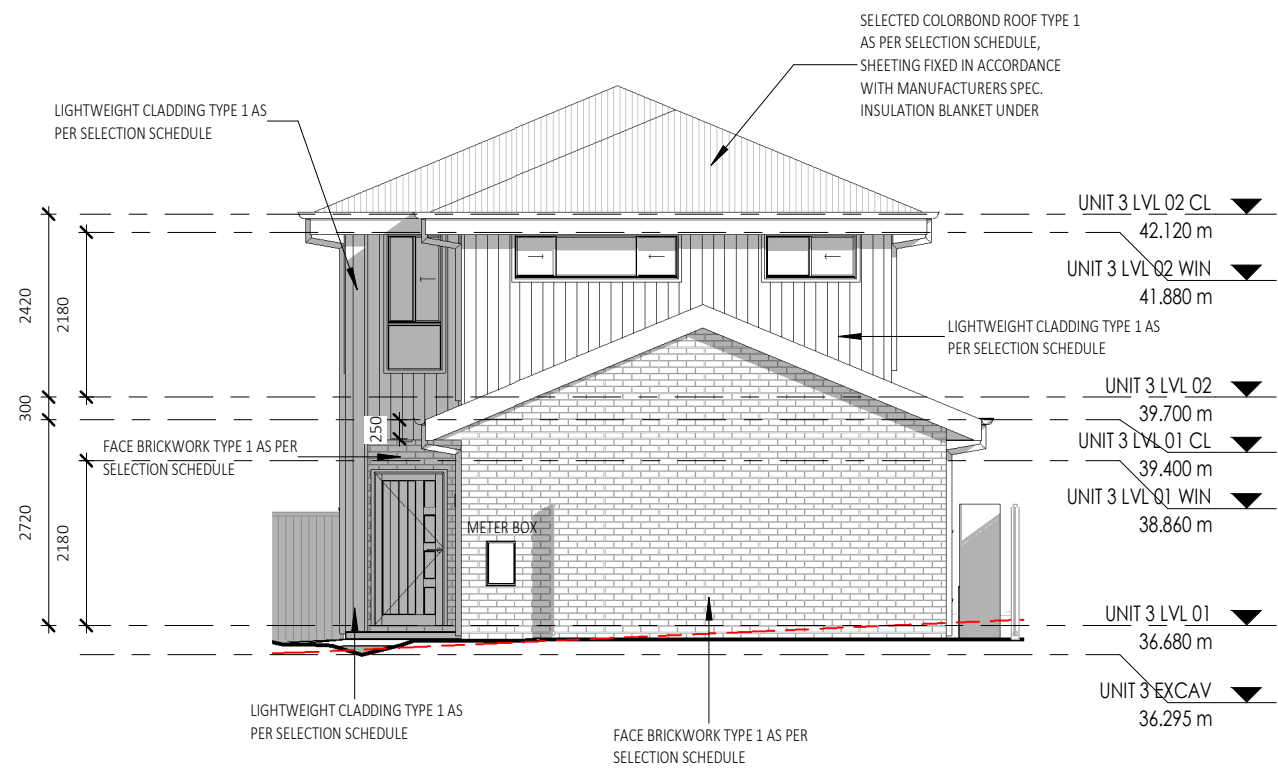
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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

SOUTH ELEVATION - UNIT 3

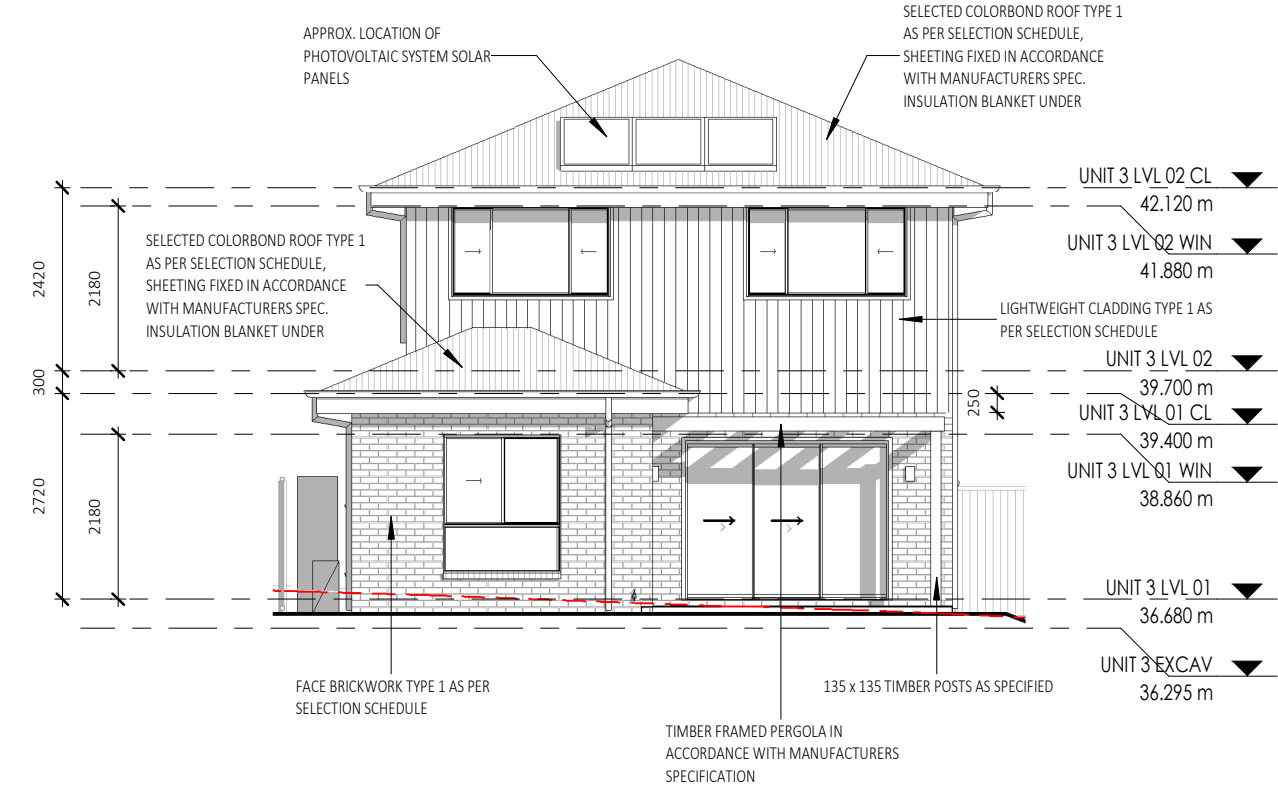
1 : 100



LEGEND - KEYNOTES (REFER SPECIFICATIONS)

NORTH ELEVATION - UNIT 3

1 : 100



REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ELEVATIONS - UNIT 3

Date
25.10.23

Drawn by
Checked
GR

Checked by Owner
Date
Signed by Builder

Scale
1 : 100 @ A3

Design
CUSTOM Rev A

Drawing No.
24005 Sheet C30.0.1

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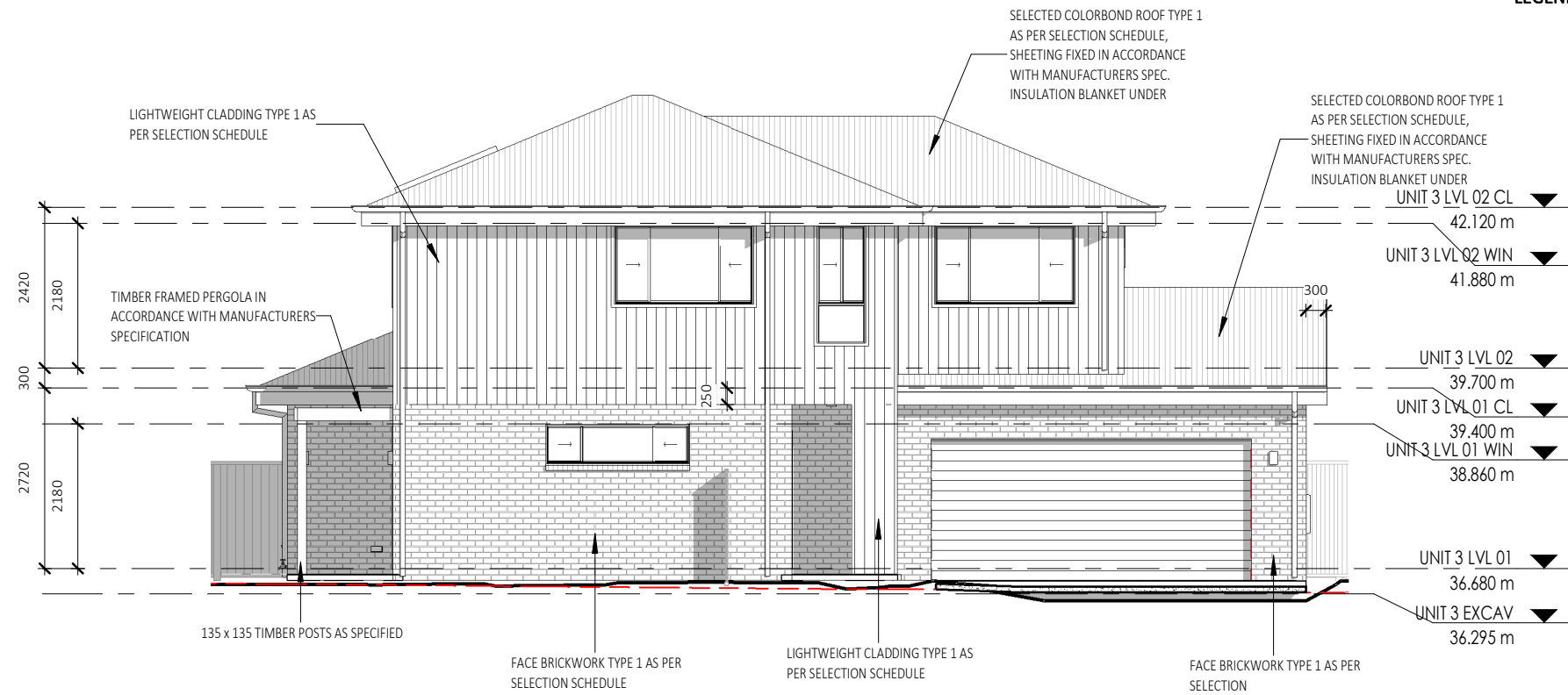
FOR: GRUGEON

AT: LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

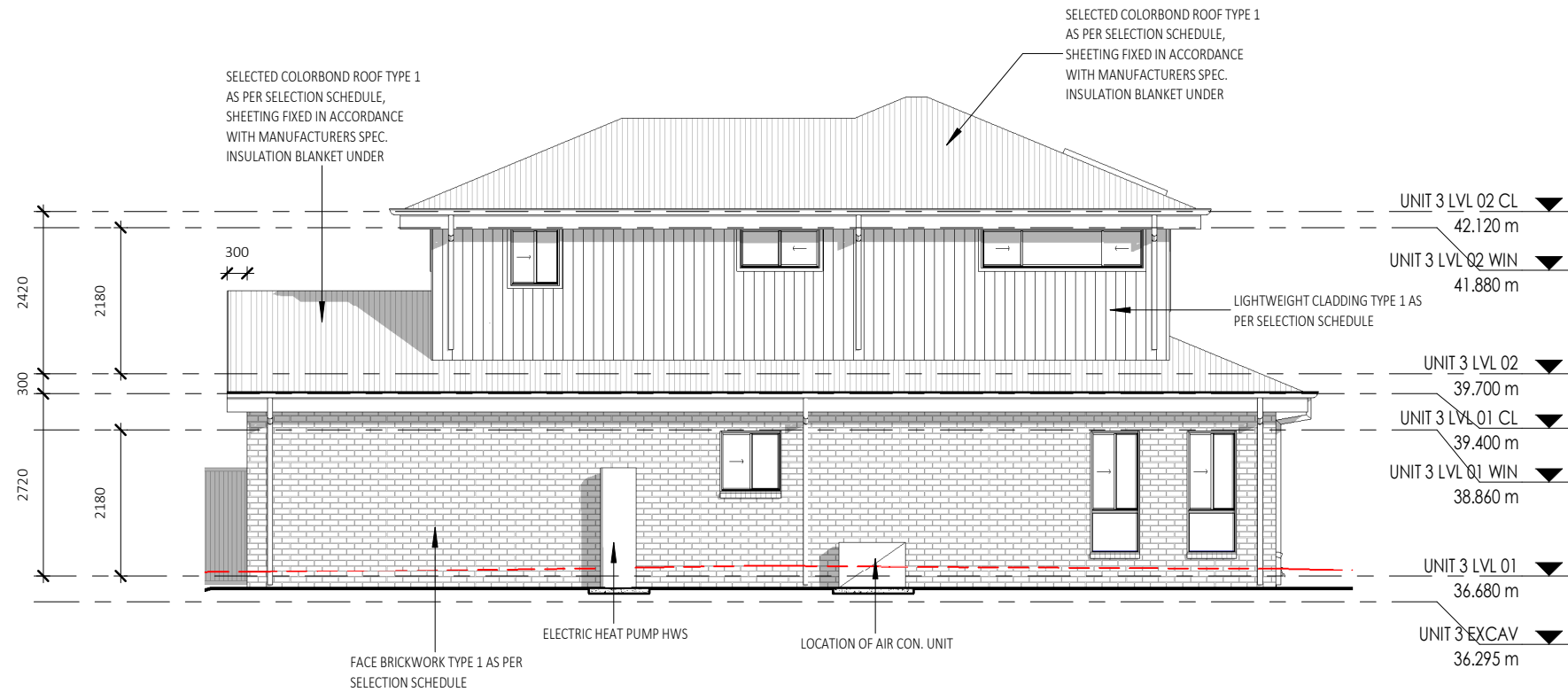
Sheet Title
ELEVATIONS - UNIT 3

Date	25.10.23	
Drawn by	GR	Checked
Checked by Owner	Date	Signed by Builder
Scale	1 : 100 @ A3	
Design	CUSTOM	Rev A
Drawing No.	24005	Sheet C30.0.2

LEGEND - KEYNOTES (REFER SPECIFICATIONS)



WEST ELEVATION - UNIT 3
1 : 100



EAST ELEVATION - UNIT 3
1 : 100

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

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No.	Date	Description	Drn
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FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
SECTION - UNIT 3

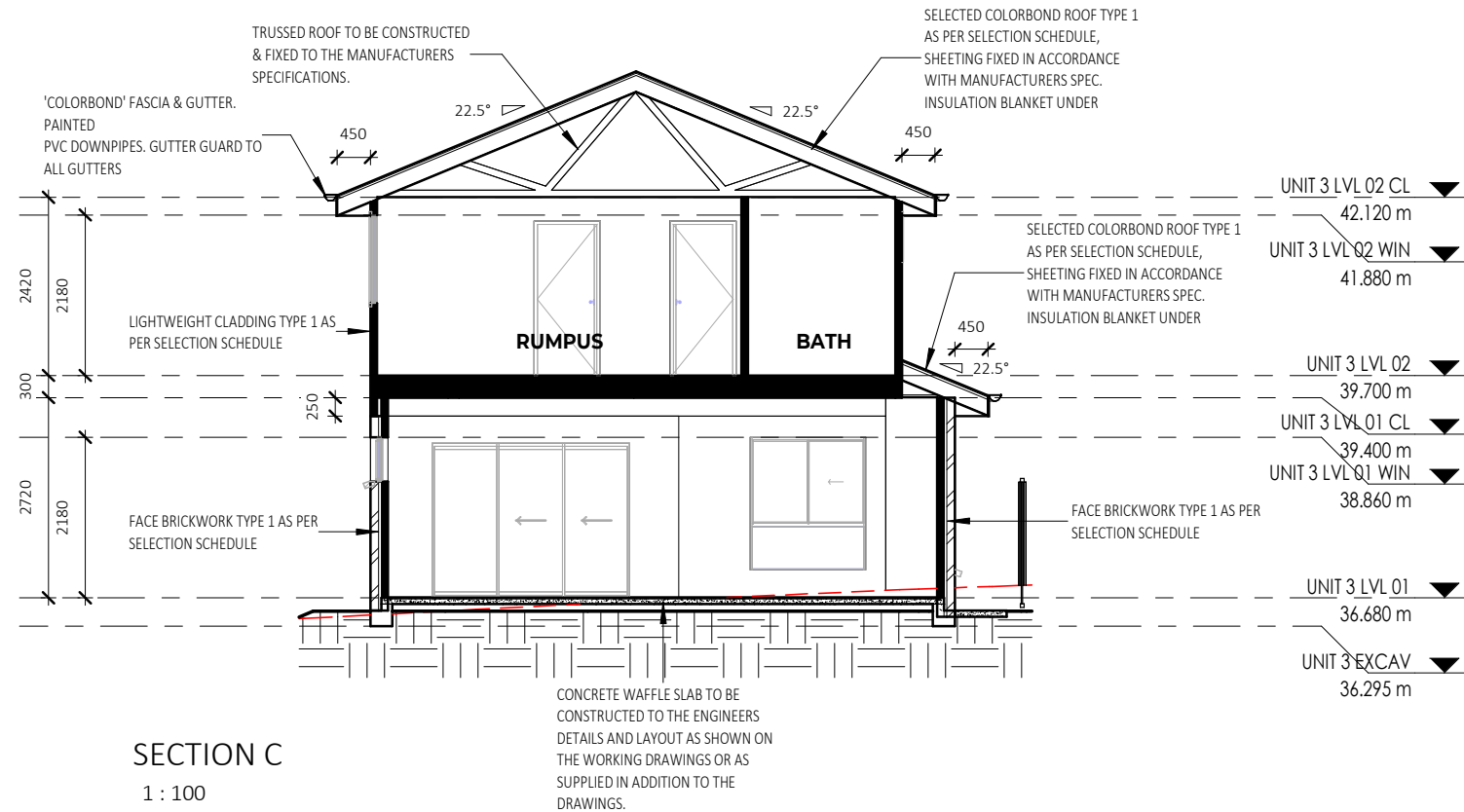
Date 25.10.23

Drawn by	GR	Checked	
Checked by Owner	Date	Signed by Builder	

Scale As indicated @ A3

Design CUSTOM Rev A

Drawing No. 24005 Sheet C40.0.1



LEGEND - KEYNOTES (REFER SPECIFICATION...

ALL BRICKWORK TO BE FULLY ARTICULATED IN ACCORDANCE WITH AS 3700 MASONRY STRUCTURES OR AS4773 MASONRY FOR SMALL BUILDINGS, PARTS 1 AND 2.

ARTICULATION JOINTS MUST HAVE A WIDTH NOT LESS THAN 10mm AND BE PROVIDED IN FOLLOWING LOCATIONS:

- * FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS UP TO 4m HIGH: EXTERNAL FACE FINISHED MASONRY 5.0m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 4.5m OR
- * FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS FROM 4m-8.5m H: EXTERNAL FACE FINISHED MASONRY 3.5m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 3.2m
- * MAXIMUM SPACING OF ARTICULATION JOINTS IN WALLS WHERE WINDOW OR DOOR OPENINGS MORE THAN 900 x 900mm OCCUR, TO BE NO MORE THAN 5.0m CTRS, AND POSITIONED IN LINE WITH ONE EDGE OF THE OPENING; AND
- * WHERE THE HEIGHT OF THE WALL CHANGES BY MORE THAN 20%, AT THE POSITION OF CHANGE IN HEIGHT; AND
- * WHERE WALLS CHANGE IN THICKNESS; AND
- * AT CONTROL OR CONSTRUCTION JOINTS IN FOOTING SLABS; AND
- * AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MASONRY MATERIALS; AND
- * AT DEEP CHASES (REBATES) FOR SERVICE PIPES.
- * AT A DISTANCE FROM ALL CORNERS NOT GREATER THAN 4500mm AND NOT LESS THAN 470mm FOR CAVITY WALLS OR 230mm FOR VENEER WALLS.

INSULATION NOTES:

R3.5 INSULATION TO CEILINGS (EXCLUDES GARAGES, PORCHES, BALCONIES AND ALFRESCOS).

R2.0 INSULATION TO EXTERNAL WALLS (EXCLUDES GARAGE WALLS)

R2.0 INSULATION TO INTERNAL GARAGE WALLS

UNDER SLAB INSULATION:

REFER TO GEOTECH S/M/H CLASS.

S&M CLASS - 310MM SLAB THICKNESS / 225MM THICK STYROFOAM PODS UNDER SLAB

H CLASS - 385MM SLAB THICKNESS / 300MM THICK STYROFOAM PODS UNDER SLAB

REFER TO TENDER

COMMUNITY TITLE SUBDIVISION

LEGEND - KEYNOTES (REFER SPECIFICATIONS)



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A.C.N. 000 939 980
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457 HIGH STREET, MAITLAND. 2320
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BUILDERS LIC. No. 5117

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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
SLAB PLAN - UNIT 4

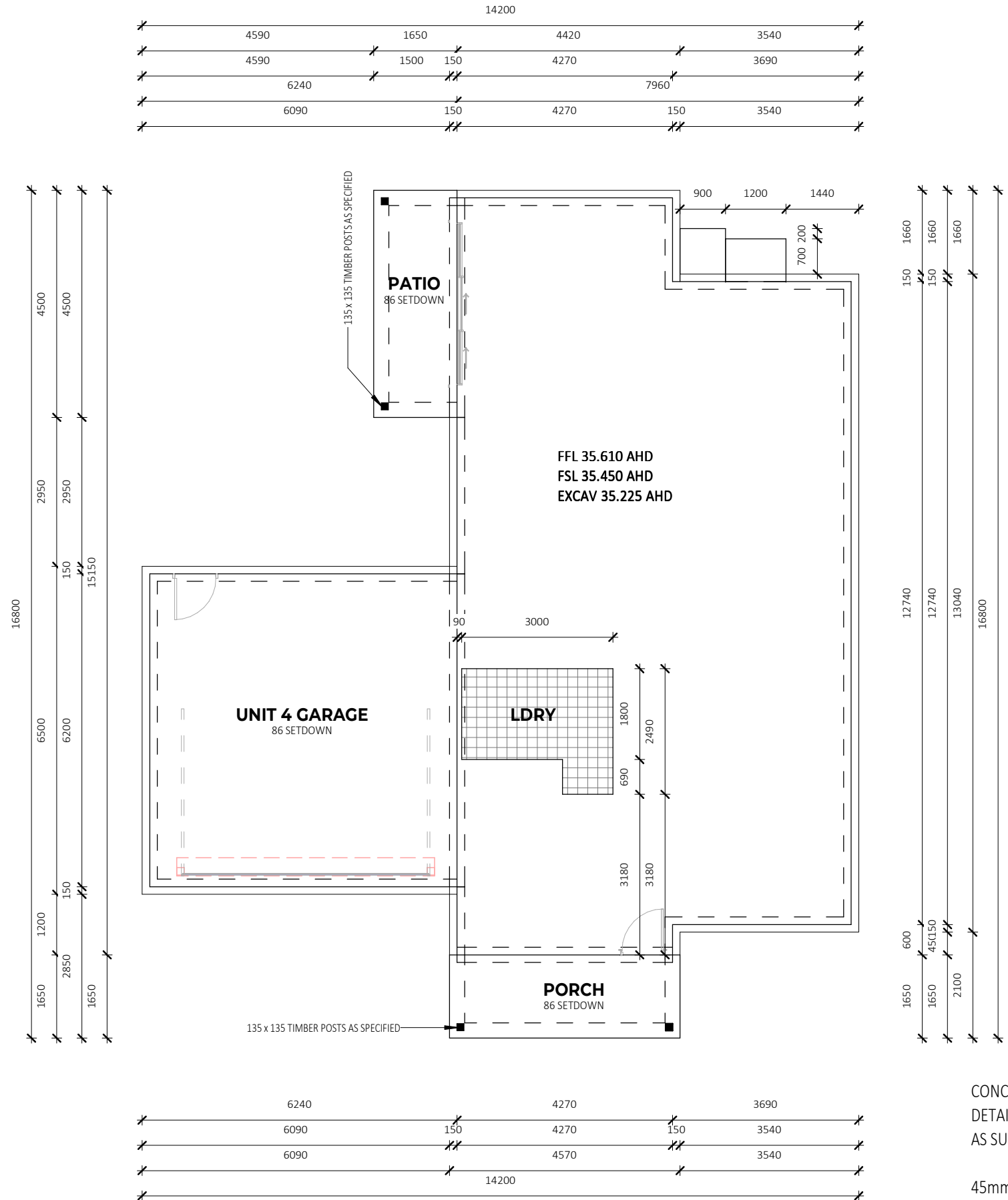
Date
25.10.23

Drawn by	Checked
	GR
Checked by Owner	Signed by Builder
Date	

Scale
1 : 100 @ A3

Design
CUSTOM Rev A

Drawing No.
24005 Sheet D21.0.1



CONCRETE WAFFLE SLAB TO BE CONSTRUCTED TO THE ENGINEERS
DETAILS AND LAYOUT AS SHOWN ON THE WORKING DRAWINGS OR
AS SUPPLIED IN ADDITION TO THE DRAWINGS.

45mm SET DOWN IN SLAB FOR WET AREA TILING SHOWN
HATCHED.

REFER TO TENDER

TORRENS TITLE SUBDIVISION

SLAB PLAN - UNIT 4
1 : 100

FLOOR AREAS UNIT 4

PORCH	6.85 m ²
GARAGE	39.61 m ²
LIVING	115.14 m ²
PATIO	6.75 m ²
TOTAL	168.36 m ²

DOOR LEAF LEGEND:
 XXX/21=2040H LEAF
 XXX/24=2340H LEAF

SHELVING NOTES:
 MELAMINE SHELF AND HANGING RAIL TO ROBES
 BANK OF DRAW & SHELVES TO ROBES
 4x MELAMINE SHELVES TO LINEN CUPBOARD

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

AC	AIR CONDITIONING AS SPECIFIED
BRM	BROOM CLOSET
DP	DOWNPIPE AS SPECIFIED
DW	DISHWASHER AS SPECIFIED
ET-1	EXTERNAL TILE AS SPECIFIED
HWS	HOT WATER SYSTEM
MX	MIXER AS SPECIFIED
PTY	KITCHEN PANTRY
REF	REFRIGERATOR OPENING AS SPECIFIED
SR	SHOWER ROSE AS SPECIFIED
SWR	SHOWER WALL RECESS AS SPECIFIED
TAP	TAP AS SPECIFIED
TR	TOWEL RAIL AS SPECIFIED
WM	WASHING MACHINE



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No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**

AT:
 LOT 265 & 266 - DP1271229
 SPRINGFIELD DRIVE
 LOCHINVAR
 NSW 2321

Sheet Title
 LVL 01 FLOOR PLAN - UNIT 4

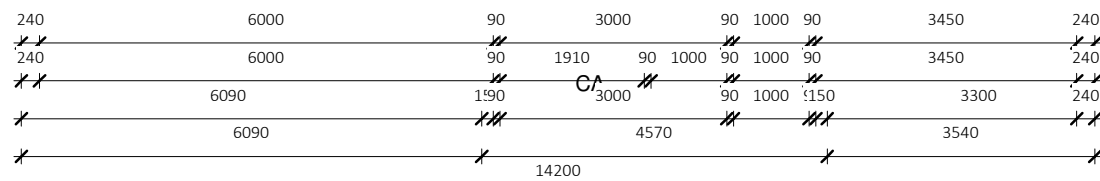
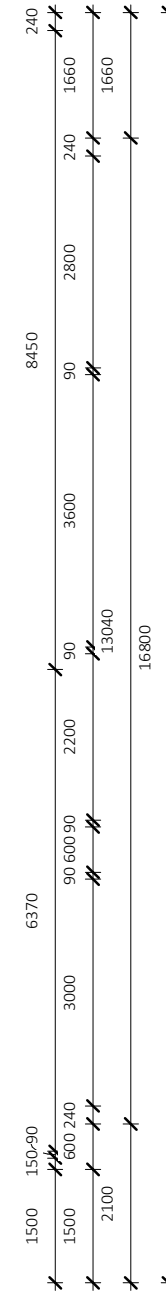
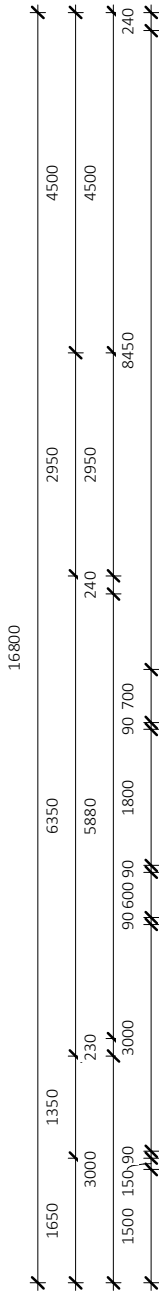
Date: 25.10.23

Drawn by	Checked
	GR
Checked by Owner	Signed by Builder
Date	

Scale: As indicated @ A3

Design: CUSTOM Rev A

Drawing No. 24005 D21.1.2



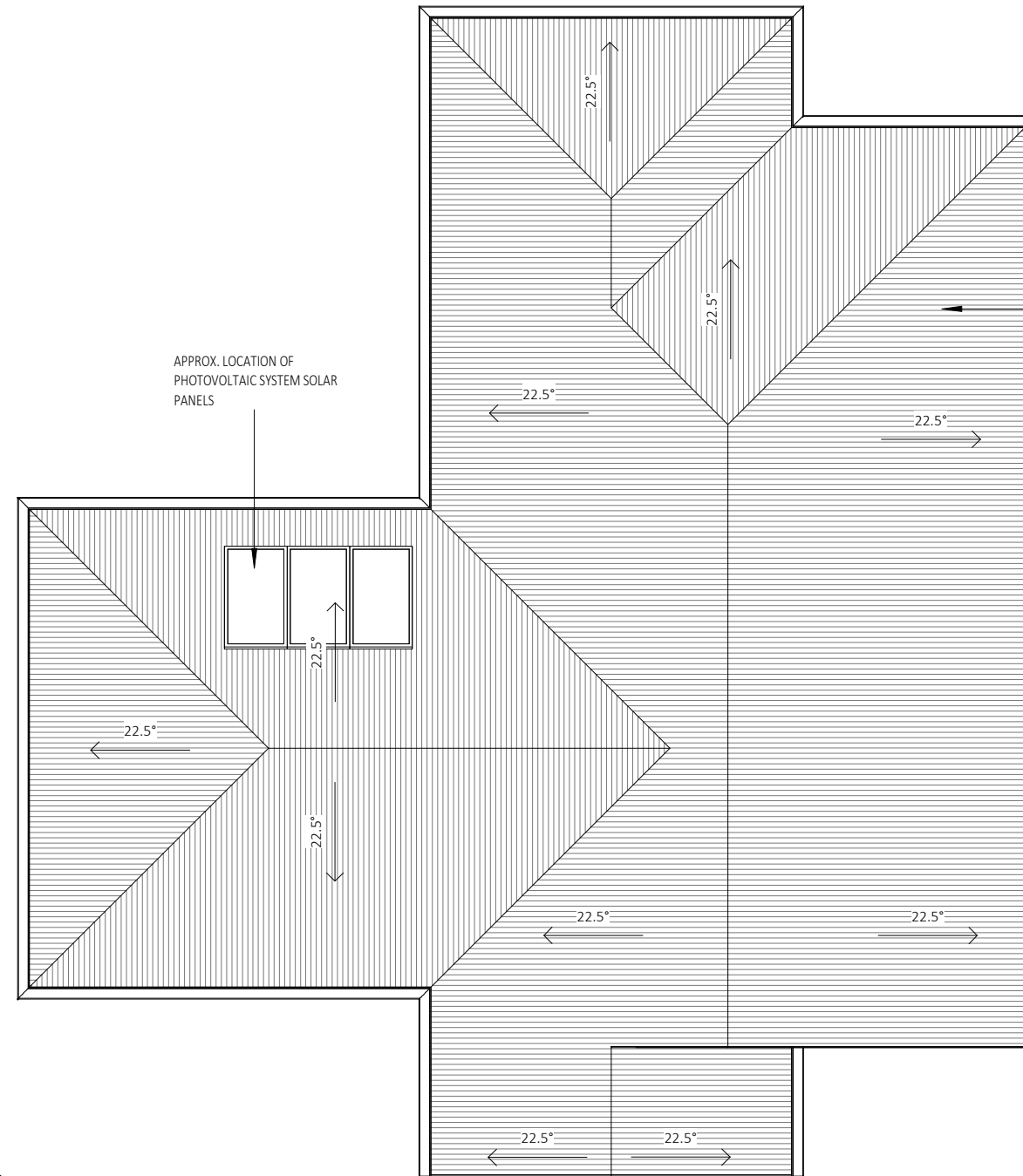
LVL 01 FLOOR PLAN - UNIT 4

1 : 100

REFER TO TENDER

TORRENS TITLE SUBDIVISION

LEGEND - KEYNOTES (REFER SPECIFICATION...



SELECTED COLORBOND ROOF TYPE 1
AS PER SELECTION SCHEDULE,
SHEETING FIXED IN ACCORDANCE
WITH MANUFACTURERS SPEC.
INSULATION BLANKET UNDER

APPROX. LOCATION OF
PHOTOVOLTAIC SYSTEM SOLAR
PANELS



ROOF PLAN - UNIT 4
1 : 100

REFER TO TENDER

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A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ROOF PLAN - UNIT 4

Date
25.10.23

Drawn by	Checked
	GR
Checked by Owner	Signed by Builder
Date	

Scale
1 : 100 @ A3

Design
CUSTOM Rev A

Drawing No.
24005 Sheet D21.5.1

LEGEND: AS SPECIFIED

ELECTRICAL FIXTURE SCHEDULE	
Type	Count
GPO DOUBLE	18
GPO SINGLE	2
GPO SINGLE	1
VH_EXHAUST FAN	3
ELECTRICAL METER & FUSE BOX	1
GPO DOUBLE	5
GPO DOUBLE WP	1
GPO SINGLE	1
NBN CONNECTION BOX	1
TELEPHONE / DATA POINT	2
TV POINT	2
Grand total:	37

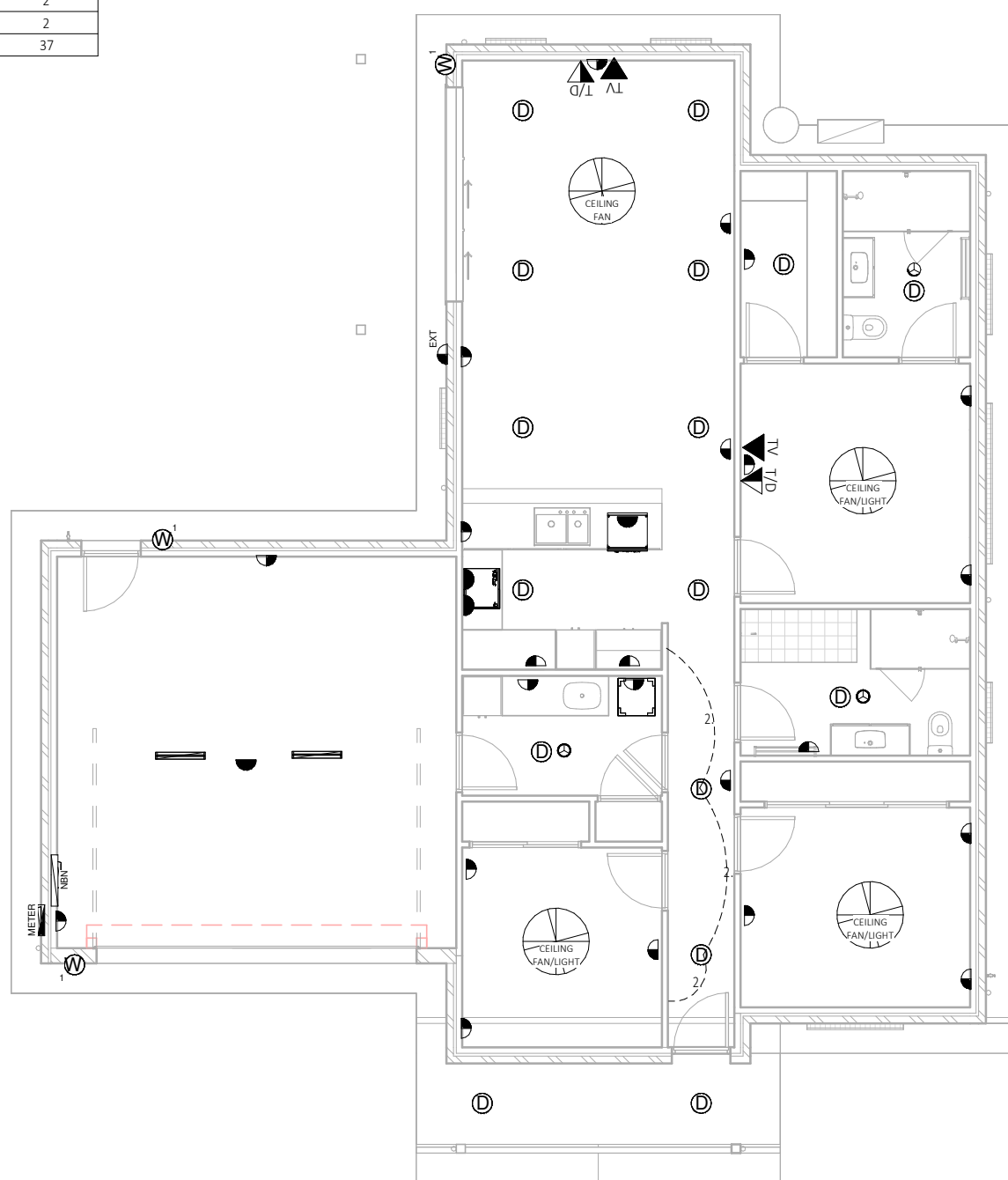
LIGHTING FIXTURE SCHEDULE	
Type	Count
CEILING FAN LIGHT	3
LED BATTEN LIGHT	2
LED DOWNLIGHT	13
WALL LIGHT	3
CEILING FAN	1
LED DOWNLIGHT	3
Grand total:	25

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

2.

- \textcircled{D}^1 LED DOWNLIGHT RECESSED
- \textcircled{D}^2 LED DOWNLIGHT DIRECTIONAL
- \textcircled{D}^3 LED DOWNLIGHT FIXED
- \textcircled{P}^1 PEDANT LIGHT TYPE 1
- \textcircled{P}^2 PEDANT LIGHT TYPE 2
- \textcircled{P}^3 PEDANT LIGHT TYPE 3
- \textcircled{W}^1 EXTERNAL WALL LIGHT
- \textcircled{S} SENSOR LIGHT
- \textcircled{H} HEATER FAN LIGHT
- \textcircled{E} EXHAUST FAN LIGHT
- \textcircled{E}^1 EXTERNALLY DUCTED EXHAUST FAN
- --- FLUORESCENT LIGHT SINGLE
- = LED BATTEN LIGHT
- \textcircled{CF} CEILING FAN
- $\textcircled{CF/L}$ CEILING FAN WITH LIGHT
- \textcircled{SD} LOCATION OF SMOKE ALARM
IN ACCORDANCE WITH AS3786.
- \textcircled{G} GAS POINT
- $\textcircled{\cdot}$ GPO SINGLE
- $\textcircled{\cdot}$ GPO DOUBLE
- $\textcircled{\cdot}^{\text{EXT}}$ GPO SINGLE WATERPROOF
- $\textcircled{\cdot}^{\text{EXT}}$ GPO DOUBLE WATERPROOF
- $\textcircled{\cdot}^{1000}$ GPO SINGLE ELEVATED 1000
- $\textcircled{\cdot}^{1000}$ GPO DOUBLE ELEVATED 1000
- --- NBN CONNECTION BOX
- --- ELECTRICAL METER & FUSE BOX
- TV TV POINT
- T/D TELEPHONE / DATA POINT
- ∇ HARD WIRED DOOR BELL
- \times LIGHT SWITCH SINGLE
- \times^3 LIGHT SWITCH MULTIPLE
- \times^{EXT} LIGHT SWITCH EXTERNAL
- --- 2 WAY SWITCHING
- --- 3 WAY SWITCHING

LVL 01 ELECTRICAL PLAN - UNIT 4
1 : 100



REFER TO TENDER

TORRENS TITLE SUBDIVISION



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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
LVL 01 ELECTRICAL PLAN - UNIT 4

Date
25.10.23

Drawn by GR Checked

Checked by Owner Date Signed by Builder

Scale 1 : 100 @ A3

Design CUSTOM Rev A

Drawing No. 24005 Sheet D22.1.1

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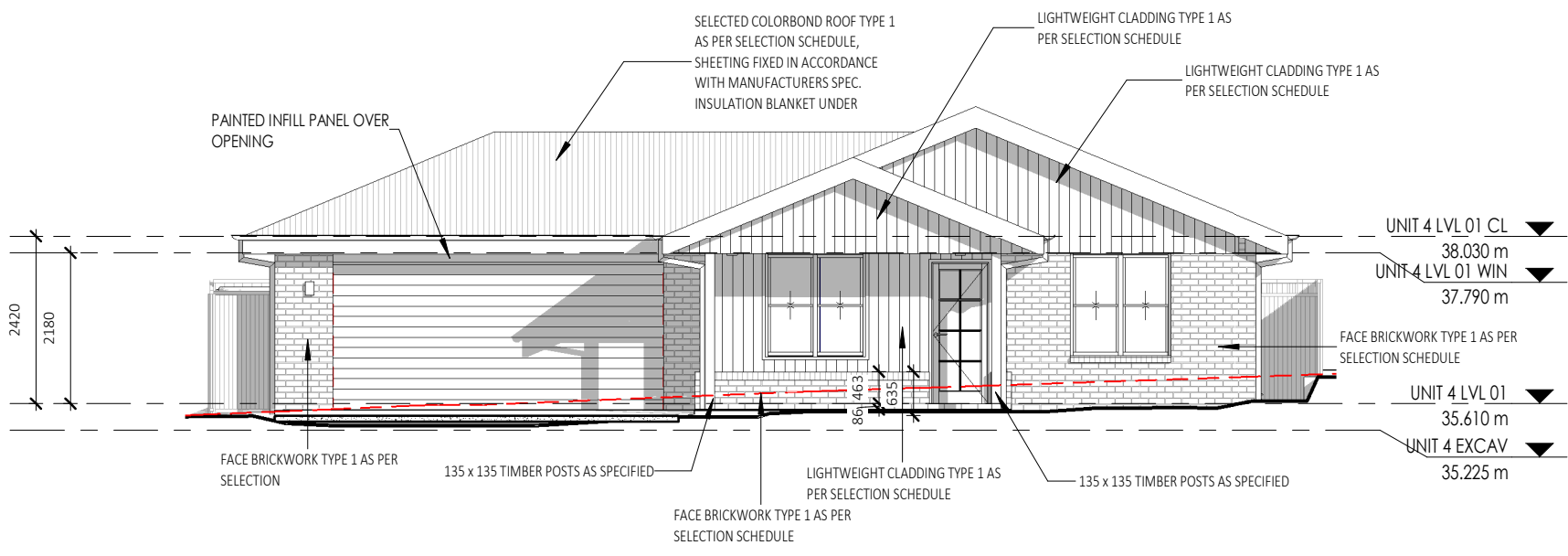
No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**

AT: LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

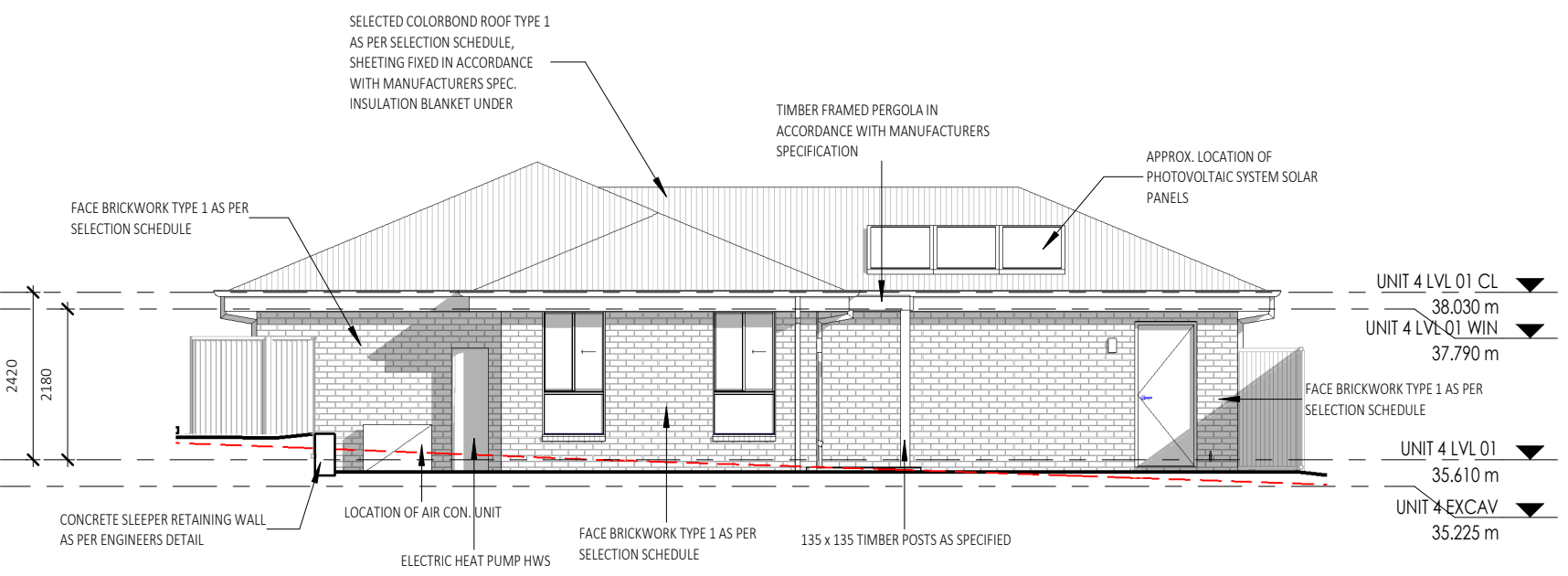
Sheet Title
ELEVATIONS - UNIT 4

Date	25.10.23
Drawn by	GR
Checked	
Checked by Owner	Date
Signed by Builder	
Scale	1 : 100 @ A3
Design	CUSTOM Rev A
Drawing No.	24005 D30.0.1



SOUTH ELEVATION - UNIT 4
1 : 100

LEGEND - KEYNOTES (REFER SPECIFICATIONS)



NORTH ELEVATION - UNIT 4
1 : 100

REFER TO TENDER

TORRENS TITLE SUBDIVISION

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FOR:
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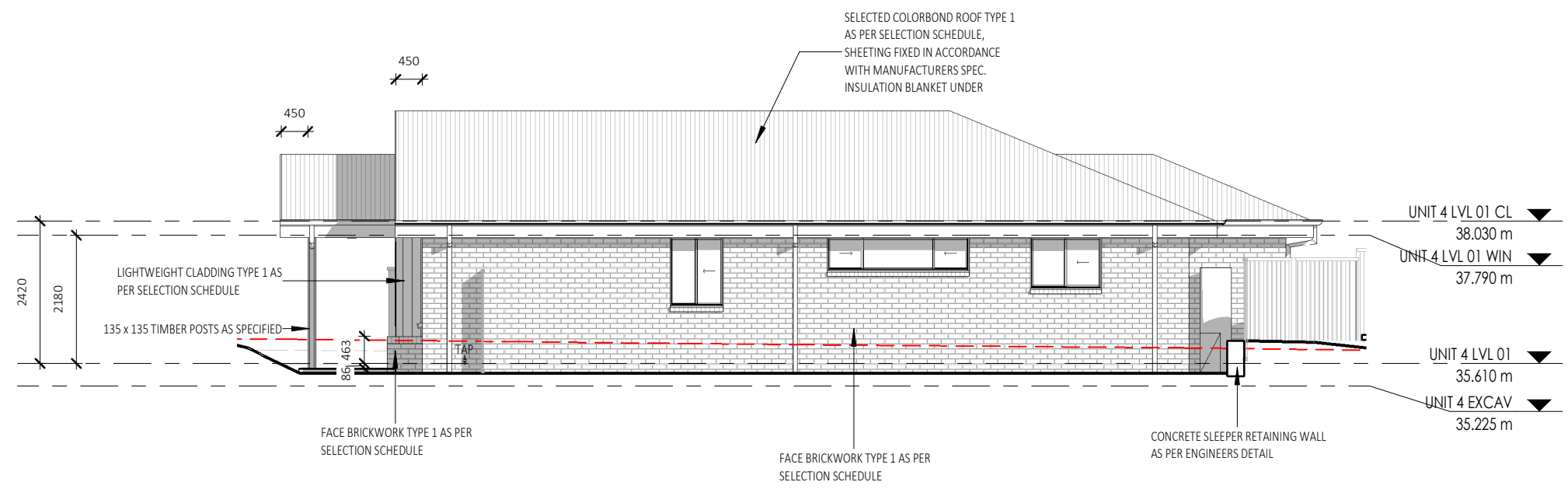
AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ELEVATIONS - UNIT 4

Date
25.10.23

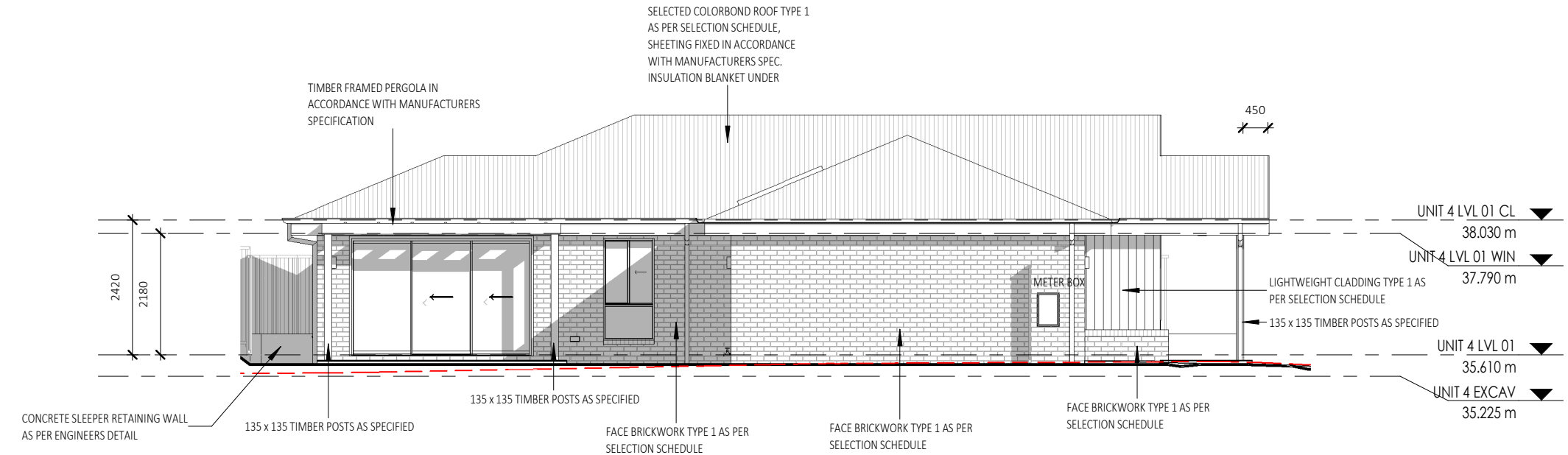
Drawn by	GR	Checked
Checked by Owner	Date	Signed by Builder

Scale	1 : 100	@ A3
Design	CUSTOM	Rev A
Drawing No.	24005	Sheet D30.0.2



EAST ELEVATION - UNIT 4
1 : 100

LEGEND - KEYNOTES (REFER SPECIFICATIONS)
TAP TAP AS SPECIFIED



WEST ELEVATION - UNIT 4
1 : 100

REFER TO TENDER

TORRENS TITLE SUBDIVISION

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FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
SECTION - UNIT 4

Date
25.10.23

Drawn by GR Checked

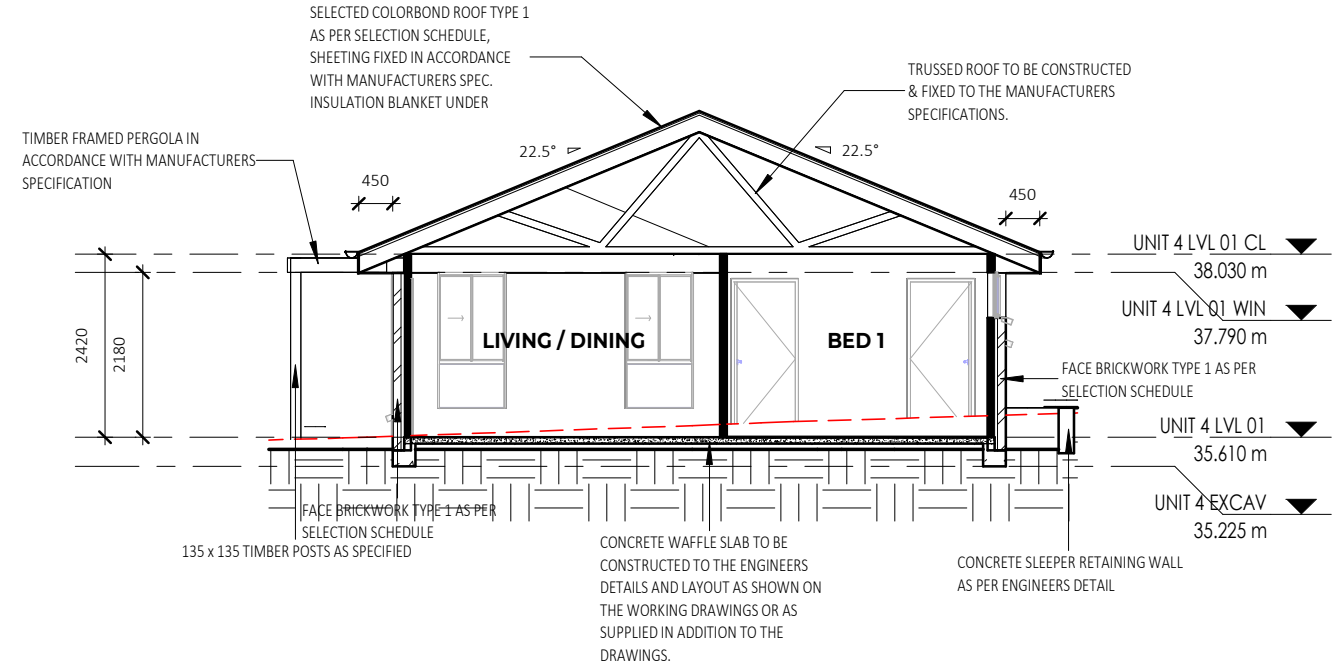
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Scale As indicated @ A3

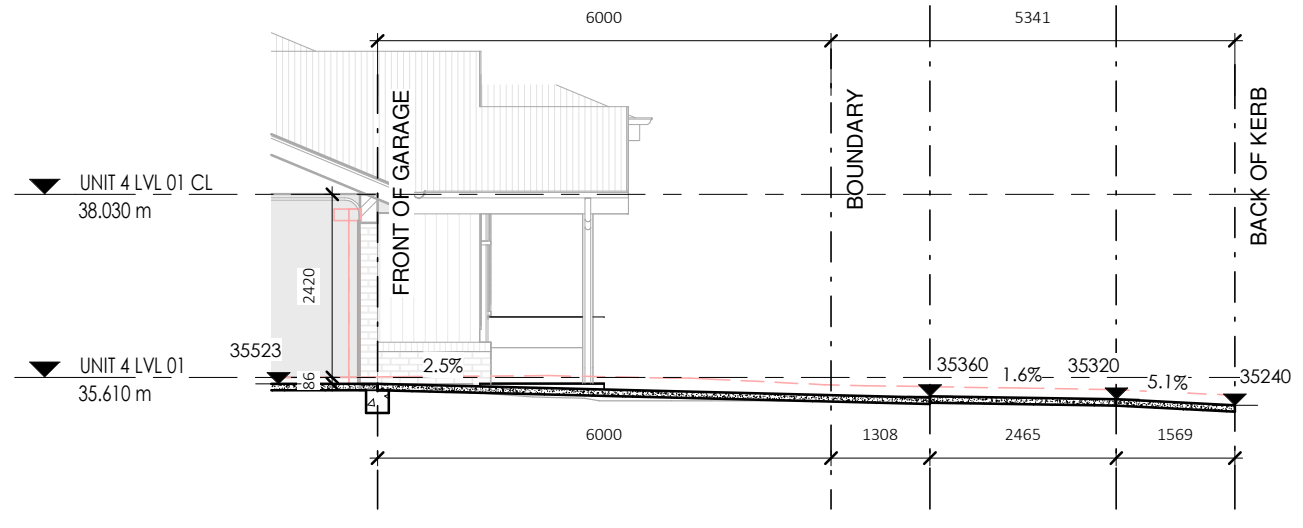
Design CUSTOM Rev A

Drawing No. 24005 Sheet D40.0.1

LEGEND - KEYNOTES (REFER SPECIFICATION...



SECTION D
1 : 100



DRIVEWAY PROFILE D1
1 : 100

NOTE : DIMENSIONS AND RL'S TO BE CONFIRMED ON SITE
MAX. ALLOWABLE GRADIENT 25.0%

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* FOR STRAIGHT, CONTINUOUS WALLS HAVING NO OPENINGS, THE MAXIMUM SPACING OF 10mm ARTICULATION JOINTS FROM 4m-8.5m H: EXTERNAL FACE FINISHED MASONRY 3.5m CTS; EXTERNAL RENDERED AND/OR PAINTED MASONRY 3.2m
* MAXIMUM SPACING OF ARTICULATION JOINTS IN WALLS WHERE WINDOW OR DOOR OPENINGS MORE THAN 900 x 900mm OCCUR, TO BE NO MORE THAN 5.0m CTRS, AND POSITIONED IN LINE WITH ONE EDGE OF THE OPENING; AND
* WHERE THE HEIGHT OF THE WALL CHANGES BY MORE THAN 20%, AT THE POSITION OF CHANGE IN HEIGHT; AND
* WHERE WALLS CHANGE IN THICKNESS; AND
* AT CONTROL OR CONSTRUCTION JOINTS IN FOOTING SLABS; AND
* AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MASONRY MATERIALS; AND
* AT DEEP CHASES (REBATES) FOR SERVICE PIPES.
* AT A DISTANCE FROM ALL CORNERS NOT GREATER THAN 4500mm AND NOT LESS THAN 470mm FOR CAVITY WALLS OR 230mm FOR VENEER WALLS.

INSULATION NOTES:

R3.5 INSULATION TO CEILINGS (EXCLUDES GARAGES, PORCHES, BALCONIES AND ALFRESCOS).

R2.0 INSULATION TO EXTERNAL WALLS (EXCLUDES GARAGE WALLS)

R2.0 INSULATION TO INTERNAL GARAGE WALLS

UNDER SLAB INSULATION:

REFER TO GEOTECH S/M/H CLASS.

S&M CLASS - 310MM SLAB THICKNESS / 225MM THICK STYROFOAM PODS UNDER SLAB

H CLASS - 385MM SLAB THICKNESS / 300MM THICK STYROFOAM PODS UNDER SLAB

REFER TO TENDER

TORRENS TITLE SUBDIVISION

FLOOR AREAS UNIT 5

PORCH	6.85 m ²
GARAGE	39.61 m ²
LIVING	115.14 m ²
PATIO	6.75 m ²
TOTAL	168.36 m ²

DOOR LEAF LEGEND:

XXX/21=2040H LEAF
XXX/24=2340H LEAF

SHELVING NOTES:

MELAMINE SHELF AND HANGING RAIL TO ROBES
BANK OF DRAW & SHELVES TO ROBES
4x MELAMINE SHELVES TO LINEN CUPBOARD

LEGEND - KEYNOTES (REFER SPECIFICATIONS)

- AC AIR CONDITIONING AS SPECIFIED
- BRM BROOM CLOSET
- DP DOWNPIPE AS SPECIFIED
- DW DISHWASHER AS SPECIFIED
- ET-1 EXTERNAL TILE AS SPECIFIED
- HWS HOT WATER SYSTEM
- MX MIXER AS SPECIFIED
- PTY KITCHEN PANTRY
- REF REFRIGERATOR OPENING AS SPECIFIED
- SR SHOWER ROSE AS SPECIFIED
- SWR SHOWER WALL RECESS AS SPECIFIED
- TAP TAP AS SPECIFIED
- TR TOWEL RAIL AS SPECIFIED
- WM WASHING MACHINE



MAMBARE PTY LTD T/A VALLEY HOMES
A.C.N. 000 939 980
www.valleyhomes.com.au

457 HIGH STREET, MAITLAND, 2320
PHONE:(02)49341400

BUILDERS LIC. No. 5117

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No.	Date	Description	Drn
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR: **GRUGEON**

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
LVL 01 FLOOR PLAN - UNIT 5

Date 25.10.23

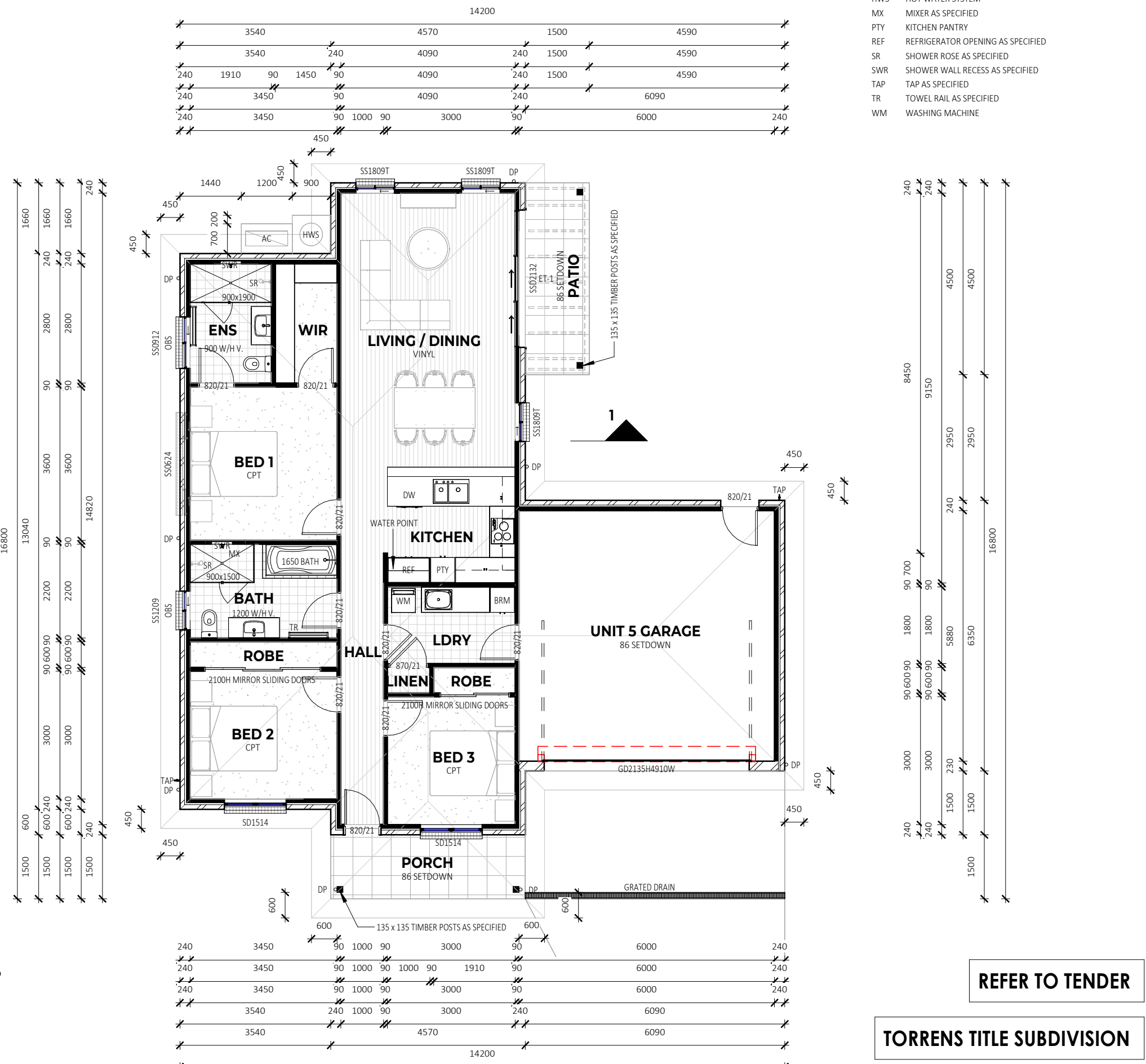
Drawn by GR Checked

Checked by Owner Date Signed by Builder

Scale As indicated @ A3

Design CUSTOM Rev A

Drawing No. 24005 E21.1.3



LVL 01 FLOOR PLAN - UNIT 5
1 : 100

REFER TO TENDER

TORRENS TITLE SUBDIVISION

LEGEND - KEYNOTES (REFER SPECIFICATION...



MAMBARE PTY LTD T/A VALLEY HOMES
A.C.N. 000 939 980
www.valleyhomes.com.au

457 HIGH STREET, MAITLAND. 2320
PHONE:(02)49341400

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No.	Date	Description	Drm
A	21.03.24	ISSUED FOR DA APPLICATION	GR

FOR:
GRUGEON

AT:
LOT 265 & 266 - DP1271229
SPRINGFIELD DRIVE
LOCHINVAR
NSW 2321

Sheet Title
ROOF PLAN - UNIT 5

Date
25.10.23

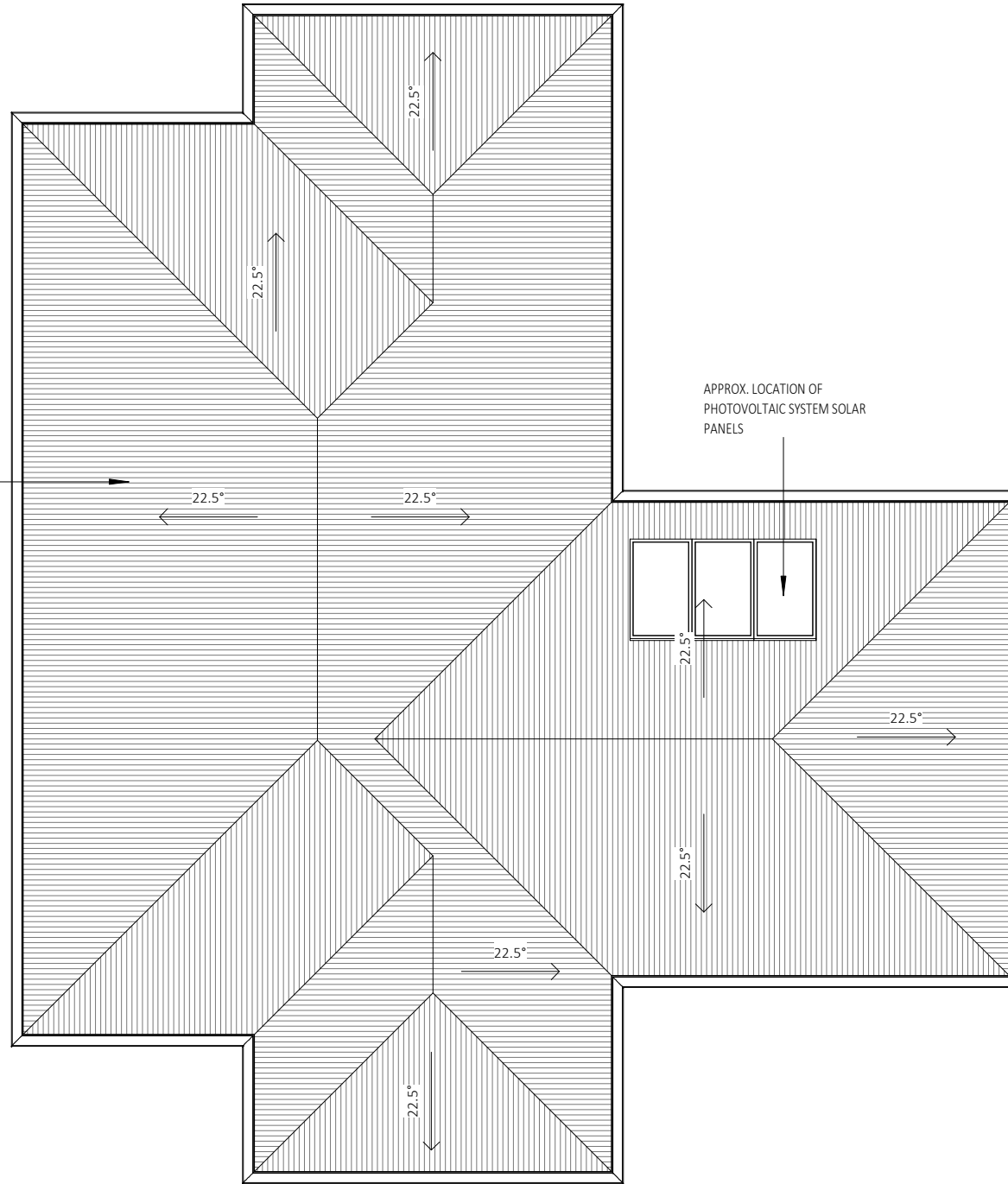
Drawn by
GR

Checked by Owner
Date
Signed by Builder

Scale
1 : 100 @ A3

Design
CUSTOM Rev A

Drawing No.
24005 Sheet E21.5.1



ROOF PLAN - UNIT 5
1 : 100

REFER TO TENDER

TORRENS TITLE SUBDIVISION

APPENDIX B ASSET PROTECTION ZONES

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMS, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

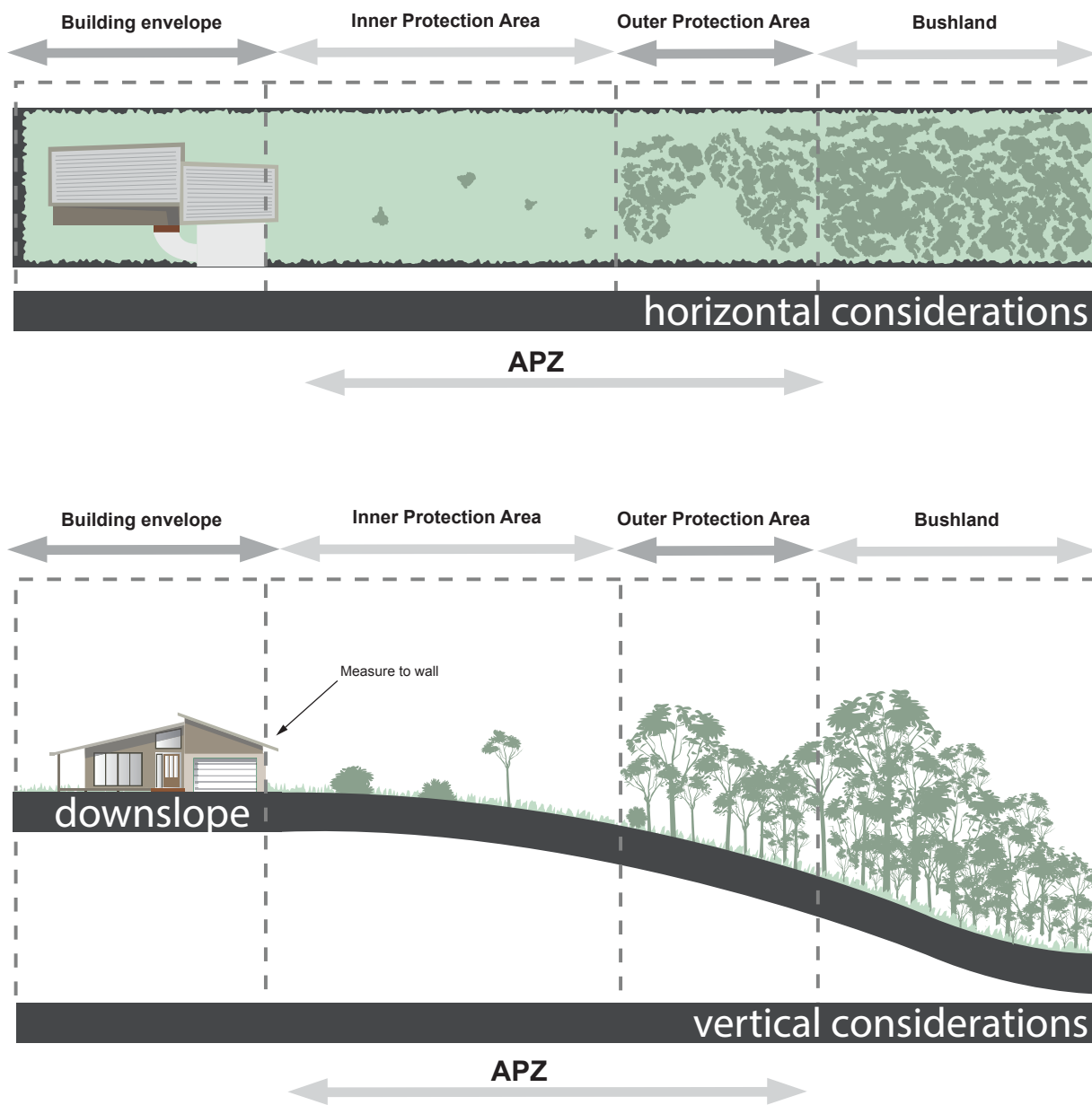
- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

Figure A4.1

Typical Inner and Outer Protection Areas.



A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defensible space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

APPENDIX C WATER INFORMATION



Before You Dig Australia (BYDA) Location Information

Hunter Water Corporation
36 Honeysuckle Drive
NEWCASTLE NSW 2300

To:

Azmina Shafie
97 Scott Street
Newcastle NSW 2300

Enquiry Details	
Utility ID	80220
Job Number	36788513
Sequence Number	239865575
Enquiry Date	29/05/2024 11:15
Response	AFFECTED
Address	130 Springfield Dr Lochinvar
Location in Road	
Activity	Planning and Design

Enquirer Details	
Customer ID	3473355
Contact	Azmina Shafie
Company	
Email	azmina@firebirdeco.com.au
Phone	+61422344481

Enquirer Responsibilities

HWC's provision, and your access to and use, of the data, maps and other information contained in HWC's response to your Before You Dig Australia (BYDA) enquiry (Information) are subject to the following terms and conditions and any additional disclaimers contained in HWC's response.

1. Nature of HWC's assets

You acknowledge and accept that:

- (a) water in HWC mains is under pressure and may cause injury or damage if a main is damaged;
- (b) HWC sewer mains can be under pressure and may cause injury or damage if a main is damaged;
- (c) HWC recycled water mains can be under pressure and may cause injury or damage if a main is damaged;
- (d) HWC services are laid at varying depths;
- (e) the Information does not include data related to property services;
- (f) HWC will seek recovery of repair costs if an HWC asset is damaged; and
- (g) all electrical services are to be considered live.

Accordingly, all persons must exercise extreme care and only use hand excavation until the exact location of all assets within a work area is established.

2. Your use of Information

You acknowledge and accept that:

- (a) neither HWC nor BYDA make any representation or give any guarantee, warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information;
- (b) all Information is:
 - i. generated by an automated system based on the information you submit to the BYDA website and it is your responsibility to ensure that the dig site is properly defined in your enquiry;
 - ii. approximate, intended to be of general application and may not be suitable for your specific requirements;
 - iii. unsuitable for scaling purposes; and
 - iv. based on information available to HWC and may not show all existing structures. For example, the location of Private Sewer/Water Mains is the initial indicative location supplied to HWC. This may not be the current location of such mains and not all private mains have been supplied to HWC;
- (c) you must not solely rely on the Information when undertaking underground works;
- (d) all Information is provided for the sole purpose of assisting you to locate HWC assets before excavation (Permitted Purpose) and you must not copy, translate, modify, distribute or make derivative works of the Information except as directly required to achieve the Permitted Purpose;
- (e) all Information must be used and kept together;
- (f) your access to and use of the Information does not grant you any ownership of or intellectual property rights in the Information;
- (g) in identifying in the Information the presence or potential presence of hazardous or potentially hazardous materials in HWC assets, HWC is not representing or warranting that other HWC assets not identified in the Information as containing or potentially containing hazardous materials do not also contain such materials; and
- (h) in excavating and conducting underground works, you must do so having regard to the fact that asbestos cement pipelines may form part of HWC's water and sewer reticulation systems.

3. Your other obligations

You are responsible for, amongst other things:

- (a) exposing underground structures, including HWC assets, by pot-holing using hand-held tools or vacuum techniques to determine the precise location and extent of structures before any mechanical means of excavation are used;
- (b) protecting underground structures, including HWC assets, from damage and interference;
- (c) maintaining acceptable clearances between HWC assets and structures belonging to others;
- (d) ensuring that backfilling in the vicinity of HWC assets complies with HWC's requirements (as set out on HWC's website or otherwise communicated to you by HWC);
- (e) notifying HWC immediately of any damage caused or threat of damage to any HWC asset; and
- (f) ensuring that plans are approved by HWC (usually by stamping) prior to landscaping or building over or in the vicinity of any HWC asset.

Enquirer Responsibilities Continued

4. Disclaimer

While HWC takes reasonable care in providing details of its underground assets, due to changes in road and footway alignments and levels, the age and incompleteness of some records and the general nature of the Information, it is not possible to conclusively specify the location of all HWC underground assets, including pipes that contain or may contain hazardous materials.

ALL INFORMATION IS PROVIDED AS GENERAL GUIDANCE ONLY AND SHOULD NOT BE USED OR RELIED UPON IN SUBSTITUTION FOR SPECIALISED PROFESSIONAL INDEPENDENT ADVICE. YOU ACKNOWLEDGE AND AGREE THAT YOUR USE OF THE INFORMATION IS AT YOUR OWN RISK.

If you have any questions or concerns about the appropriateness, reliability or application of any Information you must seek advice from a relevantly qualified professional. Further, dealing with hazardous materials is potentially dangerous, and you must always seek advice where the Information provides that HWC's assets contain or may contain hazardous materials.

HWC makes no representation and gives no warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information or that the Information can be used for any purpose in substitution for specialised, professional and independent advice.

5. Limitation of liability

To the fullest extent permitted by law:

- (a) all conditions and guarantees concerning the Information (whether as to quality, outcome, fitness, care, skill or otherwise) expressed or implied by statute, common law, equity, trade, custom, usage or otherwise are expressly excluded and to the extent such conditions and guarantees cannot be excluded, HWC's liability is limited to either of the following (as nominated by HWC):
 - i. HWC supplying the Information to you again; or
 - ii. HWC paying you the cost of having the Information supplied to you again.
- (b) HWC is not responsible for and you release HWC from any actions, liabilities, losses, damages, costs, claims, expenses, injuries or other claims whatsoever (including loss of revenue, use, production, goodwill, profit, business, contract, anticipated savings, financing costs, increased operating costs or other purely financial, economic, special or indirect loss or damage) arising out of:
 - i. your access to or use of the Information;
 - ii. any delay in HWC providing you with Information;
 - iii. your reliance on the Information or its inability to meet your needs;
 - iv. your failure to correctly or accurately:
 - (1) submit relevant or valid data to BYDA; or
 - (2) use or interpret Information provided to you by HWC; or
 - v. any failure, interruption or corruption of any Information;
- (c) you must indemnify HWC and its employees, agents and officers from and against all actions, liabilities, losses, damages, costs, claims, expenses, injuries and other claims arising out of or in connection with HWC providing you with incorrect or incomplete Information; and you assume all risk associated with your use of BYDA and HWC's websites and you release BYDA and HWC from and against all actions, liabilities, losses, damages, costs, claims, expenses, injuries or other claims which may arise in respect of such usage.

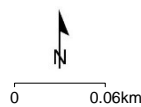
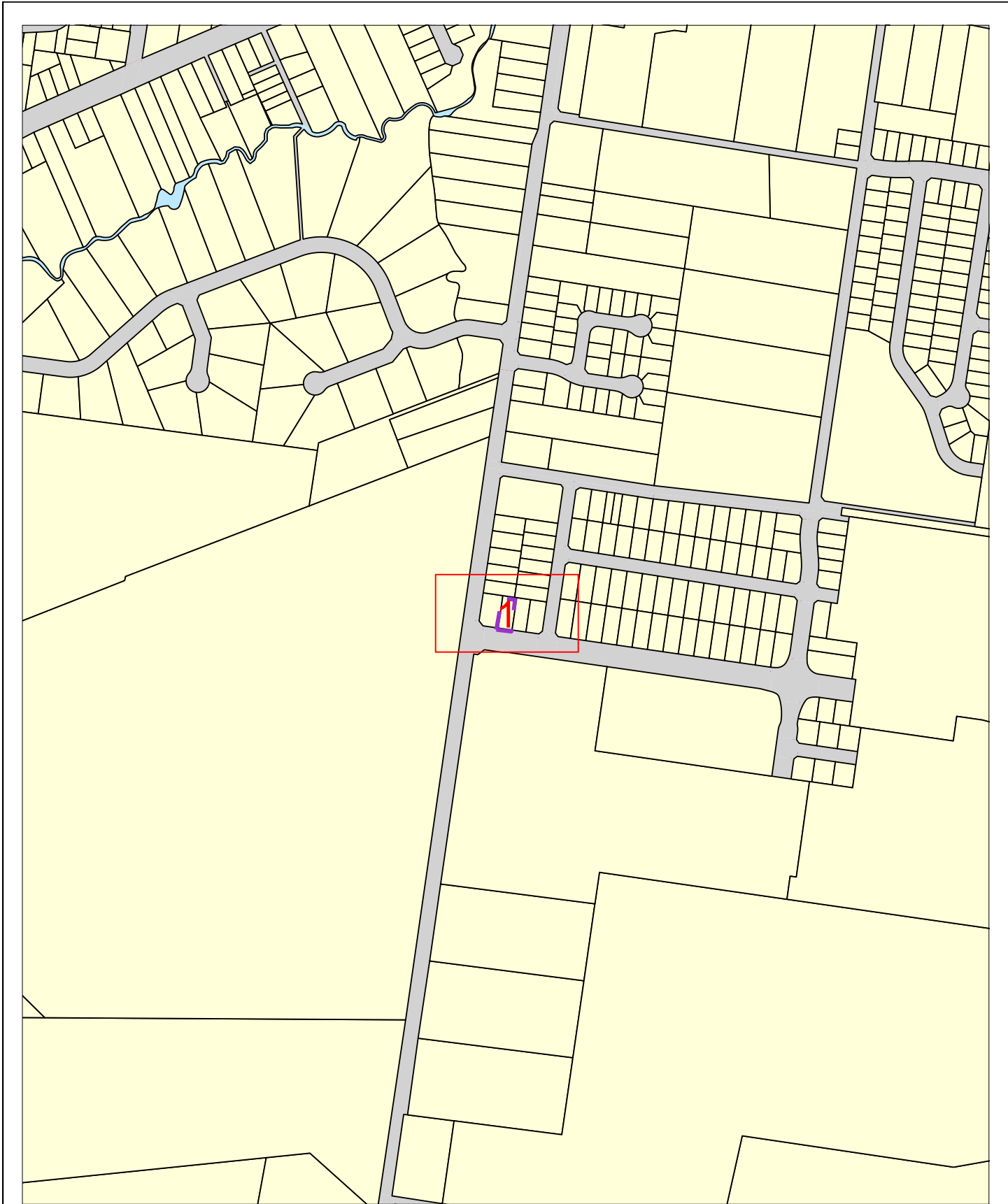
www.hunterwater.com.au

1300 657 000



Overview Map

Sequence No: 239865575
130 Springfield Dr Lochinvar



LEGEND:



Detail Map

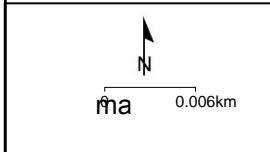
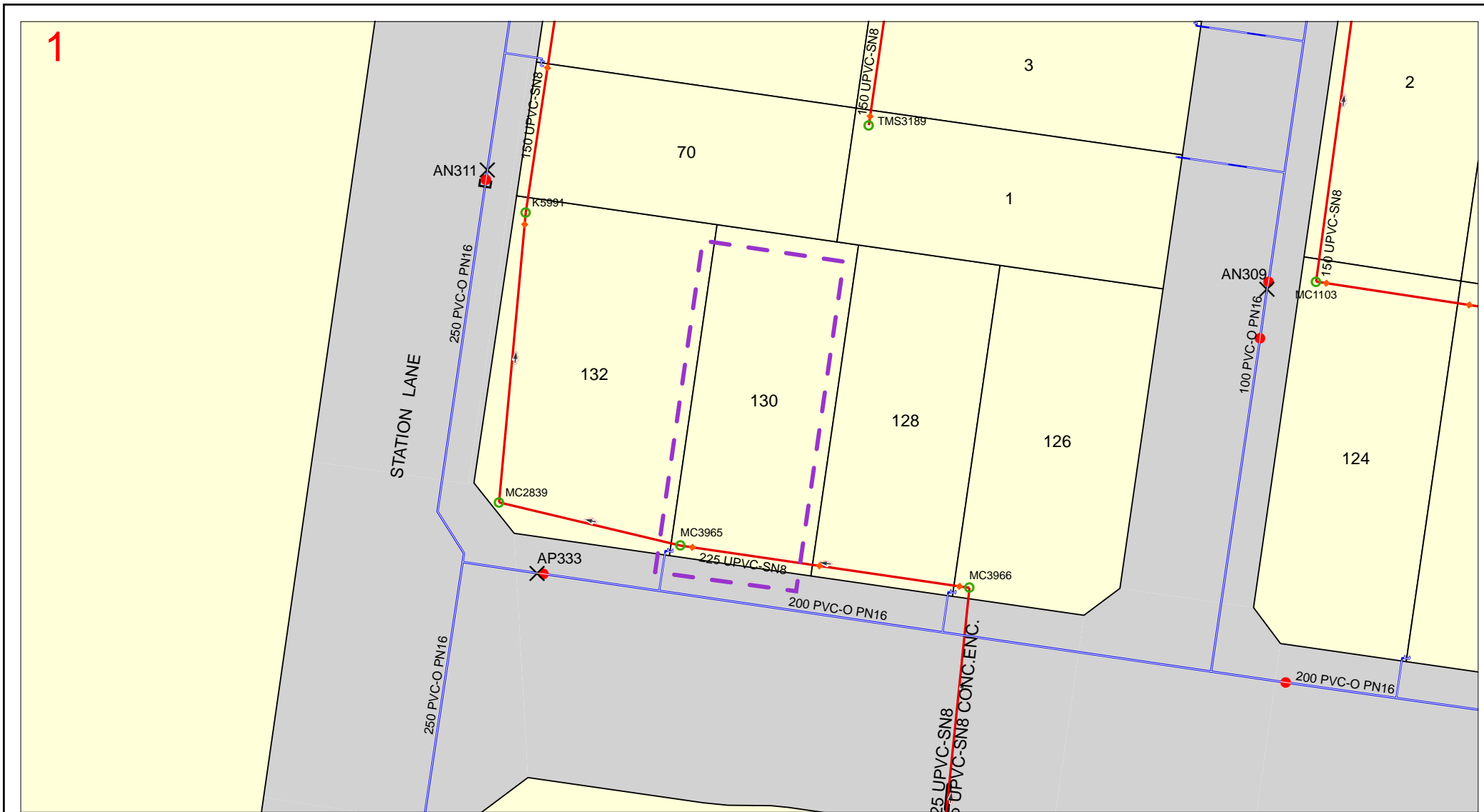


BYDADIA Work Area



Map 1

Sequence No: 239865575



IMPORTANT

THIS PLAN IS NOT TO BE USED FOR CONVEYANCING

THIS INFORMATION IS VALID FOR 30 DAYS FROM THE DATE OF ISSUE

SEWER/WATER/RECYCLED WATER/
ELECTRICAL - UTILITY DATA
© HUNTER WATER CORPORATION 2019

SERVICE LOCATIONS ARE APPROXIMATE.
HAND DIG UNTIL ACTUAL LOCATIONS ARE IDENTIFIED.
PROPERTY SERVICES ARE NOT SHOWN.

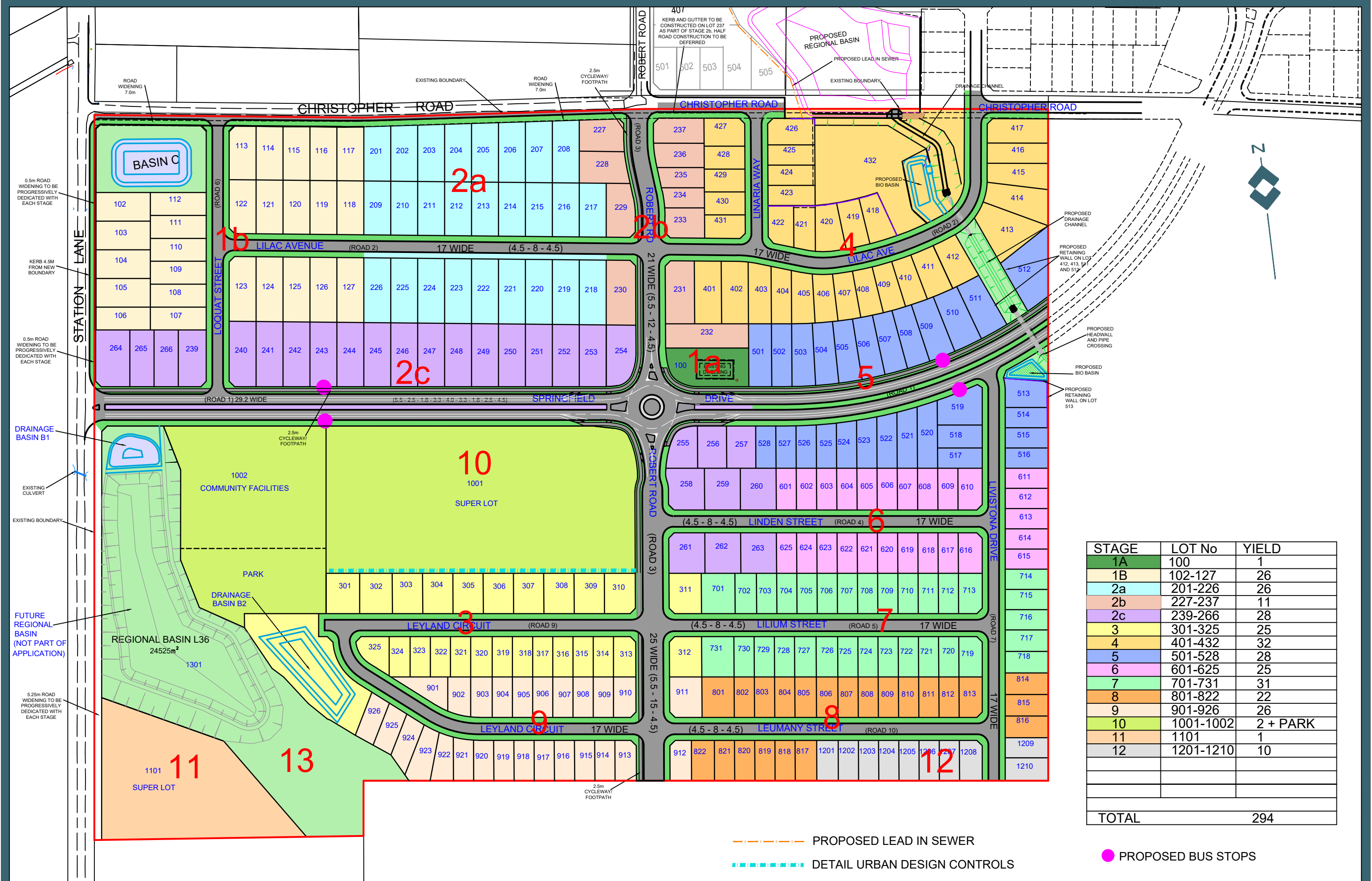
ANY INFORMATION ON THIS PLAN MAY NOT BE UP TO DATE
AND THE CORPORATION ACCEPTS NO RESPONSIBILITY FOR
ITS ACCURACY.

CADASTRAL DATA © Department Finance, Services & Innovation
[Nov 2017]

Hunter Water Corporation DBYD Asset Legend

<p>Electrical Assets</p> <ul style="list-style-type: none"> High Voltage Low Voltage Electrical Pole Distribution Transformer Air Break Switch Circuit Breaker High Voltage Low Voltage 	<p>Water Assets</p> <ul style="list-style-type: none"> Contol Valve Hydrant Control Valve Reflux Valve Stop/Scour Valve Tee & Stop Valve Hydrant Cluster Box End Cap Flushing Tap Manhole Scour Water Meter Water Network Structure Other Main Trunk Main Reticulation Main Water Encased Mains Water Prelaid Service 	<ul style="list-style-type: none"> HWC Rain Gauge HWC Stream Flow Gauge Radio Base Weather Station Piezometer Bore Site 	<p>RecycledWater Assets</p> <ul style="list-style-type: none"> Air Valve Reflux Valve Open Stop Valve Open RecycledWater Hydrant Cluster Box End Cap Flushing Tap Manhole Scour RecycledWater Meter RecycledWater Network Structure Other Main Reticulation Main Encased/Conduit Trunk Main Trunk Main Encased/Conduit RecycledWater Encased Mains RecycledWater Prelaid Service 	<p>Sewer Assets</p> <ul style="list-style-type: none"> Air Valve Stop/Butterfly/Ball Valve Gate Valve Manhole Cap Dead End Flushing Tank H&V Bend Junction Connection Outfall Overflow Sewer/Valve Pit Tangent Point Sewer Meter Sewer Vent Sewer Network Structure Other Main Gravity Main Pressure/Vacuum Main Effluent Main Outfall Overflow Main Rising Main Sewer Encased Mains 	<ul style="list-style-type: none"> StormWater Assets StormWater Network Structure StormWater Mains Mains Abandon 	<p>Land Details</p> <ul style="list-style-type: none"> Area of Interest Easement Non HWC Fence Line Non-HWC Easement HWC Easement Parcel Road Water Parcels Hazardous Material Map Sheet Index
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APPENDIX D SUBDIVISION PLAN

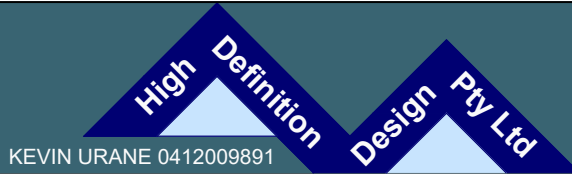


STAGE	LOT No	YIELD
1A	100	1
1B	102-127	26
2a	201-226	26
2b	227-237	11
2c	239-266	28
3	301-325	25
4	401-432	32
5	501-528	28
6	601-625	25
7	701-731	31
8	801-822	22
9	901-926	26
10	1001-1002	2 + PARK
11	1101	1
12	1201-1210	10
TOTAL		294

- - - - - PROPOSED LEAD IN SEWER
- - - - - DETAIL URBAN DESIGN CONTROLS
- PROPOSED BUS STOPS

TITLE: PROPOSED SUBDIVISION
 STATION LANE AND CHRISTOPHER ROAD
 LOCHINVAR
 LOCHINVAR RIDGE

STAGING PLAN



Date: 26.11.12	Scale: 1:2500 A3	Designed: KU	Project No: HD176
Cad Ref: HD176 r30			
29 AMEND BASIN B	KU	04.01.22	Drawing No: HD02 Revision: 30
28 ADD LEAD IN SEWER	KU	27.10.21	
30 AMEND LAYOUT	KU	21.06.22	
No	Amendment	Drawn	Date