

19.3 PLANNING AND ENVIRONMENT COURT APPEAL 894 OF 2018 - PALACIO PROPERTY GROUP PTY LTD -V- REDAND CITY COUNCIL (MCU013921 - CONVERSION APPLICATION FOR SEWER WORKS RELATING TO A MATERIAL CHANGE OF USE FOR MULTIPLE DWELLINGS AT 4-8 RACHOW STREET, THORNLANDS)

Objective Reference:

Authorising Officer: Louise Rusan, General Manager Community & Customer Services

Responsible Officer: David Jeanes, Group Manager City Planning & Assessment

Report Author: Emma Martin, Senior Appeals Planner

Attachments:

1. Location Plan
2. Approved Plans
3. Sewer connection works
4. Further sewer extension

The Council is satisfied that, pursuant to Section 275(1) of the *Local Government Regulation 2012*, the information to be received, discussed or considered in relation to this agenda item is:

- (f) starting or defending legal proceedings involving the local government.

PURPOSE

The purpose of this report is to firstly brief Councillors on the background to the infrastructure conversion application, the officers' decision and the subsequent appeal. Then secondly to seek Council direction on a settlement offer that has been presented by the appellant.

BACKGROUND

Proposed Development

On 2 June 2017 officers approved an application for a Material Change of Use for Multiple Dwellings (22 single storey villas) at 4-8 Rachow Street, Thornlands (MCU013921). The Decision Notice included a condition that required the proponent to:

16. *Construct an uPVC 150mm diameter sewer line and manholes required according to "External Sewer Plan", Sheet 1 and 2, preliminary issue, prepared by BG Group Engineers, in accordance with the assessment criteria listed in Table 2: Compliance Assessment of this approval. A tunnel boring system must be used for the construction of the sewer line along Rachow Street and connection point to manhole 6/1 asset No.456367 to protect existing stormwater infrastructure, footpaths and trees along the alignment, due to the depth of the pipe.*

Additionally, an Adopted Infrastructure Charges Notice (AICN) was issued with the Decision Notice and detailed that a total charge of [REDACTED] was payable over the two proposed stages. No offsets or refunds were applicable.

An aerial image detailing the location of the proposed development is contained within **Attachment 1**. A selection of the approved plans is contained within **Attachment 2**.

Infrastructure Conversion Application

On 22 August 2017 the proponent lodged an infrastructure conversion application seeking to convert the non-trunk sewer infrastructure referenced in condition 16 of the Decision Notice (see

above) to trunk infrastructure in accordance with the *Planning Act 2016* Chapter 4 Part 2. Their representations specifically set out the following:

1. *The requirements of the approvals are that infrastructure is provided that services premises other than the subject premises.*
2. *Council is imposing full infrastructure charges for infrastructure it is not providing (i.e. double dipping).*
3. *Council has zoned the land, within the PIA [Priority Infrastructure Area], for the intended use without providing trunk infrastructure.*
4. *It is appropriate that council agree to convert the infrastructure to trunk and offset or fund the full cost of its construction.*

The sewer infrastructure the subject of the conversion application and the appeal is shown in **Attachment 3**.

Officers considered the representations against section 140(2) of the *Planning Act 2016* and on 1 March 2018 decided to refuse the request for the following reasons:

The proposed infrastructure:

1. *is not identified in the Redland Priority Infrastructure Plan (PIP);*
2. *the site is not within the Priority Infrastructure Area (PIA);*
3. *is not within a Wastewater Connection Area under the Redland Netserv Plan;*
4. *does not satisfy the identified trunk infrastructure criteria in Schedule 5 of Council's Adopted Infrastructure Charges resolution. The gravity sewer is 150mm which is less than the pipe size criteria of 300mm. A 150mm pipe is the next minimum pipe size for any connection greater than a single dwelling house connection according to the SEQ WS&S D&C Code – Design Criteria;*
5. *does not meet all the default conversion criteria as it:*
6. *is inconsistent with other trunk infrastructure as identified in Redland Priority Infrastructure Plan (PIP); and*
7. *is consistent with non-trunk infrastructure for which conditions may be imposed in accordance with section 665 of the repealed Sustainable Planning Act 2009 (SPA):*
 - a. *connecting the premises to external infrastructure networks; and*
 - b. *protecting or maintaining the safety or efficiency of the infrastructure network of which the non-trunk infrastructure is a component.*
8. *Condition 16 for non-trunk sewer infrastructure is considered reasonable and relevant to connect the development to the external network and to maintain the efficiency of the infrastructure network. The change in the invert level to provide orderly development and not compromise the efficiency of the network does not provide an unreasonable additional cost or additional demand to the delivery of the infrastructure.*

Appeal

An appeal against the decision regarding the infrastructure conversion application was filed with the Planning and Environment Court on 9 March 2018. Officers attended a without prejudice meeting with the appellant, his consultants and solicitors on 17 May 2018.

Subsequent to the without prejudice meeting the appellant wrote to officers detailing a settlement offer, which is discussed in more detail under the relevant heading in this report. In the

first instance the appellant sought officers' opinion on the offer. After considering the offer officers advised that they were not minded to make a positive recommendation to Council with respect to the offer and asked the appellant whether, despite this, they would still like the offer to be formally presented to Council. On 8 August 2018 the appellant requested officers to present the offer to a General Meeting of Council for formal direction.

Subsequent Approvals and Works

Relevantly since the appeal was filed the following has occurred in relation to the development:

1. Officers agreed to alter the conditioned construction method from tunnel boring to open-cut techniques. This agreement will reduce the construction costs of the infrastructure from approximately [REDACTED]
2. Operational Works approval for the development has been granted.
3. Operational Works approval for the further extension of the sewer has been granted by Council. These are the additional works referenced under the 'Offer' heading in this report.
4. Building Works approval has been granted.
5. The Plumbing Final has been issued.
6. The Building Format plan for the development has been sealed
 - a. This means all infrastructure charges levied by the Infrastructure Charges Notices have been paid by the developer
7. The sewer infrastructure the subject of the appeal, including the extension that forms part of the settlement offer, has been constructed and connected.
 - a. The infrastructure has not been handed to Redland Water and Waste yet as the developer is responsible for maintenance for the first 12 months post-construction.
8. The development itself is approximately 95% complete.

Council officers have written to the appellant highlighting the implications of commencing (and now completing) the works prior to the outcome of the appeal being determined, especially if they are successful. Council's Adopted Infrastructure Charges Resolution (AICR) details the process by which trunk infrastructure costs must be determined and the means by which the appellant can contest the values set by Council. The fact that the appellant has already constructed the infrastructure does not prevent Council from establishing a cost lower than the actual cost borne by the developer, if we have evidence that a more efficient construction method was possible. Critically, by constructing the infrastructure first the appellant has undermined their ability to challenge and negotiate the value of offset to be paid by Council, or the construction methods available.

ISSUES

Offer

As previously mentioned the appellant has written to Council officers to make a settlement offer by which the appeal may be resolved.

In the correspondence the appellant's solicitor has highlighted additional matters for Council to consider along with the grounds of appeal. These matters include:

- The size of the catchment that will be serviced by the subject sewer infrastructure – being a land area with the potential to accommodate 155 dwellings in accordance with the Redlands

Planning Scheme (and draft City Plan). This includes the development associated with the appeal.

- As a proportion of this catchment the subject development comprises 14.1%.
- The total cost of the sewer works is estimated to be over [REDACTED]

Considering the above the settlement offer proposes that the appellant is willing to cover 25% of this cost, with Redland City Council to take carriage of the balance. This proportion, the appellant highlights, is more than the actual demand on the infrastructure caused by their development.

In addition the appellant has outlined further sewer extension works they will commit to delivering that will enable easier connection for upstream properties in the future. These are shown in **Attachment 4**. The appellant values these additional works at just over [REDACTED] and also points out that they have applied for and obtained Operational Works approval for these works (OPW18/0065). Once these additional works are added to the infrastructure costs for their development the cost breakdown for the sewer infrastructure is approximately a 50/50 split with Council.

The appellant argues that the following are benefits to Council if it accepts the settlement offer:

- (1) *Avoiding the necessity of digging established developed areas to install sewer extension at a later date (given the current development in the area which is expected in the short to medium term); and*
- (2) *Providing the immediate availability for servicing of future development speeding the development of the catchment;*
- (3) *Cost savings in legal and expert fees; and*
- (4) *Enhancing the rate base within Council's area.*

Officers' comments

Trunk Infrastructure

The *Planning Act 2016* provides the following definition of trunk infrastructure:

trunk infrastructure, for a local government, means—

- a) *development infrastructure identified in a LGIP as trunk infrastructure; or*
- b) *development infrastructure that, because of a conversion application, becomes trunk infrastructure; or*
- c) *development infrastructure that is required to be provided under a condition under section 128(3)*

The local government infrastructure plan (LGIP) in the Redlands Planning Scheme sets out existing and scheduled trunk infrastructure for all essential services including the sewerage network. It does not identify the need for trunk sewer upgrades to service the subject site. Additionally, Council's Adopted Infrastructure Charges Resolution (AICR) sets out the criteria for determining whether infrastructure is trunk infrastructure. In the Resolution Council has nominated that in relation to gravity sewer on the mainland trunk infrastructure is a pipe no less than 300mm in diameter and this is consistent with the desired standards of service set out in Redland Water's netserv plans. Anything less than this is considered development infrastructure.

The sewer the subject of the conversion application and this appeal is 150mm, which is half the diameter of what Council considers trunk sewer. Generally speaking, the critical difference in function between the two pipes is the size of the catchment that will be serviced by the

infrastructure, with a 300mm diameter gravity main servicing a significantly larger population than a 150mm pipe.

Officers acknowledge that the sewer infrastructure required to service the subject development will service land beyond the development, this feature is not however sufficient for the infrastructure to be considered trunk infrastructure. Not only is the sewer pipe less than the 300mm requirement for trunk sewer, it is also the minimum sewer infrastructure required to service the subject development, meaning even if the only development being serviced was the proposed development the same size sewer pipe would be required. This means that it has not been designed or up-sized to specifically enable a greater capacity and service a larger catchment. In this case it is merely a coincidence that the infrastructure required to service the subject development is also the same infrastructure required to service the entire catchment.

On this basis it is the view of officers that the 150mm sewer pipe required to connect the proposed development to the reticulated sewer network is not trunk infrastructure. It is noted that the provocative factor in this case is the distance of the sewer infrastructure from the appellant's development, which means that rather than simply connecting the development to a sewer pipe in the road reserve in front of the site an extension across Council-owned land (opposite) is required. This is a costly process and will burden the first developer within the catchment, whilst benefitting all landowners/developers who will eventually connect to it. Of course in such a scenario the developer has the option of negotiating with the other landowners/developers seeking to share the cost so no one is solely responsible.

Ultimately it is unfortunate for the appellant but it is a situation that occurs regularly across the City and in relation to all types of essential infrastructure. If Council were to step in with this particular case it could seriously undermine Council's position when challenged in the future. Of course any such negotiated outcome in an appeal could be subject to a confidentiality agreement.

Proposed further extension to service the upstream catchment

It is officers' opinion that the further extension of the sewer infrastructure whilst clearly being a more efficient means of developing the land and a direct advantage to upstream property owners/developers and the appellant, serves no real benefit or advantage to Council. Officers within Council's Engineering Assessment team are confident that the extension required to service those properties could be provided within the Rachow Street road reserve and can be provided when the upstream properties are developed. It is not necessary for this infrastructure to be delivered now or by the appellant as part of their development. The cost of delivering this infrastructure should be borne by the developers who will ultimately require it to service their own proposals. Officers appreciate the efficiency of delivering it now, which will no doubt benefit the future residents of the proposed villas who would otherwise be disturbed by the future works, but do not consider these as benefits that warrant Council expenditure, either directly or as an offset to infrastructure charges generated by the proposed development.


OFFICER RECOMMENDATION
STRATEGIC IMPLICATIONS**Legislative Requirements**

There are no directions orders for this appeal and as such there is no strict Court timelines at present. It is likely however that the appellant will be forced to seek directions if Council does not respond to this offer soon.

Risk Management

There is a risk that, if Council does not accept the settlement offer and the appellant goes on to succeed in the appeal, an adverse costs order may be made against Council. Conversely, officers take the view that accepting the settlement offer would not be consistent with Council's Adopted Infrastructure Charges Resolution. As discussed in the body of the report, it is important that Council take a consistent approach to the identification of trunk infrastructure. A decision that is inconsistent with the terms of the Resolution may undermine Council's position in other future matters, which itself carries financial risk.

Financial

See the matters set out in the Risk Management section above.

People

There are no implications relating to people.

Environmental

There are no environmental implications.

Social

There are no social implications.

Alignment with Council's Policy and Plans

Acceptance of the settlement offer is not consistent with Council's Adopted Infrastructure Charges Resolution.

CONSULTATION

Council's Infrastructure Planning and Charging Unit and Legal Services Team were consulted on the content of the report and recommendations. In addition external legal advice was sought by officers.

OPTIONS

Option One

That Council resolves to:

1. instruct its solicitors to decline the settlement offer and take all necessary steps to defend the refusal of the application; and
2. maintain this report as confidential.

Option Two

That Council resolves to:

1. instruct its solicitors to accept the settlement offer and take all necessary steps to negotiate the terms of a settlement agreement; and
2. maintain this report as confidential.

Option Three

That Council resolves to:

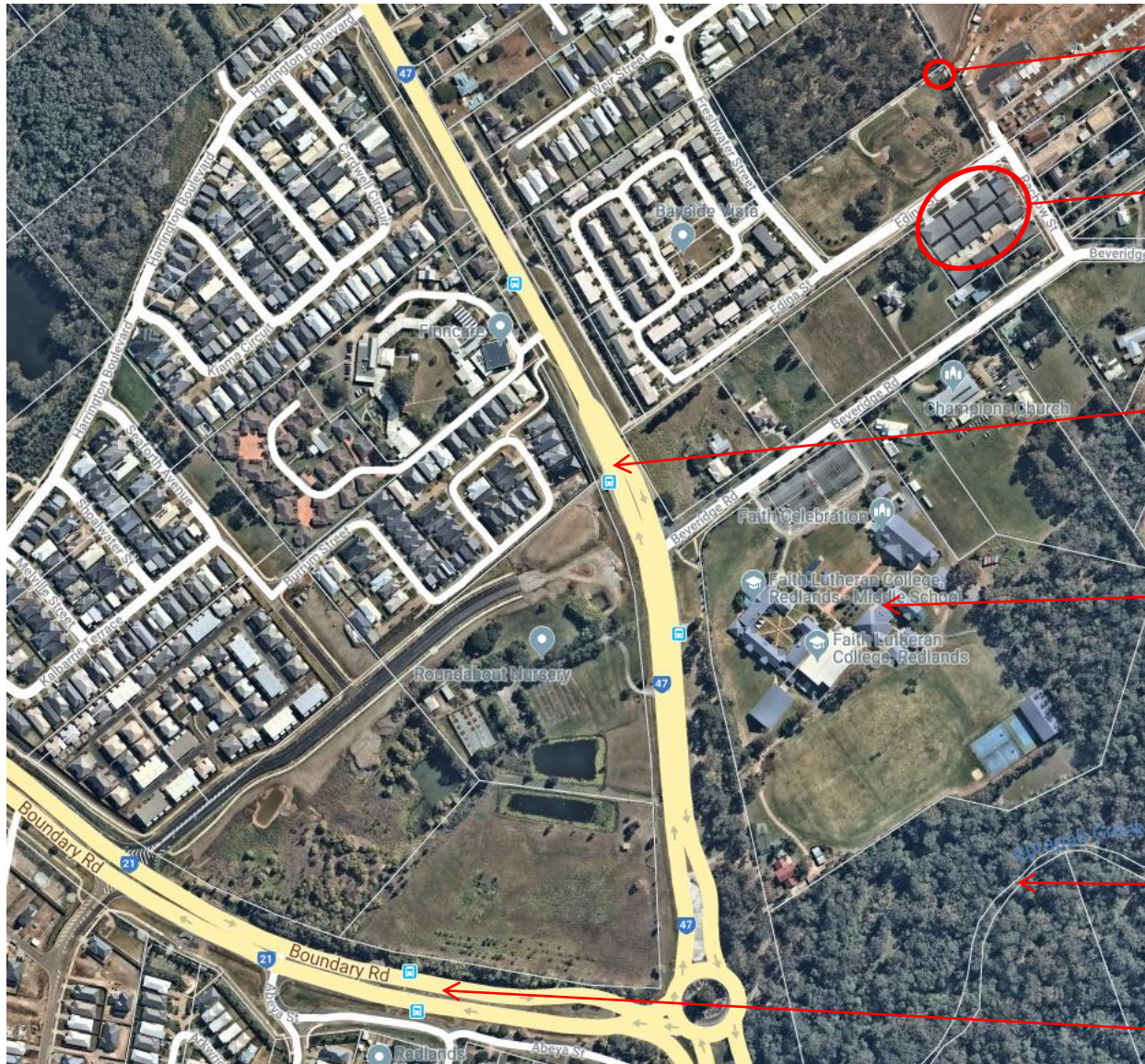
1. instruct its solicitors to write to the appellant with a counter settlement offer; and
2. maintain this report as confidential.

OFFICER'S RECOMMENDATION

That Council resolves to:

1. **instruct its solicitors to decline the settlement offer and take all necessary steps to defend the refusal of the application; and**
2. **maintain this report and attachments as confidential until the release of the report and attachments is determined to be in the public interest in accordance with the factors set out in the *Right to Information Act 2009*.**

ATTACHMENT 1 – LOCATION PLAN



Sewer connection point

Appeal Site

Cleveland-Redland Bay Road

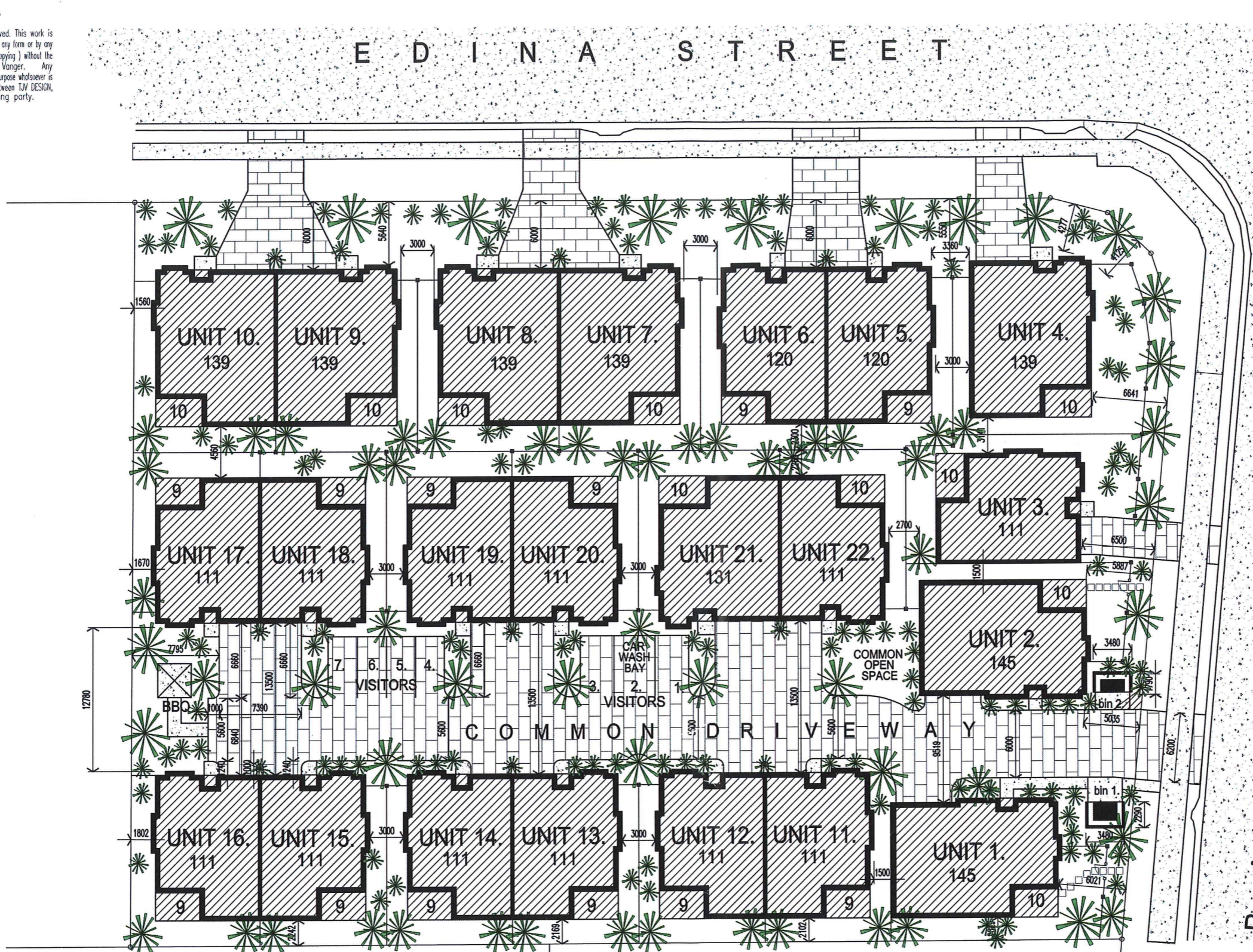
Faith Lutheran College

Eprapah Creek

Boundary Road

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Redland City Council
 Approved Plan
 - 2 JUN 2017
 Application Number *MC20139.2.1*
 See Decision Notice for conditions of approval

Lot 5 on SP 149013

LAND AREA: 6001 sqm
 SITE COVER: 2687 sqm (44.7%)

4-8 RACHOW STREET DEVELOPMENT, THORNLANDS, QLD.

SITE PLAN

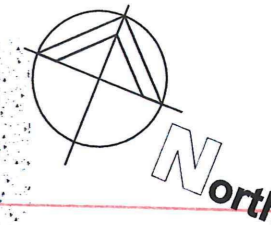


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06 March 2017
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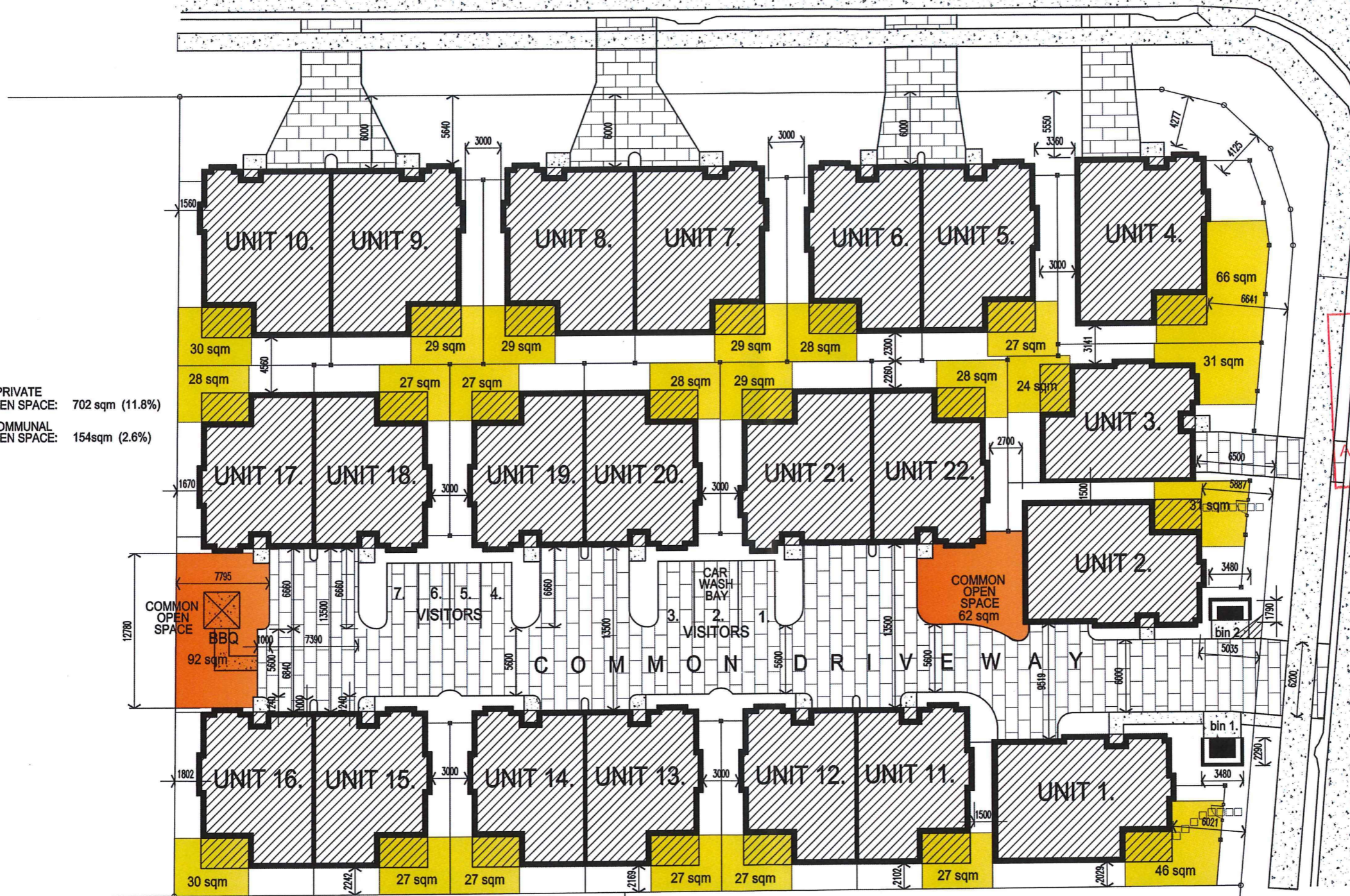
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Application Number M.L. 2017.3921
See Decision Notice for conditions of approval

PRIVATE OPEN SPACE: 702 sqm (11.8%)
COMMUNAL OPEN SPACE: 154sqm (2.6%)



Lot 5 on SP 149013

LAND AREA: 6001 sqm
SITE COVER: 2687 sqm (44.7%)

4-8 RACHOW STREET DEVELOPMENT, THORNLANDS, QLD.

SITE PLAN - OPEN SPACE



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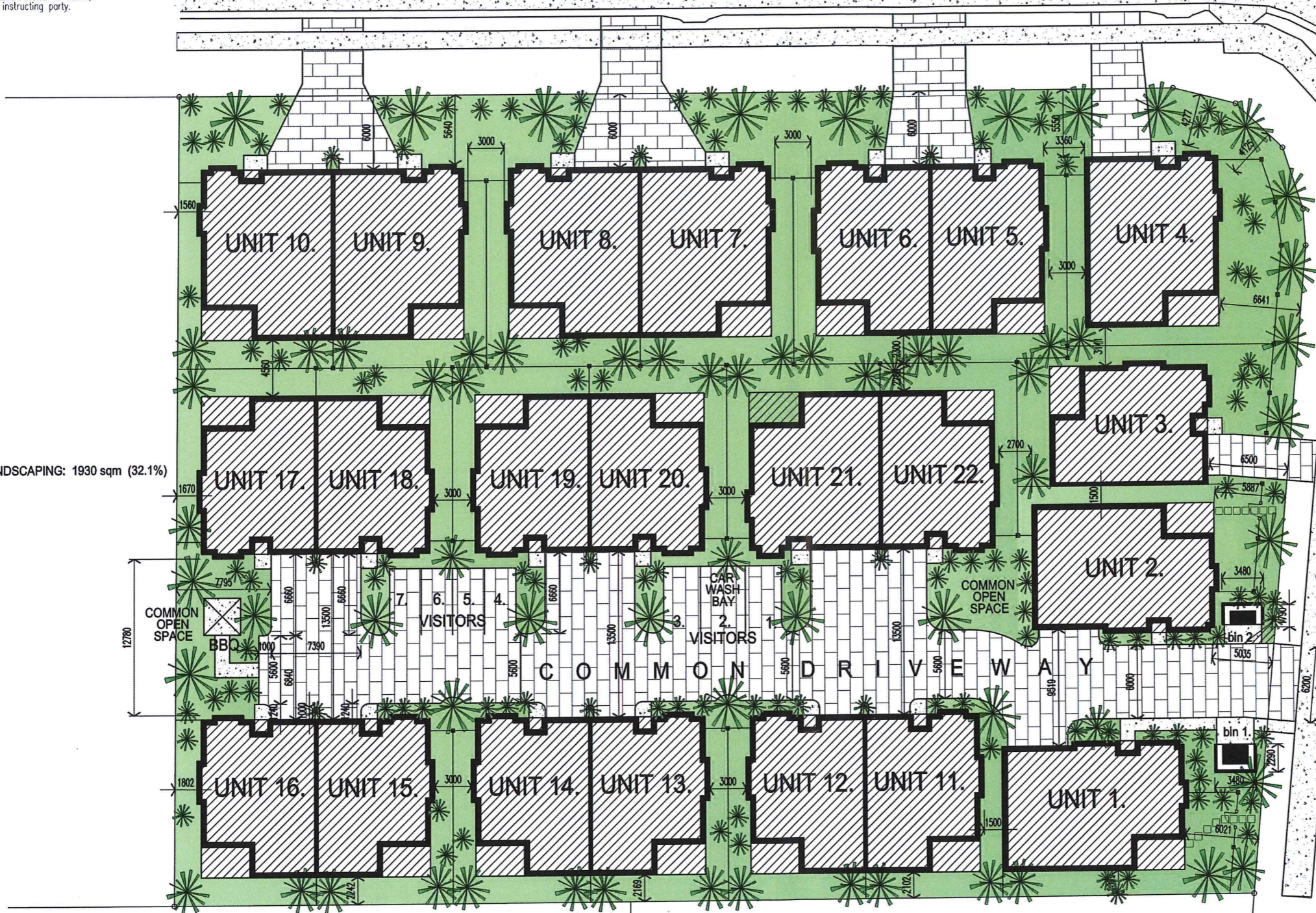
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Redland City Council
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 Application Number: M200130121
 See Decision Notice for conditions of approval

LANDSCAPING: 1930 sqm (32.1%)



R A C H O W

Lot 5 on SP 149013

LAND AREA: 6001 sqm
 SITE COVER: 2687 sqm (44.7%)



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4-8 RACHOW STREET DEVELOPMENT, THORNLANDS, QLD.

SITE PLAN - LANDSCAPED AREAS

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UNIT 1. DRIVE WAY UNIT 2. UNIT 3. UNIT 4.

RACHOW STREET ELEVATION

Redland City Council
Approved Plan
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See Decision Notice for conditions of approval



UNIT 4. UNIT 5. UNIT 6. UNIT 7. UNIT 8. UNIT 9. UNIT 10.

EDINA STREET ELEVATION



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4-8 RACHOW STREET, THORNLANDS, QLD.
DEVELOPMENT ELEVATIONS

06 March 2017.
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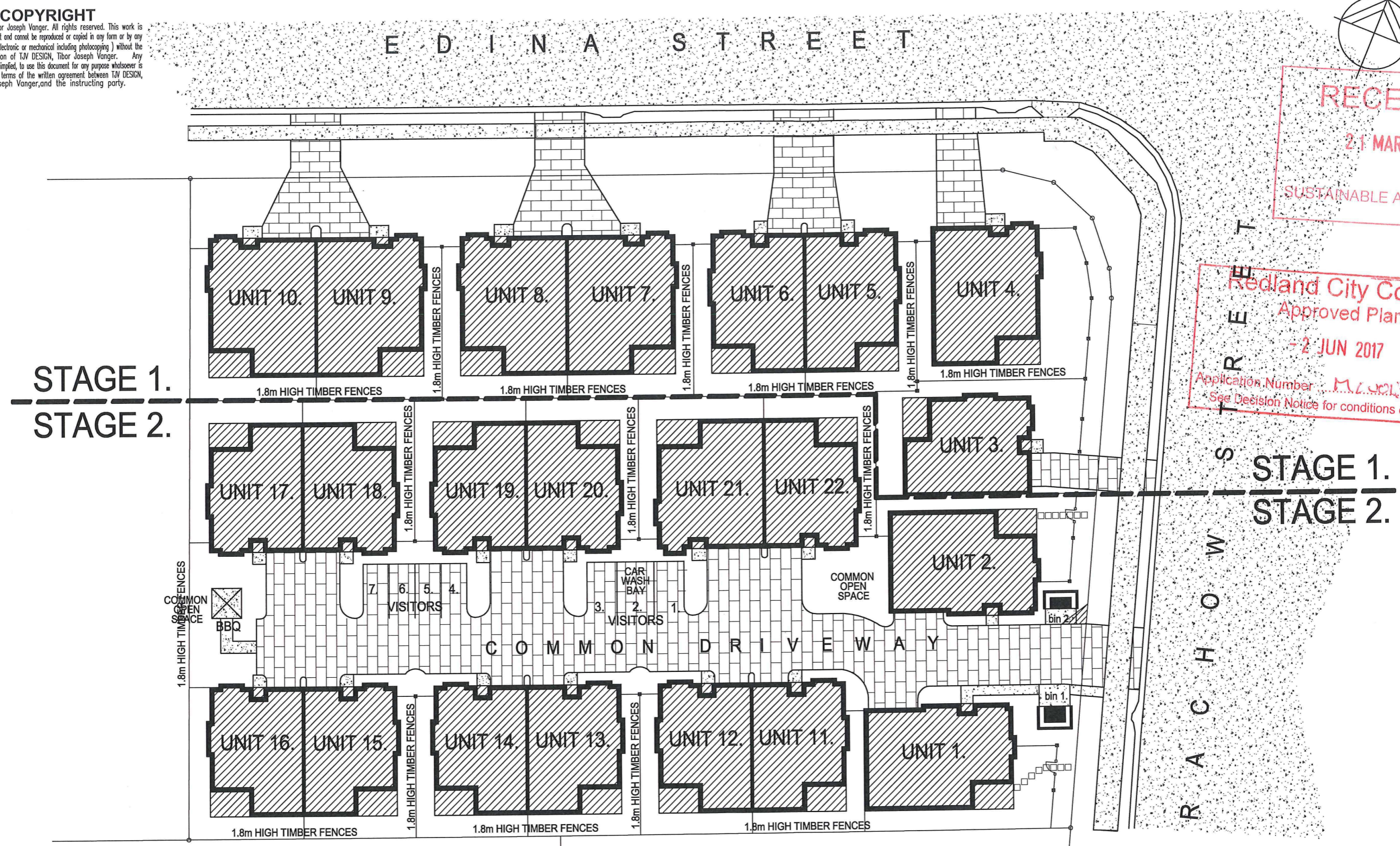
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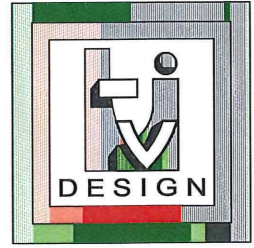
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Lot 5 on SP 149013

LAND AREA: 6001 sqm
 SITE COVER: 2687 sqm (44.7%)



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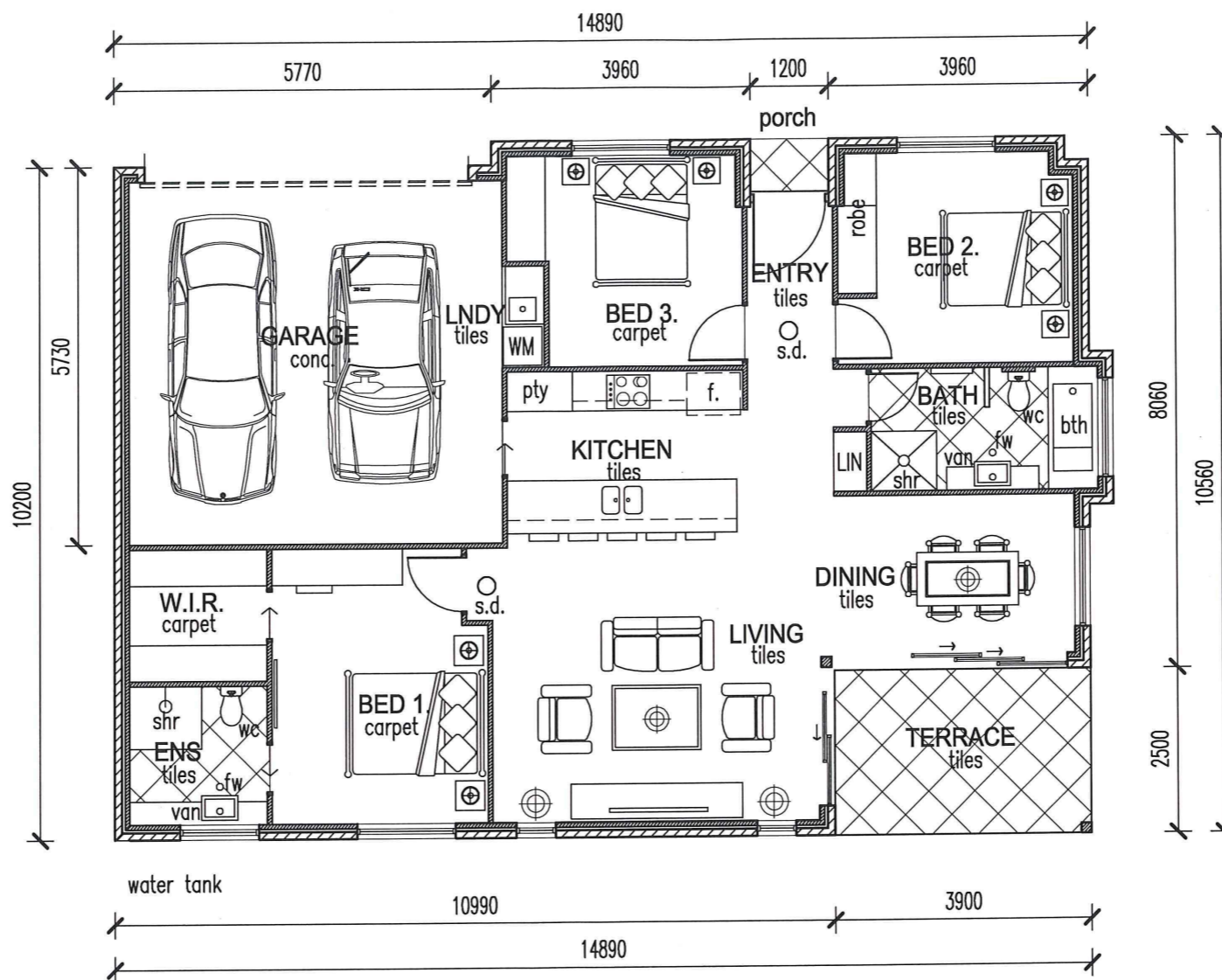
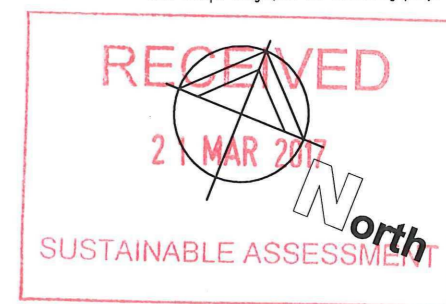
4-8 RACHOW STREET DEVELOPMENT, THORNLANDS, QLD.

SITE PLAN - STAGING

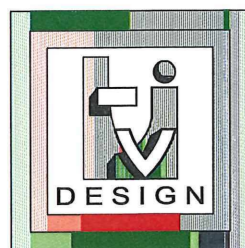
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**UNIT 1.
145 SQM**



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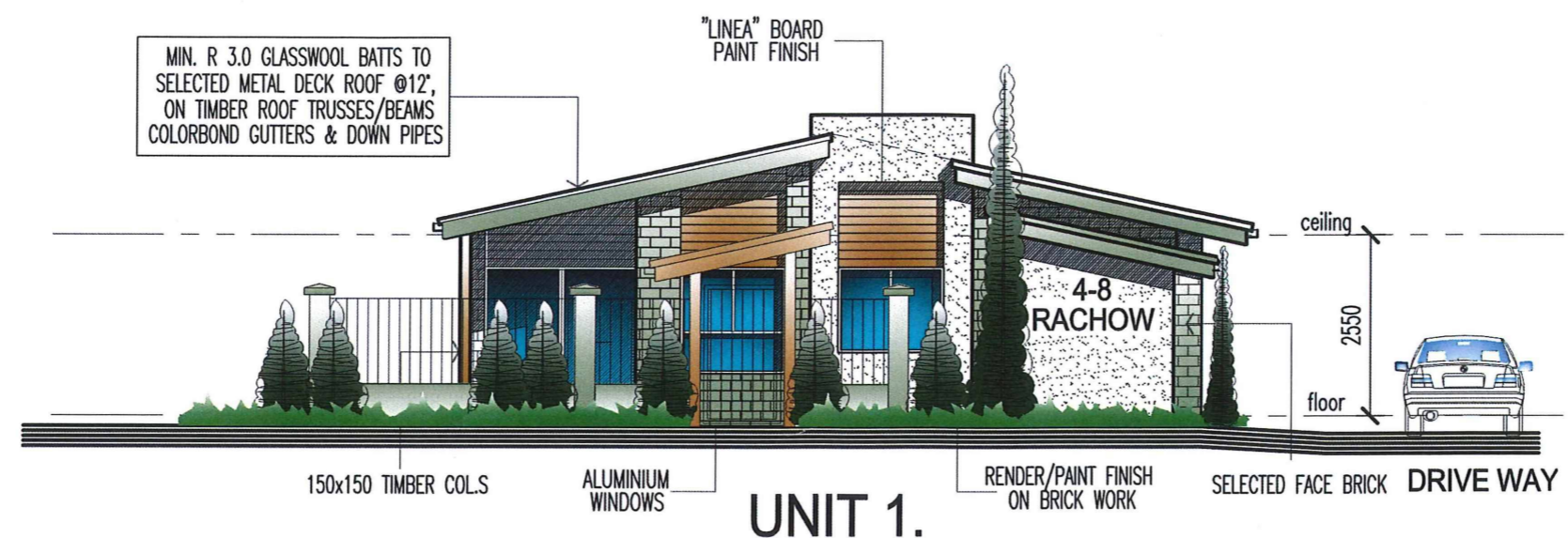
4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 1. - UNIT 1, PLANS

19 January 2017.
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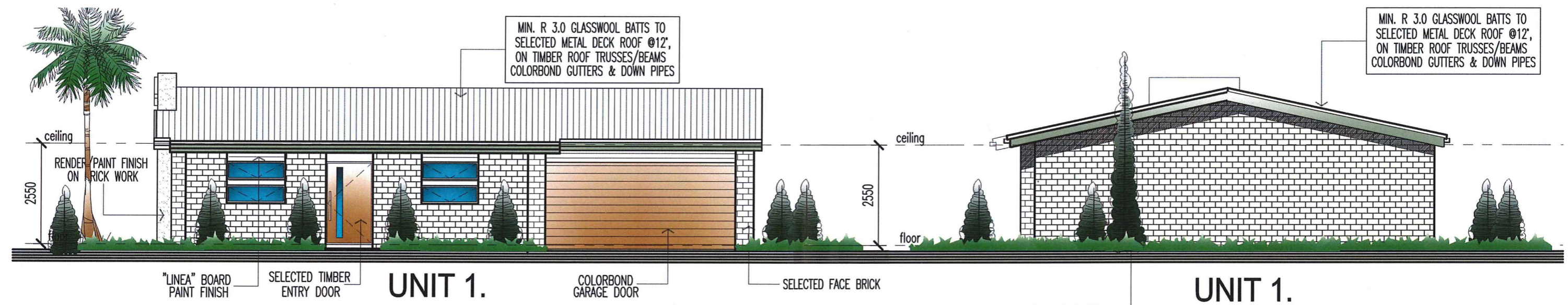
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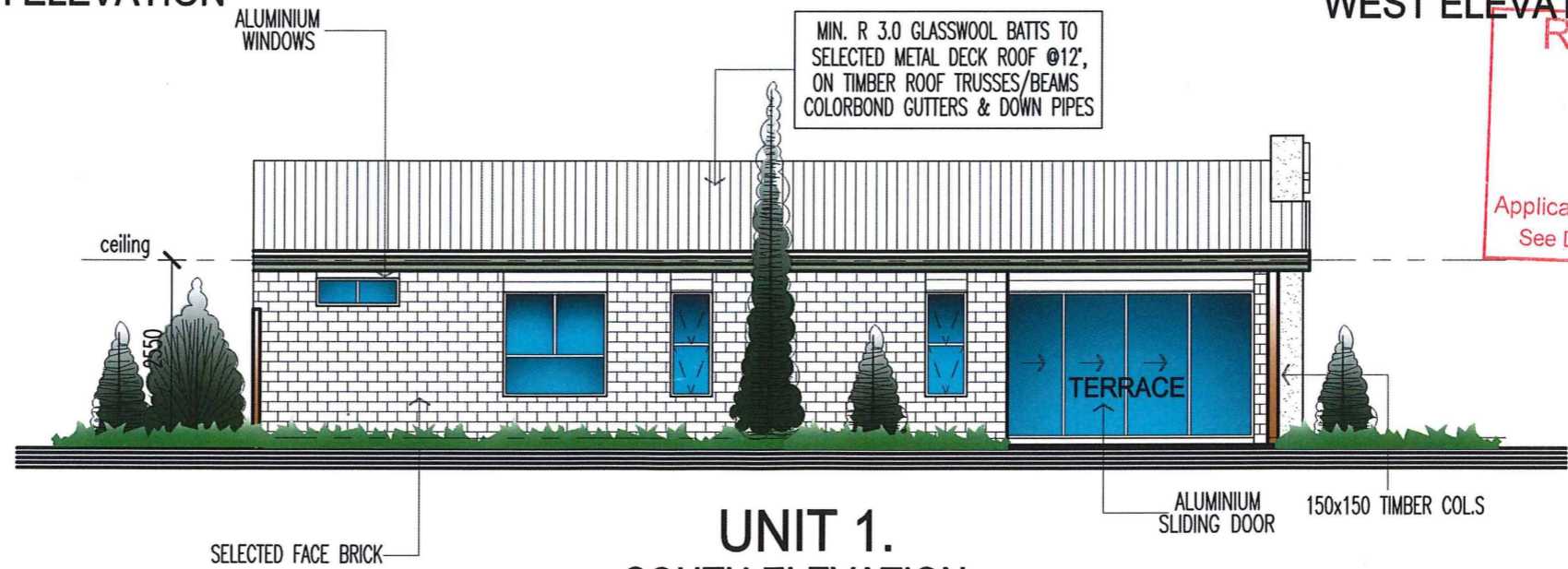


UNIT 1.
RACHOW STREET ELEVATION



UNIT 1.
NORTH ELEVATION

UNIT 1.
WEST ELEVATION



UNIT 1.
SOUTH ELEVATION
4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 1. - UNIT 1, ELEVATIONS 1.

Redland City Council
Approved Plan
- 2 JUN 2017
Application Number M.L.C.C.13921
See Decision Notice for conditions of approval



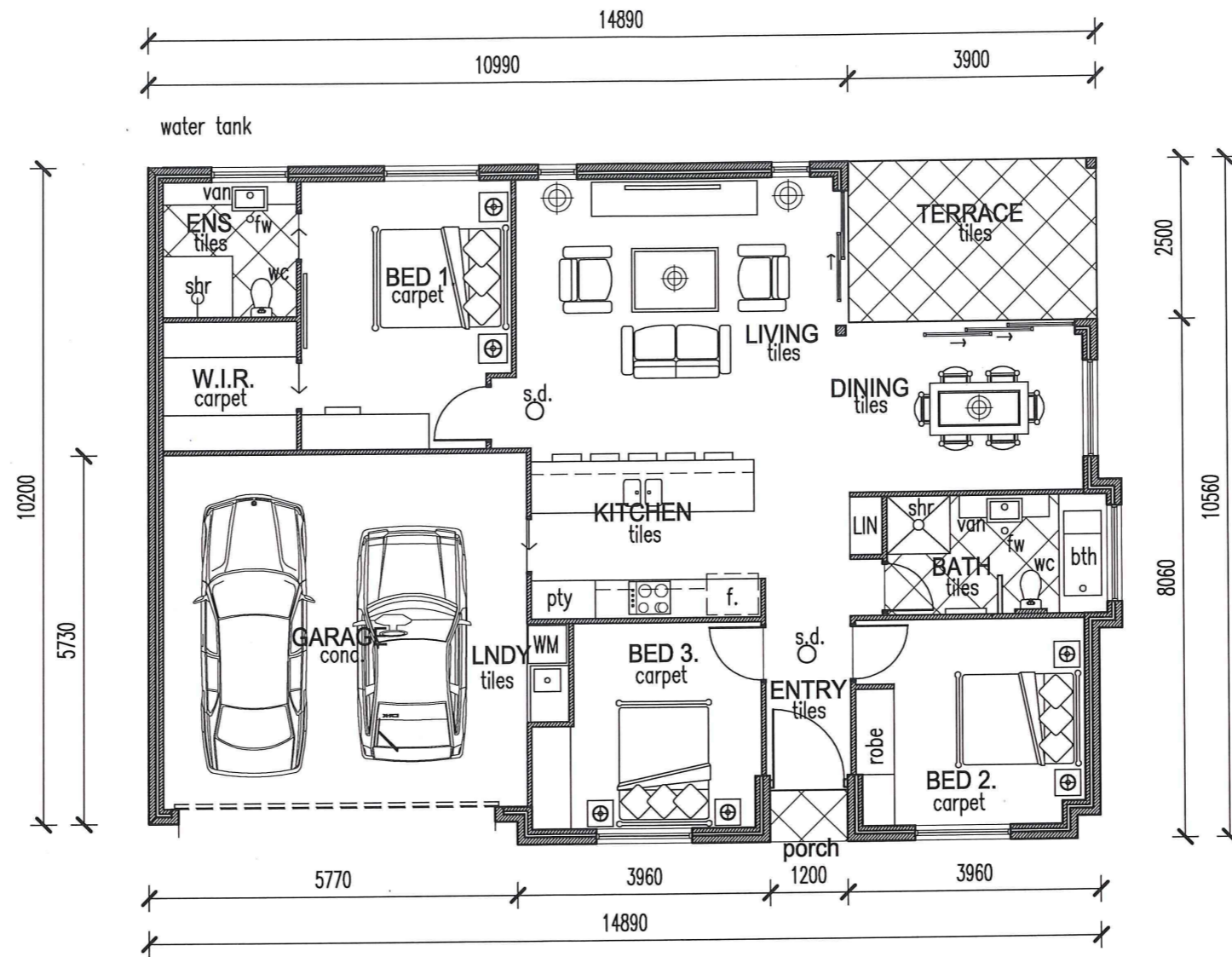
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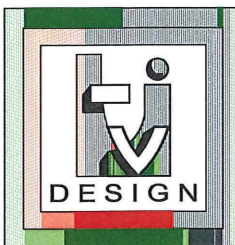
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Redland City Council
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 - 2 JUN 2017
 Application Number 150023921
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UNIT 2.
145 SQM



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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 2, - UNIT 2, PLANS

19 January 2017.

090117 DA-20/A

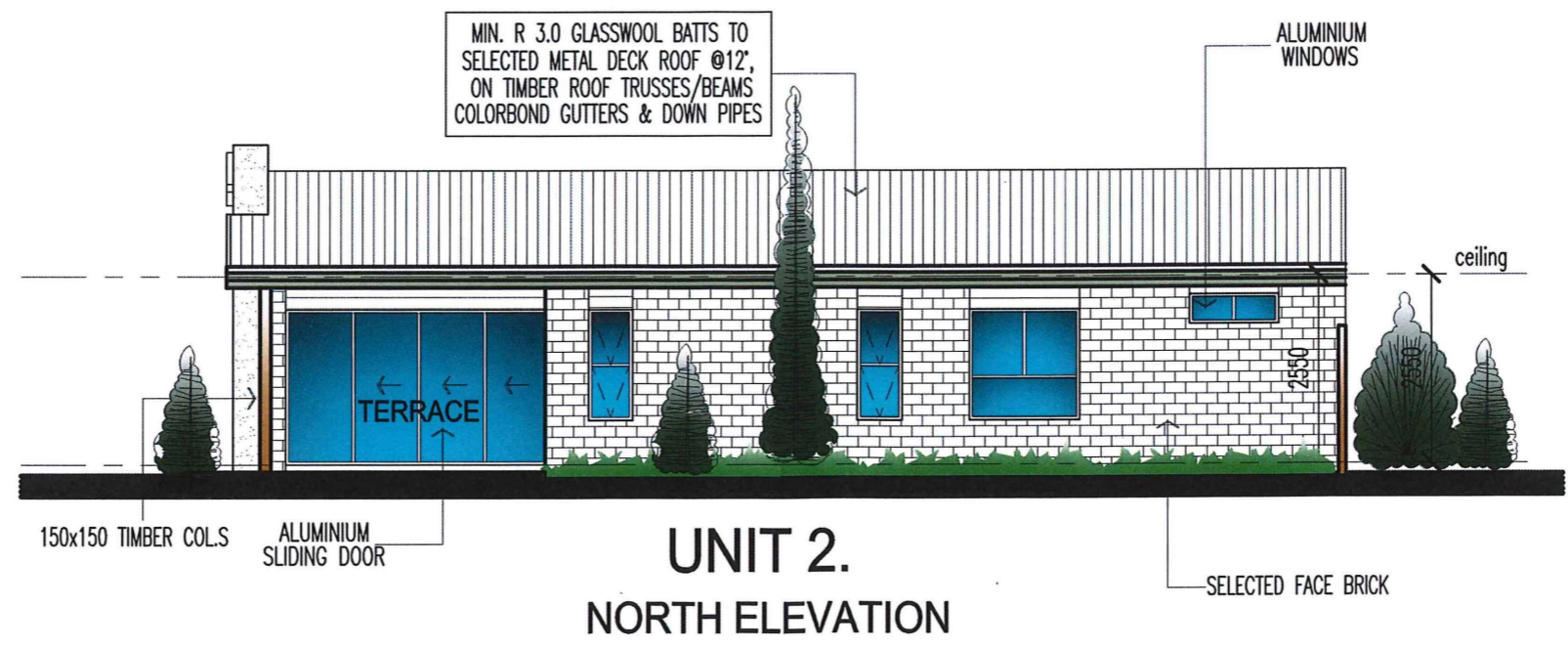
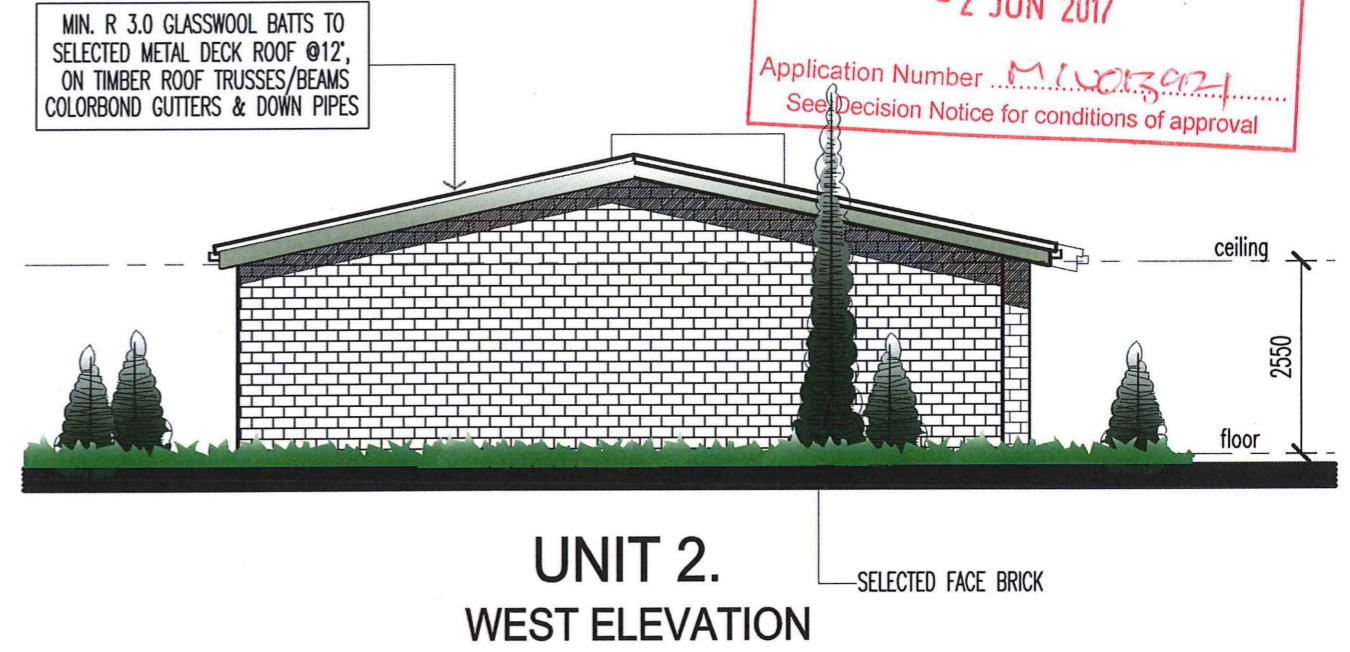
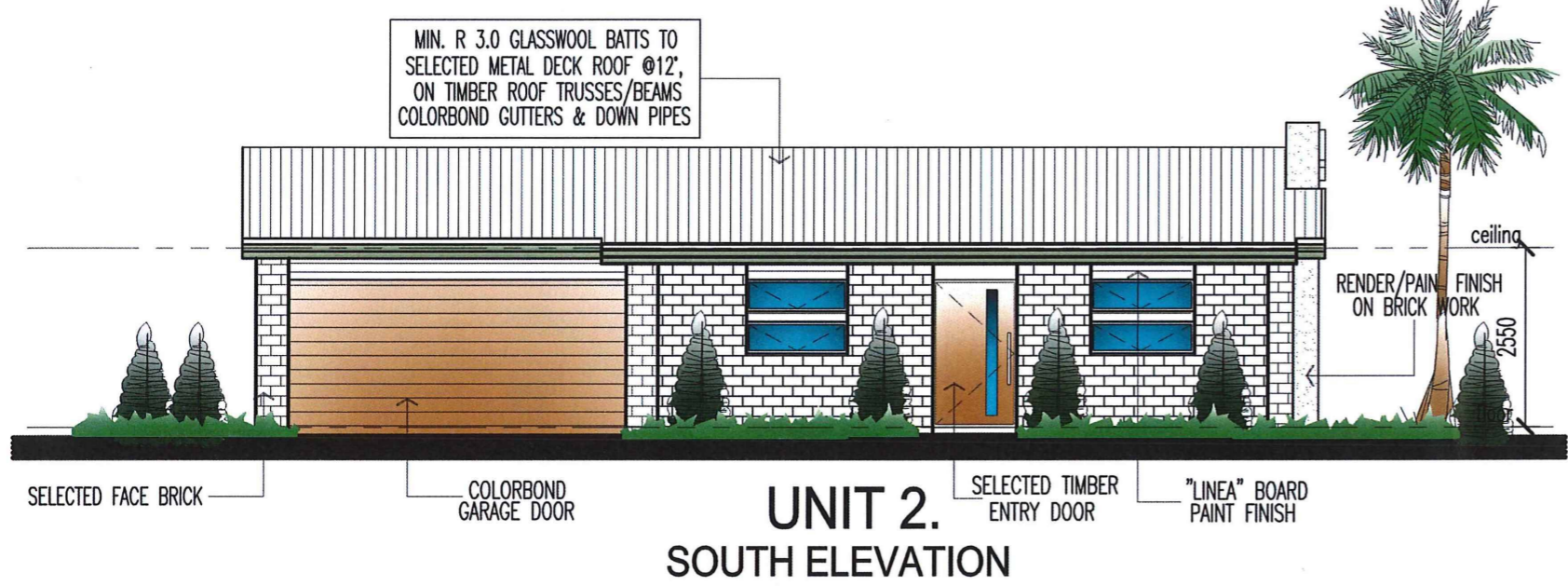
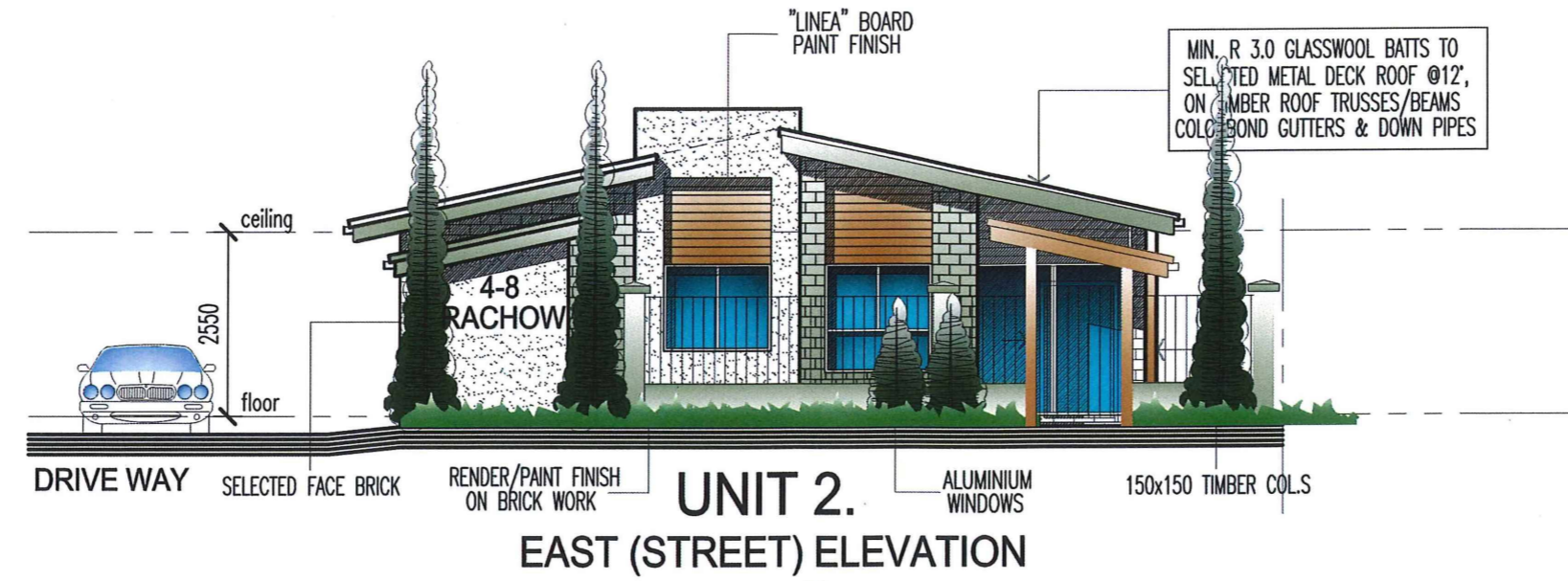
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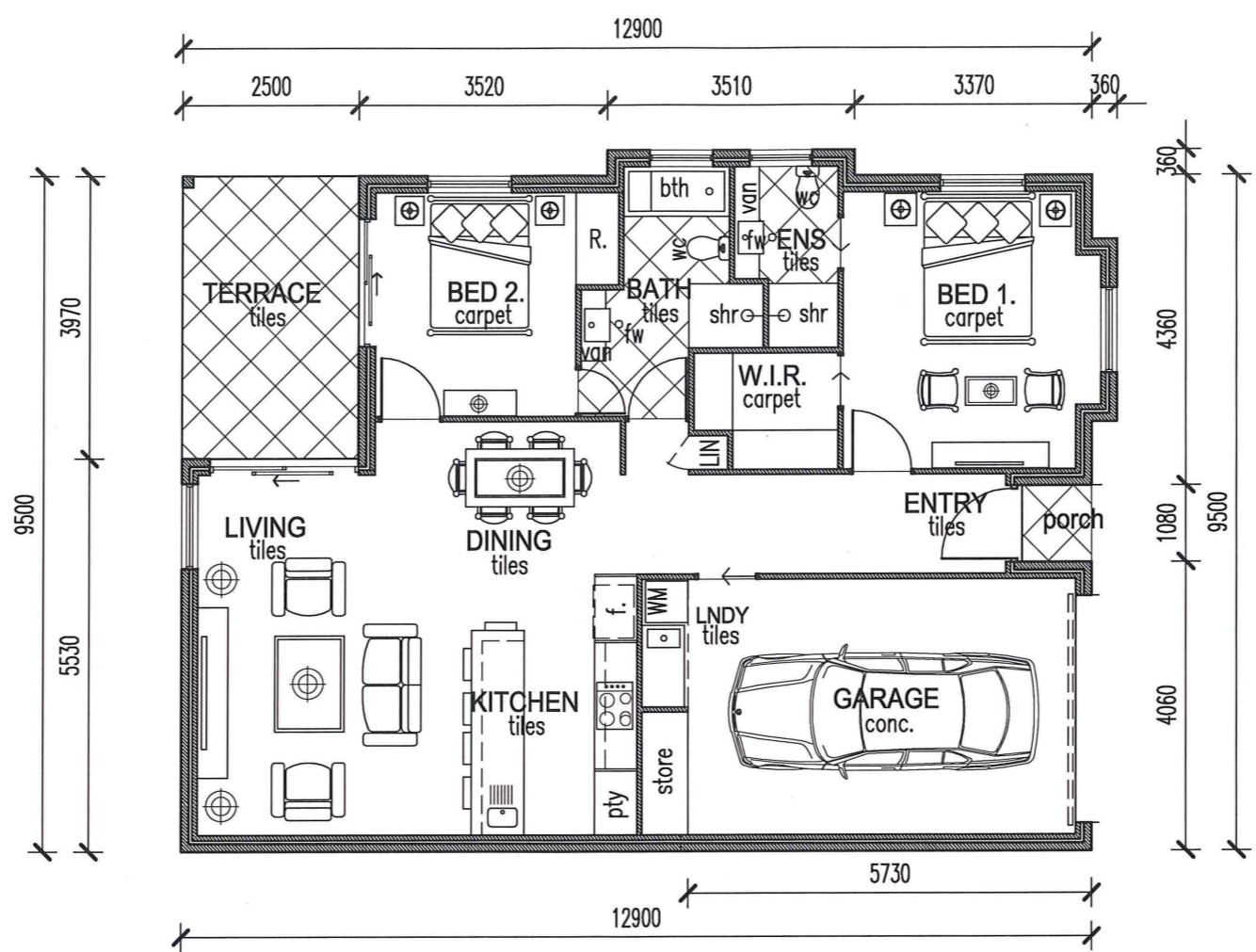


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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 2, - UNIT 2, PLANS

19 January 2017.
 090117 DA-21/A
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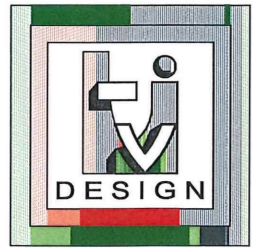
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UNIT 3.
111 SQM

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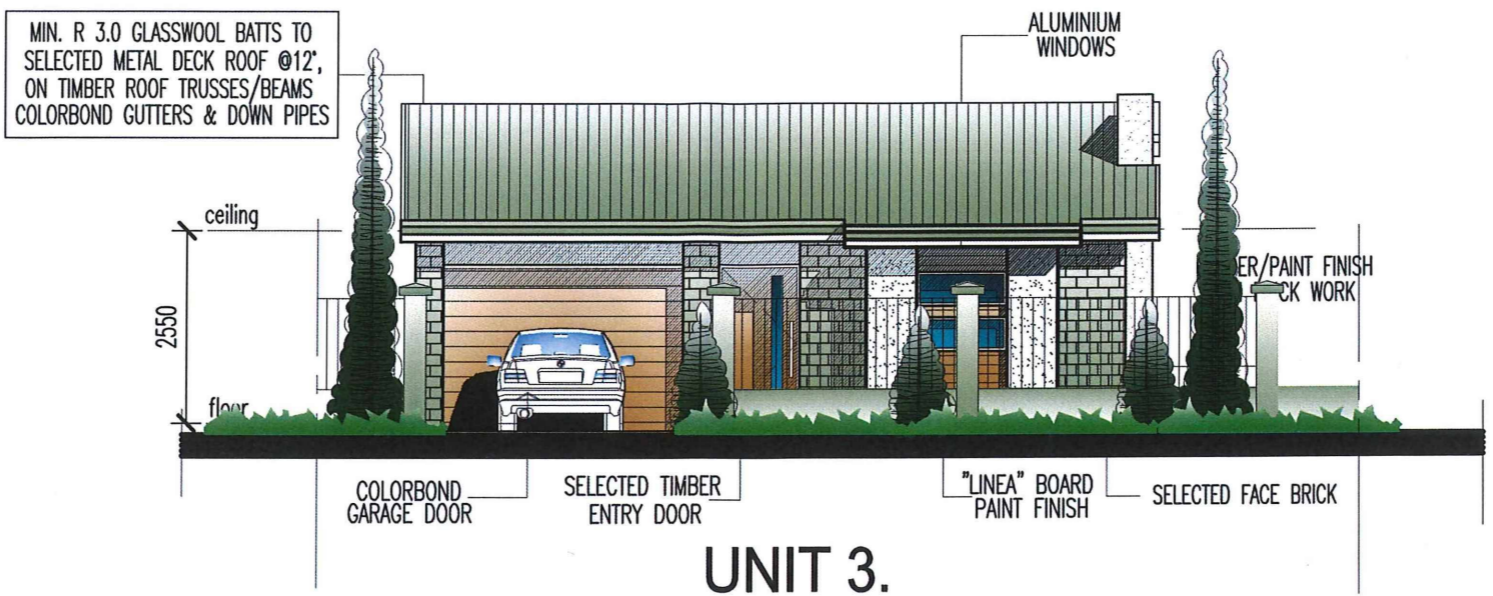


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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 3. - UNIT 3, PLANS

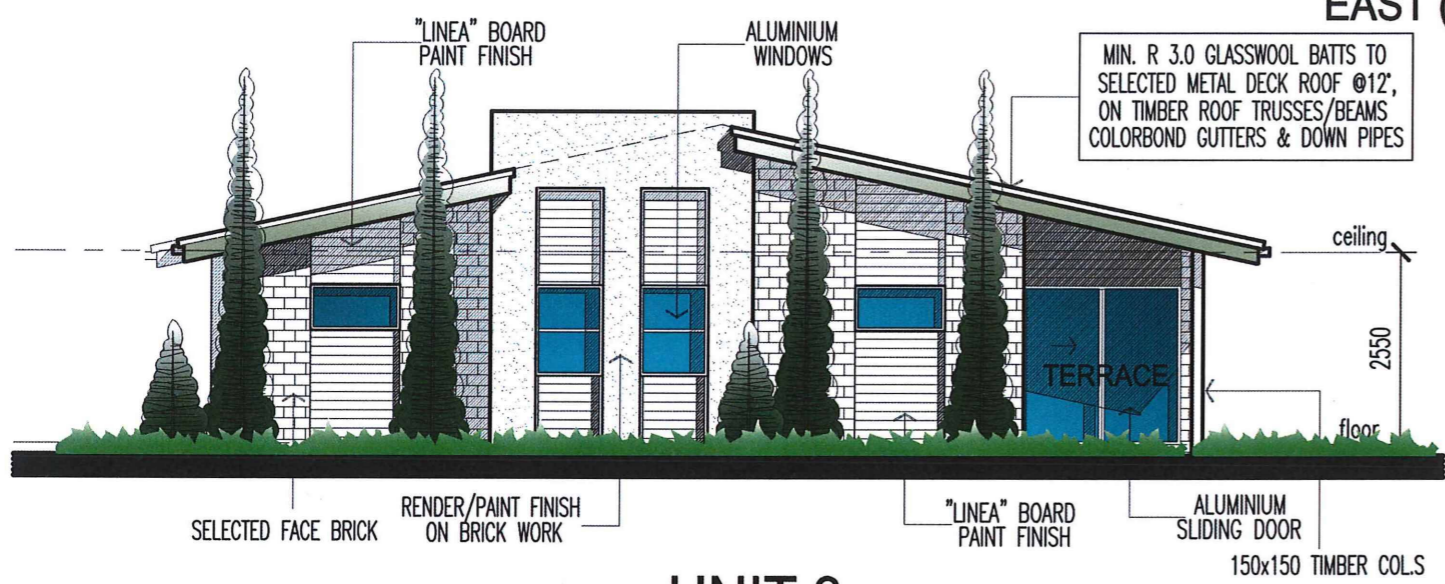
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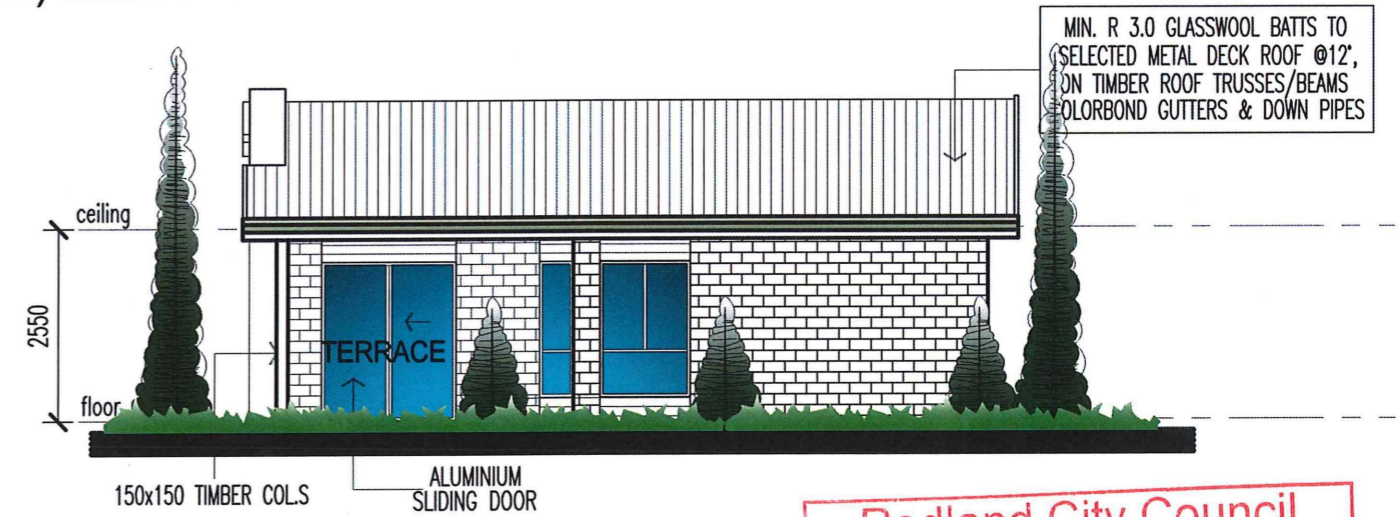


**UNIT 3.
 EAST (STREET) ELEVATION**

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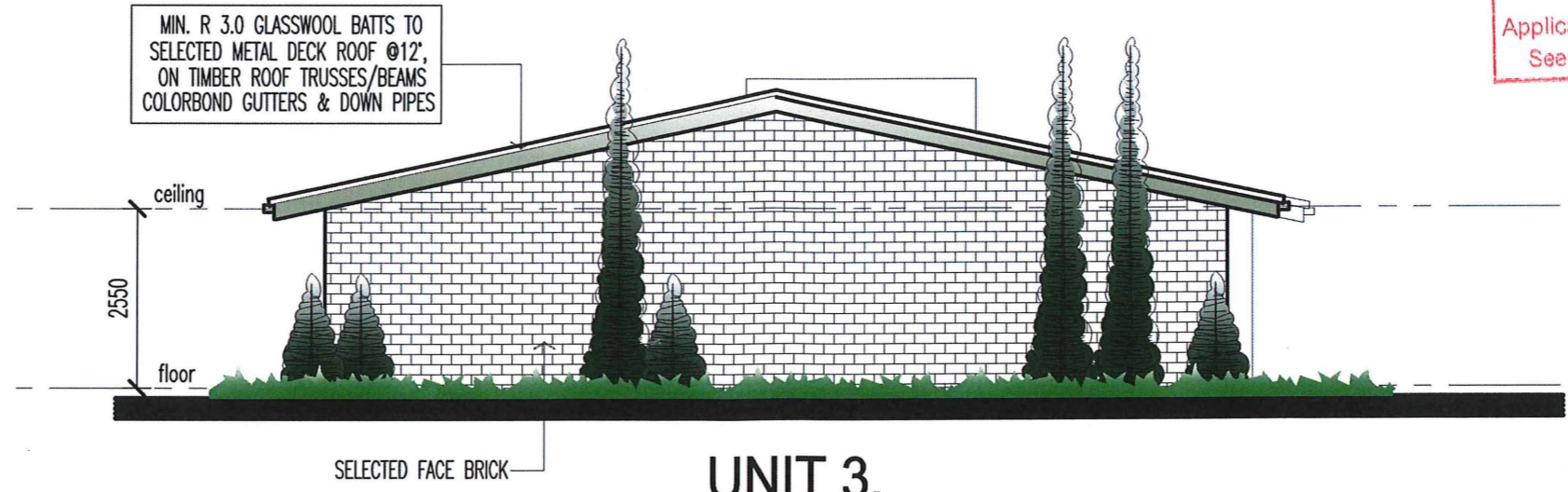


**UNIT 3.
 NORTH ELEVATION**



**UNIT 3.
 WEST ELEVATION**

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**UNIT 3.
 SOUTH ELEVATION**

4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 3. - UNIT 3, ELEVATIONS

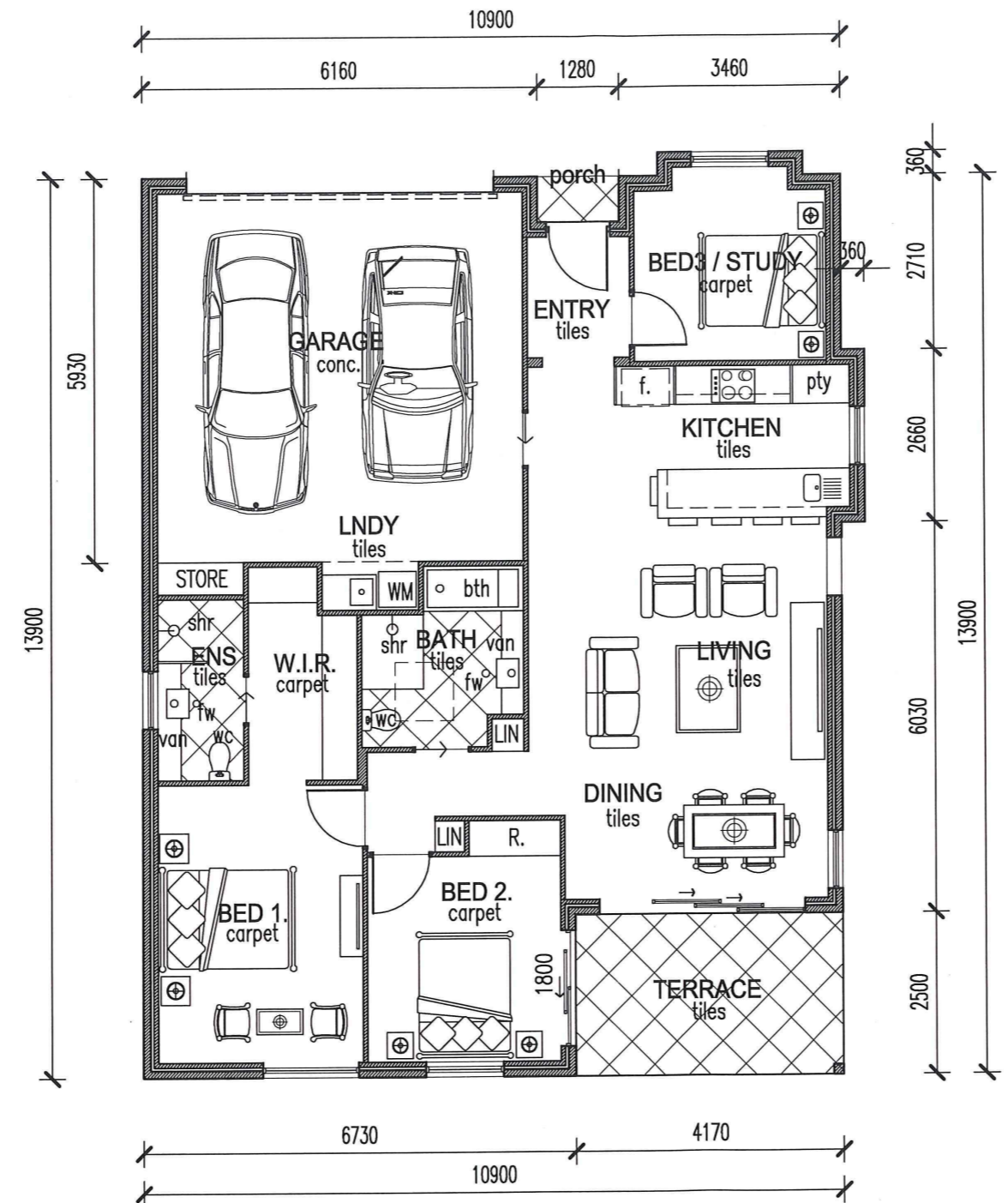


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UNIT 4.
139 SQM

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4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 4. - UNIT 4, PLANS

19 January 2017.

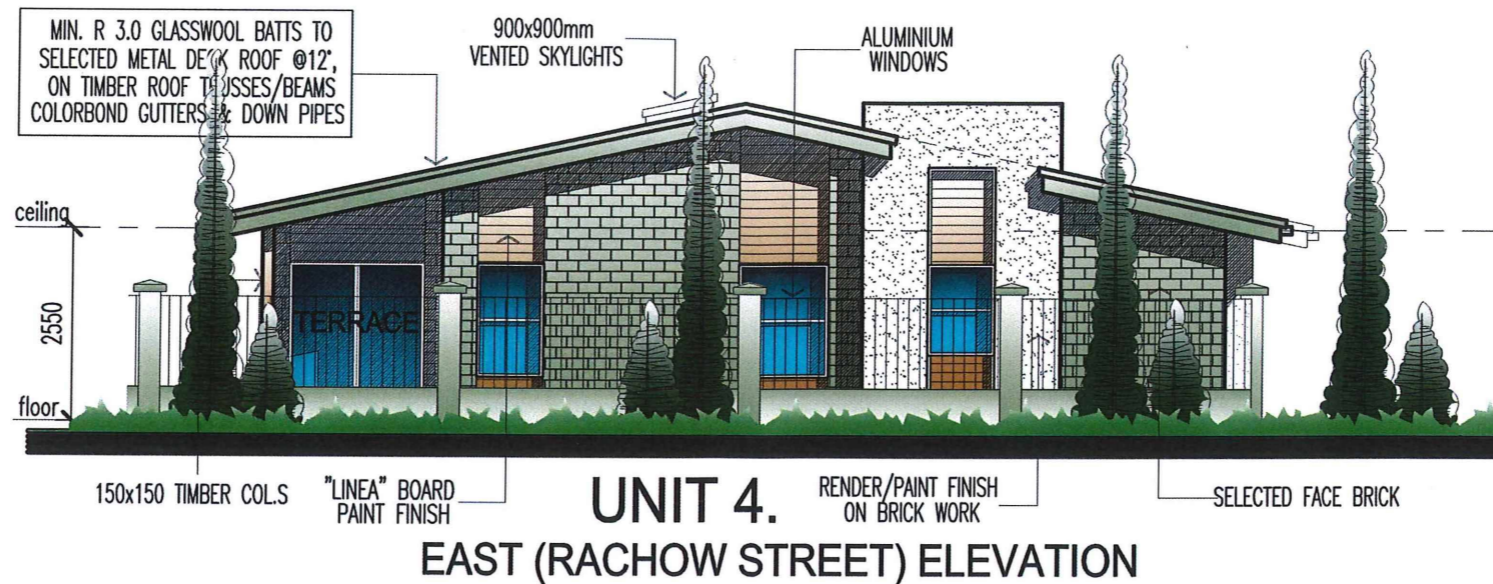
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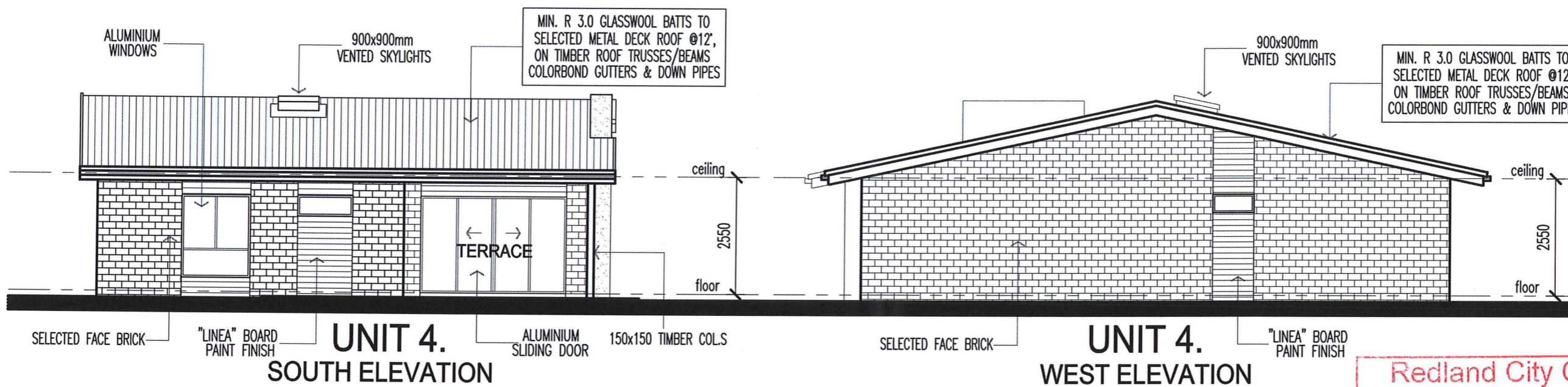
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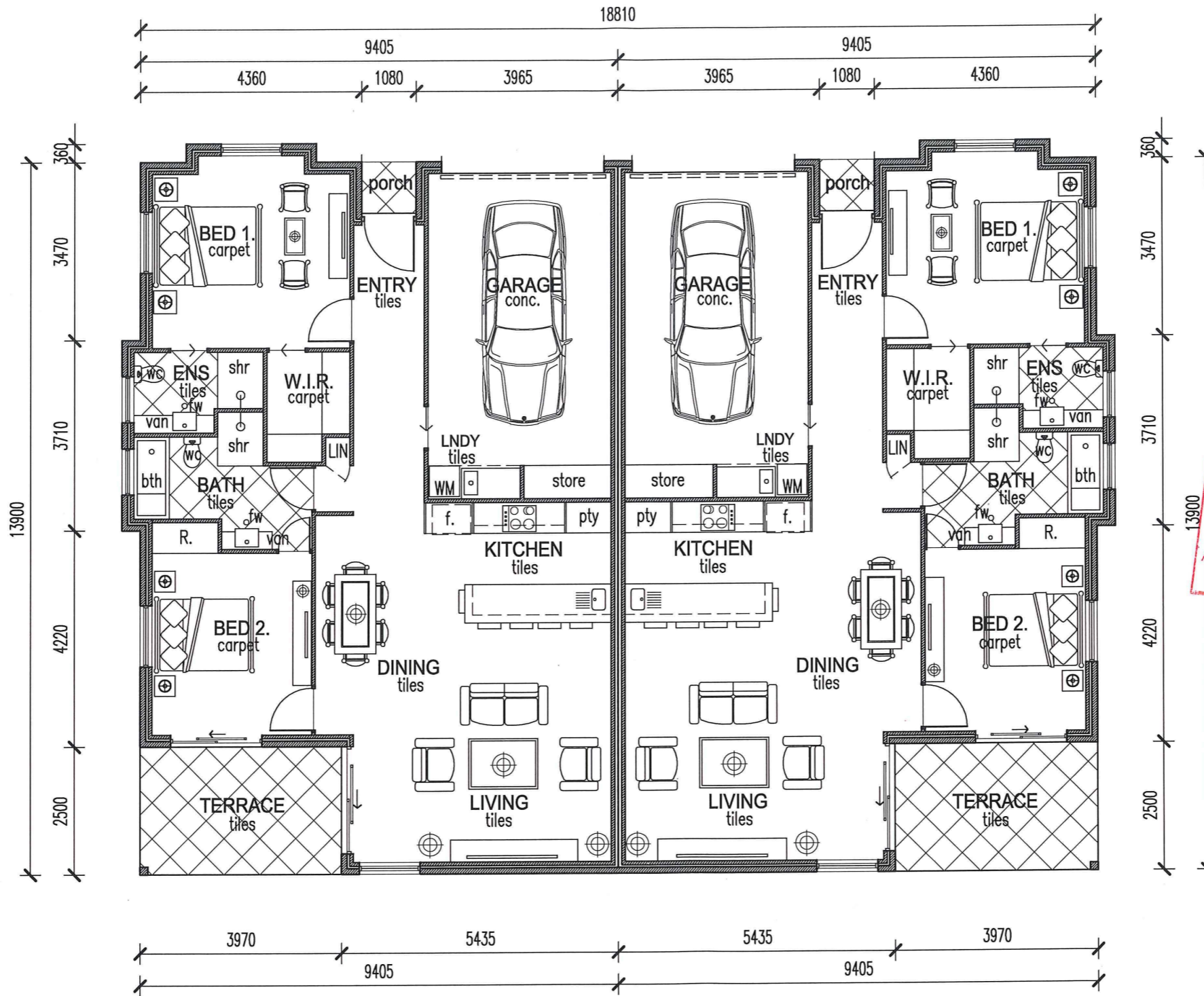


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4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 4. - UNIT 4, ELEVATIONS

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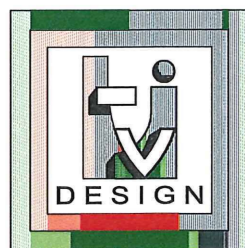


UNIT 6
 120 SQM

UNIT 5
 120 SQM

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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 5, - UNIT 5 & 6, PLANS

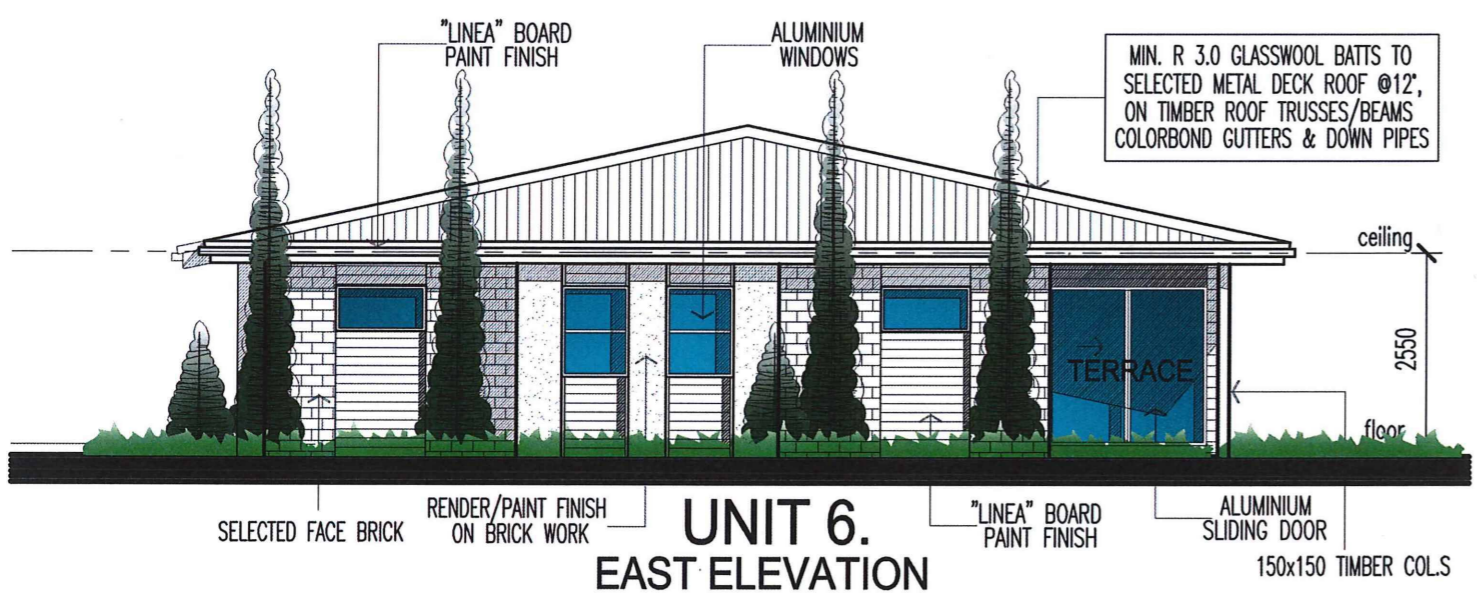
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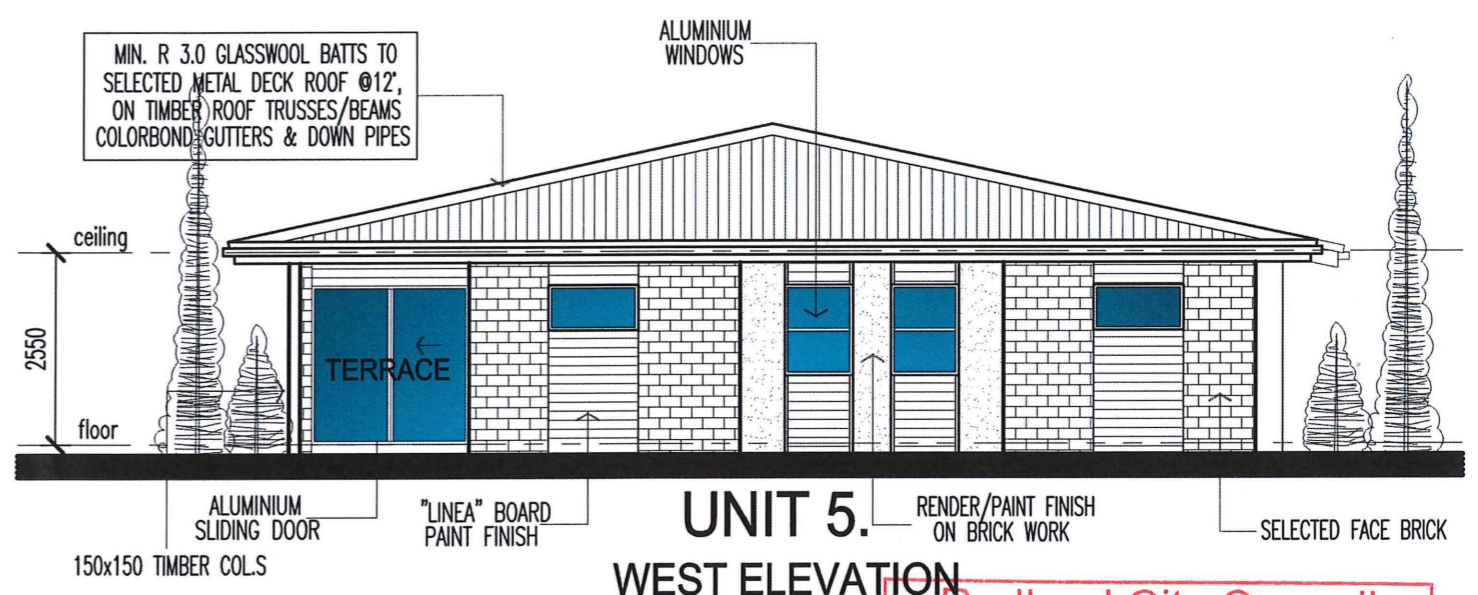
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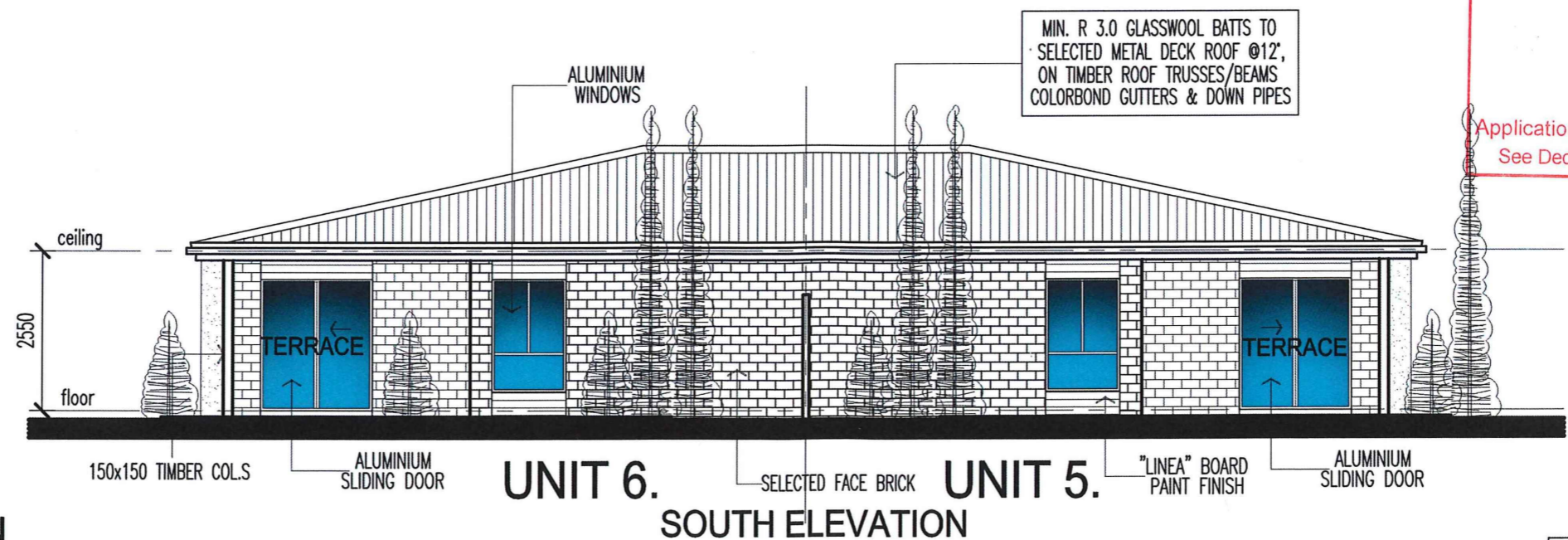
UNIT 5. UNIT 6.
NORTH (STREET) ELEVATION



UNIT 6.
EAST ELEVATION



UNIT 5.
WEST ELEVATION



UNIT 6. UNIT 5.
SOUTH ELEVATION

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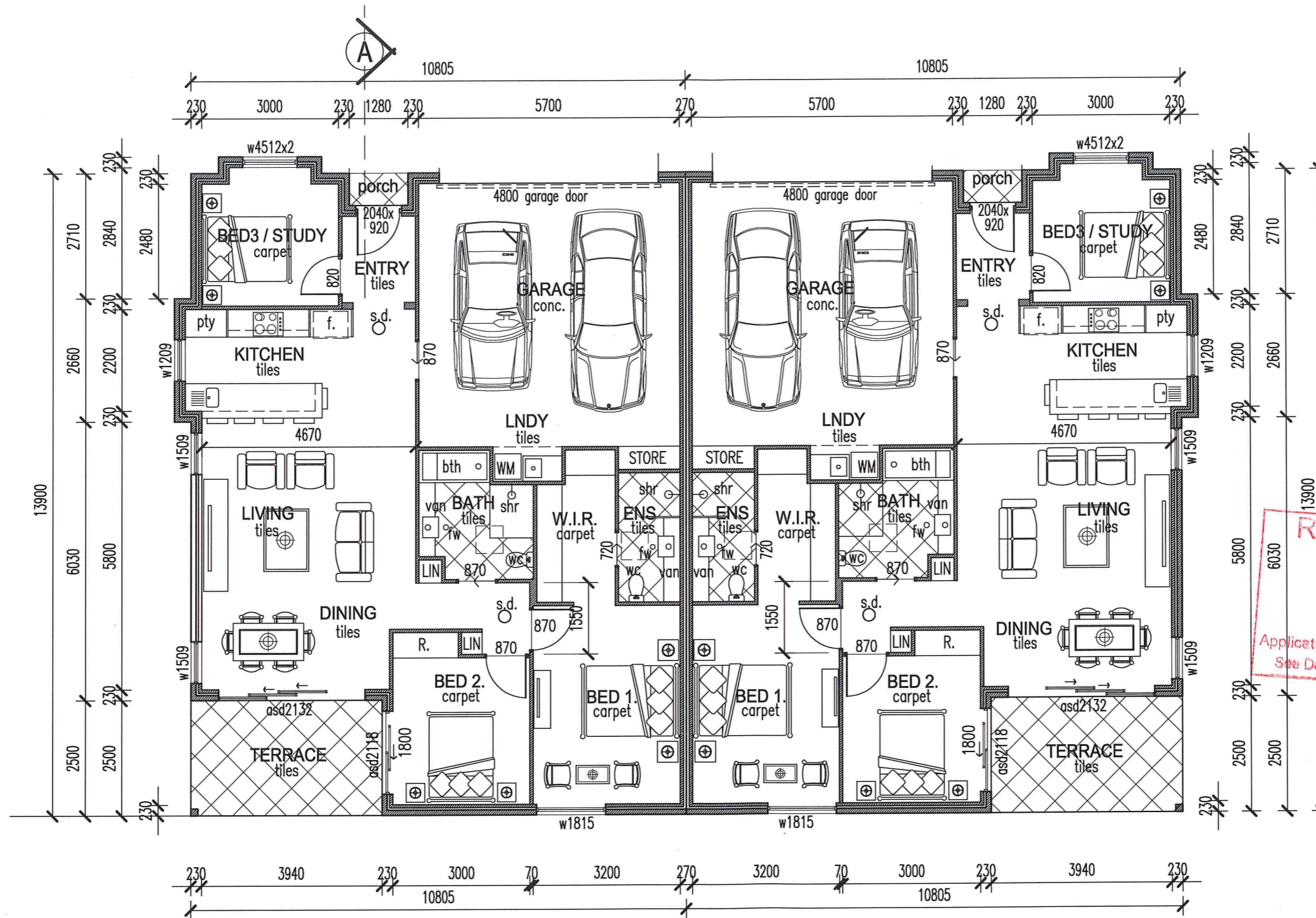


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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 5, - UNIT 5 & 6, ELEVATIONS

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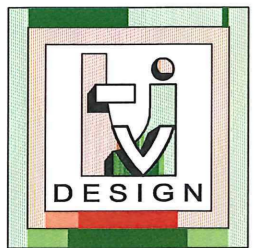


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UNIT 8.
 139 SQM

UNIT 7.
 139 SQM



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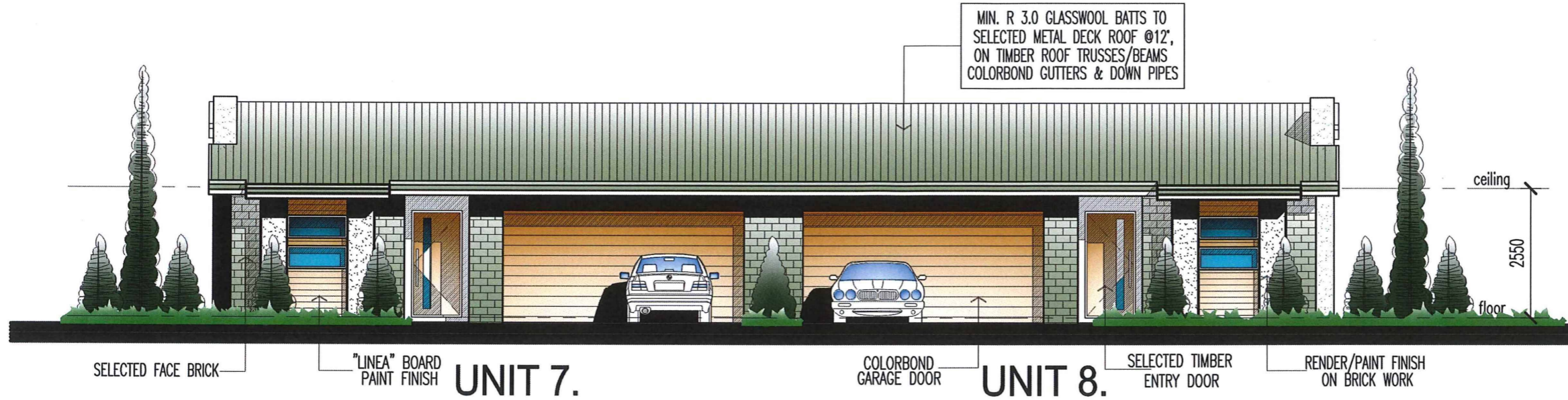
4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 6, - UNIT 7 & 8 PLANS

12 April 2017.
 090117 BA-60/A
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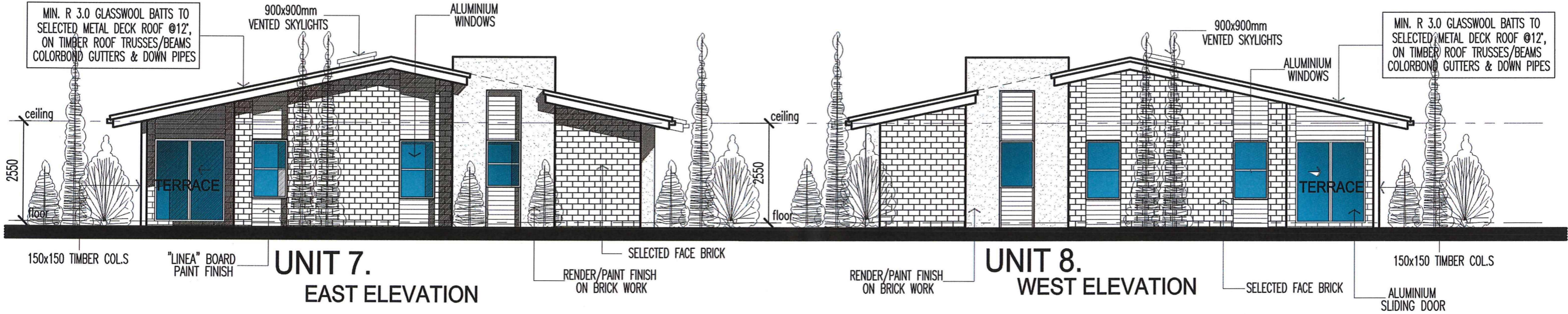
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NORTH (STREET) ELEVATION



UNIT 7. EAST ELEVATION

UNIT 8. WEST ELEVATION



SOUTH ELEVATION

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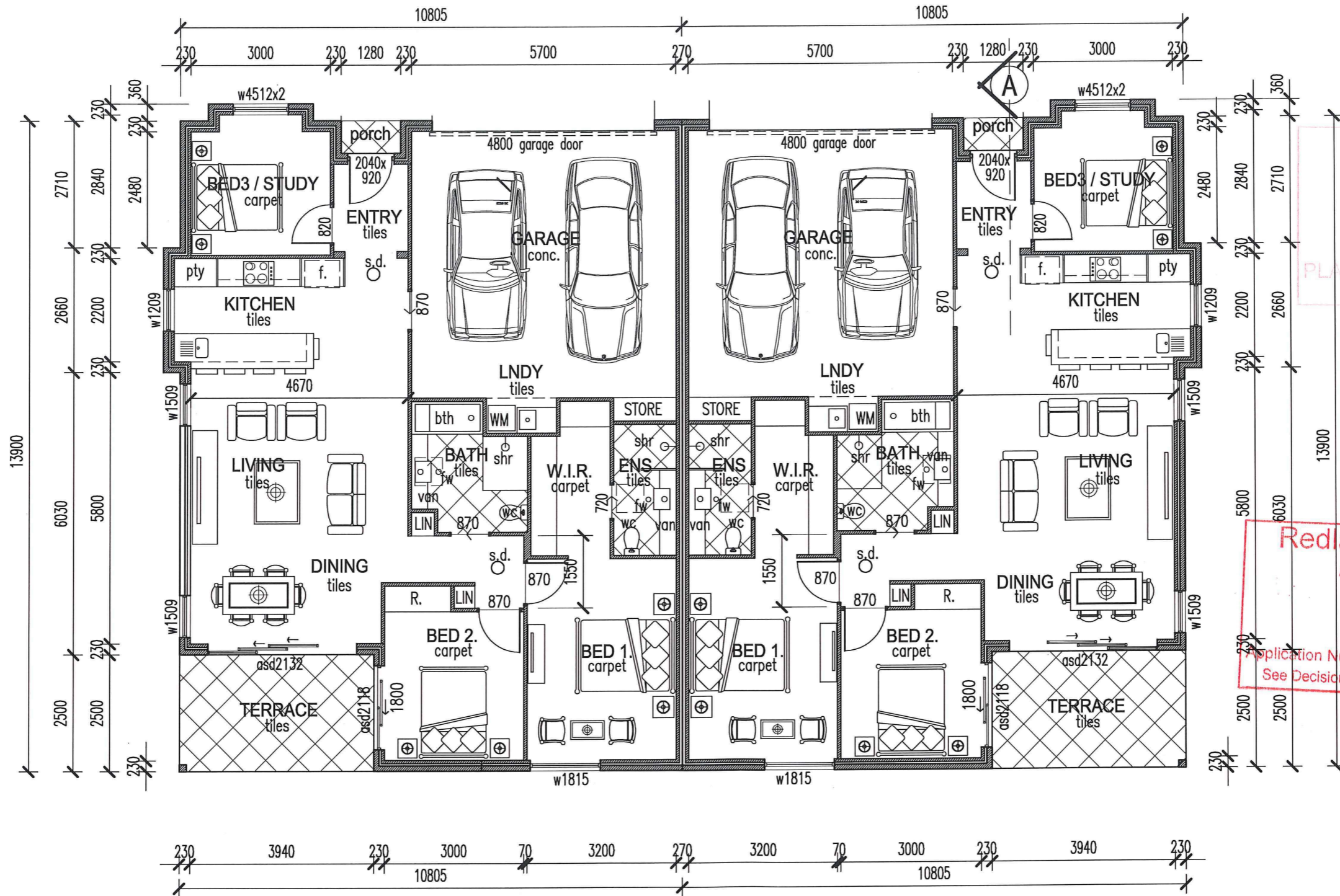
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4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 6, - UNIT 7 & 8 ELEVATIONS

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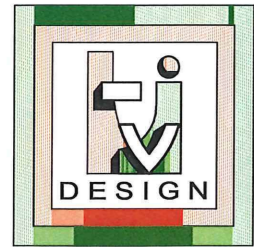


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UNIT 10.
139 SQM

UNIT 9.
139 SQM



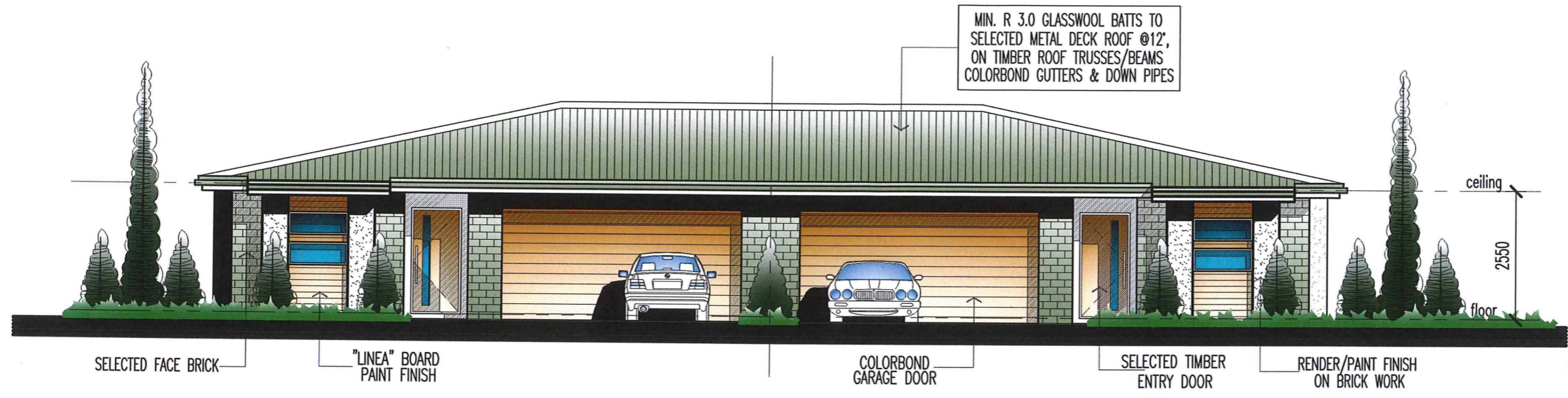
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4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 7, - UNIT 9 & 10 PLANS

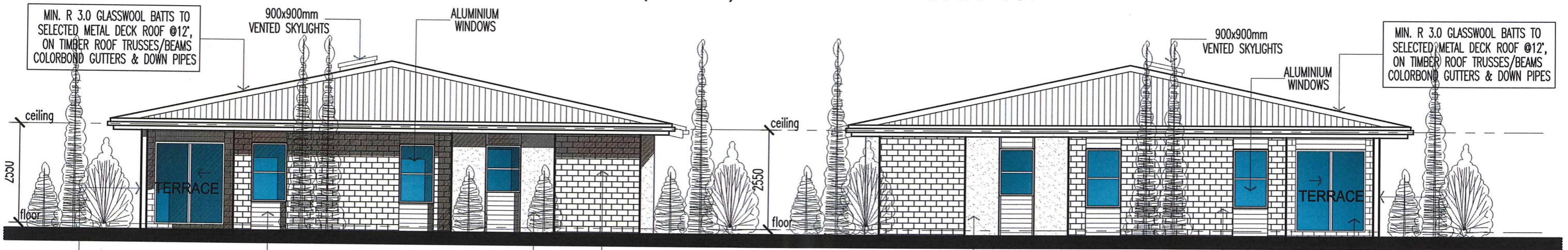
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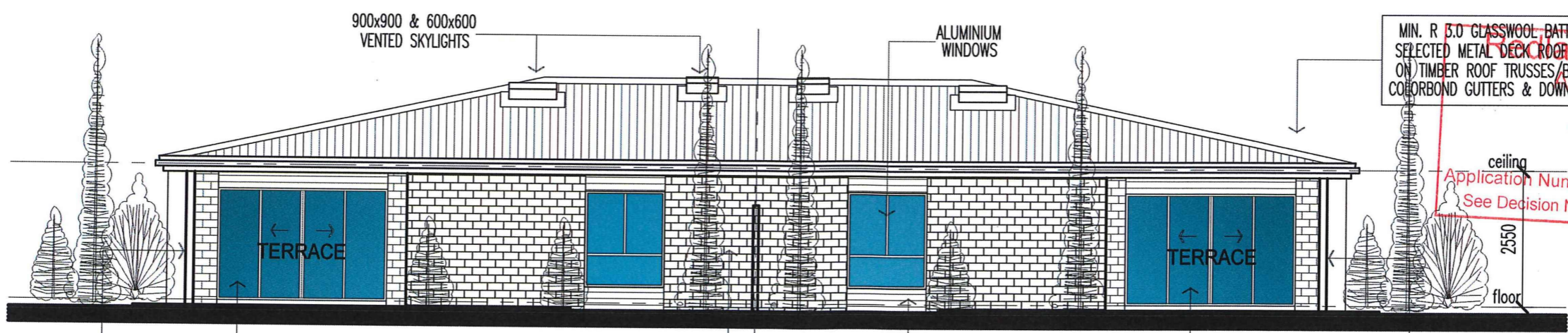
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UNIT 9. NORTH (STREET) ELEVATION UNIT 10.



UNIT 9. EAST ELEVATION UNIT 10. WEST ELEVATION



UNIT 10. SOUTH ELEVATION UNIT 9.

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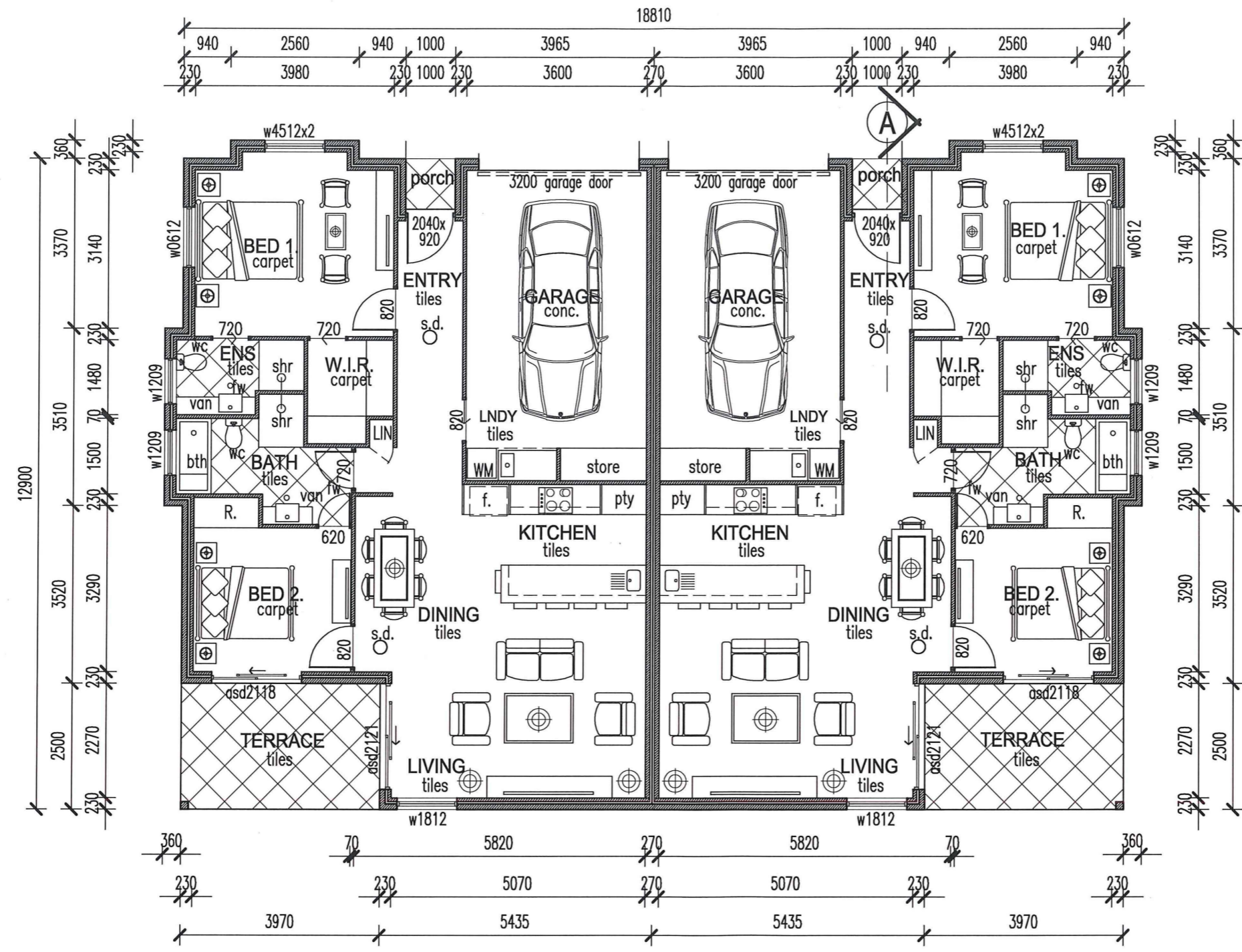


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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 7, - UNIT 9 & 10 ELEVATIONS

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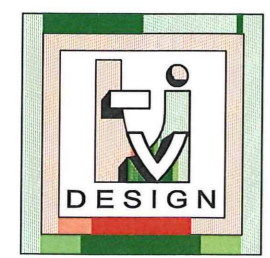


UNIT 12.
 & UNIT 14.
 & UNIT 16.
 111 SQM

UNIT 11.
 & UNIT 13.
 & UNIT 15.
 111 SQM

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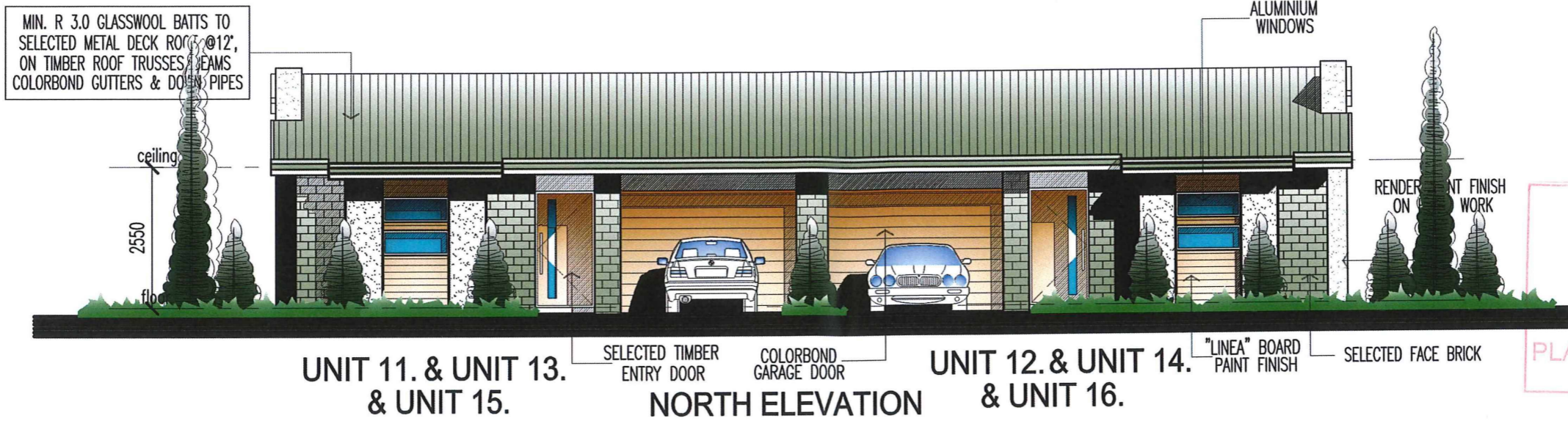
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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 8, - UNITS 11 & 12, 13 & 14, 15 & 16, PLANS

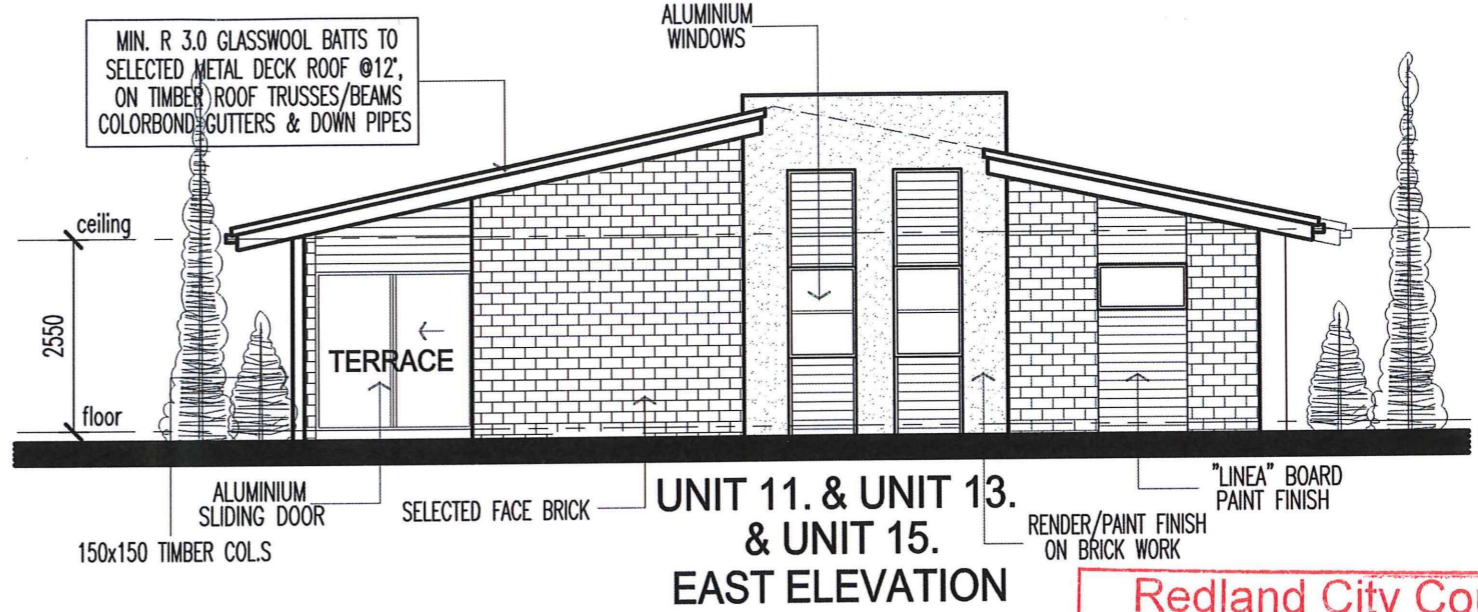
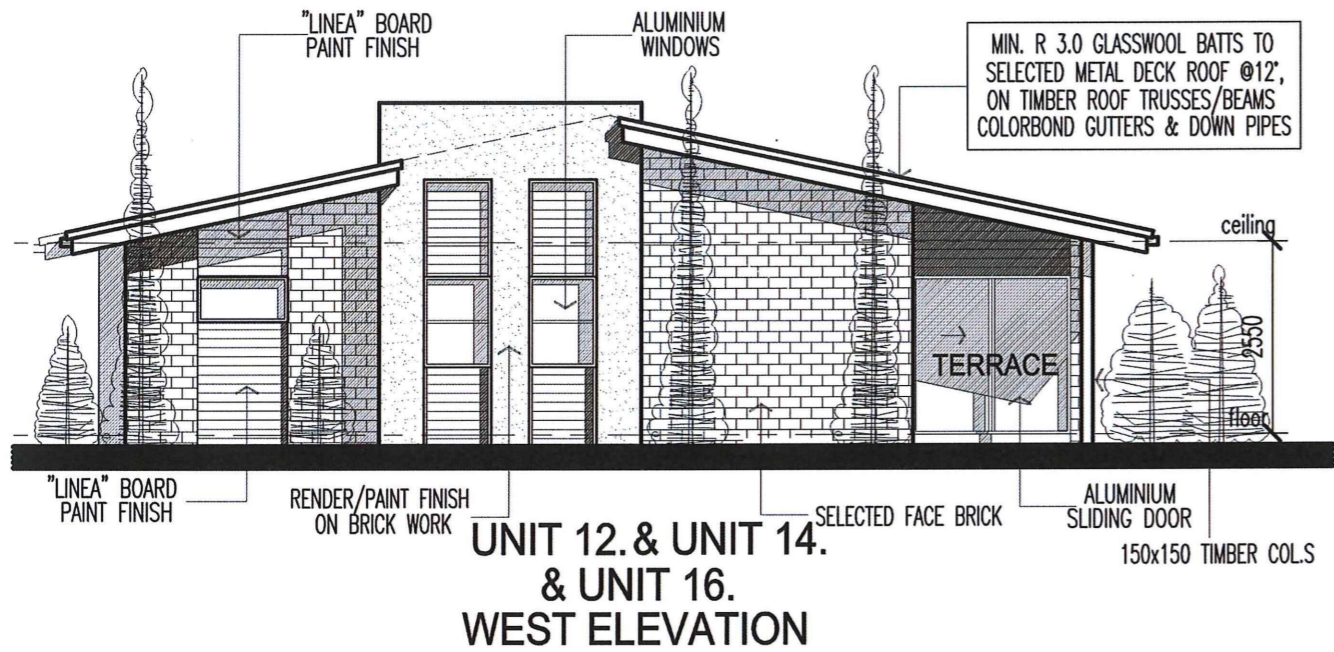
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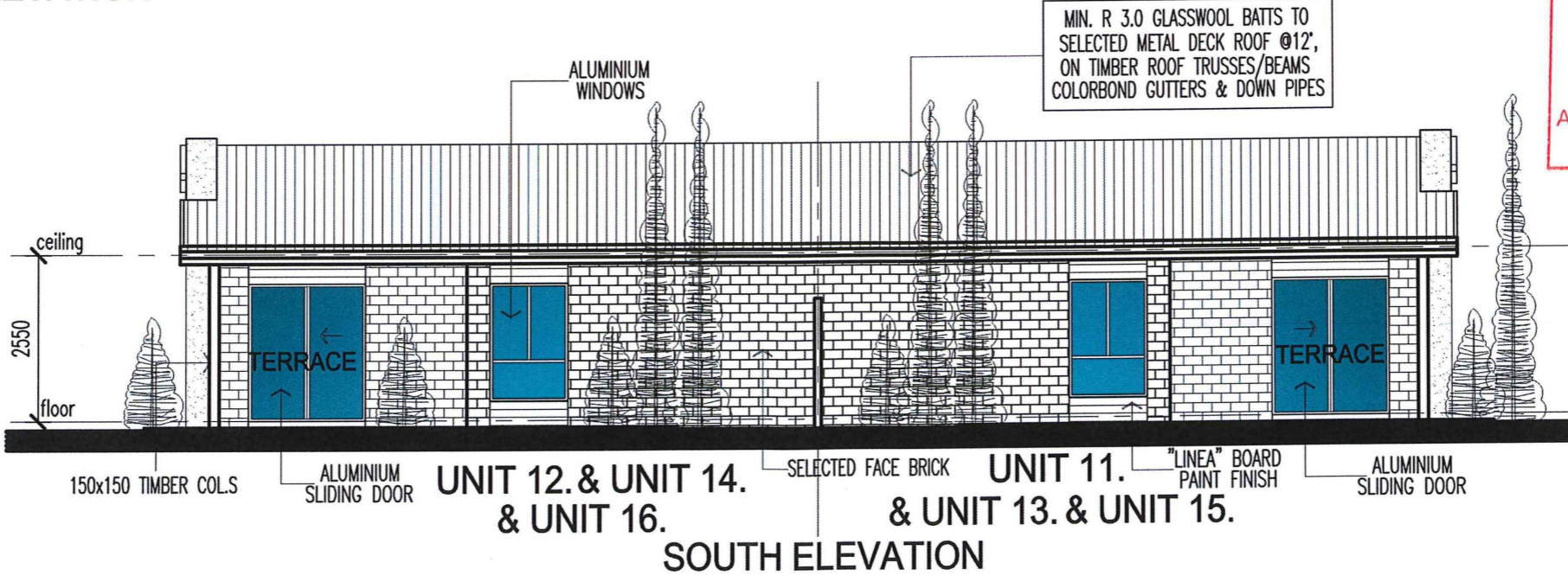
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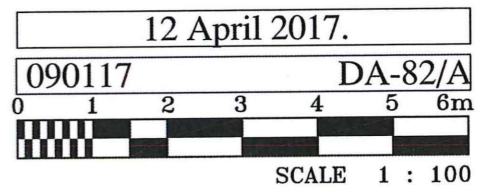


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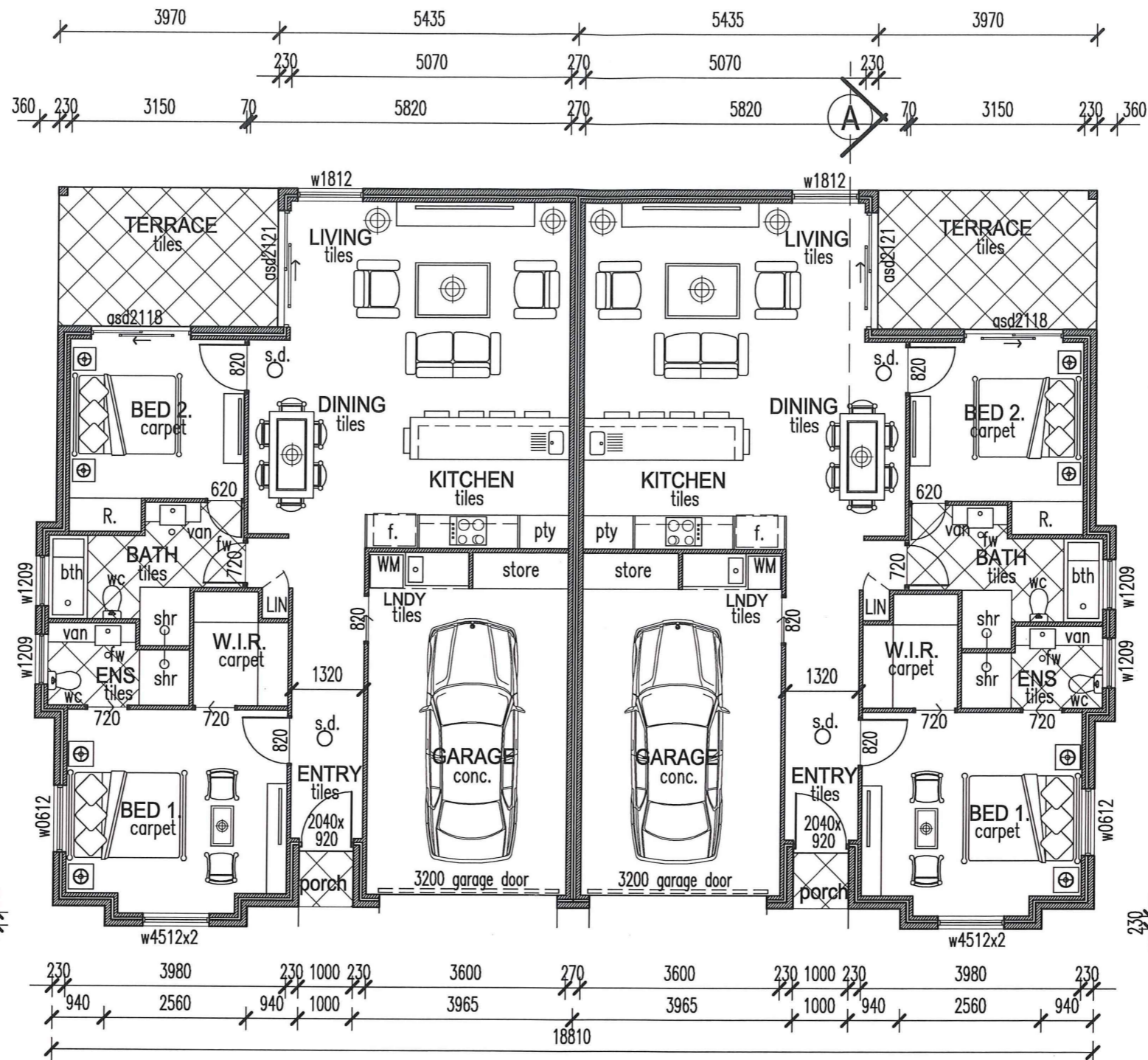


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4-8 RACHOW STREET, THORNLANDS, QLD.
BUILDING TYPE 8, - UNITS 11 & 12, 13 & 14, 15 & 16, ELEVATIONS



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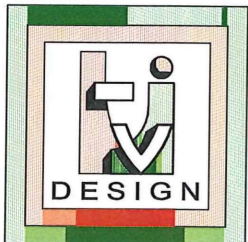
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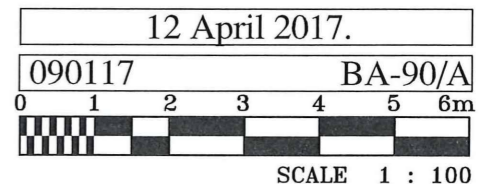
**UNIT 17.
 & UNIT 19.
 111 SQM**

**UNIT 18.
 & UNIT 20.
 111 SQM**

4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 9. - UNITS 17 & 18, 19 & 20, PLANS

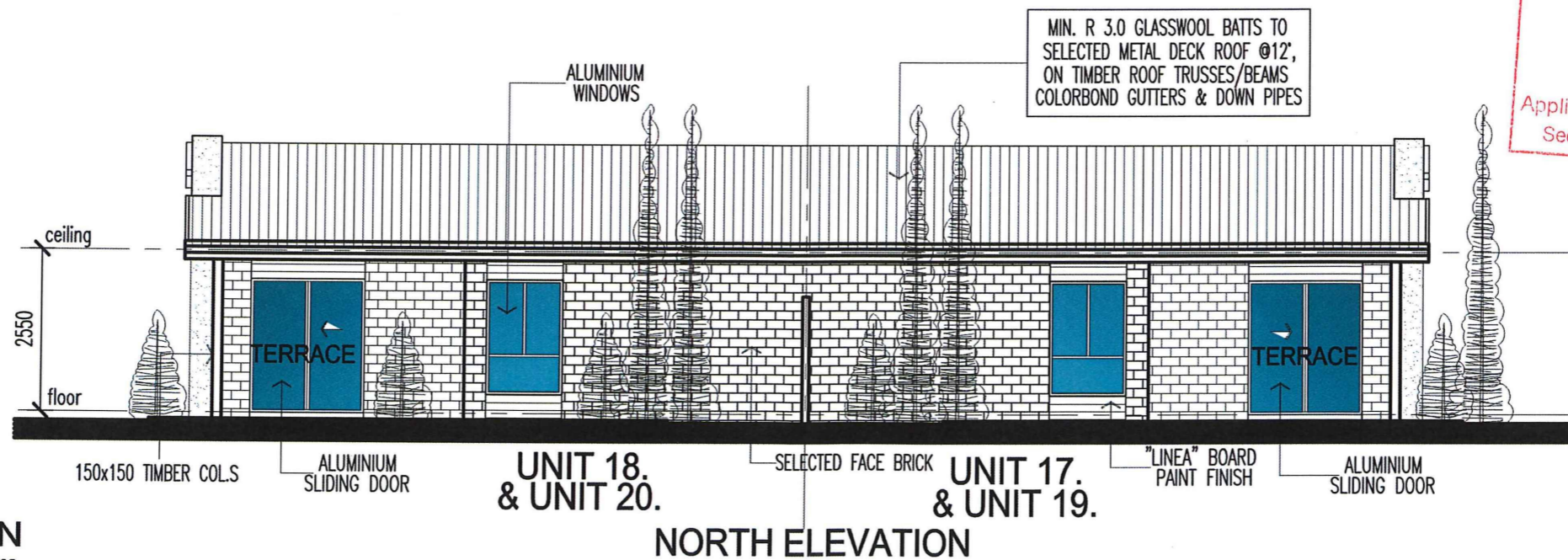
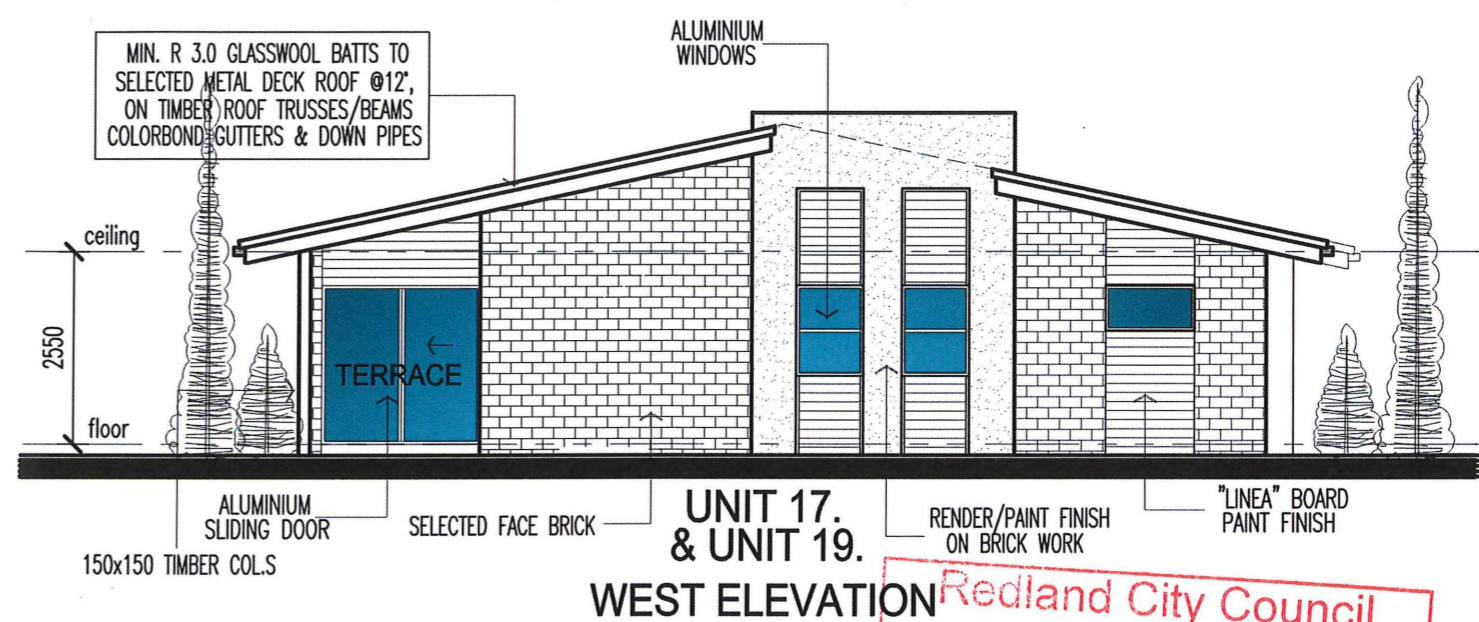
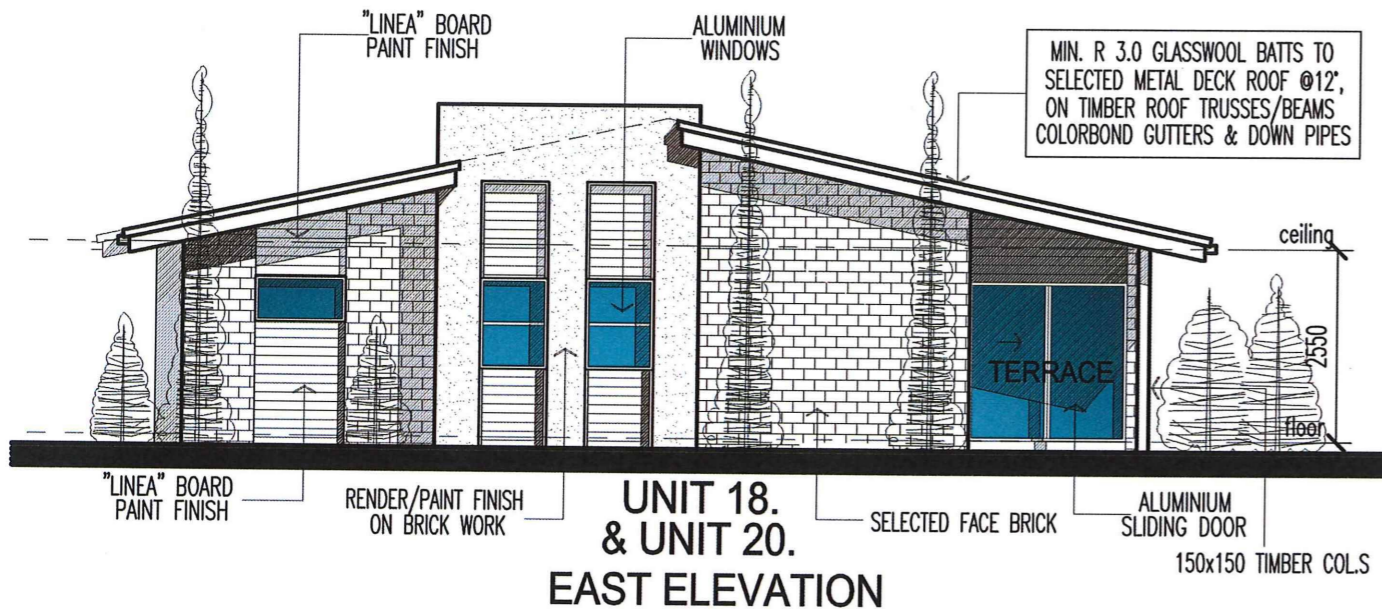
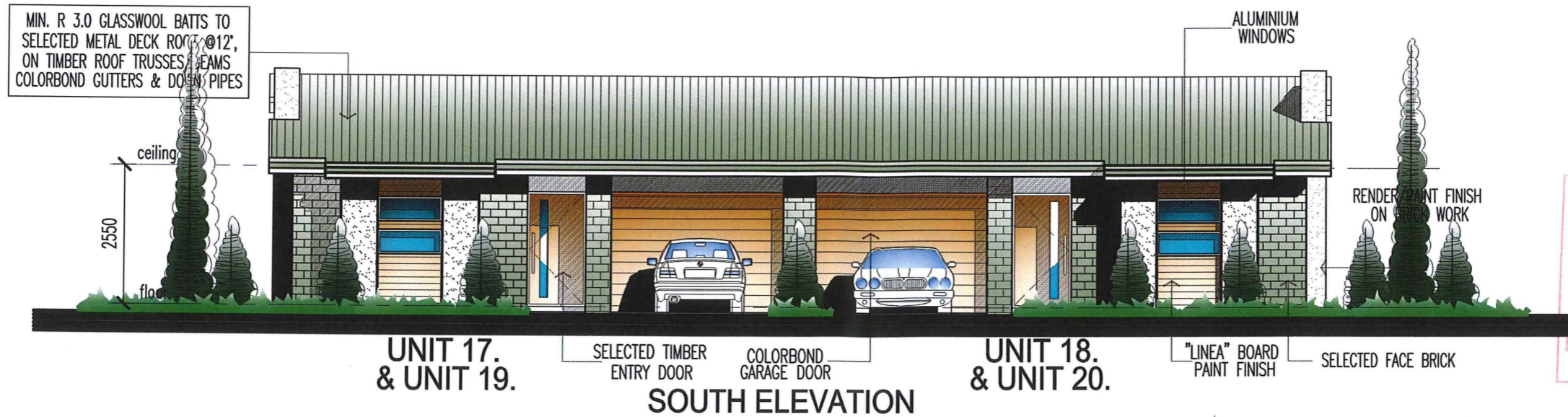


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Redland City Council
Approved Plan
- 2 JUN 2017
Application Number M.U.013921
See Decision Notice for conditions of approval



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AUSTRALIA

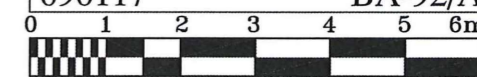
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www.tjvdesign.com.au

4-8 RACHOW STREET, THORNLANDS, QLD.

BUILDING TYPE 9. - UNITS 17 & 18, 19 & 20, ELEVATIONS

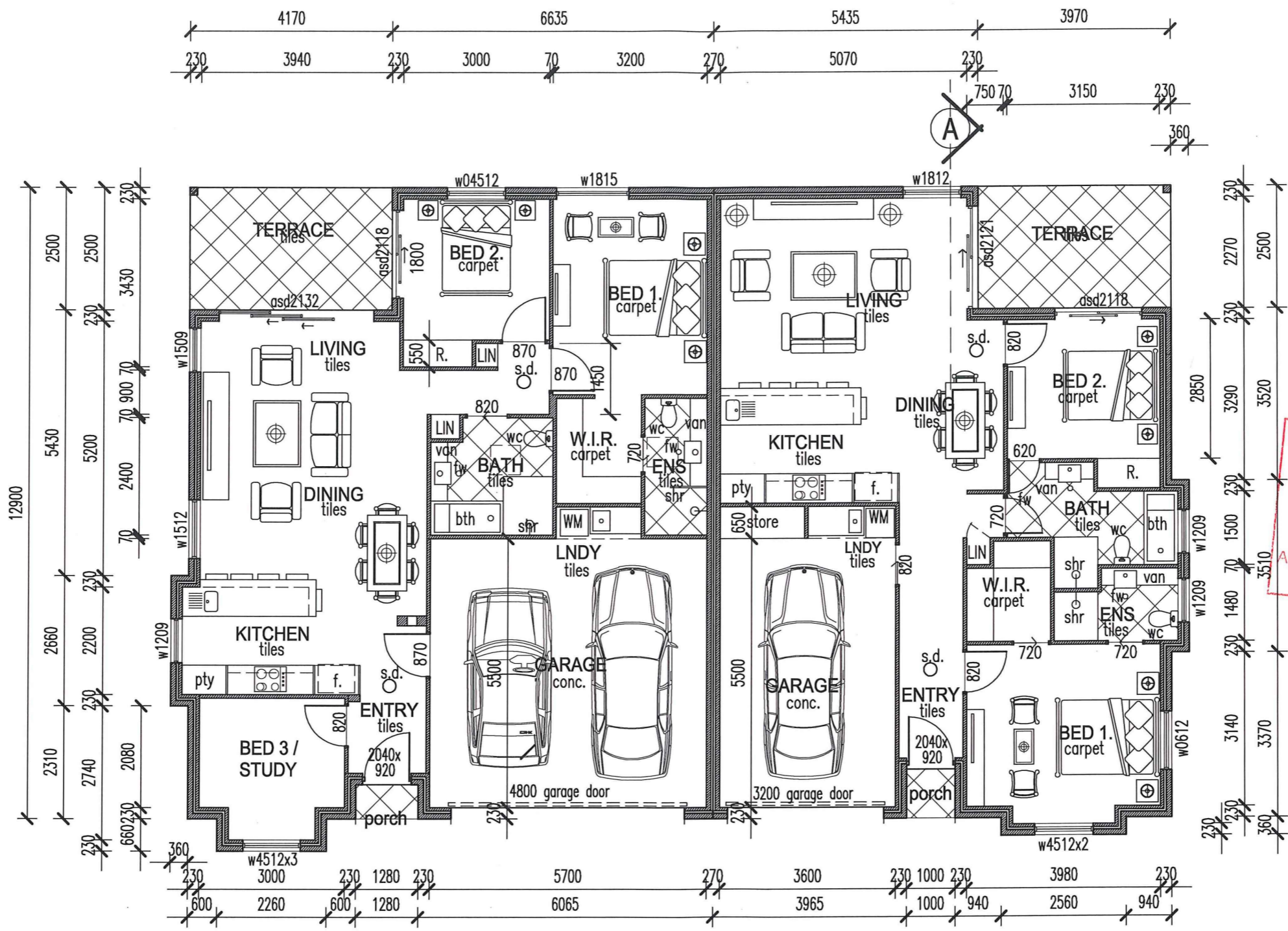
12 April 2017.

090117 BA-92/A



SCALE 1 : 100

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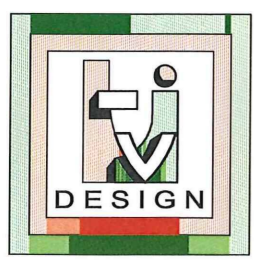


UNIT 21.
 131 SQM

UNIT 22.
 111 SQM

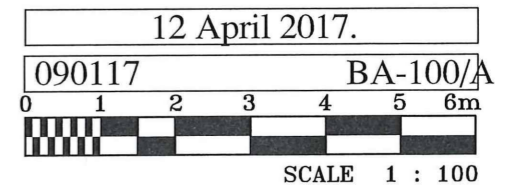
RECEIVED
 20 APR 2017
 PLANNING ASSESSMENT

Redland City Council
 Approved Plan
 - 2 JUN 2017
 Application Number MLA/3921
 See Decision Notice for conditions of approval



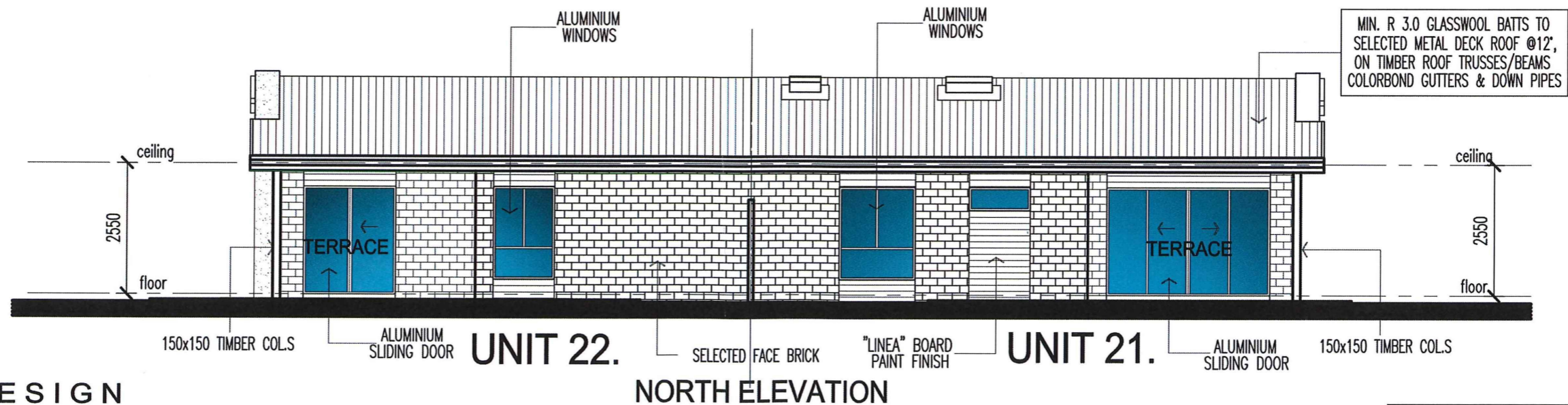
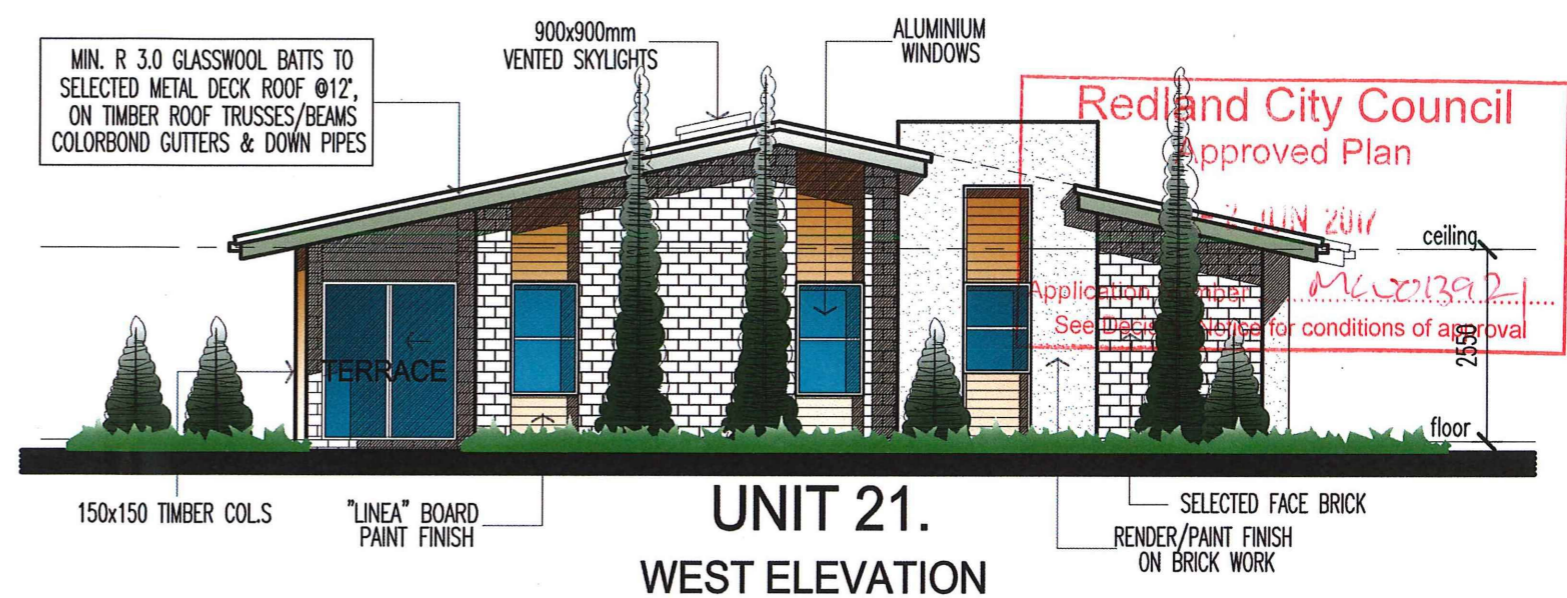
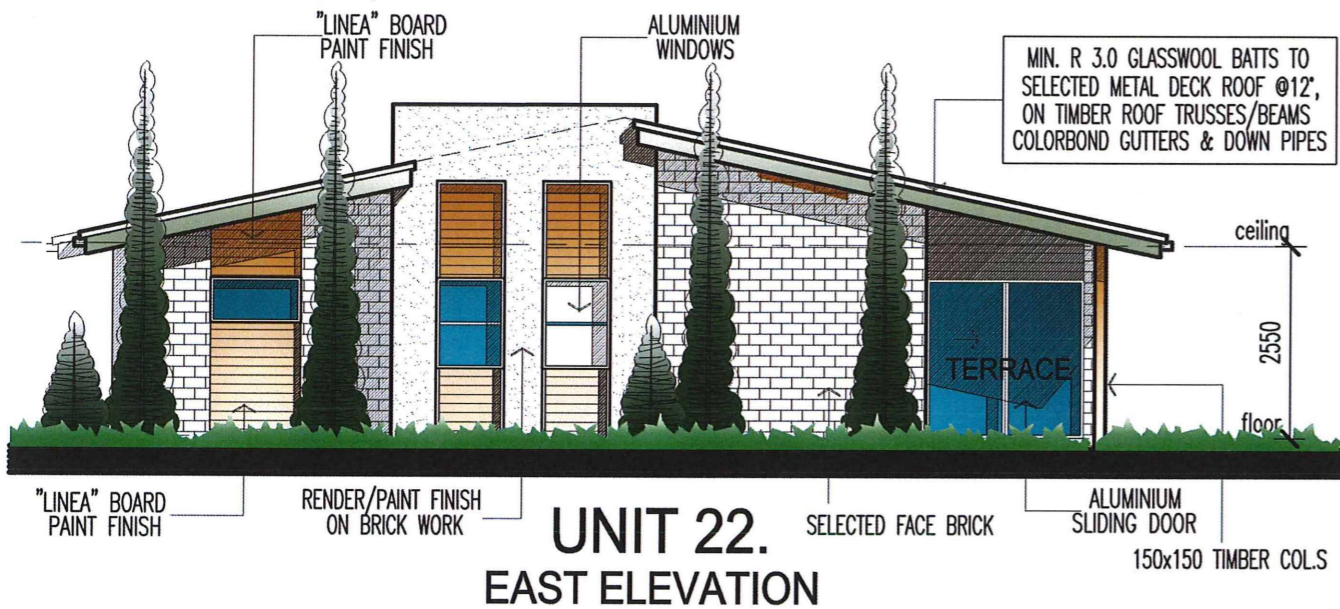
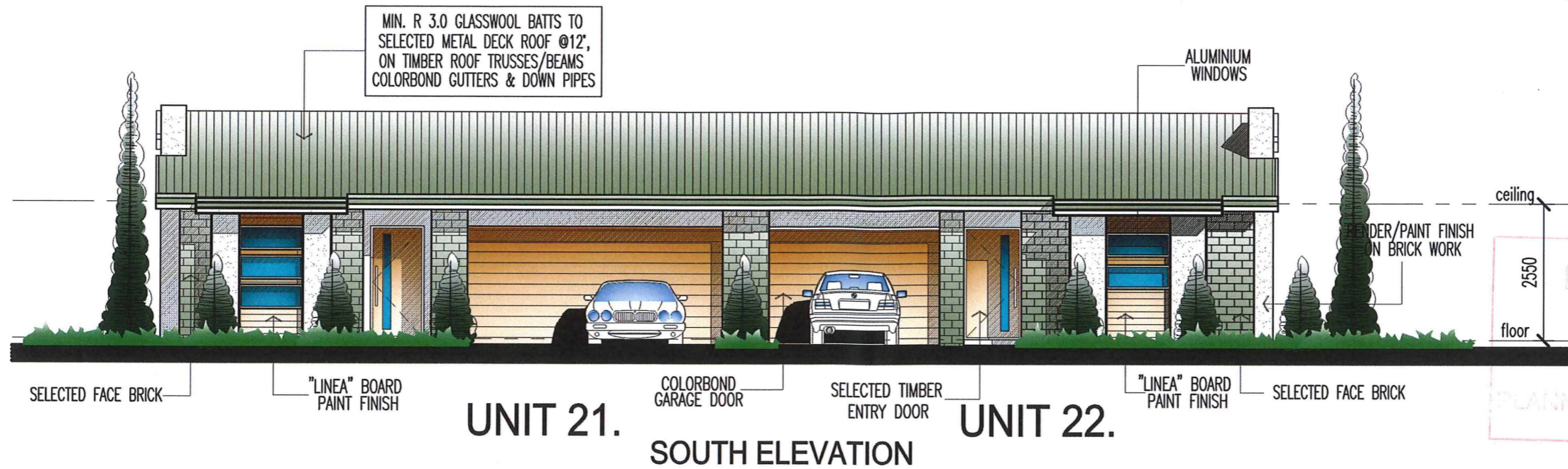
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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 10. - UNIT 21 & 22, PLANS



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4-8 RACHOW STREET, THORNLANDS, QLD.
 BUILDING TYPE 10. - UNIT 21 & 22, ELEVATIONS

12 April 2017.

090117 DA-102/A

0 1 2 3 4 5 6m

SCALE 1 : 100



LOCALITY PLAN
NOT TO SCALE
UBD MAP 565 REF R20

ALL ENVIRONMENTAL PROTECTION MEASURES SHOULD BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

CONTRACTOR TO UNDERTAKE A DIAL BEFORE YOU DIG & ENSURE PROPOSED SEWER IS CLEAR OF ALL SERVICES WITHIN THE FOOTPATH PRIOR TO COMMENCEMENT OF WORKS.

ENERGEX CABLE WARNING
2 DAYS NOTICE IS REQUIRED PRIOR TO WORK COMMENCING NEAR THESE MAINS

TELSTRA CABLE WARNING
CONTACT TELSTRA TWO WORKING DAYS PRIOR TO COMMENCEMENT OF WORK TO ARRANGE SITE INSPECTION.

WARNING - HIGH PRESSURE GAS MAINS
2 DAYS NOTICE IS REQUIRED PRIOR TO WORK COMMENCING NEAR THESE MAINS ORIGIN ENERGY ASSET MANAGEMENT (07) 3267 9514

ALL WATER AND SEWER CONSTRUCTION WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 2011.

CONTACT THE DIVISION OF WORKPLACE HEALTH AND SAFETY FOR INFORMATION
PHONE : 1300 362 128

GENERAL NOTES

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEO REGISTRATION. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE SEQ SERVICE PROVIDER SEWERAGE SYSTEM.
- ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY THE CONTRACTOR UNDER QUU SUPERVISION AT THE DEVELOPER'S COST.
- ALL PIPES AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS AND MATERIALS" LIST.
- EACH ALLOTMENT SHALL BE SERVED BY A DN110 PE PROPERTY CONNECTION. FOR ALLOTMENTS OTHER THAN SINGLE RESIDENTIAL, A DN160 PE PROPERTY CONNECTION SHALL BE PROVIDED.
- PROPERTY CONNECTIONS SHALL BE LOCATED WITHIN THE PROPERTY AS SHOWN IN THE DRAWINGS.
- PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 300mm AND A MAXIMUM OF 750mm. UNITYWATER REQUIRES MINIMUM EXTENSION OF 500mm INTO PROPERTY.
- WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE SEQ SERVICE PROVIDER UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
- WHERE SEWERS HAVE A GRADE OF 1 IN 20 OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SEQ SEWER CODE.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
- SEWERS SHALL BE DISUSED / ABANDONED IN ACCORDANCE WITH PROCEDURES SET OUT IN THE SEQ SEWER CODE.
- BENCH MARK AND LEVELS TO AHD.
- EXISTING ALLOTMENTS REQUIRING A PROPERTY CONNECTION FROM EXISTING SEWERS SHALL BE PROVIDED BY THE SEQ SERVICE PROVIDER AT THE DEVELOPER'S COST.
- SEWER MANHOLES ARE TO BE CONSTRUCTED WITH CALCAREOUS AGGREGATE AS OUTLINED IN THE SEQ CODE. AND ALTERNATIVE SOLUTION WITH THE USE OF PE LINING IS ACCEPTABLE.

VEGETATION PROTECTION

- TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
- WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST

SOILS

- CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.
- TOPSOIL AND SUBSOIL MATERIALS SHALL BE STOCKPILED SEPARATELY.
- IF ACID SULPHATE SOILS EXIST IN THE WORKS AREA THE OUTPUTS FROM THE RISK ASSESSMENT BASED ON THE QUEENSLAND ACID SULPHATE SOIL TECHNICAL MANUAL SHALL BE ADHERED TO.

CREEK CROSSINGS

- SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
- APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
- NO SOIL SHALL BE STOCKPILED WITHIN 5m OF THE CREEK.

REHABILITATION

- PRE-DISTURBANCE SOIL PROFILES AND COMPACTION LEVELS ARE TO BE REINSTATED.
- PRE-DISTURBANCE VEGETATION PATTERNS SHOULD BE RESTORED.
- ALL DISTURBANCE AREAS ARE TO BE LEFT IN A STABLE CONDITION.
- ALL PLANTINGS WILL NEED TO BE MAINTAINED THROUGHOUT THE ESTABLISHMENT PHASE.

SAFETY

- THE DESIGN AND CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION.

PE SEWER HOUSE CONNECTIONS

- QUU REQUIRES PE SEWER HOUSE CONNECTIONS TO BE CONSTRUCTED WITH THE REQUIRED ACCESS CAP AND RRJ PE/PVC CONNECTOR AND SCREW CAP.

SERVICE PROVIDER LIVE WORKS

- CONTRACTORS ARE TO CONTACT NAXOS ENGINEERS ENGINEERS AND UTILITY PROVIDER 3 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR PRE-START MEETING WHERE CONTRACTOR IS RESPONSIBLE TO ORGANIZE TIMING OF SERVICE PROVIDER TO UNDERTAKE THE LIVE WORKS. (EXCAVATION, SAFE-SHORING AND ASSOCIATED WORK TO BE UNDERTAKEN BY CONTRACTOR).
- EXCAVATION WORKS CARRIED OUT BY CONTRACTORS AT DEPTH OF 1.5m OR GREATER MUST PROVIDE A 'SAFE WORK PLAN' AS PER WORKPLACE HEALTH AND SAFETY LEGISLATION TO UTILITY PROVIDER PRIOR TO AGENT COMMENCING ANY WORK.
- IT IS THE DEVELOPER'S RESPONSIBILITY TO ENSURE ALL LIVE SEWER WORKS ARE COMPLETE BEFORE ALLOWING PRIVATE DRAINAGE TO BE CONNECTED.

CONSTRUCTION NOTES

- ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY CONTRACTOR UNDER QUU SUPERVISION AT THE DEVELOPER'S COST.
- ALL SEWERS SHALL BE PE 100 (AS/NZS 4130) SDR 21, UNLESS NOTED
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS
- BENCH MARK AND LEVELS TO AHD AS PROVIDED BY SURVEYOR
- THE INVERT LEVELS SHOWN ON THE LONGITUDINAL SECTIONS ARE THE LEVELS CALCULATED AT THE CENTRES OF MAINTENANCE HOLES.
- NOTWITHSTANDING THAT THE PRESENT AND / OR PROPOSED POSITIONS OF PUBLIC UTILITIES, FITTINGS, PIPES, POLES, MANHOLES, ETC. MAY BE INDICATED ON THE DRAWINGS, NO RESPONSIBILITY WILL BE ACCEPTED BY THE PRINCIPAL FOR THE ACCURACY OF THE PRESENTATION OR THE OMISSION THEREOF.
- CONTACT 1100 (DIAL BEFORE YOU DIG), ENERGEX, AGILITY (GAS), SANTOS (OIL), ETC. FOR THE EXACT LOCATION OF UNDERGROUND CABLES.
- NAXOS ENGINEERS ENGINEERS SHALL BE INFORMED OF ALL AMENDMENTS, VARIATIONS OR POSSIBLE CHANGES PRIOR TO COMPLETING WITH SUFFICIENT TIME TO ENSURE AMENDMENTS ARE APPROVED BY SERVICE PROVIDER.

SURVEY

- THE EXISTING SURFACE LEVELS ARE BASED ON THE SURVEY DRAWING 5357 PREPARED BY EAST COAST SURVEYS.
- THE CONTRACTOR SHALL PERFORM A CHECK ON ALL THE EXISTING SURFACE AND INVERT LEVELS FOR ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK. REPORT ANY DISCREPANCY TO THE ENGINEER.



STANDARD REFERENCE DOCUMENTS

THIS DRAWING IS DESIGNED GENERALLY IN ACCORDANCE WITH THE FOLLOWING REFERENCE DOCUMENTS	
1.	SEQ WATER SUPPLY AND SEWERAGE DESIGN & CONSTRUCTION CODE (1 JULY 2013)
2.	WSAA SEWERAGE CODE OF AUSTRALIA WSA 02 - 2002
THIS DRAWING IS DESIGNED GENERALLY IN ACCORDANCE WITH THE FOLLOWING SEQ CODE SEWERAGE DRAWINGS	
1.	SEQ-SEW-1103-2 NUSEWER PIPELAYING TYPICAL ARRANGEMENTS
2.	SEQ-SEW-1106-2 TYPICAL PROPERTY CONNECTION TYPE A1, A2 STD. AND EXTENDED
3.	SEQ-SEW-1106-4 TYPICAL PROPERTY CONNECTION TYPE B1 TO B4 SLOPED CONNECTIONS
4.	SEQ-SEW-1106-5 TYPICAL PROPERTY CONNECTION TYPE C1 TO C4 VERTICAL RISER
5.	SEQ-SEW-1201-1 TYPICAL STANDARD EMBEDMENT FLEXIBLE AND RIGID PIPES

NEIGHBOURS SEWER RECONNECTION NOTE

WHERE PERMISSION IS NOT GRANTED IN WRITING BY THE PROPERTY OWNER PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LOCATE THE EXISTING HOUSE DRAIN (SEWER) AND MAKE THE CONNECTION WITHIN THE DEVELOPMENT SITE. NO WORKS SHALL BE UNDERTAKEN IN LOTS WITHOUT PRIOR PERMISSION

SEWER TO BE ABANDONED				JOB No.		MH. TYPE & No.			
LOCATION	SEGMENT	DIA.	TYPE	LENGTH	YEAR LAID	G	F	X	OTHER
-	-	-	-	-	-	-	-	-	-

REDLAND CITY COUNCIL
Approved Plan

29/03/2018

ApplicationNo **OPW002219**

See Compliance Certificate for conditions of approval

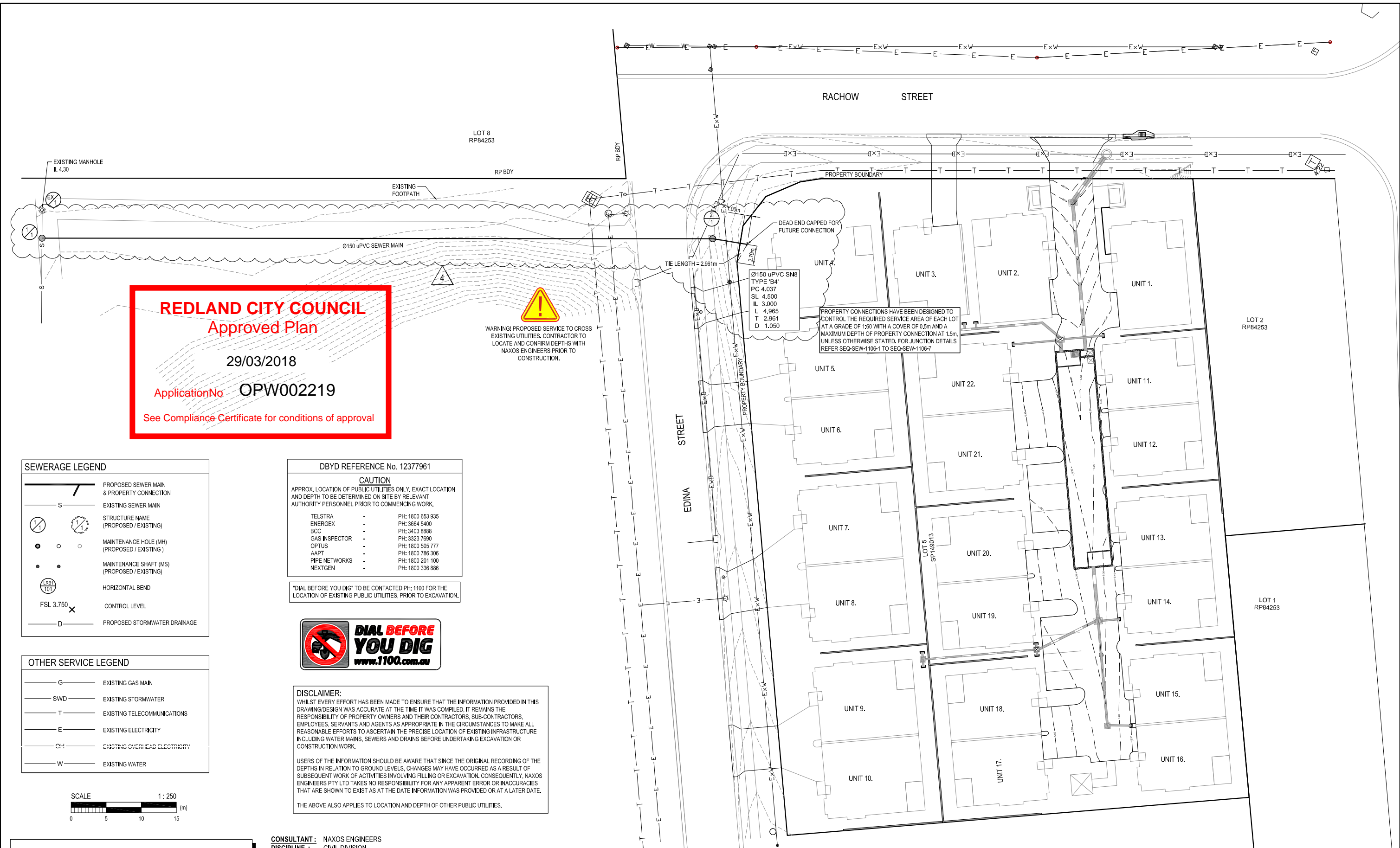
CONSTRUCTION ISSUE

CONSULTANT : NAXOS ENGINEERS
DISCIPLINE : CIVIL DIVISION
CONTACT : DEAN EVANS
TELEPHONE : 1300 598 544
EMAIL : Dean@naxosengineers.com.au

AMENDMENTS				Associated Consultant:		Surveyor:		RP Description:		North:		Client:		Scale:	
No.	DATE	DESCRIPTION	DRAWN	No.	DATE	DESCRIPTION	DRAWN	T.J.V. DESIGN	EAST COAST SURVEYS	LOT 5 ON SP149013	North	PALACIO PROPERTY GROUP	AS SHOWN		
1	20.12.2017	ISSUE FOR CONSTRUCTION	DE						Plan Ref.: 5357 Level Datum AHD PM 165646 RL 8.93	Size of Land: 0.5978 HA	Orig. Dwg. Size A1	PROPOSED UNIT DEVELOPMENT AT 4-8 RACHOW ST, THORNLANDS	Job No. C17-283		
				Approved:		Drawn:		Design:		IMAGERY, CADASTRAL AND SURVEY DATA DISCLAIMER		Drawing No. C501			
				RPEQ. 11311		Date: 28.06.2017		CMT		While every care is taken by NAXOS Engineers Pty Ltd to ensure the accuracy of the data supplied by local authorities, dial before you dig (dbyd) records, as constructed information and detailed survey, we make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of data being inaccurate or incomplete in any way and for any reason.		Revision: 1			

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E info@naxosengineers.com.au
50 Leichhardt Street, Spring Hill QLD 4000
PO Box 224, Spring Hill QLD 4004
NAXOSENGINEERS.COM.AU

CONSTRUCTION



CONSTRUCTION ISSUE

SEWERAGE RETICULATION LAYOUT PLAN
SCALE 1 : 250

CONSULTANT: NAXOS ENGINEERS
DISCIPLINE: CIVIL DIVISION
CONTACT: ADRIAN RODGERS
TELEPHONE: 1300 598 544
EMAIL: Adrian@naxosengineers.com.au

AMENDMENTS		DRAWN	
No.	DATE	No.	DATE
1	20.12.2017		
2	09.03.2018		
3	13.03.2018		
4	15.03.2018		

Associated Consultant:
T.J.V. DESIGN

Approved: *[Signature]*

Check: CMT
Supervisor: CMT

REQ. 11311 Date: 28.06.2017

Surveyor:
EAST COAST SURVEYS

Plan Ref.: 537
Level Datum AHD
PM 165646 RL 8.93

Size of Land:
0.5978 HA

North:
A1

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PO Box 224, Spring Hill QLD 4004
NAXOSENGINEERS.COM.AU

Client: **PALACIO PROPERTY GROUP**

Project: **PROPOSED UNIT DEVELOPMENT AT 4-8 RACHOW ST, THORNLANDS**

Title: **SEWERAGE RETICULATION LAYOUT PLAN**

Scale: 1:250

Job No. C17-283

Drawing No. C502

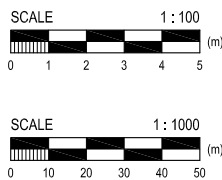
Revision: 4

CONSTRUCTION

MANHOLE/END NAME
MANHOLE TYPE
LID TYPE
JUNCTION LINE
DROP TYPE
DEPTH TO HC
HOUSE CONNECTION
INVERT LEVEL
HC TYPE
HC UNIT No
CH. FROM D/S MH



- NOTE:
1. REFER TO DRG NO. C502 FOR SEWER LAYOUT PLAN
 2. ALL LEVELS, CHAINAGES & DISTANCES IN METERS
 3. REFER SEQ-SEW-1200 SERIES FOR BEDDING & BACKFILL REQUIREMENTS
 4. REFER SEQ-SEW-1300 SERIES FOR MAINTENANCE STRUCTURE TYPES AND DROPS
 5. REFER SEQ-SEW-1206-1 FOR BULKHEAD AND TRENCH STOP DETAILS
 6. REFER SEQ-SEW-1106 SERIES FOR PROPERTY CONNECTION TYPES.



INSPECTION REQUIREMENTS

PRIOR TO COMMENCEMENT OF WORKS, CONTACT NAXOS ENGINEERS ON 1300 598 544 TO CONFIRM INSPECTION REQUIREMENTS RELATING TO SEWER / WATER WORKS INCLUDING LIVE CONNECTIONS.

A MINIMUM 48 HOURS NOTICE IS REQUIRED.

INSPECTIONS ARE REQUIRED TO BE ORGANIZED WITH NAXOS ENGINEERS AND REDLAND WATER. ANY COSTS ASSOCIATED WITH ENGAGING REDLAND WATER TO UNDERTAKE INSPECTIONS OUTSIDE OF THE REDLAND WATER QUOTE FEE PAID SHALL BE BORNE BY THE CONTRACTOR.

EXISTING SERVICES WARNING:

EXISTING SERVICES ARE LOCATED WITHIN THE VICINITY OF WORKS.

LOCATING OF THIS EXISTING SERVICES MUST BE UNDERTAKEN PRIOR TO COMMENCEMENT OF WORKS AS THE LOCATION ON THIS PLAN HAS BEEN PLOTTED FROM DBYD RECORDS AND IS SHOWN AS INDICATIVE AND ASSUMED TO BE AT STANDARD DEPTH AND ALIGNMENT.

EXTREME CAUTION IS TO BE UNDERTAKEN WHILE UNDERTAKING WORKS IN THE VICINITY OF THESE SERVICES.

A DBYD REQUEST IS TO BE UNDERTAKEN PRIOR TO WORKS. WORKS TO ADHERE TO INDIVIDUAL SERVICE AUTHORITY REQUIREMENTS FOR WORKING NEAR THEIR INFRASTRUCTURE.

CONSULTANT: NAXOS ENGINEERS
DISCIPLINE: CIVIL DIVISION
CONTACT: ADRIAN RODGERS
TELEPHONE: 1300 598 544
EMAIL: Adrian@naxosengineers.com.au

CONSTRUCTION ISSUE

DATUM R.L.	-7.000
DIAMETER	Ø150 uPVC S18
GRADE	1 IN 180
DEPTH TO INVERT	3.045
INVERT LEVEL OF SEWER	1.544
NATURAL SURFACE LEVEL	4.495
CHAINAGE	0.000
CO-ORDINATE	E 1008.406 N 5143.8551

REDLAND CITY COUNCIL
Approved Plan

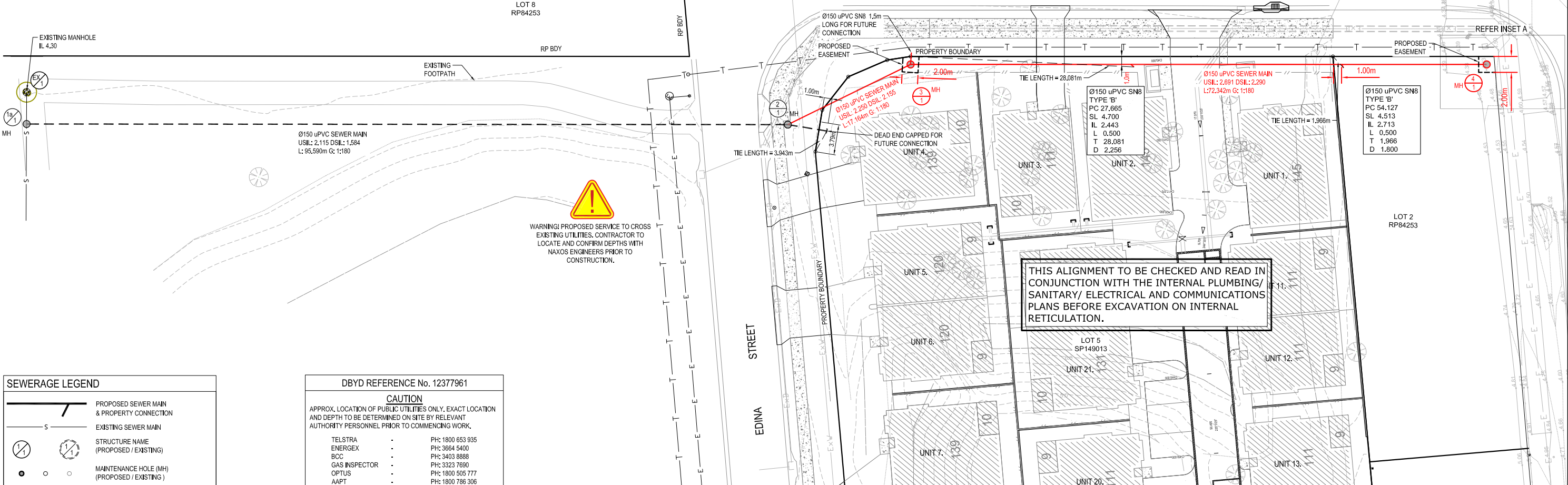
29/03/2018

ApplicationNo **OPW002219**

See Compliance Certificate for conditions of approval

<table border="1"> <thead> <tr><th colspan="4">AMENDMENTS</th></tr> <tr><th>No.</th><th>DATE</th><th>DESCRIPTION</th><th>DRAWN</th></tr> </thead> <tbody> <tr><td>1</td><td>20.12.2017</td><td>ISSUE FOR CONSTRUCTION</td><td>DE</td></tr> <tr><td>2</td><td>09.03.2018</td><td>UPDATED ISSUE FOR CONSTRUCTION</td><td>AR</td></tr> <tr><td>3</td><td>13.03.2018</td><td>UPDATED ISSUE FOR CONSTRUCTION</td><td>AR</td></tr> <tr><td>4</td><td>15.03.2018</td><td>UPDATED ISSUE FOR CONSTRUCTION</td><td>AR</td></tr> </tbody> </table>				AMENDMENTS				No.	DATE	DESCRIPTION	DRAWN	1	20.12.2017	ISSUE FOR CONSTRUCTION	DE	2	09.03.2018	UPDATED ISSUE FOR CONSTRUCTION	AR	3	13.03.2018	UPDATED ISSUE FOR CONSTRUCTION	AR	4	15.03.2018	UPDATED ISSUE FOR CONSTRUCTION	AR	Associated Consultant T.J.V. DESIGN				Surveyor: EAST COAST SURVEYS Plan Ref.: 5357 Level Datum AHD PM 165648 RL 8.93				RP Description: LOT 5 ON SP149013				North: Orig. Drg. Size A1				Client: PALACIO PROPERTY GROUP				Scale: AS SHOWN			
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RPEQ. 11311 Date: 28.06.2017				Checked: CMT				Supervisor: CMT				Title: SEWERAGE LONGITUDINAL SECTIONS				Drawing No. C503																																			
								T 1300 598 544 E info@naxosengineers.com.au 50 Leichhardt Street, Spring Hill QLD 4000 PO Box 224, Spring Hill QLD 4004 NAXOSENGINEERS.COM.AU				Revision: 4				CONSTRUCTION																																			

SEWERAGE WORKS LEGEND	
	EXISTING SEWER MAIN TO BE INSTALLED BY DEVELOPER
	FUTURE SEWER MAIN
	STRUCTURE NAME (EXISTING / PROPOSED)
	MAINTENANCE STRUCTURE (EXISTING / PROPOSED)



CAUTION
 WARNING! PROPOSED SERVICE TO CROSS EXISTING UTILITIES. CONTRACTOR TO LOCATE AND CONFIRM DEPTHS WITH NAXOS ENGINEERS PRIOR TO CONSTRUCTION.

THIS ALIGNMENT TO BE CHECKED AND READ IN CONJUNCTION WITH THE INTERNAL PLUMBING/SANITARY/ ELECTRICAL AND COMMUNICATIONS PLANS BEFORE EXCAVATION ON INTERNAL RETICULATION.

SEWERAGE LEGEND	
	PROPOSED SEWER MAIN & PROPERTY CONNECTION
	EXISTING SEWER MAIN
	STRUCTURE NAME (PROPOSED / EXISTING)
	MAINTENANCE HOLE (MH) (PROPOSED / EXISTING)
	MAINTENANCE SHAFT (MS) (PROPOSED / EXISTING)
	HORIZONTAL BEND
	FSL 3.750 CONTROL LEVEL
	PROPOSED STORMWATER DRAINAGE

DBYD REFERENCE No. 12377961	
CAUTION	
APPROX. LOCATION OF PUBLIC UTILITIES ONLY. EXACT LOCATION AND DEPTH TO BE DETERMINED ON SITE BY RELEVANT AUTHORITY PERSONNEL PRIOR TO COMMENCING WORK.	
TELSTRA	PH: 1800 653 935
ENERGEX	PH: 3664 5400
BCC	PH: 3403 8888
GAS INSPECTOR	PH: 3323 7890
OPTUS	PH: 1800 505 777
AAPT	PH: 1800 786 306
PIPE NETWORKS	PH: 1800 201 100
NEXTGEN	PH: 1800 336 886

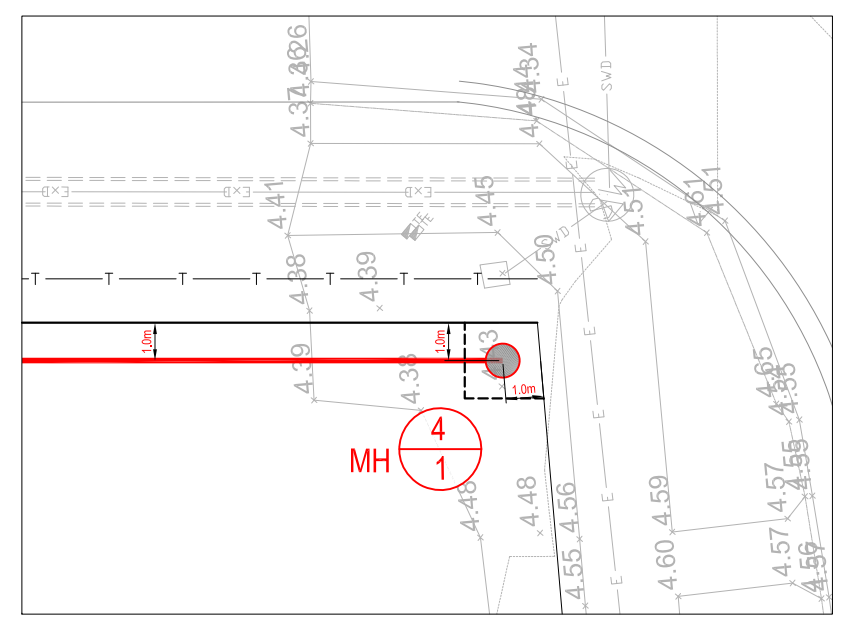
"DIAL BEFORE YOU DIG" TO BE CONTACTED PH: 1100 FOR THE LOCATION OF EXISTING PUBLIC UTILITIES, PRIOR TO EXCAVATION.



DISCLAIMER:
 WHILEST EVERY EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION PROVIDED IN THIS DRAWING/DESIGN WAS ACCURATE AT THE TIME IT WAS COMPILED, IT REMAINS THE RESPONSIBILITY OF PROPERTY OWNERS AND THEIR CONTRACTORS, SUB-CONTRACTORS, EMPLOYEES, SERVANTS AND AGENTS AS APPROPRIATE IN THE CIRCUMSTANCES TO MAKE ALL REASONABLE EFFORTS TO ASCERTAIN THE PRECISE LOCATION OF EXISTING INFRASTRUCTURE INCLUDING WATER MAINS, SEWERS AND DRAINS BEFORE UNDERTAKING EXCAVATION OR CONSTRUCTION WORK.
 USERS OF THE INFORMATION SHOULD BE AWARE THAT SINCE THE ORIGINAL RECORDING OF THE DEPTHS IN RELATION TO GROUND LEVELS, CHANGES MAY HAVE OCCURRED AS A RESULT OF SUBSEQUENT WORK OF ACTIVITIES INVOLVING FILLING OR EXCAVATION. CONSEQUENTLY, NAXOS ENGINEERS PTY LTD TAKES NO RESPONSIBILITY FOR ANY APPARENT ERROR OR INACCURACIES THAT ARE SHOWN TO EXIST AS AT THE DATE INFORMATION WAS PROVIDED OR AT A LATER DATE.
 THE ABOVE ALSO APPLIES TO LOCATION AND DEPTH OF OTHER PUBLIC UTILITIES.

SEWERAGE RETICULATION LAYOUT PLAN
 SCALE 1 : 250

REDLAND CITY COUNCIL
 Operational Works Approval
 08/06/2018
 ApplicationNo OPW18/0065
 See Decision Notice for conditions of approval



INSET A
 SCALE 1 : 100

ISSUE FOR APPROVAL

CONSULTANT: NAXOS ENGINEERS
DISCIPLINE: CIVIL DIVISION
CONTACT: ADRIAN RODGERS
TELEPHONE: 1300 598 544
EMAIL: Adrian@naxosengineers.com.au

NAXOS ENGINEERS
 T 1300 598 544
 E Info@naxosengineers.com.au
 Ground Floor, Suite 1
 424 Upper Roma Street, Brisbane 4000
 PO Box 224, Spring Hill QLD 4004
 NAXOSENINEERS.COM.AU

AMENDMENTS			
No.	DATE	DESCRIPTION	DRAWN
A	19.02.2018	ISSUED FOR APPROVAL	AR
B	03.05.2018	NEW COUNCIL APPLICATION	AR
C	11.05.2018	UPDATED FOLLOWING CLIENT COMMENTS	AR
D	23.05.2018	UPDATED PROPERTY CONNECTIONS	AR
E	04.06.2018	UPDATED FOLLOWING COUNCILS COMMENTS	AR

Associated Consultant:		T.J.V. DESIGN	
Approved:		Drawn:	DE
Checked:	CMT	Design:	DE
Supervised:	CMT	Checked:	CMT
RPEQ:	11311	Date:	23.05.2018

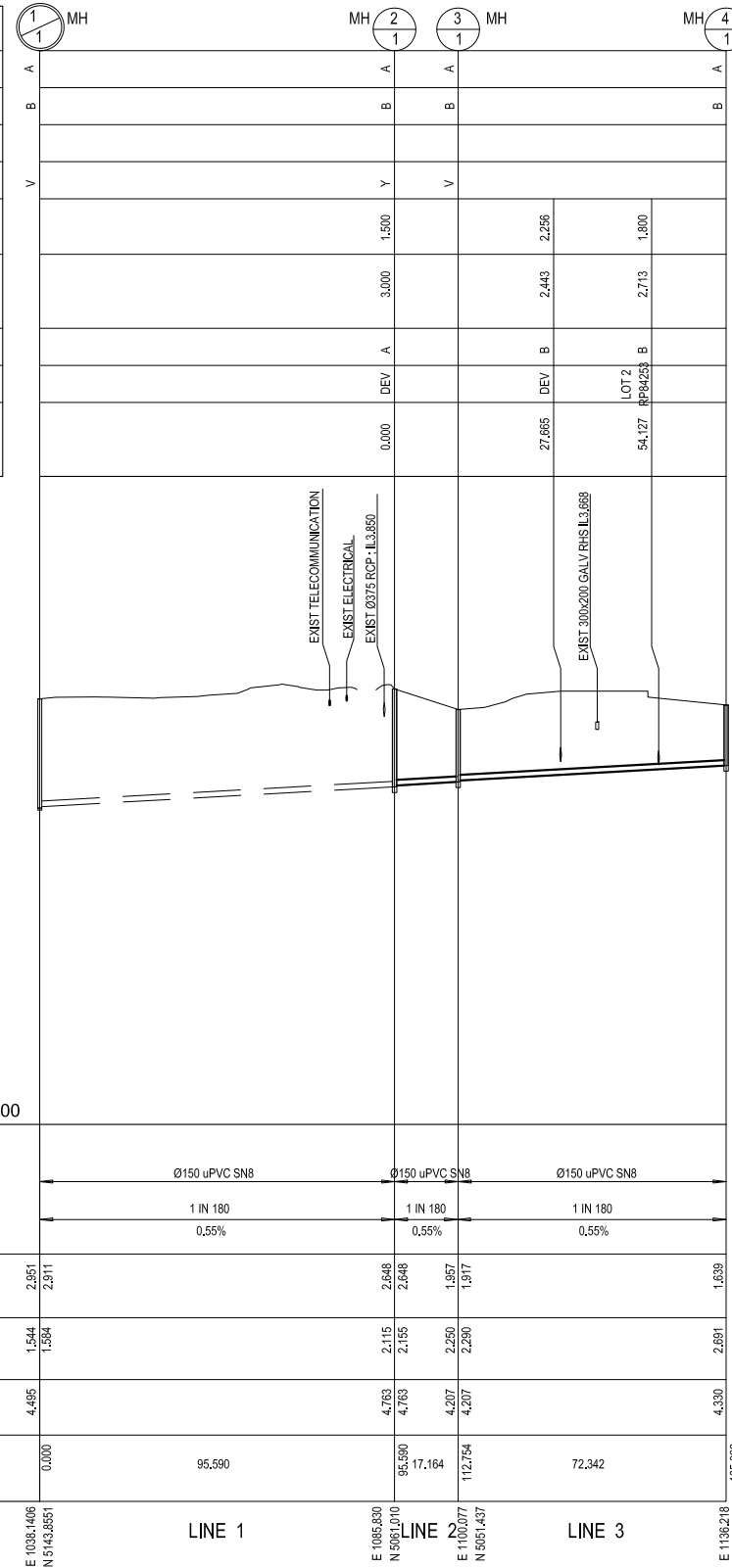
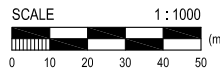
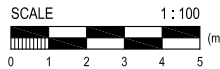
DISCLAIMER NOTE:
 THIS PLAN WAS PREPARED FOR DISCUSSION AND ESTIMATING PURPOSES. THE LAYOUT SHOWN IS INDICATIVE ONLY AND MAY BE SUBJECT TO LOCAL AUTHORITY / GOVERNMENT REQUIREMENTS AND FURTHER DETAILED ENGINEERING DESIGN.
 THIS PLAN SHALL NOT BE USED FOR CONSTRUCTION PURPOSES AND IS NOT TO BE USED FOR ANY OTHER PURPOSE OR BY ANY OTHER PERSON OR CORPORATION OTHER THAN LISTED AS THE 'CLIENT' ON THIS PLAN.
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UPSTREAM SEWER CONCEPT PLAN

North	Size of Land:	Client:	Job No.:	Revision:
	0.5978 HA	PALACIO PROPERTY GROUP	C17-283	E
Scale:	Project:	Drawing No.:		
1:100	PROPOSED UNIT DEVELOPMENT AT 4-8 RACHOW ST, THORNLANDS	SK02		

MANHOLE/END NAME	1	2	3	4
MANHOLE TYPE	A	A	A	A
LID TYPE	B	B	B	B
JUNCTION LINE				
DROP TYPE	V	Y	V	
DEPTH TO HC		1,500		
HOUSE CONNECTION				
INVERT LEVEL		3,000	2,443	2,713
HC TYPE		A	B	
HC UNIT No		DEV	DEV	LOT 2 RPA/253 B
CH. FROM D/S MH		0,000	27,665	54,127



- NOTE:**
- REFER TO DRG NO. C502 FOR SEWER LAYOUT PLAN
 - ALL LEVELS, CHAINAGES & DISTANCES IN METERS
 - REFER SEQ-SEW-1200 SERIES FOR BEDDING & BACKFILL REQUIREMENTS
 - REFER SEQ-SEW-1300 SERIES FOR MAINTENANCE STRUCTURE TYPES AND DROPS
 - REFER SEQ-SEW-1206-1 FOR BULKHEAD AND TRENCH STOP DETAILS
 - REFER SEQ-SEW-1106 SERIES FOR PROPERTY CONNECTION TYPES
 - ALL NOMINATED MANHOLES TO BE PRECAST UNLESS NOTED OTHERWISE

INSPECTION REQUIREMENTS

PRIOR TO COMMENCEMENT OF WORKS, CONTACT NAXOS ENGINEERS ON 1300 598 544 TO CONFIRM INSPECTION REQUIREMENTS RELATING TO SEWER / WATER WORKS INCLUDING LIVE CONNECTIONS.

A MINIMUM 48 HOURS NOTICE IS REQUIRED.

INSPECTIONS ARE REQUIRED TO BE ORGANIZED WITH NAXOS ENGINEERS AND REDLAND WATER. ANY COSTS ASSOCIATED WITH ENGAGING REDLAND WATER TO UNDERTAKE INSPECTIONS OUTSIDE OF THE REDLAND WATER QUOTE FEE PAID SHALL BE BORNE BY THE CONTRACTOR.

EXISTING SERVICES WARNING:

EXISTING SERVICES ARE LOCATED WITHIN THE VICINITY OF WORKS.

LOCATING OF THIS EXISTING SERVICES MUST BE UNDERTAKEN PRIOR TO COMMENCEMENT OF WORKS AS THE LOCATION ON THIS PLAN HAS BEEN PLOTTED FROM DBYD RECORDS AND IS SHOWN AS INDICATIVE AND ASSUMED TO BE AT STANDARD DEPTH AND ALIGNMENT.

EXTREME CAUTION IS TO BE UNDERTAKEN WHILE UNDERTAKING WORKS IN THE VICINITY OF THESE SERVICES.

A DBYD REQUEST IS TO BE UNDERTAKEN PRIOR TO WORKS. WORKS TO ADHERE TO INDIVIDUAL SERVICE AUTHORITY REQUIREMENTS FOR WORKING NEAR THEIR INFRASTRUCTURE.

ISSUE FOR APPROVAL

DATUM R.L. -7.000		LINE 1	LINE 2	LINE 3
DIAMETER		Ø150 uPVC S18	Ø150 uPVC S18	Ø150 uPVC S18
GRADE		1 IN 180	1 IN 180	1 IN 180
DEPTH TO INVERT	2,951 2,911	2,648 2,648	1,957 1,917	1,659
INVERT LEVEL OF SEWER	1,544 1,594	2,115 2,155	2,250 2,280	2,691
NATURAL SURFACE LEVEL	4,405	4,763 4,763	4,207 4,207	4,330
CHAINAGE	0,000	95,590	95,590 117,164	72,342
CO-ORDINATE	E 1035,1406 N 5143,8951	E 1095,6300 N 5061,0110	E 1124,9771 N 5051,1437	E 1136,2118 N 4988,709

REDLAND CITY COUNCIL
Operational Works Approval

08/06/2018

ApplicationNo **OPW18/0065**

See Decision Notice for conditions of approval

CONSULTANT: NAXOS ENGINEERS
DISCIPLINE: CIVIL DIVISION
CONTACT: ADRIAN RODGERS
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EMAIL: Adrian@naxosengineers.com.au



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E Info@naxosengineers.com.au
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424 Upper Roma Street, Brisbane 4000
PO Box 224, Spring Hill QLD 4004
NAXOSENINEERS.COM.AU

No.	DATE	DESCRIPTION	DRAWN
A	11.05.2018	ISSUED FOR APPROVAL	AR
B	23.05.2018	UPDATED PROPERTY CONNECTIONS	AR
C	04.06.2018	UPDATED FOLLOWING COUNCILS COMMENTS	AR

Associated Consultant:
T.J.V. DESIGN

Approved: *[Signature]*

Drawn: DE
Design: DE
Checked: CMT
Supervisor: CMT

RPEQ: 11311 Date: 23.05.2018

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UPSTREAM SEWER LONGSECTION PLAN

Notice: Size of Land: 0.5978 HA Client: PALACIO PROPERTY GROUP Job No. C17-283 Revision: C

Scale: 1:100 Project: PROPOSED UNIT DEVELOPMENT AT 4-8 RACHOW ST, THORNLANDS Drawing No. SK04